CRAIG GAULDEN DAVIS PBK

June 18, 2026

City of Anderson, South Carolina

New Fire Station 4

Schematic Summary

Craig Gaulden Davis | PBK's design team was commissioned by the City of Anderson to design a new 24,500 square foot Fire Station on a 3-acre site at the intersection of the East-West Parkway and the Beltline Connector. The new Fire Station would serve the City's northern area, facilitate training, provide space for a police office, support community needs, and connect to the trail along the East-West Parkway. The following are the primary goals for the facility:

1. **Exemplifies Anderson:** The station's architecture and materials reflect the character, pride, and civic presence of the Anderson Community.
2. **Strengthens Firefighter Preparedness, Health, & Wellness:** Thoughtful circulation , operational flow, and dedicated retreat spaces to support the preparedness, physical and mental wellness of firefighters.
3. **Connecting Civic Anchor:** Transparent public spaces and a new trailhead connection to create opportunities for everyday interaction between the fire station and the community.

I. EXISTING CONDITIONS

See the Davis & Floyd Schematic Narrative for current site conditions.

II. PROJECT SCOPE

The new Fire Station 4 will be constructed in its entirety in a single phase except for the +/- 3,200 square foot covered storage structure on the northwest end of the site. See the attached drawings and narratives for further information about the construction scope.

III. ESTIMATED CONSTRUCTION COST

Based on schematic drawings and narratives, the new Fire Station 4 construction cost is estimated to range between $13.5 million to $16 million.

IV. POTENTIAL DESIGN AND CONSTRUCTION SCHEDULE

The following is a summary of a potential design and construction schedule. This schedule will be developed further once the CMAR is engaged on the project:

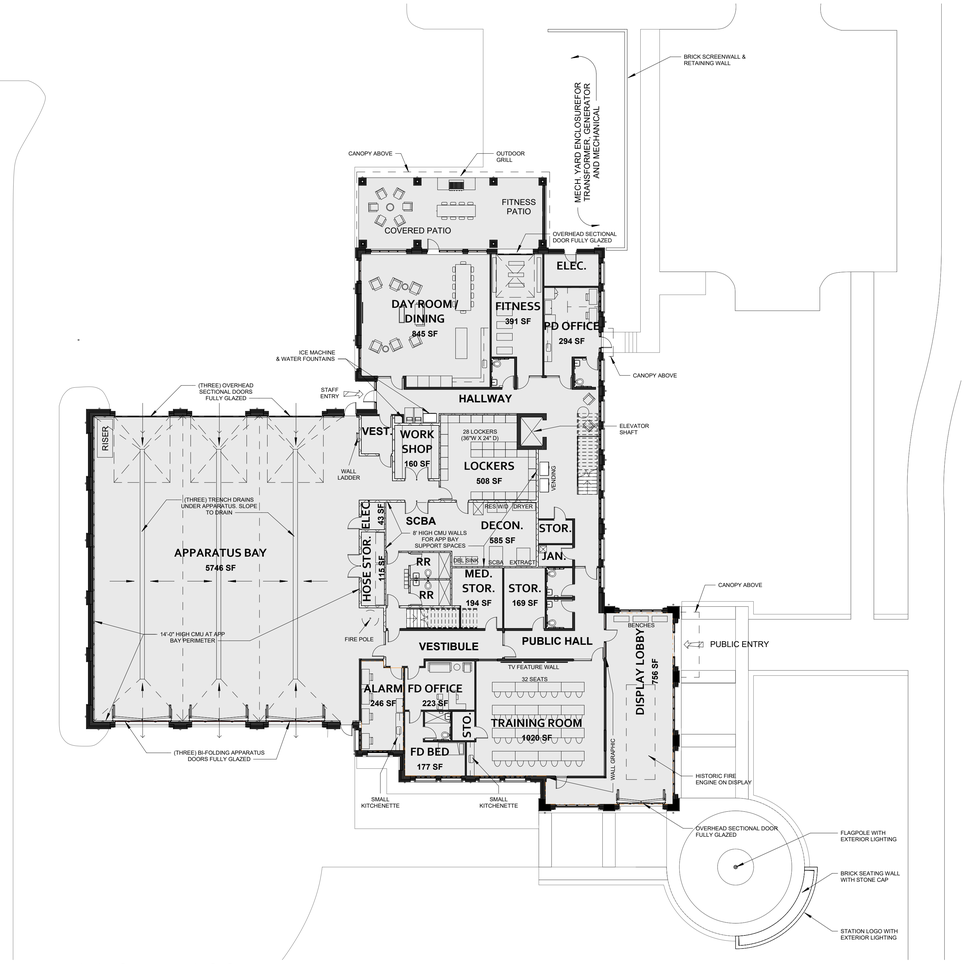
- Design Development – CM@Risk Estimate Package: Mid-Aug ‘26
- Design Development – CM@Risk Estimate Due: Early Sept ‘26
- Construction Documents & CM@Risk Bidding: Early-Sept – Late-Dec ‘26
- Finalize CM@Risk Contract & Mobilization: Winter ‘27
- Construction: Spring ’27 – Summer ‘28

V. APPENDIX

A. Architectural Schematic Drawings by CGD | PBK (3 Drawing Sheets).
B. Civil Narrative and Drawings by Davis & Floyd (6 Pages).
C. Structural Schematic Narrative by Fuller Group (7 Pages).
D. Mechanical, Plumbing, Fire Protection, and Electrical Narrative (13 Pages).

0"
1"

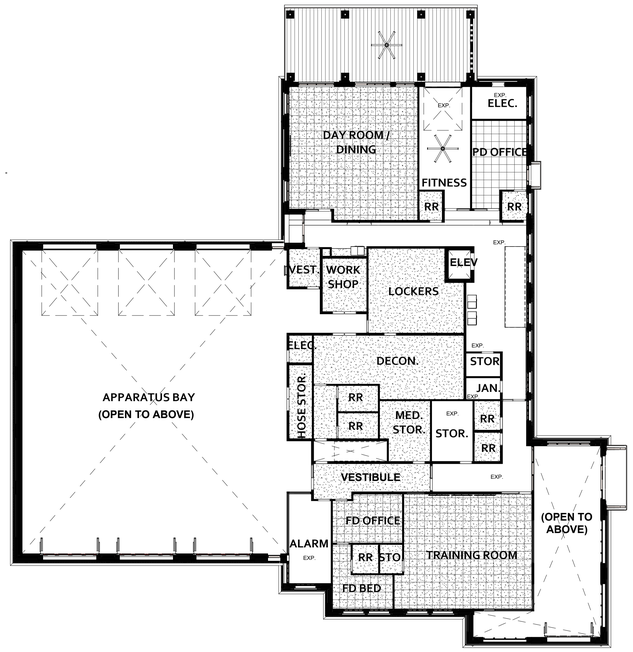
FLOOR PLAN & REFLECTED CEILING PLAN
A101
FOR BLUEBEAM LABELING/DOOR:



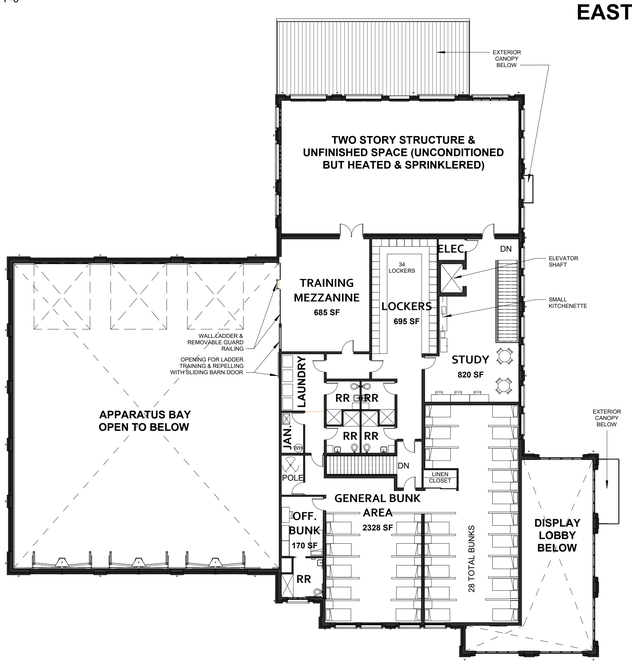
1 A101 LEVEL ONE - FLOOR PLAN
1/16" = 1'-0"

EASTWEST PARKWAY

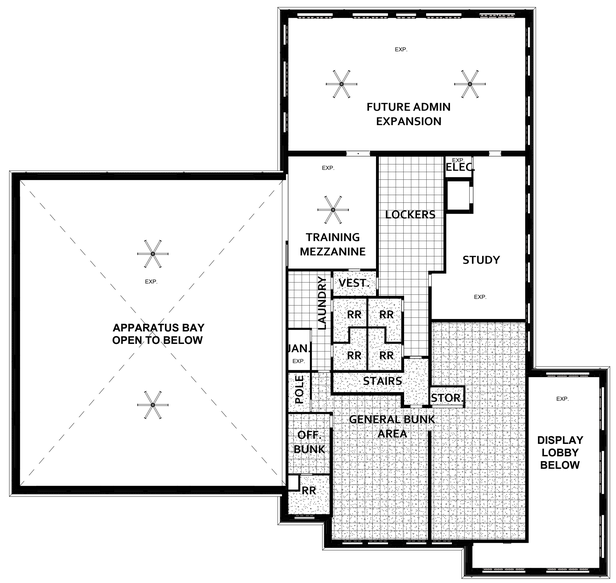
BELTLINE CONNECTOR



3 A101 LEVEL ONE - RCP
1/16" = 1'-0"



2 A101 LEVEL TWO - FLOOR PLAN
1/16" = 1'-0"



4 A101 LEVEL TWO - RCP
1/16" = 1'-0"

RCP LEGEND

CEILING

GWB
MFR:
STYLE: GWB CEILING
COLOR:
SIZE:
INSTALL:

ACP
MFR:
STYLE: ACOUSTIC CEILING PANELS
COLOR:
SIZE:
INSTALL:

ACP/NRC
MFR:
STYLE: ACOUSTIC CEILING PANELS; HIGH NRC
COLOR:
SIZE: 2' X 2'
INSTALL:

EXP.
MFR:
STYLE: EXPOSED STRUCTURE
COLOR:
SIZE:
INSTALL:

FAN
MFR:
STYLE: CEILING FAN
COLOR:
SIZE:
INSTALL:

CRAIG GAULDEN DAVIS PBK
www.cgdarch.com
SC FIRM: B ARB.74013
GREENVILLE, SC
864-242-0761

ANDERSON FIRE STATION #4

Address Line 1
Address Line 2

SCHEMATIC DESIGN

ANDERSON
THE ELECTRIC CITY

NORTH: PLAN TRUE

FOR REVIEW
NOT FOR CONSTRUCTION

CLIENT	
CITY OF ANDERSON	
DATE	PROJECT NUMBER
06/18/2026	26011

DRAWING HISTORY

No.	Description	Date

CHECKED BY:	RW
DRAWN BY:	OW

<None>

FLOOR PLAN & REFLECTED CEILING PLAN

A101

Plot Stamp:
6/15/2026 1:10:32 PM

FINISH PLAN & ROOF PLAN
A102
FOR BLUEBEAM LABELING

0"
1"

1 / A102 LEVEL ONE - FINISH PLAN
1/16" = 1'-0"

FINISH PLAN LEGEND

FLOORING

CONC/S
MFR:
STYLE: SEALED CONCRETE
COLOR:
SIZE:
INSTALL:

PT
MFR:
STYLE: PORCELAIN TILE
COLOR:
SIZE:
INSTALL:

BUDGET ITEM
MFR:
STYLE: TILE, LVT, OR CONC/S
COLOR:
SIZE:
INSTALL:

RUB
MFR:
STYLE: RUBBER
COLOR:
SIZE:
INSTALL:

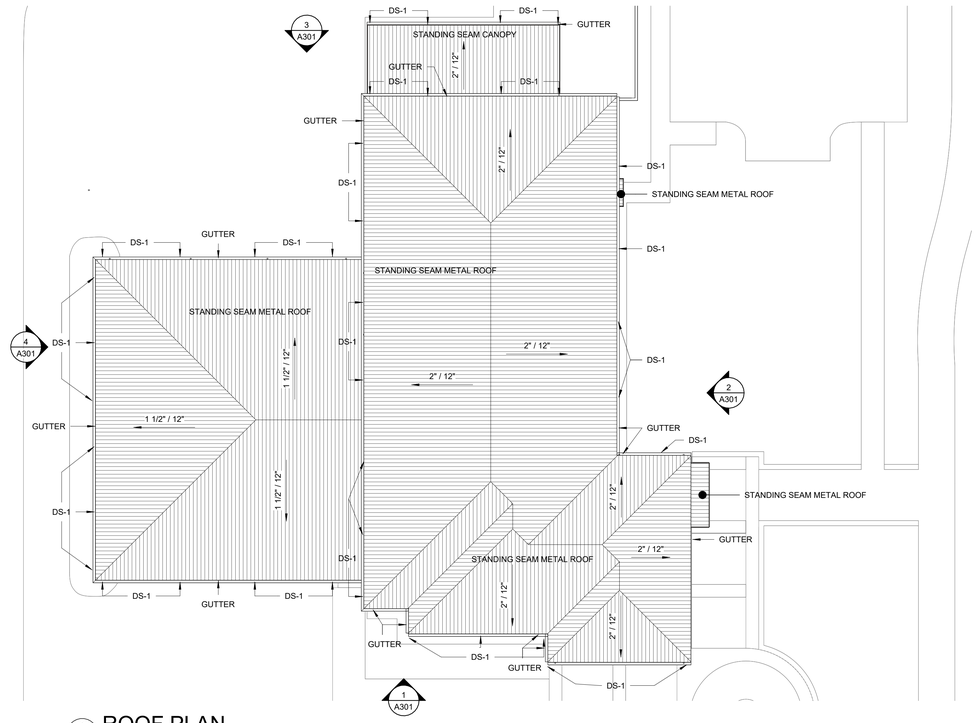
SRUB
MFR:
STYLE: SPORTS RUBBER
COLOR:
SIZE:
INSTALL:

EMT
MFR:
STYLE: ENTRY MAT TILE
COLOR:
SIZE:
INSTALL:

ES
MFR:
STYLE: ENTRY SYSTEM
COLOR:
SIZE:
INSTALL:

CPT
MFR:
STYLE: CARPET TILE
COLOR:
SIZE:
INSTALL:

2 / A102 LEVEL TWO - FINISH PLAN
1/16" = 1'-0"



3 / A102 ROOF PLAN
1/16" = 1'-0"

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GREENVILLE, SC
864-242-0761

ANDERSON FIRE STATION #4

Address Line 1
Address Line 2

SCHEMATIC DESIGN

ANDERSON
THE ELECTRIC CITY

NORTH: PLAN TRUE

FOR REVIEW
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CLIENT	
CITY OF ANDERSON	
DATE	PROJECT NUMBER
06/18/2026	26011

DRAWING HISTORY

No.	Description	Date

CHECKED BY: RMW
DRAWN BY: OW

<None>

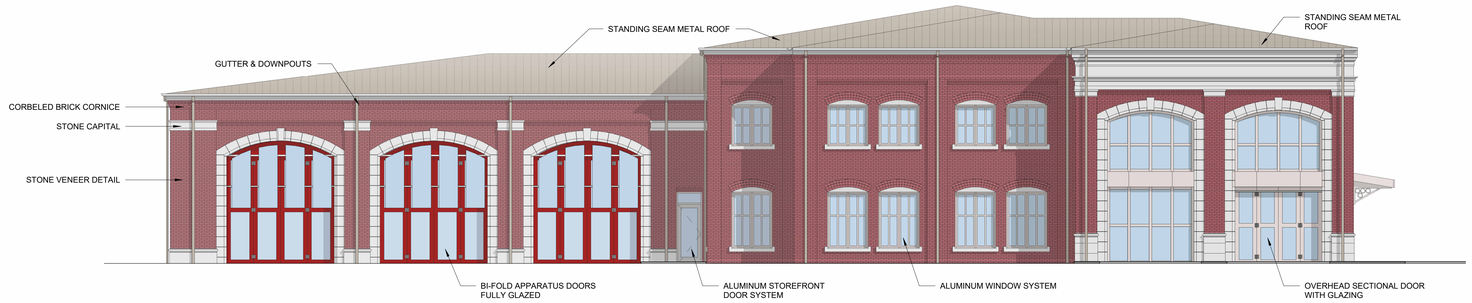
FINISH PLAN & ROOF PLAN

A102

Plot Stamp:
6/15/2026 2:26:58 PM

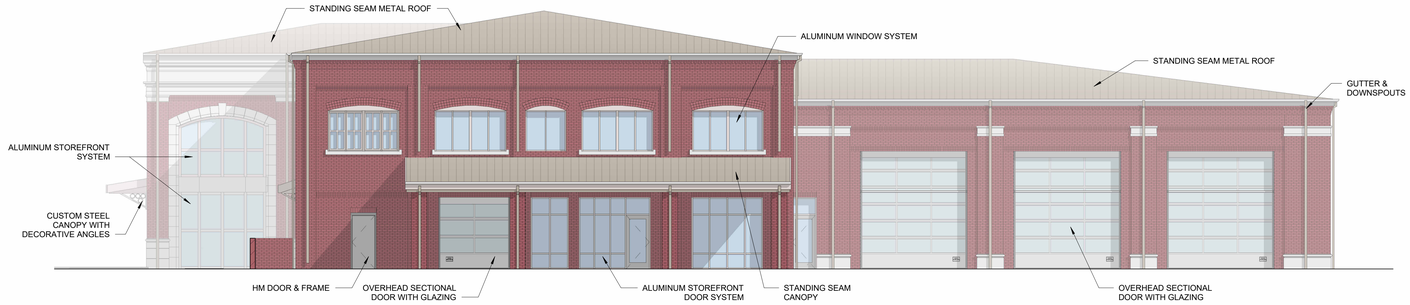
0"
1"

EXTERIOR ELEVATION
A301
FOR BLUEBEAM LABELING/DOOR:

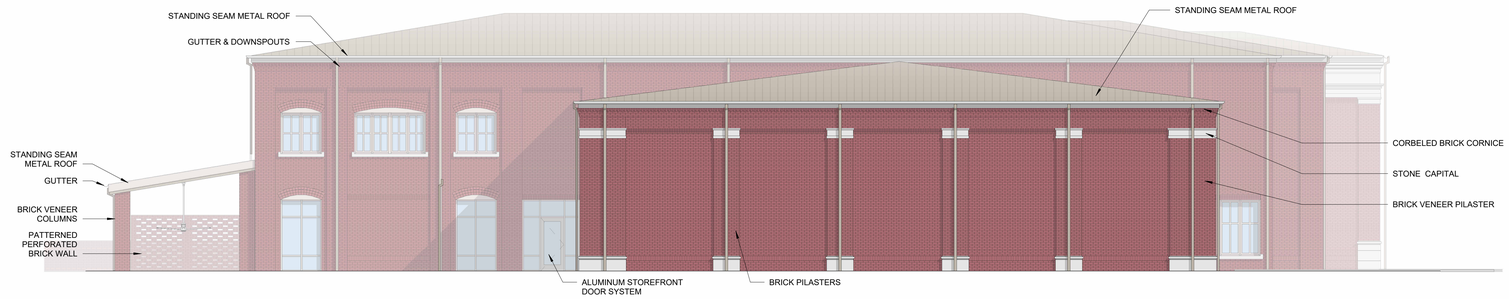


1 A301 EXTERIOR ELEVATION - EW Parkway
1/8" = 1'-0"

2 A301 EXTERIOR ELEVATION - Beltline
1/8" = 1'-0"



3 A301 EXTERIOR ELEVATION - Rear
1/8" = 1'-0"



4 A301 EXTERIOR ELEVATION - Apparatus Bay
1/8" = 1'-0"

CRAIG GAULDEN DAVIS PBK
www.cgdarch.com
SC FIRM: B.ARB.14013
GREENVILLE, SC
864-242-0761

ANDERSON FIRE STATION #4

Address Line 1
Address Line 2

SCHEMATIC DESIGN

ANDERSON
THE ELECTRIC CITY

NORTH: PLAN TRUE

FOR REVIEW
NOT FOR CONSTRUCTION

CLIENT	
CITY OF ANDERSON	
DATE	PROJECT NUMBER
06/18/2026	26011

DRAWING HISTORY

No.	Description	Date

CHECKED BY:	RW
DRAWN BY:	OW

<None>

EXTERIOR ELEVATION

A301

Plot Stamp:
6/15/2026 2:28:10 PM

June 18, 2026

Schematic Narrative
Anderson Fire Station 4
D|F Job Number: 014534.00

Project Overview:
The proposed development consists of the construction of a new fire station for the City of Anderson on approximately 3.0 acres located at the intersection of East-West Parkway and Beltline Connector in Anderson, South Carolina. The site is identified as Tax Map Number 121-00-04-033 and is zoned General Commercial (GC).

The development includes construction of an approximately 24,500-square-foot fire station, 3,200-square-foot covered storage, associated apparatus bays, employee and visitor parking, pedestrian facilities, site utilities, landscaping, storm drainage infrastructure, and supporting site improvements.

Existing Conditions:
The project site is currently undeveloped and generally slopes across the property with existing elevations ranging from approximately 754 feet to 793 feet. The site is bound by East-West Parkway and Beltline Connector and is situated within a developing commercial corridor. Existing site conditions will be modified as necessary to accommodate the proposed building, access drives, utility infrastructure, and stormwater management facilities.

Proposed Development:
The proposed development includes a new fire station building with associated emergency vehicle circulation areas, covered storage, parking facilities, sidewalks, plazas, and landscaped areas. The building has been positioned to comply with applicable zoning setback requirements, including a 25-foot front setback, 7.5-foot side setback, and 10-foot rear setback. Site improvements also include curbing, dumpster enclosures, security gates, fencing, and outdoor patio areas for station personnel.

Access and Circulation:
Vehicular access to the site is provided from both the City of Anderson-owned Beltline Connector and SCDOT-owned East-West Parkway. The primary public entrance is provided via a conventional 28-foot-wide driveway connection to Beltline Connector. This access serves visitors, employees, and service vehicles and includes appropriate pavement markings, stop control, and directional striping. Emergency apparatus egress is provided through a dedicated 45-foot-wide exit-only driveway connection to East-West Parkway. This access is designed to facilitate rapid emergency response while minimizing conflicts with public traffic.

An additional dedicated right turn-only lane from Beltline Connector to East-West Parkway will also be provided to alleviate future traffic generated from the growing East-West Parkway corridor.

Internal circulation has been designed to accommodate fire apparatus movements, employee vehicles, and public access. Heavy-duty pavement sections are provided in areas subject to emergency vehicle loading, while standard-duty pavement sections are utilized for employee and visitor parking areas.

The site provides a total of 35 parking spaces, including:

- 11 public parking spaces
- 22 employee parking spaces
- 2 police officer parking spaces

Two ADA-accessible parking spaces are provided in compliance with applicable accessibility requirements.

Pedestrian Accessibility:

The project incorporates a network of pedestrian facilities designed to provide safe and accessible access throughout the site. Improvements include concrete sidewalks, ADA-compliant curb ramps, tactile warning surfaces, accessible parking facilities, and designated accessible routes connecting parking areas to building entrances. An extension of the existing East-West Parkway multi-use path will also be continued into the proposed development, and will be served by the previously-mentioned 11 public parking spaces. This will allow pedestrian circulation between the public parking, multi-use path, and the station's public display lobby.

All accessible parking spaces, access aisles, sidewalks, ramps, and pedestrian routes have been designed in accordance with current ADA standards.

Landscaping and Buffering:

Landscaped areas are incorporated throughout the site to satisfy zoning and development requirements while enhancing the visual character of the facility. Type A transition landscape buffers are provided along property boundaries where required. Additional parking perimeter landscaping and site plantings will be installed in accordance with the approved landscape plan.

Pavement and Site Improvements:

The project includes a combination of heavy-duty asphalt pavement, heavy-duty concrete pavement, and light-duty asphalt pavement based on anticipated loading conditions. Emergency vehicle circulation routes and apparatus operating areas have been designed using pavement sections suitable for repeated heavy vehicle use.

Grading and Drainage:

The site's grading will be developed to establish positive drainage away from all building structures and paved surfaces while creating suitable slopes for emergency operations, parking areas, and pedestrian facilities.

Stormwater runoff generated from the proposed development will be collected and routed through the site's stormwater management system by way of drainage structures, stormwater pipes, and ditches. Runoff will be routed to an underground detention system before being discharged through the existing 18" culvert underneath Beltline Connector. All stormwater management facilities and

infrastructure will be designed to satisfy permitting requirements, adhere to local and state regulations, and provide long-term functionality.

Utilities:
The proposed development will be served by domestic water, sanitary sewer, electrical, communications, and other utility services. Utility improvements and designs will be coordinated with the applicable utility providers, and will be designed in accordance with applicable standards. All utilities with the exception of domestic water are readily available nearby. A short extension of the Electric City Utilities domestic water infrastructure will be required.

Waste management for the property will be addressed using one semi in-ground Sutera trash unit. A Sutera unit provides the following advantages over a traditional dumpster pad:

- By storing waste vertically, a Sutera system requires a significantly smaller footprint. This also generates fewer collections needed, as the vertical design allows the trash to compress itself naturally due to gravity.
- Sutera lids are much lower than a dumpster's, making it much easier for the user to dispose of heavy bags.
- By remaining almost entirely underground, aesthetics are improved and odor & pest control is mitigated.

Regulatory Compliance:
The site has been designed in accordance with applicable City of Anderson zoning requirements, accessibility standards, SCDOT requirements, and applicable development regulations. Access points, pavement markings, signage, and roadway improvements within public rights-of-way will be constructed in accordance with approved encroachment permits and agency standards.
The proposed development complies with applicable parking requirements, setback requirements, accessibility standards, and site development criteria for the intended use.

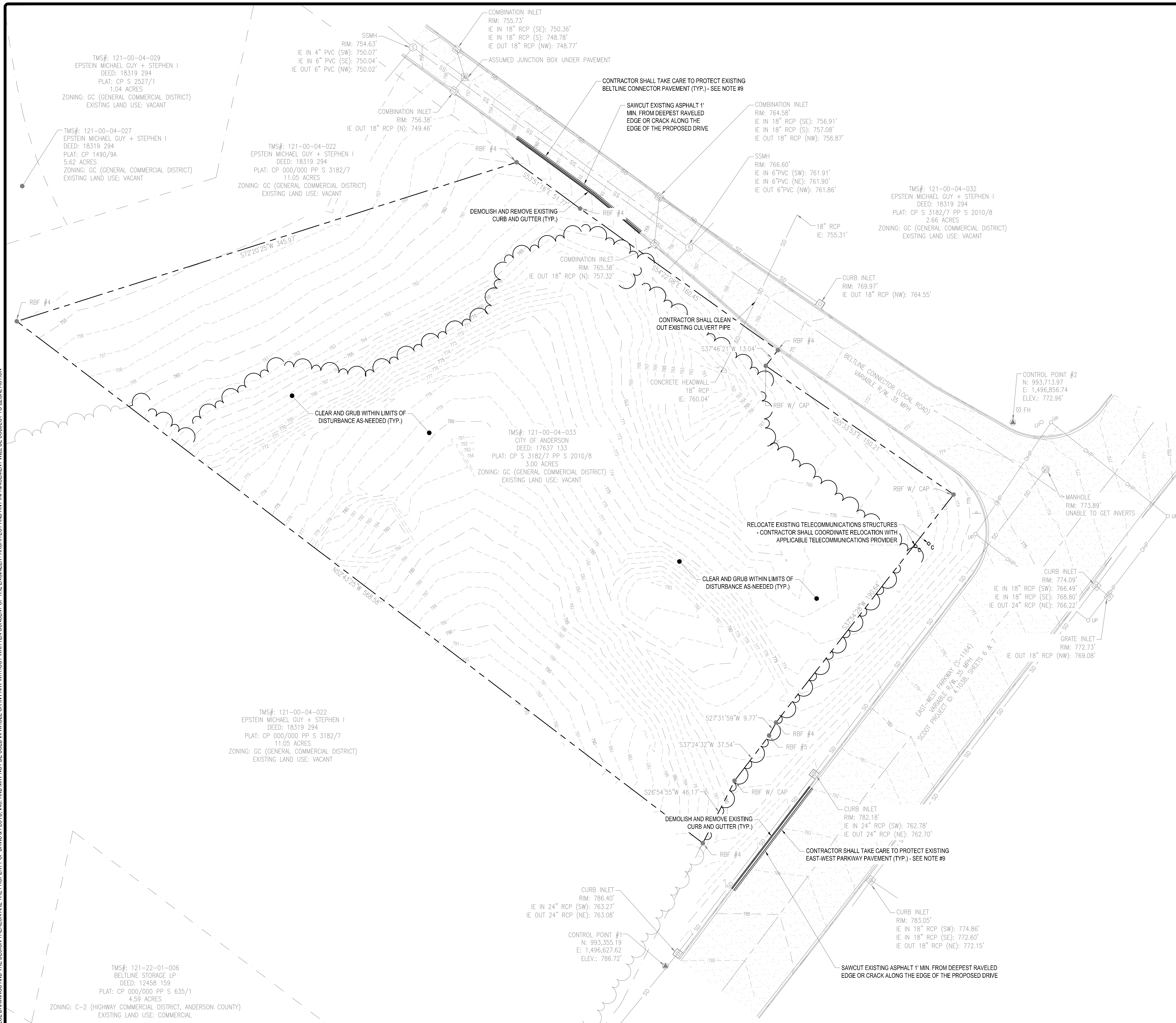
Conclusion:
The proposed Anderson Fire Station 4 will provide a modern public safety facility serving the City of Anderson and surrounding community. The site design incorporates safe vehicular and pedestrian circulation, adequate parking, accessible facilities, utility infrastructure, landscaping, and emergency vehicle operations while maintaining compliance with applicable local and state regulations.

Yours truly,

DAVIS & FLOYD
PLAN | DESIGN | ENGINEER

Bradley L Smith

Bradley Smith, PE
Associate | Project Manager



GENERAL LEGEND

PROPERTY LINE
LIMITS OF DISTURBANCE — NPDES
ADJACENT PROPERTY LINES
VEGETATION AND TREE LINES
ROAD CENTERLINES
CURB AND GUTTER
OVERHEAD ELECTRICAL LINES — OHP
DOMESTIC WATER LINES — W
SANITARY SEWER LINES — SS
STORM DRAINAGE LINES — SD

REBAR FOUND (AS DESCRIBED) | CONTROL POINT
SIGN | TELECOMMUNICATIONS STRUCTURE — C
UTILITY POLE — UP | LIGHT POLE — LP
FIRE HYDRANT — FH | SANITARY SEWER MANHOLE — S
CURB INLET — CI | GRATE INLET — GI
STORM DRAINAGE MANHOLE — SD | JUNCTION BOX — JB
ASPHALT

DEMOLITION LEGEND

ASPHALT TO BE REMOVED

EXISTING CONDITIONS AND DEMOLITION NOTES:

1. UTILITIES AS SHOWN ARE BASED ON APPARENT AND OBVIOUS SURVEYED UTILITY FEATURES. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. SURVEY WAS PERFORMED BY DAVIS & FLOYD, INC. ON 01/21/2026.
3. ALL UTILITIES NOT SPECIFIED TO BE DEMOLISHED SHALL REMAIN UNDISTURBED.
4. PRIOR TO BEGINNING DEMOLITION, THE CONTRACTOR SHALL ENSURE THAT PERIMETER SEDIMENT AND EROSION CONTROL MEASURES ARE INSTALLED (CONSTRUCTION ENTRANCE & PERIMETER SILT FENCE).
5. PROTECT AND MAINTAIN EROSION CONTROL MEASURES THROUGHOUT DEMOLITION AND CONSTRUCTION.
6. ALL DEMOLITION INCLUDES PROPER REMOVAL AND DISPOSAL OF MATERIAL BY CONTRACTOR.
7. CONTRACTOR SHALL COORDINATE WITH OWNER AND UTILITY PROVIDERS FOR RELOCATION OR REMOVAL OF EXISTING UTILITIES NECESSARY TO COMPLETE THE WORK.
8. CONTRACTOR SHALL TAKE CARE TO PROTECT ALL STRUCTURES, PAVEMENT, VEGETATION, ETC. THAT IS NOT IDENTIFIED TO BE DEMOLISHED. CONTRACTOR SHALL REPAIR/REPLACE ANY DAMAGE CAUSED DURING CONSTRUCTION TO EXISTING CONDITIONS OR BETTER.
9. WHILE SAWCUTTING PAVEMENT TO BE REMOVED, IF ANY SURROUNDING PAVEMENT IS DAMAGED, THE DAMAGED SECTION WILL BE REPLACED IF SIDEWALK. IF ASPHALT, THE CONTRACTOR SHALL MILL 2" DEPTH FOR A WIDTH OF 6.5' FOR THE LENGTH OF THE DAMAGE FOR A PATCH.

N
STATE PLANE
0 30' 60'
SCALE: 1" = 30'

811
Know what's below.
Call before you dig.

PROJECT DATUM INFORMATION:

HORIZONTAL DATUM: SC83IF
VERTICAL DATUM: NAVD88

SOUTH CAROLINA
DAVIS & FLOYD, INC
No. C00538
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
PROFESSIONAL ENGINEER
No. 35842
XX/XX/2026
LICENSED
BRADLEY L. SMITH

DAVIS & FLOYD
PLAN | DESIGN | ENGINEER
DAVISFLOYD.COM
164 MILESTONE WAY, SUITE 200
GREENVILLE, SOUTH CAROLINA 29615
(864) 527-9800

OWNER
CITY OF ANDERSON
ANDERSON, SOUTH CAROLINA

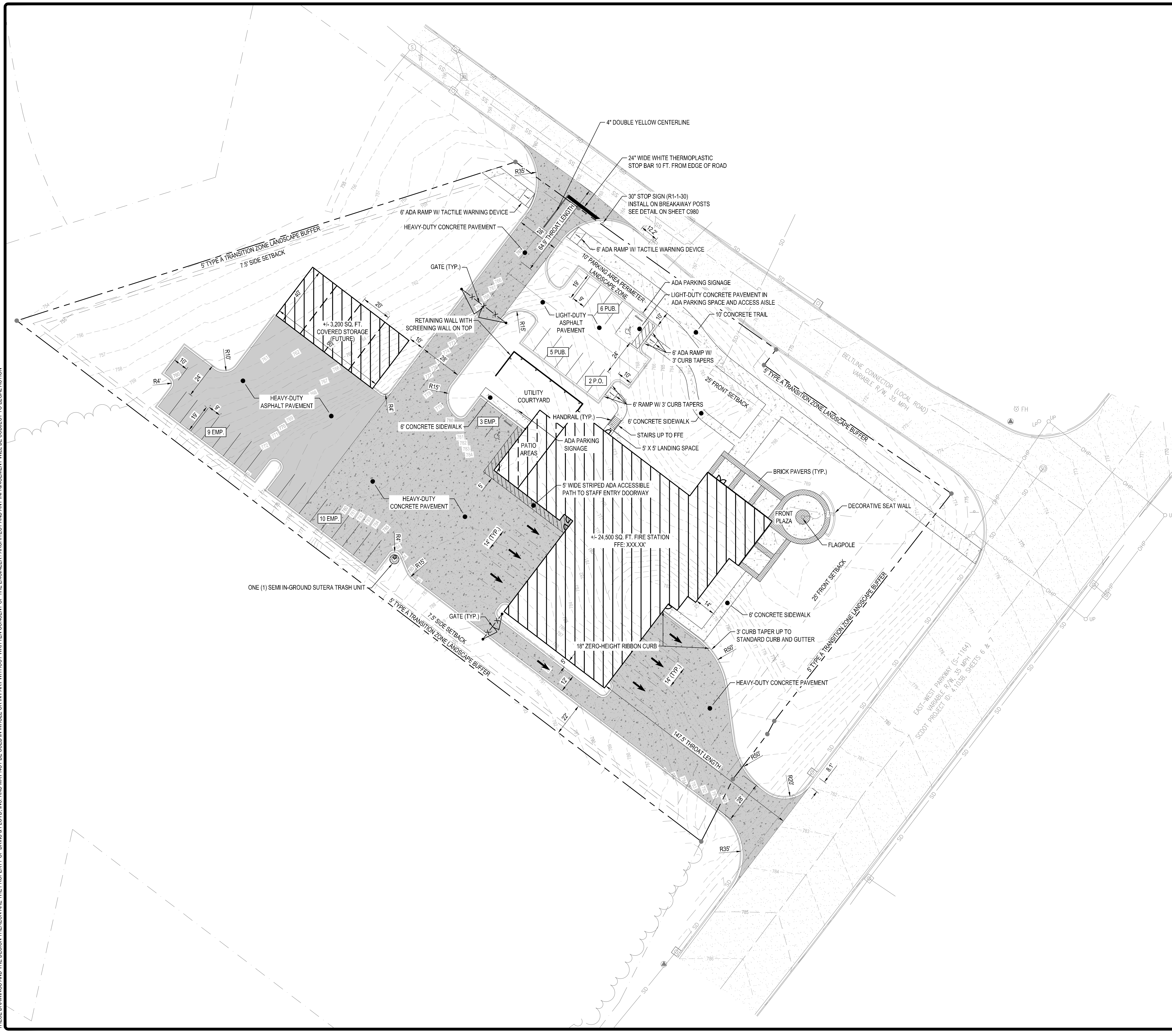
PROJECT TITLE
ANDERSON FIRE STATION 4

DRAWING TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

NO.	RELEASED	CHECKED	DATE

JOB NO. 014534.00
DATE JUNE 2026
DESIGNED SJG
DRAWN SJG
CHECKED BLS
APPROVED BLS

PAGE C100 OF X



SITE LEGEND

- PROPERTY LINE
- LIMITS OF DISTURBANCE (NPDES)
- CENTERLINE
- BUILDING SETBACK
- LANDSCAPE BUFFER
- CURB AND GUTTER
- FENCELINE
- RETAINING WALL
- PROPOSED HEAVY-DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY-DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE
- PROPOSED BRICK PAVERS
- STOP BAR (PAVEMENT MARKING)
- A.D.A. PARKING AND SIGNAGE
- WHEEL STOP
- SIGN
- FLAGPOLE
- SEMI IN-GROUND SUTERA TRASH UNIT

SITE ANALYSIS

TAX MAP NUMBER	121-00-04-033
TOTAL ACREAGE	+/- 3.0 AC.
PHYSICAL ADDRESS	EAST-WEST PKWY. & BELTLINE CONNECTOR
CITY, STATE ZIPCODE	ANDERSON, SOUTH CAROLINA 29621
ZONING	GC (GENERAL COMMERCIAL DISTRICT)
FRONT SETBACK (E-W PKWY. & BELTLINE CONN.)	25'
SIDE SETBACK	7.5'
REAR SETBACK	10'
MAXIMUM BUILDING HEIGHT	35'; 2.5 STORIES
PARKING AREA PERIMETER LANDSCAPE ZONE	10'
TRANSITION ZONE LANDSCAPE BUFFER	TYPE A: 5' WIDE
MAX. IMPERV. SURFACE AREA (75% OF SITE AREA)	+/- 2.25 AC.
IMPERVIOUS SURFACE AREA PROVIDED	+/- X.XX AC. (XX%)
TOTAL PROPOSED BUILDING	+/- 27,700 SQ. FT.
TOTAL PUBLIC PARKING PROVIDED	11 SPACES
TOTAL EMPLOYEE PARKING PROVIDED	22 SPACES
TOTAL POLICE OFFICER PARKING PROVIDED	2 SPACES
TOTAL PARKING PROVIDED	35 SPACES
TOTAL HANDICAP REQUIRED	2 SPACES
TOTAL HANDICAP PROVIDED	2 SPACES

SITE PLAN NOTES

1. REFER TO GENERAL NOTES, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
2. ALL ADA PARKING AREAS SHALL CONFORM TO ADA STANDARDS WITH THE SLOPE NOT TO EXCEED 2% MAX. IN ANY DIRECTION.
3. ALL ADA ACCESSIBLE ROUTES SHALL CONFORM TO ADA STANDARDS WITH CROSS SLOPE NOT TO EXCEED 2% MAX. AND HORIZONTAL SLOPE NOT TO EXCEED 5% MAX.
4. REFER TO LANDSCAPE PLANS FOR HARDSCAPE, FENCING, AND PLANTING DETAILS.
5. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB. TYPICAL CURB WIDTH IS 0.5'. WHERE NO CURB IS EXISTING OR PROPOSED, DIMENSIONS SHOWN ARE TO THE EDGE OF PAVEMENT.
6. ALL PARKING SPACES ARE 9' X 19'.
7. SEE SHEET C820 FOR SITE DETAILS.

SCDOT/CITY OF ANDERSON NOTES

1. THE BELTLINE CONNECTOR DRIVEWAY THAT ENCROACHES THE CITY OF ANDERSON RIGHT OF WAY IS A 28' WIDE CONVENTIONAL DRIVEWAY. THE EAST-WEST PARKWAY DRIVEWAY THAT ENCROACHES THE SCDOT RIGHT OF WAY IS A 45' WIDE EMERGENCY VEHICLE EXIT-ONLY DRIVEWAY.
2. ALL MARKINGS WITHIN BOTH RIGHT OF WAYS SHALL BE THERMOPLASTIC OR APPROVED PERMANENT EQUIVALENT.
3. PROVIDE 24" WHITE STOP BAR IN THE EXIT LANE OF THE PROPOSED BELTLINE CONNECTOR DRIVE AS SHOWN. SEE DETAIL ON SHEET C820.
4. PROVIDE R1-1-30 STOP SIGN ON BREAKAWAY POST FOR THE EXIT LANE OF THE PROPOSED BELTLINE CONNECTOR DRIVE AS SHOWN. SEE DETAIL ON SHEET C820.
5. PROVIDE 4" DOUBLE YELLOW CENTERLINE MARKINGS IN THE ENTRANCE-EXIT OF THE PROPOSED BELTLINE CONNECTOR DRIVE TO ACCURATELY MARK THE CENTERLINE OF THE DRIVE.
6. THE CONTRACTOR SHALL PERFORM WORK WITHIN THE ROAD RIGHT OF WAY IN ACCORDANCE WITH THE REQUIREMENTS AND CONDITIONS OF THE ENCROACHMENT PERMITS AND OTHER LEGAL DOCUMENTS AS THOUGH THE DOCUMENTS WERE ISSUED IN THE CONTRACTOR'S NAME.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE RIGHT OF WAY WITHIN THE WORK LIMITS OF CONSTRUCTION FOR THE LIFE OF THE PROJECT.
8. IRRIGATION VALVE BOXES, CONTROL BOXES, BACKFLOW PREVENTORS, RAIN SENSORS, AND OTHER IRRIGATION APPURTENANCES ARE NOT ALLOWED IN EITHER RIGHT OF WAY.
9. SEE TRAFFIC CONTROL DETAILS ON SHEET C980.
10. ALL PROPOSED SIGNAGE SHALL BE PLACED IN ACCORDANCE WITH SECTION 650-000 AND INSTALLED ON SCDOT APPROVED BREAKAWAY SIGN SUPPORTS AS DETAILED IN SECTION 654-000 IN THE SCDOT STANDARD DRAWINGS.

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

N — STATE PLANE

PROJECT DATUM INFORMATION:
HORIZONTAL DATUM: SC83IF
VERTICAL DATUM: NAVD88

0 30' 60'
SCALE: 1" = 30'

SOUTH CAROLINA — DAVIS & FLOYD, INC — No. C00538 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — PROFESSIONAL ENGINEER — No. 35842 — XX/XX/2026 — LICENSED — BRADLEY L. SMITH

DAVIS & FLOYD
PLAN | DESIGN | ENGINEER
DAVISFLOYD.COM
164 MILESTONE WAY, SUITE 200
GREENVILLE, SOUTH CAROLINA 29615
(864) 527-9800

OWNER
CITY OF ANDERSON
ANDERSON, SOUTH CAROLINA

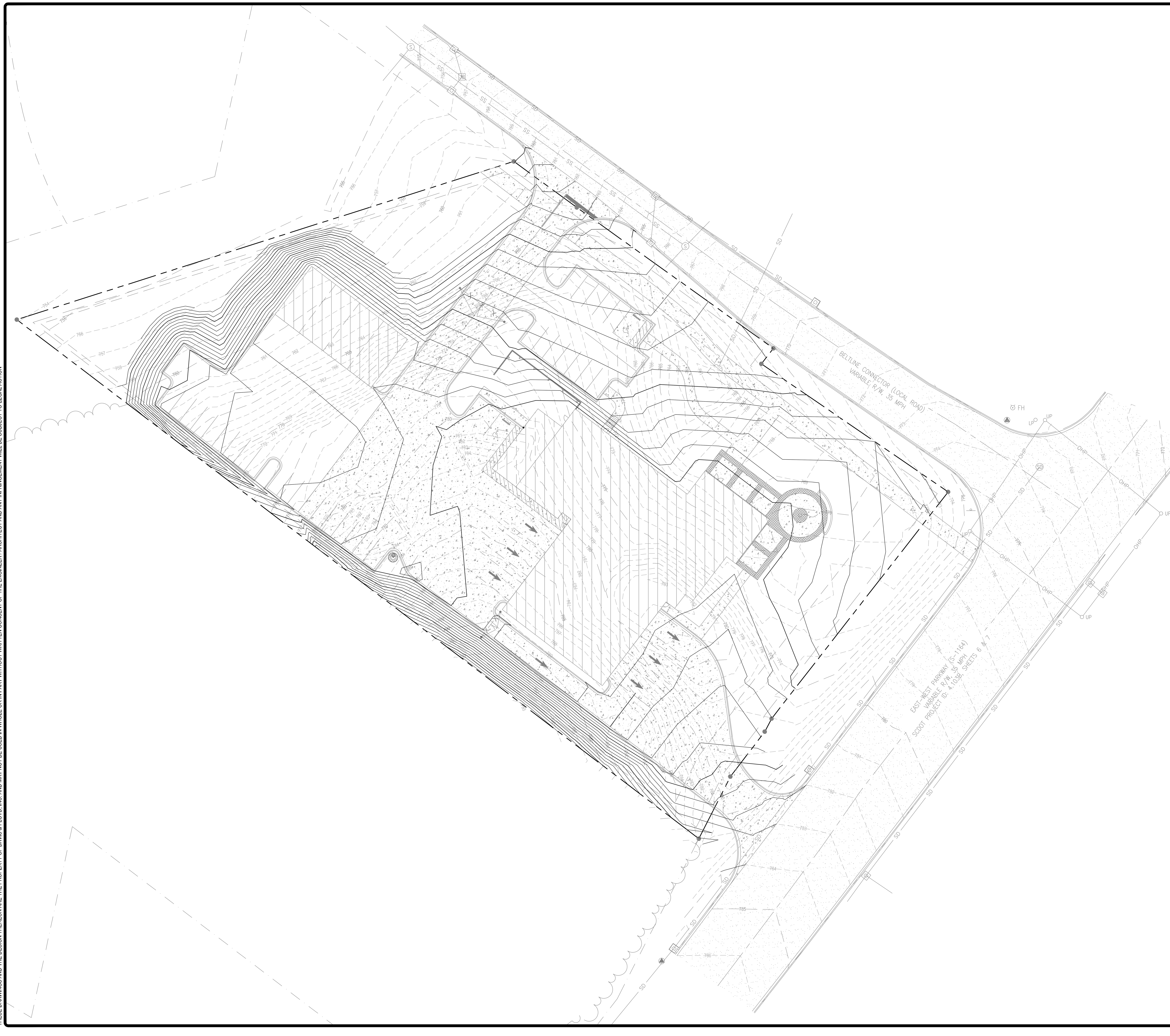
PROJECT TITLE
ANDERSON FIRE STATION 4

DRAWING TITLE
SITE PLAN

NO.	RELEASED	CHECKED	DATE

JOB NO.	014534.00
DATE	JUNE 2026
DESIGNED	SJG
DRAWN	SJG
CHECKED	BLS
APPROVED	BLS

C200
PAGE OF X



GRADING AND DRAINAGE LEGEND

LIMITS OF DISTURBANCE	NPDES
EXISTING CONTOUR - MAJOR	750
EXISTING CONTOUR - MINOR	749
PROPOSED CONTOUR - MAJOR	750
PROPOSED CONTOUR - MINOR	749
PROPOSED STORM PIPE	
ROOFDRAIN	RD RD
COMBINATION INLET	
GRATE INLET	
STORM MANHOLE	D
SURFACE FLOW DIRECTIONAL ARROW	
GRADE ELEVATION: TOP OF WALL ELEVATION	TOW: 0.00
GRADE ELEVATION: BOTTOM OF WALL ELEVATION	BOW: 0.00

GRADING AND DRAINAGE PLAN NOTES

1. REFER TO GENERAL NOTES, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
2. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION AND SPECIFICATIONS.
3. EXISTING CONDITIONS WERE OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF ANY WORK.
4. SOME UNDERGROUND CONDUITS MAY NOT BE SHOWN ON THESE PLANS. PRIOR TO ANY EXCAVATION, CONTRACTOR TO SUB-CONTRACT UTILITY LOCATION SERVICES FOR EXISTING UNDERGROUND UTILITIES.
5. FOR GRADING, PAVING, AND DRAINAGE WORK LOCATED WITHIN SCDOT AND/OR PUBLIC RIGHTS-OF-WAY, ALL MATERIALS AND EQUIPMENT, UNLESS SPECIFICALLY STATED OTHERWISE HEREIN, SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGING CONSTRUCTION ACTIVITIES AT ALL TIMES TO ENSURE THAT PUBLIC STREETS AND RIGHTS-OF-WAY ARE KEPT CLEAN OF MUD, DUST, OR DEBRIS. DUST ABATEMENT SHALL BE MAINTAINED BY ADEQUATE WATERING OF THE SITE BY THE CONTRACTOR.
7. SEE SWPPP PLANS FOR SEQUENCE OF CONSTRUCTION AND SEDIMENT & EROSION CONTROL BMP LOCATIONS.
8. STRIP WORK LIMITS, REMOVING ALL ORGANIC MATTER WHICH CANNOT BE COMPACTED INTO A STABLE MASS. TREES, BRUSH, AND DEBRIS ASSOCIATED WITH CLEARING, STRIPPING, OR GRADING SHALL BE REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR. ANY TREES MARKED OR SUSPECTED OF BEING PROTECTED SHALL BE COORDINATED THROUGH THE OWNER, ENGINEER, AND THE LOCAL JURISDICTION PRIOR TO REMOVAL.
9. FILL OR WASTE MATERIAL MUST BE FROM OR TO A PERMITTED SITE.
10. CONTOURS AND SPOT ELEVATIONS PROVIDED ON THIS PLAN ARE FINISHED GROUND ELEVATIONS.
11. ALL FINISH GRADES REPRESENT FINISHED SURFACE GRADE AND TOP OF PAVEMENT. CONTRACTOR SHALL DEDUCT FOR APPROPRIATE PAVED SURFACES.
12. STORM SYSTEM PIPING & STRUCTURES SHOWN. ALL OTHER PROPOSED UTILITIES MAY NOT BE SHOWN FOR CLARITY.
13. ALL ROOF DRAIN PIPE SHALL HAVE A 1% MINIMUM SLOPE FOR ADEQUATE DRAINAGE.
14. ALL ROOF DRAIN HEADERS SHALL BE ADS N-12 HDPE PIPE OR APPROVED EQUAL, AND SHALL MEET OR EXCEED THE MINIMUM COVER REQUIREMENTS SPECIFIED BY THE MANUFACTURER.
15. THE GRADE OF THE GRAVITY STORM PIPES SHALL BE MAINTAINED AT A CONSTANT SLOPE BETWEEN INVERT ELEVATIONS.
16. ALL STORM DRAINAGE JOINTS SHALL BE SEALED AND WATERTIGHT.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROPER DRAINAGE OF EXISTING STORM DRAINAGE LINES AND CHANNELS DURING CONSTRUCTION WORK.
18. CONTRACTOR SHALL CONFIRM THAT ADA REQUIREMENTS ARE MET WHERE SIDEWALKS INTERSECT BUILDING ACCESS RAMPS.
19. CONTRACTOR SHALL CONFIRM THAT ALL SIDEWALK SHALL BE CONSTRUCTED SUCH THAT NO CROSS SLOPE EXCEEDS 2%, INCLUDING ADA RAMPS.
20. ADA PARKING AREA SHALL BE GRADED SUCH THAT NO SLOPE EXCEEDS 2% IN ANY DIRECTION.
21. ALL AREAS WHICH ARE DISTURBED BY CONSTRUCTION OPERATIONS AND ARE NOT COVERED BY PAVEMENT OR OTHER STRUCTURES SHALL BE GRASSED AND MAINTAINED UNTIL AN ACCEPTABLE STAND OF GRASS HAS BEEN ESTABLISHED AND ACCEPTED. FINAL APPROVAL OF THIS PROJECT WILL NOT BE GIVEN UNTIL GRASSING MEETING THE REQUIREMENTS OF THE TEMPORARY AND PERMANENT SEEDING ON CXXX HAS BEEN ACCOMPLISHED.
22. UNDERGROUND DETENTION SHALL BE INSPECTED BY THE MANUFACTURER REPRESENTATIVE THROUGHOUT THE CONSTRUCTION/INSTALLATION.
23. ALL GRADING SHALL RESULT IN POSITIVE DRAINAGE. CONTRACTOR SHALL NOTIFY THE ENGINEER IF GRADING CONFLICTS DO NOT ALLOW FOR POSITIVE DRAINAGE.
24. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO GRADES THAT RESULT IN POSITIVE DRAINAGE TO THE EXISTING AND/OR NEW STORM DRAINAGE INLETS, UNLESS OTHERWISE NOTED.
25. AT THE COMPLETION OF CONSTRUCTION WHEN THE SITE IS FULLY STABILIZED, THE CONTRACTOR SHALL CLEAN ALL STORMWATER DRAINAGE SYSTEMS.

N
STATE PLANE

0 30' 60'
SCALE: 1" = 30'

811
Know what's below.
Call before you dig.

PROJECT DATUM INFORMATION:

HORIZONTAL DATUM: SC83IF
VERTICAL DATUM: NAVD88

DAVIS & FLOYD
PLAN | DESIGN | ENGINEER
DAVISFLOYD.COM
164 MILESTONE WAY, SUITE 200
GREENVILLE, SOUTH CAROLINA 29615
(864) 527-9800

OWNER
CITY OF ANDERSON
ANDERSON, SOUTH CAROLINA

PROJECT TITLE
ANDERSON FIRE STATION 4

DRAWING TITLE
GRADING AND DRAINAGE PLAN

NO.	RELEASED	CHECKED	DATE

JOB NO.	014534.00
DATE	JUNE 2026
DESIGNED	SJG
DRAWN	SJG
CHECKED	BLS
APPROVED	BLS

C300
PAGE OF X

Fuller File No. 26098
June 15, 2026

Anderson Fire Station #4
City of Anderson
Anderson, SC

SCHEMATIC DESIGN NARRATIVE

The proposed project is a new Fire Station for the City of Anderson that will be located on the corner of East West Parkway and Beltline Connector. The following schematic design narrative includes, to the best of our current knowledge of the project, the proposed construction types, basic design criteria, and proposed material specifications, as well as some commentary on various aspects of the project. The purpose of this narrative is to provide the owner and contractor with a general understanding of the proposed design and is not intended to be exhaustive, or used for final or GMP pricing exercises.

1. Design Loads:

1.1. Governing Codes:

1.1.1. 2021 International Building Code with applicable referenced standards

1.2. Live Loads:

1.2.1. Roof:	20 PSF
1.2.2. Training Areas:	100 PSF
1.2.3. Lobbies & Elevator Lobbies:	100 PSF
1.2.4. Stairs:	100 PSF
1.2.5. 2nd Floor & Open Bunk Areas:	80 PSF
1.2.6. Corridors:	80 PSF

1.3. Environmental Loads:

1.3.1. Risk Category	IV
1.3.2. Ground Snow Load:	10 PSF
1.3.3. Basic Wind Speed, Vult:	120 MPH
1.3.4. Wind Exposure Category:	C
1.3.5. Geotechnical Site Class:	D - Default (Subject to change following geotechnical study)
1.3.6. Seismic Design Category:	D (Subject to change following geotechnical study)
1.3.7. 60-min/100-year Rain Intensity:	3.4 in/hr
1.3.8. 15-min/100-year Rain Intensity:	6.44 in/hr

2. General Performance Criteria:

2.1. Roof Deflection:	Total Load (D + Lr) ≤ L/180
	Transient Load (Lr or S) ≤ L/240

2.2. Floor Deflection: Total Load (D + L) ≤ L/240
Transient Load (L) ≤ L/480
2.3. Story Drift: Amplified Seismic Story Drift ≤ 0.010h
Wind Story Drift ≤ h/480 (utilizing 25-year return period)
2.4. Brick Hung Lintels: Total Load (D + L) ≤ Minimum of L/600 or 0.30 inches

3. Material Specifications

3.1. Concrete:

3.1.1. Testing: Testing of concrete work by special inspector
3.1.2. Concrete: Compressive strength
- Slabs-on-grade 4,000 psi at 28 days
- Foundations 4,000 psi at 28 days (pending anchor des.)
- Foundation & Retaining Walls 4,500 psi at 28 days
- Elevated Slabs 4,000 psi semi-lightweight at 28 days

3.1.3. Reinforcing Steel: Fy = 60,000 psi

3.2. Concrete Masonry:

3.2.1. Testing: Testing of concrete masonry work by special inspector.
3.2.2. Compressive Strength:
- Concrete Masonry Unit: f'm = 2000 psi
- Grout (Type N or S): 2500 psi at 28 days

3.2.3. Reinforcing: Fy = 60 ksi

3.3. Structural Steel:

3.3.1. Testing: Observation of steel installation by special inspector
3.3.2. W-Shapes, and Channels: ASTM A992, Fy = 50 ksi
3.3.3. Angles: ASTM A572 Grade 50, Fy = 50 ksi
3.3.4. Cold Formed Tubing: ASTM A500 Grade C, Fy = 50 ksi
3.3.5. Other Shapes: ASTM A36, Fy = 36 ksi
3.3.6. Seismic Frame Connection Material: ASTM A572 Grade 50, Fy = 50 ksi

3.4. Metal Deck:

3.4.1. Testing: Testing of deck erection shall be done by special inspector
3.4.2. Steel Roof Deck: 1-1/2", 18 gauge, type B, galvanized
3.4.3. Composite Floor Deck: 2", 18 gauge, type VL, galvanized

3.5. Cold-Formed Framing:

3.5.1. Exterior Stud Walls: 6" metal studs @ 16" O.C. Studs shall be 50 ksi material and have a minimum flange width of 1-5/8". 8" metal studs @ 16" O.C. to create architectural

elevation features.

3.6. Cold-Formed Metal Trusses:

3.6.1. Cold Formed Members: All members shall be 43 mil or 18 Ga thick minimum and 50 ksi material.

3.6.2. Trusses to be delegated design item designed by registered engineer in the state of South Carolina. Truss spacing shall not exceed 4'-0" O.C. Final spacing shall be determined based on loading conditions and deflection criteria.

4. Foundation Design:

4.1. Slab on Grade:

4.1.1. Slabs-on-Grade: Typical floor slabs shall be a minimum of 4" thick. Slab reinforcement shall be welded wire fabric 6x6 W1.4xW1.4 typical. Select areas under Extractor and SCBA equipment, Apparatus Bay, and Display Lobby floor slabs shall be a minimum of 7" thick. Slab reinforcement shall be #4 @ 12" O.C., each way, typical. Floor slabs supporting equipment shall be isolated from the surrounding floor slab. A 4" thick minimum crushed aggregate base and 10-mil minimum vapor barrier shall be placed under all interior slabs-on-grade unless the geotechnical report recommends more stringent requirements. Interior slabs shall receive a troweled finish.

4.1.2. Slab-on-Grade Control Joints: Slab-on-grade control joints shall be located no greater than 36xslab thickness on center in each direction (12ft for 4" slab, 21ft for 7" slab). Joint patterns shall be cut as to maintain a maximum panel aspect ratio of 1.5:1.0. The joints can be either contraction joints (weakened plane joints) or doweled construction joints.

4.2. Shallow Foundations

4.2.1. Column Footings: Spread footings on approved subgrade. Top of footing at interior columns will be a minimum 1'-0" below finished floor. Top of footing at exterior columns will be a minimum of 1'-4" below finished floor.

4.2.2. Continuous Perimeter Foundation: The slab will turn down 1'-4" deep onto a continuous 30" wide x 12" thick strip footing. The strip footing will have (3) #5's continuous and #5x2'-0" @ 24" O.C. transverse with dowels to intersecting footings.

5. Structural Design:

5.1. Framing:

5.1.1. Structural Steel: The primary super structure will be framed with structural steel columns, beams, and bracing.

5.1.2. Floor System: The typical floor system will consist of 3 ¼" semi-lightweight concrete (unit weight = 120 pcf) on top of 2" type VL 18 gauge galvanized composite deck (5 ¼" total

thickness). Slab should be reinforced with 6X6 W2.4XW2.4 WWF. Composite beams supporting floor slab will be placed at a maximum of 8'-0" O.C. with ¾"Øx4" headed studs at a maximum spacing of 24" O.C. Beams located on frame lines will have fully pre-tensioned bolts and additional studs as required by analysis.

5.1.2..1. If brittle floor finishes or exposed concrete are desired, negative moment reinforcing will be required overtop all interior beams to limit serviceability cracking.

5.1.3. Roof System: Roof shall consist on 1 ½" type B 18 gauge steel deck supported by cold-formed steel trusses. Trusses shall be placed at a maximum of 4'-0" O.C.

5.1.4. MEP Systems: Chases through the floors (vertical and horizontal) will be coordinated with structural framing layout. Openings in steel framing for ductwork and plumbing shall not be permitted.

5.1.5. Exterior Lintels and Shelf Angles: Hot dip galvanized angles. Openings greater than 10'-0" or arched openings will require tube headers (rolled at arch locations) and jamb posts.

5.1.6. The majority of interior non-load bearing walls will be metal stud framing but select Interior non-load bearing walls shall be constructed with 6"-8" masonry walls. These CMU walls will have a height of approximately 8ft (matching ceiling elevations) and 14ft in the apparatus bay (to allow for clean jamb construction at bay doors). The 8ft walls are to occur in select areas of the first floor to create clean rooms with water washable surfaces. Vertical wall reinforcing will be embedded in continuous strip footings below grade.

5.1.6..1. Interior non-load bearing CMU walls adjacent to the apparatus bay should extend to the floor deck above. Extents of CMU between steel columns and horizontal slip connections at tops of walls will be detailed to isolate the CMU walls from the building lateral system.

5.2. Lateral Force Resisting System:

5.2.1. Lateral Force Resisting System: Structural stability under wind and seismic loads shall be provided by steel braced frames and/or steel moment frames, placed in plane with 6" cold-formed steel studs along the exterior wall lines, where feasible. Additional frames may be placed within interior walls if required by analysis. For a Seismic Design Category D structure, steel must be specifically detailed for seismic resistance. All braced frames are to be Ordinary Concentric Braced Frames and all moment frames are to be Intermediate Moment Frames detailed in accordance with AISC 341-16.

6. **Additional Notes & Systems**

6.1. Site Wall Construction:

6.1.1. Walls and Footings: Perimeter freestanding walls will be constructed of reinforced concrete. Vertical wall reinforcing will be embedded in continuous strip footings below grade. Wall thickness, reinforcing, footing geometry, and footing reinforcing will be determined in final design based on wind loads, soil parameters, and height of wall.

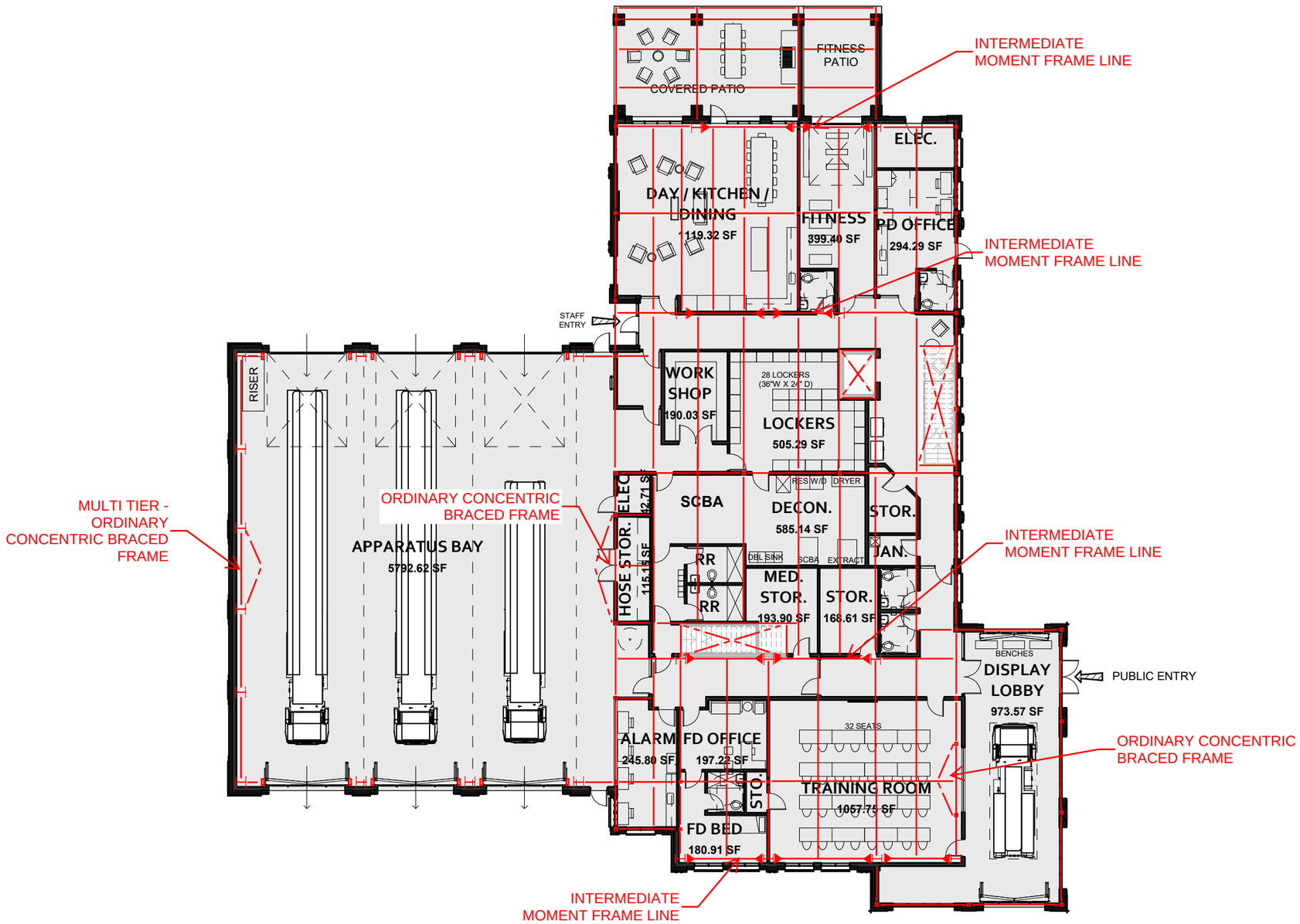
6.2. Mechanical Yard Enclosure Construction:

6.2.1. Slab-on-Grade: Floor slab within the mechanical yard enclosure shall be a minimum of 7" thick and reinforced with #4 bars at 12" O.C. each way. Subgrade shall be prepared in accordance with geotechnical recommendations.

6.2.2. Walls and Footings: Perimeter freestanding walls will be constructed of reinforced CMU with brick veneer. Vertical wall reinforcing will be embedded in continuous strip footings below grade. Wall thickness, reinforcing, footing geometry, and footing reinforcing will be determined in final design based on wind loads and height of wall.

6.3. Flag Pole Construction:

6.3.1. Footing: Cylindrical reinforced concrete foundation with a minimum diameter of 3'-0" and 6'-0" embed into subgrade below. Third party flag pole is to be anchored to top of footing with cast-in-place anchor rods or embedded into the concrete footing as desired by supplier.

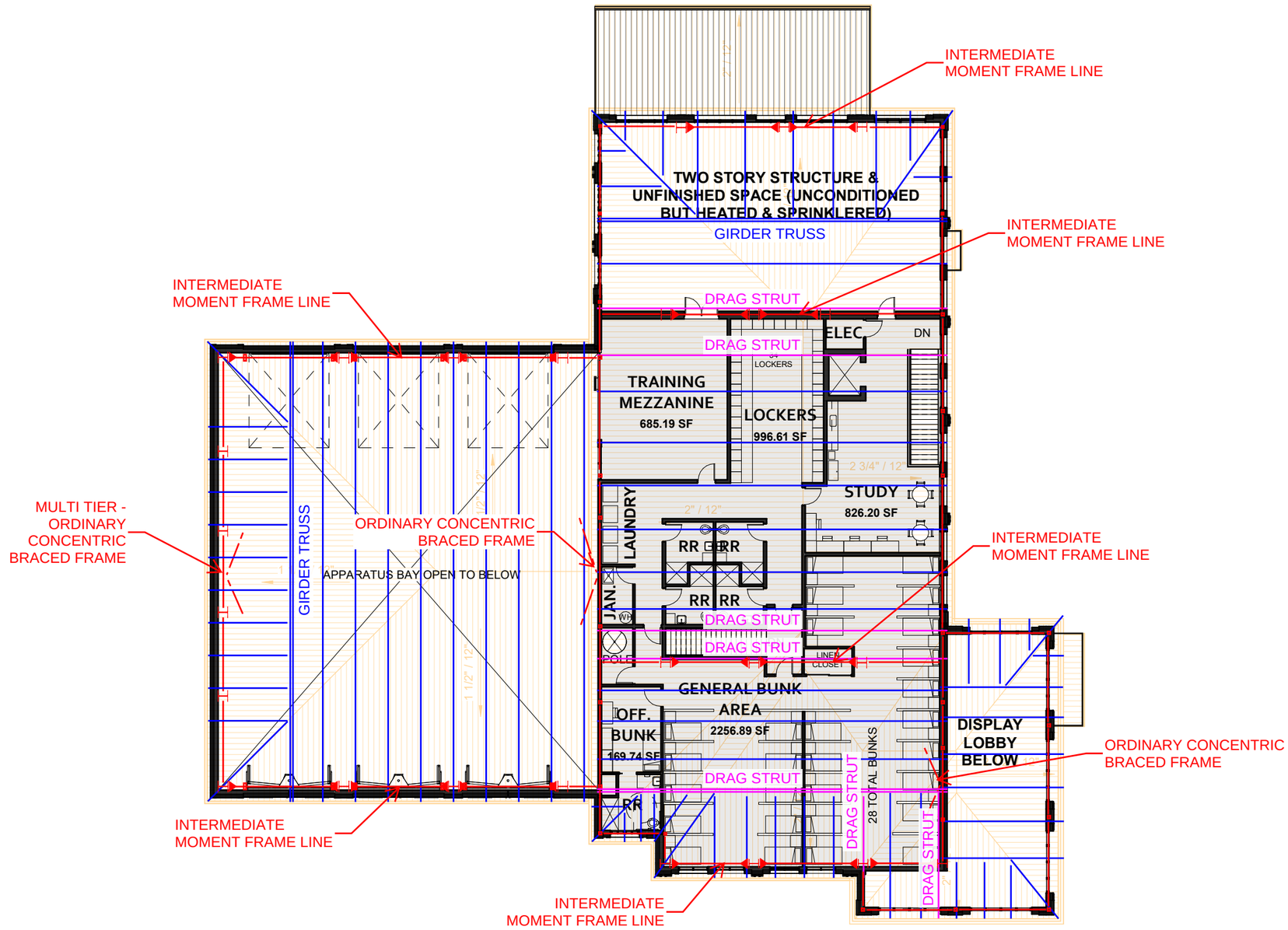


CRAIG GAULDEN DAVIS | PBK

PRESENTATION FLOOR PLAN - LEVEL ONE SCHEMATIC FRAMING PLAN

CHECKED BY:	RW	ISSUED:	SCALE:
DRAWN BY:	OW	6/15/2026	1/16" = 1'-0"

A-1.1



CRAIG GAULDEN DAVIS | PBK

PRESENTATION FLOOR PLAN - LEVEL TWO SCHEMATIC FRAMING PLAN

CHECKED BY:	RW	ISSUED: 6/15/2026	SCALE: 1/16" = 1'-0"
DRAWN BY:	OW		

A-1.2

June 18, 2026

Craig Gaulden Davis
19 Washington Park
Greenville, SC 29601

Attn: **John Hansen**

Reference: **City of Anderson - Fire Station 4, South Carolina**

Dear John,

This is a narrative description of the proposed MEPFP systems for the new fire station listed above. The new fire station will be a 2-story, 3 bay fire station located in the City of Anderson, South Carolina. The total square footage of the new station will be 24,500 Sq Ft.

Mechanical (HVAC) Systems

Mechanical design shall be in compliance with 2021 South Carolina Mechanical Code.

The proposed mechanical system for this facility is an air cooled variable refrigerant flow (VRF) Air Cooled Heat Pump with Heat Recovery. Preliminary calculations estimate that the VRF air-cooled system for this facility would be composed of three 10-ton outdoor heat pumps (30 tons total) with heat recovery serving multiple indoor non-ducted wall mounted units and ceiling cassettes as well as ducted low profile horizontal fan coil units located above ceiling. The refrigerant piping manifolds would allow heat rejection from zones calling for cooling to be utilized by zones calling for heating. Based on preliminary calculations and equipment performance correction factors, no supplemental electric heat would be required at zone level with this equipment type. VRF equipment utilizes A2L (R454B or R32) refrigerants. The system will be provided with low-ambient controls for operation down to 0° outdoor temperature.

Unconditioned areas, including the attic, with sprinkler piping will be provided with electric unit heaters for freeze protection.

Ventilation air will be provided per the SCMC requirements through a dedicated outside air unit (DOAS). The DOAS unit will be a packaged unit located on grade outside. The system will utilize a DX cooling coil for cooling and a gas heat exchanger for heat. The DOAS unit will be provided with energy recovery to reduce the energy usage of the unit. Exhaust air will be pulled from toilets, showers and similar spaces and routed through a heat recovery wheel. Preliminary calculations indicated approximately 2,350 cfm of exhaust and 4,200 cfm of outside air will be required for this facility. The system will operate continuously to provide constant neutral air of 68-76 Deg to all occupied areas.

All areas required to be under negative pressure (locker rooms, decon room, etc) shall be provided with a dedicated VRF indoor unit to prevent circulation to other spaces.

Two wall mounted Denlar kitchen hoods will be provided for the range located in the Kitchen. The kitchen hood exhaust outlets will be mounted on the non-road facing side of the building to eliminate the need for roof access and platforms. Make-up air for the kitchen exhaust hoods will be provided through the DOAS unit. The DOAS unit shall be provided with controls to raise outside air flow when the kitchen hood is energized.

The building will be provided with a direct digital controls (DDC) control system. DDC control system shall be capable of scheduling, trending and monitoring all mechanical systems in the building. The DOAS unit and VRF unit shall each be provided with factory controllers that will control each respective unit but still be monitored by the central BAS.

The apparatus bay will be ventilated via separate wall-mounted propeller type intake and exhaust fans. These will be controlled by CO and NOx sensors through a Safe-air control panel. A vehicle exhaust removal system (such as Plymovent) will be provided by the contractor with the exhaust fan mounted high on the wall of the apparatus bay and ducted through the roof. The apparatus bay will be heated using four infared heaters. A high-volume low speed (such as those manufactured by Big Ass Fans) will also be provided in the apparatus bay for air circulation.

All concealed supply, return and outside air ductwork will be externally insulated with 2" thick duct wrap. Any ductwork located in the attic space shall be wrapped with 3" thick duct wrap. All exposed supply ductwork shall be double wall spiral duct. Exposed return duct and exhaust ductwork do not require insulation. Trunk duct and branch ductwork shall be rigid metal duct. The last four feet of duct runout to diffusers and grilles will be flex duct.

Electrical Systems

Codes and Standards

Electrical systems shall be designed in accordance with the latest locally adopted editions of the following:

- NFPA 70 – National Electrical Code, 2020 Edition
- NFPA 72 – National Fire Alarm and Signaling Code
- NFPA 101 – Life Safety Code
- 2021 South Carolina Building Code
- 2021 South Carolina Fire Code
- 2009 International Energy Conservation Code

Electrical Service and Distribution

The building shall be provided with a new 800A, 480/277V, 3-phase, 4-wire electrical service from the NEC 702 ATS via serving utility transformer. Service entrance conductors, metering, CT cabinet, service disconnecting means, grounding, and bonding shall be coordinated with the local utility company and installed in accordance with NEC requirements.

The main electrical distribution shall generally consist of:

- New 800A, 480/277V, 3-phase, 4-wire main distribution switchboard/ panelboard
- Utility metering and CT cabinet as required by the serving utility
- Surge protective device at the service entrance equipment
- 480/277V distribution panelboards for the following separated systems: lighting and mechanical equipment.
- (2) Dry-type step-down transformers for 208/120V utilization loads
- (2) 208/120V panelboards for receptacles, small equipment, kitchen loads, IT equipment, office areas, bunk rooms, and miscellaneous branch circuits

Panelboards shall be commercial-grade, bolt-on circuit breaker type, copper busses/ground bars and shall be fully rated. Final AIC ratings shall be based on available fault current provided by the utility. Equipment shall be labeled with available fault current, arc-flash warning labels, service identification, panel names, voltage, phase, and source.

Conduit shall be rigid steel, IMC, schedule 40 PVC, and EMT in their respective uses. EMT shall have insulated throat connectors and coupling shall be compression type. MC cable will be permitted in concealed, non-exposed areas. Minimum wire size shall be #12. Branch circuits shall be copper. Panel feeders shall be copper unless stated otherwise.

Spare capacity and physical space shall be provided in distribution equipment where practical to accommodate future fire station growth, additional equipment, and operational modifications.

Standby Power System – NEC Article 702

The facility shall be provided with an optional standby power system designed in accordance with NEC Article 702. The standby system shall consist of a natural gas generator sized to support the entire fire station during a normal utility power outage. Estimated Generator size shall be 450KW.

The generator system shall be arranged as a NEC 702 optional standby system. The generator final size shall be sized based on the final connected and demand loads for the full facility, including lighting, receptacle loads, mechanical equipment, apparatus bay equipment, communications, fire alarm, security, access control, IT systems, fire station alerting systems, kitchen equipment, overhead doors, and other building loads required to maintain full fire station operation.

The standby power system shall utilize an 800A Service-Entrance-rated, 480/277V, 3-phase, 4-wire, Automatic Transfer Switch. The ATS shall include integral service disconnecting means, integral SPD, and be NEMA 3R rated. The ATS shall be listed for the application and rated for the available fault current at the installation location.

The generator and ATS shall be coordinated with the serving utility, natural gas utility, mechanical engineer, civil engineer, architect, and Owner. The natural gas service shall be sized to support the generator fuel demand under full building load conditions. Generator starting characteristics, motor starting loads, HVAC loads, and other large equipment shall be evaluated during final design to confirm generator capacity and voltage stability.

General Receptacles and Branch Circuit Power

General-use receptacles shall be provided throughout the building in accordance with NEC requirements, architectural layouts, furniture layouts, equipment requirements, and Owner operational needs. General-use receptacles shall be 20A, specification-grade, tamper-resistant type unless otherwise noted. Receptacles shall be provided in offices, administrative areas, bunk rooms, living areas, dayroom areas, corridors, storage rooms, support spaces, apparatus bay areas, utility spaces, and exterior service areas.

GFCI protection shall be provided where required by NEC, including but not limited to toilet rooms, kitchens, laundry areas, exterior locations, rooftops, mechanical equipment service locations, apparatus bays, garages, wet locations, service sinks, and other applicable areas. Apparatus bay receptacles shall be GFCI-protected and located to support fire station operations, vehicle maintenance, equipment charging, cleaning, and general use.

Mechanical equipment shall be provided with required branch circuits, feeders, disconnecting means, starters, variable frequency drives, controls, and final connections as required by the mechanical equipment schedules and manufacturer requirements. A 20A, 120V GFCI maintenance receptacle shall be provided within 25 feet of each mechanical unit as required by NEC.

Kitchen Power and Emergency Shutoff

Power shall be provided for kitchen equipment, appliances, refrigeration, exhaust systems, outdoor grill, and associated controls as required by the architectural and food service layouts. Kitchen receptacles shall be GFCI-protected where required by NEC.

The kitchen and outdoor grill shall be provided with emergency shutoff systems for safe shutdown of electrical and gas equipment as required by code, equipment configuration, and Owner requirements. Emergency shutoff devices shall be coordinated with the mechanical, plumbing, and fire protection designs, including gas solenoid valves, shunt-trip breakers, contactors, hood controls, and fire suppression system interfaces where applicable.

Apparatus Bay Power and Specialty Connections

The apparatus bay shall be provided with power infrastructure to support fire department operations, apparatus storage, vehicle maintenance, equipment charging, and specialty systems. Receptacles in the apparatus bay shall be GFCI-protected and coordinated with apparatus parking layouts, vehicle clearances, door locations, hose bibbs, wall-mounted equipment, and Owner operational requirements.

Special electrical connections shall be provided for air compressors, compressed air systems for tools, vehicle exhaust systems, gear dryers, extractors, laundry equipment, maintenance equipment, and other specialty equipment identified by the Owner. Final voltage, phase, circuiting, disconnecting means, and receptacle configurations shall be coordinated with approved equipment submittals.

20A GFCI quick release cord reels shall be provided for vehicle charging and apparatus support as required by the Owner. Cord reel locations shall be coordinated with apparatus parking positions, vehicle charging requirements, ceiling structure, door tracks, exhaust systems, and other overhead equipment.

Apparatus bay bi-fold and overhead doors shall be provided with power and control provisions. Door controls shall be provided at each individual door, with master control stations provided for each side of the apparatus bay. Door controls shall be coordinated with the vehicle exhaust system, apparatus bay heating system, safety interlocks, and Owner operational sequencing requirements.

Multipurpose, Training, and Conference Areas

Power and pathway provisions shall be provided for multipurpose, training, display lobby and conference areas. Floor boxes, wall boxes, audiovisual power, data pathways, and equipment connections shall be coordinated with the architectural layout, furniture plan, Owner requirements, and audiovisual system design.

Floor box and AV infrastructure shall be arranged to support flexible room configurations, presentation systems, display locations, instructor stations, and conference room technology. Final AV cabling, equipment, and system design shall be by others.

Elevator Electrical Provisions

The building shall be provided with an elevator shaft and pit only. The electrical design shall include provisions for pathways and spare service capacity for a 15HP traction elevator to be installed as an alternate or to be installed in the future.

Lighting Systems

Interior and exterior lighting shall consist of high-efficiency LED fixtures selected for the specific space type, ceiling condition, mounting height, operating environment, and Owner standards. Unless otherwise directed by the Owner or architect, the standard color temperature for interior and exterior lighting shall be 4000K**.**

Lighting levels shall be designed in accordance with IES recommendations, applicable energy code requirements, NFPA 101 where applicable, and Owner operational requirements. Fixture selections shall be coordinated with architectural reflected ceiling plans, ceiling types, structural clearances, mechanical equipment, overhead doors, station alerting requirements, and room functions.

Interior lighting shall generally include lay-in LED flat panel fixtures, recessed LED downlights, linear LED fixtures, and similar commercial-grade fixtures appropriate for the space type. Lay-in flat panel fixtures shall be utilized in areas with acoustical ceiling tile ceilings, including offices, administrative areas, corridors, support spaces, and similar areas. Recessed downlights shall be utilized in finished areas, toilet rooms, lobby areas, corridors, and other architectural spaces where appropriate.

High-bay LED fixtures shall be provided within the apparatus bay. Apparatus bay lighting shall be coordinated with overhead doors, vehicle clearances, door tracks, vehicle exhaust systems, ceiling fans, radiant heaters, hose drops, cord reels, and other overhead equipment. Fixtures within apparatus bays, mechanical spaces, utility areas, and other service areas shall be selected with appropriate lenses, guards, mounting methods, and environmental ratings.

Kitchen lighting shall include general ambient lighting, allowance for pendant over kitchen island, undercabinet lighting where casework and kitchen layouts require task illumination. Undercabinet lighting shall be coordinated with the architectural casework elevations, appliance locations, receptacle layouts, and multi zone switching/control for separate spaces within kitchen and dayroom. Day room will require decorative pendant fixtures for exposed to structure areas.

Training rooms shall be designed with lighting control flexibility. These spaces shall assume a minimum of two zones of 0-10V dimming control to support presentations, meetings, training events, and general use. Lighting zones shall be coordinated with display locations, teaching walls, projection/screens, daylight contribution, and Owner operational preferences.

The display lobby area shall include an allowance for decorative light fixtures and additional lighting controls. Decorative lighting may include pendant fixtures, wall sconces, accent lighting, display lighting, cove lighting, or other architectural lighting elements as coordinated with the architect and Owner. Additional controls shall be included to allow various zones of lobby lighting to be controlled separately, including general lighting, decorative lighting, display/accent lighting, and after-hours/night lighting where required.

Emergency and egress lighting shall be provided in accordance with the building code, NFPA 101 where applicable, NEC requirements, and AHJ direction. Interior and exterior emergency lighting shall be provided with integral 90-minute battery backup where available. Where selected light fixtures do not have an integral battery backup option, a micro-inverter shall be assumed to serve the required emergency lighting fixtures. Emergency lighting shall be coordinated with egress paths, exit discharge areas, exterior egress doors, stairways, corridors, apparatus bay egress routes, and other required life-safety illumination locations.

Exterior site lighting shall include building façade uplighting along beltline, east/west parking lot lighting, and lighting for exterior monumental signage at courtyard

Site lighting shall be provided to support parking areas, pedestrian circulation routes, drive aisles, apparatus aprons, exterior egress paths, and general site security. Site lighting shall generally be provided using LED pole-mounted fixtures on 25-foot site lighting poles, with pole locations coordinated with the civil site plan, parking layout, apparatus circulation, landscaping, utilities, and property line requirements.

Pole-mounted site lighting shall be designed to provide safe and uniform illumination while minimizing glare, light trespass, and spillover onto adjacent properties. Fixture optics, pole locations, mounting heights, and aiming shall be coordinated during final design to satisfy Owner operational needs and applicable local lighting requirements.

An allowance shall be included for landscape lighting at selected architectural and site features as directed by the Owner and architect. Landscape lighting may include low-voltage accent fixtures, pathway lighting, wall grazing, building accent lighting, and lighting for entry features or landscaped areas.

Ground-mounted flagpole lighting shall be included for exterior flag locations. Flagpole lighting shall be coordinated with flagpole height, location, aiming angles, landscaping, and site power routing. Fixtures shall be selected and aimed to provide proper flag illumination while limiting glare and unnecessary light spill.

Lighting Controls

Lighting controls shall comply with the applicable energy code, Owner operational requirements, and local AHJ requirements. Lighting control zones shall be coordinated with the architectural layout, fire station operations, apparatus bay functions, sleeping areas, administrative areas, and exterior site lighting requirements.

Interior Lighting Controls

Interior lighting controls shall generally be provided using a combination of occupancy sensors, vacancy sensors, time-based controls, dimming controls, and local manual controls based on the function of each space.

Occupancy sensors shall be provided where required by the applicable energy code and where appropriate for the space function, including offices, toilet rooms, storage rooms, support spaces, and similar areas. Vacancy sensors shall be provided in the bunk room areas to allow manual-on operation with automatic-off functionality, minimizing nuisance activation during sleeping hours.

Where occupancy sensors are not desirable due to the function of the space, lighting shall be controlled through the building lighting time control system with local dimmer switches or manual override controls as required. This approach shall be used for areas where automatic occupancy-based switching may interfere with fire station operations, occupant comfort, or response readiness.

Night lighting shall be provided where indicated by the Owner to support after-hours circulation, apparatus response, dormitory egress, and operational visibility while minimizing disruption to sleeping areas. Night lighting zones shall be coordinated with the Owner during design and shall be arranged to allow appropriate low-level illumination during nighttime operations.

Bunk rooms shall be provided with normal and red light fixtures as required by the Owner. Red light fixtures shall be connected to a relay control system that interfaces with the fire station alerting/alarm system. Upon activation of the station alarm system, the relay system shall energize the red bunk room lighting to provide visual alerting and low-disruption illumination for response personnel. Final relay control requirements, activation sequence, zoning, and interface points shall be coordinated with the station alerting system vendor, fire department operations staff, and Owner.

Light fixtures within the display lobby, training room, day room, study area, and offices shall be dimmable.

Interior lighting control strategies shall generally include:

- Occupancy sensors where required by energy code and appropriate for the function of the space.
- Vacancy sensors in bunk room areas.
- Local dimmer switches where occupancy sensors are not desirable.
- Time control system for selected interior lighting zones.
- Manual override capability where required for fire station operations.
- Separate control zones for apparatus bays, administrative areas, living areas, bunk rooms, night lighting, and support spaces.
- Relay-controlled red bunk room lighting integrated with the station alerting/alarm system.

Exterior Lighting Controls

Exterior lighting shall be controlled through a time control and photocell combination contactor system. The control system shall allow exterior light fixtures to operate based on Owner-defined operational hours while also responding to ambient daylight conditions.

The exterior lighting control system shall be arranged to energize exterior lighting during scheduled nighttime hours and prevent operation during daylight hours through photocell input. Time schedules shall be adjustable to accommodate Owner operational requirements, seasonal changes, after-hours events, and site security needs.

Exterior lighting controls shall generally serve:

- Building-mounted exterior lighting.
- Parking area lighting.
- Apparatus bay apron lighting.
- Pedestrian walkway lighting.
- Service yard lighting.
- Exterior door and egress lighting.
- Flagpole
- Courtyard area
- Exterior signage lighting

Exterior lighting shall be coordinated with civil and architectural site plans and shall be designed to maintain safe illumination levels for fire station operations while minimizing light trespass, glare, and unnecessary after-hours energy use.

Telecommunications, Data, and Low-Voltage Pathways

Power and pathway/backboxes infrastructure for telecommunications and low-voltage systems. Final low-voltage cabling and equipment shall be provided by others.

Infrastructure shall include:

- Telecommunications grounding busbar
- Dedicated power for IT racks and network equipment
- Cable tray (Owner to confirm if required), J-hooks, sleeves, and conduit pathways
- Data backboxes for workstations, wireless access points in hard ceilings or walls, printers, phones, and building systems
- Pathways for security, access control, cameras, and intercom systems
- Pathways for fire station alerting systems
- Conduit for Station Radio antenna.

A minimum of one dedicated 120V circuit shall be provided for each IT rack or communications cabinet, with additional dedicated circuits as required by the Owner's IT standards.

Security, Access Control, and CCTV

Power and pathways/backboxes shall be provided as required/requested for security systems including access control, intrusion detection, video surveillance, and intercom systems. Final device locations and system design shall be coordinated and provided by others.

Infrastructure shall include:

- Power for access control panels
- Power and pathways for card readers
- Door hardware power supplies
- Pathways for electric strikes, electrified locksets, and door position switches
- Power and pathways for CCTV cameras
- Power for security head-end equipment

Fire Alarm and ERRC Provisions

- A new fully addressable combination manual and automatic, non-coded fire alarm system shall be provided throughout the fire station in accordance with NFPA 72, the applicable building code, fire code, NEC, and AHJ requirements. The system shall include manual pull stations, automatic smoke detectors, required system monitoring devices, and audio/visual notification appliances.
- The fire alarm system shall include an automatic digital dialer/communicator reporting to a UL-listed central station. The system shall be provided with 24-hour standby battery capacity with alarm operation capacity as required by NFPA 72. All fire alarm wiring shall be installed in red conduit.
- Smoke detection and carbon monoxide detection shall be provided for bedroom/bunk room areas in accordance with code requirements. Additional smoke detection, duct detection, sprinkler monitoring, elevator recall interfaces, and other fire alarm connections shall be provided where required by code and final building systems.
- Emergency Responder Radio Coverage system provisions shall be included in the base bid. Scope shall include pre-construction and post-construction radio coverage survey reports, dedicated receptacle/circuit for ERRC equipment, submittal/design coordination if required, and a 2-inch conduit pathway to the donor antenna location. If an ERRC/BDA

system is required by the AHJ based on the survey results, the final system shall be coordinated with the Owner, AHJ, fire marshal, and radio coverage vendor.

Plumbing Systems

All plumbing work shall be in strict compliance with all applicable volumes of the 2021 South Carolina State Building Codes (Building, Plumbing, Fuel Gas, Fire and the 2009 International Energy Code) and the requirements of the local authorities having jurisdiction.

Systems which are considered part of the Plumbing work are as follows:

- Sanitary Waste and Vent systems
- Domestic Water systems
- Natural Gas system
- Plumbing Fixtures and Equipment

Each system shall be provided complete, with rough-in and final connections to all fixtures and equipment.

Plumbing Fixtures and Equipment

Plumbing fixtures and equipment proposed for the new station will be commercial grade, high efficiency, water saving fixtures.

- Water closets will be floor mounted vitreous china with manual 1.6-gallon flush valves.
- Lavatories will be wall or counter mounted vitreous china with single lever handle, 1.5 gpm (manual) faucets.
- Electric water coolers will be bi-level wall hung type with manually operated push bars or buttons, and a bottle filler.
- Kitchen sinks will be counter mounted stainless steel with a manually operated kitchen faucet with pull-out or deck mounted spray.
- Shower stalls shall be formed and tiled by the general contractor. Shower trim shall be pressure-balanced shower valves with 2.0-gpm showerheads and floor drains.
- Mop receptors will be floor mounted (24”x 24”) made of molded composite material. Mop receptor will be provided with service sink faucet, hose, and mop hanger.
- Floor drains or other suitable waste receptors will be provided in mechanical rooms, equipment rooms, restrooms, etc. and as indicated on the architectural plans. Floor drains shall conform to ANSI/ASME A112.21.1. All drains will be connected into the sanitary drainage system and shall include inline trap guards for backup trap seal protection. Hose bibbs shall be provided in each room containing floor drains for maintenance and primary trap seal maintenance purposes.
- Trench drains or floor drains with heavy duty grates will be provided in the Apparatus Bays.

Storm Drainage Systems

All roof storm drainage shall be handled by gutters and downspouts tied into the site storm water system. No internal roof drainage shall be provided.

Sanitary Waste and Vent Systems

New sanitary waste and vent systems shall be provided to serve plumbing fixtures, equipment, and drains where indicated on the floor plans.

Sanitary waste piping from plumbing fixtures shall run below the finished floor and extend under the floor and out to 5'-0" beyond the building exterior wall; to be tied into the site sewer system provided by the site utilities contractor. Based on the number of fixtures and the type of laundry equipment proposed, the size of the sanitary waste lines is currently assumed to be 4".

Sanitary vent systems will exit through the roof where required by the Plumbing Code. At least one vent through the roof will be 3" or 4" as mandated by the Plumbing Code.

Sanitary waste system piping underground (under slab) shall conform to the standards listed in the South Carolina Plumbing Code (Table 702.2). Acceptable materials for underground sanitary drainage piping include Cast Iron pipe; (ASTM A74); Polyvinyl Chloride (PVC) Schedule 40 (ASTM D2665; ASTM F891; ASTM F1488). Fittings shall be approved for installation with the piping materials listed and shall comply with the applicable standards listed in the South Carolina Plumbing Code (Table 702.4). Cellular Core PVC piping is NOT ACCEPTABLE for underground (under slab) installation.

Sanitary waste and vent piping above ground shall conform to the standards listed in the South Carolina Plumbing Code (Table 702.1). Acceptable materials for above sanitary drainage piping include. Cast Iron pipe; (ASTM A74; CISPI 301); Polyvinyl Chloride (PVC) Schedule 40 (ASTM D2665; ASTM F891; ASTM F1488). Fittings shall be approved for installation with the piping materials listed and shall comply with the applicable standards listed in the South Carolina Plumbing Code (Table 702.4). PVC piping shall not be used in HVAC return air plenums. Cellular core PVC piping is NOT acceptable for piping above ground.

Sanitary drainage systems will be provided with adequate venting provisions in accordance with Chapter 9 of the South Carolina Plumbing Code.

An oil/water separator (interceptor) will be provided to serve the Apparatus Bay drains if a requirement of the local jurisdiction. The oil interceptor will have a high water/high oil level alarm located inside the building to alert the occupants when the interceptor needs to be serviced.

A small grease interceptor will be provided to serve the kitchen sinks if required by local jurisdiction. The grease interceptor will be located underground, outside of the building.

A drain trough with a lint filter will be provided to serve the extractor. The trough will be located behind the extractor within the floor. Point of use lint filters will be provided for the washing residential washing machines throughout the building. The lint filters will be located on the wall behind the washers.

Domestic Water Service

A new 2" or 2½" water service shall be provided to the building (will require water flow/pressure test data for verification). New distribution piping will be provided throughout the building.

Domestic water service piping underground shall conform to NSF 61 and to the standards listed in the South Carolina Plumbing Code (Table 605.3). All water service materials shall have a pressure rating not less than the highest available pressure. Acceptable materials include Type K Copper pipe and tubing. Fittings shall be approved for installation with the piping materials listed and shall comply with the applicable standards listed in the South Carolina Plumbing Code (Table 605.5) and with NSF 61.

Domestic water distribution piping above floor shall conform to NSF 61 and shall conform to the standards listed in the South Carolina Plumbing Code (Table 605.5). Type L Copper piping (ASTM B42) with lead-free solder joints will be installed. Fittings shall be approved for installation with the piping materials listed and shall comply with the applicable standards listed in the South Carolina Plumbing Code (Table 605.5) and with NSF 61.

Cold water distribution piping shall have a pressure rating of 160 psi. Hot water distribution piping shall have a pressure rating of not less than 100 psi.

Domestic water system valves shall be compatible with the type of piping material installed in the system. All valves used in domestic water systems shall comply with NSF 61.

Domestic water distribution systems using copper pipe and tube (cold and hot) shall be fully insulated with fiberglass pipe insulation with canvas or PVC jacketing. Domestic water distribution systems using CPVC or PEX plastic piping shall be insulated using elastomeric closed-cell pipe insulation. For plastic piping, all distribution mains will be insulated; piping inside bathrooms walls need not be insulated unless installed in exterior walls. No water piping shall be installed in an unconditioned space.

Water Heating Equipment

High efficiency, direct vented, gas fired water heaters shall be provided to serve the plumbing fixtures on the residential side of the building; type (tank or tank-less) to be determined. Water heaters will be sized to meet the calculated demand based on the number of connected plumbing fixtures and appliances (washer/extractor, dishwasher, etc.).

Water heaters will be placed in a mechanical room, mechanical mezzanines or in other service spaces such as Janitor's closets if available. A pumped hot water circulation (return) system will be provided to maintain hot water at the chosen design/distribution temperature.

Natural Gas Piping

Natural gas piping shall be provided to any new gas fired appliances or equipment, including the exterior grill. Above and below grade gas piping will be schedule 40 black steel with malleable iron fittings. Polypropylene piping may be used below grade. The gas service will be brought to the building (meter) by the gas service provider. Gas service system pressure will be 5-psi with shut-off valves and pressure regulators provided at each piece of equipment. The gas meter location will be coordinated with the architect and owner.

Fire Protection Systems

The entire building will be provided with an automatic sprinkler system in accordance with NFPA 13 (2019 Edition). The Automatic Sprinkler system design will be delegated to a qualified fire sprinkler contractor. The system shall be hydraulically calculated.

The underground service main shall be provided by the site utilities contractor and stubbed inside the building at the designated location in the Apparatus Bay. A fire pump is not anticipated (will require water flow/pressure test data for verification).

The Automatic Sprinkler system shall be monitored by the Fire Alarm system or equivalent. An electric bell or other alarm device will be provided on the building exterior at or near the riser location. A Fire Department Connection will also be provided on the building exterior or remotely located depending on site conditions.

Fire Protection valves, appurtenances, and sprinklers (heads) shall meet all applicable NFPA 13 standards. Sprinklers shall be selected and used according to their listing.

If you have any questions, please contact us.

Sincerely Submitted,

Ben Barrier, P.E.
Principal | Mechanical Engineer