



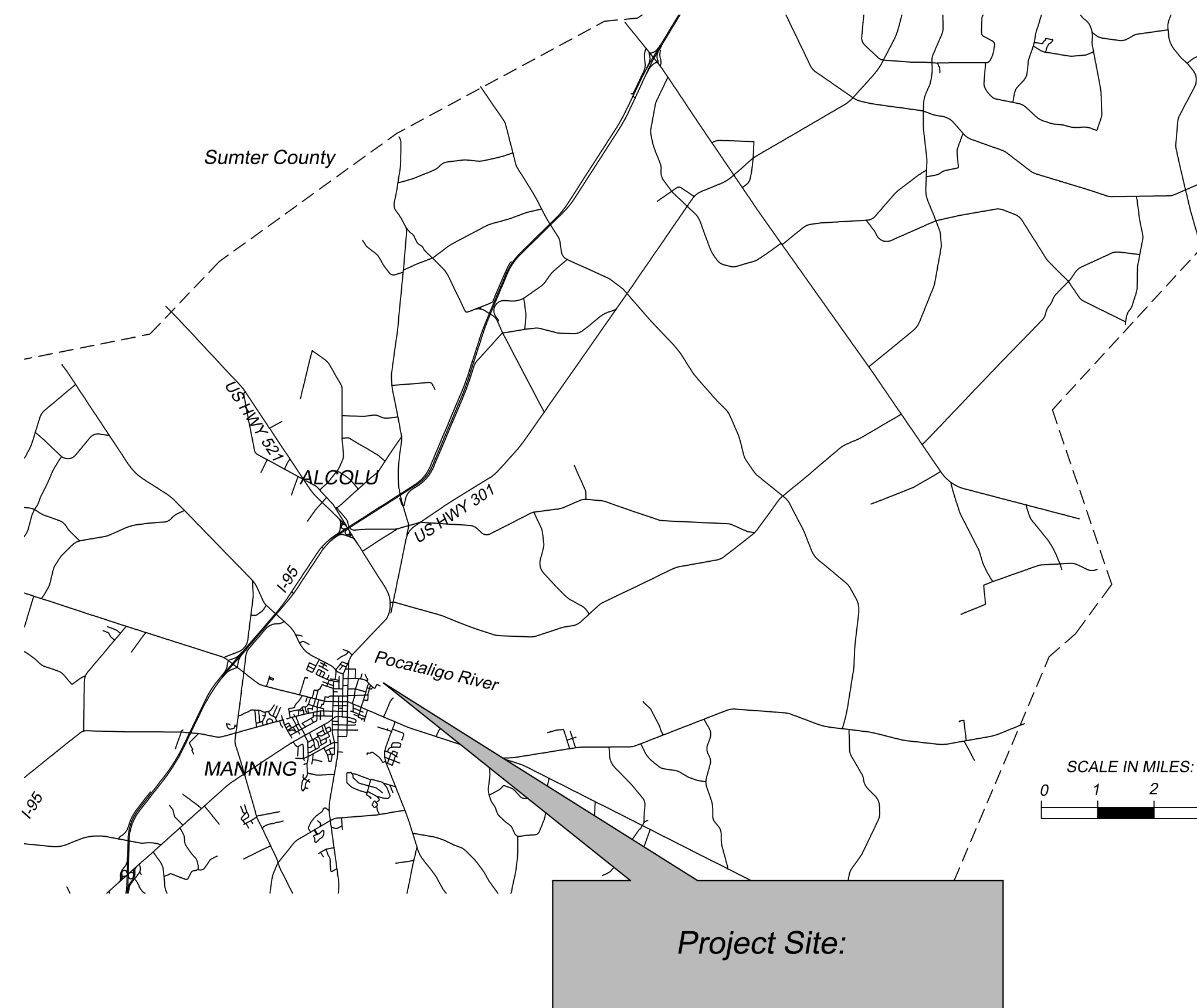
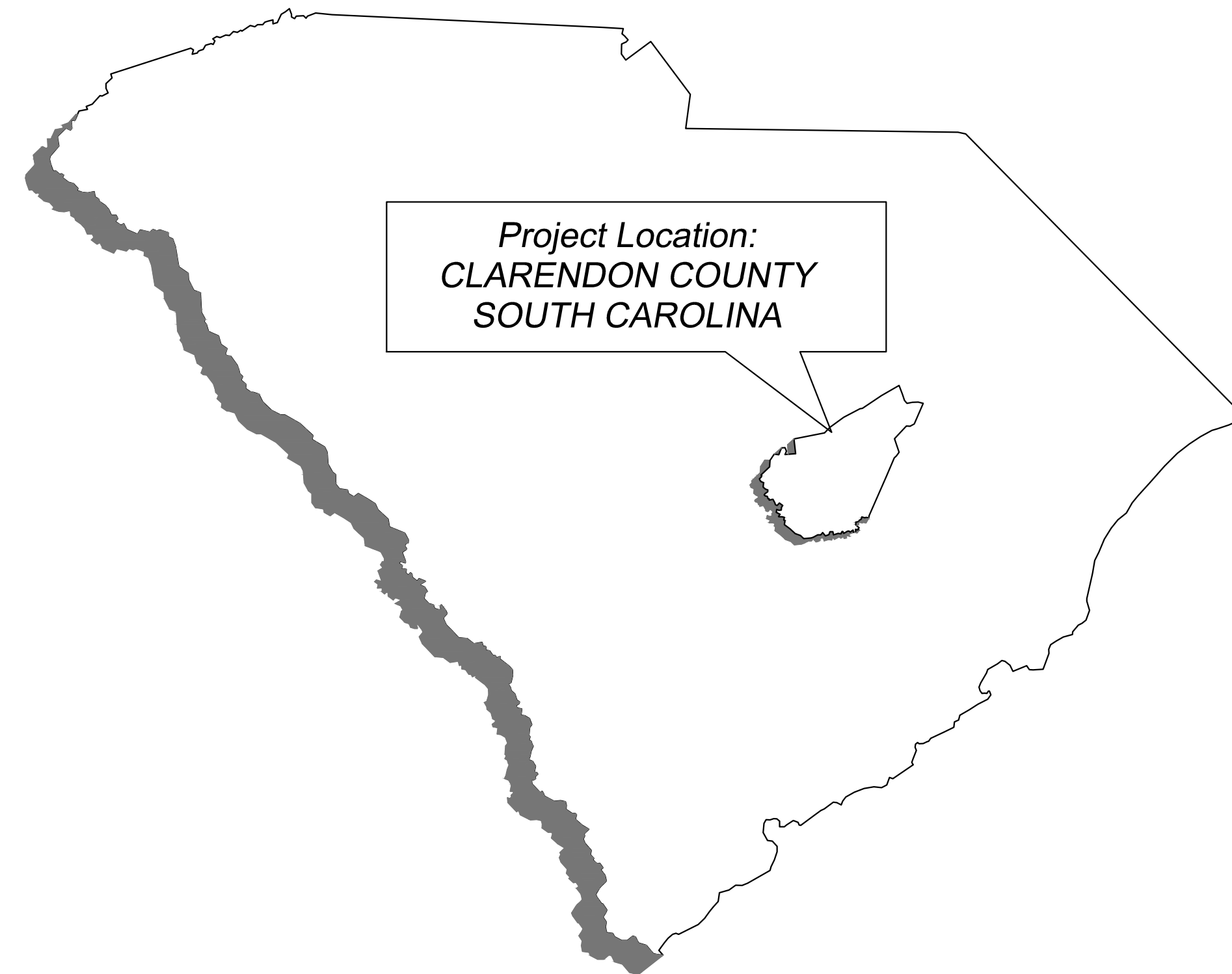
CLARENDON COUNTY SHERIFF'S OFFICE FIRING RANGE BUILDING JOINT TRAINING FACILITY DESIGN-BUILD CONCEPT PLANS 1 WASTEWATER LANE, MANNING, CLARENDON COUNTY SOUTH CAROLINA

Clarendon County Engineering

411 SUNSET DR. - MANNING, S.C. 29102
(803) 433-3256 FAX: (803) 435-2208

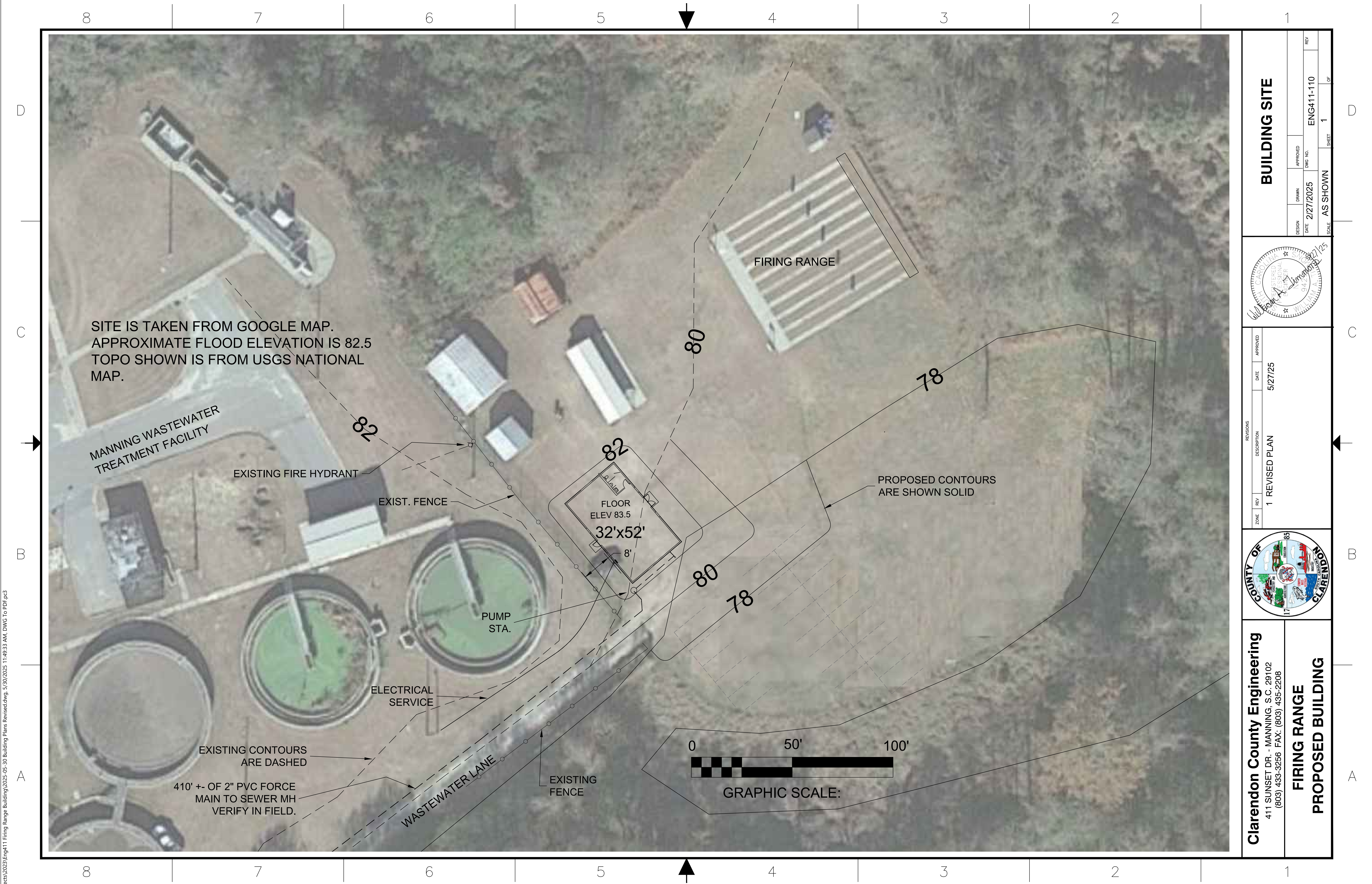
APRIL 7, 2025

REVISED FOR REBID MAY 27, 2025



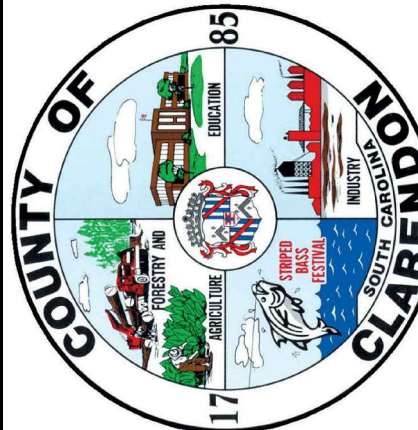
C:\Projects\2023\Eng411 Firing Range Building\2025-05-30 Building Plans Revised.dwg, 5/30/2025 11:49:33 AM, DWG To PDF.pc3

D
C
B
A



Clarendon County Engineering
411 SUNSET DR. - MANNING, S.C. 29102
(803) 433-3256 FAX: (803) 435-2203

**FIRING RANGE
PROPOSED BUILDING**



ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	REVISED PLAN	5/27/25	



BUILDING SITE				
DESIGN	DRAWN	APPROVED	DWG NO.	REV
DATE	2/27/2025		ENG411-110	
SCALE	AS SHOWN	SHEET	1	OF

D
C
B
A

D

C

B

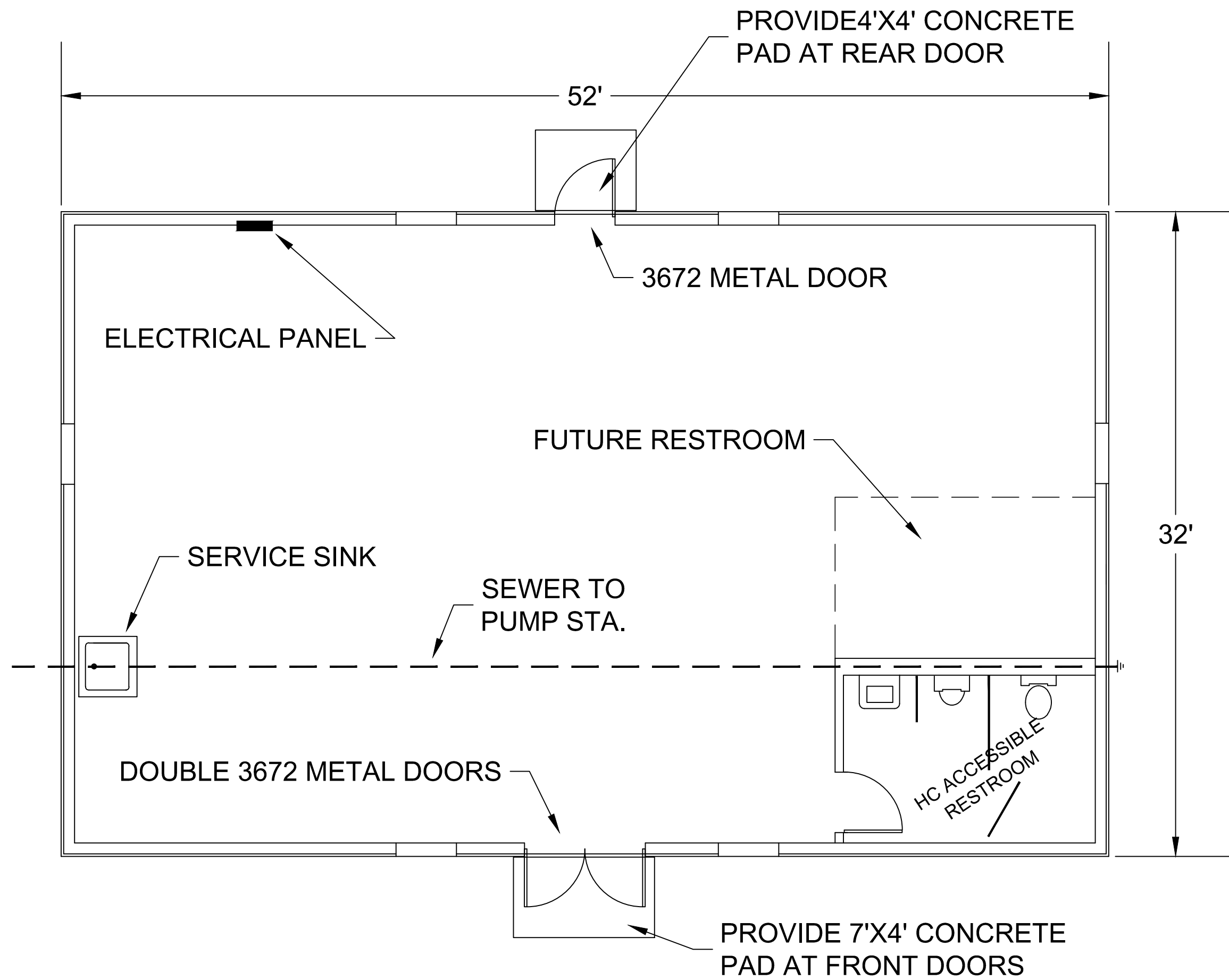
A

D

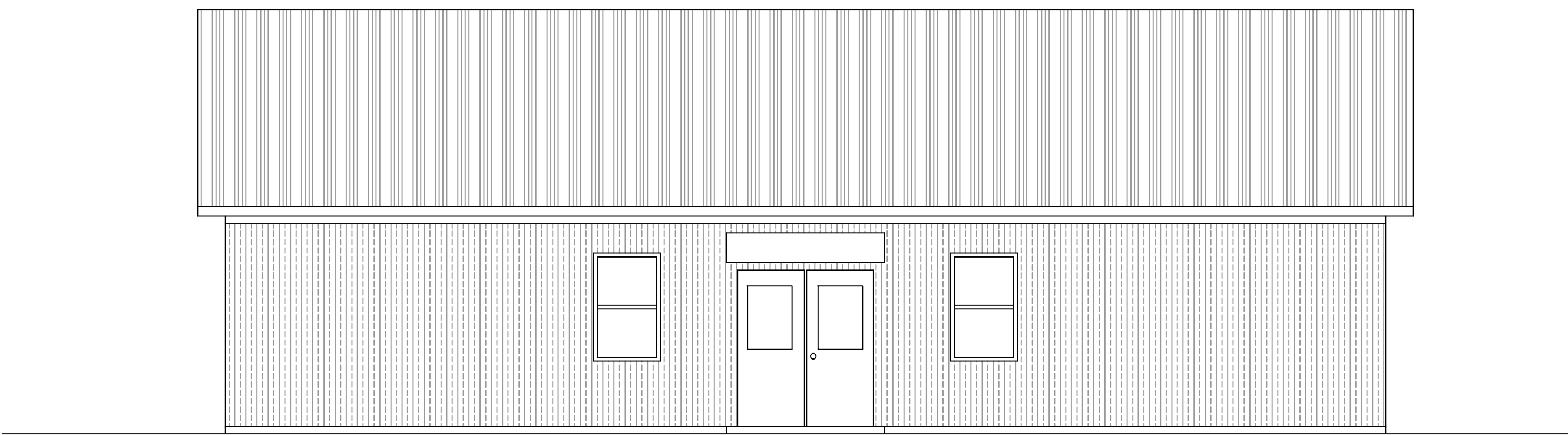
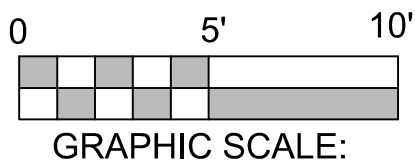
C

B

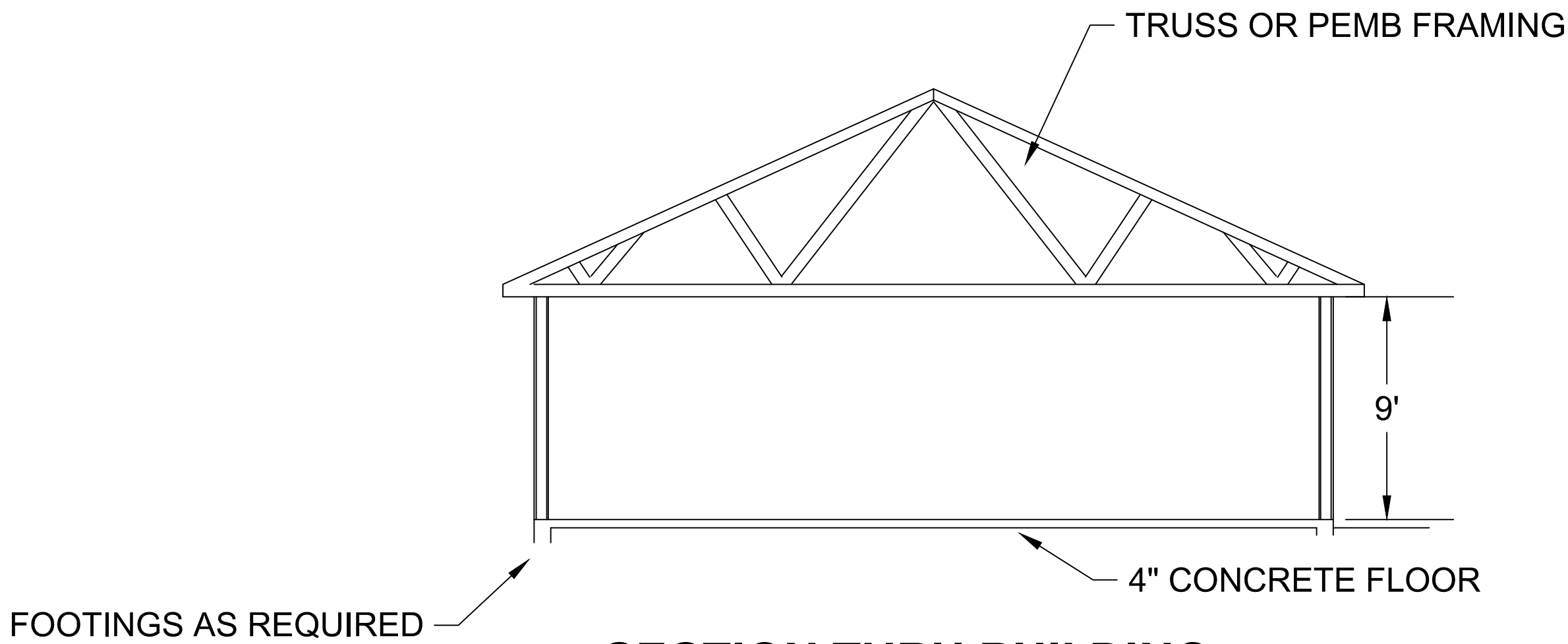
A



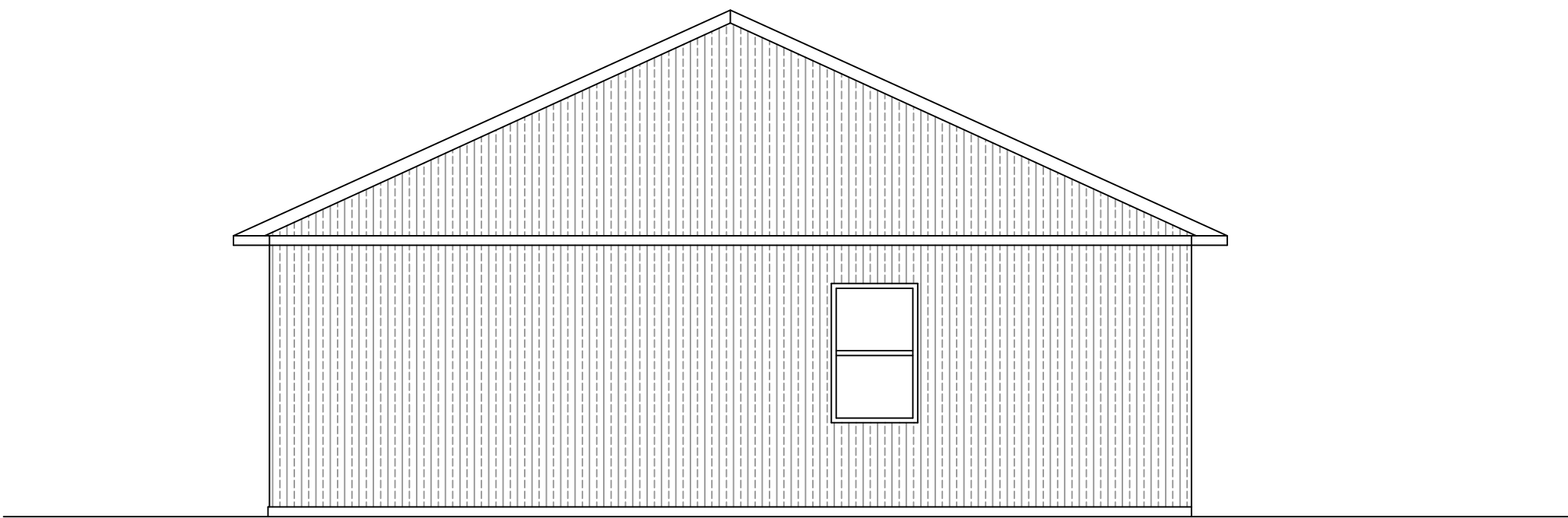
PLAN VIEW



FRONT ELEVATION



SECTION THRU BUILDING

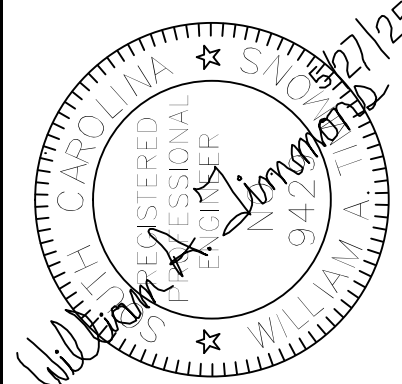


RIGHT SIDE ELEVATION

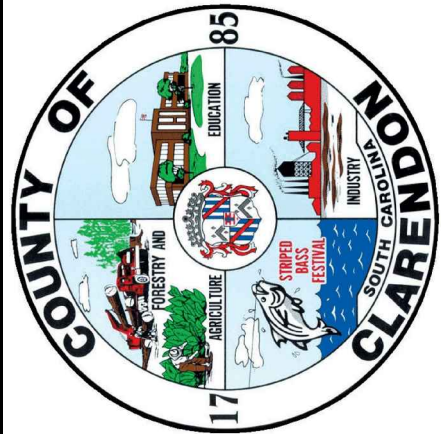
BUILDING NOTES:

1. PROJECT IS TO BE TURN-KEY, DESIGN BUILD. CONTRACTOR IS TO PROVIDE ARCHITECTURAL AND ENGINEERING SERVICES AS REQUIRED FOR PLANS PREPARATION AND PERMITTING.
2. ALL WORK IS TO CONFORM TO APPLICABLE BUILDING CODES AND LOCAL REGULATIONS.
3. PROVIDE SITE WORK INCLUDING FILL, GRADING AND GRASSING AS INDICATED ON SHEETS 1, 5 AND SPECIFIED ON SHEET 3. 480 CU. YDS FILL IS TO BE PROVIDED BY OWNER ON SITE.
4. BUILDING FLOORS AND PADS SHOWN ARE TO BE REINFORCED CONCRETE. FLOORS ARE TO BE MINIMUM 4" THICK.
5. BUILDING IS TO BE A POST FRAME OR PRE-ENGINEERED METAL STRUCTURE WITH STEEL ROOF AND WALLS, 32' WIDE BY 52' LONG WITH 9' CEILING HEIGHT.
6. PROVIDE ONE HANDICAPPED ACCESSIBLE BATHROOM WITH TOILET, SINK, URINAL, AS SHOWN, PROVIDE HC RAILS, MIRROR AND APPURTENANCES. OWNER TO PROVIDE WATER SERVICE TO 10' OUTSIDE BUILDING.
7. PROVIDE TANKLESS PROPANE WATER HEATER, ONE NEAR BATHROOM PLUMB COMPLETE. PROVIDE HOT AND COLD TO UTILITY SINK.
8. PROVIDE NOMINAL 5 TON HEAT PUMP STYLE UNIT WITH GAS AUXILIARY HEAT AND CEILING DUCTS FOR HVAC. PROVIDE VENT FAN IN RESTROOM.
9. INTERIOR FINISH MATERIAL IS TO BE STANDARD VINYL BACKED INSULATION. FRAME AND PROVIDE WATER RESISTANT GYPSUM WALLBOARD "SHEETROCK" IN BATHROOM. PROVIDE VINYL BASE.
10. ALL COLORS, FINISHES, ETC. ARE TO BE SELECTED BY OWNER.
11. PROVIDE LED LIGHTING FIXTURES PER DESIGN STANDARDS.
12. PROVIDE 30 GPM PACKAGED GRINDER PUMP STATION WITH ABOUT 410' OF 2" FORCE MAIN DOWN ENTRANCE ROAD TO SEWER MANHOLE AS DIRECTED BY CITY.

BUILDING CONCEPT
PLAN AND ELEVATIONS



REVISIONS	DESCRIPTION	DATE	APPROVED
1	REVISED PLAN	5/27/25	



Clarendon County Engineering
411 SUNSET DR. - MANNING, S.C. 29102
(803) 433-3256 FAX: (803) 435-2203

FIRING RANGE BUILDING

DESIGN	DRAWN	APPROVED	DWG NO.	REV
2/27/2025			ENG411-110	

AS SHOWN
SHEET 2 OF 2

C:\Projects\2023\Eng411 Firing Range Building\2025-05-30 Building Plans Revised.dwg, 5/30/2025 11:49:42 AM, DWG To PDF.pc3

A

B

C

D

8

7

6

5

4

3

2

1

SPECIFICATIONS - EARTHWORK

1. Scope. Earthwork shall consist of furnishing all labor, materials, equipment and service required to complete all clearing, grubbing, stripping, proofrolling, excavation, filling and grading, etc. as shown on the drawings and as specified herein. Refer to Geotechnical Investigation Report furnished with Request for Bids for information on existing soils and proposed methods of construction.

2. Disposal of Materials. Properly dispose of all materials to be disposed of as a result of clearing, grubbing and stripping as allowed by federal, state and local codes.

3. Excavation. The Contractor shall perform all excavation of every description of whatever substances encountered within the grading limits of the project. All excavations shall be to the lines and grade shown on the drawings. Should unsuitable materials be encountered, then the Contractor shall excavate below the grade shown and shall replace it with suitable materials.

4. Protection of Existing Utilities. The Contractor shall be responsible for and shall take all necessary precautions to protect and preserve any and all existing culverts, cables, pipelines, conduits, subdrains, etc. or parts thereof which may be affected by his operations on the Contract (whether shown or not shown on the drawings) .

5. Preparation of Ground Surface for Fill. All clearing and grubbing shall have been completed and stump holes and depressions filed and compacted before proceeding with the embankment construction. Before the embankment is placed on hillsides and slopes, the existing ground surface shall be plowed or deeply scarified or, if the nature of the ground indicates, greater precautions should be taken for binding the fill to the original ground.

6. Embankment. Embankments shall be formed by placing and spreading the material in successive, uniform, horizontal layers of not more than 8 inches in depth, loose measurement, for the full width of the cross section. Each layer of the embankment material shall be kept uniform and shaped to drain for the full width of the cross section by the use of blade graders, bulldozers, or other suitable equipment. Fills and embankments shall be constructed at the locations and alignment and grades as shown on the plans. Fill material shall be satisfactory material free from root, organic material and trash, and from stones having a maximum dimension greater than 8 inches.

7. Embankment Compaction. Each layer of embankment shall be compacted to not less than 95% of maximum Modified Proctor density before successive layers are applied. The compaction shall be accomplished by using suitable construction procedures and while the material is at a suitable moisture content.

8. Preparation of Subgrade. All unstable material which is unsuitable for compaction shall be removed and replaced with materials that are satisfactory. Any boulders shall either be removed or cut off 8 inches below subgrade. All stumps and large roots shall also be removed. Any depressions that exist or develop shall be replaced with approved materials and compacted.

9. Finished Excavation, Fills and Embankments. All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from either bladegrader or scraper operations, supplemented with hand raking and finishing. The finished surface shall not be more than 0.10 foot above or below the established grade or approved cross section.

10. Placement of Topsoil Blanket. The ground surface shall be cleared of all stones larger than 2" in diameter, roots, cable, wire, grade stakes, and any other material or debris which might hinder proper grading, tillage or other required operations. The topsoil shall be uniformly distributed, evenly spread and rolled with a roller of one hundred pounds weight for each foot of width. The completed surface shall match finished grades as shown on the drawings. Any irregularities in the surface shall be corrected and , if necessary, additional topsoil shall be added. Topsoil shall not be placed when the topsoil or the subgrade is in a frozen or muddy condition or in a condition otherwise detrimental to subsequent operations.

11. Protection. Protect newly graded areas from traffic and erosion and keep free of trash and debris. Re-establish grades in settled, eroded and rutted areas.

12. Erosion Control. Unless exposed earth areas are properly cared for during construction, they may result in substantial sedimentation damage and introduction of pollutants downstream from the construction area. The Contractor shall be responsible for conducting his site grading and drainage operations as directed and in such manner as to prevent excessive soil erosion of the construction site work areas and so as to conform fully with the requirements of the Erosion Control Plan, The Stormwater Pollution Prevention Plan, the Construction General Permit SCR100000, and all applicable regulations. Should clogging of structures occur as the result of erosion at the site of this construction, immediately remove the clogging soil and/or debris and restore the proper functioning of these structures.

13. Temporary and Permanent Vegetation. Establish temporary and/or permanent vegetation in all disturbed areas as soon as it is practical following grading or any other construction operations. See Erosion Control Plans for details.

END OF SECTION

SPECIFICATIONS - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Provide cast-in-place concrete, including formwork and reinforcement, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.2 QUALITY ASSURANCE

A. Comply with "Specifications for Structural Concrete for Buildings", ACI 301, except as may be modified herein.

PART 2 - PRODUCTS

2.1 FORMS

A. General
1. Construct forms in conformance with ACI 347.
2. Side forms for footing may be omitted, and concrete may be placed directly against excavation.

2.2 REINFORCEMENT

A. Comply with the following as minimums:
1. Bars: ASTM A615, Grade 60, unless otherwise shown on the Drawings, using deformed bars for Number 3 and larger;
2. Welded wire fabric: ASTM A185;
3. Bending: ACI 318.
B. Fabricate reinforcement to the required shapes and dimensions, within fabrication tolerances stated in the CRSI "Manual of Standard Practices".

2.3 CONCRETE

A. Comply with the following as minimums:
1. Portland cement: ASTM C150, Type I or II, low alkali,
2. Aggregate, ASTM C30, uniformly graded and clean.
3. Aggregate, course: Crushed rock or washed gravel with minimum size between 3/4" and 1-1/2", with a maximum size number 4.
4. Aggregate, fine: Natural washed sand of hard and durable particles varying from fine to particles passing a 3/8" screen, of which at least 12% shall pass a 50-mesh screen.
5. Water: Clean and potable.
B. Provide concrete with the 28 day compressive strengths following as minimum:
1. All structural concrete except as indicated in 2 below: 4000 psi
2. All sidewalks, curbs and gutters, and unreinforced foundations: 3000 psi

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
B. Water, mud, organic and other detrimental material shall be removed from excavations before concrete is deposited.

3.2 REINFORCING

A. Comply with the following, as well as the specified standards, for details and methods of reinforcing placement and supports.
1. Clean reinforcement and remove loose dust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
2. Position, support, and secure reinforcement against displacement by forms, construction, and the concrete placement operations.
3. Place reinforcement to obtain the required coverages for concrete protection.
4. Install welded wire fabric in as long lengths as practicable, lapping adjoining pieces one full mesh minimum.
5. Splices in reinforcement steel shall be in accordance with the latest revision of the American Concrete Institute "Building Code Requirements for Reinforced Concrete" (ACI 318) .

3.3 PLACING CONCRETE

A. Mixing:
1. Transit mix the concrete in accordance with provisions of ASTM C94.
2. Do not use concrete that is not placed within 1-1/2 hours after water is first introduced into the mix.
B. Preparation:
1. Set forms for slope as indicated. Slope sidewalks adjacent building away from buildings to prevent water from entering the building. Remove foreign matter accumulated in the forms.
2. Locate and construct control and contraction joints in accordance with the Drawings. Provide 1/2" expansion material at all contact points with structure or existing sidewalk. Provide maximum contraction joints spacing of 6' in sidewalk.
C. Placing concrete slabs:
1. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
2. Bring slab surfaces to the correct level with a straight edge, and then strike off.
3. Use bullfloats or darbies to smooth the surface, leaving the surface free from bumps and hollows.
4. Do not sprinkle water on the plastic surface. Do not disturb the slab surface prior to start of finishing operations.

D. Provide finish for slabs as shown on drawings or as directed by Owner. Sidewalks and curbs to have light broom finish and tooled edges.

3.4 REMOVAL OF FORMS

A. Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety and no damage to structure. Do not remove shoring until the member has acquired sufficient strength to support its own weight, the load upon it, and the added load of construction.
B. Exercise care in removing forms from finished concrete surfaces so that surfaces are not marred or gouged, and that corners are true, sharp, and unbroken.
C. Repair any damaged areas as approved by Engineer.

END OF SECTION

SPECIFICATIONS - PUMP STATION AND FORCE MAIN

PART 1 - GENERAL

1.1 Provide all materials and installation for a complete and proper installation. Coordinate work with City of Manning to avoid any existing utilities and make connection to manhole as required.

1.2 The grinder sewage pump station shall be designed to efficiently handle domestic wastewater and solids, utilizing duplex submersible grinder pumps with a 1-horsepower motor, operating at 230 volts, single-phase. This pump maintains a minimum flow rate of 30 gallons per minute (GPM), grinding solid waste into a fine slurry for easy transport through the force main. The semi-open impeller prevents clogging, while a stainless-steel cutting mechanism ensures reliable shredding of debris before entering the system.

1.3 The wet well shall be constructed from fiberglass-reinforced plastic (FRP), offering high corrosion resistance, structural durability, and a lightweight design for ease of installation. Fiberglass provides superior resistance to environmental degradation, making it well-suited for wastewater applications. The wet well typically includes a minimum sump diameter of 36 inches, allowing ample space for pump operation, maintenance, and solids retention.

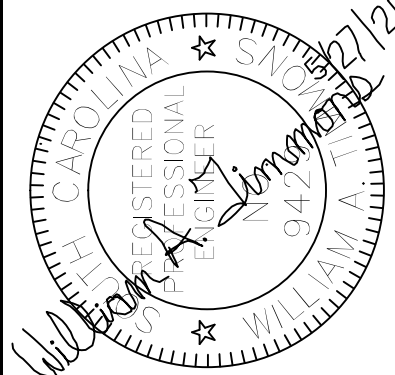
1.4 For automated operation, the system is equipped with float switches or level sensors, ensuring seamless activation based on fluid levels. A 2-inch female pipe-thread (FPT) discharge port enables direct connection to the force main.

1.5 The 2-inch PVC force main, responsible for conveying wastewater from the pump station to the designated discharge point, is to be constructed from rigid PVC pipe, conforming to ASTM D2241 standards. The pipe shall have a minimum pressure rating of 160 PSI, ensuring durability under varying flow and pressure conditions. Solvent-welded or gasketed joints provide flexibility, accommodating thermal expansion and contraction while maintaining a secure seal.

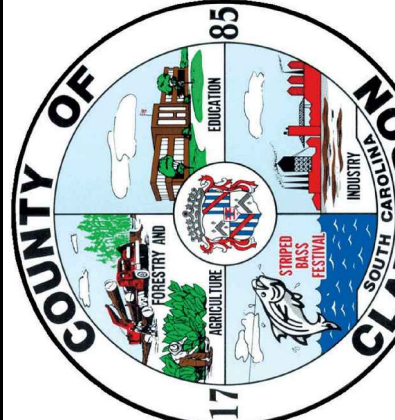
1.6 To facilitate identification and tracing, the PVC force main is green and clearly labeled "Sewer." Additionally, trace wire and metallic detection tape are installed alongside the pipe, allowing maintenance personnel to accurately locate the force main when needed. Thrust restraints, such as concrete thrust blocks or restrained joints, are strategically positioned at bends and directional changes to prevent movement due to hydraulic pressure.

1.7 Pump system shall be manufactured by Franklin Electric, Liberty Pump or approved equal.

BUILDING CONCEPT SPECIFICATIONS



REVISIONS	DATE	APPROVED
1	5/27/25	
DESCRIPTION		
1	REVISED PLAN	
ZONE	REV	



Clarendon County Engineering

411 SUNSET DR. - MANNING, S.C. 29102
(803) 433-3256 FAX: (803) 435-2208

FIRING RANGE BUILDING

A

B

C

D

8

7

6

5

4

3

2

1

