

## 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 through "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 design should be based on a predicted sub-grade GDR 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 GDR value and/or the RF value be below the predicted values, additional base material will be required in accordance with Departmental specifications. Refer to the same manual as the number and location 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 guardrails 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.

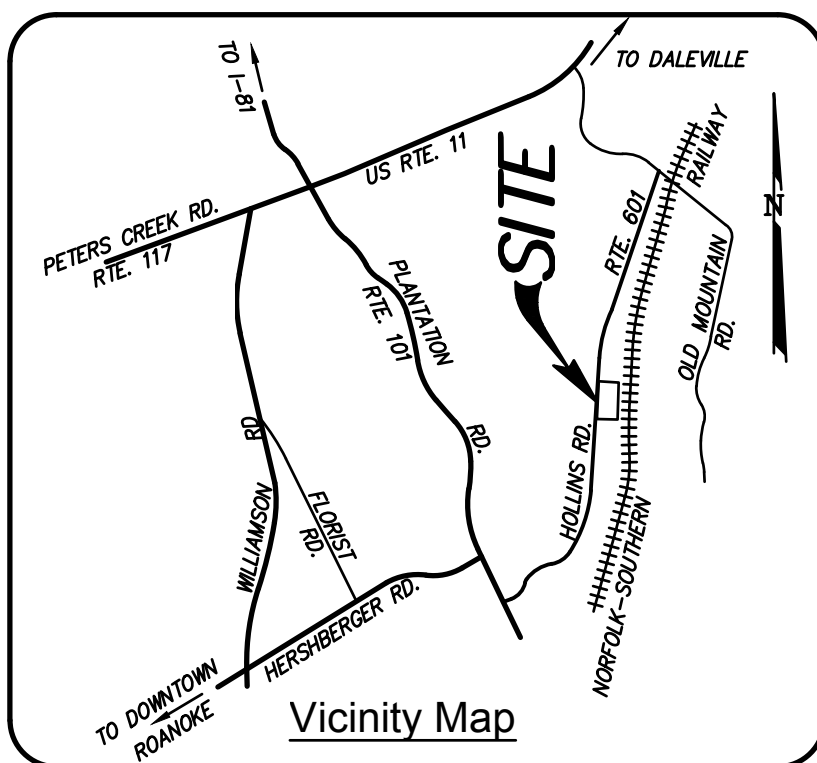


NAME OF DEVELOPMENT		I, _____, OWNER/DEVELOPER, AM AWARE OF THE SITE DESIGN REQUIREMENTS IMPOSED BY THIS SITE DEVELOPMENT PLAN, ALL REVISIONS THEREOF, AND OTHER APPLICABLE ROANOKE COUNTY CODES AND ORDINANCES.
MAGISTERIAL DISTRICT(S)	HOLLINS	I HEREBY CERTIFY THAT I AGREE TO COMPLY WITH THESE REQUIREMENTS SHOWN ON THIS COVER SHEET UNLESS MODIFIED IN ACCORDANCE WITH LOCAL LAW.
OWNER (name, address, telephone)	ROANOKE COUNTY BOARD OF SUPERVISORS PO BOX 29800 ROANOKE, VA 24018	
DEVELOPER (name, address, telephone)	ROANOKE COUNTY GENERAL SERVICES 5235 HOLLINS ROAD ROANOKE, VA 24019 CONTACT: MR. GEORGE ASSAID, TEL: (540) 777-6348 EMAIL: GAssaid@RoanokeCountyVA.gov	
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: CWAranoke@aol.com
TAX MAP NO(S)	039.05-02-04.00-0000	

## 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.westernwater.org](http://www.westernwater.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 potholes 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



### LEGEND

Property Line

Right-of-way

Centerline

Minimum Building Line

Existing Storm Sewer

Existing Sanitary Sewer

Existing Water Main

Existing Contour

Proposed Contour

Proposed Drainage Divide

Proposed Limits of Clearing

Proposed Storm Sewer

Proposed Sanitary Sewer

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.

<u>PR #:</u>	<u>NOTES:</u>
<u>Revision Table</u>	

- |      |  |
|------|--|
| C-01 | ROANOKE COUNTY COVER SHEET                                       |
| C-02 | NOTES AND LEGEND   |
| C-03 | EXISTING CONDITIONS AND SITE DEMOLITION PLAN                     |
| C-04 | DIMENSIONAL LAYOUT PLAN  |
| C-05 | SOIL EROSION & SEDIMENTATION CONTROL PLAN                        |
| C-06 | GRAVING AND STORM DRAIN PLAN                                     |
| C-07 | SITE UTILITIES PLAN  |
| C-08 | PROFILE- GRADING OVER EXISTING PUBLIC<br>SANITARY SEWER MAIN     |
| C-09 | EROSION CONTROL NARRATIVE, MEASURES &<br>CONSTRUCTION SEQUENCING |
| C-10 | DETAILS - SOIL EROSION & SEDIMENTATION CONTROL                   |
| C-11 | DETAILS - SITE CONSTRUCTION                                      |
| C-12 | COST REQUIRED LANDSCAPE PLAN                                     |

REFERENCES TO LIGHTING SHEETS OMITTED, SEE  
BUILDING PLAN SUBMITTALS FOR LIGHTING.

## 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 SPECIFIC Vertical Datum: NGVD 1929  
Source of topographic mapping is dated MARCH 2022

Source of topographic mapping is dated MARCH 2022

Boundary was performed by CWA dated: JULY 2020 (COMBINATION PLAT)

Benchmark Information: RAILROAD SPIKE IN POWER POLE LOCATED  $\pm$  20' NORTH OF THE  
ENTRANCE TO #5285 HOLLINS ROAD. ELEVATION = 1057.17 (NGVD 1929)

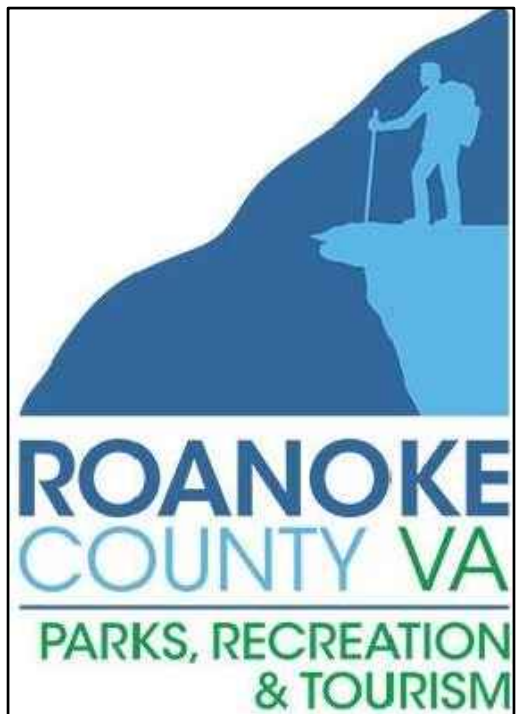
The professional seal and signature certifies the boundary survey and topographic mapping to be accurate and correct.

COUNTY OF ROANOKE, VA

(NOT APPLICABLE - ROANOKE COUNTY PROJECT)

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. STORM PIPE, VDOT CL. III RCP OR DUAL WALL HDPE		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			
CURB & 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 Z1-A BASE STONE		C.Y.			
TRAFFIC BARRICADE		EA			
SILT FENCE BARRIER		LF			
RIP-RAP, VDOT CLASS I		CY			
DIVERSION		LF			
TEMPORARY SEDIMENT TRAP		EA			
STORMWATER MANAGEMENT		LS			
AS-BUILT PLANS (STORM SEWER SYSTEMS)		LS			
AS-BUILT PLANS (STORMWATER MANAGEMENT)		LS			
SUBTOTAL					
10% CONTINGENCY					
ESTIMATED TOTAL					
<b>BY SEALING THE PLANS, THE DESIGN PROFESSIONAL HEREBY CERTIFIES THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.</b>					



**CWA**  
**CALDWELL WHITE ASSOCIATES**  
ENGINEERS / SURVEYORS / PLANNERS

Designed: C.L. White  
 Drawn: C.L. White  
 Checked: \_\_\_\_\_  
 Date: October 09, 2024  
 Field Book: CH-25  
 W.O. No.: 24-0052



# APPROVED

**NEW OUTDOOR EQUIPMENT  
STORAGE FACILITY**

FOR

**ROANOKE COUNTY DEPARTMENT OF  
PARKS, RECREATION & TOURISM**

5305 Hollins Road  
Roanoke County Tax Parcel: 039.05-02-04.00-0000  
Hollins Magisterial District  
County of Roanoke, Virginia

**SHEET**  
**C-01**  
**OF**  
**12**

**PLAN APPROVED**

Denise Jordan

REVIEW COORDINATOR, 5/1/2025



## SITE SUMMARY

CURRENT SITE ZONING:	12S – HIGH INTENSITY INDUSTRIAL
PROPOSED USE:	EXISTING WAREHOUSE STORAGE AND NEW OUTDOOR EQUIPMENT STORAGE FOR PUBLIC / MAINTENANCE SERVICES (PARKS, REC. & TOURISM EQUIPMENT)
TAX PARCEL:	039.05–02–04.00–0000
PARCEL SIZE:	16.36 AC

## PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A POLE BARN AND GRAVEL LOT TO STORE MOWERS, TRAILERS, ATHLETIC FIELD GROUND COVERS, ETC., USED IN MAINTAINING THE COUNTY’S PARKS & REC. FACILITIES. ALSO INCLUDED IS CERTAIN RESTRIPIING OF EXISTING IMPERVIOUS SURFACES FOR AUTOMOBILE PARKING STALLS.

## 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 CONTOURS AND SPOT ELEVATIONS SHOWN HEREIN ARE TO THE TOP OF THE INDIVIDUAL ELEMENT. THE CONTRACTOR SHALL ACCOUNT FOR THICKNESS OF TOPSOIL, ROAD BASE, MULCH, ETC. AND ADJUST SUBGRADE ELEVATIONS ACCORDINGLY.

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

AREAS OF, OR WITHIN FIVE FEET OF PROPOSED HARD SURFACES (INCLUDING GRAVEL) SHALL BE COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR (ASTM D698). IN AREAS OF GRASS OR LANDSCAPING, FILLS SHALL BE COMPACTED TO THE FINAL VERTICAL FOOT TO 90% STANDARD PROCTOR, WITH THE FINAL FOOT BEING COMPACTED BY NORMAL TRACKING OF EARTHWORK EQUIPMENT, GENERALLY PROVIDING 80% OF STANDARD PROCTOR.

AREAS OF CUT SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF THE GEOTECHNICAL PROJECT ENGINEER. AREAS THAT EXHIBIT RUTTING, PUMPING, OR OTHERWISE INDICATE SUB-STANDARD PERFORMANCE SHALL BE UNDERCUT, REMOVED AND REPLACED WITH SUITABLE MATERIAL AS DIRECTED BY THE GEOTECHNICAL PROJECT ENGINEER.

THE SUBJECT DEVELOPMENT LIES WITHIN THE COUNTY’S DESIGNATED "AREAS OF POTENTIALLY EXPANSIVE SOILS". THE COUNTY OF ROANOKE HAS SPECIFIC REQUIREMENTS FOR AREAS OF THE COUNTY THAT ARE SUSCEPTIBLE TO EXPANSIVE SOILS. AS THE ONLY BUILDING RELATED CONSTRUCTION PROPOSED WILL BE POST FOUNDATIONS FOR THE POLE BARN, IT IS EXPECTED AT THIS TIME THAT SPECIAL FOUNDATION DESIGNS WILL NOT BE APPLICABLE.

## VIRGINIA DEPARTMENT OF TRANSPORTATION NOTES

THESE PLANS DO NOT REQUIRE ANY WORK WITHIN THE PUBLIC RIGHT OF WAY. SHOULD CONDITIONS REQUIRE WORK WITHIN THE RIGHT OF WAY, THE CONTRACTOR IS REQUIRED TO OBTAIN A LAND USE PERMIT AND POST APPLICABLE SURETY FROM VDOT PRIOR TO PERFORMING ANY WORK WITHIN THE PUBLIC RIGHT OF WAY. ADDITIONAL INFORMATION RELATIVE TO TRAFFIC CONTROL PLANS MAY BE REQUIRED AT THAT TIME. COORDINATE WITH THE SALEM RESIDENCY OFFICE OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION, 540–387–5488.

## ROANOKE COUNTY NOTES

### SITE LIGHTING

SITE LIGHTING WILL BE PROVIDED FOR SECURITY PURPOSES. PLANS FOR SITE ELECTRICAL, FIBER OPTIC (AS APPLICABLE), AND SITE LIGHTING ARE BEING PREPARED, AND WILL BE PROVIDED FOR MUNICIPAL REVIEW WITH THE BUILDING SUBMITTALS.

### SIGNAGE

THERE IS NO PROPOSED SITE RELATED SIGNAGE. SHOULD BUILDING MOUNTED SIGNAGE BE DESIRED, THE OWNER IS REQUIRED TO PROVIDE A SIGNAGE PLAN TO THE COUNTY FOR REVIEW AND APPROVAL PRIOR TO ISSUANCE OF A SIGN PERMIT. SIGNAGE IS PERMITTED SEPARATELY FROM SITE PLANS.

### REFUSE COLLECTION

THERE IS NO NEW REFUSE COLLECTION DUMPSTER TO BE LOCATED ON THE SITE.

## WESTERN VIRGINIA WATER AUTHORITY NOTES

### SITE SPECIFIC NOTES:

1. THE ONLY CHANGE IN EXISTING DOMESTIC WATER AND SANITARY SEWER USAGE WILL BE THE ADDITION OF NEW HOSE BIBB CONNECTIONS IN THE AREA OF THE NEW POLE BARN. TAPS FOR THESE HOSE BIBBS WILL BE MADE TO THE EXISTING DOMESTIC WATER LATERAL, ON THE PRIVATE SIDE OF THE EXISTING WATER METER.
2. THE EXISTING FACILITY IS NOT SPRINKLED, AND WILL REMAIN UNSPRINKLED.

### GENERAL NOTES:

1. AS MENTIONED ABOVE, THERE ARE NO PROPOSED CHANGES TO THE EXISTING DOMESTIC AND SANITARY LATERALS. AS SUCH, THE FOLLOWING SHALL ONLY BE APPLICABLE IF SOMETHING UNFORESEEN REQUIRES RECONSTRUCTION OR ALTERATION OF THE EXISTING WYWA SERVICE LATERALS.
2. ALL MATERIALS, FABRICATION, AND INSTALLATION OF NEW WATERLINE AND SANITARY SEWER PIPELINES, MANHOLES, AND APPURTENANCES SHALL CONFORM TO THE LATEST EDITION OF THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS 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.
3. THE CONTRACTOR OR DEVELOPER IS REQUIRED TO NOTIFY THE WESTERN VIRGINIA WATER AUTHORITY IN WRITING AT LEAST THREE (3) DAYS PRIOR TO ANY CONSTRUCTION.
4. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE WESTERN VIRGINIA WATER AUTHORITY.
5. FIELD CORRECTIONS SHALL BE APPROVED BY THE WESTERN VIRGINIA WATER AUTHORITY PRIOR TO SUCH CONSTRUCTION.
6. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18" CLEARANCE VERTICALLY AND 2' MINIMUM HORIZONTALLY FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE AT ALL WATER, SANITARY SEWER CROSSINGS OF ANY OTHER UTILITIES. WHERE THIS CANNOT BE ACHIEVED ADDITIONAL MEASURES IN ACCORDANCE WITH WYWA STANDARDS WILL BE REQUIRED. CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY UPON DISCOVERY OF SUCH CONDITIONS, AS ADDITIONAL DESIGN EFFORTS MAY BE REQUIRED.
7. ANY EXISTING APPURTENANCES SHALL BE ADJUSTED TO GRADE AND NEW FRAME AND COVERS INSTALLED WHERE REQUIRED.
8. IT IS THE CONTRACTOR’S RESPONSIBILITY TO HAVE ALL EXISTING UTILITIES LOCATED AND POTHOLED TO VERIFY LOCATIONS. THIS PLAN REVIEW DOES NOT REMOVE THE CONTRACTOR’S RESPONSIBILITY TO RELOCATE ANY EXISTING CONFLICTS FOUND DURING CONSTRUCTION.

### SANITARY SEWER NOTES:

1. NO NEW PUBLIC SANITARY SEWER WORK IS REQUIRED OR PROPOSED.

### WATER NOTES:

1. NO NEW PUBLIC WATERLINE WORK IS REQUIRED OR PROPOSED.

### SYMBOLS

EXISTING	NEW	
--- 100.5	100.5	SPOT ELEVATION
== 100	100	CONTOURS
== 8"SS ==	8"SS	SANITARY SEWER LINE
--- 4"W ---	4"W	WATERLINE
== 8"SD ==	8"SD	STORM DRAIN
--- 2"G ---	2"G	GAS LINE
=== E ===	E	OVERHEAD ELECTRIC LINE
--- T ---	T	OVERHEAD TELEPHONE LINE
CATV	CATV	OVERHEAD CABLE TELEVISION LINE
--- UE --- UT ---	--- UE --- UT ---	UNDERGROUND TEL OR ELEC LINE
⊗	⊗	WATER OR GAS METER
⊕	⊕	VALVE
⊕ F.H.	⊕ F.H.	FIRE HYDRANT
⊕ C.O.	⊕ C.O.	MANHOLE
⊕	⊕	CLEANOUT
⊕	⊕	DROP INLET (CURB OR GRATE)
⊕	⊕	UTILITY POLE, GUY & ANCHOR
⊕	⊕	DITCH OR SWALE
⊕	⊕	CENTERLINE OR BASELINE
⊕	⊕	PROPERTY LINE
⊕	⊕	BENCHMARK
⊕	⊕	FENCE
⊕	⊕	HANDICAPPED SPACE

## LEGEND

### ABBREVIATIONS

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

➡ Revised December 12, 2024 Per First Roanoke County Review – C.L. White



THE FOLLOWING GEOTECHNICAL WORK HAS BEEN PERFORMED BY FROELICH & ROBERTSON, INC. OF ROANOKE, VA, AND ARE INCORPORATED HEREIN BY REFERENCE:

- SEPTEMBER 2019 REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION (F&R PROJ. 62X0325).
- SEPTEMBER 2022 REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION (F&R PROJ. 62A0121).
- OCTOBER 26, 2022 SUPPLEMENTAL REPORT OF SLOPE EVALUATIONS AND LABORATORY TESTING RESULTS (F&R PROJ. 62A0121).

BASED ON THE GRADING SHOWN, IT IS ESTIMATED THAT THE FOLLOWING EARTHWORK WILL BE REQUIRED:

SURFICIAL SOILS - REMOVAL: 3,175 CY  
SURFICIAL SOILS - PLACEMENT: 1,832 CY  

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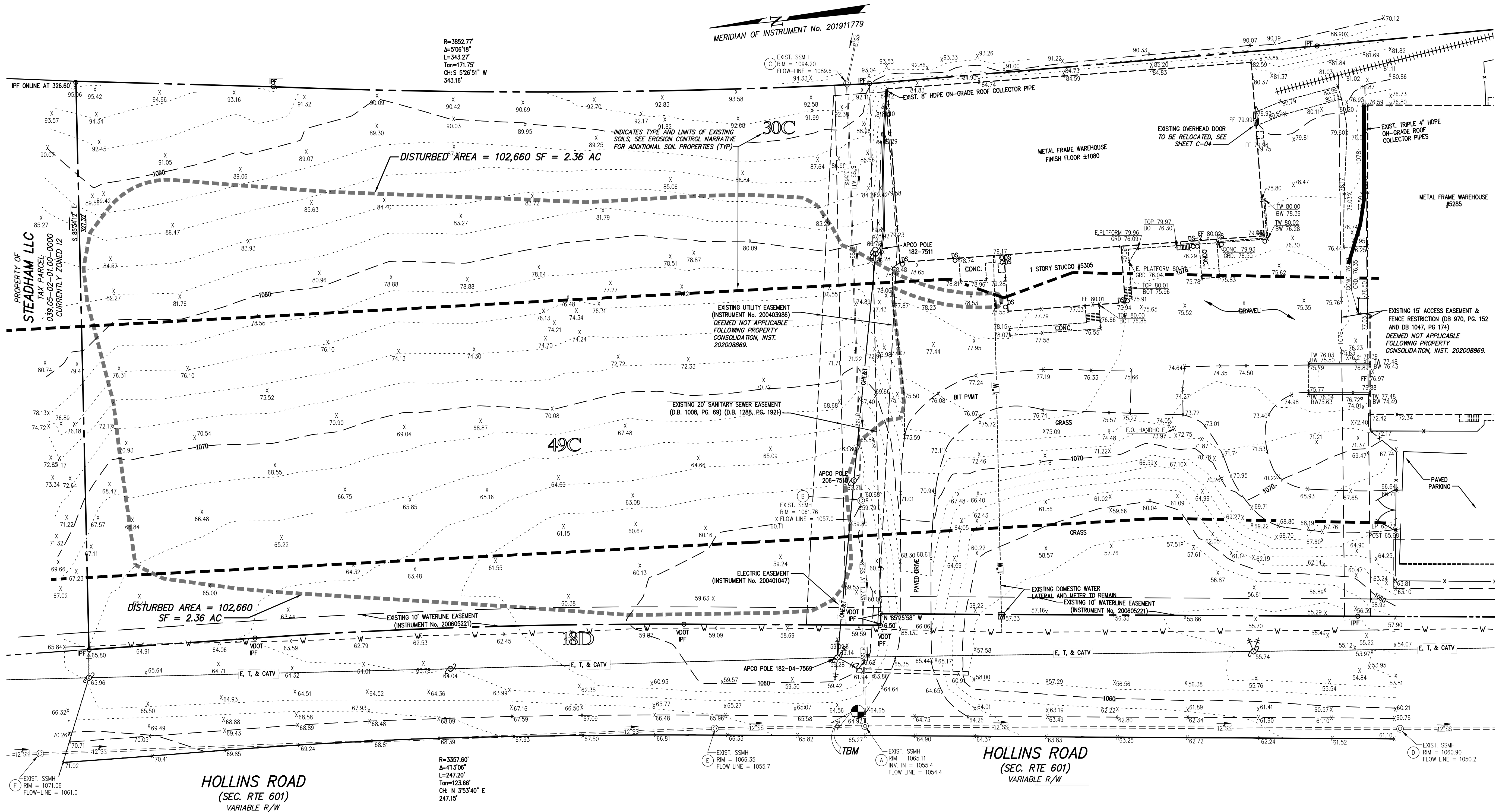
SURFICIAL SOILS - NET EXPORT FROM SITE = 1,343 CY

EARTHWORK - CUT	6,753 CY
EARTHWORK - FILL	7,213 CY
<u>EARTHWORK - NET IMPORT TO SITE</u>	<u>= 400 CY</u>

THE ABOVE ASSUMES THE FOLLOWING ELEMENT THICKNESSES:

- SURFICIAL SOIL REMOVAL 10"
- SURFICIAL SOIL REPLACEMENT 10"
- NEW GRAVEL SURFACING 10"

AS INDICATED, THE EARTHWORK BALANCE IS HIGHLY  
DEPENDENT ON THE ACTUAL THICKNESS OF SURFICIAL SOILS  
ENCOUNTERED IN THE AREA OF WORK



UNLESS OTHERWISE STATED HEREIN, ALL EXISTING PHYSICAL IMPROVEMENTS LOCATED WITHIN THE LIMITS OF "DISTURBED AREA" OR "AREA OF WORK" ARE TO BE REMOVED FROM THE SITE IN THEIR ENTIRETY. 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.

REFER TO PROJECT MANUAL FOR DIRECTION GOVERNING ABANDONMENT OR REMOVAL OF EXISTING UTILITIES.

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 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 MARQUEE) AND FLAGMEN.

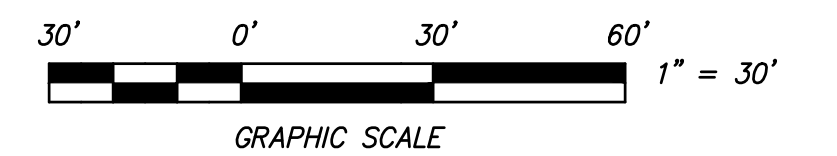
USE WATER SPRINKLING AND OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING IN AIR TO LOWEST PRACTICAL LEVEL. COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.

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.

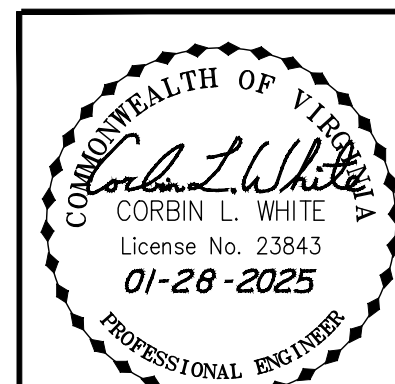
CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITIONS EXISTING PRIOR TO THE START OF WORK, OR BETTER.

**TBM**  **TEMPORARY BENCHMARK:**  
IRON PIN FOUND, NORTHERN EDGE OF DRIVE INTO SITE  
FROM HOLLINS ROAD.  
ELEVATION = 1064.82


**BENCHMARK:**  
RAILROAD SPIKE IN POWER POLE LOCATED  $\pm$  20' NORTH OF  
THE ENTRANCE TO #5285 HOLLINS ROAD  
ELEVATION = 1057.17 (NGVD 1929)



EXISTING CONDITIONS AND SITE DEMOLITION PLAN  
FOR  
NEW OFFICES & STORAGE FACILITY  
FOR  
ROANOKE COUNTY DEPARTMENT OF PARKS,  
RECREATION & TOURISM  
SITUATE 5305 HOLLINS ROAD (VA ROUTE 601)  
HOLLINS MAGISTERIAL DISTRICT  
COUNTY OF ROANOKE, VIRGINIA



Designed: C.L. White  
 Drawn: C.L. White  
 Checked: \_\_\_\_\_  
 Date: October 09, 2024  
 Scale: 1" = 30'  
 Tax Parcel: 039.05-02-04.00-000  
 Field Book: CH-25  
 W.O. No.: 24-0052

 **CWA**

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**CALDWELL WHITE ASSOCIATES**

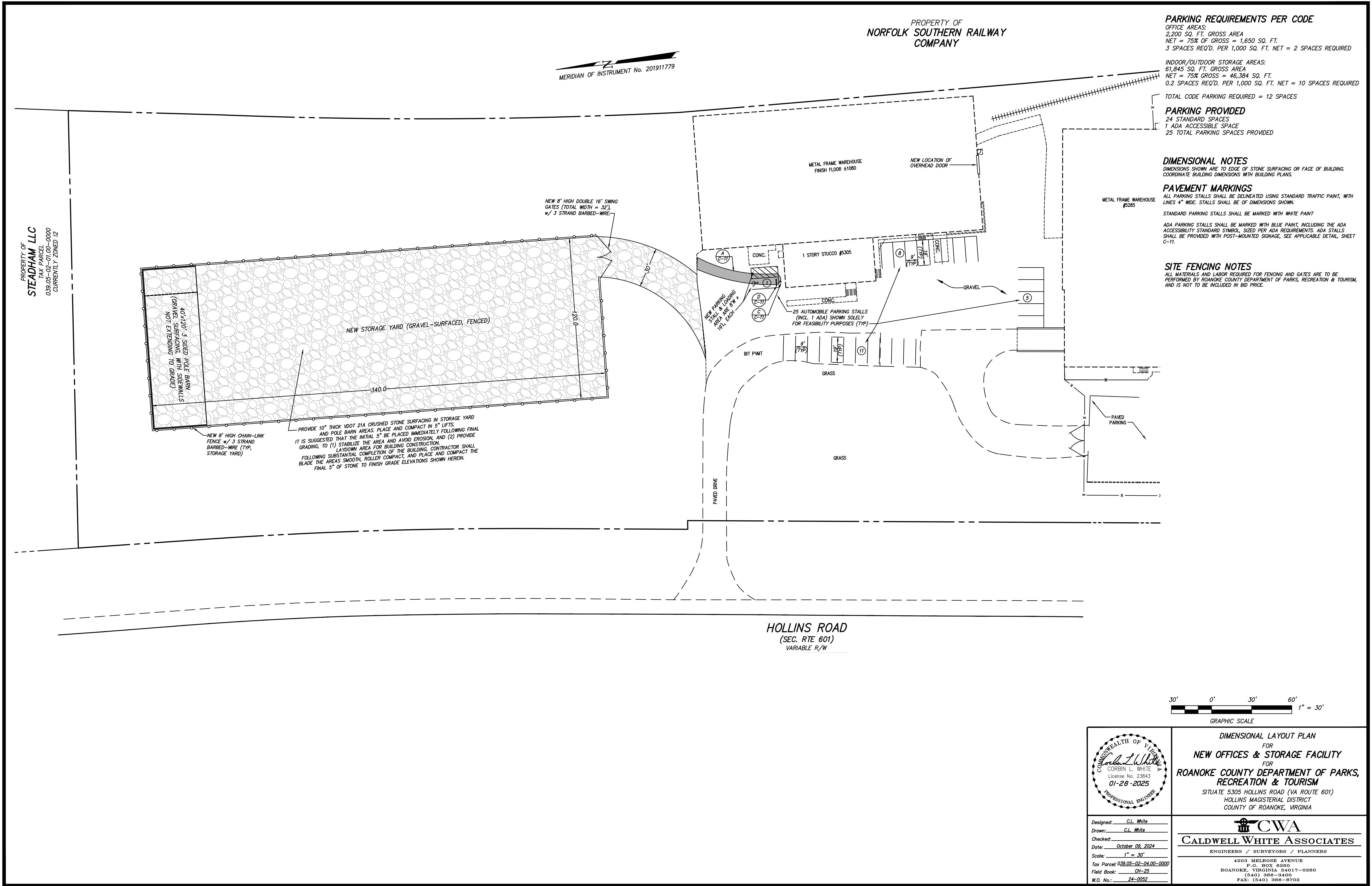
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ENGINEERS / SURVEYORS / PLANNERS

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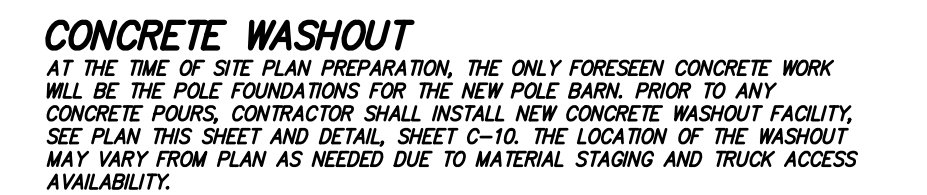
4203 MELROSE AVENUE  
P.O. BOX 6260  
ROANOKE, VIRGINIA 24017-0260  
(540) 366-3400  
FAX: (540) 366-8702






	DIMENSIONAL LAYOUT PLAN FOR <b>NEW OFFICES &amp; STORAGE FACILITY</b> FOR <b>ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION &amp; TOURISM</b> SITUATE 5305 HOLLINS ROAD (VA ROUTE 601) HOLLINS MAGISTERIAL DISTRICT COUNTY OF ROANOKE, VIRGINIA	
	 <b>CALDWELL WHITE ASSOCIATES</b> ENGINEERS / SURVEYORS / PLANNERS	
	Designed: <u>C.L. White</u>	4203 MELROSE AVENUE
	Drawn: <u>C.L. White</u>	P.O. BOX 6260
	Checked: <u>C.L. White</u>	ROANOKE, VIRGINIA 24017-0260
Date: <u>October 09, 2024</u>	(540) 366-3400	
Scale: <u>1" = 30'</u>	FAX: (540) 366-8702	
Tax Parcel: <u>039.05-02-04.00-0000</u>		
Field Book: <u>CH-25</u>		
W.O. No.: <u>24-0052</u>		





### SOIL EROSION CONTROL MEASURES

- |   |  |
|---|--|
|    | <p>SOIL EROSION &amp; SEDIMENTATION CONTROL PLAN<br/>FOR<br/>NEW OFFICES &amp; STORAGE FACILITY<br/>FOR<br/>ROANOKE COUNTY DEPARTMENT OF PARKS,<br/>RECREATION &amp; TOURISM</p> |
| <p>Designed: C.L. White<br/>Drawn: C.L. White<br/>Checked:<br/>Date: October 09, 2024<br/>Scale: 1" = 30'<br/>Tax Parcel: 039.05-02-04-000-0000<br/>Field Book: CH-25<br/>W.O. No.: 04-2052</p> | <p>SITUATE 5305 HOLLINS ROAD (VA ROUTE 601)<br/>HOLLINS MAGISTERIAL DISTRICT<br/>COUNTY OF ROANOKE, VIRGINIA</p>   |

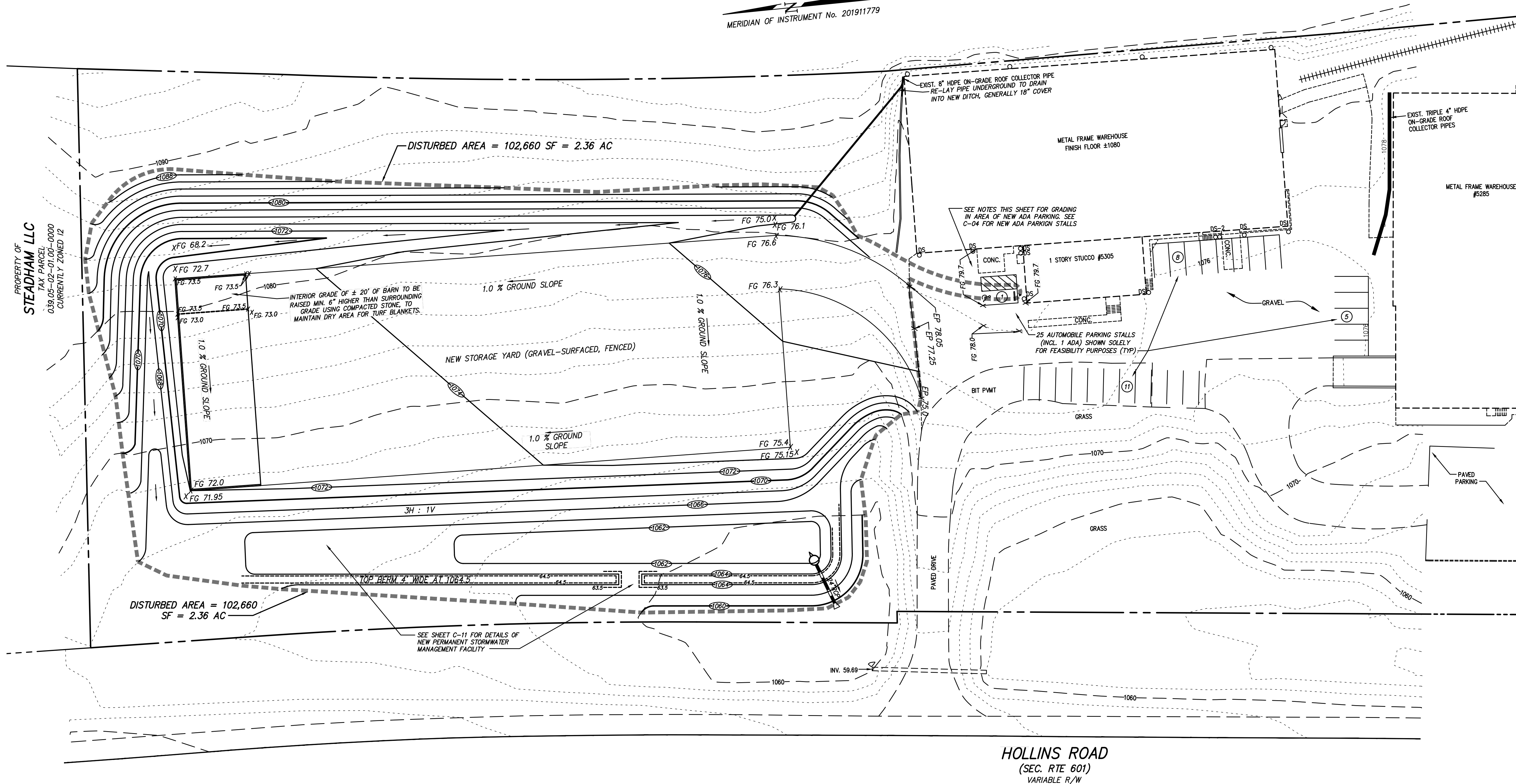


PROPERTY OF  
NORFOLK SOUTHERN RAILWAY  
COMPANY

MERIDIAN OF INSTRUMENT No. 2019111779

# GRADING NOTES – NEW ADA PARKING AREA

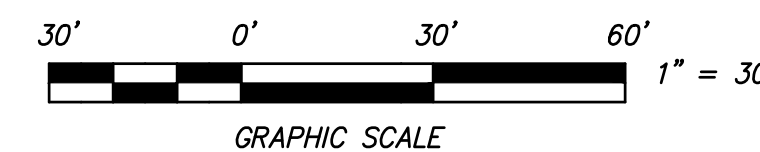
CONTRACTOR SHALL PERFORM SELECTIVE REMOVAL OF EXISTING CONCRETE AND BITUMINOUS SURFACE COURSE IN THE AREA OF THE NEW ADA PARKING STALL AND LOADING AREA. INTENT IS NOT TO DISTURB EXISTING SOILS IN THIS SMALL AREA OF WORK. RAISE GRADE ALONG THE WESTERN SIDE OF THE NEW ADA AREA AS SHOWN HEREON, USING COMPACTED VDOT #21 BASE STONE TO 2 INCHES BELOW FINISH GRADE, AND PROVIDE 2 INCHES VDOT SM9.5A BITUMINOUS WEAR COURSE TO BRING ELEVATIONS TO FINISH GRADE. SHOULD ACTUAL SOIL DISTURBANCE BE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, AS REVISED DESIGNS AND REVIEWS MAY BE REQUIRED.



HOLLINS ROAD  
(SEC. RTE 601)  
VARIABLE R/W

## AS-BUILT REQUIREMENTS

FOLLOWING COMPLETION OF THE STORM DRAIN INSTALLATION AND CONVERSION OF THE TEMPORARY SEDIMENT BASIN TO A PERMANENT STORMWATER MANAGEMENT FACILITY, THE CONTRACTOR SHALL HAVE AN AS-BUILT SURVEY AND PLANS PERFORMED, SUBMITTED TO, AND APPROVED BY THE COUNTY OF ROANOKE, IN ACCORDANCE WITH COUNTY REQUIREMENTS.

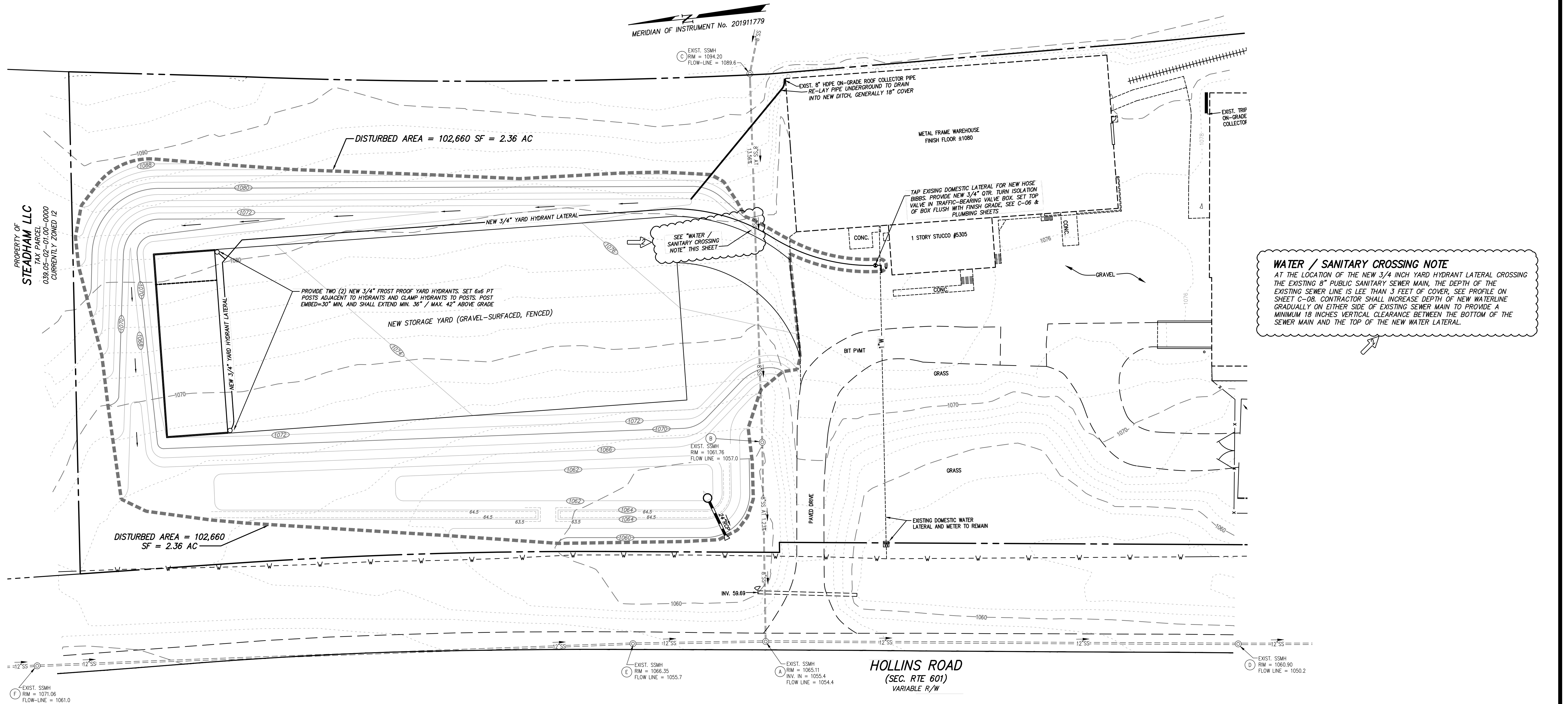


SEE SHEET C-02 FOR  
GRADING AND COMPACTION  
REQUIREMENTS

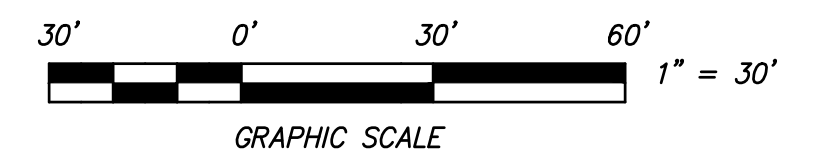
	<p>GRADING AND STORM DRAIN PLAN FOR NEW OFFICES &amp; STORAGE FACILITY FOR ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION &amp; TOURISM SITUATE 5305 HOLLINS ROAD (VA ROUTE 601) HOLLINS MAGISTERIAL DISTRICT COUNTY OF ROANOKE, VIRGINIA</p>
	<p><b>CWA</b> <b>CALDWELL WHITE ASSOCIATES</b> ENGINEERS / SURVEYORS / PLANNERS 4203 MELROSE AVENUE P.O. BOX 6260 ROANOKE, VIRGINIA 24017-0260 (540) 366-3400 FAX: (540) 366-8702</p>
<p>Designed: C.L. White Drawn: C.L. White Checked: C.L. White Date: October 09, 2024 Scale: 1" = 30' Tax Parcel: 039-05-02-04.00-0000 Field Book: CH-25 W.O. No.: 24-0052</p>	



PROPERTY OF  
NORFOLK SOUTHERN RAILWAY  
COMPANY

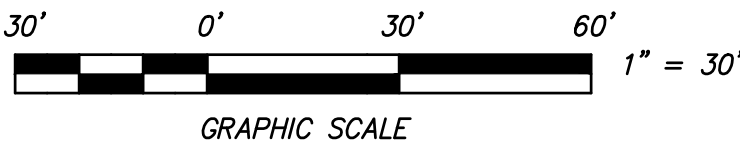
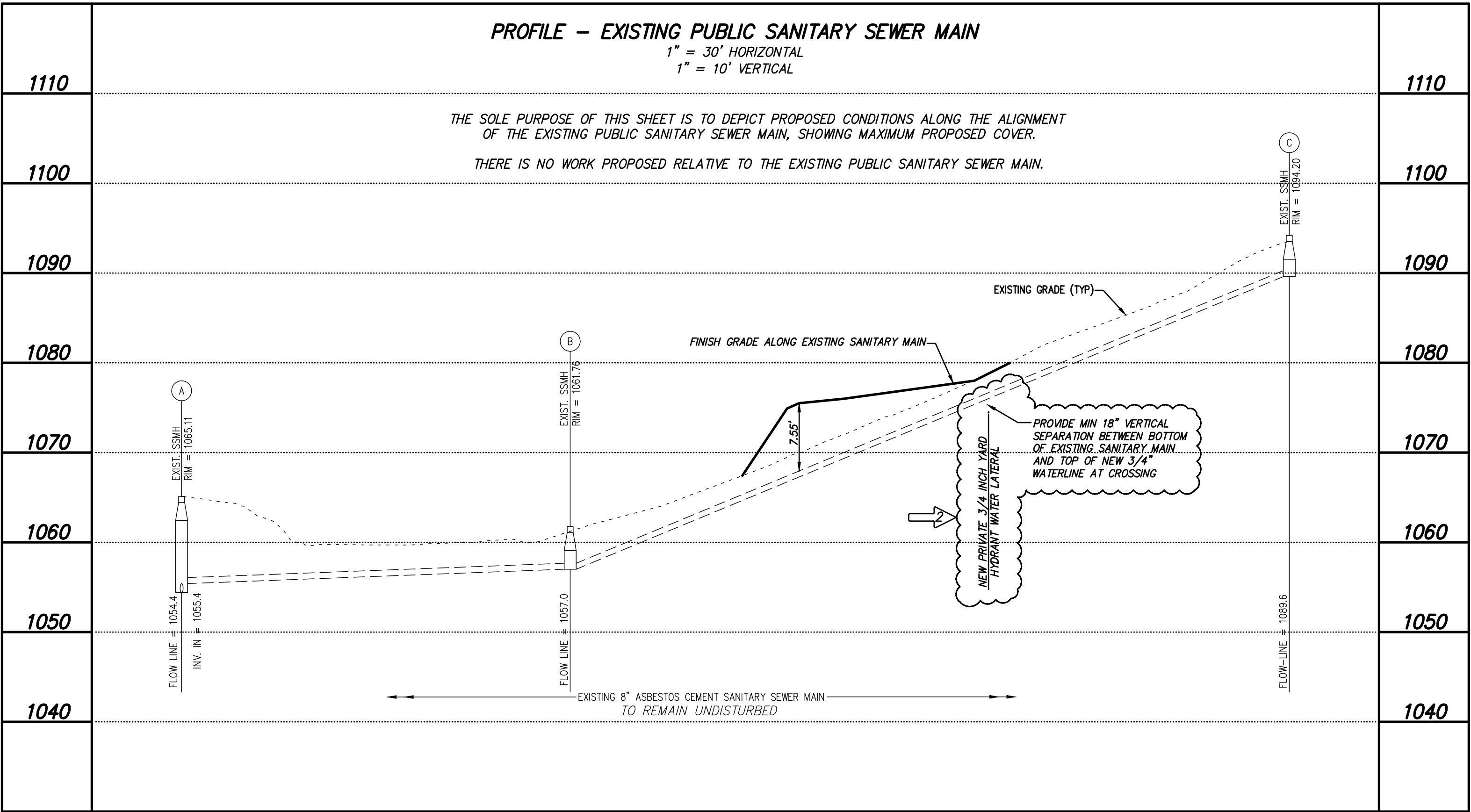


**WATER / SANITARY CROSSING NOTE**  
AT THE LOCATION OF THE NEW 3/4 INCH YARD HYDRANT LATERAL CROSSING THE EXISTING 8" PUBLIC SANITARY SEWER MAIN, THE DEPTH OF THE EXISTING SEWER LINE IS LESS THAN 3 FEET OF COVER. SEE PROFILE ON SHEET C-08. CONTRACTOR SHALL INCREASE DEPTH OF NEW WATERLINE GRADUALLY ON EITHER SIDE OF EXISTING SEWER MAIN TO PROVIDE A MINIMUM 18 INCHES VERTICAL CLEARANCE BETWEEN THE BOTTOM OF THE SEWER MAIN AND THE TOP OF THE NEW WATER LATERAL.



	<p><b>SITE UTILITIES PLAN</b> FOR <b>NEW OFFICES &amp; STORAGE FACILITY</b> FOR <b>ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION &amp; TOURISM</b> SITUATE 5305 HOLLINS ROAD (VA ROUTE 601) HOLLINS MAGISTERIAL DISTRICT COUNTY OF ROANOKE, VIRGINIA</p>
	<p><b>CWA</b> <b>CALDWELL WHITE ASSOCIATES</b> ENGINEERS / SURVEYORS / PLANNERS 4203 MELROSE AVENUE P.O. BOX 6260 ROANOKE, VIRGINIA 24017-0260 (540) 366-3400 FAX: (540) 366-8702</p>
<p>Designed: <u>C.L. White</u> Drawn: <u>C.L. White</u> Checked: <u>C.L. White</u> Date: <u>October 09, 2024</u> Scale: <u>1" = 30'</u> Tax Parcel: <u>039-05-02-04-00-0000</u> Field Book: <u>CH-25</u> W.O. No.: <u>24-0052</u></p>	<p>Revised January 17, 2025 Per First WVA Review - C.L. White</p>





	PROFILE – GRADING OVER EXISTING PUBLIC SANITARY SEWER MAIN FOR NEW OFFICES & STORAGE FACILITY FOR ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION & TOURISM SITUATE 5305 HOLLINS ROAD (VA ROUTE 601) HOLLINS MAGISTERIAL DISTRICT COUNTY OF ROANOKE, VIRGINIA
	ENGINEERS / SURVEYORS / PLANNERS
	4203 MELROSE AVENUE P.O. BOX 6260 ROANOKE, VIRGINIA 24017-0260 (540) 366-3400 FAX: (540) 366-8702
Designed: C.L. White	
Drawn: C.L. White	
Checked: October 09, 2024	
Date: As Shown	
Scale: 039.05-02-04.00-0000	
Tax Parcel: CH-25	
Field Book: 24-0052	
W.O. No.: 24-0052	

Revised January 17, 2025 Per First WVWA Review – C.L. White



PROJECT DESCRIPTION:	
THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A NEW STONE-SURFACED FENCED STORAGE AREA WITH POLE BARN ON THE NORTHERN PORTION OF THE PROPERTY, AND TO RECONFIGURE THE EXISTING HARD SURFACES FOR AUTOMOBILE PARKING STALLS. THE SUBJECT PROPERTY LIES ON HOLLINS ROAD IN THE HOLLINS MAGISTERIAL DISTRICT OF THE COUNTY OF ROANOKE, VIRGINIA. THE TOTAL DISTURBED AREA OF THE PROJECT IS ESTIMATED TO BE 102,660 SQ. FT. = 2.36 ACRES.	
EXISTING SITE CONDITIONS:	
THE SITE IS CURRENTLY A COMBINATION OF VACANT LAND AND A FORMER WAREHOUSE / OFFICE BUILDING, AND CURRENTLY DRAINS TO A DITCH ALONG THE EASTERN EDGE OF HOLLINS ROAD. THE SUBJECT SITE LIES WITHIN "ZONE "X" AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP (FIRM) 51161C0158G, EFFECTIVE DATE 09/28/2007.	
EXISTING SOIL CONDITIONS:	
A "REPORT OF SUBSURFACE EXPLORATION" WAS PERFORMED SEPTEMBER 2022 BY FROEHLING & ROBERTSON, INC. (F&R) OF ROANOKE, VA (REF: F&R PROJ. No. 62A0121), AND A "SUPPLEMENTAL REPORT OF SLOPE EVALUATIONS AND LABORATORY TESTING RESULTS" WAS PERFORMED OCTOBER 22, 2022 BY F&R. THESE SOILS REPORTS WILL BE MADE AVAILABLE BY THE COUNTY OR THE ENGINEER UPON REQUEST. BELOW ARE GENERAL SOIL CONDITIONS BASED ON THE USDA WEB SOIL SURVEY. THE USDA WEB SOIL SURVEY IDENTIFIES THE SOILS IN THE AREA OF PROPOSED CONSTRUCTION AS BELONGING TO THE SOIL UNIT GROUP(S) SHOW BELOW:	
UNIT CODE	NAME CHARACTERISTICS DEPTH TO RESTRICTIVE FEATURE DRAINAGE CLASS RUNOFF CLASS DEPTH TO WATER TABLE HYDROLOGIC SOIL GROUP
180	FREDERICK SILT LOAM, 15 TO 25 PERCENT SLOPES PARENT MATERIAL: CLAYEY RESIDUUM WEATHERED FROM DOLOMITE > 80 INCHES WELL-DRAINED HIGH > 80 INCHES B
30C	LAIDIG FINE SANDY LOAM, 7 TO 15 PERCENT SLOPES PARENT MATERIAL: COLLUVIUM DERIVED FROM SANDSTONE AND SHALE 30 TO 49 INCHES TO FRAGIPAN WELL-DRAINED MEDIUM ABOUT 30 TO 48 INCHES B
49C	TUMBLING LOAM, 7 TO 15 PERCENT SLOPES PARENT MATERIAL: COLLUVIUM DERIVED FROM SANDSTONE AND SHALE > 80 INCHES WELL-DRAINED MEDIUM > 80 INCHES B
ADJACENT PROPERTY:	
THE PROJECT SITE IS BOUNDED TO THE WEST BY HOLLINS ROAD, TO THE EAST BY NORFOLK-SOUTHERN RAILWAY, TO THE NORTH BY A COMMERCIAL OFFICE / WAREHOUSE FACILITY, AND TO THE SOUTH BY THE ROANOKE COUNTY FLEET SERVICES FACILITY. SEE PLAN SHEETS FOR INDIVIDUAL OWNERS.	
OFF-SITE AREAS:	
THE LOCATION OF ALL OFF-SITE DISTURBED AREAS ASSOCIATED WITH THE CONSTRUCTION PROJECT SHALL BE PROVIDED TO ROANOKE COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT. AN EROSION CONTROL PLAN OR MEASURES MAY BE REQUIRED FOR THESE AREAS. THE COUNTY OF ROANOKE OR ITS APPROVED AGENT RESERVES THE RIGHT TO PLACE A STOP WORK ORDER ON THE SUBJECT SITE AND ANY OFF-SITE ASSOCIATED AREAS, SHOULD APPROVED PLANS AND PERMITS NOT EXIST FOR ALL SITES.	
CRITICAL AREAS	
1. IT IS IMPERATIVE THAT PROTECTIONS BE INSTALLED ALONG THE WESTERN LIMITS OF WORK, AND THAT THE SEDIMENT BASIN BE INSTALLED EARLY IN THE WORK, TO PROTECT THE BROAD SWALE THAT PARALLELS HOLLINS ROAD. 2. PROTECTIONS SHALL BE PROVIDED DOWN GRADIENT OF ANY DISTURBED SOILS, TO FILTER SEDIMENT LADEN RUNOFF PRIOR TO LEAVING THE SITE AND ENTERING THE WATERWAYS.	
STORMWATER RUNOFF:	
SEE RESPONSE TO MINIMUM STANDARD MS-19 BELOW.	
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 SEEDDED 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. <b>MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES:</b> - 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 PERMANENTLY SEEDDED 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 SEEDDED 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 SEEDDED (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.	SELF-EXPLANATORY; SEE PERMANENT AND TEMPORARY SEEDING REQUIREMENTS HEREIN.
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.	PROTECT EARTHEN STOCKPILES WITH SILT FENCE AND TEMPORARY SEEDING
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 – ALL DISTURBED AREAS TO BE STABILIZED WITH GRASS
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 AND SEDIMENT BASIN REQUIREMENTS
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	SELF-EXPLANATORY; STABILIZE DIVERSIONS AND SEDIMENT BASIN IMMEDIATELY UPON CONSTRUCTION
6	SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.	THE SEDIMENT BASIN SHOWN HEREIN IS A SITE SPECIFIC DESIGN, BASED ON TOTAL DRAINAGE AREAS.
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.	SELF-EXPLANATORY
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 PROTECTIONS PRIOR TO PLACING SYSTEMS INTO SERVICE
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 UPWILL 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)STABILIZATION 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.	PROVIDE NEW TEMPORARY CONSTRUCTION ENTRANCE' AND 'CONSTRUCTION ROAD STABILIZATION' REQUIREMENTS CONTAINED HEREIN.
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 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 DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL. H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE. I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS. K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHERE STORM IMPACTS ON THE PROPERTIES AND WATERWAYS ARE MINIMIZED. L. THE APPLICANT SHALL BE RESPONSIBLE FOR THE PROTECTION OF 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. M. THE FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION MULTIPLIED FROM 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 QUALITY 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 (VSMMP) PERMIT REGULATIONS. N. COMPLIANCE WITH THE WATER QUALITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.	WATER QUALITY: THE ENGINEER HAS PROVIDED ROANOKE COUNTY WITH COMPUTATIONS OUTLINING THE NEED FOR 1.62 LB/YEAR OF TOTAL PHOSPHORUS REDUCTION. THIS REQUIREMENT WILL BE MET THROUGH EITHER THE USE OF A PORTION OF THE COUNTY'S FORESTED AREAS AT EITHER THEIR SUGARLOAF MOUNTAIN AREA, THEIR HAPPY HOLLOW AREA, OR A PORTION OF BOTH, OR WILL BE MET THROUGH THE PURCHASE OF NUTRIENT CREDITS FROM A VIRGINIA GEO APPROVED NUTRIENT CREDIT BANK. <div>PLEASE NOTE</div> THESE PLANS WILL BE MODIFIED ACCORDINGLY BEFORE FINAL APPROVAL, ONCE THAT DECISION HAS BEEN MADE. RUNOFF QUANTITY – CHANNEL PROTECTION & FLOOD PROTECTION: THE ENGINEER HAS PROVIDED ROANOKE COUNTY WITH COMPUTATIONS OUTLINING THAT THE NEW SWM DETENTION POND WILL MEET THE ENERGY BALANCE EQUATION REQUIREMENTS FOR CHANNEL PROTECTION, AND WILL MEET THE FLOOD PROTECTION REQUIREMENTS THROUGH REDUCING THE TEN-YEAR DISCHARGE TO A LEVEL LOWER THAN PRE-DEVELOPMENT CONDITIONS.

## SOIL EROSION AND SEDIMENTATION CONTROL COST ESTIMATE

(NOT APPLICABLE – ROANOKE COUNTY PROJECT)

ALL COSTS GIVEN ARE COMPLETE IN PLACE

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
SILT FENCE	LF			
PERMANENT SEEDING	SF			
TEMPORARY SEEDING	SF			
TEMPORARY CONSTRUCTION ENTRANCE	EA			
TEMPORARY INLET PROTECTION	EA			
CULVERT INLET PROTECTION	EA			
SLOPE BLANKET/MATTING	SF			
TEMPORARY DIVERSION DIKE	LF			
TEMPORARY SEDIMENT BASIN	LS			
SUB-TOTAL				
10% CONTINGENCY				
TOTAL BONDABLE COST				

## 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.

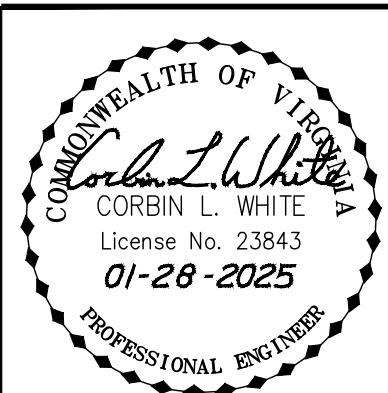
## CONSTRUCTION SEQUENCING – SITE SPECIFIC

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.

- PLACE PERIMETER CONTROLS AS A FIRST STEP, THEN IT IS SUGGESTED THAT THE LOWER EMBANKMENT OF THE BASIN BE CONSTRUCTED AS A FIRST STEP, ALONG WITH THE TSD OUTFALL STRUCTURE AND PIPE, TO SERVE AS A SETTLING BASIN FOR UPSLOPE WORK.
- STRIP SURFICIAL SOILS FROM THE NORTHERN PORTION OF THE SITE. STOCKPILE AS NEEDED FOR ON-SITE REPLACEMENT, AND DISPOSE OF EXCESS AT AN APPROVED OFF-SITE FACILITY. PROVIDE SILT FENCE AT STOCKPILE PERIMETER AND PROVIDE TEMPORARY SEEDING OF STOCKPILE. UPON COMPLETION OF STRIPPING, CUTS AND FILLS MAY THEN PROCEED TO ROUGH GRADE FOR THE STORAGE AREA AND POLE BARN, AND CONCURRENTLY, THE NEW WATERLINE AND YARD HYDRANTS MAY BE INSTALLED.
- UPON REACHING SUBGRADE, INSTALL CONSTRUCTION ROAD STABILIZATION AS INDICATED, TO FURTHER CONTROL EROSION AND PROVIDE AREAS FOR BUILDING TRADE PARKING AND MATERIAL LAYDOWN. CONCURRENTLY, PROVIDE PERMANENT SEEDING OF THE CUT AND FILL SLOPES, AND WATER AS REQUIRED TO FOSTER GERMINATION.
- ONCE THE SITE IS CONSIDERED STABILIZED BY THE COUNTY INSPECTOR, THE CONTRACTOR SHALL REMOVE THE TEMPORARY MEASURES, CONVERT THE TEMPORARY SEDIMENT BASIN TO PERMANENT STORMWATER MANAGEMENT, AND PERMANENTLY STABILIZE THOSE AREAS AFFECTED BY REMOVAL OF TEMPORARY MEASURES.
- ONCE THE SITE IS FULLY CONSTRUCTED AND STABILIZED, THE CONTRACTOR SHALL REQUEST PROJECT CLOSEOUT FROM THE COUNTY INSPECTOR.

## 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.

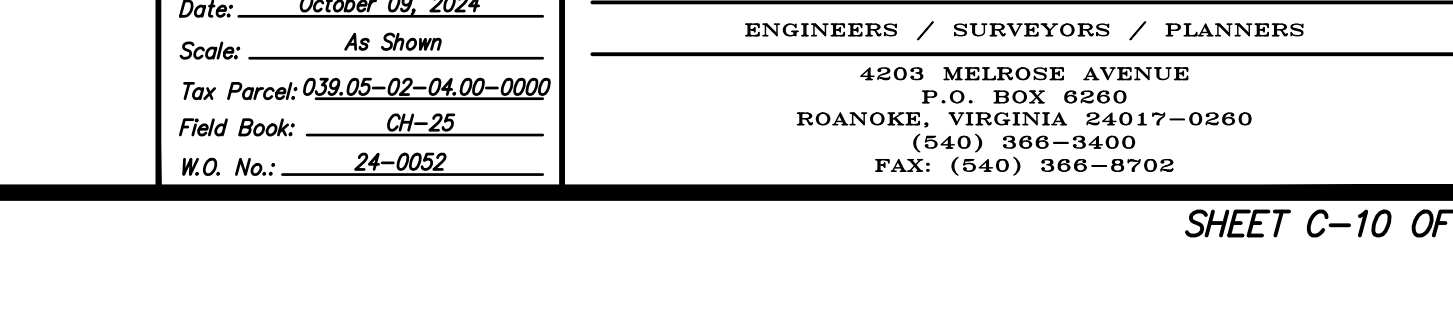
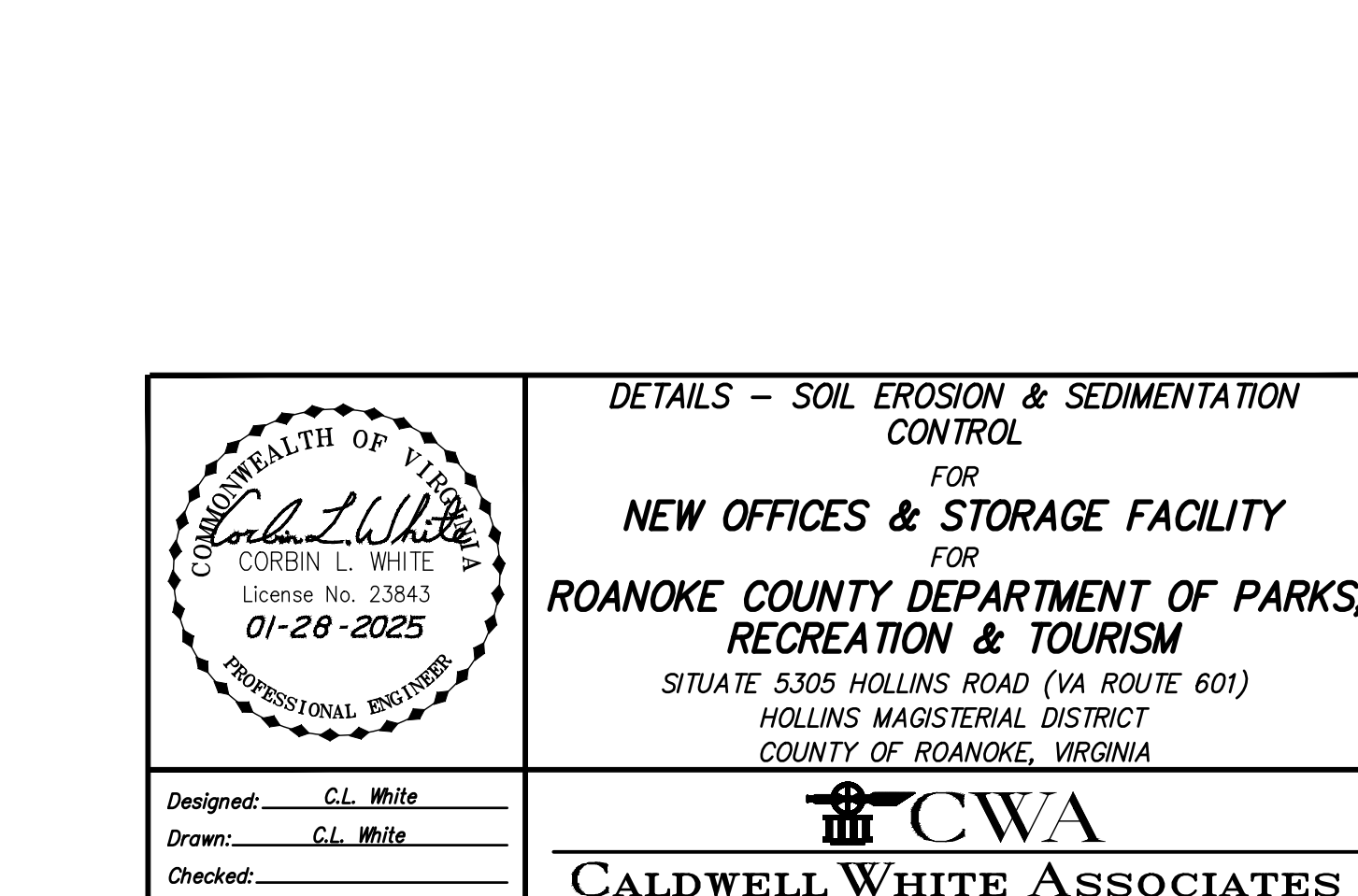
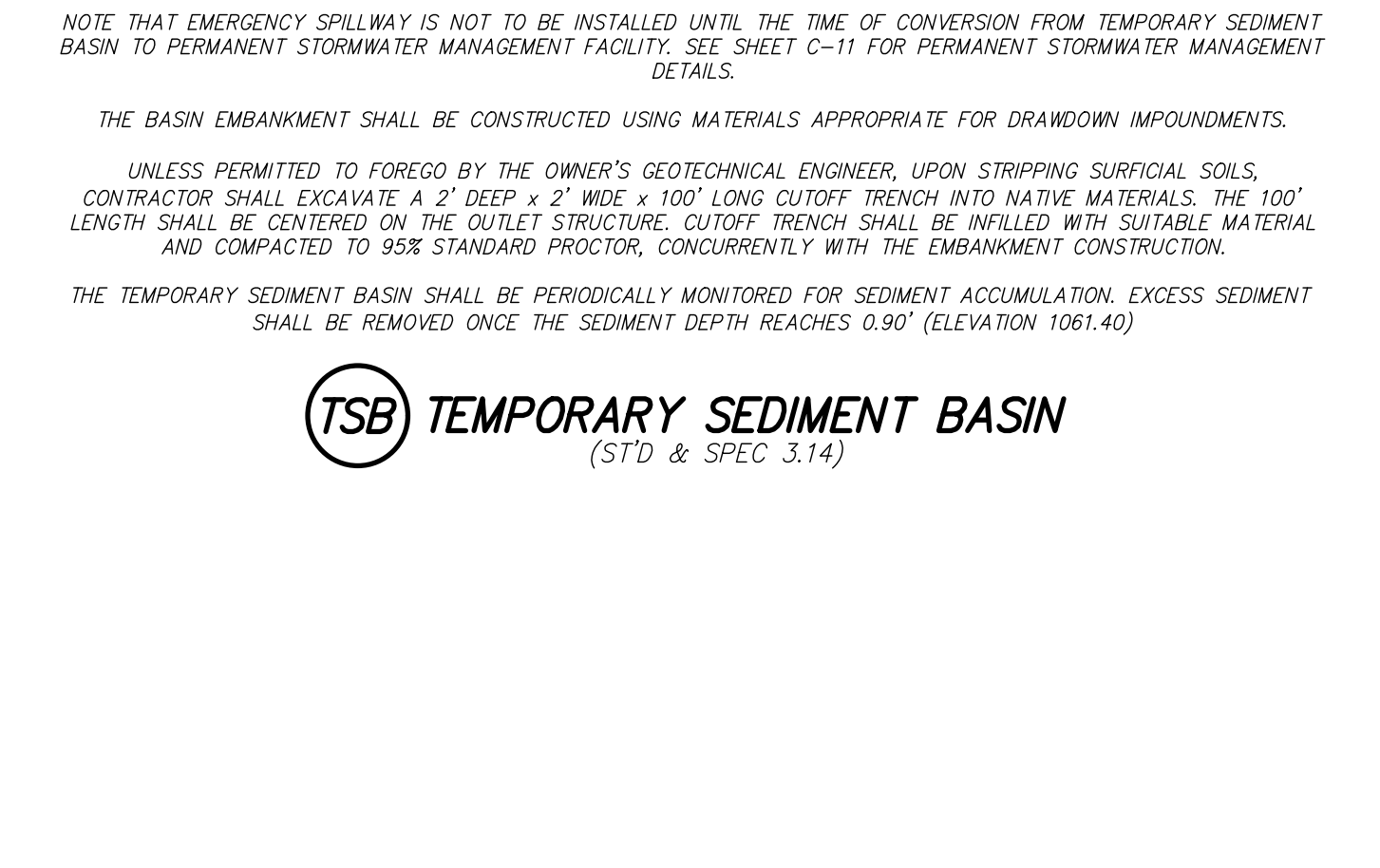
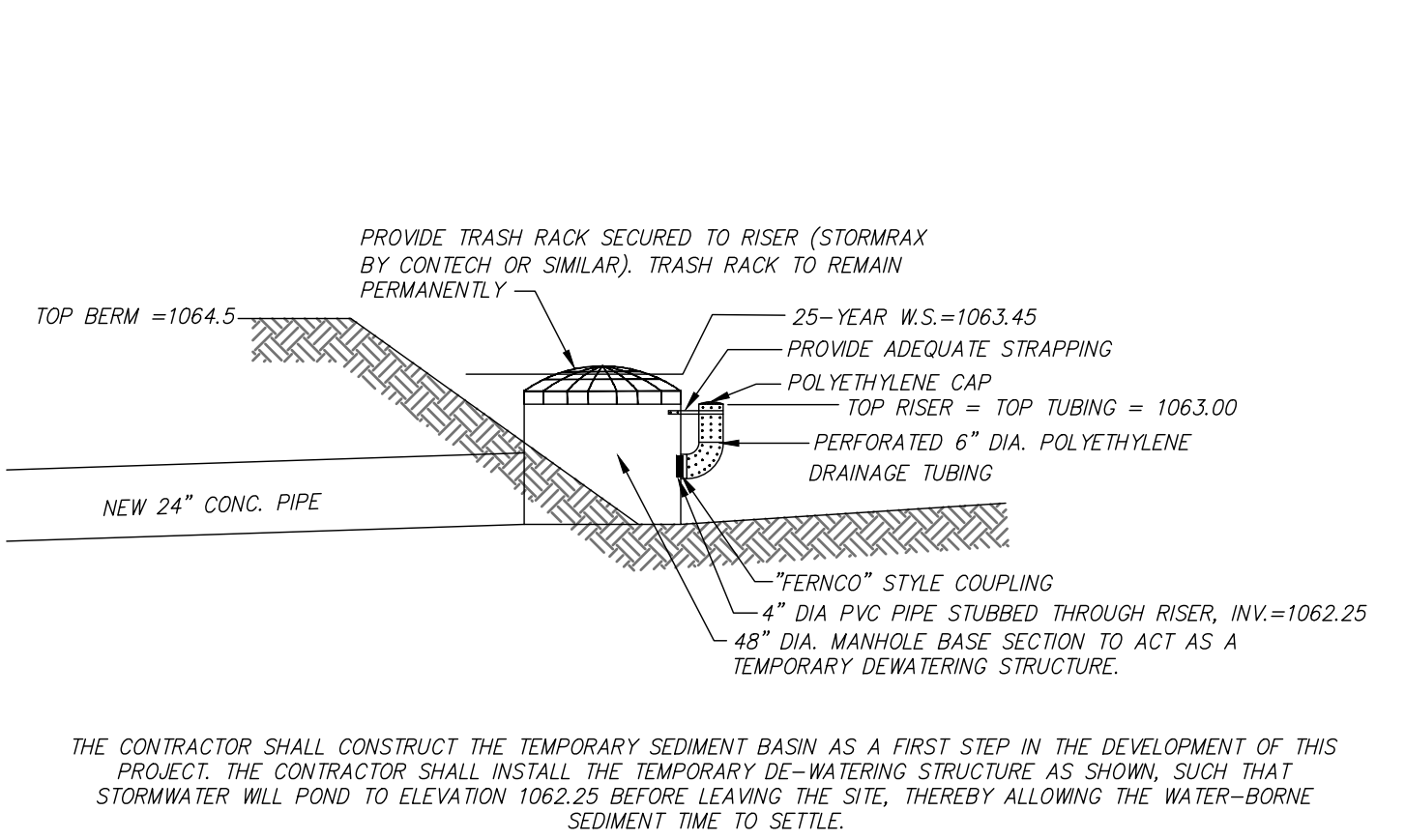
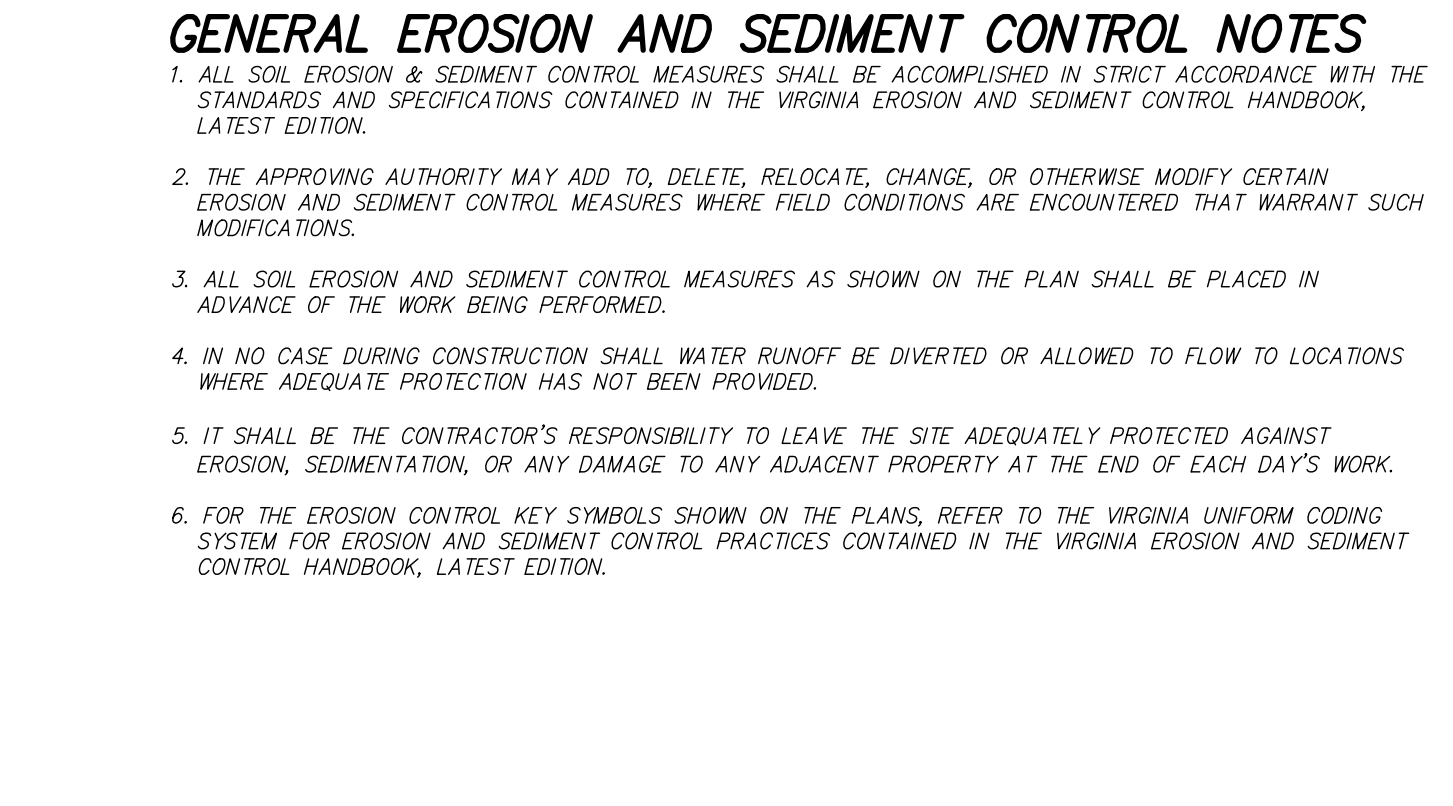
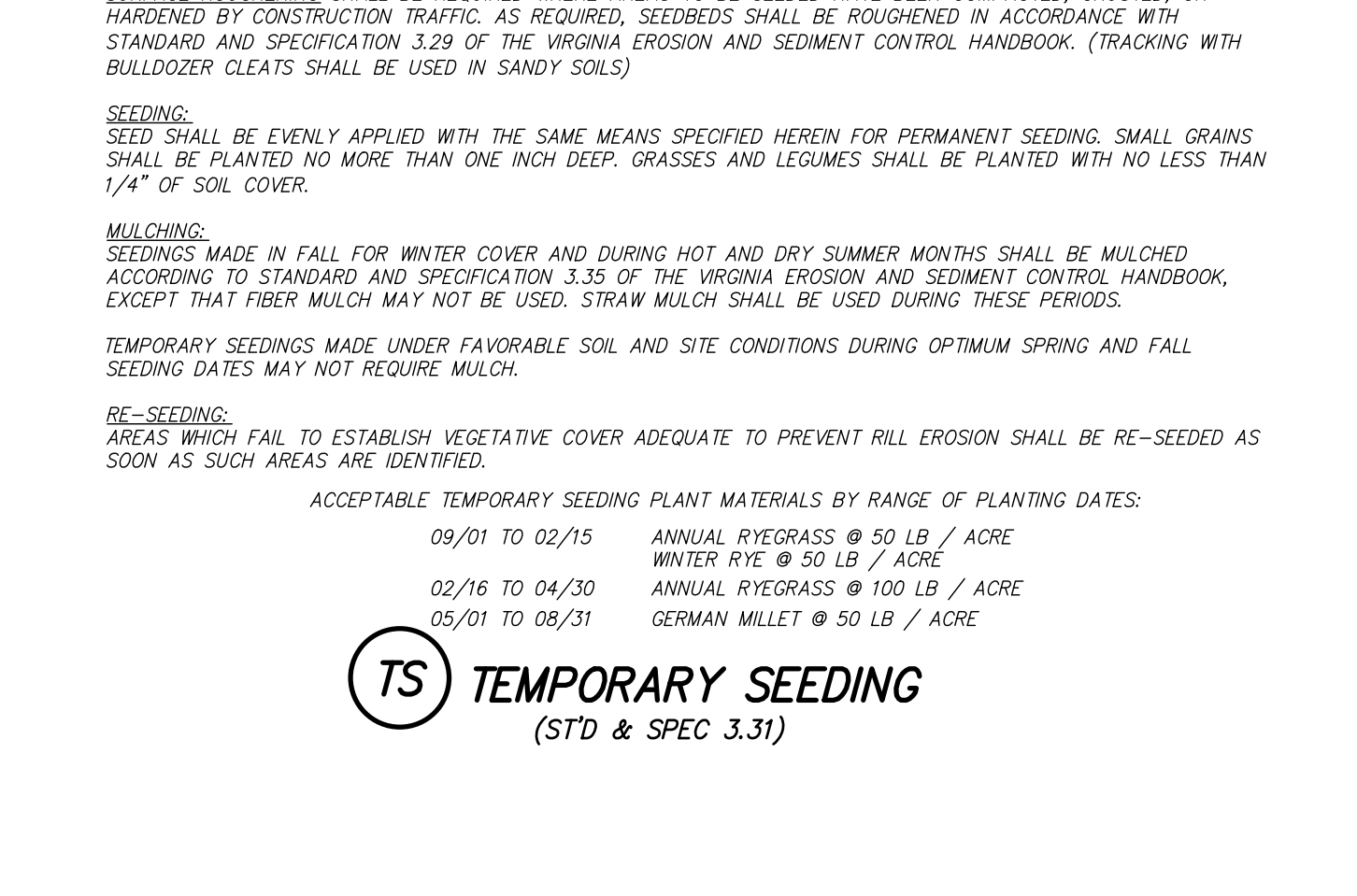
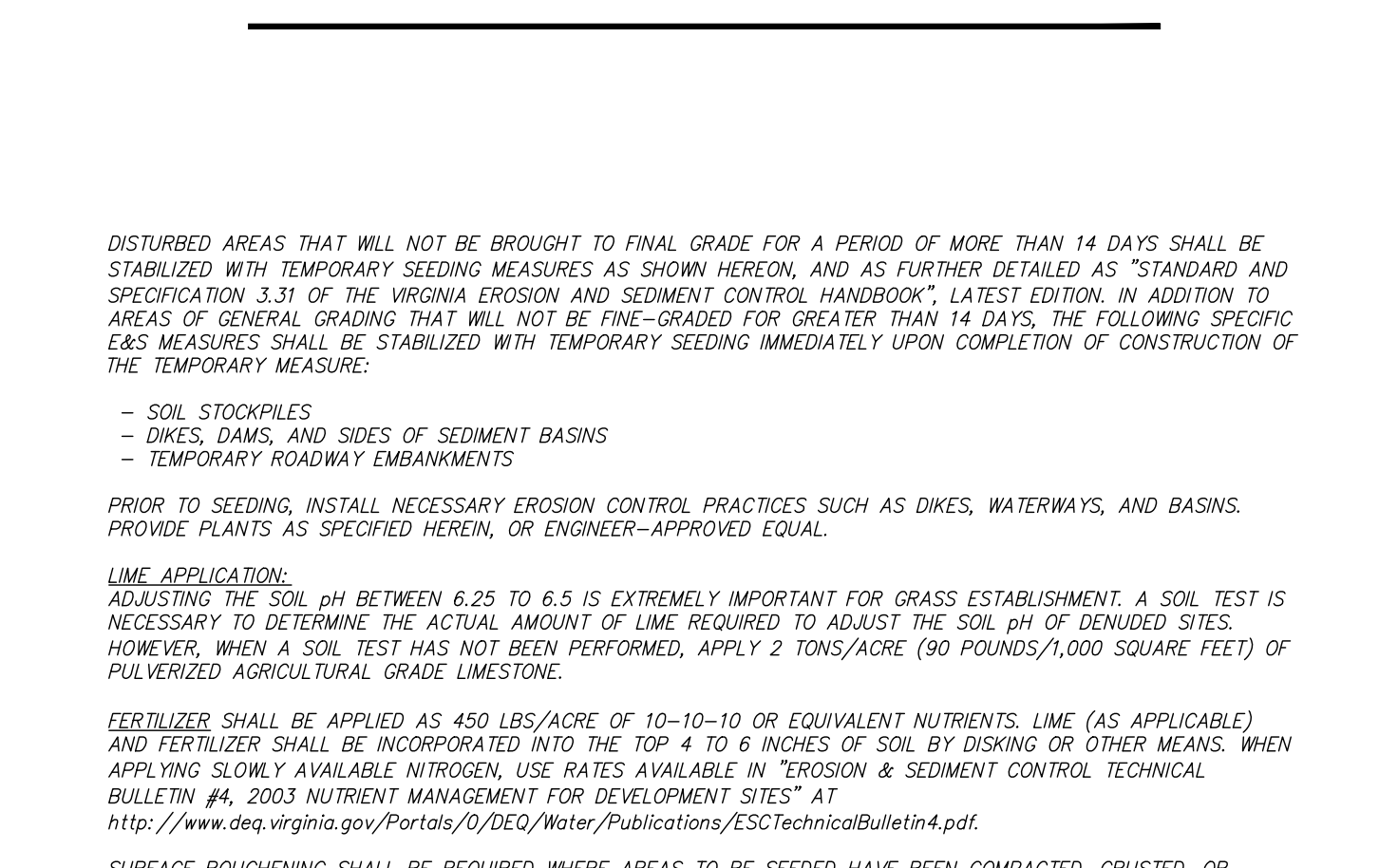
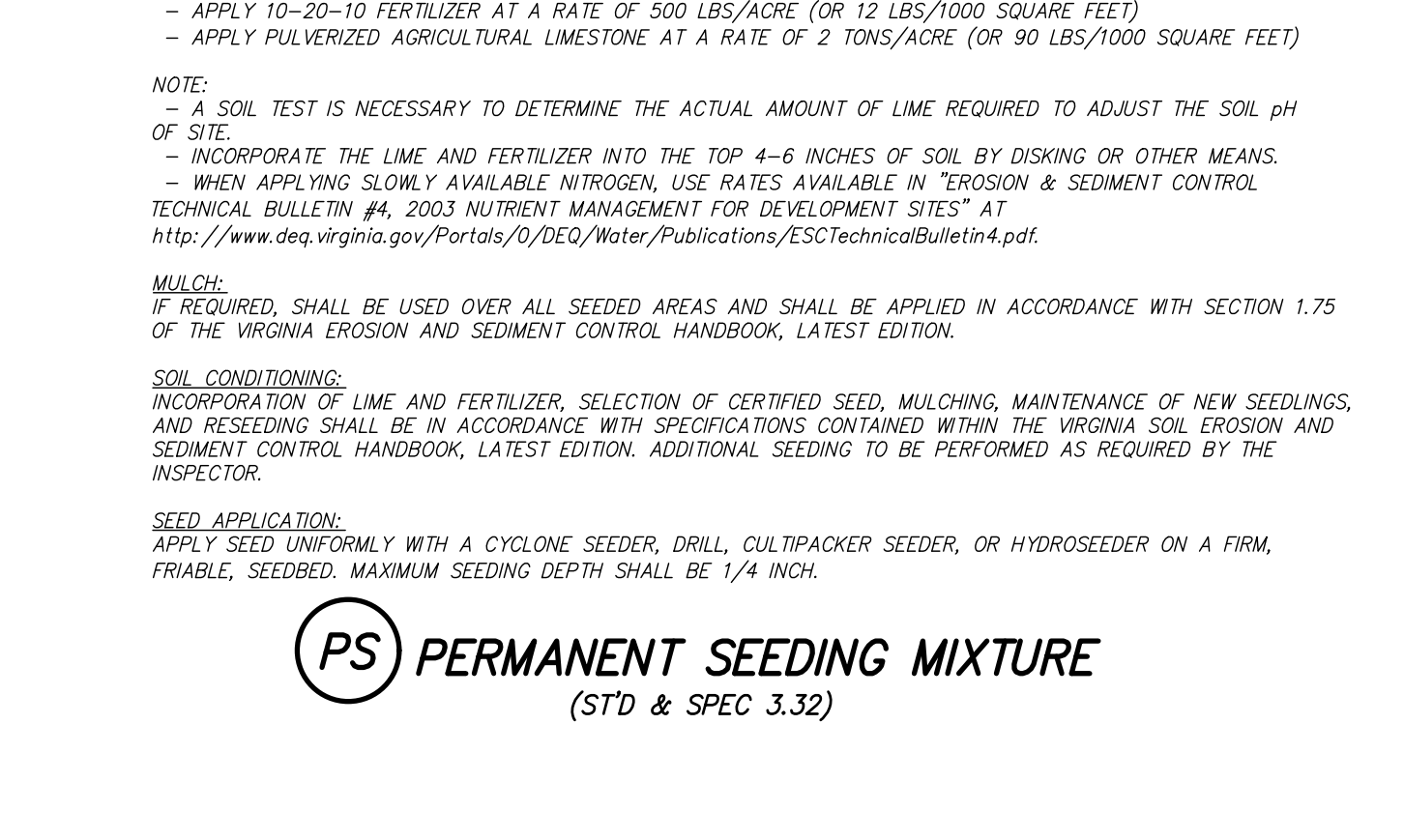
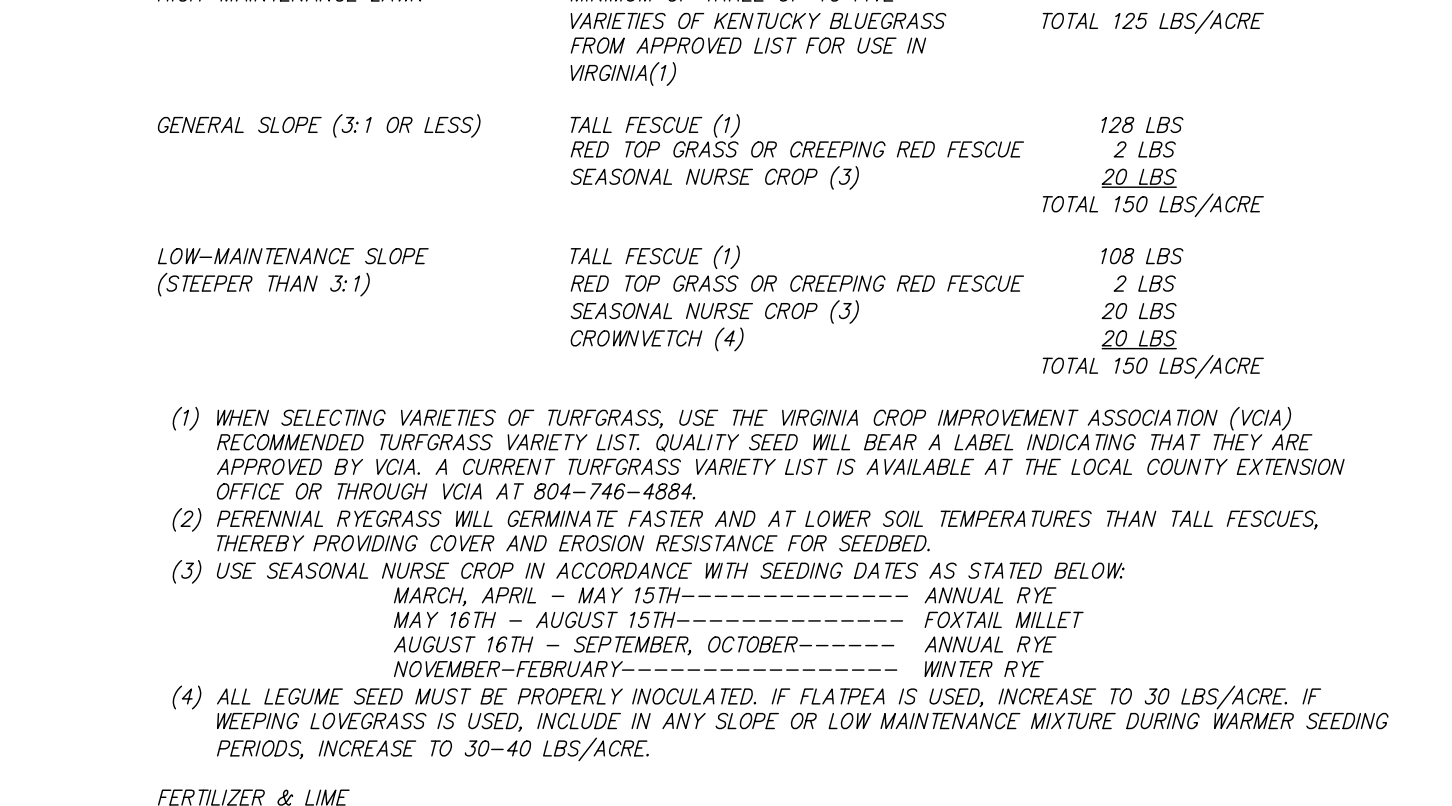
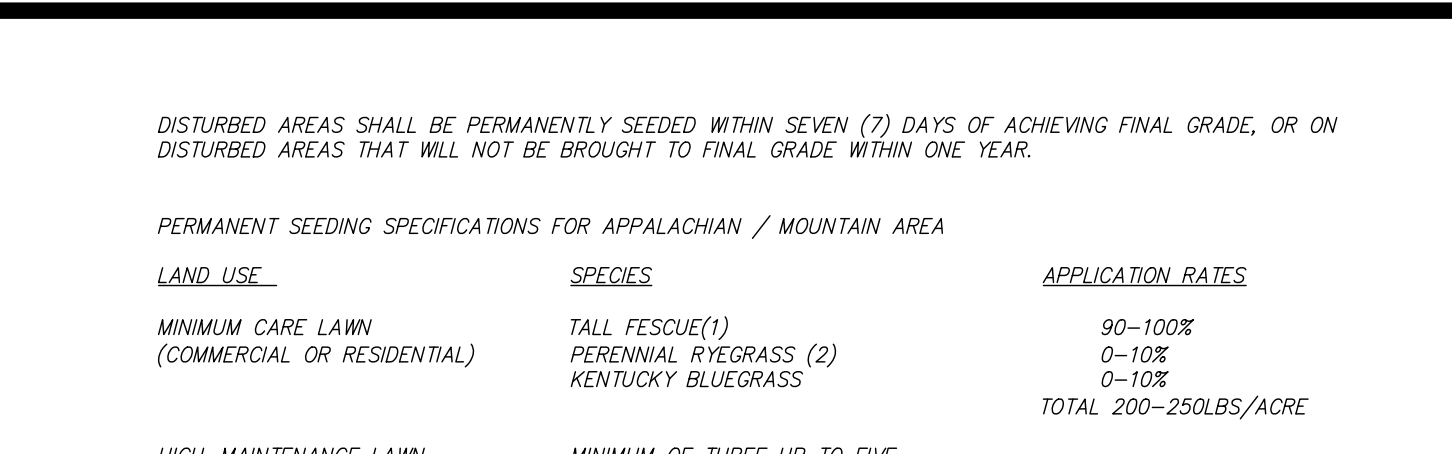
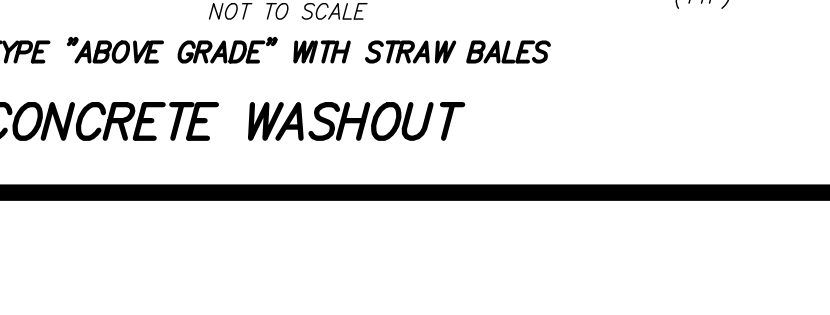
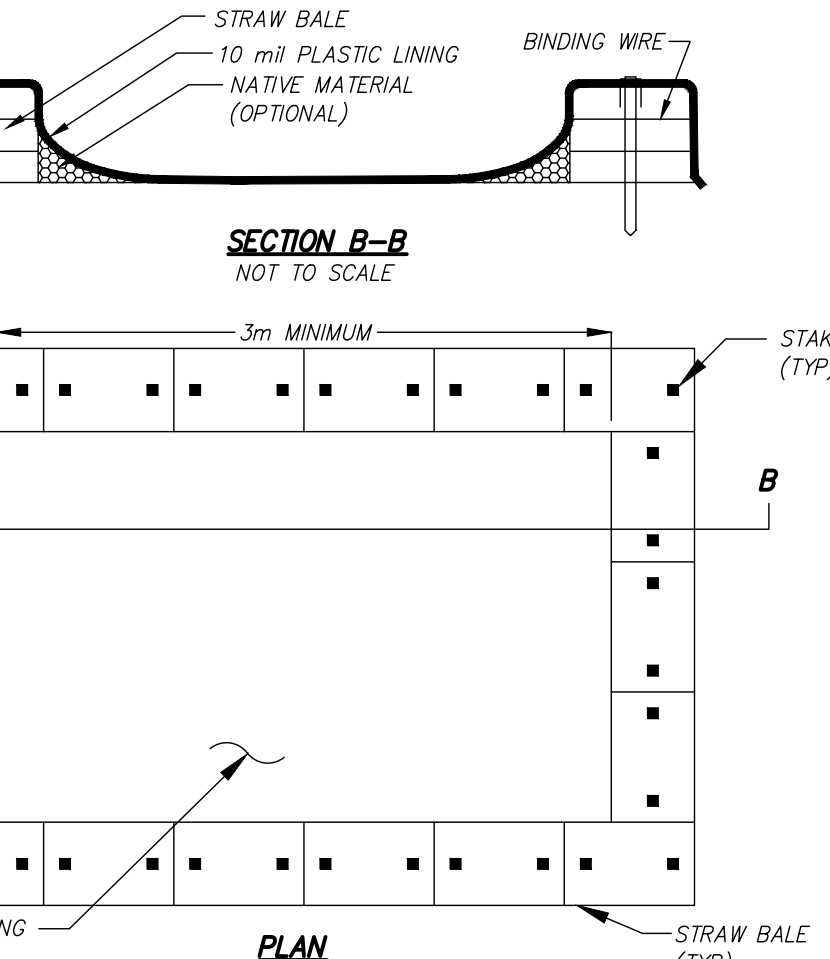
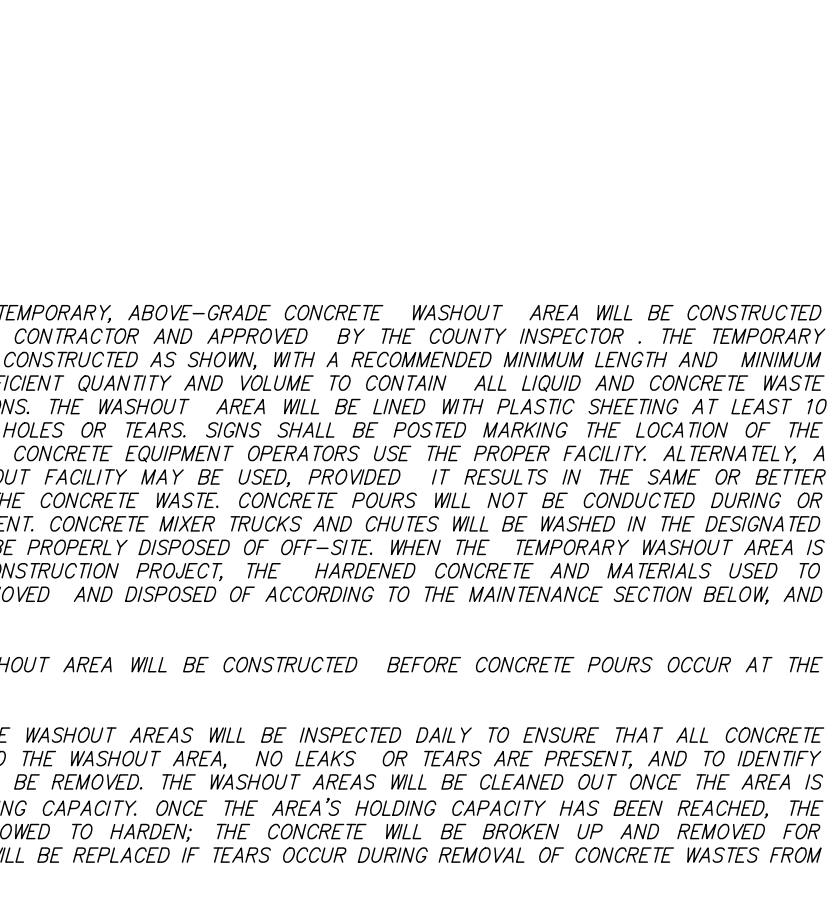
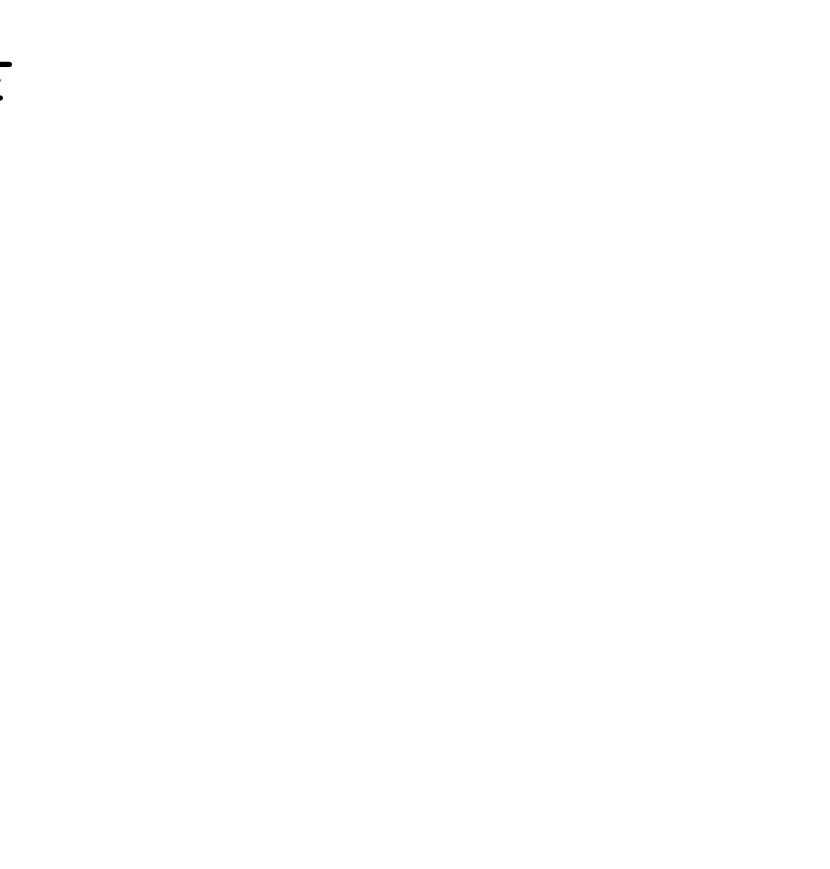
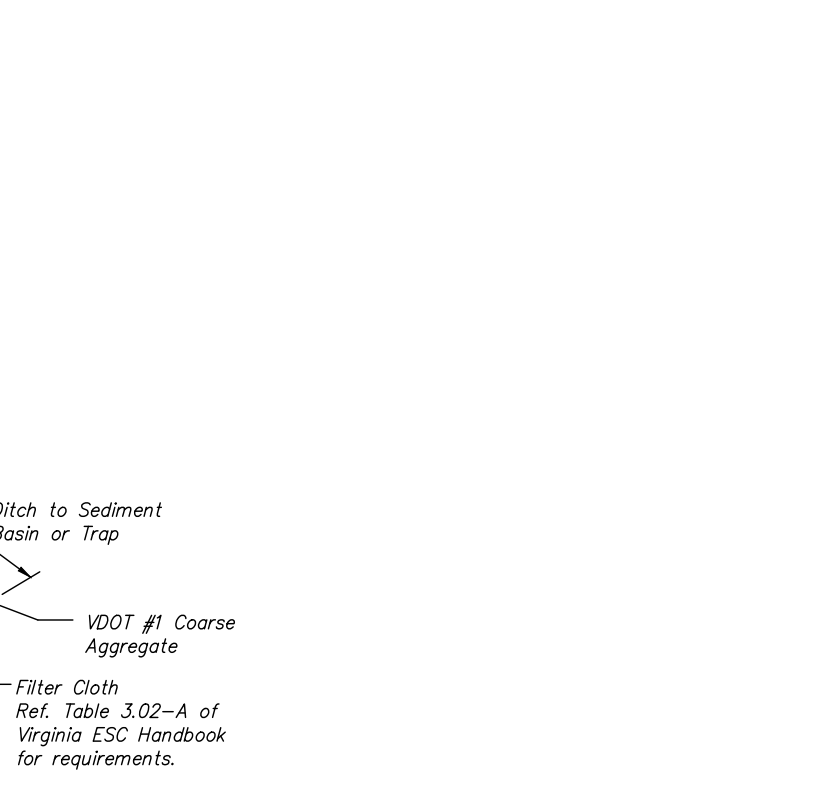
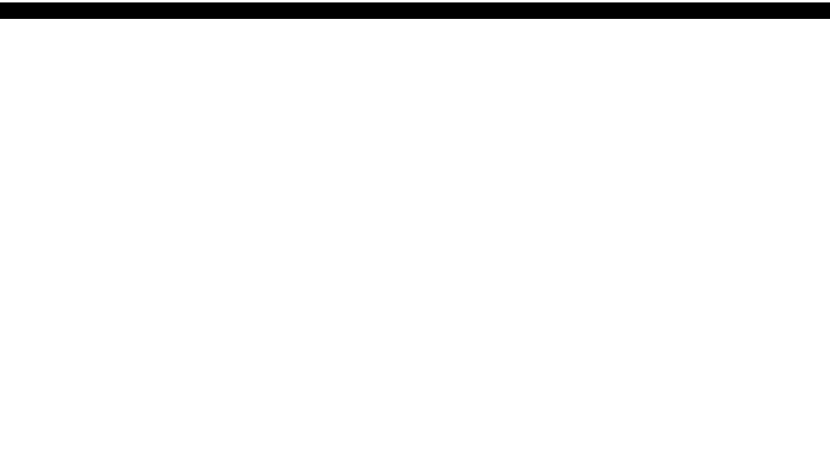
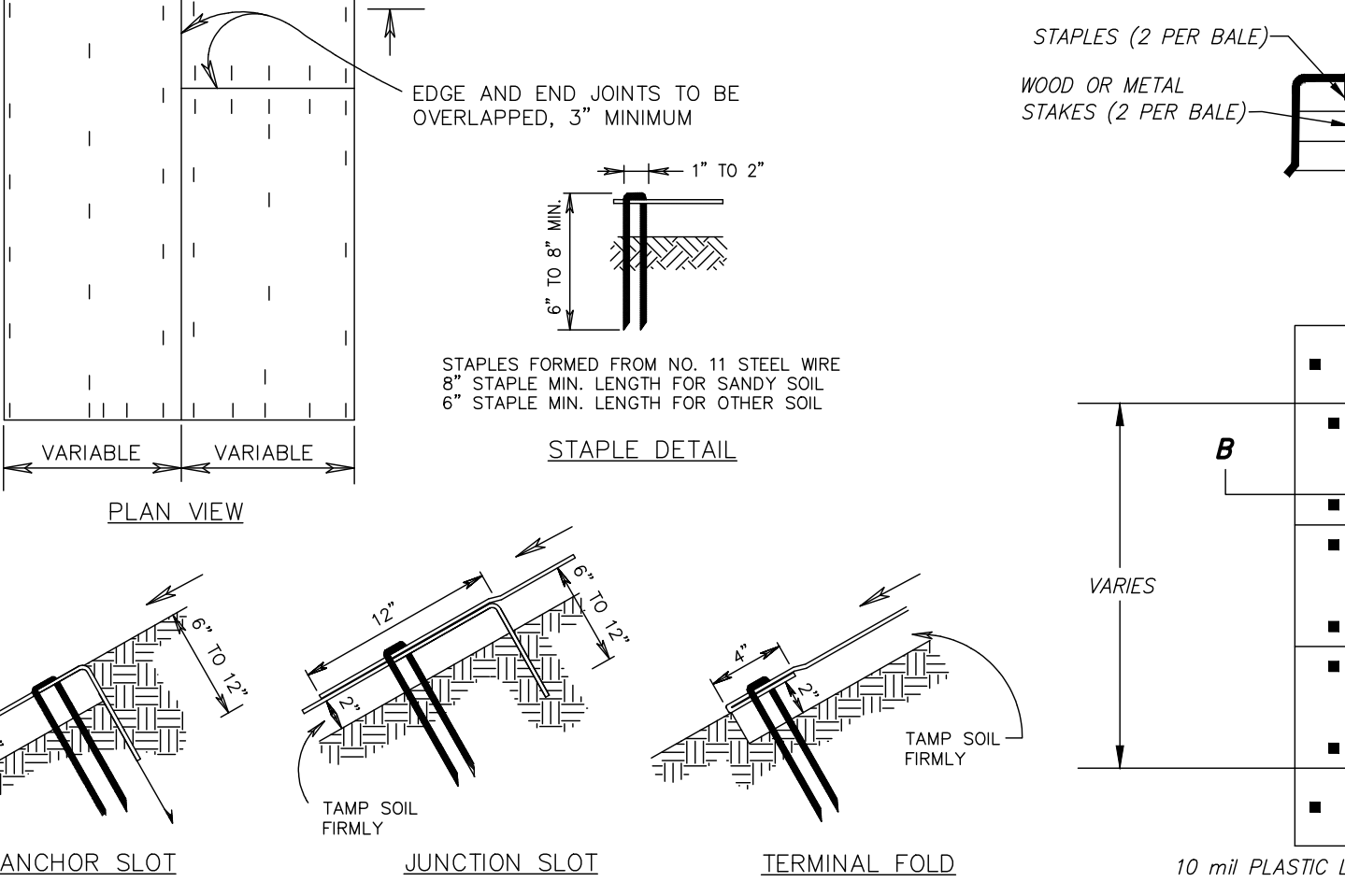
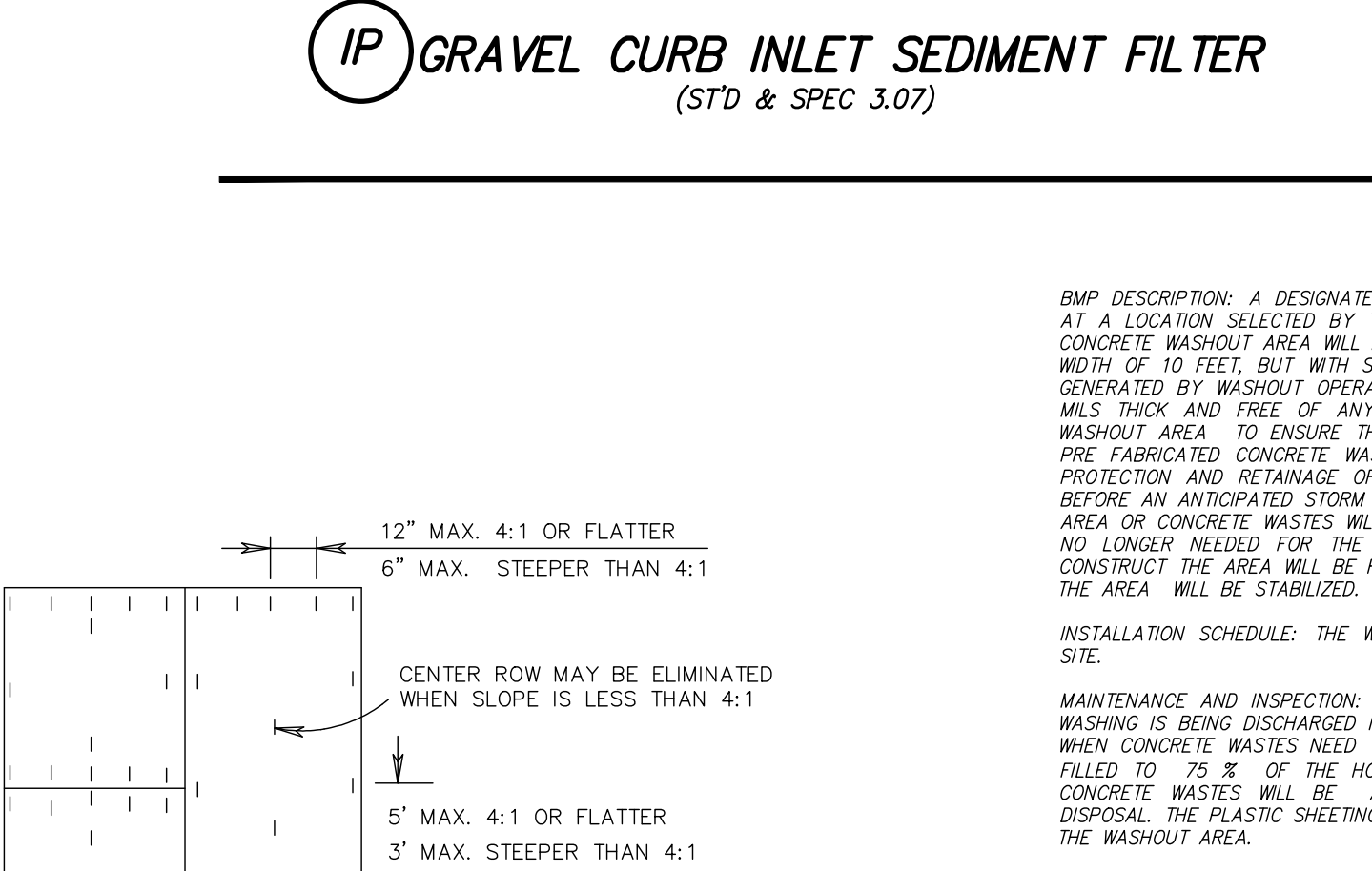
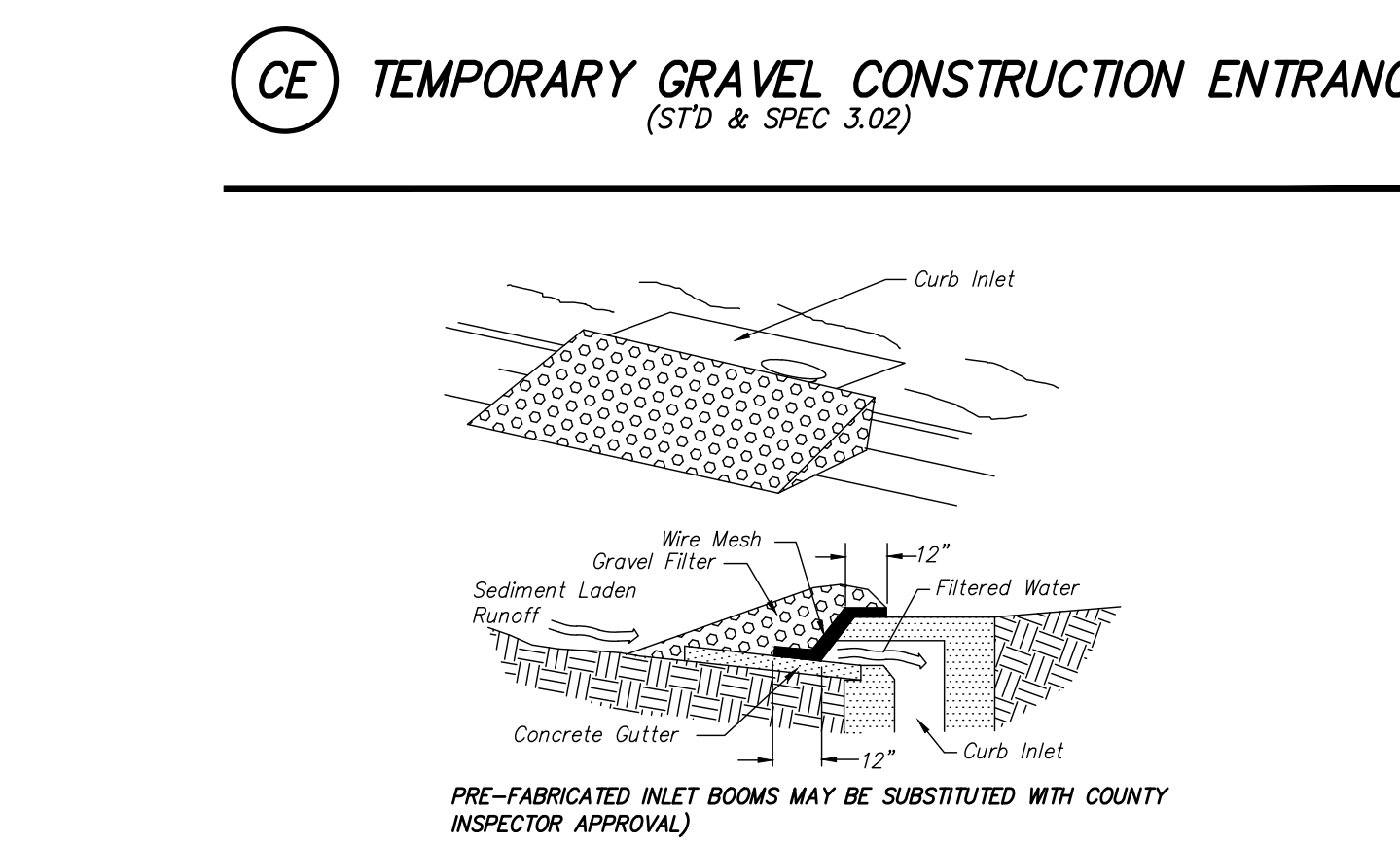
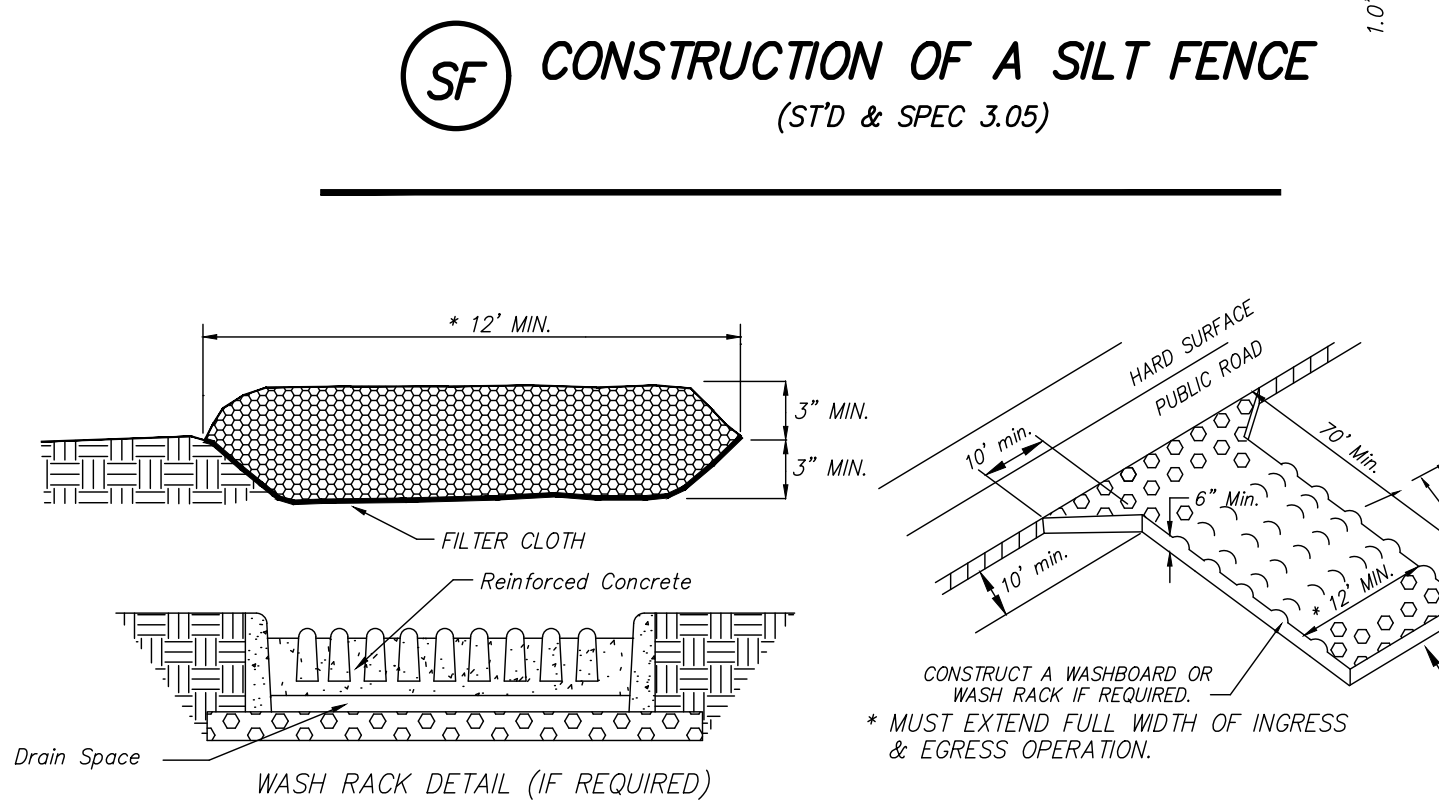
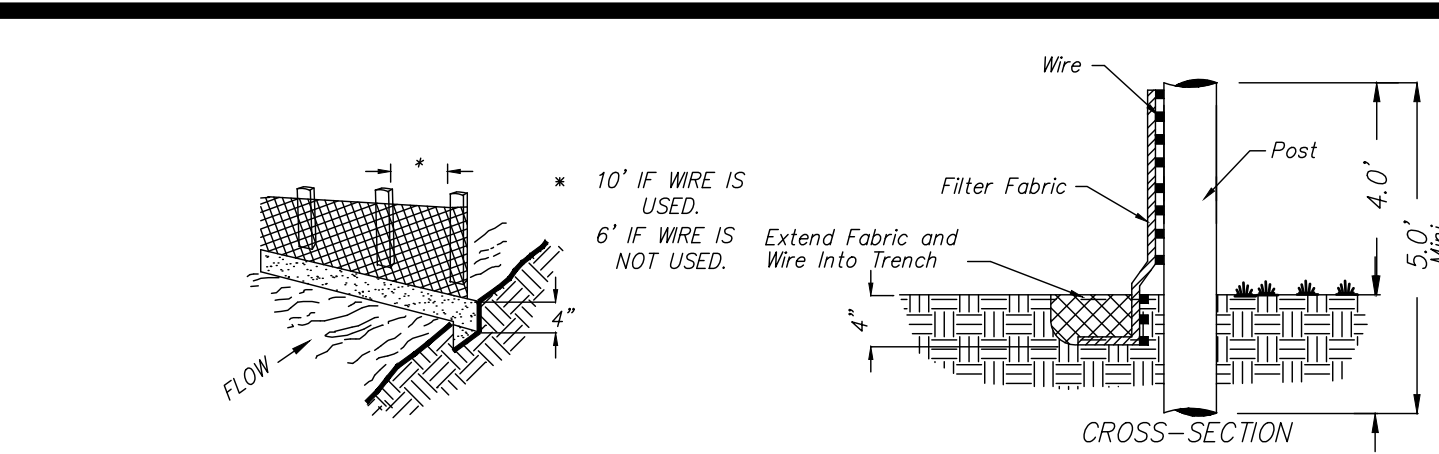


EROSION CONTROL NARRATIVE, MEASURES & CONSTRUCTION SEQUENCING  
FOR  
NEW OFFICES & STORAGE FACILITY  
FOR  
ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION & TOURISM  
SITUATE 5305 HOLLINS ROAD (VA ROUTE 601)  
HOLLINS MAGISTERIAL DISTRICT  
COUNTY OF ROANOKE, VIRGINIA

**CWA**  
**CALDWELL WHITE ASSOCIATES**  
ENGINEERS / SURVEYORS / PLANNERS  
4203 MELROSE AVENUE  
P.O. BOX 6260  
ROANOKE, VIRGINIA 24017-0260  
(540) 366-3400  
FAX: (540) 366-8708



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	
3.35	MULCHING	MU	
3.36	SOIL STABILIZATION BLANKETS AND MATTING	B/M	
3.37	TREES, SHRUBS, VINES AND GROUND COVERS	VEG	
3.38	TREE PRESERVATION AND PROTECTION	TP	
3.39	DUST CONTROL	DC	



## SOIL EROSION CONTROL SURETY

GIVEN THE RELATIVELY LOW COST OF SOIL EROSION CONTROL ITEMS COMPARED TO COST OF PROJECT, THE SOIL EROSION CONTROL ITEMS HAVE BEEN INCLUDED IN THE 'IMPROVEMENTS' SURETY SHOWN ON SHEET C-01 OF THESE PLANS.

## 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.

- (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 SEEDING.
- (3) USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:  
MARCH, APRIL - MAY 15TH----- ANNUAL RYE  
MAY 16TH - AUGUST 15TH----- FODDER MILET  
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 (STD & 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 ERS 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 DISTURBED 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.

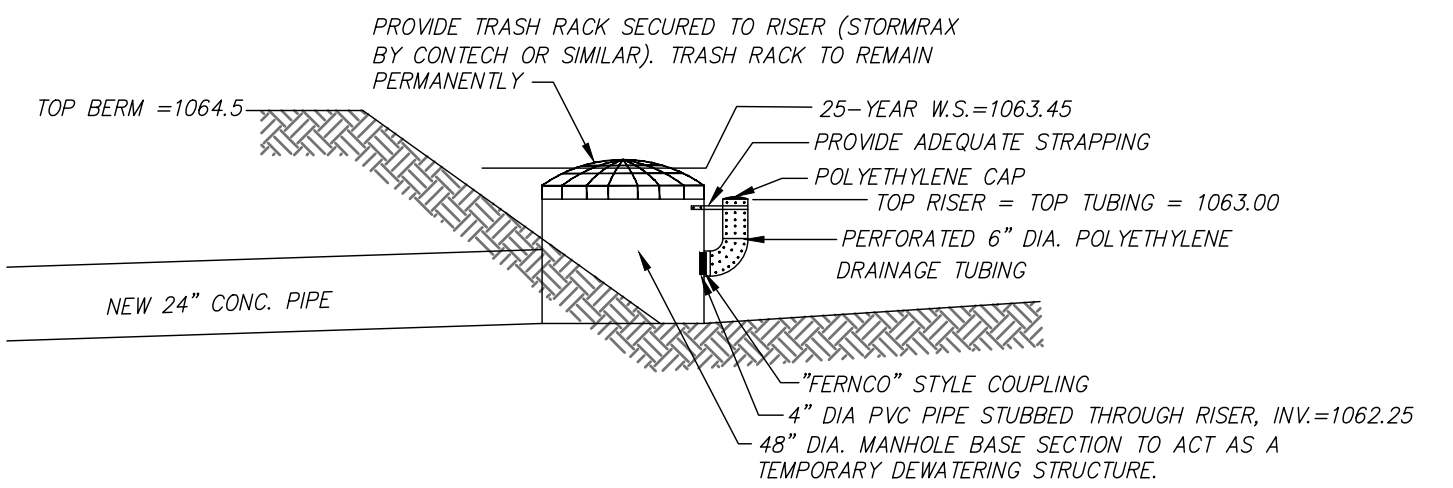
**MULCHING:**  
SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED. ACCORDING TO STANDARD AND SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, EXCEPT THAT FIBER MULCH MAY NOT BE USED. STRAW MULCH SHALL BE USED DURING THESE PERIODS.

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 (STD & SPEC 3.31)



THE CONTRACTOR SHALL CONSTRUCT THE TEMPORARY SEDIMENT BASIN AS A FIRST STEP IN THE DEVELOPMENT OF THIS PROJECT. THE CONTRACTOR SHALL INSTALL THE TEMPORARY DE-WATERING STRUCTURE AS SHOWN, SUCH THAT STORMWATER WILL POND TO ELEVATION 1062.25 BEFORE LEAVING THE SITE, THEREBY ALLOWING THE WATER-BORNE SEDIMENT TIME TO SETTLE.

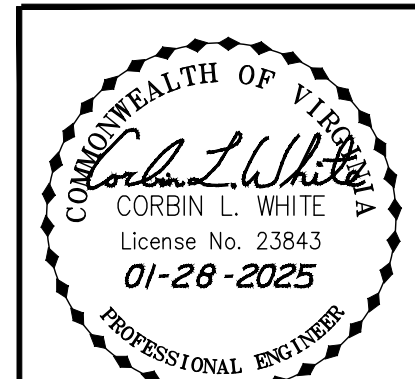
NOTE THAT EMERGENCY SPILLWAY IS NOT TO BE INSTALLED UNTIL THE TIME OF CONVERSION FROM TEMPORARY SEDIMENT BASIN TO PERMANENT STORMWATER MANAGEMENT FACILITY. SEE SHEET C-11 FOR PERMANENT STORMWATER MANAGEMENT DETAILS.

THE BASIN EMBANKMENT SHALL BE CONSTRUCTED USING MATERIALS APPROPRIATE FOR DRAWDOWN IMPOUNDMENTS.

UNLESS PERMITTED TO FOREGO BY THE OWNER'S GEOTECHNICAL ENGINEER, UPON STRIPPING SURFICIAL SOILS, CONTRACTOR SHALL EXCAVATE A 2' DEEP x 2' WIDE x 100' LONG CUTOFF TRENCH INTO NATIVE MATERIALS. THE 100' LENGTH SHALL BE CENTERED ON THE OUTLET STRUCTURE. CUTOFF TRENCH SHALL BE INFILLED WITH SUITABLE MATERIAL AND COMPACTED TO 95% STANDARD PROCTOR, CONCURRENTLY WITH THE EMBANKMENT CONSTRUCTION.

THE TEMPORARY SEDIMENT BASIN SHALL BE PERIODICALLY MONITORED FOR SEDIMENT ACCUMULATION. EXCESS SEDIMENT SHALL BE REMOVED ONCE THE SEDIMENT DEPTH REACHES 0.90' (ELEVATION 1061.40)

## TSB TEMPORARY SEDIMENT BASIN (STD & SPEC 3.14)

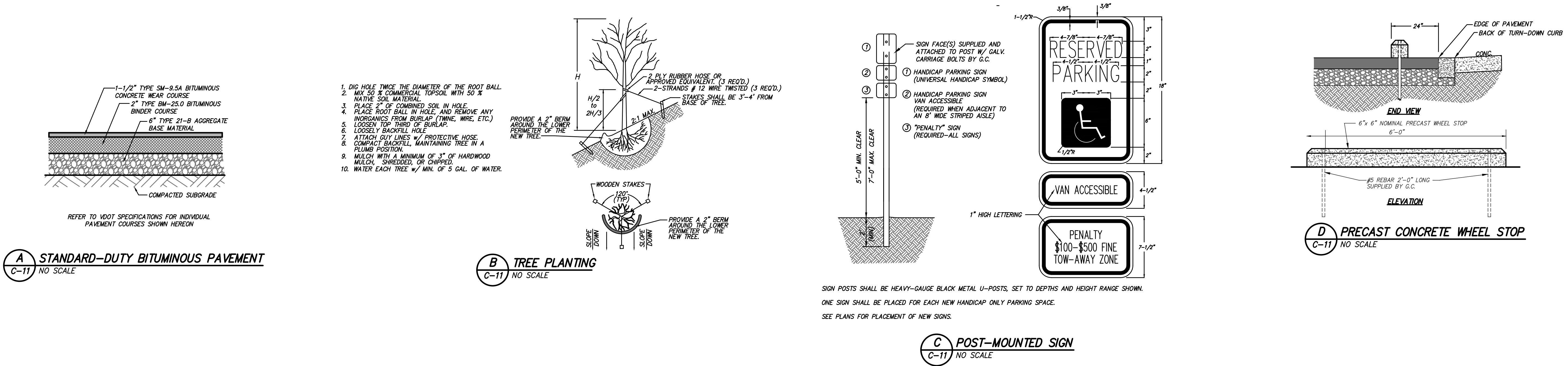


**DETAILS - SOIL EROSION & SEDIMENTATION CONTROL**  
FOR  
**NEW OFFICES & STORAGE FACILITY**  
FOR  
**ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION & TOURISM**  
SITUATE 5305 HOLLINS ROAD (VA ROUTE 601)  
HOLLINS MAGISTERIAL DISTRICT  
COUNTY OF ROANOKE, VIRGINIA

Designed: C.L. White  
Drawn: C.L. White  
Checked: \_\_\_\_\_  
Date: October 09, 2024  
Scale: As Shown  
Tax Parcel: 039-05-02-04-00-0000  
Field Book: CH-25  
W.O. No.: 24-0052

**CWA**  
**CALDWELL WHITE ASSOCIATES**  
ENGINEERS / SURVEYORS / PLANNERS  
4203 MELROSE AVENUE  
P.O. BOX 6260  
ROANOKE, VIRGINIA 24017-0260  
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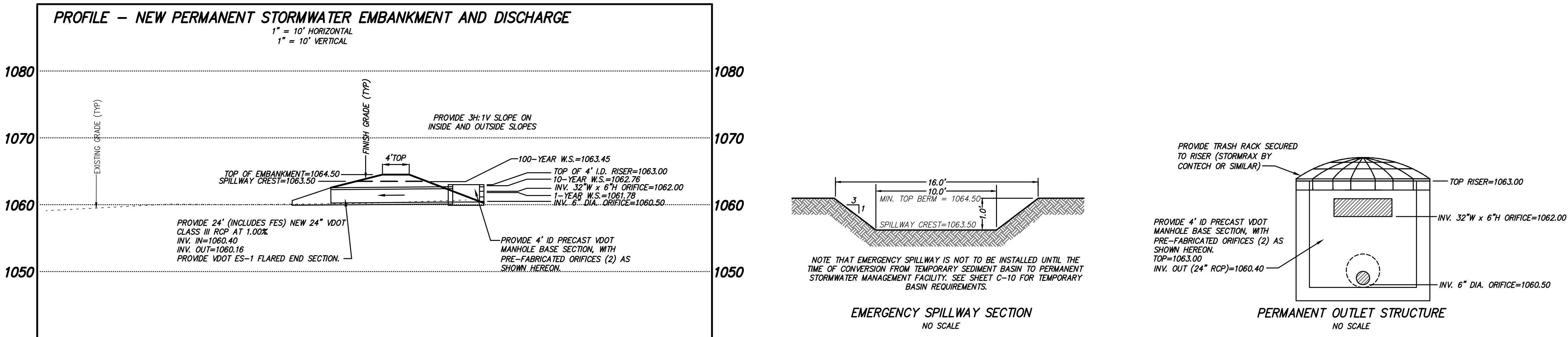




PERMANENT STORMWATER MANAGEMENT DETAILS

CONVERSION OF TEMPORARY SEDIMENT BASIN TO PERMANENT STORMWATER MANAGEMENT FACILITY:

1. CONTRACTOR MAY USE PERMANENT STRUCTURE FOR TEMPORARY BASIN PURPOSES, AS LONG AS PERMANENT ORIFICES CAN BE FABRICATED AS KNOCK-OUTS AS NEEDED, AND TEMPORARY DEWATERING ORIFICE CAN BE PERMANENTLY SEALED AT THE TIME OF BASIN CONVERSION.
2. DRAIN WET STORAGE AREA OF TEMPORARY SEDIMENT BASIN. IF PUMPING IS REQUIRED, EFFLUENT SHALL BE FILTERED USING A SILT BAG OR OTHER APPROVED FILTRATION DEVICES.
3. REMOVE ALL ACCUMULATED SEDIMENT FROM BASIN. TRANSPORT TO A PROTECTED AREA. UPON ADEQUATE DRYING, THE MATERIAL MAY BE PLACED ON-SITE IF DEEMED SUITABLE BY THE GEOTECHNICAL ENGINEER.
4. REMOVE TEMPORARY STRUCTURE AND PROVIDE NEW, IF PERMANENT STRUCTURE WAS NOT USED FOR TEMPORARY BASIN PURPOSES.
5. REMOVE KNOCK-OUTS FOR PERMANENT ORIFICES AND SEAL TEMPORARY DEWATERING ORIFICE, AS APPLICABLE IF RE-USING STRUCTURE.
6. INSTALL NEW EMERGENCY SPILLWAY AND STABILIZE WITH PERMANENT SEEDING MEASURES.
7. CLEAN STRUCTURE AND DISCHARGE PIPE OF ANY ACCUMULATED SEDIMENT.
8. REMOVE TRASH RACK FROM TEMPORARY DEWATERING STRUCTURE. IF IN SERVICEABLE CONDITION AND APPEARANCE, STORE FOR RE-INSTALLATION ON PERMANENT OUTLET STRUCTURE. IF NOT OF ACCEPTABLE CONDITION, PROVIDE NEW. DETERMINATION OF APPEARANCE WILL BE MADE BY OWNER.
9. PERMANENTLY SEED ALL DISTURBED AREAS AS REQUIRED HEREIN.



COMMONWEALTH OF VIRGINIA

CORBIN L. WHITE

License No. 23843

01-28-2025

PROFESSIONAL ENGINEER

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DETAILS — SITE CONSTRUCTION

FOR

NEW OFFICES & STORAGE FACILITY

FOR

ROANOKE COUNTY DEPARTMENT OF PARKS, RECREATION & TOURISM

SITUATE 5305 HOLLINS ROAD (VA ROUTE 601)  
HOLLINS MAGISTERIAL DISTRICT  
COUNTY OF ROANOKE, VIRGINIA

CWA

CALDWELL WHITE ASSOCIATES

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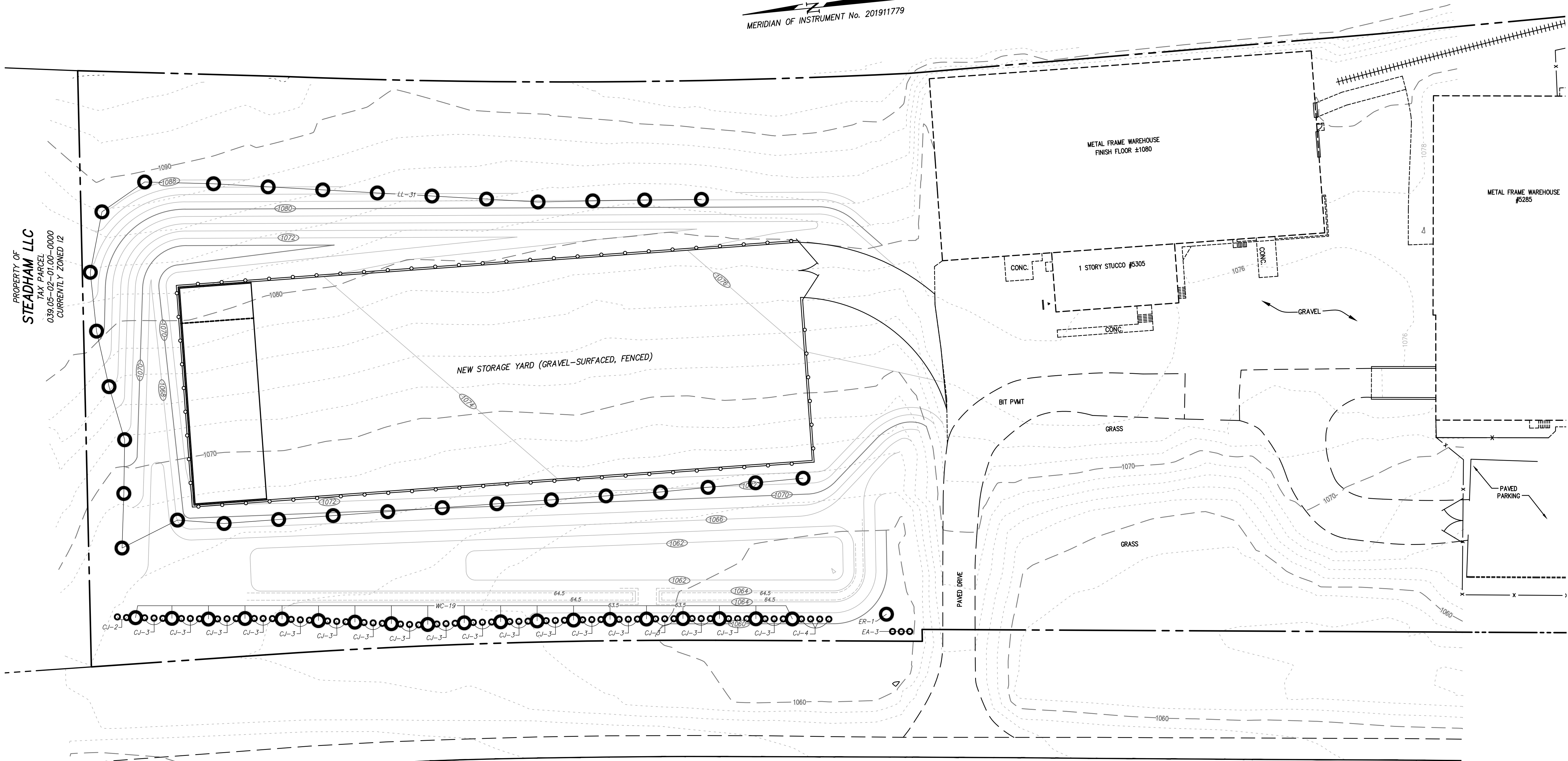
SHEET C-11 OF 12

APPROVED, 5/1/2025



PROPERTY OF  
NORFOLK SOUTHERN RAILWAY  
COMPANY

MERIDIAN OF INSTRUMENT No. 201911779



HOLLINS ROAD  
(SEC. RTE 601)  
VARIABLE R/W

GENERAL LANDSCAPING NOTES

1. ALL LANDSCAPE PLANTINGS SHALL CONFORM TO THE AMERICAN STANDARDS FOR NURSERY STOCK, LATEST EDITION.
2. ALL LANDSCAPE PLANTINGS SHALL CONFORM TO STANDARDIZED PLANT NAME AND SHALL BE WELL-FORMED, TRUE TO TYPE AND HAVE WELL-DEVELOPED ROOT SYSTEMS. ALL PLANTINGS SHALL BE SOUND, HEALTHY, AND FREE FROM DEFECTS.
3. ALL PLANTING SHALL BE DONE DURING THE PROPER SEASON AND NO PLANTING SHALL BE DONE IN FROZEN SOIL OR DURING UNFAVORABLE WEATHER CONDITIONS.
4. ALL TREES ARE TO BE LOCATED WITH RESPECT TO EXISTING OR PROPOSED UTILITIES.
5. MULCH ALL PLANTINGS WITH A MINIMUM OF THREE INCHES OF SHREDDED OR CHIPPED MULCH.
6. ADJUSTMENTS MAY BE NECESSARY DUE TO PLANT AVAILABILITY.
7. DUE TO ON-SITE CONDITIONS, IN-FIELD ADJUSTMENTS MAY BE NECESSARY.
8. ALL PLANTING OF TREES, SHRUBS, ETC. SHALL BE DONE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATIONS, SECTION 605, AND DETAIL 'B' / C-11.

SITE SPECIFIC LANDSCAPING NOTES

ADDITIONAL BEAUTIFICATION PLANTINGS ARE ENCOURAGED, AND ALLOWED 'AT WILL', SO LONG AS VEHICULAR SIGHT DISTANCES ARE NOT IMPAIRED AND VISIBILITY / ACCESS TO FIRE DEPT. CONNECTIONS AND FIRE HYDRANTS ARE MAINTAINED.

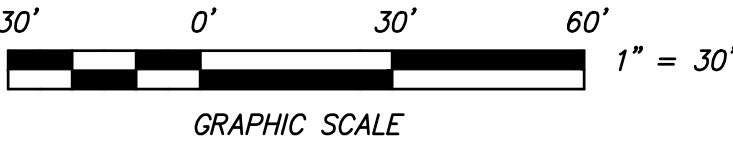
IN ROANOKE COUNTY IT IS REQUIRED TO PROVIDE A MINIMUM 35% CANOPY COVERAGE FOR THE DISTURBED AREA. THE REQUIRED CANOPY COVERAGE IS THEN (102,660 SF X 35% = 35,931 SF), WITH SHRUBS PROVIDING NO GREATER THAN 25% OF THE REQUIRED CANOPY.

NO PLANTINGS SHALL BE PLACED WITHIN 4 FEET OF A FIRE HYDRANT.

PLANTING LIST - CODE COMPLIANCE ONLY

KEY COMMON NAME	LATIN NAME	QTY	SIZE @ PLANTING	CANOPY PROVIDED
(Large Deciduous Trees)				
LL LITTLELEAF LINDEN	<i>Tilia cordata</i> 'Greenspire'	31	2" min. cal.	38,750
(Large Evergreen Trees)				
WC WHITE CEDAR	<i>Thuja occidentalis</i> 'Emerald Green'	19	6'-8'	9,500
(Small Deciduous Trees)				
ER EASTERN REDBUD	<i>Cercis Canadensis</i> 'Flame Thrower'	1	1-1/2" cal.	250
(Large Shrubs)				
EA EASTERN ARBORVITAE	<i>Thuja occidentalis</i> 'Sunkist'	3	24"	30
(Small Shrubs)				
CJ CHINESE JUNIPER	<i>Juniperus chinensis</i> 'Old Gold'	60	12"	300
TOTAL CANOPY PROVIDED				= 48,830 SF

ALL LANDSCAPE PLANTINGS,  
INSTALLATION, MULCHING, ETC. ARE TO  
BE PROVIDED BY ROANOKE COUNTY  
DEPARTMENT OF PARKS, RECREATION &  
TOURISM, AND ARE NOT TO BE INCLUDED  
IN BID PRICE.



COMMONWEALTH OF VIRGINIA  
CORBIN L. WHITE  
License No. 23843  
01-28-2025  
PROFESSIONAL ENGINEER

CODE REQUIRED LANDSCAPE PLAN  
FOR  
NEW OFFICES & STORAGE FACILITY  
FOR  
ROANOKE COUNTY DEPARTMENT OF PARKS,  
RECREATION & TOURISM  
SITUATE 5305 HOLLINS ROAD (VA ROUTE 601)  
HOLLINS MAGISTERIAL DISTRICT  
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