SITE CONSTRUCTION DRAWINGS FOR

WALKING TRAILS AND REFLECTING POND

ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210
BIBB COUNTY TAX PARCEL(S) Q072 0204

GEORGIA811 www.Georgia811.com

AERIAL PHOTO

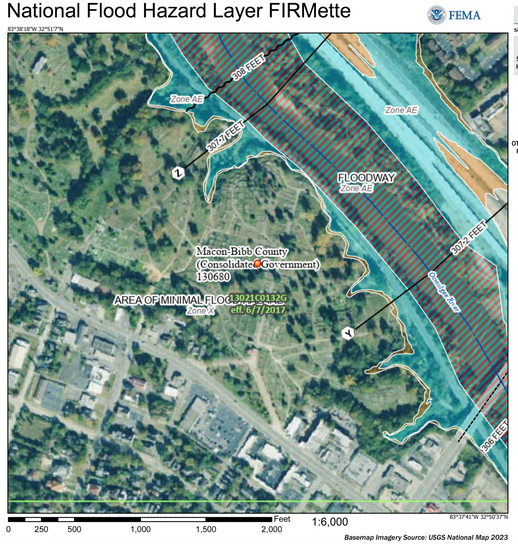


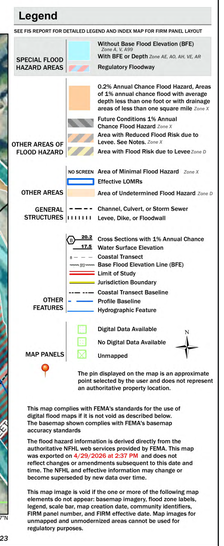
VICINITY MAP (CHECKLIST ITEM #10)



APPROVAL STAMPS

FEMA - FLOOD INSURANCE RATE MAP





DEVELOPMENT DATA

OWNER/PRIMARY PERMITTEE:	MICHAEL GLISSON 327 LOWER POPLAR ST MACON, GA. 31201 478-954-5063	PROJECT GPS LOCATION:	LATITUDE 32.846303° LONGITUDE -83.633333°
24-HOUR CONTACT:	MICHAEL GLISSON 478-954-5063 (mobile) MGLISSON@MACONBIBB.US	ZONING:	ZONED NA (CITY/COUNTY OWNED)
		AREAS:	PROPERTY AREA: 41.66 ACRES DISTURBED AREA: 0.90 ACRES IMPERVIOUS AREA: 0.36 ACRES
ENGINEER:	ROWLAND ENGINEERING, INC. 107 INDUSTRIAL PARK DR., STE. B FORSYTH, GA 31029 (478) 621-7500 office steven@rowland-engineering.com	START DATE: END DATE:	SEPTEMBER 1, 2026 FEBRUARY 1,2027

THE CONTRACTOR SHALL NOTIFY THE MACON WATER AUTHORITY INSPECTIONS DEPARTMENT 48 HOURS PRIOR TO BEGINNING CONSTRUCTION - CALL CHIEF INSPECTOR JOEL HERNDON (478) 464-5639

ALL WORK PERFORMED IN ASSOCIATION WITH THIS PROJECT MUST CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE MACON WATER AUTHORITY (MWA OR THE AUTHORITY).

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION..

THIS PROPERTY IS OWNED BY MACON-BIBB COUNTY. THEREFORE, THIS PROJECT IS EXEMPT FROM PLANNING AND ZONING REVIEW/APPROVAL.

THIS PROJECT INVOLVES LESS THAN 1-ACRE OF LAND DISTURBANCE. THEREFORE, IT IS NOT SUBJECT TO THE REQUIREMENTS OF THE NPDES GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES.

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PROJECT SUMMARY

THIS PROJECT INCLUDES THE ADDITION OF WALKING/BIKING PATHS AND THE RESTORATION OF A REFLECTING POND. WETLAND AND STATE WATERS BUFFER PERMITTING IS BEING PERFORMED BY TERRACON.

STORM WATER CERTIFICATION

I, STEVEN A. ROWLAND, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF GEORGIA, HEREBY CERTIFY THAT THE GRADING AND DRAINAGE PLANS FOR THE PROJECT KNOWN AS WALKING TRAILS AND REFLECTING POND, LOCATED AT ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210, BIBB COUNTY, GEORGIA, HAVE BEEN PREPARED UNDER MY SUPERVISION, AND, STATE THAT IN MY OPINION, THE CONSTRUCTION OF SAID PROJECT WILL NOT PRODUCE STORM DRAINAGE CONDITIONS THAT WILL CAUSE DAMAGE OR ADVERSELY AFFECT THE SURROUNDING PROPERTIES.

WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210

FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

ROWLAND ENGINEERING
107 Industrial Park Drive, Ste B
Forsyth, GA 31029
(478) 621-7500 office
steven@rowland-engineering.com
www.rowland-engineering.com

PROJECT NO: 2519

GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25851 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

1.0 COVER SHEET

1.0

SHEET 1 OF 22

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EROSION AND CONTROL:

1. ALL SILT BARRIERS MUST BE PLACED AS ACCESS IS OBTAINED DURING CLEARING AS SHOWN AND/OR AS DIRECTED BY THE PROJECT ENGINEER AND/OR THE CITY/COUNTY INSPECTOR. NO GRADING SHALL BE DONE UNTIL SILT BARRIER INSTALLATION AND SEDIMENT CONTROL FACILITIES ARE CONSTRUCTED.
2. ADDITIONAL EROSION CONTROL MEASURES WILL BE EMPLOYED WHERE DETERMINED NECESSARY BY ACTUAL SITE CONDITIONS.
3. PROVISIONS TO PREVENT EROSION OF SOIL FROM SITE SHALL BE, AS MINIMUM, IN CONFORMANCE WITH THE REQUIREMENTS OF THE MANUAL FOR SEDIMENT AND EROSION CONTROL IN GEORGIA AND THE APPLICABLE CITY AND/OR COUNTY CODE OF LAWS DEALING WITH EROSION AND SEDIMENTATION.
4. PRIOR TO ANY OTHER CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT EACH ENTRY TO OR EXIT FROM THE SITE.
5. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH STONE, AS CONDITIONS DEMANDS, AND REPAIR AND/OR CLEAN-OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT.
6. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE SHALL OCCUR INSIDE THE APPROVED LIMITS AS INDICATED ON THE APPROVED PLANS.
7. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXITS, ALL PERIMETER EROSION CONTROL DEVICES AND STORM WATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
8. ALL APPLICABLE EROSION AND SEDIMENTATION CONTROLS, AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY EXCAVATION.
9. EROSION CONTROL MEASURES WILL BE INSPECTED AT LEAST WEEKLY AND FOLLOWING ALL RAINFALL EVENTS AND REPAIRED, IF NECESSARY, BY CONTRACTOR.
10. STORM DRAIN SYSTEMS SHALL BE MAINTAINED CLEAN AND FREE OF SILT AND DEBRIS.
11. A RESPONSE TO A NOTIFICATION OF NONCOMPLIANCE OR INADEQUATE MEASURES SHALL BE MADE WITHIN 24 HOURS AFTER RECEIVING SUCH NOTIFICATION, UNLESS OTHERWISE SPECIFIED FOR CONDITIONS DEEMED CRITICAL.
12. SEEDING SPECIFICATIONS AND APPLICATION RATES ARE AVAILABLE AT THE NATIONAL RESOURCES CONVERSATION SERVICES (NRCS). FOR TEMPORARY AND/OR PERMANENT SEEDING A VARIETY SUBSTITUTED FOR THAT SHOWN ON THE PLANS MAY BE UTILIZED WITH THE APPROVAL OF THE LOCAL GOVERNMENTAL AGENCY AND THE OWNER.
13. THE CONSTRUCTION OF THE SITE WILL INITIATE WITH THE INSTALLATION OF EROSION CONTROLS MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.
14. EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
15. SANITARY SEWER EASEMENTS ARE TO BE STABILIZED WITH TEMPORARY AND PERMANENT VEGETATION AS SOON AS EACH SEGMENT IS COMPLETED. STREAM BANK RESTORATION AND STABILIZATION REQUIRED IN ALL DISTURBED STATE WATERS BUFFERS. THE STREAM BANK CANOPY IS TO BE RESTORED WITHIN THE STATE WATERS BUFFERS. GEOMAT AND RIP RAP ARE TO BE PLACED AS NECESSARY TO PREVENT EROSION WITHIN THE STREAM BANKS.
16. **THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES.**
17. **EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.**
18. **ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.**

GRADING AND CONSTRUCTION:

1. GROUND SURFACE PREPARATION: REMOVE VEGETATION INCLUDING GRASS, ROOTS, AND SURFICIAL ORGANICS, DEBRIS, UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACEMENT OF FILLS. PLOW STRIP, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERT. TO 2 HORIZ. SO THAT FILL MATERIAL WILL BOND WITH EXISTING SURFACE. WHEN EXISTING GROUND SURFACE HAS A DENSITY LESS THAN THAT SPECIFIED UNDER COMPACTION FOR PARTICULAR AREA CLASSIFICATION, BREAK UP GROUND SURFACE, PULVERIZE, MOISTURE CONDITION TO OPTIMUM MOISTURE CONTENT, AND COMPACT TO REQUIRED DEPTH AND PERCENTAGE OF MAXIMUM DENSITY.
2. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 12 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT AND NOT MORE THAN 6 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
3. BEFORE COMPACTION, MOISTEN AND AERATE EACH LAYER AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. COMPACT EACH LAYER TO REQUIRED PERCENTAGE OF MAXIMUM DRY DENSITY OR RELATIVE DRY DENSITY FOR EACH AREA CLASSIFICATION. DO NOT PLACE BACKFILL OR FILL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN OR CONTAIN FROST OR ICE.
4. COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OF FILL MAT'L. TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 6" BELOW BOTTOM OF FINAL GRADE. A REPORT FROM A GEOTECHNICAL ENGINEER MAY BE REQUIRED BY THE CONSTRUCTION INSPECTOR FOR ALL FILL AREAS WITHIN THE RIGHT-OF-WAY.
5. MOISTURE CONTROL: WHERE SUBGRADE OR LAYER OF SOIL MATERIAL MUST BE MOISTURE CONDITIONED BEFORE COMPACTION, UNIFORMLY APPLY WATER TO SURFACE OF SUBGRADE OR LAYER OF SOIL MAT'L. APPLY WATER IN MINIMUM QUANTITY AS NECESSARY TO PREVENT FREE WATER FROM APPEARING ON SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS.
6. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, SOIL MATERIAL THAT IS TOO WET TO PERMIT COMPACTION TO SPECIFIED DENSITY.
7. SPREAD SOIL MATERIAL THAT HAS BEEN REMOVED BECAUSE IT IS TOO WET TO PERMIT COMPACTION. ASSIST DRYING BY DISCING, HARROWING, OR PULVERIZING UNTIL MOISTURE CONTENT IS REDUCED TO A SATISFACTORY VALUE.
8. QUALITY CONTROL TESTING DURING CONSTRUCTION: ALLOW GEOTECHNICAL TESTING SERVICE TO INSPECT AND APPROVE EACH SUB-GRADE AND BACKFILL OR FILL LAYER BEFORE FURTHER BACKFILL OR CONSTRUCTION WORK IS PERFORMED. TEST SHALL BE PERFORMED EVERY 10,000 SQ. FT. OF AREA PER ONE FOOT LIFT (OR AS DIRECTED BY A REGISTERED GEOTECHNICAL ENGINEER.
9. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THE DISCOVERY OF ANY GROUNDWATER, SUB-SURFACE SEEPAGE OR SPRINGS DURING THE COURSE OF CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO CONSULT WITH A REGISTERED GEOTECHNICAL ENGINEER TO INSPECT THE SITE, AND TO MAKE ANY RECOMMENDATIONS REGARDING EVIDENCE AND REMEDIATION (IF ANY) OF SAID SUB-SURFACE WATERS.
10. THE CONTRACTOR SHALL INCLUDE IN BID ANY COST IN RELATION TO TEMPORARY AND/OR PERMANENT MEASURES PROVIDED TO REMOVE SUBSURFACE SEEPAGE, SPRINGS OR OTHER GROUND WATER DURING AND AFTER CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, WELL PERMITTING, FRENCH DRAIN, ETC. WHETHER OR NOT DEPICTED IN THE BID SET.
11. ALL CUT AND FILL SLOPES (WHERE NO WALL IS PROPOSED) SHALL BE EQUAL TO OR LESS THAN 2:1.

CONTRACTOR/DEVELOPER NOTES:

1. FOR OTHER SITE, MISCELLANEOUS AND/OR SPECIAL NOTES SPECIFIC TO VARIOUS CONSTRUCTION PHASES, REFER TO EACH INDIVIDUAL SHEET FOR SAID NOTES AND/OR CONDITIONS.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE POSITIVE DRAINAGE TO THE STORMWATER CONVEYANCE SYSTEM.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT PRIOR TO ORDERING PROJECT MATERIALS, THAT THE MOST CURRENT SET OF CONSTRUCTION DOCUMENTS HAVE BEEN OBTAINED FROM THE PROJECT ENGINEER INCLUDING, BUT NOT LIMITED TO, THE PERMITTED SET(S) FROM ALL APPLICABLE AGENCIES AS APPROPRIATE. THE PROJECT ENGINEER ACCEPTS NO RESPONSIBILITY FOR IMPROPER ORDERING OF MATERIALS.
4. NO BURIAL PITS FOR WASTE DISPOSAL ARE ALLOWED ON THIS SITE. NO PORTION OF WASTE DISPOSAL AREA SHALL BE LOCATED WITHIN ONE HUNDRED (100) LINEAR FEET OF ANY PROPERTY LINE OR ENCLOSED STRUCTURE.
5. THE DEVELOPER AND/OR DEVELOPER'S CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION, SIZE AND MATERIAL OF ANY EXISTING WATER OR SEWER FACILITY PROPOSED FOR CONNECTION OR USE BY THIS PROJECT.
6. DISTURBANCE TO ANY SURVEY MARKERS OR MONUMENTS REQUIRES RE-ESTABLISHMENT BY A LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
7. IF IN THE COURSE OF CONSTRUCTION, A CONFLICT ARISES BETWEEN THE NEW WORK AND THE EXISTING WATER AND SEWER FACILITIES, IT WILL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER, AT HIS EXPENSE, TO CORRECT SAME AS DIRECTED BY A REPRESENTATIVE OF THE UTILITY OWNER.

FLOODPLAIN/WETLANDS/STATE WATERS:

1. WETLANDS SHOWN UPON THESE CONSTRUCTION DOCUMENTS (IF ANY) ARE UNDER THE JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS. LOT OWNERS MAY BE SUBJECT BY LAW FOR DISTURBANCE TO THESE WETLANDS AREAS WITHOUT PROPER AUTHORIZATION.
2. THERE IS ESTABLISHED A 25 FOOT BUFFER ALONG THE BANKS OF ALL STATE WATERS, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW OR WAVE ACTION. NO LAND DISTURBING ACTIVITIES SHALL BE CONDUCTED WITHIN A BUFFER AND A BUFFER SHALL REMAIN IN ITS NATURAL, UNDISTURBED STATE OF VEGETATION UNTIL ALL LAND DISTURBING ACTIVITIES ON THE CONSTRUCTION SITE ARE COMPLETED. ONCE THE FINAL STABILIZATION OFTHE SITE IS ACHIEVED, A BUFFER MAY BE THINNED OR TRIMMED OF VEGETATION AS LONG AS A PROTECTIVE VEGETATIVE COVER REMAINS TO PROTECT WATER QUALITY AND AQUATIC HABITAT AND A NATURAL CANOPY IS LEFT IN SUFFICIENT QUANTITY TO KEEP SHADE ON THE STREAM BED; PROVIDED, HOWEVER, THAT ANY PERSON CONSTRUCTING A SINGLE FAMILY RESIDENCE, WHEN SUCH RESIDENCE IS CONSTRUCTED BY OR UNDER CONTRACT WITH THE OWNER FOR HIS OR HER OWN OCCUPANCY, MAY THIN OR TRIM VEGETATION IN A BUFFER AT ANY TIME AS LONG AS PROTECTIVE VEGETATIVE COVER REMAINS TO PROTECT WATER QUALITY AND AQUATIC HABITAT AND A NATURAL CANOPY IS LEFT IN SUFFICIENT QUANTITY TO KEEP SHADE ON THE STREAM.
3. THERE ARE NO LIVE STREAMS, WETLANDS, OR STATE WATERS LOCATED WITHIN THIS SITE, OR WITHIN 200 FEET OF THIS SITE.

UTILITY LOCATION:

1. CAUTION, UNDERGROUND SERVICE ALERT! THE CONTRACTOR SHALL TELEPHONE TOLL FREE 811 A MINIMUM OF 72 HOURS PRIOR TO THE START OF ANY EXCAVATION AS SHOWN AND NOTED ON THE APPROVED PLANS.
2. UNDERGROUND UTILITY LINE LOCATIONS (IF ANY) ARE APPROXIMATE ONLY, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF ANY SUCH UTILITIES. THE CONTRACTOR SHALL VERIFY LOCATIONS OF WATER, SANITARY SEWER AND POWER. UTILITIES SHOWN ON PLANS ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THE ENGINEER ASSUMES NO RESPONSIBILITY TO VERIFY ALL UTILITY LOCATIONS. CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY EXISTING UTILITIES WILL EFFECT OR IMPEDE THE PROGRESSION OR COMPLETION OF THE DESIGN INTENT OF THESE CONSTRUCTION DOCUMENTS.
3. THE CONTRACTOR SHALL COORDINATE RELOCATION OF ANY EXISTING UTILITIES WITH THE APPROPRIATE UTILITY ENTITY PRIOR TO THE START OF ANY CONSTRUCTION.

STORMWATER:

1. PIPE IS TO BE INSTALLED PER GA. D.O.T. STD 1030D.
2. ALL DROP INLETS ARE TO BE PER GA. D.O.T. STD. 1019A.
3. ALL HEADWALLS ARE TO BE PER GA. D.O.T. STD 1125.
4. CURB INLETS ARE TO BE CONSTRUCTED PER GA DOT STD. 1019, TYPE B, WITH METAL HOOD.
5. ALL CATCH BASINS ARE TO BE CONSTRUCTED PER GA. D.O.T. STD. 1033D OR 1034D.
6. ALL FLARED END SECTIONS ARE TO BE PER GA. D.O.T. STD. 1120 CONCRETE.
7. ALL JUNCTION BOXES ARE TO BE PER GA. D.O.T. STD. OR OTHER ACCEPTABLE DESIGN MODIFIED WITH A METAL CLEAN OUT COVER.

STRIPING AND SIGNAGE:

1. WARNING DEVICES SHALL BE PLACED PRIOR TO THE COMMENCEMENT OF ANY ROAD IMPROVEMENT WORK ON COUNTY ROADS AND SHALL REMAIN IN PLACE UNTIL THE CONCLUSION OF ALL SIGNING AND STRIPING WORK.
2. ALL WARNING DEVICES SHALL BE EITHER TYPE I BARRICADES OR DRUMS WITH WARNING LIGHTS ON EVERY OTHER DEVICE, AND SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR COLOR, SIZE, REFLECTIVITY, HEIGHT, AND PLACEMENT.
3. ALL SIGNS SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS FOR COLOR, SIZE, REFLECTIVITY, HEIGHT, AND PLACEMENT.
4. STRIPING (WHITE AND YELLOW) AND ARROW MARKINGS ON PRIVATE PROPERTY SHALL BE APPLIED USING GEORGIA D.O.T. STANDARD PAINT. ALL STRIPING AND PAVEMENT MARKINGS WITHIN GDOT RIGHT-OF-WAY SHALL BE THERMOPLASTIC.
5. WHEN NECESSARY, EXISTING STRIPING SHALL BE REMOVED BY GRINDING, UNLESS SPECIFIED BY THE COUNTY TRAFFIC ENGINEER.
6. ALL SIGNS MUST BE INSTALLED CONCURRENTLY WITH THE PERFORMANCE OF THE STRIPING WORK.

UTILITIES NOTES:

1. ALL DESIGN AND CONSTRUCTION FOR WATER, SEWER, FIRE LINES, LIFT STATIONS AND BACKFLOW PREVENTION SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE LOCAL WATER AND SEWER AUTHORITY.
2. FIELD CHANGES DURING CONSTRUCTION MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER-OF-RECORD.
3. CONTRACTOR MUST NOTIFY WATER AND SEWER CONSTRUCTION INSPECTOR AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

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WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210

FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

ROWLAND ENGINEERING
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(478) 621-7500 office
steven@rowland-engineering.com
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PROJECT NO: 2519

GA LEVEL II CERTIFIED DESIGN
PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25863 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

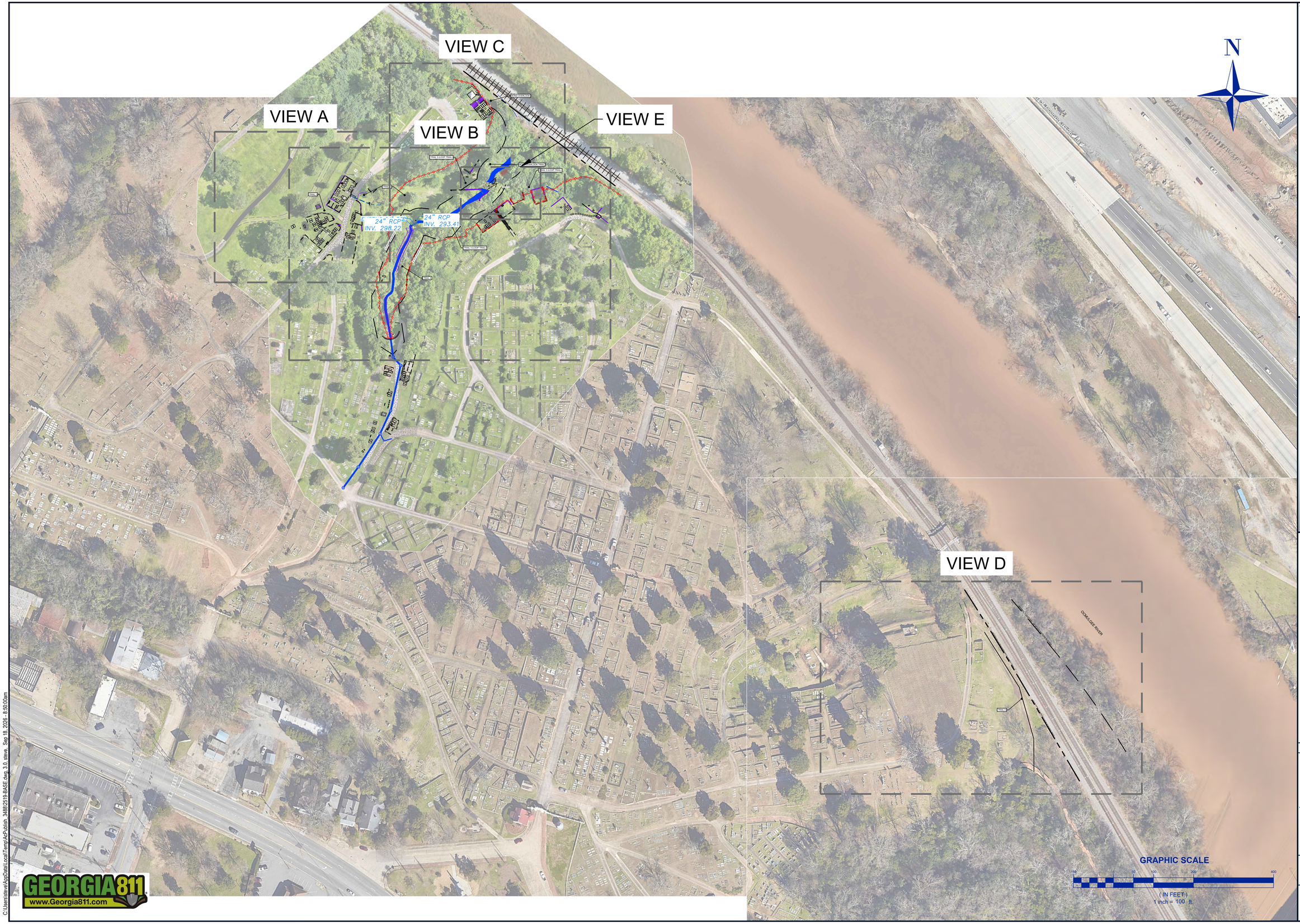
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2.0 - GENERAL NOTES

2.0

SHEET 2 OF 22

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WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210

FOR

MACON-BIBB COUNTY/ROSE HILL CEMETERY

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PROJECT NO: 2519

GA LEVEL II CERTIFIED DESIGN
PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25882 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

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3.0 - EXISTING CONDITIONS - INDEX SHEET

3.0

SHEET 3 OF 22

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GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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FOR

ROWLAND ENGINEERING
107 Industrial Park Drive, Ste B
Forsyth, GA 31029
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(478) 621-7500 office
steven@rowland-engineering.com

PROJECT NO: ####

GA LEVEL II CERTIFIED DESIGN
PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

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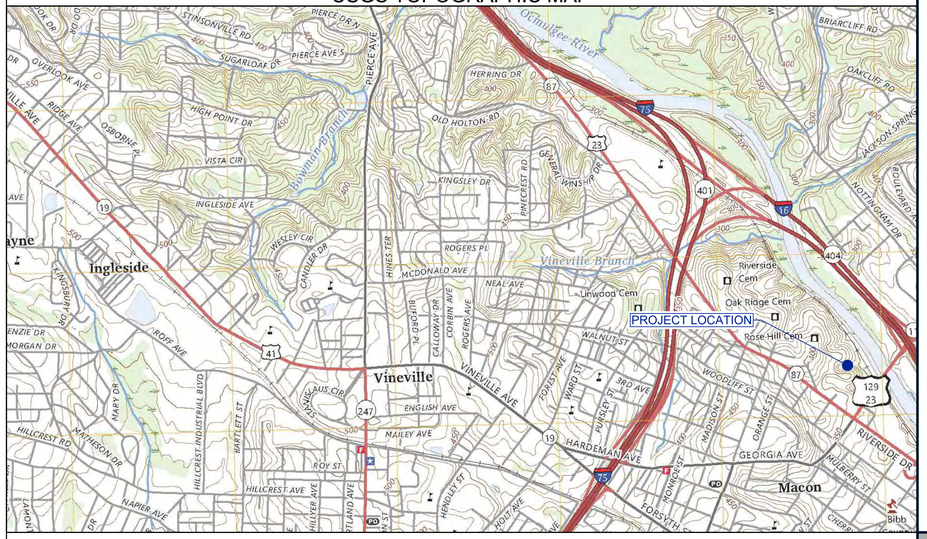
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SHEET#### OF #####

USGS TOPOGRAPHIC MAP



UNIFORM CODING SYSTEM

FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT			A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION			A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE			A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE			Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A storm flow outlet device constructed at zero grade across the slope whereby concentrated runoff may be discharged at a non-erosive velocity onto undisturbed areas stabilized by existing vegetation.
Rd	ROCK FILTER DAM			A temporary stone filter dam installed across drainageways or in conjunction with a temporary sediment trap.
Re	RETAINING WALL			A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING			A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, or a silt fence.
Sd2	INLET SEDIMENT TRAP			A temporary protective device formed at or around an inlet to a storm drain to trap sediment.
Sd3	TEMPORARY SEDIMENT BASIN			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER			A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM			Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING			A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORM DRAIN OUTLET PROTECTION			A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING			The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION			To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE			Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)			Planting vegetation on dunes that are denuded, artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)			Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP. SEEDING)			Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM. SEEDING)			Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)			A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS			Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS			Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM. VEGETATION)			The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION			A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS			Substance used to anchor straw or hay mulch by causing the organic material to bind together.

WALKING TRAILS AND REFLECTING POND
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FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

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Forsyth, GA. 31029
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www.rowland-engineering.com

PROJECT NO: 2519

GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL STEVEN A. ROWLAND

09-17-2026

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4.0 - ES&PC PLAN
BMP LEGEND

4.0

SHEET 4 OF 22

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INITIAL ES & PC PLAN NOTES:

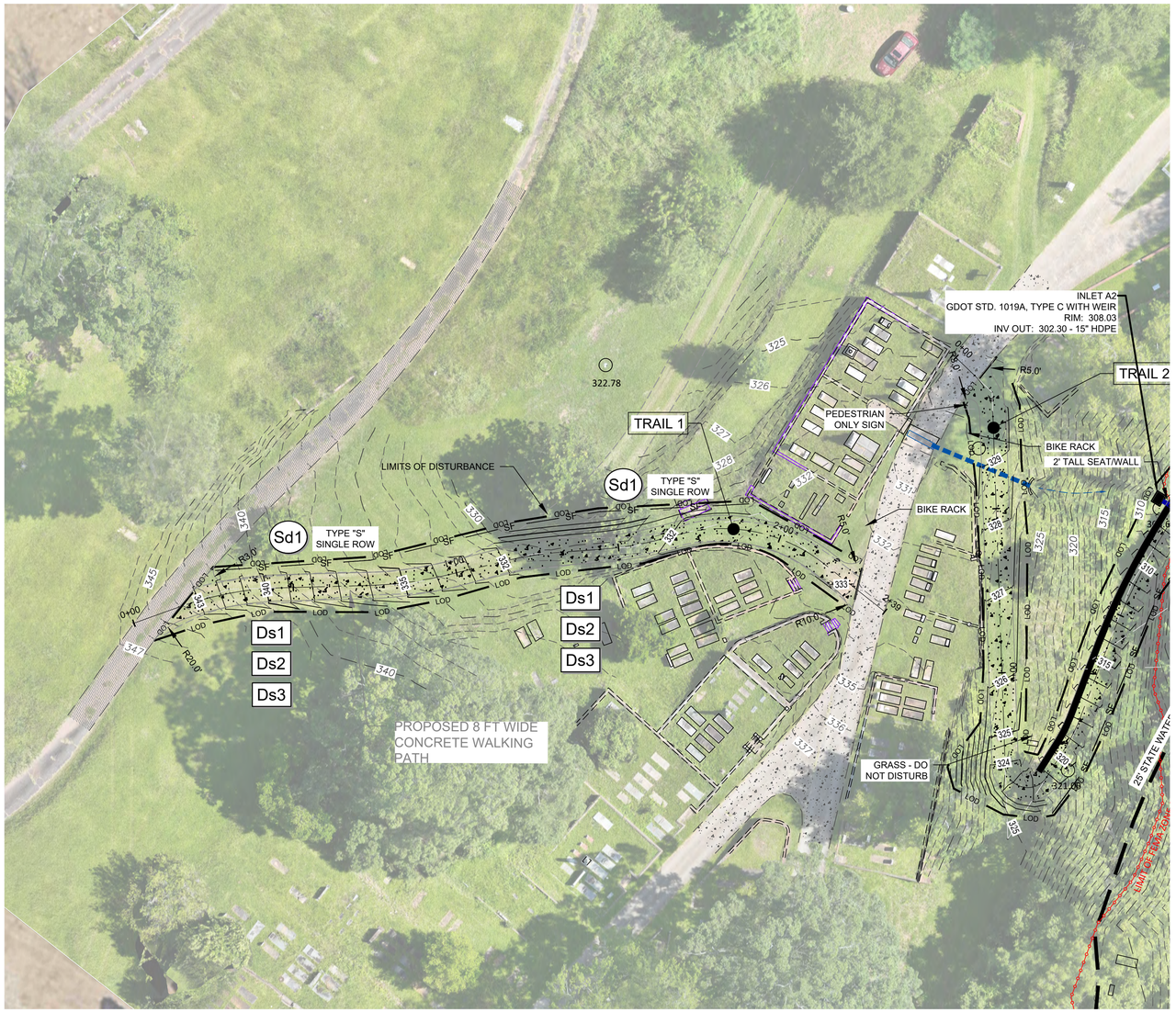
- FOR STAND ALONE PROJECTS THAT BEGIN CONSTRUCTION ACTIVITY AFTER THE EFFECTIVE DATE OF THIS PERMIT. THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, OR AN ALTERNATIVE DESIGN PROFESSIONAL APPROVED BY EPD IN WRITING, TO INSPECT AND CERTIFY THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WHICH THE DESIGN PROFESSIONAL DESIGNED WITHIN SEVEN (7) DAYS AFTER INSTALLATION. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMPS HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITTEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL PRIOR TO COMMENCING WITH CONSTRUCTION ACTIVITIES AS REQUIRED BY PART III.D.2 OF THIS PERMIT UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.
- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
- AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
- EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
- BUILDING MATERIALS AND BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS SHALL BE COVERED WITH PLASTIC SHEETING, TARPS OR OTHERWISE SHELTERED WHILE AWAITING TO BE USED FOR CONSTRUCTION IN ORDER TO MINIMIZE EXPOSURE TO PRECIPITATION AND TO STORMWATER.
-

(CHECKLIST ITEM #37)
NARRATIVE DESCRIPTION OF INITIAL PHASE OF CONSTRUCTION:

DURING THE INITIAL PHASE OF CONSTRUCTION, ALL PERIMETER BMP'S AND THE CONSTRUCTION ENTRANCE ARE TO BE INSTALLED. THE PERIMETER BMP'S INCLUDE SILT FENCE AND ALL SEDIMENT STORAGE BMP'S, SUCH AS RETROFITTING THE EXISTING STORMWATER POND.

CLEARING LIMITS ARE TO BE MARKED AND ANY BUFFERS ARE TO BE FLAGGED AND PROTECTED. THERE ARE NO BUFFERS WITHIN THIS PARTICULAR SITE.

SOILS LEGEND



N

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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FOR
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EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

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4.2A - ES&PC PLAN (VIEW A)

4.2A

SHEET 6 OF 22

INTERMEDIATE ES & PC PLAN NOTES:

- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
- AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
- EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
- BUILDING MATERIALS AND BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE, AND OTHER MATERIALS SHALL BE COVERED WITH PLASTIC SHEETING, TARPS OR OTHERWISE SHELTERED WHILE AWAITING TO BE USED FOR CONSTRUCTION IN ORDER TO MINIMIZE EXPOSURE TO PRECIPITATION AND TO STORMWATER.

(CHECKLIST ITEM #37)
NARRATIVE DESCRIPTION OF INTERMEDIATE PHASE OF CONSTRUCTION:

DURING THE INTERMEDIATE PHASE OF CONSTRUCTION, GRADING ACTIVITIES TAKE PLACE, ALONG WITH THE INSTALLATION OF DRAINAGE AND UTILITY INFRASTRUCTURE. ALL PERIMETER BMP'S ARE TO BE MAINTAINED AND ADDITIONAL BMP'S ARE TO BE INSTALLED AS DRAINAGE INFRASTRUCTURE IS INSTALLED, SUCH AS Sd2, INLET PROTECTION ON ALL STORM DRAINAGE BOXES. SLOPES ARE TO BE PROTECTED WITH SLOPE STABILIZATION MATTING AND ALL DISTURBED SURFACES ARE TO BE MULCHED AND SEEDED.

CONSTRUCTION ACTIVITIES WILL INCLUDE PAVING AND CONSTRUCTION OF CURB AND GUTTER AND SIDEWALKS. THE CONTRACTOR(S) SHALL UTILIZE APPROPRIATE BMP'S FOR THE CLEANING OF CONCRETE TRUCKS AND TOOLS.

THE FOLLOWING MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED:

- ALL IMPERVIOUS SURFACES WILL BE SURROUNDED BY GRASS AND/OR PERMANENT VEGETATION, WHICH WILL ACT AS A FILTER TO STORMWATER RUNOFF.
- DRAINAGE SWALES WILL BE VEGETATED TO PROVIDE STORMWATER FILTERING OF RUNOFF
- STORMWATER DETENTION PONDS WILL FILTER SEDIMENT AND OTHER POLLUTANTS BEFORE RUNOFF IS DISCHARGED FROM THE SITE.

TRAIL 3 (LOOP TRAIL)
WETLAND IMPACT AREA = 3577 SF
LIMIT OF FEMA ZONE AE
DOWNSTREAM STORMWATER SAMPLING LOCATION
BOND OVERLOOK TRAIL
TRAIL 3 (LOOP TRAIL)
15.13' of 15" HDPE @ 2.00%
HW A1
RIM: 303.86
INV IN: 302.00 - 15" HDPE
PROPOSED 8' WIDE CONCRETE WALKING PATH
INLET A2
GDOT STD. 1019A, TYPE C WITH WEIR
RIM: 308.03
INV OUT: 302.30 - 15" HDPE
TRAIL 2
R5.0'
PEDESTRIAN ONLY SIGN
BIKE RACK
2' TALL SEAT/WALL
Sd1
TYPE "S" SINGLE ROW
PROPOSED REFLECTING POOL (3.5' DEEP)
PROPOSED CONCRETE FLUME
24" RCP INV: 293.41
EXISTING 24" RCP
24" RCP
INV: 298.22
Ds1
Ds2
Ds3
Ss
Sd1
TYPE "S" DOUBLE ROW
PROPOSED 8' WIDE CONCRETE WALKING PATH
BIKE RACK
332.86
25' STATE WATERS BUFFER
STREAM IMPACT AREA = 1094 SF
TRAIL 3 (LOOP TRAIL)
PROPOSED 8' WIDE CONCRETE WALKING PATH
DISTURBED AREA WITHIN THE STATE WATERS BUFFER
14,871 S.F. (0.34 ACRES)
TRAIL 4
IMPERVIOUS AREA WITHIN THE STATE WATERS BUFFER
3,515 S.F. (0.08 ACRES)
UPSTREAM STORMWATER SAMPLING LOCATION
319.97
N

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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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FOR
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PROJECT NO: 2519

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EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

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4.2B - ES&PC PLAN (VIEW B)

4.2B

SHEET 7 OF 22

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FINAL ES & PC PLAN NOTES:

- NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
- AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
- EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
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THE FOLLOWING MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED:

- ALL IMPERVIOUS SURFACES WILL BE SURROUNDED BY GRASS AND/OR PERMANENT VEGETATION, WHICH WILL ACT AS A FILTER TO STORMWATER RUNOFF.
- DRAINAGE SWALES WILL BE VEGETATED TO PROVIDE STORMWATER FILTERING OF RUNOFF
- STORMWATER DETENTION PONDS WILL FILTER SEDIMENT AND OTHER POLLUTANTS BEFORE RUNOFF IS DISCHARGED FROM THE SITE.

(CHECKLIST ITEM #37)
NARRATIVE DESCRIPTION OF FINAL PHASE OF CONSTRUCTION:

DURING THE FINAL PHASE OF CONSTRUCTION, FINE GRADING IS PERFORMED AND LANDSCAPING IS INSTALLED. ALL PERIMETER BMP'S ARE TO BE MAINTAINED AND REMOVED ONLY WHEN FINAL STABILIZATION OF DISTURBED AREAS IS COMPLETE. SLOPES ARE TO BE PROTECTED WITH PERMANENT SLOPE STABILIZATION MATTING AND ALL DISTURBED SURFACES ARE TO BE PERMANENTLY GRASSED, SODDED OR LANDSCAPED AS REQUIRED. STORM DRAINAGE PIPE OUTLET PROTECTION IS TO BE INSTALLED AS A PERMANENT BMP.

ANY ACCUMULATED SEDIMENT IN DETENTION PONDS SHALL BE CLEANED OUT AND PERMANENT VEGETATION ESTABLISHED.

N

OCMULGEE RIVER

APPROX. LOCATION 25' STATE WATERS BUFFER

Sd1 TYPE S SINGLE ROW

RAILROAD R/W (15' FROM CENTERLINE OF NEAREST TRACK)

PROPOSED 10' WIDE CONCRETE WALKING/BIKE PATH (379 S.Y.)

LIMITS OF DISTURBANCE
AREA = 0.15 ACRES

TRAIL 5

Ds1
Ds2
Ds3

R20.0'

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

WALKING TRAILS AND REFLECTING POND
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FOR
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09-17-2026

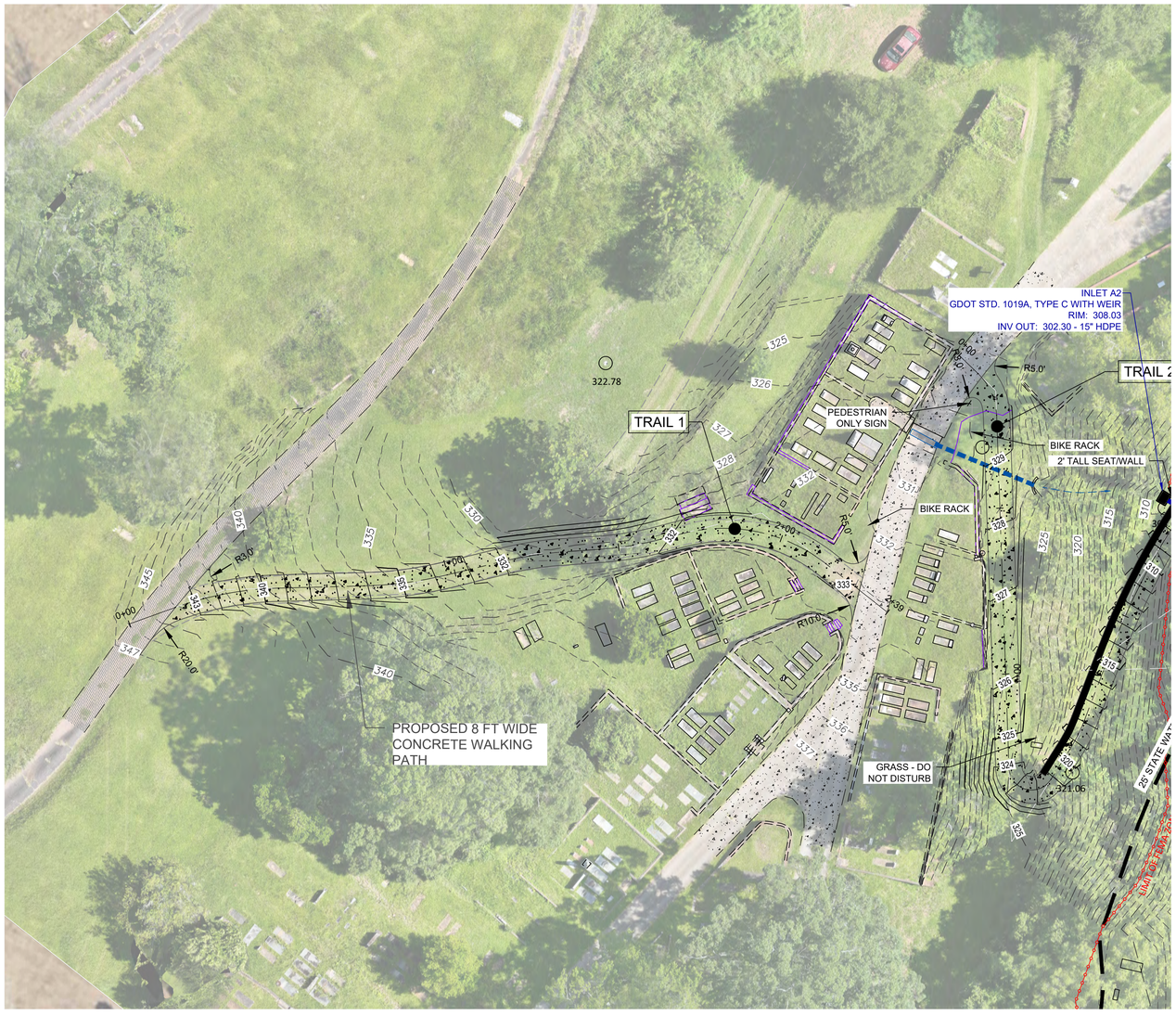
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4.2C - ES&PC PLAN (VIEW C)

4.2C

SHEET 8 OF 22

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LEGEND

	EXISTING	PROPOSED
CONTOUR LINE	453	453
SANITARY SEWER LINE	SS	SS
SS MANHOLE	S	S
SS CLEANOUT	CO	CLEANOUT
STORM DRAIN LINE		
STORM DRAINAGE INLETS		
WATER LINE		W
WOODS LINE		
FENCE LINE		
WATER VALVE		
WATER METER		
FIRE DEPARTMENT CONNECTION	FDC	
FIRE HYDRANT		
TELEPHONE PEDESTAL	T	
TELEPHONE MANHOLE	TMH	
SIGN		
TREE (SIZE AND TYPE NOTED)		
REINFORCED CONCRETE PIPE	RCP	
CORRUGATED METAL PIPE	CMP	
HIGH DENSITY POLYETHYLENE PIPE	HDPE	
LIGHT POLE		
ELECTRIC BOX	E	
TELEVISION PEDESTAL	TV	
SPOT ELEVATION		
BENCHMARK		
ASPHALT PAVING		
CURB AND GUTTER		
SIDEWALK		
GRAVEL		
BUILDING		

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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

N

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5.0A - GRADING PLAN (VIEW A)

5.0A

SHEET 9 OF 22

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TRAIL 3 (LOOP TRAIL)

WETLAND IMPACT AREA = 3577 SF

LIMIT OF FEMA ZONE AE

15.13' of 15" HDPE @ 2.00%

HW A1
RIM: 303.86
INV IN: 302.00 - 15" HDPE

INLET A2
GDOT STD. 1019A, TYPE C WITH WEIR
RIM: 308.03
INV OUT: 302.30 - 15" HDPE

PROPOSED 8' WIDE CONCRETE WALKING PATH

BOND OVERLOOK TRAIL

TRAIL 3 (LOOP TRAIL)

TRAIL 2

TRAIL 1

PEDESTRIAN ONLY SIGN

BIKE RACK

2' TALL SEAT/WALL

PROPOSED REFLECTING POOL (3.5' DEEP)

PROPOSED CONCRETE FLUME

EXISTING 24" RCP

24" RCP
INV. 298.22

25' STATE WATERS BUFFER

GRASS - DO NOT DISTURB

STREAM IMPACT AREA = 1094 SF

TRAIL 3 (LOOP TRAIL)

PROPOSED 8' WIDE CONCRETE WALKING PATH

PROPOSED 8' WIDE CONCRETE WALKING PATH

BIKE RACK

TRAIL 4

322.78

321.06

319.97

332.86

N

LEGEND

	EXISTING	PROPOSED
CONTOUR LINE	453	453
SANITARY SEWER LINE		SS
SS MANHOLE	SS CO	SS
SS CLEANOUT		CLEANOUT
STORM DRAIN LINE		
STORM DRAINAGE INLETS		
WATER LINE	W	W
WOODS LINE		
FENCE LINE		
WATER VALVE		
WATER METER		
FIRE DEPARTMENT CONNECTION	FDC	
FIRE HYDRANT		
TELEPHONE PEDESTAL	T	
TELEPHONE MANHOLE	TMH	
SIGN		
TREE (SIZE AND TYPE NOTED)		
REINFORCED CONCRETE PIPE	RCP	
CORRUGATED METAL PIPE	CMP	
HIGH DENSITY POLYETHYLENE PIPE	HDPE	
LIGHT POLE		
ELECTRIC BOX	E	
TELEVISION PEDESTAL	TV	
SPOT ELEVATION	100.00	100.00
BENCHMARK		
ASPHALT PAVING		
CURB AND GUTTER		
SIDEWALK		
GRAVEL		
BUILDING		

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(IN FEET)
1 inch = 20 ft.

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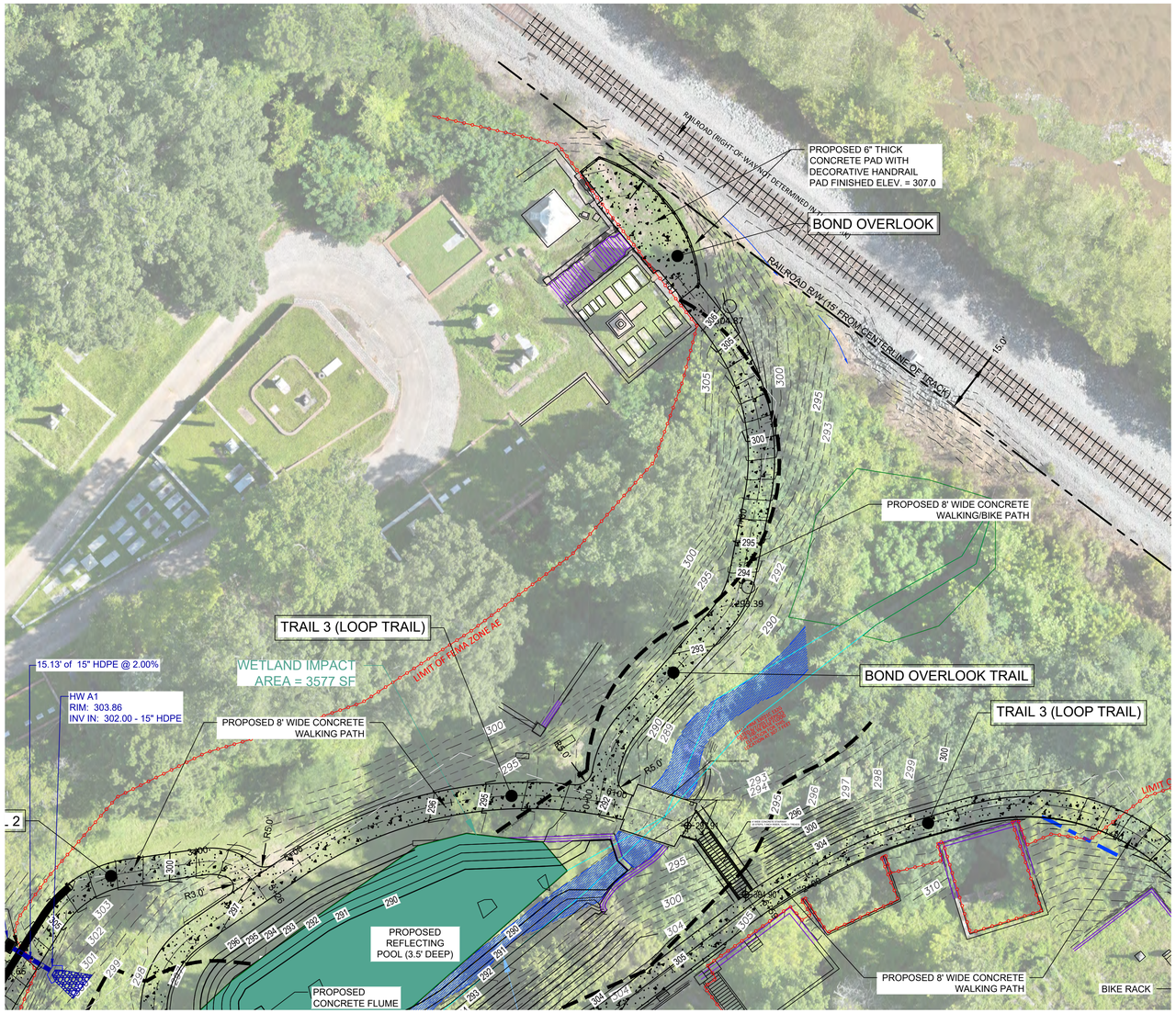
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5.0B - GRADING PLAN (VIEW B)

5.0B

SHEET 10 OF 22



LEGEND

	EXISTING	PROPOSED
CONTOUR LINE	453	453
SANITARY SEWER LINE	S	SS
SS MANHOLE	S	S
SS CLEANOUT	CO	CLEANOUT
STORM DRAIN LINE		
STORM DRAINAGE INLETS		
WATER LINE	W	W
WOODS LINE		
FENCE LINE		
WATER VALVE		
WATER METER		
FIRE DEPARTMENT CONNECTION	FDC	
FIRE HYDRANT		
TELEPHONE PEDESTAL	T	
TELEPHONE MANHOLE	TMH	
SIGN		
TREE (SIZE AND TYPE NOTED)		
REINFORCED CONCRETE PIPE	RCP	
CORRUGATED METAL PIPE	CMP	
HIGH DENSITY POLYETHYLENE PIPE	HDPE	
LIGHT POLE		
ELECTRIC BOX	E	
TELEVISION PEDESTAL	TV	
SPOT ELEVATION	100.00	100.00
BENCHMARK		
ASPHALT PAVING		
CURB AND GUTTER		
SIDEWALK		
GRAVEL		
BUILDING		

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

N

WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210

FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

ROWLAND ENGINEERING
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PROJECT NO: 2519

GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL STEVEN A. ROWLAND ENGINEER

09-17-2026

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5.0C - GRADING PLAN (VIEW C)

5.0C

SHEET 11 OF 22

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WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210
FOR

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ENGINEER
STEVEN A. ROWLAND
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5.0D - GRADING PLAN (VIEW D)

5.0D

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FEMA FIRM 13021C 132G
DATED 6/7/2017 DEPICTS
THE 100-YR BASE FLOOD
ELEVATION FOR THIS
LOCATION AT 307.7 FEET

N

TRAIL 3 (LOOP

R5.0'

R5.0'

EXISTING CONCRETE BRIDGE

HANDRAILS

4' WIDE CONCRETE STAIRWAY
20 STEPS, 7-INCH RISER, 12-INCH TREADS

292.91

304.90

29.7'

22.0'

4.0'

25' STATE WATERS BUFFER

25' STATE WATERS BUFFER

PROPOSED 8' WIDE CONCRETE WALKING PATH

LEGEND

	EXISTING	PROPOSED
CONTOUR LINE	453	453
SANITARY SEWER LINE		SS
SS MANHOLE	SS	
SS CLEANOUT	CO	CLEANOUT
STORM DRAIN LINE		
STORM DRAINAGE INLETS		W
WATER LINE	W	
WOODS LINE		
FENCE LINE		
WATER VALVE		
WATER METER		
FIRE DEPARTMENT CONNECTION	FDC	
FIRE HYDRANT		
TELEPHONE PEDESTAL	T	
TELEPHONE MANHOLE	TMH	
SIGN		
TREE (SIZE AND TYPE NOTED)		
REINFORCED CONCRETE PIPE	RCP	
CORRUGATED METAL PIPE	CMP	
HIGH DENSITY POLYETHYLENE PIPE	HDPE	
LIGHT POLE		
ELECTRIC BOX	E	
TELEVISION PEDESTAL	TV	
SPOT ELEVATION	100.00	100.00
BENCHMARK		
ASPHALT PAVING		
CURB AND GUTTER		
SIDEWALK		
GRAVEL		
BUILDING		

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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09-17-2026

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5.0E - STAIRWAY AND BRIDGE RAILING DETAIL

5.0E

SHEET 13 OF 22

REFLECTING POOL CONSTRUCTION/DIVERSION NOTES:

THE PROPOSED PROJECT CONSISTS OF CONSTRUCTING A REFLECTING POOL WITHIN THE LIMITS OF AN EXISTING STREAM CHANNEL AT ROSE HILL CEMETERY IN MACON, GEORGIA. HISTORICAL RECORDS AND SITE OBSERVATIONS INDICATE THAT A POND PREVIOUSLY EXISTED AT THIS LOCATION BUT HAS BECOME FILLED WITH SEDIMENT OVER TIME. THE PROJECT WILL RESTORE THE HISTORIC WATER FEATURE BY EXCAVATING ACCUMULATED SEDIMENT AND CONSTRUCTING THE PROPOSED REFLECTING POOL.

DUE TO EXISTING SITE CONSTRAINTS, INCLUDING SIGNIFICANT TOPOGRAPHIC LIMITATIONS, MATURE CEMETERY FEATURES, AND ADJACENT GRAVE SITES, SUFFICIENT SPACE IS NOT AVAILABLE TO CONSTRUCT A CONVENTIONAL TEMPORARY BYPASS CHANNEL AROUND THE WORK AREA. THEREFORE, A TEMPORARY PUMPING DIVERSION SYSTEM IS PROPOSED TO MAINTAIN STREAM FLOW DURING CONSTRUCTION WHILE ALLOWING EXCAVATION ACTIVITIES TO OCCUR IN DRY CONDITIONS.

TEMPORARY DIVERSION PLAN

PRIOR TO COMMENCEMENT OF EXCAVATION ACTIVITIES, A TEMPORARY COFFERDAM WILL BE INSTALLED UPSTREAM OF THE PROPOSED REFLECTING POOL LIMITS TO IMPOUND AND DIRECT NORMAL STREAM FLOW TO A TEMPORARY PUMPING SYSTEM.

THE TEMPORARY DIVERSION SYSTEM WILL CONSIST OF THE FOLLOWING COMPONENTS:

1. UPSTREAM COFFERDAM

A TEMPORARY COFFERDAM WILL BE CONSTRUCTED IMMEDIATELY UPSTREAM OF THE PROPOSED WORK AREA USING CLEAN STONE, SANDBAGS, WATER-FILLED BARRIERS, OR OTHER APPROVED TEMPORARY MATERIALS.

THE COFFERDAM WILL:

ISOLATE THE CONSTRUCTION AREA FROM UPSTREAM FLOW.
CREATE A SMALL SUMP AREA FOR PUMP INTAKE.
BE SIZED TO ACCOMMODATE ANTICIPATED BASE STREAM FLOWS.
BE INSTALLED IN A MANNER THAT MINIMIZES DISTURBANCE TO THE STREAM CHANNEL AND ADJACENT AREAS.

THE COFFERDAM WILL REMAIN IN PLACE ONLY FOR THE DURATION NECESSARY TO COMPLETE EXCAVATION AND CONSTRUCTION ACTIVITIES.

2. PUMPED STREAM DIVERSION

A TEMPORARY PUMP SYSTEM WILL BE INSTALLED UPSTREAM OF THE COFFERDAM TO CONVEY STREAM FLOW AROUND THE CONSTRUCTION AREA.

THE PUMP SYSTEM WILL:

MAINTAIN CONTINUOUS DOWNSTREAM FLOW DURING CONSTRUCTION.
BE SIZED TO ACCOMMODATE NORMAL STREAM BASE FLOW CONDITIONS AND ANTICIPATED RAINFALL EVENTS OCCURRING DURING CONSTRUCTION.
INCLUDE BACKUP PUMPING CAPACITY AVAILABLE ON-SITE IN THE EVENT OF PRIMARY PUMP FAILURE.
OPERATE CONTINUOUSLY WHENEVER THE WORK AREA IS ISOLATED.

THE DISCHARGE LINE WILL CONVEY WATER AROUND THE EXCAVATION LIMITS AND RELEASE FLOW DOWNSTREAM OF THE PROPOSED REFLECTING POOL CONSTRUCTION AREA.

3. DISCHARGE PROTECTION

PUMP DISCHARGE WILL BE DIRECTED TO A STABILIZED OUTLET LOCATED DOWNSTREAM OF THE CONSTRUCTION LIMITS. THERE IS AN EXISTING CONCRETE PAD JUST DOWNSTREAM OF THE EXISTING WEIR WALL, WHERE THE PUMP SHOULD DISCHARGE, TO AVOID EROSION OF THE STREAM BED.

4. DEWATERING OPERATIONS

ANY WATER ACCUMULATING WITHIN THE ISOLATED WORK AREA FROM GROUNDWATER INFILTRATION, RAINFALL, OR RESIDUAL FLOWS WILL BE REMOVED THROUGH TEMPORARY DEWATERING MEASURES.

WATER GENERATED DURING DEWATERING ACTIVITIES WILL:

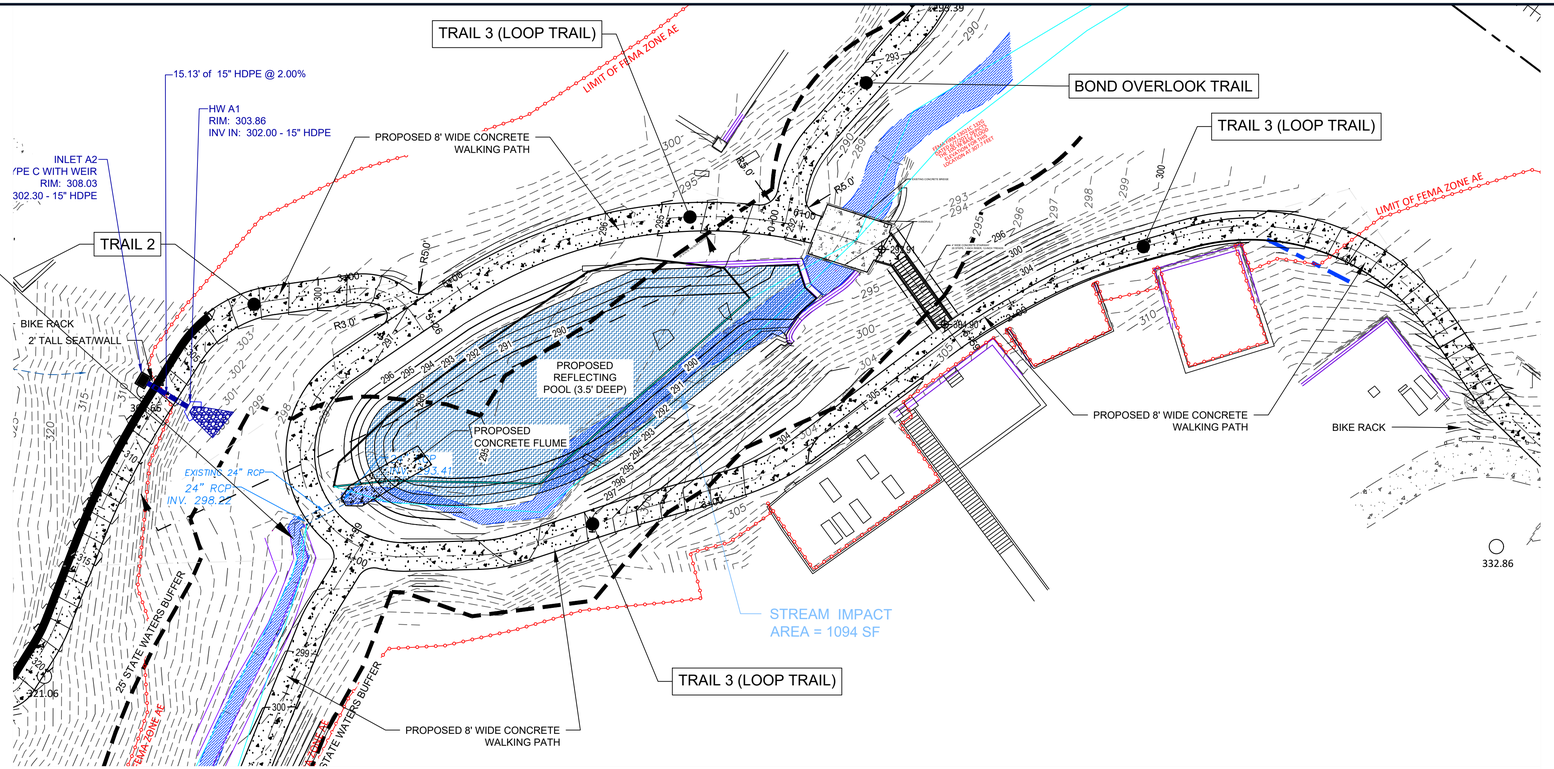
BE PUMPED TO AN APPROPRIATELY SIZED SEDIMENT FILTERING DEVICE, SEDIMENT BAG, OR TEMPORARY SETTLING AREA PRIOR TO DISCHARGE.
BE DISCHARGED IN A MANNER THAT PREVENTS EROSION AND SEDIMENT TRANSPORT.
COMPLY WITH ALL APPLICABLE EROSION AND SEDIMENT CONTROL REQUIREMENTS.

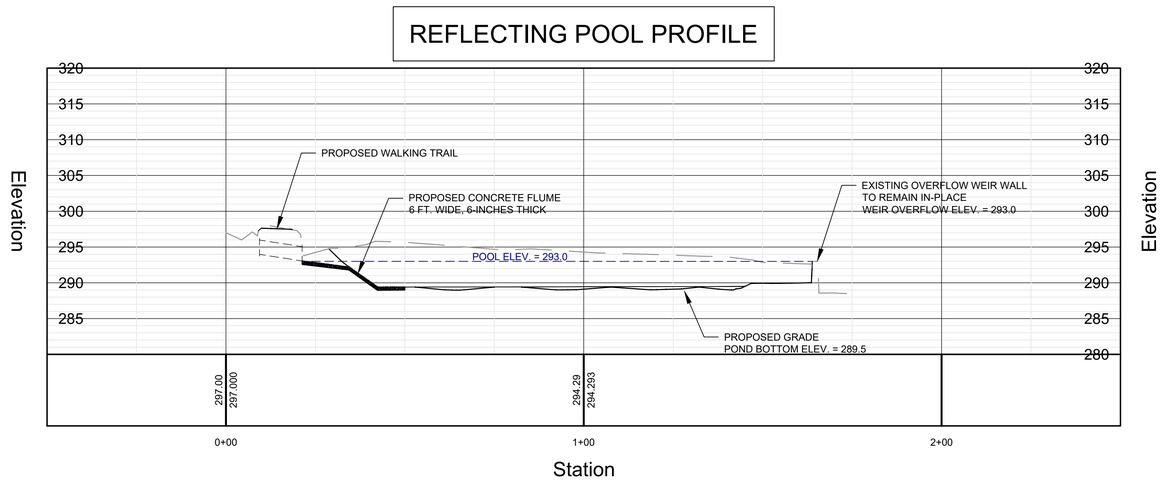
NO TURBID WATER FROM EXCAVATION ACTIVITIES WILL BE DISCHARGED DIRECTLY INTO THE STREAM.

EXCAVATION AND CONSTRUCTION ACTIVITIES

ONCE STREAM FLOW HAS BEEN FULLY DIVERTED AROUND THE WORK AREA, ACCUMULATED SEDIMENT WILL BE EXCAVATED TO ESTABLISH THE PROPOSED REFLECTING POOL GEOMETRY AND ELEVATIONS.

ALL DISTURBED AREAS OUTSIDE THE PERMANENT WATER FEATURE WILL BE STABILIZED AS CONSTRUCTION PROGRESSES.





GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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WALKING TRAILS AND REFLECTING POND
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FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

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GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

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6.0 - REFLECTING POOL DETAIL SHEET

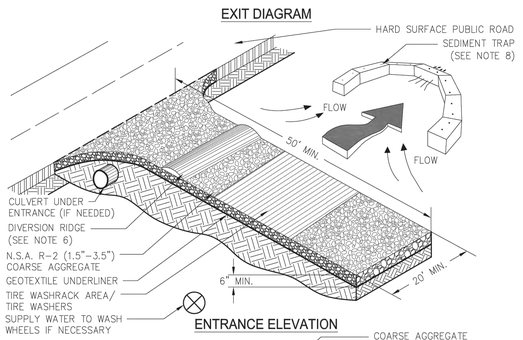
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SHEET 14 OF 22

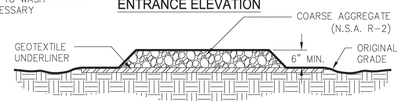
Co Construction Exit

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION



NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Ds1 Disturbed Area Stabilization (With Mulching Only)

SPECIFICATIONS

Mulching Without Seeding
This standard applies to graded or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation
1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
3. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
Select one of the following materials and apply at the depth indicated:
4. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil cover-age. One advantage of this material is easy application.
5. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of develop-ment should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
6. Polyethylene film shall be secured over banks or stockpiled soil material for tem-porary protection. This material can be sal-vaged and re-used.

Applying Mulch
When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.
1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.
2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of ni-trogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
3. Apply polyethylene film on exposed areas.

Anchoring Mulch
1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application.

   Straw or hay mulch spread with special blower-type equipment may be anchored. Tackifers, binders and hydraulic mulch with tackifier specifically desgined for tacking straw can be substituted for emulsified asphalt. Please refer to specification **Tac Tackifers**. Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.

2. Netting of the appropriate size shall be used to anchor wood waste. Openings of the net-ting shall not be larger than the average size of the wood waste chips.
3. Polyethylene film shall be anchor trenched at the top as well as incrementally as necessary.

Ds2 Disturbed Area Stabilization (With Temporary Seeding)

CONDITIONS

Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

SPECIFICATIONS

Grading and Shaping
Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others. No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation
When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or hand-seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall. When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer
Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate determined by soil test for pH. Quick acting lime should be incorporated to modify pH during the germination period. Bio stimulants should also be considered when there is less than 3% organic matter in the soil. Graded areas require lime application. Soils must be tested to determine required amounts of fertilizer and amendments. Fertilizer should be applied before land preparation and incorporated with a disk, ripper, or chisel. On slopes too steep for, or inaccessible to equipment, fertilizer shall be hydraulically applied, preferably in the first pass with seed and some hydraulic mulch, then topped with the remaining required application rate.

Seeding

Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or culti-packer seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be"raked" lightly to cover seed with soil if seeded by hand.

Mulching

Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to Ds1- Disturbed Area Stabilization (With Mulching Only).

Irrigation

During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

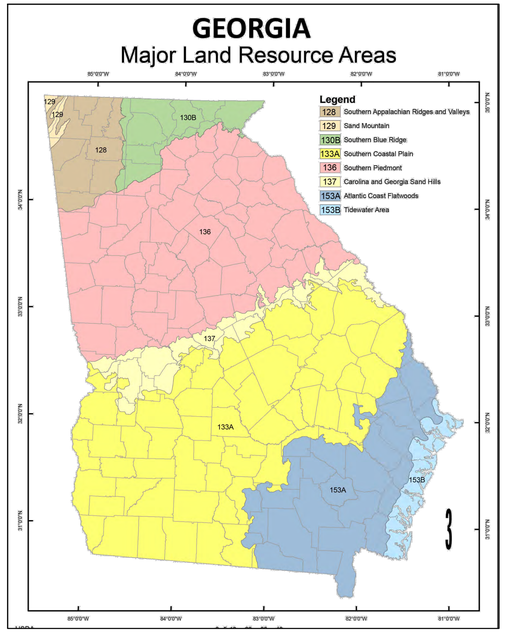


Table 6-4.1 - Temporary Cover or Companion Cover Crops
PLANT, PLANTING RATE, AND PLANTING DATE FOR TEMPORARY COVER OR COMPANION CROPS [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.)												Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft		J	F	M	A	M	J	J	A	S	O	N	D	
BARLEY *Hordeum vulagre*																
alone	3 bu. (144 lbs)	3.3 lbs	M-L													14,000 seed per pound. Winter hardy. Use on productive soils.
in mixture	1/2 bu. (24lbs)	0.6 lb	P													
			C													
LESPEDEZA, ANNUAL *Lespedeza striata*																
alone	40 lbs	0.9 lb	M-L													200,000 seed per pound. May volunteer for several years. Use inoculant EL.
in mixture	10 lbs	0.2 lb	P													
			C													
LOVEGRASS, WEEPING *Eragrostis curvula*																
alone	4 lbs	0.1 lb	M-L													1,500,000 seed per pound. May last for several years. Mix with *Sericea lespedeza.*
in mixture	2 lbs	0.05 lb	P													
			C													
MILLET, BROWNTOP *Panicum fasciculatum*																
alone	40 lbs	0.9 lb	M-L													137,000 seed per pound. Quick dense cover. Will provide excessive competion in mixtures if seeded at high rate.
in mixture	10 lbs	0.2 lb	P													
			C													

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.)												Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft		J	F	M	A	M	J	J	A	S	O	N	D	
MILLET, PEARL *Pennesetum glaucum*																
alone	50 lbs	1.1 lbs	M-L													88,000 seed per pound. Quick dense cover. May reach 5 feet in height. Not recommended for mixtures.
			P													
			C													
OATS *Avena sativa*																
alone	4 bu. (128 lbs)	2.9 lbs	M-L													
in mixture	1 bu. (32 lbs)	0.7 lb	P													13,000 seed per pound. Use on productive soils. Not as a winter hardy as rye or barley.
			C													
RYE *Secale cereale*																
alone	3 bu. (168 lbs)	3.9 lbs	M-L													
in mixture	1/2 bu. (28 lbs)	0.6 lb	P													18,000 seed per pound. Quick cover. Drought tolerant and winter hardy.
			C													
RYEGRASS, ANNUAL *Lolium temulentum*																
alone	40 lbs	0.9 lb	M-L													
			P													227,000 seed per pound. Dense cover. Very competitive and is not to be used in mixtures.
			C													
SUDANGRASS *Sorghum sudanese*																
alone	60 lbs	1.4 lbs	M-L													
			P													55,000 seed per pound. Good on droughty sites. Not recommended for mixtures.
			C													

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.)												Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft		J	F	M	A	M	J	J	A	S	O	N	D	
TRITICALE *X-Triticosecale*																
alone	3 bu. (144 lbs)	3.3 lbs	C													Use on lower part of Southern Coastal Plain and in Atlantic Coastal Flatwoods only.
in mixture	1/2 bu. (24 lbs)	0.6 lb														
WHEAT *Triticum aestivum*																
alone	3 bu. (180 lbs)	4.1 lbs	M-L													15,000 seed per pound. Winter hardy.
in mixture	1/2 bu. (30 lbs)	0.7 lb	P													
			C													

[1]Temporary cover crops are very competitive and will crowd out perennials if seeded too heavily
[2]Reduce seeding rates by 50% when drilled.
[3]M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents Southern Coastal Plan; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs
(see Figure 6-4.1, p. 6-40)

WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210

FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

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PROJECT NO: 2247
GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

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8.0 ES&PC PLAN
BMP DETAILS

8.0

SHEET 15 OF 20

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Ds3

Disturbed Area Stabilization (With Permanent Vegetation)

REQUIREMENT FOR REGULATORY COMPLIANCE

This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than six months. This practice or sodding shall be applied immediately to all areas at final grade. **Final Stabilization** means that all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by the GA EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures.
Permanent vegetation shall consist of planted trees, shrubs, perennial vines; or a crop of perennial vegetation appropriate for the region, such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Final stabilization applies to each phase of construction. For linear construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use. Until this standard is satisfied and permanent control measures and facilities are operational, interim stabilization measures and temporary erosion and sedimentation control measures shall not be removed.

CONDITIONS

Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, dams, and other denuded areas.

PLANNING CONSIDERATIONS

1. Use conventional planting methods where possible.
2. When mixed plantings are done during marginal planting periods, companion crops shall be used.
3. No-till planting is effective when planting is done following a summer or winter annual cover crop. Sericea lespedeza planted no-till into stands of rye is an excellent procedure.
4. Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other structures. Refer to Specification **Ds4-Disturbed Area Stabilization (With Sodding)**.
5. Irrigation should be used when the soil is dry or when summer plantings are done.
6. Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.
7. Mowing should not be performed during the quail nesting season (May to September).
8. Wildlife plantings should be included in critical area plantings.

Wildlife Plantings

Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees
Beech, Black Cherry, Blackgum, Chestnut, Chinkapin, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and Sweetgum.

All trees that produce nuts or fruits are favored by many game species. Hickory provides nuts used mainly by squirrels and bear.

Shrubs and Small Trees
Bayberry, Bicolor Lespedeza, Crabapple, Dogwood, Huckleberry or Native Blueberry, Mountain Laurel, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry.

Plant in patches without tall trees to develop stable shrub communities.
All produce fruits used by many kinds of wildlife, except for lespedeza which produces seeds used by quail and songbirds.

Grasses, Legumes, Vines and Temporary Cover
Bahiagrass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual Lespedeza, Orchardgrass (for mountains), Browntop Millet (for temporary cover), and Native grapes.

Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and lespedezas may be mixed with grass, but they may die out after a few years.

CONSTRUCTION SPECIFICATIONS

Grading and Shaping

Grading and shaping may not be required where hydraulic seeding and fertilizing equipment is to be used. Vertical banks shall be sloped to enable plant establishment. When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical, so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation. Concentrations of water that will cause excessive soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Lime and Fertilizer Rates and Analysis

Agricultural lime is required at the rate of one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within six months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the Georgia Department of Agriculture.
Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent will pass through a 100-mesh sieve. Fast-acting lime spread by hydraulic seeding equipment should be "finely ground limestone" spanning from the 180 micron size to the 5 micron size. Finely ground limestone is calcitic or dolomitic limestone ground so that 95% of the material will pass through a 100-mesh sieve. It is desirable to use dolomitic limestone in the Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See Figure 6-4.1) Agricultural lime is generally not required where only trees are planted. Initial fertilization, nitrogen, topdressing, and maintenance fertilizer requirements for each species or combination of species are listed in Table 6-5.1.

Lime and Fertilizer Application

When hydraulic seeding equipment is used, the initial fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the hydroseeder. Finely ground limestone can be applied in the mulch slurry or combination with the op dressing. When conventional planting is to be done, lime and fertilizer shall be applied uniformly in one of the following ways:
1. Apply before land preparation so that it will be mixed with the soil during seedbed preparation.
2. Mix with the soil used to fill the holes, distribute in furrows.
3. Broadcast after steep surfaces are scarified, pitted or trenched.
4. A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seedling

Plant Selection

Refer to Tables 6-4.1, 6-5.2, 6-5.3 and 6-5.4 for approved species. Species not listed shall be approved by the State Resource Conservationist of the Natural Resources Conservation Service before they are used. Plants shall be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and the needs and desires of the land user. Some perennial species are easily established and can be planted alone. Examples of these are Common Bermuda, Tall Fescue, and Weeping Lovegrass. Other perennials, such as Bahia Grass and Sericea Lespedeza, are slow to become established and should be planted with another perennial species. The additional species will provide quick cover and ample soil protection until the target perennial species become established.
For example, Common seeding combinations are
1) Weeping Lovegrass with Sericea Lespedeza (scarified) and
2) Tall Fescue with Sericea Lespedeza (unscarified).

Plant selection may also include annual companion crops. Annual companion crops should be used only when the perennial species are not planted during their optimum planting period. A common mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in selecting companion crop species and seeding rates because annual crops will compete with perennial species for water, nutrients, and growing space. A high seeding rate of the companion crop may prevent the establishment of perennial species. **Ryegrass shall not be used in any seeding mixtures containing perennial species due to its ability to out-compete desired species chosen for permanent perennial cover.**

Seed Quality

The term "pure live seed" is used to express the quality of seed and is not shown on the label. Pure live seed, PLS, is expressed as a percentage of the seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is determined by multiplying the percent of pure seed with the percent of germination; i.e.,
(PLS = % germination x % purity)

EXAMPLE:
Common bermuda seed
70% germination, 80% purity
PLS = 70% germination x 80% purity
PLS = 56%

The percent of PLS helps you determine the amount of seed you need. If the seeding rate is 10 pounds PLS and the bulk seed is 56 % PLS, the bulk seeding rate is:

10 lbs. PLS/acre = 17.9 lbs/acre
56% PLS

You would need to plant 17.9 lbs/acre to provide 10 lbs/acre of pure live seed.

Seedbed Preparation

Seedbed preparation may not be required where hydraulic seeding and fertilizing equipment is to be used (but is strongly recommended for any seeding process, when possible). When conventional seeding is to be used, seedbed preparation will be done as follows:

Broadcast plantings
1. Tillage at a minimum, shall adequately loosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a disk is to be used.
2. Tillage may be done with any suitable equipment.
3. Tillage should be done on the contour where feasible.
4. On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide two places 6 to 8 inches apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants
1. Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.
2. For nursery stock plants, holes shall be large enough to accommodate roots without crowding.
3. Where pine seedlings are to be planted, subsoil under the row 36 inches deep on the contour four to six months prior to planting. Subsoiling should be done when the soil is dry, preferably in August or September.

Innoculants

All legume seed shall be inoculated with appropriate nitrogen-fixing bacteria. The innoculant shall be a pure culture prepared specifically for the seed species and used within the dates on the container. A mixing medium recommended by the manufacturer shall be used to bond the innoculant to the seed. For conventional seeding, use twice the amount of innoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of innoculant recommended by the manufacturer shall be used.
All inoculated seed shall be protected from the sun and high temperatures and shall be planted the same day inoculated. No inoculated seed shall remain in the hydroseeder longer than one hour.

Planting

Hydraulic Seeding

Mix the seed (innoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water and apply in a slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.

Conventional Seeding

Seeding will be done on a freshly prepared and firmed seedbed. For broadcast planting, use a culti-packer-seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly with 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.

No-Till Seeding

No-till seeding is permissible into annual cover crops when planting is done following maturity of the cover crop or if the temporary cover stand is sparse enough to allow adequate growth of the permanent (perennial) species. No-till seeding shall be done with appropriate no-till seeding equipment. The seed must be uniformly distributed and planted at the proper depth.

Individual Plants

Shrubs, vines and sprigs may be planted with appropriate planters or hand tools. Pine trees shall be planted manually in the subsoil furrow. Each plant shall be set in a manner that will avoid crowding the roots. Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at the nursery. The tips of vines and sprigs must be at or slightly above the ground surface. Where individual holes are dug, fertilizer shall be placed in the bottom of the hole, two inches of soil shall be added and the plant shall be set in the hole.

Mulching

Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% to 100% soil cover. When selecting a mulch, design professionals should consider the mulch's functional longevity, vegetation establishment enhancement, and erosion control effectiveness. Select the mulching material from the following and apply as indicated:
1. *Dry straw or dry hay* of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 1/2 tons per acre.
2. *Wood cellulose mulch or wood pulp fiber* shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
3. One thousand pounds of *wood cellulose or wood pulp fiber*, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.
4. *Sericea lespedeza* hay containing mature seed shall be applied at a rate of three tons per acre.
5. *Pine straw or pine bark* shall be applied at a thickness of 3 inches for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.
6. When using temporary erosion control blankets or block sod, mulch is not required.
7. *Bituminous treated roving* may be applied on planted areas on slopes, in ditches or dry waterways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet Georgia Department of Transportation specifications.

Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

Applying Mulch

Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or planting. The mulch may be spread by blower-type spreading equipment, other spreading equipment or by hand. Mulch shall be applied to cover 75% of the soil surface. Wood cellulose or wood fiber mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch

Anchor straw or hay mulch immediately after application by one of the following methods:
1. Hay and straw mulch shall be pressed into the soil immediately after the mulch is spread. A special "packer disk'" or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.
2. Synthetic tackifiers, binders, or hydraulic mulch specifically designed to tack straw, shall be applied in conjunction with or immediately after the mulch is spread. Synthetic tackifiers shall be mixed and applied according to manufacturer's specifications. All tackifiers, binders or hydraulic mulch specifically designed to tack straw should be verified nontoxic through EPA 2021.0 testing. Refer to **Tackifiers-Tac**.
3. Rye or wheat can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of one-quarter to one-half bushel per acre.
4. Plastic mesh or netting with mesh no larger than one inch by one inch may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Bedding Material

Mulch is used as a bedding material to conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bare areas on lawns.

Material Depth

Grain straw 4" to 6"
Grass Hay 4" to 6"
Pine needles 3" to 5"
Wood waste 4" to 6"

Irrigation

Irrigation will be applied at a rate that will not cause runoff.

Topdressing

Topdressing will be applied on all temporary and permanent (perennial) species planted alone or in mixtures with other species. Recommended rates of application are listed in Table 6-5.1.

Second Year and Maintenance Fertilization

Second year fertilizer rates and maintenance fertilizer rates are listed in Table 6-5.1.

Lime Maintenance Application

Apply one ton of agricultural lime every 4 to 6 years or as indicated by soil tests. Soil tests can be conducted to determine more accurate requirements if desired.

Use and Management

Mow Sericea lespedeza only after frost to ensure that the seeds are mature. Mow between November and March. Bermudagrass, Bahiagrass and Tall Fescue may be mowed as desired. Maintain at least 6 inches of top growth under any use and management. Moderate use of top growth is beneficial after establishment. Exclude traffic until the plants are well established. Because of the quail nesting season, mowing should not take place between May and September.

Table 6-5.1. Fertilizer Requirements

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. Cool season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/2/ — 30
2. Cool season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ — —
3. Ground covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1300 lbs./ac. 3/ 1100 lbs./ac.	— — —
4. Pine seedlings	First	20-10-5	one 21-gram pellet per seedling placed in the closing hole	—
5. Shrub Lespedeza	First Maintenance	0-10-10 0-10-10	700 lbs./ac. 700 lbs./ac. 4/	—
6. Temporary cover crops seeded alone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
7. Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
8. Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac./6/

1/ Apply in spring following seeding.
2/ Apply in split applications when high rates are used.
3/ Apply in 3 split applications.
4/ Apply when plants are pruned.
5/ Apply to grass species only.
6/ Apply when plants grow to a height of 2 to 4 inches.

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Cherokee Rose	Rosa laevigata	2 ft.	5 ft.	Rampant grower. Not for restricted spaces. State flower.
Memoria Rose	Rosa weuchuriana	2 ft.	5 ft.	Rampant grower.
St. Johnswort	Hypericum calycenum	8-12 in.	3 ft.	Semi-shade.
Anthony Waterer Spirea	Spirea bumalda	3-4 ft.	5 ft.	Sun.
Thunberg Spirea	Spirea thinbergii	3-4 ft.	5 ft.	Sun.

Table 6-5.4. Trees for Erosion Control

SITE	SOIL MATERIAL	COMMON SOILS	PLANTING TREE SPECIES 1/	SPACING	PLANTING DATES 3/
Borrow areas, graded areas, and spoil material	Sandy	Lakeland, Troup	Loblolly pine (Pinus taeda) Longleaf pine (Pinus palustris)	2/	M-L,P 12/1-3/15 C 12/1-3/1
	Loamy	Orangeburg, Tifton	Loblolly pine Slash pine	2/	M-L,P 12/1-3/15 C 12/1-3/1
	Clay	Cecil, Faceville	Loblolly pine Slash pine Virginia pine (Pinus virginiana)	2/	M-L,P 12/1-3/15 C 12/1-3/1
Streambanks			Willows 4/ (Salix species)	2 ft x 2 ft	ALL 11/15-3/15

1/Other trees and shrubs listed on Table 6-5.3 may be interplanted with the pines for improved wildlife benefits.

2/Type of Planting	Tree Spacing	No. of Trees Per Acre
Trees alone	4 ft. x 4 ft.	2722
Trees in combination with grasses and/ or other plants	6 ft. x 6 ft.	1210

3/M-L represents the Mountains; Blue Ridge; and Ridges and Vallevs MLRAs
P represents the Southern Piedmont MLRA
C represents the Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs (See Figure 6-4.1).

4/Fertilization of companion crop is ample for this species.

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WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210

FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

PROJECT NO: 2247

GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

8.1 ES&PC PLAN BMP DETAILS

8.1

SHEET 16 OF 20

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Disturbed Area Stabilization (With Permanent Vegetation) Continued from previous page...

Table 6-5.2 - Permanent Cover

PLANTS, PLANTING RATES, AND PLANTING DATES FOR PERMANENT COVER

Species	Broadcast Rates 1/ - PLS 2/ Per Acre	Broadcast Rates 1/ - PLS 2/ Per 1000 sq. ft.	Resource Area 3/	Planting Dates by Resource Areas Planting Dates (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
BAHIA, PENSACOLA (Paspalum notatum)			P C		166,000 seed per pund. Low growing. Sod forming. Slow to establish. Plant with a companion crop. Will spread into bermuda pastures and lawns. Mix with Sericea lespedeza or weeping lovegrass.
alone or with temporary cover	60 lbs.	1.4 lb.			
with other perennials	30 lbs.	0.7 lb.			
BAHIA, WILMINGTON (Paspalum notatum)			M-L P		Same as above.
alone or with temporary cover	60 lbs.	1.4 lb.			
with other perennials	30 lbs.	0.7 lb.			
BERMUDA, COMMON (Cynodon dactylon) Hulled seed			P C		1,787,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fields.
alone	10 lbs.	0.2 lb.			
with other perennials	6 lbs.	0.1 lb.			
BERMUDA, COMMON (Cynodon dactylon) Unhulled seed			P C		
with temporary cover	10 lbs.	0.2 lb.			Plant with winter annuals.
with other perennials	6 lbs.	0.1 lb.			Plant with tall fescue.
BERMUDA SPRIGS (Cynodon dactylon)	40 cu. ft. or sod plugs 3' x 3'	0.9 cu. ft.	M-L		A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approximately 800 sprigs.
Coastal, Common, Midland, or Tift 44			P C		Same as above.
Tift 78			C		Southern Coastal Plain only.
CENTIPEDE (Eremochloa ophiuroides)	Block sod only		P C		Drought tolerant. Full sun or partial shade. Effective adjacent to concrete and in concentrated flow areas. Irrigation is needed until fully established. Do not plant near pastures. Winterhardy as far north as Athens and Atlanta.
CROWNVETECH (Coronilla varia)					100,000 seed per pound. Dense growth. Drought tolerant and fire resistant. Attractive rose, pink, and white blossoms spring to late fall. Mix with 30 pounds of Tall fescue or 15 pounds of rye. Inoculate seed with M inoculant. Use from North Atlanta and Northward.
with winter annuals or cool season grasses	15 lbs.	0.3 lb.	M-L P		
FESCUE, TALL (Festuca arundinacea)					227,000 seed per pound. Use alone only on better sites. Not for droughty soils. Mix with perennial lespedezas or crownvetch. Apply topdressing in spring following fall plantings. Not for heavy use areas or athletic fields.
alone	50 lbs.	1.1 lbs.	M-L P		
with other perennials	30 lbs.	0.7 lb.			
KUDZU (Pueraria thumbergiana)					Rapid and vigorous growth. Excellent in gully erosion control. Will climb. Good livestock forage.
plants or crowns	3' - 7' apart		ALL		
LESPEDEZA, SERICEA (Lespedeza cuneata)					
scarified	60 lbs.	1.4 lbs.	M-L P C		350,000 seed per pound. Widely adapted. Low maintenance. Mix with weeping lovegrass, common bermuda, bahia, or tall fescue. Takes 2 to 3 years to become fully established. Excellent on roadbanks. Inoculate seed with EL inoculant.
unscarified	75 lbs.	1.7 lb.	M-L P C		Mix with Tall fescue or winter annuals.
seed-bearing hay	3 tons	138lb.	M-L P C		Cut when seed is mature, but before it shatters. Add Tall fescue or winter annuals.
LESPEDEZA Ambro virgata (Lespedeza virgata DC) or Appalow (Lespedeza cuneata [Dumont] G. Don)					300,000 seed per pound. Height of growth is 18 to 24 inches. Advantageous in urban areas. Spreading-type growth has bronze coloration. Mix with Weeping lovegrass, Common bermuda, bahia, tall fescue or winter annuals. Do not mix with Sericea lespedaza. Slow to develop solid stands. Inoculate seed with EL inoculate.
scarified	60 lbs.	1.4 lb.	M-L P C		
unscarified	75 lbs.	1.7 lb.	M-L P C		
LESPEDEZA, SHRUB (Lespedeza bicolor) (Lespedeza thumbergii)			M-L P C		Provide wildlife food and cover.
plants	3' x 3'				
LOVEGRASS, WEEPING (Eragrostis curvula)					1,500,000 seed per pound. Quick cover. Drought tolerant. Grows well with Sericea lespedeza on roadbanks.
alone	4 lbs.	0.1 lb.	M-L P C		
with other perennials	2 lbs.	0.05 lb.			
MAIDENCANE (Panicum hemitomon)					For very wet sites. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines.
sprigs	2' x 3' spacing		ALL		
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var. amarulum)	20 lbs.	0.5 lb.	P C		Grows well on coastal sand dunes, borrow areas, and gravel pits. Provides winter cover for wildlife. Mix with Sericea lespedeza except on sand dunes.
REED CANARY GRASS (Phalaris arundinacea)					
alone	50 lbs.	1.1 lb.	M-L P		Grows similar to tall fescue.
with other perennials	30 lbs.	0.7 lb.			
SUNFLOWER, 'AZTEC' MAXIMILLIAM (Helianthus maximiliani)	10 lbs.	0.2 lb.	M-L P C		227,000 seed per pound. Mix with weeping lovegrass or other low-growing grasses or legumes.

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Ground covers include a wide range of low-growing plants planted together in considerable numbers to cover large areas of the landscape. Ground covers grow slower than grasses. Weeds are likely to compete, especially the first year. Maintenance is needed to insure survival. These ground covers will not be used unless proper maintenance is planned. Maintain mulch at three-inch thickness until plants provide adequate cover.

Fall planting is encouraged because the need for constant watering is reduced and plants have time to establish new roots before hot weather.

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Albelia	Abelia grandiflora	3-4 ft.	5 ft.	Also a prostrate form 2 feet high. Sun, semi-shade. Semi-evergreen.
Carolina Yellow Jessamine	Gelsemium sempervirens	low	3 ft.	Vine. Yellow, trumpet-like flowers. Hardy, one of best vines. Ever-green. Native to Georgia.
Carpet Blue	Ajuga reptans	2-4 in.	3 ft.	Needs good drainage, partial shade. Blue or white flowers. Evergreen.
Bearberry Cotoneaster	Cotoneaster dammeri	2-4 ft.	5 ft.	White flowers, red fruit. Sun. Evergreen.
Ground Cover Cotoneaster	Cotoneaster salicifoluis 'Repens'	1-2 ft.	5 ft.	White flowers, red fruit. Sun. Evergreen.
Rock Cotoneaster	Cotoneaster horizontalis	1-2 ft.	5 ft.	Semi-evergreen. Sun.
Virginia Creeper	Parthenocissue quinquefolia	low	3 ft.	Red in fall. Vine. Deciduous. Native to Georgia.
Daylily	Hemerocallis spp.	2-3 ft.	2 ft.	Many flower colors. Full sun. Very hardy.
English Ivy	Hedera helix	low	3 ft.	Shade only. Climbs.
Compacta Holly	Ilex crenata 'Compacta'	3-4 ft.	5 ft.	Sun, semi-shade.
Chinese Holly	Ilex cornuta 'Rotunda'	3-4 ft.	5 ft.	Very durable. Sun, semi-shade.
Dwarf Burford Holly	Ilex burfordii 'Nana'	5-8 ft.	8 ft.	
Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	3-4 ft.	5 ft.	Very durable, sun, semi-shade.

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Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Repandens Holly	Ilex crenata 'Repandens'	2-3 ft.	5 ft.	Sun, semi-shade.
Andorra Juniper	Juniperus horizontalis 'Plumosa'	2-3 ft.	5 ft.	Excellent for slopes. Sun.
Andorra Compacta Juniper	Juniperus horizontalis 'Plumosa com-pacta'	1-2 ft.	5 ft.	More compact than andora.
Blue Chip Juniper	Juniperus horizontalis 'Blue Chip'	8-10 in.	4 ft.	
Blue Rug Juniper	Juniperus horizontalis 'Wiltonii'	4-6 in.	3 ft.	Very low. Sun.
Parsons Juniper	Juniperus davurica 'Expansa' (Squamata Parsoni)	18-24 in.	5 ft.	One of the best, good winter cover.
Pfitzer Juniper	Juniperus chinensis 'Pfitzerana'	6-8 ft.	6 ft.	Needs room.
Prince of Wales Juniper	Juniperus horizontalis 'Prince of Wales'	8-10 in.	4 ft.	Feathery appearance.
Sargent Juniper	Juniperus chinensis 'Sargentii'	1-2 ft.	5 ft.	Full sun. Needs good drainage. Good winter color.
Shore Juniper	Juniperus conferta	2-3 ft.	5 ft.	Emerald Sea or Blue Pacific cultivars are good.
Liriope	Liriope muscari	8-10 in.	3 ft.	
Creeping Liriope	Liriope spicata	10-12 in.	1 ft.	Spreads by runners.
Big Leaf Periwinkle	Vinca major	12-15 in.	4 ft.	Lilac flowers in spring. Semi-shade.
Common Periwinkle	Vinca minor	5-6 in.	4 ft.	Lavender-blue flowers in spring. Semi-shade

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GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

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8.2 ES&PC PLAN BMP DETAILS

8.2

SHEET 17 OF 20

C:\Users\steve\rowland-engineering.com\Design - Projects\2519 - Rose Hill Cemetery - Macon-Bibb Co\2519-DETAILS.dwg, 8.2, steve, Sep 18, 2025 - 8:52:21am

Ds4 Disturbed Area Stabilization (With Sodding)

CONSTRUCTION SPECIFICATIONS

Soil Preparation

Bring soil surface to final grade. Clear surface of trash, woody debris, stones and clods larger than 1". Apply sod to soil surfaces only and not frozen surfaces, or gravel type soils.

Topsoil properly applied will help guarantee a stand. Don't use topsoil recently treated with herbicides or soil sterilants.

Mix fertilizer into soil surface. Fertilize based on soil tests or Table 6-6.1.

Table 6-6.1. Fertilizer Requirements for Soil Surface Application

Fertilizer Type	Fertilizer Rate (lbs/acre)	Fertilizer Rate (lbs/sq ft)	Season
10-10-10	1000	.025	Fall

Agricultural lime should be applied based on soil tests or at a rate of 1 to 2 tons per acre.

Installation

Lay sod with tight joints and in straight lines. Don't overlap joints. Stagger joints and do not stretch sod (See Figure 6-6.2)

On slopes steeper than 3:1, sod should be anchored with pins or other approved methods. Installed sod should be rolled or tamped to provide good contact between sod and soil.

Irrigate sod and soil to a depth of 4" immediately after installation.

Sod should not be cut or spread in extremely wet or dry weather. Irrigation should be used to supplement rainfall for a minimum of 2-3 weeks.

MATERIALS

Sod selected should be certified. Sod grown in the general area of the project is desirable.

1. Sod should be machine cut and contain 3/4" (+ or -1/4") of soil, not including shoots or thatch.
2. Sod should be cut to the desired size within + or -5%. Torn or uneven pads should be rejected.
3. Sod should be cut and installed within 36 hours of digging.
4. Avoid planting when subject to frost heave or hot weather, if irrigation is not available.

5. The sod type should be shown on the plans or installed according to Table 6-6.2. See Figure 6-4.1 for your Resource Area.

MAINTENANCE

Re-sod areas where an adequate stand of sod is not obtained. New sod should be mowed sparingly. Grass height should not be cut less than 2"-3" or as specified (See Figure 6-6.2).

Apply one ton of agricultural lime as indicated by soil test or every 4-6 years. Fertilize grasses in accordance with soil tests or Table 6-6.3.

Table 6-6.2 Sod Planting Requirements

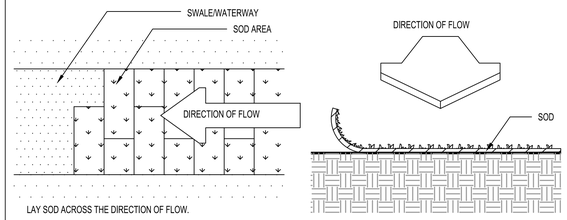
Grass	Varieties	Resource Area	Growing Season
Bermudagrass	Common Tifway Tifgreen Tiflawn	M-L,P,C P,C P,C P,C	warm weather
Bahiagrass	Pensacola	P,C	warm weather
Centipede	–	P,C	warm weather
St. Augustine	Common Bitterblue Raleigh	C	warm weather
Zoysia	Emerald Myer	P,C	warm weather
Tall Fescue	Kentucky	M-L,P	cool weather

Table 6-6.3 Fertilizer Requirements for Sod

Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./acre)	Nitrogen Top Dressing Rate (lbs./acre)
cool season grasses	first second maintenance	6-12-12 6-12-12 10-10-10	1500 1000 400	50-100 - 30
warm season grasses	first second maintenance	6-12-12 6-12-12 10-10-10	1500 800 400	50-100 50-100 30

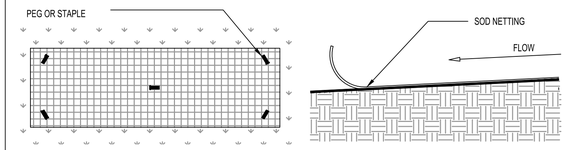
SODDED WATERWAYS

SOD DIRECTIONS



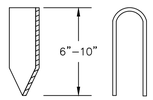
LAY SOD ACROSS THE DIRECTION OF FLOW.

NETTING DIRECTIONS



LAY NET WITH THE DIRECTION OF FLOW.

PEG DETAIL



IN CRITICAL AREAS, SECURE SOD WITH NETTING USING STAPLES.

USE PEGS OR STAPLES TO FASTEN SOD FIRMLY -- AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.

SOD MAINTENANCE AND INSTALLATION

SOD LAYOUT AND PREPARATION



LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.



BUTTING : ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.

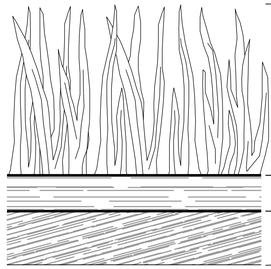
DIRECTIONS FOR INITIAL MAINTENANCE

Step 1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL

Step 2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

Step 3. MOW WHEN THE SOD IS ESTABLISHED -- IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

APPEARANCE OF GOOD SOD



SHOOTS OR GRASS BLADES : GRASS SHOULD BE GREEN AND HEALTHY, MOWED AT A 2"-3" CUTTING HEIGHT.

THATCH : GRASS CLIPPINGS AND DEAD LEAVES (UP TO 1/2" THICK).

ROOT ZONE : SOIL AND ROOTS. SHOULD BE 1/2"-3/4" THICK WITH DENSE ROOT MAT FOR STRENGTH.

Sd1 Sediment Barrier

CONSTRUCTION SPECIFICATIONS

Nonsensitive Areas (Sd1-NS)

Sediment barriers being used as Type NS shall have a support spacing of no greater than 6 feet on center, with each being driven into the ground a minimum of 18 inches.

Sensitive Areas (Sd1-S)

Sediment barriers being used as Type S shall have a support spacing of no greater than 4 feet on center, with each being driven into the ground a minimum of 18 inches.

*As of January 1 2016, in the existing Georgia Department of Transportation Qualified Products list #36 (QPL- 36), Type A, B, or C will fall under sensitive and non-sensitive applications. Type C will be classified as sensitive and Type A and B as non-sensitive. Refer to Appendix A-2 and the Equivalent BMP List.

PRACTICE CLASSIFICATIONS

For silt fence Type A, B, or C, refer to Table 6-27.4.

Type A Silt Fence

This 36-inch wide filter fabric shall be used on developments where the life of the project is great than or equal to six months. Type A is classified as non-sensitive application.

Type B Silt Fence

Though only 22-inches wide, this filter fabric allows the same flow rate as Type A silt fence. Type B silt fence shall be limited to use on minor projects, such as residential home sites or small commercial developments where permanent stabilization will be achieved in less than six months. Type B is classified as non-sensitive application.

Type C Silt Fence

Type C fence is 36-inches wide with wire rein}forcement or equivalent. The wire reinforcement is necessary because this fabric allows almost three times the flow rate as Type A silt fence. Type C silt fence shall be used where runoff flows or velocities are particularly high or where slopes exceed a vertical height of 10 feet. Type C is classified as sensitive application.

Filter Media Sock Specifications

Compost filter media used for sediment barrier filler material shall be weed free and derived from a well-decomposed source of organic matter. Filter Media Sock is classified as a Type B, non-sensitive application. The compost shall be produced using an aerobic composting process meeting CFR 503 regulations including time and temperature data. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted without applicable water quality test results. Test methods for the items below should follow US Composting Council Test Methods for the Examination of Compositing and Compost guidelines for laboratory procedures:

A. pH - 5.0-8.0 in accordance with TMECC 04.11-A, "Electrometric pH Determinations for Compost"
B. Particle size - 99% passing a 2 inch (50mm) sieve and a maximum of 40% passing a 3/8 inche (9.5mm) sieve, in accordance with TMECC 02.02-B, "Sample Sieving for Aggregate Size Classification". (Note: In the field, product commonly is between ½ in./12.5mm and 2 in./50 mm in particle size.)
C. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.
D. Material shall be relatively free (<1% by dry weight) of inert or foreign manmade materials.
E. Sock containment system for compost filter media shall be a photodegradable or biode-gradable knitted mesh material and should have 1/8 in. to 3/8 in., openings.

Brush Barrier - Sd1-BB
(Only during timber clearing operations)
Brush obtained from clearing and grubbing operations may be piled in a row along the perimeter of disturbance at the time of clearing and grubbing. Brush barriers should not be used in developed areas or locations where aesthetics are a concern. Brush should be wind-rowed on the contour as nearly as possible and may require compaction. Construction equipment may be utilized to satisfy this requirement. The minimum base width of the brush barrier shall be 5 feet and should be no wider 10 feet. The height of the brush barrier should be between 3 and 5 feet tall. A brush barrier is a good tool to use in developing pasture in an agricultural situation to prevent sediment from leaving the site until the pasture is stabilized.
If greater fl ltering capacity is required, a commercially available sediment barrier may be placed on the side of the brush barrier receiving the sediment-laden runoff. The lower edge of the fabric must be buried in a 6-inch deep trench immediately uphill from the barrier. The upper edge must be stapled, tied or otherwise fastened to the brush barrier. Edges of adjacent fabric pieces must overlap each other. See Figure 6-27.5.

Installation
Sediment barriers should be installed along the contour. Temporary sediment barriers shall be installed according to the following specifi cations as shown on the plans or as directed by the design professional. For installation of the barriers, See Figures 6-27.1, 6-27.2, 6-27.3 and 6-27.4, respectively. It is important to remember that not all sediment barriers need to be trenched into the ground but most taller sediment barriers do. Post installation shall start at the center of a low point (if applicable) with the remaining posts spaced no greater than 6 feet apart for Type NS sediment barriers and no greater than 4 feet apart for Type S sediment barriers. For post size requirements, see Table 6-27.2. Fasteners for wood posts are listed in Table 6-27.3

Static Slicing Method
The static slicing machine pulls a narrow blade through the ground to create a slit 12" deep, and simultaneously inserts the silt fence fabric into this slit behind the blade. The blade is designed to slightly disrupt soil upward next to the slit and to minimize horizontal compaction, thereby creating an optimum condition for compacting the soil vertically on both sides of the fabric. Compaction is achieved by rolling a tractor wheel along both sides of the slit in the ground 2 to 4 times to achieve nearly the same or greater compaction as the original undisturbed soil. This vertical compaction reduces the air spaces between soil particles, which minimizes infi ltration. Without this compaction infi ltration can saturate the soil, and water may fi nd a pathway under the fence. When a silt fence is holding back several tons of accumulated water and sediment, it needs to be supported by posts that are driven 18 inches into the soil. Driving in the posts and attaching the fabric to them completes the installation.

Trenching Method
Trenching machines have been used for over twenty-five years to dig a trench for burying part of the filter fabric underground. Usually the trench is about 2-"6" wide with a 6" excavation. Post setting and fabric installation often precede compaction, which make effective compaction more difficult to achieve. EPA supported an independent technology evaluation (ASCE 2001), which compared three progressively better variations of the trenching method with static slicing method. The static slicing method performed better than two lower performance levels of the trenching method, and was as good as or better than the trenching method's highest performance level. The best trenching method typically required nearly triple the time and effort to achieve results comparable to the static slicing method. Along state water and other sensitive areas, two rows of Type S sediment barriers shall be used. The two rows Type S should be placed a minimum of 36 inches apart.

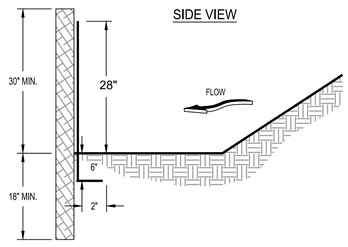
MAINTENANCE
Sediment shall be removed once it has accumulated to one-half the original height of the barrier.

Sediment barriers shall be replaced whenever they have deteriorated to such an extent that the effectiveness of the product is reduced (approxi}mately six months) or the height of the product is not maintaining 80% of its properly installed height.

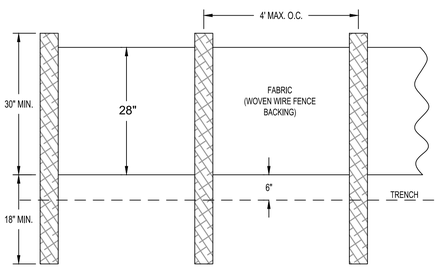
Temporary sediment barriers shall remain in place until disturbed areas have been perma}nently stabilized. All sediment accumulated at the barrier shall be removed and properly dis}posed of before the barrier is removed.

SILT FENCE - TYPE SENSITIVE

SIDE VIEW



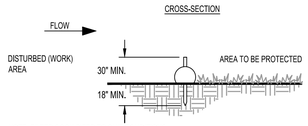
FRONT VIEW



NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

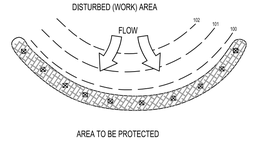
EROSION AND SEDIMENT CONTROL

COMPOST FILTER SOCK



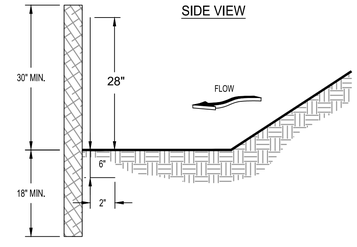
NOTE: FILTER SOCK SIZED TO SUIT CONDITIONS (SEE APPROVED LIST)

PLAN

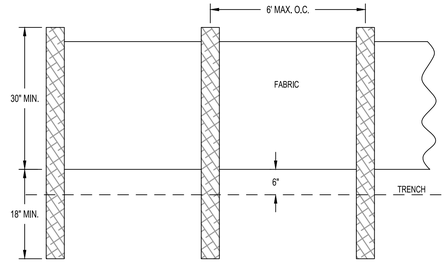


SILT FENCE - TYPE NON-SENSITIVE

SIDE VIEW



FRONT VIEW



NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

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FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

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PROJECT NO: 2247

GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED No. 25853 PROFESSIONAL STEVEN A. ROWLAND ENGINEER

09-17-2026

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8.3 ES&PC PLAN
BMP DETAILS

8.3

SHEET 18 OF 20

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Tac Tackifiers

CRITERIA

A. Temporary Methods

Type I Tackifiers: Synthetic Polymers (Tac—1)

•Application rates shall conform to manufacturer's guidelines for application.

•Only anionic forms of PAM shall be used. Anionic PAMs shall be no more than 0.05% acrylamide monomer by weight, as established by the Food and Drug Administration and the Environmental Protection Agency.

•Not harmful to plants, animals and aquatic life.

•Contain no growth or germination inhibiting materials.

•Shall not reduce infiltration rates.

Type II Tackifiers: Organic Polymers (Tac—2)
Such as guar gum, polysaccharides, and starches

•Application rates shall conform to manufacturer's guidelines for application.

•Derived from natural plant sources.

•Not harmful to plants, animals and aquatic life.

•Contain no growth or germination inhibiting materials.

•Shall not reduce infiltration rates.

Type III Tackifiers: Synthetic/Organic Blends (Tac—3)

•Application rates shall conform to manufacturer's guidelines for application.

•Only anionic forms of PAM shall be used in the blend, and shall be no more than 0.05% acrylamide monomer by weight.

•Organic material must be derived from natural plant sources.

•Not harmful to plants, animals and aquatic life.

•Contain no growth or germination inhibiting materials.

•Shall not reduce infiltration rates.

T

Type IV Tackifiers: Organic Tackifiers with Synthetic Fibers (Tac—4)

•Application rates shall conform to manufacturer's guidelines for application.

•Organic material must be derived from natural plant sources.

•Not harmful to plants, animals and aquatic life.

•Contain no growth or germination inhibiting materials.

•Shall not reduce infiltration rates.

•Synthetic fibers shall be of nylon or polyester blends.

Type V Tackifiers: Synthetic/Organic Blends with Synthetic Fibers (Tac—5)

•Application rates shall conform to manufacturer's guidelines for application.

•Only anionic forms of PAM shall be used in the blend, and shall be no more than 0.05% acrylamide monomer by weight.

•Organic material must be derived from natural plant sources.

•Not harmful to plants, animals and aquatic life.

•Contain no growth or germination inhibiting materials.

•Shall not reduce infiltration rate.

•Synthetic fibers shall be of nylon or polyester blends.

MAINTENANCE

Tackified areas should be checked after every rain event. Periodic inspections and required maintenance must be provided per manufacturer's recommendations.

Fr Filter Ring

CONSTRUCTION SPECIFICATIONS

Mechanical or hand placement of stone shall be required to uniformly surround the structure to be supplemented. Refer to Appendix C for rock riprap specifications.

The filter ring may be constructed on natural ground surface, on an excavated surface, or on machine compacted fill.

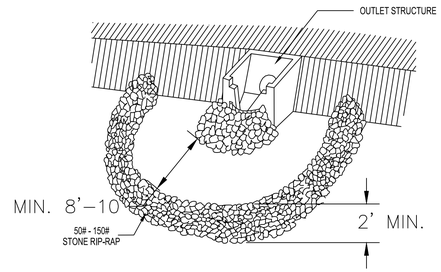
A common failure of filter rings is caused by their placement too close or too high above the structure it is enhancing. When utilized below a storm drain outlet, it shall be placed such that it does not create a condition causing water to back-up into the storm drain and inhibit the function of the storm drain system.

MAINTENANCE

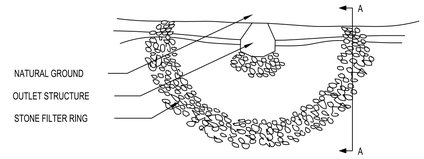
The filter ring must be kept clear of trash and debris. This will require continuous monitoring and maintenance, which includes sediment removal when one-half full. Structures are temporary and should be removed when the land disturbing project has been stabilized.

STONE FILTER RING

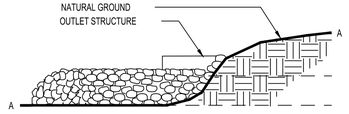
PERSPECTIVE VIEW



PLAN VIEW (NOT TO SCALE)



CROSS SECTION (NOT TO SCALE)



Di Diversion

CONSTRUCTION SPECIFICATIONS

1. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the diversion.

2. The diversion shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein and free of irregularities which will impede normal flow.

3. All fills shall be machine compacted as needed to prevent unequal settlement that would cause damage in the completed diversion.

4. All earth removed and not needed in construction shall be spread or disposed of so that it will not interfere with the functioning of the diversion.

5. Diversion channel shall be stabilized in accordance with specification **Ch - Channel Stabilization.**

TYPICAL DIVERSION ACROSS ROAD

CROSS SECTION

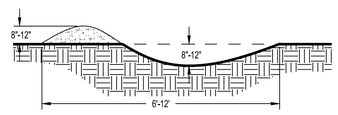


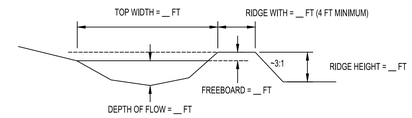
Table 6-17.1. Diversion Design Criteria

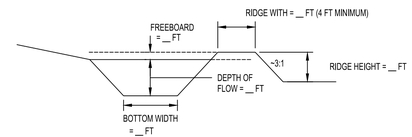
Diversion Type	Land or Improvement Protected	Storm Frequency[1]	Freeboard	Minimum Top Width
Temporary	Construction areas Building sites	10 yrs[2]	0.3'	4'
Permanent	Landscaped, recreation and similar areas.	25 yrs	0.3'	4 '
	Dwellings, schools, commercial bldgs., and similar installations	50 yrs	0.5'	4'

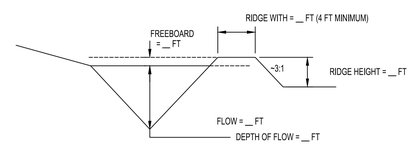
[1] Use 24-hr storm duration
[2] Use 10 yrs or the storm for the storm frequency specified in Title 12 of the Official Code of Georgia Annotated

SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

COMPLETE THE APPROPRIATE DETAIL DRAWIING FOR THE CHANNEL CROSS-SECTION OF CHOICE:







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FOR
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09-17-2026

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8.4 ES&PC PLAN
BMP DETAILS

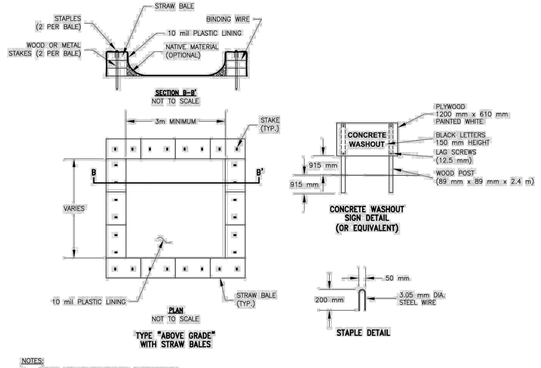
8.4

SHEET 19 OF 20

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Concrete Waste Management

WM-8

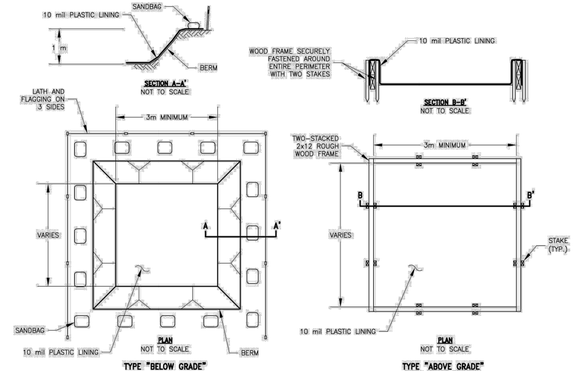


NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE FIG. 4-15) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

CALTRANS/TYG4-14.DWG SAC 8-14-02

Concrete Waste Management

WM-8



NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE PAGE 6) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

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GEORGIA REGISTERED No. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

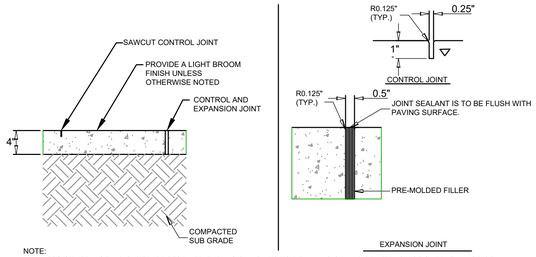
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8.5 ES&PC PLAN
BMP DETAILS

8.5

SHEET 20 OF 20

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NOTE:
1. UNLESS OTHERWISE INDICATED, PREFORMED EXPANSION JOINTS TO BE 40'-0" O.C. MAX. OR AT BACK OF CURB, CHANGE OF DIRECTION, OTHER WALK UTILITY APPURTENANCE, OR FACE OF STRUCTURE.
2. UNLESS OTHERWISE INDICATED, CONTROL JOINTS AT 5'-0' O.C.
3. ALL SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 1/4" PER FT. SEE GRADING PLANS FOR DIRECTION OF CROSS SLOPE.
4. SEE CONSTRUCTION PLANS FOR PROPOSED WIDTH OF EACH SIDEWALK.

CONCRETE SIDEWALK

NOT TO SCALE

WALKING TRAILS AND REFLECTING POND
ROSE HILL CEMETERY - 1071 RIVERSIDE DR., MACON GA 31210

FOR

MACON-BIBB COUNTY/ROSE HILL CEMETERY

ROWLAND ENGINEERING
107 Industrial Park Drive, Ste B
Forsyth, GA. 20029
(478) 621-7500 office
steven@rowland-engineering.com
www.rowland-engineering.com

PROJECT NO: 2247

GA LEVEL II CERTIFIED DESIGN PROFESSIONAL #155
EXPIRES 07-23-2029

GEORGIA REGISTERED LIC. NO. 25853 PROFESSIONAL ENGINEER STEVEN A. ROWLAND

09-17-2026

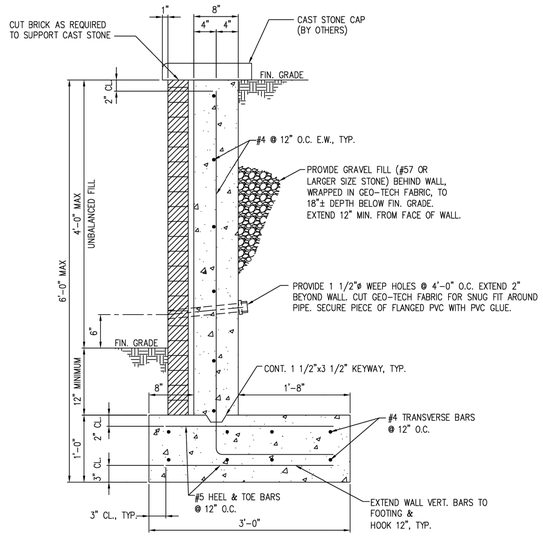
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9.0
CONSTRUCTION DETAILS

9.0

SHEET 21 OF 20

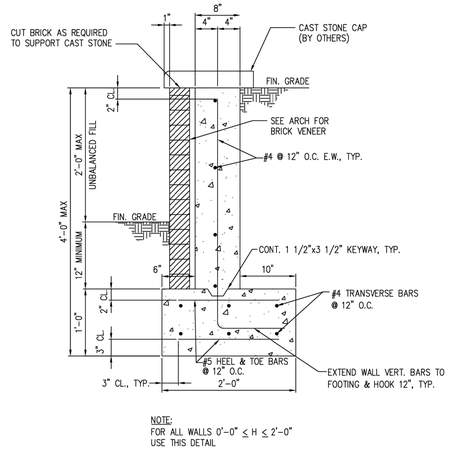
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NOTE:
FOR ALL WALLS 2'-0" ≤ H ≤ 4'-0"
USE THIS DETAIL

RETAINING WALL MAX 4'-0"

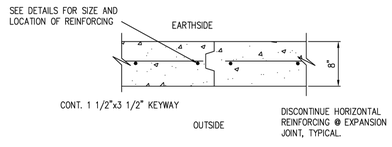
SCALE: 1"=1'-0"



NOTE:
FOR ALL WALLS 0'-0" ≤ H ≤ 2'-0"
USE THIS DETAIL

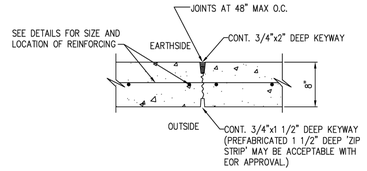
RETAINING WALL MAX 2'-0"

SCALE: 1"=1'-0"



TYPICAL CONSTRUCTION JOINT/ EXPANSION JOINT

NO SCALE



THE OUTSIDE FACE OF THE FOUNDATION/ RETAINING WALLS WILL BE LEFT EXPOSED. PROVIDE A RUBBED FINISH.

TYPICAL WEAKENED PLANE CONTRACTION JOINT

NO SCALE

REINFORCED CONCRETE GENERAL NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS". DESIGN IS BASED ON ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE."
2. CONCRETE SHALL BE NORMAL WEIGHT (145 PCF) AND SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS.
3. SUBMIT CONCRETE MIX DESIGNS FOR REVIEW, IN ACCORDANCE WITH ACI 318 TO THE ARCHITECT AND TESTING AGENCY.
4. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S.
5. USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
6. THE AIR CONTENT AT THE POINT OF PLACEMENT SHALL BE PER ACI 318 TABLE 19.3.2.1 FOR THE APPROPRIATE EXPOSURE CATEGORY. HARD TROWELED SLABS OR SLABS ON GRADE THAT WILL RECEIVED TOPPINGS SHALL NOT RECEIVE AIR ENTRAINMENT UNLESS PERMITTED BY TOPPING MANUFACTURER.
7. THE TESTING AGENCY SHALL SAMPLE AND TEST EACH 100 CU. YARDS OR FRACTION THEREOF OF EACH CLASS OF CONCRETE PLACED EACH DAY. SAMPLE CONCRETE IN ACCORDANCE WITH ASTM C172. PERFORM THE FOLLOWING TESTS IN ACCORDANCE WITH THE INDICATED STANDARD:

   SLUMP: ASTM C143

   AIR CONTENT: ASTM C231 (NORMAL WEIGHT CONCRETE) ASTM C173 (LIGHT WEIGHT CONCRETE)

   COMPRESSIVE STRENGTH: ASTM C39, WITH ONE CYLINDER AT 7 DAYS, 2 CYLINDERS AT 28 DAYS, AND ONE SPECIMEN HELD IN RESERVE.

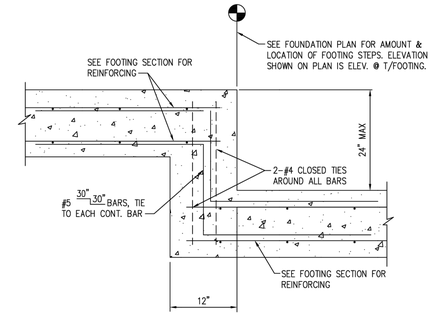
   CONCRETE TEMPERATURE: ASTM C1064

   UNIT WEIGHT: ASTM C567
8. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
9. TIE ALL REINFORCING STEEL AND EMBEDMENTS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES. "STICKING" DOWELS INTO WET CONCRETE IS NOT PERMITTED.
10. REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE:

    CONCRETE CAST AGAINST EARTH (NOT FORMED): 3"

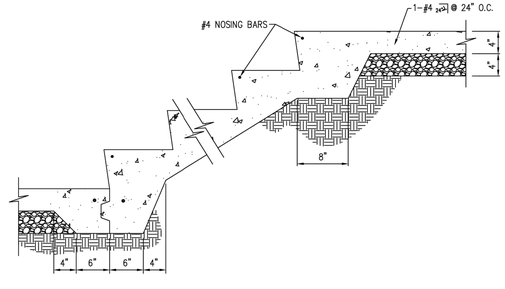
    FORMED CONCRETE EXPOSED TO EARTH OR WEATHER
    #6 BARS THROUGH #12 BARS 2"
    #5 BARS AND SMALLER 1 1/2"

    CONCRETE NOT EXPOSED TO EARTH OR WEATHER
    SLABS AND WALLS 1"
11. DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER.



TYPICAL FOOTING STEP

NO SCALE



TYPICAL CONCRETE STEPS ON GRADE

NO SCALE

STRUCTURAL DESIGN BY PI-TECH, INC.

GEORGIA REGISTERED No. PEF003000 STRUCTURAL ENGINEER MATTHEW N. ELLIS

6.12.2026
Pi-Tech, Inc. COA#PEF003000
COA Expiration: 6.30.2028

PI-TECH, INC.
115 FOREST HILL RD. - MACON, GEORGIA (478)743-5600

RETAINING WALLS
ROSE HILL CEMETERY
MACON, GA
FOR
W.T. DESIGNS
MACON, GA

REVISIONS

DRAWN BY: CGD
CHECKED BY: MNE
DATE: 6.12.2026
SHEET NO. S1
SHEET 1 OF 1

ROWLAND ENGINEERING
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WALKING TRAILS AND REFLECTING POND
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FOR
MACON-BIBB COUNTY/ROSE HILL CEMETERY

PROJECT NO: 2247

09-17-2026
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9.1 STRUCTURAL DETAILS

9.1

SHEET 22 OF 20

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