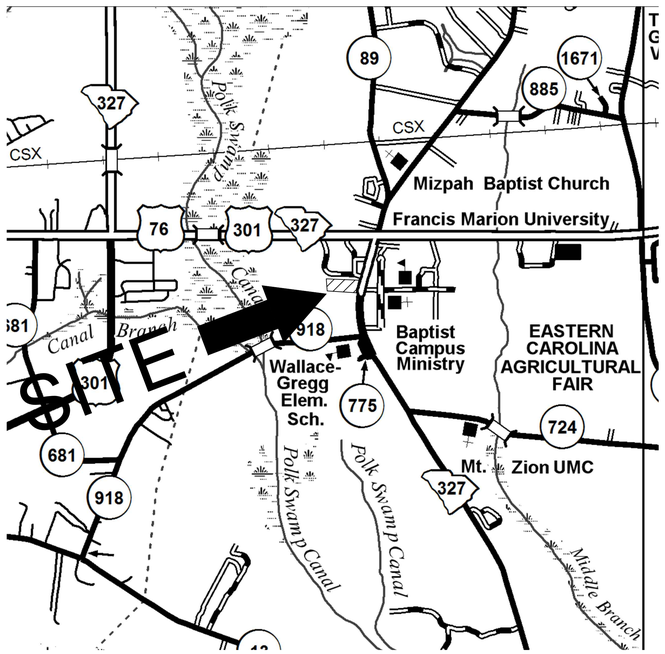
CONSTRUCTION PLANS

FOR

CIVIL SITE PACKAGE
SLED ENTRANCE ROAD AND WATER LINE EXTENSION
FRANCIS MARION UNIVERSITY
OSE PROJECT NO. H18-9592-PD-A

FRANCIS MARION ROAD
FLORENCE, SOUTH CAROLINA



GRAPHIC SCALE

2000 0 1000 2000 4000 8000

(IN PEET)

1 inch = 2000 ft.

ERVIN ENGINEERING CO., INC.

2023M18001

CONSTRUCTION DOCUMENTS

04/29/2024

Know what's **below.**
Call before you dig.

ENGINEER'S CERTIFICATION STATEMENT
I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM.
FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72-300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000.

WILLIAM C. ERVIN, JR., PE
04/29/2024

REGULATING MS4: FLORENCE COUNTY

ENGINEERING DEPARTMENT: (WATER AND SEWER)
CITY CENTER 324 W. EVANS FLORENCE, SC 29501
EDDIE WEAVER / LUCINDA HUBBS 843-665-2047

COMPLIANCE DEPARTMENT: (STORMWATER MANAGEMENT)
FLORENCE COUNTY MS4
518 SOUTH IRBY STREET
FLORENCE, SC 29501

PLANNING AND ZONING - FLORENCE COUNTY

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GENERAL DRAWINGS

NORTH CAROLINA PROFESSIONAL ENGINEER 17827 WILLIAM C. ERVIN, JR. 04/29/2024

NORTH CAROLINA ERVIN ENGINEERING COMPANY INC. NO. C0005.3 CERTIFICATE OF AUTHORIZATION

EECO

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/24	REV. PER OSE REVIEW	WCE

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

DRAWN BY: WCE DATE: 03/11/24
CHECKED BY: ADB DATE: 03/11/24
DESIGNED BY: WCE DATE: 03/11/24
CHECKED BY: ADB DATE: 03/11/24

FMU TITLE SHEET

SCALE: NONE

C0.00 FMU

EECO JOB #:

OVERALL CONSTRUCTION SEQUENCE OF EVENTS:
FOR NEW CONSTRUCTION ENTRANCE AND ENTRANCE ROAD
AND WATER LINE EXTENSION ON FRANCIS MARION ROAD
FLORENCE, SC

PHASE 0– PRE–CONSTRUCTION
1. RECEIVE NPDES COVERAGE FROM FLORENCE COUNTY MS4
2. PRE–CONSTRUCTION MEETING (ON–SITE).
3. NOTIFY SCDHEC, SCDHEC REGIONAL EQC, AND ERVIN ENGINEERING 48 HOURS PRIOR TO BEGINNING ANY LAND–DISTURBING ACTIVITIES.

PHASE 1 PRELIMINARY EROSION CONTROL
1. INSTALLATION OF CONSTRUCTION ENTRANCE(S) AT THE LOCATIONS SHOWN ON SHEET C1.01 PER THE DETAILS SHOWN ON SHEET C6.01.
2. CLEAR AND GRUB SITE ONLY AS REQUIRED FOR INSTALLATION OF PERIMETER CONTROLS.
3. INSTALLATION OF PERIMETER CONTROLS (EG., SILT FENCE).
4. CLEAR AND GRUB SITE WITHIN THE LIMITS SHOWN ON SHEET C1.01
5. FOR SITE EXCAVATION, DENSIFICATION, GRADING, AND PAVING SEE GEOTECHNICAL REPORT BY S&ME PROJECT NUMBER 23390074
6. STRIP TOPSOIL AND STOCKPILE IN AREAS SHOWN FOR FUTURE USE PER DETAILS SHOWN ON SHEET C6.01.
7. ANY STOCKPILED TOPSOIL AND EXCESS MATERIAL THAT CANNOT BE STORED ON SITE MUST BE STORED OFFSITE FOR RE–SPREAD AS REQUIRED TO PREVENT LOSS OF TOPSOIL. COORDINATE STOCKPILING WITH GENERAL CONTRACTOR. WHERE EXISTING TOPSOIL IS DEEMED TO BE NOT SUITABLE BY GEOTECHNICAL ENGINEER. CONTRACTOR SHALL BRING IN SUITABLE TOP SOIL AS DETERMINED BY A QUALIFIED GEOTECH. ENGR.
8. OFF SITE STOCK PILE AREAS WILL BE AVAILABLE FOR INSPECTION AT ALL TIMES.

PHASE 2 SITE GRADING AND STORM DRAINAGE
1. INSTALL TEMPORARY SWALE WITH EROSION CONTROL TO DISCHARGE TO WETLANDS.
2. DISCHARGE WILL BE DIRECTED TO A POND IN THE FUTURE WHEN THE ENTRANCE ROAD IS PAVED.
3. COMPLETE CLEARING AND GRUBBING OF THE REMAINDER OF THE SITE AS SHOWN ON SHEET C1.02 (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
4. INSTALL TEMPORARY DRAINAGE AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER AND AS DESCRIBED IN THE GEOTECHNICAL REPORT FOR THIS PROJECT. THE PROJECT GEOTECHNICAL ENGINEER SHALL BE ON SITE FOR THIS PHASE OF THE PROJECT.
5. AFTER STRIPPING OPERATION IS COMPLETE AND TEMPORARY DRAINAGE INSTALLED, AREAS RECEIVING FILL SHOULD BE DENSIFIED TO 95% OF MODIFIED PROCTOR TO A DEPTH OF AT LEAST 12" PER THE GEOTECHNICAL REPORT.
6. FOLLOWING DENSIFICATION, THE SUBGRADE SHOULD BE PROOF ROLLED PER THE PROJECT GEOTECHNICAL REPORT.
7. ROUGH GRADE SITE TO SUB–GRADE ELEVATIONS BASED ON GRADING PLANS FOUND ON SHEETS C3.00.
8. FILL PLACEMENT AND COMPACTION SHALL BE AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
9. ON–SITE EXCAVATED MATERIAL MAY BE USED AS FILL WHERE IT MEETS THE STANDARDS OF THE PROJECT GEOTECHNICAL ENGINEER. UNSUITABLE MATERIAL THAT CAN NOT BE USED FOR TOPSOIL OR NON–STRUCTURAL FILL MUST BE DISPOSED OF OFF SITE.
10. INSTALL CROSS LINE PIPE @ CONSTRUCTION ENTRANCE PER DRAWINGS SHOWN ON SHEET C1.02, C4.00, C4.01 AND DETAILS ON SHEET C7.02. HAUL, GRADE AND COMPACT BASE MATERIALS AS SPECIFIED TO ROUGH GRADE.
11. PROOF ROLL ALL REQUIRED BASE MATERIAL TO 75,000# WITH REPS. FROM PROJECT GEOTECHNICAL ENGINEER AND EECO PRESENT.
12. INSTALL STONE BASE PER DETAILS, PROOF ROLL ALL REQUIRED STONE TO 75,000# AND AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
13. REPRESENTATIVES OF THE PROJECT GEOTECHNICAL ENGINEER AND EECO MUST PRESENT FOR ALL PROOF ROLLS.
14. INSTALL STONE BASE ON ENTRANCE ROAD TO PROPOSED SLED SITE.

PHASE 3 – WATER LINE EXTENSION/ BUILDING PHASE @ SLED SITE /FINAL STABILIZATION
1. NOTIFY THE CITY OF FLORENCE FMU, SCDHEC AND ERVIN ENGINEERING, AND SCDOT AT LEAST 48 HOURS PRIOR TO THE START OF THE WATER LINE EXTENSION.
2. A PRE–CONSTRUCTION MEETING WILL BE HELD ON SITE WITH FMU, THE CITY OF FLORENCE, THE UTILITY CONTRACTOR, REPRESENTATIVES OF SCDHEC, SCDOT, AND ERVIN ENGINEERING PRIOR TO CONSTRUCTION.
3. MAKE 10 X 8 TAP PER NOTES AND UTILITY PLANS WITH CITY OF FLORENCE AND ERVIN ENGINEERING PRESENT.
4. BORE FRANCIS MARION ROAD WITH 16" CASING PER C7.05 WITH REPRESENTATIVES OF SCDOT AND ERVIN ENGINEERING PRESENT.
5. INSTALL PROJECT WATER LINE EXTENSION TO SECOND SLED DRIVEWAY AS SHOWN ON SHEET C5.00.
6. INTALL HYDRANT AND GATE VALVES FOR FIRE SERVICE AND POTABLE SERVICE TO SLED BUILDING.
7. WATER LINE TO BE INSTALLED AND TESTED PER WATER NOTES.
8. AT THE COMPLETION OF THE WATER LINE EXTENSION AND THE SLED BUILDING SITE, THE CONSTRUCTION ENTRANCE WILL BE REMOVED AND THE ENTRANCE ROAD WILL BE PAVED PER THE DRAWINGS FOR THIS PROJECT.
9. ALL AREAS NOT RECEIVING ASPHALT OR STONE WILL BE GRASSED PER THE GRASSING NOTES FOR THIS PROJECT.
10. INSTALL PAVING INTERIOR TO THE SITE.
11. PERFORM AS–BUILT SURVEYS OF THE ENTRANCE ROAD AND SWALES. CONTRACTOR WILL NOT GET FINAL RELEASE FOR THE PROJECT UNTIL THERE IS AN ESTABLISHED GROUND COVER OVER 70% OF THE SITE.
12. AS–BUILTS AND NOTICE OF TERMINATION (NOT) CAN BE SUBMITTED UPON 70% UNIFORM SITE STABILIZATION.

GENERAL NOTES:
1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ALL UTILITIES BEFORE DIGGING.
3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
4. CONTRACTOR TO MAINTAIN 1'–6" MINIMUM CLEARANCE VERTICALLY OR 10'–0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
5. ALL AREAS DISTURBED BY CONSTRUCTION TO BE GRASSED PER SPECIFICATIONS.
6. FIELD VERIFY ALL DIMENSIONS
7. OWNER SHALL OBTAIN THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO MAKE RECOMMENDATIONS ON SUITABLE FILL MATERIAL AND PROPER COMPACTION.
8. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ALL UTILITIES (BOTH ABOVE AND BELOW GROUND) THAT ARE DAMAGED BY CONSTRUCTION.
9. SEE DETAIL SHEETS FOR TYPICAL WATER DETAILS AND SEWER DETAILS.
10. SEE SHEET C7.02 FOR TYPICAL STORM DRAIN DETAILS
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION AND RELOCATION OF ALL EXISTING UTILITIES IN THE ROW AS REQUIRED FOR THE INSTALLATION OF ROAD WIDENING AND TURN LANES.
12. UTILITY RELOCATION IN THE ROW WILL BE A PART OR THE DIVISION 2 CONTRACT.
13. ALL DRIVEWAYS AND MAILBOXES IMPACTED BY ROAD WIDENING WILL BE REWORKED BY THE CONTRACTOR TO SCDOT STANDARDS. THIS WORK WILL BE INCLUDED IN DIVISION 2 OF THE CONTRACT.
14. CONTRACTOR TO INSTALL SILT FENCING AND EROSION CONTROL MEASURES PER SHEET C6.01 AS DIRECTED BY SCDOT.

EROSION CONTROL STANDARD NOTES
1. IF NECESSARY, SLOPES WHICH EXCEED (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH–DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THOSE PORTIONS OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE ANY SEDIMENTS BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C. REG. 72–300 ET SEQ. AND SCR100000.
8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FORM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT–LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN AREAS WHERE A 50–FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10–FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND–DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
13. MINIMIZE SOIL COMPACTION AND, UNLESS UNFEASIBLE, PRESERVE TOPSOIL.
14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPs (SEDIMENT BASIN, FILTER BAG, ETC.).
16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
 * WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL
 * WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS
 * FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE AND
 * SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING
17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.
18. IF EXISTING BMP's NEED TO BE MODIFIED OR IF ADDITIONAL BMP's ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC's WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPs MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
19. A PRE–CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON–SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON–LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERENCE MUST BE HELD ON–SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

NOTE: GRASSING AND STABILIZATION: (A) GRADING, SHAPING AND OTHER EARTH MOVING WILL BE COMPLETED TO THE EXTENT NECESSARY TO PERMIT SEEDINGS OR PLANTINGS, EITHER TEMPORARY OR PERMANENT. THE FINISHED GRADE OF SLOPES WITH A SLOPE LENGTH OF MORE THAN FOUR (4) FEET THAT ARE TO BE PLANTED AND MAINTAINED IN GRASSES AND/OR LEGUMES SHALL BE NO STEEPER THAN 2:1. (SLOPE LENGTHS STEEPER THAN 2:1 AND LESS THAN FOUR (4) FEET LONG MAY BE SEEDED.) SIMILAR SLOPES TO BE MAINTAINED IN VINES SHALL BE NO STEEPER THAN 1:1. (B) CONCENTRATION OF WATER THAT WILL CAUSE EXCESSIVE EROSION WHILE VEGETATION IS BEING ESTABLISHED WILL BE DIVERTED TO A SAFE OUTLET. STRUCTURES USED TO DIVERT WATER OR PROVIDE ADDITIONAL PROTECTION TO AN AREA MAY BE EITHER PERMANENT OR TEMPORARY ACCORDING TO THE NEEDS OF THE SITE; HOWEVER SUCH STRUCTURES MUST CONFORM TO THE APPROPRIATE STANDARDS AND SPECIFICATIONS. (C) STONES, STUMPS, AND TRASH THAT WILL INTERFERE WITH SEEDBED PREPARATION, PLANTINGS, OR THE PLANNED USE AND MAINTENANCE OF THE AREA WILL BE REMOVED. ALL SEEDING, MULCHING, AND OTHER STABILIZATION EFFORTS SHALL BE IN KEEPING WITH SECTION 503 AND 880 OF THE SPECIFICATIONS.

BMP MAINTENANCE AND INSPECTION PROCEDURES:

THE POND SHALL BE INSPECTED AT LEAST TWICE A YEAR, ONCE IN THE SUMMER AFTER MOWING AND ONCE IN THE WINTER WHEN THE VEGETATION IS DORMANT. INSPECTIONS SHALL ALSO BE MADE AFTER HEAVY RAINFALL EVENTS. WRITTEN RECORDS OF MAINTENANCE AND INSPECTIONS SHALL BE KEPT. MAINTENANCE ITEMS TO BE ADDRESSED ARE AS FOLLOWS:
1. A GOOD STAND OF GRASS SHALL BE MAINTAINED ON THE SIDE SLOPES AND THE BOTTOM OF THE POND. ERODED AREAS SHALL BE REPAIRED AND RESEEDED IMMEDIATELY. THE GRASS SHALL BE MOWED AT LEAST TWICE A YEAR.
2. TREES AND SHRUBS SHALL NOT BE ALLOWED ON THE EMBANKMENT. TREES THAT HAVE GROWN ON THE EMBANKMENT SHALL BE REMOVED. STUMPS AND ALL WOODY MATERIALS MUST BE REMOVED TO ABOUT 30 INCHES BELOW GROUND SURFACE.
3. TRASH SHALL BE REMOVED FROM WITHIN AND AROUND THE POND AREA AT LEAST TWICE A YEAR.
4. THE RIP RAP DAM AT THE LOWER END OF THE POND SHALL BE CLEANED AND REPAIRED AS NECESSARY.
5. THE RIP RAP ROCK BERM SHALL BE CLEANED AND REPAIRED AS NECESSARY.
6. ALL OTHER RIP RAP TO BE CLEANED AND REPAIRED AS NECESSARY.
7. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE POND.
8. THE POND BOTTOM SHALL BE REGARDED AS NECESSARY TO ENSURE POSITIVE DRAINAGE TO THE POND OUTLET.
9. ALL VEGETATION MUST BE KEPT OFF TRASH RACK AND ALL TRASH REMOVED FROM RACK. TRASH RACK TO BE INSPECTED TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS.
10. RIP RAP EMERGENCY SPILLWAY TO BE CLEANED AND PREPARED AS NECESSARY.
11. OUTLET STRUCTURE TO BE INSPECTED AT LEAST TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS. OUTLET STRUCTURE TO BE CLEANED AS NECESSARY.
12. ALL POND WATER QUALITY AND PERMANENT WATER QUALITY STRUCTURES TO BE INSPECTED AT LEAST TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS. WATER QUALITY STRUCTURES TO BE CLEANED AS NECESSARY.

ENGINEER'S CERTIFICATION STATEMENT
I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM.
FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72–300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000.

WILLIAM C. ERVIN, JR., P.E.
04/29/2024

GRASSING

NOTE: ALL AREAS OF THE SITE SHALL BE HYDROSEEDED PER MIX SPECS LISTED BELOW FOR EROSION CONTROL PURPOSES UNLESS SOD IS OTHERWISE SPECIFIED ON THE LANDSCAPING PLANS. STORM WATER PONDS WILL BE GRASSED USING GRASS IMPREGNATED EROSION CONTROL BLANKETS WITHIN 15 DAYS OF GRADING.

GRASSING WORK SHALL CONSIST OF SEEDING, FERTILIZING, LIMING WHEN SPECIFIED, MULCHING, AND APPLYING NITROGEN WHEN SPECIFIED ON ALL AREAS SHOWN ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER PER SPECIFICATIONS.

LIME AND FERTILIZER, WHEN CALLED FOR, SHALL BE SPREAD UNIFORMLY OVER THE DESIGNATED AREAS AND SHALL BE THOROUGHLY MIXED WITH THE SOIL TO A DEPTH OF APPROXIMATELY 2" PRIOR TO SEEDING. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE FOR THE INITIAL APPLICATION UNLESS OTHERWISE DIRECTED.

LIME SHALL BE APPLIED AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE PROVIDED, LIME WILL NOT BE APPLIED FOR TEMPORARY SEEDING. THE CONTRACTOR WILL BE REQUIRED TO DO ALL MAINTENANCE NECESSARY TO KEEP SEEDED AREAS IN A SATISFACTORY CONDITION UNTIL THE WORK IS FINALLY ACCEPTED.

SEEDING SCHEDULES FOR PERMANENT VEGETATION –– LOWER STATE

SCH. NO.	COMMON NAME OF SEED	RURAL RATE	URBAN RATE(1)	PLANTING DATES
3 SEE #5	COMMON BERMUDA (HULLED) (3)	30	30	MARCH 1 –
	WEEPING LOVEGRASS (2)	10	10	"
	SERICEA LESPEDEZA (SCARIFIED) (2)	50 (2)	50 (2)	"
4 SEE #5	COMMON BERMUDA (UNHULLED) (3)	40	40	AUG. 15 –
	WEEPING LOVEGRASS (2)	10	10	"
	SERICEA LESPEDEZA (UNHULLED, UNSCARIFIED)	80	0	"
	RESEEDING CRIMSON CLOVER (4)	20	0	"
	RYE GRAIN	20	0	"

NOTES:
1. INCLUDES RURAL AREAS ADJACENT TO WELL–DEVELOPED LAWNS
2. NOT REQUIRED ON SHOULDERS, MEDIANS, ETC., AND SLOPES UNDER 5 FEET IN HEIGHT.
3. GIANT BERMUDA SEED, INCLUDING NK–37, SHALL NOT BE USED.
4. RESEEDING CRIMSON CLOVER SHALL BE INOCULATED IN ACCORDANCE WITH SUBSECTION 810.05 (SEE SPECIFICATION BOOK). DO NOT PLANT CLOVER IN MEDIANS OR IN RURAL AREAS ADJACENT TO WELL–DEVELOPED LAWNS.
5. PENSACOLA BAHAIA SHALL BE ALLOWED ONLY AS SHOWN IN SEEDING SCHEDULES 3 AND 4 AT THE RATE OF 50 POUNDS PER ACRE ONLY WHEN SEEDING PIT AREAS WHICH ARE GOVERNED BY THE SOUTH CAROLINA MINING ACT. OTHERWISE, DO NOT INCLUDE BAHIA SEED IN SEED MIX. THE UPPER STATE SHALL BE CONSIDERED AS CONSISTING OF ALL COUNTIES WEST OF THE COUNTIES OF AIKEN, LEXINGTON, RICHLAND, KERSHAW AND CHESTERFIELD. THE LOWER STATE SHALL CONSIST OF THE ABOVE CITED COUNTIES AND ALL QUANTITIES EAST. THE CONTRACTOR MAY INCLUDE QUANTITIES OF RYE GRAIN AND MILLET IN SCHEDULE 1 AND 3 IN ORDER TO ESTABLISH QUICK GROUND COVER FOR EROSION CONTROL PURPOSES.

SEEDING SCHEDULES FOR TEMPORARY VEGETATION –– UPPER AND LOWER STATE

SCH. NO.	COMMON NAME OF SEED	RATE (lbs/acre)	PLANTING DATES
1	ANNUAL SUDAN GRASS (SWEET OR TIFT)	40	APRIL 1 – AUG. 15
2	BROWN TOP MILLET	50	APRIL 1 – AUG. 15
3	RYE GRAIN	55	AUG. 16 – MAR. 31

OAT GRAIN IS TO BE ADDED TO ALL SCHEDULES, IF SEEDING DATE IS BETWEEN MARCH1 AND APRIL 16, AT THE RATE OF 10 POUNDS PER ACRE.

TRAFFIC CONTROL PLAN:
1. INSTALL TRAFFIC CONTROL SIGNS PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. CLOSE INSIDE LANE OF TRAFFIC ON ROAD WHEN INSTALLING STORM DRAIN IMPROVEMENTS AND DURING INSTALLATION OF DRIVEWAYS.
3. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY.
4. USE FLAG MEN AS REQUIRED PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5. "ROADWORK AHEAD" SIGN TO BE LOCATED APPROXIMATELY 1,500' PRIOR TO THE START OF CONSTRUCTION AND ADDITIONAL SIGNS SHOULD BE LOCATED AT 1,000' AND 500' PRIOR TO THE START OF CONSTRUCTION AS INDICATED IN SCDOT'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND PER REVIEW DURING THE PRE–CONSTRUCTION MEETING WITH SCDOT.
6. "END OF CONSTRUCTION" SIGN TO BE LOCATED 500' PAST END OF CONSTRUCTION.

SCDOT DRAINAGE STATEMENT: THE POST DEVELOPMENT DISCHARGE INTO THE SCDOT RIGHT OF WAY IS EQUAL TO OR LESS THAN THE PRE DEVELOPMENT DISCHARGE FOR THIS PROJECT FOR THE 2, 10, AND 100 YEAR RAINFALL EVENTS.

WILLIAM C. ERVIN, JR., P.E.
04/29/2024

SCDOT REFERENCE DRAWINGS:

610–005–10
625–410–00
651–110–00
651–115–01
651–115–02
714–205–01
719–610–00
804–305–02
804–310–00
815–505–00
815–605–00

SCDOT STANDARD NOTES:
1. THERE CAN BE NO WORK PERFORMED IN THE SCDOT R/W BEFORE AN ENCROACHMENT PERMIT HAS BEEN ISSUED AND A PRECONSTRUCTION MEETING HAS BEEN HELD. THE PROPERTY OWNER AND CONTRACTOR MUST SCHEDULE AND ATTEND THE PRECONSTRUCTION MEETING.
2. ANY WORK PERFORMED BEFORE THE PRECONSTRUCTION MEETING WILL HAVE TAKEN PLACE WITHOUT SCDOT KNOWLEDGE, OVERSIGHT, AND CONSENT AND SHALL BE SUBJECT TO REMOVAL BY THE APPLICANT AND/OR AT THE APPLICANT'S EXPENSE.
3. ANY REVISIONS TO THIS APPROVED PLAN SET MUST HAVE PRIOR, WRITTEN APPROVAL FROM SCDOT OR ARE SUBJECT TO REMOVAL AT THE APPLICANT'S EXPENSE.
4. THE CONSTRUCTION ENTRANCE MUST BE ESTABLISHED AT THE LOCATION DESIGNATED IN THIS PLAN SET AND ACCORDING TO SCDOT TYPICAL 815–505–00. NO ADDITIONAL ENTRANCES OR LOCATIONS OTHER THAN SHOWN IN THIS PLAN SET ARE ALLOWED WITHOUT WRITTEN NOTICE FROM SCDOT. APPROVED CONSTRUCTION ENTRANCE SHALL BE INSTALLED PROPERLY AND SHALL BE MAINTAINED AT ALL TIMES. KEEP ROADWAY PROTECTED AND SWEPT OFF AT ALL TIMES. ANY ADDITIONAL, EXISTING DRIVEWAYS OR CONSTRUCTION ENTRANCES, IF ANY, SHALL BE REMOVED FROM SCDOT RIGHT OF WAY AT NO EXPENSE TO SCDOT.
5. NO DEWATERING ACTIVITIES SHALL BE PERFORMED WITHIN SCDOT R/W OR BRING FORTH WATER TO THE SCDOT RIGHT OF WAY BY DIRECT OR INDIRECT METHODS.
6. POST DEVELOPMENT STORMWATER FLOWS TO THE SCDOT R/W CANNOT EXCEED PREDEVELOPMENT FLOW RATES AT ANY TIME FOR ANY REASON.
7. THE APPLICANT IS SOLELY RESPONSIBLE FOR REPAIRS OF ANY AND ALL DAMAGE TO THE TRAVEL WAY DUE TO ANY WORK ALONG THE FRONTAGE OF THIS SITE, AT NO EXPENSE TO SCDOT AND ALL REPAIRS MUST MEET CURRENT SCDOT STANDARDS.
8. ANY DAMAGE TO THE TRAVEL LANE WILL REQUIRE A FULL DEPTH ASPHALT PATCH AND TOTAL ROADWAY (ALL ADJACENT TRAVEL LANES) ASPHALT OVERLAY. PATCHES LARGER THAN A FEW SQUARE FEET OR EXTENDING PAST 1 FOOT INTO THE TRAVEL LANE SHALL REQUIRE AN OVERLAY OF THE ENTIRE WIDTH OF THE EXISTING TRAVEL WAY FOR 50 FEET BEYOND EACH SIDE OF THE FULL DEPTH PATCH. ALL OF THIS WORK WILL BE SOLELY AT THE EXPENSE OF THE APPLICANT AND MUST MEET CURRENT SCDOT STANDARDS.
9. BEFORE INSTALLATION OF ANY NEW DRIVEWAY, THE EXISTING TRAVEL EDGE MUST BE SAW CUT TO PROVIDE A STRAIGHT AND UNIFORM EDGE ALONG THE MOUTH OF THE PROPOSED DRIVEWAY. CARE MUST BE TAKEN TO NOT TO DAMAGE THE EDGE ONCE CUT. ANY DAMAGE TO THE TRAVEL LANE MUST BE REPAIRED AT THE APPLICANT'S EXPENSE.
10. PAVEMENT SECTION IN THE SCDOT R/W SHALL BE, AT A MINIMUM:
a. 6 INCHES OF COMPACTED GABC
b. 4 INCHES OF COMPACTED TYPE B BINDER COURSE HOT MIX ASPHALT
c. 2 INCHES OF COMPACTED TYPE B SURFACE COURSE HOT MIX ASPHALT
SEE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION FOR SURFACE COURSE HOT MIX ASPHALT INSTALLATION TIME AND TEMPERATURE RESTRICTIONS AND THERMO PLASTIC TIME AND TEMPERATURE RESTRICTIONS.
OR
d. 8 INCHES OF COMPACTED GABC
e. 4 INCHES OF 4,000 PSI CONCRETE
NO REINFORCEMENT WIRE, REBAR, OR METAL OF ANY KIND IS PERMITTED
11. DRIVEWAY LANES SHALL BE A MINIMUM OF 12 FEET IN WIDTH MEASURED FROM EDGE TO EDGE OF ASPHALT.
12. DRIVEWAY RADII SHALL BE 30 FEET. (UNLESS NOTED OTHERWISE ON THE SCDOT APPROVED PLANS.)
13. PAVEMENT MARKINGS SHALL BE THERMOPLASTIC WITH REFLECTIVE BEADS PER SECTION 627 OF THE SCDOT STANDARD SPECIFICATIONS:
a. ALL WHITE MARKINGS SHALL BE 125 MIL MINIMUM THICKNESS
b. ALL YELLOW MARKINGS SHALL BE 90 MIL MINIMUM THICKNESS
14. ALL PERMANENT SIGNAGE SHALL BE INSTALLED ON BREAKAWAY POSTS PER SCDOT STANDARD DRAWING 651–110–00 AND SHALL HAVE A 7 VERTICAL FOOT CLEARANCE FROM THE GROUND TO THE BOTTOM OF THE SIGN.
15. DRIVEWAYS SHALL BE CONSTRUCTED TO HAVE A MINIMUM OF A 2 FOOT GRASSED SHOULDER ON EACH SIDE OF THE DRIVEWAY THROAT.
16. DITCH SLOPES SHALL BE NO STEEPER THAN 3H:1V.
17. ALL DRIVEWAY CULVERTS SHALL BE INSTALLED AND SEALED ACCORDING TO SCDOT TYPICAL 714–205–01 DETAIL 4 AND 5 WITH AN AASHTO M 315 RUBBER GASKET SEAL, ON PROPER GRADE TO ALLOW FOR POSITIVE STORM WATER FLOW WITHIN THE PIPE AND TO/FROM ADJACENT PIPES/CROSS LINES.
18. ALL CULVERTS INSIDE OF THE SCDOT R/W ARE TO BE INSTALLED WITH BEVELED ENDS PER SCDOT STANDARD DRAWING 719–610–00 AND SEALED PER SCDOT STANDARD DRAWING 714–205–01 AND CANNOT BE COVERED UNTIL AFTER AN INSPECTION BY THE SCDOT INSPECTOR ASSIGNED TO THE PROJECT AT THE REQUIRED SCDOT PRECONSTRUCTION MEETING.
19. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY. SEE SCDOT LOCAL MAINTENANCE WORK RESTRICTIONS FOR ADDITIONAL INFORMATION.
20. SHOULDER CLOSURES ARE REQUIRED FOR ALL WORK IN THE SCDOT R/W BEYOND ONE FOOT FROM THE TRAVEL WAY.
21. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE ALL REQUIRED INSPECTIONS IN ADVANCE. IF WORK REQUIRING INSPECTION IS PERFORMED WITHOUT PRIOR NOTICE BEING GIVEN TO SCDOT, THAT INSTALLATION SHALL BE SUBJECT TO REMOVAL AT THE APPLICANT'S EXPENSE. SEVERAL MEANS OF CONTACT WILL BE GIVEN AT THE PRECONSTRUCTION MEETING. FAILURE TO OBTAIN CONTACT IS NOT AN APPROVAL TO PROCEED WITH ANY WORK.
22. NO VEGETATION INSTALLED ON PRIVATE PROPERTY SHALL BLOCK THE SCDOT SIGHT TRIANGLES OR SIGHT DISTANCES FOR MOTORISTS INGRESS OR EGRESSING FROM APPROVED DRIVEWAYS AND OR ROADWAY INTERSECTIONS. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR KEEPING OFFSITE LANDSCAPINGS PROPERLY MAINTAINED TO IMPROVE ALL SIGHT DISTANCES. THE PROPERTY OWNER SHALL ALSO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGES TO SIDEWALK, DRIVEWAY OR ROADWAY, UTILITY, DRAINAGE OR OTHER STRUCTURES DAMAGED DUE TO THE INSTALLATION OR EXISTENCE OF OFFSITE LANDSCAPING.
23. THE DEPARTMENT SHALL NOT BE RESPONSIBLE FOR DAMAGE TO ANY UTILITY STRUCTURES LOCATED WITHIN THE RIGHT–OF–WAY AS A RESULT OF ROUTINE HIGHWAY MAINTENANCE OPERATIONS. THESE STRUCTURES INCLUDE BUT ARE NOT LIMITED TO ARV, METERS, VALVES, MANHOLES, ALL TYPE OF PEDESTALS AND UTILITY LINES (OVERHEAD AND/OR UNDERGROUND). THE APPLICANT SHOULD USE MECHANICAL MOWERS TO CUT AROUND THESE TYPE STRUCTURES TO INCREASE VISIBILITY FOR HIGHWAY MAINTENANCE WORKERS.
24. APPLICANT IS RESPONSIBLE FOR THE INSTALLATION AND SECURING OF ANY VALVE OR MANHOLE RISERS AS NEEDED.
25. THE DEPARTMENT SHALL BE HELD HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS, DAMAGES AND LOSSES ASSOCIATED WITH WORK AS APPROVED UNDER THIS PERMIT APPLICATION. ANY SUCH DAMAGE CLAIMS RECEIVED BY THE DEPARTMENT SHALL BE THE RESPONSIBILITY OF THE APPLICANT TO PROCESS ACCORDINGLY. THE HOLD HARMLESS AGREEMENT SHALL BE FOR THE LIFE OF THE FACILITY, STRUCTURE(S) OR ENCROACHMENT AS IT REMAINS WITHIN PUBLIC RIGHT–OF–WAY.
26. APPLICANT IS RESPONSIBLE FOR THE REPAIR OF ANY TRAFFIC SIGNAL LOOPS/WIRES/HEAD/CABINETS IF DAMAGED DUE TO THIS INSTALLATION. ALL WORK SHALL BE APPROVED UNDER THE DIRECTION OF THE SCDOT DISTRICT SIGNAL SHOP AND PERFORMED BY A SCDOT APPROVED SIGNAL CONTRACTOR, AT NO EXPENSE TO THE DEPARTMENT.
27. IF REQUIRED UNDER THE APPROVED SCDOT ENCROACHMENT PERMIT, A THIRD PARTY TESTER SHALL BE REQUIRED AT THE APPLICANT'S EXPENSE TO PERFORM COMPACTION ANALYSIS AND WITNESS A PASSING PROOF ROLL ON ALL SUB–GRADE, BASE, AND ASPHALT. ONE THIRD PARTY INSPECTOR SHALL TAKE DENSITY READINGS AT RANDOM STATION NUMBERS. A SECOND (2ND) THIRD PARTY INSPECTOR/TESTER SHALL BE AT THE ASPHALT PLANT TESTING THE ASPHALT AT THE TIME THAT SURFACE ASPHALT IS BEING PRODUCED AND PUT DOWN ON THE JOB. ONE CORE SAMPLE (LOCATIONS TO BE DETERMINED) SHALL BE TAKEN AND WEIGHED BY THE THIRD PARTY INSPECTOR. ALL RESULTS TO BE SUBMITTED IN WRITING TO SCDOT FOR REVIEW THE FOLLOWING DAY. WINTER WORK RESTRICTIONS AND HOLIDAY WORK RESTRICTIONS MUST BE ADHERED TO. SEE PERMIT FOR MORE DETAILS.
28. AN INSPECTION DATE SHALL BE SET UP IN ADVANCE FOR WHICH THE INSPECTOR WILL COME OUT AND INSPECT THE SIDEWALK FORMS BEFORE POURING CONCRETE. DO NOT LEAVE MORE THAN A 2" DROP OFF UNATTENDED. NO MORE THAN A 2" DROP OFF OR A 3:1 DITCH SLOPE IS PERMITTED ANYWHERE WITHIN THE RIGHT OF WAY DUE TO THE CONSTRUCTION ASSOCIATED WITH THIS SIDEWALK. THE INSTALLATION OF SIDEWALK SHALL BE FLUSH WITH SHOULDER OR HAVE A DRAINAGE INLET BUILT UNDERNEATH TO ALLOW FOR PROPER STORM WATER FLOW. NO WATER SHALL POND IN SHOULDER, ROADWAY, DRIVEWAYS, OR RIGHT OF WAY DUE TO THIS INSTALLATION.
29. ADA MATS (RAISED DETECTABLE WARNING PADS) SHALL BE INSTALLED AS WET INSETS AND AT ROADWAY INTERSECTIONS ONLY.
30. NO VALVES OR OTHER APPURTENANCES IN ROADWAY ASPHALT, WITHIN 5 FEET OF EDGE OF PAVEMENT, OR WITHIN DITCH LINE OR SWALE LINE. APPLICANT SHALL INSTALL 8–16 FEET OF NEW, UNDAMAGED RCP ON PROPER GRADE, FACING THE PROPER DIRECTION, MATCHING THE DIAMETER OF DRIVEWAY AND/OR CROSS LINE UPSTREAM, BUT NOT EXCEEDING THE PIPE DIAMETER DOWNSTREAM, IF THE ABOVE CANNOT BE AVOIDED. INSTALL RIP RAP AROUND ANY EXPOSED PIPES, COVER AND SOD TO MEET SCDOT MINIMUM STANDARDS. CALL SCDOT ENCROACHMENT OFFICE FOR INSPECTION OF PIPE BEFORE COVERING.
31. PROPOSED UTILITY INSTALLATION LOCATED IN SHOULDER AREA SHALL HAVE A MINIMUM COVER OF 42" ACCORDING TO FIGURE 6 OF APPENDIX B. ANY EXPOSED ROOTS TO BE REMOVED OR TRIMMED FLUSH WITH SHOULDER/DITCH.

NOTE: ALL EXISTING DRIVEWAYS TO BE RESURFACED TO EDGE OF R/W AND TIED IN SMOOTHLY WITH EXISTING DRIVES

NOTE: LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY. SHOULDER CLOSURES ARE REQUIRED FOR ALL WORK FROM ONE FOOT TO FIFTEEN FEET FROM THE TRAVEL WAY.

NOTE

ALL CULVERTS SHALL BE INSTALLED AND SEALED ACCORDING TO SCDOT TYPICAL 714–201–01 DETAILS 4 AND 5 WITH AN AASHTO M 315 RUBBER GASKET SEAL, ON PROPER GRADE TO ALLOW FOR POSITIVE STORM WATER FLOW WITHIN THE PIPE AND TO/FROM ADJACENT PIPES/CROSS LINES. CULVERTS INSIDE OF THE SCDOT R/W CANNOT BE COVERED UNTIL AFTER AN INSPECTION BY THE SCDOT INSPECTOR ASSIGNED TO THE PROJECT AT THE REQUIRED SCDOT PRECONSTRUCTION MEETING.

ALL HEADWALLS TO USE BEVELED END PIPE WITH RIP RAP PER SCDOT TYPICAL 719–610–00

THIRD PARTY TESTING REQUIRED AT THE APPLICANT'S EXPENSE ON SUB–GRADE, BASE, AND ASPHALT. ONE THIRD PARTY INSPECTOR SHALL TAKE DENSITY READINGS AT RANDOM STATION NUMBERS. A THIRD PARTY INSPECTOR/TESTER SHALL BE AT THE ASPHALT PLANT TESTING THE ASPHALT AT THE TIME THAT SURFACE ASPHALT IS BEING PRODUCED AND PUT DOWN ON THE JOB. RANDOM CORE SAMPLES SHALL BE TAKEN AND WEIGHED BY THE THIRD PARTY INSPECTOR PER SCDOT DETERMINATION. ALL RESULTS TO BE SUBMITTED IN WRITING TO SCDOT FOR REVIEW THE FOLLOWING DAY.

THIRD PARTY TESTING REQUIRED AT THE APPLICANT'S EXPENSE ON ALL STORM DRAIN PIPING. INSPECTIONS SHALL BE AS DESCRIBED IN SC–M–714 (SUPPLEMENTAL TECHNICAL SPECIFICATION FOR PERMANENT PIPE CULVERTS). SPECIFICALLY PAGES 9–12. ALL RESULTS TO BE SUBMITTED IN WRITING TO SCDOT FOR REVIEW THE FOLLOWING DAY.

GENERAL SITE GRADING NOTES
1. CONTRACTOR VERIFY PROPERTY CORNERS AND TOPO BEFORE ANY CONSTRUCTION IS BEGUN.
2. CONTRACTOR TO NOTIFY THE ENGINEER FOR A REVIEW SHOULD ANY DISCREPANCIES BE DISCOVERED AT THE SITE OR ON THE DRAWINGS.
3. EARTHWORK SHALL BE TO THE LINES AND GRADES SHOWN. PROOF ROLLING AND COMPACTION TESTING SHALL BE ACCOMPLISHED IN THE FIELD TO TEST ALL AREAS. THE OWNER SHALL RETAIN THE SERVICES OF A TESTING COMPANY FOR THIS WORK.
4. THE GRADING CONTRACTOR SHALL CONFORM TO ELEVATIONS AND AND DIMENSIONS SHOWN ON THE PLANS WITHIN A CLEARANCE OF PLUS OR MINUS 0.10 FEET.
5. ALL REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III, UNLESS NOTED ON THE DRAWINGS AND SHALL CONFORM TO THE STATE SPECIFICATIONS. JOINTS SHALL BE TONGUE AND GROOVE WITH MASTIC JOINT MATERIAL.
6. ALL WATER LINES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. ALL PIPES, VALVES AND FITTINGS SHALL COMPLY WITH AWWA STANDARDS, ALL LOCAL CODES AND ORDINANCES. PIPE BEDDING AND BACKFILL SHALL BE CAREFULLY CONTROLLED. WATER LINES SHALL BE PRESSURE TESTED AND DISINFECTED AS REQUIRED.
7. ALL UTILITY TRENCHES SHALL BE THOROUGHLY COMPACTED TO PREVENT SETTLEMENT AND DAMAGE TO FUTURE PAVEMENT AND STRUCTURES.
8. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF ALL CUT AND FILL NECESSARY TO BALANCE THE EARTHWORK ON THE SITE. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF WETTING/DRYING OF SOILS NECESSARY TO OBTAIN COMPACTION PER SPECIFICATIONS.
9. THE SEQUENCE OF WORK SHALL CONFORM TO THE EROSION CONTROL NARRATIVE.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REP. WHEN INSTRUCTIONS FROM REGULATORY AGENCIES ARE RECEIVED AND COMPLY WITH INSTRUCTIONS AS DIRECTED BY THE OWNER'S REP.
11. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONSTRUCTION DOCUMENTS AND SHALL AT ONCE REPORT ANY INCONSISTENCIES OR OMISSIONS DISCOVERED. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS TO VERIFY THAT ALL LOCATIONS ARE CORRECT PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL NOT PERFORM ANY WORK ON ANY UTILITIES OR IN PUBLIC RIGHT–OF–WAY UNTIL HE HAS OBTAINED COPIES OF ALL NECESSARY ENCROACHMENT AND CONSTRUCTION PERMITS.
12. AT COMPLETION OF PROJECT, INTERNAL DRAINAGE SYSTEM WILL BE PRIVATELY MAINTAINED.
13. SPOT ELEVATIONS SHOWN ON PLANS REFER TO B/CURB EXCEPT WHERE ACCESSIBLE RAMPS TIE TO PAVING AND AT LOADING DOCK AREAS.
14. ALL SIDEWALKS ARE TO HAVE A 2% CROSS SLOPE.
15. FINISHED GRADE AROUND THE PERIMETER OF THE NEW BUILDING IS TO BE 6" BELOW FINISHED FLOOR ELEVATION.

GENERAL SEWER NOTES
1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ALL UTILITIES BEFORE DIGGING.
3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
4. CONTRACTOR TO MAINTAIN 3'–0" MINIMUM COVER TO TOP OF PVC PIPING.
5. CONTRACTOR TO MAINTAIN 1'–6" MINIMUM CLEARANCE VERTICALLY OR 10'–0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
6. SERVICES AND CLEANOUTS SHOULD BE LOCATED TO WITHIN 5' OF BLDG. LINE AS SHOWN ON MECHANICAL DRAWINGS
7. TOP OF MANHOLE ELEVATIONS ARE APPROXIMATE AND ARE TO BE ESTABLISHED @ FINISHED ROAD GRADE BY CONTRACTOR.
8. WATERTIGHT MANHOLE COVERS MUST BE USED IN AREAS AFFECTED BY THE FIFTY (50) YEAR FLOOD PLAIN AND STREET RUNOFF.
9. CONTRACTOR TO PERFORM (5%) MANDREL TEST ON ALL PVC GRAVITY SEWER. REPRESENTATIVES OF ERVIN ENGINEERING ARE TO BE PRESENT AT THE MANDREL PULL.
10. SEWER LINES TO BE PRESSURE TESTED AT 5 PSI FOR 5 MINUTES.
11. ALL AREAS DISTURBED BY CONST.TO BE GRASSED PER C0.01.

GENERAL WATER NOTES
1. ALL UNDERGROUND FIRE SERVICE PIPING TO BE INSTALLED PER 2019 NFPA 24 STANDARD FOR INSTALLATION OF PRIVATE FIRE SERVICE MAINS. DIP SHALL BE PER 2019 NFPA 24 CHAPTER 10 TABLE 10.1.1 ALL FITTINGS SHALL CONFORM TO 2019 NFPA 24 CHAPTER 10.8
2. WATER SYSTEM TO MEET ALL CITY OF FLORENCE REQUIREMENTS.
3. CONTRACTOR TO MAINTAIN 1'–6" MINIMUM CLEARANCE VERTICALLY OR 10'–0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
4. ALL GATE VALVES TO HAVE 2" SQUARE OPERATING NUTS AND ARE TO BE PROVIDED W/ VALVE BOXES, CONCRETE COLLARS, AND MARKERS.
5. WATER LINE TO HAVE A MINIMUM OF 48" OF COVER UNDER SCDOT PAVEMENT AND 42" OF COVER IN THE SCDOT SHOULDER. WATER LINE TO HAVE A MINIMUM OF 36" OF COVER IN ALL OTHER AREAS.
6. ALL FITTINGS TO BE DUCTILE IRON, MECHANICAL JOINT, CL153
7. ALL FITTINGS TO BE MEGA LUG WITH BELL RESTR4AINT AND SHALL CONFORM TO 2019 NFPA 24 STANDARD FOR INSTALLATION OF PRIVATE FIRE SERVICE MAINS SEC. 10.8.
8. BLOW–OFFS AND SERVICES ARE SHOWN WITHIN PROPERTY LINES FOR CLARITY ONLY. BLOW–OFFS AND SERVICES ARE NOT TO EXTEND BEYOND THE RIGHT–OF–WAY.
9. ALL PIV'S AND OTHER VALVES SUPPLYING SPRINKLER SYSTEMS ARE TO BE PROVIDED WITH ELECTRICALLY SUPERVISED TAMPER SWITCHES PER IBC 2021 903.4 – SWITCH TO BE POTTER PCVS–1 OR APP. EQ. COORDINATE ELECTRICAL TIE–IN WITH PLUMBING DRAWINGS.
10. VALVE MARKERS TO BE LOCATED AS SHOWN.
11. NO SERVICE CONNECTIONS ARE TO BE LOCATED UNDER PAVEMENT.
12. FOR WATER DETAILS SEE THIS SHEET
13. CONTRACTOR VERIFY LOCATION OF ALL EXIST. UTILITIES PRIOR TO CONSTRUCTION.
14. CONTRACTOR NOTIFY ALL UTILITIES BEFORE DIGGING
15. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
16. CONTRACTOR WILL BE REQUIRED TO PRESSURE TEST NEW SERVICE CONNECTIONS REPRESENTATIVES OF EECO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THE TEST.
17. ALL AREAS DISTURBED BY CONSTRUCTION TO BE GRASSED PER SPECIFICATIONS.
18. POTABLE WATER LINES TO BE PRESSURE TESTED AT 150 PSI FOR A MINIMUM OF 2 HOURS PER SPECIFICATIONS. REPRESENTATIVES OF ERVIN ENGINEERING CO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THIS TEST.
19. POTABLE WATER LINES TO BE CHLORINATED AND TESTED PER SPECIFICATIONS.
20. FIRE SERVICE LINES TO BE PRESSURE TESTED AT 200 PSI FOR A MINIMUM OF 2 HOURS PER SPECIFICATIONS. REPRESENTATIVES OF ERVIN ENGINEERING CO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THIS TEST.

SOUTH CAROLINA PROFESSIONAL ENGINEER REGISTRATION NUMBER 10821 WILLIAM C. ERVIN
04/29/2024

SOUTH CAROLINA ERVIN ENGINEERING COMPANY INC. NO. C00053 CERTIFICATE OF AUTHORIZATION

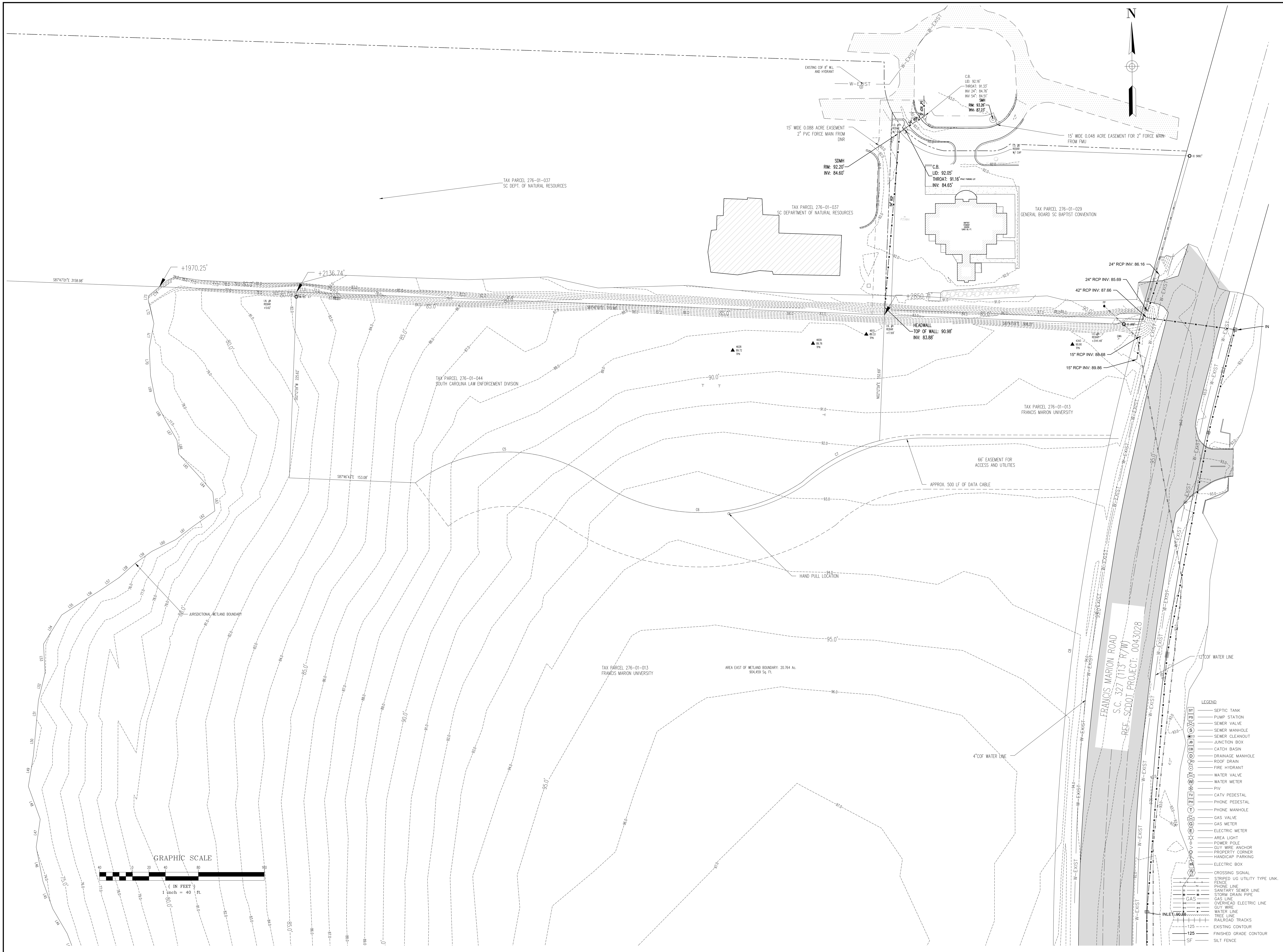
EECO
ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA
FMU NOTES

DRAWN BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
DESIGNED BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
SCALE: NONE	

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/2024	REV. PER OSE REVIEW	WCE

C0.01 -FMU
EECO JOB #:



N
TAX PARCEL 276-01-037
SC DEPT. OF NATURAL RESOURCES
TAX PARCEL 276-01-037
SC DEPARTMENT OF NATURAL RESOURCES
TAX PARCEL 276-01-029
GENERAL BOARD SC BAPTIST CONVENTION
15' WIDE 0.088 ACRE EASEMENT
2" PVC FORCE MAIN FROM
DNR
15' WIDE 0.048 ACRE EASEMENT FOR 2" FORCE MAIN
FROM FMU
SDMH
RIM: 92.20'
INV: 84.60'
C.B.
LID: 92.05'
THROAT: 91.16'
INV: 84.65'
+1970.25'
+2136.74'
+2850.71'
HEADWALL
TOP OF WALL: 90.98'
INV: 83.88'
24" RCP INV: 86.16
24" RCP INV: 85.69
42" RCP INV: 87.66
15" RCP INV: 89.68
15" RCP INV: 89.86
TAX PARCEL 276-01-044
SOUTH CAROLINA LAW ENFORCEMENT DIVISION
TAX PARCEL 276-01-013
FRANCIS MARION UNIVERSITY
66' EASEMENT FOR
ACCESS AND UTILITIES
APPROX. 500 LF OF DATA CABLE
HAND PULL LOCATION
JURISDICTIONAL WETLAND BOUNDARY
TAX PARCEL 276-01-013
FRANCIS MARION UNIVERSITY
AREA EAST OF WETLAND BOUNDARY: 20.764 Ac.
904,459 Sq. Ft.
FRANCIS MARION ROAD
S.C. 327 (113' R/W)
REF. SCDOT PROJECT: 0043028
12"COF WATER LINE
4"COF WATER LINE
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.
LEGEND
SEPTIC TANK
PUMP STATION
SEWER VALVE
SEWER MANHOLE
SEWER CLEANOUT
JUNCTION BOX
CATCH BASIN
DRAINAGE MANHOLE
ROOF DRAIN
FIRE HYDRANT
WATER VALVE
WATER METER
PIV
CATV PEDESTAL
PHONE PEDESTAL
PHONE MANHOLE
GAS VALVE
GAS METER
ELECTRIC METER
AREA LIGHT
POWER POLE
GUY WIRE ANCHOR
PROPERTY CORNER
HANDICAP PARKING
ELECTRIC BOX
CROSSING SIGNAL
STRIPED UG UTILITY TYPE UNK.
FENCE
PHONE LINE
SANITARY SEWER LINE
STORM DRAIN PIPE
GAS LINE
OVERHEAD ELECTRIC LINE
GUY WIRE
WATER LINE
TREE LINE
RAILROAD TRACKS
EXISTING CONTOUR
FINISHED GRADE CONTOUR
SILT FENCE

SOUTH CAROLINA PROFESSIONAL ENGINEER REGISTRATION No. 10821 WILLIAM C. ERVIN — 04/29/2024

SOUTH CAROLINA ERVIN ENGINEERING COMPANY INC. NO. C00053 CERTIFICATE OF AUTHORIZATION

EECO
ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

DRAWN BY: WCE	CHECKED BY: ADB	DESIGNED BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24	DATE: 03/11/24	DATE: 03/11/24

SCALE: AS NOTED

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

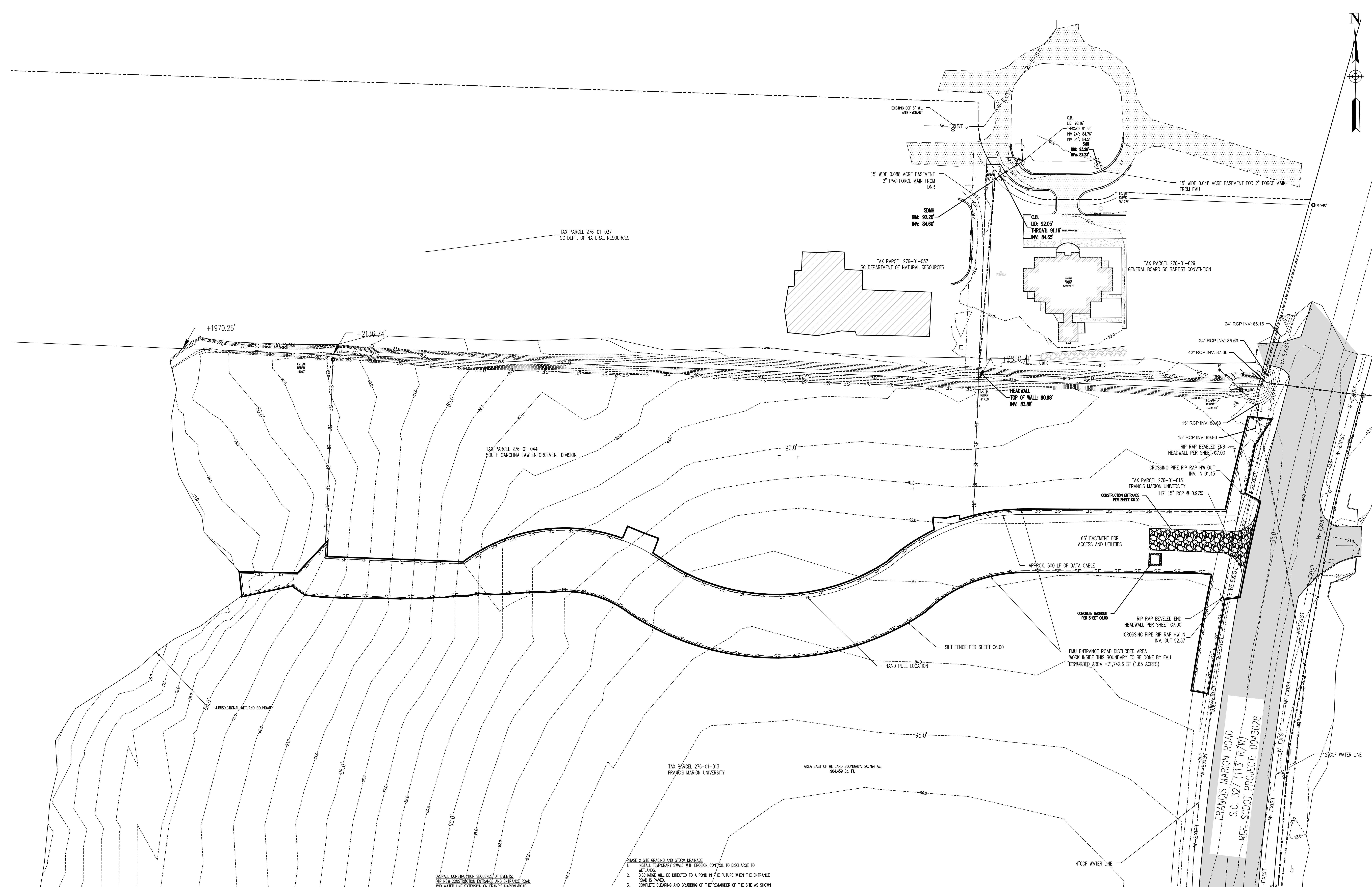
FMU EXISTING CONDITIONS

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/2024	REV. PER OSE REVIEW	WCE

REV	DATE	REVISION	APPROVED

C1.00 FMU

EECO JOB #:



OVERALL CONSTRUCTION SEQUENCE OF EVENTS:
FOR NEW CONSTRUCTION ENTRANCE AND ENTRANCE ROAD
AND WATER LINE EXTENSION ON FRANCIS MARION ROAD
FLORENCE, SC

PHASE 0- PRE-CONSTRUCTION

1. RECEIVE NPDES COVERAGE FROM FLORENCE COUNTY MS4
2. PRE-CONSTRUCTION MEETING (ON-SITE).
3. NOTIFY SCDHEC, SCDHEC REGIONAL EQC, AND ERVIN ENGINEERING 48 HOURS PRIOR TO BEGINNING ANY LAND-DISTURBING ACTIVITIES.

PHASE 1 PRELIMINARY EROSION CONTROL

1. INSTALLATION OF CONSTRUCTION ENTRANCE(S) AT THE LOCATIONS SHOWN ON SHEET C1.01 PER THE DETAILS SHOWN ON SHEET C6.01.
2. CLEAR AND GRUB SITE ONLY AS REQUIRED FOR INSTALLATION OF PERIMETER CONTROLS.
3. INSTALLATION OF PERIMETER CONTROLS (EG., SILT FENCE).
4. CLEAR AND GRUB SITE WITHIN THE LIMITS SHOWN ON SHEET C1.01
5. FOR SITE EXCAVATION, DENSIFICATION, GRADING, AND PAVING SEE GEOTECHNICAL REPORT BY S&ME PROJECT NUMBER 23390074
6. STRIP TOPSOIL AND STOCKPILE IN AREAS SHOWN FOR FUTURE USE PER DETAILS SHOWN ON SHEET C6.01.
7. ANY STOCKPILED TOPSOIL AND EXCESS MATERIAL THAT CANNOT BE STORED ON SITE MUST BE STORED OFFSITE FOR RE-SPREAD AS REQUIRED TO PREVENT LOSS OF TOPSOIL. COORDINATE STOCKPILING WITH GENERAL CONTRACTOR. WHERE EXISTING TOPSOIL IS DEEMED TO BE NOT SUITABLE BY GEOTECHNICAL ENGINEER. CONTRACTOR SHALL BRING IN SUITABLE TOP SOIL AS DETERMINED BY A QUALIFIED GEOTECH. ENGR.
8. OFF SITE STOCK PILE AREAS WILL BE AVAILABLE FOR INSPECTION AT ALL TIMES.

PHASE 2 SITE GRADING AND STORM DRAINAGE

1. INSTALL TEMPORARY SWALE WITH EROSION CONTROL TO DISCHARGE TO WETLANDS.
2. DISCHARGE WILL BE DIRECTED TO A POND IN THE FUTURE WHEN THE ENTRANCE ROAD IS PAVED.
3. COMPLETE CLEARING AND GRUBBING OF THE REMAINDER OF THE SITE AS SHOWN ON SHEET C1.02 (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
4. INSTALL TEMPORARY DRAINAGE AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER AND AS DESCRIBED IN THE GEOTECHNICAL REPORT FOR THIS PROJECT. THE PROJECT GEOTECHNICAL ENGINEER SHALL BE ON SITE FOR THIS PHASE OF THE PROJECT.
5. AFTER STRIPPING OPERATION IS COMPLETE AND TEMPORARY DRAINAGE INSTALLED, AREAS RECEIVING FILL SHOULD BE DENSIFIED TO 95% OF MODIFIED PROCTOR TO A DEPTH OF AT LEAST 12" PER THE GEOTECHNICAL REPORT.
6. FOLLOWING DENSIFICATION, THE SUBGRADE SHOULD BE PROOF ROLLED PER THE PROJECT GEOTECHNICAL REPORT.
7. ROUGH GRADE SITE TO SUB-GRADE ELEVATIONS BASED ON GRADING PLANS FOUND ON SHEETS C3.00.
8. FILL PLACEMENT AND COMPACTION SHALL BE AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
9. ON-SITE EXCAVATED MATERIAL MAY BE USED AS FILL WHERE IT MEETS THE STANDARDS OF THE PROJECT GEOTECHNICAL ENGINEER. UNSUITABLE MATERIAL THAT CAN NOT BE USED FOR TOPSOIL OR NON-STRUCTURAL FILL MUST BE DISPOSED OF OFF SITE.
10. INSTALL CROSS LINE PIPE @ CONSTRUCTION ENTRANCE PER DRAWINGS SHOWN ON SHEET C1.02, C4.00, C4.01 AND DETAILS ON SHEET C7.02. HAUL, GRADE AND COMPACT BASE MATERIALS AS SPECIFIED TO ROUGH GRADE.
11. PROOF ROLL ALL REQUIRED BASE MATERIAL TO 75,000# WITH REPS. FROM PROJECT GEOTECHNICAL ENGINEER AND EECO PRESENT.
12. INSTALL STONE BASE PER DETAILS, PROOF ROLL ALL REQUIRED STONE TO 75,000# AND AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
13. REPRESENTATIVES OF THE PROJECT GEOTECHNICAL ENGINEER AND EECO MUST PRESENT FOR ALL PROOF ROLLS.
14. INSTALL STONE BASE ON ENTRANCE ROAD TO PROPOSED SLED SITE.

PHASE 3 – WATER LINE EXTENSION/ BUILDING PHASE @ SLED SITE /FINAL STABILIZATION

1. NOTIFY THE CITY OF FLORENCE FMU, SCDHEC AND ERVIN ENGINEERING, AND SCDOT AT LEAST 48 HOURS PRIOR TO THE START OF THE WATER LINE EXTENSION.
2. A PRE-CONSTRUCTION MEETING WILL BE HELD ON SITE WITH FMU, THE CITY OF FLORENCE, THE UTILITY CONTRACTOR, REPRESENTATIVES OF SCDHEC, SCDOT, AND ERVIN ENGINEERING PRIOR TO CONSTRUCTION.
3. MAKE 10 X 8 TAP PER NOTES AND UTILITY PLANS WITH CITY OF FLORENCE AND ERVIN ENGINEERING PRESENT.
4. BORE FRANCIS MARION ROAD WITH 16" CASING PER C7.05 WITH REPRESENTATIVES OF SCDOT AND ERVIN ENGINEERING PRESENT.
5. INSTALL PROJECT WATER LINE EXTENSION TO SECOND SLED DRIVEWAY AS SHOWN ON SHEET C5.00.
6. INTALL HYDRANT AND GATE VALVES FOR FIRE SERVICE AND POTABLE SERVICE TO SLED BUILDING.
7. WATER LINE TO BE INSTALLED AND TESTED PER WATER NOTES.
8. AT THE COMPLETION OF THE WATER LINE EXTENSION AND THE SLED BUILDING SITE, THE CONSTRUCTION ENTRANCE WILL BE REMOVED AND THE ENTRANCE ROAD WILL BE PAVED PER THE DRAWINGS FOR THIS PROJECT.
9. ALL AREAS NOT RECEIVING ASPHALT OR STONE WILL BE GRASSED PER THE GRASSING NOTES FOR THIS PROJECT.
10. INSTALL PAVING INTERIOR TO THE SITE.
11. PERFORM AS-BUILT SURVEYS OF THE ENTRANCE ROAD AND SWALES. CONTRACTOR WILL NOT GET FINAL RELEASE FOR THE PROJECT UNTIL THERE IS AN ESTABLISHED GROUND COVER OVER 70% OF THE SITE.
12. AS-BUILTS AND NOTICE OF TERMINATION (NOT) CAN BE SUBMITTED UPON 70% UNIFORM SITE STABILIZATION.

GENERAL NOTES:

1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ALL UTILITIES BEFORE DIGGING.
3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
4. CONTRACTOR TO MAINTAIN 1'-6" MINIMUM CLEARANCE VERTICALLY OR 10'-0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
5. ALL AREAS DISTURBED BY CONSTRUCTION TO BE GRASSED PER SPECIFICATIONS.
6. FIELD VERIFY ALL DIMENSIONS
7. OWNER SHALL OBTAIN THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO MAKE RECOMMENDATIONS ON SUITABLE FILL MATERIAL AND PROPER COMPACTION.
8. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ALL UTILITIES (BOTH ABOVE AND BELOW GROUND) THAT ARE DAMAGED BY CONSTRUCTION.
9. SEE DETAIL SHEETS FOR TYPICAL WATER DETAILS AND SEWER DETAILS.
10. SEE SHEET C7.02 FOR TYPICAL STORM DRAIN DETAILS
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION AND RELOCATION OF ALL EXISTING UTILITIES IN THE ROW AS REQUIRED FOR THE INSTALLATION OF ROAD WIDENING AND TURN LANES.
12. UTILITY RELOCATION IN THE ROW WILL BE A PART OR THE DIVISION 2 CONTRACT.
13. ALL DRIVEWAYS AND MAILBOXES IMPACTED BY ROAD WIDENING WILL BE REWORKED BY THE CONTRACTOR TO SCDOT STANDARDS. THIS WORK WILL BE INCLUDED IN DIVISION 2 OF THE CONTRACT.
14. CONTRACTOR TO INSTALL SILT FENCING AND EROSION CONTROL MEASURES PER SHEET C6.01 AS DIRECTED BY SCDOT.

TRAFFIC CONTROL PLAN:

1. INSTALL TRAFFIC CONTROL SIGNS PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. CLOSE INSIDE LANE OF TRAFFIC ON ROAD WHEN INSTALLING STORM DRAIN IMPROVEMENTS AND DURING INSTALLATION OF DRIVEWAYS.
3. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY.
4. USE FLAG MEN AS REQUIRED PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5. "ROADWORK AHEAD" SIGN TO BE LOCATED APPROXIMATELY 1,500' PRIOR TO THE START OF CONSTRUCTION AND ADDITIONAL SIGNS SHOULD BE LOCATED AT 1,000' AND 500' PRIOR TO THE START OF CONSTRUCTION AS INDICATED IN SCDOT'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND PER REVIEW DURING THE PRE-CONSTRUCTION MEETING WITH SCDOT.
6. "END OF CONSTRUCTION" SIGN TO BE LOCATED 500' PAST END OF CONSTRUCTION.

SCDOT DRAINAGE STATEMENT: THE POST DEVELOPMENT DISCHARGE INTO THE SCDOT RIGHT OF WAY IS EQUAL TO OR LESS THAN THE PRE DEVELOPMENT DISCHARGE FOR THIS PROJECT FOR THE 2, 10, AND 100 YEAR RAINFALL EVENTS.

WILLIAM C. ERVIN, JR., P.E.
04/29/2024

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

ERVIN ENGINEERING CO., INC.

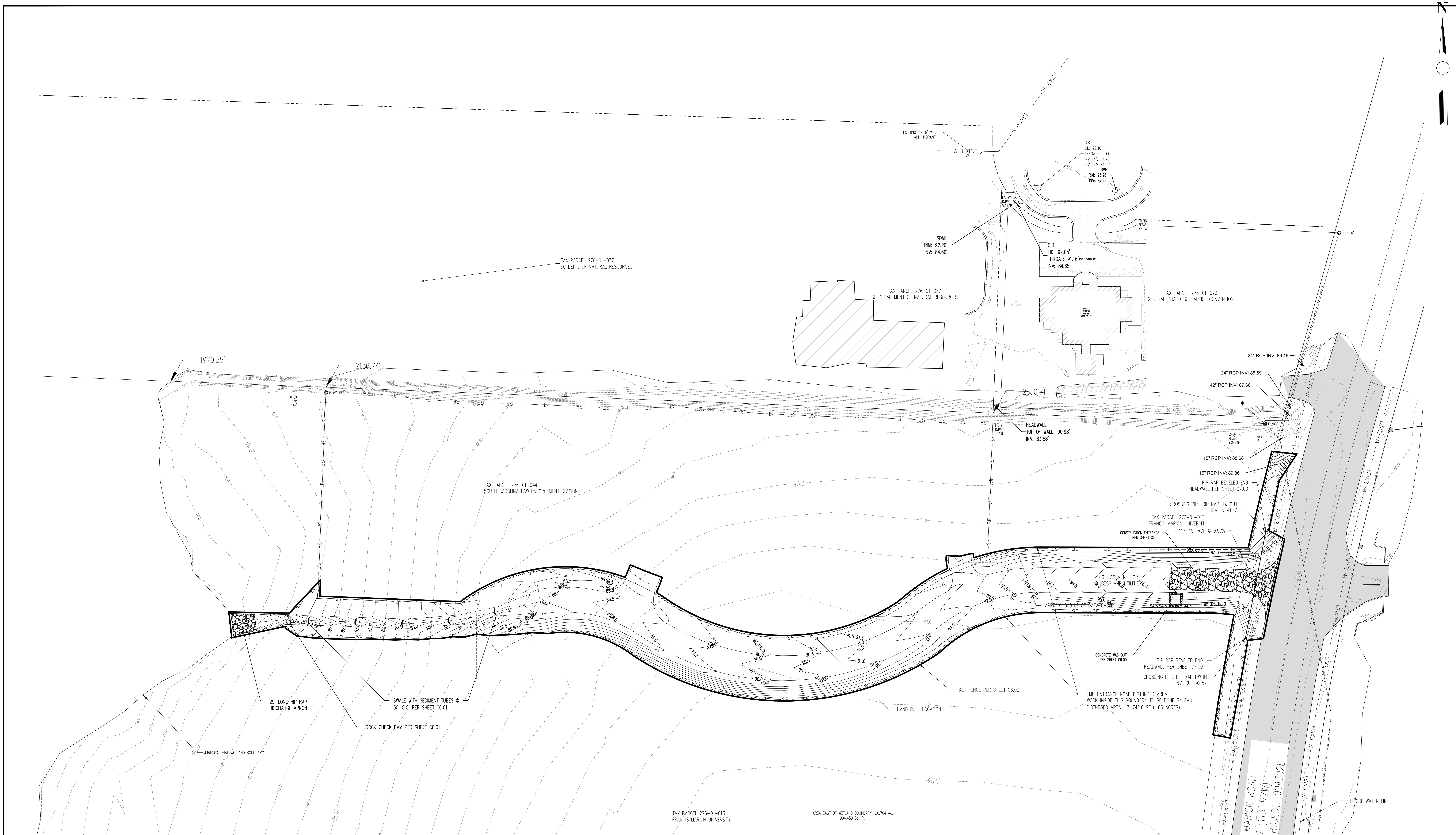
FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE, SOUTH CAROLINA
FMU EC PLAN PHASE 1

DRAWN BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
DESIGNED BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
SCALE:	AS NOTED

REV	DATE	REVISION	APPROVED
A		FOR PERMITTING	WCE
B		FOR PERMITTING	WCE
C		PER SCDOT COMMENTS	WCE
D		REV. PER OSE REVIEW	WCE

C1.01 FMU

EECO JOB #



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

GENERAL NOTES:

1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ALL UTILITIES BEFORE DIGGING.
3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
4. CONTRACTOR TO MAINTAIN 1'-6" MINIMUM CLEARANCE VERTICALLY OR 10'-0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
5. ALL AREAS DISTURBED BY CONSTRUCTION TO BE GRASSED PER SPECIFICATIONS.
6. FIELD VERIFY ALL DIMENSIONS
7. OWNER SHALL OBTAIN THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO MAKE RECOMMENDATIONS ON SUITABLE FILL MATERIAL AND PROPER COMPACTION.
8. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ALL UTILITIES (BOTH ABOVE AND BELOW GROUND) THAT ARE DAMAGED BY CONSTRUCTION.
9. SEE DETAIL SHEETS FOR TYPICAL WATER DETAILS AND SEWER DETAILS.
10. SEE SHEET C7.02 FOR TYPICAL STORM DRAIN DETAILS
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION AND RELOCATION OF ALL EXISTING UTILITIES IN THE ROW AS REQUIRED FOR THE INSTALLATION OF ROAD WIDENING AND TURN LANES.
12. UTILITY RELOCATION IN THE ROW WILL BE A PART OR THE DIVISION 2 CONTRACT.
13. ALL DRIVEWAYS AND MAILBOXES IMPACTED BY ROAD WIDENING WILL BE REWORKED BY THE CONTRACTOR TO SCDOT STANDARDS. THIS WORK WILL BE INCLUDED IN DIVISION 2 OF THE CONTRACT.
14. CONTRACTOR TO INSTALL SILT FENCING AND EROSION CONTROL MEASURES PER SHEET C6.01 AS DIRECTED BY SCDOT.

OVERALL CONSTRUCTION SEQUENCE OF EVENTS:
FOR NEW CONSTRUCTION ENTRANCE AND ENTRANCE ROAD
AND WATER LINE EXTENSION ON FRANCIS MARION ROAD
FLORENCE, SC

PHASE 0- PRE-CONSTRUCTION

1. RECEIVE NPDES COVERAGE FROM FLORENCE COUNTY MS4
2. PRE-CONSTRUCTION MEETING (ON-SITE).
3. NOTIFY SCDHEC, SCDHEC REGIONAL EQC, AND ERVIN ENGINEERING 48 HOURS PRIOR TO BEGINNING ANY LAND-DISTURBING ACTIVITIES.

PHASE 1 PRELIMINARY EROSION CONTROL

1. INSTALLATION OF CONSTRUCTION ENTRANCE(S) AT THE LOCATIONS SHOWN ON SHEET C1.01 PER THE DETAILS SHOWN ON SHEET C6.01.
2. CLEAR AND GRUB SITE ONLY AS REQUIRED FOR INSTALLATION OF PERIMETER CONTROLS.
3. INSTALLATION OF PERIMETER CONTROLS (EG., SILT FENCE).
4. CLEAR AND GRUB SITE WITHIN THE LIMITS SHOWN ON SHEET C1.01
5. FOR SITE EXCAVATION, DENSIFICATION, GRADING, AND PAVING SEE GEOTECHNICAL REPORT BY S&ME PROJECT NUMBER 23390074
6. STRIP TOPSOIL AND STOCKPILE IN AREAS SHOWN FOR FUTURE USE PER DETAILS SHOWN ON SHEET C6.01.
7. ANY STOCKPILED TOPSOIL AND EXCESS MATERIAL THAT CANNOT BE STORED ON SITE MUST BE STORED OFFSITE FOR RE-SPREAD AS REQUIRED TO PREVENT LOSS OF TOPSOIL. COORDINATE STOCKPILING WITH GENERAL CONTRACTOR. WHERE EXISTING TOPSOIL IS DEEMED TO BE NOT SUITABLE BY GEOTECHNICAL ENGINEER. CONTRACTOR SHALL BRING IN SUITABLE TOP SOIL AS DETERMINED BY A QUALIFIED GEOTECH. ENGR.
8. OFF SITE STOCK PILE AREAS WILL BE AVAILABLE FOR INSPECTION AT ALL TIMES.

PHASE 2 SITE GRADING AND STORM DRAINAGE

1. INSTALL TEMPORARY SWALE WITH EROSION CONTROL TO DISCHARGE TO WETLANDS.
2. DISCHARGE WILL BE DIRECTED TO A POND IN THE FUTURE WHEN THE ENTRANCE ROAD IS PAVED.
3. COMPLETE CLEARING AND GRUBBING OF THE REMAINDER OF THE SITE AS SHOWN ON SHEET C1.02 (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
4. INSTALL TEMPORARY DRAINAGE AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER AND AS DESCRIBED IN THE GEOTECHNICAL REPORT FOR THIS PROJECT. THE PROJECT GEOTECHNICAL ENGINEER SHALL BE ON SITE FOR THIS PHASE OF THE PROJECT.
5. AFTER STRIPPING OPERATION IS COMPLETE AND TEMPORARY DRAINAGE INSTALLED, AREAS RECEIVING FILL SHOULD BE DENSIFIED TO 95% OF MODIFIED PROCTOR TO A DEPTH OF AT LEAST 12" PER THE GEOTECHNICAL REPORT.
6. FOLLOWING DENSIFICATION, THE SUBGRADE SHOULD BE PROOF ROLLED PER THE PROJECT GEOTECHNICAL REPORT.
7. ROUGH GRADE SITE TO SUB-GRADE ELEVATIONS BASED ON GRADING PLANS FOUND ON SHEETS C3.00.
8. FILL PLACEMENT AND COMPACTION SHALL BE AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
9. ON-SITE EXCAVATED MATERIAL MAY BE USED AS FILL WHERE IT MEETS THE STANDARDS OF THE PROJECT GEOTECHNICAL ENGINEER. UNSUITABLE MATERIAL THAT CAN NOT BE USED FOR TOPSOIL OR NON-STRUCTURAL FILL MUST BE DISPOSED OF OFF SITE.
10. INSTALL CROSS LINE PIPE @ CONSTRUCTION ENTRANCE PER DRAWINGS SHOWN ON SHEET C1.02, C4.00, C4.01 AND DETAILS ON SHEET C7.02. HAUL, GRADE AND COMPACT BASE MATERIALS AS SPECIFIED TO ROUGH GRADE.
11. PROOF ROLL ALL REQUIRED BASE MATERIAL TO 75,000# WITH REPS. FROM PROJECT GEOTECHNICAL ENGINEER AND EECO PRESENT.
12. INSTALL STONE BASE PER DETAILS, PROOF ROLL ALL REQUIRED STONE TO 75,000# AND AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
13. REPRESENTATIVES OF THE PROJECT GEOTECHNICAL ENGINEER AND EECO MUST PRESENT FOR ALL PROOF ROLLS.
14. INSTALL STONE BASE ON ENTRANCE ROAD TO PROPOSED SLED SITE.

PHASE 3 - WATER LINE EXTENSION/ BUILDING PHASE @ SLED SITE /FINAL STABILIZATION

1. NOTIFY THE CITY OF FLORENCE FMU, SCDHEC AND ERVIN ENGINEERING, AND SCDOT AT LEAST 48 HOURS PRIOR TO THE START OF THE WATER LINE EXTENSION.
2. A PRE-CONSTRUCTION MEETING WILL BE HELD ON SITE WITH FMU, THE CITY OF FLORENCE, THE UTILITY CONTRACTOR, REPRESENTATIVES OF SCDHEC, SCDOT, AND ERVIN ENGINEERING PRIOR TO CONSTRUCTION.
3. MAKE 10 X 8 TAP PER NOTES AND UTILITY PLANS WITH CITY OF FLORENCE AND ERVIN ENGINEERING PRESENT.
4. BORE FRANCIS MARION ROAD WITH 16" CASING PER C7.05 WITH REPRESENTATIVES OF SCDOT AND ERVIN ENGINEERING PRESENT.
5. INSTALL PROJECT WATER LINE EXTENSION TO SECOND SLED DRIVEWAY AS SHOWN ON SHEET C5.00.
6. INTALL HYDRANT AND GATE VALVES FOR FIRE SERVICE AND POTABLE SERVICE TO SLED BUILDING.
7. WATER LINE TO BE INSTALLED AND TESTED PER WATER NOTES.
8. AT THE COMPLETION OF THE WATER LINE EXTENSION AND THE SLED BUILDING SITE, THE CONSTRUCTION ENTRANCE WILL BE REMOVED AND THE ENTRANCE ROAD WILL BE PAVED PER THE DRAWINGS FOR THIS PROJECT.
9. ALL AREAS NOT RECEIVING ASPHALT OR STONE WILL BE GRASSED PER THE GRASSING NOTES FOR THIS PROJECT.
10. INSTALL PAVING INTERIOR TO THE SITE.
11. PERFORM AS-BUILT SURVEYS OF THE ENTRANCE ROAD AND SWALES. CONTRACTOR WILL NOT GET FINAL RELEASE FOR THE PROJECT UNTIL THERE IS AN ESTABLISHED GROUND COVER OVER 70% OF THE SITE.
12. AS-BUILTS AND NOTICE OF TERMINATION (NOT) CAN BE SUBMITTED UPON 70% UNIFORM SITE STABILIZATION.

TRAFFIC CONTROL PLAN:

1. INSTALL TRAFFIC CONTROL SIGNS PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. CLOSE INSIDE LANE OF TRAFFIC ON ROAD WHEN INSTALLING STORM DRAIN IMPROVEMENTS AND DURING INSTALLATION OF DRIVEWAYS.
3. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY.
4. USE FLAG MEN AS REQUIRED PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5. "ROADWORK AHEAD" SIGN TO BE LOCATED APPROXIMATELY 1,500' PRIOR TO THE START OF CONSTRUCTION AND ADDITIONAL SIGNS SHOULD BE LOCATED AT 1,000' AND 500' PRIOR TO THE START OF CONSTRUCTION AS INDICATED IN SCDOT'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND PER REVIEW DURING THE PRE-CONSTRUCTION MEETING WITH SCDOT.
6. "END OF CONSTRUCTION" SIGN TO BE LOCATED 500' PAST END OF CONSTRUCTION.

SCDOT DRAINAGE STATEMENT: THE POST DEVELOPMENT DISCHARGE INTO THE SCDOT RIGHT OF WAY IS EQUAL TO OR LESS THAN THE PRE DEVELOPMENT DISCHARGE FOR THIS PROJECT FOR THE 2, 10, AND 100 YEAR RAINFALL EVENTS.

WILLIAM C. ERVIN, JR., P.E.
04/29/2024

BMP MAINTENANCE AND INSPECTION PROCEDURES:

THE POND SHALL BE INSPECTED AT LEAST TWICE A YEAR, ONCE IN THE SUMMER AFTER MOWING AND ONCE IN THE WINTER WHEN THE VEGETATION IS DORMANT. INSPECTIONS SHALL ALSO BE MADE AFTER HEAVY RAINFALL EVENTS. WRITTEN RECORDS OF MAINTENANCE AND INSPECTIONS SHALL BE KEPT. MAINTENANCE ITEMS TO BE ADDRESSED ARE AS FOLLOWS:

1. A GOOD STAND OF GRASS SHALL BE MAINTAINED ON THE SIDE SLOPES AND THE BOTTOM OF THE POND. ERODED AREAS SHALL BE REPAIRED AND RESEEDED IMMEDIATELY. THE GRASS SHALL BE MOWED AT LEAST TWICE A YEAR.
2. TREES AND SHRUBS SHALL NOT BE ALLOWED ON THE EMBANKMENT. TREES THAT HAVE GROWN ON THE EMBANKMENT SHALL BE REMOVED. STUMPS AND ALL WOODY MATERIALS MUST BE REMOVED TO ABOUT 30 INCHES BELOW GROUND SURFACE.
3. TRASH SHALL BE REMOVED FROM WITHIN AND AROUND THE POND AREA AT LEAST TWICE A YEAR.
4. THE RIP RAP DAM AT THE LOWER END OF THE POND SHALL BE CLEANED AND REPAIRED AS NECESSARY.
5. THE RIP RAP ROCK BERM SHALL BE CLEANED AND REPAIRED AS NECESSARY.
6. ALL OTHER RIP RAP TO BE CLEANED AND REPAIRED AS NECESSARY.
7. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE POND.
8. THE POND BOTTOM SHALL BE REGARDED AS NECESSARY TO ENSURE POSITIVE DRAINAGE TO THE POND OUTLET.
9. ALL VEGETATION MUST BE KEPT OFF TRASH RACK AND ALL TRASH REMOVED FROM RACK. TRASH RACK TO BE INSPECTED TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS.
10. RIP RAP EMERGENCY SPILLWAY TO BE CLEANED AND PREPARED AS NECESSARY.
11. OUTLET STRUCTURE TO BE INSPECTED AT LEAST TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS. OUTLET STRUCTURE TO BE CLEANED AS NECESSARY.
12. ALL POND WATER QUALITY AND PERMANENT WATER QUALITY STRUCTURES TO BE INSPECTED AT LEAST TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS. WATER QUALITY STRUCTURES TO BE CLEANED AS NECESSARY.

SOUTH CAROLINA PROFESSIONAL ENGINEER REGISTRATION 10821 WILLIAM C. ERVIN
04/29/2024

SOUTH CAROLINA ERVIN ENGINEERING COMPANY INC. NO. C00053 CERTIFICATE OF AUTHORIZATION

EECO
ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

DRAWN BY: WCE	DATE: 03/11/24	CHECKED BY: ADB	DATE: 03/11/24
DESIGNED BY: WCE	DATE: 03/11/24	CHECKED BY: ADB	DATE: 03/11/24
SCALE: AS NOTED			

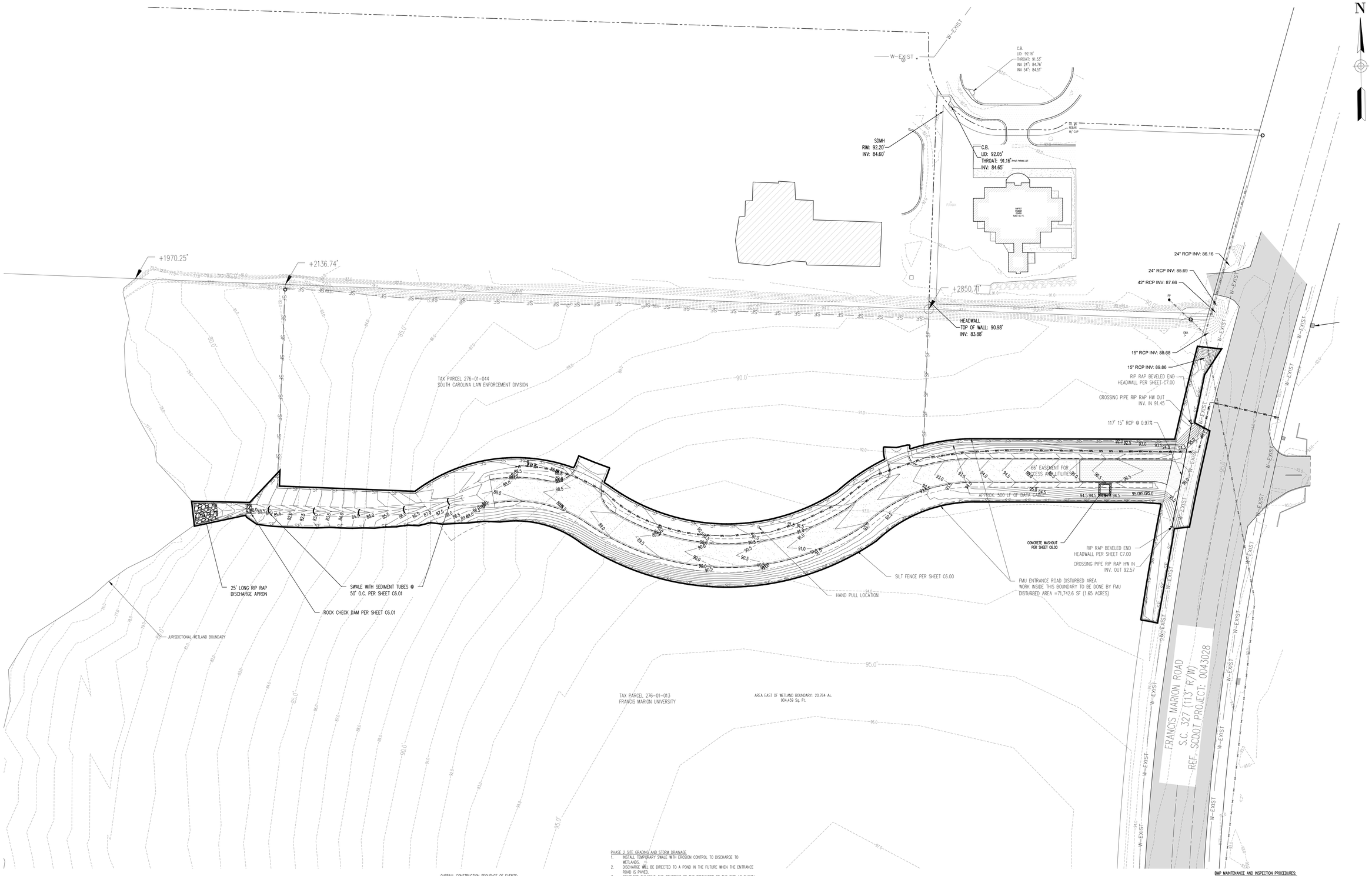
FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

FMU EC PLAN PHASE 2

REV	DATE	REVISION	APPROVED	REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE				
B	03/04/24	FOR PERMITTING	WCE				
C	03/11/24	PER SCDOT COMMENTS	WCE				
D	04/29/2024	REV. PER OSE REVIEW	WCE				

C1.02 FMU

EECO JOB #:



GENERAL NOTES:

1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ALL UTILITIES BEFORE DIGGING.
3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
4. CONTRACTOR TO MAINTAIN 7'-6" MINIMUM CLEARANCE VERTICALLY OR 10'-0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
5. ALL AREAS DISTURBED BY CONSTRUCTION TO BE GRASSED PER SPECIFICATIONS.
6. FIELD VERIFY ALL DIMENSIONS
7. OWNER SHALL OBTAIN THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO MAKE RECOMMENDATIONS ON SUITABLE FILL MATERIAL AND PROPER COMPACTION.
8. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ALL UTILITIES (BOTH ABOVE AND BELOW GROUND) THAT ARE DAMAGED BY CONSTRUCTION.
9. SEE DETAIL SHEETS FOR TYPICAL WATER DETAILS AND SEWER DETAILS.
10. SEE SHEET C7.02 FOR TYPICAL STORM DRAIN DETAILS
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION AND RELOCATION OF ALL EXISTING UTILITIES IN THE ROW AS REQUIRED FOR THE INSTALLATION OF ROAD WIDENING AND TURN LANES.
12. UTILITY RELOCATION IN THE ROW WILL BE A PART OR THE DIVISION 2 CONTRACT.
13. ALL DRIVEWAYS AND MAILBOXES IMPACTED BY ROAD WIDENING WILL BE REWORKED BY THE CONTRACTOR TO SCDOT STANDARDS. THIS WORK WILL BE INCLUDED IN DIVISION 2 OF THE CONTRACT.
14. CONTRACTOR TO INSTALL SILT FENCING AND EROSION CONTROL MEASURES PER SHEET C6.01 AS DIRECTED BY SCDOT.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

OVERALL CONSTRUCTION SEQUENCE OF EVENTS:
FOR NEW CONSTRUCTION ENTRANCE AND ENTRANCE ROAD AND WATER LINE EXTENSION ON FRANCIS MARION ROAD FLORENCE, SC

PHASE 0-- PRE-CONSTRUCTION

1. RECEIVE NPDES COVERAGE FROM FLORENCE COUNTY MS4
2. PRE-CONSTRUCTION MEETING (ON-SITE).
3. NOTIFY SCDHEC, SCDHEC REGIONAL EQC, AND ERVIN ENGINEERING 48 HOURS PRIOR TO BEGINNING ANY LAND-DISTURBING ACTIVITIES.

PHASE 1 PRELIMINARY EROSION CONTROL

1. INSTALLATION OF CONSTRUCTION ENTRANCE(S) AT THE LOCATIONS SHOWN ON SHEET C1.01 PER THE DETAILS SHOWN ON SHEET C6.01.
2. CLEAR AND GRUB SITE ONLY AS REQUIRED FOR INSTALLATION OF PERIMETER CONTROLS.
3. INSTALLATION OF PERIMETER CONTROLS (EG., SILT FENCE).
4. CLEAR AND GRUB SITE WITHIN THE LIMITS SHOWN ON SHEET C1.01
5. FOR SITE EXCAVATION, DENSIFICATION, GRADING, AND PAVING SEE GEOTECHNICAL REPORT BY S&ME PROJECT NUMBER 23390174
6. STRIP TOPSOIL AND STOCKPILE IN AREAS SHOWN FOR FUTURE USE PER DETAILS SHOWN ON SHEET C6.01.
7. ANY STOCKPILED TOPSOIL AND EXCESS MATERIAL THAT CANNOT BE STORED ON SITE MUST BE STORED OFFSITE FOR RE-SPREAD AS REQUIRED TO PREVENT LOSS OF TOPSOIL. COORDINATE STOCKPILING WITH GENERAL CONTRACTOR. WHERE EXISTING TOPSOIL IS DEEMED TO BE NOT SUITABLE BY GEOTECHNICAL ENGINEER, CONTRACTOR SHALL BRING IN SUITABLE TOP SOIL AS DETERMINED BY A QUALIFIED GEOTECH. ENGR.
8. OFF SITE STOCK PILE AREAS WILL BE AVAILABLE FOR INSPECTION AT ALL TIMES.

PHASE 2 SITE GRADING AND STORM DRAINAGE

1. INSTALL TEMPORARY SWALE WITH EROSION CONTROL TO DISCHARGE TO WETLANDS.
2. DISCHARGE WILL BE DIRECTED TO A POND IN THE FUTURE WHEN THE ENTRANCE ROAD IS PAVED.
3. COMPLETE CLEARING AND GRUBBING OF THE REMAINDER OF THE SITE AS SHOWN ON SHEET C1.02 (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
4. INSTALL TEMPORARY DRAINAGE AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER AND AS DESCRIBED IN THE GEOTECHNICAL REPORT FOR THIS PROJECT. THE PROJECT GEOTECHNICAL ENGINEER SHALL BE ON SITE FOR THIS PHASE OF THE PROJECT.
5. AFTER STRIPPING OPERATION IS COMPLETE AND TEMPORARY DRAINAGE INSTALLED, AREAS RECEIVING FILL SHOULD BE DENSIFIED TO 95% OF MODIFIED PROCTOR TO A DEPTH OF AT LEAST 12" PER THE GEOTECHNICAL REPORT.
6. FOLLOWING DENSIFICATION, THE SUBGRADE SHOULD BE PROOF ROLLED PER THE PROJECT GEOTECHNICAL REPORT.
7. ROUGH GRADE SITE TO SUB-GRADE ELEVATIONS BASED ON GRADING PLANS FOUND ON SHEETS C3.00.
8. FILL PLACEMENT AND COMPACTION SHALL BE AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
9. ON-SITE EXCAVATED MATERIAL MAY BE USED AS FILL WHERE IT MEETS THE STANDARDS OF THE PROJECT GEOTECHNICAL ENGINEER. UNSUITABLE MATERIAL THAT CAN NOT BE USED FOR TOPSOIL OR NON-STRUCTURAL FILL MUST BE DISPOSED OF OFF SITE.
10. INSTALL CROSS LINE PIPE @ CONSTRUCTION ENTRANCE PER DRAWINGS SHOWN ON SHEET C1.02, C4.00, C4.01 AND DETAILS ON SHEET C7.02. HAUL GRADE AND COMPACT BASE MATERIALS AS SPECIFIED TO ROUGH GRADE.
11. PROOF ROLL ALL REQUIRED BASE MATERIAL TO 75,000# WITH REPS. FROM PROJECT GEOTECHNICAL ENGINEER AND EECO PRESENT.
12. INSTALL STONE BASE PER DETAILS, PROOF ROLL ALL REQUIRED STONE TO 75,000# AND AS DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT.
13. REPRESENTATIVES OF THE PROJECT GEOTECHNICAL ENGINEER AND EECO MUST PRESENT FOR ALL PROOF ROLLS.
14. INSTALL STONE BASE ON ENTRANCE ROAD TO PROPOSED SLED SITE.

PHASE 3 -- WATER LINE EXTENSION/ BUILDING PHASE @ SLED SITE /FINAL STABILIZATION

1. NOTIFY THE CITY OF FLORENCE FMU, SCDHEC AND ERVIN ENGINEERING, AND SCDOT AT LEAST 48 HOURS PRIOR TO THE START OF THE WATER LINE EXTENSION.
2. A PRE-CONSTRUCTION MEETING WILL BE HELD ON SITE WITH FMU, THE CITY OF FLORENCE, THE UTILITY CONTRACTOR, REPRESENTATIVES OF SCDHEC, SCDOT, AND ERVIN ENGINEERING PRIOR TO CONSTRUCTION.
3. MAKE 10' X 8' TAP PER NOTES AND UTILITY PLANS WITH CITY OF FLORENCE AND ERVIN ENGINEERING PRESENT.
4. BORE FRANCIS MARION ROAD WITH 16" CASING PER C7.05 WITH REPRESENTATIVES OF SCDOT AND ERVIN ENGINEERING PRESENT.
5. INSTALL PROJECT WATER LINE EXTENSION TO SECOND SLED DRIVEWAY AS SHOWN ON SHEET C5.00.
6. INTALL HYDRANT AND GATE VALVES FOR FIRE SERVICE AND POTABLE SERVICE TO SLED BUILDING.
7. WATER LINE TO BE INSTALLED AND TESTED PER WATER NOTES.
8. AT THE COMPLETION OF THE WATER LINE EXTENSION AND THE SLED BUILDING SITE, THE CONSTRUCTION ENTRANCE WILL BE REMOVED AND THE ENTRANCE ROAD WILL BE PAVED PER THE DRAWINGS FOR THIS PROJECT.
9. ALL AREAS NOT RECEIVING ASPHALT OR STONE WILL BE GRASSED PER THE GRASSING NOTES FOR THIS PROJECT.
10. INSTALL PAVING INTERIOR TO THE SITE.
11. PERFORM AS-BUILT SURVEYS OF THE ENTRANCE ROAD AND SWALES. CONTRACTOR WILL NOT GET FINAL RELEASE FOR THE PROJECT UNTIL THERE IS AN ESTABLISHED GROUND COVER OVER 70% OF THE SITE.
12. AS-BUILTS AND NOTICE OF TERMINATION (NOT) CAN BE SUBMITTED UPON 70% UNIFORM SITE STABILIZATION.

TRAFFIC CONTROL PLAN:

1. INSTALL TRAFFIC CONTROL SIGNS PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. CLOSE INSIDE LANE OF TRAFFIC ON ROAD WHEN INSTALLING STORM DRAIN IMPROVEMENTS AND DURING INSTALLATION OF DRIVEWAYS. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY.
4. USE FLAG MEN AS REQUIRED PER SCDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5. "ROADWORK AHEAD" SIGN TO BE LOCATED APPROXIMATELY 1,500' PRIOR TO THE START OF CONSTRUCTION AND ADDITIONAL SIGNS SHOULD BE LOCATED AT 1,000' AND 500' PRIOR TO THE START OF CONSTRUCTION AS INDICATED IN SCDOT'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND PER REVIEW DURING THE PRE-CONSTRUCTION MEETING WITH SCDOT.
6. "END OF CONSTRUCTION" SIGN TO BE LOCATED 500' PAST END OF CONSTRUCTION.

SCDOT DRAINAGE STATEMENT: THE POST DEVELOPMENT DISCHARGE INTO THE SCDOT RIGHT OF WAY IS EQUAL TO OR LESS THAN THE PRE DEVELOPMENT DISCHARGE FOR THIS PROJECT FOR THE 2, 10, AND 100 YEAR RAINFALL EVENTS.

WILLIAM C. ERVIN, III, P.E.
04/29/2024

BMP MAINTENANCE AND INSPECTION PROCEDURES:

THE POND SHALL BE INSPECTED AT LEAST TWICE A YEAR, ONCE IN THE SUMMER AFTER MOWING AND ONCE IN THE WINTER WHEN THE VEGETATION IS DORMANT. INSPECTIONS SHALL ALSO BE MADE AFTER HEAVY RAINFALL EVENTS. WRITTEN RECORDS OF MAINTENANCE AND INSPECTIONS SHALL BE KEPT. MAINTENANCE ITEMS TO BE ADDRESSED ARE AS FOLLOWS:

1. A GOOD STAND OF GRASS SHALL BE MAINTAINED ON THE SIDE SLOPES AND THE BOTTOM OF THE POND. ERODED AREAS SHALL BE REPAIRED AND RESEEDED IMMEDIATELY. THE GRASS SHALL BE MOWED AT LEAST TWICE A YEAR.
2. TREES AND SHRUBS SHALL NOT BE ALLOWED ON THE EMBANKMENT. TREES THAT HAVE GROWN ON THE EMBANKMENT SHALL BE REMOVED. STUMPS AND ALL WOODY MATERIALS MUST BE REMOVED TO ABOUT 30 INCHES BELOW GROUND SURFACE.
3. TRASH SHALL BE REMOVED FROM WITHIN AND AROUND THE POND AREA AT LEAST TWICE A YEAR.
4. THE RIP RAP DAM AT THE LOWER END OF THE POND SHALL BE CLEANED AND REPAIRED AS NECESSARY.
5. THE RIP RAP ROCK BERM SHALL BE CLEANED AND REPAIRED AS NECESSARY.
6. ALL OTHER RIP RAP TO BE CLEANED AND REPAIRED AS NECESSARY.
7. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE POND.
8. THE POND BOTTOM SHALL BE REGARDED AS NECESSARY TO ENSURE POSITIVE DRAINAGE TO THE POND OUTLET.
9. ALL VEGETATION MUST BE KEPT OFF TRASH RACK AND ALL TRASH REMOVED FROM RACK. TRASH RACK TO BE INSPECTED TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS.
10. RIP RAP EMERGENCY SPILLWAY TO BE CLEANED AND PREPARED AS NECESSARY.
11. OUTLET STRUCTURE TO BE INSPECTED AT LEAST TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS. OUTLET STRUCTURE TO BE CLEANED AS NECESSARY.
12. ALL POND WATER QUALITY AND PERMANENT WATER QUALITY STRUCTURES TO BE INSPECTED AT LEAST TWICE A YEAR AND AFTER HEAVY RAINFALL EVENTS. WATER QUALITY STRUCTURES TO BE CLEANED AS NECESSARY.

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/24	REV. PER OSE REVIEW	WCE

NORTH CAROLINA PROFESSIONAL ENGINEER 13827 WILLIAM C. ERVIN, III
04/29/2024

ERVIN ENGINEERING COMPANY INC. NO. C00053 CERTIFICATE OF AUTHORIZATION

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

DRAWN BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
DESIGNED BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24

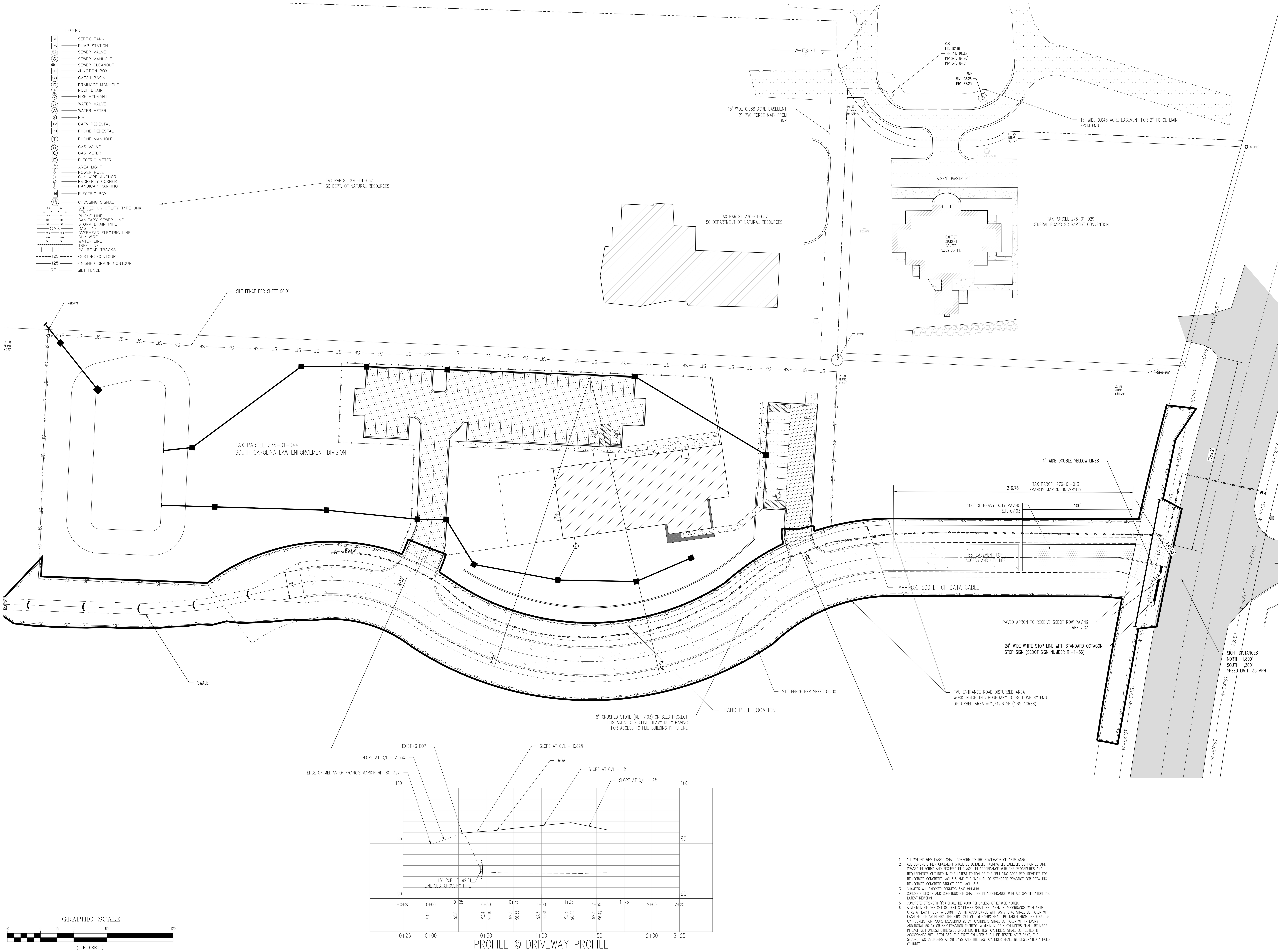
FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

SCALE: AS NOTED

FMU EC PLAN PHASE 3

C1.03 FMU

EECO JOB #:


LEGEND
SEPTIC TANK
PUMP STATION
SEWER VALVE
SEWER MANHOLE
SEWER CLEANOUT
JUNCTION BOX
CATCH BASIN
DRAINAGE MANHOLE
ROOF DRAIN
FIRE HYDRANT
WATER VALVE
WATER METER
PIV
CATV PEDESTAL
PHONE PEDESTAL
PHONE MANHOLE
GAS VALVE
GAS METER
ELECTRIC METER
AREA LIGHT
POWER POLE
GUY WIRE ANCHOR
PROPERTY CORNER
HANDICAP PARKING
ELECTRIC BOX
CROSSING SIGNAL
STRIPED UG UTILITY TYPE UNK.
FENCE
PHONE LINE
SANITARY SEWER LINE
STORM DRAIN PIPE
GAS LINE
OVERHEAD ELECTRIC LINE
GUY WIRE
WATER LINE
TREE LINE
RAILROAD TRACKS
EXISTING CONTOUR
FINISHED GRADE CONTOUR
SILT FENCE
TAX PARCEL 276-01-037
SC DEPT. OF NATURAL RESOURCES
TAX PARCEL 276-01-037
SC DEPARTMENT OF NATURAL RESOURCES
15' WIDE 0.088 ACRE EASEMENT
2" PVC FORCE MAIN FROM DNR
15' WIDE 0.048 ACRE EASEMENT FOR 2" FORCE MAIN FROM FMU
ASPHALT PARKING LOT
BAPTIST STUDENT CENTER 5,602 SQ. FT.
TAX PARCEL 276-01-029
GENERAL BOARD SC BAPTIST CONVENTION
SILT FENCE PER SHEET C6.01
TAX PARCEL 276-01-044
SOUTH CAROLINA LAW ENFORCEMENT DIVISION
4" WIDE DOUBLE YELLOW LINES
TAX PARCEL 276-01-013
FRANCIS MARION UNIVERSITY
216.78'
100' OF HEAVY DUTY PAVING
REF. C7.03
66' EASEMENT FOR ACCESS AND UTILITIES
APPROX. 500 LF OF DATA CABLE
PAVED APRON TO RECEIVE SCDOT ROW PAVING
REF 7.03
24" WIDE WHITE STOP LINE WITH STANDARD OCTAGON STOP SIGN (SCDOT SIGN NUMBER R1-1-36)
SIGHT DISTANCES
NORTH: 1,800'
SOUTH: 1,300'
SPEED LIMIT: 35 MPH
SWALE
SILT FENCE PER SHEET C6.00
FMU ENTRANCE ROAD DISTURBED AREA
WORK INSIDE THIS BOUNDARY TO BE DONE BY FMU
DISTURBED AREA =71,742.6 SF (1.65 ACRES)
HAND PULL LOCATION
8" CRUSHED STONE (REF 7.03)FOR SLED PROJECT
THIS AREA TO RECEIVE HEAVY DUTY PAVING
FOR ACCESS TO FMU BUILDING IN FUTURE
W-EXIST
EXISTING EOP
SLOPE AT C/L = 3.56%
EDGE OF MEDIAN OF FRANCIS MARION RD. SC-327
SLOPE AT C/L = 0.82%
ROW
SLOPE AT C/L = 1%
SLOPE AT C/L = 2%
15" RCP I.E. 92.01
LINE SEG. CROSSING PIPE
PROFILE @ DRIVEWAY PROFILE
GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

1. ALL WELDED WIRE FABRIC SHALL CONFORM TO THE STANDARDS OF ASTM A185.
2. ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
3. CHAMFER ALL EXPOSED CORNERS 3/4" MINIMUM.
4. CONCRETE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI SPECIFICATION 318 LATEST REVISION.
5. CONCRETE STRENGTH (f'c) SHALL BE 4000 PSI UNLESS OTHERWISE NOTED.
6. A MINIMUM OF ONE SET OF TEST CYLINDERS SHALL BE TAKEN IN ACCORDANCE WITH ASTM C172 AT EACH POUR. A SLUMP TEST IN ACCORDANCE WITH ASTM C143 SHALL BE TAKEN WITH EACH SET OF CYLINDERS. THE FIRST SET OF CYLINDERS SHALL BE TAKEN FROM THE FIRST 25 CY POURED. FOR POURS EXCEEDING 25 CY, CYLINDERS SHALL BE TAKEN WITHIN EVERY ADDITIONAL 50 CY OR ANY FRACTION THEREOF. A MINIMUM OF 4 CYLINDERS SHALL BE MADE IN EACH SET UNLESS OTHERWISE SPECIFIED. THE TEST CYLINDERS SHALL BE TESTED IN ACCORDANCE WITH ASTM C39. THE FIRST CYLINDER SHALL BE TESTED AT 7 DAYS, THE SECOND TWO CYLINDERS AT 28 DAYS AND THE LAST CYLINDER SHALL BE DESIGNATED A HOLD CYLINDER.

04/29/2024

ERVIN ENGINEERING CO. INC.
341 W. EVANS ST. P.O. BOX 3
FLORENCE, S.C. 29503

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SCALE: AS NOTED			

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

FMU ENTRANCE ROAD LAYOUT

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/2024	REV. PER OSE REVIEW	WCE

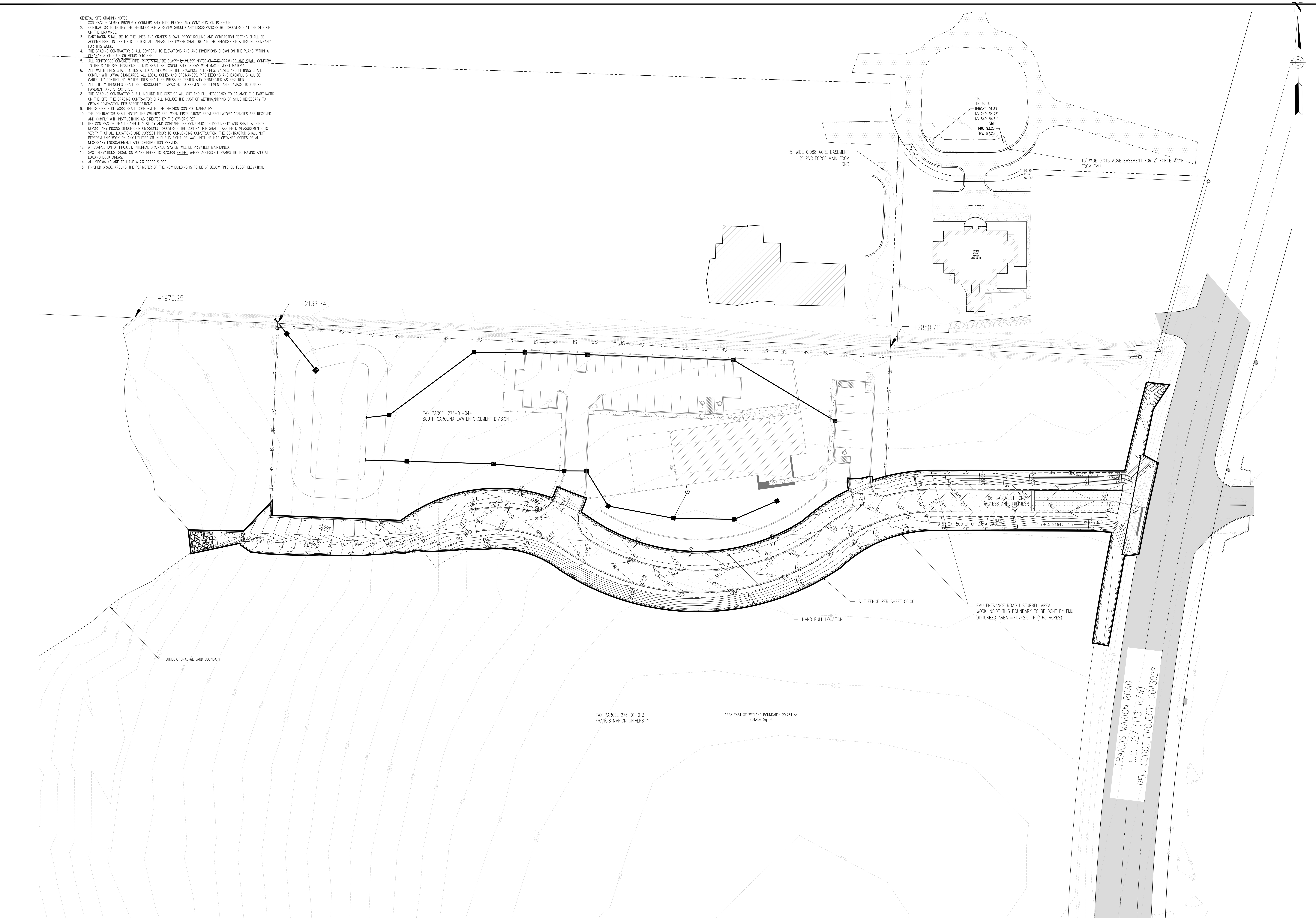
REV	DATE	REVISION	APPROVED

C2.00 FMU

EECO JOB #:

GENERAL SITE GRADING NOTES

1. CONTRACTOR VERIFY PROPERTY CORNERS AND TOPO BEFORE ANY CONSTRUCTION IS BEGUN.
2. CONTRACTOR TO NOTIFY THE ENGINEER FOR A REVIEW SHOULD ANY DISCREPANCIES BE DISCOVERED AT THE SITE OR ON THE DRAWINGS.
3. EARTHWORK SHALL BE TO THE LINES AND GRADES SHOWN. PROOF ROLLING AND COMPACTION TESTING SHALL BE ACCOMPLISHED IN THE FIELD TO TEST ALL AREAS. THE OWNER SHALL RETAIN THE SERVICES OF A TESTING COMPANY FOR THIS WORK.
4. THE GRADING CONTRACTOR SHALL CONFORM TO ELEVATIONS AND AND DIMENSIONS SHOWN ON THE PLANS WITHIN A CLEARANCE OF PLUS OR MINUS 0.10 FEET.
5. ALL REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III, UNLESS NOTED ON THE DRAWINGS AND SHALL CONFORM TO THE STATE SPECIFICATIONS. JOINTS SHALL BE TONGUE AND GROOVE WITH MASTIC JOINT MATERIAL.
6. ALL WATER LINES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. ALL PIPES, VALVES AND FITTINGS SHALL COMPLY WITH AWWA STANDARDS, ALL LOCAL CODES AND ORDINANCES. PIPE BEDDING AND BACKFILL SHALL BE CAREFULLY CONTROLLED. WATER LINES SHALL BE PRESSURE TESTED AND DISINFECTED AS REQUIRED.
7. ALL UTILITY TRENCHES SHALL BE THOROUGHLY COMPACTED TO PREVENT SETTLEMENT AND DAMAGE TO FUTURE PAVEMENT AND STRUCTURES.
8. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF ALL CUT AND FILL NECESSARY TO BALANCE THE EARTHWORK ON THE SITE. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF WETTING/DRYING OF SOILS NECESSARY TO OBTAIN COMPACTION PER SPECIFICATIONS.
9. THE SEQUENCE OF WORK SHALL CONFORM TO THE EROSION CONTROL NARRATIVE.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REP. WHEN INSTRUCTIONS FROM REGULATORY AGENCIES ARE RECEIVED AND COMPLY WITH INSTRUCTIONS AS DIRECTED BY THE OWNER'S REP.
11. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONSTRUCTION DOCUMENTS AND SHALL AT ONCE REPORT ANY INCONSISTENCIES OR OMISSIONS DISCOVERED. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS TO VERIFY THAT ALL LOCATIONS ARE CORRECT PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL NOT PERFORM ANY WORK ON ANY UTILITIES OR IN PUBLIC RIGHT-OF-WAY UNTIL HE HAS OBTAINED COPIES OF ALL NECESSARY ENCROACHMENT AND CONSTRUCTION PERMITS.
12. AT COMPLETION OF PROJECT, INTERNAL DRAINAGE SYSTEM WILL BE PRIVATELY MAINTAINED.
13. SPOT ELEVATIONS SHOWN ON PLANS REFER TO B/CURB EXCEPT WHERE ACCESSIBLE RAMPS TIE TO PAVING AND AT LOADING DOCK AREAS.
14. ALL SIDEWALKS ARE TO HAVE A 2% CROSS SLOPE.
15. FINISHED GRADE AROUND THE PERIMETER OF THE NEW BUILDING IS TO BE 6" BELOW FINISHED FLOOR ELEVATION.



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

ENGINEER'S CERTIFICATION STATEMENT
I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM.
FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72-300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000.

WILLIAM C. ERVIN, JR., P.E.
04/29/2024

04/29/2024

ERVIN ENGINEERING COMPANY INC.
CERTIFICATE OF AUTHORIZATION
NO. C00053

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

DRAWN BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
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SCALE: AS NOTED	

FRANCIS MARION UNIVERSITY

SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A

FLORENCE SOUTH CAROLINA

FMU ENTRANCE ROAD GRADING PLAN

REV	DATE	REVISION	APPROVED

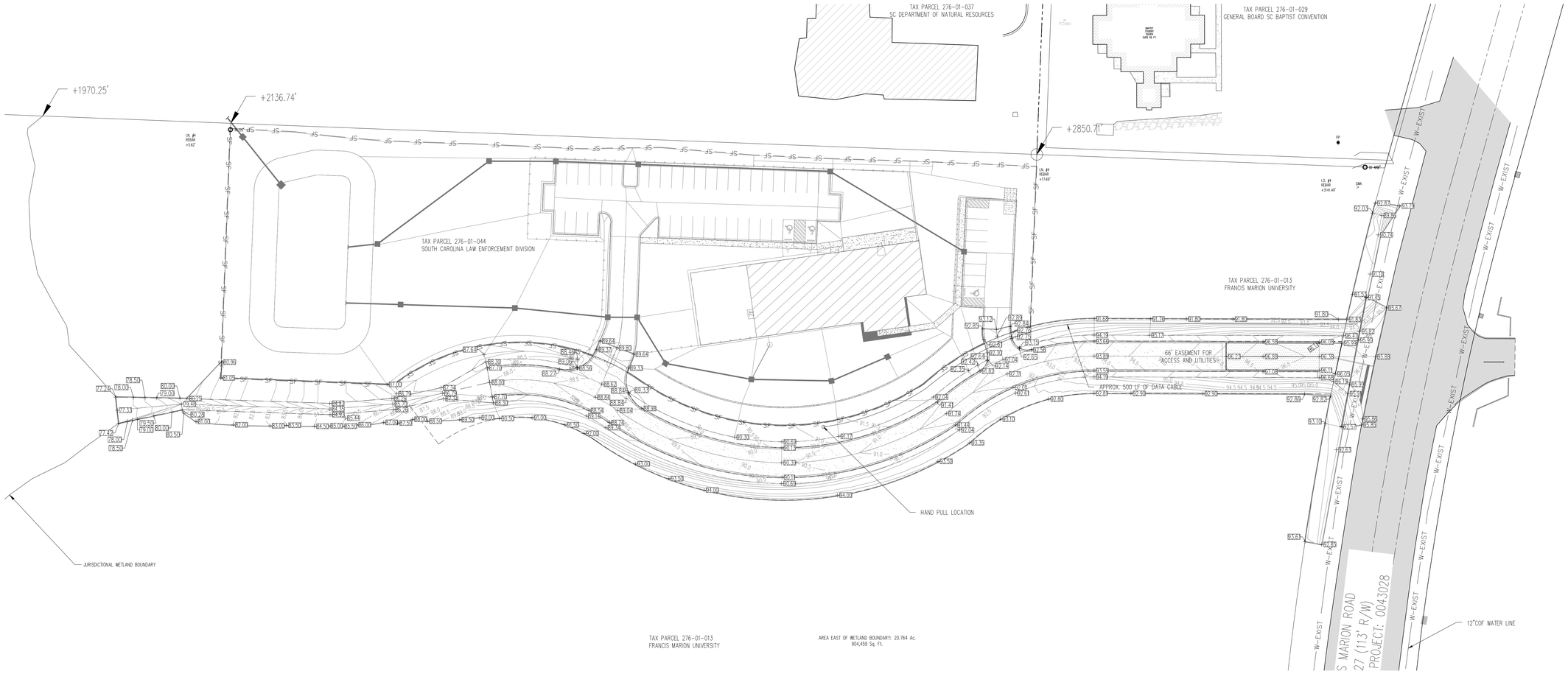
REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/2024	REV. PER OSE REVIEW	WCE

C3.00 FMU

EECO JOB #:

GENERAL SITE GRADING NOTES

1. CONTRACTOR VERIFY PROPERTY CORNERS AND TOPO BEFORE ANY CONSTRUCTION IS BEGUN.
2. CONTRACTOR TO NOTIFY THE ENGINEER FOR A REVIEW SHOULD ANY DISCREPANCIES BE DISCOVERED AT THE SITE OR ON THE DRAWINGS.
3. EARTHWORK SHALL BE TO THE LINES AND GRADES SHOWN. PROOF ROLLING AND COMPACTION TESTING SHALL BE ACCOMPLISHED IN THE FIELD TO TEST ALL AREAS. THE OWNER SHALL RETAIN THE SERVICES OF A TESTING COMPANY FOR THIS WORK.
4. THE GRADING CONTRACTOR SHALL CONFORM TO ELEVATIONS AND AND DIMENSIONS SHOWN ON THE PLANS WITHIN A CLEARANCE OF PLUS OR MINUS 0.10 FEET.
5. ALL REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III, UNLESS NOTED ON THE DRAWINGS AND SHALL CONFORM TO THE STATE SPECIFICATIONS. JOINTS SHALL BE TONGUE AND GROOVE WITH MASTIC JOINT MATERIAL.
6. ALL WATER LINES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. ALL PIPES, VALVES AND FITTINGS SHALL COMPLY WITH AWWA STANDARDS, ALL LOCAL CODES AND ORDINANCES. PIPE BEDDING AND BACKFILL SHALL BE CAREFULLY CONTROLLED. WATER LINES SHALL BE PRESSURE TESTED AND DISINFECTED AS REQUIRED.
7. ALL UTILITY TRENCHES SHALL BE THOROUGHLY COMPACTED TO PREVENT SETTLEMENT AND DAMAGE TO FUTURE PAVEMENT AND STRUCTURES.
8. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF ALL CUT AND FILL NECESSARY TO BALANCE THE EARTHWORK ON THE SITE. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF WETTING/DRYING OF SOILS NECESSARY TO OBTAIN COMPACTION PER SPECIFICATIONS.
9. THE SEQUENCE OF WORK SHALL CONFORM TO THE EROSION CONTROL NARRATIVE.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REP. WHEN INSTRUCTIONS FROM REGULATORY AGENCIES ARE RECEIVED AND COMPLY WITH INSTRUCTIONS AS DIRECTED BY THE OWNER'S REP.
11. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONSTRUCTION DOCUMENTS AND SHALL AT ONCE REPORT ANY INCONSISTENCIES OR OMISSIONS DISCOVERED. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS TO VERIFY THAT ALL LOCATIONS ARE CORRECT PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL NOT PERFORM ANY WORK ON ANY UTILITIES OR IN PUBLIC RIGHT-OF-WAY UNTIL HE HAS OBTAINED COPIES OF ALL NECESSARY ENCROACHMENT AND CONSTRUCTION PERMITS.
12. AT COMPLETION OF PROJECT, INTERNAL DRAINAGE SYSTEM WILL BE PRIVATELY MAINTAINED.
13. SPOT ELEVATIONS SHOWN ON PLANS REFER TO B/CURB EXCEPT WHERE ACCESSIBLE RAMPS TIE TO PAVING AND AT LOADING DOCK AREAS.
14. ALL SIDEWALKS ARE TO HAVE A 2% CROSS SLOPE.
15. FINISHED GRADE AROUND THE PERIMETER OF THE NEW BUILDING IS TO BE 6" BELOW FINISHED FLOOR ELEVATION.



TAX PARCEL 276-01-013
FRANCIS MARION UNIVERSITY

AREA EAST OF WETLAND BOUNDARY: 20.764 Ac.
904,459 Sq. Ft.

ENGINEER'S CERTIFICATION STATEMENT
I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM.
FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72-300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000.

WILLIAM C. ERVIN, JR., PE
04/29/2024

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

N

NORTH CAROLINA PROFESSIONAL ENGINEER 19821 WILLIAM C. ERVIN 04/29/2024

SOUTH CAROLINA ERVIN ENGINEERING COMPANY INC. NO. C00053 CERTIFICATE OF AUTHORIZATION

EECO ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
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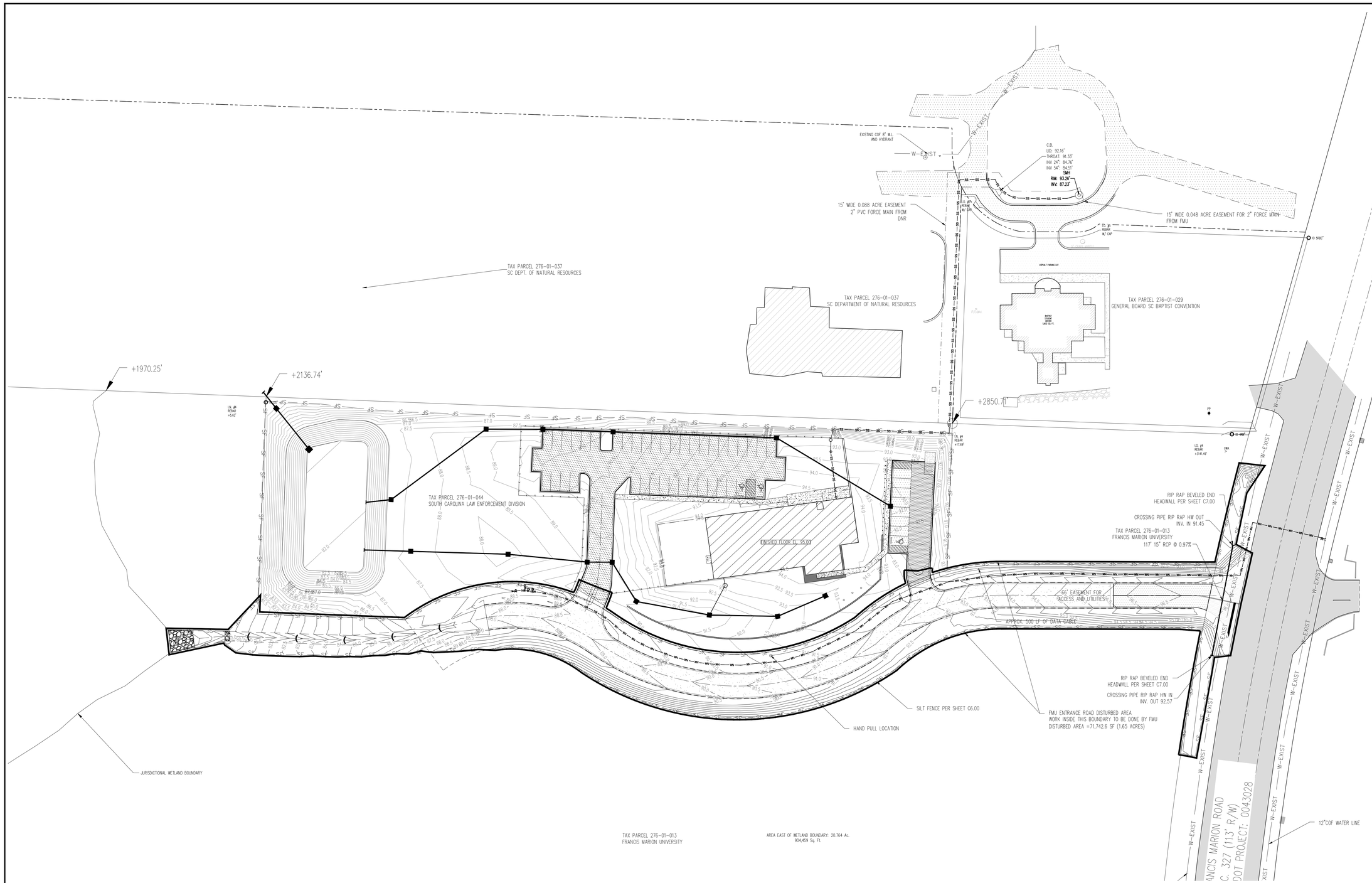
FLORENCE SOUTH CAROLINA	SCALE: AS NOTED

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-95392-PD-A

FMU ENTRANCE ROAD SPOT ELEVATIONS

C3.01 FMU

EECO JOB #:



GENERAL STORM DRAINAGE NOTES:

1. FOR CATCH BASIN INLET PROTECTION SEE DETAILS ON SHEET C6.00.
2. FOR EROSION CONTROL AND GRADING DETAILS NOT SHOWN SEE SHEETS C5.01, C6.00, AND C6.01.
3. ALL STORM DRAINAGE PIPE SHALL BE FLARED END RCP WITH RIP-RAP AT DISCHARGE POINT PER DETAILS ON SHEET C7.00.
4. CONCRETE PIPE JOINTS SHALL BE WRAPPED AND BEDDED PER DETAILS ON SHEET C7.00.
5. FLUMES SHALL BE CONSTRUCTED PER DETAILS ON SHEET C7.00.

ENGINEER'S CERTIFICATION STATEMENT
I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM.
FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 CODE OF LAWS OF SC, 1976 AS AMENDED; PURSUANT TO REGULATION 72-300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000.

WILLIAM C. ERVIN, JR., PE
04/29/2024

GENERAL SITE GRADING NOTES:

1. CONTRACTOR VERIFY PROPERTY CORNERS AND TOPO BEFORE ANY CONSTRUCTION IS BEGUN.
2. CONTRACTOR TO NOTIFY THE ENGINEER FOR A REVIEW SHOULD ANY DISCREPANCIES BE DISCOVERED AT THE SITE OR ON THE DRAWINGS.
3. EARTHWORK SHALL BE TO THE LINES AND GRADES SHOWN. PROOF ROLLING AND COMPACTION TESTING SHALL BE ACCOMPLISHED IN THE FIELD TO TEST ALL AREAS. THE OWNER SHALL RETAIN THE SERVICES OF A TESTING COMPANY FOR THIS WORK.
4. THE GRADING CONTRACTOR SHALL CONFORM TO ELEVATIONS AND AND DIMENSIONS SHOWN ON THE PLANS WITHIN A CLEARANCE OF PLUS OR MINUS 0.10 FEET.
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12. AT COMPLETION OF PROJECT, INTERNAL DRAINAGE SYSTEM WILL BE PRIVATELY MANTANED.
13. SPOT ELEVATIONS SHOWN ON PLANS REFER TO B/CURB EXCEPT WHERE ACCESSIBLE RAMPS TIE TO PAVING AND AT LOADING DOCK AREAS.
14. ALL SIDEWALKS ARE TO HAVE A 2% CROSS SLOPE.
15. FINISHED GRADE AROUND THE PERIMETER OF THE NEW BUILDING IS TO BE 6" BELOW FINISHED FLOOR ELEVATION.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/24	REV. PER OSE REVIEW	WCE

SOUTH CAROLINA PROFESSIONAL ENGINEER 19827 WILLIAM C. ERVIN, JR. 04/29/2024

ERVIN ENGINEERING CO., INC. NO. C00053 CERTIFICATE OF AUTHORIZATION

EECO
ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

DRAWN BY: WCE DATE: 03/11/24
CHECKED BY: ADB DATE: 03/11/24
DESIGNED BY: WCE DATE: 03/11/24
CHECKED BY: ADB DATE: 03/11/24

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

FMU SD LAYOUT

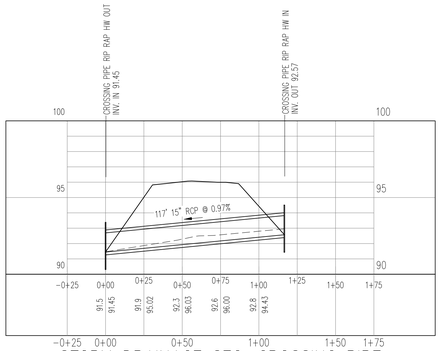
SCALE: AS NOTED

C4.00 FMU

EECO JOB #:

GENERAL STORM DRAINAGE NOTES:

1. FOR CATCH BASIN INLET PROTECTION SEE DETAILS ON SHEET C6.00.
2. FOR EROSION CONTROL AND GRADING DETAILS NOT SHOWN SEE SHEETS C0.01, C6.00, AND C6.01.
3. ALL STORM DRAINAGE PIPE SHALL BE FLARED END RCP WITH RIP-RAP AT DISCHARGE POINT PER DETAILS ON SHEET C7.00.
4. CONCRETE PIPE JOINTS SHALL BE WRAPPED AND BEDDED PER DETAILS ON SHEET C7.00.
5. FLUMES SHALL BE CONSTRUCTED PER DETAILS ON SHEET C7.00.



STORM DRAINAGE SEG. CROSSING PIPE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19827 WILLIAM C. ERVIN 04/29/2024

NORTH CAROLINA ERVIN ENGINEERING COMPANY INC. NO. C00053 CERTIFICATE OF AUTHORIZATION

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/26/24	REV. PER OSE REVIEW	WCE

REV	DATE	REVISION	APPROVED

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA
FMU SD PROFILES

DRAWN BY: WCE DATE: 03/11/24
DESIGNED BY: WCE DATE: 03/11/24
CHECKED BY: ADB DATE: 03/11/24
CHECKED BY: ADB DATE: 03/11/24
SCALE: AS NOTED

C4.01 FMU

EECO JOB #:

N
EXISTING COF 8" WL AND HYDRANT
C.B.
15' WIDE 0.088 ACRE EASEMENT 2" PVC FORCE MAIN FROM DNR
15' WIDE 0.048 ACRE EASEMENT FOR 2" FORCE MAIN FROM FMU
TAX PARCEL 276-01-037 SC DEPT. OF NATURAL RESOURCES
TAX PARCEL 276-01-037 SC DEPARTMENT OF NATURAL RESOURCES
TAX PARCEL 276-01-029 GENERAL BOARD SC BAPTIST CONVENTION
+1970.25'
+2136.74'
+2850.71'
TAX PARCEL 276-01-044 SOUTH CAROLINA LAW ENFORCEMENT DIVISION
TAX PARCEL 276-01-013 FRANCIS MARION UNIVERSITY
WATER LINE TO BE A MINIMUM OF 5' FROM EDGE OF PAVEMENT.
WATER LINE EXTENSION TO HYDRANT AT SECOND SLED DRIVEWAY BY FMU TEES AND VALVES TO FIRE AND POTABLE SERVICES BY FMU
JACK AND BORE FRANCIS MARION ROAD FOR 8" WATER LINE WITH 16" CASING EXTENDING 6' BEYOND THE EDGE OF PAVEMENT ON EITHER SIDE SEE DETAIL C7.05
EXISTING COF 12" WL
12"X8" TAPPING SLEEVE WITH 8" G.V.
EXISTING CATCH BASIN
66' EASEMENT FOR ACCESS AND UTILITIES
APPROX. 500 LF OF DATA CABLE
EXTEND 1 JOINT OF PIPE WITH 8" G.V. AND VALVE MARKER CAP AND BLOCK
8"X6" RED WITH 6"G.V. AND HYDRANT
8"X4" TEE WITH 4"X2" RED. TO 2" WATER SERVICE WITH METER AND BACKFLOW TO VALVE @ 5' FROM BLDG PER PLUMBING DRAWINGS REF C7.05
8"X6" TEE WITH 6" G.V. TO FIRE VAULT
HAND PULL LOCATION
SILT FENCE PER SHEET C6.00
FMU ENTRANCE ROAD DISTURBED AREA WORK INSIDE THIS BOUNDARY TO BE DONE BY FMU DISTURBED AREA =71,742.6 SF (1.65 ACRES)
WATER LINE TO BE A MINIMUM OF 48" BELOW ANY DITCH OR STORM DRAIN LINE
W-EXIST

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

GENERAL SEWER NOTES

1. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ALL UTILITIES BEFORE DIGGING.
3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
4. CONTRACTOR TO MAINTAIN 3'–0" MINIMUM COVER TO TOP OF PVC PIPING.
5. CONTRACTOR TO MAINTAIN 1'–6" MINIMUM CLEARANCE VERTICALLY OR 10'–0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
6. SERVICES AND CLEANOUTS SHOULD BE LOCATED TO WITHIN 5' OF BLDG. LINE AS SHOWN ON MECHANICAL DRAWINGS
7. TOP OF MANHOLE ELEVATIONS ARE APPROXIMATE AND ARE TO BE ESTABLISHED @ FINISHED ROAD GRADE BY CONTRACTOR.
8. WATERTIGHT MANHOLE COVERS MUST BE USED IN AREAS AFFECTED BY THE FIFTY (50) YEAR FLOOD PLAIN AND STREET RUNOFF.
9. CONTRACTOR TO PERFORM (5%) MANDREL TEST ON ALL PVC GRAVITY SEWER. REPRESENTATIVES OF ERVIN ENGINEERING ARE TO BE PRESENT AT THE MANDREL PULL.
10. SEWER LINES TO BE PRESSURE TESTED AT 5 PSI FOR 5 MINUTES.
11. ALL AREAS DISTURBED BY CONST.TO BE GRASSED PER C0.01.

GENERAL WATER NOTES

1. ALL UNDERGROUND FIRE SERVICE PIPING TO BE INSTALLED PER 2019 NFPA 24 STANDARD FOR INSTALLATION OF PRIVATE FIRE SERVICE MAINS. DIP SHALL BE PER 2019 NFPA 24 CHAPTER 10 TABLE 10.1.1 ALL FITTINGS SHALL CONFORM TO 2019 NFPA 24 CHAPTER 10.8
2. WATER SYSTEM TO MEET ALL CITY OF FLORENCE REQUIREMENTS.
3. CONTRACTOR TO MAINTAIN 1'–6" MINIMUM CLEARANCE VERTICALLY OR 10'–0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
4. ALL GATE VALVES TO HAVE 2" SQUARE OPERATING NUTS AND ARE TO BE PROVIDED W/ VALVE BOXES, CONCRETE COLLARS, AND MARKERS.
5. WATER LINE TO HAVE A MINIMUM OF 48" OF COVER UNDER SCDOT PAVEMENT AND 42" OF COVER IN THE SCDOT SHOULDER. WATER LINE TO HAVE A MINIMUM OF 36" OF COVER IN ALL OTHER AREAS.
6. ALL FITTINGS TO BE DUCTILE IRON, MECHANICAL JOINT, CL153
7. ALL FITTINGS TO BE MEGA LUG WITH BELL RESTR4AINT AND SHALL CONFORM TO 2019 NFPA 24 STANDARD FOR INSTALLATION OF PRIVATE FIRE SERVICE MAINS SEC. 10.8.
8. BLOW–OFFS AND SERVICES ARE SHOWN WITHIN PROPERTY LINES FOR CLARITY ONLY. BLOW–OFFS AND SERVICES ARE NOT TO EXTEND BEYOND THE RIGHT–OF–WAY.
9. ALL PIV'S AND OTHER VALVES SUPPLYING SPRINKLER SYSTEMS ARE TO BE PROVIDED WITH ELECTRICALLY SUPERVISED TAMPER SWITCHES PER IBC 2021 903.4 – SWITCH TO BE POTTER PCVS–1 OR APP. EQ. COORDINATE ELECTRICAL TIE–IN WITH PLUMBING DRAWINGS.
10. VALVE MARKERS TO BE LOCATED AS SHOWN.
11. NO SERVICE CONNECTIONS ARE TO BE LOCATED UNDER PAVEMENT.
12. FOR WATER DETAILS SEE THIS SHEET
13. CONTRACTOR VERIFY LOCATION OF ALL EXIST. UTILITIES PRIOR TO CONSTRUCTION.
14. CONTRACTOR NOTIFY ALL UTILITIES BEFORE DIGGING
15. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
16. CONTRACTOR WILL BE REQUIRED TO PRESSURE TEST NEW SERVICE CONNECTIONS REPRESENTATIVES OF EECO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THE TEST.
17. ALL AREAS DISTURBED BY CONSTRUCTION TO BE GRASSED PER SPECIFICATIONS.
18. POTABLE WATER LINES TO BE PRESSURE TESTED AT 150 PSI FOR A MINIMUM OF 2 HOURS PER SPECIFICATIONS. REPRESENTATIVES OF ERVIN ENGINEERING CO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THIS TEST.
19. POTABLE WATER LINES TO BE CHLORINATED AND TESTED PER SPECIFICATIONS.
20. FIRE SERVICE LINES TO BE PRESSURE TESTED AT 200 PSI FOR A MINIMUM OF 2 HOURS PER SPECIFICATIONS. REPRESENTATIVES OF ERVIN ENGINEERING CO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THIS TEST.

04/29/2024

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29503

DRAWN BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
DESIGNED BY: WCE	CHECKED BY: ADB
DATE: 03/11/24	DATE: 03/11/24
SCALE: AS NOTED	

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

FMU WATER LINE EXTENSION

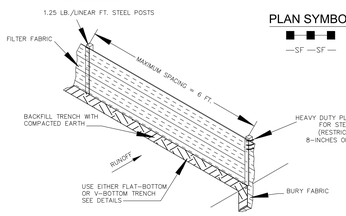
REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/2024	REV. PER OSE REVIEW	WCE

REV	DATE	REVISION	APPROVED

C5.00 FMU

EECO JOB #:

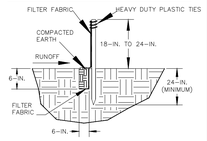
SILT FENCE INSTALLATION



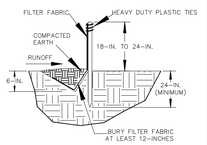
PLAN SYMBOL

—SF—SF—

FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



SILT FENCE - GENERAL NOTES

1. Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
2. Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
3. Maximum slope steepness (normal (perpendicular) to the fence line) shall be 2:1.
4. Silt fence joints, when necessary, shall be completed by one of the following options:
   - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap;
   - Overlap silt fence by installing 3-feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties; or,
   - Overlap entire width of each silt fence roll from one support post to the next support post.
5. Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
6. Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
7. Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 Page 1 of 2

NOT TO SCALE — FEBRUARY 2014 DATE

SILT FENCE - POST REQUIREMENTS

1. Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17-square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
4. Install posts to a minimum of 24-inches. A minimum height of 1- to 2-inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
5. Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE - FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE - INSPECTION & MAINTENANCE

1. The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the silt fence is extremely important.
   Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie-backs and/or reinstall silt fence, as necessary.
7. Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
8. Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

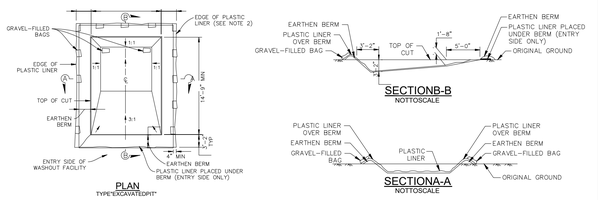
South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 PAGE 2 of 2

GENERAL NOTES — FEBRUARY 2014 DATE

EXCAVATED PIT CONCRETE WASHOUT

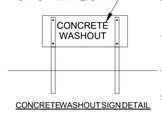


PLAN
TYPE"EXCAVATEDPIT"

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

LETTERS A MINIMUM OF 5" IN HEIGHT



CONCRETEWASHOUTSIGNDETAIL

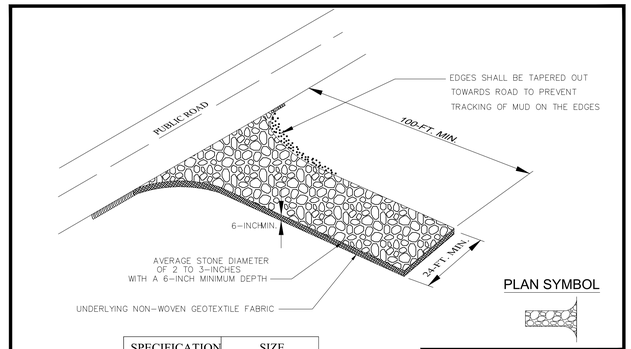
South Carolina Department of Health and Environmental Control

CONCRETE WASHOUT

EXCAVATED PIT

STANDARD DRAWING NO. RC-08 PAGE 1 of 1

NOT TO SCALE — FEBRUARY 2014



PLAN SYMBOL

SPECIFICATION	SIZE
ROCK PAD THICKNESS	6 INCHES
ROCK PAD WIDTH	24 FEET
ROCK PAD LENGTH	100 FEET
ROCK PAD STONE SIZE	D = 2-3 INCHES

South Carolina Department of Health and Environmental Control

CONSTRUCTION ENTRANCE

STANDARD DRAWING NO. SC-06 PAGE 1 of 2

NOT TO SCALE — FEBRUARY 2014 DATE

CONSTRUCTION ENTRANCE - GENERAL NOTES

1. Stabilized construction entrances should be used at all points where traffic will egress/ingress a construction site onto a public road or any impervious surfaces, such as parking lots.
2. Install a non-woven geotextile fabric prior to placing any stone.
3. Install a culvert pipe across the entrance when needed to provide positive drainage.
4. The entrance shall consist of 2-inch to 3-inch D50 stone placed at a minimum depth of 6-inches.
5. Minimum dimensions of the entrance shall be 24-feet wide by 100-feet long, and may be modified as necessary to accommodate site constraints.
6. The edges of the entrance shall be tapered out towards the road to prevent tracking at the edge of the entrance.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin or other sediment trapping structure.
8. Limestone may not be used for the stone pad.

CONSTR. ENTRANCE - INSPECTION & MAINTENANCE

1. The key to functional construction entrances is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of construction entrances shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. During regular inspections, check for mud and sediment buildup and pad integrity. Inspection frequencies may need to be more frequent during long periods of wet weather.
4. Reshape the stone pad as necessary for drainage and runoff control.
5. Wash or replace stones as needed and as directed by site inspector. The stone in the entrance should be washed or replaced whenever the entrance fails to reduce the amount of mud being carried off-site by vehicles. Frequent washing will extend the useful life of stone pad.
6. Immediately remove mud and sediment tracked or washed onto adjacent impervious surfaces by brushing or sweeping. Flushing should only be used when the water can be discharged to a sediment trap or basin.
7. During maintenance activities, any broken pavement should be repaired immediately.
8. Construction entrances should be removed after the site has reached final stabilization. Permanent vegetation should replace areas from which construction entrances have been removed, unless area will be converted to an impervious surface to serve post-construction.

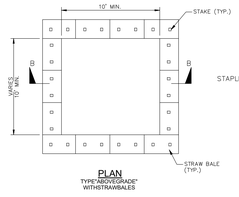
South Carolina Department of Health and Environmental Control

CONSTRUCTION ENTRANCE

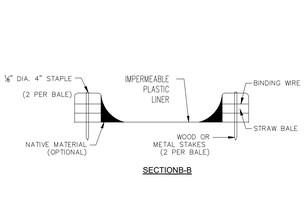
STANDARD DRAWING NO. SC-06 PAGE 2 of 2

GENERAL NOTES — FEBRUARY 2014 DATE

STRAW BALE BARRIER CONCRETE WASHOUT



PLAN
TYPE"ABOVEGRADE" WITHSTRAWBALES

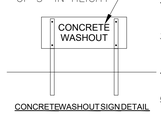


SECTIONB-B

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

LETTERS A MINIMUM OF 5" IN HEIGHT



CONCRETEWASHOUTSIGNDETAIL

South Carolina Department of Health and Environmental Control

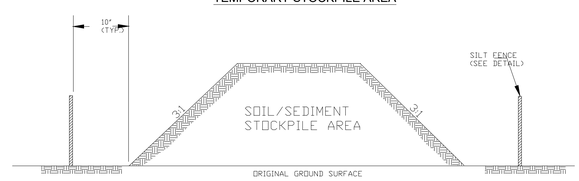
CONCRETE WASHOUT

STRAW BALES OR ABOVE GROUND

STANDARD DRAWING NO. RC-07 PAGE 1 of 1

NOT TO SCALE — FEBRUARY 2014

TEMPORARY STOCKPILE AREA



NOTES:

1. SILT FENCE TO EXTEND AROUND ENTIRE PERIMETER OF STOCKPILE, OR IF STOCKPILE AREA IS LOCATED ON/NEAR A SLOP THE SILT FENCE IS TO EXTEND ALONG CONTOURS OF THE DOWN-GRADIENT AREA.
2. IF STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, TEMPORARY STABILIZATION MEASURES MUST BE IMPLEMENTED.
3. SILT FENCE SHALL BE MAINTAINED UNTIL STOCKPILE AREA HAS EITHER BEEN REMOVED OR PERMANENTLY STABILIZED.
4. THE KEY TO FUNCTIONAL TEMPORARY STOCKPILE AREAS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.

South Carolina Department of Health and Environmental Control

TEMPORARY STOCKPILE

STANDARD DRAWING NO. SC-15 PAGE 1 of 1

NOT TO SCALE — FEBRUARY 2014 DATE

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

REV	DATE	REVISION	APPROVED
A	02/22/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/24	REV. PER OSE REVIEW	WCE

DRAWN BY: WCE — DATE: 03/11/24
CHECKED BY: AOB — DATE: 03/11/24
DESIGNED BY: WCE — DATE: 03/11/24
CHECKED BY: AOB — DATE: 03/11/24
SCALE: AS NOTED

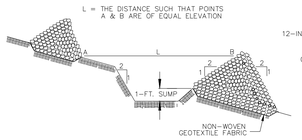
FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-8692-PD-A
FLORENCE SOUTH CAROLINA

FMU EC DETAILS SHEET 1

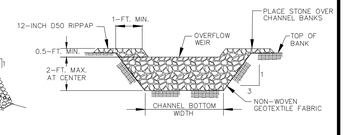
C6.00 FMU

EECO JOB #:

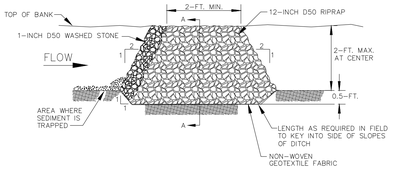
SPACING BETWEEN DITCH CHECK



CROSS SECTION A-A THRU STONE DITCH CHECK



TYPICAL DITCH CHECK SECTION



PLAN SYMBOL

OR

South Carolina Department of Health and Environmental Control

ROCK DITCH CHECK

STANDARD DRAWING NO. SC-04 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

ROCK DITCH CHECK - GENERAL NOTES

1. Rock Ditch Checks should not be placed in Waters of the State or USGS blue-line streams (unless approved by Federal Authorities).
2. Rock Ditch Checks should be installed in steeply sloped channels where adequate vegetation cannot be established. This BMP measure should only be used in small open channels.
3. A non-woven geotextile fabric shall be installed over the soil surface where the rock ditch check is to be placed.
4. The body of the rock ditch check shall be composed of 12-inch D50 Riprap. The upstream face may be composed of 1-inch D50 washed stone.
5. Rock Ditch Checks should not exceed a height of 2-feet at the centerline of the channel.
6. Rock Ditch Checks should have a minimum top flow length of 2-feet.
7. Riprap should be placed over channel banks to prevent water from cutting around the ditch check.
8. The riprap should be placed by hand or mechanical placement (no dumping of rock to form dam) to achieve complete coverage of the channel. Doing so will also ensure that the center of the check is lower than the edges.
9. The maximum spacing between the dams should be such that the toe of the upstream check is at the same elevation as the top of the downstream check.

ROCK DITCH CHECK - INSPECTION & MAINTENANCE

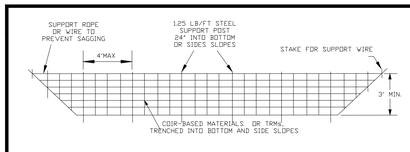
1. The key to functional rock ditch check is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of rock ditch checks shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the rock ditch check is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the rock ditch check.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Inspect Rock Ditch Checks' edges for erosion and evidence of runoff bypassing the installed check. If evident repair promptly as necessary to prevent erosion and bypassing.
7. In the case of grass-lined ditches, channels, and swales, rock ditch checks should be removed when the grass has matured sufficiently to protect the ditch or swale unless the slope of the swale is greater than 4%.
8. After construction is completed and final stabilization is reached, the entirety of the rock ditch check should be removed if vegetation will be used for permanent erosion control measures. The area beneath the removed rock ditch check must be addressed with permanent stabilization measures.

South Carolina Department of Health and Environmental Control

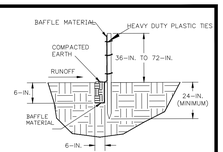
ROCK DITCH CHECK

STANDARD DRAWING NO. SC-04 PAGE 2 of 2

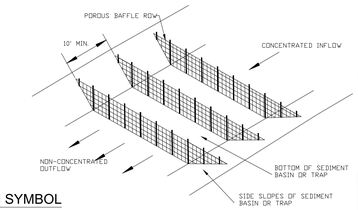
GENERAL NOTES FEBRUARY 2014 DATE



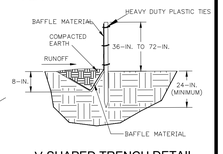
CROSS SECTION VIEW



FLAT-BOTTOM TRENCH DETAIL



PERSPECTIVE VIEW



V-SHAPED TRENCH DETAIL

PLAN SYMBOL

—PB—PB—

South Carolina Department of Health and Environmental Control

POROUS BAFFLES

STANDARD DRAWING NO. EC-13 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

BAFFLES – POST REQUIREMENTS

1. Porous baffle posts must be 60-inch to 96-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%).
2. Posts shall be equipped with projections to aid in fastening of baffle material.
3. Install posts to a minimum of 24-inches. A minimum height of 1- to 2-inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 4-feet on center.

BAFFLES – MATERIAL REQUIREMENTS

1. Baffle material must be composed of coir-based materials or Turf Reinforcement Matting (TRM) that consists of the following requirements:
   - Have a light penetration (% openings) between 10-35%;
   - Free of loose straw material;
   - Have a minimum tensile strength of 145 lb/ft; and,
   - Have a minimum width of 48-inches.
2. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled or baffle material may be stapled into ground by using 12-inch staples with a maximum spacing of 12-inches.
3. Baffle material shall be purchased in continuous rolls and cut to the width of the sediment basin or trap to avoid joints.

BAFFLES – GENERAL NOTES

1. Attach baffle to the steel posts using heavy-duty plastic ties that are evenly spaced along the above ground portion of each post.
2. Install the baffle rows perpendicular to the direction of the stormwater flow and place each baffle the proper distance from inlet and outlets to allow access for maintenance and clean-out.

BAFFLES – INSPECTION & MAINTENANCE

1. The key to functional porous baffles is weekly inspection, routine maintenance, and regular sediment removal.
2. Regular inspections of porous baffles shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along each row of baffles is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the baffle row or when it reaches the clean-out height of the sediment basin or trap, whichever is reached first.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath each row of baffles, or where the baffle has sagged or collapsed due to runoff overtopping the baffle.
7. Check for tears/rips within the baffles, areas where the baffle has begun to decompose, and for any other circumstance that may render the baffle ineffective. Removed damaged baffles and reinstall new baffles immediately.
8. Porous baffles should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

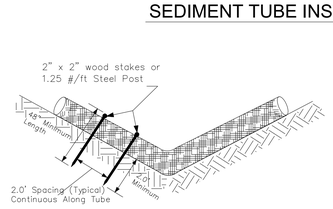
South Carolina Department of Health and Environmental Control

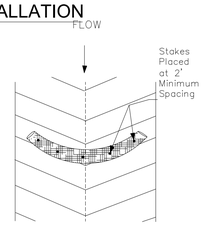
POROUS BAFFLES

STANDARD DRAWING NO. SC-13 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

SEDIMENT TUBE INSTALLATION





SEDIMENT TUBE SPACING

SLOPE	MAX. SEDIMENT TUBE SPACING
LESS THAN 2%	150-FEET
2%	100-FEET
3%	75-FEET
4%	50-FEET
5%	40-FEET
6%	30-FEET
GREATER THAN 6%	25-FEET

PLAN SYMBOL

South Carolina Department of Health and Environmental Control

SEDIMENT TUBES

STANDARD DRAWING NO. SC-05 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

SEDIMENT TUBES - GENERAL NOTES

1. Sediment tubes may be installed along contours, in drainage conveyance channels, and around inlets to help prevent off-site discharge of sediment-laden stormwater runoff.
2. Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber, or hardwood mulch. Straw, pine needle, and leaf mulch-filled sediment tubes are not permitted.
3. The outer netting of the sediment tube should consist of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable material.
4. Sediment tubes, when used as checks within channels, should range between 18-inches and 24-inches depending on channel dimensions. Diameters outside this range may be allowed where necessary when approved.
5. Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
6. Sediment tubes should be staked using wooden stakes (2-inch X 2-inch) or steel posts (standard "U" or "T" sections with a minimum weight of 1.25 pounds per foot) at a minimum of 48-inches in length placed on 2-foot centers.
7. Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.
8. The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
9. Sediment tubes should not be stacked on top of one another, unless recommended by manufacturer.
10. Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
11. Sediment tubes should continue up the side slopes a minimum of 1-foot above the design flow depth of the channel.
12. Install stakes at a diagonal facing incoming runoff.

SEDIMENT TUBES - INSPECTION & MAINTENANCE

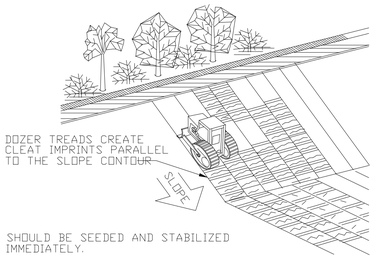
1. The key to functional sediment tubes is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of sediment tubes shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the sediment tube.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Large debris, trash, and leaves should be removed from in front of tubes when found.
7. If erosion causes the edges to fall to a height equal to or below the height of the sediment tube, repairs should be made immediately to prevent runoff from bypassing tube.
8. Sediment tubes should be removed after the contributing drainage area has been completely stabilized. Permanent vegetation should replace areas from which sediment tubes have been removed.

South Carolina Department of Health and Environmental Control

SEDIMENT TUBES

STANDARD DRAWING NO. SC-05 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE



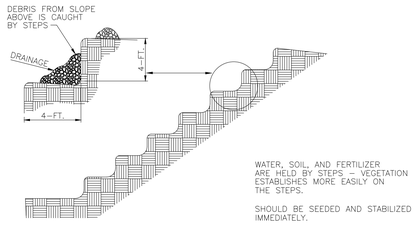
TRACKING

South Carolina Department of Health and Environmental Control

TRACKING

STANDARD DRAWING NO. EC-01 Page 1

APPROVED BY: _____ SCDHEC AUGUST, 2005 DATE



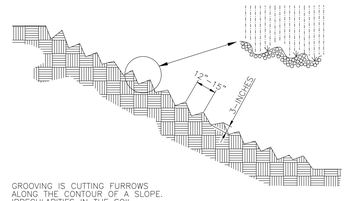
STAIR STEP GRADING

South Carolina Department of Health and Environmental Control

STAIR STEP GRADING

STANDARD DRAWING NO. EC-02 Page 1

APPROVED BY: _____ SCDHEC AUGUST, 2005 DATE



SLOPE GROOVING

South Carolina Department of Health and Environmental Control

SLOPE GROOVING

STANDARD DRAWING NO. EC-03 Page 1

APPROVED BY: _____ SCDHEC AUGUST, 2005 DATE

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/2024	REV. PER OSE REVIEW	WCE

DRAWN BY: WCE DATE: 03/11/24

CHECKED BY: ADB DATE: 03/11/24

DESIGNED BY: WCE DATE: 03/11/24

CHECKED BY: ADB DATE: 03/11/24

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

SCALE: AS NOTED

FMU EC DETAILS SHEET 2

C6.01 FMU

EECO JOB #:

GENERAL SITE GRADING NOTES:

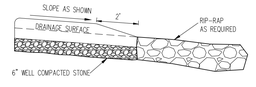
1. CONTRACTOR VERIFY PROPERTY CORNERS AND TOPO BEFORE ANY CONSTRUCTION IS BEGUN.
2. CONTRACTOR TO NOTIFY THE ENGINEER FOR A REVIEW SHOULD ANY DISCREPANCIES BE DISCOVERED AT THE SITE OR ON THE DRAWINGS.
3. EARTHWORK SHALL BE TO THE LINES AND GRADES SHOWN. PROOF ROLLING AND COMPACTION TESTING SHALL BE ACCOMPLISHED IN THE FIELD TO TEST ALL AREAS. THE OWNER SHALL RETAIN THE SERVICES OF A TESTING COMPANY FOR THIS WORK.
4. THE GRADING CONTRACTOR SHALL CONFORM TO ELEVATIONS AND AND DIMENSIONS SHOWN ON THE PLANS WITHIN A CLEARANCE OF PLUS OR MINUS 0.10 FEET.
5. ALL REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III, UNLESS NOTED ON THE DRAWINGS AND SHALL CONFORM TO THE STATE SPECIFICATIONS. JOINTS SHALL BE TONGUE AND GROOVE WITH MASTIC JOINT MATERIAL.
6. ALL WATER LINES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. ALL PIPES, VALVES AND FITTINGS SHALL COMPLY WITH AWWA STANDARDS. ALL LOCAL CODES AND ORDINANCES. PIPE BEDDING AND BACKFILL SHALL BE CAREFULLY CONTROLLED. WATER LINES SHALL BE PRESSURE TESTED AND DISINFECTED AS REQUIRED.
7. ALL UTILITY TRENCHES SHALL BE THOROUGHLY COMPACTED TO PREVENT SETTLEMENT AND DAMAGE TO FUTURE PAVEMENT AND STRUCTURES.
8. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF ALL CUT AND FILL NECESSARY TO BALANCE THE EARTHWORK ON THE SITE. THE GRADING CONTRACTOR SHALL INCLUDE THE COST OF WETTING/DRYING OF SOILS NECESSARY TO OBTAIN COMPACTION PER SPECIFICATIONS.
9. THE SEQUENCE OF WORK SHALL CONFORM TO THE EROSION CONTROL NARRATIVE.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REP. WHEN INSTRUCTIONS FROM REGULATORY AGENCIES ARE RECEIVED AND COMPLY WITH INSTRUCTIONS AS DIRECTED BY THE OWNER'S REP.
11. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONSTRUCTION DOCUMENTS AND SHALL AT ONCE REPORT ANY INCONSISTENCIES OR OMISSIONS DISCOVERED. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS TO VERIFY THAT ALL LOCATIONS ARE CORRECT PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL NOT PERFORM ANY WORK ON ANY UTILITIES OR IN PUBLIC RIGHT-OF-WAY UNTIL HE HAS OBTAINED COPIES OF ALL NECESSARY ENCROACHMENT AND CONSTRUCTION PERMITS.
12. AT COMPLETION OF PROJECT, INTERNAL DRAINAGE SYSTEM WILL BE PRIVATELY MAINTAINED.
13. SPOT ELEVATIONS SHOWN ON PLANS REFER TO B/CURB EXCEPT WHERE ACCESSIBLE RAMPS TIE TO PAVING AND AT LOADING DOCK AREAS.
14. ALL SIDEWALKS ARE TO HAVE A 2% CROSS SLOPE.
15. FINISHED GRADE AROUND THE PERIMETER OF THE NEW BUILDING IS TO BE 6" BELOW FINISHED FLOOR ELEVATION.

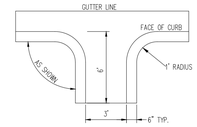
GENERAL STORM DRAINAGE NOTES:

1. FOR CATCH BASIN INLET PROTECTION SEE DETAILS ON SHEET C6.00.
2. FOR EROSION CONTROL AND GRADING DETAILS NOT SHOWN SEE SHEETS C5.01, C6.00, AND C6.01.
3. ALL STORM DRAINAGE PIPE SHALL BE FLARED END RCP WITH RIP-RAP AT DISCHARGE POINT PER DETAILS ON SHEET C7.00.
4. CONCRETE PIPE JOINTS SHALL BE WRAPPED AND BEDDED PER DETAILS ON SHEET C7.00.
5. FLUMES SHALL BE CONSTRUCTED PER DETAILS ON SHEET C7.00.

GENERAL NOTES FOR DETAILS A & B

1. La IS THE LENGTH OF THE RIP RAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 12"
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIP RAP AND SOIL FOUNDATION.
5. COMPACT ANY REQUIRED FILL TO DENSITY OF SURROUNDING UNDISTURBED MATERIAL.
6. RIP RAP MAY BE FIELDSTONE OR ROUGH QUARRY STONE AND SHALL BE HARD, ANGULAR AND WELL-GRADED.
7. CONSTRUCT APRON AT ZERO GRADE. TOP OF RIP RAP SHALL BE LEVEL WITH THE RECEIVING CHANNEL OR STREAM. ASSURE APRON IS STRAIGHT THROUGHOUT ITS LENGTH.
8. END WIDTH OF APRON TO BE EQUAL TO WIDTH OF RECEIVING CHANNEL.



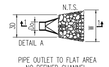


CONCRETE FLUME DETAIL

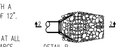
NOTE:
RIP-RAP SHALL BE "ONE MAN" RIP-RAP WITH A MINIMUM EQUIVALENT SPHERICAL DIAMETER OF 12".

NOTES:
PROVIDE A TEMPORARY STONE SPLASH PAD AT ALL FIRE HYDRANTS OR OTHER POINTS OF DISCHARGE DURING TESTING OF THE WATER DISTRIBUTION SYSTEM.

PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING CONSTRUCTION OF THE SEPTIC TANK DRAIN FIELDS. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE INSTALLATION.



PIPE OUTLET TO FLAT AREA
NO DEFINED CHANNEL



PIPE OUTLET TO DEFINED CHANNEL

CULVERT SIZE (IN)	AVG. ROCK DIAMETER (IN)	APRON WIDTH AT PIPE (Do) (FT)	APRON WIDTH AT END (W) (FT)	APRON LENGTH (La) (FT)
8	6	2	4	3
12	6	3	7	6
15	6	4	10	8
18	6	5	12	10
24	6	6	15	13
30	6	8	19	16
36	8	9	23	20
42	9	11	26	22
48	11	12	30	26
54	12	14	35	30
60	12	15	39	34
72	15	18	46	40

RCP BEVELED END HEADWALL

NOTES: SCDOT 719-610-00

1. BEVELED END SECTIONS WILL BE MANUFACTURED IN ACCORDANCE WITH SCDOT SUPPLEMENTAL TECHNICAL SPECIFICATIONS SC-M-714. THESE SPECIAL PIPE SECTIONS WILL BE MADE DURING THE MANUFACTURING OF OTHER STATE APPROVED REINFORCED CONCRETE PIPE.
2. THE PIPE BEVEL MAY BE SAWED IN THE FIELD IN LIEU OF BEING MANUFACTURED, IN FIELD SAWING, THE PIPE OPENING MAY COME TO A POINT AT THE PIPE CREST RATHER THAN A RADIUS IF APPROVED BY THE PIPE MANUFACTURER. ALTERNATE PIPE FOR SIDELINES MUST HAVE EACH END BEVELED TO MATCH THE ADJACENT SLOPES.
3. PLACE RIPRAP

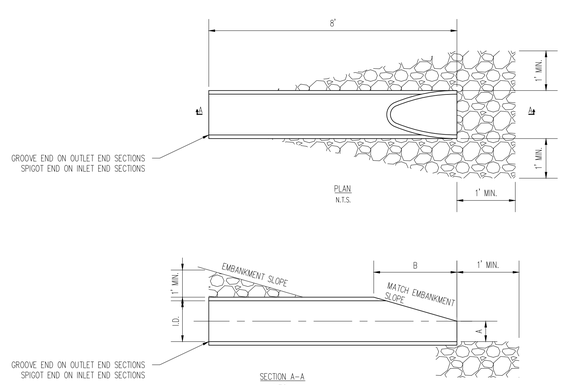
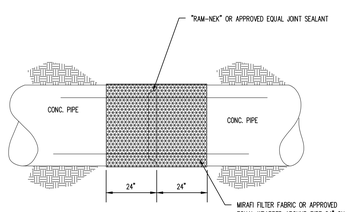


CHART 719-610B

RIPRAP PLACEMENT		
CLASS	Dso (FT)	MIN. THICKNESS (FT)
B	0.75	1.50
C	1.30	2.60

		RIPRAP PLACEMENT				
		RIPRAP PLACEMENT				
		6:1	5:1	4:1	3:1	2:1
		6	5	4	3	2
I.D. (IN)	A (IN)	B (BEVELED LENGTH) (IN)				
15	6	54	45	36	27	18
18	9	54	45	36	27	18
24	10	NA	70	56	42	28
30	12	NA	NA	72	54	36
36	15	NA	NA	NA	63	42
42	20	NA	NA	NA	66	44
48	24	NA	NA	NA	72	48
54	24	NA	NA	NA	NA	60
60	24	NA	NA	NA	NA	72



CONCRETE PIPE JOINT DETAIL
NTS

ERVIN ENGINEERING CO., INC.
341 W. ERVINS ST., P.O. BOX 3
FLORENCE, S.C. 29501

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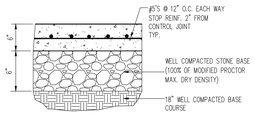
FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

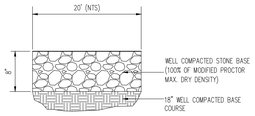
FMU SD DETAILS

C7.00 FMU

EECO JOB #:

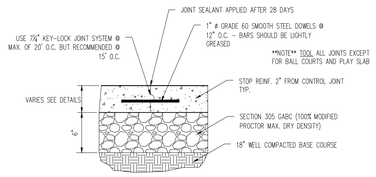


HEAVY- DUTY CONCRETE PAVING DETAIL AT DUMPSTER PAD



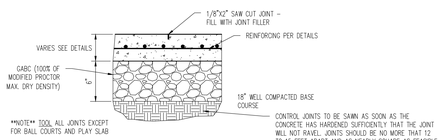
STONE FOR ENTRANCE ROAD

N.T.S.



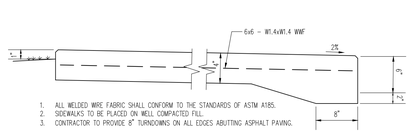
CONCRETE CONSTRUCTION JOINT DETAIL

N.T.S.



TYPICAL CONTROL JOINT

N.T.S. **NOTE** TOOL ALL JOINTS EXCEPT FOR BALL COURTS AND PLAY SLAB



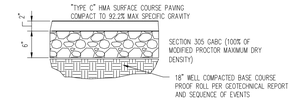
1. ALL WELDED WIRE FABRIC SHALL CONFORM TO THE STANDARDS OF ASTM A185.
2. SIDEWALKS TO BE PLACED ON WELL COMPACTED FILL.
3. CONTRACTOR TO PROVIDE 8" TURNDOWNS ON ALL EDGES ABUTTING ASPHALT PAVING.

CONCRETE SIDEWALK DETAIL

N.T.S.

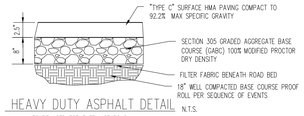
CONCRETE ISLAND DETAIL

N.T.S.



LIGHT DUTY ASPHALT DETAIL

N.T.S.

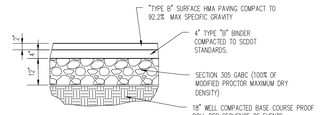


HEAVY DUTY ASPHALT DETAIL

TO BE USED FOR ENTRANCE ROAD

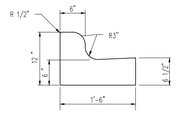
N.T.S.

FOR PAVING, BASE, AND COMPACTION DETAILS SEE
PROJECT GEOTECHNICAL REPORT
S&ME PROJECT NO. 23390074



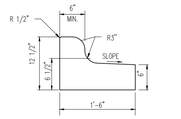
PAVING IN SCDOT ROW

N.T.S.



STD. CONCRETE CURB

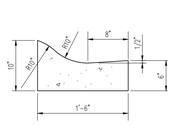
N.T.S.



STD. CONCRETE CURB

N.T.S.

(USE WHEN PAVING IS SLOPED AWAY FROM CURB)

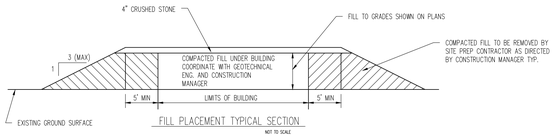


CONCRETE ROLL CURB

N.T.S.

(USE WHERE GRASS PAVE TIES TO ROADWAY)

1. ALL WELDED WIRE FABRIC SHALL CONFORM TO THE STANDARDS OF ASTM A185.
2. ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
3. CHAMFER ALL EXPOSED CORNERS 3/4" MINIMUM.
4. CONCRETE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI SPECIFICATION 318 LATEST REVISION.
5. CONCRETE STRENGTH (f'_c) SHALL BE 4000 PSI UNLESS OTHERWISE NOTED.
6. A MINIMUM OF ONE SET OF TEST CYLINDERS SHALL BE TAKEN IN ACCORDANCE WITH ASTM C172 AT EACH POUR. A SLUMP TEST IN ACCORDANCE WITH ASTM C143 SHALL BE TAKEN WITH EACH SET OF CYLINDERS. THE FIRST SET OF CYLINDERS SHALL BE TAKEN FROM THE FIRST 25 CY POURED. FOR POURS EXCEEDING 25 CY, CYLINDERS SHALL BE TAKEN WITHIN EVERY ADDITIONAL 50 CY OR ANY FRACTION THEREOF. A MINIMUM OF 4 CYLINDERS SHALL BE MADE IN EACH SET UNLESS OTHERWISE SPECIFIED. THE TEST CYLINDERS SHALL BE TESTED IN ACCORDANCE WITH ASTM C39. THE FIRST CYLINDER SHALL BE TESTED AT 7 DAYS, THE SECOND TWO CYLINDERS AT 28 DAYS AND THE LAST CYLINDER SHALL BE DESIGNATED A HOLD CYLINDER.



FILL PLACEMENT TYPICAL SECTION

NOT TO SCALE

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/24	REV. PER OSE REVIEW	WCE

DRAWN BY: WCE DATE: 03/11/24 CHECKED BY: ADB DATE: 03/11/24
DESIGNED BY: WCE DATE: 03/11/24 CHECKED BY: ADB DATE: 03/11/24
SCALE: AS NOTED

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA

FMU PAVING DETAILS

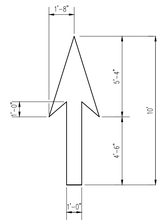
C7.01 FMU

EECO JOB #:

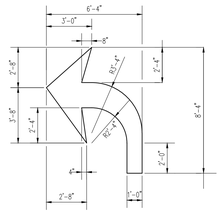
STANDARD PAVEMENT MARKINGS

FOR ARROWS & ONLY(S)

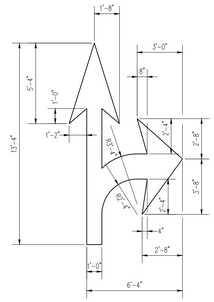
STRAIGHT ARROW



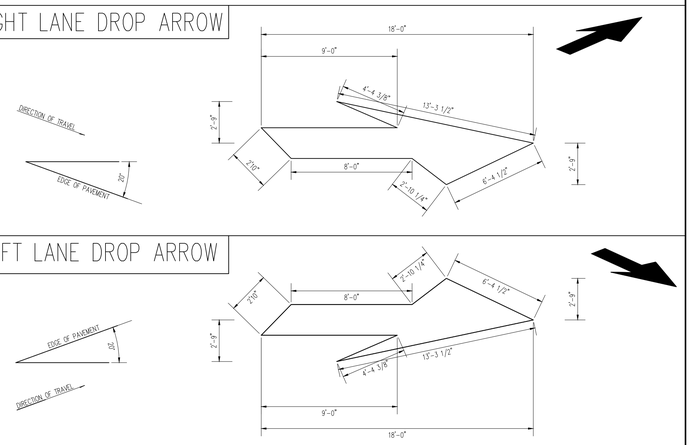
RIGHT OR LEFT TURN ARROW



COMBINATION STRAIGHT AND LEFT OR RIGHT TURN ARROW

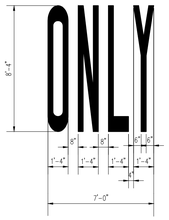


RIGHT LANE DROP ARROW



LEFT LANE DROP ARROW

"ONLY"



SCDOT NOTES:

1. ALL PAVEMENT MARKINGS WITHIN SCDOT R/W SHALL BE THERMOPLASTIC AND INSTALLED ACCORDING TO CURRENT SCDOT STANDARDS AND SPECIFICATIONS.
2. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY. SHOULDER CLOSURES ARE REQUIRED FOR ALL WORK FROM ONE FOOT TO FIFTEEN FEET FROM THE TRAVEL WAY.

SCDOT STANDARD NOTES:

1. THERE CAN BE NO WORK PERFORMED IN THE SCDOT R/W BEFORE AN ENCROACHMENT PERMIT HAS BEEN ISSUED AND A PRECONSTRUCTION MEETING HAS BEEN HELD. THE PROPERTY OWNER AND CONTRACTOR MUST SCHEDULE AND ATTEND THE PRECONSTRUCTION MEETING.
2. ANY WORK PERFORMED BEFORE THE PRECONSTRUCTION MEETING WILL HAVE TAKEN PLACE WITHOUT SCDOT KNOWLEDGE, OVERSIGHT, AND CONSENT AND SHALL BE SUBJECT TO REMOVAL BY THE APPLICANT AND/OR AT THE APPLICANT'S EXPENSE.
3. ANY REVISIONS TO THIS APPROVED PLAN SET MUST HAVE PRIOR, WRITTEN APPROVAL FROM SCDOT OR ARE SUBJECT TO REMOVAL AT THE APPLICANT'S EXPENSE.
4. THE CONSTRUCTION ENTRANCE MUST BE ESTABLISHED AT THE LOCATION DESIGNATED IN THIS PLAN SET AND ACCORDING TO SCDOT TYPICAL 815-505-00. NO ADDITIONAL ENTRANCES OR LOCATIONS OTHER THAN SHOWN IN THIS PLAN SET ARE ALLOWED WITHOUT WRITTEN NOTICE FROM SCDOT. APPROVED CONSTRUCTION ENTRANCE SHALL BE INSTALLED PROPERLY AND SHALL BE MAINTAINED AT ALL TIMES. KEEP ROADWAY PROTECTED AND SWEPT OFF AT ALL TIMES. ANY ADDITIONAL, EXISTING DRIVEWAYS OR CONSTRUCTION ENTRANCES, IF ANY, SHALL BE REMOVED FROM SCDOT RIGHT OF WAY AT NO EXPENSE TO SCDOT.
5. NO DEWATERING ACTIVITIES SHALL BE PERFORMED WITHIN SCDOT R/W OR BRING FORTH WATER TO THE SCDOT RIGHT OF WAY BY DIRECT OR INDIRECT METHODS.
6. POST DEVELOPMENT STORMWATER FLOWS TO THE SCDOT R/W CANNOT EXCEED PREDEVELOPMENT FLOW RATES AT ANY TIME FOR ANY REASON.
7. THE APPLICANT IS SOLELY RESPONSIBLE FOR REPAIRS OF ANY AND ALL DAMAGE TO THE TRAVEL WAY DUE TO ANY WORK ALONG THE FRONTAGE OF THIS SITE, AT NO EXPENSE TO SCDOT AND ALL REPAIRS MUST MEET CURRENT SCDOT STANDARDS.
8. ANY DAMAGE TO THE TRAVEL LANE WILL REQUIRE A FULL DEPTH ASPHALT PATCH AND TOTAL ROADWAY (ALL ADJACENT TRAVEL LANES) ASPHALT OVERLAY. PATCHES LARGER THAN A FEW SQUARE FEET OR EXTENDING PAST 1 FOOT INTO THE TRAVEL LANE SHALL REQUIRE AN OVERLAY OF THE ENTIRE WIDTH OF THE EXISTING TRAVEL WAY FOR 50 FEET BEYOND EACH SIDE OF THE FULL DEPTH PATCH. ALL OF THIS WORK WILL BE SOLELY AT THE EXPENSE OF THE APPLICANT AND MUST MEET CURRENT SCDOT STANDARDS.
9. BEFORE INSTALLATION OF ANY NEW DRIVEWAY, THE EXISTING TRAVEL EDGE MUST BE SAW CUT TO PROVIDE A STRAIGHT AND UNIFORM EDGE ALONG THE MOUTH OF THE PROPOSED DRIVEWAY. CARE MUST BE TAKEN TO NOT TO DAMAGE THE EDGE ONCE CUT. ANY DAMAGE TO THE TRAVEL LANE MUST BE REPAIRED AT THE APPLICANT'S EXPENSE.
10. PAVEMENT SECTION IN THE SCDOT R/W SHALL BE, AT A MINIMUM:
    a. 6 INCHES OF COMPACTED GABC
    b. 4 INCHES OF COMPACTED TYPE B BINDER COURSE HOT MIX ASPHALT
    c. 2 INCHES OF COMPACTED TYPE B SURFACE COURSE HOT MIX ASPHALT

    SEE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION FOR SURFACE COURSE HOT MIX ASPHALT INSTALLATION TIME AND TEMPERATURE RESTRICTIONS AND THERMO PLASTIC TIME AND TEMPERATURE RESTRICTIONS.

    OR

    d. 8 INCHES OF COMPACTED GABC
    e. 4 INCHES OF 4,000 PSI CONCRETE

    NO REINFORCEMENT WIRE, REBAR, OR METAL OF ANY KIND IS PERMITTED
11. DRIVEWAY LANES SHALL BE A MINIMUM OF 12 FEET IN WIDTH MEASURED FROM EDGE TO EDGE OF ASPHALT.
12. DRIVEWAY RADII SHALL BE 30 FEET. (UNLESS NOTED OTHERWISE ON THE SCDOT APPROVED PLANS.)
13. PAVEMENT MARKINGS SHALL BE THERMOPLASTIC WITH REFLECTIVE BEADS PER SECTION 627 OF THE SCDOT STANDARD SPECIFICATIONS:
    a. ALL WHITE MARKINGS SHALL BE 125 MIL MINIMUM THICKNESS
    b. ALL YELLOW MARKINGS SHALL BE 90 MIL MINIMUM THICKNESS
14. ALL PERMANENT SIGNAGE SHALL BE INSTALLED ON BREAKAWAY POSTS PER SCDOT STANDARD DRAWING 651-110-00 AND SHALL HAVE A 7 VERTICAL FOOT CLEARANCE FROM THE GROUND TO THE BOTTOM OF THE SIGN.
15. DRIVEWAYS SHALL BE CONSTRUCTED TO HAVE A MINIMUM OF A 2 FOOT GRASSED SHOULDER ON EACH SIDE OF THE DRIVEWAY THROAT.
16. DITCH SLOPES SHALL BE NO STEEPER THAN 3H:1V.
17. ALL DRIVEWAY CULVERTS SHALL BE INSTALLED AND SEALED ACCORDING TO SCDOT TYPICAL 714-205-01 DETAIL 4 AND 5 WITH AN AASHTO M 315 RUBBER GASKET SEAL, ON PROPER GRADE TO ALLOW FOR POSITIVE STORM WATER FLOW WITHIN THE PIPE AND TO/FROM ADJACENT PIPES/CROSS LINES.
18. ALL CULVERTS INSIDE OF THE SCDOT R/W ARE TO BE INSTALLED WITH BEVELED ENDS PER SCDOT STANDARD DRAWING 719-610-00 AND SEALED PER SCDOT STANDARD DRAWING 714-205-01 AND CANNOT BE COVERED UNTIL AFTER AN INSPECTION BY THE SCDOT INSPECTOR ASSIGNED TO THE PROJECT AT THE REQUIRED SCDOT PRECONSTRUCTION MEETING.
19. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY. SEE SCDOT LOCAL MAINTENANCE WORK RESTRICTIONS FOR ADDITIONAL INFORMATION.
20. SHOULDER CLOSURES ARE REQUIRED FOR ALL WORK IN THE SCDOT R/W BEYOND ONE FOOT FROM THE TRAVEL WAY.
21. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE ALL REQUIRED INSPECTIONS IN ADVANCE. IF WORK REQUIRING INSPECTION IS PERFORMED WITHOUT PRIOR NOTICE BEING GIVEN TO SCDOT, THAT INSTALLATION SHALL BE SUBJECT TO REMOVAL AT THE APPLICANT'S EXPENSE. SEVERAL MEANS OF CONTACT WILL BE GIVEN AT THE PRECONSTRUCTION MEETING. FAILURE TO OBTAIN CONTACT IS NOT AN APPROVAL TO PROCEED WITH ANY WORK.
22. NO VEGETATION INSTALLED ON PRIVATE PROPERTY SHALL BLOCK THE SCDOT SIGHT TRIANGLES OR SIGHT DISTANCES FOR MOTORISTS INGRESS OR EGRESSING FROM APPROVED DRIVEWAYS AND OR ROADWAY INTERSECTIONS. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR KEEPING OFFSITE LANDSCAPING PROPERLY MAINTAINED TO IMPROVE ALL SIGHT DISTANCES. THE PROPERTY OWNER SHALL ALSO BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGES TO SIDEWALK, DRIVEWAY OR ROADWAY, UTILITY, DRAINAGE OR OTHER STRUCTURES DAMAGED DUE TO THE INSTALLATION OR EXISTENCE OF OFFSITE LANDSCAPING.
23. THE DEPARTMENT SHALL NOT BE RESPONSIBLE FOR DAMAGE TO ANY UTILITY STRUCTURES LOCATED WITHIN THE RIGHT-OF-WAY AS A RESULT OF ROUTINE HIGHWAY MAINTENANCE OPERATIONS. THESE STRUCTURES INCLUDE BUT ARE NOT LIMITED TO APV, METERS, VALVES, MANHOLES, ALL TYPE OF PEDESTALS AND UTILITY LINES (OVERHEAD AND/OR UNDERGROUND). THE APPLICANT SHOULD USE MECHANICAL MOWERS TO CUT AROUND THESE TYPE STRUCTURES TO INCREASE VISIBILITY FOR HIGHWAY MAINTENANCE WORKERS.
24. APPLICANT IS RESPONSIBLE FOR THE INSTALLATION AND SECURING OF ANY VALVE OR MANHOLE RISERS AS NEEDED.
25. THE DEPARTMENT SHALL BE HELD HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS, DAMAGES AND LOSSES ASSOCIATED WITH WORK AS APPROVED UNDER THIS PERMIT APPLICATION. ANY SUCH DAMAGE CLAIMS RECEIVED BY THE DEPARTMENT SHALL BE THE RESPONSIBILITY OF THE APPLICANT TO PROCESS ACCORDINGLY. THE HOLD HARMLESS AGREEMENT SHALL BE FOR THE LIFE OF THE FACILITY, STRUCTURE(S) OR ENCROACHMENT AS IT REMAINS WITHIN PUBLIC RIGHT-OF-WAY.
26. APPLICANT IS RESPONSIBLE FOR THE REPAIR OF ANY TRAFFIC SIGNAL LOOPS/WIRES/HEAD/CABINETS IF DAMAGED DUE TO THIS INSTALLATION. ALL WORK SHALL BE APPROVED UNDER THE DIRECTION OF THE SCDOT DISTRICT SIGNAL SHOP AND PERFORMED BY A SCDOT APPROVED SIGNAL CONTRACTOR, AT NO EXPENSE TO THE DEPARTMENT.
27. IF REQUIRED UNDER THE APPROVED SCDOT ENCROACHMENT PERMIT, A THIRD PARTY TESTER SHALL BE REQUIRED AT THE APPLICANT'S EXPENSE TO PERFORM COMPACTION ANALYSIS AND WITNESS A PASSING PROOF ROLL ON ALL SUB-GRADE, BASE, AND ASPHALT. ONE THIRD PARTY INSPECTOR SHALL TAKE DENSITY READINGS AT RANDOM STATION NUMBERS. A SECOND (2ND) THIRD PARTY INSPECTOR/TESTER SHALL BE AT THE ASPHALT PLANT TESTING THE ASPHALT AT THE TIME THAT SURFACE ASPHALT IS BEING PRODUCED AND PUT DOWN ON THE JOB. ONE CORE SAMPLE (LOCATIONS TO BE DETERMINED) SHALL BE TAKEN AND WEIGHED BY THE THIRD PARTY INSPECTOR. ALL RESULTS TO BE SUBMITTED IN WRITING TO SCDOT FOR REVIEW THE FOLLOWING DAY. WINTER WORK RESTRICTIONS AND HOLIDAY WORK RESTRICTIONS MUST BE ADHERED TO. SEE PERMIT FOR MORE DETAILS.
28. AN INSPECTION DATE SHALL BE SET UP IN ADVANCE FOR WHICH THE INSPECTOR WILL COME OUT AND INSPECT THE SIDEWALK FORMS BEFORE POURING CONCRETE. DO NOT LEAVE MORE THAN A 2" DROP OFF UNATTENDED. NO MORE THAN A 2" DROP OFF OR A 3:1 DITCH SLOPE IS PERMITTED ANYWHERE WITHIN THE RIGHT OF WAY DUE TO THE CONSTRUCTION ASSOCIATED WITH THIS SIDEWALK. THE INSTALLATION OF SIDEWALK SHALL BE FLUSH WITH SHOULDER OR HAVE A DRAINAGE INLET BUILT UNDERNEATH TO ALLOW FOR PROPER STORM WATER FLOW. NO WATER SHALL POND IN SHOULDER, ROADWAY, DRIVEWAYS, OR RIGHT OF WAY DUE TO THIS INSTALLATION.
29. ADA MATS (RAISED DETECTABLE WARNING PADS) SHALL BE INSTALLED AS WET INSETS AND AT ROADWAY INTERSECTIONS ONLY.
30. NO VALVES OR OTHER APPURTENANCES IN ROADWAY ASPHALT, WITHIN 5 FEET OF EDGE OF PAVEMENT, OR WITHIN DITCH LINE OR SWALE LINE. APPLICANT SHALL INSTALL 8-16 FEET OF NEW, UNDAMAGED RCP ON PROPER GRADE, FACING THE PROPER DIRECTION, MATCHING THE DIAMETER OF DRIVEWAY AND/OR CROSS LINE UPSTREAM, BUT NOT EXCEEDING THE PIPE DIAMETER DOWNSTREAM, IF THE ABOVE CANNOT BE AVOIDED. INSTALL RIP RAP AROUND ANY EXPOSED PIPES, COVER AND SOD TO MEET SCDOT MINIMUM STANDARDS. CALL SCDOT ENCROACHMENT OFFICE FOR INSPECTION OF PIPE BEFORE COVERING.
31. PROPOSED UTILITY INSTALLATION LOCATED IN SHOULDER AREA SHALL HAVE A MINIMUM COVER OF 42" ACCORDING TO FIGURE 6 OF APPENDIX B. ANY EXPOSED ROOTS TO BE REMOVED OR TRIMMED FLUSH WITH SHOULDER/DITCH.

NOTE: LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY. SHOULDER CLOSURES ARE REQUIRED FOR ALL WORK FROM ONE FOOT TO FIFTEEN FEET FROM THE TRAVEL WAY.

NOTE: ALL EXISTING DRIVEWAYS TO BE RESURFACED TO EDGE OF R/W AND TIED IN SMOOTHLY WITH EXISTING DRIVES

NOTE

ALL CULVERTS SHALL BE INSTALLED AND SEALED ACCORDING TO SCDOT TYPICAL 714-201-01 DETAILS 4 AND 5 WITH AN AASHTO M 315 RUBBER GASKET SEAL, ON PROPER GRADE TO ALLOW FOR POSITIVE STORM WATER FLOW WITHIN THE PIPE AND TO/FROM ADJACENT PIPES/CROSS LINES. CULVERTS INSIDE OF THE SCDOT R/W CANNOT BE COVERED UNTIL AFTER AN INSPECTION BY THE SCDOT INSPECTOR ASSIGNED TO THE PROJECT AT THE REQUIRED SCDOT PRECONSTRUCTION MEETING.

ALL HEADWALLS TO USE BEVELED END PIPE WITH RIP RAP PER SCDOT TYPICAL 719-610-00

THIRD PARTY TESTING REQUIRED AT THE APPLICANT'S EXPENSE ON SUB-GRADE, BASE, AND ASPHALT. ONE THIRD PARTY INSPECTOR SHALL TAKE DENSITY READINGS AT RANDOM STATION NUMBERS. A THIRD PARTY INSPECTOR/TESTER SHALL BE AT THE ASPHALT PLANT TESTING THE ASPHALT AT THE TIME THAT SURFACE ASPHALT IS BEING PRODUCED AND PUT DOWN ON THE JOB. RANDOM CORE SAMPLES SHALL BE TAKEN AND WEIGHED BY THE THIRD PARTY INSPECTOR PER SCDOT DETERMINATION. ALL RESULTS TO BE SUBMITTED IN WRITING TO SCDOT FOR REVIEW THE FOLLOWING DAY.

THIRD PARTY TESTING REQUIRED AT THE APPLICANT'S EXPENSE ON ALL STORM DRAIN PIPING. INSPECTIONS SHALL BE AS DESCRIBED IN SC-M-714 (SUPPLEMENTAL TECHNICAL SPECIFICATION FOR PERMANENT PIPE CULVERTS). SPECIFICALLY PAGES 9-12. ALL RESULTS TO BE SUBMITTED IN WRITING TO SCDOT FOR REVIEW THE FOLLOWING DAY.

REV	DATE	REVISION	APPROVED
A	02/27/24	FOR PERMITTING	WCE
B	03/04/24	FOR PERMITTING	WCE
C	03/11/24	PER SCDOT COMMENTS	WCE
D	04/29/24	REV. PER OSE REVIEW	WCE

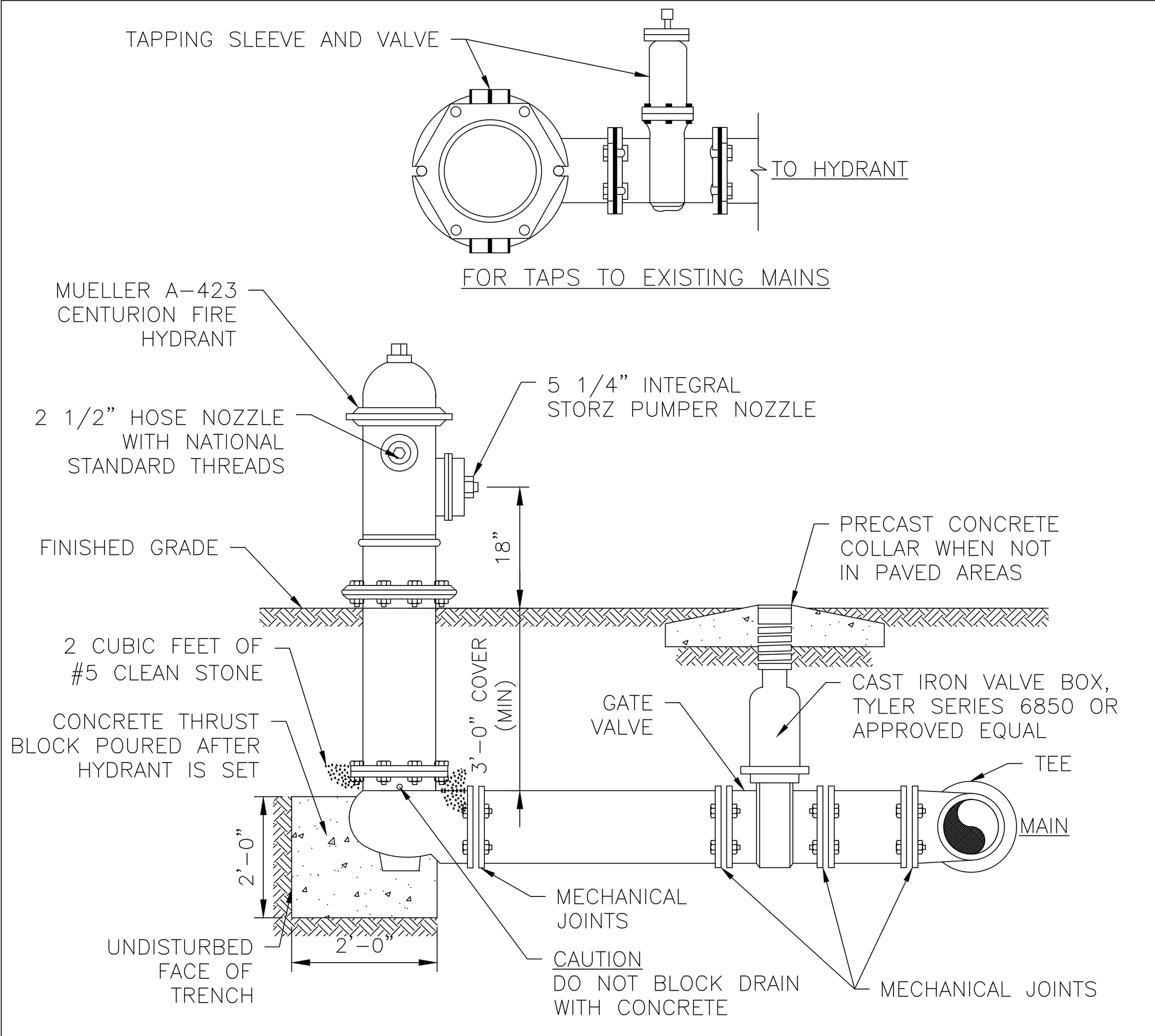
ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29501

DRAWN BY: WCE
DATE: 03/11/24
DESIGNED BY: WCE
DATE: 03/11/24
CHECKED BY: ADB
DATE: 03/11/24
CHECKED BY: ADB
DATE: 03/11/24
SCALE: AS NOTED

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA
FMU PAVEMENT MARKING DETAILS

C7.02 FMU

EECO JOB #:

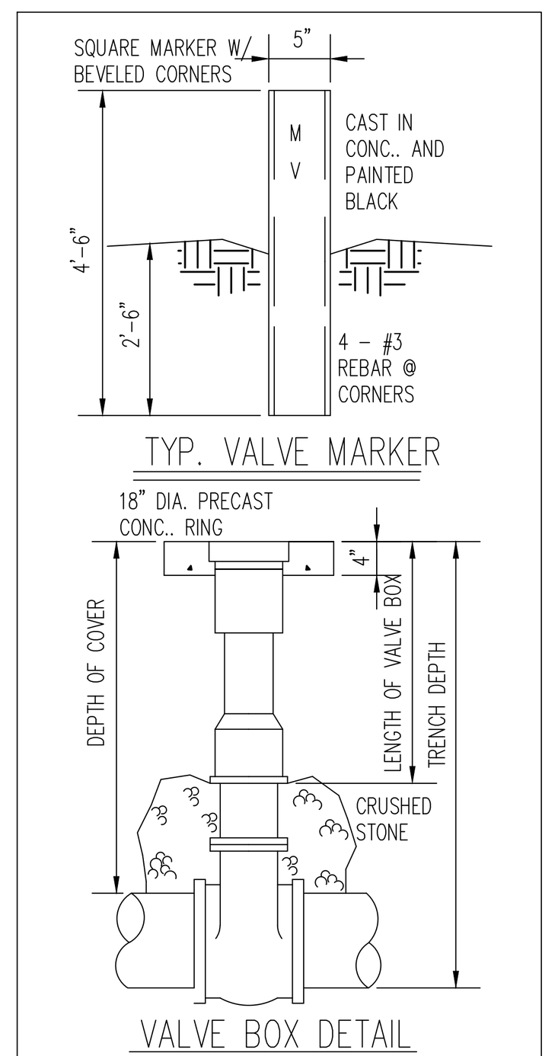


NOTES:

1. ALL FIRE HYDRANT LEADS TO BE DUCTILE IRON WITH MECHANICAL JOINTS RESTRAINTS.
2. PROVIDE MECHANICAL JOINT DUCTILE IRON FITTINGS.
3. HYDRANTS SHALL BE NO LESS THAN 3' NOR MORE THAN 6' FROM THE CURB OR THE EDGE OF A HARD SURFACE STREET OR ACCESS ROAD, EXCEPT THAT ALONG RURAL ROADS THROUGH UNDEVELOPED AREAS THE MAXIMUM DISTANCE MAY BE INCREASED TO 10'.
4. HYDRANT MUST BE LOCATED SO AS TO BE UNOBSTRUCTED FOR 15' EITHER SIDE AS MEASURED ALONG THE CURB OR A HARD SURFACE STREET OR ACCESS ROAD. THE AREA MUST BE FREE OF GROWTH AND OTHER OBSTRUCTIONS WHICH WOULD HINDER THE ACCESS TO THE HYDRANT.
5. MINIMUM DISTANCE BETWEEN VALVE AND HYDRANT SHALL BE 3'.
6. BENDS MAY BE USED IN HYDRANT LEAD TO FACILITATE HYDRANT LOCATION.
7. HYDRANT VALVES TO OPEN COUNTERCLOCKWISE.
8. HYDRANT COLOR SHALL BE A YELLOW BARREL WITH ORANGE BONNET AND NOZZLE CAPS.

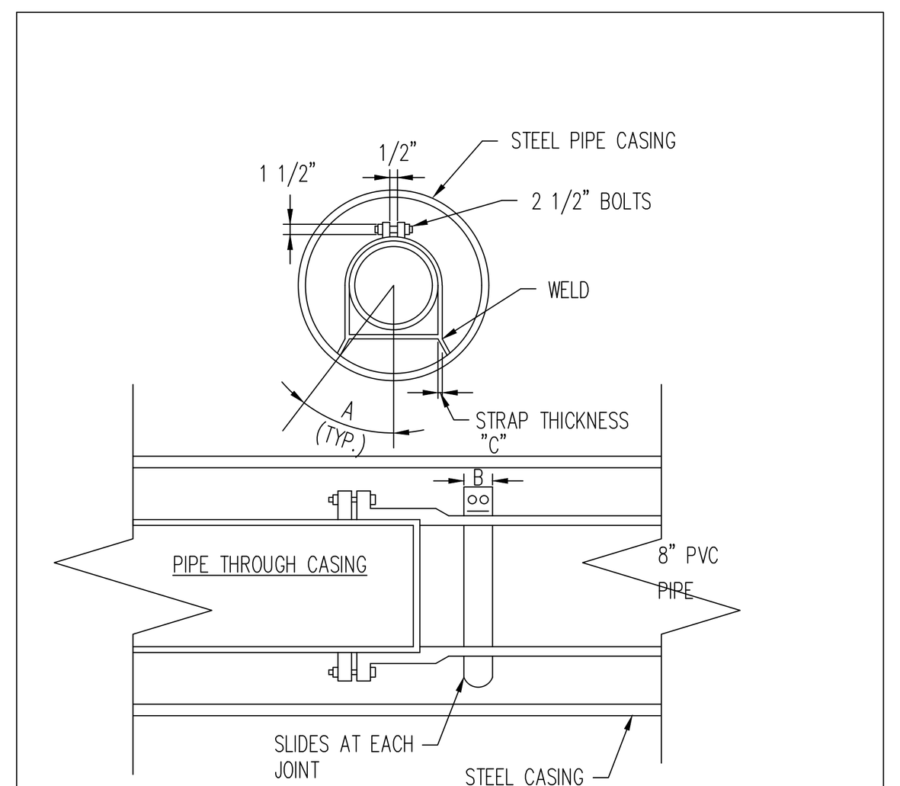
TYPICAL FIRE HYDRANT DETAIL

			NO.	REVISION	DATE
DWG NO:	W-008	**CITY OF FLORENCE**			
JOB NO:		**CITY CENTER**			
DATE:	6/4/14	**324 WEST EVANS STREET**			
SCALE:	NTS	**FLORENCE, SC 29565**			



VALVE BOX DETAIL

TWO PIECE SCREW TYPE

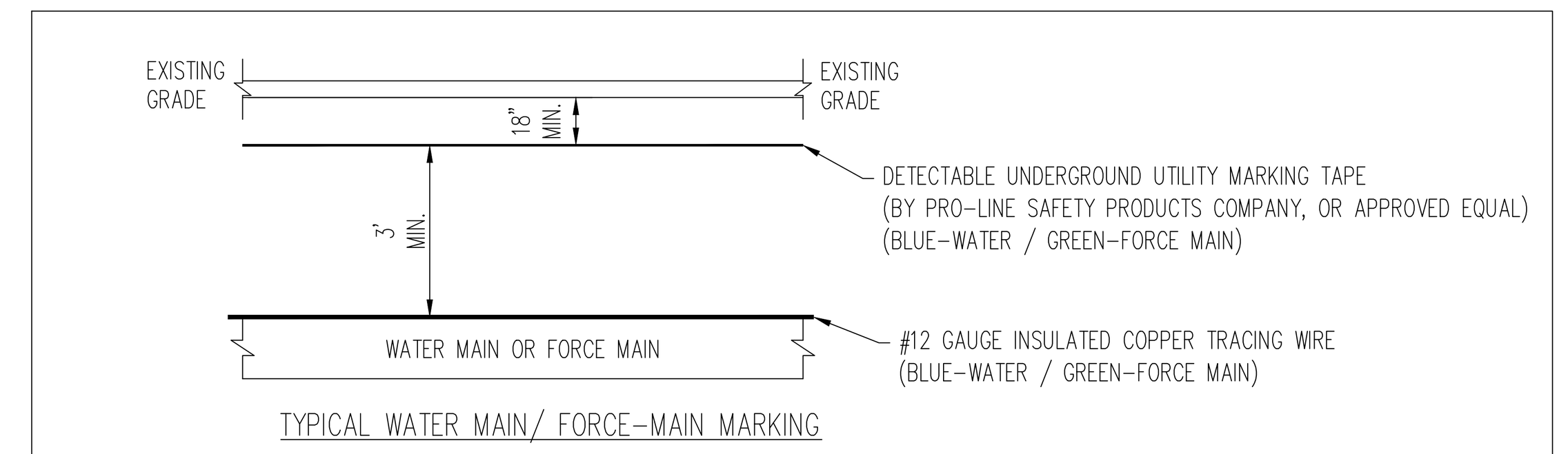


SCHEDULE OF DIMENSIONS				
PIPE	CASING A	B C		
6" ID	12" OD	35 DEG.	1 1/2"	1/4"
8" ID	16" OD	35 DEG.	1 1/2"	1/4"
10" ID	20" OD	35 DEG. 2"	3/16"	
12" ID	24" OD	35 DEG. 3"	3/16"	

1. END TO BE CLOSED W/BRICKS AND GROUT.
2. PIPE WITHIN CASING TO BE DUCTILE IRON UNLESS OTHERWISE SPECIFIED.
3. M.J. JOINTS WITHIN CASING UNLESS OTHERWISE SPECIFIED.
4. CASING SIZE TO BE USED WHERE SIZE IS NOT INDICATED ON PLANS.

GENERAL WATER NOTES

1. ALL UNDERGROUND FIRE SERVICE PIPING TO BE INSTALLED PER 2019 NFPA 24 STANDARD FOR INSTALLATION OF PRIVATE FIRE SERVICE MAINS. DIP SHALL BE PER 2019 NFPA 24 CHAPTER 10 TABLE 10.1.1 ALL FITTINGS SHALL CONFORM TO 2019 NFPA 24 CHAPTER 10.8
2. WATER SYSTEM TO MEET ALL CITY OF FLORENCE REQUIREMENTS.
3. CONTRACTOR TO MAINTAIN 1'-6" MINIMUM CLEARANCE VERTICALLY OR 10'-0" MINIMUM CLEARANCE HORIZONTALLY BETWEEN WASTEWATER LINES AND ANY EXISTING AND/OR NEW WATER LINES.
4. ALL GATE VALVES TO HAVE 2" SQUARE OPERATING NUTS AND ARE TO BE PROVIDED W/ VALVE BOXES, CONCRETE COLLARS, AND MARKERS.
5. WATER LINE TO HAVE A MINIMUM OF 48" OF COVER UNDER SCDOT PAVEMENT AND 42" OF COVER IN THE SCDOT SHOULDER. WATER LINE TO HAVE A MINIMUM OF 36" OF COVER IN ALL OTHER AREAS.
6. ALL FITTINGS TO BE DUCTILE IRON, MECHANICAL JOINT, CL153
7. ALL FITTINGS TO BE MEGA LUG WITH BELL RESTR4AINT AND SHALL CONFORM TO 2019 NFPA 24 STANDARD FOR INSTALLATION OF PRIVATE FIRE SERVICE MAINS SEC. 10.8.
8. BLOW-OFFS AND SERVICES ARE SHOWN WITHIN PROPERTY LINES FOR CLARITY ONLY. BLOW-OFFS AND SERVICES ARE NOT TO EXTEND BEYOND THE RIGHT-OF-WAY.
9. ALL PIV'S AND OTHER VALVES SUPPLYING SPRINKLER SYSTEMS ARE TO BE PROVIDED WITH ELECTRICALLY SUPERVISED TAMPER SWITCHES PER IBC 2021 903.4 - SWITCH TO BE POTTER PCVS-1 OR APP. EQ. COORDINATE ELECTRICAL TIE-IN WITH PLUMBING DRAWINGS.
10. VALVE MARKERS TO BE LOCATED AS SHOWN.
11. NO SERVICE CONNECTIONS ARE TO BE LOCATED UNDER PAVEMENT.
12. FOR WATER DETAILS SEE THIS SHEET
13. CONTRACTOR VERIFY LOCATION OF ALL EXIST. UTILITIES PRIOR TO CONSTRUCTION.
14. CONTRACTOR NOTIFY ALL UTILITIES BEFORE DIGGING
15. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE DIGGING.
16. CONTRACTOR WILL BE REQUIRED TO PRESSURE TEST NEW SERVICE CONNECTIONS REPRESENTATIVES OF EECO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THE TEST.
17. ALL AREAS DISTURBED BY CONSTRUCTION TO BE GRASSED PER SPECIFICATIONS.
18. POTABLE WATER LINES TO BE PRESSURE TESTED AT 150 PSI FOR A MINIMUM OF 2 HOURS PER SPECIFICATIONS. REPRESENTATIVES OF ERVIN ENGINEERING CO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THIS TEST.
19. POTABLE WATER LINES TO BE CHLORINATED AND TESTED PER SPECIFICATIONS.
20. FIRE SERVICE LINES TO BE PRESSURE TESTED AT 200 PSI FOR A MINIMUM OF 2 HOURS PER SPECIFICATIONS. REPRESENTATIVES OF ERVIN ENGINEERING CO. AND THE CITY OF FLORENCE MUST BE PRESENT TO WITNESS THIS TEST.



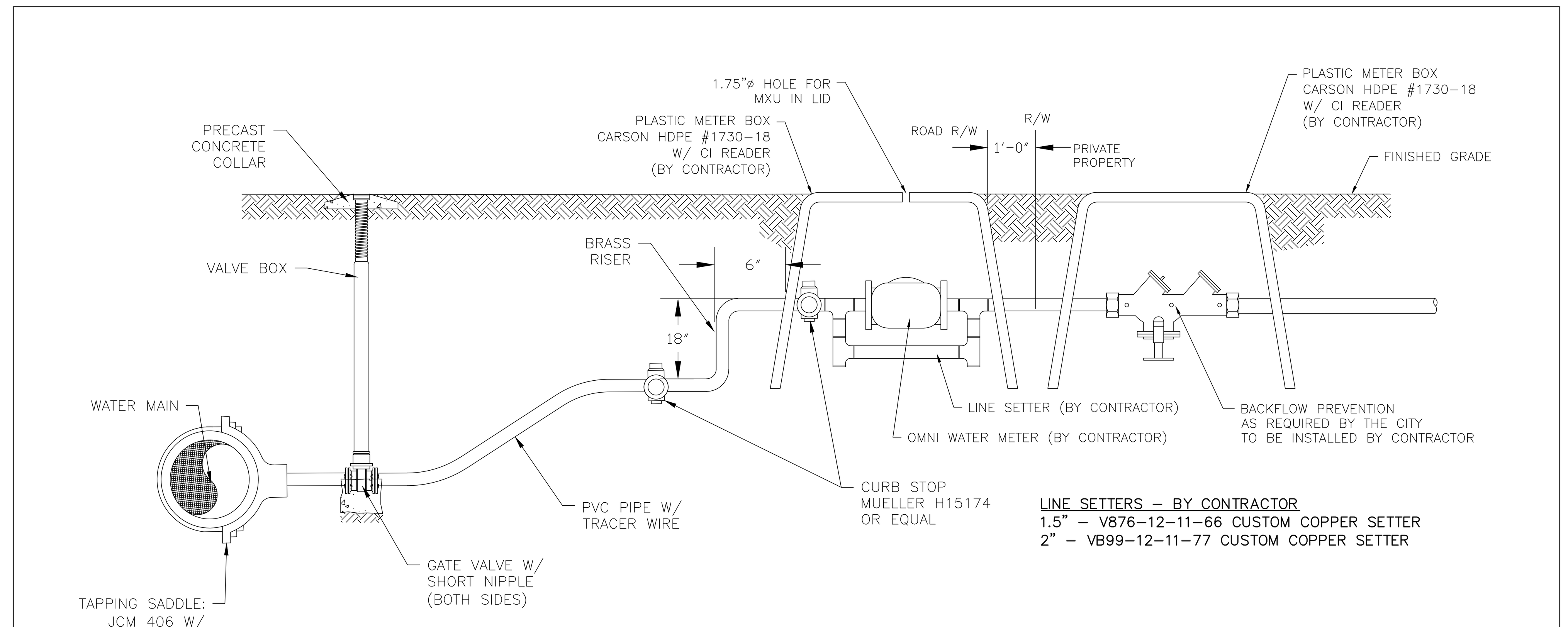
TYPICAL WATER MAIN/ FORCE-MAIN MARKING

A DETECTABLE UNDERGROUND UTILITY MARKING TAPE SHALL BE PLACED OVER ALL NONMETALLIC PRESSURE MAINS. THE TAPE SHALL BE A MINIMUM OF 5 MIL. OVERALL THICKNESS WITH A SOLID ALUMINUM CORE, SHALL HAVE PERMANENT MARKINGS, AND SHALL BE COLOR CODED BLUE IN ACCORDANCE WITH THE AMERICAN PUBLIC WORKS. CO. OR APPROVED EQUAL, SHALL BE 3" WIDE AND LAID 18" FROM FINISHED GRADE. THE TAPE SHALL BE DETECTABLE WITHIN 3' WITH A METAL DETECTOR.

WIRE AND TAPE DETAIL

CITY OF FLORENCE
CITY-COUNTY COMPLEX RR
180 N. IRBY ST.
FLORENCE, SC. 29501

DEP. OF PUBLIC WORKS & UTILITIES
1440 McCURDY ROAD
FLORENCE, S.C. 29501
PHONE: 843-665-3236 FAX: 843-665-3200



LINE SETTERS – BY CONTRACTOR
1.5" – V876-12-11-66 CUSTOM COPPER SETTER
2" – VB99-12-11-77 CUSTOM COPPER SETTER

TYPICAL WATER SERVICE – 1-1/2" AND 2"

DETAIL 10 TYP

SCALE: NONE

STANDARD 1.50IN AND 2IN WATER SERVICE CONNECTION DETAIL
NOT TO SCALE

FULL LIFE. FULL FORWARD. FLORENCE SOUTH CAROLINA

STANDARD CONSTRUCTION DETAILS
WATER DISTRIBUTION

REV. 09/11/20 | DETAIL NO. 23

H:\2023\2023m18001 Moseley - Sled Building\support\Valve Marker.jpg

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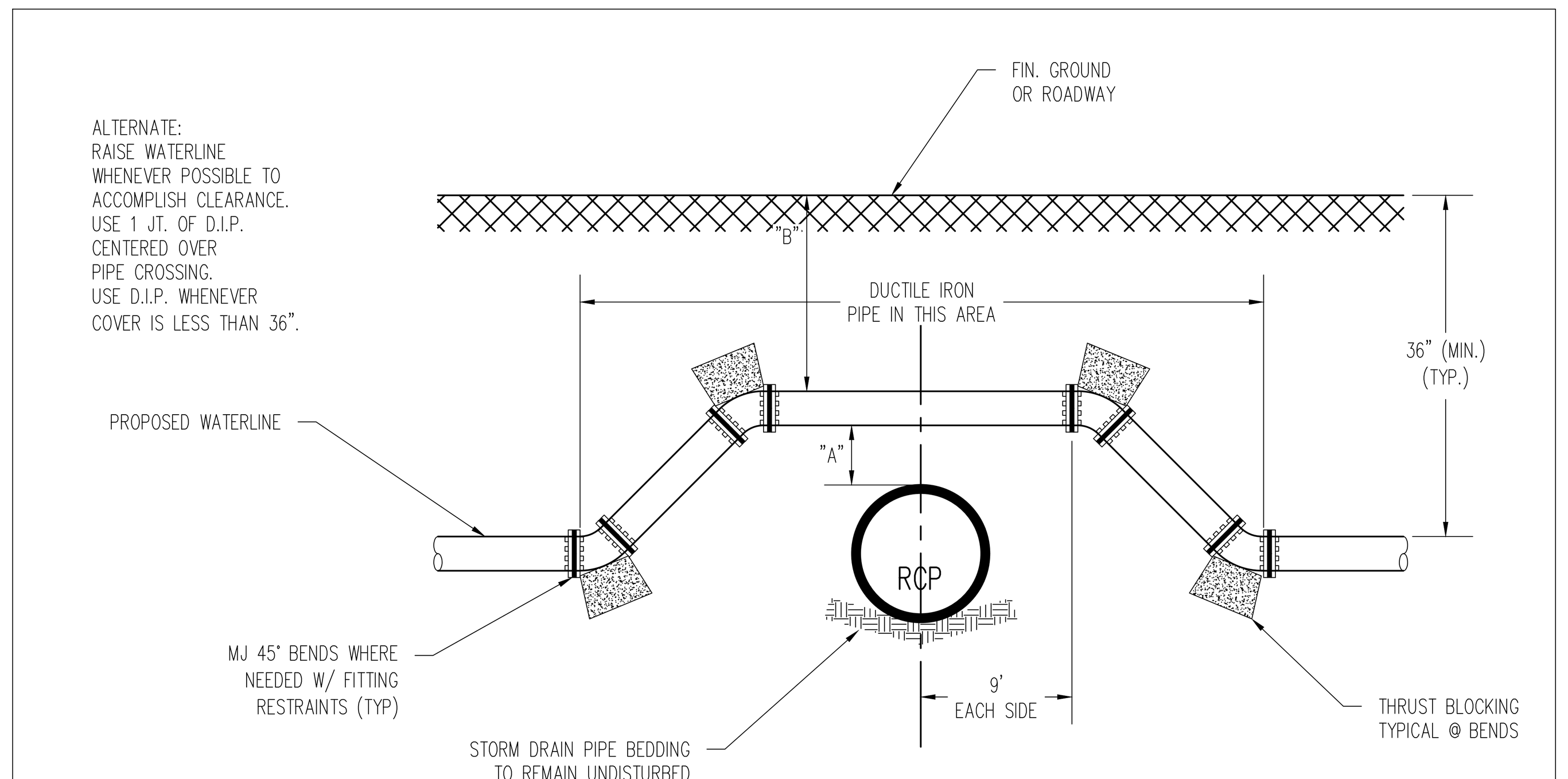

NOTES:
1.) IF "A" ≥ 12 INCHES AND "B" ≥ 36 INCHES, USE C900 CLASS 150 DR18 PVC WATER LINE.
2.) IF 6" ≤ "A" < 12 INCHES OR 24" < "B" < 36 INCHES, USE DUCTILE IRON PIPE WITH 1 JT. CENTERED OVER THE PIPE CROSSING.
3.) DISTANCE "A" CANNOT BE LESS THAN 6".
4.) DISTANCE "B" CANNOT BE LESS THAN 24".

TYPICAL WATER LINE STORM DRAIN CROSSING #1

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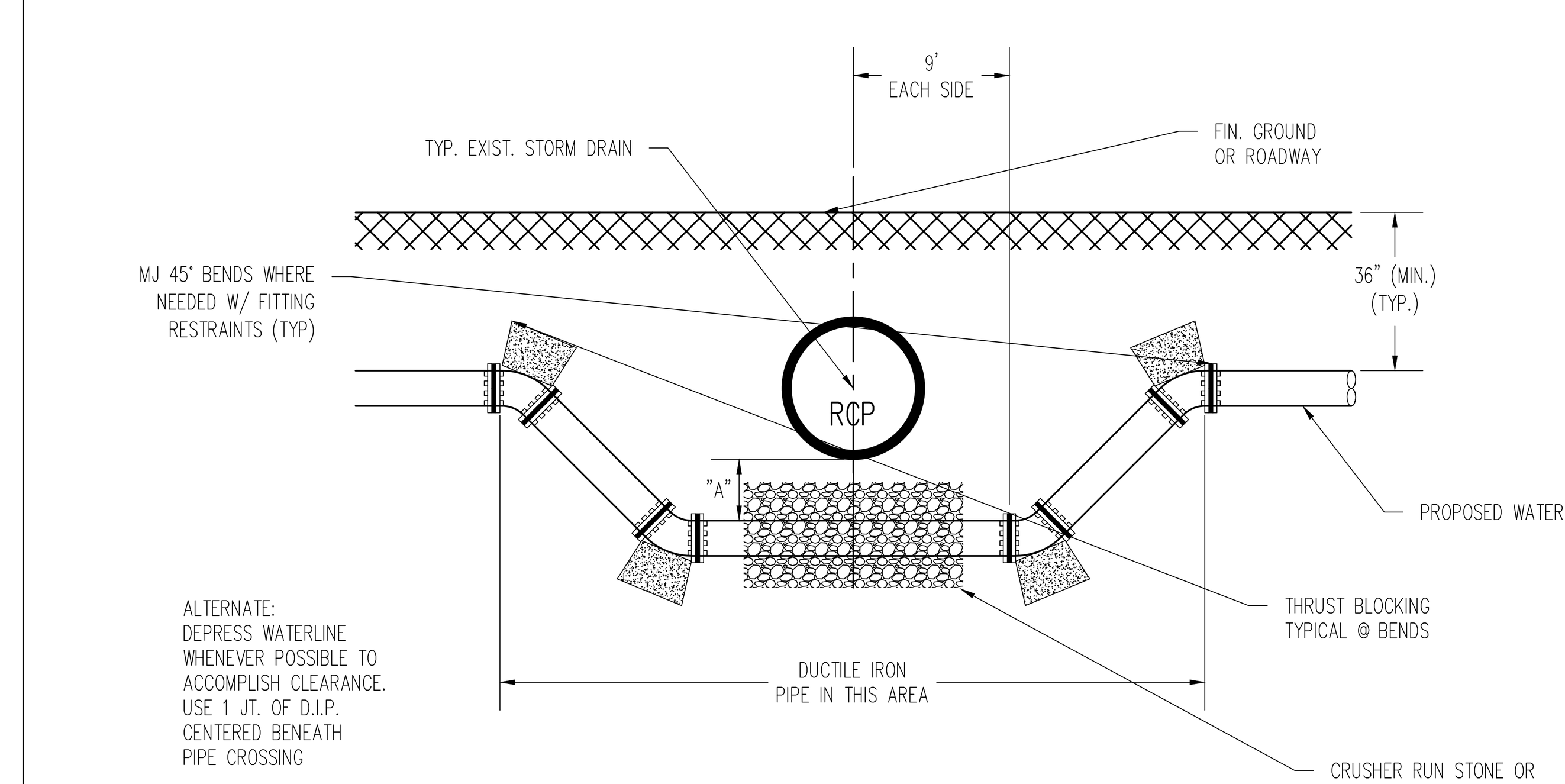

NOTES:
1.) IF "A" ≥ 24 INCHES, C900 CLASS 150 DR18 PVC WATER LINE MAY BE USED.
2.) IF 12" ≤ "A" < 12 INCHES, USE DUCTILE IRON PIPE WITH ONE (1) JOINT CENTERED BENEATH THE PIPE CROSSING.
3.) DISTANCE "A" CANNOT BE LESS THAN 12".

TYPICAL WATER LINE STORM DRAIN CROSSING #2

CITY OF FLORENCE
CITY-COUNTY COMPLEX RR
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FLORENCE, SC. 29501

DEP. OF PUBLIC WORKS & UTILITIES
1440 McCURDY ROAD
FLORENCE, S.C. 29501
PHONE: 843-665-3236 FAX: 843-665-3200

04/29/2024

ERVIN ENGINEERING CO., INC.
341 W. EVANS ST., P.O. BOX 3
FLORENCE, S.C. 29503

DRAWN BY: WCE | DATE: 03/11/24 | CHECKED BY: ADB | DATE: 03/11/24
DESIGNED BY: WCE | DATE: 03/11/24 | CHECKED BY: ADB | DATE: 03/11/24
SCALE: AS NOTED

FRANCIS MARION UNIVERSITY
SLED ROAD AND WATER LINE EXTENSION
OSE PROJECT NO. H18-9592-PD-A
FLORENCE SOUTH CAROLINA
FMU WATER DETAILS

REV	DATE	REVISION	APPROVED
A	02/07/24	FOR PERMITTING	WCE
B	03/11/24	FOR PERMITTING	WCE
C	04/11/24	PER SCDOT COMMENTS	WCE
D	04/29/24	REV. PER OSE REVIEW	WCE

C7.03 FMU

EECO JOB #