

**Outdoor Welding Lab
Midlands Technical College, Airport Campus
Columbia, South Carolina
OSE PROJECT No. H59-N348-AT
Studio 2LR No. 25098**

August 6, 2026

ADDENDUM NO. 1

This addendum forms a part of the Contract documents and modifies the original Bidding Documents and any previous Addenda as noted below. Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may subject Bidder to disqualification. The following items take precedence over reference portions of the specifications and drawings for the above- referenced project, and shall become a part thereof. Where any item called for in the documents is supplemented hereby, the original requirements shall remain in effect. All supplemental conditions shall be considered as added thereto. Where any original item is amended, voided or superseded, hereby, the provisions of such items not so specifically amended, voided or superseded shall remain in effect.

PRE-BID MEETING:

1. A Pre-Bid meeting was held on site on Midlands Technical College Airport Campus on Thursday, July 30, 2026. A brief discussion was held to go over the OSE Pre-Bid Discussion Items and review the scope of the project. After the discussion, all attendees visited the project site.
2. Last date for any questions will be end of the day Tuesday, August 4, 2026.
3. Last Addendum, if needed, will go out Thursday, August 6, 2026.

ATTACHMENTS:

1. Report of Geotechnical Exploration by BLE dated April 14, 2026, provided for information.
2. 27 83 06 EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEM
3. C101 Existing Conditions & Demo Plan
4. C102 Site & Utility Connection Plan
5. C103 Grading, Storm Drainage, and SWPP Plan
6. C104 Details
7. C105 Details
8. L101 Landscape Plan
9. L102 Landscape Details

MODIFICATIONS TO PROJECT MANUAL:

1. 09 91 13 EXTERIOR PAINTING
 - a. Delete paragraph 3.7, A, 1. The system specified in paragraph 2 will be used to coat all exposed steel.

2. 13 34 19 METAL BUILDING SYSTEMS
 - a. Delete paragraph 2.2, D, E, and F in their entirety.
 - b. Delete paragraph 2.2, H in its entirety.
3. 27 83 06 EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEM
 - a. See attached revised specification to change the fire alarm monitoring to an audible alarm.
4. 42 22 13 UNDERHUNG BRIDGE CRANES
 - a. Delete paragraph 2.1, C, 3 in its entirety.

MODIFICATIONS TO DRAWINGS:

1. **S501 – Slab-On-Grade Details**
 - a. Delete detail 2/S501
2. **A110- Reflected Ceiling Plan:**
 - a. Detail 2: Add bird netting to underside of the ceiling structure. Where bird netting cannot be installed close to radiant heaters or in or around the bridge crane, install bird spikes to prevent birds from landing.
3. **C101 Existing Conditions & Demo Plan**
 - a. Tree Protection expanded per Lexington County and Concrete wash relocated to the north end of the existing parking lot.
 - b. Initial Land Disturbance Sequence revised to comply with Lexington County requirements.
4. **C102 Site & Utility Connection Plan**
 - a. River rock channels shown from downspout locations to the detention pond per Lexington County
 - b. Inverts for the sewer service adjusted
 - c. Add 6" DIP encasement of 4" sewer service at crossing with storm drainage pipe.
 - d. Strike words "By Others" from Coded Note 10.
5. **C103 Grading, Storm Drainage, and SWPP Plan**
 - a. Show expanded Tree Protection per Lexington County and concrete wash relocation to the north end of the existing parking lot.
 - b. Show river rock channels from the downspout locations to the detention pond.
 - c. Show coded note 16 for the river rock channel.
 - d. Show the lowered sanitary sewer service crossing on the storm drainage profile.
 - e. Revise storm drainage profile to show raised storm drainage line and encased sewer service crossing.
 - f. Struck out language for a skimmer attached to the outlet structure in Coded Note 8.
6. **C104 Details, add:**
 - a. Heavy Duty Asphalt Pavement section detail
 - b. Bollard detail
 - c. Pavement Repair detail.

d. Revise discharge pipe invert elevation on Outlet Structure Detail.

7. C105 Details

a. Moved the SiltSoxx for Sediment Control on Pavement detail from Sheet C104 to Sheet C105.

8. L101 Landscape Plan

a. Show expanded Tree Protection area per Lexington County.

9. L102 Landscape Details

a. Replaced Upstate permanent and temporary seeding requirements with Lexington County permanent and temporary seeding requirements.

REQUESTED PRODUCT APPROVALS: None

CLARIFICATIONS TO QUESTIONS FROM CONTRACTORS:

1. The bridge crane specified in 41 22 13 UNDERHUNG BRIDGE CRANES and in the location and size shown on drawings, approximately 12' wide and 30' long is entirely within the contractor's scope. Welder racks shown on the plan and labeled "NIC" which stands for *Not-In-Contract* are not to be included in the contractor's scope. Crane reactions to be coordinated with the PEMB supplier and incorporated into their design. Final PEMB design, including column reactions, to be provided to EOR (project design team) for review prior to fabrication. The crane is supported by the PEMB.
2. Bids shall include the transformer and medium voltage work noted and shown on the plans and specifications. Note that the subcontractor must be properly licensed for this work.
3. SWPPP inspections must be conducted by qualified personnel, which typically requires certification through a program approved by the South Carolina Department of Environmental Services (SCDES). The primary recognized credential is the Certified Erosion Prevention and Sediment Control Inspector (CEPSCI) offered by Clemson University. The individual may also have the registration equivalent of the SWPPP preparer, i.e. PE. Any qualified personnel may conduct the inspections. The contractor shall include SWPPP inspections in his bid.
4. See the bid form, SE-330 for licenses required to be listed for the bid. If you have questions regarding the types of licenses required, please contact SC LLR and visit the link posted on the bid form,
<https://llr.sc.gov/clb/PDFFiles/CLBClassificationAbbreviations.pdf>
5. OSE will provide a building permit at no cost to the GC. Individual bidders are responsible for their own business license to do work in the jurisdiction. The land

disturbance permit will be provided to the Contractor at the pre-construction conference. Owner will pay necessary tap and meter fees for water and sanitary sewer.

6. CAD drawings are not provided during the bid process. They can be provided to the GC once they are under contract with the appropriate signed waiver.
7. Details for the colored band on the front façade are shown on 1/A401.
8. Loading for the mezzanine grating is shown on sheet S010. Mezzanine grating shall be designed by the PEMB Manufacturer and shall be 1-1/2" thick, galvanized with a serrated top. Mezzanine structure shall also be designed by the PEMB and included in the PEMB scope of work.
9. Column base plates are set on the finished slab. Epoxy anchors are not acceptable at the stairs, provide embedded studs as shown.
10. Specification 10 81 13 BIRD CONTROL DEVICES; Paragraph 2.1, D, 3 provides that the location of bird spikes. Provide bird spikes on all steel members not covered by bird netting.
11. The roof collateral load shall be coordinated with the PEMB subcontractor. The sizes, weights and locations of roof mounted equipment shall be coordinated with the PEMB supplier/designer, the architect and the mechanical engineer to account for all roof mounted equipment. Please note that the intent is for the bridge crane to be supported by the PEMB, see plan notes on 2/A110.
12. The PEMB manufacturer will be a subcontractor to the GC. Their engineering, schedule, etc. is entirely under the purview of the GC. The foundations are currently sized and designed based on preliminary load estimates that were performed by the design team. These loads must be verified prior to construction. This will happen through the PEMB supplier design and submittal process. Reactions provided by the PEMB supplier will be reviewed by design team against the assumed loads that were used to develop the current foundation design. Once reactions are provided, the Design team will revise the foundation design within 2 weeks.
13. The welder rack receptacle type shall be L16-20R, Coordinate exact location and mounting height with the Owner prior to rough in.
14. See the attached geotechnical report for the thickness of the granular fill under the slab.
15. This building does not have a fire alarm.
16. See detail 3/S521 for the bollard detail for the bollards located in the building. Locate bollards as shown on architectural drawings. See civil drawings for bollards located on the site.
17. Note the following finishes: All exposed steel shall receive a paint finish (see 099113, 3.7, A, 2) apart from the galvanized steel grating, which will keep its galvanized finish.

The concrete slab on grade will have a light broom finish, coordinate with owner and architect on approval of the finish. Bollards shall have a paint finish. Steel railings are painted steel with the exception of the handrail at the stairs, which will be galvanized and left unpainted.

18. This is an uninsulated building. There is no insulation on the roof or walls.
19. A weather-tightness warranty for the metal roof is specified and required.
20. There is no temporary signage requirement.
21. The complete scope of the medium-voltage switching equipment and distribution system is shown on the drawings. All other portions of the system will be in a future project.
22. See the civil grading plan for spot elevations for the finished slab. The slab slopes as shown.
23. The contractor is responsible for disposing of spoils on site, but confirm with MTC if any materials should be salvage before disposal.
24. There isn't an FAA height restriction to the building on this site.

END OF ADDENDUM NO. 1

MIDLANDS TECHNICAL COLLEGE - AIRPORT CAMPUS

KENTUCKY AVE

LEXINGTON BLVD

COLUMBIA METROPOLITAN AIRPORT

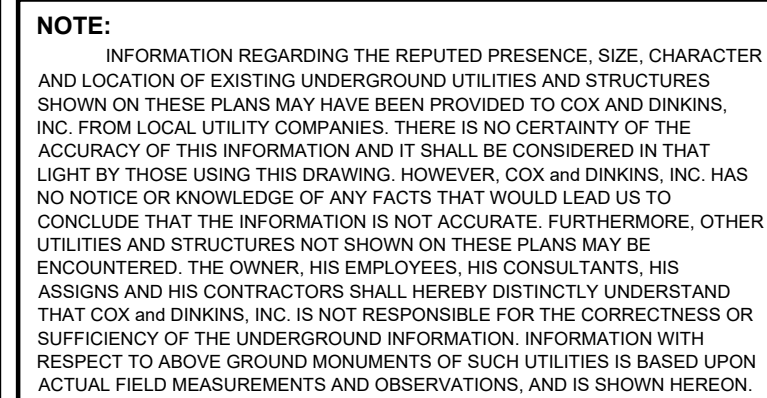
JOHN W. HARDEE EXPR

AIRPORT BLVD

PROJECT SITE

LOCATION MAP
(1"=1000')

NORTH



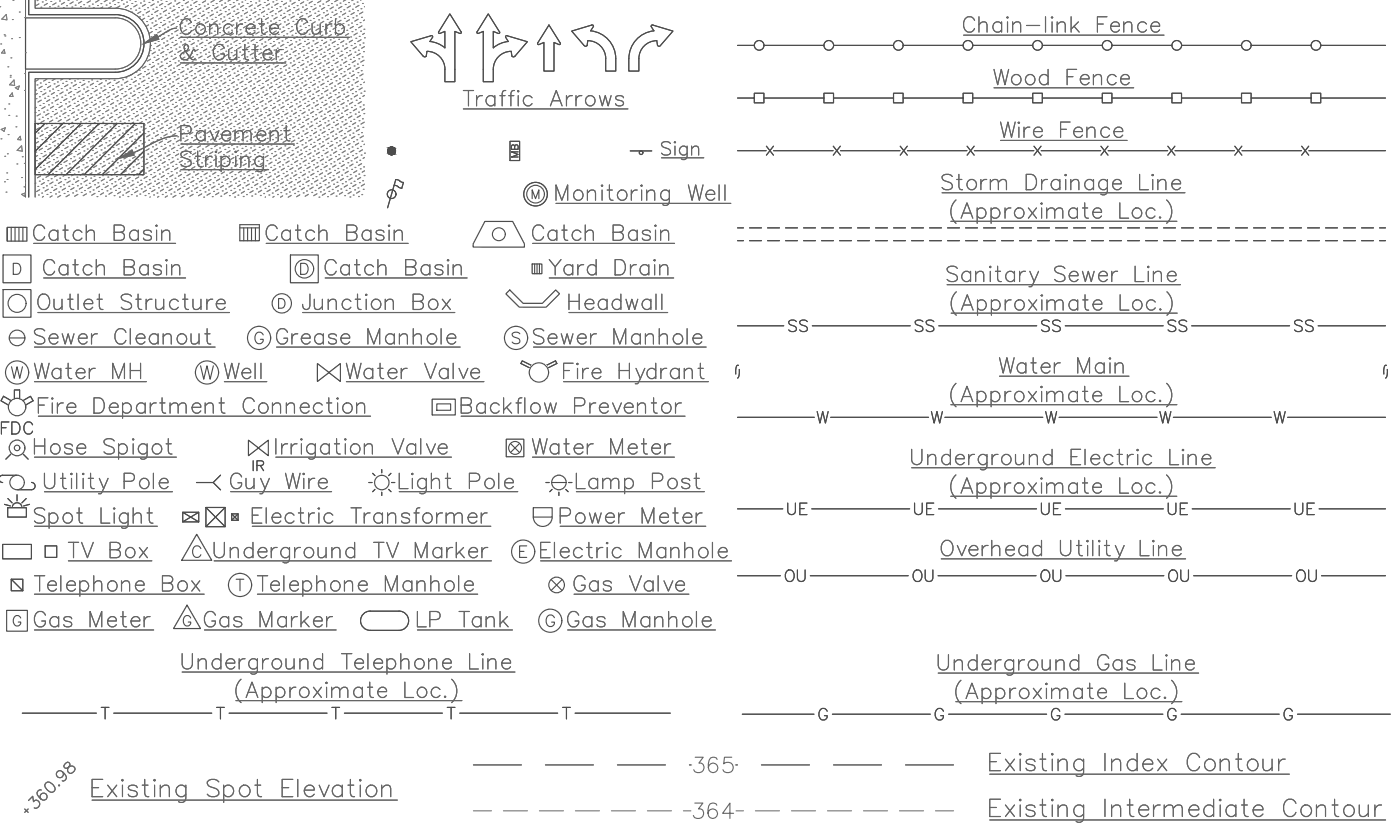
CODED NOTES

- | | |
|----|--|
| SC | CONTRACTOR SHALL SAW-CUT EXISTING PAVEMENT ALONG THE INDICATED LINE TO PROVIDE A CLEAN, STRAIGHT EDGE. |
| CE | CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY CONSTRUCTION ENTRANCE/EXIT. (SEE DETAIL.) CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES. |
| SP | CONTRACTOR SHALL FURNISH AND INSTALL WIRE-BACKED PERIMETER SILT FENCING PRIOR TO ANY CLEARING OR LAND DISTURBING ACTIVITIES. (SEE DETAIL.) ADDITIONAL SILT FENCING SHALL BE INSTALLED WITHIN THE LIMITS OF DISTURBANCE AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE. SILT FENCING SHALL NOT BE PLACED IN ACCESS CHANNELS OR IN AREAS SUBJECT TO CONCENTRATED FLOWS GREATER THAN 0.5 CFS. REFER TO THE SILT FENCE DETAIL FOR INSTALLATION, INSPECTION, AND MAINTENANCE REQUIREMENTS. TEMPORARY SILT FENCING SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ACHIEVED. |
| ST | CONTRACTOR SHALL FURNISH AND INSTALL 15 L' MIN. OF 8" FILLTRENZ SILT/SOXX SEDIMENT TUBE (OR APPROVED EQUAL) ON PAVEMENT ANCHORED WITH CMU BLOCK AT 5' O.C. ON DOWNHILL SIDE OF SEDIMENT TUBES. (SEE DETAIL.) |
| IP | CONTRACTOR SHALL FURNISH AND INSTALL INLET PROTECTION ON EXISTING GATCH BASIN. INSTALL SILT SAVIOR MODEL S-200A (OR APPROVED EQUAL) INLET PROTECTION. (SEE DETAIL.) |
| TP | INSTALL TREE PROTECTION FENCING AROUND TREES DESIGNATED TO REMAIN PRIOR TO CLEARING. MAINTAIN FENCING THROUGHOUT CONSTRUCTION. SEE TREE PROTECTION DETAILS AND LANDSCAPE PLANS. |
| CW | CONTRACTOR SHALL FURNISH AND INSTALL CONCRETE WASHOUT. EXACT LOCATION TO BE DETERMINED BY CONTRACTOR. PIT SHALL BE A MINIMUM OF 10'X10' AND 2' DEEP. DIVERT STORMWATER FLOW AROUND PIT. INSTALL SILT FENCE DOWNHILL SIDE. REMOVE AND PROPERLY DISPOSE OF CONCRETE AFTER FINAL STABILIZATION. (SEE DETAIL.) |
| SP | STOCKPILE AREA. THIS STOCKPILE SHALL BE SEED, STABILIZED, AND HAVE SILT FENCE AROUND THE BASE. (SEE DETAIL.) AFTER ACCESS ROUTE IS PLACED IN THE STOCKPILE AREA, IT SHALL BE DESTROYED AND/OR USED TO PERFORM ANY OTHER LAND DISTURBING ACTIVITIES DURING THIS PHASE OF THE PROJECT. |
| 1 | CONTRACTOR SHALL DEMOLISH EXISTING CONCRETE PAD, ASPHALT PAVEMENT, PERVIOUS PAVEMENT, CONCRETE KEY, AND CONCRETE CURB AND GUTTER AS SHOWN, AND PROPERLY DISPOSE OF ALL MATERIALS. |
| 2 | CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN 6' TALL TEMPORARY SECURITY FENCE FOR THE DURATION OF THE CONSTRUCTION. |
| 3 | CONTRACTOR SHALL REMOVE EXISTING TREE AND ASSOCIATED ROOTS. REFER TO THE LANDSCAPE PLAN FOR ADDITIONAL INFORMATION. |

INITIAL LAND DISTURBANCE SEQUENCE:

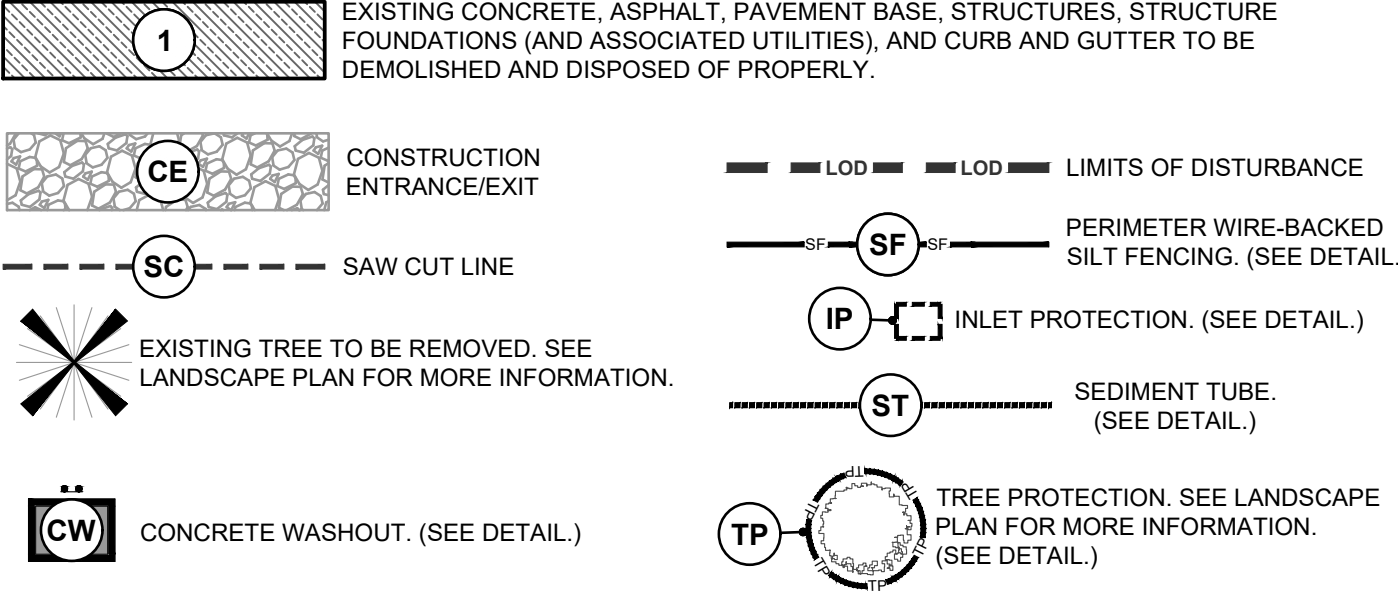
1. RECEIVE NPDES PERMIT APPROVAL FROM LEXINGTON COUNTY AND SCDES.
2. INITIAL APPLICATION FOR THE LAND DISTURBANCE PERMIT AND/OR GRADING PERMIT AND REQUEST A PRE-CONSTRUCTION CONFERENCE.
3. FLAG INITIAL LIMITS OF DISTURBANCE.
4. THE CONTRACTOR, OWNER AND/OR PRIMARY PERMITTEE, ENGINEER, AND COUNTY REPRESENTATIVES SHALL ATTEND AN ON-SITE PRE-CONSTRUCTION MEETING.
5. THE MEETING SHALL BE ATTENDED BY THE AGENCY'S DEVELOPMENT CENTER, PUBLIC WORKS DEPARTMENT, ENGINEERING DEPARTMENT, UTILITIES DEPARTMENT, AND/OR INSPECTOR'S OFFICE 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
6. INSTALLATION OF TEMPORARY PERIMETER SECURITY FENCE, (1 DAYS)
7. CLEAR ONLY WHAT IS NECESSARY TO INSTALL EROSION CONTROLS INCLUDING STABILIZED CONSTRUCTION ENTRANCE, PERIMETER SILT FENCING, SEDIMENT BASINS, AND DETENTION BASINS. BEGIN WEEKLY SWPPP INSPECTIONS UNTIL SITE IS STABILIZED. (4 DAYS)
8. EROSION CONTROL SHALL BE INSTALLED PRIOR TO ANY ACTIVITIES. SEDIMENT CONTROL IN STOCKPILE AREA. STOCKPILE AREA SHALL BE SEED, STABILIZED, AND HAVE WIRE-BALE SILT FENCING AROUND THE BASE AND ADJUSTED AS NEEDED IF STOCKPILE AREA LIES DORMANT FOR 14 DAYS. (1 DAY)
9. NOTIFY COUNTY PERSONNEL FOR INSPECTION OF EROSION CONTROL MEASURES.
10. MAKE GRADING ADJUSTMENTS AND OBTAIN APPROVAL OF EROSION CONTROL INSTALLATION.
11. TEMPORARILY ESTABLISH VEGETATION TO THE MAXIMUM EXTENT POSSIBLE ON ALL DISTURBED AREAS REQUIRED FOR INSTALLATION OF ALL ITEMS NOTED ABOVE PER THE EROSION CONTROL NOTES AND SEEDING SCHEDULE. (ONGOING)
12. DISCUSS ITEMS A-D NOTED ON THIS EXISTING CONDITIONS AND DEMO PLAN AND DISPOSE OF PER APPLICABLE REGULATIONS. (2 DAYS)
13. MAINTAIN EROSION AND SEDIMENT CONTROL DEVICES THROUGHOUT ALL STAGES OF CONSTRUCTION.
14. INSPECTIONS TO BE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 1/2 INCHES OR MORE OF PRECIPITATION. (ONGOING)
15. PROCEED TO THE CONSTRUCTION PHASE.

LEGEND



*NOTE: THIS LEGEND IS SHOWN FOR REFERENCE ONLY. ITEMS SHOWN IN THIS LEGEND MAY NOT EXIST ON, OR ADJACENT TO, THE PROJECT SITE.

DEMOLITION LEGEND



NOTES:

1. THE CONTRACTOR SHALL REVIEW AND UNDERSTAND ALL CONSTRUCTION SEQUENCES ON THE SWPP PLAN BEFORE STARTING ANY DEMOLITION AND/OR LAND DISTURBING ACTIVITIES.
2. ALL WORK WITHIN THE SCDOT RIGHT-OF-WAY SHALL COMPLY WITH THE APPROVED SCDOT ENCROACHMENT PERMIT.

DEMOLITION/CLEARING NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL ITEMS REQUIRING DEMOLITION OR REMOVAL. VERIFICATION INCLUDES VISITING AND WALKING THE SITE. ALL DEMOLITION/REMOVAL ITEMS—WHETHER SHOWN ON THE PLANS OR NOT—are the CONTRACTOR'S RESPONSIBILITY.
2. BURNING ON SITE IS PROHIBITED.
3. CONTRACTOR SHALL REMOVE ALL EXISTING STRUCTURES NOTED, INCLUDING FOOTINGS, FOUNDATIONS, STEPS, AND RELATED COMPONENTS. DISPOSE OF ALL MATERIALS IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
4. CONTRACTOR SHALL COORDINATE THE REMOVAL OR RELOCATION OF ALL UTILITIES (ABOVE AND BELOW GRADE) AS REQUIRED TO ACCOMMODATE THE IMPROVEMENTS AND FACILITATE CONSTRUCTION.
5. CONTRACTOR SHALL PROTECT ALL SERVICES DESIGNATED TO REMAIN, BE EXTENDED, OR BE REUSED.
6. CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL EXISTING CONCRETE AND ASPHALT PAVEMENT INDICATED FOR REMOVAL. OFF-SITE DISPOSAL SHALL COMPLY WITH APPLICABLE CODES.
7. CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL EXISTING GRASS AND SOILS NOT RETAINED BY THE OWNER. SHALL BE REMOVED AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
8. CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO BEGINNING DEMOLITION ACTIVITIES.
9. IF HAZARDOUS MATERIALS ARE ENCOUNTERED, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND APPROPRIATE AGENCIES AND COORDINATE PROPER REMOVAL AND DISPOSAL.
10. DEMOLITION WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
11. CONTRACTOR SHALL GRADE ALL DEMOLISHED AREAS TO DRAIN.
12. IF WELLS OR SEPTIC TANKS ARE ENCOUNTERED, CONTRACTOR SHALL ACCURATELY LOCATE AND BARRICADE THEM. MAINTAIN GRADES TO PREVENT RUNOFF FROM ENTERING THE OPENING, AND NOTIFY THE OWNER AND GEOTECHNICAL ENGINEER IMMEDIATELY. ABANDONMENT/REMOVAL SHALL COMPLY WITH APPLICABLE CODES.

UNDERGROUND UTILITIES:

COX AND DINKINS, INC. HAS ATTEMPTED TO LOCATE ALL KNOWN BURIED WATER AND SANITARY SEWER LINES, STORM DRAINAGE PIPES/STRUCTURES, AND OTHER UNDERGROUND UTILITIES. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST WITHIN THE LIMITS OF DISTURBANCE THAT ARE NOT KNOWN TO COX AND DINKINS, INC. IF A MORE DETAILED INVESTIGATION OF UNDERGROUND PIPES OR UTILITIES IS REQUIRED, COX AND DINKINS, INC. STRONGLY RECOMMENDS THAT AN INDEPENDENT THIRD-PARTY UNDERGROUND UTILITY LOCATOR BE RETAINED TO PERFORM THIS WORK.

REFERENCES:

1. SKETCH PREPARED FOR MIDLANDS TECHNICAL COLLEGE BY COX AND DINKINS, INC., DATED JANUARY 19, 2026, LAST REVISED MARCH 25, 2026.
2. TOPOGRAPHIC MAP PREPARED FOR MIDLANDS TECHNICAL COLLEGE WELDING BUILDING BY COX AND DINKINS, INC., DATED AUGUST 16, 2017.
3. PLAT OF SUBDIVISION & LIMITED TOPOGRAPHIC MAP PREPARED FOR MIDLAND TECHNICAL COLLEGE, JOHN N. HARDEE EXPRESSWAY AND KENTUCKY AVENUE BY COX AND DINKINS, INC., DATED JUNE 17, 2013.
4. RECORD DRAWING OF AIRPORT CONNECTOR ROAD UTILITY RELOCATIONS PREPARED FOR THE CITY OF CAYCE S.C. BY AMERICAN ENGINEERING CONSULTANTS, INC., DATED JULY 29, 2002.

GENERAL NOTES:

1. THE SUBJECT PROPERTY IS IDENTIFIED AS LEXINGTON COUNTY TAX MAP PARCEL RSM# 005699-04-002.
2. TOTAL AREA OF SUBJECT PROPERTY IS APPROXIMATELY 54.9 ACRES.
3. ZONING OF THE SUBJECT PARCEL IS ID. REQUIRED BUFFER = 0'. REQUIRED SETBACK FROM ADJOINING
PROPERTY AND ROAD R.T.W. = 0'.
4. CONTOUR INTERVAL ELEVATIONS ARE ONE (1) FOOT. ELEVATIONS SHOWN ARE NAVD 88 DATUM.
5. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE. THE LOCATIONS OF OTHER
UNDERGROUND UTILITIES AND THEIR SERVICES ARE UNKNOWN. CONTRACTOR SHALL LOCATE ALL UTILITIES
BEFORE ANY CONSTRUCTION.
6. THIS PROPERTY IS LOCATED IN FLOOD ZONE X PER FLOOD INSURANCE RATE MAP NUMBER 450630C207J
EFFECTIVE JULY 5, 2018, BY SCALED LOCATION AND GRAPHIC PLOTTING ONLY.
7. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT THEY AND THEIR SUBCONTRACTORS HAVE THE
CORRESPONDING TO-DATE PLANS AVAILABLE.
8. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

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C&D PROJECT NO. 26002



Daniel C. Lam 8/6/26
 LICENSED PROFESSIONAL ENGINEER
 NO. 20942



MIDLANDS TECHNICAL COLLEGE

OUTDOOR WELDING LAB

LOCATION
WEST COLUMBIA, SC

REVISIONS

NO.	DATE	DESCRIPTION
1	8/6/26	Addendum No. 1

STATE PROJECT NUMBER

PROJECT NUMBER **25098**

SHEET NUMBER

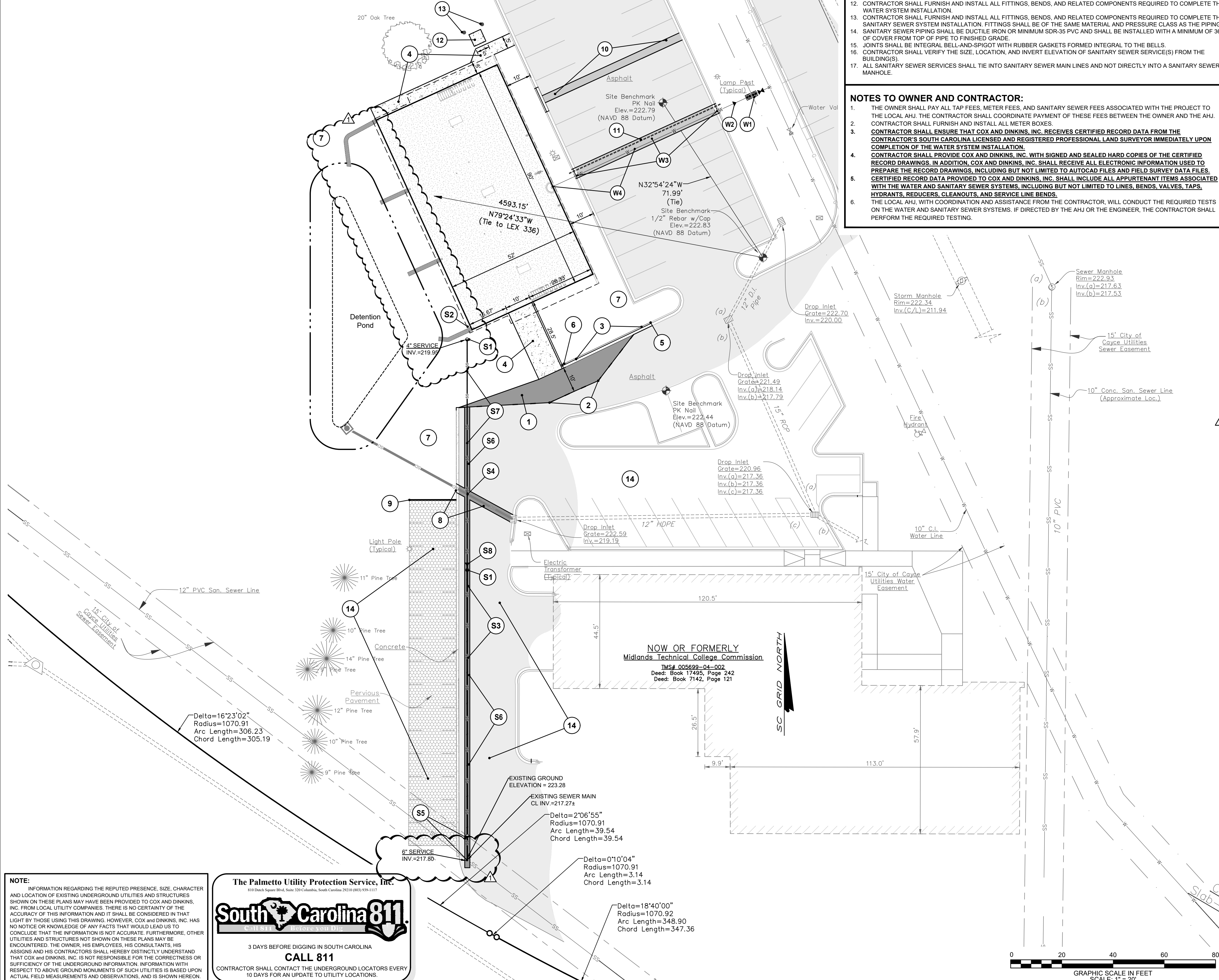
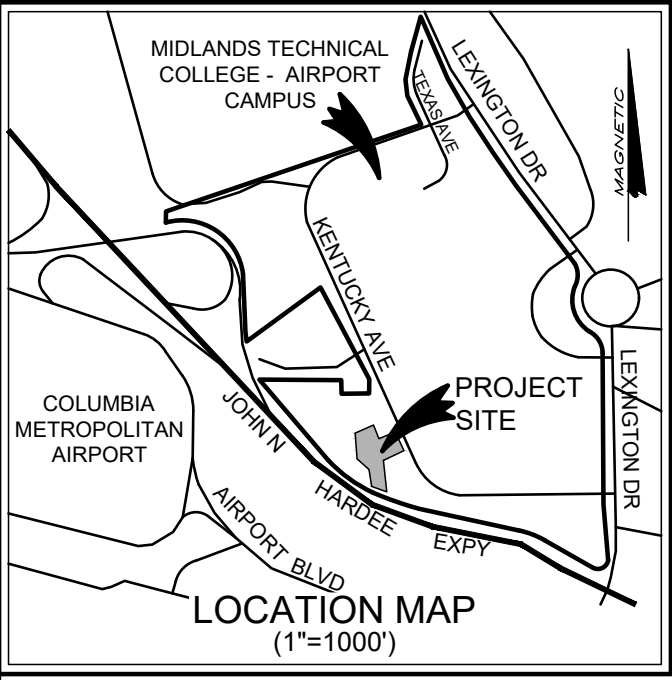
C101

SHEET NAME
**EXISTING CONDITIONS &
EMO PLAN**

DATE **07/06/2026**

G:\Proj\26002 MTC Outdoor Welding Lab\DRAWINGS\26002_Existing.dwg, Plotted By: DCL, Plotted: Aug 03, 2026 - 3:43pm
5/26/2026 9:03:12 AM

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WATER AND SANITARY SEWER SYSTEM NOTES:

1. ALL MATERIALS AND INSTALLATION FOR THE PROPOSED WATER AND SANITARY SEWER SYSTEMS SHALL MEET THE REQUIREMENTS OF THE CITY OF CAYCE AND SCDES.
2. ALL PROPOSED DOMESTIC AND FIRE-PROTECTION WATER SERVICE AND SANITARY SEWER SERVICE SHALL CONFORM TO "TEN STATE STANDARDS".
3. CONTRACTOR SHALL NOTIFY THE CITY OF CAYCE AND THE ENGINEER 48 HOURS PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS AND LICENSES FROM THE CITY OF CAYCE AND SCDES PRIOR TO CONSTRUCTION.
4. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED TESTING OF THE NEW WATER SERVICE IN ACCORDANCE WITH CITY OF CAYCE AND SCDES REQUIREMENTS.
5. CONTRACTOR SHALL FURNISH AND INSTALL A STONE SPLASH PAD AT ALL PROPOSED HYDRANTS OR OTHER DISCHARGE POINTS PRIOR TO REQUIRED WATER SYSTEM TESTING.
6. CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND/OR PERFORMING ALL REQUIRED TESTING OF THE NEW SANITARY SEWER SERVICE IN ACCORDANCE WITH CITY OF CAYCE AND SCDES REQUIREMENTS. AT A MINIMUM, PRESSURE TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER AND A REPRESENTATIVE OF THE CITY OF CAYCE.
7. CONTRACTOR SHALL FURNISH AND INSTALL SILT FENCING AND/OR OTHER SEDIMENT AND EROSION CONTROL DEVICES AS NECESSARY TO LIMIT EROSION TO THE MAXIMUM EXTENT POSSIBLE DURING INSTALLATION AND TESTING OF THE WATER AND SANITARY SEWER SYSTEMS.
8. ALL DISTURBED AREAS RESULTING FROM INSTALLATION OF THE PROPOSED WATER AND SANITARY SEWER SYSTEMS SHALL BE CLEANED, GRADED, AND IMMEDIATELY STABILIZED UPON COMPLETION.
9. OTHER UTILITY CROSSINGS MAY EXIST THAT ARE NOT SHOWN ON THE CONSTRUCTION PLANS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION AND ELEVATION OF ALL EXISTING AND PROPOSED UTILITY CROSSINGS PRIOR TO CONSTRUCTION.
10. CONTRACTOR SHALL MAINTAIN, PROTECT, RELOCATE, OR CONNECT ANY OPERATING UTILITIES ENCOUNTERED DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE PLANS. NOTIFY THE ARCHITECT AND ENGINEER IMMEDIATELY IF UNKNOWN UTILITIES ARE ENCOUNTERED.
11. CONTRACTOR SHALL FURNISH AND INSTALL ALL FITTINGS, BENDS, AND RELATED COMPONENTS REQUIRED TO COMPLETE THE WATER SYSTEM INSTALLATION.
12. CONTRACTOR SHALL FURNISH AND INSTALL ALL FITTINGS, BENDS, AND RELATED COMPONENTS REQUIRED TO COMPLETE THE SANITARY SEWER SYSTEM INSTALLATION. FITTINGS SHALL BE OF THE SAME MATERIAL AND PRESSURE CLASS AS THE PIPING OF COVER FROM TOP OF PIPE TO FINISHED GRADE.
13. SANITARY SEWER PIPING SHALL BE DUCTILE IRON OR MINIMUM SDR-35 PVC AND SHALL BE INSTALLED WITH A MINIMUM OF 36\"/>
14. JOINTS SHALL BE INTEGRAL BELL-AND-SPIGOT WITH RUBBER GASKETS FORMED INTEGRAL TO THE BELLS.
15. CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, AND INVERT ELEVATION OF SANITARY SEWER SERVICE(S) FROM THE BUILDING(S).
16. ALL SANITARY SEWER SERVICES SHALL TIE INTO SANITARY SEWER MAIN LINES AND NOT DIRECTLY INTO A SANITARY SEWER MANHOLE.

NOTES TO OWNER AND CONTRACTOR:

1. THE OWNER SHALL PAY ALL TAP FEES, METER FEES, AND SANITARY SEWER FEES ASSOCIATED WITH THE PROJECT TO THE LOCAL AHJ. THE CONTRACTOR SHALL COORDINATE PAYMENT OF THESE FEES BETWEEN THE OWNER AND THE AHJ.
2. CONTRACTOR SHALL FURNISH AND INSTALL ALL METER BOXES.
3. **CONTRACTOR SHALL ENSURE THAT COX AND DINKINS, INC. RECEIVES CERTIFIED RECORD DATA FROM THE CONTRACTOR'S SOUTH CAROLINA LICENSED AND REGISTERED PROFESSIONAL LAND SURVEYOR IMMEDIATELY UPON COMPLETION OF THE WATER SYSTEM INSTALLATION.**
4. **CONTRACTOR SHALL PROVIDE COX AND DINKINS, INC. WITH SIGNED AND SEALED HARD COPIES OF THE CERTIFIED RECORD DRAWINGS. IN ADDITION, COX AND DINKINS, INC. SHALL RECEIVE ALL ELECTRONIC INFORMATION USED TO PREPARE THE RECORD DRAWINGS, INCLUDING BUT NOT LIMITED TO AUTOCAD FILES AND FIELD SURVEY DATA FILES.**
5. **CERTIFIED RECORD DATA PROVIDED TO COX AND DINKINS, INC. SHALL INCLUDE ALL APPURTENANT ITEMS ASSOCIATED WITH THE WATER AND SANITARY SEWER SYSTEMS, INCLUDING BUT NOT LIMITED TO LINES, BENDS, VALVES, TAPS, HYDRANTS, REDUCERS, CLEANOUTS, AND SERVICE LINE BENDS.**
6. THE LOCAL AHJ, WITH COORDINATION AND ASSISTANCE FROM THE CONTRACTOR, WILL CONDUCT THE REQUIRED TESTS ON THE WATER AND SANITARY SEWER SYSTEMS, IF DIRECTED BY THE AHJ OR THE ENGINEER. THE CONTRACTOR SHALL PERFORM THE REQUIRED TESTING.

PAVEMENT LEGEND

1	HEAVY DUTY ASPHALTIC CONCRETE PAVEMENT (SEE DETAIL.)	4	STANDARD DUTY CONCRETE PAVEMENT (SEE DETAIL.)
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CODED NOTES

- 1** HEAVY DUTY ASPHALTIC CONCRETE PAVEMENT. CONTRACTOR SHALL VERIFY THE REQUIRED PAVEMENT SECTION WITH PROJECT GEOTECHNICAL REPORT AND/OR THE OWNER'S GEOTECHNICAL ENGINEER. (TYPICAL; SEE DETAIL.)
- 2** CONTRACTOR SHALL TIE NEW ASPHALT PAVEMENT INTO EXISTING PAVEMENT THE INDICATED LINE.
- 3** FURNISH AND INSTALL NEW 18\"/>
- 4** FURNISH AND INSTALL 4\"/>
- 5** CONTRACTOR SHALL TIE NEW CURB AND GUTTER INTO EXISTING CURB AND GUTTER AT THE INDICATED LOCATION.
- 6** FEATHER CURB AT THIS LOCATION. (SEE DETAIL.)
- 7** LANDSCAPE AREA. REFER TO THE LANDSCAPE PLANS FOR PERMANENT GROUND COVER.
- 8** CONTRACTOR SHALL PATCH ASPHALT DRIVEWAY AND CONCRETE KEY AFTER INSTALLATION OF STORM DRAINAGE LINE. SEE ASPHALT PATCH DETAIL.
- 9** CONTRACTOR SHALL INSTALL TIMBER TO MAINTAIN EDGE OF PERVIOUS PAVEMENT.
- 10** APPROXIMATE LOCATION ELECTRICAL SERVICE LINE BY OTHERS. CONTRACTOR SHALL REPAIR CONCRETE CURB, PATCH ASPHALT PARKING LOT, AND RESTRIPE PARKING STALLS AS NECESSARY AFTER INSTALLATION OF ELECTRICAL SERVICE LINE. SEE ASPHALT PATCH DETAIL. SEE ELECTRICAL PLAN FOR MORE INFORMATION.
- 11** FURNISH AND INSTALL IRRIGATION SLEEVING IN THE SAME TRENCH AS THE WATER SERVICE. COORDINATE WITH TOMMY WISE, 803-707-0479, MIDLANDS TECH OPERATIONS, FOR SIZE AND NUMBER. (SEE DETAIL.)
- 12** CONCRETE TRANSFORMER PAD. SEE ELECTRICAL PLANS FOR DETAILS.
- 13** CONTRACTOR SHALL INSTALL PROTECTIVE BOLLARDS. SEE DETAILS.
- 14** THESE AREAS ARE TO REMAIN ACCESSIBLE FOR STUDENT AND FACULTY USE AND MATERIAL DELIVERY. COORDINATE WITH TOMMY WISE, 803-707-0479, MTC OPERATIONS, FOR ACCESSIBILITY OF THESE AREAS DURING THE SANITARY SEWER SERVICE AND STORM DRAINAGE CONSTRUCTION.

SEWER LEGEND

	PROPOSED SEWER SERVICE		EXISTING SEWER MANHOLE
	PROPOSED SEWER CLEANOUT		EXISTING SEWER MAIN
			EXISTING SANITARY SEWER EASEMENT

CODED SEWER NOTES

- S1** NEW SANITARY SEWER CLEANOUT. USE TRAFFIC-RATED MATERIALS IN PAVEMENT AREAS. (TYPICAL; SEE DETAIL.)
- S2** APPROXIMATE LOCATION WHERE DOMESTIC SANITARY SEWER SERVICE LINE EXISTS THE BUILDING. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE SEWER SERVICE STUB-OUT FROM THE PROPOSED BUILDING USING THE BUILDING PLUMBING AND/OR ARCHITECTURAL PLANS. NOTIFY THE ENGINEER IMMEDIATELY IF THE STUB-OUT INVERT ELEVATION IS BELOW 219.95.
- S3** CONTRACTOR SHALL FURNISH AND INSTALL 6\"/>
- S4** PROPOSED SANITARY SEWER SERVICE LINE CROSSES THE STORM DRAINAGE LINE AT THIS LOCATION. 4\"/>
- S5** CONTRACTOR SHALL TAP NEW SANITARY SEWER SERVICE INTO THE EXISTING SANITARY SEWER LINE AT THE INDICATED LOCATION. THE CITY OF CAYCE UTILITIES DEPARTMENT SHALL BE PROVIDED BY CITY OF CAYCE AFTER APPLICATION AND PAYMENT OF ALL REQUIRED FEES BY OWNER. COORDINATE WITH THE CITY OF CAYCE AS APPLICABLE.
- S6** CONTRACTOR SHALL PATCH ASPHALT DRIVEWAY WITH HEAVY DUTY PAVEMENT AS EXISTING AFTER INSTALLATION OF SEWER SERVICE LINE. SEE ASPHALT PATCH DETAIL.
- S7** CONTRACTOR SHALL FURNISH AND INSTALL 4\"/>
- S8** CONTRACTOR SHALL FURNISH AND INSTALL 6\"/>

WATER LEGEND

	PROPOSED WATER SERVICE		EXISTING WATER EASEMENT
	PROPOSED WATER VALVE		EXISTING WATER METER
	EXISTING WATER MAIN		EXISTING FIRE HYDRANT
	EXISTING WATER VALVE		

CODED WATER NOTES

- W1** THE CITY APPROVED CONTRACTOR SHALL TAP EXISTING 10\"/>
- W2** CONTRACTOR SHALL INCREASE PVC SERVICE LINE FROM 1\"/>
- W3** CONTRACTOR SHALL REPAIR CONCRETE CURB, PATCH ASPHALT PARKING LOT, AND RESTRIPE PARKING STALLS AS NECESSARY AFTER INSTALLATION OF WATER SERVICE LINE AND IRRIGATION SLEEVING. SEE ASPHALT PATCH DETAIL.
- W4** CONTRACTOR SHALL EXTEND 1-1/2\"/>

Construction Documents

REFERENCES:

1. SKETCH PREPARED FOR MIDLANDS TECHNICAL COLLEGE BY COX AND DINKINS, INC., DATED JANUARY 19, 2026.
2. LAST REVISED MARCH 25, 2026.
3. TOPOGRAPHIC MAP PREPARED FOR MIDLANDS TECHNICAL COLLEGE WELDING BUILDING BY COX AND DINKINS, INC., DATED AUGUST 16, 2017.
4. PLAT OF SUBDIVISION & LIMITED TOPOGRAPHIC MAP PREPARED FOR MIDLAND TECHNICAL COLLEGE, JOHN N. HARDEE EXPRESSWAY AND KENTUCKY AVENUE BY COX AND DINKINS, INC., DATED JUNE 17, 2013.
5. RECORD DRAWING OF REPORT CONNECTOR ROAD UTILITY RELOCATIONS PREPARED FOR THE CITY OF CAYCE, S.C., BY AMERICAN ENGINEERING CONSULTANTS, INC., DATED JULY 29, 2002.

GENERAL NOTES:

1. THE SUBJECT PROPERTY IS IDENTIFIED AS LEXINGTON COUNTY TAX MAP PARCEL TMS# 005699-04-002.
2. TOTAL AREA OF SUBJECT PROPERTY IS APPROXIMATELY 54.9 ACRES.
3. ZONING OF THE SUBJECT PARCEL IS ID. REQUIRED BUFFER = 0'. REQUIRED SETBACK FROM ADJOINING PROPERTY AND ROAD R.O.W. = 0'.
4. CONTOUR INTERVAL ELEVATIONS ARE ONE (1) FOOT. ELEVATIONS SHOWN ARE NAVD 88 DATUM.
5. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE. THE LOCATIONS OF OTHER UNDERGROUND UTILITIES AND THEIR SERVICES ARE UNKNOWN. CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
6. THIS PROPERTY IS LOCATED IN FLOOD ZONE X PER FLOOD INSURANCE RATE MAP NUMBER 45063C0278J EFFECTIVE JULY 5, 2018, BY SCALED LOCATION AND GRAPHIC PLOTTING ONLY.
7. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT THEY AND THEIR SUBCONTRACTORS HAVE THE CORRECTMOST UP-TO-DATE PLANS AVAILABLE.
8. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

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C&D PROJECT NO. 26002

Daniel C. Lem 01426
LICENSED PROFESSIONAL ENGINEER
NO. 20942

COX AND DINKINS, INC.
No. C00294

CLIENT NAME
MIDLANDS TECHNICAL COLLEGE

PROJECT NAME
OUTDOOR WELDING LAB

LOCATION
WEST COLUMBIA, SC

REVISIONS		
NO.	DATE	DESCRIPTION
1	8/6/26	Addendum No. 1

STATE PROJECT NUMBER
H59-N348-AT

PROJECT NUMBER
25098

SHEET NUMBER
C102

SHEET NAME
SITE & UTILITY CONNECTION PLAN

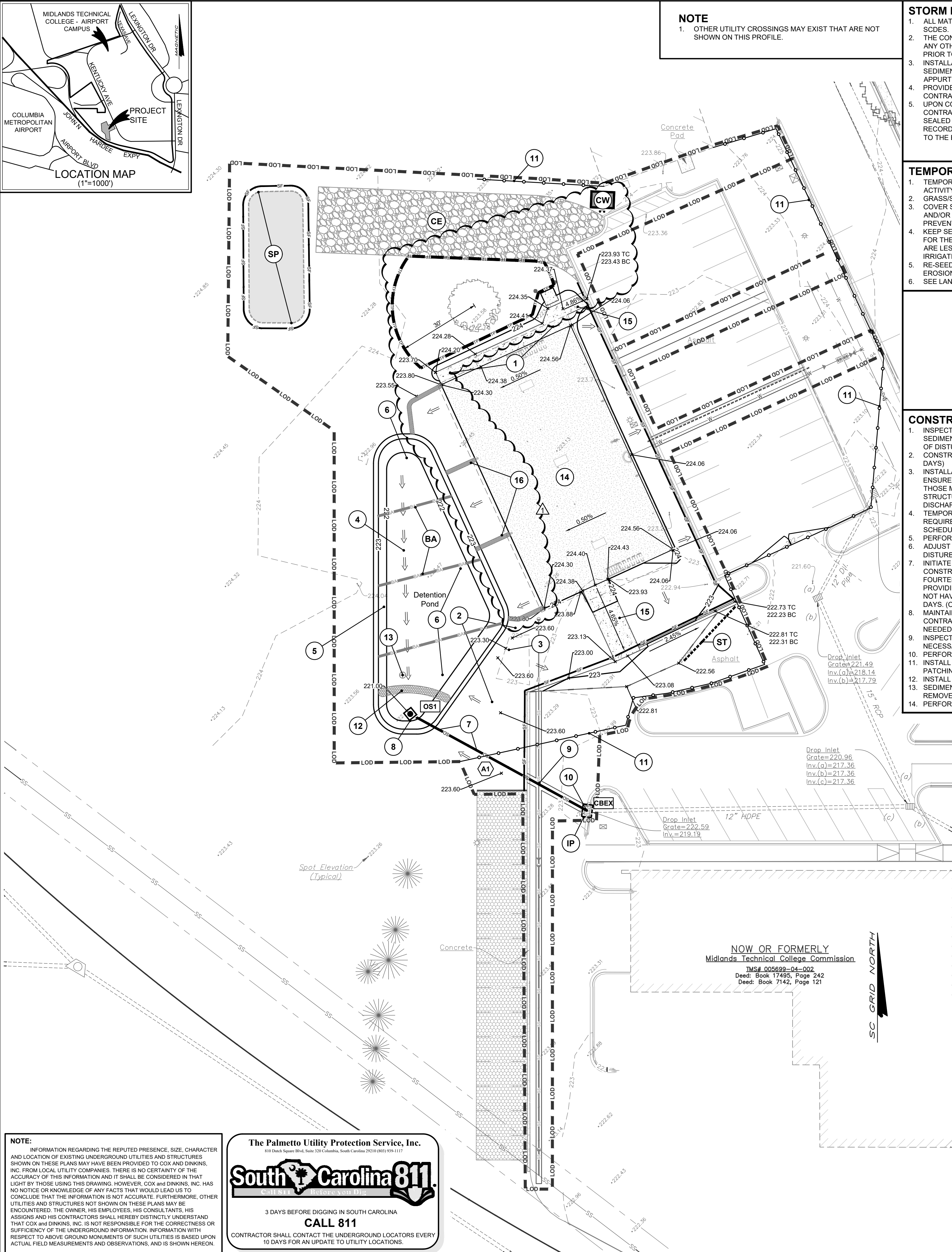
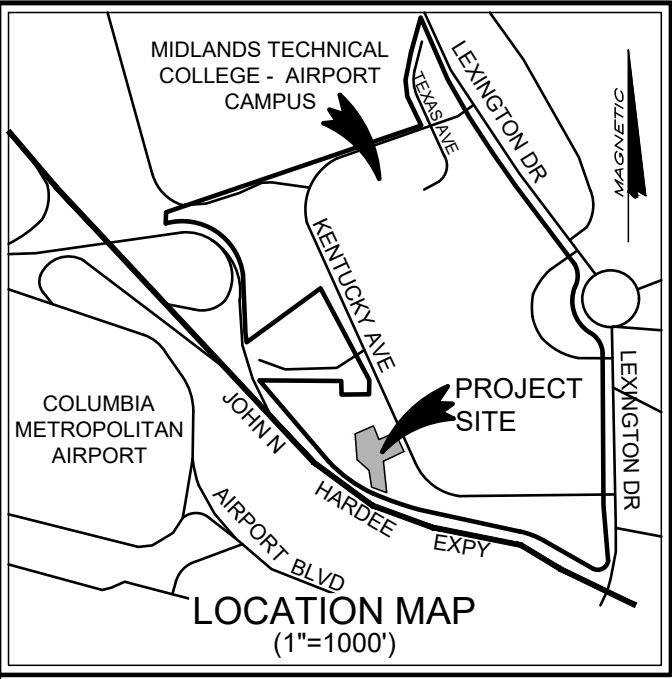
DATE
07/06/2026

NOTE:
INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES SHOWN ON THESE PLANS MAY HAVE BEEN PROVIDED TO COX AND DINKINS, INC. FROM LOCAL UTILITY COMPANIES. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. HOWEVER, COX AND DINKINS, INC. HAS NO NOTICE OR KNOWLEDGE OF ANY FACTS THAT WOULD LEAD US TO CONCLUDE THAT THE INFORMATION IS NOT ACCURATE. FURTHERMORE, OTHER UTILITIES AND STRUCTURES NOT SHOWN ON THESE PLANS MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS ASSIGNS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT COX AND DINKINS, INC. IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THE UNDERGROUND INFORMATION. INFORMATION WITH RESPECT TO ABOVE GROUND MONUMENTS OF SUCH UTILITIES IS BASED UPON ACTUAL FIELD MEASUREMENTS AND OBSERVATIONS AND IS SHOWN HEREON.

The Palmetto Utility Protection Service, Inc.
810 Dutch Square Blvd., Suite 330 Columbia, South Carolina 29201 (803) 939-1117

South Carolina 811
CALL 811
CONTRACTOR SHALL CONTACT THE UNDERGROUND LOCATORS EVERY 10 DAYS FOR AN UPDATE TO UTILITY LOCATIONS.

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The Palmetto Utility Protection Service, Inc.
810 Dutch Square Blvd, Suite 120 Columbia, South Carolina 29210 (803) 939-1117
South Carolina 811
3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 811
CONTRACTOR SHALL CONTACT THE UNDERGROUND LOCATORS EVERY 10 DAYS FOR AN UPDATE TO UTILITY LOCATIONS.

NOTE
1. OTHER UTILITY CROSSINGS MAY EXIST THAT ARE NOT SHOWN ON THIS PROFILE.

STORM DRAINAGE NOTES:

1. ALL MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE LOCAL GOVERNING AGENCY AND SDCES.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL REQUIRED LAND DISTURBANCE PERMITS AND ANY OTHER PERMITS NECESSARY FOR THIS PROJECT HAVE BEEN ISSUED BY THE GOVERNING AGENCIES PRIOR TO THE START OF CONSTRUCTION.
3. INSTALLATION OF SEDIMENT CONTROL STRUCTURES AND MEASURES—including, BUT NOT LIMITED TO, SEDIMENT BASINS, DIVERSION SWALES, ASSOCIATED STORM DRAINAGE PIPING, AND ALL RELATED APPURTENANCES—SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
4. PROVIDE WATER QUALITY LIDS AND/OR SYMBOLS ON ALL STORM DRAINAGE STRUCTURES. IF NECESSARY, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL.
5. UPON COMPLETION OF THE BASIN(S) AND INSTALLATION OF ALL STORM DRAINAGE ELEMENTS, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH RECORD STORM DRAINAGE DRAWINGS SIGNED AND SEALED BY A LICENSED SURVEYOR. ALL ELECTRONIC INFORMATION USED TO PREPARE THE RECORD DRAWINGS—including AUTOCAD FILES AND FIELD SURVEY DATA FILES—SHALL ALSO BE PROVIDED TO THE ENGINEER.

TEMPORARY STABILIZATION NOTES:

1. TEMPORARY STABILIZATION IS REQUIRED ON ALL DISTURBED AREAS WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY IS COMPLETE UNLESS CONSTRUCTION ACTIVITY IS GOING TO RESUME WITHIN 21 DAYS.
2. GRASS/SEED ALL AREAS PER THE TEMPORARY SEEDING SCHEDULE.
3. COVER SEEDER AREAS WITH AN APPROPRIATE MULCH TO PROVIDE PROTECTION FROM EROSION, WEATHER, AND/OR WASHOUT. WHEN THE TEMPORARY VEGETATION DOES NOT GROW QUICKLY OR THICK ENOUGH TO PREVENT EROSION, RE-SEED AND IRRIGATE AS SOON AS POSSIBLE.
4. KEEP SEEDER AREAS ADEQUATELY MOIST. IRRIGATE SEEDER AREA IF NORMAL RAINFALL IS NOT ADEQUATE FOR THE GERMINATION AND GROWTH OF SEEDLINGS. WATER SEEDER AREAS AT CONTROLLED RATES THAT ARE LESS THAN THE RATE AT WHICH THE SOIL CAN ABSORB WATER TO PREVENT RUNOFF. RUNOFF OF IRRIGATION WATER WASTES WATER AND CAN CAUSE EROSION.
5. RE-SEED AREAS WHERE SEEDING DOES NOT GROW QUICKLY, THICK ENOUGH, OR ADEQUATELY TO PREVENT EROSION.
6. SEE LANDSCAPE/IRRIGATIONS PLANS FOR PERMANENT STABILIZATION MEASURES.

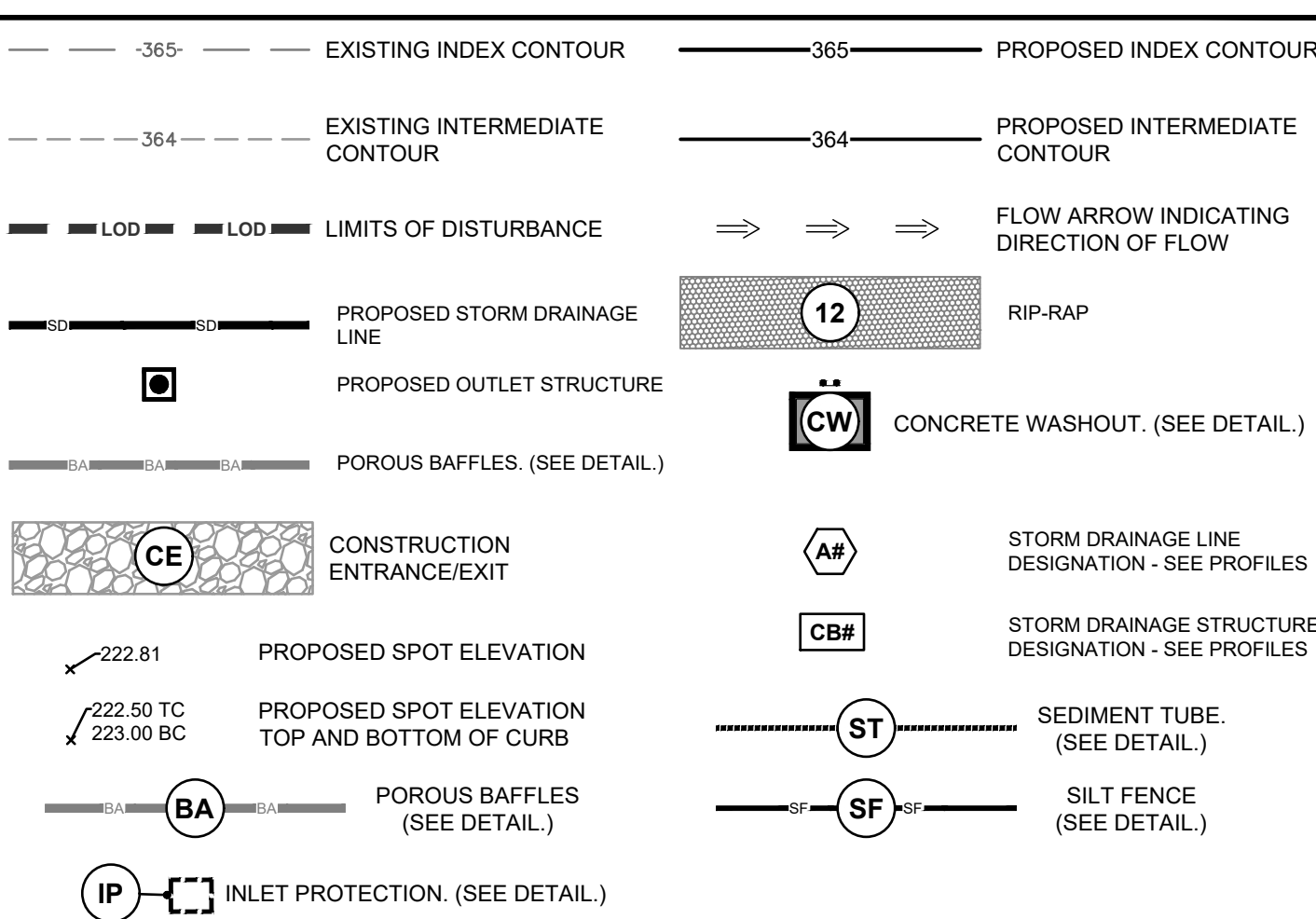
FINAL STABILIZATION NOTE:

TEMPORARY SEEDING WILL NOT BE ACCEPTED AS A FINAL STABILIZATION MEASURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT PERMANENT SEEDING IS APPLIED IN STRICT ACCORDANCE WITH PERMANENT SEEDING SCHEDULE OR LANDSCAPE PLANS AND THAT ALL SEEDER AND/OR SODDED AREAS ARE ADEQUATELY IRRIGATED BY ANY AND ALL MEANS NECESSARY TO ESTABLISH VEGETATION AS REQUIRED TO ACHIEVE FINAL STABILIZATION, WHICH IS DEFINED BY 70% COVERAGE OVER 100% OF THE DISTURBED AREA.

CONSTRUCTION/STABILIZATION PHASE SEQUENCE:

1. INSPECT PERIMETER CONTROLS INSTALLED DURING THE INITIAL LAND DISTURBANCE PHASE FOR DAMAGE AND SEDIMENT BUILD UP. REPAIR AS NECESSARY AND REMOVE ANY ACCUMULATED SEDIMENT. FLAG INITIAL LIMITS OF DISTURBANCE/INSTALL WETLANDS BUFFER SIGNS IF APPLICABLE(1 DAY)
2. CONSTRUCT SEDIMENT TRAP WITH OUTLET STRUCTURE, OUTLET PIPE, BAFFLES AND STONE FILTER BERM. (10 DAYS)
3. INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES AND OR DIVERSIONS AS NECESSARY TO ENSURE RUNOFF IS DIRECTED INTO THE CONTROL STRUCTURE(S). ENSURE RUNOFF CONVEYANCE FROM THOSE MEASURES DO NOT ERODE THE STRUCTURE SIDES OR POINTS OF DISCHARGE INTO THE STRUCTURE(S). ADDITIONAL RIP-RAP OR OTHER EROSION CONTROL METHODS MAY BE NEEDED AT ALL POINT DISCHARGE LOCATIONS INTO THE TRAP FROM TEMPORARY SWALES AND/OR DIVERSION DITCHES. (2 DAYS)
4. TEMPORARILY ESTABLISH VEGETATION TO THE MAXIMUM EXTENT POSSIBLE ON ALL DISTURBED AREAS REQUIRED FOR INSTALLATION OF ALL ITEMS NOTED ABOVE PER THE EROSION CONTROL NOTES AND SEEDING SCHEDULE.
5. PERFORM ROUGH GRADING OF THE SITE. (7 DAYS)
6. ADJUST TEMPORARY SWALES AND/OR DIVERSION DITCHES SUCH THAT SEDIMENT LADEN WATER FROM LAND DISTURBING ACTIVITIES IS DIRECTED INTO THE SEDIMENT TRAP. (1 DAY)
7. INITIATE STABILIZATION MEASURES AS SOON AS PRACTICAL ON PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORKED HAS CEASED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUFFICIENT IRRIGATION TO ESTABLISH VEGETATION. TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED WHERE EARTH MOVING OPERATIONS WILL BE RESUMED WITHIN FOURTEEN (14) DAYS. (ONGOING)
8. MAINTAIN EROSION AND SEDIMENT CONTROL DEVICES THROUGHOUT ALL STAGES OF CONSTRUCTION. THE CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL SEDIMENT AND EROSION CONTROL DEVICES AS NEEDED AND/OR AS DIRECTED BY THE ENGINEER OR INSPECTOR. (ONGOING)
9. INSPECT SEEDER AREAS WHERE STABILIZATION MEASURES HAVE BEEN INITIATED AND RE-APPLY SEED AS NECESSARY TO ACHIEVE AND MAINTAIN A MINIMUM 70% COVERAGE OF THE SEEDER AREAS. (1 DAY)
10. PERFORM FINE GRADING FOR BUILDING PAD, SIDEWALKS, CURBING AND PAVING. (10 DAYS)
11. INSTALL WATER, SANITARY SEWER SERVICE LINES, AND OTHER NECESSARY UTILITIES AND PERFORM ASPHALT PATCHING. (5 DAYS)
12. INSTALL CONCRETE SIDEWALKS, CURBING, AND ASPHALT PAVING. (5 DAYS)
13. SEDIMENT TRAP MAY BE CONVERTED TO A PERMANENT DETENTION POND AFTER 80% OF SITE IS STABILIZED. REMOVE SEDIMENT, POROUS BAFFLES FROM SEDIMENT TRAP AND GRADE TO FINAL DESIGN GRADES. (3 DAYS)
14. PERFORM PERMANENT/FINAL STABILIZATION. (2 DAYS)

GRADING LEGEND



CODED NOTES

1. MAINTAIN TEMPORARY CONSTRUCTION ENTRANCE/EXIT INSTALLED DURING THE INITIAL DEMOLITION. (SEE DETAIL.)
2. MAINTAIN SEDIMENT TUBE EROSION CONTROL INSTALLED AT INITIAL DEMOLITION.
3. MAINTAIN CONCRETE WASHOUT. EXACT LOCATION TO BE DETERMINED BY CONTRACTOR. DIVERT STORMWATER FLOW AROUND PIT AS NECESSARY. REMOVE AND PROPERLY DISPOSE OF CONCRETE AFTER FINAL STABILIZATION. (SEE DETAIL.)
4. STOCKPILE AREA. THIS AREA SHALL BE SEEDER, STABILIZED, AND HAVE SILT FENCE AROUND THE BASE. (SEE DETAIL.) AFTER EXCESS MATERIAL IS PLACED IN THE STOCKPILE AREA IT SHALL NOT BE DISTRIBUTED AND/OR USED TO PERFORM ANY OTHER LAND DISTURBING ACTIVITIES DURING THIS PHASE OF THE PROJECT.
5. MAINTAIN INLET PROTECTION INSTALLED AT INITIAL DEMOLITION.
6. INSTALL POROUS BAFFLES AS SHOWN. (SEE DETAIL)
7. SIDEWALK MAXIMUM CROSS SLOPE SHALL BE 2.0%. CONTRACTOR SHALL ENSURE THAT ALL SIDEWALK INSTALLATION MEETS ADA STANDARDS.
8. CONSTRUCT 5' MIN. WIDE BERM AT ELEVATION = 223.60'. TOP OF BERM MUST BE THIS GRADE AFTER SETTLEMENT.
9. CONSTRUCT 5' WIDE GRASSED EMERGENCY SPILLWAY AT ELEVATION = 223.30'.
10. MAINTAIN A MINIMUM OF 1.0% SLOPE ALONG BOTTOM OF THE DETENTION AREA. FLOW ARROWS INDICATING DIRECTION OF FLOW.
11. SLOPE = 3 TO 1 MIN.
12. SLOPE = 5 TO 1 MIN.
13. 12" HDPE DRAIN LINE @ 0.5% MIN. REFER TO PROFILE FOR MORE INFORMATION.
14. OUTLET STRUCTURE (OS1) WITH SKIMMER AND BOOT SHALL BE INSTALLED DURING THE INITIAL LAND DISTURBANCE PHASE. THE SKIMMER SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED. AFTER SKIMMER REMOVAL AND STABILIZATION, INSTALL THE ORIFICE HOOD OVER THE ORIFICE. (SEE DETAIL.)
15. PROPOSED STORM DRAINAGE CROSSES OVER THE SEWER LINE AT THIS LOCATION. REFER TO THE PROFILE FOR MORE INFORMATION.
16. CONNECT NEW STORM DRAINAGE LINE TO EXISTING CATCH BASIN AT THIS LOCATION. CORE HOLE INTO EXISTING STRUCTURE FOR THE NEW PIPE CONNECTION AND GROUT TO ACHIEVE A WATERTIGHT SEAL.
17. CONTRACTOR SHALL FURNISH AND INSTALL 6' TALL SECURITY FENCE. (SEE DETAIL.)
18. CONTRACTOR SHALL FURNISH AND INSTALL STONE FILTER BERM. (TYP.) (SEE DETAIL)
19. INSTALL 4' TALL 2"x4" STAKE IN BASIN MARKED TO INDICATE HALF OF THE SEDIMENT STORAGE. CLEAN SEDIMENT OUT OF BASIN WHEN ACCUMULATION REACHES THIS LEVEL. (SEE DETAIL)
20. CANOPY CONCRETE PAD DESIGNED BY OTHERS. SEE ARCHITECTURAL PLANS.
21. SIDEWALK MAXIMUM CROSS SLOPE SHALL BE 2.0%. MAXIMUM LONGITUDINAL SLOPE SHALL BE 5.0%. CONTRACTOR SHALL ENSURE THAT ALL SIDEWALK INSTALLATION MEETS ADA STANDARDS.
22. EXCAVATE AND INSTALL 18" WIDE, 6" DEEP RIVER ROCK CHANNEL LINE WITH NON-WOVEN GEOTEXTILE FABRIC FROM DOWNSPROUTS TO THE DETENTION POND AT 1.0% MIN SLOPE (TYP.)

GRADING NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ALL MEASURES NECESSARY, INCLUDING GRADING ADDITIONAL SWALES AS NEEDED, TO ENSURE POSITIVE DRAINAGE AWAY FROM AND AROUND ALL BUILDINGS.
2. ALL RUNOFF SHALL BE DIRECTED TOWARD DRAINAGE SWALES, DITCHES, CATCH BASINS, AND STORM WATER BASINS.
3. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL THE INFORMATION PROVIDED BY THE OWNER'S GEOTECHNICAL ENGINEER PRIOR TO BIDDING THIS PROJECT.
4. THE CONTRACTOR SHALL CONDUCT ALL GRADING AND RELATED CONSTRUCTION IN ACCORDANCE WITH THE RECOMMENDATIONS PROVIDED BY THE OWNER'S GEOTECHNICAL ENGINEER.

**TOTAL DISTURBED AREA
0.78 ACRES**

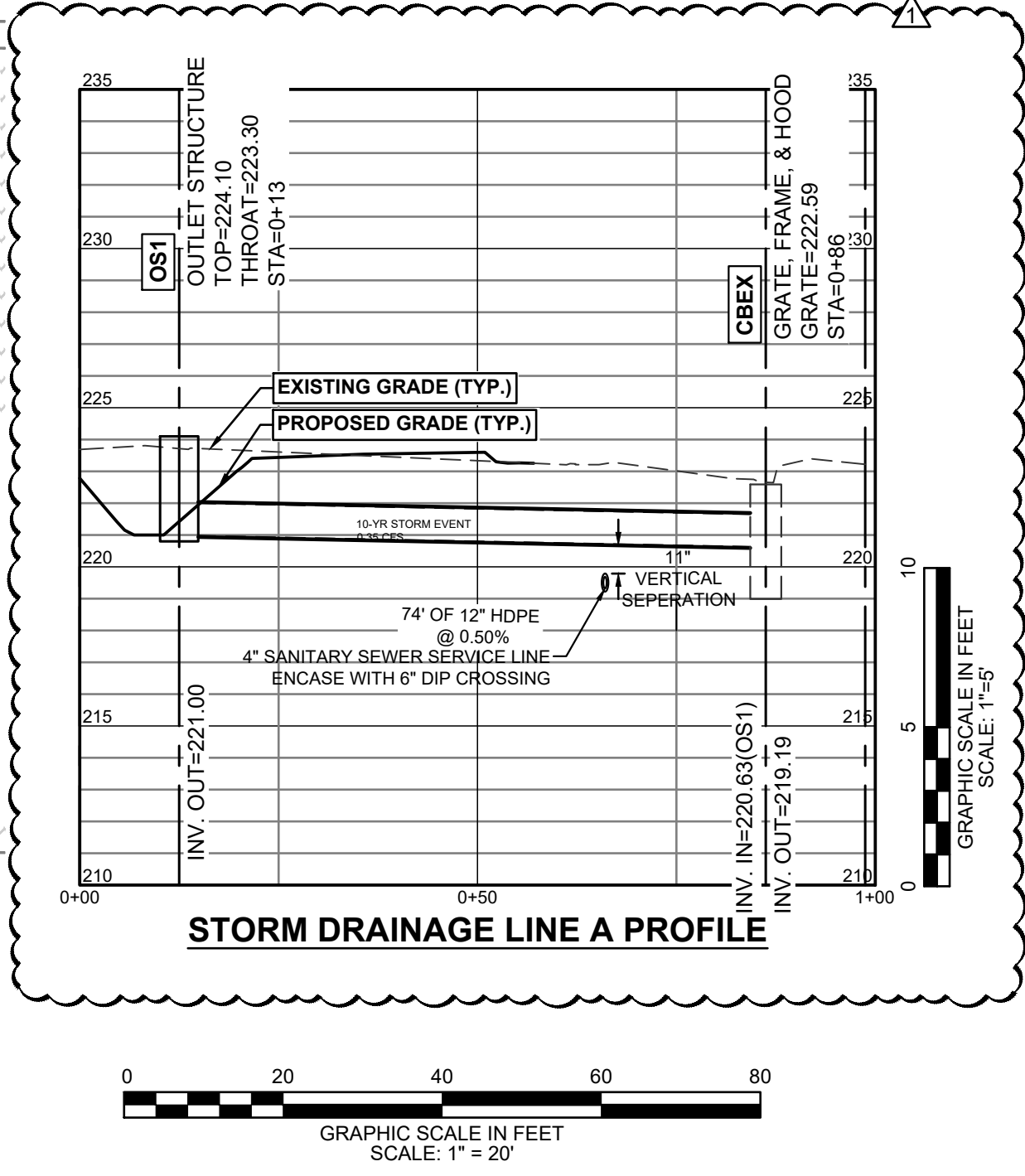
Construction Documents

REFERENCES:

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C&D PROJECT NO. 26002

Daniel C. Cox 8/4/26
LICENSED PROFESSIONAL ENGINEER
NO. 20942

COX AND DINKINS, INC.
No. C00294

CLIENT NAME
MIDLANDS TECHNICAL COLLEGE

PROJECT NAME
OUTDOOR WELDING LAB

LOCATION
WEST COLUMBIA, SC

REVISIONS

NO.	DATE	DESCRIPTION
1	8/6/26	Addendum No. 1

STATE PROJECT NUMBER
H59-N348-AT

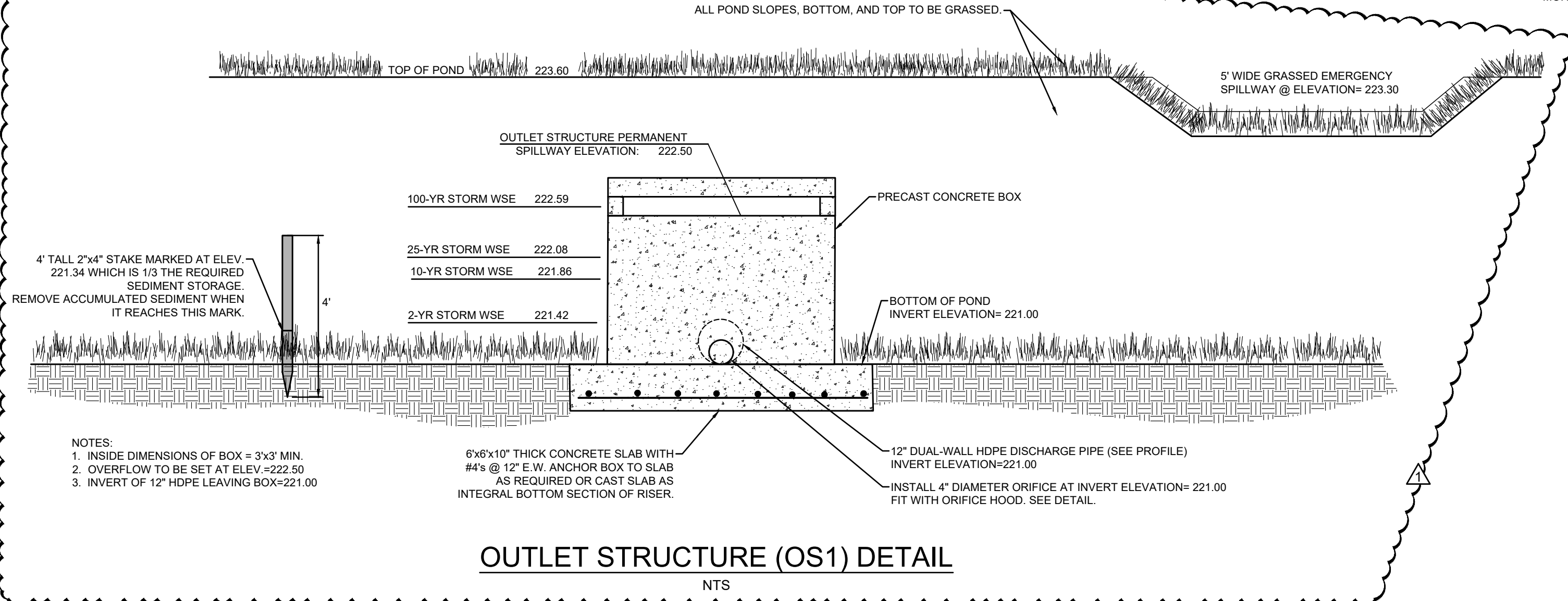
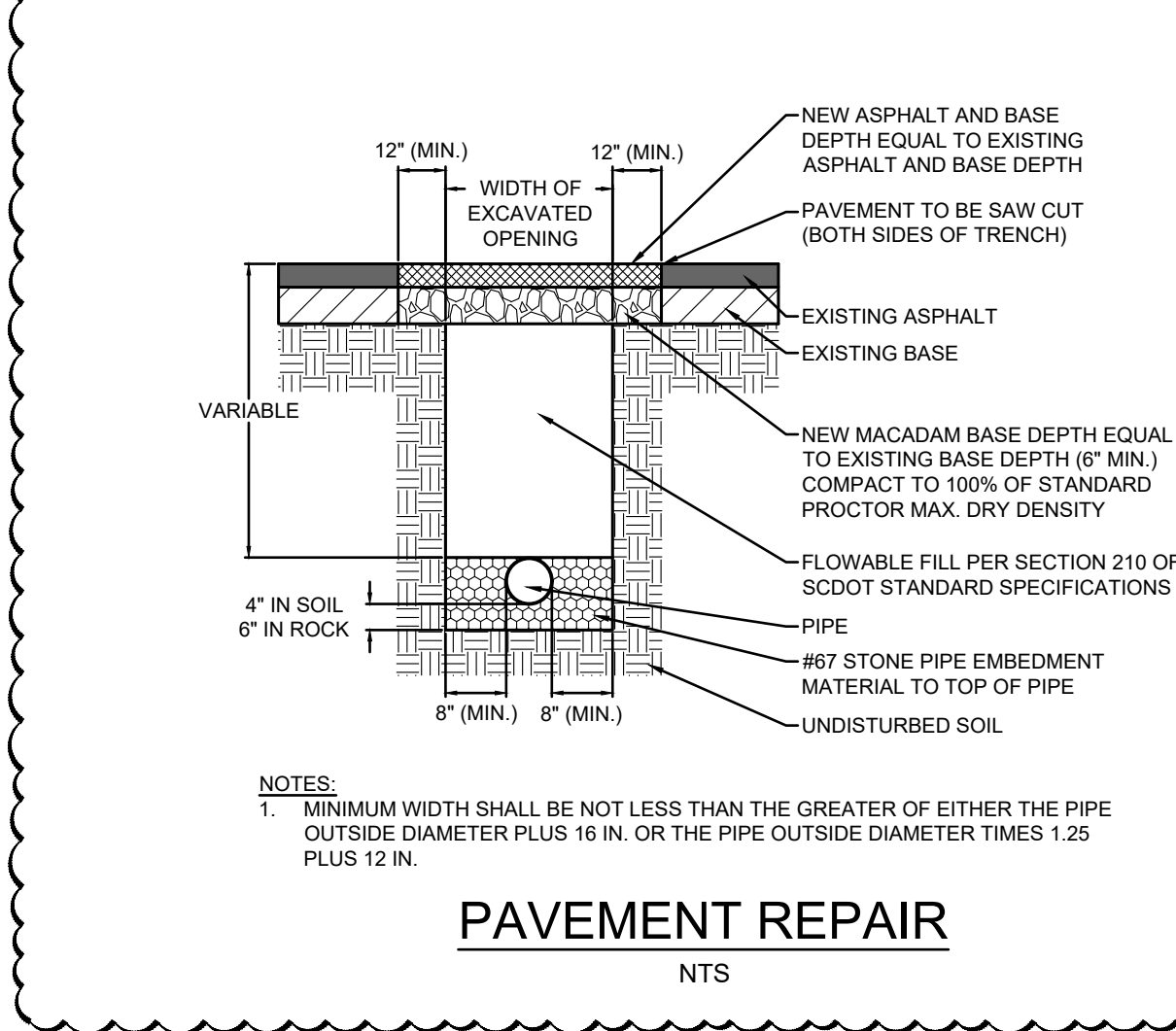
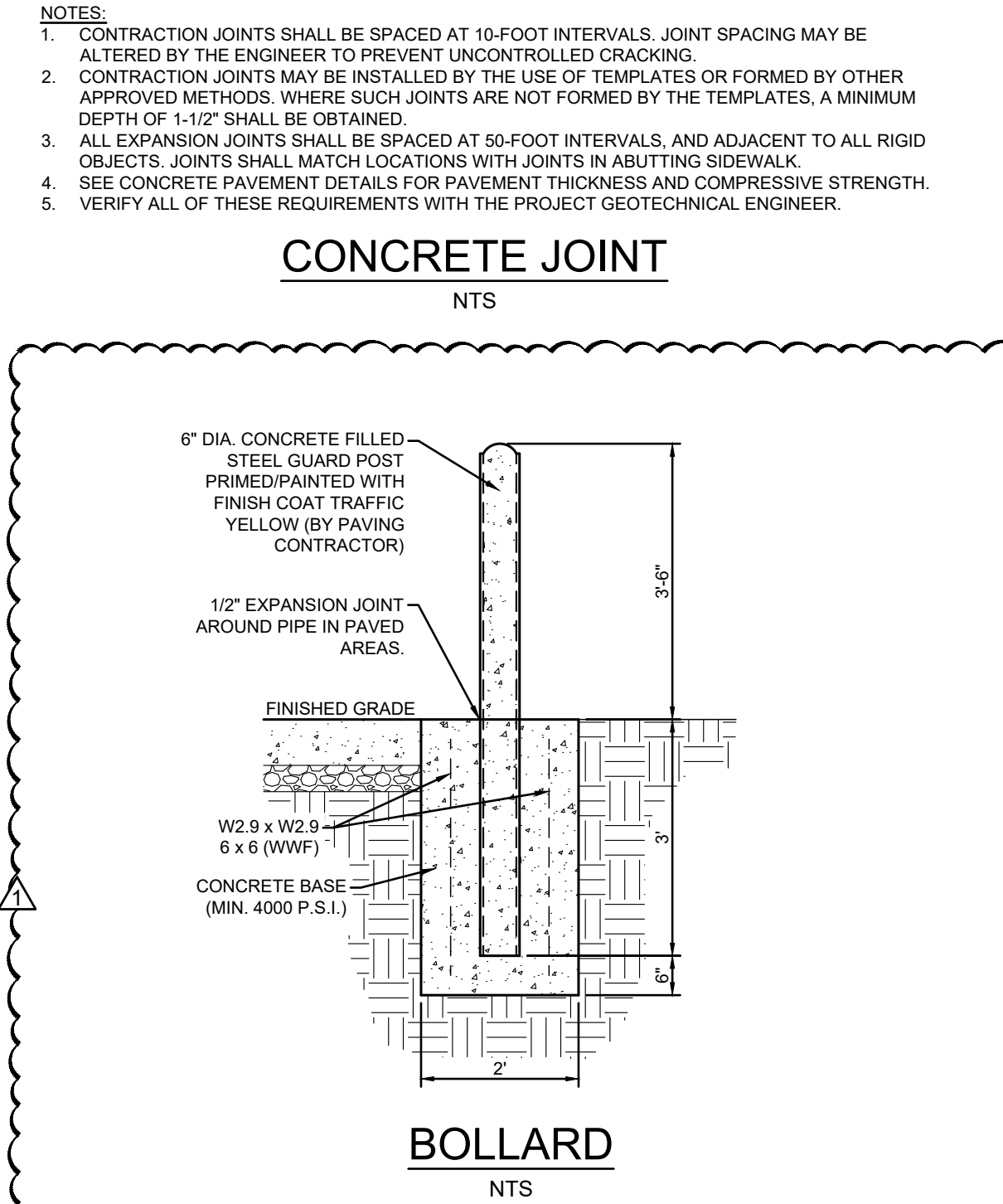
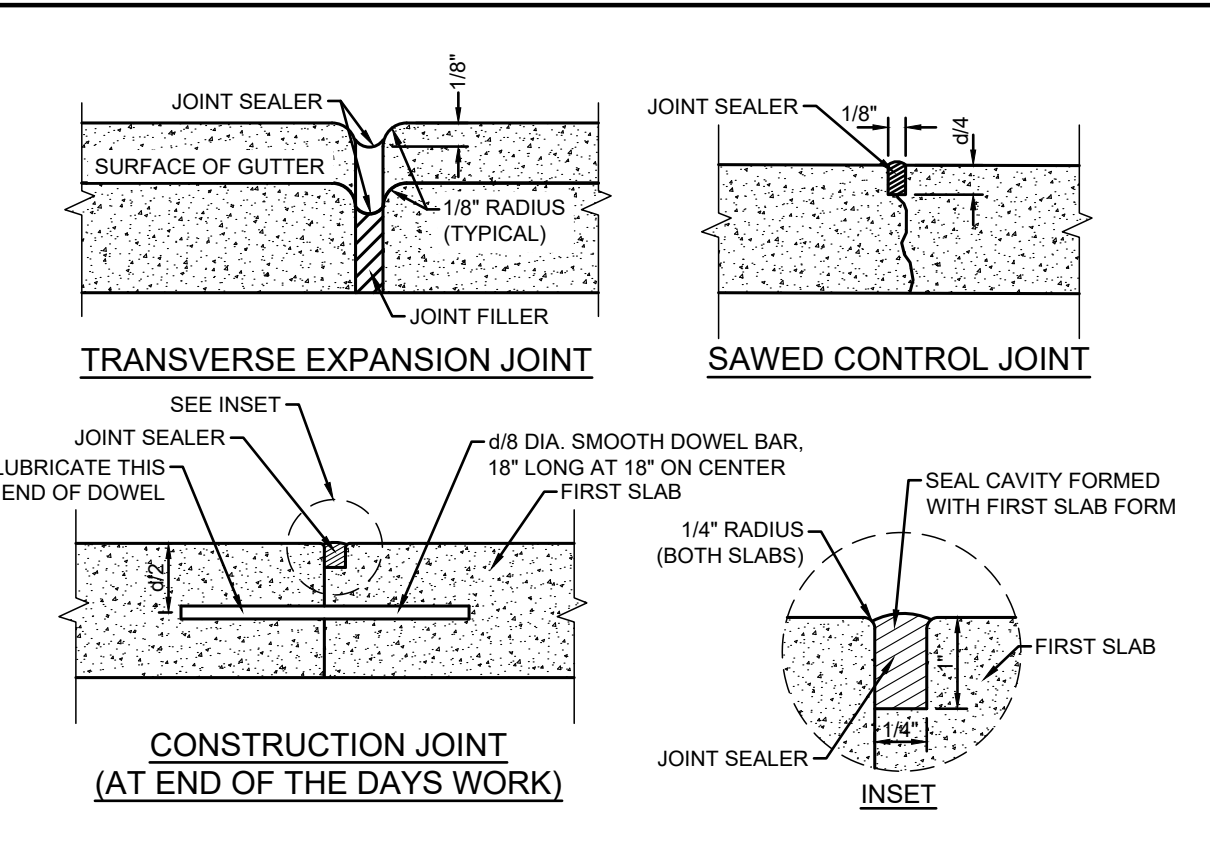
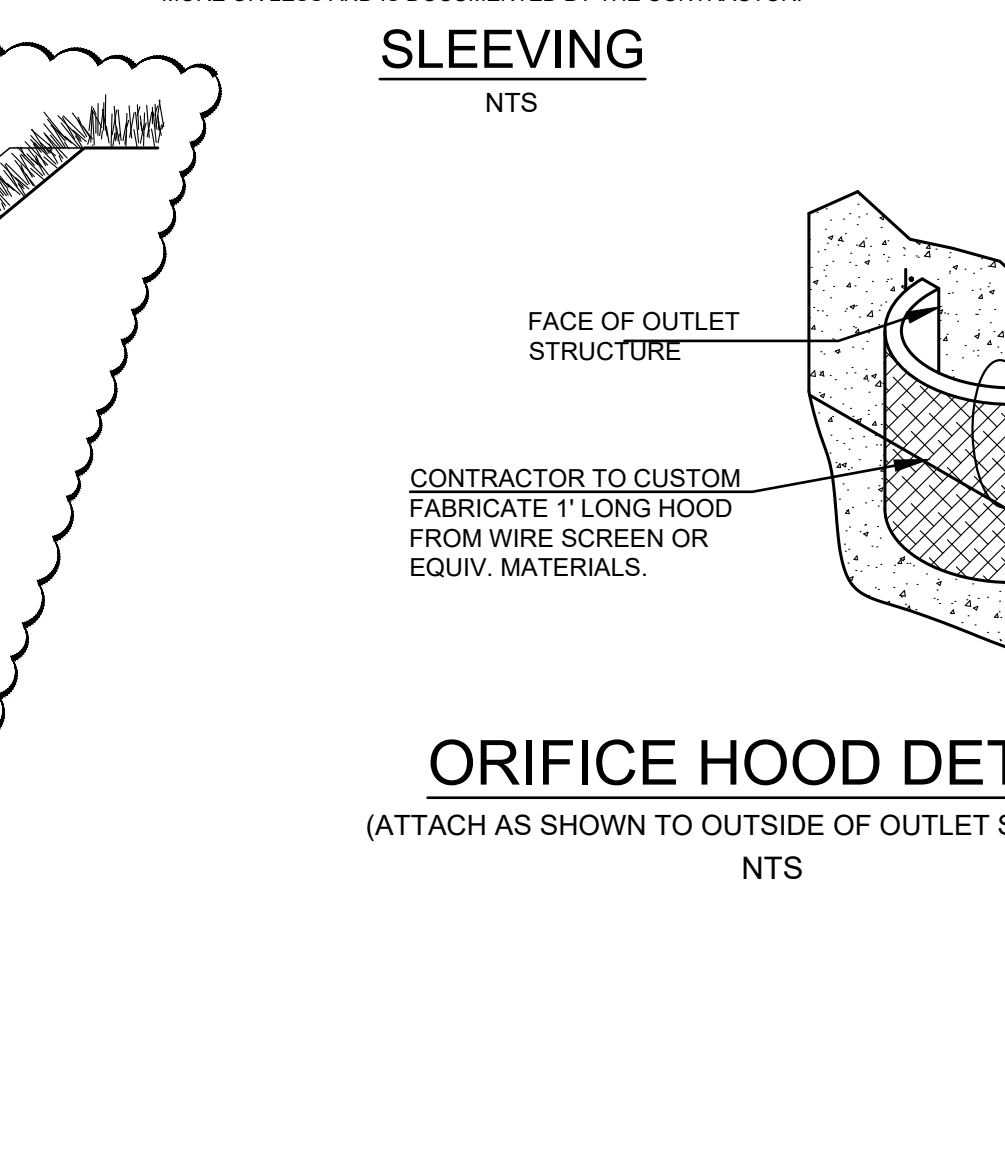
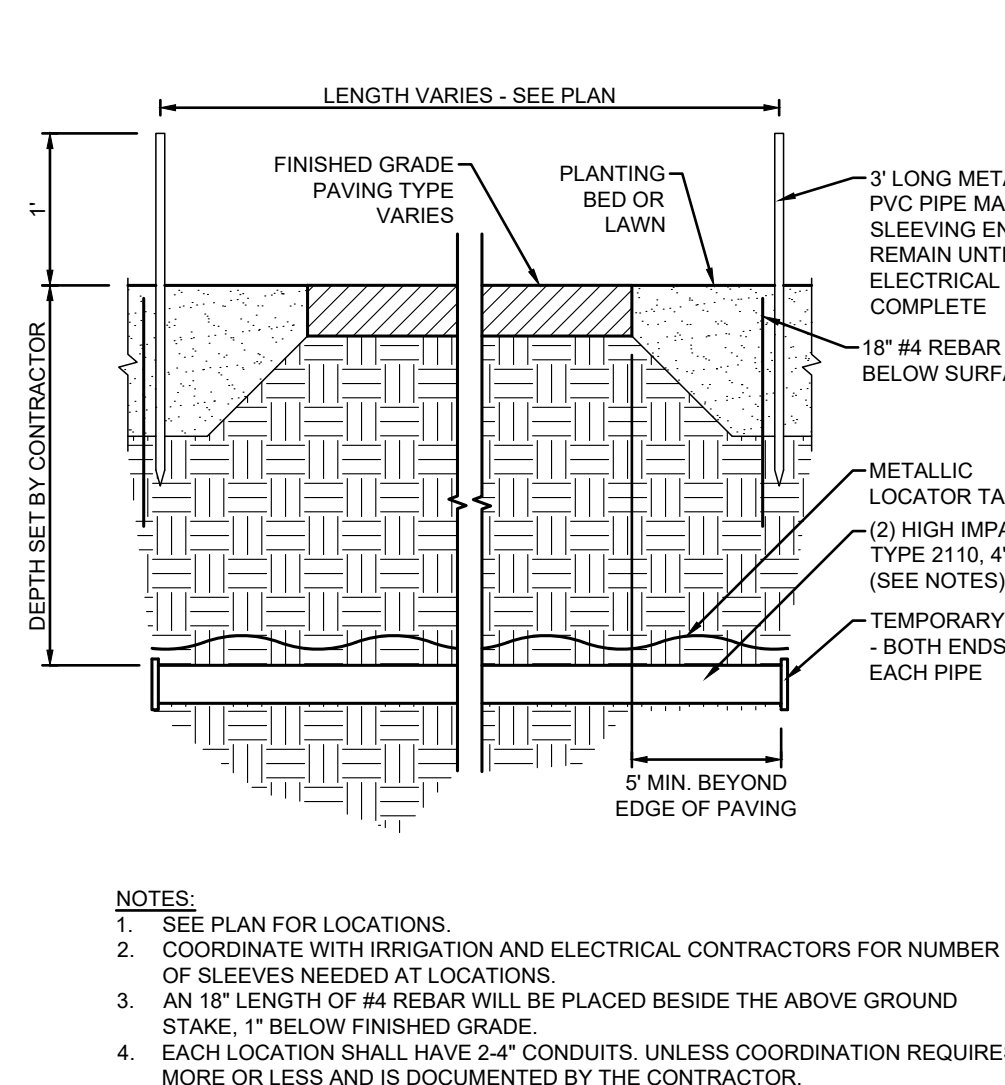
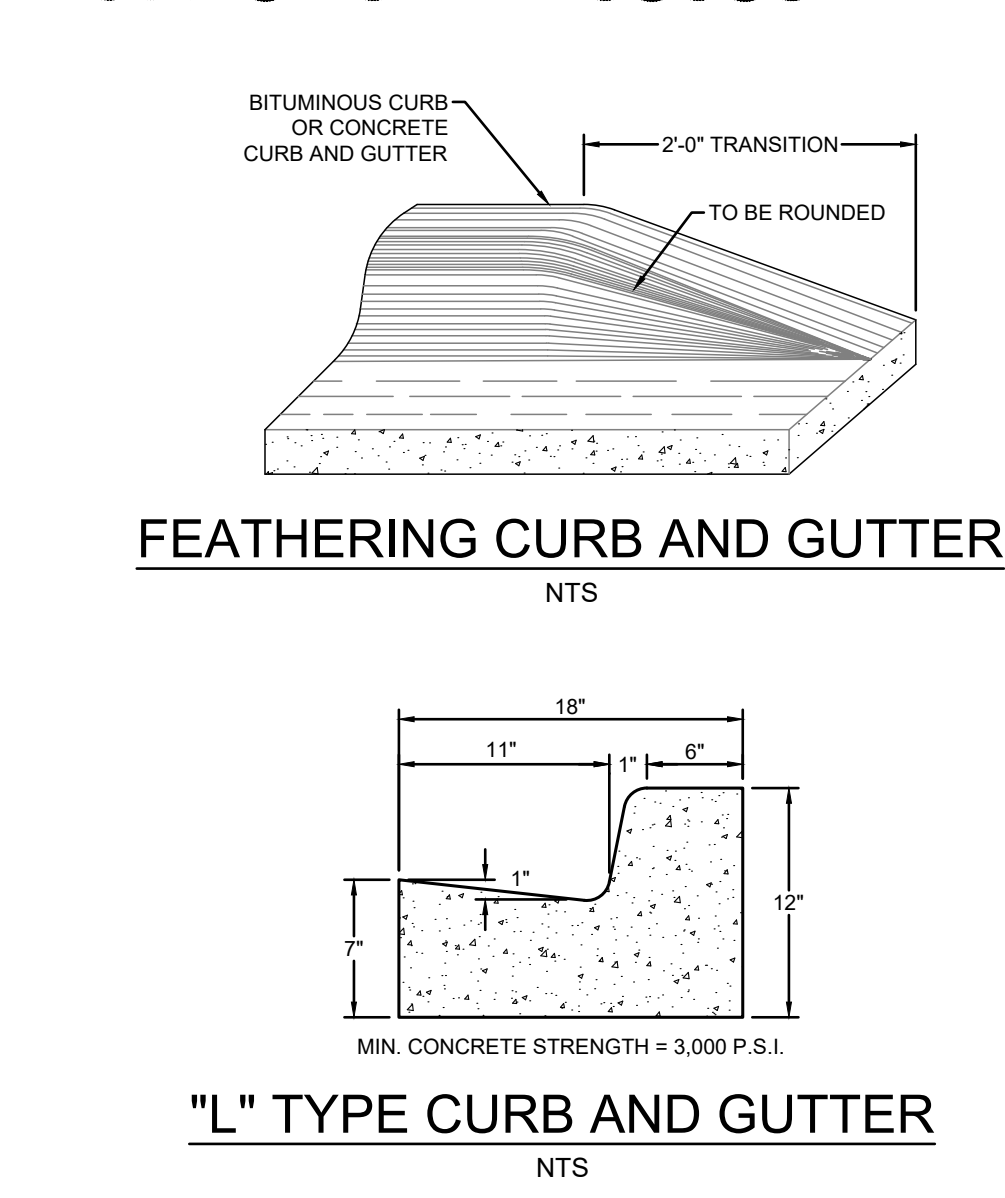
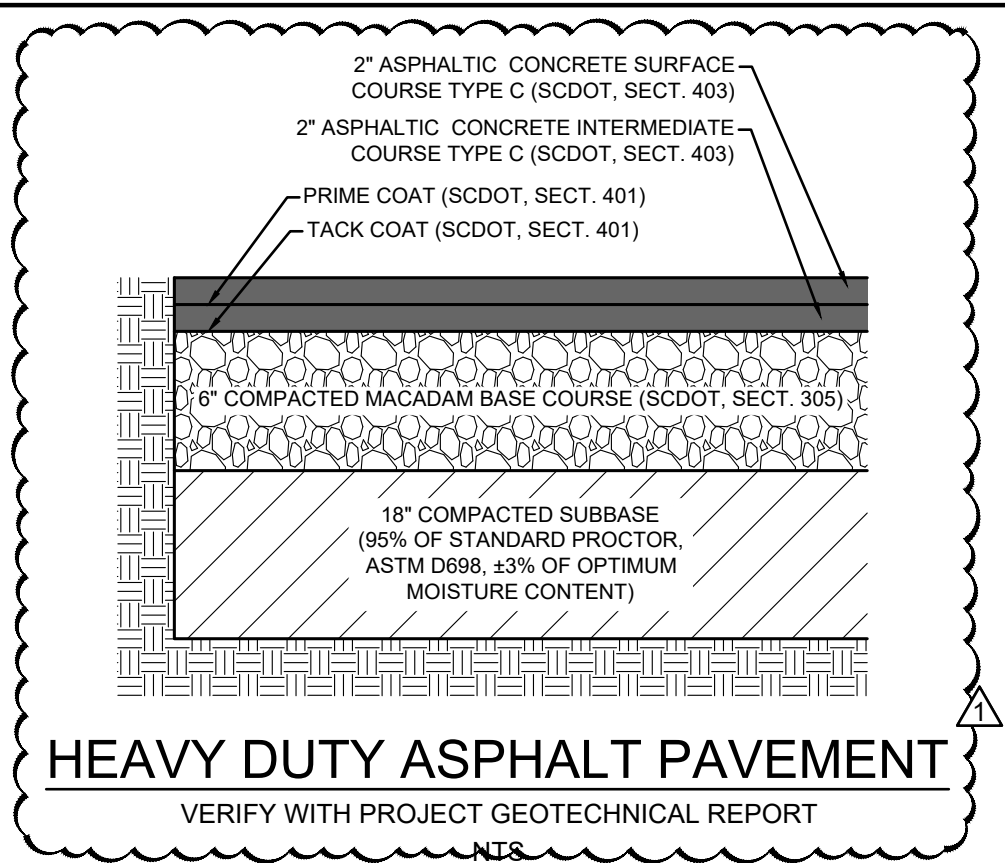
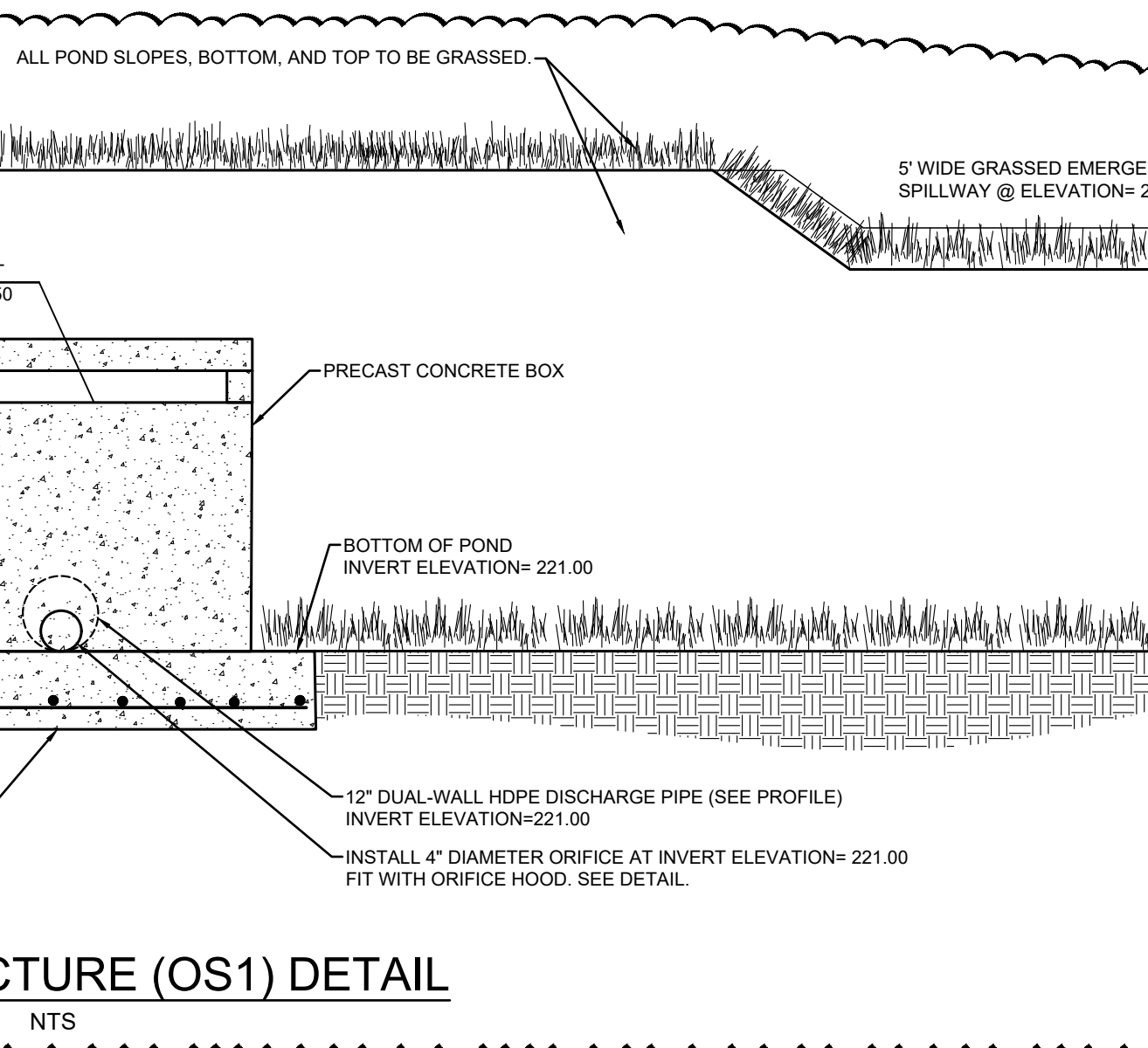
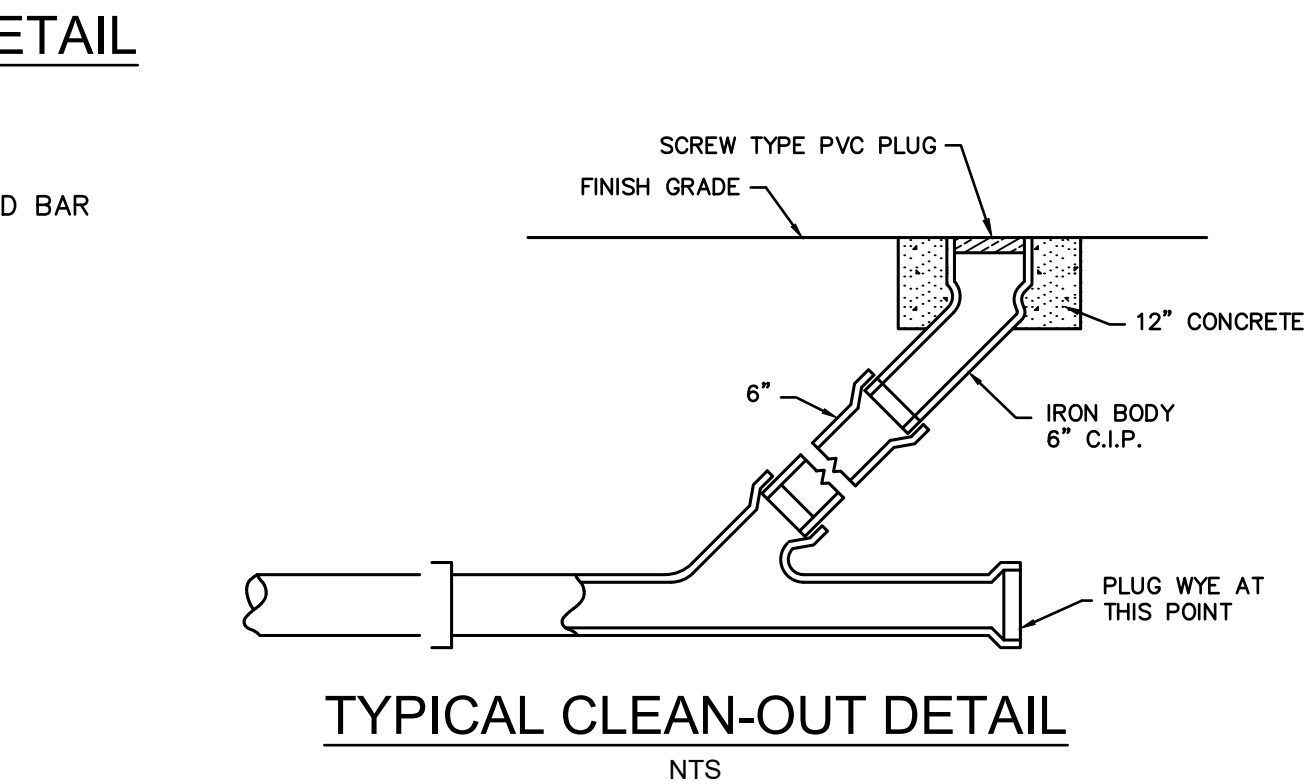
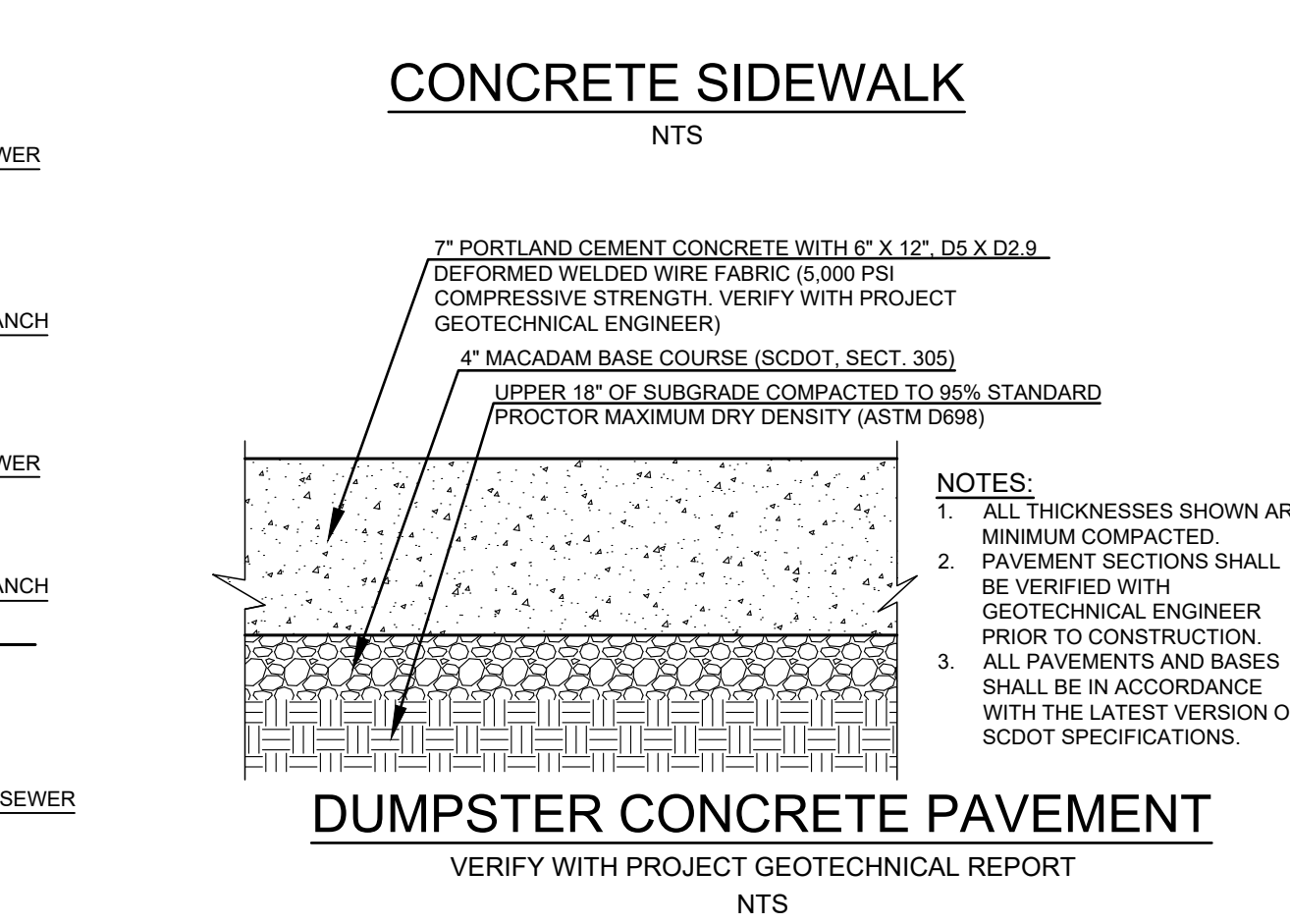
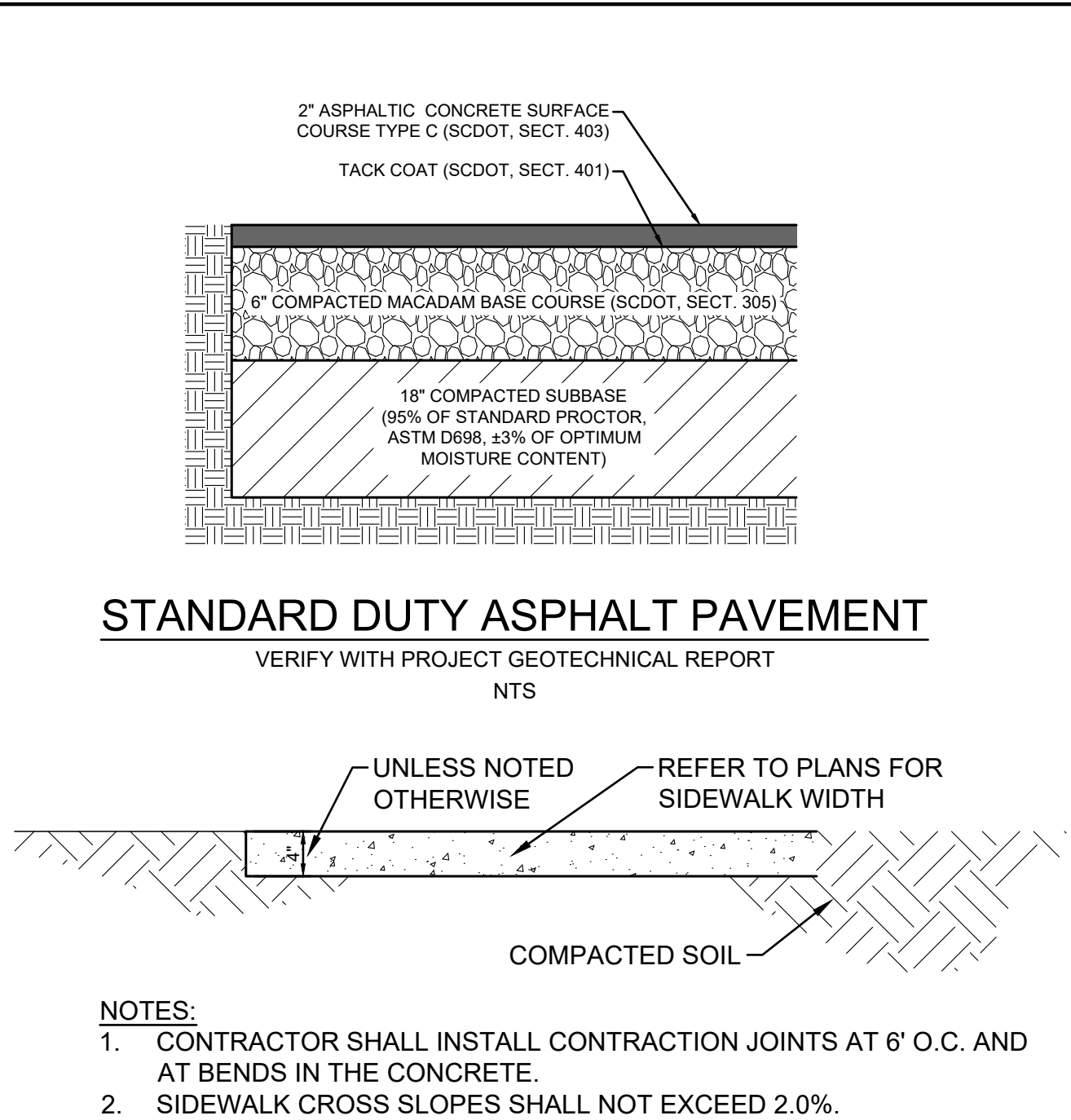
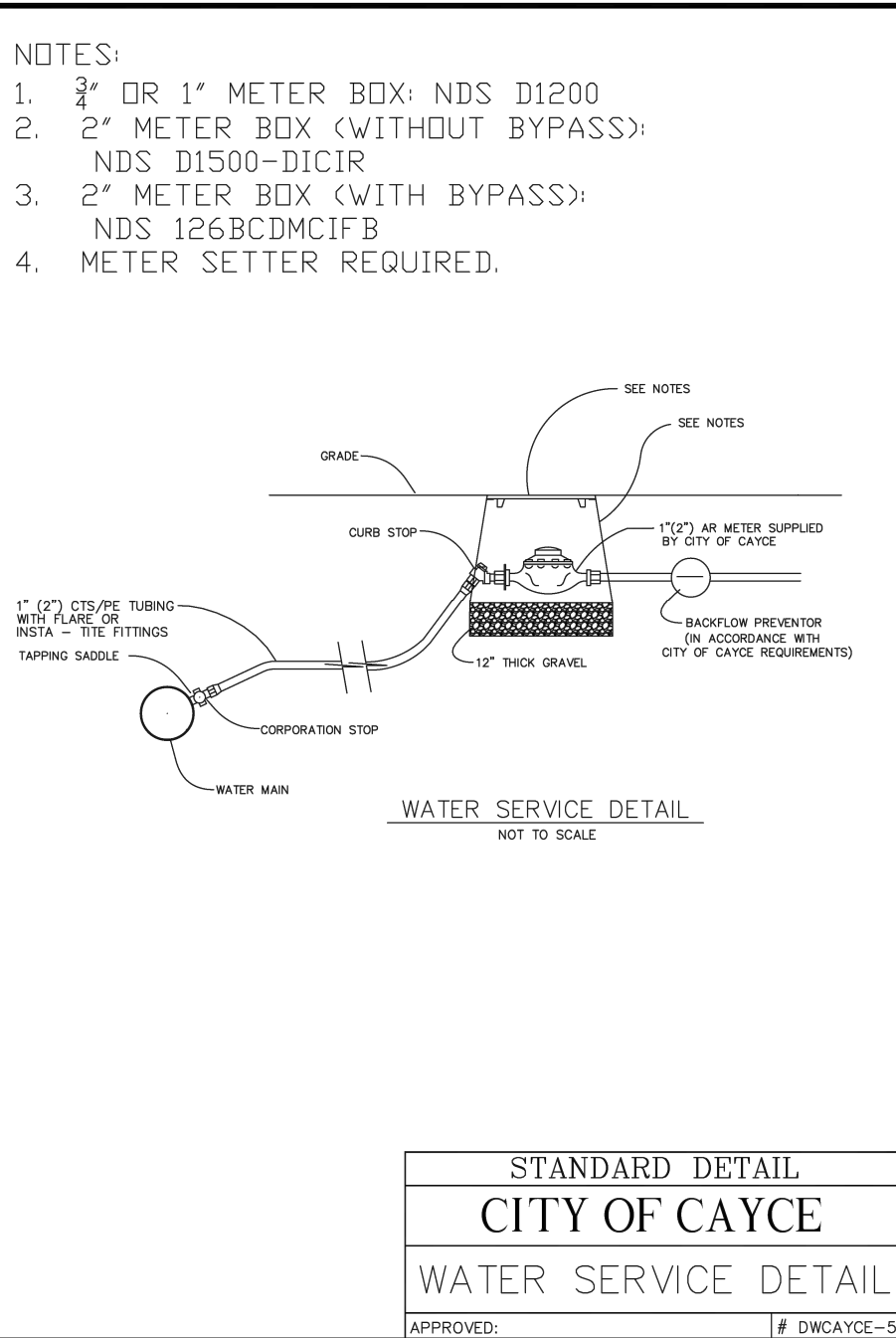
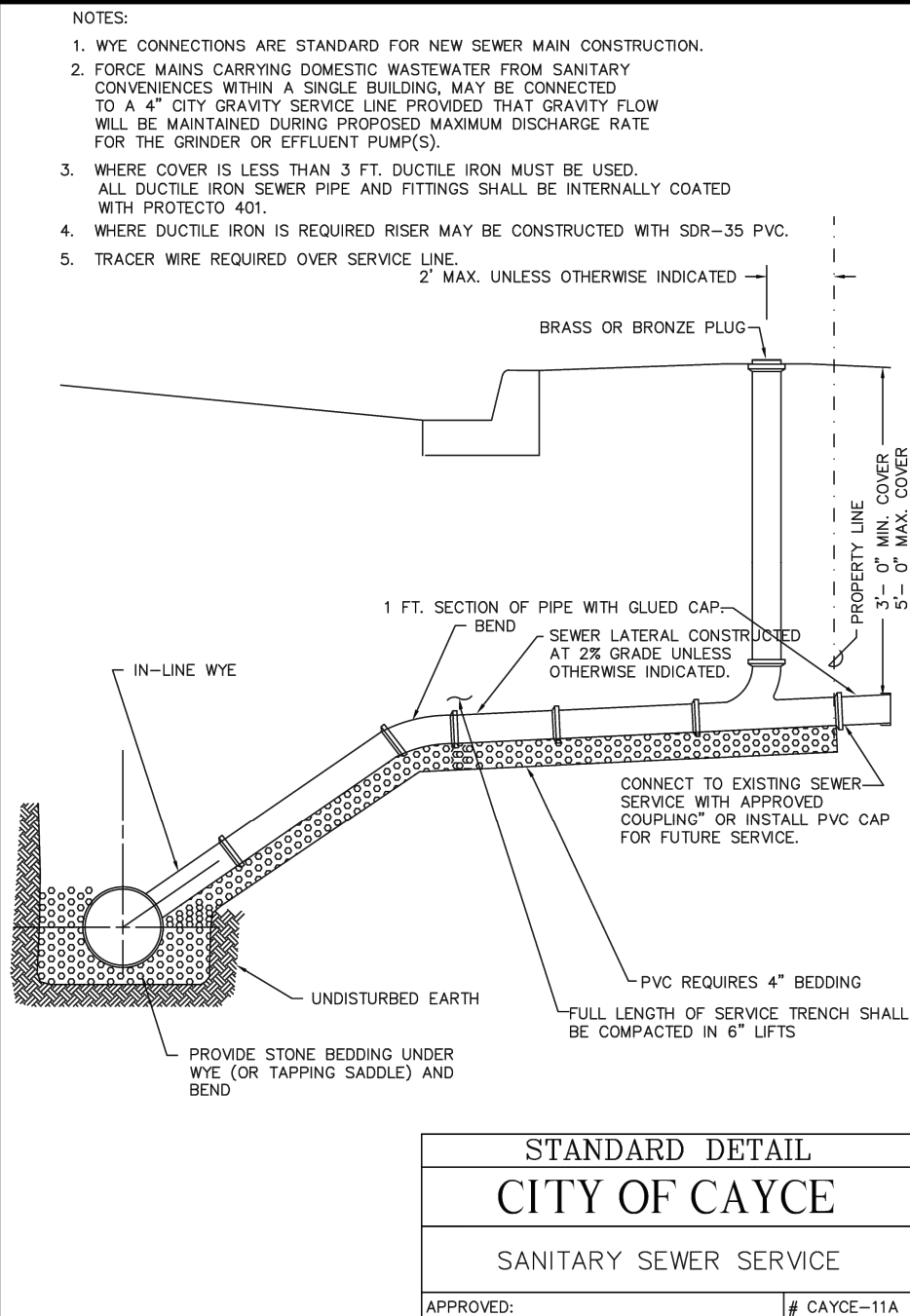
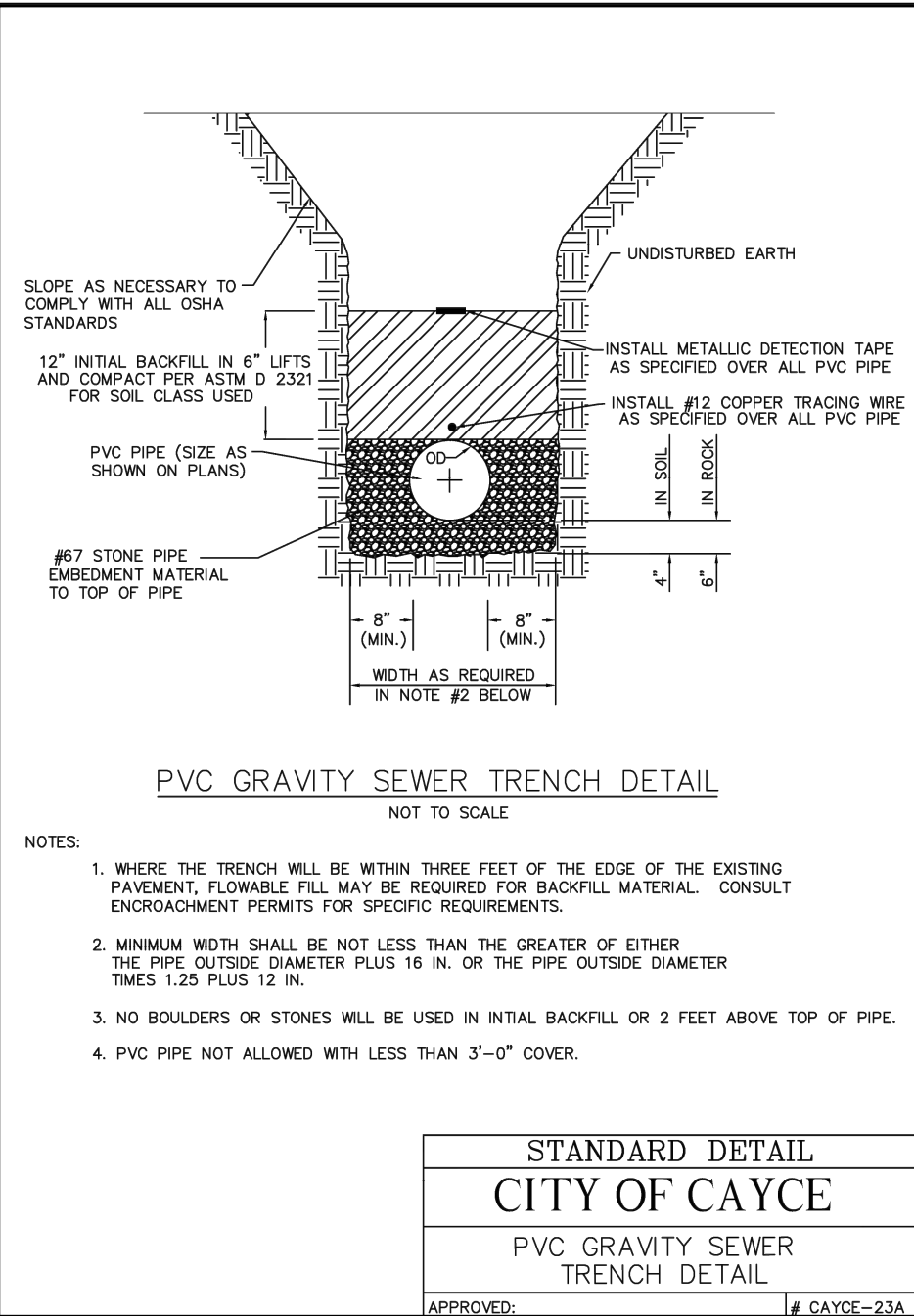
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25098

SHEET NUMBER
C103

SHEET NAME
GRADING, STORM DRAINAGE, & SWPP PLAN

DATE
07/06/2026

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MIDLANDS TECHNICAL COLLEGE

PROJECT NAME

OUTDOOR WELDING LAB

LOCATION

WEST COLUMBIA, SC

REVISIONS

NO. DATE DESCRIPTION

1 8/6/26 Addendum No. 1

STATE PROJECT NUMBER

H59-N348-AT

PROJECT NUMBER

25098

SHEET NUMBER

C104

SHEET NAME

DETAILS

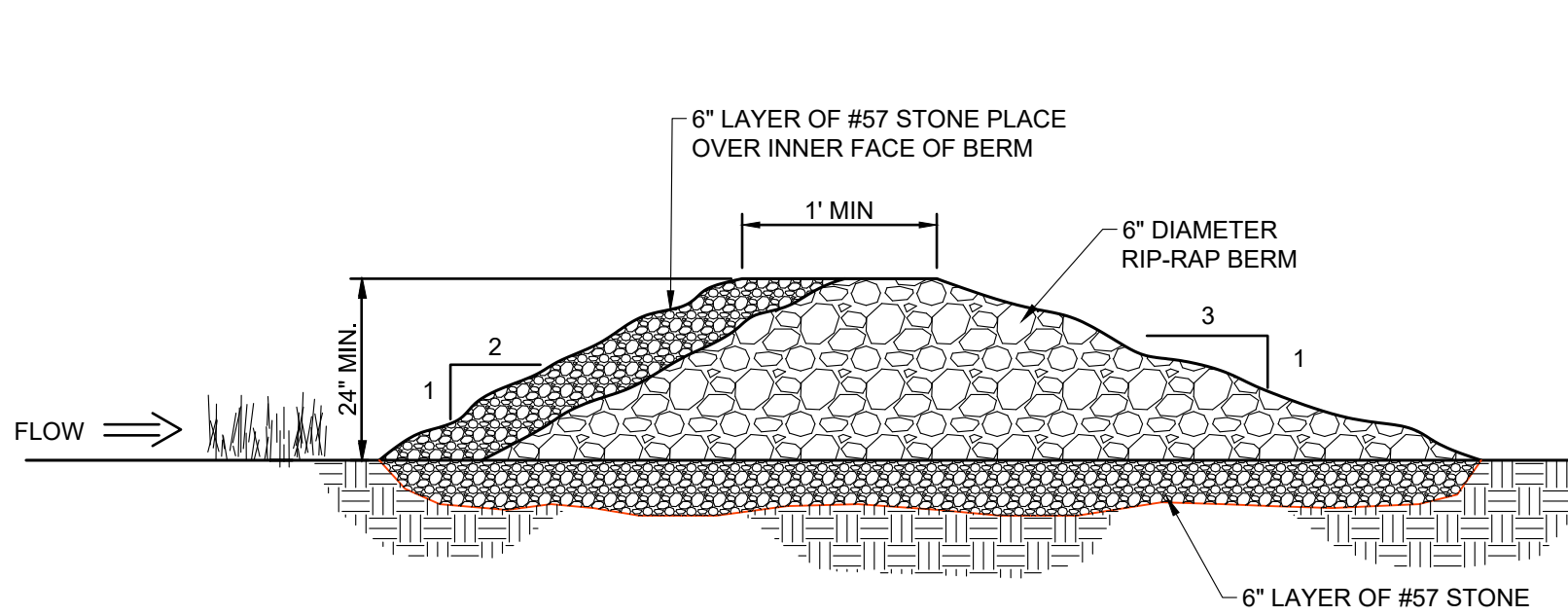
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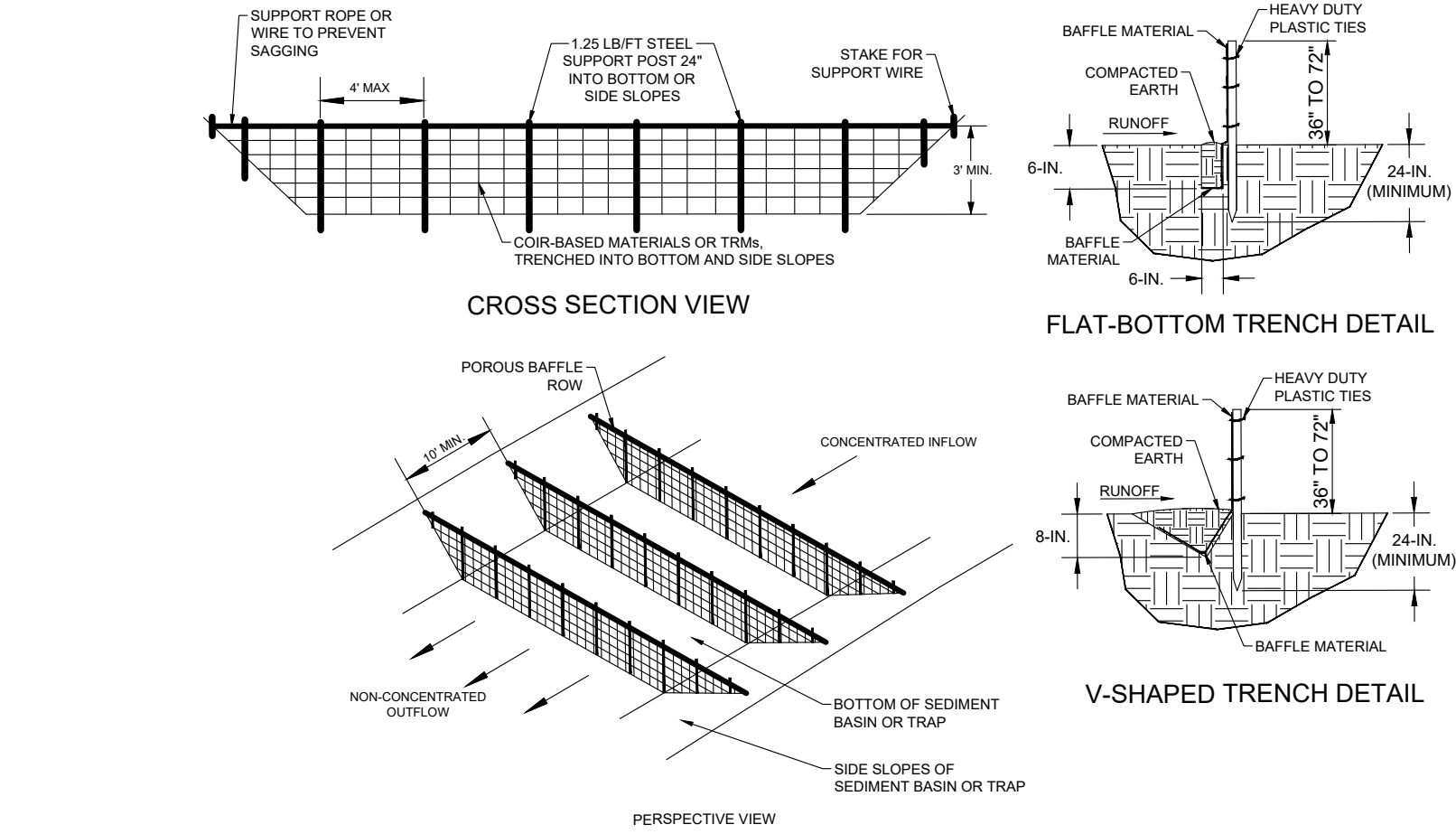
EROSION CONTROL NOTES

- IF NECESSARY, SLOPES WHICH EXCEED 8:1 (VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS. IN ADDITION TO HYDROSEEDING, IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINAGE DURING CONSTRUCTION. TEMPORARY BERMING MAY BE NECESSARY UNTIL THE SLOPE IS BROUGHT TO GRADE.
- 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 OTHERWISE, MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.
- WHERE CONSTRUCTION ACTIVITIES 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 THAT PORTION OF THE SITE.
- ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED EVERY NINE (9) CALENDAR DAYS. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN APPROPRIATELY OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
- 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 SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION AND 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 SITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE HAS BEEN STABILIZED.
- THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAYS FROM CONSTRUCTION AREAS AND TO MINIMIZE THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
- THE CONTRACTOR SHALL CONTROL DUST GENERATED BY USE OF WATER TRUCK OR OTHER MEASURES AS NECESSARY TO LIMIT DUST.
- TEMPORARY DIVERSION BERMIS AND/OR DITCHES MUST BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT LADEN WATER TO APPROPRIATE DRAINAGE OUTLETS.
- ALL WATERS OF THE STATE (WOS), INCLUDING JURISDICTIONAL WETLANDS AND STREAMS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 5-FOOT BUFFER CANNOT BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. WHEN POSSIBLE A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
- 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.
- A COPY OF THE SWPPP, INSPECTION RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS. FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES THROUGH THE DATE FINAL STABILIZATION IS REACHED.
- INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3:1 OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 1 CALENDAR DAYS.
- MINIMIZE TOPSOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
- 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.
- MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DETAIRING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPs (SEDIMENT BASIN, FILTER BAG, ETC.).
- THE FOLLOWING DISCHARGES FROM THE SITE ARE PROHIBITED:
 - WASTEWATER FROM THE WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL.
 - WASTEWATER FROM THE 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.
 - SOAPS AND SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
- IF EXISTING BMPs REQUIRE MODIFICATION OR IF ADDITIONAL BMPs ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SCS 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.
- A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. FOR NON-LEASER PROJECTS THAT REQUIRE A PRE-CONSTRUCTION CONFERENCE, THE CONFERENCE MUST BE HELD ON OR BEFORE THE DATE THE DEPARTMENT HAS APPROVED OTHERWISE.
- THE CONTRACTOR SHALL MAINTAIN A RAIN GAUGE ON SITE AND MAINTAIN DAILY PRECIPITATION RECORDS IN THE SWPPP MANUAL PER SCDECH REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE SWPPP INSPECTOR OF ALL RAINFALL EVENTS OVER ONE-HALF INCH PRECIPITATION.
- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN GRANTED BY GOVERNING AUTHORITIES.
- THE CONTRACTOR SHALL COMPLY WITH APPLICABLE STATE AND LOCAL ORDINANCES.
- THE EROSION CONTROL MEASURES INCLUDED IN THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE INSTALLED PRIOR TO INITIAL LAND DISTURBANCE ACTIVITIES OR AS SOON AS PRACTICABLE. SEDIMENT SHALL BE PREVENTED FROM DISCHARGING FROM THE PROJECT SITE BY INSTALLING AND MAINTAINING CONTROL PRACTICES AS SHOWN ON THIS PLAN. IF SHOWN ON THESE PLANS, ENERGY DISSIPATION DEVICES OR EROSION CONTROL AT THE OUTLET OF THE STORM SEWER SYSTEM SHALL BE INSTALLED AT THE TIME OF THE CONSTRUCTION OF THE OUTLET. STRUCTURAL PRACTICES SHALL BE USED TO CONTROL EROSION FROM ALL SITES REMAINING UNDISTURBED FOR MORE THAN 14 DAYS.
- THE CONTRACTOR SHALL CONTROL EROSION DURING CONSTRUCTION OF THE SITE IN SUCH A MANNER THAT THEY SHALL NOT BE TRANSPORTED FROM THE SITE BY THE ACTION OF WINDS, STORM WATER RUNOFF, OR OTHER FORCES. PROPER DISPOSAL, OR MANAGEMENT OF ALL WASTES AND UNUSED BUILDING MATERIAL APPROPRIATE TO THE NATURE OF THE WASTE OR MATERIAL IS REQUIRED. LOCAL REGULATIONS REGARDING WASTE DISPOSAL, SANITARY SEWER, OR SEPTIC SYSTEMS.
- ALL ON-SITE STORM DRAIN INLETS SHALL BE PROTECTED AGAINST SEDIMENTATION AS SHOWN ON THESE PLANS.
- THIS EROSION CONTROL PLAN SHALL BE MAINTAINED ON SITE THROUGHOUT THE CONSTRUCTION SITE. ALL MEASURES INVOLVING EROSION CONTROL PRACTICES SHALL BE INSTALLED UNDER THE GUIDANCE OF QUALIFIED PERSONNEL EXPERIENCED IN EROSION CONTROL, AND FOLLOWING THE PLANS AND SPECIFICATIONS INCLUDED HEREIN.
- DURING THE PERIOD OF CONSTRUCTION ACTIVITY, ALL SEDIMENT BASINS AND OTHER EROSION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR. AT COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE THE TRANSFER OF MAINTENANCE RESPONSIBILITIES. IF REQUIRED, WITH THE OWNER. MAINTENANCE SHALL BE IN ACCORDANCE WITH DEC'S MANUAL, "SOUTH CAROLINA STORMWATER MANAGEMENT AND SEDIMENT CONTROL HANDBOOK FOR LAND DISTURBANCE ACTIVITIES".
- ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH "SOUTH CAROLINA STORMWATER MANAGEMENT AND SEDIMENT CONTROL HANDBOOK FOR LAND DISTURBANCE ACTIVITIES" AND APPLICABLE LOCAL AND COUNTY REGULATIONS AND BMP MANUAL.
- EXISTING VEGETATION SHALL BE PROTECTED AS MUCH AS PRACTICABLE.
- IF SYNTHETIC OR PERMANENT VEGETATIVE MATTING IS USED, THE MANUFACTURER'S REPRESENTATIVE MUST PROVIDE WRITTEN APPROVAL OF THE INSTALLATION OF THE MATERIAL. A COPY OF THAT LETTER MUST BE PROVIDED TO THE OWNER AND THE ENGINEER.
- IF THE INSTALLATION OF THE STORM DRAINAGE SYSTEM IS INTERRUPTED BY WEATHER OR NIGHTFALL, PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
- THE CONTRACTOR SHALL REMOVE SEDIMENT FROM THE DETENTION POND/SEDIMENT BASIN AT SUCH TIME AS IT REACHES THE SPECIFIED DEPTH ABOVE THE DESIGN BOTTOM ELEVATION OF THE POND/BASIN. DISPOSAL OF THE MATERIAL IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE DETENTION POND/SEDIMENT BASIN AFTER THE SITE IS STABILIZED, ENSURING THAT THE DESIGN VOLUME OF THE POND/BASIN HAS BEEN PROVIDED FOLLOWING STABILIZATION.
- ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
- THE CONTRACTOR SHALL RESEED TOPSOIL ON SITE AS PART OF THE FINAL GRADING AND STABILIZATION PROCESS.
- THIS PLAN SHALL NOT BE CONSIDERED AS INCLUDING THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES AT HIS EXPENSE TO REDUCE EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR ALL CLEANUP AND REPAIR ON-SITE AND DOWNSTREAM DUE TO EROSION AND SILTATION.



STONE FILTER BERM DETAIL

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INSPECTION AND MAINTENANCE:

- THE KEY TO FUNCTIONAL POROUS BAFFLES IS WEEKLY INSPECTION, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.
- REGULAR INSPECTIONS OF POROUS BAFFLES SHALL BE CONDUCTED ONCE EVERY CALENDAR WEEK AND AS RECOMMENDED, WITHIN 24 HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 1/2 INCH OR MORE OF PRECIPITATION.
- ATTENTION TO SEDIMENT ACCUMULATIONS ALONG EACH ROW OF BAFFLES IS EXTREMELY IMPORTANT. ACCUMULATED SEDIMENT SHOULD BE CONTINUALLY MONITORED AND REMOVED WHEN NECESSARY.
- 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.
- REMOVED SEDIMENT SHALL BE PLACED IN STOCKPILE STORAGE AREAS OR SPREAD THINLY ACROSS DISTURBED AREA, STABILIZED OR REMOVED SEDIMENT AFTER IT IS RELOCATED.
- CHECK FOR AREAS WHERE STORMWATER RUNOFF HAS ERODED A CHANNEL BENEATH EACH ROW OF BAFFLES. IF FOUND, THE BAFFLE HAS SAGGED OR COLLAPSED DUE TO FLOWING OVERTOPPING THE BAFFLE.
- CHECK FOR TRENCHING WHERE THE BAFFLES AREAS WASHED OR COLLAPSED DUE TO FLOWING OVERTOPPING THE BAFFLE.
- FOR TRENCHING WHERE THE BAFFLES AREAS WASHED OR COLLAPSED DUE TO FLOWING OVERTOPPING THE BAFFLE, REPAIR THE TRENCHING AND REINSTALL NEW BAFFLES IMMEDIATELY.
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BAFFLES - MATERIAL REQUIREMENTS:

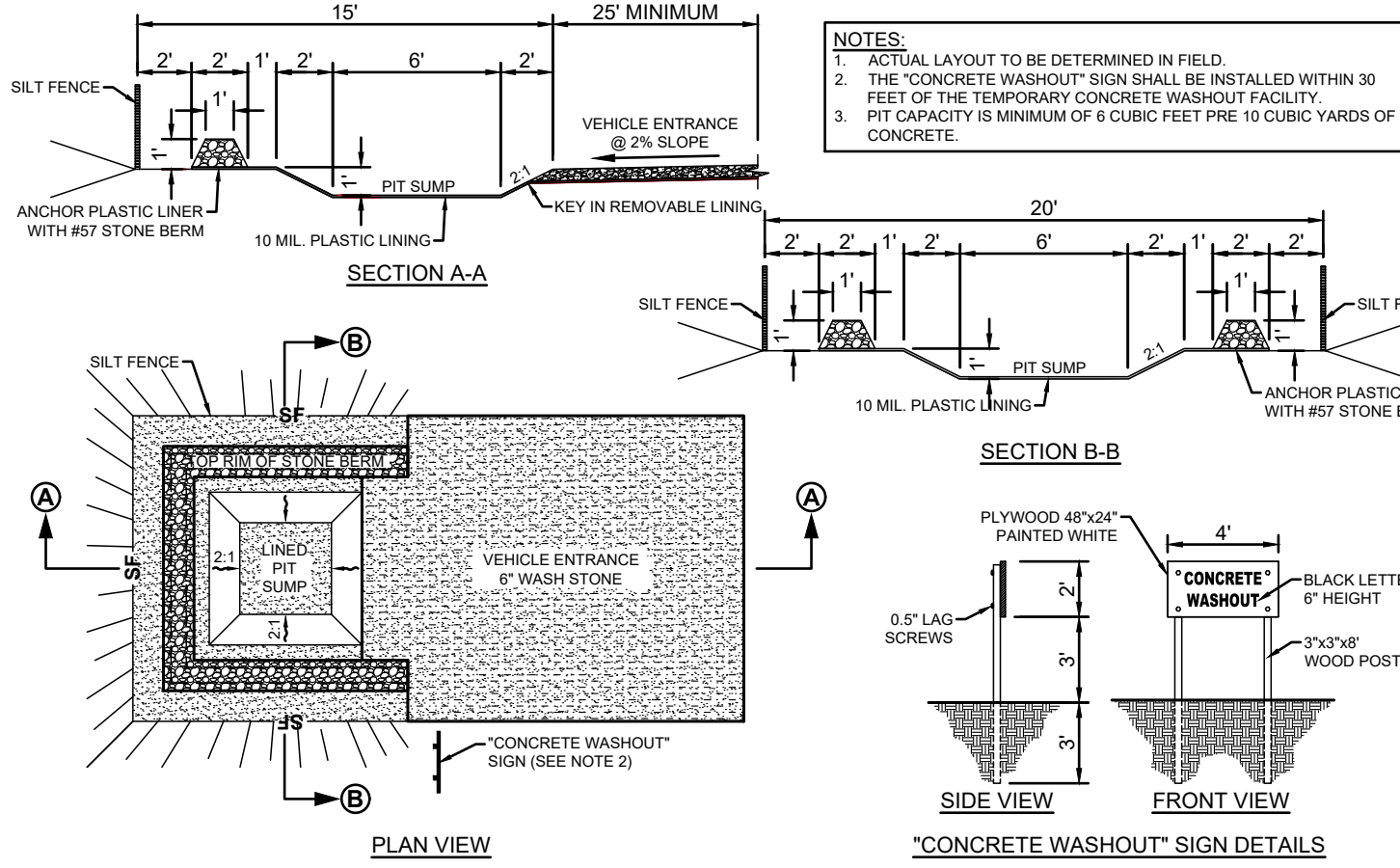
- BAFFLE MATERIAL MUST BE COMPOSED OF CORRUGATED MATERIALS OR TURF REINFORCEMENT MATTING (TWM) THAT CONSISTS OF THE FOLLOWING REQUIREMENTS:
 - HAVE A LIGHT PENETRATION IN OPENINGS BETWEEN 10-30%.
 - BE FREE OF LOGS, STAVES, AND OTHER OBSTRUCTIONS.
 - HAVE A MINIMUM TENSILE STRENGTH OF 145 LB/FT.
 - HAVE A MINIMUM WIDTH OF 48 INCHES.
 - HAVE A MINIMUM SPACING OF 2 INCHES.
- 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:

- ATTACH BAFFLES TO THE STEEL POSTS USING HEAVY-DUTY PLASTIC TIES THAT ARE EVENLY SPACED ALONG THE ABOVE-GROUND PORTION OF EACH POST.
- 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.

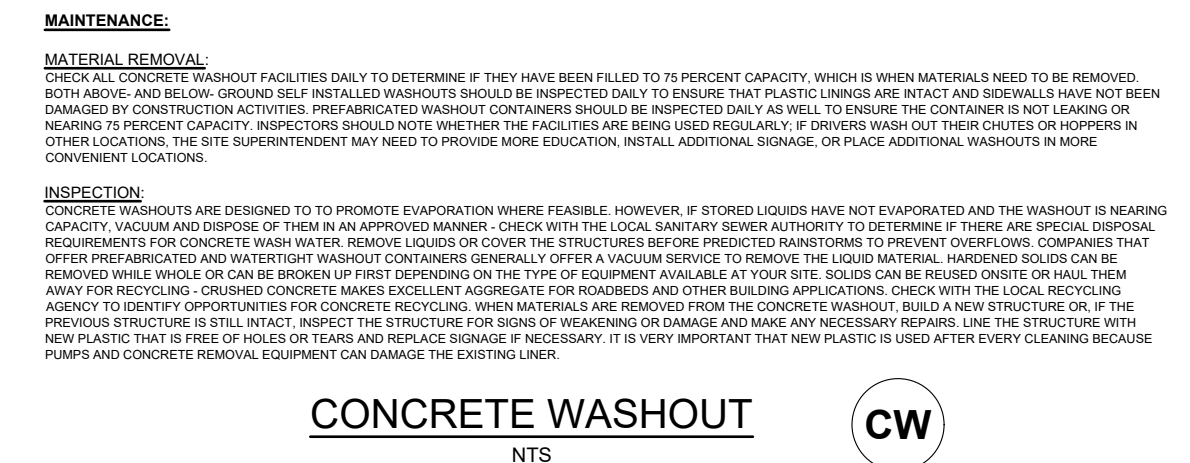
POROUS BAFFLES
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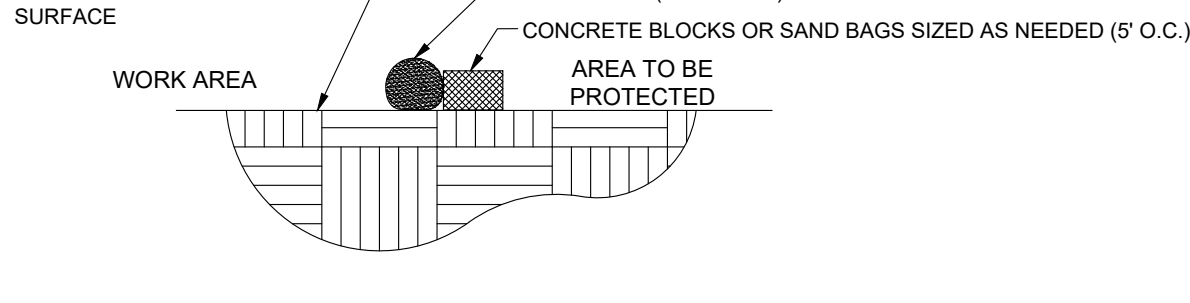
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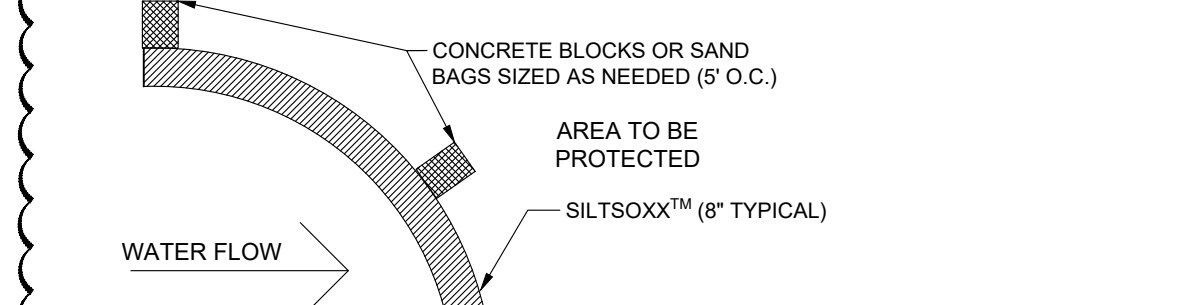
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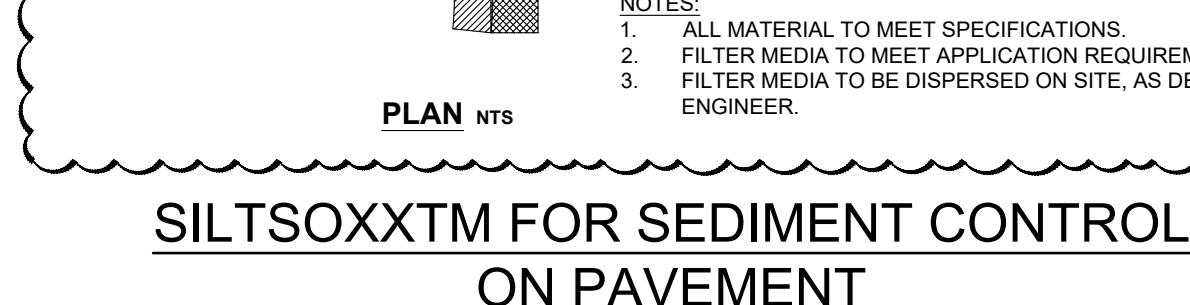
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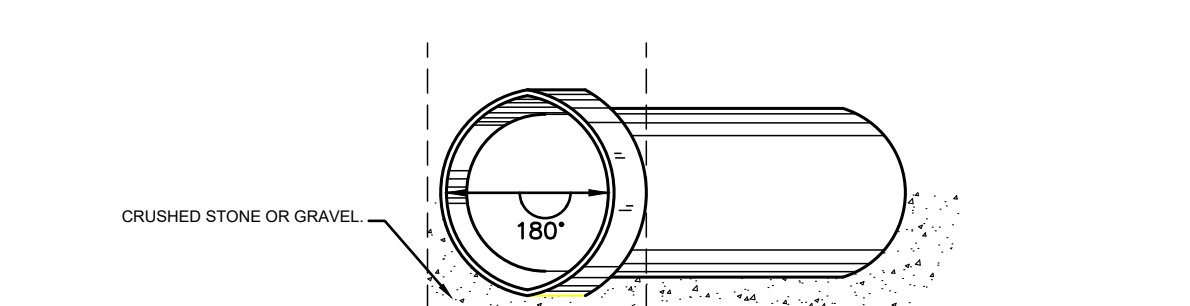
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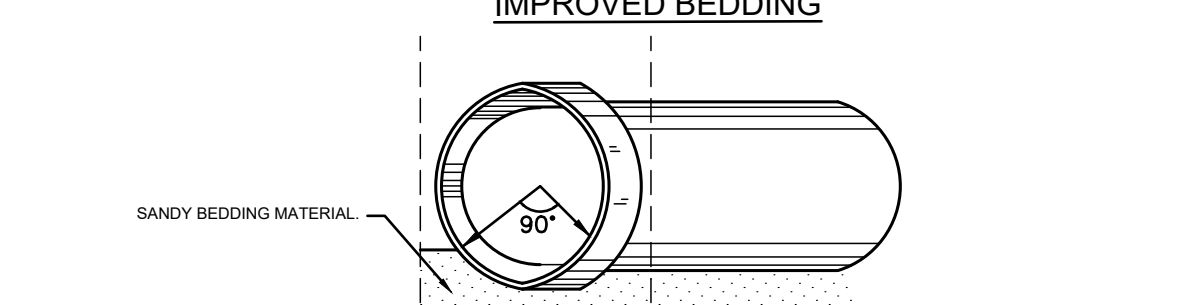
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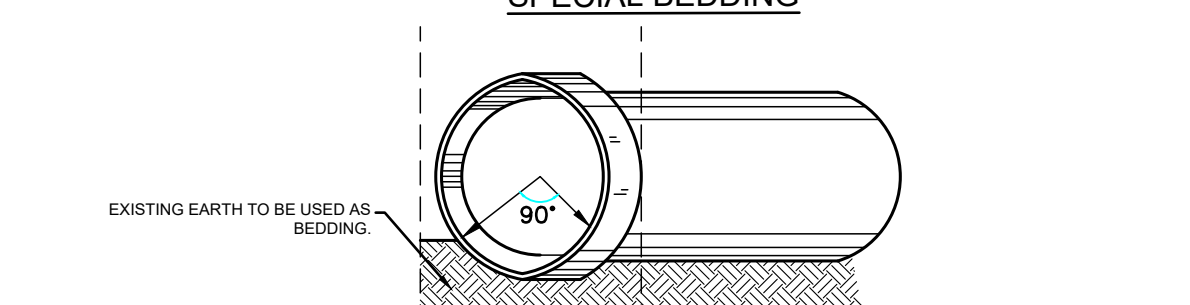
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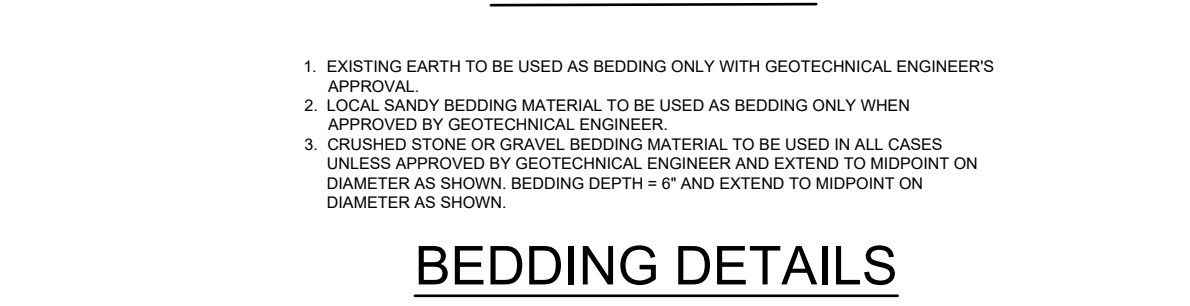
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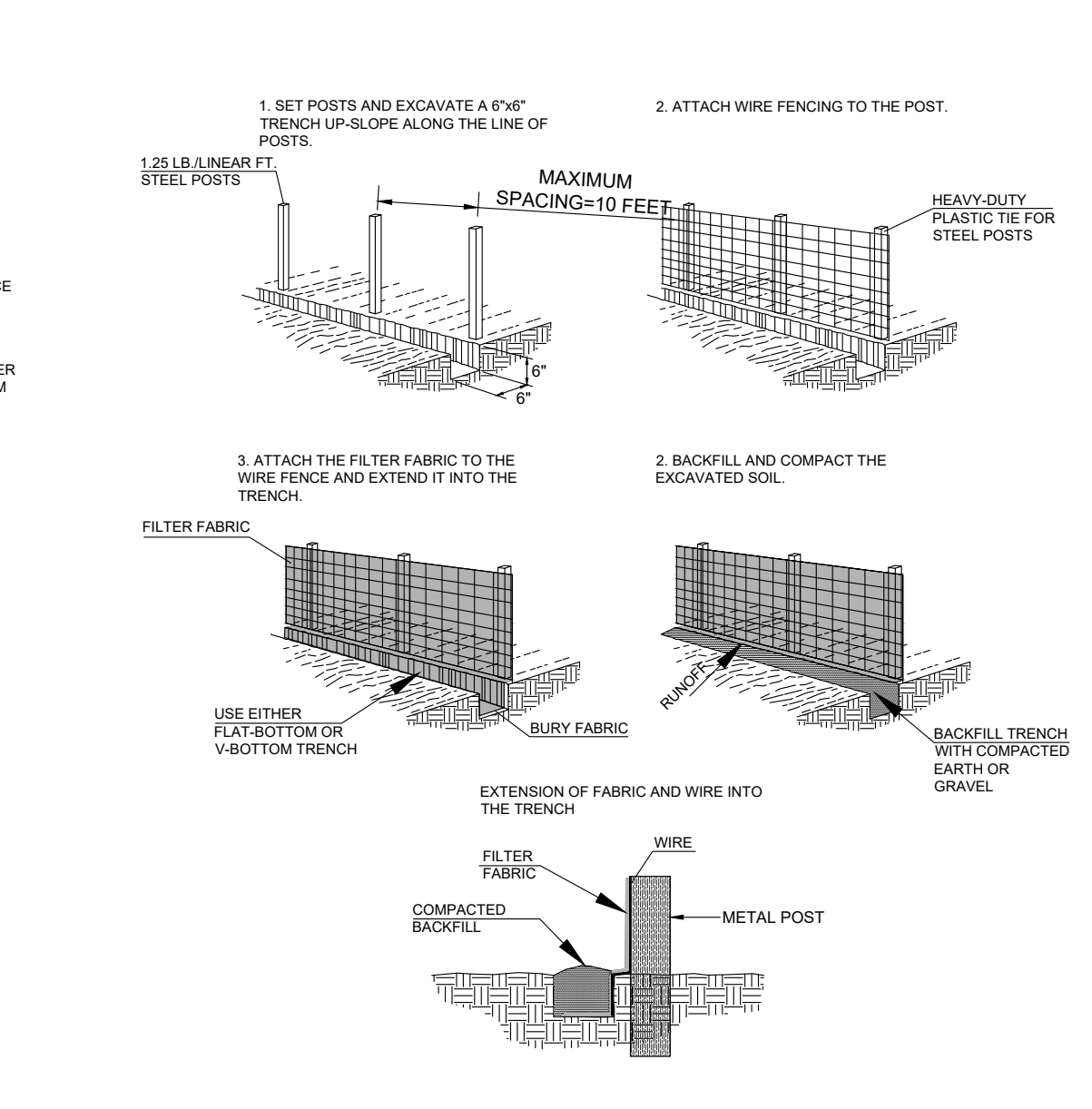


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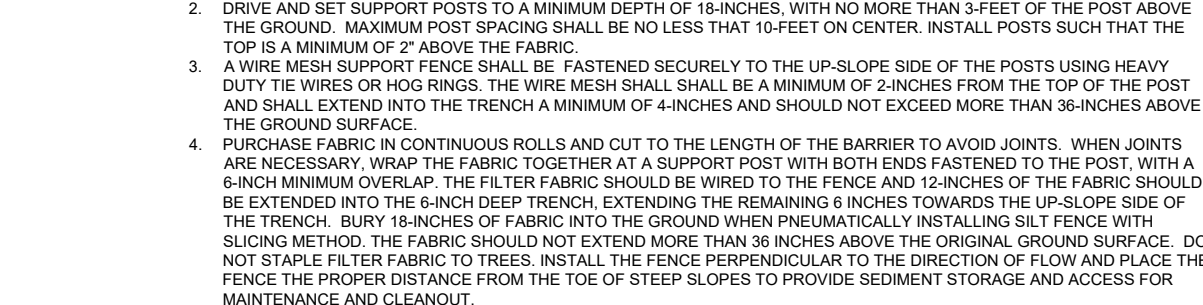
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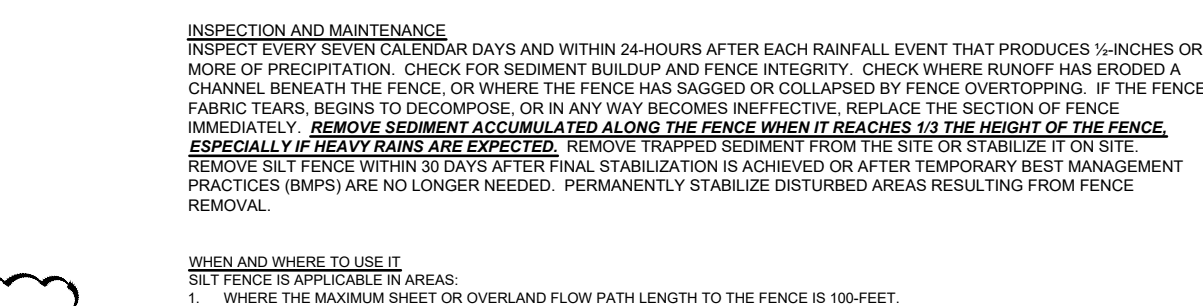
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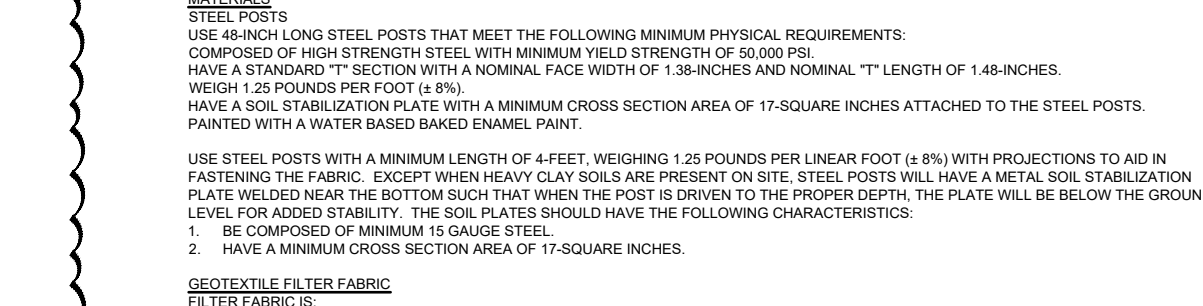
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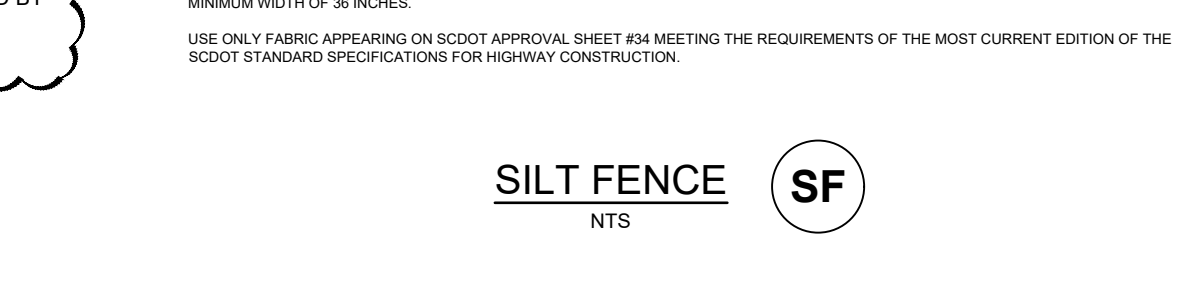
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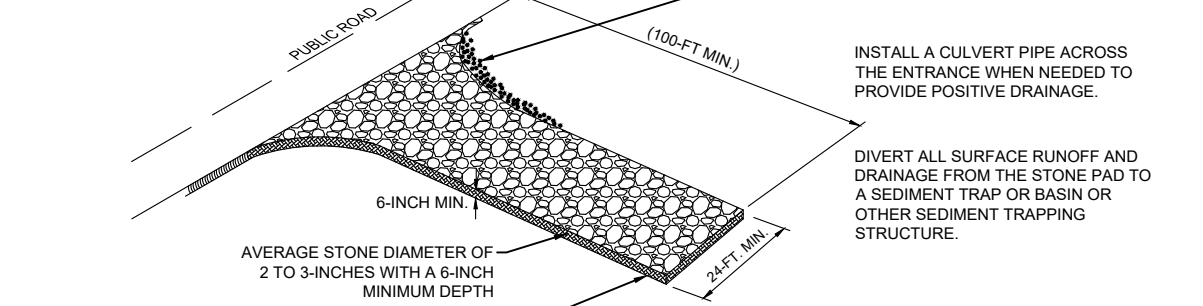
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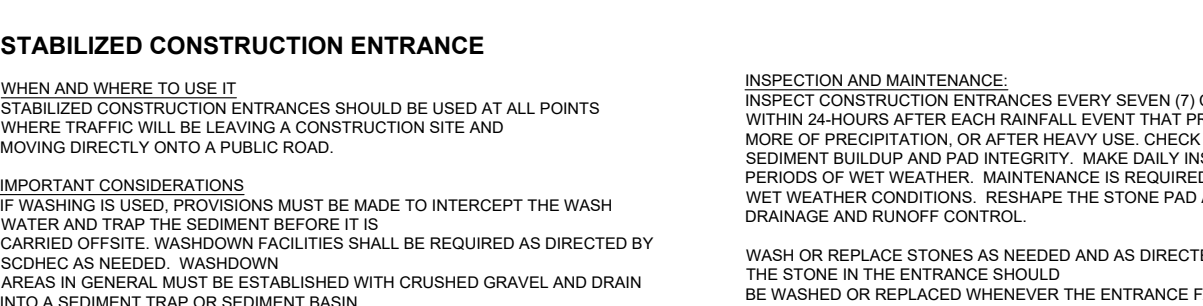
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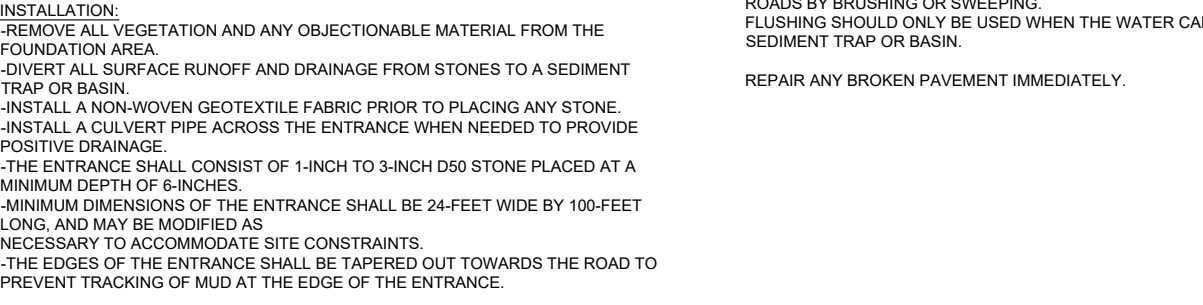
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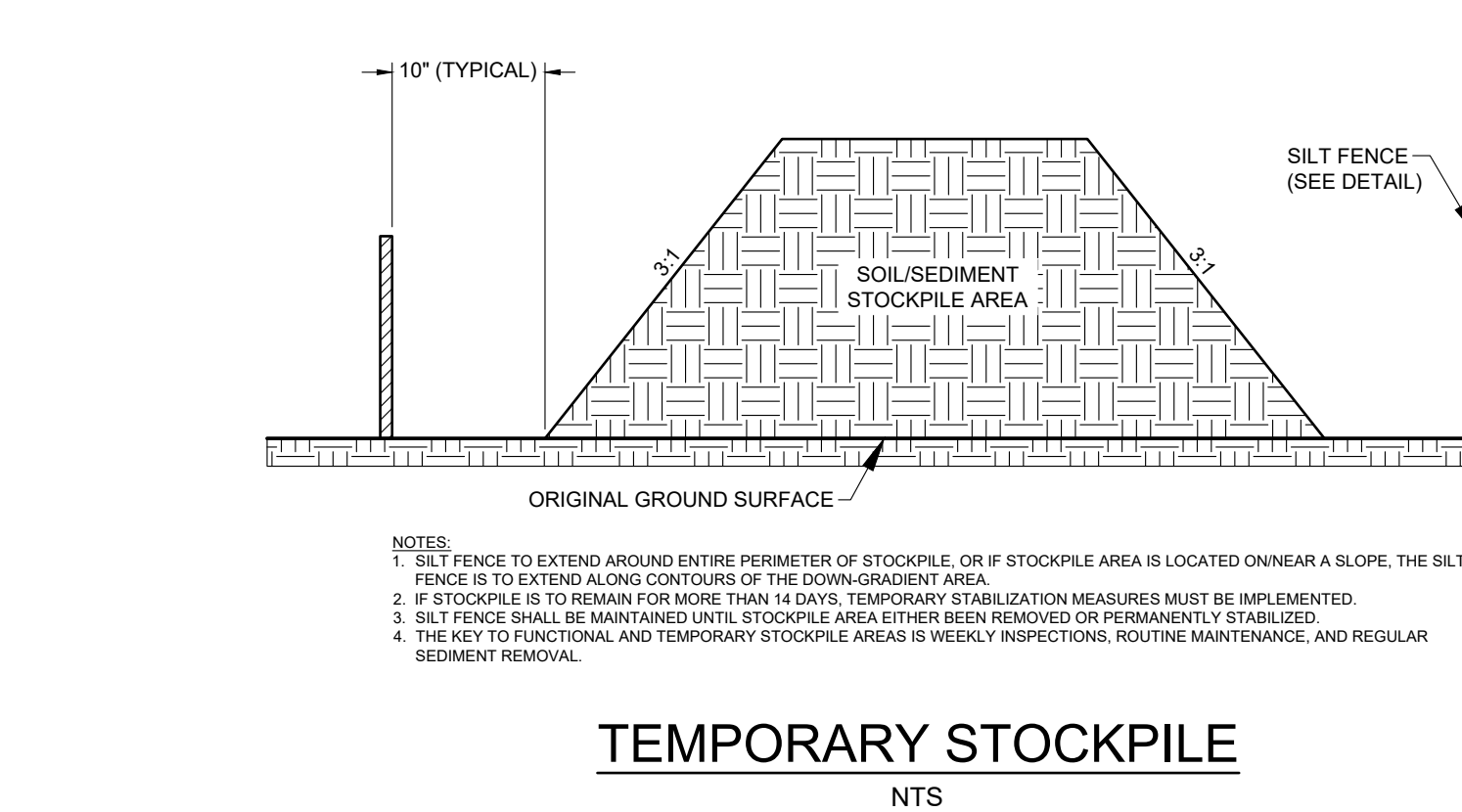
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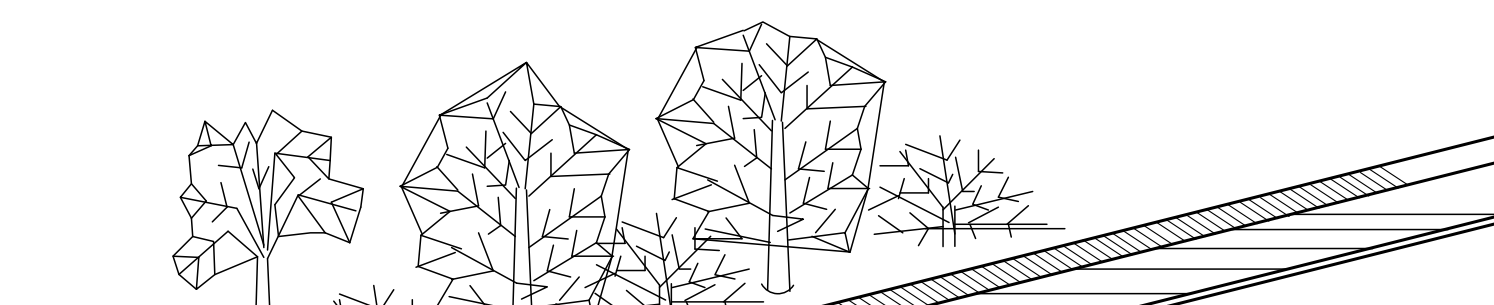
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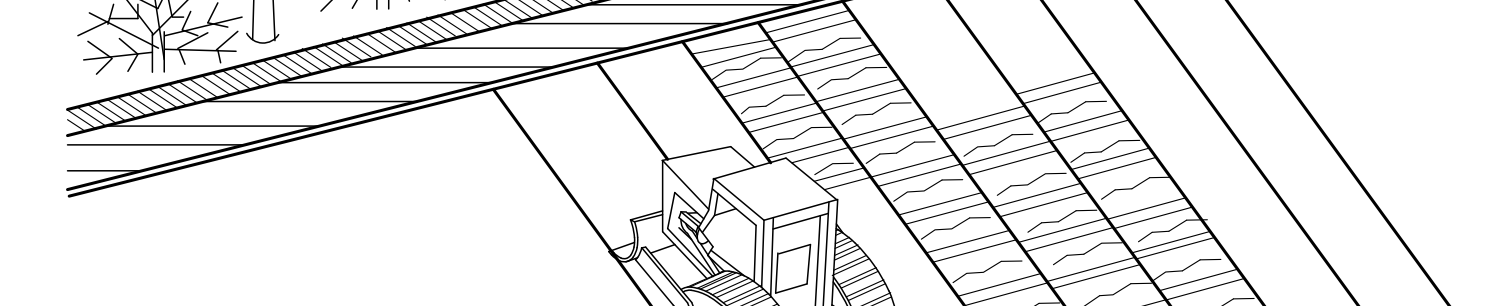
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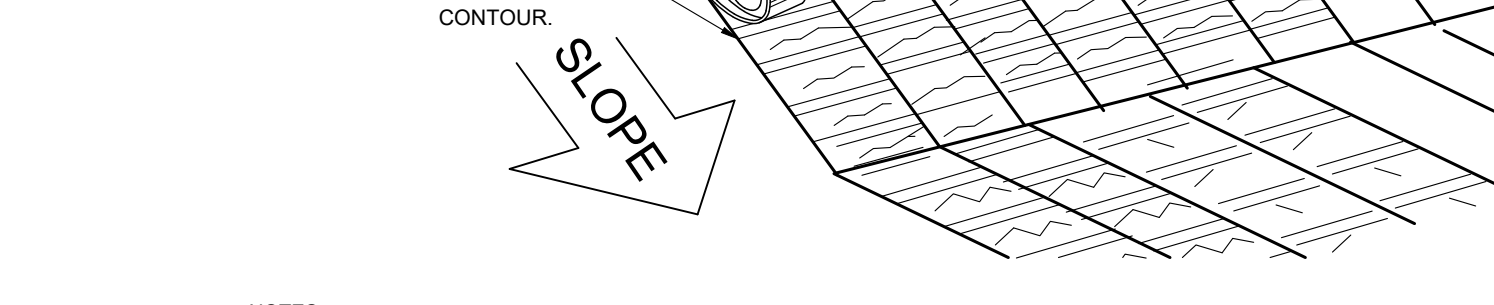
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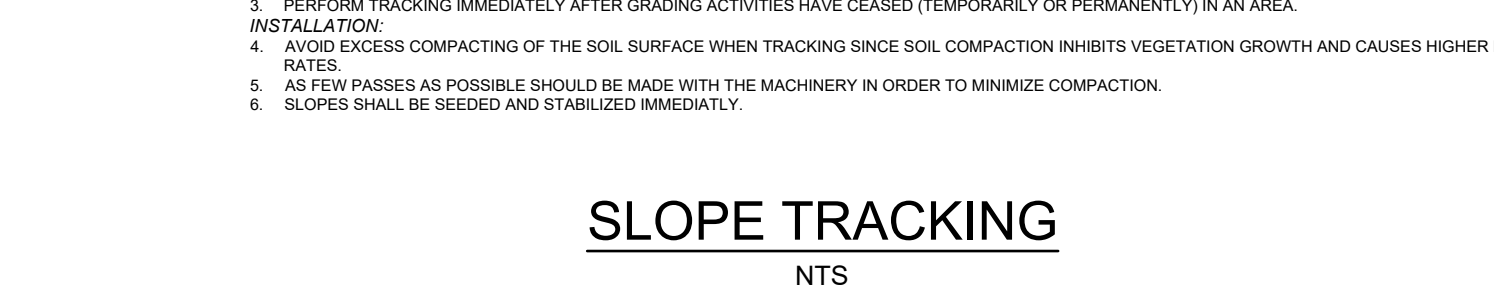
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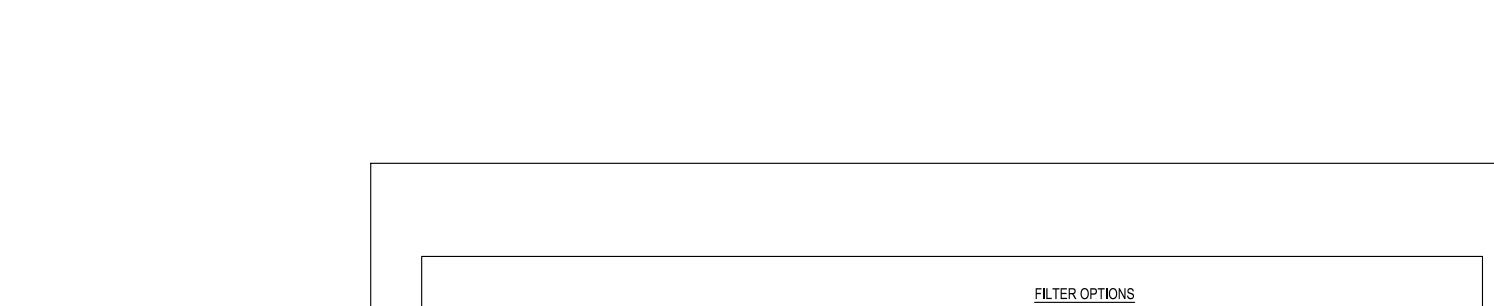
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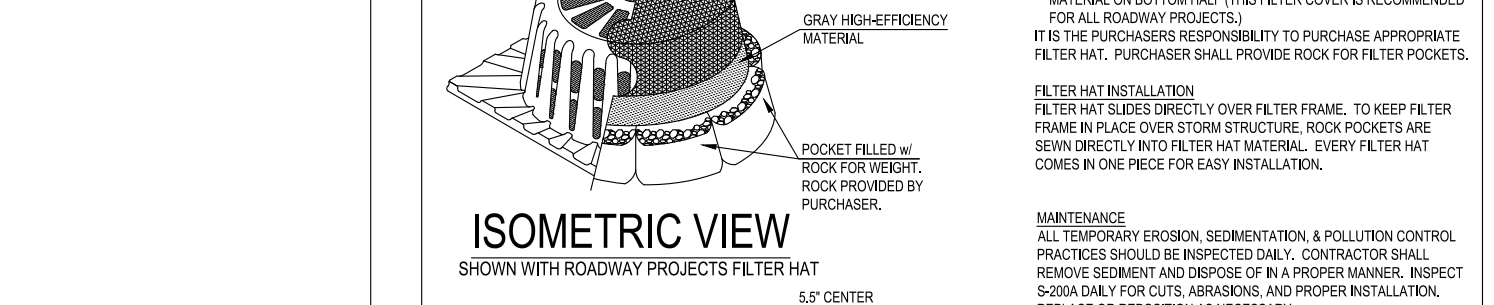
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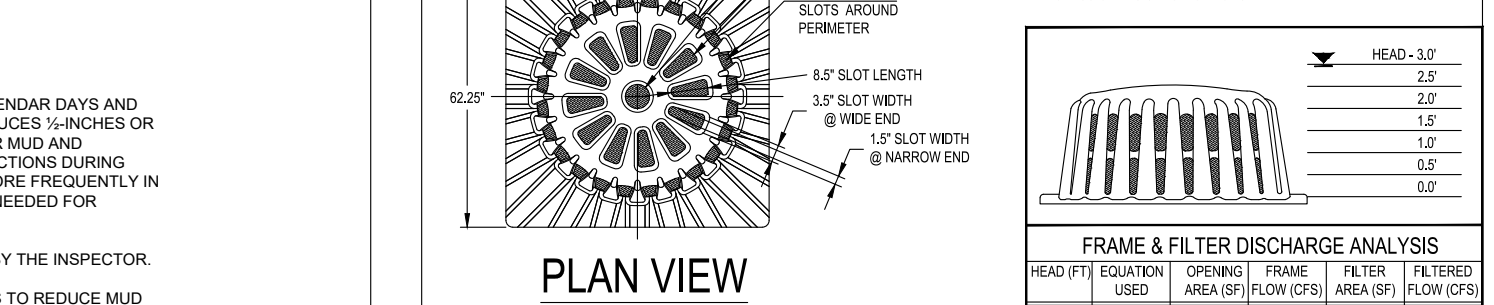
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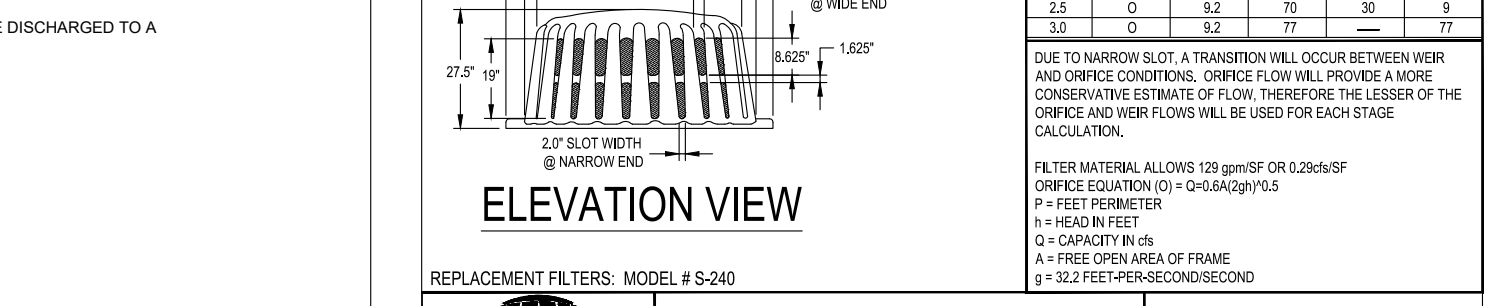
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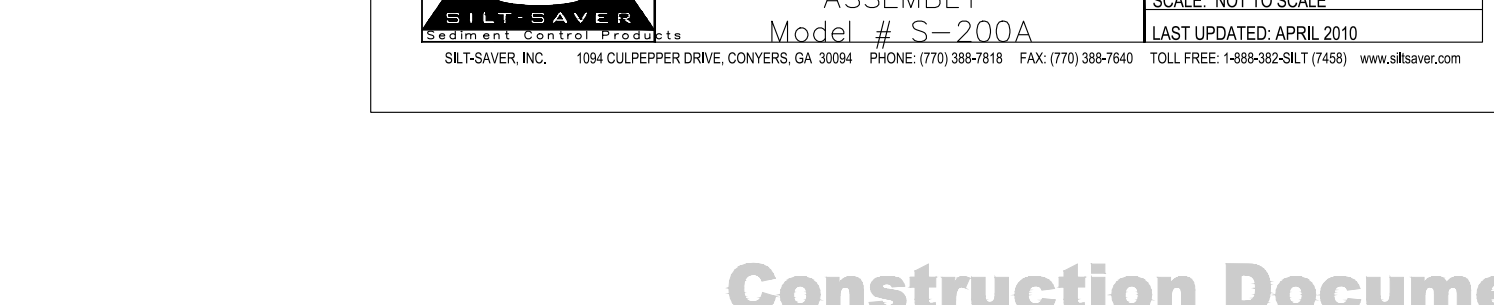
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STUDIO 2LR

ARCHITECTURE + INTERIORS

2428 MAIN STREET, COLUMBIA, SC
29201
803.233.6602
STUDIO 2LR ROOM

COX AND DINKINS

ENGINEERS - SURVEYORS - LANDSCAPE ARCHITECTS

724 BELTLINE BLVD.
COLUMBIA, SC 29206
803.254.0518
COXANDDINKINS.COM
C&D PROJECT NO. 26002

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 20942
DANIEL C. LAM, P.E.
CIVIL ENGINEER

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 00294
COX AND DINKINS, INC.
STATE OF SOUTH CAROLINA

MIDLANDS TECHNICAL COLLEGE

PROJECT NAME

OUTDOOR WELDING LAB

LOCATION

WEST COLUMBIA, SC

REVISIONS

NO.	DATE	DESCRIPTION
1	8/6/26	Addenda Revision

STATE PROJECT NUMBER
H59-N348-AT

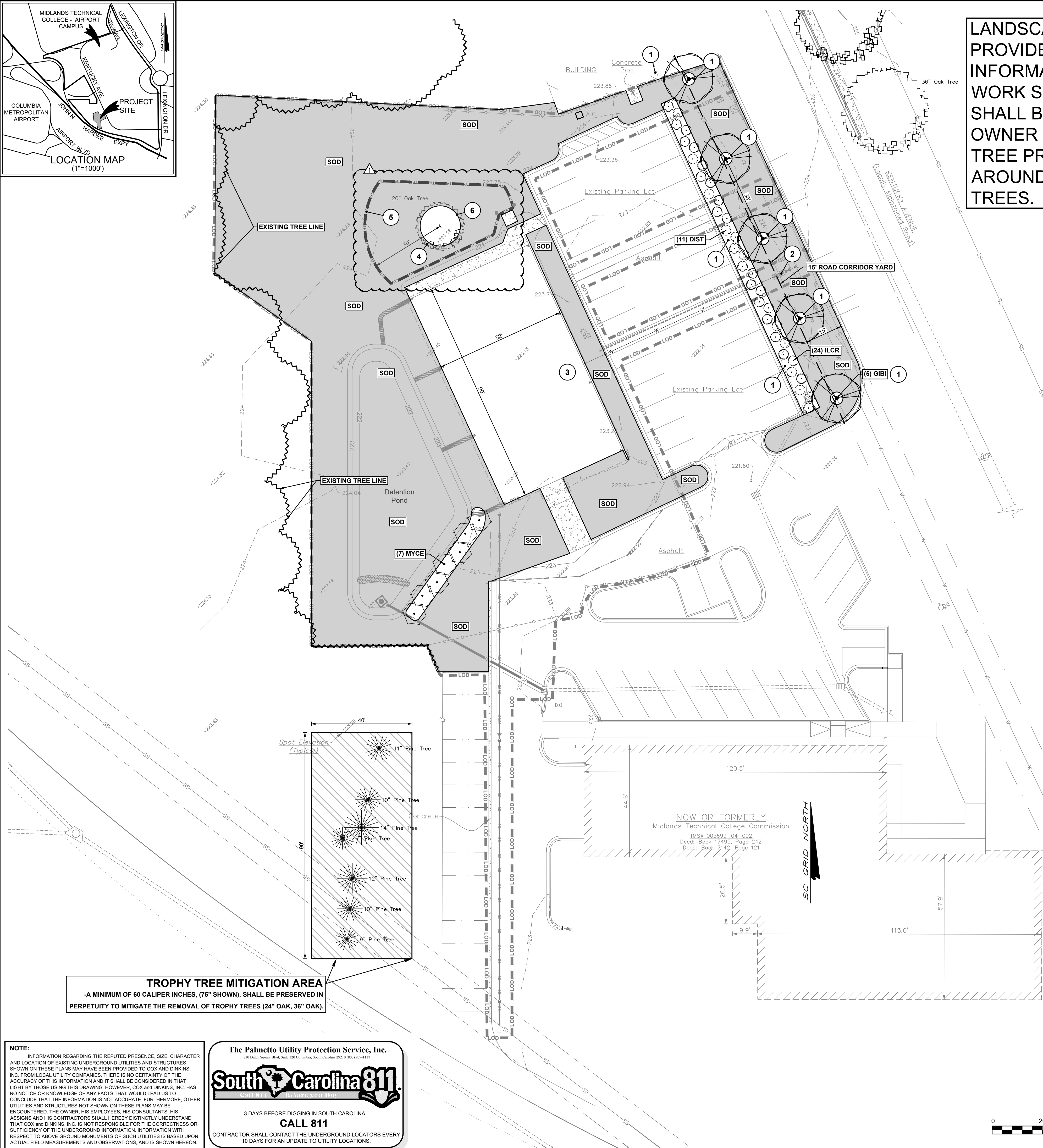
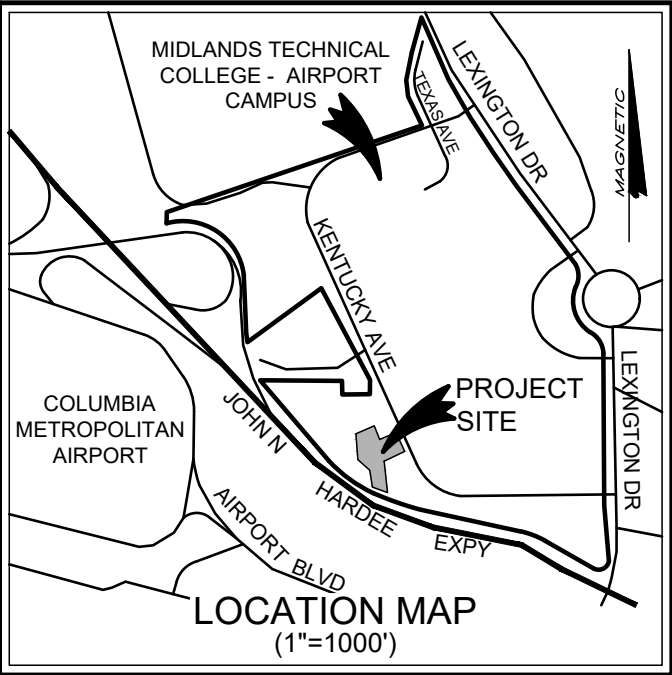
PROJECT NUMBER
25098

SHEET NUMBER
C105

SHEET NAME
DETAILS

DATE
07/06/2026

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LANDSCAPE PLANS
PROVIDED FOR
INFORMATION ONLY. ALL
WORK SHOWN ON PLANS
SHALL BE PROVIDED BY
OWNER EXCEPT FOR
TREE PROTECTION
AROUND DESIGNATED
TREES.

LEGEND



LANDSCAPE NOTES

1. MATERIAL LIST WAS PREPARED FOR ESTIMATING PURPOSES ONLY. CONTRACTOR SHALL MAKE OWN QUANTITY TAKEOFFS USING THE DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT IMMEDIATELY. LANDSCAPE ARCHITECT ASSUMES NO LIABILITY FOR QUANTITY DISCREPANCIES.
2. CONTRACTOR TO VERIFY THAT ALL PLANT MATERIALS ARE AVAILABLE AS SPECIFIED WHEN PROPOSAL IS SUBMITTED.
3. CONTRACTOR SHALL STAKE OUT ALL SHRUB BED LINES, TREE LOCATIONS AND SHRUB GROUPINGS FOR APPROVAL BY LANDSCAPE ARCHITECT BEFORE COMMENCING PLANTING OPERATIONS. NOTIFY LANDSCAPE ARCHITECT 24 HOURS PRIOR TO PLANTING.
4. ALL DISTURBED AREA IN PLANT BEDS TO RECEIVE 3" OF TRIPLE GROUND, HARDWOOD BARK MULCH, AGED A MINIMUM OF 6 MONTHS. TREES NOT LOCATED WITHIN A PLANT BED SHALL RECEIVE A 5' DIAMETER SAUCER OF TRIPLE SHREDDED HARDWOOD BARK MULCH THAT IS 3" DEEP. PULL BACK MULCH 6-8" FROM ROOT FLARE / TRUNK.
5. CONTRACTOR TO MAINTAIN ALL AREAS WITHIN THE LIMITS OF WORK FOR THE DURATION OF CONSTRUCTION.
6. IN THE PLANT SCHEDULE, PLANTS NOTED AS 'SPECIMEN' SHALL BE SELECTED BY THE LANDSCAPE ARCHITECT AND FLAGGED AT THE NURSERY. THE TREES NOTED AS 'MULTI-STEM' OR 'MULTI-TRUNK' SHALL HAVE NO LESS THAN 3 STEMS AND NO MORE THAN 5 STEMS OR TRUNKS. MULTI-STEM TREES WITH LESS THAN 3 OR MORE THAN 5 STEMS WILL BE REJECTED.
7. PRE-EMERGENT HERBICIDE SUCH AS 'PREEN' OR EQUAL SHALL BE APPLIED TO PLANTING AREAS IMMEDIATELY FOLLOWING LANDSCAPE INSTALLATION, AND PRIOR TO MULCHING. ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
8. CENTERS OF PLANT MATERIAL SHOULD BE LOCATED NO CLOSER THAN 2' FROM THE FOUNDATION OF ANY BUILDING. ADJUST LOCATION OF PLANT MATERIAL TO AVOID PLACEMENT IN FRONT OF GUTTER DRAINS.
9. CONTRACTOR TO VERIFY WITH LANDSCAPE ARCHITECT THAT ADEQUATE SURFACE AND PLANT PIT DRAINAGE EXISTS PRIOR TO PLANTING.
10. ALL TREES, SHRUBS AND PLANTS SHALL BE TYPICAL FOR THE SPECIES IN FORM AND COLOR; FREE FROM DAMAGE AND DISEASE AND SHALL BE U.S. NURSERY STANDARD #1 OR BETTER.
11. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES AND TELECOMMUNICATION LINES IN THE VICINITY OF HIS WORK AND INFORM THE LANDSCAPE ARCHITECT IF ANY CONFLICTS OR DISCREPANCIES ARE ENCOUNTERED.
12. IF INSTALLED PLANTS SETTLE OR FALL OUT OF PLUMB POSITION CONTRACTOR WILL STRAIGHTEN THE PLANTS BY MAKING ADJUSTMENTS TO THE POSITION OF THE ROOTBALL AND NOT BY PUSHING OR PULLING ON THE TRUNK, OR BY TIGHTENING THE GUYWIRES. TREES SHALL BE STRAIGHTENED DURING THE DURATION OF THE PROJECT AS THEY GET OUT OF PLUMB, UNTIL THE FINAL INSPECTION OR CERTIFICATE OF OCCUPANCY IS GRANTED, WHICHEVER IS LONGER.
13. BALL DEPTHS ON SOME TREES IN A SINGLE GROUP MAY VARY. THE TOP OF ROOTBALLS ARE TO BE SET 2" ABOVE FINISHED GRADE. IF DEPTHS VARY, ALL TREES IN A GROUP SHOULD BE SET SO THAT THE BASE OF THE TRUNKS WILL APPEAR TO BE AT THE SAME RELATIVE ELEVATION ABOVE GRADE.
14. NO DECIDUOUS OR EVERGREEN TREE WILL BE ACCEPTED IF THERE IS MORE THAN ONE LEADER, UNLESS THE TREE IS DESIGNATED AS MULTI-STEM OR MULTI-TRUNK.
15. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
16. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
17. ANY AND ALL EXISTING BUFFERS ARE TO BE MAINTAINED AND PROTECTED THROUGHOUT THE DURATION OF CONSTRUCTION, UNLESS OTHERWISE NOTED ON THE PLANS. ANY DAMAGE TO PROTECTED BUFFERS WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
18. NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED WITHOUT APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
19. UPON COMPLETION OF ALL LANDSCAPING, AN INSPECTION FOR ACCEPTANCE OF THE WORK SHALL BE HELD. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND OWNER OF THE INSPECTION AT LEAST 7 BUSINESS DAYS PRIOR TO THE ANTICIPATED INSPECTION DATE.
20. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR 12 MONTHS FROM THE DATE OF ACCEPTANCE. REPLACEMENTS SHALL BE GUARANTEED FOR AN ADDITIONAL 12 MONTHS.
21. LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE CONSTRUCTION OPERATION, TO REJECT ANY AND ALL WORK WHICH, IN HIS OPINION, DO NOT MEET THE REQUIREMENTS OF THESE PLANS OR SPECIFICATIONS.
22. ALL PROPOSED TREES ARE TO BE INSTALLED EITHER COMPLETELY INSIDE OR COMPLETELY OUTSIDE OF PLANTING BEDS. PLANT BED LINES ARE NOT TO BE OBSTRUCTED (EVEN BY EXISTING TREES). BED LINES MUST MAINTAIN A MINIMUM DISTANCE OF 4'-0" FROM EXISTING TREE TRUNKS, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
23. THE CONTRACTOR SHALL COORDINATE WITH UTILITY, LIGHTING AND IRRIGATION CONTRACTORS REGARDING THE INSTALLATION OF PLANT MATERIAL.
24. THE CONTRACTOR SHALL ENSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROJECTED DRAINAGE PATTERNS.
25. SEE TREE, SHRUB AND GROUND COVER PLANTING DETAILS AND SPECIAL PROVISIONS IN THE PLANTING SPECIFICATIONS.
26. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEEDING OR MULCHING ALL DISTURBED AREAS WITHIN THE LIMIT OF WORK TO CONTROL SOIL EROSION.
27. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL INSTALLED PLANT MATERIAL RECEIVES ADEQUATE AND REGULAR WATERINGS.
28. **CONTRACTOR SHALL TEST SOIL PH AND CONDITIONS FOR ALL SOD AND SEEDING AREAS TO ENSURE THAT PROPER SOIL REQUIREMENTS ARE MET. PLANTING BED SOILS SHALL BE AMENDED BY CONTRACTOR AS INDICATED BY SOIL TEST AND SPECIFICATIONS TO ACHIEVE PROPER SOIL CONDITIONS PRIOR TO PLANTING.**
29. **IRRIGATION SHALL BE DESIGN-BUILD ACCORDING TO THE DESIGN-BUILD NOTES ON THIS SHEET. CONTRACTOR TO FORWARD DESIGN TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.**
30. ALL PLANTINGS SHALL BE MECHANICALLY IRRIGATED.

CODED NOTES

- 1 3" TRIPLE HAMMERED HARDWOOD BARK MULCH IN ALL LANDSCAPE AREAS, 2" IN ALL GROUND COVER BEDS. (TYP.)
- 2 PROPOSED LOCATION OF IRRIGATION METER.
- 3 CONTRACTOR SHALL COORDINATE WITH OWNER ON FINAL LOCATION OF IRRIGATION CONTROLLER.
- 4 TREE TO REMAIN (TYP.)
- 5 INSTALL TREE PROTECTION FENCING AROUND TREES DESIGNATED TO REMAIN PRIOR TO CLEARING. MAINTAIN FENCING THROUGHOUT CONSTRUCTION. SEE TREE PROTECTION DETAILS AND LANDSCAPE PLANS.
- 6 INSTALL 8'-0" DIAMETER MULCH RING WITH 3" DEPTH OF TRIPLE HAMMERED HARDWOOD BARK MULCH AS SHOWN.

LANDSCAPE REQUIREMENTS

- ROAD CORRIDOR (STREET YARD):**
- Street frontage trees shall be spaced on an average of (1) canopy tree per (35) LF.
 - Street frontage trees shall be setback at least 10 feet, but not greater than 20' from the existing or potential future right-of-way.
 - Kentucky Ave. (Local Road) : (162) LF of frontage = (5) Maiden Hair Trees
- PARKING LOTS (SCREENING):**
- Surface parking areas, including lots for storage and/or display, visible from an existing or proposed public or private street right-of-way and adjoining properties shall be landscaped with evergreen plant material that can be maintained at two to four feet in height.
- TROPHY TREES PROTECTION & MITIGATION:**
- Trophy trees removed : (1) 24" Oak Tree, (1) 36" Oak Tree
 - Trophy trees saved : (1) 20" Oak Tree
 - Trophy tree mitigation : (SEE PLAN) A preserved portion of 75 caliper inches to be preserved to mitigate the removal of 1 (24" Oak) & 1 (36" Oak)
 - ***Trees located outside of the LOD shall be designated as protected in "perpetuity", however this shall not prevent the removal of those trees in the future

Construction Documents

REFERENCES:

1. SKETCH PREPARED FOR MIDLANDS TECHNICAL COLLEGE BY COX and DINKINS, INC., DATED JANUARY 19, 2026, LAST REVISED MARCH 25, 2026.
2. TOPOGRAPHIC MAP PREPARED FOR MIDLANDS TECHNICAL COLLEGE WELDING BUILDING BY COX and DINKINS, INC., DATED AUGUST 16, 2017.
3. PLAT OF SUBDIVISION & LIMITED TOPOGRAPHIC MAP PREPARED FOR MIDLAND TECHNICAL COLLEGE, JOHN N. HARDEE EXPRESSWAY AND KENTUCKY AVENUE BY COX and DINKINS, INC., DATED JUNE 17, 2013.
4. RECORD DRAWING OF AIRPORT CONNECTOR ROAD UTILITY RELOCATIONS PREPARED FOR THE CITY OF CAYCE, S.C., BY AMERICAN ENGINEERING CONSULTANTS, INC., DATED JULY 29, 2002.

GENERAL NOTES:

1. THE SUBJECT PROPERTY IS IDENTIFIED AS LEXINGTON COUNTY TAX MAP PARCEL TMS# 005699-04-002.
2. TOTAL AREA OF SUBJECT PROPERTY IS APPROXIMATELY 54.9 ACRES.
3. ZONING OF THE SUBJECT PARCEL IS ID. REQUIRED SETBACK FROM ADJOINING PROPERTY AND ROAD R.O.W. = 0'.
4. CONTOUR INTERVAL ELEVATIONS ARE ONE (1) FOOT. ELEVATIONS SHOWN ARE NAVD 88 DATUM.
5. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE. THE LOCATIONS OF OTHER UNDERGROUND UTILITIES AND THEIR SERVICES ARE UNKNOWN. CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
6. THIS PROPERTY IS LOCATED IN FLOOD ZONE X PER FLOOD INSURANCE RATE MAP NUMBER 45063C0278J EFFECTIVE JULY 5, 2019, BY SCALED LOCATION AND GRAPHIC PLOTTING ONLY.
7. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT THEY AND THEIR SUBCONTRACTORS HAVE THE CORRECT/MOST UP-TO-DATE PLANS AVAILABLE.
8. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

NOTE:
INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES SHOWN ON THESE PLANS MAY HAVE BEEN PROVIDED TO COX AND DINKINS, INC. FROM LOCAL UTILITY COMPANIES. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. HOWEVER, COX AND DINKINS, INC. HAS NO NOTICE OR KNOWLEDGE OF ANY FACTS THAT WOULD LEAD US TO CONCLUDE THAT THE INFORMATION IS NOT ACCURATE. FURTHERMORE, OTHER UTILITIES AND STRUCTURES NOT SHOWN ON THESE PLANS MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS ASSIGNS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT COX AND DINKINS, INC. IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THE UNDERGROUND INFORMATION. INFORMATION WITH RESPECT TO ABOVE GROUND MONUMENTS OF SUCH UTILITIES IS BASED UPON ACTUAL FIELD MEASUREMENTS AND OBSERVATIONS, AND IS SHOWN HEREON.

The Palmetto Utility Protection Service, Inc.
810 Dutch Square Blvd, Suite 320 Columbia, South Carolina 29204 (803) 936-1117

South Carolina 811
Call before you dig

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 811

CONTRACTOR SHALL CONTACT THE UNDERGROUND LOCATORS EVERY 10 DAYS FOR AN UPDATE TO UTILITY LOCATIONS.

STUDIO 2LR
ARCHITECTURE + INTERIORS

2428 MAIN STREET, COLUMBIA, SC
29201
P 803.233.6602
STUDIO2LR.COM

COX AND DINKINS
ENGINEERS - SURVEYORS - LANDSCAPE ARCHITECTS

724 BELTLINE BLVD.
COLUMBIA, SC 29206
803.254.0516
COXANDINKINS.COM
C&D PROJECT NO. 26002

REGISTERED LANDSCAPE ARCHITECT
No. 1057

REGISTERED LANDSCAPE ARCHITECT
No. 1057

REGISTERED LANDSCAPE ARCHITECT
No. 361

REGISTERED LANDSCAPE ARCHITECT
No. 361

CERTIFICATE OF AUTHORIZATION SEAL

CLIENT NAME
MIDLANDS TECHNICAL COLLEGE

PROJECT NAME
OUTDOOR WELDING LAB

LOCATION
WEST COLUMBIA, SC

REVISIONS

NO.	DATE	DESCRIPTION
1	8/6/26	Addendum No. 1

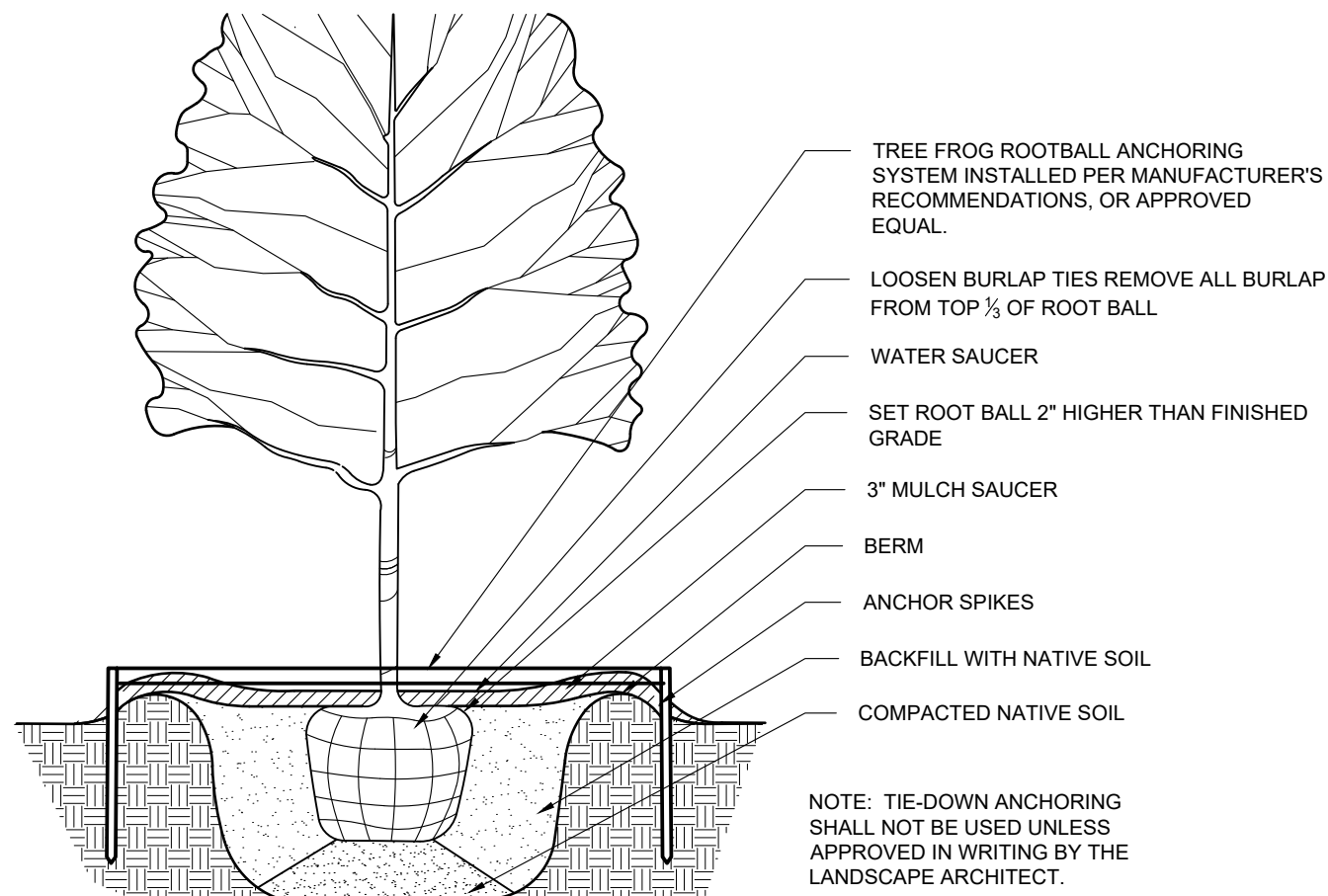
STATE PROJECT NUMBER
H59-N348-AT

PROJECT NUMBER
25098

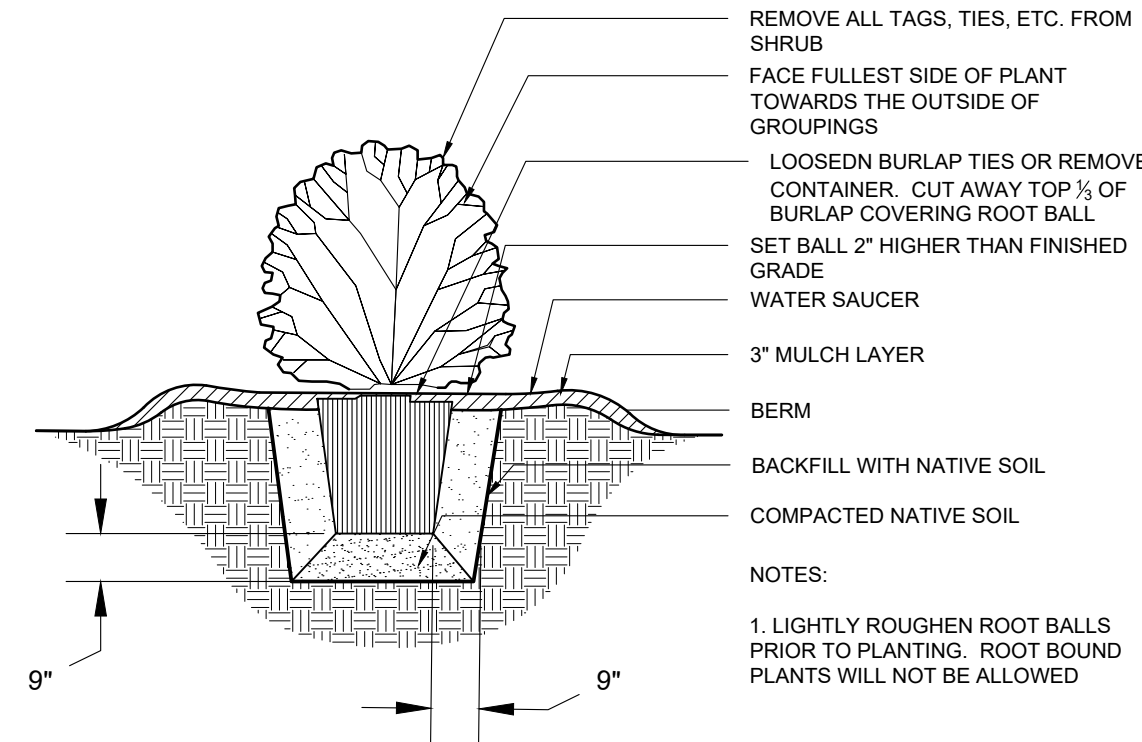
SHEET NUMBER
L101

SHEET NAME
LANDSCAPE PLAN

DATE
07/06/2026



TREE PLANTING DETAILS



SHRUB PLANTING DETAILS

LANDSCAPE PLANS PROVIDED FOR INFORMATION ONLY. ALL WORK SHOWN ON PLANS SHALL BE PROVIDED BY OWNER EXCEPT FOR TREE PROTECTION AROUND DESIGNATED TREES.



ROOT BALL ANCHORING SYSTEM SPECIFICATION SHEET

Features

- **SUSTAINABLE** - THE MOST SUSTAINABLE tree anchoring solution on the market, made with biodegradable and recycled materials
- **NO GO BACKS** - Once installed, you do not need to go back to remove it
- **TOTALLY HIDDEN** - Installed under the mulch without distracting from beautiful landscape
- **REDUCES LIABILITY** - No stakes, poles or hazards; theft/tamper resistant
- **TREE HEALTHY** - Tree sways naturally and you do not need to puncture the root ball
- **WIDELY SPECIFIED** - Corporate campuses, municipalities; field-tested in hurricane-prone FL
- **FAST** - 5-min install by one person
- **AFFORDABLE** - will not break the bank
- **MADE IN THE USA**

Specifications

- RBK20 / Up to 2" Caliper Trees (typically 15-30 gallon containers)**
- Kit includes (2) 16" x 2" x 4" anchor-boards, (4) 3/4" x 60" polyester strapping with 0% stretch, 1800lb break strength, (2) metal tensioning clips and (4) 4" x 3-3/4" arrowhead anchors
 - Requires min. distance of 6" from outer edge of root ball to outer edge of tree trunk
 - Requires solid, intact root ball with suggested total diameter of at least 14" across
- RBK40 / Up to 4" Caliper Trees (typically 30-100 gallon containers)**
- Kit includes (2) 24" x 2" x 6" anchor-boards, (4) 3/4" x 84" polyester strapping with 0% stretch, 1800lb break strength, (2) metal tensioning clips and (4) 4-3/4" x 4-1/2" arrowhead anchors
 - ***** RBK40L option includes 32" anchor-boards designed for 32" diameter root balls*****
 - Requires min. distance of 8" from outer edge of root ball to outer edge of tree trunk
 - Requires solid, intact root ball with suggested total diameter of at least 24" across
- RBK60 / Up to 6" Caliper Trees (typically 100-200 gallon containers)**
- Kit includes (2) 32" x 2" x 6" anchor-boards, (2) 16" x 2" x 6" anchor-boards, (8) 3/4" x 84" polyester strapping with 0% stretch, 1800lb break strength, (4) metal tensioning clips and (8) 4-3/4" x 4-1/2" arrowhead anchors
 - Requires min. distance of 8" from outer edge of root ball to outer edge of tree trunk
 - Requires solid, intact root ball with suggested total diameter of at least 32" across

- RBKPALM / Palms with Up to 30' Clear Trunk**
- Kit includes (4) 32" x 2" x 6" anchor-boards, (8) 3/4" x 120" polyester strapping with 0% stretch, 1800lb tensile strength, (4) metal tensioning clips and (8) 4-3/4" x 4-1/2" arrowhead anchors
 - Requires min. distance of 8" from outer edge of root ball to outer edge of palm trunk
 - Requires solid, intact root ball with suggested total diameter of at least 32" across

Ordering Information

Example: RBK60BIO

Series	Tree Caliper Size	Anchor Type
RBK	20 - up to 2" Caliper	(Blank) - Recycled Plastic Anchors
	40 - up to 4" Caliper	BIO - Biodegradable Anchors
	60 - up to 6" Caliper	HD - Metal Anchors for hard soils
	PALM - up to 30' clear trunk	

300 Morin St, Eustis, FL 32726 | 352-735-7411 | info.treefrogpe@gmail.com | www.treefrogpe.com



Project Name:
Landscape Architect:
Part #:
Quantity:
Comments:

Table 4. Permanent Vegetation Schedule for Steep Slopes/Cut Slopes

Species	Rates (lbs/acre)	Optimum Dates to Plant	Remarks
Weeping Lovegrass (Alone)	4	April - July 20	Quick cover, deep roots, likes dry sites, seldom used alone, clumps
Weeping Lovegrass (Mix)*	2	April - July 20	Quick cover, deep roots, likes dry sites, seldom used alone, clumps
Crownvetch (Mix)*	8 - 10	March - April	2 years to establish, no mowing, green all year, 20" maximum height

* For details on mixes, consult the Lexington County Soil and Water Conservation District

Table 5. Native Species That Can Be Used on Non-Critical, Level Sites in Lexington County, SC

Species	Rates (lbs/acre)	Optimum Dates to Plant	Remarks
Switchgrass (Mix* with Legumes)	10, PLS**	February 10 - April 20	Mix with Serecia at 30 lbs/acre
Indian Grass (Mix)*	8, PLS**	February 10 - April 20	Mix with Serecia at 30 lbs/acre
Little Bluestem, (Mix)*	8, PLS**	February 10 - April	-

* For details on mixes, consult the Lexington County Soil and Water Conservation District

** PLS - Pure Live Seed

Table 3. Permanent Vegetation Schedule

Species	Rates (lbs/acre)	Optimum Dates to Plant	Remarks
Bahia Grass (Alone)	40	March 20 - June 15	Slow to become established
Bahia Grass (Mix)*	30	March 20 - June 15	Slow to become established
Bermuda Grass (Hulled) (Alone)	8 - 12	April - July 15	Quick cover, sod forming, partial winter kill
Bermuda Grass (Hulled) (Mix)*	4 - 6	April - July 15	Quick cover, sod forming, partial winter kill
Fescue, Tall (KY31) Alone	40	August 15 - October	Seldom seeded alone, not for dry or wet sites
Fescue, Tall (KY31) Mix*	20	August 15 - October	Seldom seeded alone, not for dry or wet sites
Sericea Lespedeza (Scarified) Alone or Mix*, (Inoculate with EL, Inoculant)	40	April - June	Good for slopes, cuts, and fills that require low maintenance
Ladino Clover (Mix* only), (Inoculate with AB Inoculant)	2	August 20 - October	Naturally adds nitrogen

* For details on mixes, consult the Lexington County Soil and Water Conservation District

Table 4. Permanent Vegetation Schedule for Steep Slopes/Cut Slopes

Species	Rates (lbs/acre)	Optimum Dates to Plant	Remarks
Weeping Lovegrass (Alone)	4	April - July 20	Quick cover, deep roots, likes dry sites, seldom used alone, clumps
Weeping Lovegrass (Mix)*	2	April - July 20	Quick cover, deep roots, likes dry sites, seldom used alone, clumps
Crownvetch (Mix)*	8 - 10	March - April	2 years to establish, no mowing, green all year, 20" maximum height

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* For details on mixes, consult the Lexington County Soil and Water Conservation District

** PLS - Pure Live Seed

OUTDOOR WELDING LAB PLANT SCHEDULE									
Job #: 26002									
Last updated: 07-20-2026									
TREES	KEY	LATIN NAME	COMMON NAME	CAL	HEIGHT	SPREAD	ROOT/CONT.	SPACING	NOTES
5	GIBI	<i>Ginkgo biloba</i>	Maidenhair Tree	2" min.	10' min.		B&B	as shown	Full, Well-Branching, Strong central leader
SHRUBS, GRASSES and GROUNDCOVERS									
11	DIST	<i>Distylium</i> x 'Vintage Jade'	First Editions Vintage Jade Distylium		24" min.		#3	as shown	Full, Well-Branching, To be uniform in shape and height
24	ILCR	<i>Ilex crenata</i> 'Helleri'	Heler Japanese Holly		24" min.		#3	as shown	Full, Well-Branching, To be uniform in shape and height
7	MYCE	<i>Morella cerifera</i>	Wax Myrtle		36" min.		#3	as shown	Full, Well-Branching, To be uniform in shape and height
SOD/SEED ACRES									
0.52	SOD	<i>Cynodon dactylon</i>	Common Bermuda Grass Sod				SOD		
OTHER									
TBD	MULCH	TRIPLE SHREDDED HARDWOOD BARK MULCH					CY		3" in all plant beds, saucers around trees and under existing trees as shown - CONTRACTOR SHALL DO THEIR OWN TAKEOFF TO DETERMINE MULCH AMOUNT

NOTE: Materials list was prepared for estimating purposes. Contractor shall make own quantity take-off from drawings and specifications to determine quantities to his satisfaction, reporting promptly any discrepancies which may effect bidding. In the event of a plant quantity discrepancy, the planting plan shall take precedence over the plant schedule.

REVISIONS

NO.	DATE	DESCRIPTION
1	8/6/26	Addendum No.1

STATE PROJECT NUMBER

H59-N348-AT

PROJECT NUMBER

25098

SHEET NUMBER

L102

SHEET NAME

LANDSCAPE DETAILS

DATE

07/06/2026

REPORT OF GEOTECHNICAL EXPLORATION

OUTDOOR WELDING BUILDING
MIDLANDS TECHNICAL COLLEGE
AIRPORT CAMPUS
WEST COLUMBIA, SOUTH CAROLINA

Prepared For:

Midlands Technical College
1260 Lexington Drive
West Columbia, South Carolina 29170

BLE Project Number 26-29096
April 14, 2026



720 Gracern Road, Suite 132, Columbia, SC 29210

803.832.1380 803.832.1379 info@blecorp.com

BLECORP.COM



BUNNELL
LAMMONS
ENGINEERING

April 14, 2026

Midlands Technical College
C/O: Mr. Tommy Wise
1260 Lexington Drive
West Columbia, South Carolina 29170

Attention: Mr. Tommy Wise

Subject: **Report of Geotechnical Exploration – Revision 1**
Outdoor Welding Building
Midlands Technical College, Airport Campus
West Columbia, South Carolina
BLE Project No. 26-29096

Mr. Wise:

Bunnell-Lammons Engineering, Incorporated (BLE) is pleased to present this report of geotechnical exploration for the Outdoor Welding Building development located at Midlands Technical College Airport Campus in West Columbia, South Carolina.

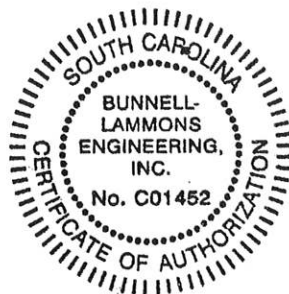
This exploration was performed generally as described in Bunnell-Lammons Engineering (BLE) Proposal No. 26-29096P dated February 25, 2026. The exploration was authorized on February 25, 2026, by the signature of Mr. Tommy Wise on our Proposal Acceptance Sheet.

Sincerely,

BUNNELL-LAMMONS ENGINEERING, INC.



Kevin Morgan, P.E.
Geotechnical Engineer
Registered, SC #39160



Gary L. Weekley, P.E.
Senior Engineer
Registered, SC #10398



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Appendix D	Laboratory Test Procedures and Results
Appendix E	Key to Soil Symbols and Classification
Appendix F	Important Information About This Geotechnical Report

1.0 AUTHORIZATION

A geotechnical exploration for the proposed Outdoor Welding Building located at Midlands Technical College Airport Campus in West Columbia, South Carolina was performed generally as described in Bunnell-Lammons Engineering (BLE) Proposal No. 26-29096P dated February 25, 2026. The exploration was authorized on February 25, 2026, by the signature of Mr. Tommy Wise on our Proposal Acceptance Sheet.

2.0 SCOPE OF EXPLORATION

This report presents the findings of the geotechnical exploration performed for the proposed Outdoor Welding Building in West Columbia, South Carolina (reference Figure 1, Appendix A). The intent of this exploration was to evaluate the subsurface soil and groundwater conditions at the site along with water infiltration rates and provide geotechnical recommendations for design of the foundations, floor slab and associated project elements. We have also included a discussion of secondary design considerations and provided geotechnical related construction recommendations.

3.0 PROJECT INFORMATION

The following project information was provided in a request for proposal (RFP) from Mr. Tommy Wise of Midlands Technical College to our Mr. Kevin Morgan. Included in the RFP was a satellite aerial image, site survey, and a conceptual site sketch. The site sketch included the preliminary site layout with proposed boring and infiltration locations.

It is proposed to construct an approximately 4,600-square-foot pre-engineered metal building (PEMB) with an outdoor welding lab. It is also planned to construct an approximately 21,000 square foot stormwater detention pond to the west of the proposed building. We understand the building will be one story tall and supported by conventional shallow foundations with a concrete slab on grade.

Based on our review of available online aerial imagery, the site where the proposed outdoor welding building will be located is mostly open, grass covered and relatively flat. The proposed detention pond to the west is located within a heavily wooded area of planted pines. To the immediate south is the existing Welding Technology Center along with asphalt paved parking to the south and east.

Structural information was not provided to us as of the date of this report. However, based on our experience with similar projects, we anticipate maximum individual column, and continuous wall loads of up to 75 kips and 2 kips per linear foot, respectively. Detailed grading information was not available at this time. As such, we have assumed minimal earthwork (less than 5 feet of cut and/or fill) will be required for construction in the building area and approximately 15 feet of excavation in the stormwater detention dam.

4.0 FIELD EXPLORATION

4.1 Soil Test Borings

The site was explored by drilling six soil test borings (ASTM D1586) at the approximate locations shown on the attached Boring Location Plan (reference Figure 2, Appendix A). Borings B-1 and B-2 were advanced within the proposed welding building footprint and advanced to a depth of 20 feet below the existing ground surface. Borings B-3 through B-6 were advanced within the proposed stormwater pond area and advanced to a depth of 15 feet below the existing ground surface. The borings were located in the field by our Mr. Alex Skoler by referencing the provided site plan and identifiable site landmarks. Mr. Skoler also monitored the drilling process and classified the soil samples to create field boring logs. Boring elevations were estimated using publicly available sources and referencing the provided topographic site plan. Boring logs are presented in the Appendix C of this report. The boring locations and elevations shown in the Appendix should be considered approximate. A description of our field procedures is also included in Appendix B.

4.2 Infiltration Testing

BLE performed infiltration testing at the project site using an Aardvark Permeameter 2840 (compatible with ASTM D5126) at the two requested infiltration test locations according to the conceptual site sketch given to us by Midlands Technical College. The Aardvark is a constant-head permeameter. “Constant-head” refers to the fact that the depth of water in the borehole does not change during the measurement period. As a result, the measurement conditions remain constant during the testing period. The rate of water supplied corresponds to the soil infiltration rate from the bottom and side surfaces of the test borehole. The soil infiltration rate is the amount of percolated water over time which is equivalent to the reservoir flow rate. The measurement period ends when the reservoir flow rate does not change during several consecutive readings.

The results of the Aardvark Permeameter Test are shown in the following Table 1. The test data are presented in Appendix C.

It should be noted that INF-2 indicated a higher infiltration rate than that of INF-1 due to the soil type encountered. We recommend that INF-1 be utilized for design purposes within the vicinity of the proposed detention pond in this area.

Table 1: Aardvark Permeameter Test Results

ID	Infiltration Test Depth (feet)	Hydraulic Conductivity (K_{sat})	
		(inch/s)	(inch/hr)
INF-1	5.0	1.96×10^{-3}	7.07
INF-2	5.0	1.23×10^{-2}	44.3

5.0 SITE GEOLOGY

The site is located within the Atlantic Coastal Plain Physiographic Province of South Carolina. The soils in this province are generally interbedded silts, sands, and clays that have been deposited during successive advances and retreats of the ocean over the past several million years. Along rivers the marine deposits have, in more recent times, been successively eroded and overlain by alluvial (water-deposited) soils.

Most formations within the Coastal Plain were laid down in a shallow sloping sea bottom, tilting gradually toward the sea at the rate of a few feet per mile. During periods of relatively low sea level, the old bottom deposits emerged, forming plains tilting toward the sea. These plains were subsequently eroded by coastal streams which formed shallow troughs in an otherwise uniform stratum. During periods of relatively high sea level, the former troughs were inundated and filled with more recent sediments. Consequently, many of the formations in the Coastal Plain exist as fractional erosional remnants sandwiched within more continuous strata.

6.0 SUBSURFACE CONDITIONS

Beneath an approximate 2 to 4-inch-thick layer of topsoil at most of the borings, and a 3-inch-thick layer of asphalt pavement at boring B-2, the borings primarily encountered native Coastal Plain soils. The native Coastal Plain soils encountered consist primarily of loose to medium dense poorly graded sand with silt (SP-SM), silty sand (SM), and clayey sand (SC). Boring B-1 encountered stiff to very stiff sandy lean clay (CL) between approximately 8 and 13 feet below ground surface. Borings B-1 and B-2 in the proposed building area encountered possible fill soils to depths of 3 and 2 feet below ground surface, respectively. The possible fill soils consisted of firm sandy lean clay (CL) and medium dense silty sand. The letters in parentheses represent a visual classification of the soils in accordance with the Unified Soil Classification System. A key to symbols and classification is included as Appendix E.

The above descriptions provide a summary of the subsurface conditions encountered. The boring logs included as Appendix C contain detailed information recorded at each boring location. The boring logs represent our interpretation of the field logs based on engineering examination of the field samples and soil laboratory testing. The lines designating the interfaces between various strata represent approximate boundaries and the transition between strata may be gradual. It should be noted that the soil conditions will vary between boring locations.

6.1 Groundwater

Groundwater was not encountered within the soil test borings at the time of drilling. It should be noted that groundwater levels may fluctuate several feet with seasonal changes, rainfall variations, and with changes in the water level in adjacent drainage features. Normally, the highest groundwater levels occur in late winter and spring and the lowest levels occur in late summer and fall. Based on our groundwater observations, we do not expect groundwater to have a major impact on construction.

7.0 LABORATORY TESTING

A summary of the laboratory test results are presented in the following Table 2:

Table 2: Laboratory Index Test Results

Boring ID	Sample Depth (feet)	Soil Description	Natural Moisture Content (%)	Atterberg Limits			Percent Gravel (%)	Percent Fines (%)	USCS
				LL	PL	PI			
B-1	8.5 – 10	sandy lean clay	17.8	45	22	23	0.0	65.8	CL
B-1	18.5 – 20	clayey sand	19.4	35	22	13	0.1	41.2	SC
INF-1	4.5 – 5.0	silty sand	3.4	NV	NP	NP	0.0	12.9	SM
INF-2	4.5 – 5.0	poorly graded sand with silt	3.7	NV	NP	NP	0.0	10.0	SP-SM

Note: NP: Non-Plastic, NV: Non-Viscous

These laboratory tests were used to assist in soil classifications as well as foundation recommendations. The laboratory test results are presented in Appendix D along with a discussion of the laboratory test procedures.

8.0 ANALYSIS AND DESIGN RECOMMENDATIONS

8.1 Foundations

Based on the boring data and our experience with similar soil conditions, the existing fill soils and the Coastal Plain soils encountered in the borings are suitable for shallow foundation support of the proposed construction, however the upper soils should be re-conditioned/densified as recommended in the following sections. Satisfactory performance of the shallow foundations is subject to the criteria and site preparation recommendations contained in this report.

Foundations bearing in approved native soils may be sized for an allowable bearing pressure of 3,000 pounds per square foot (psf). Foundations bearing on new engineered fill that is placed on approved soil and compacted to at least 95 percent of the standard Proctor maximum dry density, and 98 percent in the upper 18-inches, (ASTM D698), as recommended later in this report, may also be sized for an allowable bearing pressure of 3,000 psf. We also recommend that the bearing soils in the foundation excavations be densified with at least 5 passes of a vibratory compactor prior to placement of steel reinforcement. The compaction of the foundation excavations will also improve the existing fill beneath the foundations.

We recommend that the minimum widths for individual column and continuous wall footings be 24 and 18 inches, respectively. The minimum widths will provide a margin of safety against a local or punching shear

failure of the foundation soils. There is a minimal frost depth at the project site, however footings should bear at least 18 inches below final exterior grade to provide sufficient bearing capacity embedment considerations. We recommend that walls be provided with movement joints to accommodate some possible differential settlement.

Exposure to the environment may weaken the soils at the foundation bearing level if the foundation excavations remain open for long periods of time. Therefore, we recommend that once each foundation excavation is extended to final grade, the foundation be constructed as soon as possible to minimize the potential damage due to loose soil, ponded water, and debris. Foundation concrete should not be placed on soils that have been disturbed by seepage. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom and replaced with a structural fill prior to placement of concrete. If the excavation must remain open overnight or if rainfall becomes imminent while the bearing soils are exposed, we recommend that a 2 to 4-inch thick "mud-mat" of "lean" (2,000 psi) concrete be placed on the bearing soils for protection before the placement of reinforcing steel.

To verify that the soils encountered in footing excavations are similar to those encountered by the borings, we recommend that foundation excavations be examined. Part of this examination should include checking the bearing soils after the recommended densification to a depth of 3 feet with a dynamic cone penetrometer (DCP) performed by an experienced engineering technician working under the direction of the geotechnical engineer.

8.2 Settlement

We conducted settlement estimates assuming conventional shallow spread foundations were used to support the structure. The settlement estimates are based on the maximum estimated column load of 75 kips and 2 kips per linear foot. Assuming foundations are designed and constructed in accordance with the recommendations presented in this report, we estimate the total foundation settlement to be less than 1-inch. Maximum differential settlement between adjacent similarly loaded foundations is estimated to be approximately ½-inch or less.

8.3 Grade Slabs

The grade slab may be soil supported assuming that the existing fill and native soils are densified by several passes of a heavy compactor prior to the subgrade proofroll test recommended in Section 9.4 of this report. The grade slab should be jointed around columns and along footing supported walls so that the slab and foundations can settle differentially without damage. This jointing is not required when slabs and foundations are cast as a monolithic unit (i.e. thickened edge foundations). If slab thickness permits, joints containing dowels or keys may be used in the slab to permit movement between parts of the slab without cracking or sharp vertical displacements.

Based on the soils encountered at the site, we recommend a modulus of subgrade reaction, k , of 150 pci for use in design of slabs. This modulus value is for a one-foot square plate.

Floor slabs supported on grade which will be carpeted, tiled, painted or receive some other covering or sealant should incorporate a vapor barrier. The vapor barrier should be installed in accordance with the requirements of ACI 302 and per the manufacturer's recommendations.

Concrete slabs-on-grade should be underlain by a minimum 4-inch layer of crushed stone or washed gravel to serve as a capillary moisture barrier. Suitable materials include AASHTO size No. 57, 67, or 78 crushed stone. A non-plastic material containing less than 6% fines passing through the No. 200 sieve may be used as an alternate.

8.4 Canopy Structures

Canopy structures to be constructed at the site will need to factor in consideration for uplift. Uplift loads should be resisted by the weight of the concrete and the soil backfill over the concrete foundations. A factor of safety of at least 1.5 should be provided against uplift loads. Frictional resistance between the soil and the concrete should not be considered in uplift design as the available resistance will be highly dependent on the soil conditions along the sides of the excavations as affected by weather, construction methods and quality, and the length of time that the excavation remains open prior to placing concrete.

8.5 Secondary Design Considerations

The following items are presented for your consideration. These items are known to enhance performance of structural and pavement systems.

- Roof drainage should be collected by a system of gutters and downspouts and directed away from all structures.
- Sidewalks should be sloped so that water drains away from the structures.
- Site grading and paving should result in positive drainage away from the structures. Water should not be allowed to pond around the structures or in such locations that would lead to saturation of pavement subgrade materials. A minimum slope of approximately $\frac{1}{4}$ to $\frac{1}{2}$ -inch per foot should provide adequate drainage.
- Backfill for utility lines should be placed in accordance with the requirements for engineered fill to minimize the potential for differential settlement.

9.0 CONSTRUCTION RECOMMENDATIONS

9.1 Clearing and Grubbing

All existing topsoil, vegetation, trees, stumps, disturbed soils, unsuitable soils and surface soils containing organic matter or other deleterious materials should be stripped from within the proposed building and pavement areas. Topsoil and organic soils may be stockpiled for later use in areas to be landscaped. Other

deleterious material should be disposed of offsite or in areas of the site that will not be developed. We encountered approximately 2-4-inches of topsoil and 3-inches of asphalt pavement across the site, however these depths may vary throughout. Root mass of mature trees are typically deeper than nominal topsoil.

9.2 Drainage

Groundwater was not encountered in any of the borings advanced at the time of drilling. However, it should be noted that groundwater levels may fluctuate several feet with seasonal and rainfall variations and with changes in the water level in adjacent drainage features. Normally, the highest groundwater levels occur in late winter and spring and the lowest levels occur in late summer and fall. The contractor should be prepared to promptly remove any surface water or groundwater from the construction area. This has been done effectively on past jobs by means of gravity ditches and pumping from filtered sumps. Based on our groundwater observations, we do not expect groundwater to have a major impact on construction.

9.3 Proofrolling

After stripping and densification of the subgrade as needed, we recommend that areas to provide support for the foundations, floor slab, engineered fill, and pavement be carefully inspected for soft surficial soils and proofrolled with a 25 to 35-ton, four-wheeled, rubber-tired roller or similar approved equipment. The proofroller should make at least four passes over each location, with the last two passes perpendicular to the first two where practical.

Any areas which wave, rut, or deflect excessively and continue to do so after several passes of the proofroller should be excavated to firmer soils. The excavated areas should be backfilled in thin lifts with engineered fill. The proofrolling and excavating operations should be carefully monitored by an experienced engineering technician working under the direction of the geotechnical engineer. Proofrolling should not be performed when the ground is frozen or wet from recent precipitation.

9.4 Engineered Fill

All fill used for raising site grade or for replacement of material that is undercut should be uniformly compacted in thin lifts to at least 95 percent of the standard Proctor maximum dry density (ASTM D698). In addition, at least the upper 18 inches of subgrade fill beneath pavements and floor slabs should be compacted to at least 98 percent of the standard Proctor maximum dry density. We recommend that the fill be placed and compacted at a moisture content within three percent of the standard Proctor optimum moisture content.

Based on our visual examination, laboratory testing, and experience with similar soil types, most of the near surface on-site soil appears to be suitable for use as engineered fill with proper moisture adjustment. Soils having a Plasticity Index (PI) greater than 30 (less than 15 is preferable) should not be used for fill. Soils used for engineered fill should be reasonably free from organics (less than 3% organics by weight), should contain particles no larger than 3-inches, and should exhibit a standard Proctor maximum dry density

greater than 90 pcf. The near surface soils encountered across the site primarily classify as clayey sand (SC) and may be used as engineered fill.

Soils encountered within the proposed detention pond locations also visually appear to be appropriate for use as engineered fill, classifying primarily as poorly graded sand with silt (SP-SM), however, additional laboratory testing should be conducted to confirm prior to use as structural fill on site.

Before filling operations begin, representative samples of each proposed fill material should be collected and tested to determine the compaction and classification characteristics. The maximum dry density and optimum moisture content should be determined for each type of fill soil. Once compaction begins, a sufficient number of density tests should be performed by an experienced engineering technician working under the direction of the geotechnical engineer to measure the degree of compaction being obtained. Existing slopes steeper than 6:1 (horizontal:vertical) should be benched prior to placement of engineered fill such that the fill is placed in horizontal layers and keyed into the existing slopes.

The edge of engineered fill extending above surrounding grade should extend horizontally beyond the outside edge of the building foundations at least 10 feet or a distance equivalent to the height of fill to be placed, whichever is greater, before sloping. The edge of fill should extend at least 5 feet beyond paved areas. Fill slope surfaces should be protected from erosion by grassing or some other means.

The surface of compacted subgrade soils can deteriorate and lose its support capabilities when exposed to environmental changes and construction activity. Deterioration can occur in the form of freezing, formation of erosion gullies, extreme drying, exposure for a long period of time or rutting by construction traffic. We recommend that the surfaces of floor slab and pavement subgrades that have deteriorated or softened be recompacted prior to construction of the floor slab or pavement. Additionally, any excavations through the subgrade soils (such as utility trenches) should be properly backfilled in compacted lifts. Recompanction of subgrade surfaces and compaction of backfill should be checked with a sufficient number of density tests to determine if adequate compaction is being achieved.

9.5 Slopes

Confined temporary excavations such as for utility installation or below-grade wall construction should conform to OSHA regulations. For permanent slopes which are not confined, our experience suggests that excavation side slopes through the existing soil overburden at the site should be laid back at a 2H:1V (horizontal to vertical) slope or flatter. Permanent fill slopes placed on a suitable foundation should be constructed at 2.5:1, or flatter. Fill slopes should be adequately compacted. Cut and fill slope surfaces should be protected from erosion by grassing or other means. Permanent slopes of 3:1 or flatter may be desirable for mowing.



10.0 SPECIFICATIONS REVIEW

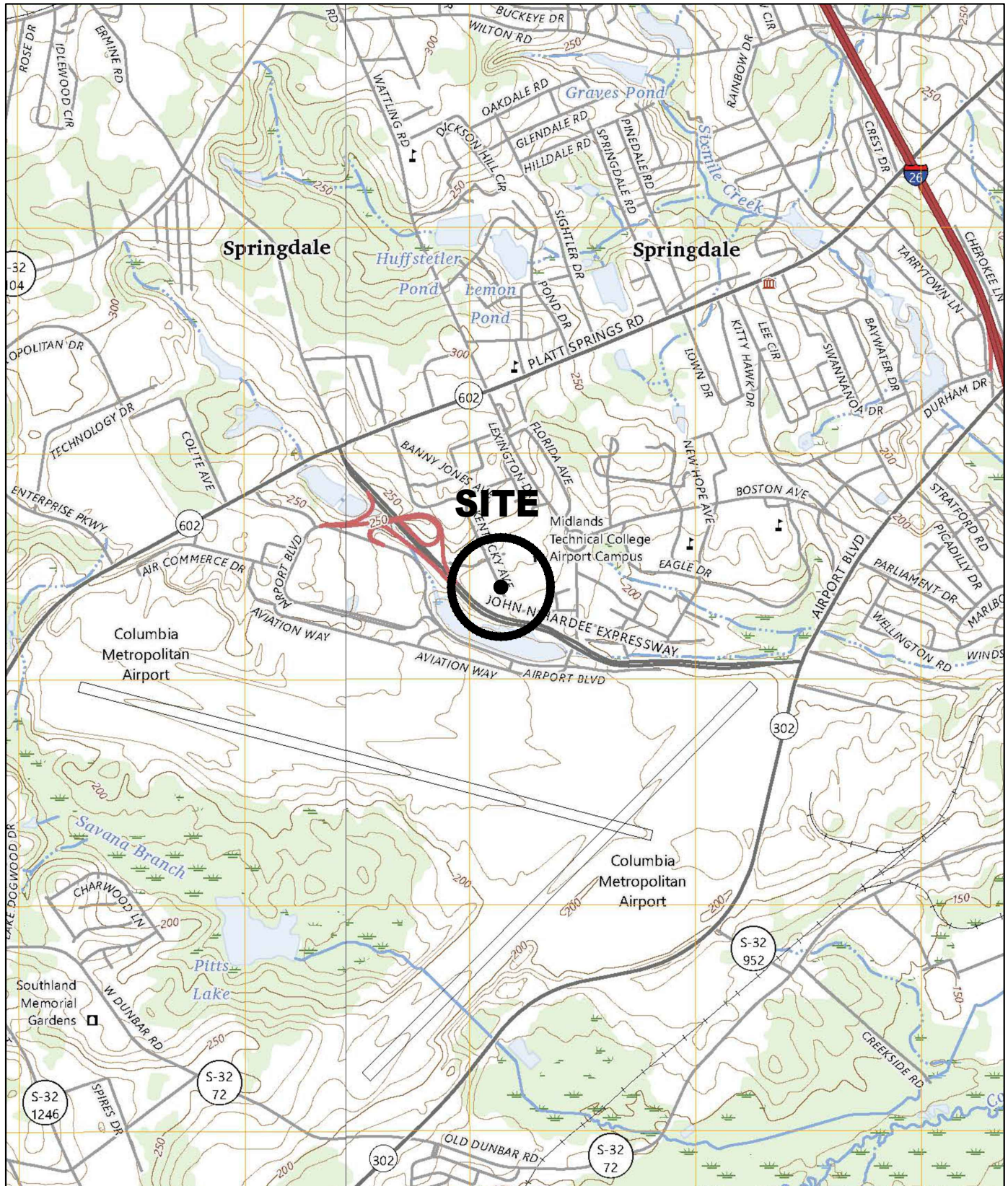
It is recommended that Bunnell-Lammons Engineering be retained to make a review of the foundation and earthwork plans and specifications prepared from the recommendations presented in this report. We would then suggest any modifications so that our recommendations are properly interpreted and implemented.

11.0 BASIS OF RECOMMENDATIONS

Our evaluation of foundation support conditions has been based on our understanding of the project information and data obtained in our exploration as well as our experience on similar projects. The generalized subsurface conditions utilized in our foundation evaluation have been based on interpolation of the subsurface data between the widely spaced borings. Subsurface conditions between the borings may differ. If the project information is incorrect or the structure location (horizontal or vertical) and/or dimensions are changed, please contact us so that our recommendations can be reviewed. The discovery of any site or subsurface conditions during construction which deviate from the data obtained in this exploration should be reported to us for our evaluation. The assessment of site environmental conditions for presence of pollutants in the soil, rock and groundwater of the site was beyond the scope of this exploration. Soil cuttings used as backfill in boreholes will settle over time resulting in a depression at the surface. It is beyond the scope of our services to return to the site to repair boreholes that have exhibited settlement of the backfill soils.

APPENDIX A

Figures



REFERENCE:
USGS TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES,
SOUTHWEST COLUMBIA AND LEXINGTON, S.C. QUADRANGLE, 2024.

DRAWN:	ENC	DATE:	04-13-26
CHECKED:	KRM	CAD:	MTCWELDBLDG-SLM
APPROVED:	KRM	JOB NO:	26-29096

BLE

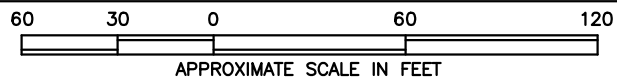
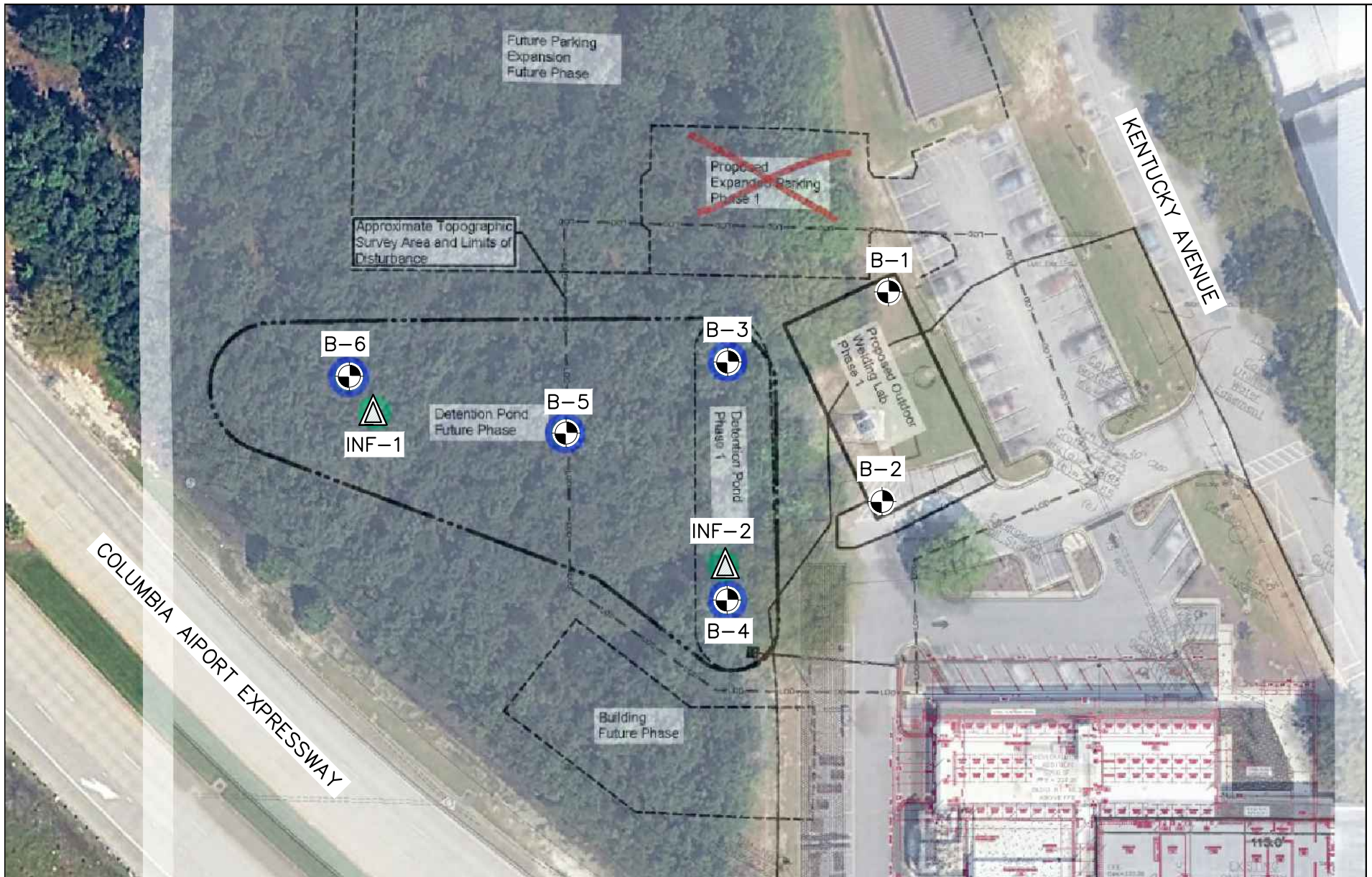
**BUNNELL
LAMMONS
ENGINEERING**

720 Gracern Rd, Ste 132 Columbia, SC 29210
Phone: (803) 832-1380 Fax: (803) 832-1379

SITE LOCATION MAP
OUTDOOR WELDING BUILDING
MIDLANDS TECHNICAL COLLEGE, AIRPORT CAMPUS
WEST COLUMBIA, SOUTH CAROLINA

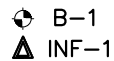
FIGURE

1



LEGEND:

BORING LOCATION
INFILTRATION LOCATION



REFERENCE:

1. GOOGLE EARTH IMAGERY DATED 03-28-2024.
2. SITE PLAN PROVIDED BY TOMMY WISE, UNDATED.

DRAWN:	ENC	DATE:	04-13-26
CHECKED:	KRM	CAD:	MTCWELDBLDG-BLP
APPROVED:	KRM	JOB NO:	26-29096

BLE | **BUNNELL
LAMMONS
ENGINEERING**
720 Gracern Rd, Ste 132 Columbia, SC 29210
Phone: (803) 832-1380 Fax: (803) 832-1379

BORING LOCATION PLAN
OUTDOOR WELDING BUILDING
MIDLANDS TECHNICAL COLLEGE, AIRPORT CAMPUS
WEST COLUMBIA, SOUTH CAROLINA

FIGURE

2

APPENDIX B

Field Exploration Procedures



Field Exploration Procedures

SOIL TEST BORINGS – HOLLOW STEM AUGERS WITH SPT

The soil borings were made by mechanically twisting a continuous flight steel auger into the soil. Soil standard penetration testing (SPT) were performed in general accordance with ASTM D1586. At assigned intervals, soil samples were obtained with a standard 1.4-inch I. D., 2-inch O. D., split-tube sampler. The sampler was first seated 6 inches to penetrate any loose cuttings, and then driven an additional 12 inches to 18 inches with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the second and third 6-inches was recorded and is designated the "standard penetration resistance," or "N-Value." The penetration resistance, when properly evaluated, is an index to the strength of the soil and foundation supporting capability.

Representative portions of the soil samples, thus obtained, are collected in glass jars or sealed bags and transported to our laboratory. In the laboratory, the samples were examined by a geotechnical engineer to verify the field classifications and to conduct selected laboratory tests. Boring Logs are attached, showing the soil descriptions and penetration resistance.

INFILTRATION TESTING – CONSTANT HEAD TEST

The constant head infiltration test utilizes an Aardvark Permeameter 2840 (compatible with ASTM D5126). A borehole, typically 3.9-inch in diameter, is augered down to the prescribed depth. The pressure regulator is then lowered to the bottom of the borehole. A full jug of water, which is connected to the pressure regulator, is placed upon a scale in which is connected to a computer to record the readings in real time. The pressure regulator prevents the depth of water in the borehole from changing during the measurement period. As a result, the measurement conditions remain constant during the measurement period. The rate of water supplied corresponds to the soil infiltration rate from the bottom and side surfaces of the testing borehole. The soil infiltration rate is the amount of percolated water over time which is equivalent to the reservoir flow rate. The measurement ends when the reservoir flow rate does not change during several consecutive readings.

LOCATIONS AND ELEVATIONS

Test boring elevations and coordinates were obtained using publicly available software and are shown on Figure 2 in Appendix A and on the boring logs in Appendix C. Elevations and coordinates should be considered approximate, and are only as accurate as the means used to obtain them.

APPENDIX C

Boring Logs and Infiltration Test Data

SOIL TEST NO. B-01

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS

PROJECT: MTC Outdoor Welding Building

PROJECT NO.: 26-29096

CLIENT: Midlands Technical College

START: 03/13/2026

END: 03/13/2026

LOCATION: 1260 Lexington Dr, West Columbia, SC 29170, USA

GS ELEVATION: 223

NORTHING/EASTING: 769447.63 N, 1964199.37 E

DRILLER: W Walker Environmental, W. Walker

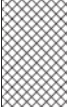
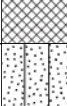
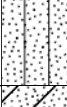
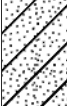
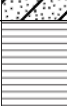
LOGGED BY: A. Skoler

DRILLING METHOD: Geoprobe 7822 DT 2 1/4 inch HSA

DEPTH TO - WATER> INITIAL: ▽ N/A

AFTER 24 HOURS: ▽ N/A

CAVING:  18

Water	Depth (ft)	Elevation (ft)	Description	Graphic Log	SPT Testing	SPT N-Value
						0 10 20 30 40 50 60 70 80 90 100
		223	Topsoil - 4 inches			
		222.6	Sandy Lean Clay (CL): firm, orangish brown and brown, moist, - (possible fill)		2, 3, 5	●
		220.0	Silty Sand (SM): medium dense, gray, moist, fine to medium grained sand, - (coastal plain)		4, 6, 8	●
	5.0		Clayey Sand (SC): medium dense, gray, moist, fine to medium grained sand		6, 6, 9	●
		215.0	Sandy Lean Clay (CL): stiff to very stiff, gray, red, and orange, moist		5, 7, 8	●
	10.0		Clayey Sand (SC): medium dense, gray and light brown, moist, fine to medium grained sand		6, 9, 11	●
		210.0				
	15.0					
		205.0				
		203			3, 5, 8	●
			B-01 Terminated at 20 Ft			

SOIL TEST NO. B-02

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS

PROJECT: MTC Outdoor Welding Building

PROJECT NO.: 26-29096

CLIENT: Midlands Technical College

START: 03/13/2026

END: 03/13/2026

LOCATION: 1260 Lexington Dr, West Columbia, SC 29170, USA

GS ELEVATION: 222

NORTHING/EASTING: 769351.57 N, 1964198.96 E

DRILLER: W Walker Environmental, W. Walker

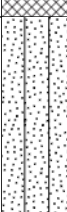
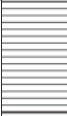
LOGGED BY: A. Skoler

DRILLING METHOD: Geoprobe 7822 DT 2 1/4 inch HSA

DEPTH TO - WATER> INITIAL: ∇ N/A

AFTER 24 HOURS: ∇ N/A

CAVING:  18.5

Water	Depth (ft)	Elevation (ft)	Description	Graphic Log	SPT Testing	SPT N-Value
						0 10 20 30 40 50 60 70 80 90 100
		222.0	Asphalt - 3 inches			
		221.7	Silty Sand (SM): medium dense, brown, moist, fine to medium grained sand, - (possible fill)		9, 6, 5	
		220.0	Silty Sand (SM): medium dense, brown, moist, fine to medium grained sand, - (coastal plain)		3, 5, 5	
	5.0		gray and light brown		6, 7, 6	
		215.0	Sandy Lean Clay (CL): stiff, gray, moist		4, 5, 7	
	10.0					
		210.0	Clayey Sand (SC): medium dense, gray, moist, fine to medium grained sand		4, 7, 9	
	15.0					
		205.0	loose		3, 4, 6	
		202				
			B-02 Terminated at 20 Ft			

SOIL TEST NO. B-03

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS

PROJECT: MTC Outdoor Welding Building

PROJECT NO.: 26-29096

CLIENT: Midlands Technical College

START: 03/13/2026

END: 03/13/2026

LOCATION: 1260 Lexington Dr, West Columbia, SC 29170, USA

GS ELEVATION: 223

NORTHING/EASTING: 769412.05 N, 1964131.71 E

DRILLER: W Walker Environmental, W. Walker

LOGGED BY: A. Skoler

DRILLING METHOD: Geoprobe 7822 DT 2 1/4 inch HSA

DEPTH TO - WATER> INITIAL: ▽ N/A

AFTER 24 HOURS: ▽ N/A

CAVING:  14

Water	Depth (ft)	Elevation (ft)	Description	Graphic Log	SPT Testing	SPT N-Value
						0 10 20 30 40 50 60 70 80 90 100
		223	Topsoil - 3 inches			
		222.7	Silty Sand (SM): medium dense, dark brown and light brown, moist, fine to medium grained sand, - (coastal plain)		4, 5, 6	●
		220.0	Poorly Graded Sand with Silt (SP-SM): loose, light brown, fine to medium grained sand		3, 4, 4	●
	5.0		medium dense		12, 13, 12	●
		215.0	Silty Sand (SM): very dense, light brown, fine to medium grained sand		24, 29, 25	●
	10.0		medium dense			
		210.0			3, 5, 6	●
		208				
			B-03 Terminated at 15 Ft			

SOIL TEST NO. B-04

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS

PROJECT: MTC Outdoor Welding Building

PROJECT NO.: 26-29096

CLIENT: Midlands Technical College

START: 03/13/2026

END: 03/13/2026

LOCATION: 1260 Lexington Dr, West Columbia, SC 29170, USA

GS ELEVATION: 223

NORTHING/EASTING: 769303.62 N, 1964135.84 E

DRILLER: W Walker Environmental, W. Walker

LOGGED BY: A. Skoler

DRILLING METHOD: Geoprobe 7822 DT 2 1/4 inch HSA

DEPTH TO - WATER> INITIAL: ∇ N/A

AFTER 24 HOURS: ∇ N/A

CAVING:  13.5

Water	Depth (ft)	Elevation (ft)	Description	Graphic Log	SPT Testing	SPT N-Value
						0 10 20 30 40 50 60 70 80 90 100
		223.0	Topsoil - 2 inches			
		222.8	Poorly Graded Sand with Silt (SP-SM): loose, brown, moist, fine to medium grained sand, - (coastal plain)		1, 3, 7	●
		220.0	light brown		2, 3, 4	●
	5.0		Silty Sand (SM): medium dense, orangish brown, moist, fine to medium grained sand		11, 14, 13	●
		215.0	Clayey Sand (SC): medium dense, orangish brown and brown, moist, fine to medium grained sand		9, 5, 7	●
	10.0		Silty Sand (SM): medium dense, grayish brown, moist, fine to medium grained sand		13, 13, 13	●
		210.0				
		208				
			B-04 Terminated at 15 Ft			

SOIL TEST NO. B-05

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS

PROJECT: MTC Outdoor Welding Building

PROJECT NO.: 26-29096

CLIENT: Midlands Technical College

START: 03/13/2026

END: 03/13/2026

LOCATION: 1260 Lexington Dr, West Columbia, SC 29170, USA

GS ELEVATION: 225

NORTHING/EASTING: 769396.13 N, 1964051.34 E

DRILLER: W Walker Environmental, W. Walker

LOGGED BY: A. Skoler

DRILLING METHOD: Geoprobe 7822 DT 2 1/4 inch HSA

DEPTH TO - WATER> INITIAL: ∇ N/A

AFTER 24 HOURS: ∇ N/A

CAVING:  N/A

Water	Depth (ft)	Elevation (ft)	Description	Graphic Log	SPT Testing	SPT N-Value
		225	Topsoil - 4 inches			
		224.6	Poorly Graded Sand with Silt (SP-SM): medium dense, brown, moist, fine to medium grained sand, - (coastal plain)		3, 6, 6	
			loose, light brown		3, 4, 5	
	5.0	220.0	dense		11, 17, 20	
			Clayey Sand (SC): medium dense, gray, moist, fine to medium grained sand		10, 11, 11	
	10.0	215.0				
					4, 5, 12	
		210.0				
			B-05 Terminated at 15 Ft			

SOIL TEST NO. B-06

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS

PROJECT: MTC Outdoor Welding Building

PROJECT NO.: 26-29096

CLIENT: Midlands Technical College

START: 03/13/2026

END: 03/13/2026

LOCATION: 1260 Lexington Dr, West Columbia, SC 29170, USA

GS ELEVATION: 226

NORTHING/EASTING: 769422.04 N, 1963980.72 E

DRILLER: W Walker Environmental, W. Walker

LOGGED BY: A. Skoler

DRILLING METHOD: Geoprobe 7822 DT 2 1/4 inch HSA

DEPTH TO - WATER> INITIAL: ▽ N/A

AFTER 24 HOURS: ▽ N/A

CAVING:  12.5

Water	Depth (ft)	Elevation (ft)	Description	Graphic Log	SPT Testing	SPT N-Value
						0 10 20 30 40 50 60 70 80 90 100
		226	Topsoil - 3 inches			
		225.7	Poorly Graded Sand with Silt (SP-SM): medium dense, brown, moist, fine to medium grained sand, - (coastal plain)		5, 7, 9	●
			loose			
					4, 3, 4	●
	5.0					
		220.0			2, 3, 4	●
			light brown			
					4, 5, 8	●
	10.0					
		215.0				
			Clayey Sand (SC): dense, gray, moist, fine to medium grained sand			
					10, 25, 24	●
		211				
			B-06 Terminated at 15 Ft			

Location: Outdoor Welding Building
Site: INF1

Time interval: 0.3 minutes

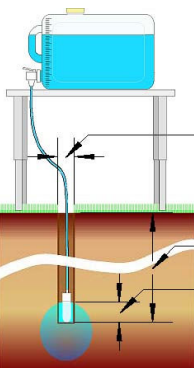
Ksat Method: Earth Manual

Steady Flow Rate achieved when Water Consumption
Rate changes less than
+/- 3 % for 3 consecutive readings

Steady Flow Rate: 172.889 ml/min
Tmp Adj Flow Rate: 173.195 ml/min
Percolation Rate: 0.453 ml/n/cm
Ksat: 7.07
Inches / hour

Site Details:

Notes:



Site GPS Position

Longitude: -81.118783
Latitude: 33.947956

3.9 inches Hole Diameter

68 °F Water Temperature

59.8 inches Hole Depth

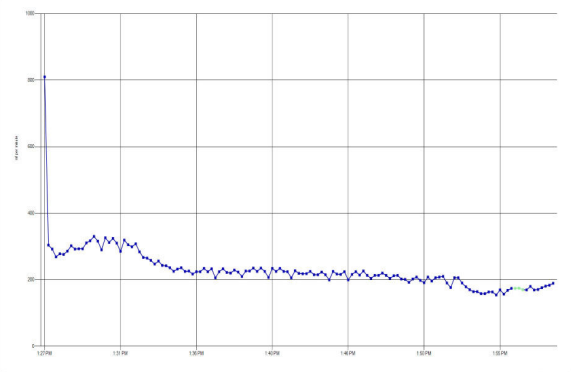
3.1 inches Water Height in Hole

179.9 inches Water Table Depth

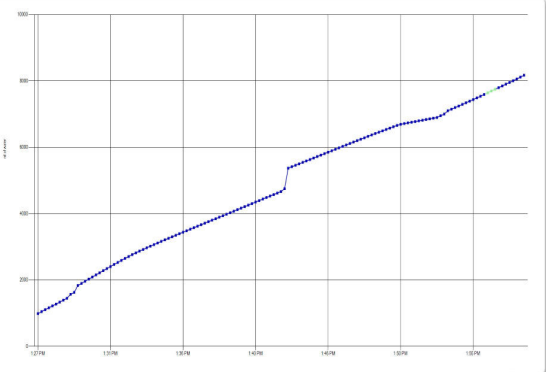
Soil Texture Structure Category:

Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Water Consumption Rate



Total Water Consumed



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
3/13/2026 1:26:02 PM	9500.4	0				
3/13/2026 1:26:14 PM	9205.6	0				Yes
3/13/2026 1:26:26 PM	8911.8	0				Yes
3/13/2026 1:26:38 PM	8695.8	0				Yes
3/13/2026 1:26:51 PM	8635.4	0				Yes
3/13/2026 1:27:03 PM	8573.8	0				Yes
3/13/2026 1:27:15 PM	8515.2	1	985.2	985.2	809.753	
3/13/2026 1:27:27 PM	8454.4	0	60.8	1046	304	
3/13/2026 1:27:39 PM	8396	0	58.4	1104.4	292	
3/13/2026 1:27:52 PM	8337.8	0	58.2	1162.6	268.615	
3/13/2026 1:28:04 PM	8282.2	0	55.6	1218.2	278	
3/13/2026 1:28:16 PM	8227	0	55.2	1273.4	276	
3/13/2026 1:28:28 PM	8169.8	0	57.2	1330.6	286	
3/13/2026 1:28:40 PM	8109.4	0	60.4	1391	302	
3/13/2026 1:28:52 PM	8051	0	58.4	1449.4	292	
3/13/2026 1:29:04 PM	7992.2	0				Yes
3/13/2026 1:29:16 PM	7933.8	0	117.2	1566.6	293	
3/13/2026 1:29:28 PM	7875.2	0	58.6	1625.2	283	
3/13/2026 1:30:08 PM	7668.2	0	207	1832.2	310.5	
3/13/2026 1:30:20 PM	7604.8	0	63.4	1895.6	317	
3/13/2026 1:30:32 PM	7538.8	0	66	1961.6	330	
3/13/2026 1:30:44 PM	7475.6	0	63.2	2024.8	316	
3/13/2026 1:30:57 PM	7412.8	0	62.8	2087.6	289.846	
3/13/2026 1:31:09 PM	7347.6	0	65.2	2152.8	326	
3/13/2026 1:31:21 PM	7285.2	0	62.4	2215.2	326	
3/13/2026 1:31:33 PM	7220.4	0	64.8	2280	324	
3/13/2026 1:31:45 PM	7158.4	0	62	2342	310	
3/13/2026 1:31:58 PM	7096.6	0	61.8	2403.8	285.231	
3/13/2026 1:32:10 PM	7032.8	0	63.8	2467.6	319	
3/13/2026 1:32:22 PM	6971.8	0	61	2528.6	305	
3/13/2026 1:32:34 PM	6912	0	59.8	2588.4	299	
3/13/2026 1:32:46 PM	6850.4	0	61.6	2650	308	
3/13/2026 1:32:58 PM	6793.6	0	56.8	2706.8	284	
3/13/2026 1:33:11 PM	6735.8	0	57.8	2764.6	266.769	
3/13/2026 1:33:23 PM	6682.8	0	53	2817.6	265	
3/13/2026 1:33:35 PM	6631.2	0	51.6	2869.2	258	
3/13/2026 1:33:47 PM	6581.8	0	49.4	2918.6	247	
3/13/2026 1:33:59 PM	6530.6	0	51.2	2969.8	256	
3/13/2026 1:34:11 PM	6482	0	48.6	3018.4	243	
3/13/2026 1:34:23 PM	6433.6	0	48.4	3066.8	242	
3/13/2026 1:34:35 PM	6386.4	0	47.2	3114	236	
3/13/2026 1:34:48 PM	6337.6	0	48.8	3162.8	225.231	
3/13/2026 1:35:00 PM	6291.2	0	46.4	3209.2	232	
3/13/2026 1:35:12 PM	6244	0	47.2	3256.4	236	
3/13/2026 1:35:24 PM	6199	0	45	3301.4	225	
3/13/2026 1:35:36 PM	6153.8	0	45.2	3346.6	226	
3/13/2026 1:35:49 PM	6106.8	0	47	3393.6	216.923	
3/13/2026 1:36:01 PM	6062	0	44.8	3438.4	224	
3/13/2026 1:36:13 PM	6017.2	0	44.8	3483.2	224	
3/13/2026 1:36:25 PM	5970.4	0	46.8	3530	234	
3/13/2026 1:36:37 PM	5925.6	0	44.8	3574.8	224	
3/13/2026 1:36:49 PM	5879	0	46.6	3621.4	233	
3/13/2026 1:37:02 PM	5834.4	0	44.6	3666	205.846	
3/13/2026 1:37:14 PM	5789.6	0	44.8	3710.8	224	
3/13/2026 1:37:26 PM	5743	0	46.6	3757.4	233	
3/13/2026 1:37:38 PM	5698.6	0	44.4	3801.8	222	
3/13/2026 1:37:50 PM	5654.6	0	44	3845.8	220	

3/13/2026 1:38:02 PM	5608.8	0	45.8	3891.6	229	Yes
3/13/2026 1:38:14 PM	5564.2	0	44.6	3936.2	223	
3/13/2026 1:38:27 PM	5518.8	0	45.4	3981.6	209.538	
3/13/2026 1:38:39 PM	5473.6	0	45.2	4026.8	226	
3/13/2026 1:38:51 PM	5428.4	0	45.2	4072	226	
3/13/2026 1:39:03 PM	5381.4	0	47	4119	235	
3/13/2026 1:39:15 PM	5336.4	0	45	4164	225	
3/13/2026 1:39:27 PM	5289.4	0	47	4211	235	
3/13/2026 1:39:39 PM	5244.4	0	45	4256	225	
3/13/2026 1:39:52 PM	5199.6	0	44.8	4300.8	206.769	
3/13/2026 1:40:04 PM	5152.8	0	46.8	4347.6	234	
3/13/2026 1:40:16 PM	5107.8	0	45	4392.6	225	
3/13/2026 1:40:28 PM	5061	0	46.8	4439.4	234	
3/13/2026 1:40:40 PM	5016	0	45	4484.4	225	
3/13/2026 1:40:52 PM	4971.2	0	44.8	4529.2	224	
3/13/2026 1:41:05 PM	4926.6	0	44.6	4573.8	205.846	
3/13/2026 1:41:17 PM	4881.2	0	45.4	4619.2	227	
3/13/2026 1:41:29 PM	4837.4	0	43.8	4663	219	
3/13/2026 1:41:41 PM	4793.8	0				
3/13/2026 1:41:53 PM	4750.2	0	87.2	4750.2	218	
3/13/2026 1:44:43 PM	4132.2	3	618	5368.2	218.118	
3/13/2026 1:44:55 PM	4087.2	0	45	5413.2	225	
3/13/2026 1:45:07 PM	4044.2	0	43	5456.2	215	
3/13/2026 1:45:19 PM	4001.2	0	43	5499.2	215	
3/13/2026 1:45:31 PM	3956.6	0	44.6	5543.8	223	
3/13/2026 1:45:43 PM	3913.6	0	43	5586.8	215	
3/13/2026 1:45:56 PM	3870.4	0	43.2	5630	199.385	
3/13/2026 1:46:08 PM	3825.4	0	45	5675	225	
3/13/2026 1:46:20 PM	3782	0	43.4	5718.4	217	
3/13/2026 1:46:32 PM	3738.8	0	43.2	5761.6	216	
3/13/2026 1:46:44 PM	3694	0	44.8	5806.4	224	
3/13/2026 1:46:57 PM	3650.8	0	43.2	5849.6	199.385	
3/13/2026 1:47:09 PM	3607.6	0	43.2	5892.8	216	
3/13/2026 1:47:21 PM	3562.8	0	44.8	5937.6	224	
3/13/2026 1:47:33 PM	3520	0	42.8	5980.4	214	
3/13/2026 1:47:45 PM	3474.8	0	45.2	6025.6	226	
3/13/2026 1:47:57 PM	3432.2	0	42.6	6068.2	213	
3/13/2026 1:48:10 PM	3388	0	44.2	6112.4	204	
3/13/2026 1:48:22 PM	3345.4	0	42.6	6155	213	
3/13/2026 1:48:34 PM	3302.8	0	42.6	6197.6	213	
3/13/2026 1:48:46 PM	3258.8	0	44	6241.6	220	
3/13/2026 1:48:58 PM	3216.2	0	42.6	6284.2	213	
3/13/2026 1:49:11 PM	3172	0	44.2	6328.4	204	
3/13/2026 1:49:23 PM	3129.6	0	42.4	6370.8	212	
3/13/2026 1:49:35 PM	3087	0	42.6	6413.4	213	
3/13/2026 1:49:47 PM	3046.6	0	40.4	6453.8	202	
3/13/2026 1:49:59 PM	3006.4	0	40.2	6494	201	
3/13/2026 1:50:12 PM	2964.8	0	41.6	6535.6	192	
3/13/2026 1:50:24 PM	2924.4	0	40.4	6576	202	
3/13/2026 1:50:36 PM	2882.8	0	41.6	6617.6	208	
3/13/2026 1:50:48 PM	2843.2	0	39.6	6657.2	198	
3/13/2026 1:50:59 PM	2808.2	0	35	6692.2	190.909	
3/13/2026 1:51:05 PM	2787.4	0	20.8	6713	208	
3/13/2026 1:51:11 PM	2767.8	0	19.6	6732.6	196	
3/13/2026 1:51:17 PM	2747.2	0	20.6	6753.2	206	
3/13/2026 1:51:23 PM	2726.4	0	20.8	6774	208	
3/13/2026 1:51:29 PM	2705.4	0	21	6795	210	
3/13/2026 1:51:35 PM	2686.4	0	19	6814	190	
3/13/2026 1:51:42 PM	2665.8	0	20.6	6834.6	176.571	
3/13/2026 1:51:48 PM	2645.2	0	20.6	6855.2	206	
3/13/2026 1:51:54 PM	2624.6	0	20.6	6875.8	206	
3/13/2026 1:52:00 PM	2605.6	0	19	6894.8	190	
3/13/2026 1:52:18 PM	2552	0	53.6	6948.4	178.667	
3/13/2026 1:52:36 PM	2501	0	51	6999.4	170	Yes
3/13/2026 1:52:54 PM	2451.4	0				
3/13/2026 1:53:12 PM	2402.6	0	98.4	7097.8	164	
3/13/2026 1:53:30 PM	2353.4	0	49.2	7147	164	
3/13/2026 1:53:48 PM	2306	0	47.4	7194.4	158	
3/13/2026 1:54:06 PM	2258.6	0	47.4	7241.8	158	
3/13/2026 1:54:24 PM	2209.6	0	49	7290.8	163.333	
3/13/2026 1:54:42 PM	2160.6	0	49	7339.8	163.333	
3/13/2026 1:55:01 PM	2111.8	0	48.8	7388.6	154.105	
3/13/2026 1:55:18 PM	2063.8	0	48	7436.6	169.412	
3/13/2026 1:55:37 PM	2014.2	0	49.6	7486.2	156.632	
3/13/2026 1:55:55 PM	1963.8	0	50.4	7536.6	168	
3/13/2026 1:56:13 PM	1911.6	0	52.2	7588.8	174	
3/13/2026 1:56:31 PM	1859.4	0	52.2	7641	174	
3/13/2026 1:56:49 PM	1807	0	52.4	7693.4	174.667	
3/13/2026 1:57:07 PM	1756	0	51	7744.4	170	
3/13/2026 1:57:25 PM	1705.2	0	50.8	7795.2	169.333	
3/13/2026 1:57:42 PM	1654.2	0	51	7846.2	180	
3/13/2026 1:58:01 PM	1600.6	0	53.6	7899.8	169.263	
3/13/2026 1:58:19 PM	1549.4	0	51.2	7951	170.667	
3/13/2026 1:58:37 PM	1496.6	0	52.8	8003.8	176	
3/13/2026 1:58:55 PM	1444.4	0	54.2	8058	180.667	
3/13/2026 1:59:13 PM	1387.4	0	55	8113	183.333	

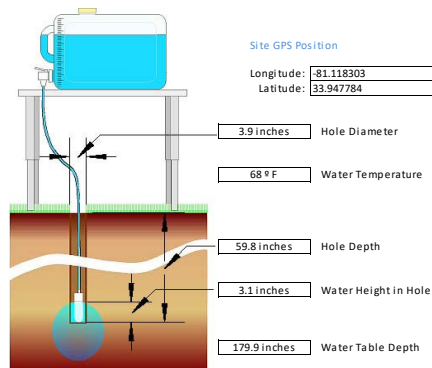
Location: Outdoor Welding Building
Site: INF2
Time interval: 0.2 minutes
Ksat Method: Earth Manual

Steady Flow Rate achieved when Water Consumption
Rate changes less than
+/- 3 % for 3 consecutive readings

Steady Flow Rate: 1083.184 ml/min
Tmp Adj Flow Rate: 1085.100 ml/min
Percolation Rate: 0.072 min/cm
Ksat: 44.28
Inches / hour

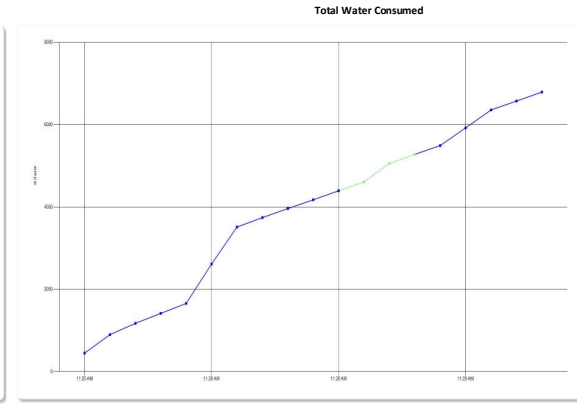
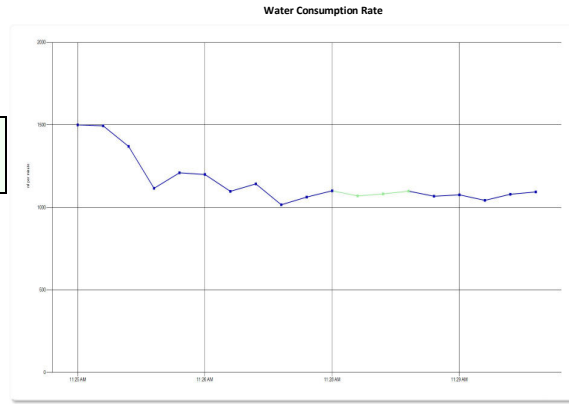
Site Details:

Notes:



Soil Texture Structure Category:

Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
3/13/2026 11:24:43 AM	8419.4	0				
3/13/2026 11:25:01 AM	7969.4	0	450	450	1500	
3/13/2026 11:25:19 AM	7521	0	448.4	898.4	1494.667	
3/13/2026 11:25:31 AM	7247	0	274	1172.4	1370	
3/13/2026 11:25:44 AM	7005.2	0	241.8	1414.2	1116	
3/13/2026 11:25:56 AM	6763.2	0	242	1656.2	1210	
3/13/2026 11:26:08 AM	6510.2	0				Yes
3/13/2026 11:26:20 AM	6268.4	0				Yes
3/13/2026 11:26:32 AM	6034.6	0				Yes
3/13/2026 11:26:44 AM	5803.4	0	959.8	2616	1199.75	
3/13/2026 11:26:57 AM	5594.8	0				Yes
3/13/2026 11:27:09 AM	5353.6	0				Yes
3/13/2026 11:27:21 AM	5126.8	0				Yes
3/13/2026 11:27:33 AM	4907	0	896.4	3512.4	1097.633	
3/13/2026 11:27:45 AM	4678.4	0	228.6	3741	1143	
3/13/2026 11:27:58 AM	4458.2	0	220.2	3961.2	1016.308	
3/13/2026 11:28:10 AM	4245.6	0	212.6	4173.8	1063	
3/13/2026 11:28:22 AM	4025.4	0	220.2	4394	1101	
3/13/2026 11:28:34 AM	3811.4	0	214	4608	1070	
3/13/2026 11:28:46 AM	3577.2	0				Yes
3/13/2026 11:28:59 AM	3360.6	0	450.8	5058.8	1081.92	
3/13/2026 11:29:11 AM	3140.8	0	219.8	5278.6	1099	
3/13/2026 11:29:23 AM	2927.2	0	213.6	5492.2	1068	
3/13/2026 11:29:35 AM	2706.6	0				Yes
3/13/2026 11:29:47 AM	2496.6	0	430.6	5922.8	1076.5	
3/13/2026 11:30:00 AM	2278.8	0				Yes
3/13/2026 11:30:12 AM	2062	0	434.6	6357.4	1043.04	
3/13/2026 11:30:24 AM	1846	0	216	6573.4	1080	
3/13/2026 11:30:36 AM	1627.2	0	218.8	6792.2	1094	
3/13/2026 11:30:48 AM	1435.4	0				Yes
3/13/2026 11:31:00 AM	1377.8	0				Yes
3/13/2026 11:31:13 AM	1350.8	0				Yes
3/13/2026 11:31:25 AM	1325.8	0				Yes

APPENDIX D

Laboratory Test Procedures and Results



Laboratory Test Procedures

NATURAL MOISTURE CONTENT

The natural moisture content of selected samples was determined in accordance with ASTM D2216. The moisture content of the soil is the ratio, expressed as a percentage, of the weight of water in a given mass of soil to the weight of the soil particles.

GRAIN SIZE DISTRIBUTION

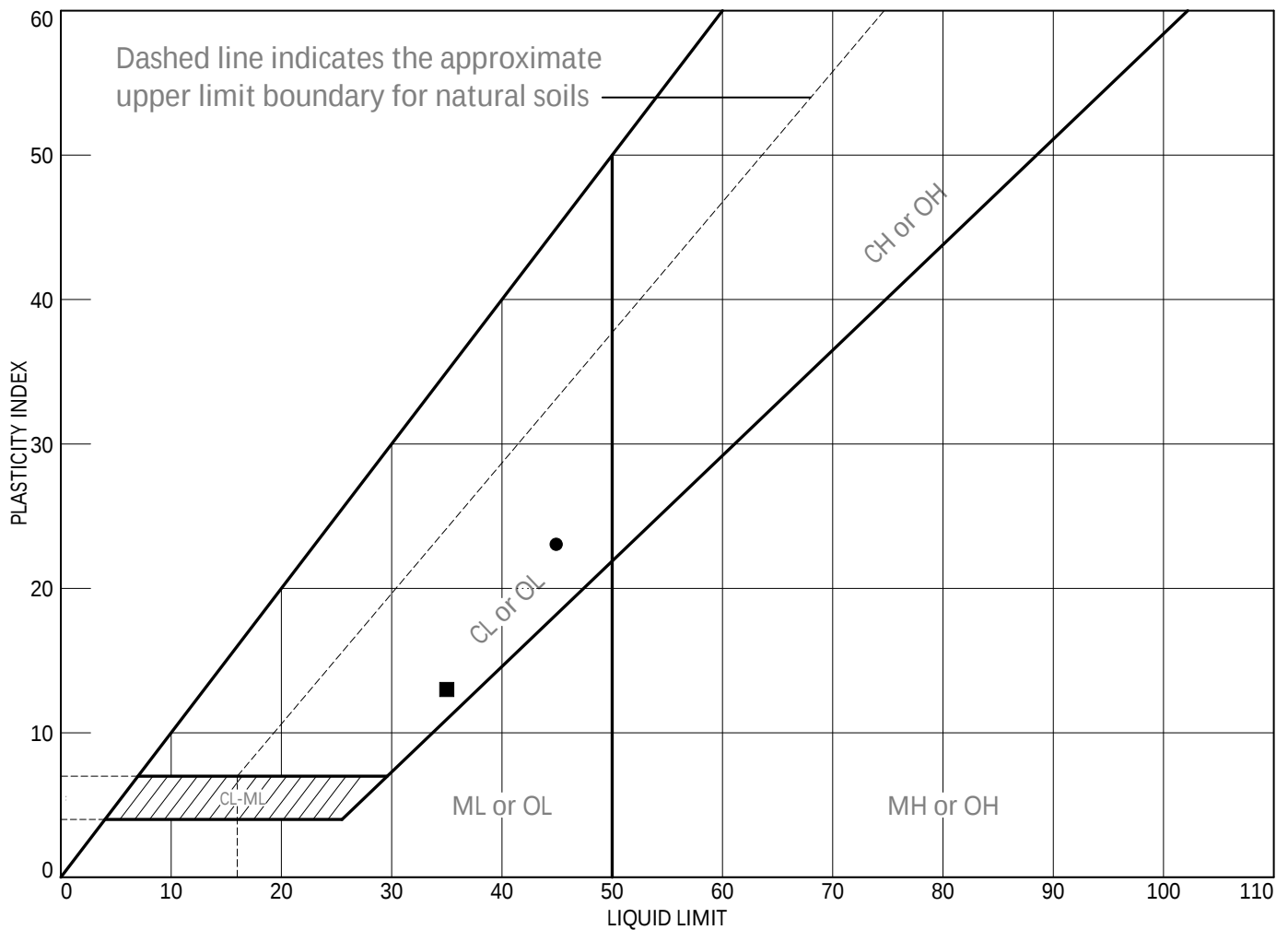
Grain size tests were performed on selected soil samples to determine the particle size distribution of these materials. After initial drying, the samples were washed over a U.S. Standard No. 200 Sieve to remove the fines (particles finer than a No. 200 mesh sieve). The samples were then dried and sieved through a standard set of nested sieves. This test was performed in accordance with ASTM D6913. The results are presented as percent finer by weight versus particle size curves.

SOIL PLASTICITY

Representative samples were selected for Atterberg Limits testing to determine their soil plasticity characteristics. The soil's Plasticity Index (PI) is representative of this characteristic and is bracketed by the Liquid Limit (LL) and the Plastic Limit (PL). These characteristics are determined in accordance with ASTM D4318. The LL is the moisture content at which the soil will flow as a heavy viscous fluid. The PL is the moisture content at which the soil begins to lose its plasticity.

Certain soils swell and shrink with increases and decreases in soil moisture. The PI is related to this potential volume change ability. When such volume changes occur in soils confined beneath foundations, floor slabs, and pavements, structural deformations can be produced. Past experience has shown that soils having a PI of less than 30 are only slightly susceptible to volume changes. Soils having a PI greater than 50 are generally very susceptible to these volume changes. Soils with a PI between these limits have moderate volume change potential.

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Soil Boring	B-1	8.5-10.0 FT	17.8	22	45	23	CL
■	Soil Boring	B-1	18.5-20.0 FT	19.4	22	35	13	SC
▲	Infiltration	INF-1	4.5-5.0 FT	3.4	NP	NV	NP	SM
◆	Infiltration	INF-2	4.5-5.0 FT	3.7	NP	NV	NP	SP-SM

BUNNELL-LAMMONS

ENGINEERING, INC.

Client: Midlands Technical College

Project: Outdoor Welding Building
MTC - Airport Campus, West Columbia, SC

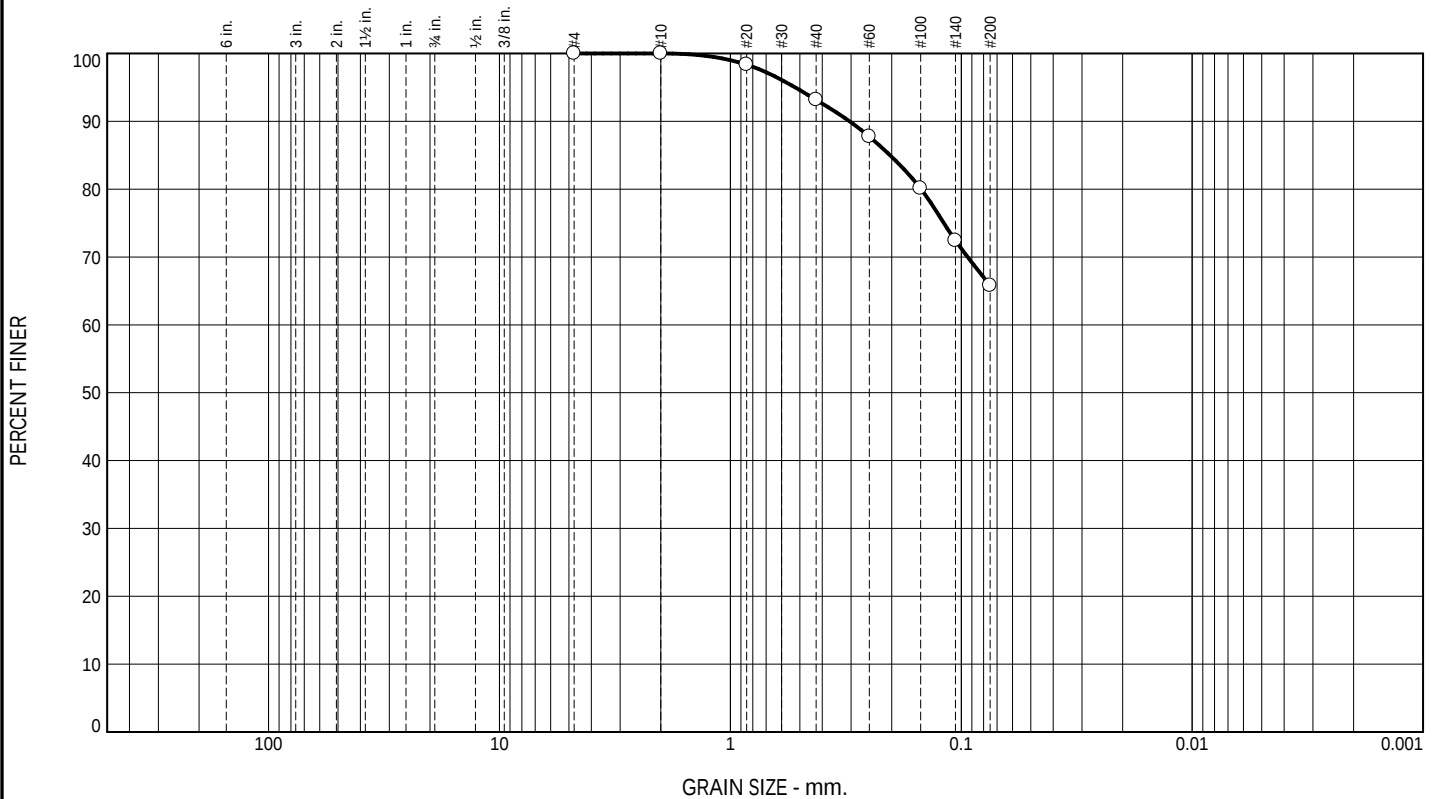
Project No.: 26-29096

Figure 1

Tested By: RK Checked By: KM

Particle Size Distribution Report

ASTM D6913



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.8	27.4	65.8	

Test Results (ASTM D6913)				
Sieve Size or Diam. (mm.)	Finer (%)	Spec. * (%)	Out of Spec. (%)	Pct. of Fines
#4	100.0			
#10	100.0			
#20	98.4			
#40	93.2			
#60	87.7			
#100	80.1			
#140	72.4			
#200	65.8			

* (no specification provided)

Material Description		
sandy lean clay, gray, red, and orange		
Atterberg Limits		
PL= 22	LL= 45	PI= 23
Coefficients		
D ₉₀ = 0.3046	D ₈₅ = 0.2033	D ₆₀ =
D ₅₀ =	D ₃₀ =	D ₁₅ =
D ₁₀ =	C _u =	C _c =
Classification		
USCS= CL	AASHTO=	A-7-6(14)
Test Remarks		

Source of Sample: Soil Boring
Sample Number: B-1

Depth: 8.5-10.0 FT

Sample Date: 3/18/26

BUNNELL-LAMMONS

ENGINEERING, INC.

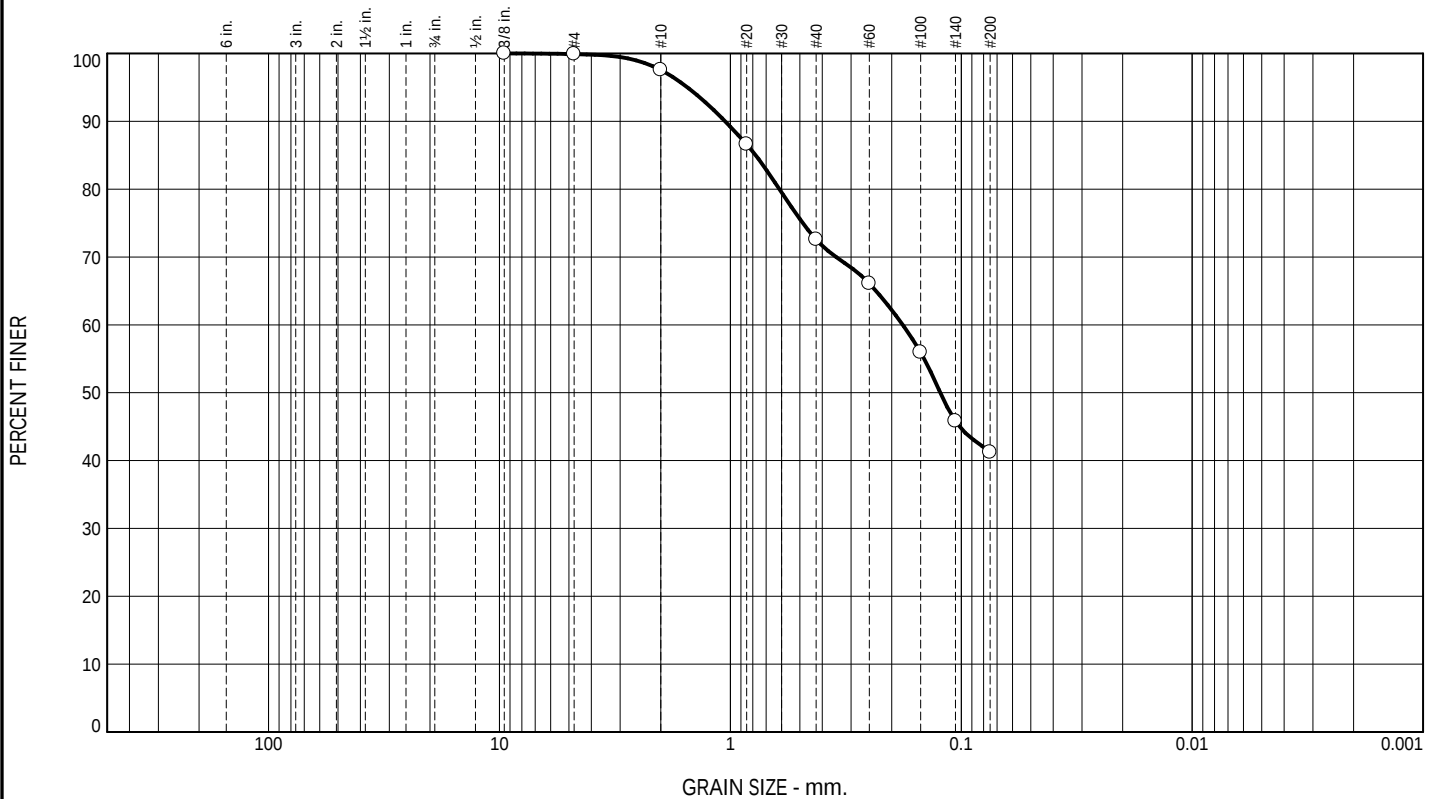
Client: Midlands Technical College
Project: Outdoor Welding Building
MTC - Airport Campus, West Columbia, SC
Project No: 26-29096

Figure 2

Tested By: RK Checked By: KM

Particle Size Distribution Report

ASTM D6913



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	2.3	25.0	31.4	41.2	

Test Results (ASTM D6913)				
Sieve Size or Diam. (mm.)	Finer (%)	Spec. * (%)	Out of Spec. (%)	Pct. of Fines
.375	100.0			
#4	99.9			
#10	97.6			
#20	86.6			
#40	72.6			
#60	66.1			
#100	56.0			
#140	45.8			
#200	41.2			

* (no specification provided)

Material Description
clayey sand, gray and light brown

Atterberg Limits
PL= 22 LL= 35 PI= 13

Coefficients
D₉₀= 1.0534 D₈₅= 0.7772 D₆₀= 0.1793
D₅₀= 0.1233 D₃₀= C_c=
D₁₀=

Classification
USCS= SC AASHTO= A-6(2)

Test Remarks

Source of Sample: Soil Boring
Sample Number: B-1

Depth: 18.5-20.0 FT

Sample Date: 3/18/26

BUNNELL-LAMMONS

ENGINEERING, INC.

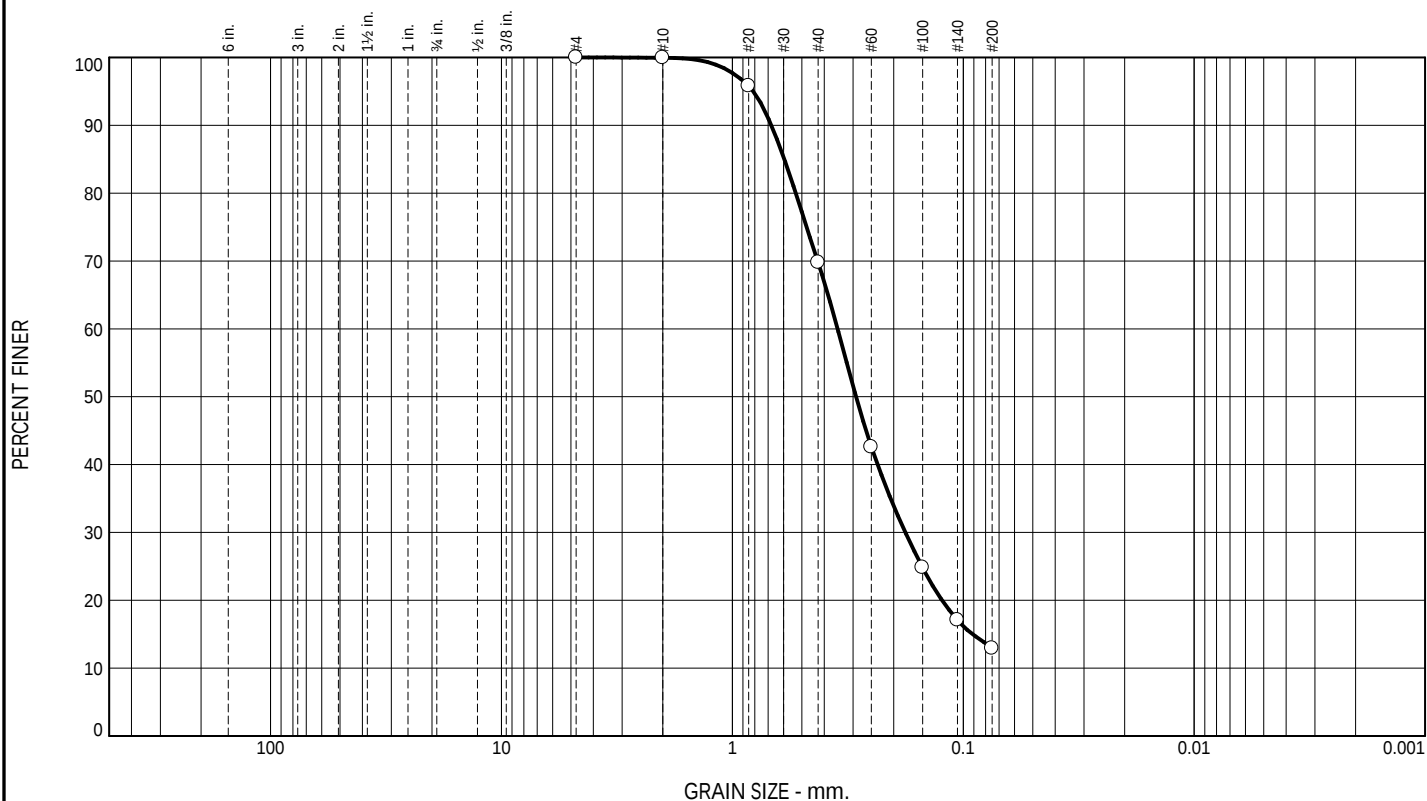
Client: Midlands Technical College
Project: Outdoor Welding Building
MTC - Airport Campus, West Columbia, SC
Project No: 26-29096

Figure 3

Tested By: RK Checked By: KM

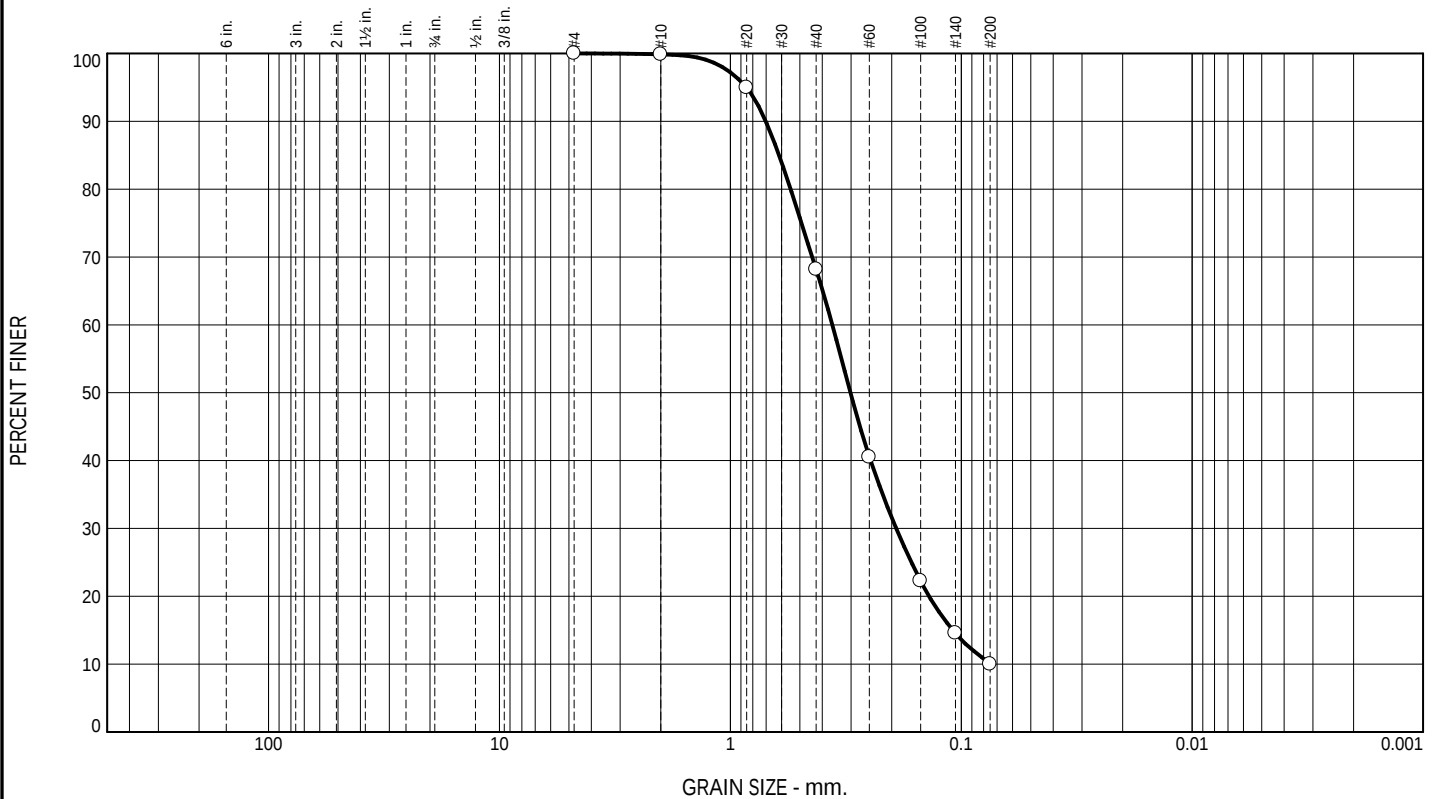
Particle Size Distribution Report

ASTM D6913



Particle Size Distribution Report

ASTM D6913



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	31.7	58.2	10.0	

Test Results (ASTM D6913)				
Sieve Size or Diam. (mm.)	Finer (%)	Spec. * (%)	Out of Spec. (%)	Pct. of Fines
#4	100.0			
#10	99.9			
#20	95.0			
#40	68.2			
#60	40.5			
#100	22.3			
#140	14.5			
#200	10.0			

* (no specification provided)

Material Description
poorly graded sand with silt, light brown

Atterberg Limits
 PL= NP LL= NV PI= NP

Coefficients
 D₉₀= 0.7023 D₈₅= 0.6152 D₆₀= 0.3615
 D₅₀= 0.3019 D₃₀= 0.1913 D₁₅= 0.1087
 D₁₀= 0.0751 C_u= 4.81 C_c= 1.35

Classification
 USCS= SP-SM AASHTO= A-3

Test Remarks

Source of Sample: Infiltration
Sample Number: INF-2

Depth: 4.5-5.0 FT

Sample Date: 3/18/26

BUNNELL-LAMMONS

ENGINEERING, INC.

Client: Midlands Technical College
 Project: Outdoor Welding Building
 MTC - Airport Campus, West Columbia, SC
 Project No: 26-29096

Figure 5

Tested By: RK Checked By: KM

APPENDIX E
A Key to Soil Classification

KEY TO SOIL CLASSIFICATIONS AND CONSISTENCY DESCRIPTIONS

BUNNELL-LAMMONS ENGINEERING, INC.

Penetration Resistance* Blows per Foot

0 to 4
5 to 10
11 to 30
31 to 50
over 50

SANDS

Relative Density

Very Loose
Loose
Medium-Dense
Dense
Very Dense

Particle Size Identification

Boulder: Greater than 300 mm
Cobble: 75 to 300 mm
Gravel: Coarse - 19 to 75 mm
Fine - 4.75 to 19 mm
Sand: Coarse - 2 to 4.75 mm
Medium - 0.425 to 2 mm
Fine - 0.075 to 0.425 mm
Silt & Clay: Less than 0.075 mm

Penetration Resistance* Blows per Foot

0 to 2
3 to 4
5 to 8
9 to 15
16 to 30
31 to 50
over 50

SILTS AND CLAYS

Consistency

Very Soft
Soft
Firm
Stiff
Very Stiff
Hard
Very Hard

*ASTM D 1586

KEY TO DRILLING SYMBOLS



Bulk Sample



Groundwater Table at Time of Drilling



Split Spoon Sample



Groundwater Table 24 Hours After
Completion of Drilling



Undisturbed Sample



Cave-in Depth

KEY TO SOIL CLASSIFICATION



Well-graded Gravel
GW



Fat Clay
CH



Elastic Silt
MH



Well Graded Sand
SW



Poorly-graded Gravel
GP



Lean Clay
CL



Silt
ML



Poorly Graded Sand
SP



Partially Weathered Rock
PWR



Sandy Clay
CL



Sandy Silt
ML



Clayey Sand
SC



FILL
FILL



Silty Clay
CL-ML



Topsoil
TOPSOIL



Silty Sand
SM

APPENDIX F
**Important Information About This Geotechnical
Engineering Report**

IMPORTANT INFORMATION ABOUT THIS

GEOTECHNICAL-ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Bunnell-Lammons Engineering, Inc. (BLE) has prepared this advisory to help you interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and their development, which for decades have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, reach to your BLE contact.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, And At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific

project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you’ve included the material for information purposes*

only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*

SECTION 27 83 06 – EMERGENCY RESPONDER COMMUNICATION ENHANCEMENT SYSTEM

PART 1 GENERAL

1.1 ELECTRICAL DIVISIONS

1.2 SUMMARY

- A. Section includes design, installation, and testing of a Communications Enhancement System as defined in IFC 510, NFPA 1221 and NFPA 72.

1.3 REFERENCES

- A. NFPA 1221 – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems
- B. International Fire Code.
- C. National Electrical Safety Code.
- D. UL2524
- E. FCC Rules and Regulations 47 CFR.
- F. Telecommunications Industry Association (TIA)

1.4 SYSTEM DESCRIPTION

- A. Provide an emergency responder enhancement system per IFC 510 and install NFPA 1221.
- B. Coordinate with local AHJ for radio frequencies and bandwidth requirements, and cellular communication requirements prior to design. For bidding purposes assume the following:
 - 1. 700 MHz and 800 MHz Analog / Digital bands (T25 compliant).
- C. Prior to installation, test coverage throughout building per NFPA 72-24.5.2 to define areas where enhanced coverage is required. Submit drawing to architect showing areas where coverage is required.
 - 1. Testing shall include points outside of building. If signal strength is not sufficient exterior to the building, then enhancement system is not required inside the building.
- D. For bidding purposes, assume system is required throughout entire building. A credit shall be provided to the owner once testing is complete and scope of system requirements is confirmed.
- E. Install system only where required per testing. Provide power requirements, including battery back-up, as required for system regardless of whether power is shown on drawings.

1.5 SUBMITTALS

- A. Pre-Install Testing: Submit floor plan showing location of testing points and signal strength at each of those points.
- B. Design: Submit design information as required for review and approval. If requested by the Architect / Engineer, a design review meeting shall be held for the contractor to present the design submittal.

- C. Shop Drawings: Indicate electrical characteristics and connection requirements; cable routing; connection diagrams; and equipment arrangement.
 - 1. Equipment and component cut sheets.
 - 2. Submit detail drawings including panel and cabinet layouts, equipment interconnection diagrams, equipment and material lists.
 - 3. Note proposed location of exterior antenna on shop drawings.
- D. Product Data: Submit manufacturer's descriptive and technical literature, catalog data, and installation instructions showing electrical characteristics and connection requirements.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- F. Manufacturer's Field Reports: Indicate activities on site, adverse findings, and recommendations.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of each item of equipment and show interconnecting wiring.
- B. Operation and Maintenance Data: Submit operator instructions for each required mode of operation, routine troubleshooting procedures, and manufacturer's operation and maintenance manual for each item of equipment and accessory.

1.7 QUALITY ASSURANCE

- A. Provide wiring materials located in plenums with peak optical density not greater than 0.5, average optical density not greater than 0.15, and flame spread not greater than 5 feet (1.5 m) when tested in accordance with NFPA 262.
- B. Maintain one copy of each document on site.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience, and with the ability to respond to service calls within 4 hours.

1.9 MAINTENANCE SERVICE

- A. Furnish service and maintenance of equipment for one year from Date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following manufacturers:
 - 1. Honeywell / Fiplex.
 - 2. Mobile Communications.
 - 3. SideBand System.
 - 4. Bird Technologies.

2.2 GENERAL

- A. The Enhancement system(s) shall be designed and furnished to operate in the frequency band provided by the AHJ with the ability to make minor adjustments (within 50MHz) without component change.
- B. The RES system shall be designed to provide a minimum -90 dBm RF signal level, or a minimum of 10 dB above the RF noise floor, at any point within the building, or elsewhere as designated in the contract documents.
- C. The RES RF output shall be close-coupled to the RF input so as to prevent feedback saturation. The minimum output-to-input path loss shall equal the maximum operating gain of the amplifier plus 10 dB. System component selection and layout shall take this requirement into consideration when placing the RES system components in and around the building.
- D. The RES system shall be capable of accurately and properly amplifying and distributing radio signals without causing any sort of radio system degradation. It shall be capable of using the following modulation techniques and formats:
 - 1. Analog FM
 - 2. Digital FM
 - 3. EDACS™
 - 4. TDMA
 - 5. CDMA
 - 6. P25 Phase II
 - 7. GSM
- E. The RES system shall be FCC type-accepted and labeled as such prior to placing it into operation.

2.3 BI-DIRECTIONAL AMPLIFIER (BDA)

- A. Provide an all-inclusive and fully integrated BDA with UL2524 1st edition for in-building 2-way emergency radio communication enhancement system listing.
- B. BDA shall include an audible alarm for any troubles or faults that occur in system as dictated in IFC 510.4.2.5.
- C. The BDA shall be an automatic gain adjusting or OLC (output level control) type, where the gain is automatically set over a wide operating range. The BDA system shall be FCC type accepted and labeled as such prior to placing it into operation.
- D. An input signal level of -60 dBm is the nominal input signal level applied into the BDA system. The contractor shall take steps to augment local input signal reception to this level. If the contractor cannot make the input level reach the nominal level, the contractor shall notify the engineer, and provide the expected input signal level, and corresponding output level as part of the design submittal.
- E. The RES system shall amplify all signals within the specified frequency band. The effective output power per channel is reduced as more channels are amplified. The contractor must account for the reduction in signal strength when calculating the signal distribution within the building. The following table depicts the typical effect of multiple channel amplification.

Number of Frequencies In The Passband	Maximum Output Power Per Single Channel
2	24.7 dBm

4	20.0 dBm
6	17.5 dBm
8	15.5 dBm
10	14.1 dBm
20	9.8 dBm

- F. The maximum output power of the amplifier shall be set below the amplifier's 1 dB compression point to prevent damage to the amplifier and minimize signal distortion. If necessary, external attenuator pads shall be inserted before the electronic attenuator to prevent overdriving the BDA OLC circuitry.
- G. Decoupled RF test points shall be provided to permit performance testing or alignment while the RES is in operation. They shall be clearly labeled as test points and depicted on a block diagram with the rest of the RES circuitry.
- H. The RES system shall be powered by the building's electrical distribution system.
 - 1. A surge suppression device shall be provided as part of the RES system design, to protect the incoming power line from transients.
 - 2. Provide a backup electrical power supply capable of supporting entire RES system for a minimum of four hours. Provide recharging system for power supply and warranty power supply and charging system for a minimum of 1 year.
- I. Provide hinged door type, lockable cabinet to support RES system components. Cabinet shall be sized by contractor with adequate space inside the cabinet for servicing the unit. Provide a nameplate on cabinet that reads "RES System Cabinet #" where # indicates a number where multiple cabinets are required. Provide labels for internal components. Provide system schematic diagram inside a plastic sleeve on inside of each cabinet.
- J. If installed outdoors or in unprotected locations, the cabinet shall be weatherproof stainless steel NEMA 4X. All penetrations into the cabinet shall be made with RGS or IMC conduit, and weatherproofed.

2.4 EXTERIOR ANTENNA SYSTEM

- A. The exterior antenna system shall consist of a highly directional gain antenna, and antenna mount, coaxial lightning surge suppression, and a minimum ½" type LDF coaxial cable feed to the BDA. The specific size of the feed line coaxial cable shall depend on the system design. A short (2' max) super flexible cable may be used to connect the antenna to the RF feed line cable. The exterior antenna shall be configured to mount on or near the building rooftop, at a location affording the best view towards the nearest radio repeater site. The antenna shall be oriented towards the nearest system repeater site. Coordinate exact location of antenna with architect prior to rough-in.
- B. A lightning surge suppressor shall be connected in the RF coaxial feed line in-between the antenna and the BDA. A copper grounding plate shall be provided with the surge suppressor, and bonded to the grounding system. Locate the surge suppressor inside the building at the cable penetration point. Building penetration for the RF feed line cabling shall be protected with an electrical service weatherhead and coaxial cable drip loop.
- C. The antenna system, antenna mast, coaxial cable, and surge suppressor shall be grounded by attachment to the building's grounding system. The coaxial cable shall be connected to the ground system by means of the cable manufacturer's shield grounding kit. A ground system connection to the coaxial cable shall be at both ends of the exterior-run cable if it exceeds 100 feet in length, otherwise within 20 feet of the building entrance. The coaxial lightning surge suppressor shall be grounded per the manufacturer's recommendations. Grounding cables shall be sized according to manufacturer's recommendations.

- D. The antenna installation shall be suitable for operation with wind loading of 95 mph. All components shall be suitable for outdoor installation. All outdoor RF connections and coaxial cable grounding kits shall be covered in weatherproof connector boot coverings.

2.5 INTERIOR ANTENNA SYSTEM

- A. The interior antenna system shall consist of a sufficient number of antennas and / or radiating cable distributed within the building to meet the -90 dBm, or 10 dB above noise floor, design criteria throughout the building. Coaxial power dividers shall distribute and balance the radio signals into appropriate branch circuits connecting back to the BDA.
- B. The coaxial cable shall be a minimum of ½” type foam dielectric low loss type. Radiating coaxial cable shall be minimum of 7/8” foam dielectric and shall be installed a minimum of 2 inches off any wall surface. Cable jackets for any coaxial cables installed indoors shall be low smoke, non-halogen construction. Attachment between the cable and building shall be by plastic cable clamps, expressly designed for the application.
- C. Each splitter shall be mounted in a separate junction box located so as to be easily accessible for maintenance while maintaining security from unauthorized tampering. Each junction box shall be labeled externally.

PART 3 EXECUTION

3.1 COORDINATION

- A. Provide a copy of approved design submittals to the local AHJ prior to installation.

3.2 INSTALLATION

- A. Consolidate all cabinets, back-up power supplies, and accessories in one location. Mount cabinets adjacent to each other. Coordinate location with all other trades prior to rough-in.
- B. Provide two 120-volt, 20 amp branch circuits to each RES system cabinet.
- C. All cabling shall be installed in metallic conduit (EMT). All exterior cable shall be installed in 2” conduit.
- D. Conduit penetration through roof shall extend to a minimum of two feet above the roof deck and be terminated with an electrical weatherhead.

3.3 SYSTEM OPTIMIZATION

- A. The RES system shall be adjusted to the level of desired signal and avoid inter-modulation. Fixed attenuators may be used to set the BDA levels if required.
- B. THE BDA’s OLC circuits shall provide a dynamic range of 30 to 40 dB. If the input level to the BDA causes continual output limiting, a fixed value coaxial RF attenuator shall be inserted at a point provided in the RES’s input circuit.

3.4 FIELD QUALITY CONTROL

- A. Perform all work necessary to plan, schedule, and conduct tests, and to complete the required documentation as specified in the contract.
- B. Perform operational test on each item of equipment and on system.
- C. Verify that the RES has been installed in accordance with the specifications, and the system performance criteria. This includes inspections, test, and measurements of the DC power, the BDA gain, and the signal levels within and outside of the building. Record all test measurements.
- D. Provide diagrams showing equipment placement and routing for antennas, coaxial cables, and AC power to the engineer prior to testing. After testing, provide another copy of the final documents inside the cabinet.
- E. Submit an Rf compliance certificate for the RES at the conclusion of acceptance testing.

END OF SECTION 278306