# RAGGED MOUNTAIN RAW WATER PUMPING STATION

## INITIAL SITE PLAN SUBMITTAL JUNE 2023

OWNER:


RIVANNA WATER AND SEWER AUTHORITY
695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902
PHONE: (434) 977-2970


PREPARED BY:


11400 COMMERCE PARK DRIVE, SUITE 400
RESTON, VA 20191
PHONE: (703) 674-1300


**GENERAL INFORMATION:**

**ZONING:** R1 RESIDENTIAL

PARCEL A-1 IS A SPECIAL LOT ESTABLISHED SOLELY FOR PUBLIC UTILITIES.

**MAGISTERIAL DISTRICT:** SAMUEL MILLER

THERE ARE NO PROFFERS, SPECIAL USE PERMITS OR VARIANCES ON THIS PROPERTY.

**PROPERTY OVERLAY DISTRICTS:** AREA A; CENSUS TRACTS; CHARLOTTESVILLE- ALBEMARLE MPO BOUNDARY; AND AIRPORT IMPACT AREA.

**REMAINING PARCEL A OVERLAY DISTRICTS:** DAM BREAK INUNDATION ZONES - STATE; WATER PROTECTION ORDINANCE BUFFERS; FLOOD HAZARD OVERLAY (100 YEAR FLOODPLAIN); STEEP SLOPES OVERLAY

THE PROPERTY IS NOT WITHIN AN ALBEMARLE COUNTY AND/OR CITY OF CHARLOTTESVILLE WATER SUPPLY WATERSHED NOR AN AGRICULTURAL/FORESTAL DISTRICT.

**WATERSHED:** MOORES CREEK

PARCEL A-1 AND THE RESIDUE OF TMP #07600-00-00-013B0 EACH CONTAIN A BUILDING SITE THAT COMPLIES WITH SECTION 4.2.1 OF THE ALBEMARLE COUNTY ZONING ORDINANCE.

**IMPERVIOUS COVER**: APPROXIMATELY 14,700 SF

**SURVEY NOTES:**

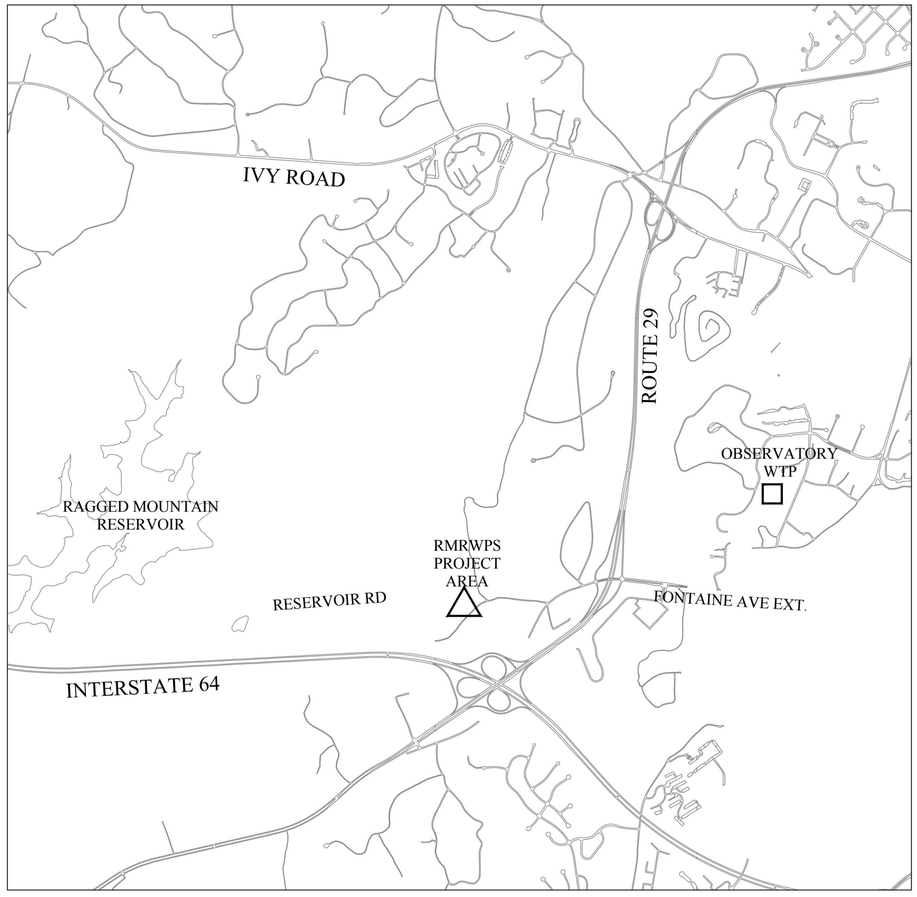
1. THE LAND BOUNDARY INFORMATION SHOWN ON THIS DRAWING WAS COMPILED FROM EXISTING LAND RECORDS AND DOES NOT REPRESENT A BOUNDARY SURVEY. NOT ALL EASEMENTS MAY BE SHOWN.

2. THIS SITE SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF RINKER DESIGN ASSOCIATES, P.C. FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND OTHER DATA WAS OBTAINED ON JULY 19, 2022, AND THAT THIS DIGITAL GEOSPATIAL DATA, INCLUDING METADATA, MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

3. UNDERGROUND UTILITY DESIGNATION WAS PERFORMED BY ACCUMARK, INC JULY 2022.

4. CONTOUR INTERVAL: 2 FOOT

5. **HORIZONTAL DATUM:** VCS 1983 - SOUTH ZONE
**VERTICAL DATUM:** NAVD88




VICINITY MAP
SCALE: 1" = 1500'

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**DRAFT PROGRESS CONCEPTUAL DRAWINGS NOT FOR CONSTRUCTION**

PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CALL
"MISS UTILITY"
OF VIRGINIA
DIAL - 811
FOR LOCATION OF UNDERGROUND UTILITIES

REVISIONS

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | | | |
| 1 | | | |


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SEAL:

DATE: JUNE 2023

JOB NUMBER: 110787002

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## EXISTING FEATURES LEGEND

POWER POLE

SURVEY CONTROL POINT

SIGN

EXISTING WATERMAIN (RECORD DRAWINGS) — W — W —

ABANDONED WATERMAIN — // — W — // — // — W — //

ASPHALT PAVEMENT

PROPERTY BOUNDARY

EXISTING EASEMENT

TREELINE

OVERHEAD UTILITY LINE — OH — OH — OH — OH —

EXISTING GROUND ELEVATION CONTOUR (MAJOR) — 570 —

EXISTING GROUND ELEVATION CONTOUR (MINOR) — 568 —

PROPOSED GROUND ELEVATION CONTOUR (MAJOR) — 570 —

PROPOSED GROUND ELEVATION CONTOUR (MINOR) — 568 —

EXISTING GRAVEL

EXISTING ASPHALT

## EROSION AND SEDIMENT CONTROL LEGEND

LIMITS OF DISTURBANCE — LOD —

SILT FENCE — SF — SF —

TEMPORARY/PERMANENT SEEDING (TS) (PS)

GRAVEL CONSTRUCTION ENTRANCE (CE)

DIVERSION DIKE (DD)

CHECK DAM (CD)

TEMPORARY CULVERT CROSSING (CC)

CULVERT INLET PROTECTION (CIP)

SEDIMENT TRAP (ST)

SEDIMENT TRAP EMBANKMENT (STE)

## GENERAL NOTES

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL COMPLY WITH THE LATEST VERSION OF THE DESIGN AND CONSTRUCTION STANDARDS AS ADOPTED BY RWSA, EXCEPT AS MODIFIED BELOW OR MODIFIED IN SPECIAL NOTES.
2. THE CONTRACTOR SHALL CONTACT THE FOLLOWING 14 DAYS PRIOR TO START OF CONSTRUCTION:

| | |
|---|---|
| A. MISS UTILITY | 811 |
| B. COMCAST | (804) 915–5370 |
| C. DOMINION VIRGINIA POWER | (804) 771–3655 |
| D. CHARLOTTESVILLE PUBLIC UTILITIES DIVISION – DEPART. OF WORKS | (434) 970–3800 |
| E. RWSA | (434) 977–2970 |
| F. ACSA | (434) 977–4511 |
| G. VDOT (CHARLOTTESVILLE RESIDENCY) | (434) 293–0011 |
| H. UVA FOUNDATION | (434) 982–3777 |

4. ALL STATIONING AND DISTANCES SHOWN ON THE DRAWINGS ARE BASED ON HORIZONTAL MEASUREMENTS.
5. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE FROM DATA AVAILABLE AT THE TIME OF DESIGN AND ARE NOT NECESSARILY COMPLETE OR CORRECT. THE CONTRACTOR IS REQUIRED TO FIELD VERIFY THE LOCATION OF ALL EXISTING FEATURES, AND TO VERIFY THE LOCATION, DEPTH, AND SIZE OF ALL UNDERGROUND UTILITIES. ALL EXISTING UTILITIES WITHIN THE EASEMENT AND/OR ALIGNMENT AREA SHALL BE TEST PITTED AND FULLY EXPOSED TO VERIFY ACTUAL LOCATION AND DEPTH FOR CROSSINGS, RELOCATIONS, CUTTING AND FILLING, CONNECTING TO, AND ALL OTHER WORK ON THE SITE. TEST PITS SHALL BE CONDUCTED IN ADVANCE (MINIMUM 30 DAYS) OF THE PIPE LAYING WORK AND ALL UTILITY INVERT INFORMATION SHALL BE PROVIDED TO THE ENGINEER TO DETERMINE IF ANY FIELD ADJUSTMENTS FOR WATER LINE ELEVATIONS NEED TO BE MADE. THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND STRUCTURES FROM DAMAGE AT ALL TIMES, WHETHER SHOWN ON THE PLANS OR NOT. DAMAGE TO ANY EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
6. ALL DISTURBED PATHWAYS, CURB & GUTTER, AND SIDEWALKS SHALL BE RESTORED TO PRE–CONSTRUCTION CONDITIONS.
7. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH ALL PERMIT REQUIREMENTS INCLUDING BUT NOT LIMITED TO VDOT LAND USE PERMITS AND COUNTY OF ALBEMARLE PERMITS.
8. STATIONS FOR APPURTENANCES SHOWN ON THE PLANS ARE INTENDED AS A GUIDE TO SHOW APPROXIMATE LOCATIONS. VALVES AND FITTINGS MAY BE SHIFTED AS DIRECTED BY THE OWNER TO THE CLOSEST WHOLE PIPE SECTIONS TO MINIMIZE FIELD CUTS. ADJUSTED STATIONING SHALL BE SHOWN ON THE AS–BUILT DRAWINGS. CRITICAL ITEMS SHALL BE INSTALLED TO THE EXACT POSITION AS DIRECTED BY THE OWNER.
9. ALL WORK IS SUBJECT TO THE INSPECTION AND ACCEPTANCE BY RWSA. NO TIE–INS TO THE EXISTING SYSTEM SHALL BE MADE WITHOUT COORDINATION AND THE PRESENCE OF RWSA STAFF. NO WORK SHALL BE CONDUCTED ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR WRITTEN PERMISSION FROM RWSA. CONTRACTOR SHALL PROVIDE A MINIMUM OF FOURTEEN (14) DAYS NOTICE TO THE OWNER PRIOR TO ANY AFTER–HOURS OR NIGHT WORK AND PRIOR TO ALL TIE–INS.
10. THE CONTRACTOR SHALL COORDINATE WORK WITH OTHERS AT ALL TIMES TO INCLUDE, BUT NOT LIMITED TO, UTILITIES AND REGULATORY AGENCIES.
11. CONSTRUCTION LIMITS ARE RESTRICTED TO THE LIMITS DESIGNATED ON THE PLANS UNLESS OTHERWISE APPROVED IN WRITING BY RWSA.
12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND SHALL BE INSTALLED PRIOR TO ANY CLEARING, GRADING, OR OTHER CONSTRUCTION.
13. ALL SLOPES AND DISTURBED AREAS ARE TO BE FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH SECTION 02 92 00 OF THE SPECIFICATIONS.
14. PAVED, RIP–RAP, OR STABILIZATION MAY BE REQUIRED WHEN IN THE OPINION OF THE ENGINEER, OR DESIGNEE, IT IS DEEMED NECESSARY IN ORDER TO STABILIZE A DRAINAGE CHANNEL.
15. THE CONTRACTOR SHALL CONFORM TO ALL APPLICABLE OSHA SAFETY REGULATIONS. ALL EXCAVATION FOR UNDERGROUND PIPE INSTALLATION MUST COMPLY WITH OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFR PART 1926).
16. REPAIR AND RESTORE ALL CULVERT AND STREAM CROSSINGS TO ORIGINAL OR BETTER CONDITIONS (AS DIRECTED BY THE ENGINEER).
17. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT (CODE OF VIRGINIA, SECTIONS 59.1–406 THROUGH 59.1–414) AND OTHER APPLICABLE STATE AND FEDERAL REGULATIONS. ANY OVERHEAD UTILITY CONFLICT RESOLUTION (INCLUDING POSSIBLE PUSH BRACES, POLE HOLDING, OR TEMPORARY RELOCATION), AS REQUIRED TO COMPLETE THE PROJECT, SHALL BE BY THE OWNER OF SUCH FACILITIES AT NO ADDITIONAL EXPENSE TO THE OWNER. CONTRACTOR MUST REVIEW PROJECT CORRIDOR FOR OVERHEAD CLEARANCE REQUIREMENTS.

## ABBREVIATIONS

| | |
|---|---|
| ACSA | ALBEMARLE COUNTY SERVICE AUTHORITY |
| CAL | CALIPER |
| CP | CONTROL POINT |
| CY | CUBIC YARDS |
| DA | DRAINAGE AREA |
| DIP | DUCTILE IRON PIPE |
| EX | EXISTING |
| EP | EDGE OF PAVEMENT |
| FF | FINISHED FLOOR |
| FT | FEET |
| HT | HEIGHT |
| INV | INVERT |
| MPH | MILES PER HOUR |
| OBWTP | OBSERVATORY WATER TREATMENT PLANT |
| PID | PROPERTY IDENTIFICATION NUMBER |
| PROP | PROPOSED |
| PVC | POLYVINYL CHLORIDE |
| RCP | REINFORCED CONCRETE PIPE |
| RMR | RAGGED MOUNTAIN RESERVOIR |
| RMRWPS | RAGGED MOUNTAIN RAW WATER PUMP STATION |
| RMRW | RAGGED MOUNTAIN RAW WATERMAIN |
| R/W | RIGHT–OF–WAY |
| RWSA | RIVANNA WATER AND SEWER AUTHORITY |
| SF | SQUARE FEET |
| TYP | TYPICAL |
| VDOT | VIRGINIA DEPARTMENT OF TRANSPORTATION |

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

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KHA PROJECT 110787002
DATE JUNE 2023
SCALE AS SHOWN
DESIGNED BY RCM
DRAWN BY MMM
CHECKED BY AMS

RIVANNA WATER & SEWER AUTHORITY
RIVANNA WATER AND SEWER AUTHORITY
695 MOORES CREEK LANE
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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**GENERAL NOTES & ABBREVIATIONS**

SHEET NUMBER
**G-101**

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## EXISTING STORM STRUCTURE INFORMATION

SYMBOL: ⌀

11. EX. INV. OUT = 495.14 (18" RCP FROM SOUTHEAST)
    11.1 POSSIBLE BURIED STRUCTURE. PIPE CHANGES FROM 15" RCP TO 18" RCP SOMEWHERE ALONG THE RUN.
12. EX. INV. OUT = 520.36 (15" RCP TO NORTHWEST)

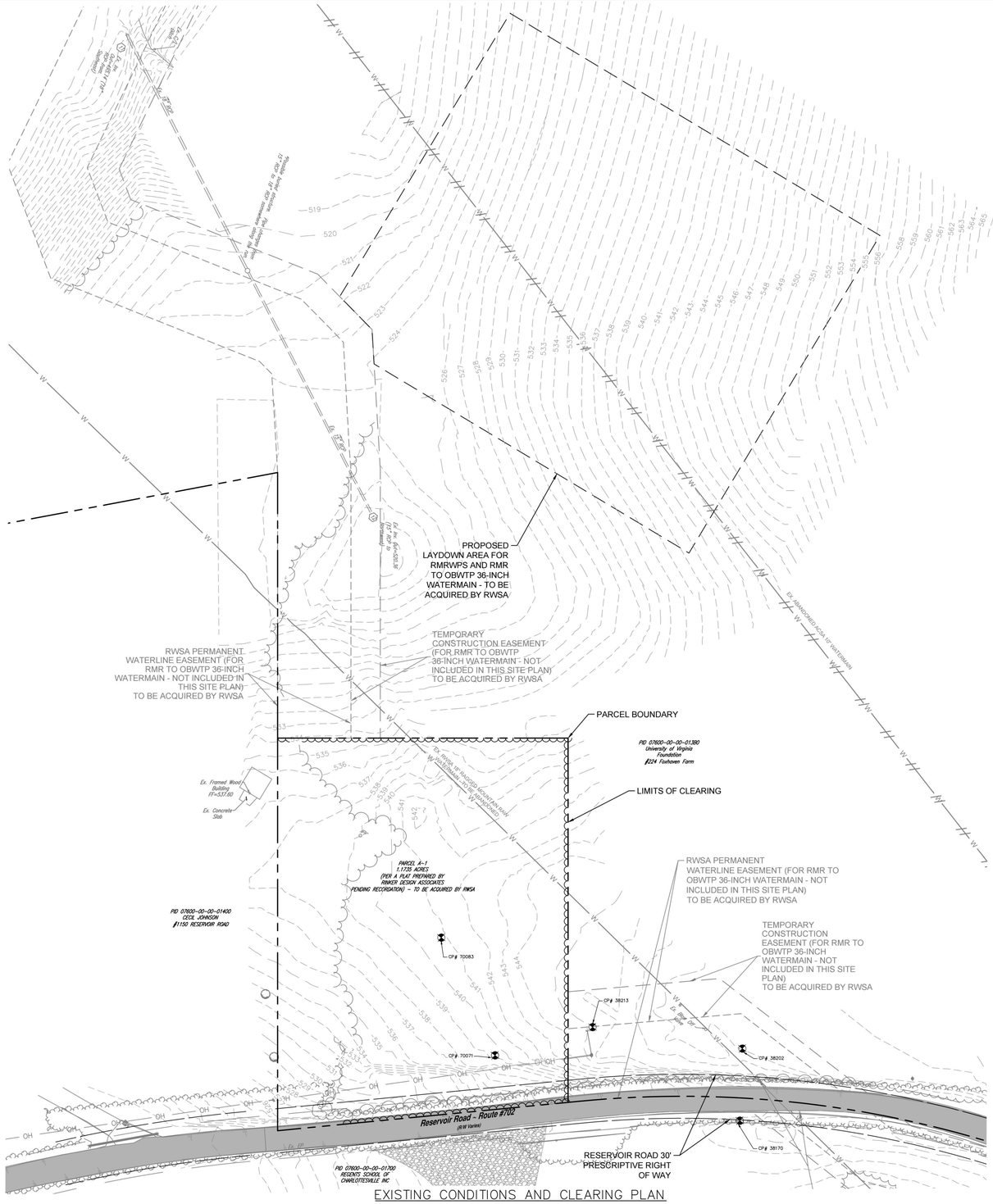
## LEGEND:

⧗ SURVEY CONTROL POINT (CP)

## SURVEY CONTROL POINT TABLE

HORIZONTAL DATUM: VCS 1983 – South Zone
VERTICAL DATUM: NAVD88

| POINT # | NORTHING | EASTING | ELEVATION | DESCRIPTION |
|---|---|---|---|---|
| 70071 | 3896777.647 | 11471740.167 | 539.57 | Fly–Spike |
| 70083 | 3896816.115 | 11471660.598 | 541.10 | Fly–Spike |
| 38202 | 3896889.071 | 11471866.841 | 548.29 | FLY |
| 38213 | 3896835.078 | 11471778.950 | 545.50 | FLY |
| 38170 | 3896850.144 | 11471896.912 | 541.12 | FLY |




EXISTING CONDITIONS AND CLEARING PLAN
1" = 40'

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| | | | |

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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**EXISTING CONDITIONS AND CLEARING PLAN**

SHEET NUMBER
**C-100**

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# STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED BY THE CONTRACTOR 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 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.
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 MEASURE AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
8. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
9. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF- PRODUCING RAINFALL 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 6:00PM.
15. BORROW, FILL OR WASTE ACTIVITY SHALL BE CONDUCTED IN A SAFE MANNER THAT MAINTAINS LATERAL SUPPORT, IN ORDER TO MINIMIZE ANY HAZARD TO PERSONS, PHYSICAL DAMAGE TO ADJACENT LAND AND IMPROVEMENTS, AND DAMAGE TO ANY PUBLIC STREET BECAUSE OF SLIDES, SINKING, OR COLLAPSE.
16. 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 OR MAY THROUGH AUGUST TO CONSIST OF GERMAN MILLET. STRAW MULCH IS TO BE APPLIED AT 80 LBS/1000 SF. ALTERNATIVES ARE SUBJECT TO APPROVAL BY THE COUNTY EROSION AND CONTROL INSPECTOR.
17. PERMANENT STABILIZATION SHALL BE LIME AND FERTILIZER, PERMANENT SEEDING, AND MULCH. AGRICULTURAL GRADE LIMESTONE SHALL BE APPLIED AT 90 LBS/ 1000 SF, INCORPORATED INTO THE TOP 4-6 INCHES OF SOIL. FERTILIZER SHALL BE APPLIED AT 1000 LBS/ACRE AND CONSIST OF A 10-20-10 NUTRIENT MIX. PERMANENT SEEDING SHALL BE APPLIED AT 180 LBS/ACRE AND CONSIST OF A THREE-WAY BLEND OF TALL FESCUE, PERENNIAL RYEGRASS, AND KENTUCKY BLUEGRASS PER SECTION 029200 OF THE SPECIFICATIONS. STRAW MULCH IS TO BE APPLIED AT 80 LBS/100 SF. ALTERNATIVES ARE SUBJECT TO APPROVED BY THE COUNTY EROSION CONTROL INSPECTOR.
18. MAINTENANCE: ALL MEASURES ARE TO BE INSPECTED WEEKLY AND AFTER EACH RAINFALL. ANY DAMAGE OR CLOGGING TO STRUCTURAL MEASURES IS TO BE REPAIRED IMMEDIATELY. SILT TRAPS ARE TO BE CLEANED WHEN 50% OF THE WET STORAGE VOLUME IS FILLED WITH SEDIMENT. ALL SEEDED AREAS ARE TO BE RESEEDED WHEN NECESSARY TO ACHIEVE A GOOD STAND OF GRASS. SILT FENCE AND DIVERSION DYKES WHICH ARE COLLECTING SEDIMENT TO HALF THEIR HEIGHT MUST BE CLEANED AND REPAIRED IMMEDIATELY.
19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE REMOVED WITHIN 30 DAYS OF FINAL SITE STABILIZATION, WHEN MEASURES ARE NO LONGER NEEDED, SUBJECT TO APPROVAL BY THE COUNTY EROSION CONTROL INSPECTOR.

# PROJECT NARRATIVE

PROJECT DESCRIPTION:

THIS PROJECT INCLUDES A RAW WATER PUMP STATION WITH YARD PIPING AND APPURTENANCES. PROJECT IS LOCATED ON PARCEL A-1, TO BE ACQUIRED BY RWSA AND PENDING RECORDATION. TOTAL DISTURBED AREA IS 3.32 ACRES.

EXISTING SITE CONDITIONS:

THE EXISTING TOPOGRAPHY WITHIN THE LIMITS OF DISTURBANCE VARIES FROM ELEVATION 523 FT TO 555 FT, AND EXTENDS ALONG OPEN SPACE AND FORESTED AREAS.

ADJACENT/OFF-SITE AREAS:

AREAS BEYOND THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS SHALL NOT BE IMPACTED OR DISTURBED BY THE DEVELOPMENT DURING OR FOLLOWING CONSTRUCTION.

SOILS:

THE USDA NATIONAL RESOURCES CONSERVATION SERVICES MAP DESCRIBES THE SOILS WITHIN THIS PROJECT AREA TO BE FINE SANDY LOAM AND CLAYEY LAND.

CRITICAL AREAS:

STAGING AREAS: THE CONTRACTOR SHALL BE DILIGENT IN MAINTAINING, AND REPAIRING AS NEEDED, THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS. IF THE EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ARE DEEMED INADEQUATE IN PREVENTING SEDIMENT TRANSPORT OFFSITE, THE CONTRACTOR SHALL INSTALL ADDITIONAL MEASURES AS NEEDED.

EROSION AND SEDIMENT CONTROL MEASURES:

THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES ARE INCLUDED IN THE DESIGN, AND ALL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).

SF: SILT FENCE
SILT FENCE SEDIMENT BARRIERS WILL BE USED WHERE THE SITE IS DRAINING AWAY FROM EXISTING STORM DRAINS IN ORDER TO FILTER ANY SEDIMENT-LADEN RUNOFF FROM SHEET FLOW.

TS: TEMPORARY SEEDING
ALL AREAS THAT HAVE NOT REACHED FINAL GRADE AND WILL BE LEFT DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR WILL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED, BUT WILL BE IN ACCORDANCE WITH VESCH STANDARDS.

PS: PERMANENT SEEDING/SODDING/FERTILIZATION
ALL DENUDED OPEN AREAS THAT HAVE REACHED FINAL GRADE WILL BE PERMANENTLY SEEDED IMMEDIATELY FOLLOWING CONSTRUCTION. PERMANENT SEEDING AND FERTILIZATION WILL FOLLOW THE PLANTING SCHEDULE PROVIDED IN THE SITE PLANS. ALL ON-SITE UNPAVED OPEN AREAS THAT HAVE REACHED FINAL GRADE WILL BE PERMANENTLY SEEDED OR SODDED AND FERTILIZED IMMEDIATELY FOLLOWING GRADING.

CE: CONSTRUCTION ENTRANCE
A CONSTRUCTION ENTRANCE WILL BE USED WHERE CONSTRUCTION TRAFFIC ON-SITE MOVES DIRECTLY TO A PUBLIC ROAD.

CC: CULVERT CROSSING
A CULVERT CROSSING WILL BE USED WHERE CONSTRUCTION TRAFFIC ON-SITE MOVES DIRECTLY OVER A STORM PIPE.

DD: DIVERSION DIKES
TEMPORARY DIVERSION DIKES WILL BE USED TO DIVERT SHEET FLOW TO THE SEDIMENT TRAP ON-SITE.

CD: CHECK DAM
CHECK DAMS WILL BE USED TO REDUCE THE VELOCITY OF THE CONCENTRATED STORM WATER AND TRAP SEDIMENT GENERATED ON-SITE AND ADJACENT AREAS.

CIP: CULVERT INLET PROTECTION
CULVERT INLET PROTECTION WILL BE USED WHERE RUNOFF FROM THE DISTURBED SITE IS DRAINING INTO EXISTING STORM SEWER CULVERTS TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW.

ST: SEDIMENT TRAP
SEDIMENT TRAP WILL BE USED TO DETAIN SEDIMENT-LADEN RUNOFF GENERATED ON-SITE AND UPSTREAM OF THE PROJECT AREA, AND ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT INTO THE SEDIMENT TRAP BEFORE BEING DISCHARGED TO SHEET FLOW.

PERMANENT STABILIZATION:

PERMANENT STABILIZATION SHALL BE PROVIDED FOR ALL DENUDED AREAS THAT HAVE REACHED FINAL GRADE AND WILL BE DORMANT MORE THAN ONE YEAR, WITHIN 7 DAYS, IN ACCORDANCE WITH THE PERMANENT STABILIZATION SEEDING SCHEDULE PROVIDED ON SHEET C-106.

STORMWATER RUNOFF CONSIDERATIONS:

THE PROJECT DOES NOT SIGNIFICANTLY ALTER THE RUNOFF CHARACTERISTICS OF THE LAND SURFACE AFTER THE COMPLETION OF CONSTRUCTION AND FINAL STABILIZATION. VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION PART II B SECTION 66.D STATES NO FURTHER WATER QUANTITY CONTROLS ARE REQUIRED IF ALL RUNOFF FROM THE SITE IS SHEET FLOW AND THE STORMWATER CONVEYANCE SYSTEM RUNOFF DOES NOT CAUSE DOWN-GRADIENT EROSION, SEDIMENTATION, OR FLOODING.

THE DISTURBED LAND WHERE WORK HAS BEEN COMPLETED IS ADEQUATELY STABILIZED ON A DAILY BASIS.

THE ENVIRONMENT IS PROTECTED FROM EROSION AND SEDIMENTATION DAMAGE ASSOCIATED WITH THE LAND-DISTURBING ACTIVITY.

THE OWNER AND/OR CONSTRUCTION ACTIVITY OPERATOR DESIGNS, INSTALLS, IMPLEMENTS, AND MAINTAINS POLLUTION PREVENTION MEASURES TO:

- MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS.
- MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS PRESENT ON-SITE TO PRECIPITATION AND TO STORMWATER.
- MINIMIZE THE DISCHARGE OF POLLUTANTS FROM SPILLS AND LEAKS AND IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES.
- PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT OF CONCRETE.
- PROHIBIT THE DISCHARGE OF WASTEWATER FROM THE WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS.
- PROHIBIT THE DISCHARGE OF FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.

MAINTENANCE:

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY, AFTER EVERY SIGNIFICANT RAINFALL (0.25" IN A 24-HOUR DURATION), AND IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR.

1. CONSTRUCTION ENTRANCE AND CULVERT CROSSING SHALL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WILL PREVENT THE CLEANING OF THE WHEELS OF CONSTRUCTION TRAFFIC. IF THE CONSTRUCTION ENTRANCE OR CULVERT CROSSING IS CLOGGED BY SEDIMENT, IT SHALL BE REMOVED AND CLEANED OR REPLACED.
2. THE SILT FENCE BARRIERS SHALL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
3. THE SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED TO ESTABLISH AND MAINTAIN A GOOD STAND OF VEGETATION.
4. THE DIVERSION DIKE SHALL BE CHECKED REGULARLY TO ENSURE FOR UNDERMINING OR ANY DAMAGE TO THE RIPRAP ALONG THE DIVERSION DIKE.
5. THE SEDIMENT TRAP SHALL BE CHECKED REGULARLY TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED, STRUCTURALLY SOUND, STONE OUTLET IS AT ITS CENTER, AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKEMENT, AND THE SEDIMENT HAS NOT ACCUMULATED TO ONE HALF OF THE DESIGN VOLUME OF THE WET STORAGE.

REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES:

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR ONCE TEMPORARY MEASURES ARE NO LONGER NEEDED. ANY TRAPPED SEDIMENT AND DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED.

EROSION AND SEDIMENT CONTROL UTILITY INSTALLATION NOTES:

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

1. MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
2. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABLILIZATION.
3. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH VESCH.
4. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION

PHASE I:

1. INSTALL CONSTRUCTION ENTRANCE, SEDIMENT TRAP, DIVERSION DIKE, STORMWATER PIPES, CULVERT CROSSING, AND CONTROLS INCLUDING, BUT NOT LIMITED TO, SILT FENCE AND INLET PROTECTION.
2. INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES AS NECESSARY AND AS DIRECTED BY THE SITE INSPECTOR.

PHASE II:

1. INSPECT AND MAINTAIN/REPLACE PHASE I SEDIMENT CONTROLS AS NECESSARY.
2. CLEAR THE WORK AREA TO NO MORE THAN THE LIMITS SHOWN ON THE CONSTRUCTION PLANS FOR THE ACTIVE WORK AREA. APPLY TEMPORARY SEEDING IN ACCORDANCE WITH THE SEEDING SCHEDULE INCLUDED ON SHEET C-106.
3. BEGIN CONSTRUCTION WITHIN THE ACTIVE WORK AREA. INSTALL YARD PIPING AND CONSTRUCT PUMP STATION.
4. INSPECT CONSTRUCTION CONTROLS AT LEAST ONCE DAILY.
5. ROUGH GRADE PROJECT SITE.
6. FINE GRADE.
7. STABILIZE ANY DENUDED AREAS. APPLY PERMANENT STABILIZATION IN ACCORDANCE WITH THE SEEDING SCHEDULE ON SHEET C-106.
8. REMOVE CONTROL MEASURES ONLY AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED AND ONLY AS APPROVED AND DIRECTED BY THE INSPECTOR.

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|---|---|---|---|
| | | | |

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| | |
|---|---|
| KHA PROJECT | 110787002 |
| DATE | JUNE 2023 |
| SCALE | AS SHOWN |
| DESIGNED BY | RCM |
| DRAWN BY | MMM |
| CHECKED BY | AMS |

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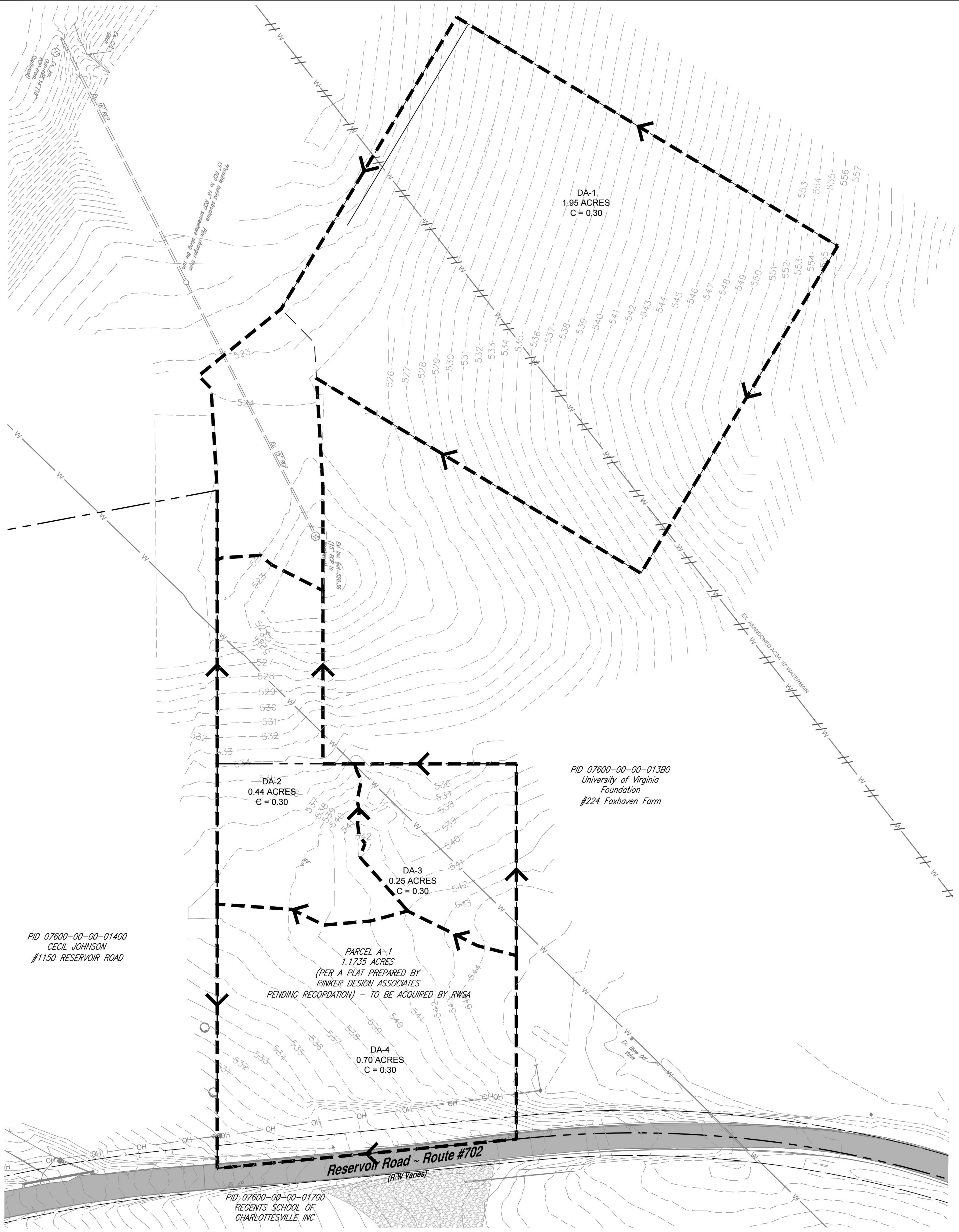
**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**EROSION AND SEDIMENT CONTROL NARRATIVE**

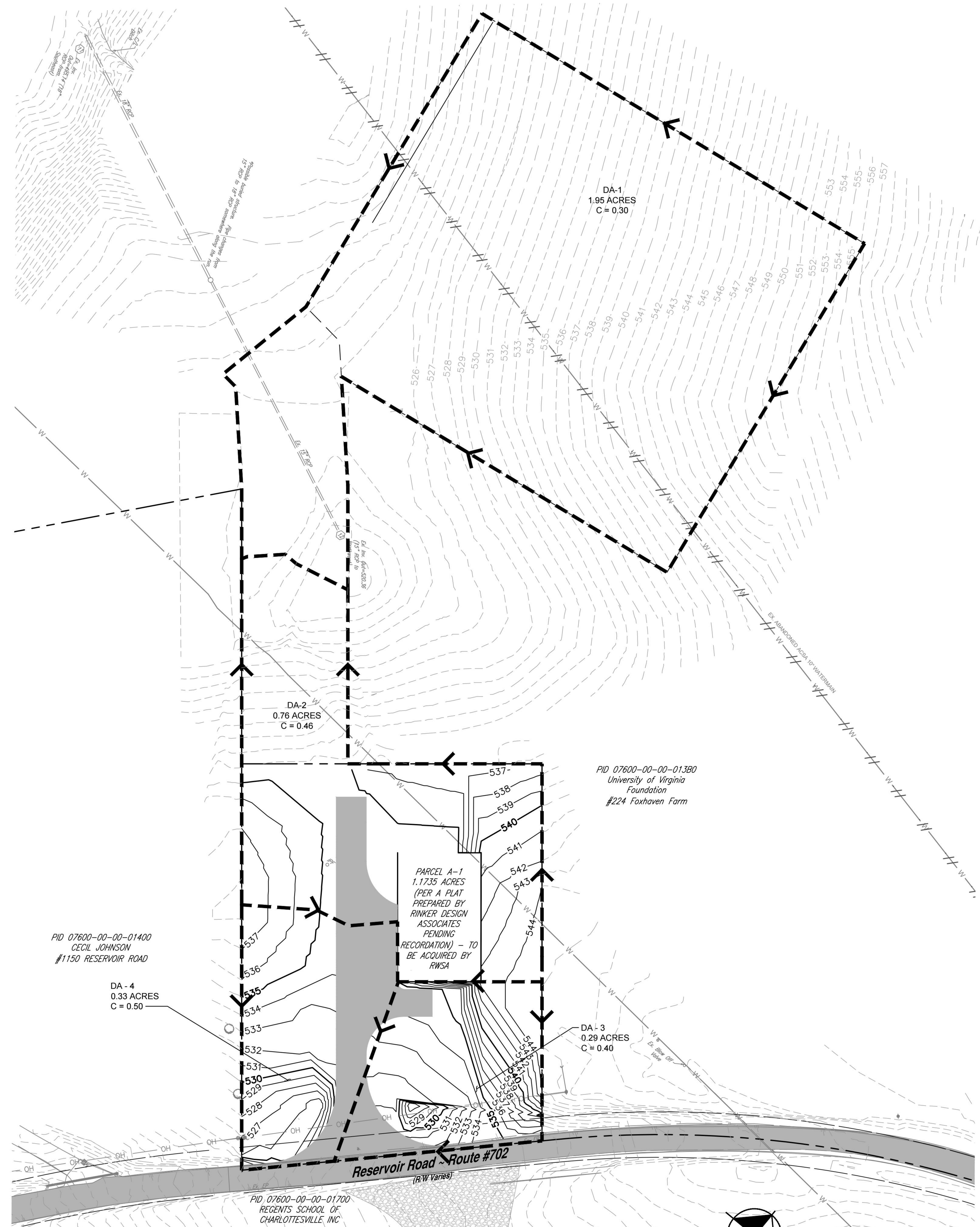
SHEET NUMBER

**C-101**

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PRE DEVELOPMENT DRAINAGE CONDITIONS
1" = 40'




POST DEVELOPMENT DRAINAGE AREAS
1" = 40'

GRAPHIC SCALE IN FEET
0 20 40 80

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|---|---|---|---|
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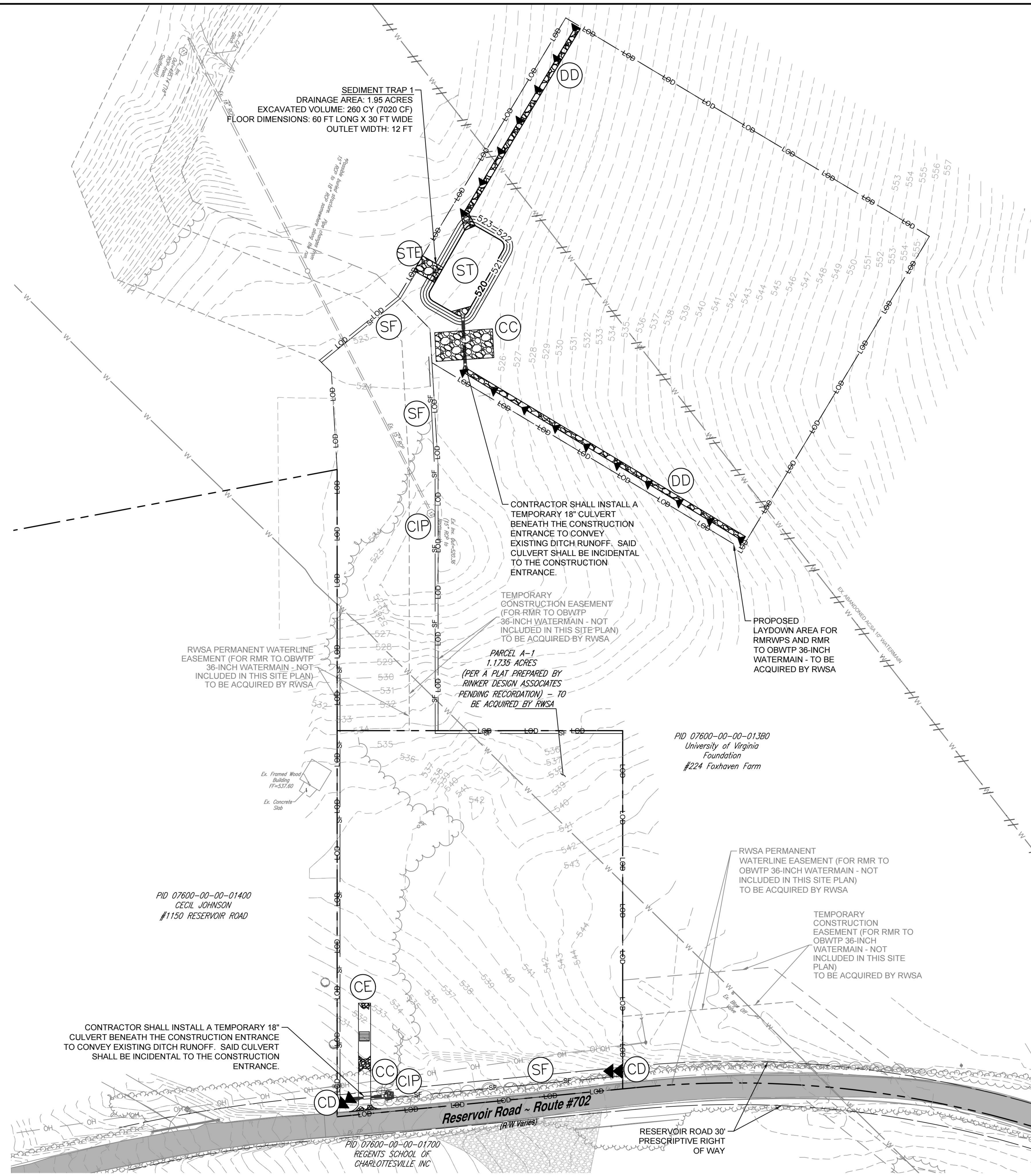
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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**DRAINAGE AREAS**

SHEET NUMBER
**C-102**

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EROSION AND SEDIMENT CONTROL PHASE I
1" = 40'

## SEDIMENT TRAP 1 CALCULATIONS

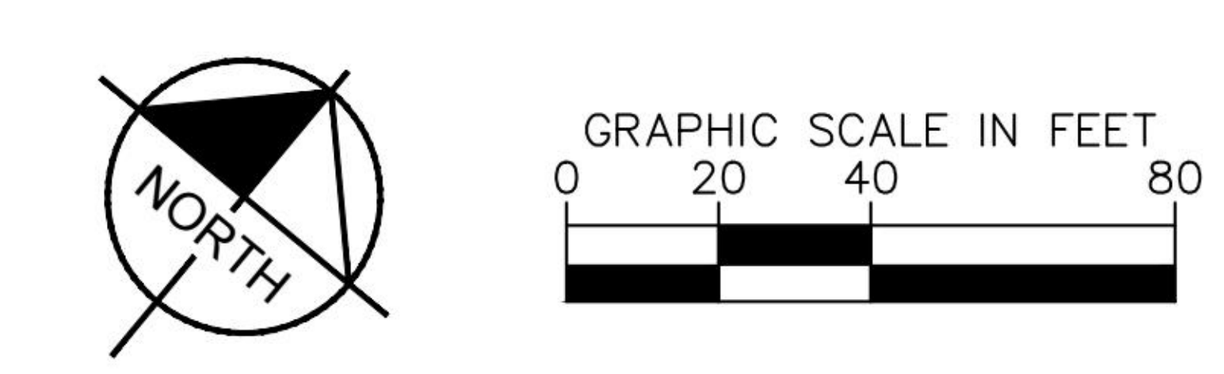
DRAINAGE AREA = 1.95 ACRES

STORAGE VOLUME = 260 CY

WET STORAGE VOLUME = 130 CY
$A_1$ = 60 FT X 30 FT = 1800 SQ FT
$D_1$ = 2.5 FT
$V_1$ = 130 CY = 0.85 X 1800 SQ FT X 2.5 FT

DRY STORAGE VOLUME = 130 CY
$A_1$ = 1800 SQ FT
$A_2$ = 2800 SQ FT
$D_2$ = 1.5 FT
$V_2$ = 130 CY = (1800 SQ FT + 2800 SQ FT)/2 X 1.5 FT

REFERENCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992




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| DESIGNED BY | RCM |
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| CHECKED BY | AMS |

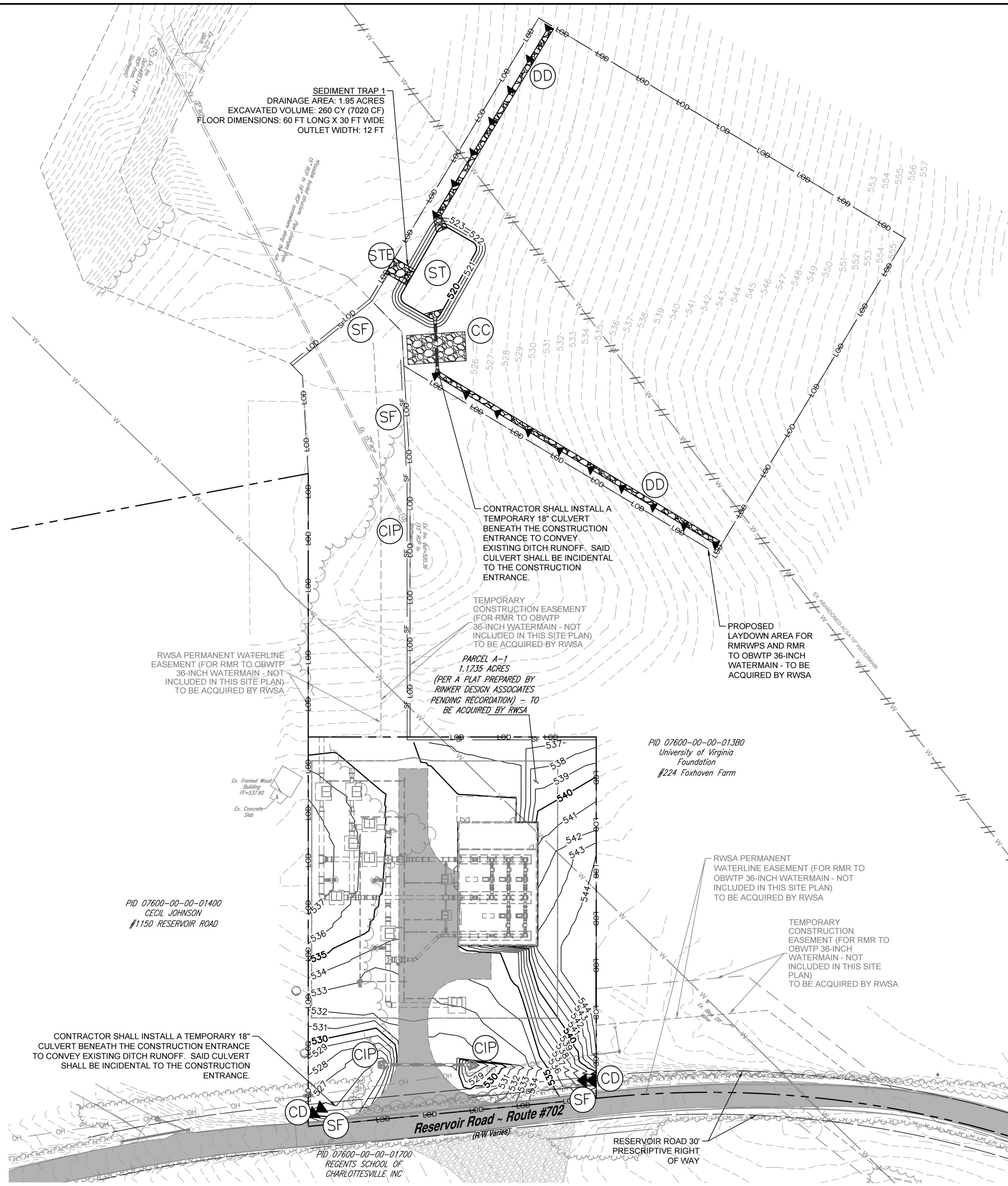
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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**EROSION AND SEDIMENT CONTROL PHASE I**

SHEET NUMBER
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EROSION AND SEDIMENT CONTROL PHASE II

1" = 40'

## SEDIMENT TRAP 1 CALCULATIONS

DRAINAGE AREA = 1.95 ACRES

STORAGE VOLUME = 260 CY

WET STORAGE VOLUME = 130 CY
$A_1$ = 60 FT X 30 FT = 1800 SQ FT
$D_1$ = 2.5 FT
$V_1$ = 130 CY = 0.85 X 1800 SQ FT X 2.5 FT

DRY STORAGE VOLUME = 130 CY
$A_1$ = 1800 SQ FT
$A_2$ = 2800 SQ FT
$D_2$ = 1.5 FT
$V_2$ = 130 CY = (1800 SQ FT + 2800 SQ FT)/2 X 1.5 FT

REFERENCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION, 1992

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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**EROSION AND SEDIMENT CONTROL PHASE II**

SHEET NUMBER

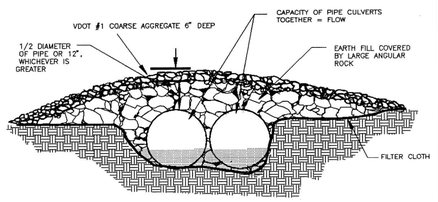
**C-104**

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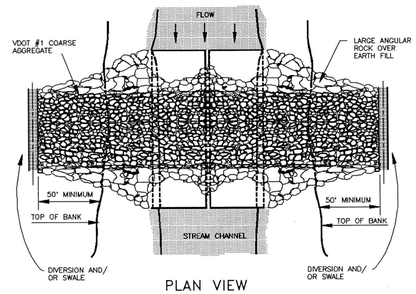
1992 3.24

CC

## TEMPORARY CULVERT CROSSING




ELEVATION



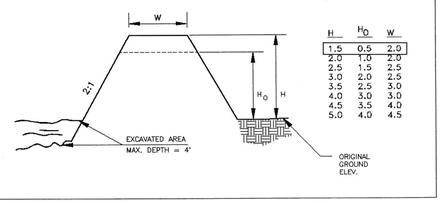

PLAN VIEW

Source: Va. DSWC Plate 3.24-2

1992 3.13

STE

## MINIMUM TOP WIDTH (W) REQUIRED FOR SEDIMENT TRAP EMBANKMENTS ACCORDING TO HEIGHT OF EMBANKMENT (FEET)

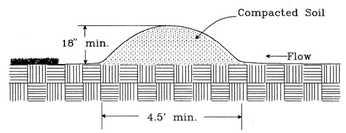



| H | $H_0$ | W |
|---|---|---|
| 1.5 | 0.5 | 2.0 |
| 2.0 | 1.0 | 2.0 |
| 2.5 | 1.5 | 2.5 |
| 3.0 | 2.0 | 2.5 |
| 3.5 | 2.5 | 3.0 |
| 4.0 | 3.0 | 3.0 |
| 4.5 | 3.5 | 4.0 |
| 5.0 | 4.0 | 4.5 |

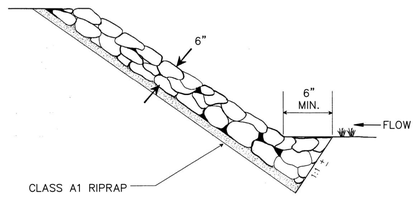
Source: Va. DSWC Plate 3.13-1

DD

## TEMPORARY DIVERSION DIKE



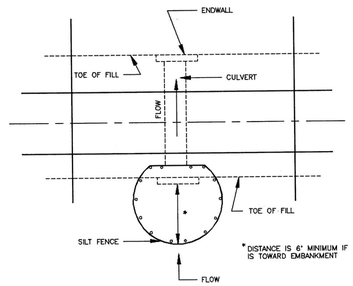

GRANULAR FILTER



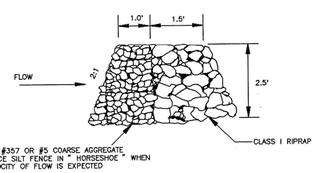

1992 3.08

CIP

## SILT FENCE CULVERT INLET PROTECTION




## OPTIONAL STONE COMBINATION **



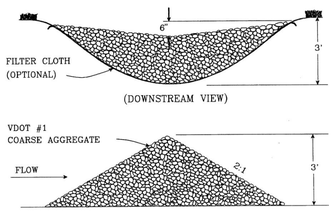

** VDOT #3, #357 OR #5 COARSE AGGREGATE TO REPLACE SILT FENCE IN " HORSESHOE " WHEN HIGH VELOCITY OF FLOW IS EXPECTED

1992 3.20

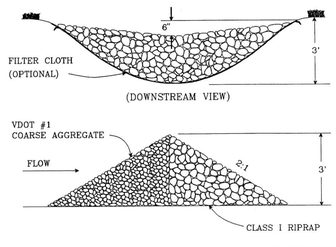
CD

## ROCK CHECK DAM

2 ACRES OR LESS OF DRAINAGE AREA:




2-10 ACRES OF DRAINAGE AREA:

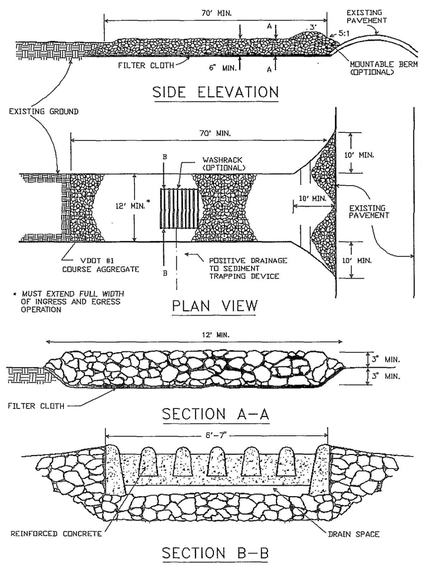



Source: Va. DSWC Plate 3.20-1

1992 3.02

CE

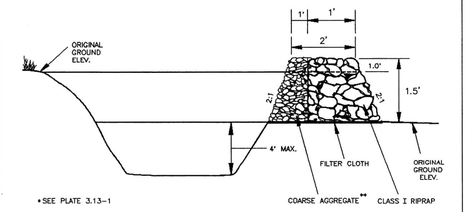
## STONE CONSTRUCTION ENTRANCE



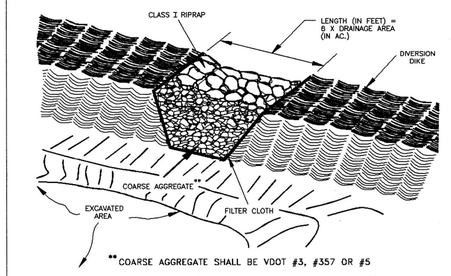

1992 3.13

ST

## TEMPORARY SEDIMENT TRAP




CROSS SECTION OF OUTLET




OUTLET (PERSPECTIVE VIEW)

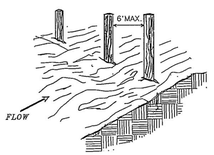
Source: Va. DSWC Plate 3.13-2

1992 3.05

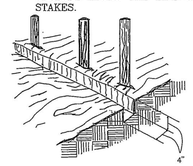
SF

## CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

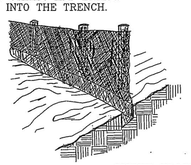
1. SET THE STAKES.



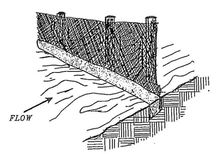

2. EXCAVATE A 4"X 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



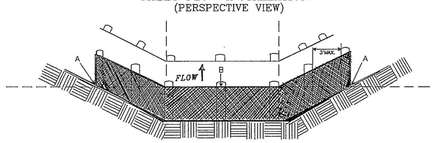

3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.




SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)




POINTS A SHOULD BE HIGHER THAN POINT B.

DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

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| SCALE | AS SHOWN |
| DESIGNED BY | RCM |
| DRAWN BY | MMM |
| CHECKED BY | AMS |

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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**EROSION AND SEDIMENT CONTROL DETAILS**

SHEET NUMBER

**C-105**

PS

**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 | 95-100% |
| - Improved Perennial Ryegrass | 0-5% |
| - Kentucky Bluegrass | 0-5% |
| High-Maintenance Lawn | 200-250 lbs. |
| - Kentucky 31 or Turf-Type Tall Fescue | 100% |
| 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.

TS

**TABLE 3.31-B**
(Revised June 2003)
**TEMPORARY SEEDING SPECIFICATIONS**
**QUICK REFERENCE FOR ALL REGIONS**

**SEED**

| APPLICATION DATES | SPECIES | APPLICATION RATES |
|---|---|---|
| Sept. 1 - Feb. 15 | 50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale) | 50 -100 (lbs/acre) |
| Feb. 16 - Apr. 30 | Annual Ryegrass (lolium multi-florum) | 60 - 100 (lbs/acre) |
| May 1 - Aug. 31 | German Millet | 50 (lbs/acre) |

**FERTILIZER & LIME**

- Apply 10-10-10 **fertilizer** at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

**NOTE:**
1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2 - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means.
3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

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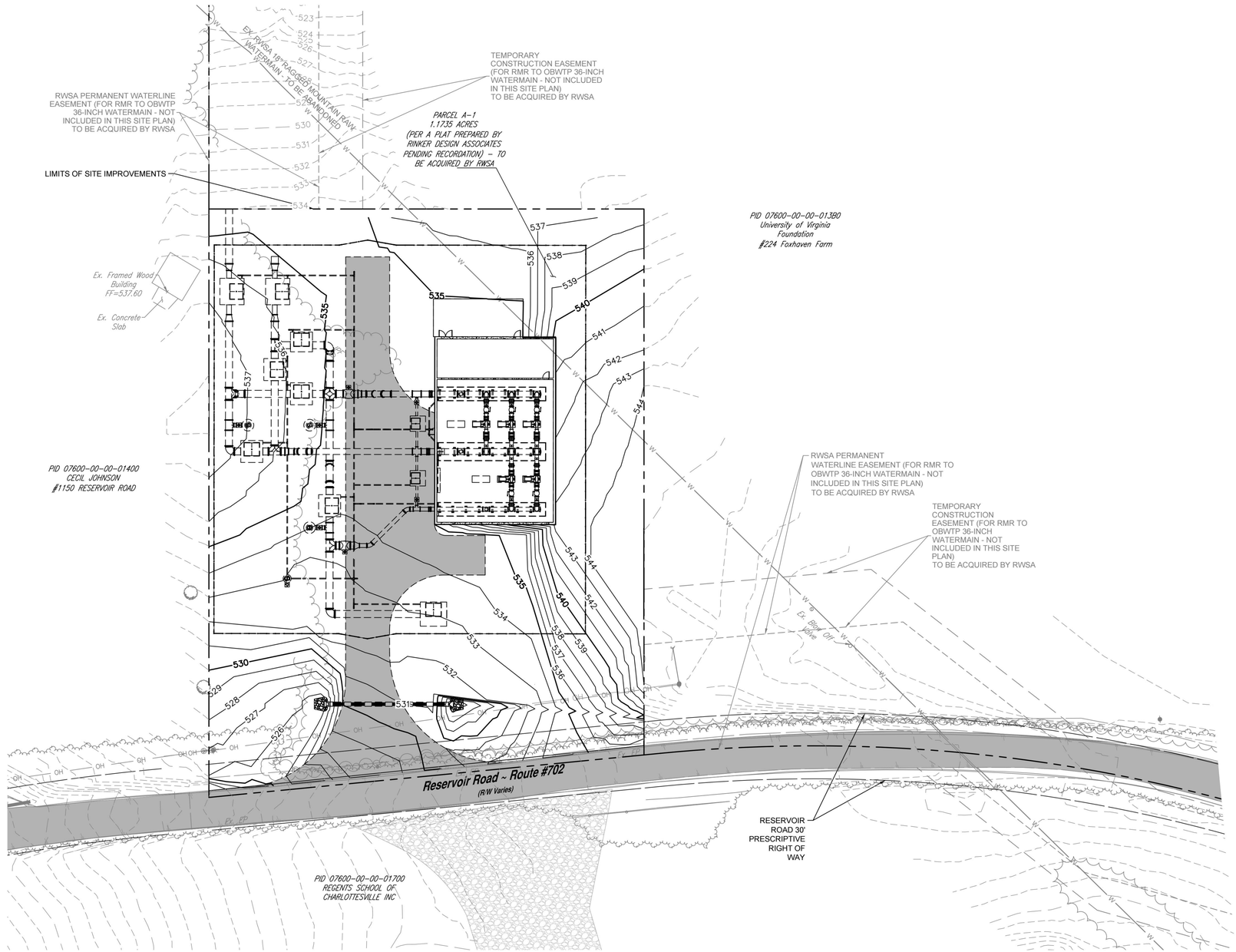
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DESIGNED BY RCM
DRAWN BY MMM
CHECKED BY AMS

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RIVANNA WATER AND SEWER AUTHORITY
695 MOORES CREEK LANE
CHARLOTTESVILLE, VIRGINIA 22902
(434) 977-2970

**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**EROSION AND SEDIMENT CONTROL DETAILS 2**

SHEET NUMBER
**C-106**




GRADING PLAN
1" = 25'

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| | |
|---|---|
| KHA PROJECT | 110787002 |
| DATE | JUNE 2023 |
| SCALE | AS SHOWN |
| DESIGNED BY | RCM |
| DRAWN BY | MMM |
| CHECKED BY | AMS |

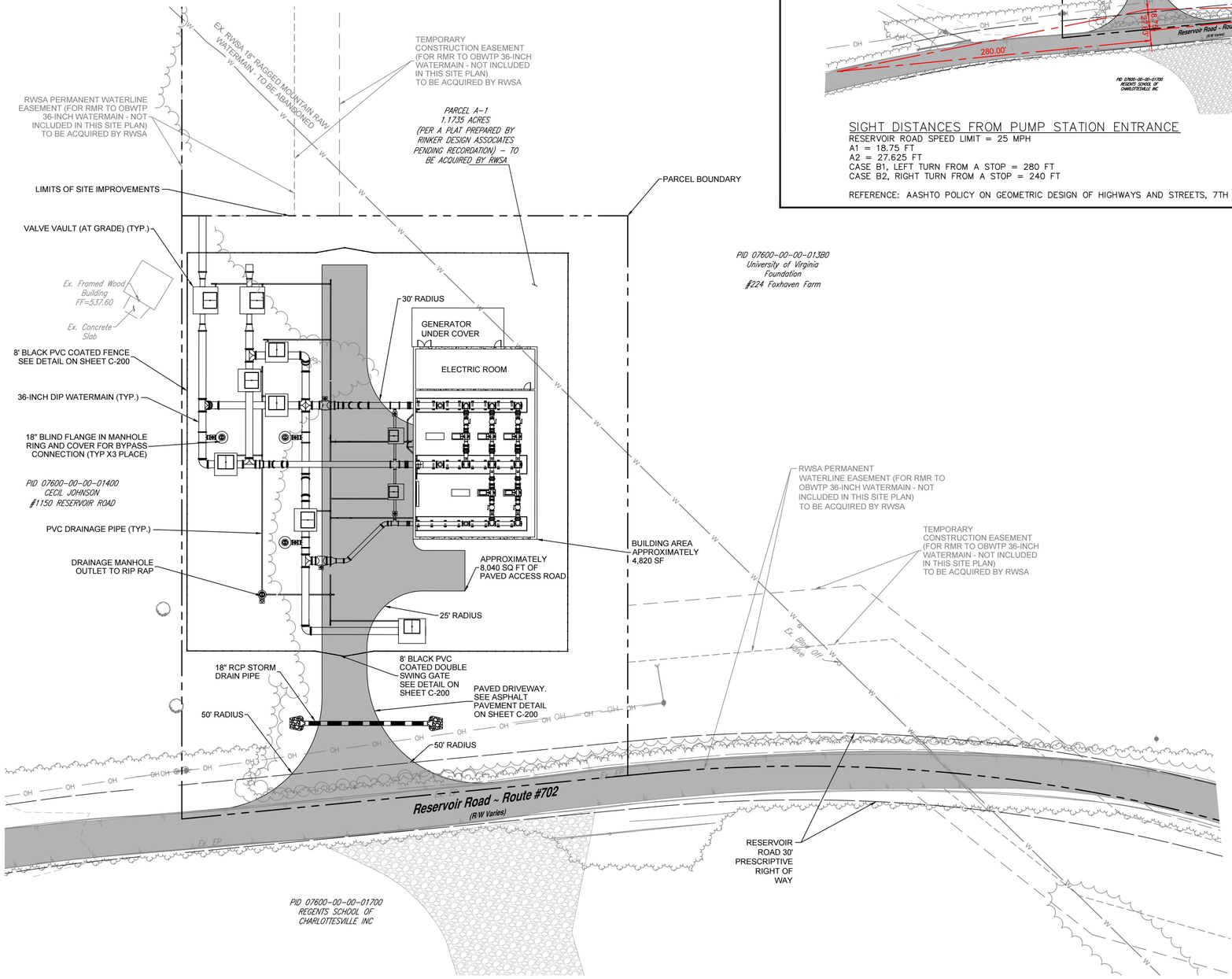
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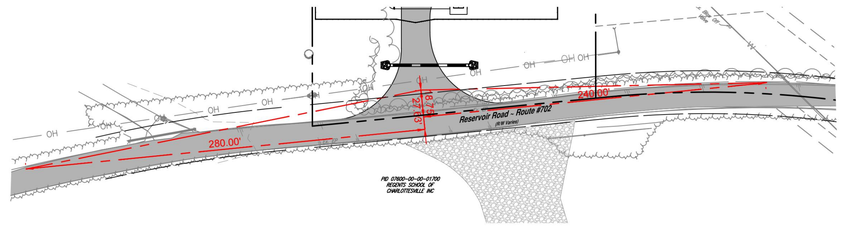
**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**GRADING PLAN**

SHEET NUMBER
**C-107**

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SIGHT DISTANCES FROM PUMP STATION ENTRANCE
RESERVOIR ROAD SPEED LIMIT = 25 MPH
A1 = 18.75 FT
A2 = 27.625 FT
CASE B1, LEFT TURN FROM A STOP = 280 FT
CASE B2, RIGHT TURN FROM A STOP = 240 FT

REFERENCE: AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 7TH EDITION, 2018

NOTE:
1.) POWER AND COMMUNICATION TO RMRWPS WILL BE PROVIDED BY OTHERS. LOCATIONS TO BE DETERMINED WITH FUTURE SUBMITTALS.

NORTH

GRAPHIC SCALE IN FEET
0 12.5 25 50

SITE PLAN
1" = 25'

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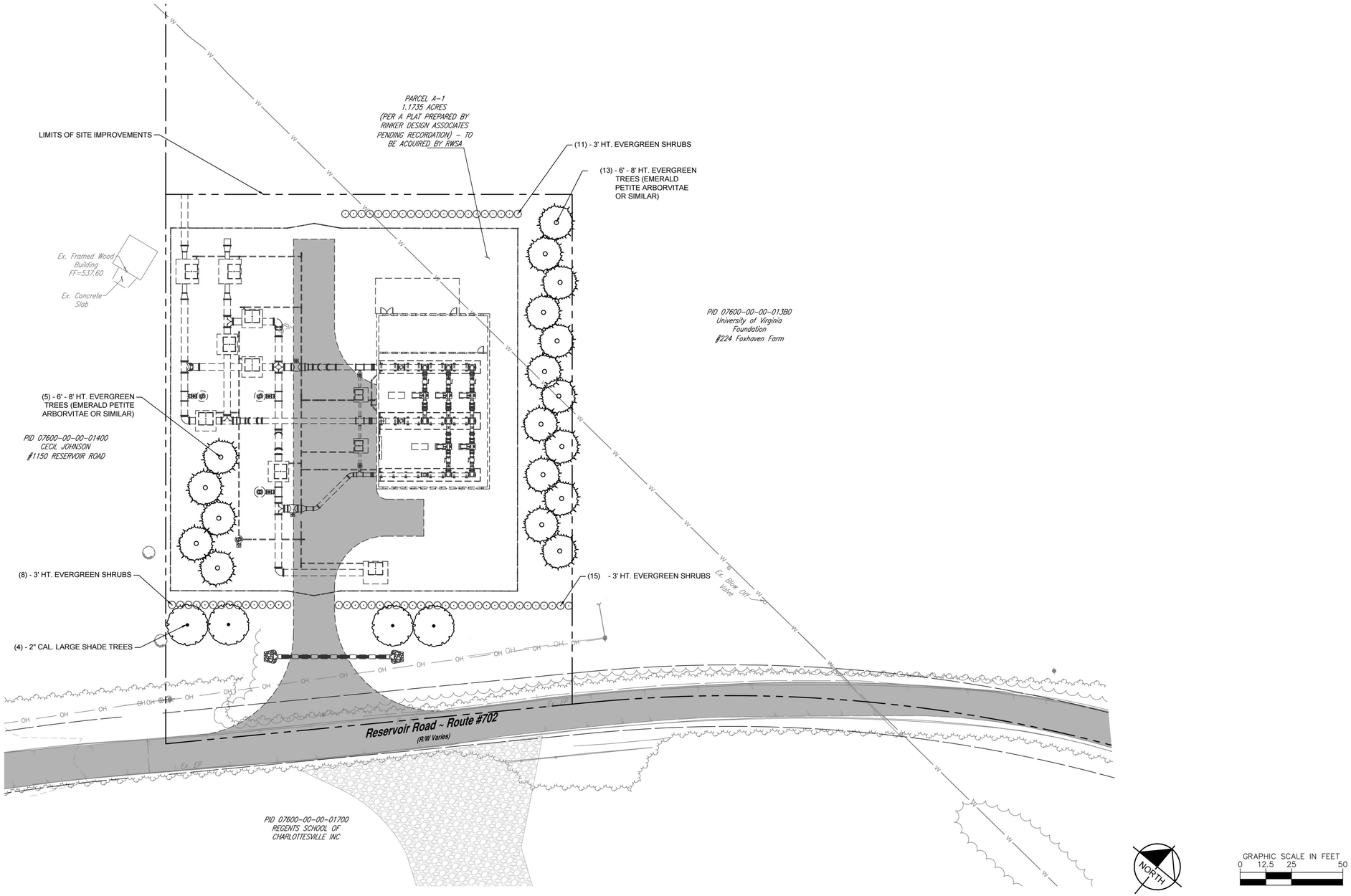
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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**SITE PLAN**

SHEET NUMBER
**C-108**

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LANDSCAPE PLAN
1" = 25'

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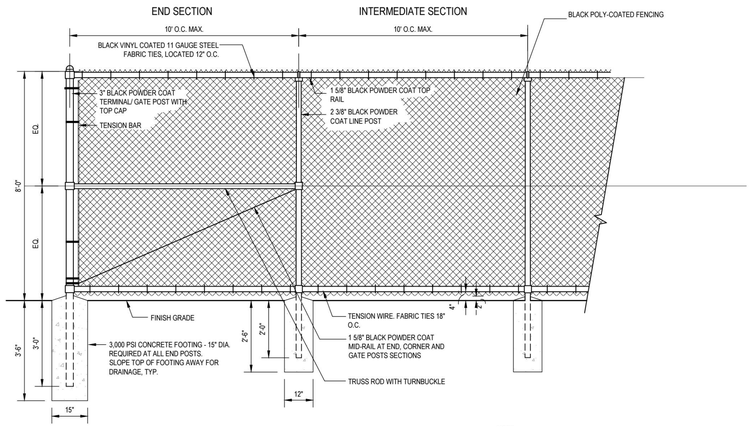
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|---|---|
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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**LANDSCAPE PLAN**

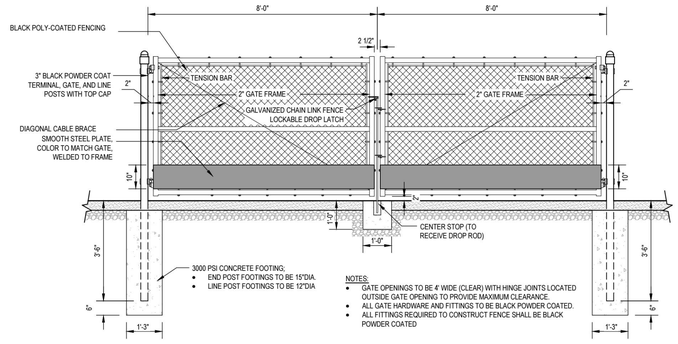
SHEET NUMBER
**C-109**




NOTE:
- SHOP DRAWING SUBMITTAL REQUIRED FROM CONTRACTOR FOR APPROVAL FOR FENCING AND GROUT
- ALL FITTINGS REQUIRED TO BE POWDER COATED BLACK

## CHAIN LINK FENCE

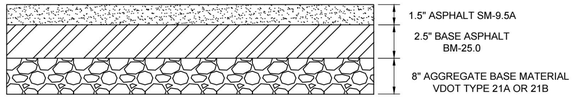
NOT TO SCALE




NOTES:
- GATE OPENINGS TO BE 4' WIDE (CLEAR) WITH HINGE JOINTS LOCATED OUTSIDE GATE OPENING TO PROVIDE MAXIMUM CLEARANCE.
- ALL GATE HARDWARE AND FITTINGS TO BE BLACK POWDER COATED.
- ALL FITTINGS REQUIRED TO CONSTRUCT FENCE SHALL BE BLACK POWDER COATED

## SWING GATE FENCE

NOT TO SCALE




## ASPHALT PAVEMENT SECTION

NOT TO SCALE

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**RAGGED MOUNTAIN RAW WATER PUMP STATION**

**DETAILS**

SHEET NUMBER

**C-200**