Site Redesign at Crozet Elementary

Sheet List Table	
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C0.0	Cover
C1.0	Existing Layout
C2.0	Demolition Plan
C3.0	Notes & Details
C4.0	E & S Plan Phase 1
C4.1	E & S Plan Phase 2
C4.2	E&S Notes
C4.3	E&S Details
C5.0	Layout Plan
C6.0	Grading & Drainage Plan
C7.0	Stormwater Management Plan
C7.1	Inlet Drainage Area Map
C8.0	Calculations
C8.1	Calculations Continued

SITE DATA:

TAX MAP PARCEL AND OWNER INFO:

Parcel 05600-00-00-064E0
Crozet Elementary School
1407 Crozet Avenue, Crozet, VA, 22932

TOTAL SITE AREA:

21.16 acres

LIMITS OF DISTURBANCE: Make sure this matches with final stormwater calcs

2.497 acres

EXISTING IMPERVIOUS AREA:

0.935 acres

PROPOSED IMPERVIOUS AREA:

2.017 acres

SOURCE OF SURVEY, BOUNDARY, AND TOPOGRAPHY:

Timmons Group
28 Imperial Drive
Staunton, VA, 24401
Joseph C. Medley, L.S.
Conducted 04/21/2020

CURRENT USE: Elementary School

PROPOSED USE: Elementary School

ZONING: Educational

ADJACENT PROPERTIES:

North - Residential
South - Residential
East - Agricultural/Undeveloped
West - Educational

PROJECT REQUIREMENTS:

Parking: 136 parking spaces including 5 ADA parking spaces (1 van accessible),
12 dedicated bus parking spaces
Traffic Circulation: Separate bus and car traffic as much as possible

CONSTRAINTS:

Adhere to Virginia and Albemarle County stormwater regulations
Adhere to Virginia Department of Transportation and Albemarle County design standards

DATE 05/02/23
DRAWN BY Capstone Team
DESIGNED BY Capstone Team
CHECKED BY Capstone Team
SCALE N/A

CROZET ELEMENTARY SCHOOL
ALBEMARLE COUNTY - CROZET
COVER

JOB NO. 1
SHEET NO. C0.0

TMP 56-64
ROBERT S. & BLAIR R. ANDERSON
DB. 1871, PG. 34
ZONED: RA (RURAL AREAS)

TMP 56-64E
COUNTY SCHOOL BOARD OF
ALBEMARLE COUNTY, VIRGINIA
DB. 1044, PG. 498
DB. 1098, PG. 703
ZONED: RA (RURAL AREAS)

TMP 56A1-1-73B3
ELIZABETH B. PEDERSON OR
J. JUSTIN TAYLOR
DB. 1625, PG. 150
ZONED: R2

TMP 56A1-1-73B
CHRISTOPHER L. & JACLYN M. SCOTT
DB. 4929, PG. 177
ZONED: R2

CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

EXISTING LAYOUT

DATE	05/02/23
DRAWN BY	Capstone Team
DESIGNED BY	Capstone Team
CHECKED BY	Capstone Team
SCALE	1":30'
JOB NO.	1
SHEET NO.	C1.0

0 100 200 Feet

Remove Curb And Gutter

Remove Asphalt

Remove Curb And Gutter

Remove Gravel Lot

Remove Trees

Remove Shed

Remove Riprap

Remove Bioretention Outfall Pipe/Structure

Electrical Pedestal Will Remain

Remove Chain Link Fence

Existing Sidewalk to Remain

Remove Light Posts

Remove Concrete

Remove Pavement Markings

Remove Asphalt

Remove Drainage Pipe & Inlet

Remove Curb And Gutter

Remove Basketball Court

Legend

- Remove Curb/Gutter
- Remove Tree
- Remove Concrete
- Remove Asphalt
- Remove Structure
- Remove Basketball Court
- Remove Pavement Markings
- Remove Gravel
- Remove Pipe

0 100 200 Feet

N

DATE	05/02/23
DRAWN BY	Capstone Team
DESIGNED BY	Capstone Team
CHECKED BY	Capstone Team
SCALE	1":30'

CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

DEMOLITION PLAN

JOB NO.	1
SHEET NO.	C2.0

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS AND STANDARDS.
2. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONSULT THE ENGINEER AND VERIFY THE APPROVAL OF THE PLANS BY ALL FEDERAL, STATE AND LOCAL AGENCIES.
3. LAND USE PERMITS (LUP-A) MUST BE OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO BEGINNING ANY CONSTRUCTION WITHIN THE EXISTING STATE MAINTAINED RIGHT OF WAY (INCLUDING ACCESS).
4. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL POINTS OF CONNECTION OR PROPOSED WORK TO EXISTING CURBS, SANITARY LINES, WATERLINES, ETC, PRIOR TO CONSTRUCTION.
5. UPON DISCOVERY OF SOILS THAT ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADES, OR OTHER ROADWAY CONSTRUCTION PURPOSES, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER. THESE AREAS SHALL BE EXCAVATED BELOW PLAN GRADE AS DIRECTED BY THE OWNER, BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED IN ACCORDANCE WITH THE CURRENT VERSION OF THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.
6. ALL STORM SEWER DESIGN AND CONSTRUCTION TO BE IN ACCORDANCE WITH VDOT I AND I LD-94 (D) 121.13.
7. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE AND GROVE CONCRETE PIPE IN ACCORDANCE WITH ASTM-C-76. PIPE WITHIN THE RIGHT OF WAY SHALL BE MINIMUM CLASS III OR GREATER IN ACCORDANCE WITH CURRENT VDOT STANDARDS AND SPECIFICATIONS.
8. IF PRE-CAST UNITS ARE TO BE USED, VDOT SHALL BE NOTIFIED AND THE MANUFACTURER SHALL SUBMIT DRAWING DETAILS FOR REVIEW. CERTIFICATION AND VDOT STAMP WILL BE REQUIRED ON ALL UNITS.
9. ALL CONCRETE SHALL BE A3-AE (AIR ENTRAINED 3,000 PSI), UNLESS OTHERWISE NOTED.
10. DESIGN CHANGES, SPECIFIED MATERIALS CHANGES AND/OR FIELD CHANGES FROM THE APPROVED PLANS NEED TO BE RESUBMITTED TO THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. A LETTER OF EXPLANATION SHALL ACCOMPANY THE REVISED PLANS AND/OR THE DRAINAGE CALCULATIONS, WHICH MUST BE SUBMITTED AND APPROVED BY THE ENGINEER.
11. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, AND/OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CALL MISS UTILITY OF CENTRAL VIRGINIA AT 1-800-552-7001. THE OWNER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN EXISTING AND/OR PROPOSED RIGHT-OF-WAY REQUIRED BY THE DEVELOPMENT.
12. THE INSTALLATION OF SEWER, WATER, AND GAS MAINS (INCLUDING SERVICE LATERALS AND SLEEVES) SHALL BE COMPLETED PRIOR TO THE PLACEMENT OF AGGREGATE BASE COURSE.
13. ALBEMARLE COUNTY APPROVAL OF CONSTRUCTION PLANS DOES NOT PRECLUDE THE RIGHT TO REQUIRE ADDITIONAL FACILITIES AS DEEMED NECESSARY .
14. A PRIME COAT SEAL BETWEEN THE AGGREGATE BASE AND BITUMINOUS CONCRETE WILL BE REQUIRED AT THE RATE OF 0.30 GALLONS PER SQUARE YARD (REC-250 PRIME COAT) PER VDOT STANDARDS AND SPECIFICATIONS.
15. THE SCHEDULING OF AGGREGATE BASE INSTALLATION AND SUBSEQUENT PAVING ACTIVITIES SHALL ACCOMMODATE FORECAST WEATHER CONDITIONS PER SECTION 315 OF THE ROAD AND BRIDGE SPECIFICATIONS.
16. THE OWNERS REPRESENTATIVE SHALL HAVE APPROVED THE AGGREGATE BASE COURSE(S) FOR DEPTH, TEMPLATE AND PERFORMED THE REQUIRED FIELD INSPECTION (PROOF ROLL) PRIOR TO PLACEMENT OF ANY SURFACE COURSE(S). CONTACT THE OWNER FOR INSPECTION FOR THE AGGREGATE BASE COURSE(S) 48 HOURS PRIOR TO APPLICATION OF THE SURFACE COURSE(S).
17. A GEOTECHNICAL ENGINEER IS TO ASCERTAIN CAUSE AND CERTIFY RECOMMENDED METHOD OF REPAIR FOR ALL PAVEMENT STRUCTURAL FAILURES PRIOR TO STATE ACCEPTANCE.
18. ALL VEGETATION AND ORGANIC MATERIAL MATERIAL IS TO BE REMOVED FROM THE PROPOSED PAVEMENT LIMITS PRIOR TO CONDITIONING OF THE SUBGRADE.
19. CERTIFICATION AND SOURCE OF MATERIALS ARE TO BE SUBMITTED TO THE OWNER FOR ALL MATERIALS AND BE IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS, AND ROAD AND BRIDGE STANDARDS.
20. ALL APPROACH GUTTERS TO SAG INLETS SHALL MAINTAIN A MINIMUM SLOPE OF 0.004 ft./ft.
21. ALL NEW HANDICAP ACCESSIBLE REQUIREMENTS ON-SITE AND WITHIN ALL NEW STRUCTURES SHALL COMPLY WITH THE 2009 UNIFORM STATEWIDE BUILDING CODE, 2009 VIRGINIA CONSTRUCTION CODE, 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND ICC/ANSI A117.1-03.
22. REFER TO SHEET L1.0 FOR ALL LANDSCAPING GENERAL NOTES.
23. VISIBILITY OF ALL MECHANICAL EQUIPMENT FROM THE ENTRANCE CORRIDOR SHALL BE ELIMINATED.
24. ALL WATER LINES, SEWER LINES, AND FIRE LINES FROM THE MAIN TO THE STRUCTURE MUST HAVE A VISUAL INSPECTION PERFORMED BY THE BUILDING DEPARTMENT.
25. ALL ROOFDRAINS SHALL DISCHARGE IN A MANNER NOT TO CAUSE A PUBLIC NUISANCE AND NOT OVER SIDEWALKS.
26. BUILDING OR STRUCTURES BUILT BEFORE JANUARY 1, 1985 MUST HAVE AN ASBESTOS SURVEY PERFORMED IN ORDER TO APPLY FOR A PERMIT. ASBESTOS REMOVAL PERMITS ARE REQUIRED IF POSITIVE FOR SUCH. CONTACT VDOLI FOR ADDITIONAL REQUIREMENTS AND PERMITS FOR DEMOLITION PROJECTS.

ALBEMARLE COUNTY ENGINEERING GENERAL CONSTRUCTION NOTES

1. PRIOR TO ANY CONSTRUCTION WITHIN ANY EXISTING PUBLIC RIGHT OF WAY, INCLUDING CONNECTION TO ANY EXISTING ROAD, A PERMIT SHALL BE OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT). THIS PLAN AS DRAWN MAY NOT ACCURATELY REFLECT THE REQUIREMENTS OF THE PERMIT. WHERE ANY DISCREPANCIES OCCUR THE REQUIREMENTS OF THE PERMIT SHALL GOVERN.
2. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO CURRENT SPECIFICATIONS AND STANDARDS OF VDOT.
3. EROSION AND SILTATION CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLAN AND MUST BE INSTALLED PRIOR TO ANY CLEARING, GRADING OR OTHER CONSTRUCTION.
4. ALL SLOPES AND DISTURBED AREAS ARE TO BE FERTILIZED, SEEDED AND MULCHED.
5. THE MAXIMUM ALLOWABLE SLOPE IS 2:1 (HORIZONTAL:VERTICAL). WHERE REASONABLY OBTAINABLE, LESSER SLOPES OF 3:1 OR BETTER ARE TO BE ACHIEVED.
6. PAVED, RIP-RAP OR STABILIZATION MAT LINED DITCH MAY BE REQUIRED WHEN IN THE OPINION OF THE COUNTY ENGINEER, OR DESIGNEE, IT IS DEEMED NECESSARY IN ORDER TO STABILIZE A DRAINAGE CHANNEL.
7. ALL TRAFFIC CONTROL SIGNS SHALL CONFORM WITH THE VIRGINIA MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES.
8. UNLESS OTHERWISE NOTED ALL CONCRETE PIPE SHALL BE REINFORCED CONCRETE PIPE - CLASS III.
9. ALL EXCAVATION FOR UNDERGROUND PIPE INSTALLATION MUST COMPLY WITH OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFR PART 1926).

ALBEMARLE COUNTY BUILDING NOTES:

1. BUILDING INSPECTIONS MUST VERIFY PROPER ABANDONMENT OF SITE UTILITIES BEFORE CONCEALMENT.
2. WHERE THE FLOOD LEVEL RIMS OF PLUMBING FIXTURES ARE BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER, THE FIXTURES SHALL BE PROTECTED BY A BACKWATER VALVE INSTALLED INT EH BUILDING DRAIN, BRANCH OF THE BUILDING DRAIN OR HORIZONTAL BRANCH SERVING SUCH FIXURES. PLUMBING FIXTURES HAVING FLOOD LEVEL RIMS ABOVE THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SHALL NOT DISCHARGE THROUGH A BACKWATER VALVE.
3. ALL WATER, SEWER, AND FIRE LINES REQUIRE NEW INSPECTION AND TESTING PROCEDURES. ALL ACSA PERFORMS ANY TESTING AND INSPECTIONS OF THE PUBLIC SEWER AND WATER MAIN(S).
4. RETAINING WALLS GREATER THAN 3 FEET IN HEIGHT REQUIRE A SEPARATE BUILDING PERMIT. WALLS EXCEEDING 4 FEET IN HEIGHT REQUIRE A STAMPED ENGINEERING DESIGN ALSO. WALLS REQUIRE INSPECTIONS AS OUTLINED IN THE USBC.

FIRE SAFETY NOTES:

1. SMOKING SHALL BE PROHIBITED IN AREAS WHERE SMOKING MAKES CONDITIONS SUCH AS TO MAKE SMOKING A HAZARD AND THESE AREAS SHALL BE DESIGNATED WITH NO SMOKING SIGNS PER VIRGINIA STATEWIDE FIRE PREVENTION CODE.
2. AREAS WHERE SMOKING CAN OCCUR, SHALL HAVE APPROPRIATE RECEPTACLES FOR DISCARDED SMOKING MATERIALS PER STATEWIDE FIRE PREVENTION CODE.
3. PER THE VIRGINIA STATEWIDE FIRE PREVENTION CODE, VEHICULAR ACCESS FOR FIREFIGHTING SHALL BE PROVIDED AT ALL CONSTRUCTION AND DEMOLITION SITES, PROVIDE ACCESS TO WITHIN 100 FT. OF TEMPORARY OR PERMANENT FIRE DEPARTMENT CONNECTIONS, AND HAVE NO OVERHEAD WIRING OR OTHER OVERHEAD OBSTRUCTIONS LOWER THAN 13 FT. 6 INCHES; THIS ACCESS MAY BE VIA PERMANENT OR TEMPORARY ROAD, BUT SHALL BE CAPABLE OF SUPPORTING FIRE APPARATUS IN ALL WEATHER CONDITIONS.
4. CONTRACTOR SHALL ENSURE THE STREET NUMBERS ARE ALWAYS PLAINLY VISIBLE FROM THE FRONTAGE STREET DURING CONSTRUCTION PER THE VIRGINIA STATEWIDE FIRE CODE.
5. AN APPROVED WATER SUPPLY FOR FIREFIGHTING OPERATIONS SHALL BE IN PLACE AND AVAILABLE AS SOON AS COMBUSTIBLE MATERIALS ARRIVE ON SITE.
6. WASTE AND COMBUSTIBLE DEBRIS SHALL BE REMOVED FROM THE BUILDING AT THE END OF EACH DAY AND DISPOSED OF IN ACCORDANCE WITH THE VIRGINIA STATEWIDE FIRE CODE.
7. FIRE EXTINGUISHERS SHALL BE PROVIDED, WITH NOT LESS THAN ONE APPROVED FIRE EXTINGUISHER AT EACH STAIRWELL, ON ALL FLOOR LEVELS WHERE COMBUSTIBLE MATERIALS HAVE ACCUMULATED, IN EVERY STORAGE AND CONSTRUCTION SHED AND IN AREAS OF SPECIAL HAZARDS SUCH AS FLAMMABLE AND COMBUSTIBLE LIQUIDS ARE STORED OR USED, IN ACCORDANCE WITH THE VIRGINIA STATEWIDE CODE.
8. OPERATIONS INVOLVING THE USE OF CUTTING AND WELDING SHALL COMPLY WITH THE VIRGINIA STATEWIDE FIRE PREVENTION CODE AND SHALL REQUIRE A PERMIT FROM THE ALBEMARLE COUNTY FIRE MARSHAL'S OFFICE.

ALBEMARLE COUNTY STORMWATER MANAGEMENT NOTES

1. ALL DAMS AND CONSTRUCTED FILL TO BE WITHIN 95% OF MAXIMUM DRY DENSITY AND 2% OF OPTIMUM MOISTURE CONTENT. ALL FILL MATERIAL TO BE APPROVED BY A GEOTECHNICAL ENGINEER. A GEOTECHNICAL ENGINEER IS TO BE PRESENT DURING CONSTRUCTION OF DAMS.
2. PIPE AND RISER JOINTS ARE TO BE WATERTIGHT WITHIN STORMWATER MANAGEMENT FACILITIES.
3. FOR TEMPORARY SEDIMENT TRAPS OR BASINS WHICH ARE TO BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT FACILITIES; CONVERSION IS NOT TO TAKE PLACE UNTIL THE SITE IS STABILIZED, AND PERMISSION HAS BEEN OBTAINED FROM THE COUNTY EROSION CONTROL INSPECTOR.

BLASTING NOTES

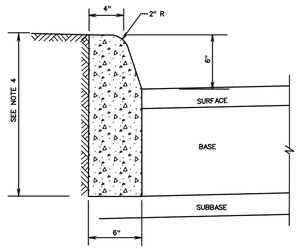
1. BLASTING SHALL NOT BE PERMITTED ON THIS PROJECT.

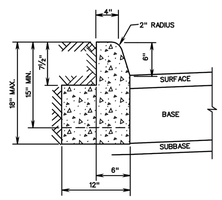
2016 ROAD & BRIDGE STANDARDS

CG-2

NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.
3. CURB HAVING A RADIUS OF 300 FEET OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB.
4. THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (10" DEPTH) OR INCREASED AS MUCH AS 3" (22" DEPTH) IN ORDER THAT THE BOTTOM OF CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 16" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.
5. CG-2 IS TO BE USED ON ROADWAYS MEETING THE REQUIREMENTS FOR CG-6 AS SHOWN IN APPENDIX A OF THE VDOT ROAD DESIGN MANUAL, IN THE SECTION ON GS URBAN STANDARDS.





ACCEPTABLE ALTERNATIVE IF CURB IS EXTRUDED

SPECIFICATION REFERENCE	STANDARD 6" CURB	VDOT ROAD AND BRIDGE STANDARDS
105 502	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: — SHEET 1 OF 1 201.01

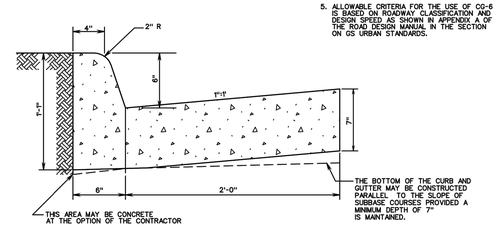
2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

CG-6

NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.
3. COMBINATION CURB & GUTTER HAVING A RADIUS OF 300 FEET OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS RADIAL COMBINATION CURB & GUTTER.
4. FOR USE WITH STABILIZED OPEN-GRADED DRAINAGE LAYER, THE BOTTOM OF THE CURB & GUTTER SHALL BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUBBASE COURSES AND TO THE DEPTH OF THE PAVEMENT.
5. ALLOWABLE CRITERIA FOR THE USE OF CG-6 IS BASED ON ROADWAY CLASSIFICATION AND DESIGN SPEED AS SHOWN IN APPENDIX A OF THE ROAD DESIGN MANUAL IN THE SECTION ON GS URBAN STANDARDS.

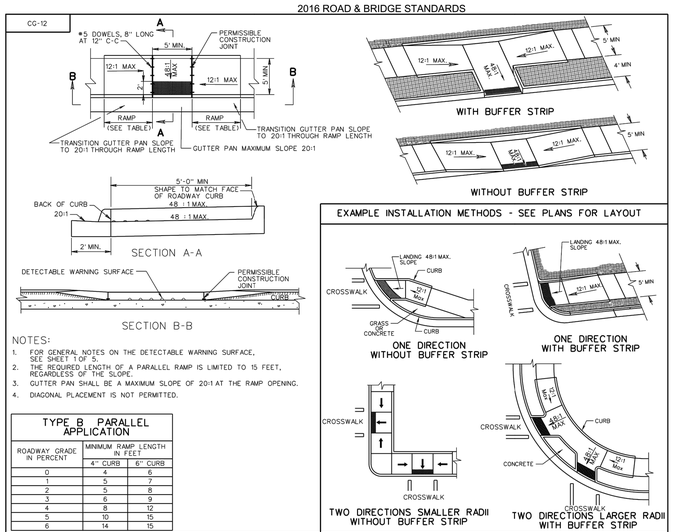


SPECIFICATION REFERENCE	COMBINATION 6" CURB AND GUTTER	VDOT ROAD AND BRIDGE STANDARDS
105 502	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: — SHEET 1 OF 1 201.03

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

CG-12



NOTES:

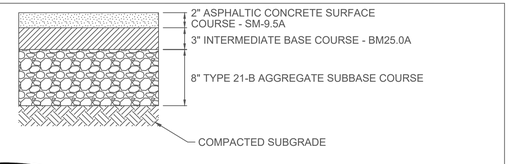
1. FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
2. THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.
3. GUTTER PAN SHALL BE A MAXIMUM SLOPE OF 20:1 AT THE RAMP OPENING.
4. DIAGONAL PLACEMENT IS NOT PERMITTED.

TYPE B PARALLEL APPLICATION		
ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15

EXAMPLE INSTALLATION METHODS - SEE PLANS FOR LAYOUT

VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	SPECIFICATION REFERENCE
SHEET 3 OF 5 — REVISION DATE: 04/19 204.03	CG-12 DETECTABLE WARNING SURFACE TYPE B (PARALLEL) APPLICATION VIRGINIA DEPARTMENT OF TRANSPORTATION	105 502 504

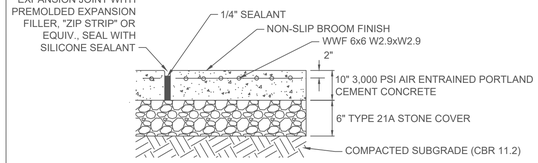
2016 ROAD & BRIDGE STANDARDS



DENOTES HEAVY DUTY ASPHALT PAVEMENT ON PLANS

HEAVY DUTY ASPHALT PAVEMENT SECTION

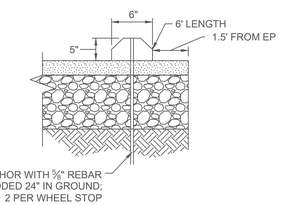
No Scale



DENOTES CONCRETE SERVICE AREA PAVEMENT ON PLANS

HEAVY DUTY CONCRETE SECTION

No Scale



PRECAST CONCRETE WHEEL STOP

No Scale

DATE: 05/02/23
DRAWN BY: Capstone Team
DESIGNED BY: Capstone Team
CHECKED BY: Capstone Team
SCALE: N/A

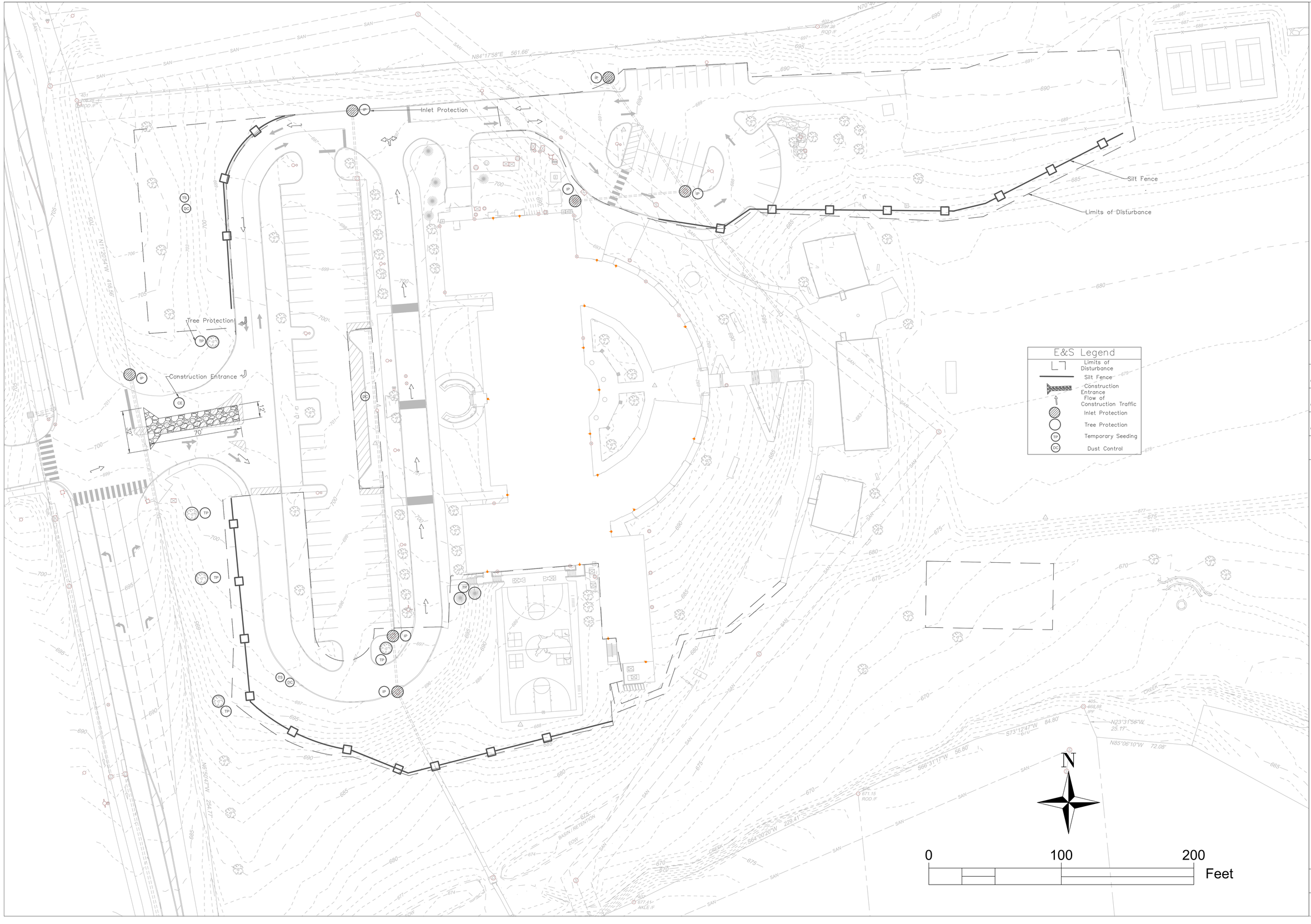
CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

NOTES & DETAILS

JOB NO. 1

SHEET NO. C3.0



E&S Legend

- Limits of Disturbance
- Silt Fence
- Construction Entrance
- Flow of Construction Traffic
- Inlet Protection
- Tree Protection
- TP — Temporary Seeding
- DC — Dust Control

DATE	05/02/23
DRAWN BY	Capstone Team
DESIGNED BY	Capstone Team
CHECKED BY	Capstone Team
SCALE	1":30'

CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

EROSION & SEDIMENT CONTROL PLAN PHASE 1

JOB NO.	1
SHEET NO.	C4.0

Inlet Protection

Tree Protection

Construction Entrance

Move lighting

Silt Fence

Limits of Disturbance

PS

DC

E&S Legend

- Limits of Disturbance
- Silt Fence
- Construction Entrance
- Flow of Traffic
- Inlet Protection
- Tree Protection
- Permanent Seeding
- Dust Control

0 100 200 Feet

CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

EROSION & SEDIMENT CONTROL PLAN PHASE 2

DATE
05/02/23

DRAWN BY
Capstone Team

DESIGNED BY
Capstone Team

CHECKED BY
Capstone Team

SCALE
1":30'

JOB NO.
1

SHEET NO.
C4.1

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT INCLUDES AN ADDITION TO CROZET ELEMENTARY SCHOOL AND THE REDESIGN OF THE SCHOOL PARKING SYSTEM, INCREASING THE TOTAL AMOUNT OF CAR AND BUS PARKING ON SITE, AS WELL AS CORRESPONDING STORMWATER MANAGEMENT & GRADING TO MEET STATE/COUNTY STANDARDS.

ADJACENT PROPERTY
THE SITE PROPERTY IS BOUNDED BY RESIDENTIAL PARCELS TO THE NORTH AND SOUTH, CROZET AVENUE TO THE WEST, AND AN UNDEVELOPED/AGRICULTURAL PARCEL TO THE EAST.

EXISTING SITE CONDITIONS
THE EXISTING SITE CONSISTS OF THE CROZET ELEMENTARY SCHOOL BUILDING, THE SCHOOL PARKING LOT, AND ADDITIONAL FACILITIES SUCH AS PLAYGROUND SPACE, SPORTS COURTS, EXTERIOR SIDEWALKS, ETC. EXISTING SITE RUNOFF ULTIMATELY FLOWS TO THE SOUTH THROUGH AN EXISTING STORM SYSTEM OR SHEET FLOW UNTIL REACHING AN EXISTING STREAM WHERE IT IS THEN CARRIED OFFSITE.

OFF-SITE AREAS
NO OFF-SITE AREAS WILL BE DISTURBED AS A PART OF THIS PROJECT.

CRITICAL EROSION AREAS
NO CRITICAL EROSION AREA EXIST.

EROSION AND SEDIMENT CONTROL MEASURES
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE CURRENT ADDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE BY LOCAL AUTHORITIES HAVING JURISDICTION.

EROSION AND SEDIMENT CONTROL MAINTENANCE
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN ACCORDANCE WITH VESCH AND THE CONSTRUCTION SEQUENCE, INCLUDING THE INSPECTION OF ALL MEASURES AFTER ALL RAIN EVENTS.

STRUCTURAL PRACTICES:
1. TEMPORARY CONSTRUCTION ENTRANCE - 3.02 A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT THE LOCATION INDICATED ON THE PLANS. IT IS IMPERATIVE THAT THIS MEASURE BE MAINTAINED THROUGHOUT CONSTRUCTION. ITS PURPOSE IS TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PAVED PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.
2. SILT FENCE BARRIER - 3.05 SILT FENCE SEDIEMENT BARRIERS SHALL BE INSTALLED DOWNSLOPE OF AREAS WITH MINIMAL GRADES TO FILTER SETTLEMENT LADEN RUNOFF FROM SHEET FLOW AS INDICATED. ITS PRPOSE IS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
3. STORM DRAIN INLET PROTECTION - 3.07 STONE FILTERS SHALL BE PLACED AT THE INLET OF ALL DRAINAGE STRUCTURES AS INDICATED ON PLANS. ITS PURPOSE IS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION.
4. TREE PROTECTION - 3.38 PROTECTION OF DESIRABLE TRESS FROM MECHANICAL AND OTHER INJUSRY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY.
5. DUST CONTROL - 3.39 DUST CONTROL IS TO BE USED THROUGH THE SITE IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT

VEGETATIVE PRACTICES:
6. TEMPORARY SEEDING - 3.31 ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR MORE THAN 30 DAYS SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING OF THOSE AREAS. SELECTION OF THE SEED MIXTURE SHALL DEPEND ON THE TIME OF YEAR IT IS APPLIED.
7. PERMANENT SEEDING - 3.32 FOLLOWING GRADING ACTIVITIES, ESTABLISH PERENNIAL VEGETATIVE COVER BY PLANTING SEED TO REDUCE EROSION, STABILIZE DISTURBED AREAS, AND ENHANCE NATURAL BEAUTY.

MANAGEMENT STRATEGIES
1. PROVIDE SEDIMENT TRAPPING MEASURES AS A FIRST STEP IN GRADING, SEED AND MULCH IMMEDIATELY FOLLOWING INSTALLATION.
2. PROVIDE TEMPORARY SEEDING OR OTHER STABILIZATION IMMEDIATELY AFTER GRADING.
3. ISOLATE TRENCHING FOR UTILITIES AND DRAINAGE FROM DOWNSTREAM CONVEYANCES IN ORDER TO MINIMIZE PERIMETER CONTROLS.
4. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED UNTIL THEY ARE NO LONGER REQUIRED TO COMPLY WITH THE CONTRACT DOCUMENTS OR STATE LAW.

PERMANENT STABILIZATION
ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISHED GRADING. SEEDING SHALL BE IN ACCORDANCE WITH STD. & SPEC. 3.32, PERMANENT SEEDING. SEED TYPE SHALL BE AS SPECIFIED FOR "MINIMUM CARE LAWNS" AND "GENERAL SLOPES" IN THE HANDBOOK FOR SLOPES LESS THAN 3:1. FOR SLOPES GREATER THAN 3:1, SEED TYPE SHALL BE AS SPECIFIED FOR "LOW MAINTENANCE SLOPES" IN TABLE 3.32-D OF THE HANDBOOK. FOR MULCH (STRAW OR FIBER) SHALL BE USED ON ALL SEEDED SURFACES. IN ALL SEEDING OPERATIONS SEED, FERTILIZER AND LIME SHALL BE APPLIED PRIOR TO MULCHING.

SEQUENCE OF INSTALLATION
PHASE I
1. A PRE-CONSTRUCTION MEETING IS REQUIRED WITH ALBEMARLE COUNTY E&S INSPECTOR, CONTRACTOR, OWNER, AND ENGINEER. THIS MEETING SHALL TAKE PLACE AT THE COMMUNITY DEVELOPMENT OFFICE. CLEARING LIMITS MUST BE FLAGGED PRIOR TO THE MEETING WITH ONE (1) WEEK OF NOTICE.
2. INSTALL CONSTRUCTION ENTRANCE, TEMPORARY SEEDING, DUST CONTROL, INLET PROTECTION, SILT FENCE, AND TREE PROTECTION. NO WORK SHALL BEGIN IN THOSE AREAS UNTIL ALL ESC MEASURES IN THOSE AREAS ARE INSTALLED.
3. AFTER ALL EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE, SITE WORK CON BEGIN.
4. ROUGH GRADE PROJECT AREA.
5. SEED ALL DENUDED AREAS PER VESCH STANDARDS.

PHASE II
1. FINE GRADE PROJECT AREA. APPLY PERMANENT SOIL STABILIZATION TO THESE AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS ACHIEVED.
2. APPLY PERMANENT SOIL STABILIZATION TO THESE AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS ACHIEVED. SILT FENCE AND INLET PROTECTION MUST BE MAINTAINED THROUGH GRADING AND CONSTRUCTION.
3. ONCE CONSTRUCTION IS COMPLETE AND ALL CONTRIBUTING AREAS ARE STABILIZED, EROSION CONTROL MEASURES CAN BE REMOVED UPON APPROVAL FROM THE E&S INSPECTOR.

GENERAL CONSTRUCTION NOTES FOR EROSION AND SEDIMENT CONTROL

1. 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.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
5. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
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.
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.
8. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
9. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
10. ALL FILL MATERIAL TO BE TAKEN FROM AN APPROVED, DESIGNATED BORROW AREA.
11. ALL WASTE MATERIALS SHALL BE TAKEN TO AN APPROVED WASTE AREA. EARTH FILL SHALL BE INERT MATERIALS ONLY, FREE OF ROOTS, STUMPS, WOOD, RUBBISH, AND OTHER DEBRIS.
12. BORROW OR WASTE AREAS ARE TO BE RECLAIMED WITHIN 7 DAYS OF COMPLETION PER ZONING ORDINANCE SECTION 5.1.28.
13. ALL INERT MATERIALS SHALL BE TRANSPORTED IN COMPLIANCE WITH SECTION 13-301 OF THE CODE OF ALBEMARLE.
14. BORROW, FILL OR WASTE ACTIVITY INVOLVING INDUSTRIAL-TYPE POWER EQUIPMENT SHALL BE LIMITED TO THE HOURS OF 7:00AM TO 9:00PM.
15. BORROW, FILL OR WASTE ACTIVITY SHALL BE CONDUCTED IN A SAFE MANNER THAT MAINTAINS LATERAL SUPPORT, OR ORDER TO MINIMIZE ANY HAZARD TO PERSONS, PHYSICAL DAMAGE TO ADJACENT LAND AND STRUCTURES/IMPROVEMENTS, AND DAMAGE TO ANY PUBLIC STREET BECAUSE OF SLIDES, SINKING, OR COLLAPSE.
16. THE DEVELOPER SHALL RESERVE THE RIGHT TO INSTALL, MAINTAIN, REMOVE OR CONVERT TO PERMANENT STORMWATER MANAGEMENT FACILITIES WHERE APPLICABLE ALL EROSION CONTROL MEASURES REQUIRED BY THIS PLAN REGARDLESS OF THE SALE OF ANY LOT, UNIT, BUILDING OR OTHER PORTION OF THE PROPERTY.
17. TEMPORARY STABILIZATION SHALL BE TEMPORARY SEEDING AND MULCHING. SEEDING IS TO BE AT 75 LBS/ACRE, AND IN THE MONTHS OF SEPTEMBER TO FEBRUARY TO CONSIST A 50/50 MIX OF ANNUAL RYEGRASS AND CEREAL WINTER RYE, OR IN MARCH AND APRIL TO CONSIST OF ANNUAL RYE, OR MAY THROUGH AUGUST TO CONSIST OF GERMAN MILLET. STRAW MULCH IS TO BE APPLIED AT 80LBS/100SF. ALTERNATIVES ARE SUBJECT TO APPROVAL BY THE COUNTY EROSION CONTROL INSPECTOR.
18. PERMANENT STABILIZATION SHALL BE LIME AND FERTILIZER, PERMANENT SEEDING, AND MULCH. AGRICULTURAL GRADE LIMESTONE SHALL BE APPLIED AT 90LBS/1000SF, INCORPORATED INTO THE TOP 4-6 INCHES OF SOIL. FERTILIZER SHALL BE APPLIED AT 1000LBS/ACRE AND CONSIST OF A 10-20-10 NUTRIENT MIX. PERMANENT SEEDING SHALL BE APPLIED AT 180LBS/ACRE AND CONSIST OF 95% KENTUCKY 31 OR TALL FESCUE AND 0-5% PERENNIAL RYEGRASS OR KENTUCKY BLUEGRASS. STRAW MULCH IS TO BE APPLIED AT 80LBS/100SF. ALTERNATIVES ARE SUBJECT TO APPROVAL BY THE COUNTY EROSION CONTROL INSPECTOR.
19. MAINTENANCE: ALL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT. ANY DAMAGE OR CLOGGING TO STRUCTURAL MEASURES SHALL BE REPAIRED IMMEDIATELY. SILT TRAPS SHALL BE CLEANED WHEN 50% OF THE WET STORAGE VOLUME IS FILLED WITH SEDIMENT. ALL SEEDED AREAS SHALL BE RESEEDED WHEN NECESSARY TO ACHIEVE A GOOD STAND OF GRASS. SILT FENCE AND DIVERSION DYKES WHICH COLLECT SEDIMENT TO HALF THEIR HEIGHT MUST BE CLEANED AND REPAIRED IMMEDIATELY.
20. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF FINAL SITE STABILIZATION, WHEN MEASURES ARE NO LONGER NEEDED, SUBJECT TO APPROVAL BY THE COUNTY EROSION CONTROL INSPECTOR.
21. THIS PLAN SHALL BE VOID IF THE OWNER DOES NOT OBTAIN A PERMIT WTIHIN 1 YEAR OF THE DATE OF APPROVAL. (WATER PROTECTION ORDINANCE SECTION 17-204G.)
22. PERMANENT VEGETATION SHALL BE INSTALLED ON ALL DENUDED AREAS WITHIN NINE (9) MONTHS AFTER THE DATE THE LAND DISTURBING ACTIVITY COMMENCED. (WATER PROTECTION ORDINANCE SECTION 17-207B)

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

ES-1: UNLESS OTHERWISE INDICATED, CONSTRUCT AND MAINTAIN ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2: THE CONTROLLING EROSION AND SEDIMENT CONTROL AUTHORITY WILL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHODS AND EFFECTIVENESS OF THE EROSION CONTROL PLAN.

ES-3: PLACE ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO OR AS THE FIRST STEP IN CLEARING, GRADING, OR LAND DISTURBANCE.

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

ES-5: PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFFSITE BORROW OR WASTE AREA), SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE ARCHITECT/ENGINEER AND THE CONTROLLING EROSION AND SEDIMENT CONTROL AUTHORITY FOR REVIEW AND ACCEPTANCE.

ES-6: PROVIDE ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE RESPONSIBLE LAND DISTURBER. (MODIFIED NOTE)

ES-7: ALL DISTURBED AREAS SHALL DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND-DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT.

ES-8: DURING DEWATERING OPERATIONS, PUMP WATER INTO AN APPROVED FILTERING DEVICE.

ES-9: INSPECT ALL EROSION CONTROL MEASURES DAILY AND AFTER EACH RUNOFF- PRODUCING RAINFALL EVENT. MAKE ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES IMMEDIATELY.

SOILS INFORMATION:

5B - BELVOIR LOAM, 2 TO 7 PERCENT SLOPES, 16 TO 30 INCHES TO FRAGIPAN, SOMEWHAT POORLY DRAINED, HYDROLOGIC SOIL GROUP: D

7B - BRADDOCK LOAM, 2 TO 7 PERCENT SLOPES, MORE THAN 80 INCHES TO RESTRICTIVE FEATURES, WELL DRAINED, HYDROLOGIC SOIL GROUP: B

8C3 - BRADDOCK CLAY LOAM, 7 TO 15 PERCENT SLOPES, SEVERELY ERODED, MORE THAN 80 INCHES TP RESTRICTIVE FEATURES, WELL DRAINED, HYDROLOGIC SOIL GROUP: B

25B - DYKE SILT LOAM, 2 TO 7 PERCENT SLOPES, MORE THAN 80 INCHES TO RESTRICTIVE FEATURES, , WELL DRAINED, HYDROLOGIC SOIL GROUP: B

26C3 - DYKE CLAY LOAM, 7 TO 15 PERCENT SLOPES, SEVERLY ERODED, MORE THAN 80 INCHES TO RESTRICTIVE FEATURES, WELL DRAINED, HYDROLOGIC SOIL GROUP: B

MINIMUM STANDARDS:

AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

MS-1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-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 IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

MS-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.

MS-5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

MS-7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

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

MS-10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

MS-11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. 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.

MS-13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

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

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

MS-16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

MS-17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

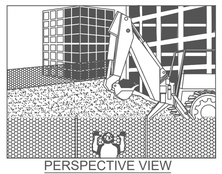
MS-18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

MS-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 STANDARDS AND CRITERIA LISTED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, CHAPTER 8 PAGES 20-24.

DATE
05/02/23
DRAWN BY
Capstone Team
DESIGNED BY
Capstone Team
CHECKED BY
Capstone Team
SCALE
N/A

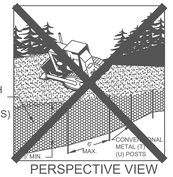
CROZET ELEMENTARY SCHOOL
ALBEMARLE COUNTY - CROZET
EROSION & SEDIMENT CONTROL NOTES

JOB NO.
1
SHEET NO.
C4.2

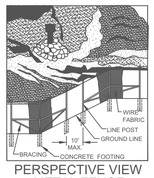


PERSPECTIVE VIEW

POLYETHYLENE FABRIC (ATTACH TO POSTS WITH METAL TIE WIRES)



PERSPECTIVE VIEW
PLASTIC FENCE



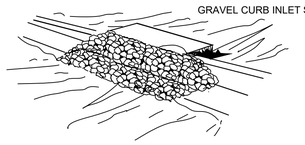
PERSPECTIVE VIEW
METAL FENCE

SAF

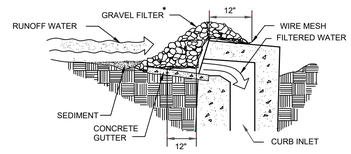
3.1-1

SAFETY FENCE

No Scale



GRAVEL CURB INLET SEDIMENT FILTER



* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

IP

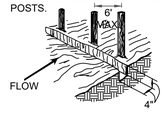
SPECIFIC APPLICATION: THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

3.07- 6

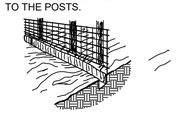
STORMWATER INLET PROTECTION

No Scale

1. SET POSTS AND EXCAVATE A 4"X4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.

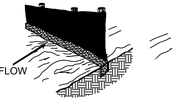


2. STAPLE WIRE FENCING TO THE POSTS.

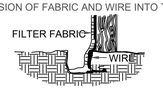


3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



EXTENSION OF FABRIC AND WIRE INTO THE TRENCH.

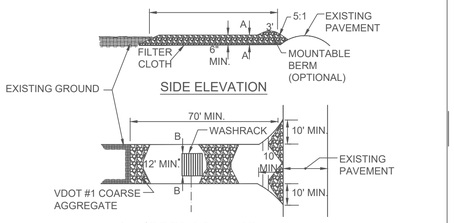


SF

3.05-1

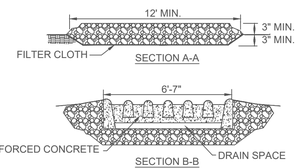
CONSTRUCTION OF A SILT FENCE

No Scale



* MUST EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.

PLAN VIEW

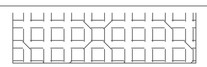


CE

3.02-1

STONE CONSTRUCTION ENTRANCE

No Scale



STANDARD ORANGE VINYL OR PLASTIC CONSTRUCTION FENCE ATTACHED TO POSTS (PRE-WEATHERED WOOD, GALVANIZED STEEL, IRON OR THICK PVC PLASTIC), AT LEAST 40" ABOVE FINISH GRADE WITH SPAN BETWEEN POSTS NO GREATER THAN 6' ON CENTER. EVERY NINTH POST SHALL CONTAIN A WARNING SIGN THAT CLEARLY IDENTIFIES THE FENCE AS A TREE PROTECTION FENCE.

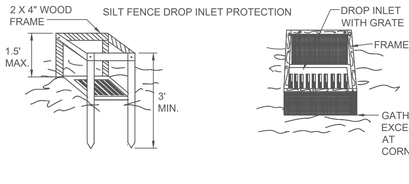
TP

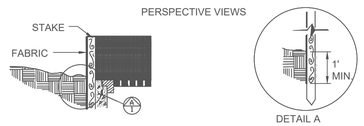
NO SCALE

3.38

TREE PROTECTION

No Scale





ELEVATION OF STAKE AND FABRIC ORIENTATION

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

IP

3.07-1

STORM DRAIN INLET PROTECTION

No Scale

TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	
COMMERCIAL OR RESIDENTIAL	175-200 LBS.
KENTUCKY 31 OR TURF-TYPE TALL FESCUE	90-100%
IMPROVED PERENNIAL RYEGRASS	0-5%
KENTUCKY BLUEGRASS	0-5%
GENERAL SLOPE (3:1 OR LESS)	
KENTUCKY 31 FESCUE	128 LBS.
RED TOP GRASS	2 LBS.
SEASONAL NURSE CROP *	20 LBS.
	150 LBS.
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	
KENTUCKY 31 FESCUE	108 LBS.
RED TOP GRASS	2 LBS.
SEASONAL NURSE CROP *	20 LBS.
CROWNVETCH **	20 LBS.
	150 LBS.

* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
FEBRUARY 16TH THROUGH APRIL..... ANNUAL RYE
MAY 1ST THROUGH AUGUST 15TH..... FOXTAIL MILLET
AUGUST 16TH THROUGH OCTOBER..... ANNUAL RYE
NOVEMBER THROUGH FEBRUARY 15TH..... WINTER RYE

** SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVETCH EAST OF FARMVILLE, VA (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF CROWNVETCH, INCREASE RATE TO 30 LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

PS

PERMANENT SEEDING MIX FOR PIEDMONT AREA

No Scale

TABLE 3.31-B
ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS
"QUICK REFERENCE FOR ALL REGIONS"

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50-100
FEB. 16 - APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60-100
MAY 1 - AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

TS

TEMPORARY SEEDING PLANT MATERIALS

No Scale

DATE
05/02/23
DRAWN BY
Capstone Team
DESIGNED BY
Capstone Team
CHECKED BY
Capstone Team
SCALE
N/A

CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

EROSION & SEDIMENT CONTROL DETAILS

JOB NO.
1
SHEET NO.
C4.3

CG-2
New pavement begins
20ft
CG-6
24.5ft
CG-12
21ft
Keep existing ADA space
Move lighting
New pavement begins
CG-2
New pavement begins
3 additional ADA spaces
CG-2
CG-2 Keep existing ADA space
Wheel Stop (TYP.)
New pavement begins
CG-6
5ft (TYP.)
New pavement begins
20ft
CG-2
CG-6
CG-2
CG-2
CG-2
ADA Ramp
30ft
6ft
30ft
Landing
8ft (TYP.)
5ft (TYP.)
Bench platform
Retaining Wall
CG-2
12 Bus Spaces
30.5ft
44ft
14ft
23ft
32ft
58ft
34ft
23ft
CG-6
CG-2
16ft
20ft
24ft
9ft
CG-6
Bioretention Garden
Basketball Court
N84°17'58"E 561.66'
N70°40'12"E 107.23'
N11°20'54"W 416.59'
N6°50'47"W 254.77'
S64°00'20"W 229.41'
S66°31'17"W 56.80'
S73°12'47"W 84.80'
N23°31'56"W 25.17'
N85°06'10"W 72.08'
0
100
200
Feet
N

DATE
05/02/23
DRAWN BY
Capstone Team
DESIGNED BY
Capstone Team
CHECKED BY
Capstone Team
SCALE
1":30'

CROZET ELEMENTARY SCHOOL
ALBEMARLE COUNTY - CROZET
LAYOUT PLAN

JOB NO.
1
SHEET NO.
C5.0

Legend	
BC	Bottom of Curb
ME	Match Existing
EP	Edge of Pavement

BC 700.01'
ME 696.80'
ME 697.72'
BC 698.77'
BC 699.25'
Inv. In = 692.55'
Inv. Out = 692.42'
BC 698.03'
BC 699.02'
ME 699.94'
BC 700.01'
ME 699.99'
ME 700.44'
ME 699.97'
BC 700.09'
ME 700.72'
ME 699.89'
ME 700.52'
BC 699.27'
ADA spaces must have a max. slope of 2% in all directions
Inv. In = 689.63'
Inv. Out = 689.50'
ME 693.99'
ME 694.94'
BC 688.50'
BC 689.90'
BC 690.28'
BC 689.58'
BC 687.53'
BC 688.57'
Inv. In = 686.75'
Inv. Out = 686.65'
BC 687.97'
BC 689.05'
Inv. In = 684.65'
Inv. Out = 684.52'
ME 690.03'
BC 687.11'
BC 685.88'
Inv. In = 685.86'
Inv. Out = 685.71'
Inv. In =689.32'
Inv. Out = 689.19'
BC 697.66'
BC 698.08'
BC 698.11'
ME 698.19'
ME 697.54'
BC 697.66'
Inv. In = 688.42'
Inv. Out = 688.30'
ME 698.05'
ME 697.61'
ME 696.92'
ME 697.77'
EP 697.77'
EP 697.70'
EP 696.16'
EP 696.19'
ME 697.99'
EP 696.04'
EP 696.07'
EP 693.70'
EP 693.77'
Inv. In = 688.72'
Inv. Out = 688.60'
BC 696.07'
FFE 693.42' (First Floor)
FFE 680.75' (Basement)
ME 689.94'
ME 678.88'
ME 678.81'
EP 681.28'
EP 680.16'
EP 679.98'
EP 681.06'
EP 680.58'
EP 680.49'
EP 680.26'
EP 680.09'
EP 671.86'
EP 671.00'
EP 671.41'
EP 670.55'

N

0 100 200 Feet

DATE
05/02/23
DRAWN BY
Capstone Team
DESIGNED BY
Capstone Team
CHECKED BY
Capstone Team
SCALE
1":30'

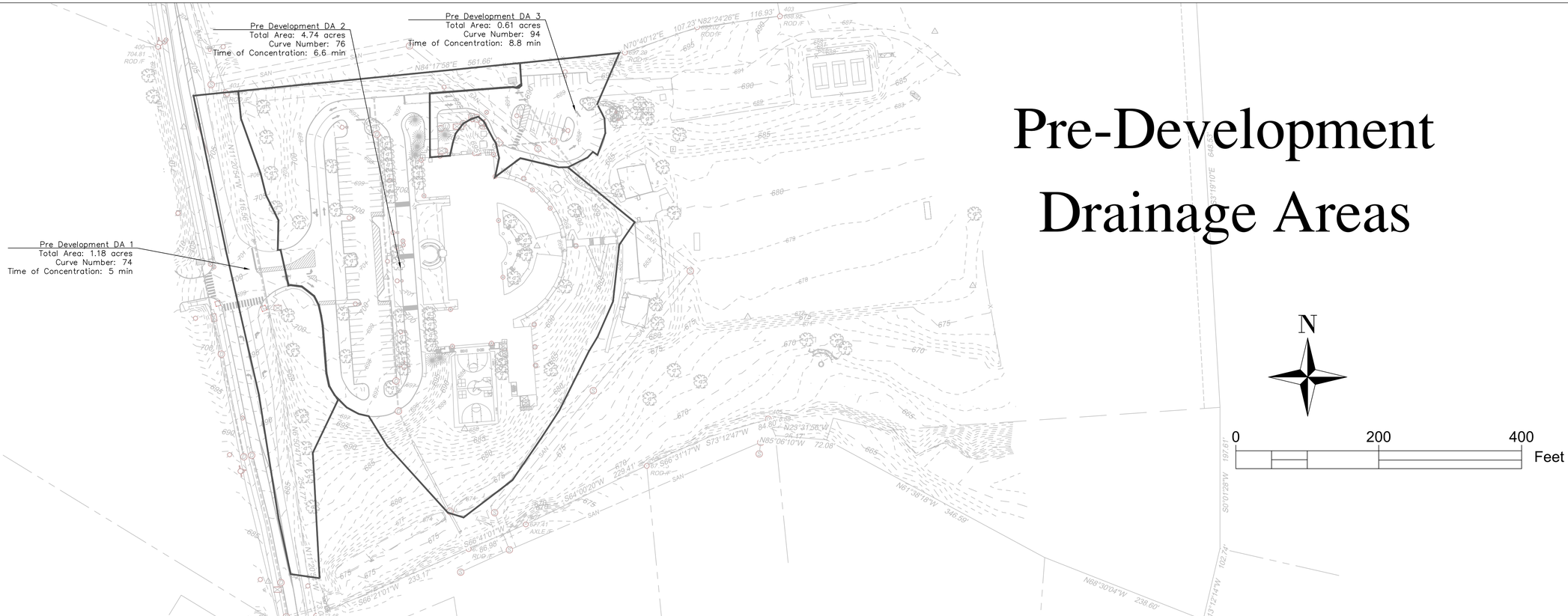
CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

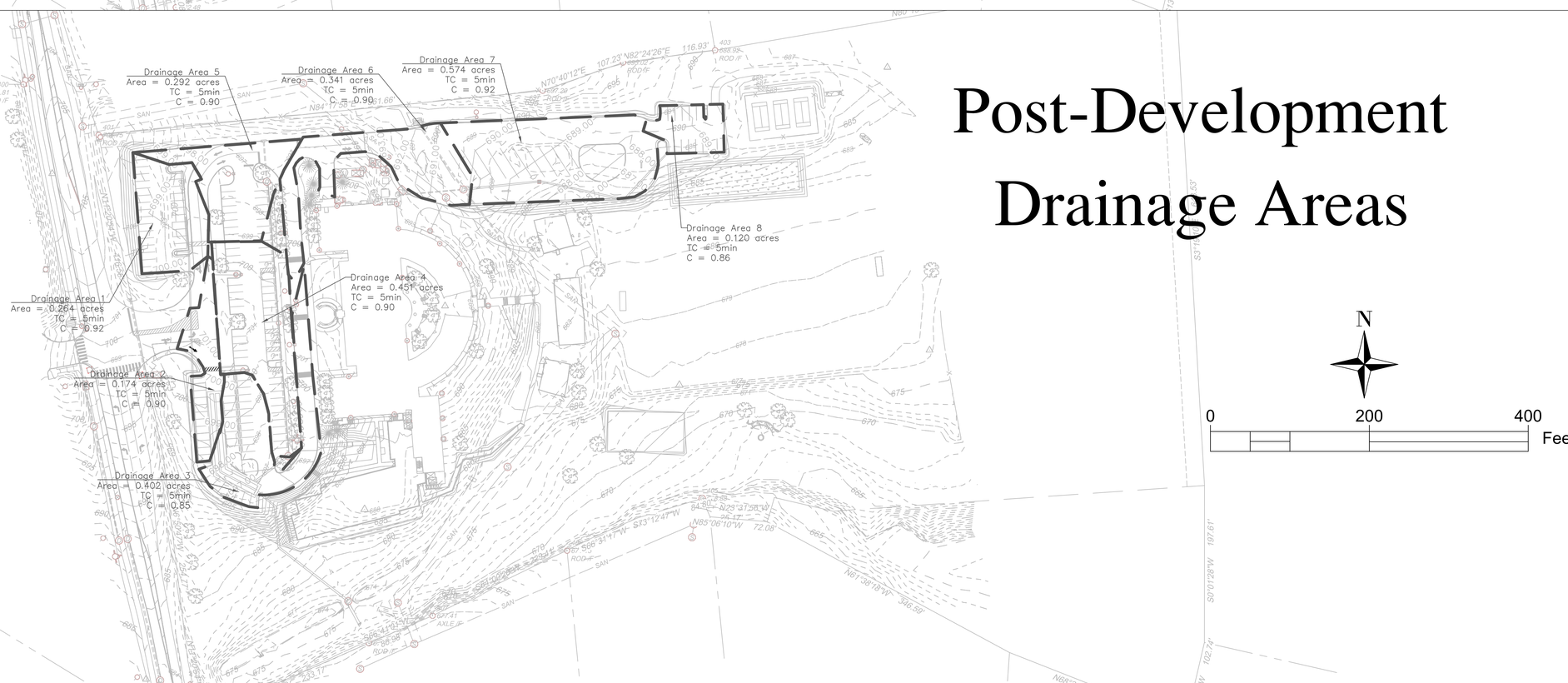
GRADING & DRAINAGE PLAN

JOB NO.
1
SHEET NO.
C6.0

Pre-Development Drainage Areas



Post-Development Drainage Areas



DATE	05/02/23
DRAWN BY	Capstone Team
DESIGNED BY	Capstone Team
CHECKED BY	Capstone Team
SCALE	1":75'

CROZET ELEMENTARY SCHOOL
ALBEMARLE COUNTY - CROZET
STORMWATER MANAGEMENT PLAN

JOB NO.	1
SHEET NO.	C7.0

Drainage Area 1
Area = 0.264 acres
TC = 5min
C = 0.92

Drainage Area 2
Area = 0.174 acres
TC = 5min
C = 0.90

Drainage Area 3
Area = 0.402 acres
TC = 5min
C = 0.85

Drainage Area 4
Area = 0.451 acres
TC = 5min
C = 0.90

Drainage Area 5
Area = 0.292 acres
TC = 5min
C = 0.90

Drainage Area 6
Area = 0.341 acres
TC = 5min
C = 0.90

Drainage Area 7
Area = 0.574 acres
TC = 5min
C = 0.92

Drainage Area 8
Area = 0.120 acres
TC = 5min
C = 0.86

Move lighting

CROZET ELEMENTARY SCHOOL

ALBEMARLE COUNTY - CROZET

INLET DRAINAGE AREA MAP

DATE
05/02/23

DRAWN BY
Capstone Team

DESIGNED BY
Capstone Team

CHECKED BY
Capstone Team

SCALE
1":30'

JOB NO.
1

SHEET NO.
C7.1

1-Yr ○ 2-Yr ○ 3-Yr ○ 5-Yr ○ 10-Yr ○ 25-Yr ○ 50-Yr ○ 100-Yr

Hyd. No.	Hydrograph type	Peak flow	Time interval	Time of conc. Tc	Time to peak	Volume	Inflow hyd(s)	Maximum Elevation	Maximum Storage	Hydrograph description
	(origin)	(cfs)	(min)	(min)	(min)	(cuft)		(ft)	(cuft)	
1	SCS Runoff	0.000	2	5.00	0.00	0.000				Post 1
2	SCS Runoff	5.446	2	8.60	720.00	12,467				Post 2
3	SCS Runoff	3.485	2	10.20	722.00	9,119				Post 3
4	SCS Runoff	4.266	2	5.00	716.00	9,084				Post LOD 2
5	SCS Runoff	3.567	2	6.10	716.00	7,296				Post 3 LOD
6	SCS Runoff	9.931	2	6.40	716.00	20,052				Post 2 Total
7	Reservoir	5.667	2		722.00	20,052	6	692.27	2,983	Res

○ 1-Yr ○ 2-Yr ○ 3-Yr ○ 5-Yr ● 10-Yr ○ 25-Yr ○ 50-Yr ○ 100-Yr

Hyd. No.	Hydrograph type	Peak flow	Time interval	Time of conc. Tc	Time to peak	Volume	Inflow hyd(s)	Maximum Elevation	Maximum Storage	Hydrograph description
	(origin)	(cfs)	(min)	(min)	(min)	(cuft)		(ft)	(cuft)	
1	SCS Runoff	3.519	2	5.00	716.00	7,106				Post 1
2	SCS Runoff	14.46	2	8.60	718.00	33,252				Post 2
3	SCS Runoff	9.155	2	10.20	720.00	23,833				Post 3
4	SCS Runoff	6.206	2	5.00	716.00	13,555				Post LOD 2
5	SCS Runoff	5.506	2	6.10	716.00	11,490				Post 3 LOD
6	SCS Runoff	23.89	2	6.40	716.00	49,403				Post 2 Total
7	Reservoir	22.55	2		718.00	49,403	6	694.47	5,603	Res
8	Reservoir	3.565	2		732.00	23,695	3	701.49	9,661	Garden

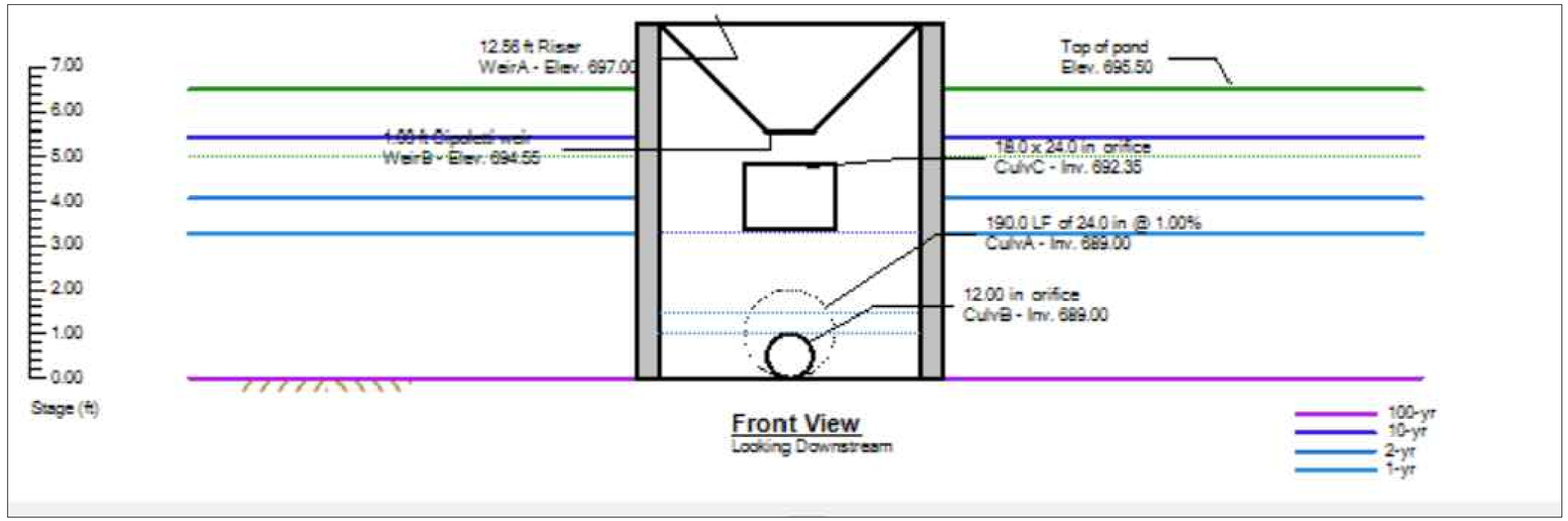
Energy Balance Equations

$Q_{Developed} \leq I.F.*(Q_{Pre\text{-}developed} * RV_{Pre\text{-}Developed})/RV_{Developed}$

Underground Retention:

.8*(2.294*5,249)/9,034 + 5.4 = 6.47

QDeveloped = 5.667 ≤ 6.47



Underwater Retention System Calculations

DATE 05/02/23
DRAWN BY Capstone Team
DESIGNED BY Capstone Team
CHECKED BY Capstone Team
SCALE N/A

CROZET ELEMENTARY SCHOOL
ALBEMARLE COUNTY - CROZET
CALCULATIONS

JOB NO. 1
SHEET NO. C8.0

Contours | Manual | Trapezoid | Chambers

Item	Input
Storage Type =	Contours
Bottom Elev. (ft) =	690.00
Voids (%) =	100.00
Volume by =	Conic

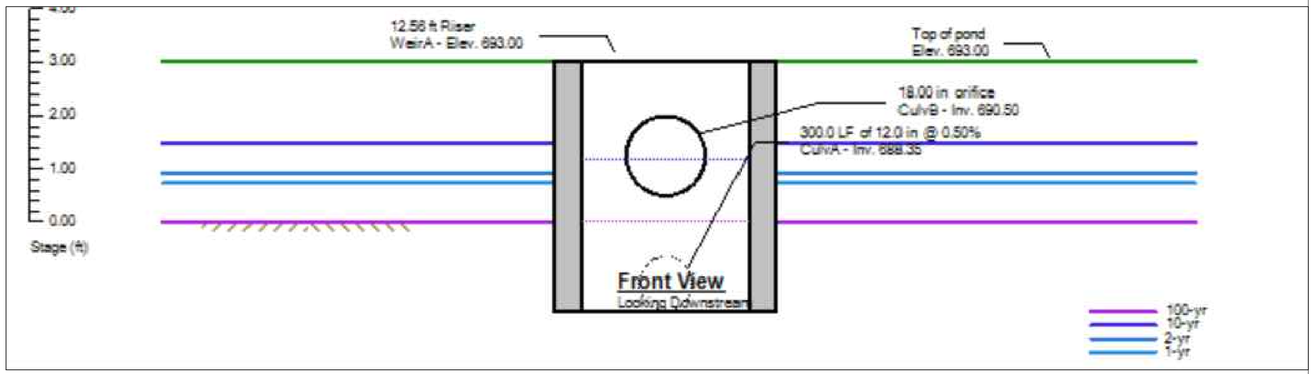
Clear | Apply

Pond Name: Garden

Row	Stage (ft)	Elevation (ft)	Contour (sqft)	Incremental (cuft)	Total (cuft)	Total (cfs)
0	0.00	690.00	5,695	0.000	0.000	0.000
1	1.00	691.00	6,697	6,189	6,189	1.343
2	2.00	692.00	7,946	7,312	13,500	3.903
3	3.00	693.00	9,267	8,597	22,098	4.353
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						

Auto update stage-discharge | Done

Selected storage type is Contours.



Culverts / Orifices

Culv/Orifice	A	B	C	Prf Riser
Rise (in) =	12	18		
Span (in) =	12	18		
No. Barrels =	1	1		
Invert Elev. (ft) =	688.35	690.5		
Length (ft) =	300	0		
Slope (%) =	0.5	0		----
N-Value =	0.013	0.013	0.013	----
Orifice Coeff. =	0.6	0.6	0.6	0.6
Multi-Stage =	n/a	Yes	No	No
Active =	Yes	Yes	Yes	Yes

Weirs

Weir	A	B	C	D
Weir Type =	Riser	Choose...	Choose...	Choose...
Crest Elev (ft) =	693.00			
Crest Length ft) =	12.56			
Weir Coeff. =	3.33	3.33	3.33	3.33
Multi-Stage =	Yes	No	No	No
Active =	Yes	Yes	Yes	Yes

Exfiltration

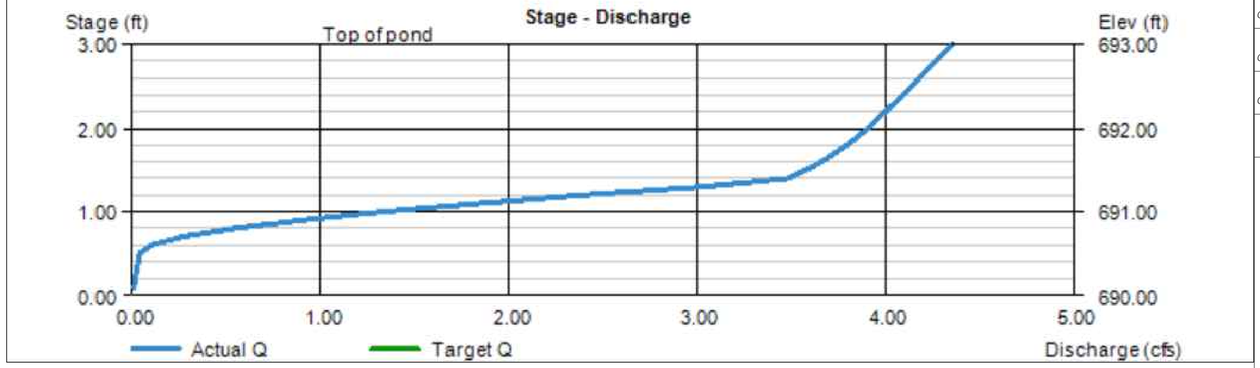
Rate (in/hr)	Apply to	Extract from Outflow Hyd (y/n)
0.50	Contour Area	No

Tailwater

Tailwater Elevation (ft) = 0.00

Compute | Clear

Row	Stage (ft)	Elev (ft)	Culvert / Orifice A (cfs)	Culvert / Orifice B (cfs)	Culvert / Orifice C (cfs)	Culvert / Orifice Prf Riser (cfs)	Weir A (cfs)	Weir B (cfs)	Weir C (cfs)	Weir D (cfs)	Exfil (cfs)	User Defined (cfs)	Total Outflow (cfs)
0	0.00	690.00	0.000	0.000	-	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000



Energy Balance Equations

$$Q_{Developed} \leq I.F.*(Q_{Pre\text{-}developed} * RV_{Pre\text{-}Developed})/RV_{Developed}$$

Bioretention:

$$.8*(2.215*5,354)/9,119 = 1.04$$

$$QDeveloped = 0.354 \leq 1.04$$

Bioretention System Calculations

DATE: 05/02/23
DRAWN BY: Capstone Team
DESIGNED BY: Capstone Team
CHECKED BY: Capstone Team
SCALE: N/A

CROZET ELEMENTARY SCHOOL
ALBEMARLE COUNTY - CROZET
CALCULATIONS CONTINUED

JOB NO. 1
SHEET NO. C8.1