

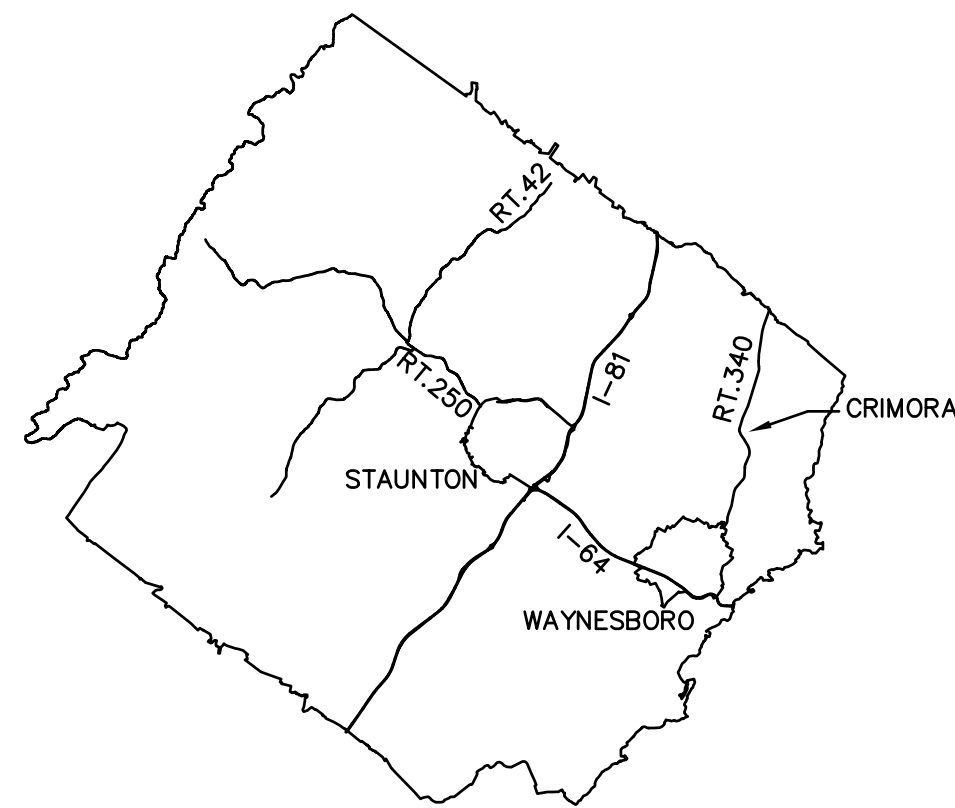
EROSION AND SEDIMENT CONTROL PLAN FOR THE

IMPROVEMENTS TO THE

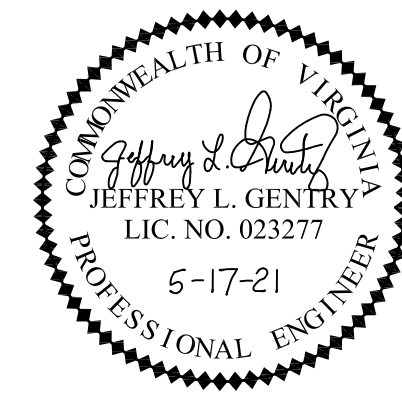
CRIMORA RECREATIONAL PARK

MIDDLE RIVER DISTRICT
AUGUSTA COUNTY, VIRGINIA

DATE: NOVEMBER 11, 2020
REVISED 05-17-2021



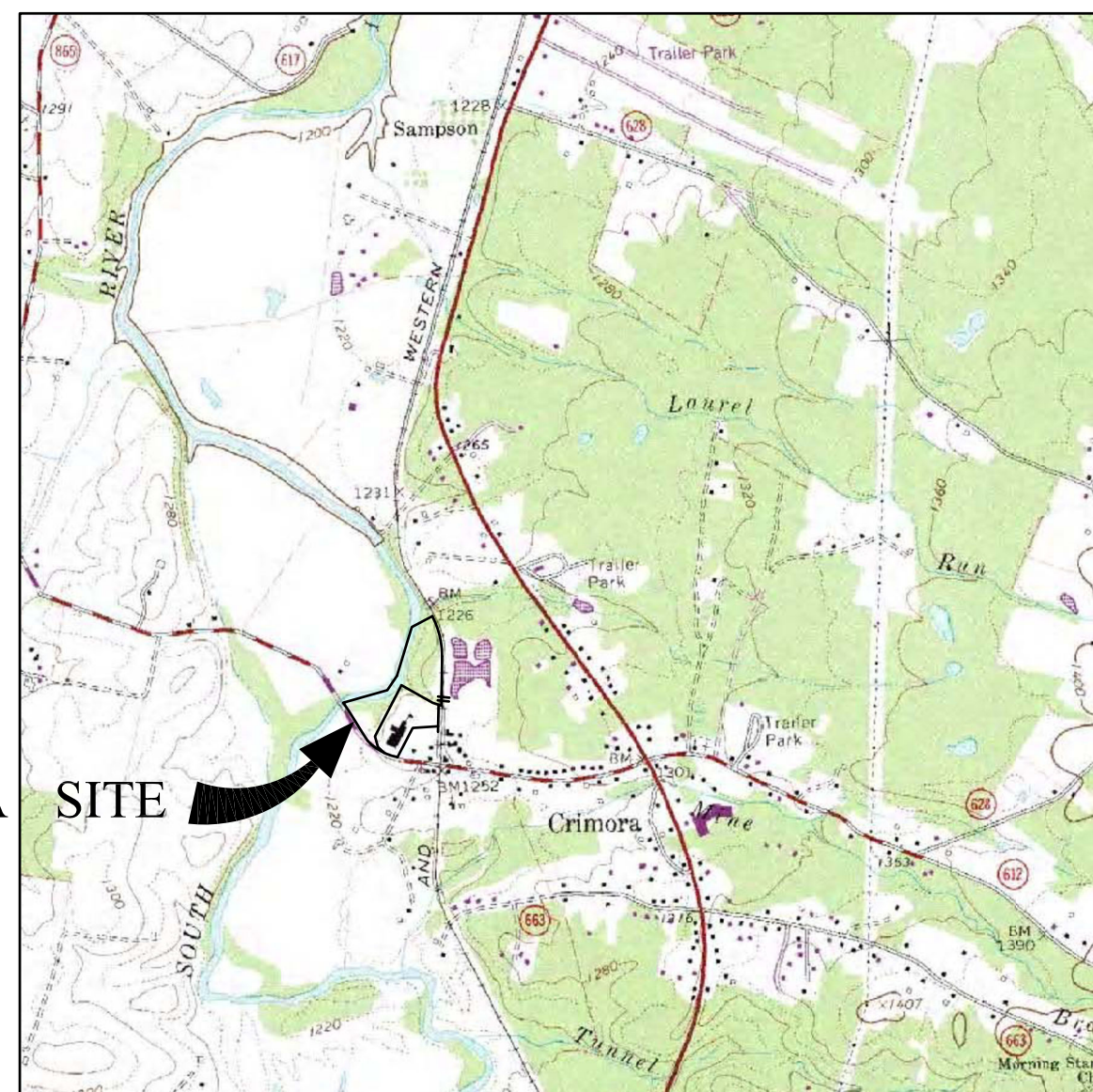
CRIMORA, VIRGINIA
AUGUSTA COUNTY, VIRGINIA
1"=10 MILES
LAT. 38.156° N 38°9'16.78"N
LONG. 78.854° W 78°51'12.12"W
02070005 SOUTH FORK SHENANDOAH
020700050705 SOUTH RIVER - PAINE RUN



EGS & Associates., Inc.

15 Terry Street
Staunton, VA. 24401
Tele: 540-885-8944
Fax: 540-885-8947

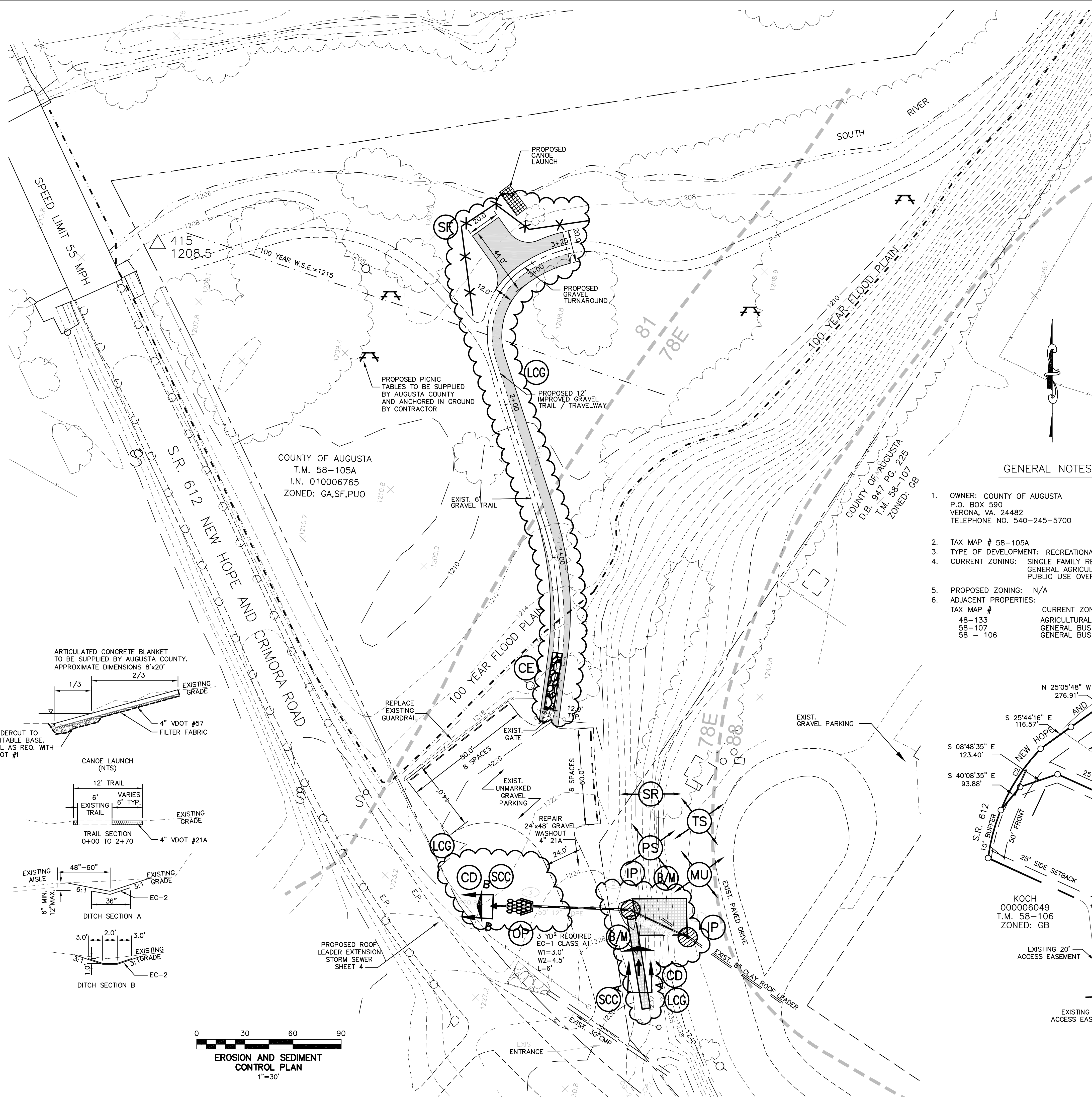
OWNER/DEVELOPER
COUNTY OF AUGUSTA
18 GOVERNMENT LANE
VERONA, VA 24482-0590
540-245-5727



LOCATION MAP
1"=2,000'

THIS SET OF PLANS CONTAINS

- E&S PLAN, LEGEND, GENERAL NOTES, SHEET 2
- E&S NARRATIVE, NOTES, SHEET 3
- E&S DETAILS, STORM DRAIN PROFILE, SHEET 4
- E&S DETAILS, SHEET 5



EROSION AND SEDIMENT CONTROL LEGEND

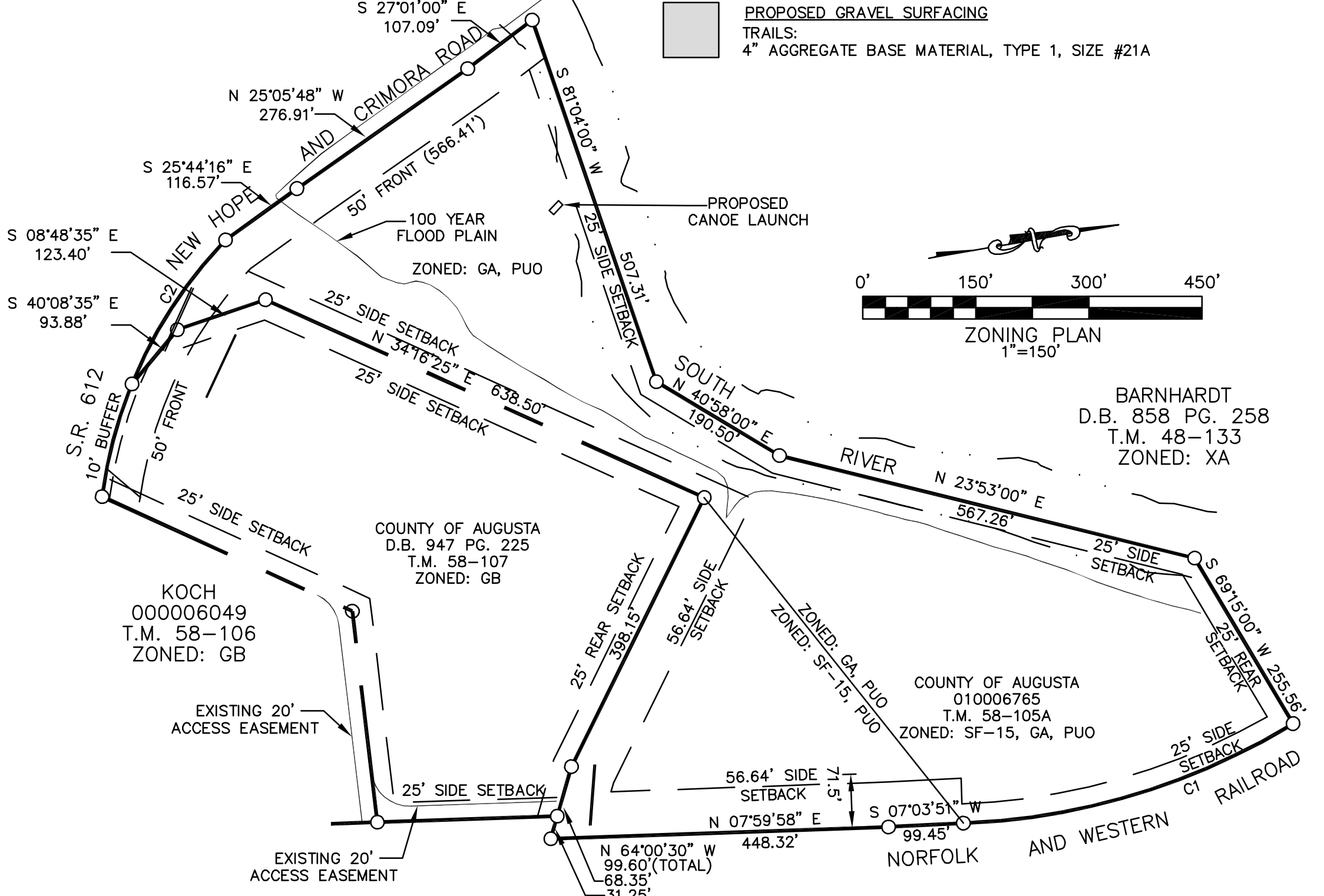
| | | | | |
|---------|------|-----|--|--|
| 1 | 3.02 | CE | | CONSTRUCTION ENTRANCE |
| 140 LF | 3.05 | SF | | SILT FENCE |
| 2 | 3.07 | IP | | STORM DRAIN INLET PROTECTION |
| 2 | 3.17 | SCC | | STORMWATER CONVEYANCE CHANNEL |
| 1 | 3.18 | OP | | OUTLET PROTECTION |
| 2 | 3.20 | CD | | CHECK DAM |
| | 3.29 | SR | | SURFACE ROUGHENING |
| 0.2 AC. | 3.31 | TS | | EROSION CONTROL TEMPORARY SEEDING |
| 0.2 AC. | 3.32 | PS | | PERMANENT SEEDING |
| 0.2 AC. | 3.35 | MU | | MULCHING |
| | 3.36 | | | BLANKETS TREATMENT-1 (EC-2) |
| | | | | BLANKETS TREATMENT-2 (EC-3, TYPE A) |
| | 3.39 | DC | | DUST CONTROL |
| | | LCG | | DISTURBED AREA=0.30 ACRES LIMITS OF CLEARING AND GRADING |

GENERAL NOTES

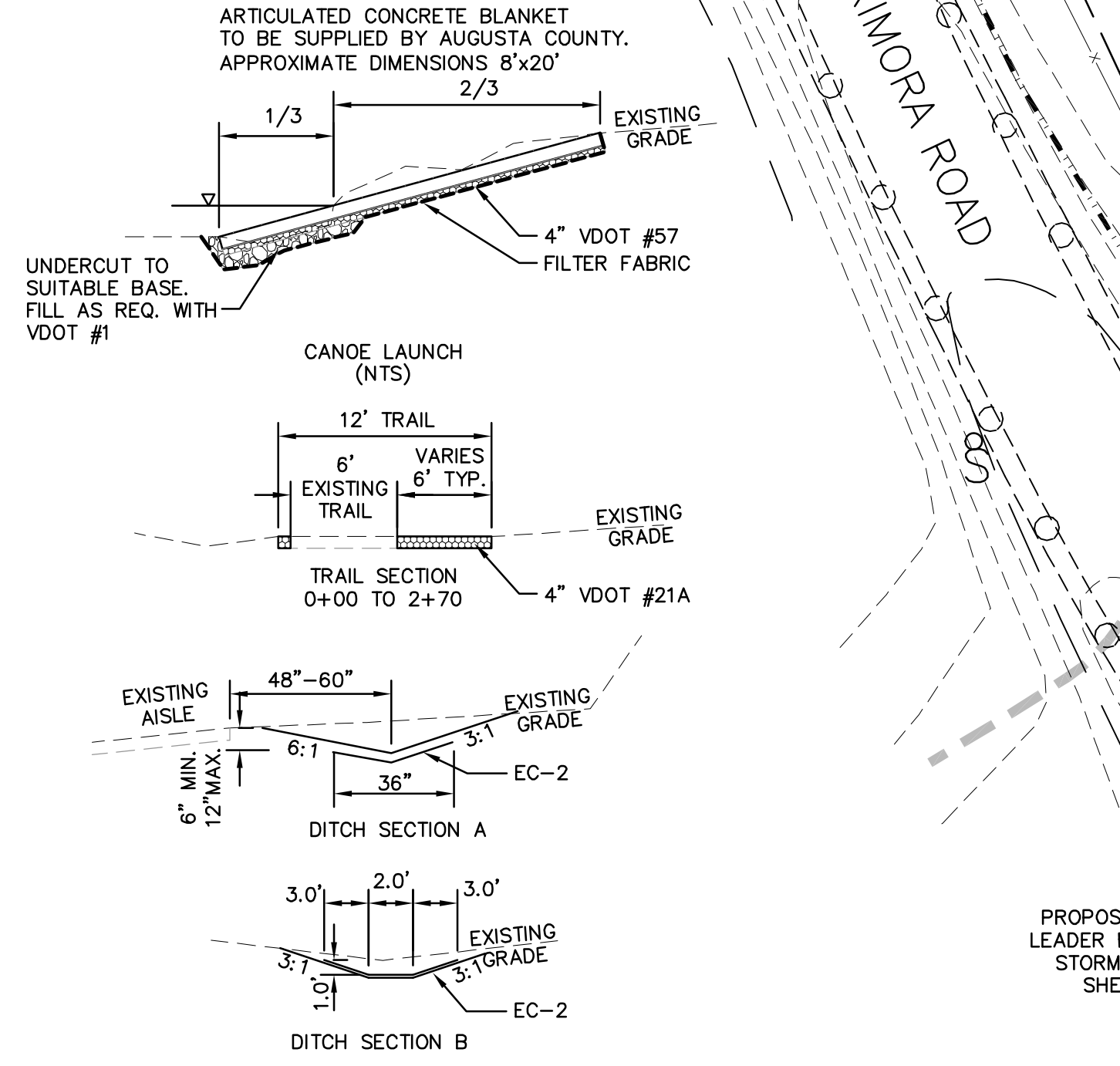
- OWNER: COUNTY OF AUGUSTA
P.O. BOX 590
VERONA, VA. 24482
TELEPHONE NO. 540-245-5700
- TAX MAP # 58-105A
- TYPE OF DEVELOPMENT: RECREATIONAL PARK
- CURRENT ZONING: SINGLE FAMILY RESIDENTIAL
GENERAL AGRICULTURAL
PUBLIC USE OVERLAY
- PROPOSED ZONING: N/A
- ADJACENT PROPERTIES:
TAX MAP # CURRENT ZONING PROPOSED ZONING
48-133 AGRICULTURAL N/A
58-107 GENERAL BUSINESS
58-106 GENERAL BUSINESS

LEGEND

| | | | | |
|----------|-------|----------|----|--|
| EXISTING | 14.38 | PROPOSED | 38 | CONTOURS |
| | 1440 | | 40 | |
| | | | 2 | STORM SEWER |
| | | | | CG-6R TRANS. CG-6 CG-2 CURB AND GUTTER |
| | | | | PROPOSED GRAVEL SURFACING |
| | | | | TRAILS: 4" AGGREGATE BASE MATERIAL, TYPE 1, SIZE #21A |



| NUMBER | DELTA ANGLE | RADIUS | ARC LENGTH | TANGENT | CHORD DIRECTION | CHORD LENGTH |
|--------|-------------|--------|------------|---------|-----------------|--------------|
| C1 | 29°22'19" | 901.00 | 461.89 | 236.14 | S 06°48'08" E | 456.85 |
| C2 | 21°39'44" | 606.62 | 229.35 | 116.06 | N 47°00'22" W | 227.99 |



EROSION AND SEDIMENT CONTROL PLAN
1"=30'

| REVISIONS | COMMENTS |
|------------|----------------------------|
| DATE | REVISED PER STAFF COMMENTS |
| 05-17-2021 | |

EGS & Assoc., Inc.
15 Terry Street
Staunton, VA. 24401
Tel: 540-865-8944
Fax: 540-865-8947

SURVEYING
ENGINEERING
GPS SERVICES



EROSION AND SEDIMENT CONTROL PLAN FOR THE IMPROVEMENTS TO CRIMORA RECREATIONAL PARK MIDDLE RIVER MAGISTERIAL DISTRICT AUGUSTA COUNTY, VIRGINIA

9VAC25-840-40. MINIMUM STANDARDS

A VESCP MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

- 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...
2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES...
3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED...
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...
5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION...
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...
7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION...
8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL...
9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED...
10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM...
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...
12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT...
13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD...
14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET...
15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED...
16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS...
17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS...
18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION...
19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION...
20. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL...
21. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA...
22. IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION...
23. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES...
24. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL...
25. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY...
26. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS...
27. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP...
28. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL...
29. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE...
30. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS...
31. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE...
32. FOR PLANS APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS...
33. COMPLIANCE WITH THE WATER QUALITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-68 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSWMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A CANOE LAUNCH SITE AT THE EXISTING PUBLIC RECREATIONAL PARK IN CRIMORA AND IMPROVE DRAINAGE AT THE RT. 612 PARKING AREA. ACCESS TO THE CANOE LAUNCH SITE WILL REQUIRE MINOR UPGRADES TO THE EXISTING TRAIL ACCOMPLISHED BY WIDENING THE EXISTING 10' TRAIL TO 14' WIDE AND PROVIDING A SMALL TURNAROUND FOR VEHICLES. APPROXIMATELY 0.35 ACRES IS TO BE DISTURBED.

THE CANOE LAUNCH ITSELF IS TO BE MADE FROM A CONCRETE ARMOR BLANKET PROVIDED BY AUGUSTA COUNTY, IT IS TO BE INSTALLED WITH 1/3 OF ITS LENGTH IN THE RIVER AND 2/3 ON THE BANK. THE AREA BENEATH THE BLANKET SHALL BE SCARIFIED, DE MUCKED, AND LEVELED WITH 4" MINIMUM #57 STONE. SHOULD CONDITIONS REQUIRE MORE THAN 8" FILL THE BALANCE IS TO BE #1 STONE.

THE IMPROVEMENT OF THE ACCESS PATH IS INTENDED TO HAVE AS LITTLE IMPACT TO THE FLOODPLAIN AS PRACTICAL. THE TOPSOIL ADJACENT TO THE EXISTING TRAIL IS TO BE REMOVED, AND THE AREA IS TO BE FILLED IN WITH COMPACTED STONE. THE 10'X30' TURN-AROUND IS NOT TO BE USED AS A PARKING AREA AND IS ONLY INTENDED TO BE USED BY ONE VEHICLE AT A TIME. EXCESS MATERIAL FROM THESE IMPROVEMENTS SHALL BE USED TO DRESS THE SLOPE ADJACENT TO THE PARKING AREA WHICH IS ABOVE THE FLOODPLAIN.

A SMALL STORM SEWER IS TO BE CREATED TO INTERCEPT RUNOFF BEFORE IT CROSSES THE PARKING AREA. THE FIRST INLET WILL BE LOCATED TO INTERCEPT AN EXISTING 8" CLAY PIPE LOCATED ON THE SLOPE. AN 8" PIPE WILL CARRY THE FLOW DOWN THE SLOPE TO ANOTHER INLET. THE SECOND INLET SHALL INTERCEPT THE FLOW AT THE EDGE OF GRAVEL. A PIPE WILL BE EXTENDED ACROSS THE AISLE TO DAYLIGHT INTO A DITCH WHICH WILL BE GRADED TO DISCHARGE INTO THE ROADSIDE DITCH.

EXISTING SITE CONDITIONS

THE CANOE LAUNCH AND ACCESS TRAIL IS TO BE LOCATED WITHIN THE GRASS FLOODPLAIN OF THE PARK. AN EXISTING WALKING PATH STARTS AT THE PARKING AREA AND TRAVERSES THE FIELD ALONG THE RIVER.

THE UPPER ACCESS AISLE IS A GRAVEL ROAD THAT STARTS AT THE RT. 612 ENTRANCE AND GOES DOWNHILL TO THE PARKING AREA. RUNOFF FROM THE UPHILL SLOPE HAS CUT A RIVULET IN THE GRAVEL SURFACE AND CONTINUES TO BE A MAINTENANCE ISSUE.

ADJACENT AREAS

THE SITE IS BORDERED ON THE SOUTH BY RT. 612, AND TO THE WEST BY THE SOUTH RIVER. THE NORTH, THE OLD SCHOOL LIES TO THE NORTH, AND EAST.

OFF-SITE AREAS

NO OFF-SITE BORROW AND/OR FILL AREA ARE ANTICIPATED FOR THE CONSTRUCTION OF THIS SITE. ANY OFF-SITE AREAS REQUIRED FOR THIS PROJECT MUST HAVE AN APPROVED EROSION AND SEDIMENT CONTROL PLAN AND A VALID LAND DISTURBING PERMIT. THE OWNER SHALL BE RESPONSIBLE FOR NOTIFYING THE COUNTY OF AUGUSTA AND THE DEQ OF THE BORROW/FILL SITE AND PROVIDING PROOF OF A VALID LAND DISTURBING PERMIT.

SOILS

7B8- THE SHERADNO COBBLY SANDY LOAM ARE SLOPING TO STEEP, WELL TO EXCESSIVELY DRAINED SOILS LOCATED ALONG TERRACE BREAKS, COLLUVIAL FANS, AND NARROW FOOT SLOPES ON MOUNTAIN UPLANDS. AREAS OF THIS SOIL ARE ELONGATED OR LONG AND WINDING. TYPICALLY, THE SURFACE LAYER IS PALE BROWN COBBLY SANDY LOAM ABOUT 6 INCHES THICK. THE SUBSOIL IS LIGHT YELLOWISH BROWN, FRIABLE GRAVELLY AND VERY GRAVELLY SANDY LOAM OR LOAMY SAND TO A DEPTH OF MORE THAN 60 INCHES. THE PERMEABILITY RATE IS 2.0-6.0 INCHES PER HOUR AND THE EROSION FACTOR IS 0.20. THE HYDROLOGIC GROUP IS B WITH A SEASONAL HIGH WATER TABLE.

81- THE TIOGA FINE SANDY LOAM IS DEEP, NEARLY LEVEL TO GENTLY SLOPING, WELL-DRAINED SOIL LOCATED ON FLOOD PLAINS ADJACENT TO MAJOR STREAMS AND RIVERS STREAMS. TYPICALLY, THE SURFACE LAYER IS DARK BROWN FINE SANDY LOAM ABOUT 9 INCHES THICK. THE SUBSOIL IS BROWN LOAM 21 INCHES THICK. THE SUBSTRATUM CONSISTS OF BROWN LOAMY FINE SAND TO A DEPTH OF 60 INCHES OR MORE. THE PERMEABILITY RATE IS 0.6-2.0 INCHES PER HOUR. THE HYDROLOGIC GROUP IS B WITH A HIGH WATER TABLE.

CRITICAL EROSION AREAS

NO CRITICAL EROSION AREAS EXIST ON THE SITE. OF THE DRAINAGE SWALES CONVEYING SURFACE RUNOFF ARE AT MINIMAL SLOPE TO REDUCE VELOCITIES. AS INDICATED, PROTECTIVE MATTING WILL BE INSTALLED TO PREVENT EROSION FROM OCCURRING. HOWEVER, CAREFUL CONSIDERATION WILL BE TAKEN TO MONITOR STRUCTURAL PRACTICES. THE PRIMARY CONCERN IS TO CONTROL RUNOFF FROM THE PROPERTY TO LIMIT DISCHARGE FROM THE SITE TO THE PRE-DEVELOPED CONDITION AND PREVENT DOWNSTREAM EROSION AND DEPOSITION OF SEDIMENT ON ADJACENT PROPERTIES.

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 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THE MINIMUM STANDARDS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

STRUCTURAL PRACTICES

- 1. TEMPORARY CONSTRUCTION ENTRANCE (3.02) - ONE NEW TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED WHERE THE EXISTING GATED ACCESS AREAS INTERSECT WITH THE EXISTING PARKING LOT. AFTER THE IMPROVEMENTS ARE COMPLETE THE ENTRANCE SHALL BE REMOVED, OBSCURED, OR INCORPORATED INTO THE SUBBASE OF THE PAVEMENT ACCESS TRAIL.
2. SILT FENCE BARRIER (3.05) - SILT FENCE BARRIERS WILL BE INSTALLED DOWNSLOPE OF AREAS WITH MINIMAL GRADES TO FILTER RUNOFF FROM SHEET FLOW AS INDICATED ON THE ATTACHED SITE PLAN.
3. STORM DRAIN INLET PROTECTION (3.07) - INLET PROTECTION WILL BE INSTALLED AT THE DROP INLETS ADJACENT TO THE EXISTING ACCESS AISLE AS SHOWN ON THE SITE PLAN. SILT-FENCE TYPE INLET PROTECTION SHALL BE USED AT INLETS 1 & 2.
4. STORMWATER CONVEYANCE CHANNEL (3.17) - STORMWATER CONVEYANCE CHANNELS WILL BE INSTALLED TO CONTROL RUNOFF FROM THE SLOPE AND DIRECT IT TO THE PROPOSED STORM DRAIN. THESE CHANNELS TO CONVEY RUNOFF FROM THE PROPOSED FORM SEWER TO THE OUTFALL IN THE RIGHT-OF-WAY.
5. OUTLET PROTECTION (3.18) - OUTLET PROTECTION WILL BE INSTALLED AT THE END OF THE ALL PIPES AS INDICATED ON THE PLAN.
6. CHECK DAM (3.20) - ROCK CHECK DAMS WILL BE INSTALLED IN THE DITCHES TO REDUCE THE VELOCITY OF CONCENTRATED FLOWS. DAMS WILL ALSO BE INSTALLED UPSLOPE OF INLETS WHICH WILL HELP INCREASE THE EFFECTIVENESS OF THE INLET PROTECTION.

VEGETATIVE PRACTICES

- 1. SURFACE ROUGHENING (3.29) - SLOPES STEEPER THAN 3:1 REQUIRE GROOVING, FURROWING, OR TRACKING. SLOPES LESS THAN 3:1 SHOULD HAVE THE SOIL SURFACE LIGHTLY ROUGHENED AND LOOSE TO A DEPTH OF 2 TO 4 INCHES PRIOR TO SEEDING.
2. TOPSOILING & STOCKPILING (3.30) - TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILES ARE TO BE STABILIZED WITH TEMPORARY VEGETATION OR TO HAVE SILT FENCE INSTALLED ALONG THE LOWER PERIMETER TO PROTECT DOWNSTREAM AREAS.
3. TEMPORARY SEEDING (3.31) - AREAS NOT BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 7 DAYS SHALL BE STABILIZED WITH A TEMPORARY SEED MIXTURE ACCEPTABLE FOR THAT TIME OF YEAR. CRIMPING, PUNCH ROLLER-TYPE ROLLERS, OR TRACK WALKING MAY BE USED TO INCORPORATE STRAW MULCH INTO THE SOIL ON SLOPES IF STRAW IS TO BE USED.
4. PERMANENT SEEDING (3.32) - AREAS BROUGHT TO FINAL GRADE SHALL BE STABILIZED WITH A PERMANENT SEED MIXTURE ACCEPTABLE FOR THE APPALACHIAN REGION. CRIMPING, PUNCH ROLLER-TYPE ROLLERS, OR TRACK WALKING MAY BE USED TO INCORPORATE STRAW MULCH INTO THE SOIL ON SLOPES IF STRAW IS TO BE USED.
5. MULCH (3.35) - STRAW MULCH OR FIBER WILL BE USED ON RELATIVELY FLAT AREAS AND WILL BE APPLIED AS A SECOND STEP IN THE SEEDING OPERATION. STRAW MULCH SHALL BE APPLIED AT 2 TONS/ACRE OR 70-90LB/1000 SQ. FT. STRAW MULCH MUST BE ANCHORED EITHER WITH A MULCH CRIMPING TOOL, OR LIQUID BINDER.
6. SOIL STABILIZATION BLANKETS & MATTING (3.36) - SOIL STABILIZATION BLANKETS WILL BE INSTALLED AS SHOWN ON THE SITE PLAN TO PREVENT EROSION FROM OCCURRING IN AREAS WITH CONCENTRATED RUNOFF OR SLOPES 3:1 OR STEEPER.
7. DUST CONTROL (3.39) - DUST CONTROL METHODS MUST BE USED TO REDUCE THE AMOUNT OF AIRBORNE DUST DURING ALL PHASES OF CONSTRUCTION WHERE SOIL IS EXPOSED OR DISTURBED.

MANAGEMENT STRATEGIES

- 1. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
2. THE TEMPORARY CONSTRUCTION ENTRANCE WILL BE THE FIRST CONTROL MEASURE TO BE INSTALLED FOLLOWED BY THE SILT FENCE.
3. AS THE ACCESS DRIVE GRADES ARE REACHED, THE CONTRACTOR SHALL STABILIZE THE PROPOSED ROAD SURFACE IMMEDIATELY WITH THE STONE AGGREGATE.
4. ALL OTHER TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING.
5. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
6. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY EROSION AND SEDIMENT CONTROLS WILL BE CLEANED UP AND REMOVED.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE IN ACCORDANCE TO STANDARD AND SPECIFICATION 3.32. PERMANENT SEEDING, OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ANY FERTILIZER AND LIME APPLICATIONS SHALL BE IN ACCORDANCE WITH SOIL TEST RESULTS. ALL SEEDED AREAS WILL BE STRAW MULCHED TO PROTECT AGAINST RILL EROSION AND TO PRESERVE SOIL MOISTURE THAT WILL ENHANCE SEED GERMINATION.

STORMWATER RUNOFF CONSIDERATIONS

THE SITE DISCHARGES TO THE SOUTH RIVER. THE NEW IMPERVIOUS AREA IS TO EXIT THE SITE VIA SHEET FLOW WITHIN THE 100-YEAR FLOODPLAIN. OUTFALL ARE WITHIN THE 100-YEAR FLOOD ELEVATION INDICATED ON FEMA PANEL 5105603900, DATED 9/28/2007. THE DRAINAGE AREA AT THE POINT OF DISCHARGE FOR THESE CHANNELS IS GREATER THAN 100 TIMES THE DRAINAGE AREA OF THE SITE. CHANNEL ADEQUACY FOR THE 2-YEAR STORM, AND 10 YEAR-STORM HAS BEEN DEMONSTRATED IN THE STORMWATER CONVEYANCE SECTION OF THE CALCULATIONS.

IN TERMS OF WATER QUALITY, THE PROPOSED SITE PLAN WILL INCREASE THE PHOSPHORUS POLLUTANT LOAD OVER THE EXISTING CONDITION. THIS SHALL BE OFFSET BY PERFORMING THE STREAM RESTORATION AND WATER QUALITY IMPROVEMENTS IN THE JOINT PERMIT APPLICATION IN THE DOOMS CROSSING AREA.

MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

- 1. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS OF WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
2. SILT FENCE AND BRUSH BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED.
3. STORM DRAIN INLET PROTECTION SHALL BE INSPECTED AFTER EVERY RAIN AND REPAIRS MADE AS NEEDED. AGGREGATE SHALL BE REPLACED OR CLEANED WHEN INSPECTION REVEALS THAT CLOGGED VOIDS ARE CAUSING PONDING PROBLEMS WHICH INTERFERE WITH ON-SITE CONSTRUCTION. SILT-FENCE TYPE INLET PROTECTION SHALL BE CHECKED FOR UNDERMINING AND STRUCTURAL INTEGRITY, AND HAVE SEDIMENT BUILDUP REMOVED WHEN THE SEDIMENT IS HALFWAY TO THE TOP OF THE BARRIER. BLOCK-AND-GRAVEL TYPE INLET PROTECTION SHALL BE REPLACED WHEN THE GRAVEL BECOMES CLOGGED WITH SEDIMENT. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS. TEMPORARY STRUCTURES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. STORMWATER CONVEYANCE CHANNELS:
4.1. GRASS LINED CHANNELS - DURING THE INITIAL ESTABLISHMENT, GRASS LINED CHANNELS SHOULD BE REPAIRED IMMEDIATELY AND RE-ESTABLISHED IF NECESSARY. AFTER GRASS HAS BECOME ESTABLISHED, THE CHANNEL SHOULD BE CHECKED PERIODICALLY TO DETERMINE IF THE GRASS IS WITHSTANDING FLOW VELOCITIES WITHOUT DAMAGE. IF THE CHANNEL IS TO BE MOWED, IT SHOULD BE DONE IN A MANNER THAT IT WILL NOT DAMAGE THE GRASS.
4.2. RIPRAP-LINED CHANNELS - RIPRAP LINED CHANNELS SHOULD BE CHECKED PERIODICALLY TO ENSURE SCOUR IS NOT OCCURRING BENEATH FABRIC UNDERLINING OF THE RIPRAP LAYER. THE CHANNEL SHOULD ALSO BE CHECKED TO DETERMINE THE STONES ARE NOT DISLOGGED BY LARGE FLOWS.
4.3. IF SEDIMENT IS DEPOSITED IN A GRASS-LINED CHANNEL, IT SHOULD BE REMOVED PROMPTLY TO PREVENT DAMAGE TO THE GRASS. SEDIMENT DEPOSITED IN A RIPRAP CHANNEL SHOULD BE REMOVED WHEN IT REDUCES THE CAPACITY OF THE CHANNEL.
5. THE OUTLET PROTECTION WILL BE INSPECTED AFTER EACH RAINFALL EVENT TO INSURE NO EROSION IS OCCURRING. ANY DAMAGED AREAS WILL BE REPAIRED TO ORIGINAL CONDITION AS NEEDED.
6. CHECK DAMS SHALL BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EVERY RUNOFF PRODUCING STORM EVENT. SEDIMENT SHOULD BE REMOVED WHEN IT REACHES ONE-HALF OF THE ORIGINAL HEIGHT OF THE MEASURE. REGULAR INSPECTIONS SHALL BE MADE TO INSURE THE CENTER OF THE DAM IS LOWER THAN THE EDGES. EROSION CAUSED BY HIGH FLOWS AROUND THE EDGES OF THE DAM SHOULD BE CORRECTED IMMEDIATELY.
7. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.
8. SOIL STABILIZATION BLANKETS SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY FOLLOWING RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. ANY DISLOCATION OR OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. CONTINUE TO MONITOR THESE AREAS UNTIL THE AREA IS PERMANENTLY STABILIZED, AT THAT TIME ANNUAL INSPECTION SHOULD BE ADEQUATE.

CALCULATIONS

THE STORM SEWER HAS BEEN SIZED TO ACCOMMODATE THE EXISTING ROOF LEADER EXTENSION BY BEST ENGINEERING PRACTICE TO MATCH THE CAPACITY OF THE EXISTING STORM DRAIN. DITCHES ARE SIZED TO CONVEY THE FLOW FROM WITHIN THE WATERSHED OF THE CONVEYANCE SYSTEM.

RESPONSIBLE LAND DISTURBER

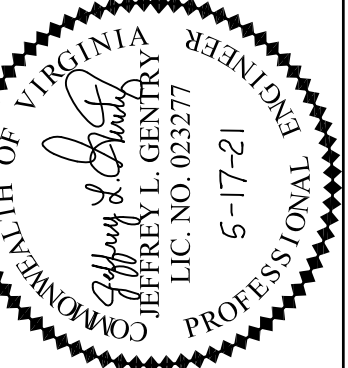
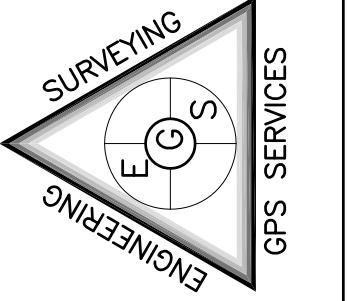
NAME:
PHONE NUMBER:
CERTIFICATE #
EXPIRES:

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 9-VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS.
ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON 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 REVIEWING AUTHORITY.
ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN REVIEWING AUTHORITY.
ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED.
ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

Table with 2 columns: REVISIONS, COMMENTS. Row 1: DATE 05-12-2021, REVISED PER STAFF COMMENTS.

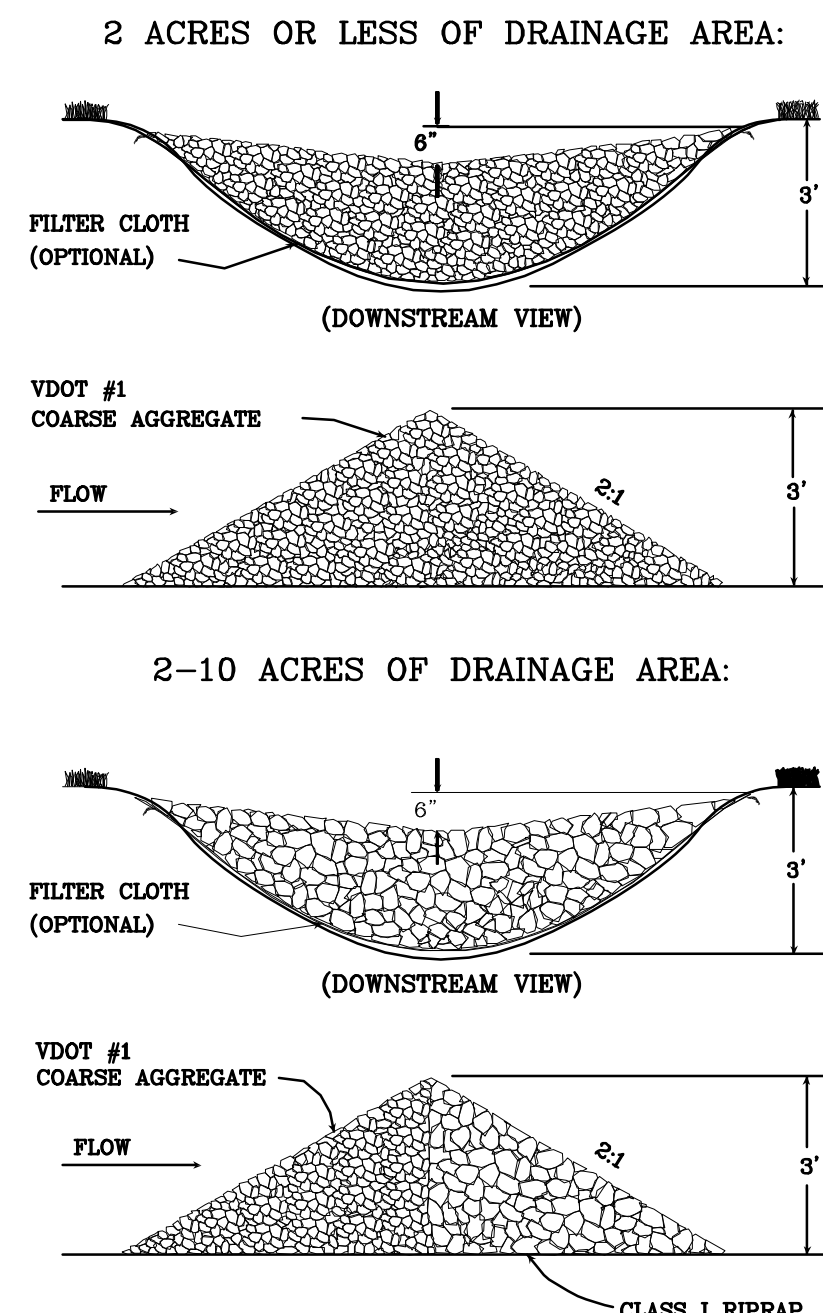
EGS & Assoc., Inc. 15 Terry Street Staunton, VA 24401 Tel: 540-865-8944 Fax: 540-865-8947



EROSION AND SEDIMENT CONTROL PLAN FOR THE IMPROVEMENTS TO CRIMORA RECREATIONAL PARK MIDDLE RIVER MAGISTERIAL DISTRICT AUGUSTA COUNTY, VIRGINIA

Table with 2 columns: DATE: NOVEMBER 11, 2020; SCALE: AS NOTED; 3 OF 5

ROCK CHECK DAM

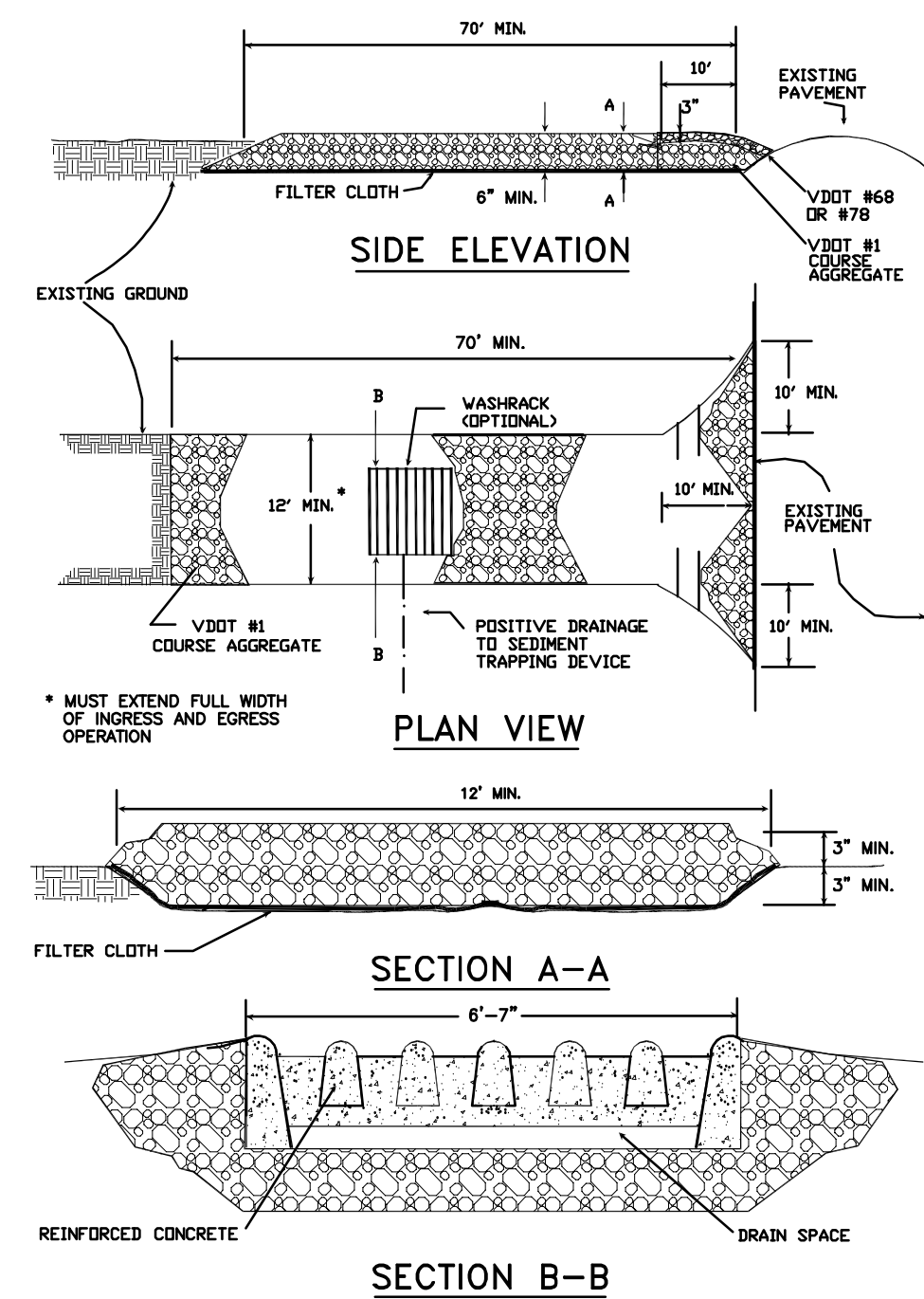


SOURCE: VA. DSWC

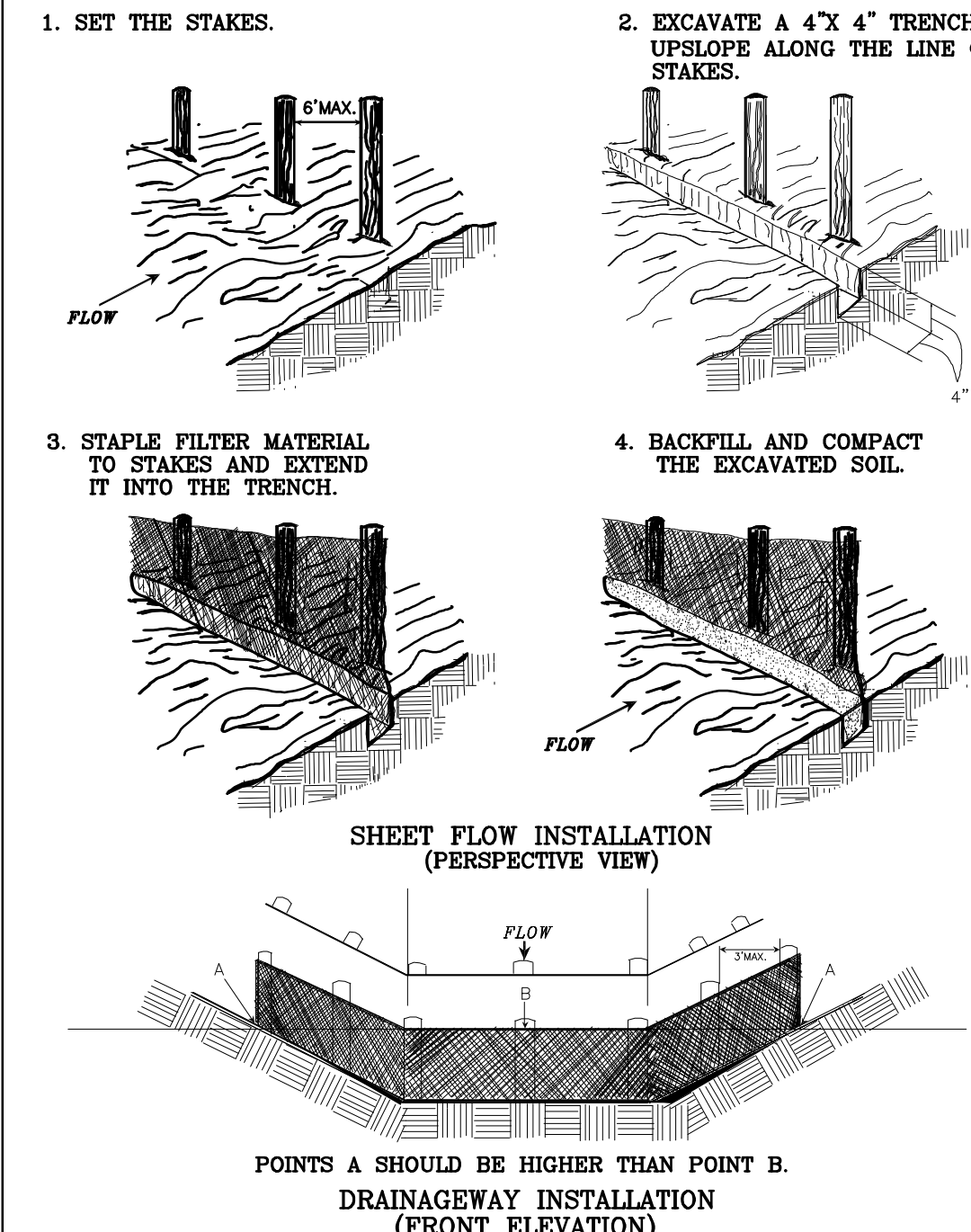
PLATE 3.20-15 SOURCE: ADAPTED FROM 1983 Maryland Standards for Soil erosion and Sediment Control, and Va. DSWC

PLATE 3.02-1

STONE CONSTRUCTION ENTRANCE



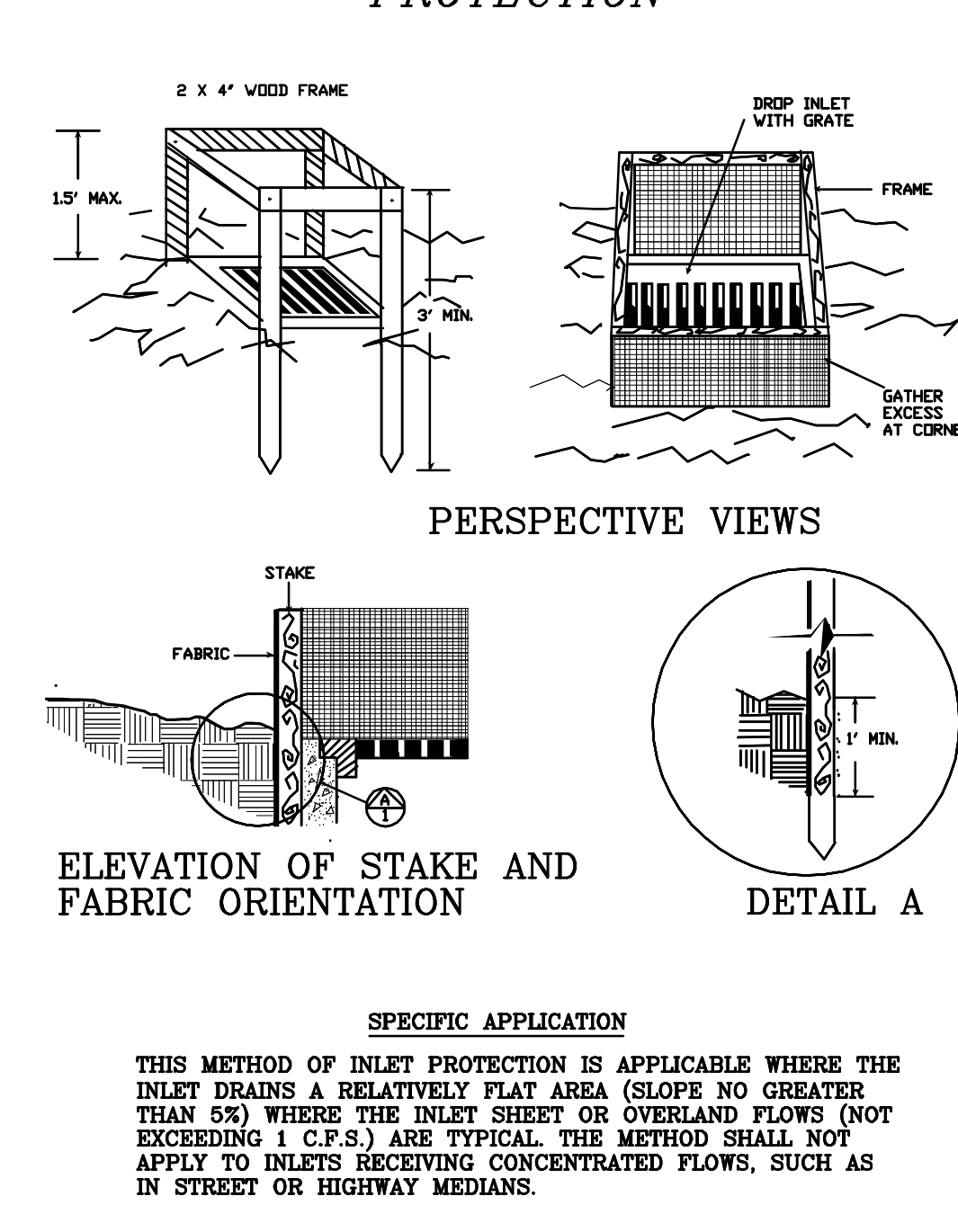
CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, VA. DSWC

PLATE 3.05-2

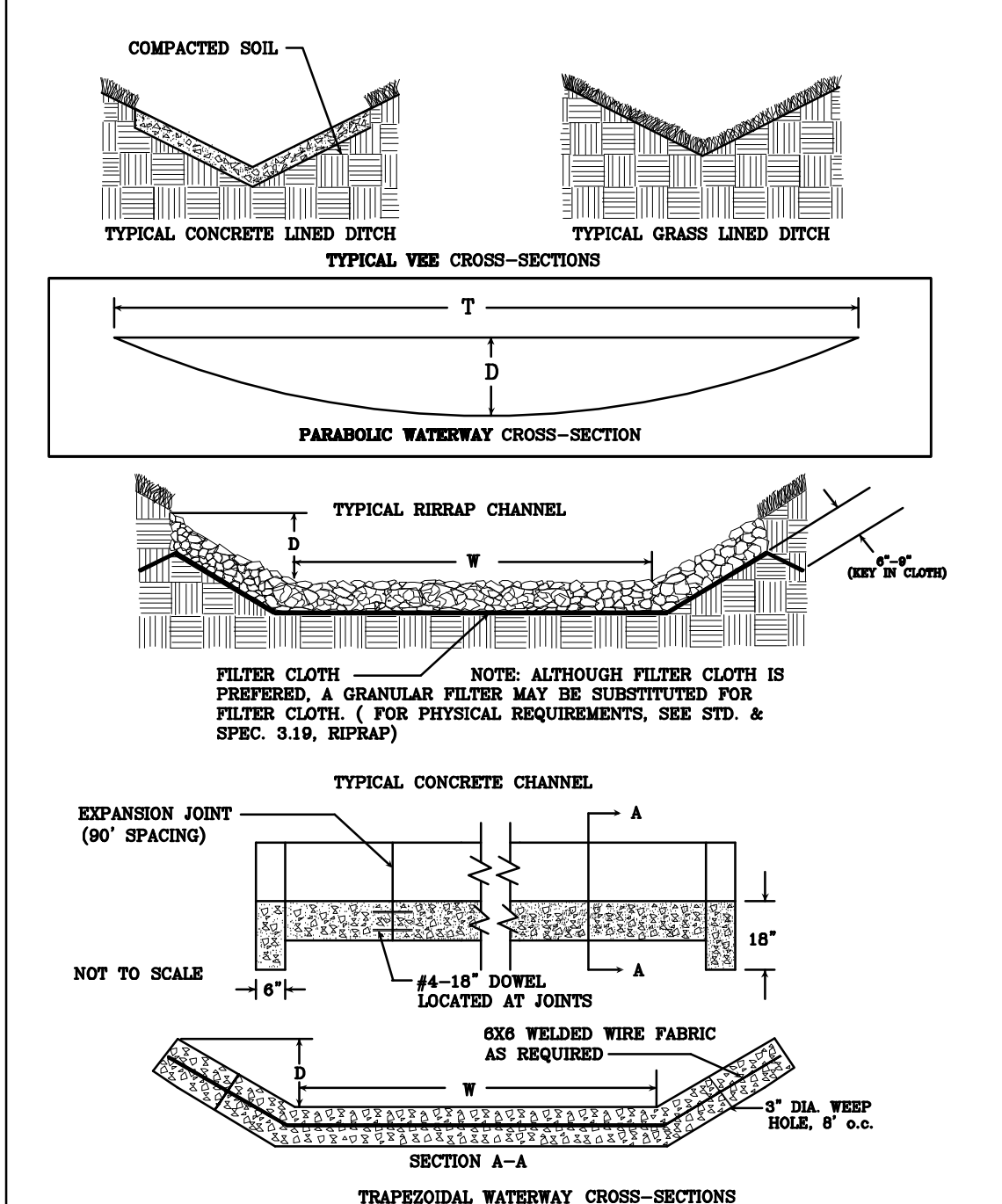
SILT FENCE DROP INLET PROTECTION



SOURCE: N.C. Erosion and Sediment Control Planning and Design Manual, 1988

PLATE 3.07-1

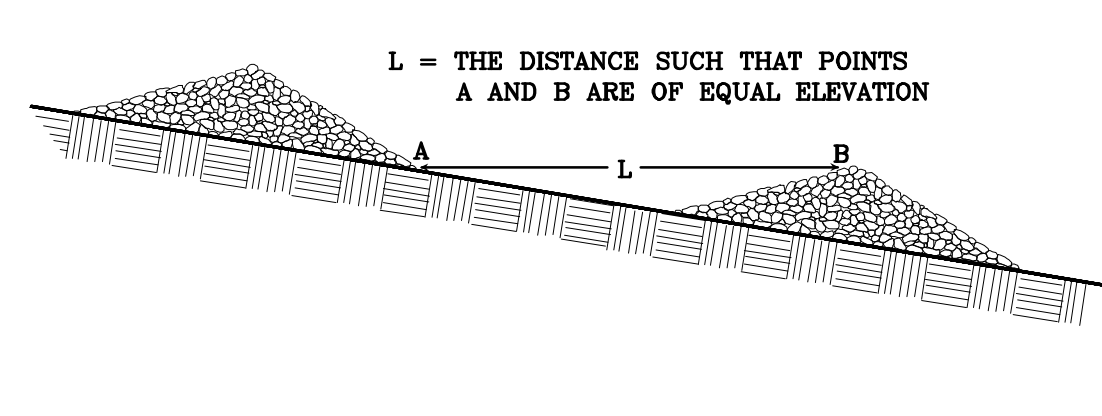
TYPICAL WATERWAY CROSS-SECTIONS



SOURCE: VA. DSWC

PLATE 3.17-1

SPACING BETWEEN CHECK DAMS



SOURCE: VA. DSWC

PLATE 3.20-2

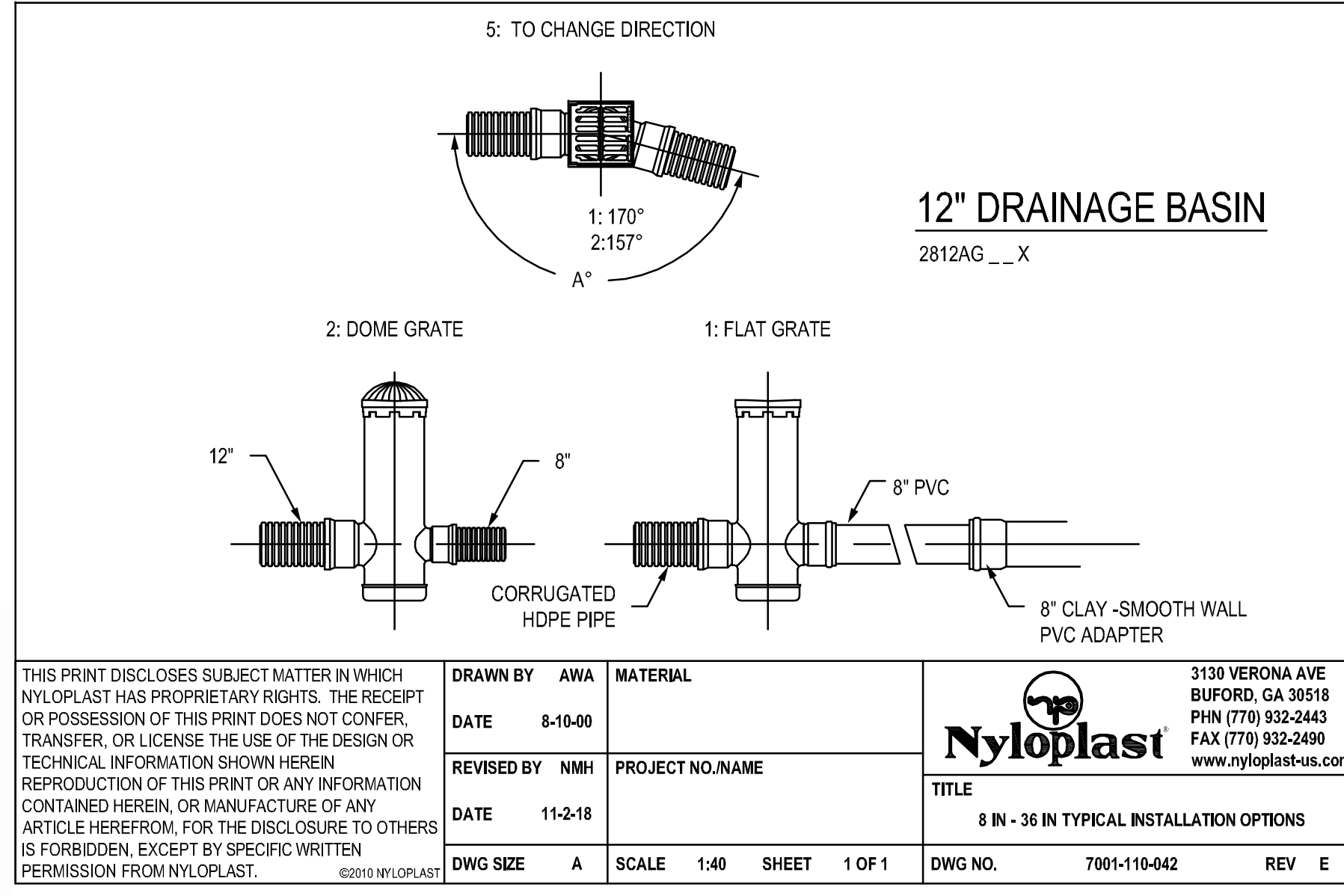
STORM SEWER DESIGN COMPUTATIONS

| FROM POINT | TO POINT | LENGTH FT. | UPPER INVERT | LOWER INVERT | SLOPE FT/FT | DIA IN. | CAPACITY CFS | DEPTH FT (10) | FLOW CFS(10YR) |
|------------|----------|------------|--------------|--------------|-------------|---------|--------------|---------------|----------------|
| 1 | 2 | 40.00 | 1238.0 | 1222.0 | 0.400 | 8 | 8.28 | 0.21 | 2.18 |
| 2 | 3 | 50.00 | 1221.9 | 1221.4 | 0.010 | 12 | 3.87 | 0.64 | 2.86 |

ALL STORM SEWER TO BE N-12 HDPE WITH SOIL TIGHT-JOINTS

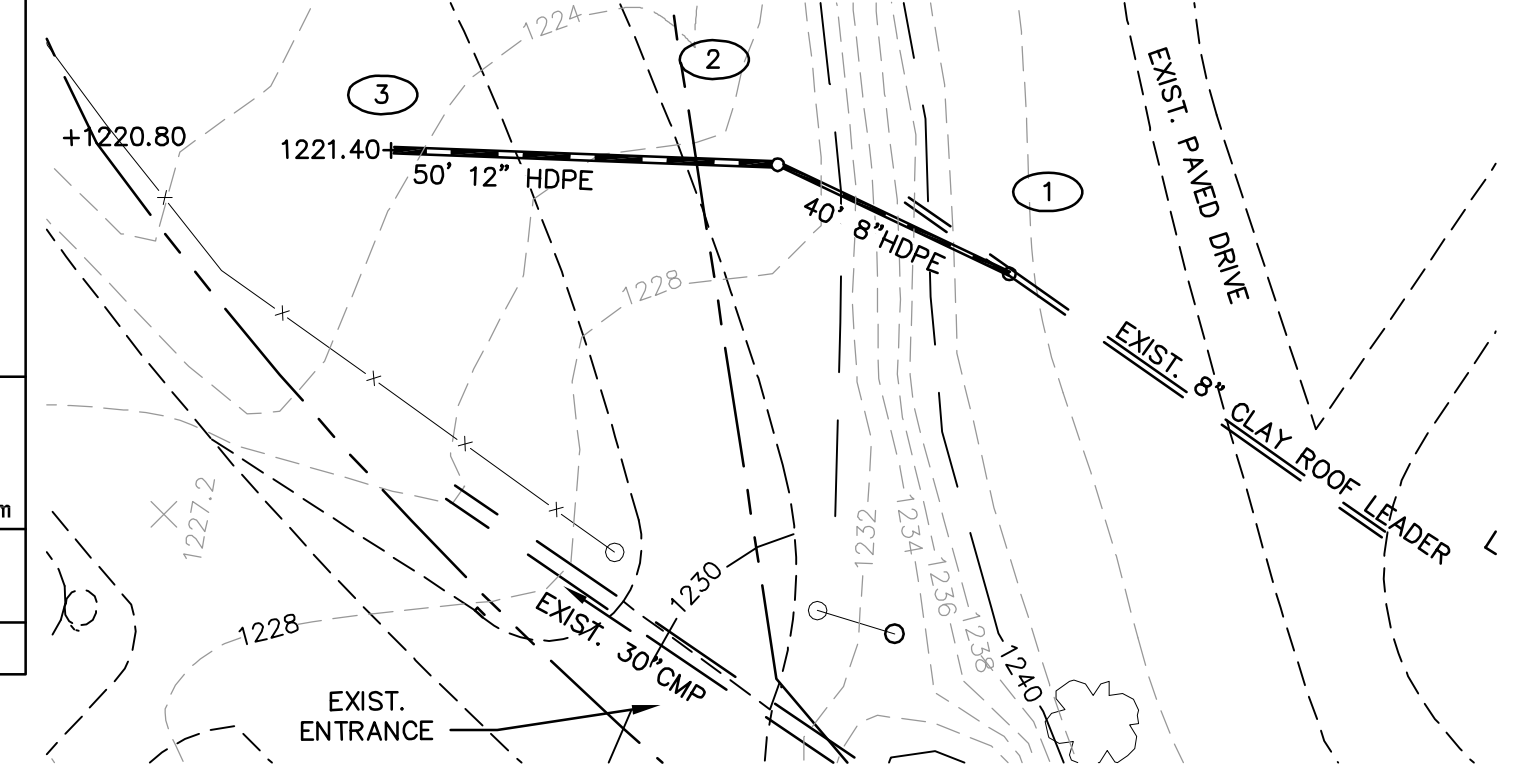
STORM SEWER STRUCTURE TABLE

| ST-# | TYPE | TOP | INV. IN | INV. OUT | HEIGHT |
|------|----------|--------|---------------|---------------|--------|
| 1 | 12" FLAT | 1243.5 | 1238.1 (CLAY) | 1238.0 (HDPE) | 5.5' |
| 2 | 12" DOME | 1225.0 | 1222.0 (HDPE) | 1221.9 (HDPE) | 3.1' |
| 3 | ES-1 | N/A | 1221.4 (RCP) | | |

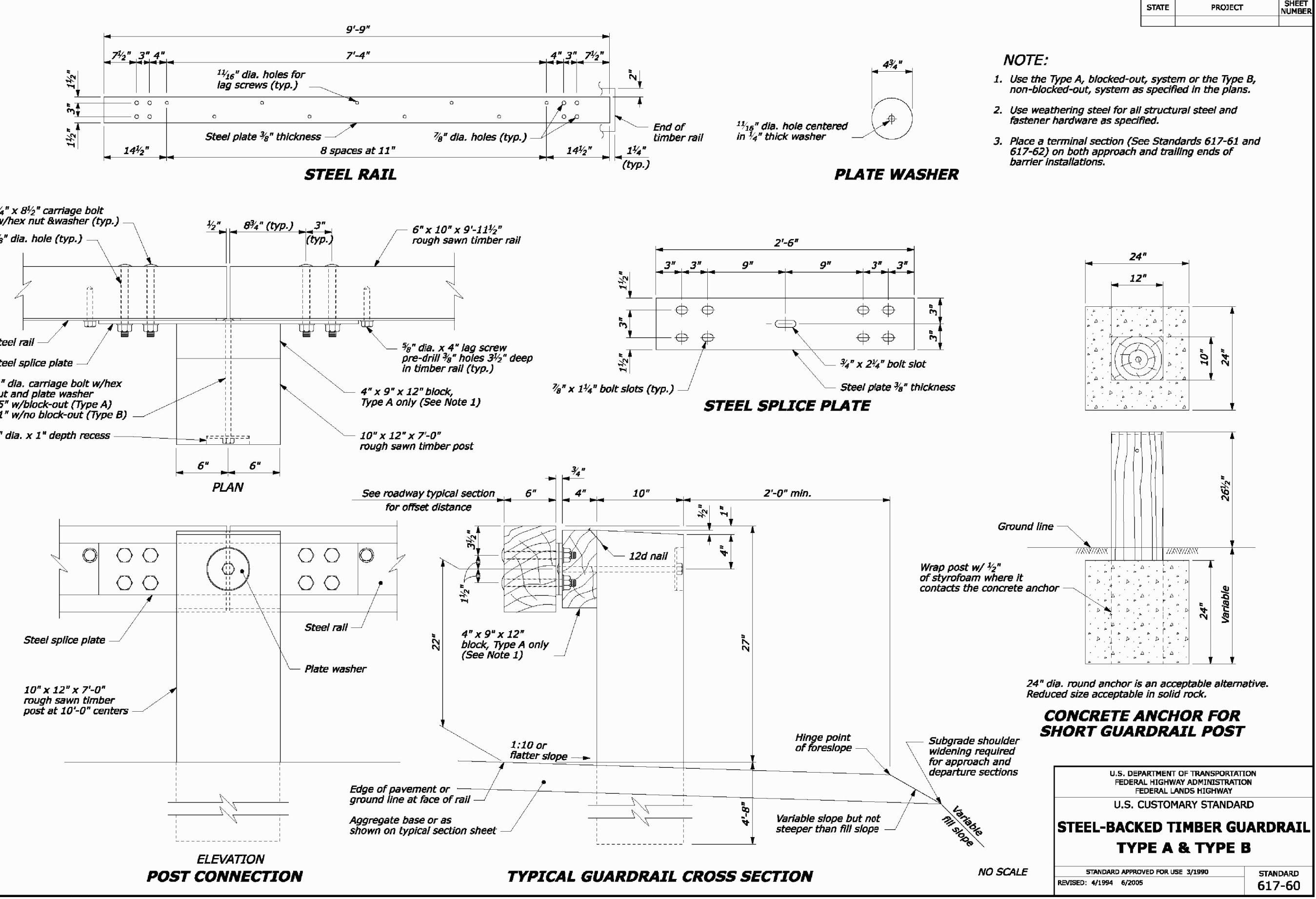
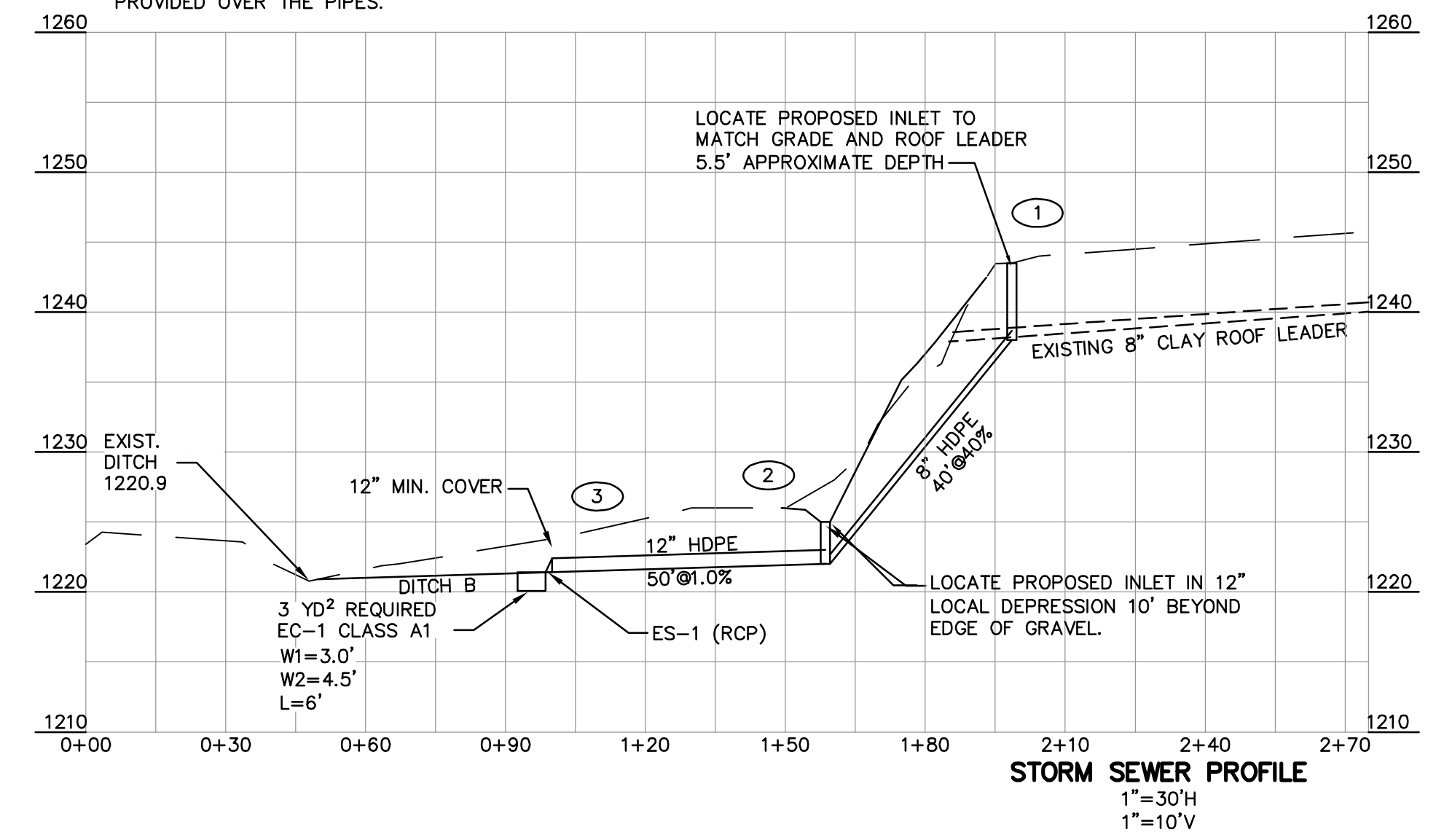


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| | | | |
|------------|---------|------------------|---|
| DRAWN BY | AWA | MATERIAL | 3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2499 www.nyloplast-us.com |
| DATE | 8-10-00 | PROJECT NO./NAME | |
| REVISED BY | NMH | TITLE | 8 IN - 36 IN TYPICAL INSTALLATION OPTIONS |
| DATE | 11-2-18 | DWG NO. | 7001-110-042 |
| DWG SIZE | A | SCALE | 1:40 |
| SHEET | 1 OF 1 | REV | E |



NOTE: THE LENGTHS AND INVERTS SHOWN FOR THE DRAINAGE SYSTEM ARE INTENDED TO BE REPRESENTATIVE AND WERE GENERATED WITHOUT THE BENEFIT OF A FIELD SURVEY. ONCE THE LOCATION AND ELEVATION OF THE EXISTING ROOF LEADER TIE-IN-POINT, THE PROPOSED INLET, AND THE POINT WHERE THE OUTFALL DITCH "B" INTERSECTS THE EXISTING DITCH ARE DETERMINED, THE LENGTHS AND INVERTS MAY BE ADJUSTED PROVIDED THE MINIMUM SLOPE ACHIEVED IS GREATER THAN 1.0% AND 12" COVER IS PROVIDED OVER THE PIPES.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY
U.S. CUSTOMARY STANDARD

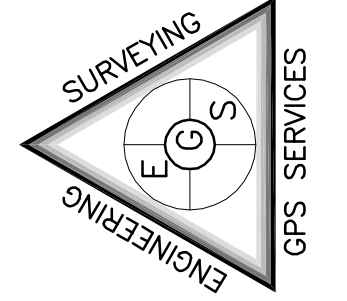
STEEL-BACKED TIMBER GUARDRAIL TYPE A & TYPE B

STANDARD APPROVED FOR USE: 5/1990
REVISED: 4/1996, 4/2009

STANDARD 617-50

| DATE | REVISIONS | COMMENTS |
|------------|----------------------------|----------|
| 05-17-2021 | REVISED PER STAFF COMMENTS | |

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EROSION AND SEDIMENT CONTROL PLAN FOR THE IMPROVEMENTS TO CRIMORA RECREATIONAL PARK MIDDLE RIVER MAGISTERIAL DISTRICT AUGUSTA COUNTY, VIRGINIA

DATE: NOVEMBER 11, 2020
SCALE: AS NOTED
4 OF 5

433370119-2 CRIMORA PARK ESC PLAN.DWG

SUGGESTED TEMPORARY SEEDING MIXTURE

FERTILIZER: 10-20-10 600 LBS/ACRE
 SEPTEMBER-FEBRUARY 15:
 50% ANNUAL RYE &
 50% WINTER RYE 100 LBS/ACRE
 FEBRUARY 16-APRIL 30:
 ANNUAL RYE 100 LBS/ACRE
 MAY-AUGUST:
 GERMAN MILLET 50 LBS/ACRE
 OTHER OPTIONS EXIST, SEE VA EROSION
 AND SEDIMENT CONTROL HANDBOOK.

SUGGESTED PERMANENT SEEDING MIXTURE

LIME: 2 TONS/ACRE
 FERTILIZER: 1,000 LBS/ACRE 10-20-10
 MARCH-MAY 15:
 KENTUCKY 31 FESCUE 200 LBS/ACRE,
 ANNUAL RYE 20 LBS/ACRE
 MAY 16-AUGUST 15:
 KENTUCKY 31 FESCUE 200 LBS/ACRE,
 FOXTAIL MILLET 20 LBS/ACRE
 AUGUST 16-OCTOBER:
 KENTUCKY 31 FESCUE 200 LBS/ACRE,
 ANNUAL RYE 20 LBS/ACRE
 NOVEMBER-FEBRUARY:
 KENTUCKY 31 FESCUE 200 LBS/ACRE,
 WINTER RYE 20 LBS/ACRE
 OTHER OPTIONS EXIST, SEE VA EROSION
 AND SEDIMENT CONTROL HANDBOOK.

TABLE 3.31-A
 LIMING REQUIREMENTS
 FOR TEMPORARY SITES

| pH Test | Recommended Application of Agricultural Limestone |
|------------|---|
| Below 4.2 | 3 tons per acre |
| 4.2 to 5.2 | 2 tons per acre |
| 5.2 to 6 | 1 ton per acre |

FERTILIZER: 10-20-10 1,000 LBS/ACRE

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

| Planting Dates | Species | Rate (lbs./acre) |
|--------------------|---|------------------|
| Sept. 1 to Feb. 15 | 50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter) Rye (Secale cereale) | 50-100 |
| Feb 16 to Apr. 30 | Annual Ryegrass (Lolium multi-florum) | 60-100 |
| May 1 to Aug. 31 | German Millet (Setaria italica) | 50 |

TABLE 3.31-C
 TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

| SPECIES | ACRE | 1000ft | NORTH ^a | | | | SOUTH ^b | | | | PLANT CHARACTERISTICS |
|--|---|-------------------|--------------------|-------------|--------------|--------------|--------------------|--------------|---|---|---|
| | | | 3/1 to 4/30 | 5/1 to 6/15 | 8/15 to 11/1 | 2/15 to 4/30 | 5-1 to 9/1 | 9/1 to 11/15 | | | |
| OATS (Avena Sativa) | 3 bu. (up to 100 lbs., not less than 50 lbs.) | 2 lbs. | X | - | - | X | - | - | - | - | Use spring varieties (e.g. Noble). |
| RYE ^d (Secale cereale) | 2 bu. (up to 110 lbs., not less than 50 lbs.) | 2.5 lbs. | X | - | X | X | - | X | - | - | Use for late fall seedings, winter cover. Tolerates cold and low moisture. |
| GERMAN MILLET (Setaria italica) | 50 lbs. | approx. 1 lb. | - | X | - | - | X | - | - | - | Warm-season annual. Dies at first frost. May be added to summer mixes. |
| ANNUAL RYEGRASS ^c (Lolium multi-florum) | 60 lbs. | 1 1/2 lbs. | X | - | X | X | - | X | - | - | May be added in mixes. Will mow out of most stands. |
| WEEPING LOVEGRASS (Eragrostis curvula) | 15 lbs. | 5 1/2 oz | - | X | - | - | X | - | - | - | Warm season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes. |
| KOREAN LESPEDEZA ^c (Lespedeza stipucea) | 25 lbs. | approx. 1 1/2 lbs | X | X | - | X | X | - | - | - | Warm season annual legume. Tolerates acid soils. May be added to mixes. |

^a Northern Piedmont and Mountain region. See plates 3.22-1 and 3.22-2
^b Southern Piedmont and Coastal Plain.
^c May be used as a cover crop with spring seeding.
^d May be used as a cover crop with fall seeding.
 X May be planted between these dates
 - May not be planted between these dates.

TABLE 3.32-C
 SITE SPECIFIC SEEDING MIXTURES
 FOR APPALACHIAN/MOUNTAIN AREA

| Mixture | Total Lbs. Per Acre |
|--|---------------------|
| Minimum Care Lawn | |
| - Commercial or Residential | 200-250 lbs. |
| - Kentucky 31 or Turf-Type Tall Fescue | 90-100% |
| - Improved Perennial Ryegrass* | 0-10% |
| - Kentucky Bluegrass | 0-10% |
| High-Maintenance Lawn | |
| Minimum of three (3) up to five (5) varieties of bluegrass from approved list for use in Virginia. | 125 lbs. |
| General Slope (3:1 or less)- Kentucky 31 Fescue | |
| - 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. | |

* Perennial Ryegrass will germinate faster and at lower soil temperature than fescue, thereby providing cover and erosion resistance for seedbed.
 ** Use seasonal nurse crop in accordance with seeding dates as stated below:
 March, April through May 15th..... Annual Rye
 May 16th through August 15th..... Foxtail Millet
 August 16th through September, October..... Annual Rye
 November through February..... Winter Rye

***If Flatpea is used, increase to 30 lbs./acre. All legume seed must be properly inoculated. Weeping Lovegrass may also be included in any slope or low-maintenance mixture during warmer seeding periods; add 10-20lbs./acre in mixes.

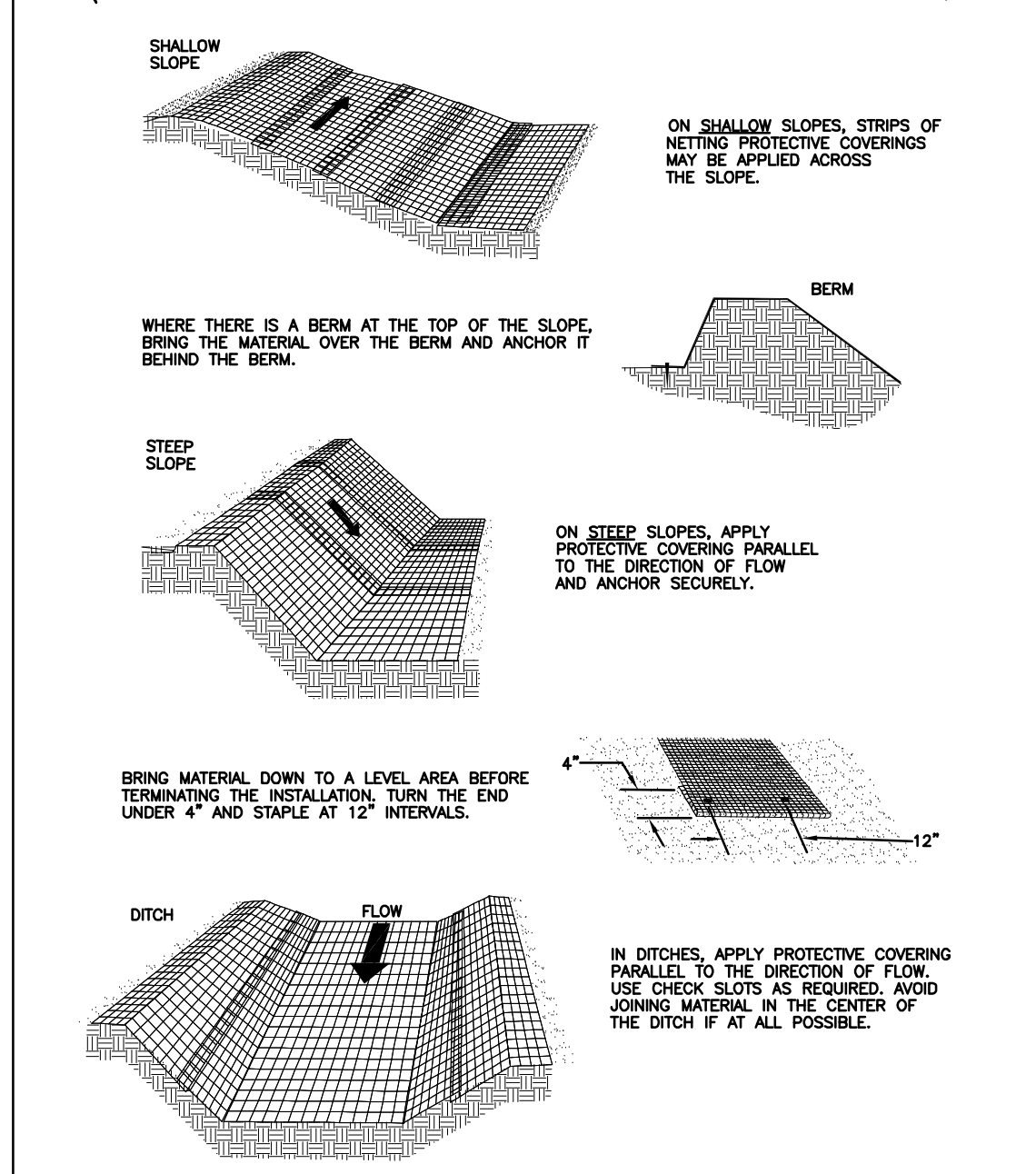
TABLE 3.35-A
 ORGANIC MULCH MATERIALS AND APPLICATION RATES 3.35

| MULCHES | RATES | | NOTES: |
|-----------------------------|--|------------------|--|
| | Per Acre | Per 1000 sq. ft. | |
| Straw or Hay | 1 1/2-2 tons (Minimum 2 tons for winter cover) | 70-90 lbs. | Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand. |
| Fiber Mulch | Minimum 1500 lbs. | 35 lbs. | Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry. |
| Corn Stalks | 4-6 tons | 185-275 lbs. | Cut or shredded in 4-6" lengths. Air dried. Do Not use in fine turf areas. Apply with mulch blower or by hand. |
| Wood Chips | 4-6 tons | 185-275 lbs. | Free of coarse matter. Air-dried. Treat with 12 lbs. nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand. |
| Bark Chips or Shredded Bark | 50-70 cu. yds. | 1-2 cu. yds. | Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand. |

*When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2,000 lbs./ac. or 45 lbs./1000 sq. ft.

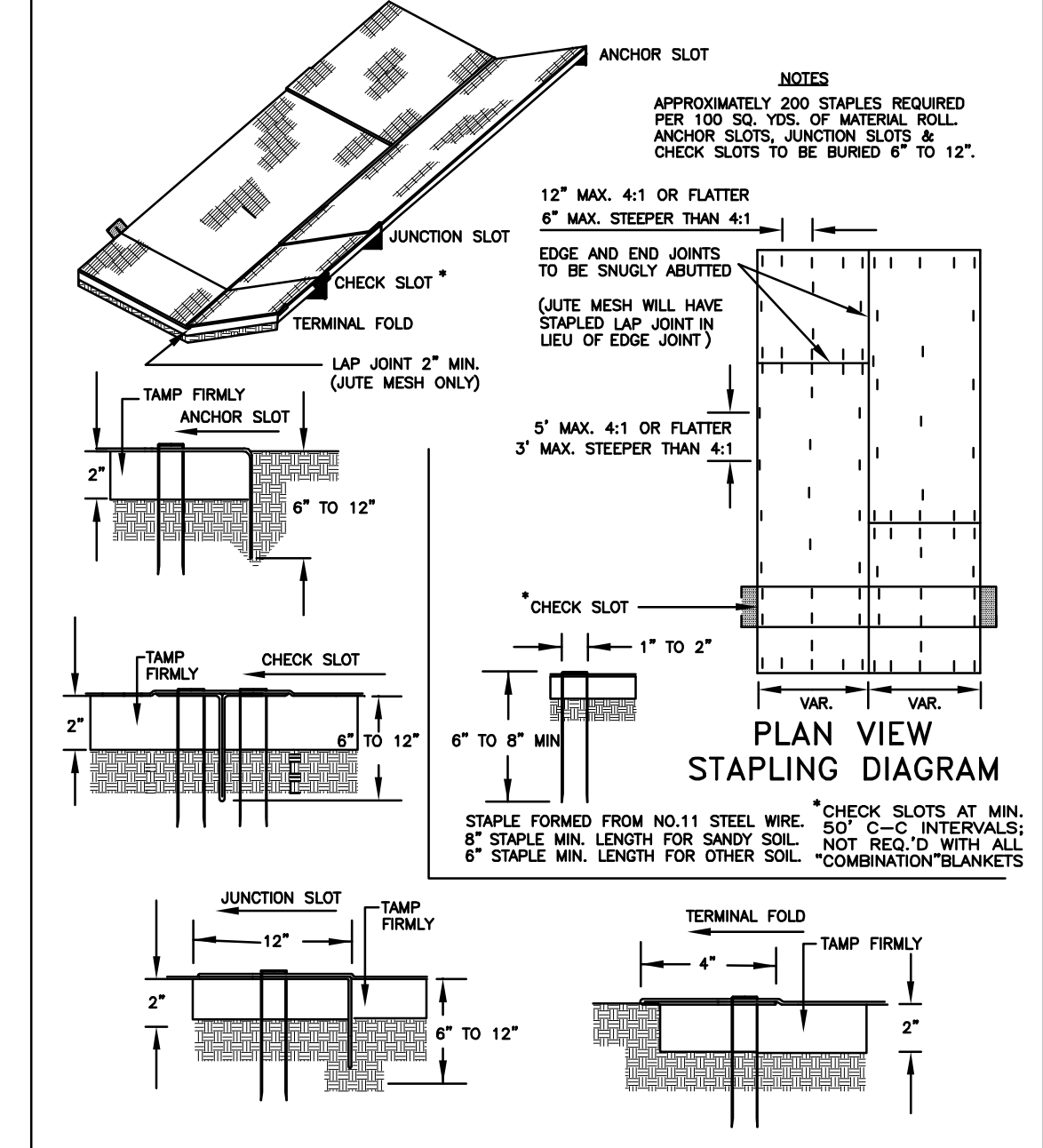
Source: VA DSWC

TYPICAL ORIENTATION OF TREATMENT - 1 (SOIL STABILIZATION BLANKET)



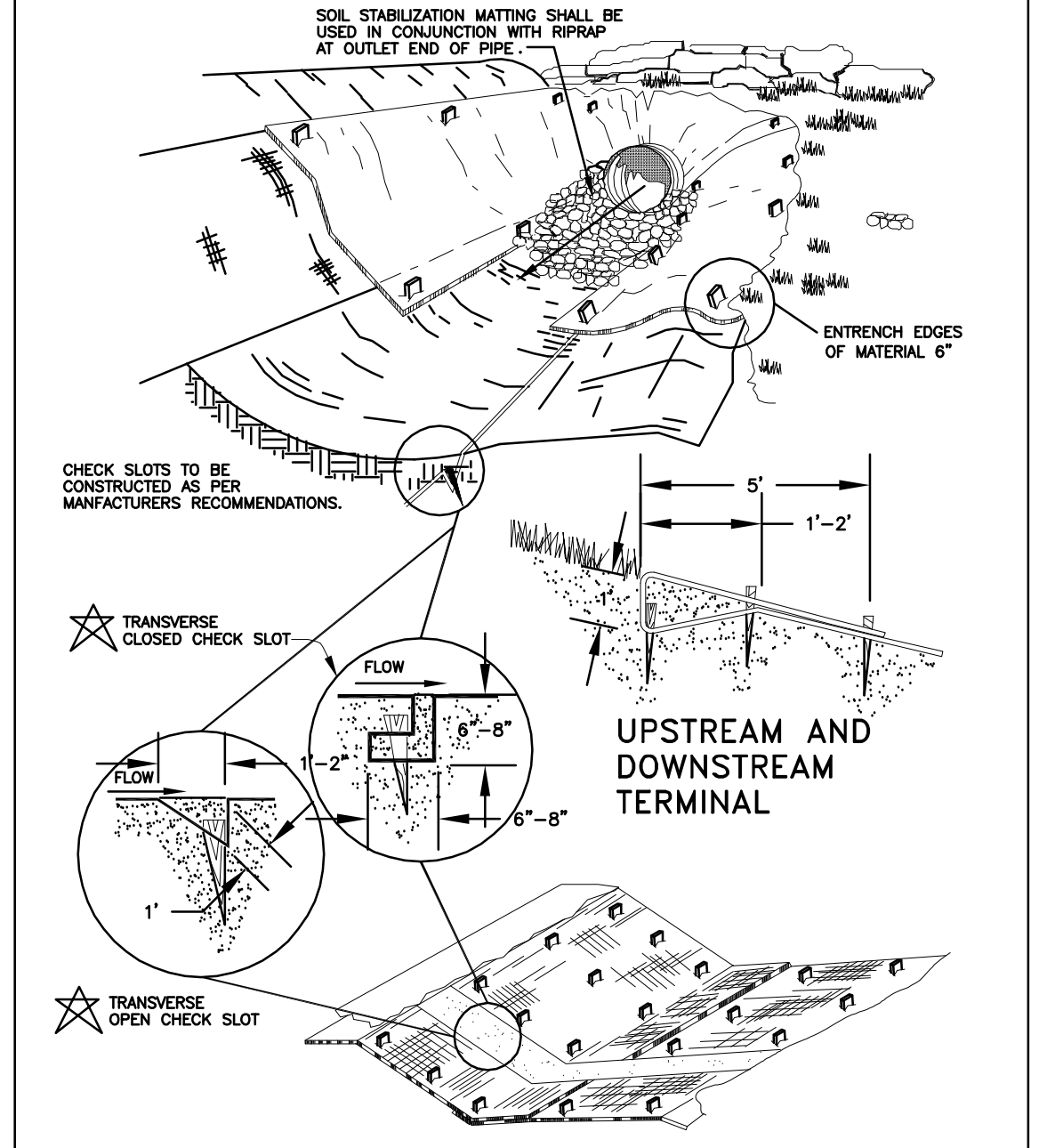
SOURCE: ADAPTED FROM LUDLOW PRODUCTS BROCHURE PLATE: 3.36-1

TYPICAL TREATMENT - 1 (SOIL STABILIZATION BLANKET) INSTALLATION CRITERIA



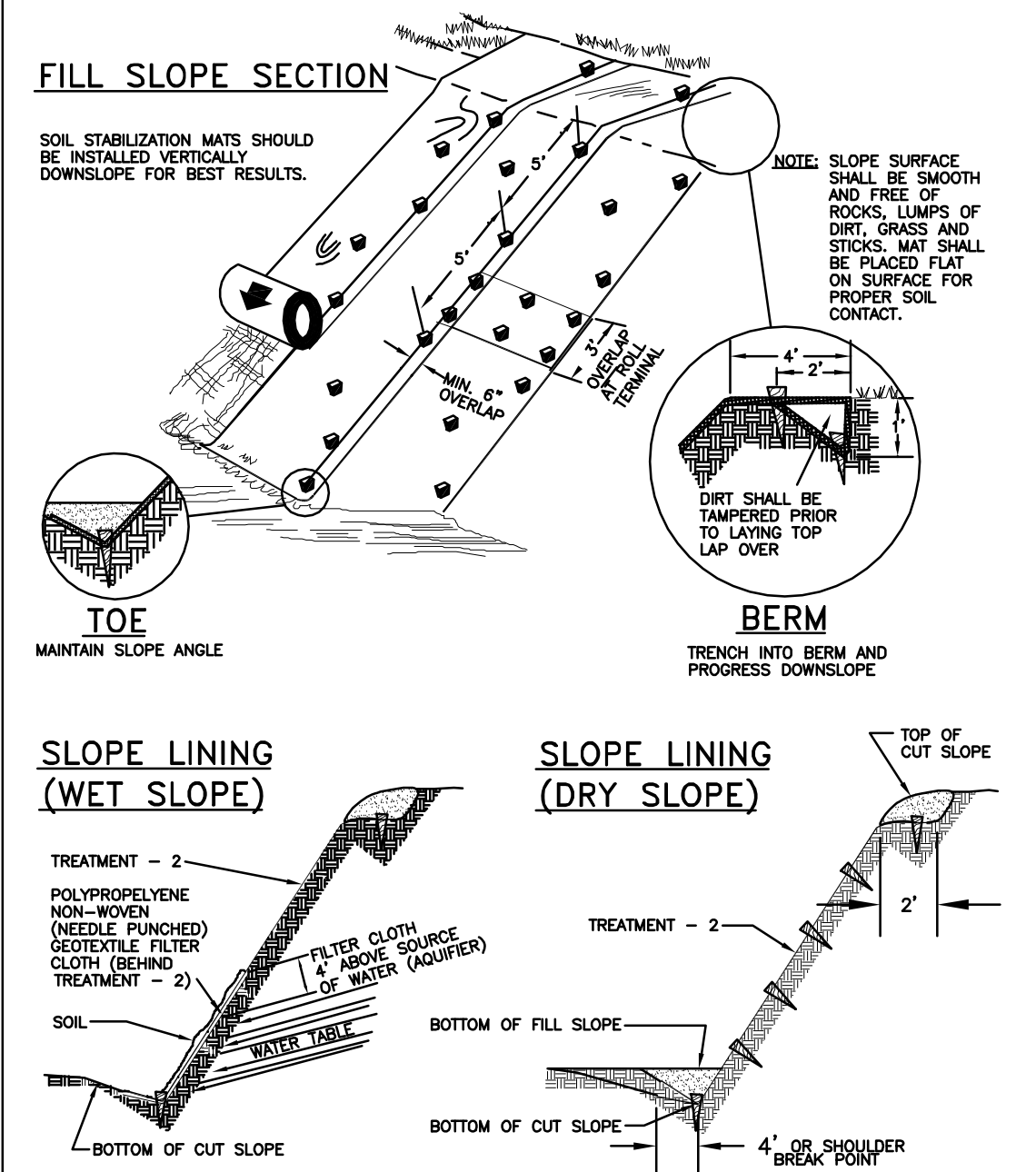
SOURCE: VDOT ROAD AND BRIDGE STANDARDS PLATE: 3.36-2

TYPICAL TREATMENT-2 SOIL STABILIZATION MATTING INSTALLATION



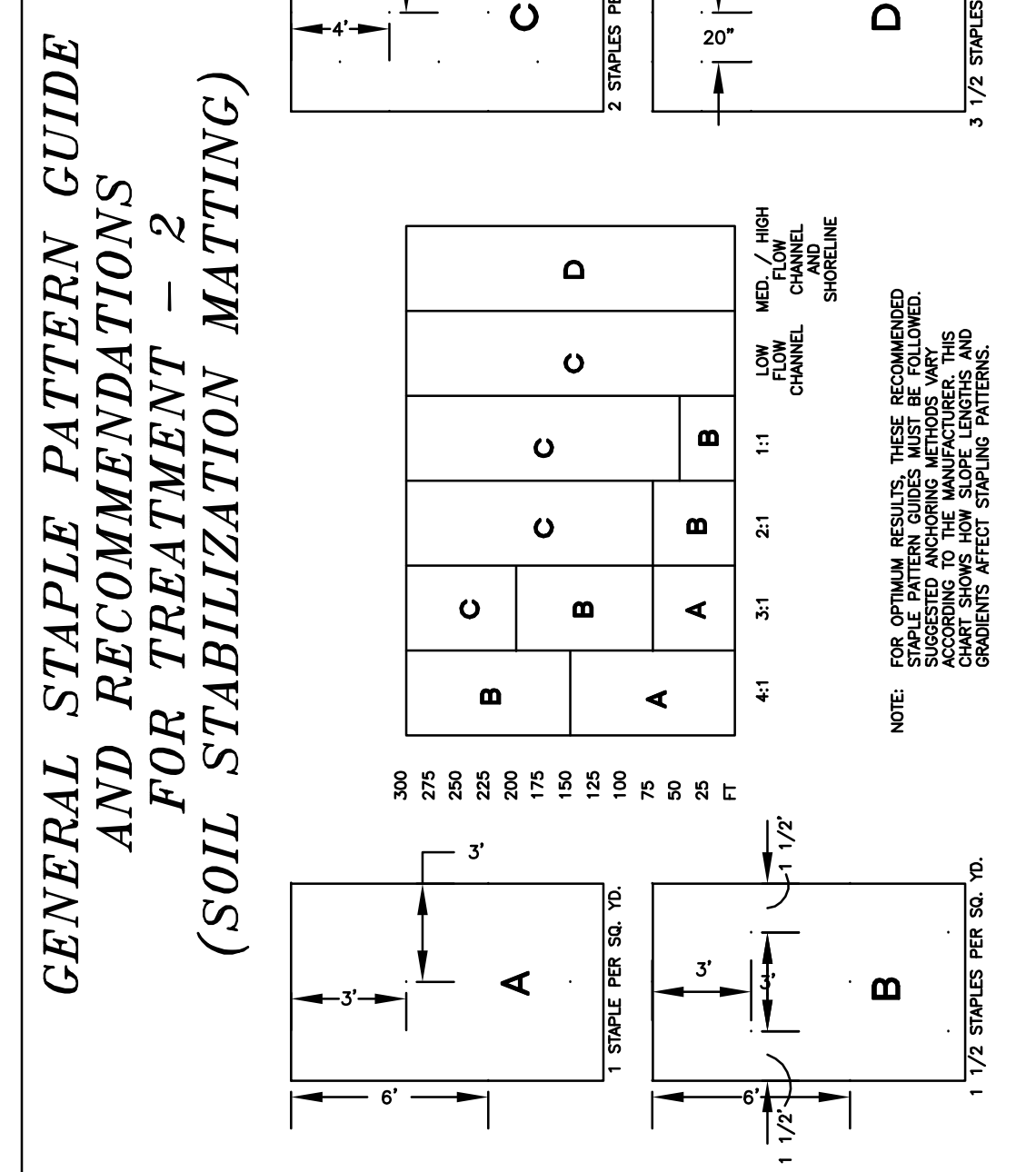
SOURCE: VDOT ROAD AND BRIDGE STANDARDS PLATE: 3.36-4

TYPICAL TREATMENT - 2 SOIL STABILIZATION MATTING SLOPE INSTALLATION



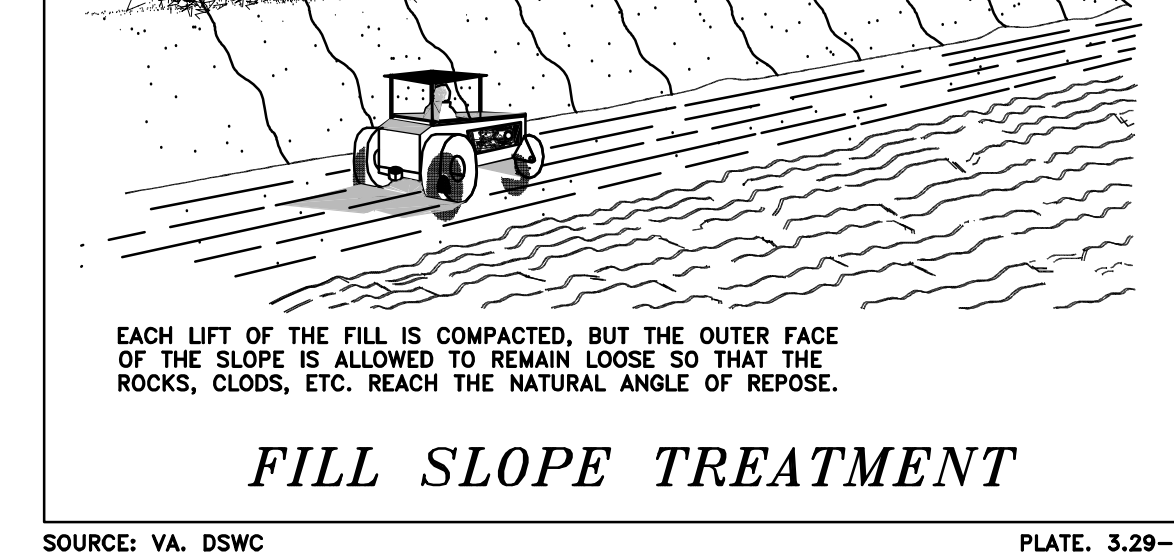
SOURCE: VDOT ROAD AND BRIDGE STANDARDS PLATE: 3.36-5

GENERAL STAPLE PATTERN GUIDE AND RECOMMENDATIONS FOR TREATMENT - 2 (SOIL STABILIZATION MATTING)



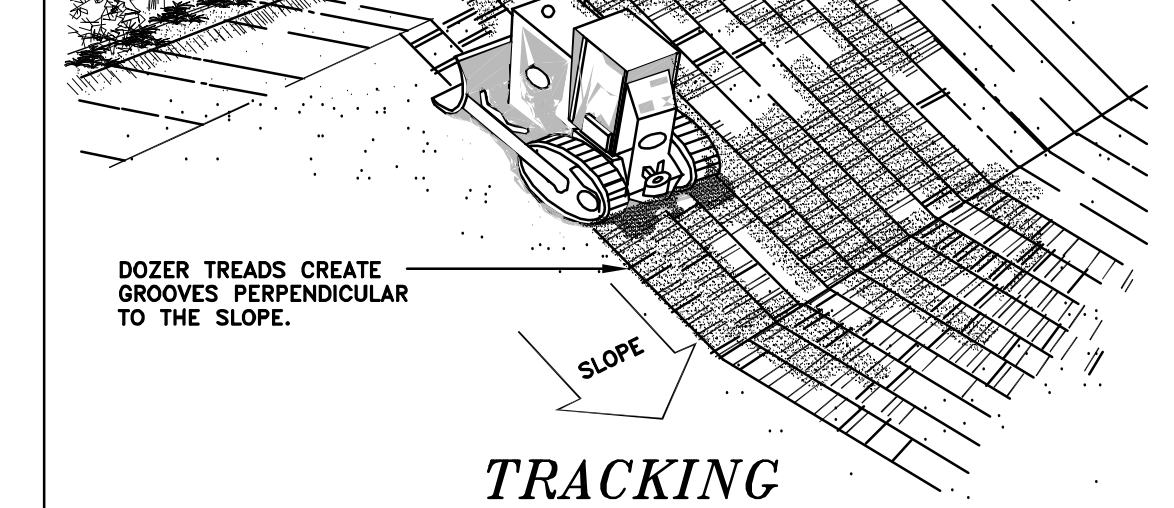
SOURCE: PRODUCT LITERATURE FROM NORTH AMERICAN GREEN PLATE: 3.36-6

FILL SLOPE TREATMENT



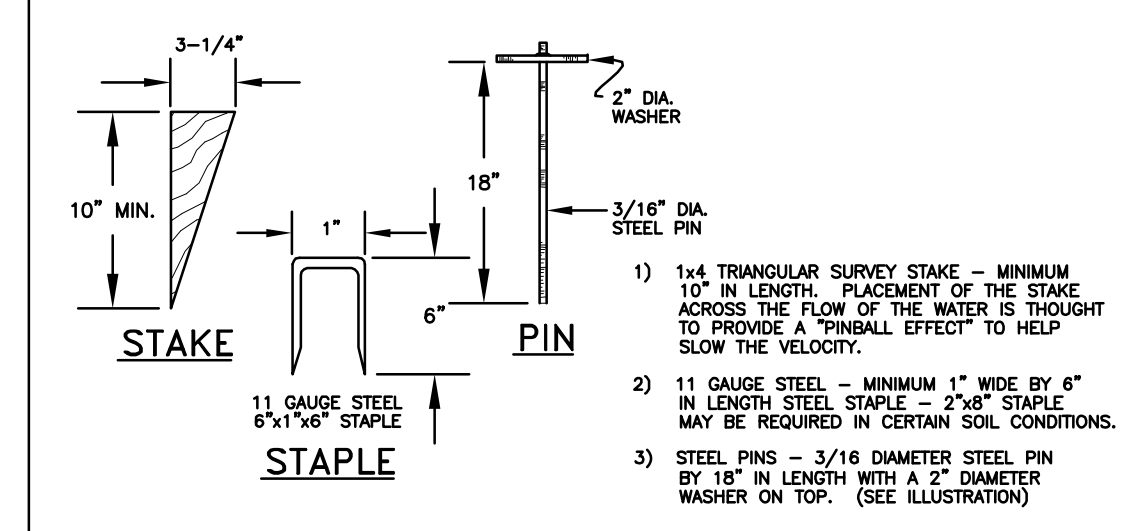
SOURCE: VA. DSWC PLATE: 3.29-3

TRACKING



SOURCE: MICHIGAN SOIL EROSION AND SEDIMENTATION GUIDE PLATE: 3.29-4

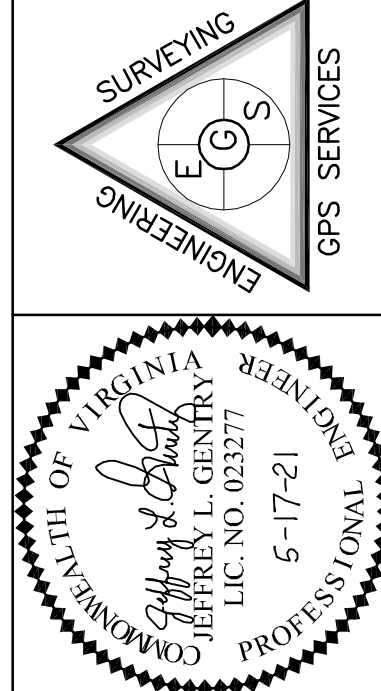
STAKES, STAPLES, & PINS FOR INSTALLATION OF TREATMENT - 2 SOIL STABILIZATION MATTING



SOURCE: PRODUCT LITERATURE FROM GREENSTREAK, INC. PLATE: 3.36-3

| DATE | REVISIONS | COMMENTS |
|---|--------------------------------------|----------|
| 05-17-2021 <td>REVISED PER STAFF COMMENTS <td></td> </td> | REVISED PER STAFF COMMENTS <td></td> | |

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EROSION AND SEDIMENT CONTROL PLAN FOR THE IMPROVEMENTS TO CRIMORA RECREATIONAL PARK MIDDLE RIVER MAGISTERIAL DISTRICT AUGUSTA COUNTY, VIRGINIA

DATE: NOVEMBER 11, 2020
 SCALE: AS NOTED
 5 OF 5

433370119-2 CRIMORA PARK ESC PLAN.DWG