ANGIER & BLACK RIVER FIRE STATION #2

783 MANGUM ROAD
ANGIER, NC 27501

EXTERIOR RENDERING



Revisions			
#	Date	By	Description
1	-		-

CONSTRUCTION DOCUMENTS

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APPROVAL:
DATE:

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TRUE NORTH:

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DESIGN TEAM

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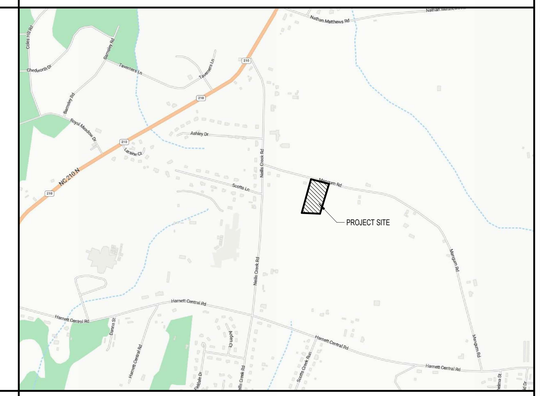
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PROJECT LOCATION MAP


PROJECT SITE
NC-210 N
Mangum Rd
Ashley Dr
Hamlett Chemical Rd
Hamlett Chemical Rd
Hamlett Chemical Rd

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

Name of Project: ANGIER AND BLACK RIVER FIRE STATION
Address: 783 MANGUM ROAD, ANGIER, NC Zip Code 27501
Proposed Use: FIRE STATION
Projec Description: A New 8,565 GSF Fire Station with (2) Drive-thru Apparatus Bays, Sleeping Quarters, & additional support spaces.
Owner/Authorized Agent: BOBBITT CONSTRUCTION, INC
Phone # 919-851-1980 **E-Mail** PERMITTING@BOBBITT.COM
Owned By: - ☐ City/County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☐ City - ■ County HARNETT COUNTY ☐ State

LEAD DESIGN PROFESSIONAL:

BOBBITT A&E, PLLC

DESIGNER	FIRM	NAME	LICENSE#	TELEPHONE#	E-MAIL
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Fire Alarm	ALIGN ENGINEERING	W. JACOB TAYLOR	37323	919-275-1935	EMMETT@A&E-NC.COM
Plumbing	ALIGN ENGINEERING	R. EMMETT WILLIS	34327	919-275-1935	MICHAEL@A&E-NC.COM
Mechanical	ALIGN ENGINEERING	MICHAEL T. CRANKSHAW	32489	919-275-1935	-
Sprinkler_Standpipe	-	-	-	-	BRIAN@ROSSLINDEN.COM
Structural	ROSS LINDEN ENGINEERS PC	ROSS LINDEN	-	919-832-5680	-
Retaining Walls >5' High	-	-	-	-	-
Other	-	-	-	-	-

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: ■ New Building ☐ Addition ☐ 1st Time Interior Completions ☐ Shell/Core* ☐ Phased Construction*
*Contact the local inspection jurisdiction for possible additional procedures and requirements.

2018 NC EXISTING BUILDING CODE: (check all that apply) ☐ Prescriptive ☐ Alteration Level I ☐ Historic Property ☐ Repair ☐ Alteration Level II ☐ Change of Use ☐ Chapter 14 ☐ Alteration Level III
CONSTRUCTED: (date) - **CURRENT OCCUPANCY(S)** (Ch.3): -
RENOVATED: (date) - **PROPOSED OCCUPANCY(S)** (Ch.3): -
OCCUPANCY CATEGORY (Table 1604.5): **Current:** ☐ I ☐ II ☐ III ☐ IV **Proposed:** ☐ I ☐ II ☐ III ☐ IV

BASIC BUILDING DATA

Construction Type: ☐ I-A ☐ I-B ■ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☐ V-B
Sprinklers: ☐ No ☐ Partial ■ Yes ■ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ■ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Primary Fire District: ■ No ☐ Yes **Flood Hazard Area:** ☐ No ☐ Yes
Special Inspections Required: ☐ No ■ Yes (If special inspections are required, contact the local inspection jurisdiction for additional procedures and requirements.)

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor	-	-	-
2nd Floor	-	-	-
Mezzanine	-	995	-
1st Floor	-	7,570	-
Basement	-	-	-
TOTAL	**-**	**8,565**	**-**

ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ■
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2 ☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-2 Condition ☐ 1 ☐ 2 ☐ I-4 Condition
Mercantile ☐
Residential ☐ R-1 ■ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ■ S-2 Moderate ☐ High-piled ■ Parking Garage ☐ Open ■ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2 ☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-2 Condition ☐ 1 ☐ 2 ☐ I-4 Condition
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Moderate ☐ High-piled ☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Incidental Uses (Table 509):
- ☐ Furnace room where any piece of equipment is over 400,000 Btu per hour input
- ☐ Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower
- ☐ Refrigerant machinery room
- ☐ Hydrogen fuel gas rooms, not classified as Group H
- ☐ Incinerator rooms
- ☐ Paint shops, not classified as Group H, located in occupancies other than Group F
- ☐ In Group E occupancies, laboratories and vocational shops not classified as Group H
- ☐ In Group I-2 occupancies, laboratories not classified as Group H
- ☐ In ambulatory care facilities, laboratories not classified as Group H
- ☐ Laundry rooms over 100 square feet
- ☐ In Group I-2, laundry rooms over 100 square feet
- ☐ In Group I-2, laundries equal to or less than 100 square feet
- ☐ In Group I-2, commercial kitchens
- ☐ In Group I-2, rooms or spaces that contain fuel-fired heating equipment
- ☐ Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces
- ☐ Group I-2, physical plant maintenance shops
- ☐ In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cu.ft. or greater
- ☐ In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet
- ☐ In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet
- ☐ Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterrupted power supplies
- ☐ Fuel Storage rooms in public schools and boiler rooms in public schools
- ☐ Storage rooms underneath grandstands or bleacher seats containing combustable or flammable materials

Special Uses (Chapter 4 - List Code Sections):
☐ 402 ☐ 403 ☐ 404 ☐ 405 ■ 406 ☐ 407 ☐ 408 ☐ 409 ☐ 410 ☐ 411 ☐ 412 ☐ 413 ☐ 414 ☐ 415 ☐ 416 ☐ 417
☐ 418 ☐ 419 ■ 420 ☐ 421 ☐ 422 ☐ 423 ☐ 424 ☐ 425 ☐ 426 ☐ 427 ☐ 428 ☐ 429 ☐ 430 ☐ 430 ☐ 430

Special Provisions: (Chapter 5):
☐ 510.2 ☐ 510.3 ☐ 510.4 ☐ 510.5 ☐ 510.6 ☐ 510.7 ☐ 510.8 ☐ 510.9

Mixed Occupancy: ☐ No ■ Yes Separation: 1 Hr. Exception: -
☐ Incidental Use Separation (509.4.1)
■ Non-Separated Use (508.3)
☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

$$\frac{-}{-} + \frac{-}{-} + \ldots = \frac{-}{-} \leq 1.00$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE [1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED [2,3]
1	S-2 MODERATE	7,570	104,000	NOT USED	-

1. Frontage area increases from Section 506.2 are computed thus:
   a. Perimeter which fronts a public way or open space having 20 feet minimum width = ___-___ **(F)**
   b. Total Building Perimeter = ___-___ **(P)**
   c. Ratio **(F/P)** = ___-___ **(F/P)**
   d. **W** = Minimum width of public way = ___-___ **(W)**
   e. Percent of frontage increase I: = 100[F/P - 0.25] x W/30 ___-___ **(%)**
2. Unlimited are applicable under conditions of Section 507.
3. Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (560.2).
4. The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control tower must comply with Table 412.3.1.
5. Frontage increase is based on the unsprinklered area value in Table 506.2.

2018 NC Administrative Code and Policies

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	75 FT	24 FT	-
Building Height in Stories (Table 504.4)	3	1	-

[1]Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (w/ ___-___ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses	-	0	0	-	-	-	-
Bearing Walls	> 30 FT	-	-	-	-	-	-
Exterior	-	-	-	-	-	-	-
North	-	-	-	-	-	-	-
East	-	-	-	-	-	-	-
West	-	-	-	-	-	-	-
South	-	-	-	-	-	-	-
Interior	-	-	-	-	-	-	-
Nonbearing Walls and Partitions	> 30 FT	0	0	-	-	-	-
Exterior walls	-	0	0	-	-	-	-
North	-	0	0	-	-	-	-
East	-	0	0	-	-	-	-
West	-	0	0	-	-	-	-
South	-	0	0	-	-	-	-
Interior walls and partitions	-	0	0	-	-	-	-
Floor Construction Including supporting beams and joists		0	0	-	-	-	-
Floor Ceiling Assembly		0	0	-	-	-	-
Columns Supporting Floors		-	-	-	-	-	-
Roof Construction, including supporting beams and joists		0	0	-	-	-	-
Roof Ceiling Assembly		0	0	-	-	-	-
Columns Supporting Roof		0	0	-	-	-	-
Shaft Enclosures - Exit		-	-	-	-	-	-
Shaft Enclosures - Other		0	0	-	-	-	-
Corridor Separation		0	0	-	-	-	-
Occupancy/Fire Barrier Separation		-	-	-	-	-	-
Party/Fire Wall Separation		-	-	-	-	-	-
Smoke Barrier Separation		-	-	-	-	-	-
Smoke Partition		-	-	-	-	-	-
Tenant/Dwelling Unit/ Sleeping Unit Seperation	1/2 HR	1 HR	U419 GO-02	U419	-	-
Incidental Use Separation		-	-	-	-	-	-

*Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
30+ FT	UP, S	NO LIMIT	NO LIMIT
-	-	-	-
-	-	-	-

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ■ Yes
Exit Signs: ☐ No ■ Yes
Fire Alarm: ■ No ☐ Yes
Smoke Detection Systems: ■ No ☐ Yes ■ Partial
Panic Hardware: ■ No ☐ Yes
Carbon Monoxide Detection: ■ No ☐ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G1-01

■ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
■ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
■ Occupant loads for each area
■ Exit Sign Locations (1013)
■ Exit access travel distances (1017)
☐ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
☐ Dead end lengths (1020.4)
■ Clear exit widths for each exit door
■ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
■ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.10)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE 'A' UNITS REQUIRED	TYPE 'A' UNITS PROVIDED	TYPE 'B' UNITS REQUIRED	TYPE 'B' UNITS PROVIDED	TYPE ACCESSIBLE UNITS PROVIDED
-	-	-	-	-	-	-	-

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR w/ 5' ACCESS AISLE	VAN SPACES WITH 96" ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	
ENTIRE LOT	10	10	1	-	-	1
-	-	-	-	-	-	-
TOTAL	**10**	**10**	**1**	**-**	**-**	**1**

USE	WATER CLOSETS			URINALS	LAVATORIES			SHOWERS/ TUBS	DRINKING FOUNTAINS		SERVICE SINK
	MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ADA	
SPACE: BUSINESS	0.00	0.00	0.71	0.00	0.00	0.00	0.44	0.00	0.18	0.18	0.00
SPACE: STORAGE	0.00	0.00	0.16	0.00	0.00	0.00	0.16	1.00	0.02	0.02	1.00
SPACE: RESIDENTIAL	0.00	0.00	0.38	0.00	0.00	0.00	0.38	0.48	0.04	0.04	0.00
-											
TOTAL REQUIRED	**0.00**	**0.00**	**2.00**	**0.00**	**0.00**	**0.00**	**1.00**	**2.00**	**1.00**	**1.00**	**1.00**
TOTAL PROVIDED	**0.00**	**0.00**	**4.00**	**0.00**	**0.00**	**0.00**	**4.00**	**3.00**	**2.00**	**2.00**	**1.00**

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)
N/A

CODE REVIEW NOTES

- KITCHEN IS FOR RESIDENTIAL FIRE STATION STAFF USE ONLY. NOT DESIGNED TO SERVE THE PUBLIC.

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ NO ☐ YES (If checked the remainder of this section is not applicable.)
Exempt Building: ☐ NO ■ YES (Provide code or statutory reference): NCECC C101.2, Exception 2
Climate Zone: ☐ 3A ☐ 4A ☐ 5A
Method of Compliance:
Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
Other ☐ Performance (specify source)

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: -
U-Value of total assembly: -
R-Value of total assembly: -
Skylights in each assembly: -
U-Value of skylight: -
Total square footage of skylights in each assembly: -

Exterior Walls (each assembly)
Description of assembly: -
U-Value of total assembly: -
R-Value of insulation: -
Openings (windows or doors with glazing)
U-Value of assembly: -
Solar heat gain coefficient: -
projection factor: -
Door R-Values: -

Walls below grade (each assembly)
Description of assembly: -
U-Value of total assembly: -
R-Value of total assembly: -

Floors over unconditioned space (each assembly)
Description of assembly: -
U-Value of total assembly: -
R-Value of total assembly: -

Floors slab on grade
Description of assembly: -
U-Value of total assembly: -
R-Value of insulation: -
Horizontal/vertical requirement: -
slab heated: -

STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:
Importance Factors: Snow (I_s) - Seismic (I_E) -
Live Loads: Roof 20 psf; Mezzanine 125 psf; Floor 100 psf
Ground Snow Load: 15 psf
Wind Load: Basic Wind Speed 124 mph (ASCE-7); Exposure Category -
SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ■ D
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☐ I ☐ II ☐ III ■ IV
Spectral Response Acceleration S_S 0.176 %g S_1 0.084 %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ■ D ☐ E ☐ F
Data Source: ■ Field Test ☐ Presumptive ☐ Historical Data
Basic structural system (check one)
☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ■ Yes ☐ No
LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☐
SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) 3,000 psf
Presumptive Bearing capacity - psf
Pile size, type, and capacity -

MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
Thermal Zone
winter dry bulb: 16°
summer dry bulb: 93°
Interior design conditions
winter dry bulb: 70°
summer dry bulb: 75°
relative humidity: 50% MAX
Building heating load: 26,000 BTUH
Building cooling load: 61,400 BTUH
Mechanical Spacing Conditioning System
Unitary
description of unit: SEE PLANS AND SPECIFICATIONS
heating efficiency: SEE PLANS AND SPECIFICATIONS
cooling efficiency: SEE PLANS AND SPECIFICATIONS
size category of unit: SEE PLANS AND SPECIFICATIONS
Boiler
Size category. If oversized, state reason.: N/A
Chiller
Size category. If oversized, state reason.: N/A
List equipment efficiencies: REFER TO MECHANICAL DWGS FOR EFFICIENCIES

ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT
Method of Compliance:
Energy Code: ■ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance
Lighting schedule (each fixture type)
lamp type required in fixture: SEE FIXTURES SCHEDULE ON E- AND SPECIFICATIONS
number of lamps in fixture: SEE FIXTURES SCHEDULE ON E- AND SPECIFICATIONS
ballast type used in the fixture: SEE FIXTURES SCHEDULE ON E- AND SPECIFICATIONS
number of ballasts in fixture: SEE FIXTURES SCHEDULE ON E- AND SPECIFICATIONS
total wattage per fixture: SEE FIXTURES SCHEDULE ON E- AND SPECIFICATIONS
total interior wattage specified vs. allowed (whole building or space by space): -W vs. -W
total exterior wattage specified vs. allowed: -W vs. -W
Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
■ C406.2 More Efficient HVAC Equipment Performance
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

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UL Product iQ™

Design/System/Construction/Assembly Usage Disclaimer

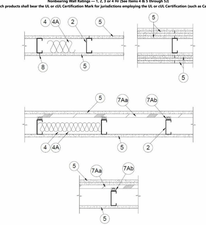
- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- Users of fire resistance assemblies and products are encouraged to contact the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
See General Information for Fire resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. **U419**

August 8, 2025

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 4 & 5 through 5J)
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Floor and Ceiling Runners** — (Not Shown) — For use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1 1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

1A. **Framing Members*** — **Floor and Ceiling Runner** — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 0 5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
CEMCO, LLC — Viper25™ Track
CRACO MFG INC — SmartTrack25™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper25™ Track

1B. **Framing Members*** — **Floor and Ceiling Runner** — Not Shown — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1 1/4 in. wide by 3 5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CEMCO, LLC — Viper35™ Track
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper35™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper35™ Track

1C. **Framing Members*** — **Floor and Ceiling Runners** — (Not Shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC max.
ALLIED G.YPSUM PRODUCTS INC — Type SUPREME GX4/5850D and Type SUPREME GSD
CONSOLIDATED FABRICATORS CORP BUILDING PRODUCTS DIV — Type SUPREME GX4/5850D and Type SUPREME GSD
GUAM, RUIN BUILDING MATERIALS INC — Type SUPREME GX4/5850D and Type SUPREME GSD
SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME GX4/5850D and Type SUPREME GSD
STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME GX4/5850D and Type SUPREME GSD
TELLING INDUSTRIES L L C — Type SUPREME GX4/5850D and Type SUPREME GSD
UNITED METAL PRODUCTS INC — Type SUPREME GX4/5850D and Type SUPREME GSD

1D. **Floor and Ceiling Runners** — (Not Shown) — For use with Item 2A — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. **Framing Members*** — **Floor and Ceiling Runners** — (Not Shown, As an alternate to Item 1) — For use with Items 2E, 5F or 5G or SI only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel with fasteners 24 in. OC, max.
CLASSIC/TECH BUILDING SYSTEMS — CLD ProTRAK
DMPC/WBS L L C — ProTRAK
MBA METAL FRAMING — ProTRAK
RAM SALES L L C — Ram ProTRAK
STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

1F. **Framing Members*** — **Floor and Ceiling Runner** — Not Shown — In lieu of Item 1 — For use with Item 2F, proprietary channel shaped runners, minimum width to accommodate stud size, with 1 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
SUPER STUD BUILDING PRODUCTS — The Edge

1G. **Framing Members*** — **Floor and Ceiling Runner** — For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC max.
STUDCO BUILDING SYSTEMS — CRDCSTUD Track

1H. **Floor and Ceiling Runners** — (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.018 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in.OC.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track or VT100
IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track VT100

1I. **Framing Members*** — **Floor and Ceiling Runners** — (Not Shown, As an alternate to Item 1) — For use with Items 2H, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel with fasteners 24 in. OC, max.
TELLING INDUSTRIES L L C — TRUE TRACK™

https://iq.ulprospector.com/en/profile?e=14078

Revisions			
#	Date	By	Description
1	08-07-2026	MM	Permit Comments

APPROVAL:
DATE:

CONSTRUCTION DOCUMENTS
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DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
1/8" = 1'-0"
10 JULY 2026
25-0006
APPENDIX 'B' & UL LISTINGS

G0-02

10/7/2025 1:24:45 PM Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River Fire Station #2.rvt

Revisions			
#	Date	By	Description

BUILDING CODES & GUIDELINES TO BE APPROVED:
2018 NORTH CAROLINA BUILDING CODE: BUILDING CODE (BASED ON 2015 IBC)
- INCLUDING CHAPTER 35: *REFERENCED* STANDARDS
- 2009 ANSI A117.1 & ICC A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES (ACCESSIBILITY CODE)

2018 NORTH CAROLINA BUILDING CODE: ADMINISTRATIVE CODE AND POLICIES

2018 NORTH CAROLINA BUILDING CODE: ENERGY CONSERVATION CODE (BASED ON 2015 IBC)
- INCLUDING CHAPTER 6: REFERENCED STANDARDS
- ENERGY CODE COMPLIANCE IS NOTED ON TITLE SHEET AND-INDUSTRY STANDARD PRESCRIPTIVE- METHOD

2018 NORTH CAROLINA BUILDING CODE: EXISTING BUILDING CODE (BASED ON 2015 IBC) - *SEE TITLE SHEET IF APPLICABLE*
- INCLUDING CHAPTER16: REFERENCED STANDARDS

2018 NORTH CAROLINA BUILDING CODE: MECHANICAL CODE (BASED ON 2015 IBC)
- INCLUDING CHAPTER15: REFERENCED STANDARDS

2018 NORTH CAROLINA BUILDING CODE: PLUMBING CODE (BASED ON 2015 IBC)
- INCLUDING CHAPTER15: REFERENCED STANDARDS

2018 NORTH CAROLINA BUILDING CODE: FUEL GAS CODE (BASED ON 2015 IBC)
- INCLUDING CHAPTER15: REFERENCED STANDARDS

2018 NORTH CAROLINA BUILDING CODE: FIRE PREVENTION CODE (BASED ON 2015 IBC)
- INCLUDING CHAPTER15: REFERENCED STANDARDS

2020 NORTH CAROLINA STATE ELECTRICAL CODE (BASED ON 2020 NEC)

PRODUCT MANUFACTURER INSTALLATION DIRECTIONS PROVIDING A FULL MANUFACTURER WARRANTY (DEVIATION REQUESTS SHALL BE PROVIDED TO GC IN WRITING WITH REASON AND DETAILS PRIOR TO ORDER AND INSTALLATION)

DIVISION 1: GENERAL REQUIREMENTS:

1. BOBBITT CONSTRUCTION (GENERAL CONTRACTOR, CIVIL ENGINEER, LANDSCAPE ARCHITECT, AND CONTRACTED CONSULTANTS) AND BOBBITT A&E (ARCHITECTURE, INTERIOR DESIGN, AND CONTRACTED CONSULTANTS) ARE TEAMING TO PROVIDE AN INTEGRATED DESIGN/BUILD PROJECT AS 'BOBBITT'.

2. CONTRACTORS ARE CRITICAL TO THE SUCCESS OF THE PROJECT, OWNER SATISFACTION, AND BOBBITT. BOBBITT RELIES ON THE EXPERT KNOWLEDGE AND EXPERIENCE OF EACH CONTRACTOR IN CODES/JURISDICTION REQUIREMENTS, MEANS AND METHODS, AND LEADING INDUSTRY STANDARD KNOWLEDGE. BOBBITT REQUIRES EARLY AND CLEAR COMMUNICATION IN ALL PHASES: BID, SUBMITTAL, FIELD INSTALLATION, PUNCH LIST, AND WARRANTY.

3. ALTERNATE GOOD PRACTICE MEANS AND METHODS OF ACHIEVING DESIGN INTENT AS WELL AS LONG-TERM PERFORMANCE EXPECTATIONS OF OUR SHARED CLIENTS ARE STRONGLY ENCOURAGED AS BIDDING
   a. ALTERNATES TO THE ITEMS SPECIFIED IN THE CONTRACT DOCUMENTS.

4. CONTRACTORS SHALL VISIT ALL EXISTING BUILDING SITES AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. BID SHALL BE INTERPRETED AS ACCEPTANCE OF EXISTING CONDITIONS AND NO OBSERVABLE ITEMS SHALL CAUSE A REQUEST FOR ADDITIONAL COMPENSATION.

5. CONTRACTORS ARE REQUIRED TO KEEP A CURRENT/ UP-TO-DATE SET OF PLANS ON SITE. NO ESTIMATING OF BID SETS SHALL BE USED FOR CONSTRUCTION OR REFERENCE ON-SITE.

6. EACH CONTRACTOR IS RESPONSIBLE FOR PROTECTING; EXISTING WORK, FINISHED WORK, AND/OR WORK BY OTHERS AS REQUIRED TO FINISH EACH SCOPE OF WORK. ALL WORK PROVIDED SHALL INCLUDE FULL TURN-KEY
   a. INSTALLATION. IF WORK BY OTHERS NOTED IN CONTRACT IS NOT ADEQUATE FOR THE INSTALLATION OF THE SCOPE OF WORK, IT SHALL BE NOTED IN BID OR SHALL BE DEEMED ACCEPTABLE (EXAMPLES: ELECTRICAL REQUIREMENTS, SUBSTRATE/BLOCKING, FINISHES BY OTHERS).

7. CONTRACTORS SHALL PROVIDE ALL MATERIALS, ACCESSORIES, TOOLS, SAFETY PROTECTION, DUST CONTROL, AND CLEANING MATERIALS FOR A FULL START TO-FINISH INSTALLATION OF WORK.

8. RECEIVING DELIVERIES AND PROPER STORAGE/SECURITY/ACCLIMATION OF PRODUCTS IS THE RESPONSIBILITY OF THE ORDERING CONTRACTOR FOR SAID MATERIALS. ALL THE TRANSPORTATION CHARGES AND INSURANCE FOR DELIVERIES SHALL BE THE RESPONSIBILITY OF THE ORDERING CONTRACTOR.

9. CONTRACTORS ARE ENCOURAGED TO PHOTOGRAPH EXISTING CONDITIONS, PROGRESS, AND COMPLETED CONDITIONS TO QUANTIFY QUALITY OF WORK AT VARIOUS LEVELS OF COMPLETION.

10. CLEAN AND SAFE WORK ENVIRONMENT SHALL BE PROVIDED BY EACH CONTRACTOR WHICH INCLUDES: ENGLISH SPEAKING ONSITE SUPERVISOR DURING INSTALLATION, KEEP WORK AREA CLEAN AND THOROUGH CLEANUP AT END OF EACH DAY, PROVIDE COMPLETED WORK IN FULLY CLEANED CONDITION.

11. NO WORK SHALL DECREASE THE EXISTING EMERGENCY LIGHTING, SAFETY, EXIT, FIRE PROTECTION, STRUCTURAL INTEGRITY OF THE PROJECT UNLESS CLEARLY NOTED IN TEH CONSTRUCTION DOCUMENTS AND/OR CLARIFIED IN
   a. WRITING WITH THE GENERAL CONTRACTOR.

12. ALL WORK SHALL BE WARRANTIED PER MANUFACTURER'S STANDARD PERIOD UNLESS SPECIFIED OTHERWISE. ALL LABOR SHALL BE WARRANTIED FOR (1) YEAR MINIMUM FROM THE CERTIFICATE OF OCCUPANCY OR AS STIPULATED ELSEWHERE ABOVE THIS MINIMUM (LONGEST TERM APPLIES).

DIVISION 03: CONCRETE

03 33 16 LIGHTWEIGHT ARCHITECTURAL CONCRETE

03 54 13 GYPSUM CEMENT UNDERLAYMENT

1. WE HAVE INCLUDED BUILDING FOOTINGS, SLABS AND CIP RETAINING WALLS AS PER THE STRUCTURAL PLANS.

DIVISION 4: MASONRY

1. BRANDS: AS NOTED, ON "EXTERIOR FINISH FORM" WITH OWNER APPROVAL SIGNATURE.

2. MASONRY JOINTS: COMPRESSED CONCAVE MORTAR JOINTS SHALL BE PROVIDED *UNLESS NOTED OTHERWISE*.MASON SHALL PROVIDE A FINISHED MASONRY SURFACE REMOVED OF ALL SURPLUS MORTAR FOR A CLEAN AND FINISHED SURFACE.

3. CMU: AS NOTED ON STRUCTURAL DOCUMENTS AND RATINGS PER ARCHITECTURAL DOCUMENTS WITH INTEGRAL MOISTURE AND MOLD INHIBITOR ADMIXTURE.

4. REINFORCEMENT SHALL BE PROVIDED BY MASON.

5. STEEL ANGLES, EMBEDS, BEAMS, AND OTHER MISCELLANEOUS STEEL WILL BE PROVIDED BY OTHERS FOR INSTALLATION BY MASON.

6. CONSTRUCTION/ QUALITY ASSURANCE: COMPLIANCE WITH "BUILDING CODES & GUILDELINES TO BE APPLLED" NOTED ABOVE AS WELL AS TMS 602/ACI 530.1/ASCE 6.

7. SCAFFOLDING & FALL PROTECTLON SHALL BE PROVIDED BY THE MASON AS REQUILRED FOR INSTALLATION.

8. A 48- X 48" MASONRY SAMPLE PANEL SHALL BE CONSTRUCTED ON-SITE AND APPROVED BY GC PRIOR TO A FULL MASONRY ORDER.

9. WE HAVE INCLUDED THE MASONRY SCOPE OF WORK AS PER THE PLANS WITH THE FOLLOWING CLARIFICATIONS:
   a. BRICK VENEER PRICED IS XXX MODULAR SIZE.
   b. STANDARD MORTAR COLORS ARE INCLUDED

DIVISION 6: WOOD, PLASTICS, AND COMPOSITES

06 22 00 MILLWORK

1. CUSTOM MILLWORK SHALL CONFORM WITH CURRENT AWI STANDARDS. MINIMUM LEVEL IS: STRUCTURAL PERFORMANCE "DUTY LEVEL 3". AESTHETIC PERFORMANCE-CUSTOM GRADE"

2. MR-10 (OR GREATER) OR MARINE GRADE PLYWOOD SUBSTRATES SHALL BE PROVIDED IN THE FOLLOWING AREA:
   - WITHIN 24" OF A PUBLICLY ACCESSIBLE WATER SOURCE
   - HIGH HUMIDITY ROOMS SUCH AS RESTROOMS WITH SHOWERS
   - AREAS WITHOUT OR LIMITED AIR CONDITIONING (AREAS DESIGNATED BEYOND THE TYPICAL 65-75 DEGREE RANGE)

DIVISION 7: THERMAL AND MOISTURE PROTECTION

07 10 00 DAMPPROOFING AND WATERPROOFING
1. WE HAVE INCLUDED WATERPROOFING AS PER THE PLANS.
2. WE HAVE NOT INCLUDED ANY WATERPROOFING FOR CHIMNEYS OR ELEVATOR PITS, NEITHER WERE SHOWN.
3. ANY COSTS FOR A THIRD-PARTY CONSULTANT ASSOCIATED WITH MOISTURE AND WATER INTRUSION CONSULTING. IF NEEDED, THE OWNER IS SOLELY RESPONSIBLE FOR COSTS ASSOCIATED WITH MOISTURE AND WATER INTRUSION CONSULTING SERVICES AND TESTING.

07 25 00 WEATHER-RESISTIVE BARRIERS

1. BRANDS: MAJOR MANUFACTURERS ONLY: DUPONT, WR MEADOWS, PROSOCO, GRACE CONSTRUCTION PRODUCTS, TREMCO, GEORGLA-PACIFIC, HENRY

2. PERFORMANCE REQUIREMENTS: UV EXPOSURE, 90 DAY MIN. WATER VAPOR TRANSMISSION, 30 PERMS MAX, SURFACE BURN=CLASS A WALL COVERING OVER SHEATHING ON STUD WALLS:
   - NOT ALLOWED: FELT BASED PRODUCTS
   - MINIMUM WRB: 1) TYVEK, COMMERCIAL WRAP (AND COMMERCIAL WRAP D)[2) TYPAR, METROWRAP 3) BARRICADE. WRAP PLUS
   - APPROVED ALTERNATE SHEATHING SYSTEMS: 1) GP, DENS ELEMENT 2) USG, SECUROCK EXOAIR 430
   - APPROVED ALTERNATE FLUID APPLIED: 1) TREMCO, EXOAIR 130 2) TYVEK, FLUID APPLIED WB+
3. MASONRY DAMPROOFING (30 DAY EXPOSURE APPROVED FOR THIS CONDITION ONLY)
   - TREMCO, EXOAIR 120 2) HENRY, 789 (TWO COAT SYSTEM)

07 92 00 JOINT SEALANTS
1. WE HAVE INCLUDED JOINT SEALANTS AT WINDOWS, DOORS, BRICK CONTROL JOINTS, DISSIMILAR MATERIALS, AND THE SIDEWALK/CONCRETE PAVEMENT AT THE BUILDINGS.

DIVISION 8: OPENINGS:

08 11 13 INTERIOR METAL FRAMES HOLLOW METAL DOORS AND FRAMES

1. BRANDS: MAJOR MANUFACTURERS (AND SUB BRANDS) ONLY: ***CURRIES/ASSA ABLOY*** BASIS OF DESIGN. ALLEGION/STEELCRAFT. DE LA FONTAINE APPROVED EQUALS

2. INTERIOR DRYWALL DOOR FRAME: CURRIES, KD 16 GAUGE C FRAME COLD ROLLED W/ STANDARD BASE ANCHOR, 2" FACE, DEPTH PER WALL THICKNESS (4 7/8" & 7 1/4" TYPICAL)

3. INTERIOR MASONRY DOOR FRAME: (MATCH EXTERIOR METAL DOORS AND FRAMES SECTION)

08 11 13 EXTERIOR METAL DOORS AND FRAMES

1. BRANDS: MAJOR MANUFACTURERS (AND SUB BRANDS) ONLY: ***CURRIES/ASSA ABLOY*** BASIS OF DESIGN. ALLEGION/STEELCRAFT, DE LA FONTAINE APPROVED EQUALS

2. EXTERIOR HOLLOW METAL DOOR & FRAME
   a. DOOR: CURRIES, 707 WITH 18 GA A60 GALVANIZED STEEL OR 16 GA W/ A40 GALVANIZED STEEL, FLUSH 1-¾" THICK
   b. W/ (3) 4 ½" MORTISED HINGE LOCATIONS
   c. INCLUDE OPTIONS:
      1. INSULATED GLASS PREP (5/8" POCKET)/LOUVER PER DOOR ELEVATION(S)
      2. POLYURETHANE CORE OF R10
      3. MORTISE LOCK PREP
      4. CLOSER REINFORCEMENT

   D. FRAME: CURRIES, SEAM WELDED 4 1/2" 16 GAUGE UNEQUAL M FRAME W/ MASONRY WIRE ANCHOR

08 41 00 STOREFRONTS AND ENTRANCES

1. BRANDS: STOREFRONT. MAJOR MANUFACTURERS ONLY: TUBELITE, YKK, KAWNEER (OTHERS UPON SUBMITTAL REVIEW ACCEPTANCE)

2. GLASS, MAJOR MANUFACTURERS ONLY: VITRO. PILKINGTON, GUARDIAN, OLDCASTLE (OTHERS UPON SUBMITTAL REVIEW ACCEPTANCE)

3. PERFORMANCE: SEE T1.1 AND EXTERIOR FINISH FORM FOR; COLOR, MINIMUM U-VALUE, LOW-E COATING

4. FRAME/WINDOWS: 4" THERMALLY BROKEN, CENTER SET W/ 1-IGU, PROVIDE MATCHING SILL PAN UNDER ALL OPENINGS

5. DOORS: INSULATED IGU TO MATCH STOREFRONT WINDOWS

   a. SEE SHEET A7-01 FOR STILES, PROVIDE 10" MINIMUM BOTTOM RAIL FOR ADA COMPLIANCE
   b. CORE LOCK CYLINDER: SFIC 7-PIN W/ INTERIOR DEADLATCH PADDLE SIMILAR TO ADAMS RITE, 4590 PUSH (OR PANIC BAR)
   c. WIND RATING: SEE STRUCTURAL DRAWINGS, STOREFRONT CONTRACTOR SHALL VERIFY COMPLIANT
   d. INTERIOR PUSH BAR: 1" DIAMETER PUSH BAR (OR PANIC BAR)
   e. EXTERIOR PULL: 1" DIAMETER PULL HANDLE, 8" TALL ALUMINUM OFFSET PULL HANDLE
   f. HINGES: FIVE KNUCKLE BALL BEARING WITH NON-REMOVABLE PIN
   g. CLOSER: BHMA GRADE1, SURFACE CLOSER
   h. FLUSHBOLTS: PROVIDE TOP AND BOTTOM RODS @ DOUBLE DOOR LOCATIONS ON INACTIVE LEAF W/ MEETING
   i. ASTRAGAL WEATHERSTRIPPING
   j. THRESHOLD: ALUMINUM SET IN SEALANT/WEATHERSEAL BED TO FLOOR SURFACE
   k. SWEEP: SOLID VINYL ATTACHED TO DOOR
   l. WEATHERSTRIP: PROVIDE GASKET JAMB AND HEAD SIDES OF FRAME

08 71 00 DOOR HARDWARE

1. BRANDS: MAJOR MANUFACTURERS (AND SUB BRANDS) ONLY: ***HAGER*** BASIS OF DESIGN. ALLEGION/SCHLAGE. ASSA ABLOY /SARGENT APPROVED EQUALS

2. LEVER OPERATORS SHALL BE PRVIDED FOR ALL DOORS AND ADA COMPLIANT UTILIZING STYLE SIMILAR TO: **ARCHER**

3. METAL FINISH: SEE EXTERIOR AND INTERIOR FINISH SELECTION FORMS

4. 4, CORE LOCKING CYLINDER: SFIC 7-PIN (INTERIOR DOOR HARDWARE SUPPLIER TO PROVIDE 3 LEVEL DEEP MASTER KEYING AND CORES FOR ALL KEYED DOORS INCLUDING STOREFRONT)

5. EXTERIOR LEVER HARDWARE: BHMA GRADE 1

   a. LOCK: HAGER, 3800 SECTIONAL SERIES, MORTISE KEYED LOCK (SEE SCHEDULE FOR OPERATION) W/ ANSI STRIKE PLATE - CLOSER: HAGER, 5200 SERIES
   b. HINGES: HAGER, (3) ECBB1101-NRP FIVE KNUCKLE HINGES, W/ NON-REMOVABLE PIN
   c. KICKPLATE(INTERIOR SIDE): HAGER,1985, 34" WIDE X 8" TALL
   d. WEATHER STRIPPING: HAGER, 726
   e. SWEEP: HAGER, 7325 (¼" OR HIGHER MODEL APPROVED
   f. THRESHOLD: HAGER, 413S SET IN SEALANT/WEATHERSEAL BED TO FLOOR SURFACE
   g. RAINDRIP (WHERE NO PROTECTION ABOVE PER ELEVATIONS): HAGAR, 810S

6. INTERIOR LEVER HARDWARE: BHMA GRADE 1

   a. LOCK: HAGER, 3400 SERIES, 2¼" BACKSET, FUNCTION PER SCHEDULE W/ ANSI STRIKE PLATE
   b. CLOSER (IF NOTED IN SCHEDULE): HAGER, 5200 SERIES
   c. FLUSHBOLTS (IF NOTED IN SCHEDULE): HAGER, 293D
   d. WALLSTOP(S): HAGER, 236W
   e. HINGES: HAGER, (3) ECBB1100 FIVE KNUCKLE HINGES W/ REMOVABLE PIN

7. INTERIOR PUSH/PULL HARDWARE:

   a. PUSH PLATE: HAGER, A305 IN STAINLESS STEEL, 4" WIDE X 16" TALL
   b. PULL PLATE: HAGER, A54 IN STAINLESS STEEL, 4" WIDE X 16" TALL
   c. CLOSER(S): HAGER, 5200 SERIES
   d. WALLSTOP(S): HAGER, 236W
   e. HINGES: HAGER, (3) ECBB1100 FIVE KNUCKLE HINGES, W/ REMOVABLE PIN
   f. KICKPLATE (PUSH SIDE): HAGER, 198S, 34" WIDE X 8" TALL

DIVISION 9: FINISHES:

09 90 00 PAINTING AND COATING

1. BRANDS: SHERWIN-WILLIAMS (BASIS OF DESIGN), PPG (APPROVED ALTERNATE), BENJAMIN MOORE (APPROVED ALTERNATE)

2. FIELD INSPECTION: INSPECT DRYWALL FINISHING IS A MINIMUM OF LEVEL 4. ALERT BOBBITT TO DEFECT AREA(S)
   a. PRIOR TO APPLYING PRIMER, INSTALL REQUIREMENTS: CLEAN AND PREP SURFACE PER MANUFACTURER. PROVIDE WET
   b. FINISH MILS PER MANUFACTURER.

3. DRYWALL (NON-EPOXY):

   a. PRIMER, (1) TINTED COAT: SHERWLN-WILLIAMS, PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER
   b. - BASE AND FINISH COAT (2) COATS TOTAL: SHERWIN-WILLIAMS, PROMAR 200 ZERO VOC INTERIOR (SHEEN PER PLANS)

4. DRYWALL (EPOXY):

   a. PRIMER,(1) TINTED COAT: SHERWIN-WILLIAMS, PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER
   b. - BASE AND FINISH COAT (2) COATS TOTAL: SHERWIN-WILLIAMS, PRO INDUSTRIAL WATERBASED CATALYZED EPOXY (SHEEN PER PLANS)

5. MASONRY(INTERIOR)
   a. PRIMER. (1) TINTED COAT: SHERWIN-WILLIAMS. PREPRITE INTERIOR/EXTERIOR LATEX BLOCK FILLER
   b. - BASE AND FINISH COAT (2) COATS TOTAL: SHERWIN-WILLIAMS, PRO INDUSTRIAL PRECATALYZED WATERBASED EPOXY (SHEEN PER PLANS)

6. HOLLOW METAL DOORS, FRAMES, LOOSE EXTERIOR STEEL LINTELS:
   a. PRIMER, (1) TINTED COAT: SHERWIN-WILLIAMS, PRO INDUSTRIAL PRO-CRYL UNIVERSAL ACRYLIC PRIMER
   b. BASE AND FINISH COAT (2) COATS TOTAL: SHERWLN-WILLIAMS, PRO INDUSTRIAL WATERBASED ALKYD URETHANE (SHEEN PER PLANS)

7. SUBMITTALS
   a. PRODUCT DATA: PROVIDE A COMPLETE LIST OF PRODUCTS TO BE USED, WITH THE FOLLOWING INFORMATION FOR EACH:
      1. MANUFACTURER'S NAME, PRODUCT NAME AND/OR CATALOG NUMBER, AND GENERAL PRODUCT CATEGORY
   b. SAMPLES: SUBMIT THREE PAPER 'DRAW DOWN' SAMPLES, 8.5 BY 11 INCHES IN SIZE, ILLUSTRATING RANGE OF COLORS AVAILABLE FOR EACH FINISHING PRODUCT SPECIFIED.
      1. WHERE SHEEN IS SPECIFIED, SUBMIT SAMPLES IN ONLY THAT SHEEN.
   c. MAINTENANCE DATA: SUBMIT DATA INCLUDING FINISH SCHDULE SHOWING WHERE EACH PRODUCT/COLOR/FINISH WAS USED, PRODCUT TECHNICAL DATA SHEETS, MATERIAL SAFETY DATA SHEETS (MSDS), CARE AND CLEANING INSTRUCTIONS, TOUCH-UP PROCEDURES, REPAIR OF PAINTED AND FINISHED SURFACES, AND COLOR SAMPLES OF EACH COLOR AND FINISH USED.
   d. MAINTENANCE MATERIALS: FURNISH THE FOLLOWING FOR OWNER'S USE IN MAINTENANCE OF PROJECT.

8. WE HAVE INCLUDED THE PAINTING SCOPE AS PER THE PLANS WITH THE FOLLOWING CLARIFICATIONS.
   a. WE HAVE INCLUDED ONE PRIMER AND ONE FINISH COAT ON THE INTERIOR WALLS AND TWO COATS OF PAINT ON INTERIOR TRIM MATERIAL.
   b. ALL PAINT MATERIAL TO BE SHERMIN WILLIAMS.

APPROVAL:
DATE:

BOBBITT A&E, PLLC
Headquarters Office
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CONSTRUCTION DOCUMENTS

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COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2

783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
1/2" = 1'-0"
10 JULY 2026
25-0006
PROJECT SPECIFCATIONS

G0-03

7/9/2026 11:35:50 AM Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS.rvt

Revisions			
#	Date	By	Description

ROOM OCCUPANCY LOAD SCHEDULE

NUMBER	ROOM NAME	OCCUPANCY USE	AREA (S.F.)	S.F. / PERSON	S.F. TYPE	PERSONS
120	APPARATUS BAY	Accessory Storage Areas, Mechanical Equipment Room	3494.4 SF	300	Gross	12
124	UTILITY ROOM + RISER	Accessory Storage Areas, Mechanical Equipment Room	288.5 SF	300	Gross	1
123	TOOL ROOM	Accessory Storage Areas, Mechanical Equipment Room	234.6 SF	300	Gross	1
122	DECON	Accessory Storage Areas, Mechanical Equipment Room	302.2 SF	300	Gross	2
100	LOBBY	Business Areas	469.8 SF	100	Gross	5
108	DATACOM	Business Areas	56.8 SF	100	Gross	1
101	OFFICE	Business Areas	115.9 SF	100	Gross	2
103	STORAGE	Business Areas	62.8 SF	100	Gross	1
102	OFFICE	Business Areas	124.9 SF	100	Gross	2
104	DAYROOM	Business Areas	708.4 SF	100	Gross	8
121	BATH	General Circulation/Support	80.9 SF	0	Gross	
106	TOILET	General Circulation/Support	60.4 SF	0	Gross	
111	BATH 2	General Circulation/Support	79.1 SF	0	Gross	
109	BATH 1	General Circulation/Support	78.4 SF	0	Gross	
105	PANTRY	General Circulation/Support	6.1 SF	0	Gross	
107	CORRIDOR	Residential	173.7 SF	200	Gross	1
113	BUNKROOM 4	Residential	110.6 SF	200	Gross	1
114	BUNKROOM 3	Residential	126.5 SF	200	Gross	1
110	BUNKROOM 1	Residential	123.2 SF	200	Gross	1
112	BUNKROOM 2	Residential	120.4 SF	200	Gross	1
200	MEZZANINE	Accessory Storage Areas, Mechanical Equipment Room	941.9 SF	300	Gross	4
			7759.5 SF			44

OCCUPANCY USE TABLE

TYPE IMAGE	LEVEL	OCCUPANCY USE	AREA (S.F.)	S.F./PERSON	S.F. TYPE
	GROUND FLOOR	Accessory Storage Areas, Mechanical Equipment Room	4319.6 SF	300	Gross
	GROUND FLOOR	Business Areas	1538.6 SF	100	Gross
	GROUND FLOOR	General Circulation/Support	305.0 SF	0	Gross
	GROUND FLOOR	Residential	654.4 SF	200	Gross
	MEZZANINE LEVEL	Accessory Storage Areas, Mechanical Equipment Room	941.9 SF	300	Gross
			7759.5 SF		

FIRE EXTINGUISHER MOUNTING

FEB **SURFACE MOUNT** TO BE EXPOSED EXTINGUISHERS (Bracket, No cabinet)
FEC **RECESSED:** TO BE IN CABINETS MEETING GUIDELINES BELOW

Projection Requirements
The federal regulations for ADA Standards for Accessible Design Section: Protruding Objects Section (28 CFR 36, 4.4.1) specify that "objects projecting from walls with their leading edges between 27" and 80" (685 mm and 2030 mm) above the finished floor (AFF) shall protrude no more than 4" (100mm) into walks, halls, corridors, passageways, or aisles. Please note that a surface-mounted cabinet installed in such a way that any part of it falls between 27" and 80" AAF would not meet ADA requirements.

Mounting Heights
The NFPA and ADA have created guidelines for the mounting of cabinets and extinguishers to provide safety and/or easy access to the equipment. ADA guidelines specify reach ranges for building occupants who require access to equipment such as fire extinguishers and other fire safety devices. According to the ADA Standards (28 CFR 36, 4.2.5 and 4.2.6 neither the extinguisher handle nor the cabinet handle can be mounted higher than 48" AFF for applications which allow for only a forward approach in a wheelchair to the object; and, no higher than 54" AFF, or those applications which allow for a parallel approach.

Typical install:
Center Handle
38" Above Floor





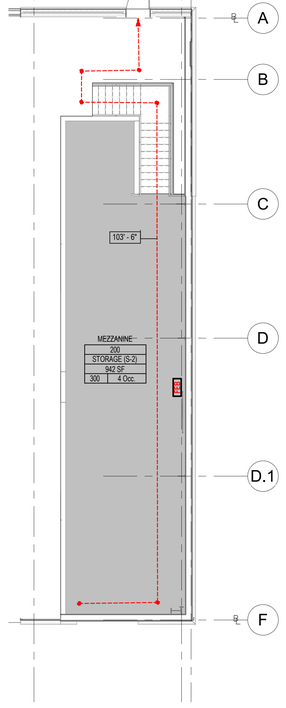
NC BUILDING CODE 2018:

SMALL ASSEMBLY SPACES (303.1.2)
THE FOLLOWING ROOMS AND SPACES SHALL NOT BE CLASSIFIED AS ASSEMBLY OCCUPANCIES:
A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES THAT IS LESS THAN 750 SQUARE FEET (70 M2) IN AREA AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY OR AS PART OF THAT OCCUPANCY.

1 GROUND FLOOR LIFE SAFETY PLAN

1/8" = 1'-0"

0 8' 16' 24' 32'



2 MEZZANINE LEVEL LIFE SAFETY PLAN

1/8" = 1'-0"

LIFE SAFETY LEGEND

FEB	LOCATION OF FIRE EXSTINGUISHER ON A BRACKET
FEC	LOCATION OF FIRE EXTINGUISHER IN A CABINET
	EXIT SIGN & LIGHTS
	1 HR RATED WALL
110'-0" / 29.0 s	TRAVEL DISTANCE / EGRESS TRAVEL TIME
25	OCCUPANT LOAD
1hr / 33" / 200 / 5	**LIFE SAFETY DOOR TAG:** DOOR RATING; CLEAR EGRESS WIDTH; DOOR EGRESS CAPACITY; OCCUPANT LOAD
Room Name / 100 / Business / 650 SF / 100 | 7 Occ.	**LIFE SAFETY ROOM TAG:** ROOM NAME; ROOM NUMBER; OCCUPANCY CLASSIFICATION; ROOM SQUARE FOOTAGE; OCCUPANT LOAD FACTOR/TOTAL OCCUPANTS PER ROOM PER CODE

APPROVAL:
DATE:

BOBBITT A&E, PLLC
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Cary, NC 27513-5519

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TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2

783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006

LIFE SAFETY PLANS

G1-01

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VICINITY MAP 1"=500'

PROJECT NARRATIVE:

THIS PROJECT IS A ±7,670 SF, FIRE DEPARTMENT BUILDING AND ASSOCIATED ACCESS, PARKING, AND UTILITIES. THE PROJECT IS LOCATED ON MANGUM RD, HARNETT COUNTY, NORTH CAROLINA. THE CURRENT PARCEL IS 2.52 ACRES.

HARNETT COUNTY GIS DOES NOT SHOW A 100 YEAR FLOODPLAIN OR WETLANDS WITHIN THE PROPERTY BOUNDARIES. AN UNNAMED STREAM WAS IDENTIFIED ON THE PROPERTY AND A 30 FOOT BUFFER WAS DELINEATED. THE PROPERTY LIES WITHIN THE CAPE FEAR RIVER BASIN.

THERE ARE NO SPECIAL OR EXPERIMENTAL EROSION CONTROL DEVICES AND THE CONSTRUCTION SEQUENCE IS PER HARNETT COUNTY STANDARD.

NOTES

1. BASE INFORMATION IS FROM A SURVEY MAP ENTITLED "BOUNDARY/EXISTING CONDITIONS ANGIER & BLACK RIVER FIRE STA." DATED 08/15/2025 BY MAERSTAN, PLLC LAND SURVEYORS OF 2411 US 64 BUSINESS WEST, PITTSBORO, NC 27312, PH: 919-545-7001.
2. PLAN IS SUBJECT TO REVISIONS DURING CONSTRUCTION DRAWING APPROVAL PROCESS
3. CONSTRUCTION DRAWING APPROVAL IS REQUIRED BEFORE CONSTRUCTION ON THIS PROJECT MAY BEGIN. DEVELOPMENT FEES ARE DUE BEFORE CONSTRUCTION DRAWING APPROVAL.
4. THE PROJECT REQUIRES SITE PLAN CERTIFICATION FROM PROFESSIONAL NORTH CAROLINA LAND SURVEYOR OR ENGINEER.
5. OWNER WILL BE RESPONSIBLE FOR MAINTENANCE OF THE PARKING AREAS AND ALL LANDSCAPE BUFFERING.
6. FIRE STATION PLANS TO UTILIZE ROLL OUT TRASH SERVICE. CANS WILL BE STORED BEHIND THE BUILDING.
7. THIS DEVELOPMENT IS WITHIN ONE MILE OF A VOLUNTARY AGRICULTURAL DISTRICT.
8. ALL CONSTRUCTION SHALL CONFORM TO HARNETT COUNTY STANDARD SPECS.

FLOODPLAIN INFORMATION

THIS SITE IS IN ZONE X, AREA OF MINIMAL FLOOD HAZARD (NOT IN ANY SPECIAL FLOOD HAZARD AREAS OR FUTURE CONDITIONS FLOOD HAZARD AREAS), AS SHOWN ON FIRM PANEL 3720066200J DATED OCTOBER 3, 2006.

STREAM FEATURE & WETLAND INFORMATION

BASED UPON USGS 7.5-MINUTE QUADRANGLE MAP (LILLINGTON QUADRANGLE NC HARNETT COUNTY 7.5-MINUTE SERIES) THERE ARE NO PERENNIAL OR INTERMITTENT STREAMS IMPACTING PROJECT PARCEL. THERE IS AN UNNAMED FLOWLINE EXISTING ON THE PARCEL ACCORDING TO HARNETT COUNTY GIS AND UPON INVESTIGATION, A 30 FOOT BUFFER WAS ESTABLISHED. NO WETLANDS EXIST ON-SITE. WETLAND INVESTIGATION WAS PERFORMED BY S&EC (SOIL & ENVIRONMENTAL CONSULTANTS, PA) CONTACT: JOSHUA HARVEY; 8412 FALLS OF NEUSE ROAD, SUITE 104, RALEIGH, NC 27615 (919)-846-5900.

PROJECT LOCATION:

THIS PROJECT IS LOCATED IN THE HARNETT COUNTY, NORTH CAROLINA WITHIN THE HARNETT COUNTY JURISDICTION, LOCATED OFF OF MANGUM RD.

SITE DATA

OWNER/DEVELOPER	ANGIER AND BLACK RIVER FIRE STA., INC.
STREET	P.O. BOX 389
CITY, ZIP	ANGIER, NC 27501
PHONE	919-639-6234
DESIGNER/ PREPARER/ DEVELOPER	BOBBITT CONSTRUCTION, INC ATTN: BLAIR PITTMAN, PE (24438)
STREET	2400 WESTON PARKWAY
CITY	CARY, NC 27513
EMAIL ADDRESS	blair.pittman@bobbitt.com
PHONE NUMBER	919.851.1980
SITE ADDRESS	783 MANGUM ROAD ANGIER NC 27501
GPIN NUMBER	0662-64-8377
DEEDED ACREAGE	2.52 ACRES
PROJECT AREA	2.52 ACRES
PROPOSED IMPERVIOUS AREA, %	19 % (±20,972 SF/±0.48 AC)
JURISDICTION	HARNETT COUNTY
ZONED	RA-30
RIVER BASIN	CAPE FEAR BASIN
BUILDING HEIGHT	N/A
EXISTING BUILDING AREA	±0 SF
PROJECT BUILDING AREA	±7,670 SF
LIMITS OF DISTURBANCE:	0.98 AC
HOURS OF OPERATION:	24 HOURS, 7 DAYS A WEEK

IMPERVIOUS	EXISTING	PROPOSED
BUILDING AREA:	±0 SF	±7,670 SF
VEHICLE PVMT. AREA	±0 SF	±10,918 SF
NON-VEHICLE PVMT. AREA (CONCRETE):	±0 SF	±2,384 SF
TOTAL	±0 SF	±20,972 SF

BUILDING SETBACKS:	ZONING: RA-30
STREET RIGHT-OF-WAY	35 FT
SIDE	10 FT
REAR	25 FT

LANDSCAPE BUFFER:	ZONING: RA-30
STREET	10 FT TYPE C
SIDE	15 FT TYPE A
REAR	15 FT TYPE A

PARKING REQUIREMENTS	
EMERGENCY SERVICES: (1 PER EVERY 350 SF - EXCLUDES APPARATUS BAY)	10 SPACES
EXISTING PARKING:	0
PROPOSED PARKING:	10 SPACES
TOTAL:	10 SPACES
HANDICAP SPACES REQUIRED/PROVIDED:	1/1 SPACES

INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
C0.0	COVER SHEET
C0.1	EXISTING CONDITIONS
C1.0	STAKING PLAN
C2.0	SEDIMENT AND EROSION CONTROL PLAN
C3.0	GRADING PLAN
C4.0	UTILITY PLAN
C5.0	LANDSCAPE PLAN
C7.0	DETAILS
C7.1	DETAILS

OWNER'S CONSENT FORM

AS THE OWNER OF RECORD OR AGENT OF THE PROPERTY, I HEREBY FORMALLY CONSENT TO THE PROPOSED DEVELOPM,ENT SHOWN ON THIS SITE PLAN AND ALL REGULATIONS AND REQUIREMENTS OF THE HARNETT COUNTY ORDINANCE.

0662-64-8377
TAX PARCEL ID NUMBER

SIGNATURE:_____

PRINTED NAME & TITLE: _____

DATE:_____

ENGINEER CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, AND DRAWING WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH CAROLINA.

SIGNATURE:

NAME: BLAIR PITTMAN

DATE: 5/27/2026 NC STATE PE LICENCE NUMBER:24438

CALL BEFORE YOU DIG!
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION

NORTH CAROLINA 811 www.nc811.org 1-800-632-4949

North Carolina One-Call Center, Inc.

ANGIER AND BLACK RIVER FIRE STATION

SITE PLAN

APPROVED FOR PERMITTING
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REVISIONS			
No.	DATE	DESCRIPTION	REV. BY
1			
2			
3			
4			

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think, design, build

NORTH CAROLINA PROFESSIONAL SEAL 24438 ENGINEER BLAIR P. PITTMAN
05/27/2026

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Firm Lic. # C-0191

COORDINATOR: BLAIR PITTMAN

DRAWN BY: S. VELAGAPUDI

CHK BY: BPP

ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

24 X 36

22 MAY 2026

25-006

COVER

C0.0

SITE PLAN NOTES:

1. SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY MAERSTAN, PLLC LAND SURVEYORS, OF 2411 US 64 BUSINESS WEST, PITTSBORO, NC 27312; PHONE: 919-545-7001; DATED: 08/15/2025.
2. PARTS OF LAND ON THIS SITE ARE IN ZONE AREA "X", AN AREA OF MINIMAL FLOOD HAZARD PER FIRM PANEL #3720006200J DATED 3 OCTOBER 2006.
3. THE RECEIVING WATER COURSE IS WEST BUIES CREEK, A TRIBUTARY OF CAPE FEAR RIVER.
4. NO WETLAND EXISTS WITHIN THE PROPERTY AS PER NATIONAL WETLAND INVENTORY (NWI) MAPPER ONLINE TOOL.
5. ALL MATERIALS AND CONSTRUCTION METHODS PER THE LATEST EDITION OF HARNETT COUNTY SPECIFICATIONS AND DETAILS.

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SYMBOL LEGEND

	EXISTING	PROPOSED
WATER METER	◪	■
SANITARY SEWER MANHOLE	Ⓢ	●
CLEAN OUT	○	◔
POWER POLE	⌐○	⌐●
FIRE HYDRANT	✱	✦
WATER VALVE	⋈	⋈
BLOWOFF ASSEMBLY	○-○	●-●
TEMPORARY BENCHMARK	⊕	
EXISTING OVERHEAD ELECTRIC	OHE	
EX. SANITARY SEWER		
EX. WATER LINE		
SILT FENCE		
TREE PROTECTION FENCE		

LINE TYPE LEGEND

- PROPERTY LINE – LINE SURVEYED
- RIGHT-OF-WAY
- ADJOINING LINE – LINE NOT SURVEYED
- EASEMENT
- STREAM BUFFER

EX. 4" WATER LINE

N/F
MANGUM TONY R & ADAMS GAYLE M
PIN# 0662-74-0826
DB 2459 / PG 0111
ZONING: RA-30

INV OUT:277.28
20.4' 15" RCP @ 1.82%
INV IN:277.65

MANGUM ROAD (NCSR 1512)
60' PUBLIC ROW

EXISTING WELL
LANDSCAPING
813

IRF 1.0 0.70 AG

S74°57'58"E 105.79'
S75°27'08"E 31.47'
S75°10'07"E 33.66'
S75°21'26"E 55.23'
S75°40'05"E 23.78'

IRF 5 FLUSH
BM ELEV:282.29

10' PERIMETER BUFFER (TYPE C)

35' FRONT SETBACK

N/F
MILTON & MISSIE L. HARRINGTON
PIN# 0662-64-7533
DB 696 / PG 424
ZONING: RA-30

DOG PEN
(TO BE REMOVED)

N14°20'28"E 200.05'

IRF 4 LEAN-0.80BG

N14°20'28"E 60.00'

10' SIDE SETBACK

15' PERIMETER BUFFER (TYPE A)

30' BUFFER AVERAGE

N/F
ANGIER AND BLACK RIVER FIRE DEPT INC.
PIN# 0662-64-8377
DB 4207 / PG 1426
PB 2023 / PG 382
ZONING: RA-30
AREA: 109,945.3 SF / 2.52 AC

N/F
TONY R. & GAYLE M. MANGUM
PIN# 0662-74-0826
DB 2459 / PG 111
ZONING: RA-30

S14°19'29"W 247.98'

S14°19'29"W 172.03'

N14°20'28"E 212.15'

WOODS

25' FRONT SETBACK

15' PERIMETER BUFFER (TYPE A)

N85°14'04"W 253.57'

IRF 5 0.90BG

IRF 5 0.3AG

N/F
DANNY HONEYCUTT
PIN# 0662-63-4673
DB 1137 / PG 87
ZONING: RA-30

N/F
W. NELSON & SYLVIA B. AUSTIN
PIN# 0662-73-4170
DB 698 / PG 648
ZONING: RA-30

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NOT FOR CONSTRUCTION

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NORTH CAROLINA 811 www.nc811.org 1-800-632-4949

North Carolina One-Call Center, Inc.

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No.	DATE	DESCRIPTION	REV. BY
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 24438 BLAIR P. PITTMAN
05/27/2026

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Firm Lic. # P-0191

COORDINATOR: BLAIR PITTMAN

DRAWN BY: S. VELAGAPUDI

CHK BY: BPP

ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

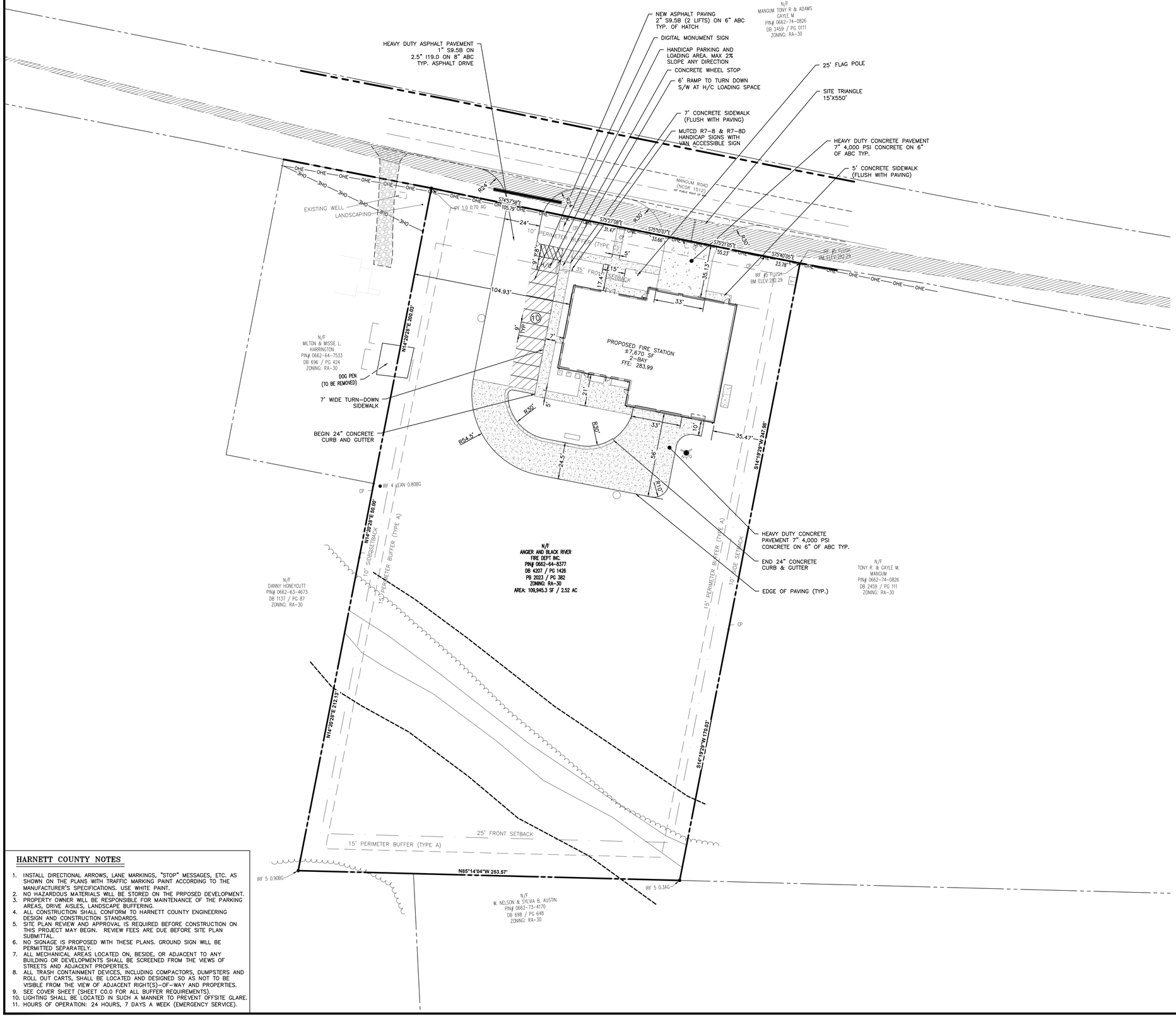
24 X 36
1" = 30'

22 MAY 2026

25-006

EXISTING CONDITIONS

C0.1



GENERAL NOTES: STAKING PLAN

1. BASE INFORMATION IS FROM A SURVEY MAP ENTITLED "BOUNDARY/EXISTING CONDITIONS ANGIER & BLACK RIVER FIRE STA. MANGUM RD." DATED 08/15/2025 BY MAERSTAN, PLLC LAND SURVEYORS OF 2411 US 64 BUSINESS WEST, PITTSBORO, NC 27312, PH: 919-545-7001.
2. NO FREE STANDING SIGNS ARE PROPOSED AS PART OF THE DESIGN. IF NEW FREE STANDING SIGNS ARE REQUIRED IN THE FUTURE, IT WILL BE PERMITTED SEPARATELY.
3. ALL DENUDED AREAS NOT COVERED WITH IMPERVIOUS SURFACE OR NOTED LANDSCAPING TO BE PERMANENTLY SEEDED.
4. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR CONSTRUCTION SHOWN ON THESE PLANS.
5. ALL DIMENSIONS AND STAKING POINT LOCATIONS ARE TO BACK OF CURB/EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ANY WORK SHOWN ON THESE PLANS THAT IS FOUND TO BE IN CONFLICT WITH LOCAL ZONING SETBACK REQUIREMENTS SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR ADJUSTMENT.
7. LOCATIONS FOR EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL CALL UTILITY LOCATOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES.
8. CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE SAFETY MEASURES, ACTIVITIES, AND BARRICADES FOR THE PROTECTION OF ALL PERSONS ON OR ABOUT THE LOCATION OF THE SITE.
9. CONTRACTOR SHALL INSTALL SIGNS, AND CONSTRUCT NECESSARY RAMPS, AS PER THE NORTH CAROLINA STATE BUILDING CODE, FOR ALL HANDICAP PARKING SPACES NOTED ON THE PLANS.
10. FOR ALL HANDICAPPED PARKING SPACES, AS PER ADA CODE: 1)REGARDLESS OF AGE, ALL ACCESSIBLE SPACES SHALL BE IDENTIFIED BY ABOVE GROUND SIGNS ONLY; 2) NEW SPACES SHALL NOT USE GROUND-PAINTED SYMBOLS; 3) ACCESSIBLE SPACES ARE REQUIRED TO BE STRIPED OFF ONLY. 4) STRIPING IS WHITE ON DARK PAVEMENT; BLACK ON LIGHT PAVEMENT.
11. INSTALL DIRECTIONAL ARROWS, LANE MARKINGS, "STOP" MESSAGES, ETC. AS SHOWN ON THE PLANS WITH TRAFFIC MARKING PAINT ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. USE WHITE PAINT.

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PARKING CALCULATIONS

EMERGENCY SERVICES- ±9,000 SF (1 SPACE PER 350 SF EXCLUDING APPARATUS BAY)	10
PROPOSED PARKING:	10
HANDICAP SPACES REQUIRED/PROVIDED:	1/1

LINE TYPE LEGEND

- PROPERTY LINE – LINE SURVEYED
- RIGHT-OF-WAY
- ADJOINING LINE – LINE NOT SURVEYED
- EASEMENT
- STREAM BUFFER

SYMBOL/LEGEND

- EX. LIGHT POLE
- EX. OVERHEAD FLOODLIGHT
- EX. U/G SPRINKLER HEAD (W)
- NEW SAN. SEWER CLEANOUT
- WATER METER
- SANITARY SEWER MANHOLE (S)
- WATER VALVE
- CONSTRUCTION LIMIT
- SILT PROTECTION FENCE
- EX. U/G ELECTRIC LINE
- EX. OVERHEAD UTILITY LINE
- EX. STORM SEWER
- EX. WATER LINE
- NEW WATER LINE
- NEW STORM SEWER

HARNETT COUNTY NOTES

1. INSTALL DIRECTIONAL ARROWS, LANE MARKINGS, "STOP" MESSAGES, ETC. AS SHOWN ON THE PLANS WITH TRAFFIC MARKING PAINT ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. USE WHITE PAINT.
2. NO HAZARDOUS MATERIALS WILL BE STORED ON THE PRPOSED DEVELOPMENT.
3. PROPERTY OWNER WILL BE RESPONSIBLE FOR MAINTENANCE OF THE PARKING AREAS, DRIVE AISLES, LANDSCAPE BUFFERING.
4. ALL CONSTRUCTION SHALL CONFORM TO HARNETT COUNTY ENGINEERING DESIGN AND CONSTRUCTION STANDARDS.
5. SITE PLAN REVIEW AND APPROVAL IS REQUIRED BEFORE CONSTRUCTION ON THIS PROJECT MAY BEGIN. REVIEW FEES ARE DUE BEFORE SITE PLAN SUBMITTAL.
6. NO SIGNAGE IS PROPOSED WITH THESE PLANS. GROUND SIGN WILL BE PERMITTED SEPARATELY.
7. ALL MECHANICAL AREAS LOCATED ON, BESIDE, OR ADJACENT TO ANY BUILDING OR DEVELOPMENTS SHALL BE SCREENED FROM THE VIEWS OF STREETS AND ADJACENT PROPERTIES.
8. ALL TRASH CONTAINMENT DEVICES, INCLUDING COMPACTORS, DUMPSTERS AND ROLL OUT CARTS, SHALL BE LOCATED AND DESIGNED SO AS NOT TO BE VISIBLE FROM THE VIEW OF ADJACENT RIGHT(S)-OF-WAY AND PROPERTIES.
9. SEE COVER SHEET (SHEET C0.0 FOR ALL BUFFER REQUIREMENTS).
10. LIGHTING SHALL BE LOCATED IN SUCH A MANNER TO PREVENT OFFSITE GLARE.
11. HOURS OF OPERATION: 24 HOURS, 7 DAYS A WEEK (EMERGENCY SERVICE).

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NOT FOR CONSTRUCTION

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1-800-632-4949
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REVISIONS

No.	DATE	DESCRIPTION	REV. BY
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3			
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NORTH CAROLINA PROFESSIONAL SEAL 24438 ENGINEER BLAIR P. PITTMAN
05/27/2026

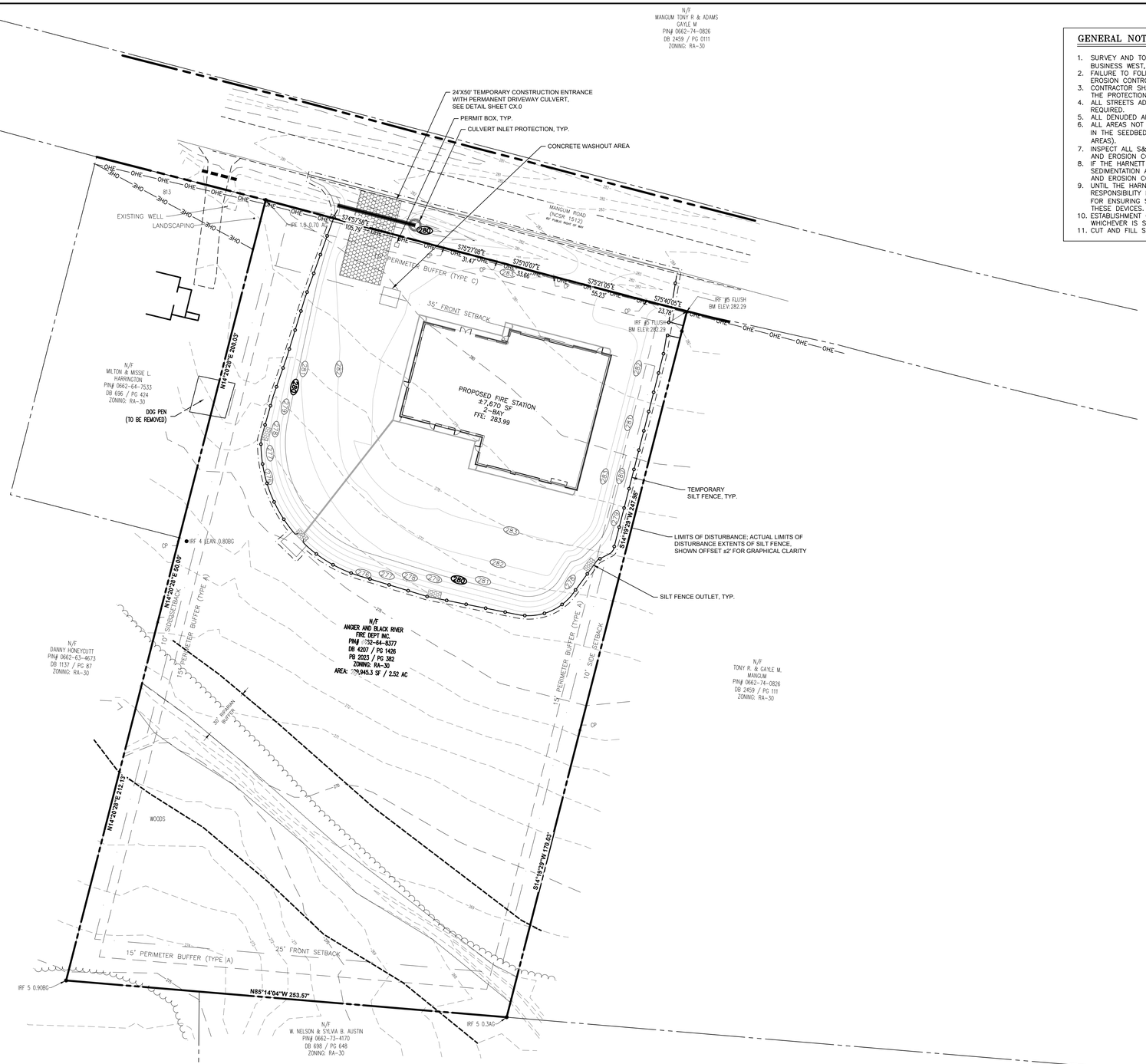
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DRAWN BY: S. VELAGAPUDI
CHK BY: BPP

ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

24 X 36
1" = 30'
22 MAY 2026
25-006
STAKING PLAN

C1.0



GENERAL NOTES: EROSION CONTROL PLAN

1. SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY MAERSTAN, PLLC LAND SURVEYORS OF 2411 US BUSINESS WEST, PITTSBORO, NC 27312. PHONE: (919) 545-7001. DATED: 08/18/2025.
2. FAILURE TO FOLLOW THESE APPROVED PLANS AND ORDINANCES OF THE HARNETT COUNTY SEDIMENT AND EROSION CONTROL MAY RESULT IN PENALTIES AND FINES.
3. CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE SAFETY MEASURES, ACTIVITIES, AND BARRICADES FOR THE PROTECTION OF ALL PERSONS ON OR ABOUT THE LOCATION OF THE SITE.
4. ALL STREETS ADJACENT TO THE PROJECT SHALL BE KEPT CLEAN AT ALL TIMES OR A WASH STATION WILL BE REQUIRED.
5. ALL DENUDED AREAS TO BE SEEDED PER ATTACHED SEEDING SCHEDULE.
6. ALL AREAS NOT COVERED WITH PAVING, GRAVEL, BUILDING OR PLANTING BEDS SHALL BE SEEDED AS SHOWN IN THE SEEDBED PREP. AND SEEDING SCHEDULE NOTES. (SEE THE LANDSCAPE PLAN FOR SPECIFIC LAWN AREAS).
7. INSPECT ALL S&E MEASURES AT LEAST WEEKLY AND AFTER EACH 1" RAINFALL REPAIR ANY SEDIMENTATION AND EROSION CONTROL MEASURE THAT HAS FAILED.
8. IF THE HARNETT COUNTY S&E DEPARTMENT DETERMINE EXCESSIVE SEDIMENT IS LEAVING THE SITE, ADDITIONAL SEDIMENTATION AND EROSION CONTROL MEASURES MAY BE REQUIRED, INCLUDING A REVISED SEDIMENTATION AND EROSION CONTROL PLAN.
9. UNTIL THE HARNETT COUNTY HAS ACCEPTED THE COMPLETED CONSTRUCTION, THE CONTRACTOR RETAINS THE RESPONSIBILITY FOR MAINTAINING THE S&E DEVICES. ADDITIONALLY, THE CONTRACTOR RETAINS RESPONSIBILITY FOR ENSURING S&E INSPECTIONS ARE COMPLETED AT LEAST WEEKLY AND AFTER EACH 1" RAINFALL FOR THESE DEVICES.
10. ESTABLISHMENT OF PERMANENT GROUND COVER IS REQUIRED IN 15 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER.
11. CUT AND FILL SLOPES TO BE STABILIZED WITHIN 15 DAYS OF ANY PHASE OF GRADING.

CONSTRUCTION SEQUENCE

1. OBTAIN SITE CONSTRUCTION APPROVAL.
2. INSTALL DRIVEWAY CULVERT, CONSTRUCTION ENTRANCE & SILT FENCING WITH OUTLETS AS SHOWN, PRIOR TO GRADING SITE. CLEAR AND GRUB ONLY AS NECESSARY TO INSTALL EROSION CONTROL DEVICES.
3. BEGIN CLEARING AND GRADING AND SITE GRADING.
4. MAINTAIN DEVICES AS NEEDED.
5. ONCE SITE CONSTRUCTION IS COMPLETED AND DISTURBED AREA IS STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL AND SEED ANY REMAINING BARE AREAS.

DISTURBED AREA: 0.98 ACRES

SEEDING SCHEDULE (TEMPORARY SEEDING)

DATE	TYPE	PLANTING RATE
JAN 1 – MAY 1	RYE GRAIN (SECALE CEREALE)	120 LBS/ACRE
MAY 1 – AUG 15	GERMAN MILLET (SETARIA ITALICA), OR	45 LBS/ACRE
	BROWNTOP MILLET (UROCHLOA RAMOSA), OR	45 LBS/ACRE
	WEEPING LOVEGRASS	5 LBS/ACRE
AUG 15 – DEC 30	RYE GRAIN (SECALE CEREALE)	120 LBS/ACRE
AUG 15 – NOV 30	ANNUAL RYE GRASS	40 LBS/ACRE

NOTES:
1. FOR OPTIMUM RESULTS, A SOIL ANALYSIS SHOULD BE PERFORMED TO DETERMINE NUTRIENT AND LIME NEEDS FOR THE SITE.
2. CONSULT CONSERVATION OR ENVIRONMENTAL ENGINEER FOR A SOIL ANALYSIS AND FOR RECOMMENDATIONS AND INFORMATION CONCERNING SEEDING, FERTILIZING, AND ALTERNATIVES FOR VEGETATION.
3. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.
4. TEMPORARY ANNUAL SEEDING SHALL BE BASED ON THE SEASON. DURING OVERLAPPING SEASONS, A MIXTURE OF TEMPORARY SPECIES IS ACCEPTABLE PROVIDED APPLICATION RATES ARE NOT IN EXCESS OF THE TOTAL RECOMMENDED RATE PER ACRE.
5. APPLY SOIL NUTRIENTS AND AMENDMENTS PER SOIL ANALYSIS, OTHERWISE 700–1000 LBS OF 10–10–10 FERTILIZER AND UP TO 2 TONS OF DOLOMITIC LIME PER ACRE.
6. MULCH AFTER SEEDING WITH 1.5 TONS OF GRAIN STRAW PER ACRE AND SECURE IN PLACE WITH CRIMPING, TACKING AND/OR NETTING TO PROTECT SEEDBED AND ENCOURAGE GROWTH.
7. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING, AS OTHER ESTABLISHMENTS MAY BE SHADED OUT.
8. IF RECENT TILLAGE OPERATIONS HAVE RESULTED IN A LOOSE SURFACE, ADDITIONAL ROUGHENING MAY NOT BE REQUIRED, EXCEPT TO BREAK UP LARGE CLODS. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING, OR OTHER SUITABLE METHODS. GROOVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING

APPROVED FOR PERMITTING
NOT FOR CONSTRUCTION

EROSION CONTROL LEGEND

TEMPORARY GRAVEL CONSTR. ENTRANCE
TEMPORARY SILT FENCE
LIMITS OF DISTURBANCE
TEMPORARY SILT FENCE OUTLET
TEMPORARY CULVERT INLET PROTECTION

0 15 30 60 90

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NORTH CAROLINA PROFESSIONAL SEAL 24438 ENGINEER BLAIR P. PITTMAN
05/27/2026

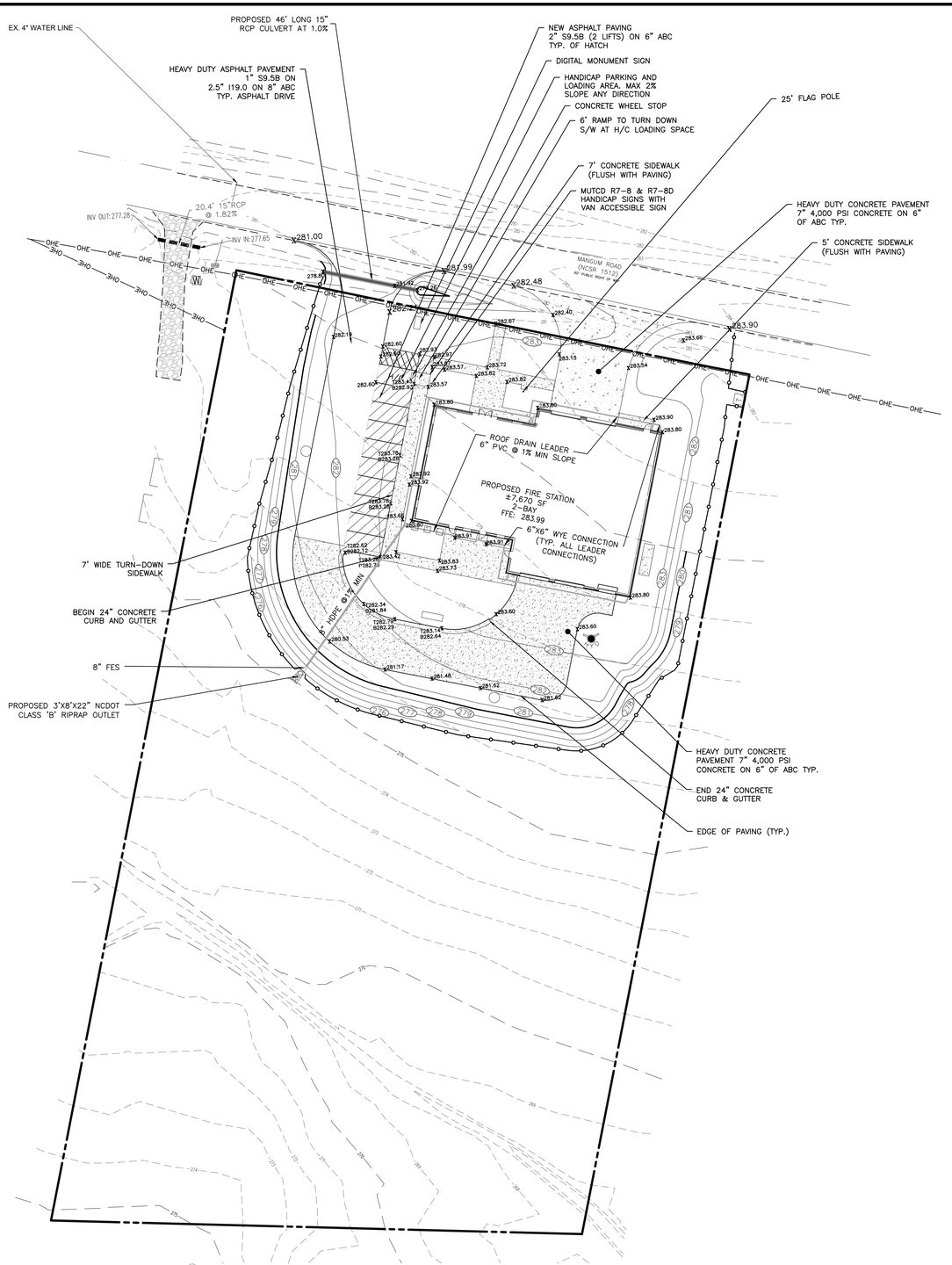
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Firm Lic # C-0181

COORDINATOR: BLAIR PITTMAN
DRAWN BY: S. VELAGAPUDI
CHK BY: BPP

ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

24 X 36
1"= 30'
22 MAY 2026
25-006
EROSION CONTROL PLAN

C2.0



GENERAL NOTES: GRADING PLAN

1. BASE INFORMATION IS FROM A SURVEY MAP ENTITLED " BOUNDARY/EXISTING CONDITIONS ANGIER & BLACK RIVER FIRE STA. MANGUM RD." DATED 08/15/2025 BY MAERSTAN, PLLC LAND SURVEYORS OF 2411 US 64 BUSINESS WEST, PITTSBORO, NC 27312, PH: 919-545-7001.
2. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR CONSTRUCTION SHOWN ON THESE PLANS.
3. CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE SAFETY MEASURES, ACTIVITIES, AND BARRICADES FOR THE PROTECTION OF ALL PERSONS ON OR ABOUT THE LOCATION OF THE SITE.
4. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
5. GRADING BEYOND THE DENUDED LIMITS INDICATED ON CONSTRUCTION DOCUMENTS IS A VIOLATION AND IS SUBJECT TO A FINE.
6. ALL EXISTING UTILITIES AND STORM STRUCTURES ARE SHOWN PER SURVEY DATA AND ARE APPROXIMATE. CONTRACTOR IS FULLY RESPONSIBLE TO FIELD VERIFY ACTUAL LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION AND SHALL CALL UTILITY LOCATOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES.
7. TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY LAND DISTURBANCE AND SHALL INCLUDE WARNING SIGNS POSTED IN BOTH ENGLISH AND SPANISH, AS FOLLOWS: "NO TRESPASSING/TREE PROTECTION AREA/PROHIBIDO ENTRAR/ZONA PROTECTORA PARA LOS ARBOLES."
8. ALL SIDEWALKS, STOOPS, TERRACES AND OTHER PAVED AREAS SHALL SLOPE AWAY FROM BUILDING(S) AT 2%(MIN).
9. THE CONTRACTOR SHALL MAINTAIN EACH DITCH IN AN UNOBSTRUCTED CONDITION AND SHALL REMOVE FROM THESE AREAS ALL DEBRIS, LOGS, TIMBER, TRASH, JUNK AND OTHER ACCUMULATIONS.
10. TOPSOIL STRIPPED FROM THE SITE IS TO BE STOCKPILED AND USED FOR BACKFILLING ALL LANDSCAPE ISLANDS, BEDS AND LAWN AREAS. TOPSOIL IS TO BE SPREAD TO A DEPTH OF AT LEAST 6" AS SOIL IS AVAILABLE.
11. ALL AREAS NOT COVERED WITH PAVING, GRAVEL, BUILDING OR PLANTING BEDS SHALL BE SEEDED AS SHOWN IN THE SEEDBED PREP. AND SEEDING SCHEDULE NOTES. (SEE THE LANDSCAPE PLAN FOR SPECIFIC LAWN AREAS)

LINE TYPE LEGEND

- PROPERTY LINE – LINE SURVEYED
- RIGHT-OF-WAY
- ADJOINING LINE – LINE NOT SURVEYED
- EASEMENT
- STREAM BUFFER

SYMBOL/LEGEND

- EX. LIGHT POLE
- EX. OVERHEAD FLOODLIGHT
- EX. U/G SPRINKLER HEAD (W)
- NEW SAN. SEWER CLEANOUT
- WATER METER
- SANITARY SEWER MANHOLE (S)
- WATER VALVE
- CONSTRUCTION LIMIT
- SILT PROTECTION FENCE
- EX. U/G ELECTRIC LINE
- EX. OVERHEAD UTILITY LINE
- EX. STORM SEWER
- EX. WATER LINE
- NEW WATER LINE
- NEW STORM SEWER

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NOT FOR CONSTRUCTION

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ANGIER AND BLACK RIVER FIRE STATION
STORM DRAINAGE CALCULATIONS

n = 0.012 (RCP) n = 0.010 (HDPE) STORM FREQUENCY - 10 YR
RCP - REINFORCED CONCRETE PIPE
HDPE - HIGH DENSITY POLYETHELENE SMOOTH CORE, DOUBLE WALLED PIPE
AI - AREA INLET DI - DROP INLET CI - CURB INLET
MH - MANHOLE FES - FLARED END SECTION JB - JUNCTION BOX

STRUCTURE			INCREMENTAL INLET AREA		DESIGN FLOW - 10YR				STORM SEWER DESIGN						STORM PIPE INVERTS		GRATE ELEV.	HEADWATER		COMMENTS
FROM	TO	TYPE	'C'	AREA	AVG. 'C'	AREA	I	Q (CFS)	LENGTH (ft.)	DIA. (in.)	SLOPE (%)	DEPTH OF FLOW (ft)	VELOCITY (F/S)	CAPACITY FULL (CFS)	INV. IN	INV. OUT	(FT)	REQ'D	AVAIL.	
2	-	DI	0.65	0.17	-	-	-	-	-	-	-	-	-	-	-	-	281.92	0.70	2.16	
2	1	RCP	-	-	0.65	0.17	7.22	0.81	46	15	1.0	0.26	4.34	8.42	279.26	278.80	-	-	-	-

ROOF DRAIN (SEE PLAN FOR SIZES, LOCATIONS AND SLOPE)
6" HDPE ROOF DRAIN - APPROX. 310 LF
8" HDPE ROOF DRAIN - APPROX. 85 LF

NOTE:
HDPE PIPE SHALL ADHERE TO THE SPECIFICATIONS OF ASTM D2321 AND BE CERTIFIED BY AN ENGINEER ACCORDING TO HARNETT COUNTY STANDARDS

0 15 30 60 90

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NORTH CAROLINA PROFESSIONAL SEAL 24438 ENGINEER BLAIR P. PITTMAN
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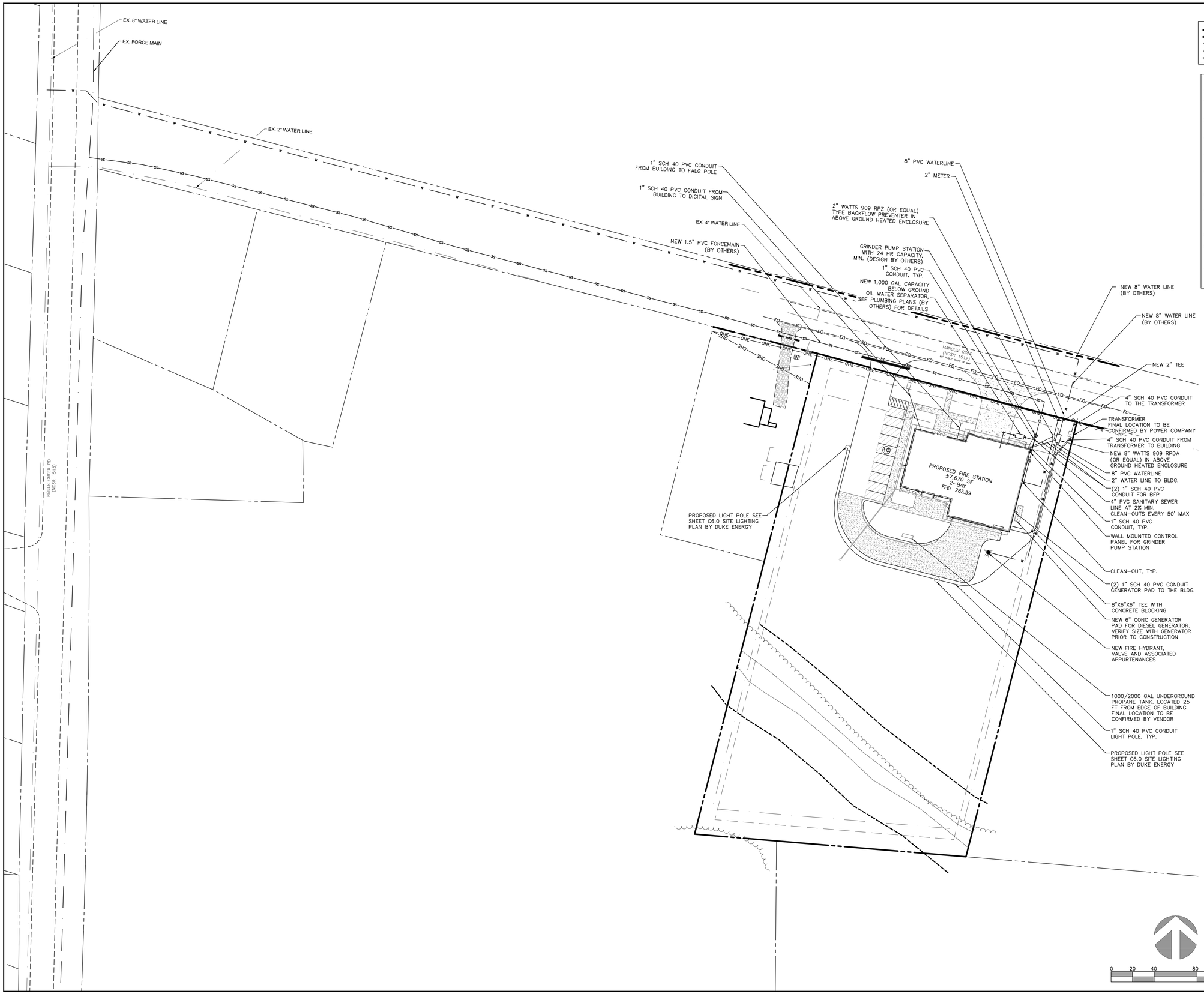
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ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

24 X 36
1" = 30'
22 MAY 2026
25-006
GRADING PLAN

C3.0



LINE TYPE LEGEND

- PROPERTY LINE – LINE SURVEYED
- RIGHT-OF-WAY
- ADJOINING LINE – LINE NOT SURVEYED
- EASEMENT
- STREAM BUFFER

GENERAL NOTES: UTILITY PLAN

1. SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY SACKS SURVEY AND MAPPING, P.C. OF 3308-B EDGEFIELD ROAD, GREENSBORO, NC 27409; PHONE: (336) 931-0566; DATED: 12-12-2023.
2. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HARNETT COUNTY AND THE STATE OF NORTH CAROLINA STANDARDS AND SPECIFICATIONS.
3. CONTRACTOR SHALL HAVE NORTH CAROLINA ONE CALL (1-800-632-4949) LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
4. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
5. CONTRACTOR SHALL COORDINATE THE LOCATION OF THE ELECTRIC, WATER, GAS, AND TELEPHONE SERVICE WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL PROVIDE CONDUITS AS REQUIRED FOR THESE UTILITIES UNDER PAVED AREAS.
6. CONTRACTOR SHALL COORDINATE THE LOCATION OF THE CONDUITS NECESSARY FOR THE IRRIGATION SYSTEM, SITE LIGHTING, AND SIGNAGE PRIOR TO BEGINNING CONSTRUCTION.
7. THIS PLAN IS DIAGRAMMATIC AND REPRESENTS THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED. THE CONTRACTOR SHALL COORDINATE FOR THE ACTUAL AND PROPOSED LOCATION OF UTILITIES TO AVOID CONFLICTS.
8. REFER TO SHEET. NO. C7.0 THROUGH C7.1 FOR SITE CONSTRUCTION DETAILS.
9. CONTRACTOR SHALL COORDINATE THE LOCATION OF THE WATER AND SEWER SERVICE TO THE BUILDING WITH THE BUILDING PLUMBING CONTRACTOR AND THE BUILDING PLANS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
10. ALL CONSTRUCTION MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE HARNETT COUNTY ENGINEERING SPECIFICATIONS AND STANDARD DRAWINGS.

SYMBOL/LEGEND

- EX. LIGHT POLE
- EX. OVERHEAD FLOODLIGHT
- EX. U/G SPRINKLER HEAD (W)
- NEW SAN. SEWER CLEANOUT
- WATER METER
- SANITARY SEWER MANHOLE (S)
- WATER VALVE
- CONSTRUCTION LIMIT
- SILT PROTECTION FENCE
- EX. U/G ELECTRIC LINE
- EX. OVERHEAD UTILITY LINE
- EX. STORM SEWER
- EX. WATER LINE
- NEW WATER LINE
- NEW STORM SEWER

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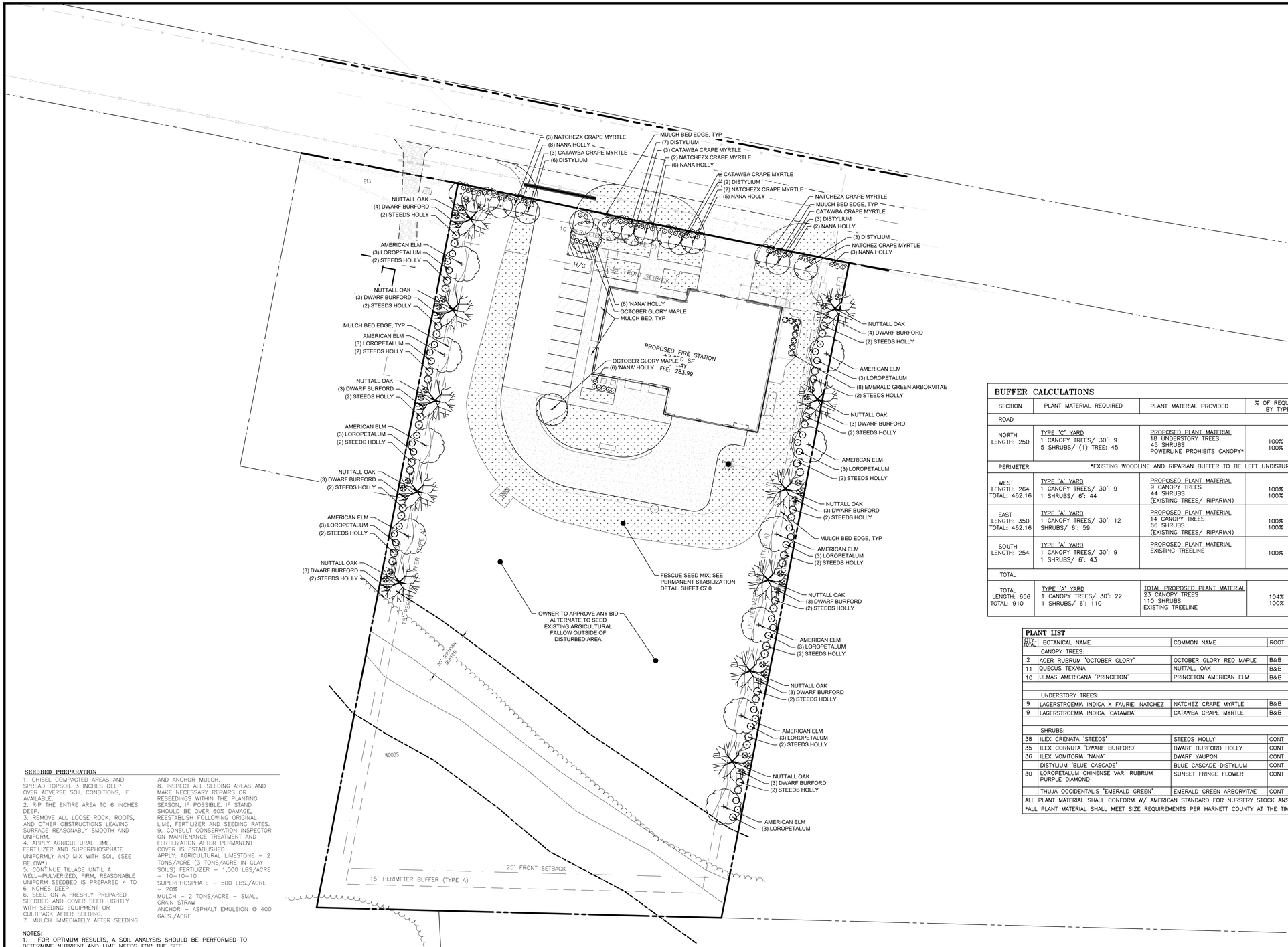
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DRAWN BY: S. VELAGAPUDI
CHK BY: BPP

ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

24 X 36
1"=40'
22 MAY 2026
25-006
UTILITY PLAN
C4.0



SEEDBED PREPARATION

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO 6 INCHES DEEP.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLE UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDING AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGE, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS) FERTILIZER – 1,000 LBS/ACRE – 10-10-10
SUPERHOSPHATE – 500 LBS./ACRE – 20%
MULCH – 2 TONS/ACRE – SMALL GRAIN STRAW
ANCHOR – ASPHALT EMULSION @ 400 GALS./ACRE

NOTES:
1. FOR OPTIMUM RESULTS, A SOIL ANALYSIS SHOULD BE PERFORMED TO DETERMINE NUTRIENT AND LIME NEEDS FOR THE SITE.
2. CONSULT CONSERVATION OR ENVIRONMENTAL ENGINEER FOR A SOIL ANALYSIS AND FOR RECOMMENDATIONS AND INFORMATION CONCERNING SEEDING, FERTILIZING, AND ALTERNATIVES FOR VEGETATION.
3. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.
4. TEMPORARY ANNUAL SEEDING SHALL BE BASED ON THE SEASON. DURING OVERLAPPING SEASONS, A MIXTURE OF TEMPORARY SPECIES IS ACCEPTABLE PROVIDED APPLICATION RATES ARE NOT IN EXCESS OF THE TOTAL RECOMMENDED RATE PER ACRE.
5. APPLY SOIL NUTRIENTS AND AMENDMENTS PER SOIL ANALYSIS, OTHERWISE 750-1000 LBS OF 10-10-10 FERTILIZER AND UP TO 2 TONS OF DOLOMITIC LIME PER ACRE.
6. MULCH AFTER SEEDING WITH 1.5 TONS OF GRAIN STRAW PER ACRE AND SECURE IN PLACE WITH CRIMPING, TACKING AND/OR NETTING TO PROTECT SEEDBED AND ENCOURAGE GROWTH.
7. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING, AS OTHER ESTABLISHMENTS MAY BE SHADED OUT.

LANDSCAPE NOTES

1. SURVEY AND TOPOGRAPHIC INFORMATION BY MAERSTAN, PLLC, 2411 US 64 BUSINESS WEST, PITTSBORO, NC 27312. (919) 545-7001. OFF-SITE INFORMATION FROM HARNETT COUNTY GIS.
2. THIS PLAN IS FOR PLANTING PURPOSES ONLY. FOR INFORMATION RELATING TO GRADING, REFER TO GRADING PLAN.
3. VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
4. ALL PLANTS AND PLANTING PROCEDURES SHALL CONFORM TO ACCEPTED STANDARDS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN LATEST EDITION.
5. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.
6. ALL TREES AND SHRUBS SHALL BE FULL-WELL BRANCHED PLANTS WHICH ARE CHARACTERISTIC OF THE SPECIES.
7. ALL GRASS IS TO BE BERMUDA GRASS, OR BETTER QUALITY.
8. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
9. REMOVE ALL STRING AND WIRE FROM BASE OF ALL PLANT MATERIAL.
10. MULCH ALL BEDS WITH 3" OF CLEAN PINE NEEDLES, UNLESS OTHERWISE NOTED.
11. ALL PLANT BED AREAS ARE TO RECEIVE A MINIMUM OF 6" OF APPROVED TOPSOIL.
12. ALL AREAS NOT COVERED WITH PAVING, GRAVEL, BUILDINGS OR PLANTING BEDS SHALL BE SEEDED AS SHOWN IN THE SEEDBED PREP. AND SEEDING SCHEDULE.
13. LAWN AREAS SHALL BE RAKED TO REMOVE ROCKS, STICKS, ROOTS AND OTHER TRASH AND DEBRIS AND SHALL BE SMOOTH FOR EASE OF MOWING.
14. ALL SEED BED (LAWN) AREAS TO FOLLOW "SEEDBED PREPARATION" NOTES ON THIS SHEET.
15. ALL PLANTINGS OF TREES & SHRUBS SHALL BE A MINIMUM OF 2' BEHIND ALL CURBS. WHERE NO CURB AND GUTTER IS PROPOSED BORDERING PARKING SPACES, WHEEL STOPS MUST BE PROVIDED TO PREVENT DAMAGE TO PLANT MATERIAL.
16. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE LOWERING OF EXISTING GRADE AROUND A TREE OR STRIPPING OF TOPSOIL, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA.
17. ROOT ZONE PROTECTION AREA: EQUALS ONE FOOT OF RADIUS FOR EVERY INCH OF DIAMETER OF EXISTING TREES, OR SIX FOOT RADIUS, WHICHEVER IS GREATER. NO DISTURBANCE ALLOWED WITHIN THIS AREA. AREA MUST BE PROTECTED WITH BOTH TREE PROTECTION FENCING AND WARNING SIGNS.
18. LANDSCAPING/C.O. STANDARDS NOTE: ALL LANDSCAPING MUST BE IN PLACE PRIOR TO REQUEST FOR A CERTIFICATE OF COMPLIANCE.
19. ALL CONSTRUCTION TO BE PERFORMED TO THE HARNETT COUNTY ENGINEERING DESIGN AND CONSTRUCTION STANDARDS.

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LINE TYPE LEGEND

- PROPERTY LINE – LINE SURVEYED
- RIGHT-OF-WAY
- ADJOINING LINE – LINE NOT SURVEYED
- EASEMENT
- STREAM BUFFER

BUFFER CALCULATIONS

SECTION	PLANT MATERIAL REQUIRED	PLANT MATERIAL PROVIDED	% OF REQUIRED BY TYPE	% OF REQUIREMENT PROVIDED
ROAD				
NORTH LENGTH: 250	TYPE 'C' YARD 1 CANOPY TREES/ 30': 9 5 SHRUBS/ (1) TREE: 45	PROPOSED PLANT MATERIAL 18 UNDERSTORY TREES 45 SHRUBS POWERLINE PROHIBITS CANOPY*	100% 100%	100% OF TYPE C BUFFER
PERIMETER	*EXISTING WOODLINE AND RIPARIAN BUFFER TO BE LEFT UNDISTURBED*			
WEST LENGTH: 264 TOTAL: 462.16	TYPE 'A' YARD 1 CANOPY TREES/ 30': 9 1 SHRUBS/ 6': 44	PROPOSED PLANT MATERIAL 9 CANOPY TREES 44 SHRUBS (EXISTING TREES/ RIPARIAN)	100% 100%	100% OF TYPE A BUFFER
EAST LENGTH: 350 TOTAL: 462.16	TYPE 'A' YARD 1 CANOPY TREES/ 30': 12 SHRUBS/ 6': 59	PROPOSED PLANT MATERIAL 14 CANOPY TREES 66 SHRUBS (EXISTING TREES/ RIPARIAN)	100% 100%	100% OF TYPE A BUFFER
SOUTH LENGTH: 254	TYPE 'A' YARD 1 CANOPY TREES/ 30': 9 1 SHRUBS/ 6': 43	PROPOSED PLANT MATERIAL EXISTING TREELINE	100%	100% OF TYPE A BUFFER
TOTAL				
TOTAL LENGTH: 656 TOTAL: 910	TYPE 'A' YARD 1 CANOPY TREES/ 30': 22 1 SHRUBS/ 6': 110	TOTAL PROPOSED PLANT MATERIAL 23 CANOPY TREES 110 SHRUBS EXISTING TREELINE	104% 100%	100% OF TYPE A BUFFER

PLANT LIST

QTY TOTAL	BOTANICAL NAME	COMMON NAME	ROOT	CAL/HT.*	COMMENTS
	CANOPY TREES:				
2	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	B&B	2.0" CAL.	28%
11	QUECUS TEXANA	NUTTALL OAK	B&B	2.0" CAL.	25%
10	ULMAS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	B&B	2.0" CAL.	25%
	UNDERSTORY TREES:				
9	LAGERSTROEMIA INDICA X FAURIEI NATCHEZ	NATCHEZ CRAPE MYRTLE	B&B	6' TALL MIN.	SINGLE STEM
9	LAGERSTROEMIA INDICA 'CATAWBA'	CATAWBA CRAPE MYRTLE	B&B	6' TALL MIN.	SINGLE STEM
	SHRUBS:				
38	ILEX CRENATA 'STEEDS'	STEEDS HOLLY	CONT	#7	
35	ILEX CORNUTA 'DWARF BURFORD'	DWARF BURFORD HOLLY	CONT	#7	
36	ILEX VOMITORIA 'NANA'	DWARF YAUPON	CONT	#5	
	DISTYLIUM 'BLUE CASCADE'	BLUE CASCADE DISTYLIUM	CONT	#5	
30	LOROPETALUM CHINENSE VAR. RUBRUM PURPLE DIAMOND	SUNSET FRINGE FLOWER	CONT	#7	
	THUJA OCCIDENTALIS 'EMERALD GREEN'	EMERALD GREEN ARBORVITAE	CONT	MIN. 4' HEIGHT	

ALL PLANT MATERIAL SHALL CONFORM W/ AMERICAN STANDARD FOR NURSERY STOCK ANSI 260.1
*ALL PLANT MATERIAL SHALL MEET SIZE REQUIREMENTS PER HARNETT COUNTY AT THE TIME OF PLANTING

SYMBOL/LEGEND

- EX. LIGHT POLE
- EX. OVERHEAD FLOODLIGHT
- EX. U/G SPRINKLER HEAD (W)
- NEW SAN. SEWER CLEANOUT
- WATER METER
- SANITARY SEWER MANHOLE (S)
- WATER VALVE
- CONSTRUCTION LIMIT
- SILT PROTECTION FENCE
- EX. U/G ELECTRIC LINE
- EX. OVERHEAD UTILITY LINE
- EX. STORM SEWER
- EX. WATER LINE
- NEW WATER LINE
- NEW STORM SEWER

PLANT SYMBOLS

- NUTTALL OAK
- AMERICAN ELM
- NATCHEX CRAPE MYRTLE
- CATAWBA CRAPE MYRTLE
- STEEDS HOLLY
- EMERALD GREEN ARBORVITAE
- LOROPETALUM
- DWARF BURFORD
- DWARF YAUPON
- DYSTILIUM 'BLUE CASCADE'

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No.	DATE	DESCRIPTION	REV. BY

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0 15 30 60 90

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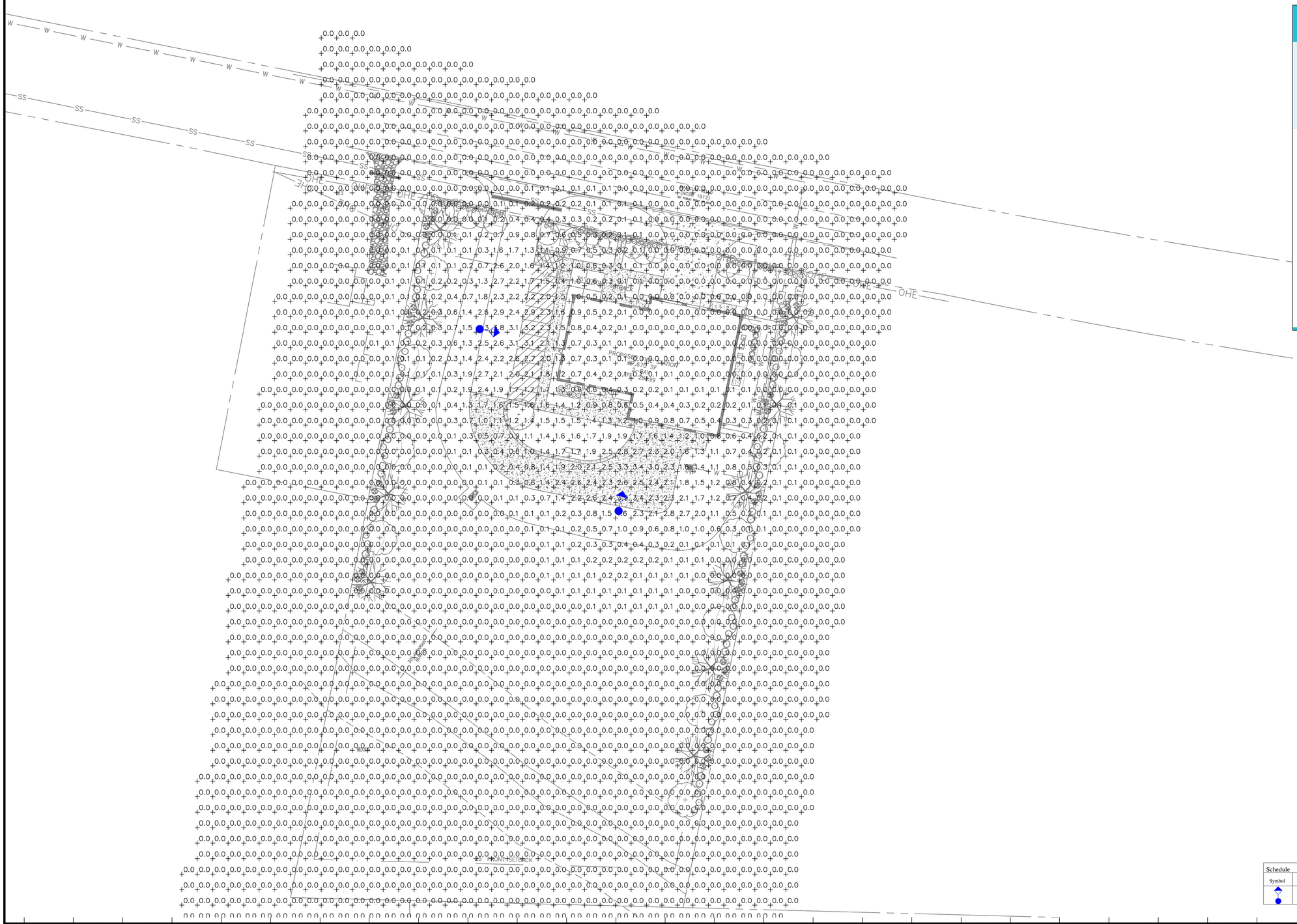
NORTH CAROLINA LANDSCAPE ARCHITECTURE 2506 MATTHEW R. MOFFITT
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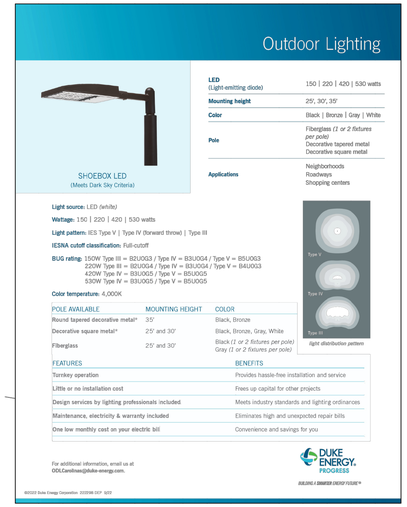
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COORDINATOR: BLAIR PITTMAN
DRAWN BY: M. MOFFITT
CHK BY: BPP

ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

24 X 36
1" = 30'
22 MAY 2026
25-006
PLANTING PLAN
C5.0

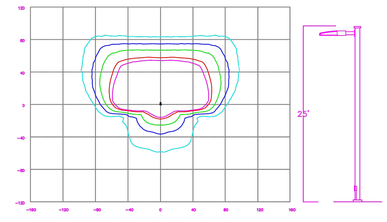




ISOFOOTCANDLE CURVES

FIXTURE: LED220W SHOEBOX
MOUNTING HEIGHT: 25 FT
LIGHT SOURCE: LED'S, 3000K, 70 CRI
LUMENS = 23064
PATTERN: TYPE IV B3-U0-G4

ASSY@_FIX-SBX-LED-220-BLK-IV-3000K-____P
POLE ASSY# LPOLE-AR-STK-25FT-BLK-SQ-____P (BLACK)
BRACKET ASSY@ LBKT-SGE-12IN-BLK-UNV-STC-____P (BLACK)



Schedule						
Symbol	Label	QTY	Description	Number Lamps	Lamp Output	LLF
	A	2	LED 220w Shoebox - Type IV - 3000K	64	361	0.85

REVISION	BY

DISTANCE CALIBRATION (INCHES)
0 0.5 1.0 2.0 3.0 4.0

LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.

DUKE ENERGY® PROGRESS

PROPRIETARY & CONFIDENTIAL

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BLACK RIVER FIRE STATION
ANGIER, NC
SITE LIGHTING ARRANGEMENT

Designed by DUKE ENERGY PROGRESS LIGHTING SOLUTIONS
Reviewed by N. Johnson Scale 1" = 30'
Date 05/04/2026 Size Drawing size "D"
Description LED SHOEBOX
Drawing No. 26-0154A Sht. 1 OF 1

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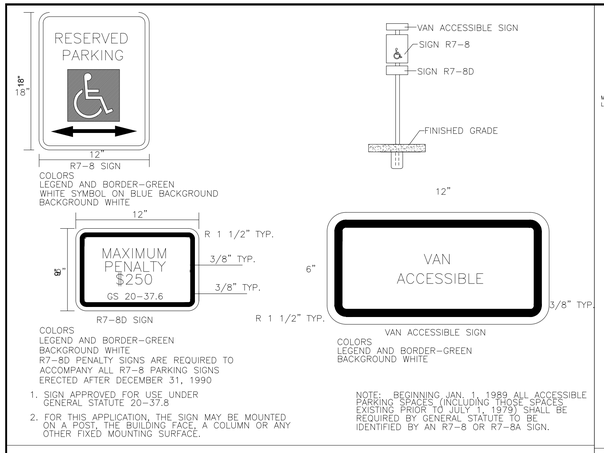
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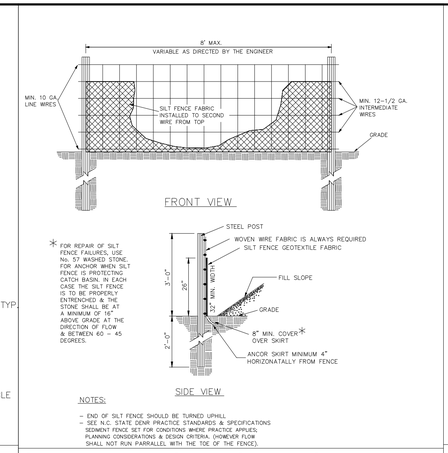
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783 MANGUM ROAD
ANGIER NC 27501

24 X 36
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22 MAY 2026
25-006
SITE LIGHTING PLAN

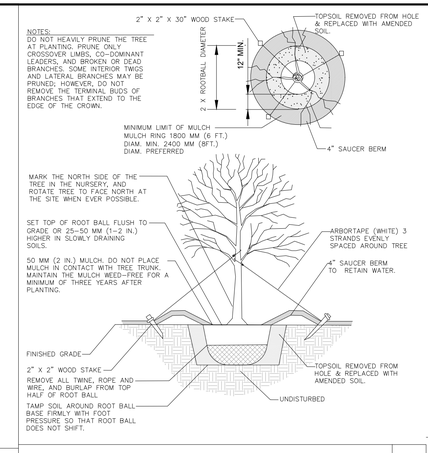
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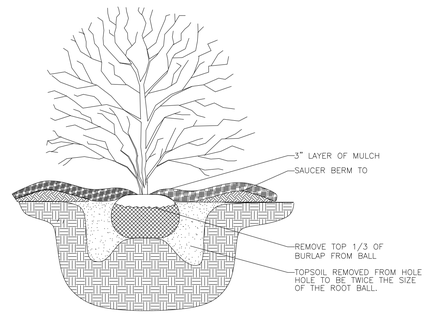
R7-8, R7-8D & VAN ACCESSIBLE SIGN N.T.S.



STANDARD TEMPORARY SILT FENCE N.T.S.



TREE PLANTING DETAIL N.T.S.



1 SHRUB BED PLANTING

EROSION CONTROL MAINTENANCE

TEMPORARY SILT FENCE MAINTENANCE
- INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AFTER EACH RAINFALL, MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
- REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

TEMPORARY CONSTRUCTION ENTRANCE MAINTENANCE
- MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2" STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS.

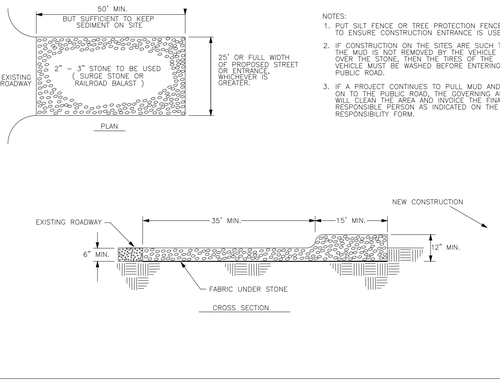
TEMPORARY ROCK CHECK DAM MAINTENANCE
- INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
- REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

PERMANENT OUTLET STABILIZATION MAINTENANCE
- INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (½" OR GREATER) RAINFALL EVENTS TO SEE IF ONLY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE

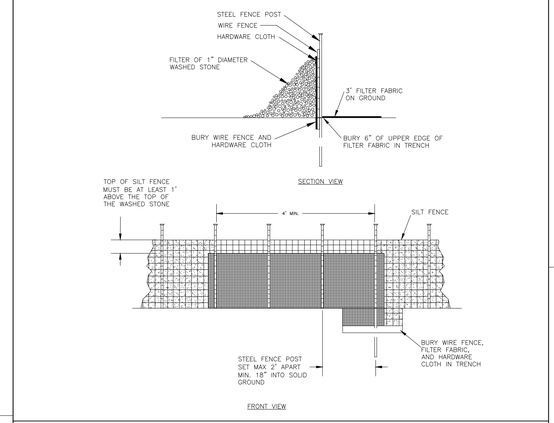
PERMANENT GRASSED SWALE MAINTENANCE
- DURING THE ESTABLISHMENT PERIOD, CHECK GRASS-LINED CHANNELS AFTER EVERY RAINFALL. AFTER GRASS IS ESTABLISHED, PERIODICALLY CHECK THE CHANNEL; CHECK IT AFTER EVERY HEAVY RAINFALL EVENT. IMMEDIATELY MAKE REPAIRS. IT IS PARTICULARLY IMPORTANT TO CHECK THE CHANNEL OUTLET AND ALL ROAD CROSSINGS FOR BANK STABILITY AND EVIDENCE OF PIPING OR SCOUR HOLES. REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIGNED CARRYING CAPACITY. KEEP THE GRASS IN A HEALTHY VIGOROUS CONDITION AT ALL TIMES.

CONTACT PERSON RESPONSIBLE FOR MAINTENANCE: BLAIR PITTMAN, PE (919) 851-1980

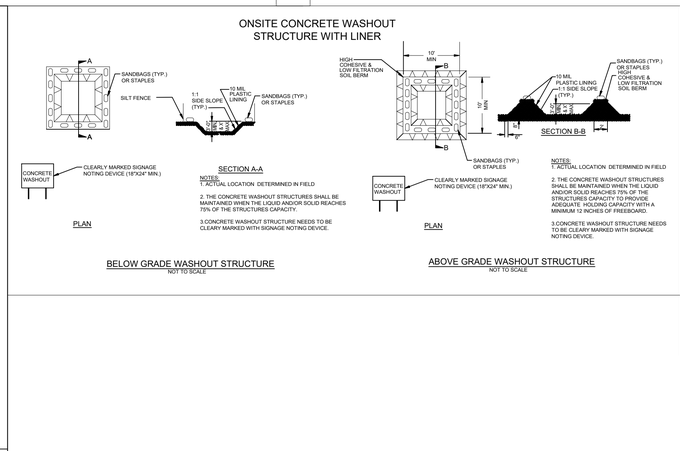
2 EROSION CONTROL MAINTENANCE

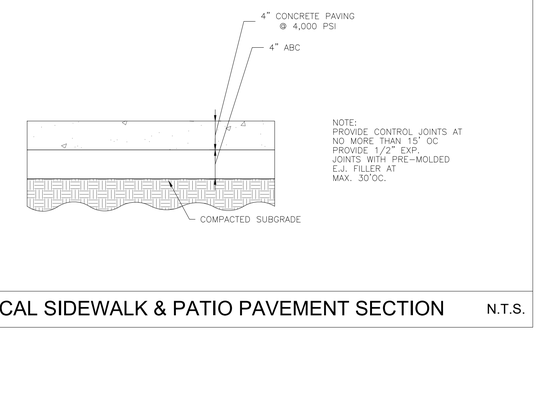


CONSTRUCTION ENTRANCE N.T.S.



SILT FENCE OUTLET N.T.S.





TYPICAL SIDEWALK & PATIO PAVEMENT SECTION N.T.S.

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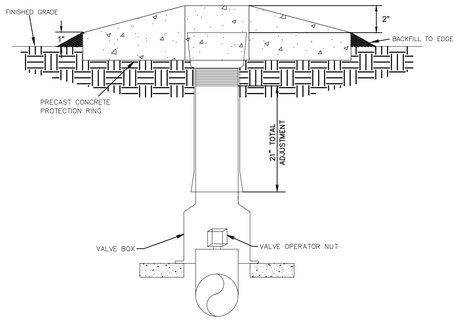
24 X 36

22 MAY 2026

25-006

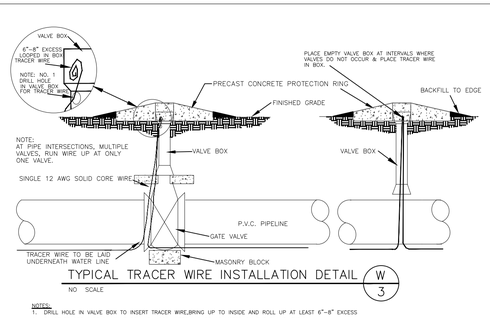
DETAILS

C7.0



TYPICAL VALVE BOX DETAIL W 2

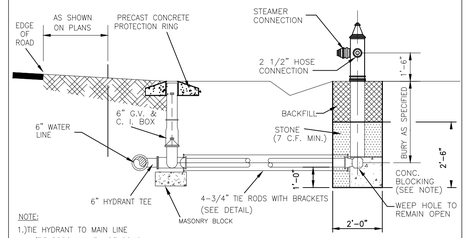
NO SCALE



TYPICAL TRACER WIRE INSTALLATION DETAIL W 3

NO SCALE

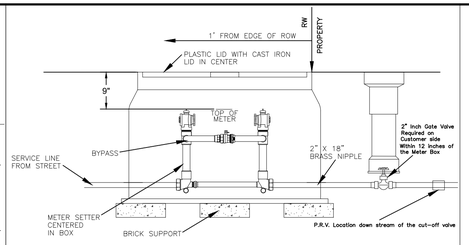
NOTES:
1. DRILL HOLE IN VALVE BOX TO INSERT TRACER WIRE,BRING UP TO INSIDE AND ROLL UP AT LEAST 6"-8" EXCESS
2. PLACE TRACER WIRE IN VALVE BOX AT 1,000' INTERVALS OR AS NOTED ON THE PLANS, TYPICAL.
3. DO NOT SPLICE WIRE WHEN BEGINNING A NEW SPOOL, INSTEAD INSTALL A VALVE BOX AND ATTACH EACH WIRE WITH A BRASS SCREW TO THE VALVE BOX.



NOTE:
1.)TIE HYDRANT TO MAIN LINE W/TIE RODS IN LIEW OF CONC. BLOCKING IN SANDY SOIL.
2.)MECHANICAL JOINTS USED WITH GRIP RINGS

TYPICAL FIRE HYDRANT INSTALLATION DETAIL W 6

NO SCALE

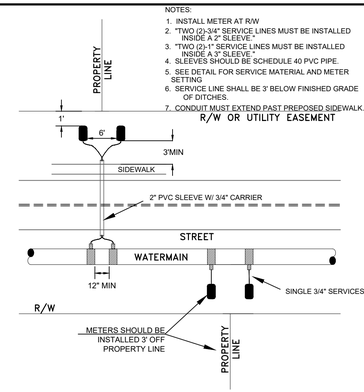


1. METER AND PRIVATE SERVICE LINE NOT IN CONTRACT UNLESS SPECIFIED
2. METER SETTER SIZE AS NOTED ON PLANS.
3. ALL BRASS FITTINGS SHALL BE COMPRESSION TYPE.
4. 17 1/4" SPREAD (FLANGE TO FLANGE).

TYPICAL 2" METER SETTER INSTALLATION DETAIL W 18

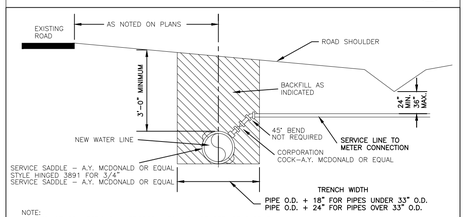
NO SCALE

NOTES:
1. INSTALL METER AT R/W
2. "TWO (2)-3/4" SERVICE LINES MUST BE INSTALLED INSIDE A 2" SLEEVE."
3. "TWO (2)-1" SERVICE LINES MUST BE INSTALLED INSIDE A 3" SLEEVE."
4. SLEEVES SHOULD BE SCHEDULE 40 PVC PIPE.
5. SEE DETAIL FOR SERVICE MATERIAL AND METER SETTING
6. SERVICE LINE SHALL BE 3' BELOW FINISHED GRADE OF DITCHES.
7. CONDUIT MUST EXTEND PAST PREPOSED SIDEWALK.



TYPICAL DOMESTIC WATER SERVICE INSTALLATION DETAIL W 12

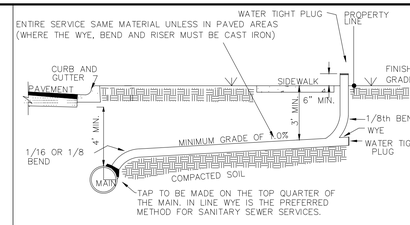
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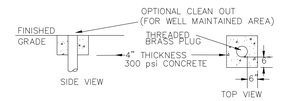


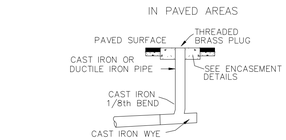
NOTE:
1. "SERVICE CONNECTION" IN PROPOSAL TO INCLUDE SERVICE SADDLE, 45° BEND, CORPORATION COCK AND ALL LABOR INVOLVED IN MAKING A COMPLETE SERVICE CONNECTION.
2. SERVICE PIPING TO BE 3/4" SDR-9 PE TUBING
3. ALL BRASS FITTINGS SHALL BE COMPRESSION TYPE

TYPICAL WATER SERVICE CONNECTION USING TAPPING SADDLE DETAIL W 13

NO SCALE



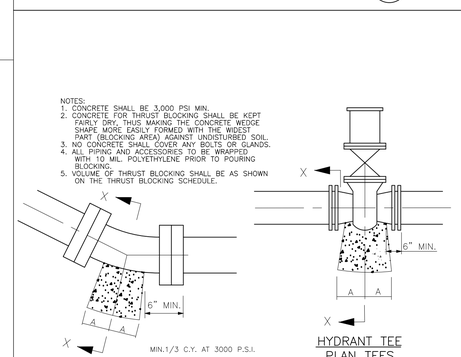




NOTES:
SAN. SEWER SERVICES WHICH ARE 14 TO 20 FEET DEEP SHALL REQUIRE BEDDING IN ACCORDANCE WITH DETAIL 7.16 FOR FLEXIBLE PIPE. SERVICES OVER 20' AND UNDER 3' DEEP SHALL REQUIRE D.I.P.

STANDARD SANITARY SEWER TAP AND SERVICE

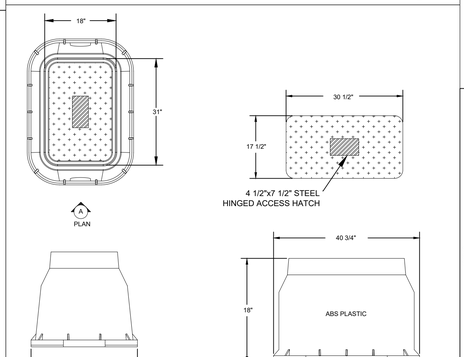
SEWER SERVICE DETAIL WITH CLEAN-OUT N.T.S.



PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	8"	9"	10"	16"
6"	10"	12"	8"	10"	8"	8"	8"	8"	10"	10"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	10"	12"	12"	24"
10"	16"	14"	10"	12"	6"	10"	6"	10"	11"	14"	14	25"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	16"	18"	18"	34"
16"	26"	20"	16"	18"	12"	16"	12"	16"	18"	20"	20"	36"

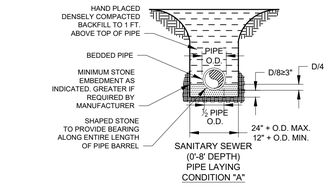
TYPICAL THRUST BLOCK DETAIL W 7

NO SCALE



TYPICAL METER BOX DETAIL FOR 2" SERVICE W 19

NO SCALE



TYPICAL PIPE LAYING CONDITION DETAIL S 16

NO SCALE

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CHK BY: BPP

ANGIER AND BLACK RIVER FIRE STATION
783 MANGUM ROAD
ANGIER NC 27501

24 X 36

22 MAY 2026

25-006

DETAILS

C7.1

GENERAL PLAN NOTES

1. ALL INTERIOR WALL TYPES TO BE '**S3**' UNLESS OTHERWISE NOTED.
2. WALL DIMENSIONS ARE TO FACE OF WOOD/METAL STUD, FACE OF CONCRETE MASONRY UNIT (C.M.U.), OR CENTERLINE OF COLUMN.
3. ALL RATED WALL CONSTRUCTION TO COMPLY W/ UL REQUIREMENTS.
4. ALL C.M.U. WALLS GOING TO BOTTOM OF DECK ARE TO PROVIDE A 1" GAP FOR DEFLECTION, FILL GAP WITH MINERAL WOOL INSULATION ALONG THE ENTIRE LENGTH OF WALL. AT FIRE RATED WALLS, ENSURE SPRAY APPLIED FIRE SEALANT BOTH SIDES.
5. ALL METAL STUD WALLS TERMINATING AT BOTTOM OF DECK ARE TO PROVIDE A DEFLECTION TRACK SECURED TO THE UNDERSIDE OF THE DECKING, NEST TOP TRACK BUT DO NOT ATTACH TO DEFLECTION TRACK. FILL FLUTE IN METAL DECK WHERE REQUIRED.
6. ALL WALLS EXTEND TO DECK AND ARE BRACED TO DECK AT HEAD ON ALTERNATE STUDS OR 32" OC FOR C.M.U. WALLS, UNLESS OTHERWISE NOTED.
7. CONTROL JOINTS SHALL BE AS SHOWN ON PLANS AND ELEVATIONS OR SPACED AT A MINIMUM OF 25'-0" OC AND A MAXIMUM OF 32'-0" OC WITH ONE CONTROL JOINT LOCATED WITHIN 3'-4" OF ANY CORNER.
8. SEE FINISH SCHEDULE FOR WALL, FLOOR, BASE, AND CEILING TYPES AND FINISHES.
9. REFER TO STRUCTURAL DRAWINGS FOR LOCATION OF REINFORCING, BOND BEAMS, BRACING, ETC.
10. ALL COLUMN CHASES TO HAVE GYP BOARD ON ROOM SIDE OF WALL, TYPICAL UNLESS OTHERWISE NOTED.
11. ALL EXTERIOR SIDEWALKS SHALL SLOPE AWAY FROM THE BUILDING AT 1/4" PER FOOT, MINIMUM.
12. FURNITURE AND EQUIPMENT SHOWN DASHED ON PLANS IS NOT IN CONTRACT (NIC). GC TO PROVIDE WOOD BLOCKING FOR ALL WALL/CEILING MOUNTED ACCESSORIES.
13. FIELD VERIFY FINAL ROOM DIMENSIONS PRIOR TO CASEWORK FABRICATION.
14. WARP SLAB DOWN 1" IN A 2'-0"x2'-0" SQUARE AROUND ALL FLOOR DRAINS.
15. ALL CERAMIC TILE TO HAVE CONTROL JOINTS THAT ALIGN WITH CONTROL JOINTS IN CONCRETE SLAB.
16. THERE SHALL BE NO PENETRATIONS IN THROUGH WALL FLASHING.
17. DOOR JAMB FROM INTERSECTING WALLS: C.M.U. - 8" UNLESS NOTED OTHERWISE STUD - 6" UNLESS NOTED OTHERWISE.
18. ALL CEILINGS TO BE 10'-0" A.F.F. UNLESS OTHERWISE NOTED.

FLOOR PLAN LEGEND

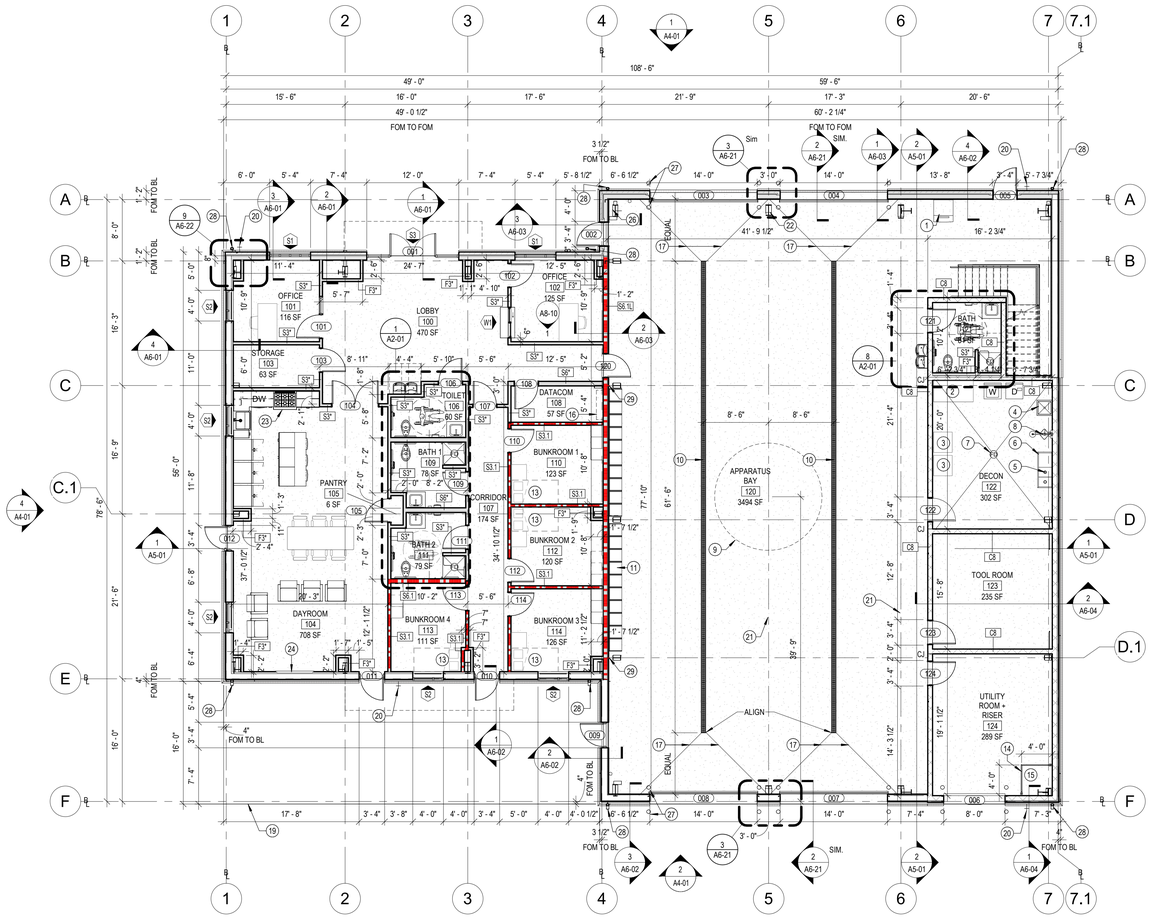
- HALF TONED WALLS DENOTES EXISTING WALL CONSTRUCTION TO REMAIN.
- NEW GYPSUM BOARD WALL CONSTRUCTION. SEE PARTITION TYPES.
- NEW C.M.U. WALL CONSTRUCTION. SEE PARTITION TYPES.
- **(1)** HOUR RATED WALL CONSTRUCTION
- **(2)** HOUR RATED WALL CONSTRUCTION
- **(3)** HOUR RATED WALL CONSTRUCTION
- XX # — NEW PARTITION & DOOR w/ PARTITION TYPE & DOOR NUMBER. SEE DOOR SCHEDULE.
- EXISTING DOOR IN EXISTING WALL CONSTRUCTION TO REMAIN.
- ES — ELECTRIC DOOR STRIKE

FLOOR PLAN KEYNOTES LEGEND

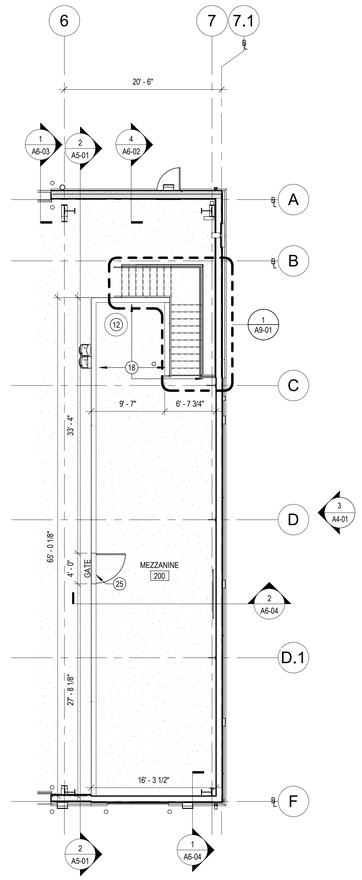
KEYNOTE NUBMER	DESCRIPTION
1	ICE MACHINE
2	GEAR DRYER
3	EXTRACTOR
4	MOP SINK. W/ BOBRICK B239 x 34 WALL MOUNTED SHELF WITH MOP AND BROOM HOLDERS ABOVE
5	FLOOR SINK.
6	2-COMPARTMENT SINK W/ DRAINBOARD
7	SLOPE CONCRETE FLOOR TO DRAIN. PITCH AT 1/4" PER FOOT
8	EMERGENCY EYEWASH AND SHOWER STATION - SEE PLUMBING DRAWINGS
9	HIGH VOLUME / LOW SPEED FAN
10	TRENCH DRAIN - SEE PLUMBING DRAWINGS
11	20 GEAR LOCKERS. 20"x20"x72. INCLUDE BLOCKING BEHIND GWB TYP.
12	AIR COMPRESSOR
13	BUNK ROOM FURNITURE
14	36" TALL GUARDRAIL WITH EMBED POST. PROVIDE NON-SHRINK GROUT @ EA. POST LOCATION
15	SPRINKLER RISER
16	MINISPLIT
17	SLOPE SLAB TO TRENCH DRAIN
18	42" H CMU GUARDRAIL
19	4" CONCRETE SLAB ON GRADE - SEE CIVIL DRAWINGS
20	HOSE BIBB - SEE PLUMBING DRAWINGS
21	POWER & COMPRESSED AIR DROPS FROM CEILING
22	1 3/4" WATER FILL STATION
23	PROPANE OVEN, 6 BURNER, CFCI, RANGE HOOD ABOVE W/ EXTENSION TO CEILING - SEE ELECTRICAL DWGS
24	TV WALL - SEE ELEC. DWGS FOR OUTLET LOCATIONS
25	42" H x 48" W METAL SWING GATE
26	STRUCTURAL COLUMNS, BRACING & FRAMES TO BE PAINTED - DO NOT PAINT INSULATION & PEMB SECONDARY ROOF STRUCTURE
27	6" DIA. CONCRETE FILLED PIPE BOLLARDS - PAINT RED
28	DOWNSPOUT INTO BOOT CONNECTION - SEE CIVIL DRAWINGS
29	CONTROL JOINT IN GWB METAL STUD WALL

EQUIPMENT SCHEDULE

ITEM	COUNT	MANUFACTURER	MODEL NO.	FURNISHED BY	INSTALLED BY	ROOM/LOCATION	NOTES
ICE MACHINE	1	TBD	TBD	CONTRACTOR	CONTRACTOR	APPARATUS BAY	
GEAR DRYER	1	TBD	TBD	OWNER	OWNER	DECON	COMPONENT IS NOT WITHIN PROJECT SCOPE. MEP INFRASTRUCTURE WILL BE IN PLACE FOR LATER INSTALL
GEAR EXTRACTOR	2	TBD	TBD	OWNER	OWNER	DECON	COMPONENT IS NOT WITHIN PROJECT SCOPE. MEP INFRASTRUCTURE WILL BE IN PLACE FOR LATER INSTALL
GEAR LOCKERS	20	TBD	TBD	CONTRACTOR	CONTRACTOR	APPARATUS BAY	
AIR COMPRESSOR	1	TBD	TBD	CONTRACTOR	CONTRACTOR	MEZZANINE	
BUNK ROOM FURNITURE	1	TBD	TBD	OWNER	OWNER	BUNK ROOMS	
PROPANE RANGE	1	TBD	TBD	CONTRACTOR	CONTRACTOR	DAYROOM	
REFRIGERATOR	3	TBD	TBD	CONTRACTOR	CONTRACTOR	DAYROOM	
DISHWASHER	1	TBD	TBD	CONTRACTOR	CONTRACTOR	DAYROOM	
APPARATUS CEILING FAN	1	GREENHECK	DS-6-14-LV	CONTRACTOR	CONTRACTOR	APPARATUS BAY	__' DIAMETER. HIGH VELOCITY, LOW SPEED
TV MONITOR	1	TBD	TBD	CONTRACTOR	CONTRACTOR	DAYROOM	
PROPANE GRILL	1	TBD	TBD	OWNER	OWNER	EXTERIOR - REAR	
FLAG POLE	1	TBD	TBD	CONTRACTOR	CONTRACTOR	EXTERIOR - FRONT	25' TALL. POLE TO BE PAINTED BLACK
MONUMENT SIGN	1	TBD	TBD	CONTRACTOR	CONTRACTOR	EXTERIOR - FRONT	
RADIANT HEATER	2	DETROIT RADIANT	HL3-40-100	CONTRACTOR	CONTRACTOR	APPARATUS BAY	
OVERHEAD REELS - AIR	1	COXREEL	P SERIESE	CONTRACTOR	CONTRACTOR	APPARATUS BAY	
TRENCH DRAINS	2	ABT	#PDX	CONTRACTOR	CONTRACTOR	APPARATUS BAY	SEE PLUMBING DRAWINGS
TV MONITOR	1	TBD	TBD	CONTRACTOR	CONTRACTOR	BUNKROOM 4	
OVERHEAD WATER HOSE REEL	1	MACNAUGHT	DR460G-05	CONTRACTOR	CONTRACTOR	APPARATUS BAY	
MEZZANINE SWING GATE	1	PS SAFETY ACCESS	TBD	CONTRACTOR	CONTRACTOR	MEZZANINE	



1 **GROUND FLOOR LEVEL PLAN**
1/8" = 1'-0"



2 **MEZZANINE LEVEL PLAN**
1/8" = 1'-0"

0 8' 16' 24' 32'

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Revisions			
#	Date	By	Description

APPROVAL:
DATE:

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DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER

TRUE NORTH:

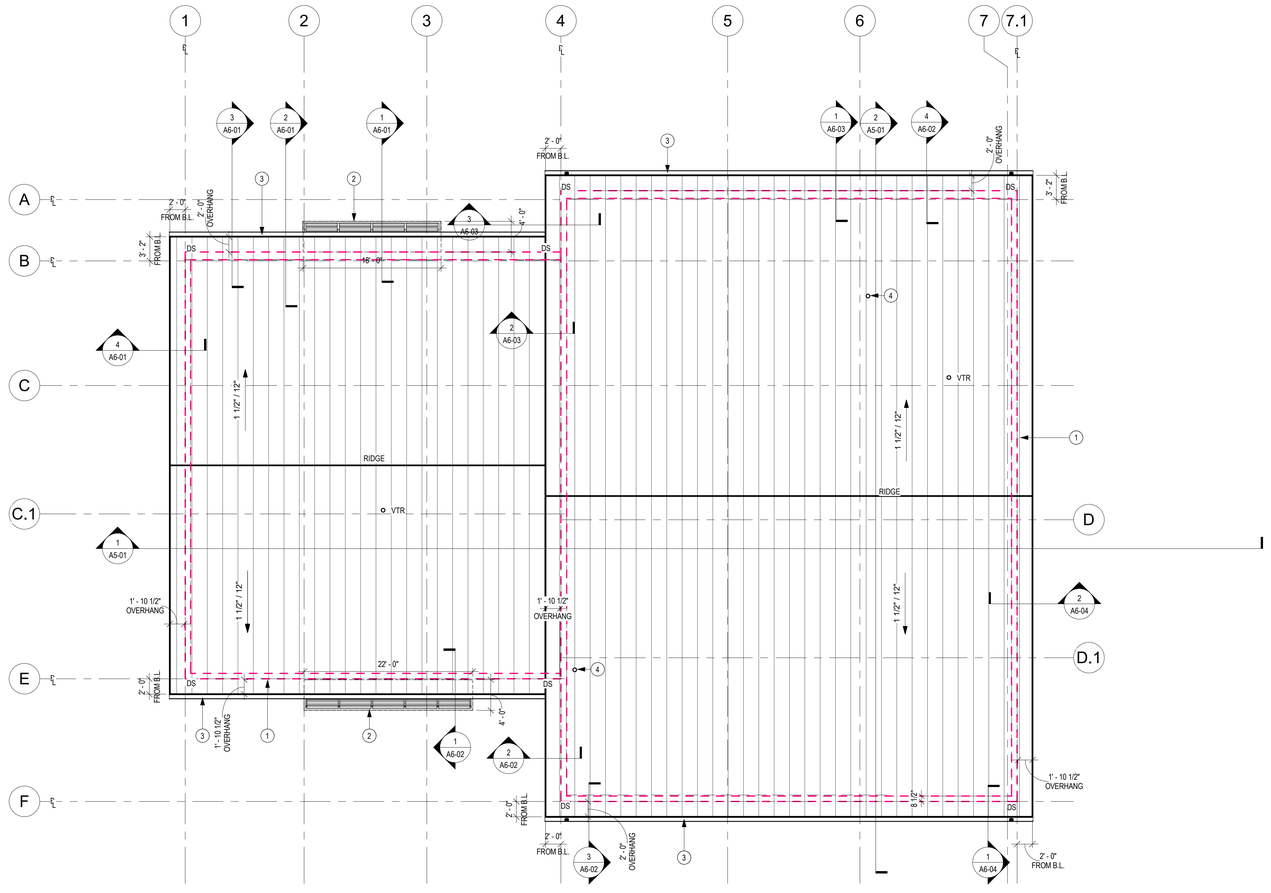
ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
1/8" = 1'-0"
10 JULY 2026
25-0006
FLOOR PLANS

A1-01

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Revisions			
#	Date	By	Description



1 **ROOF PLAN**
1/8" = 1'-0"

GENERAL PLAN NOTES

1. REFER TO STRUCTURAL FOR FRAMING OF OPENINGS IN ROOF ASSEMBLY.
2. ALL ROOF PENETRATIONS, SHEET METAL TRIM AND FLASHING SHALL CONFORM TO "NCRA" NATIONAL ROOFING AND WATERPROOFING MANUAL, "SMACNA" SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. AND ALL MANUFACTURERS SPECIFICATIONS. WHEN ANY OF THESE ORGANIZATIONS ARE IN CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
3. ROOF PENETRATIONS DEPICTED ON THIS PLAN SHOW GENERAL LAYOUT OF MAJOR ROOF TOP EQUIPMENT. FOR COMPLETE EXTENT OF ROOF PENETRATIONS, THE GENERAL CONTRACTOR SHALL REFER TO ARCHITECTURAL, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS AND INCLUDING THE BID OF ALL CURBS, FLASHING AND OTHER ITEMS NEEDED TO PROVIDE A COMPLETE WATERTIGHT AND FULLY WARRANTED ROOF SYSTEM.

FLOOR PLAN LEGEND

	INDICATES DIRECTION OF ROOF SLOPE ACHIEVED THRU STRUCTURE, REFER TO STRUCTURAL
VTR	VENT THROUGH ROOF
DS	PREFINISHED ALUMINUM DOWSPOUT, TYPICAL
	MR-24 PEMB ROOF SYSTEM
	HIDDEN WALL BELOW.

ROOF PLAN KEYNOTES LEGEND

KEYNOTE NUMBER	KEYNOTE DESCRIPTION
1	DASHED LINE INDICATES EXTERIOR FACE OF WALL BELOW
2	PRE-ENGINEERED METAL AWNING BELOW
3	GUTTER
4	EXHAUST. SEE MECHANICAL PLANS

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COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
1/8" = 1'-0"
10 JULY 2026
25-0006
ROOF PLAN

A1-11

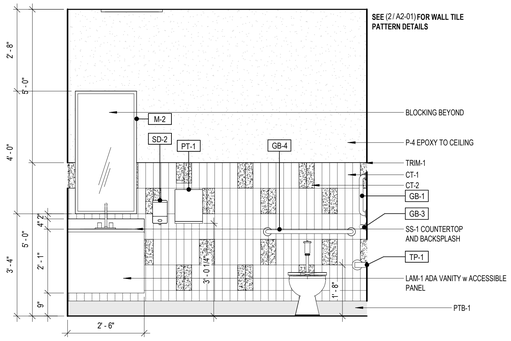
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TOILET ROOM ACCESSORIES SCHEDULE

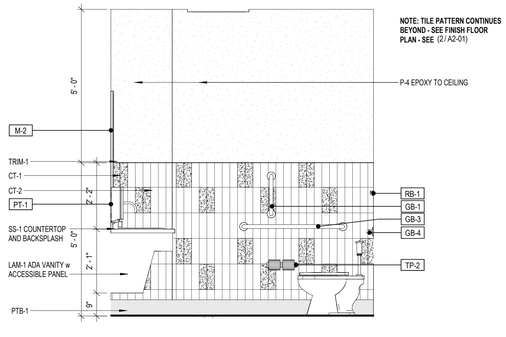
Type Mark	Description	Manufacturer	Model	Furnished By/Installed By	Comments
FSS-1	ADA Compliant Reversible Folding Shower Seat	ASI	8206	CFCI	
GB-1	18" Stainless Steel Grab Bar w/ Concealed Fasteners	Bradley Corporation	812-001-18	CFCI	
GB-2	Grab Bars	Bradley Corporation	8120-001180	CFCI	
GB-3	36" Stainless Steel Grab Bar w/ Concealed Fasteners	Bradley Corporation	812-001-36	CFCI	
GB-4	42" Stainless Steel Grab Bar w/ Concealed Fasteners	Bradley Corporation	812-001-42	CFCI	
M-2	Channel Framed Mirror - 24" X 48"	BOBRICK	B-165-2448	CFCI	INCLUDE BLOCKING BEHIND MIRROR TO HOLD OFF WALL WHERE TILE TERMINATES
PT-1	Surface-Mounted Paper Towel Dispenser	BOBRICK	B-5262	CFCI	
RB-1	Bobrick Coat Hook	BOBRICK	B-542	CFCI	
SD-2	Stainless Steel Vertical Mounted Soap Dispenser	BOBRICK	B-4112	CFCI	
TP-1	Toilet Paper Dispenser - Single	ASI	0710	OFOI	
TP-2	Toilet Paper Dispenser - Double	ASI	0715	OFOI	

GENERAL TOILET ACCESSORY NOTES:

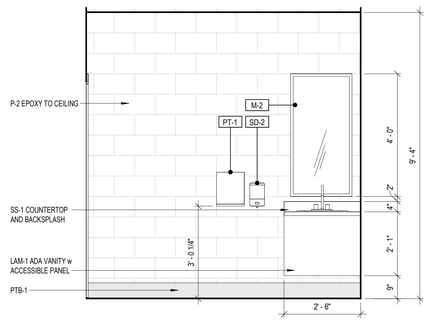
1. **ALL** DIMENSIONS SHOWN ARE FROM FINISHED FACE OF FLOOR/WALL.
2. CONTRACTOR TO VERIFY & PROVIDE WOOD BLOCKING AS REQUIRED FOR **ALL** WALL-MOUNTED FIXTURES & ACCESSORIES.
3. **ALL** FIXTURE & ACCESSORY MOUNTING HEIGHTS TO BE MOUNTED AT HEIGHTS TO MEET A.D.A. REQUIREMENTS.
4. SEE PLUMBING DRAWINGS FOR ALL FIXTURE TYPES.



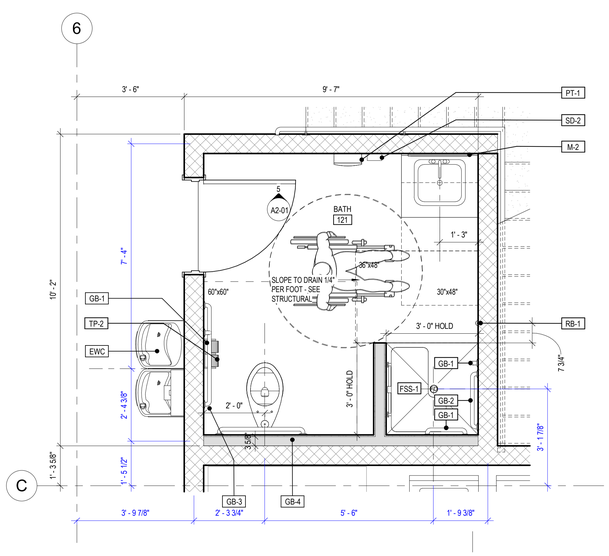
7 TOILET - WET WALL ELEVATION
1/2" = 1'-0"



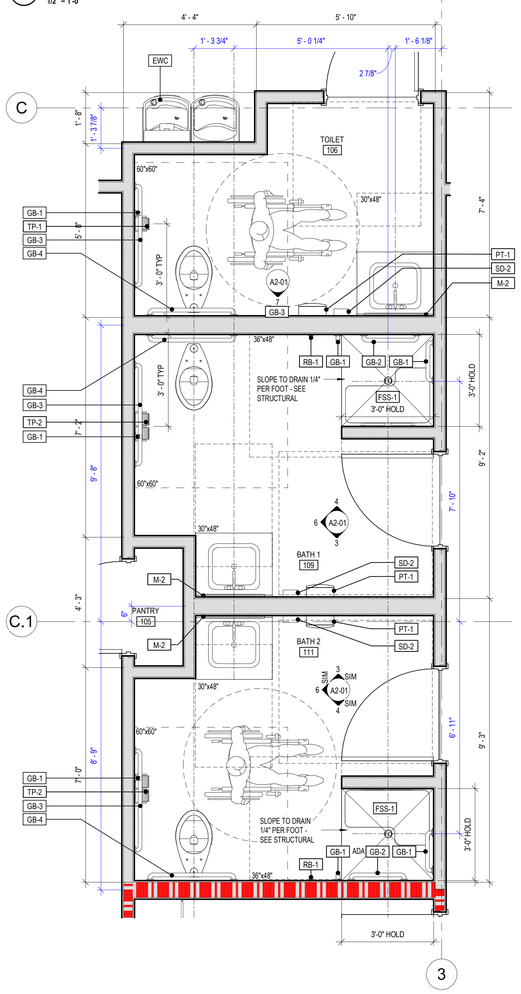
6 BATHROOM ELEVATION - TYP
1/2" = 1'-0"



5 APPARATUS BATH ELEVATION
1/2" = 1'-0"



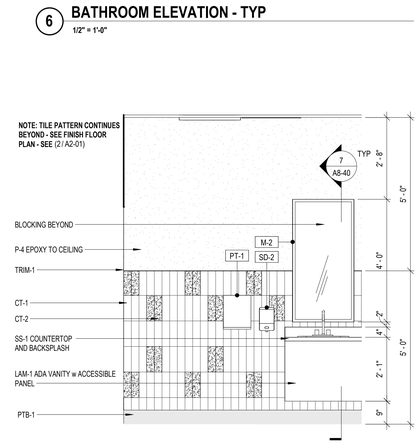
8 APPARATUS BATH ENLARGED PLAN
1/2" = 1'-0"



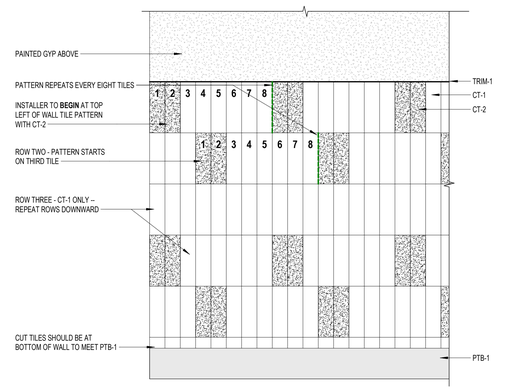
1 ENGLARGED RESTROOM PLAN
1/2" = 1'-0"



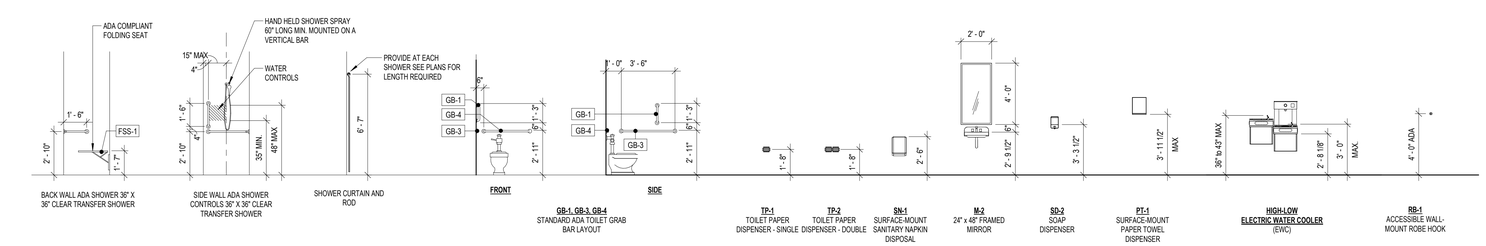
4 BATHROOM ELEVATION - TYP
1/2" = 1'-0"



3 BATHROOM ELEVATION - TYP
1/2" = 1'-0"



2 WALL TILE PATTERN - ENLARGED DETAIL TYP
1" = 1'-0"



○ STANDARD TOILET ROOM ACCESSORIES
1/4" = 1'-0"

Revisions			
#	Date	By	Description

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COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006

ENLARGED INTERIOR TOILET ROOM PLANS & DETAILS

A2-01

Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS #2_

Revisions			
#	Date	By	Description

GENERAL CEILING PLAN NOTES

1. SEE MECHANICAL, ELECTRICAL, & PLUMBING DRAWINGS FOR **ALL** ASSOCIATED DEVICE & FIXTURE TYPES, SIZES, LOCATIONS, & REQUIREMENTS.
2. CEILING PLANS DENOTE DESIGN INTENT ONLY. REFER TO SPECIFICATIONS, AS WELL AS MECHANICAL, ELECTRICAL, & PLUMBING DRAWINGS FOR **ALL** ASSOCIATED DEVICES & INSTALLATION REQUIREMENTS. ANY DEVICE SHOWN ON THE ARCHITECTURAL DRAWINGS AND NOT DENOTED ON THE MEP DRAWINGS OR SPECIFICATIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION PRIOR TO THE START OF WORK.
3. **ALL** ACOUSTICAL GRID SHALL BE CENTERED IN ROOM UNLESS NOTED OTHERWISE.
4. UNLESS NOTED OTHERWISE, SEE ROOM FINISH SCHEDULE FOR **ALL** FINISHED CEILING HEIGHTS. CEILING HEIGHTS ARE DIMENSIONED FROM FINISH FLOOR LINE TO FINISHED CEILING HEIGHT UNLESS NOTED OTHERWISE.
5. CENTER LIGHTS, ELECTRICAL & MEP DEVICES, & SPRINKLER HEADS IN LAYIN CEILING TILE (BOTH DIRECTIONS) UNLESS NOTED OTHERWISE.
6. MECHANICAL, ELECTRICAL, & PLUMBING CONTRACTORS SHALL COORDINATE LOCATION OF DEVICES REQUIRING ACCESS IN NON-ACCESSIBLE CEILING AREA & PROVIDE ACCESS PANELS AS REQUIRED FOR FUTURE ACCESS & MAINTENANCE. SEE MEP DRAWINGS.
7. SEE FINISH SCHEDULE FOR **ALL** NEW SCHEDULED CEILING FINISHES.
8. **ALL** CEILING SOFFITS & BULKHEADS TO BE PAINTED ON ALL EXPOSED SIDES. SEE FINISH SCHEDULE FOR NEW FINISH.
9. WHERE OPEN CEILING DRYFALL PAINT IS SPECIFIED, PAINT ALL EXPOSED STRUCTURE, CONDUIT, AND PIPING TO MATCH.

CEILING PLAN LEGEND

- NEW 2x2 LAYIN LIGHT FIXTURE SEE ELECTRICAL DRAWINGS.
- NEW 2x4 LAYIN LIGHT FIXTURE SEE ELECTRICAL DRAWINGS.
- NEW 4' SUSPENDED LIGHT FIXTURE SEE ELECTRICAL DRAWINGS
- NEW CEILING MOUNT LIGHT FIXTURE SEE ELECTRICAL DRAWINGS.
- NEW CEILING MOUNT LIGHT FIXTURE SEE ELECTRICAL DRAWINGS.
- NEW RECESSED CAN LIGHT FIXTURE SEE ELECTRICAL DRAWINGS.
- NEW EGRESS EXIT LIGHT SEE ELECTRICAL DRAWINGS.
- NEW HVAC SUPPLY DIFFUSER SEE HVAC DRAWINGS.
- NEW HVAC RETURN AIR DIFFUSER SEE HVAC DRAWINGS.
- NEW HVAC EXHAUST GRILLE SEE HVAC DRAWINGS.
- NEW RECESSED SPRINKLER HEAD. SEE FIRE PROTECTION DRAWINGS.
- NEW EMERGENCY LIGHTING / NIGHT LIGHT

CEILING TYPE LEGEND:

CEILING RATING *(1, 2, 3 HOUR)*
CEILING TYPE NO. *(1, 2, 3)*
CEILING CONSTRUCTION *(ACT, GYPSUM BOARD, ETC)*
CEILING HEIGHT *(X' - XX")*

A 1. 1 | X' - XX'

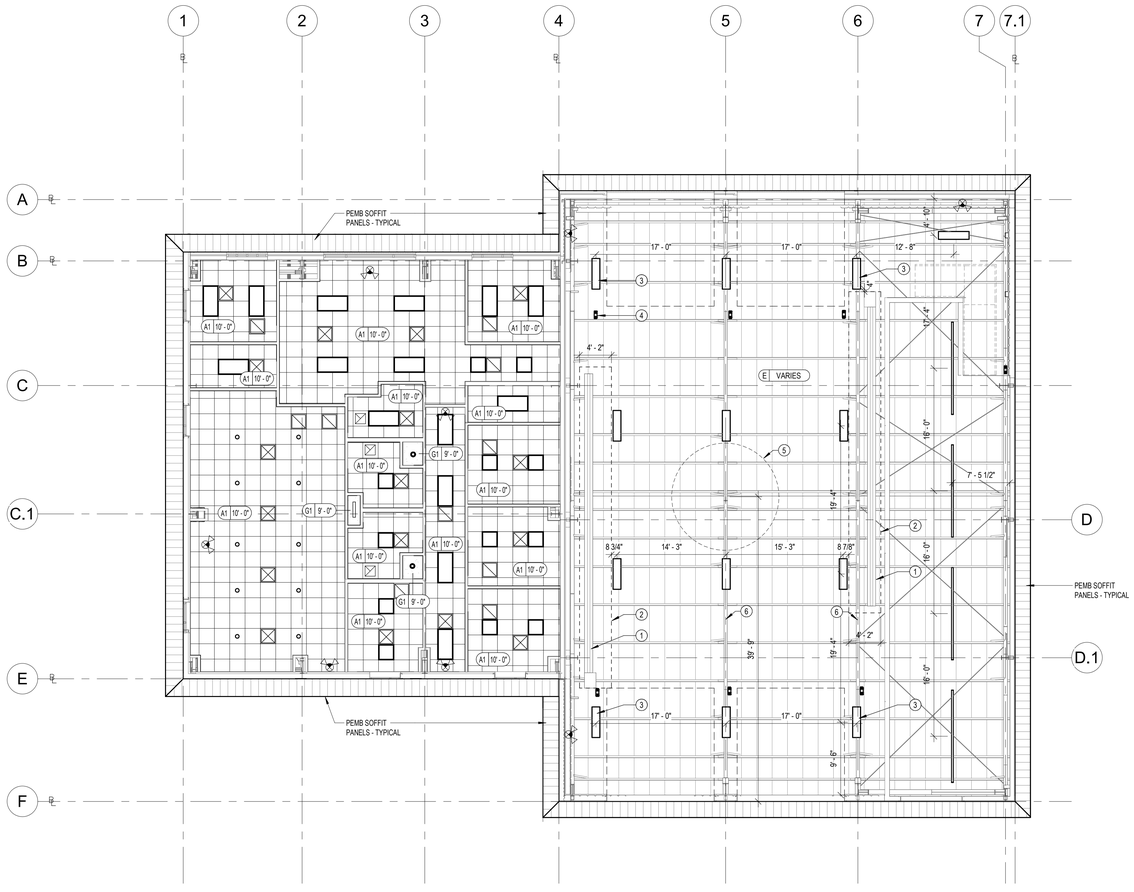
CONSTRUCTION:
A = ACOUSTICAL CEILING TILE
G = GYPSUM BOARD CEILING
E = EXPOSED

CEILING TYPE LEGEND

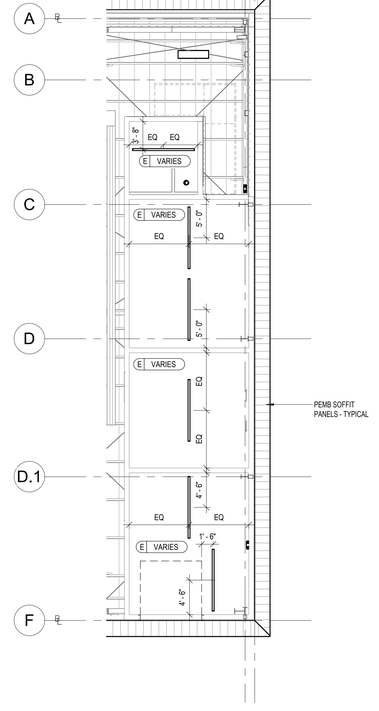
TYPE IMAGE	TYPE	DESCRIPTION
	A1	NEW 2 x 2 ACOUSTICAL CEILING TILE & GRID
	G1	5/8" PAINTED GYPSUM BOARD CEILING OVER 3 5/8" STEEL STUDS @ 16" O.C.

CEILING PLAN KEYNOTES LEGEND

KEYNOTE NUMBER	DESCRIPTION
1	OVERHEAD RADIANT HEATER
2	OVERHEAD RADIANT HEATER CLEARANCE. ENSURE NO CEILING COMPONENTS SIT WITHIN 60" BELOW RADIANT HEATER
3	LIGHT FIXTURE TO CLEAR OVERHEAD DOOR RAILS
4	EMERGENCY LIGHTING
5	HIGH VOLUME / LOW SPEED FAN
6	POWER & COMPRESSED AIR DROPS FROM CEILING



1 **GROUND FLOOR REFLECTED CEILING PLAN**
1/8" = 1'-0"



2 **BELOW MEZZANINE REFLECTED CEILING PLAN**
1/8" = 1'-0"

0 8' 16' 24' 32'

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CONSTRUCTION DOCUMENTS

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DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006
REFLECTED CEILING PLANS

A3-01

7/20/2026 11:35:11 AM
Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS.rvt

Revisions			
#	Date	By	Description

Date(s) of selection: 12/09/2025
Job name: ANGIER & BLACK RIVER FIRE STATION #2
Job number: 25-0006
Project developer: ANDY SPECK
Project manager: LES PARKER
Exterior designer: MADELINE THOMPSON

EXTERIOR FINISH SELECTIONS
(Manufacturer, size/finish, model #, name)

Brick A:	BLUE BLACK VELOUR, US BRICK, MODULAR
Mortar A:	MEDIUM GRAY
Brick B:	TITAN GRAY VELOUR, US BRICK, MODULAR
Mortar B:	MEDIUM GRAY
Control joint:	MATCH BRICK
Masonry lintels:	MATCH BRICK
Metal Panel:	"COOL GRAY STONE", BUTLER
Exterior storefront:	MATCH "COOL ONYX BLACK", BUTLER
Window tint:	VITRO SOLARBAN 67 (2) CLEAR
Window sill:	"COOL ONYX BLACK", BUTLER W/
	BLACK SATIN VELOUR, US BRICK, MODULAR
Mortar A:	MEDIUM GRAY
Coping and trim:	"COOL ONYX BLACK", BUTLER
Soffit material:	"COOL SHELL GRAY", BUTLER
Louver/fan:	MATCH "COOL ONYX BLACK", BUTLER
HM door and frame:	FRONT ELEVATION: MATCH "COOL BRICK RED", BUTLER
	REMAINING ELEVATIONS: MATCH "COOL GRAY STONE", BUTLER
Overhead door:	MATCH "COOL BRICK RED", BUTLER
Exterior door hardware:	ANODIZED ALUMINUM
Exterior handrail:	N/A
Steel bollards:	MATCH "COOL BRICK RED", BUTLER
Metal awning:	"COOL ONYX BLACK", BUTLER
Retaining wall:	N/A
PEMB wall panel:	
Corner trim:	"COOL SHELL GRAY", BUTLER
Gable trim:	"COOL ONYX BLACK", BUTLER
Fascia:	"COOL ONYX BLACK", BUTLER
Gutters:	"COOL ONYX BLACK", BUTLER
Downspouts:	"COOL ONYX BLACK", BUTLER
Roof panel:	"COOL SHELL GRAY", BUTLER

SELECTIONS INVALID UNTIL SIGNED

Owner or Representative Signature & Date

EXTERIOR ELEVATION NOTES

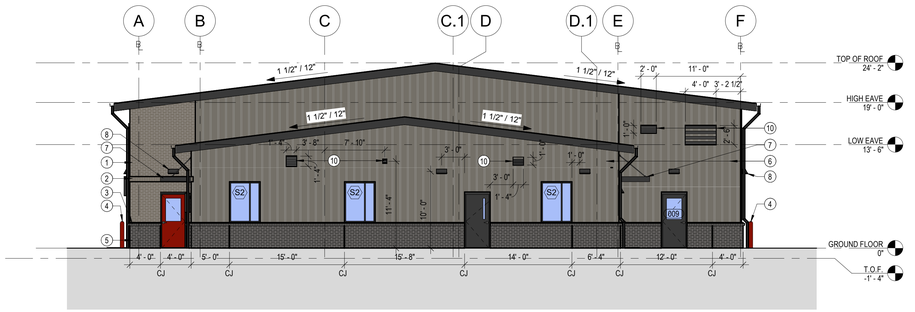
1. **ALL** MEP ROOF PENETRATIONS, (NEW & EXISTING) SHALL BE PAINTED TO MATCH ADJACENT WALL/ROOF SURFACE. SEE MEP DRAWINGS FOR LOCATIONS.
2. SEE A7 SERIES SHEETS FOR EXTERIOR DOOR & FRAME TYPES, & WINDOW TYPE ELEVATIONS.
3. SEE ELECTRICAL DRAWINGS FOR EXTERIOR BUILDING LIGHTING DESIGN, LOCATIONS, & REQUIREMENTS.
4. SEE CIVIL DRAWING FOR **ALL** SITE GRADING & ADDITIONAL LANDSCAPE REQUIREMENTS.

ELEVATION FINISH LEGEND

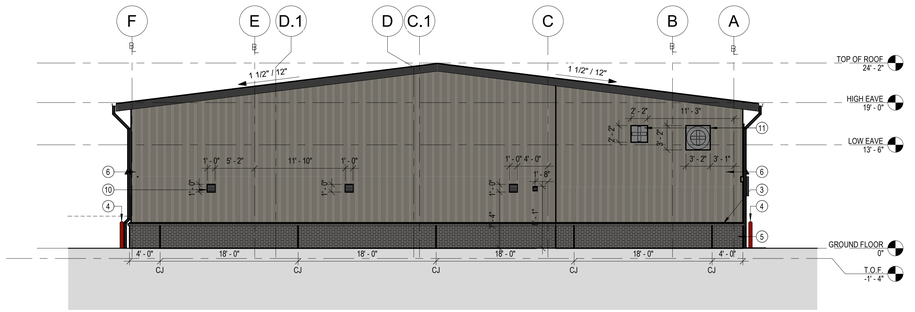
	NEW BRICK VENEER WALL CONSTRUCTION - TYPE 'A'
	NEW BRICK VENEER WALL CONSTRUCTION - TYPE 'B'
	NEW PEMB METAL WALL PANELS
DS	ROOF DOWNSPOUT LOCATION
CJ	BRICK/EIFS CONTROL JOINT

ELEVATION KEYNOTES LEGEND

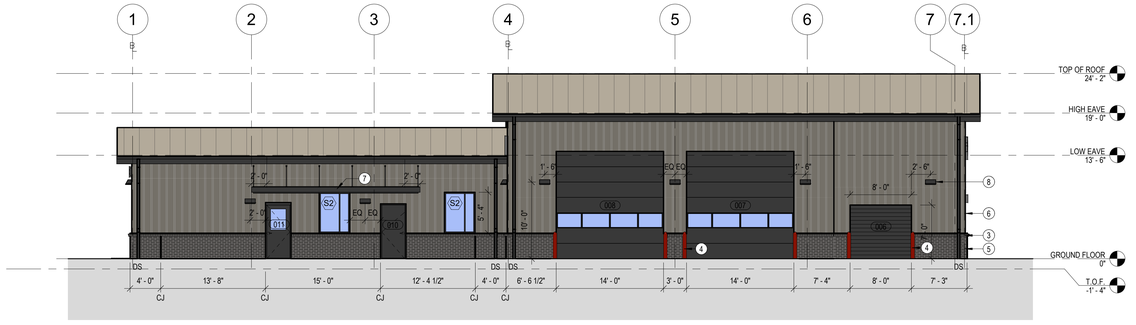
KEYNOTE NUMBER	DESCRIPTION
1	BRICK B VENEER
2	BRICK SOLDIER - BRICK B
3	BRICK ROWLOCK - BRICK A
4	6" DIA. CONCRETE FILLED PIPE BOLLARD
5	BRICK A VENEER
6	PEMB WALL PANEL
7	PRE-ENGINEERED METAL CANOPY
8	WALL PACK. CENTER OVER OPENINGS UON TYP. SEE ELECTRICAL
9	WALL MOUNTED LIGHT FIXTURE. ALIGN WITH T. O. SOLDIER BAND. SEE ELECTRICAL
10	LOUVERS. SEE MECHANICAL
11	EXHAUST FANS. SEE MECHANICAL
12	DOUBLE BRICK SOLDIER - BRICK A
13	<same>



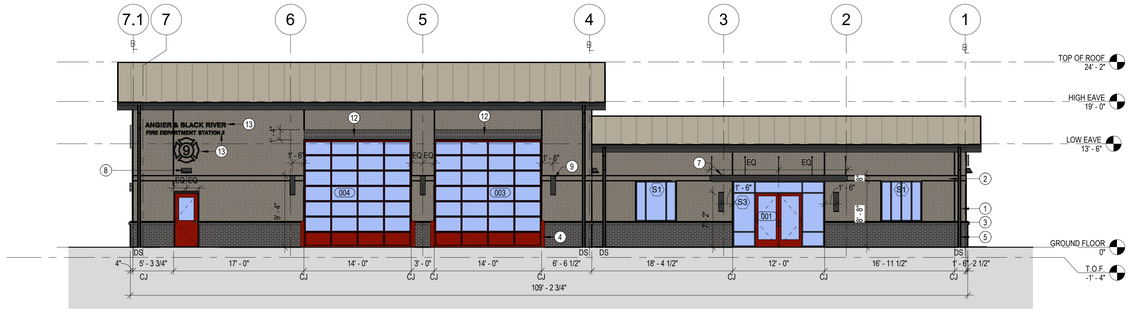
4 OVERALL WEST ELEVATION
1/8" = 1'-0"



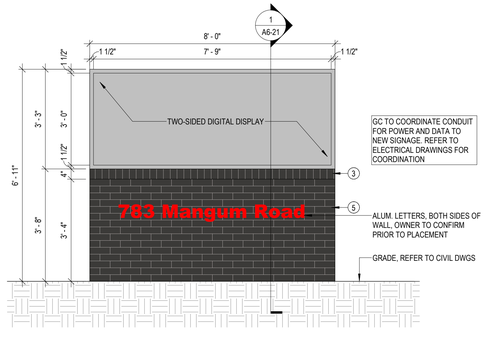
3 OVERALL EAST ELEVATION
1/8" = 1'-0"



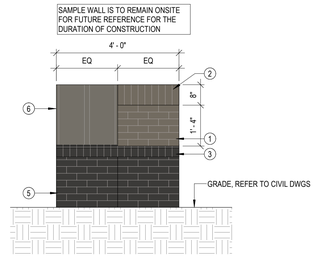
2 OVERALL SOUTH ELEVATION
1/8" = 1'-0"



1 OVERALL NORTH ELEVATION
1/8" = 1'-0"



5 MONUMENT SIGN BASE
1/2" = 1'-0"



6 SAMPLE WALL
1/2" = 1'-0"

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COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

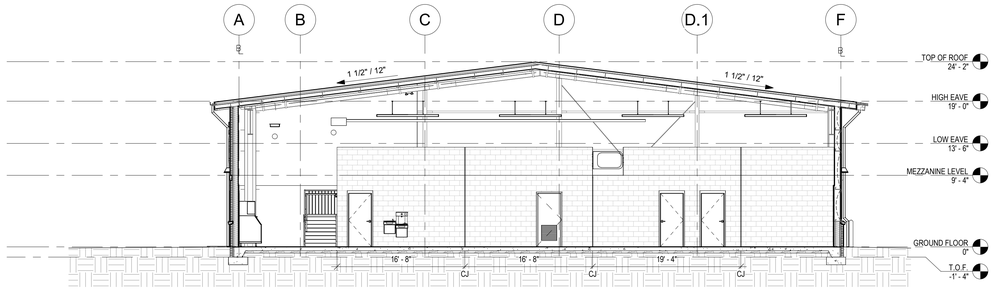
ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006
EXTERIOR BUILDING ELEVATIONS

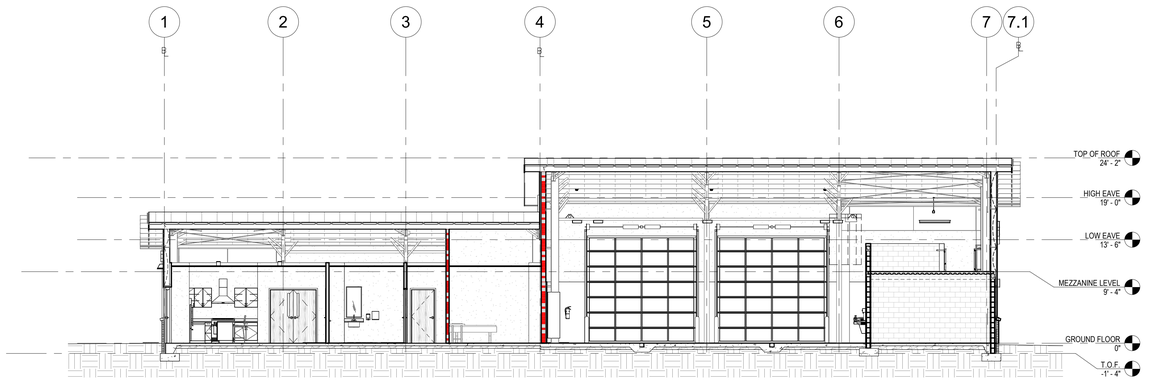
A4-01

Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS.rvt

Revisions			
#	Date	By	Description



2 **BUILDING CROSS SECTION**
1/8" = 1'-0"



1 **BUILDING LONGITUDINAL SECTION**
1/8" = 1'-0"

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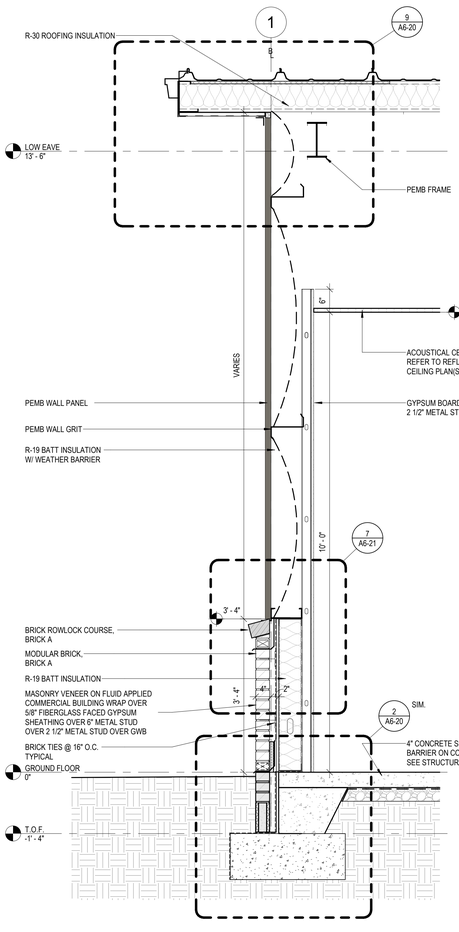
ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
1/8" = 1'-0"
10 JULY 2026
25-0006
BUILDING SECTIONS

A5-01

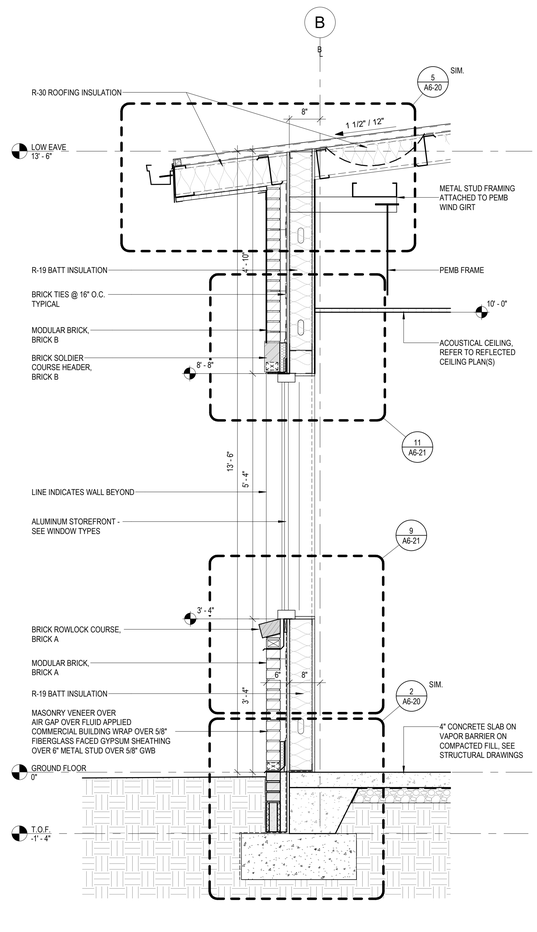
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Revisions			
#	Date	By	Description



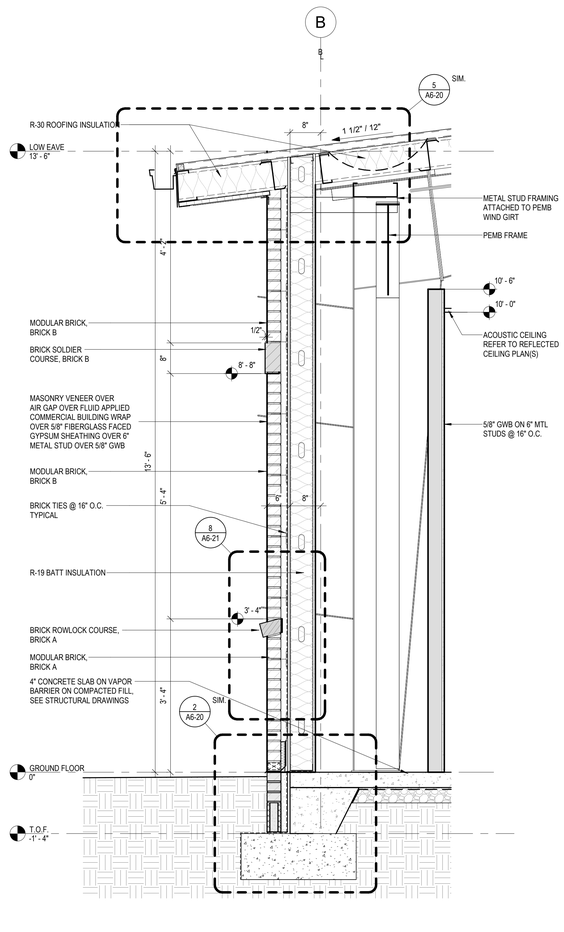
4 OFFICE WALL SECTION - PEMB WALL PANEL @ GABLE

3/4" = 1'-0"



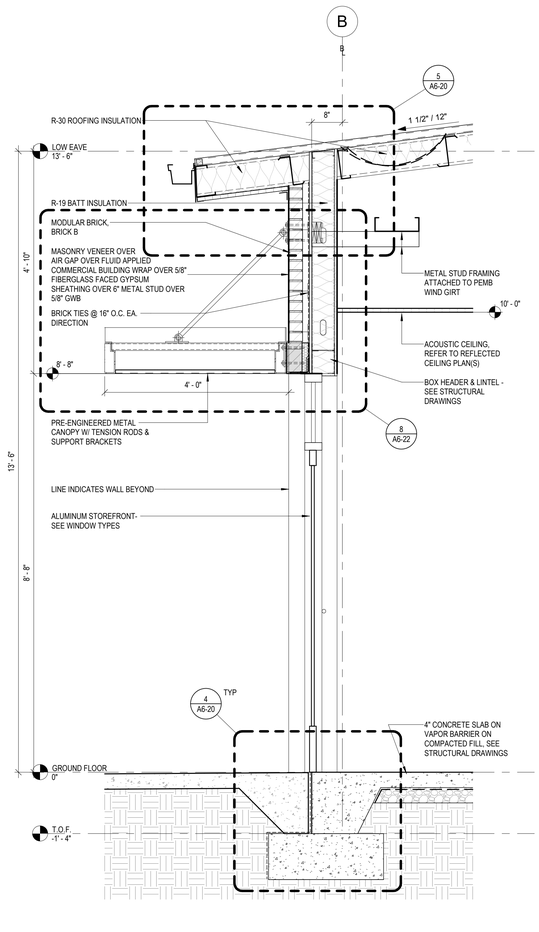
3 OFFICE WALL SECTION - MASONRY WALL @ WINDOW @ EAVE

3/4" = 1'-0"



2 OFFICE WALL SECTION - MASONRY WALL @ EAVE

3/4" = 1'-0"



1 OFFICE WALL SECTION - MASONRY WALL @ STOREFRONT DOOR @ EAVE

3/4" = 1'-0"

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DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2

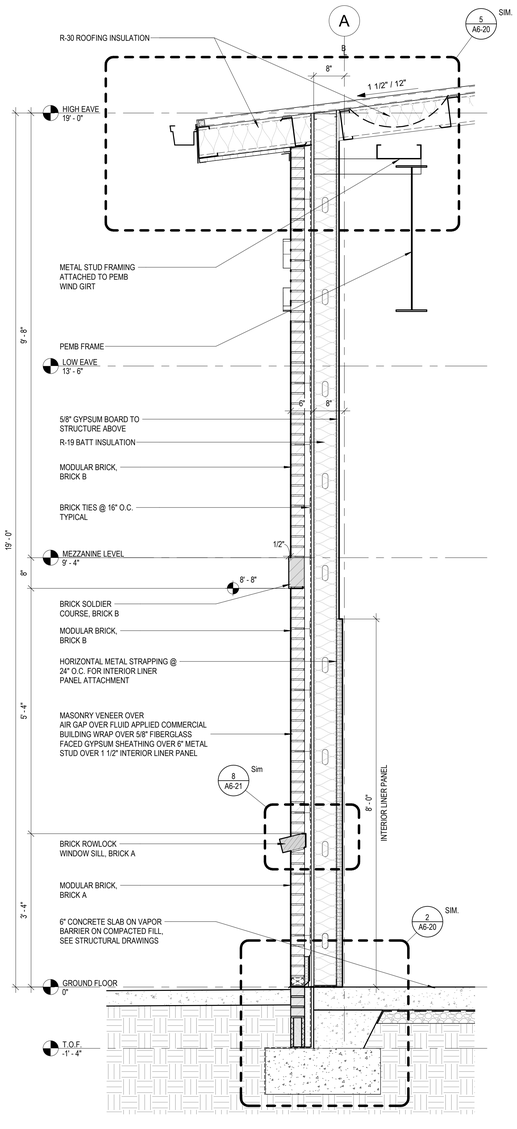
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
3/4" = 1'-0"
10 JULY 2026
25-0006
WALL SECTIONS

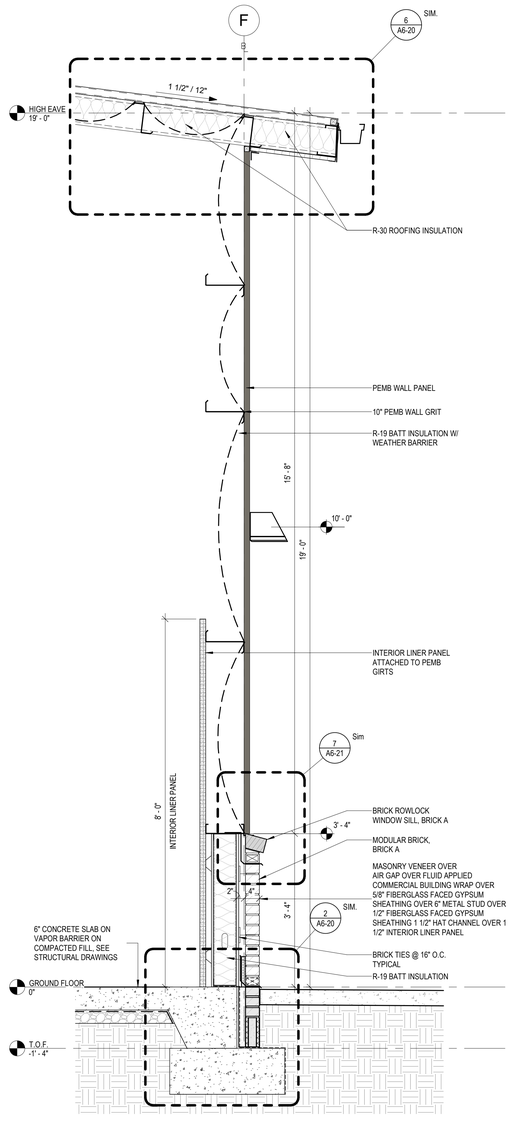
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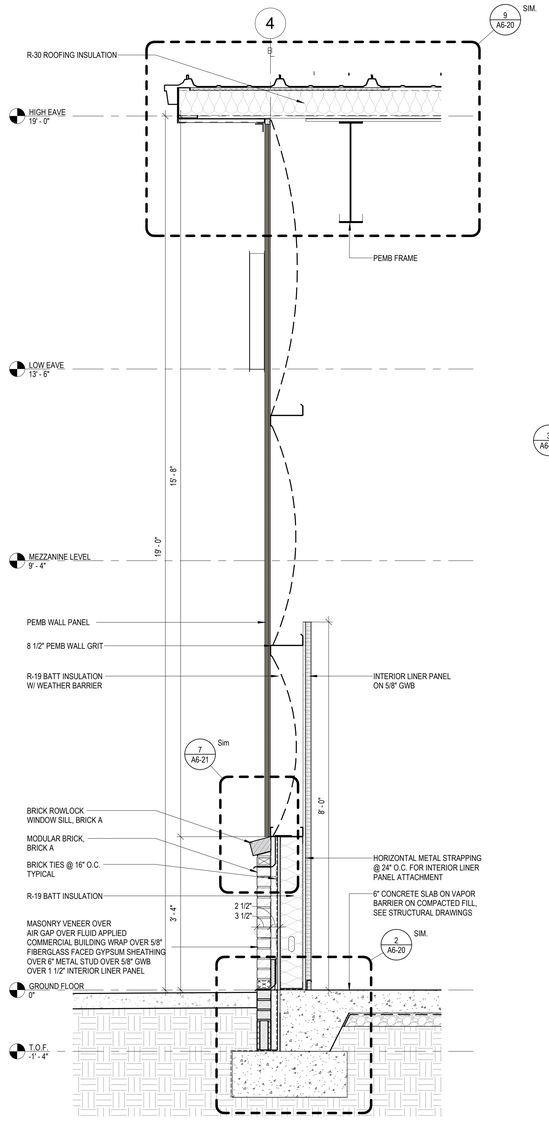
Revisions			
#	Date	By	Description



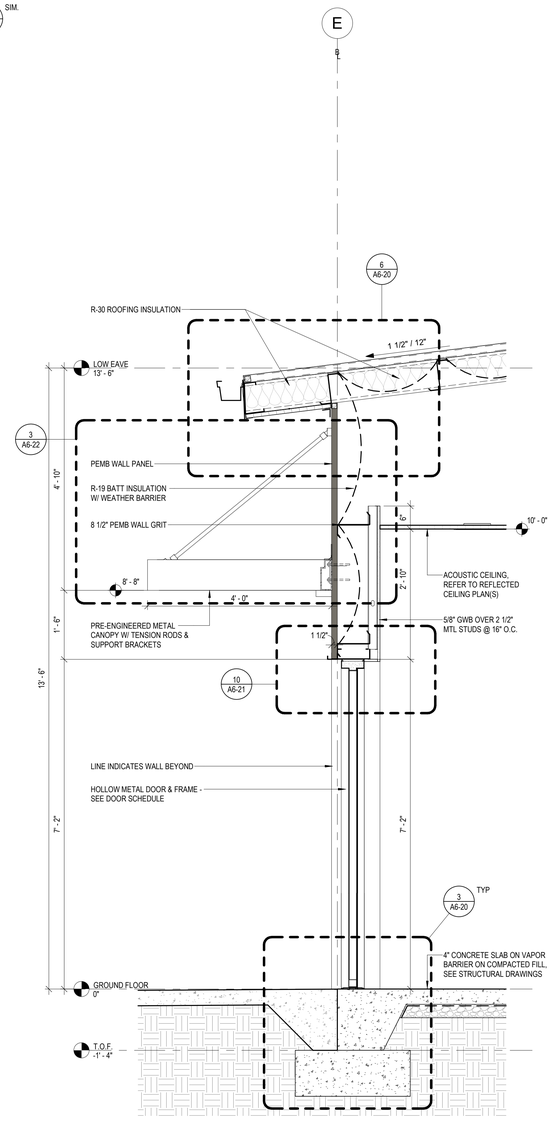
4 **APPARATUS BAY WALL SECTION - MASONRY WALL @ EAVE**
3/4" = 1'-0"



3 **APPARATUS BAY WALL SECTION - PEMB WALL @ EAVE**
3/4" = 1'-0"



2 **APPARATUS BAY WALL SECTION - PEMB WALL @ GABLE**
3/4" = 1'-0"



1 **OFFICE WALL SECTION - PEMB WALL @ H.M. DOOR @ EAVE**
3/4" = 1'-0"

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COORDINATOR: J.OBERHEIM
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TRUE NORTH:

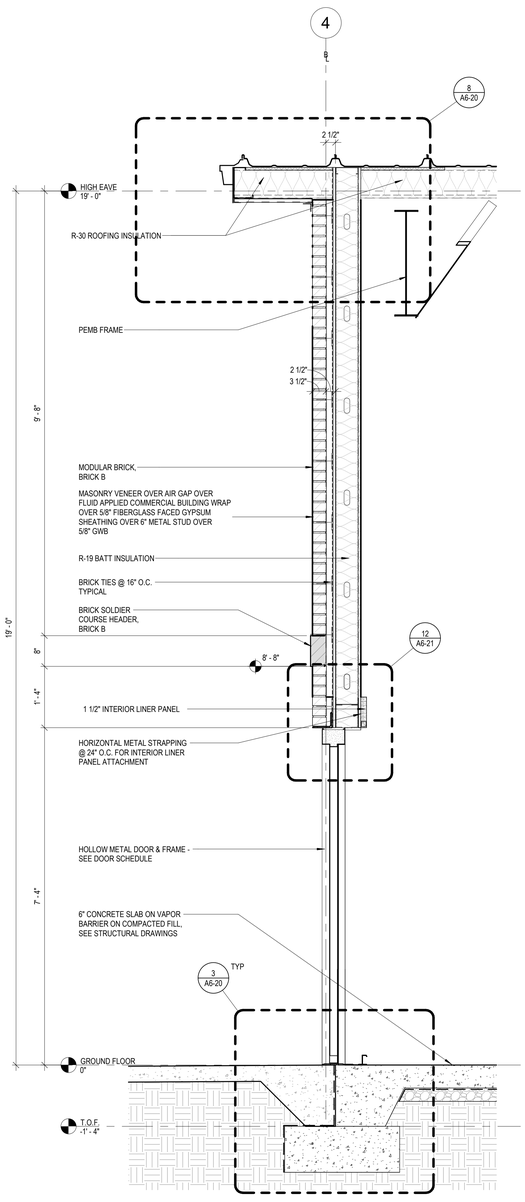
ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
3/4" = 1'-0"
10 JULY 2026
25-0006
WALL SECTIONS

A6-02

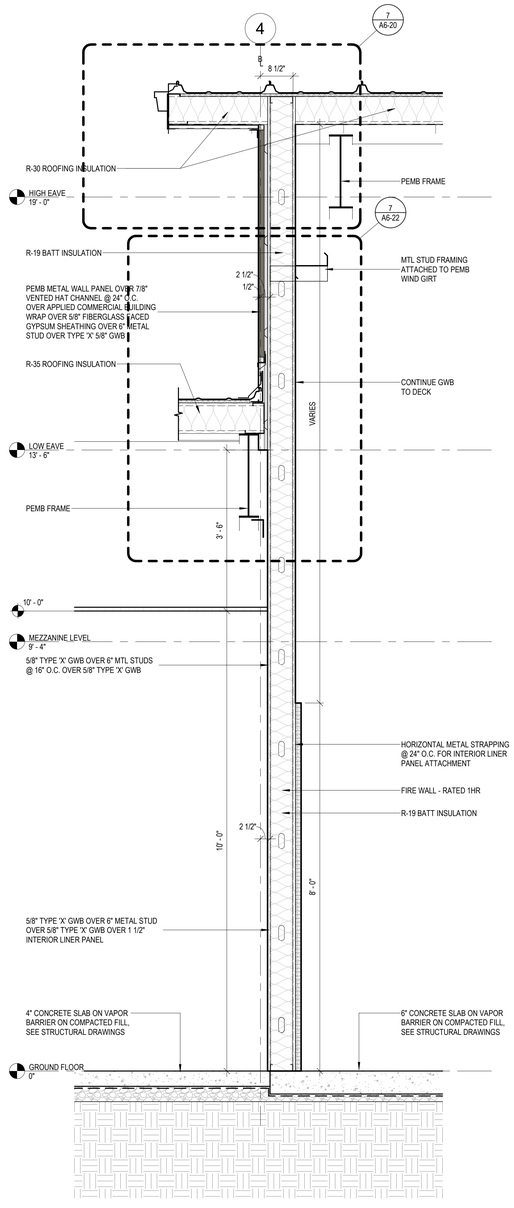
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Revisions			
#	Date	By	Description



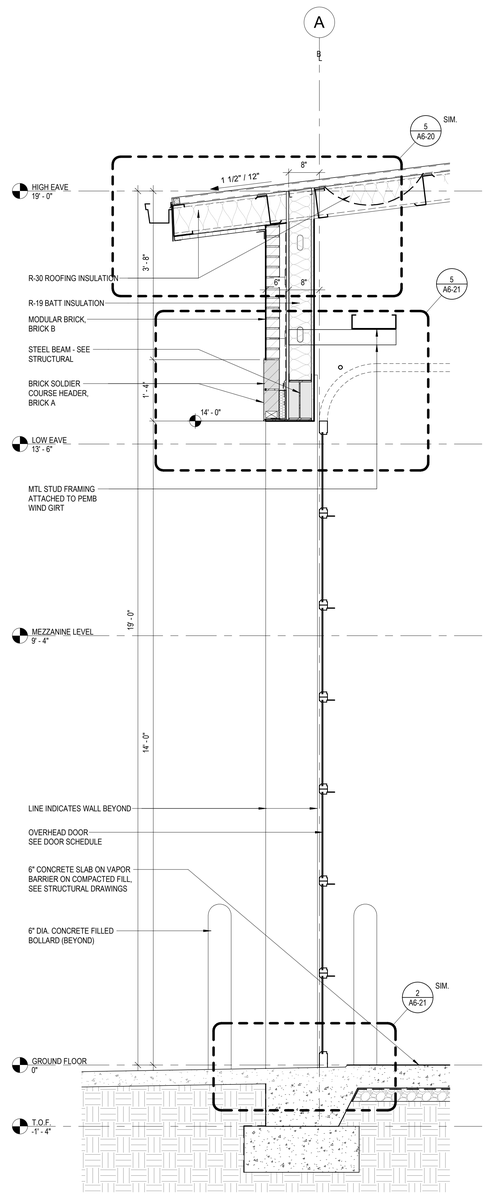
3 APPARATUS BAY WALL SECTION - MASONRY WALL @ H.M. DOOR @ GABLE

3/4" = 1'-0"



2 WALL SECTION @ TRANSITION FROM OFFICE TO APPARATUS BAY

3/4" = 1'-0"



1 APPARATUS BAY WALL SECTION - OHD @ EAVE

3/4" = 1'-0"

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CERT. NO. 52583
RALEIGH, NC

L. C. PARKER
CERT. NO. 12353
07/20/2026
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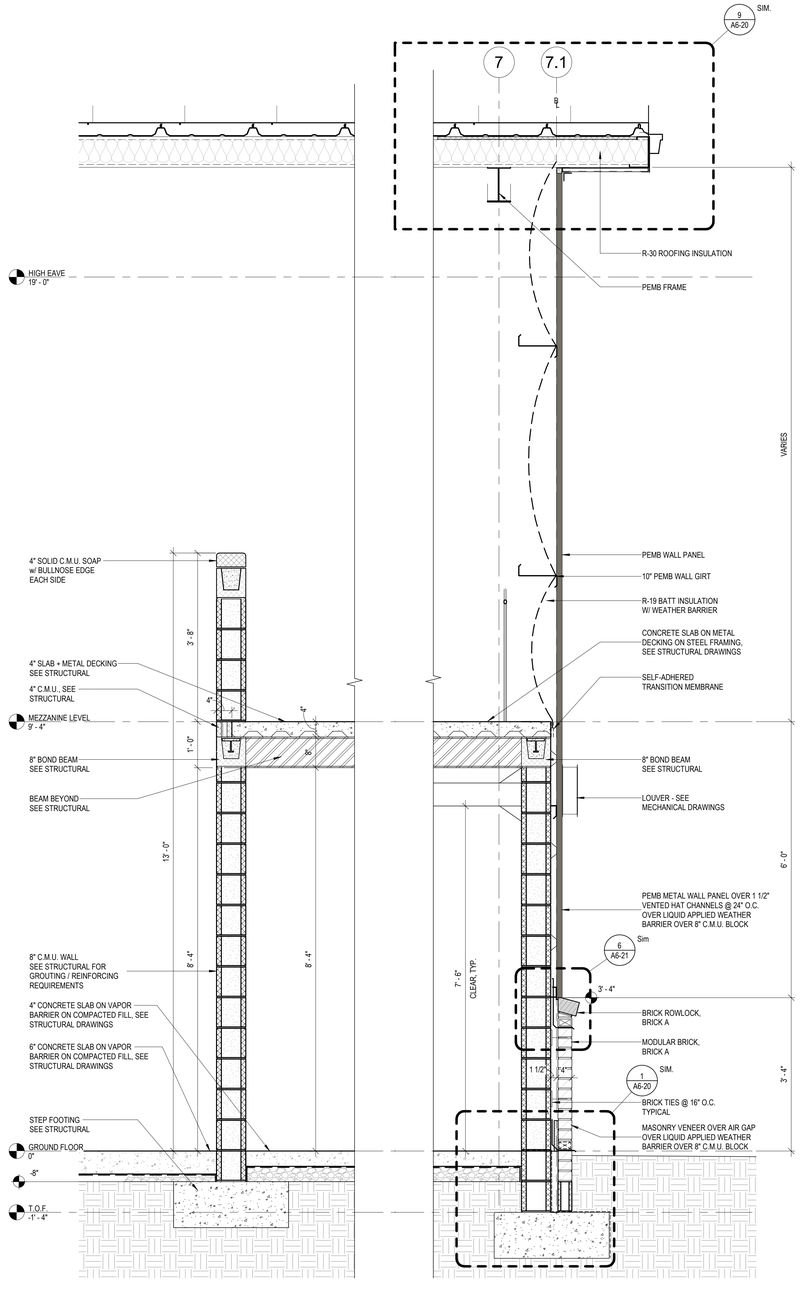
COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42 3/4" = 1'-0"
10 JULY 2026
25-0006
WALL SECTIONS
A6-03

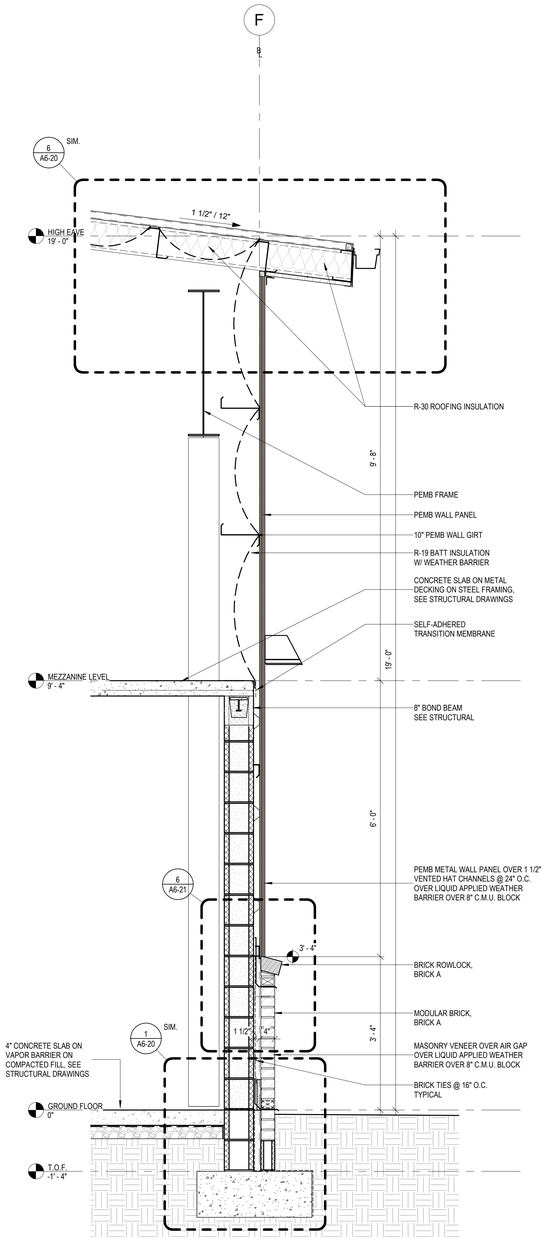
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Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS.rvt

Revisions			
#	Date	By	Description



2 APPARATUS BAY WALL SECTION - C.M.U. + PEMB WALL @ GABLE

3/4" = 1'-0"



1 APPARATUS BAY WALL SECTION - C.M.U. + PEMB WALL @ EAVE

3/4" = 1'-0"

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TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2

783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
3/4" = 1'-0"

10 JULY 2026

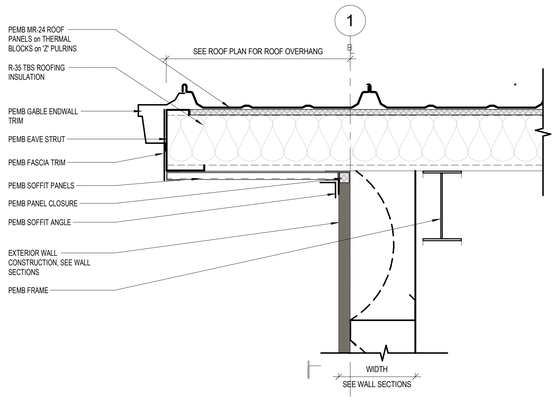
25-0006

WALL SECTIONS

A6-04

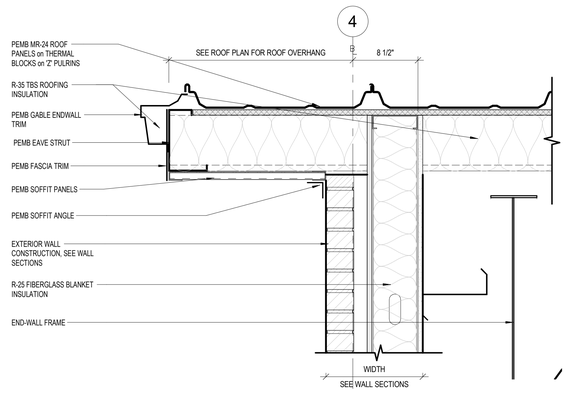
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Revisions			
#	Date	By	Description



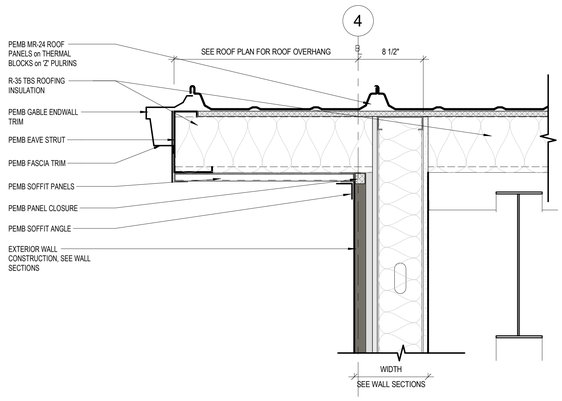
9 TYPICAL GABLE DETAIL @ METAL PANEL / GIRT

1 1/2" = 1'-0"



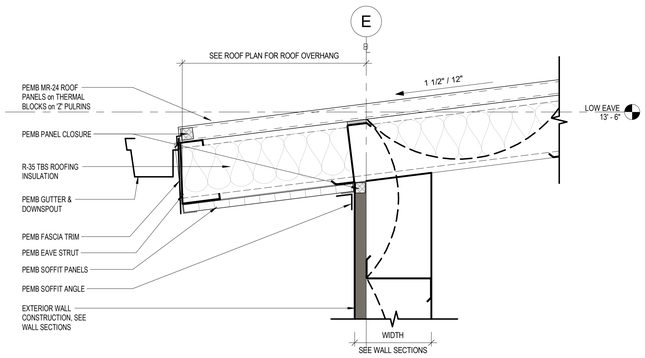
8 TYPICAL GABLE DETAIL @ BRICK VENEER / METAL STUD

1 1/2" = 1'-0"



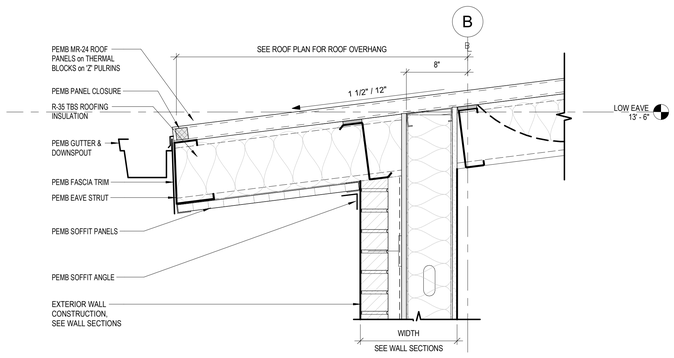
7 TYPICAL GABLE DETAIL @ METAL PANEL / METAL STUD

1 1/2" = 1'-0"



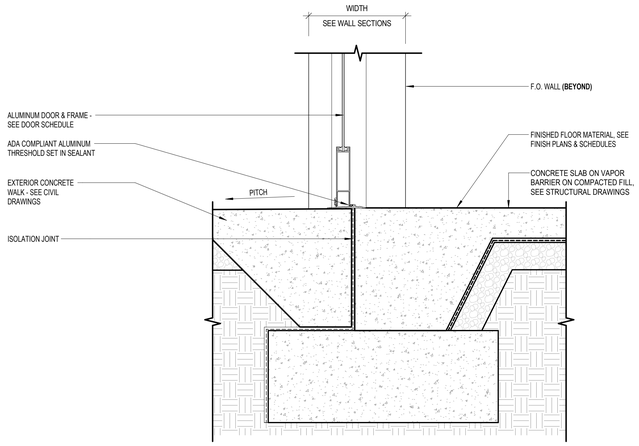
6 TYPICAL EAVE DETAIL @ METAL PANEL / GIRT

1 1/2" = 1'-0"



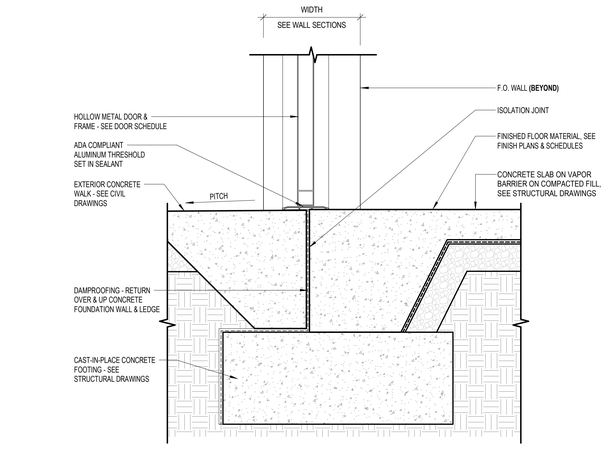
5 TYPICAL EAVE DETAIL @ BRICK VENEER / METAL STUD

1 1/2" = 1'-0"



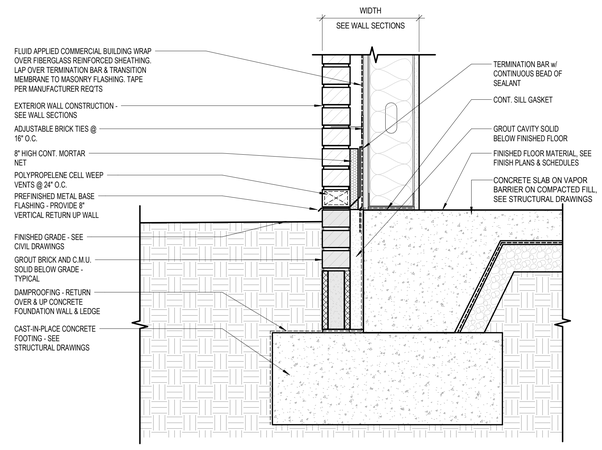
4 TYPICAL BASE FLASHING DETAIL @ ALUMINUM STOREFRONT DOOR SILL

1 1/2" = 1'-0"



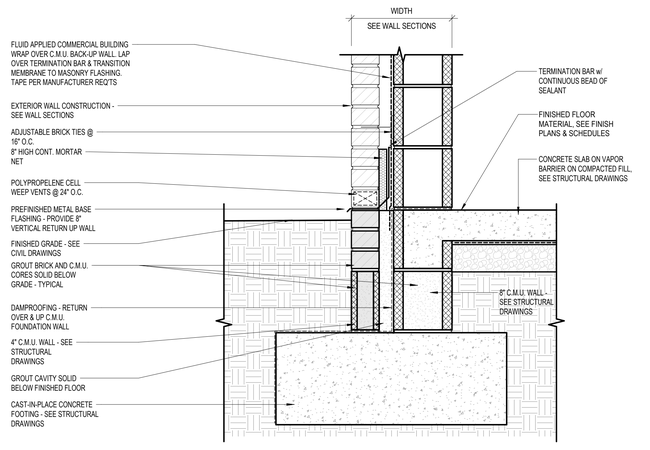
3 TYPICAL BASE FLASHING DETAIL @ ALUMINUM STOREFRONT DOOR SILL

1 1/2" = 1'-0"



2 TYPICAL BASE FLASHING DETAIL @ BRICK VENEER / METAL STUD

1 1/2" = 1'-0"



1 TYPICAL BASE FLASHING DETAIL @ BRICK VENEER / C.M.U.

1 1/2" = 1'-0"

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bobbittdesign.com

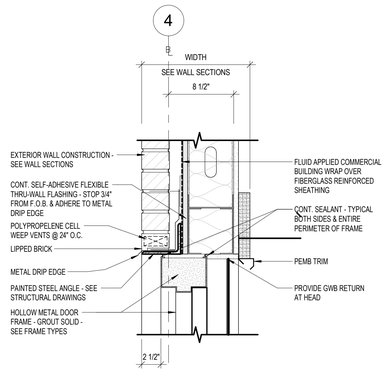
COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2

783 MANGUM ROAD
ANGIER, NC 27501

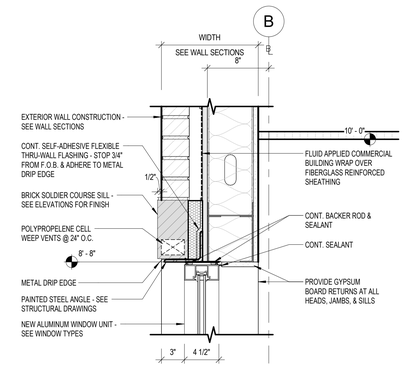
30 X 42
1 1/2" = 1'-0"
10 JULY 2026
25-0006
ENLARGED EXTERIOR DETAILS
A6-20

7/20/2026 11:33:22 AM C:\Autodesk Docs\Angier & Black River Fire Station #2\Angier and Black River FS (c...



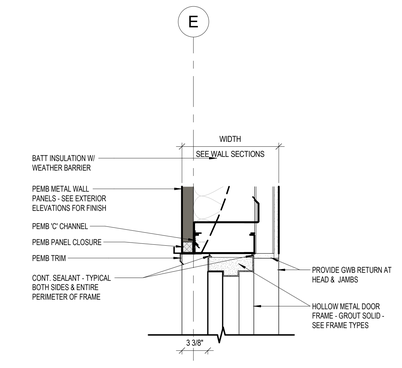
12 TYPICAL H.M. DOOR HEAD @ MASONRY WALL

1 1/2" = 1'-0"



11 TYPICAL ALUMINUM STOREFRONT HEAD DETAIL @ MASONRY WALL

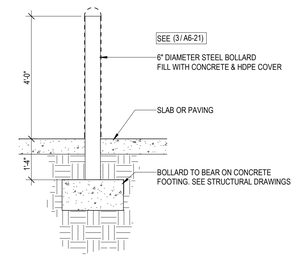
1 1/2" = 1'-0"



10 TYPICAL H.M. DOOR HEAD DETAIL @ PEMB

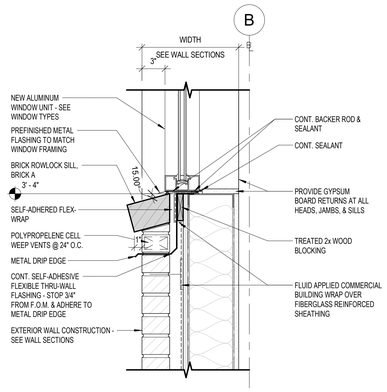
1 1/2" = 1'-0"

Revisions			
#	Date	By	Description



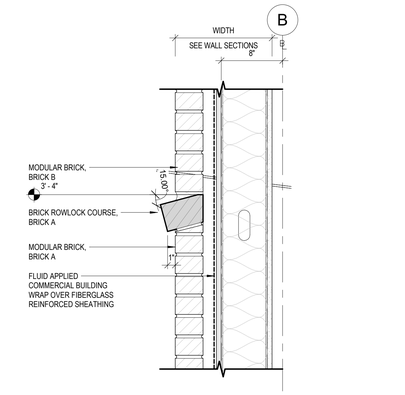
13 BOLLARD DETAIL

1/2" = 1'-0"



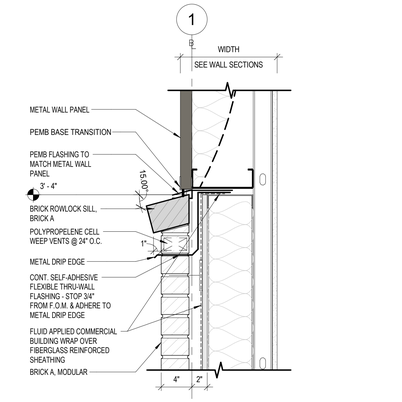
9 TYPICAL ALUMINUM STOREFRONT SILL DETAIL

1 1/2" = 1'-0"



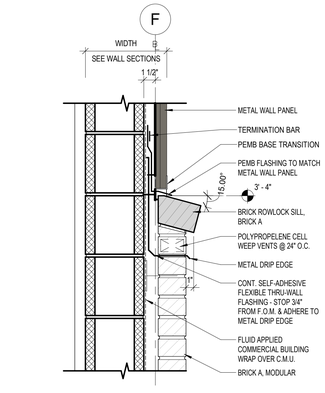
8 TYPICAL BRICK ROWLOCK DETAIL

1 1/2" = 1'-0"



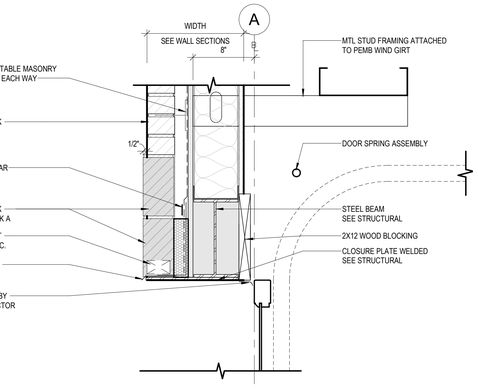
7 TYP. BRICK TO MTL PANEL TRANSITION @ STUD WALL

1 1/2" = 1'-0"



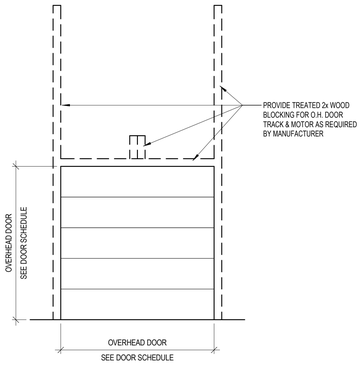
6 TYP. BRICK TO MTL PANEL TRANSITION @ C.M.U. WALL

1 1/2" = 1'-0"



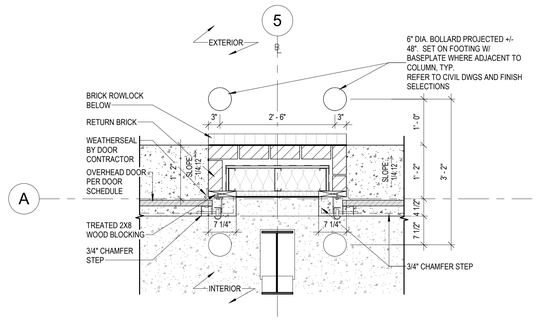
5 OVERHEAD DOOR HEAD DETAIL

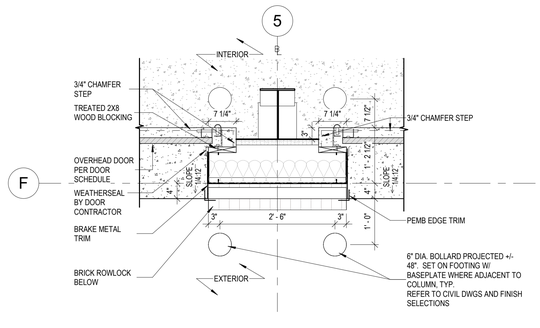
1 1/2" = 1'-0"



4 O.H. DOOR BLOCKING & REINFORCING LAYOUT

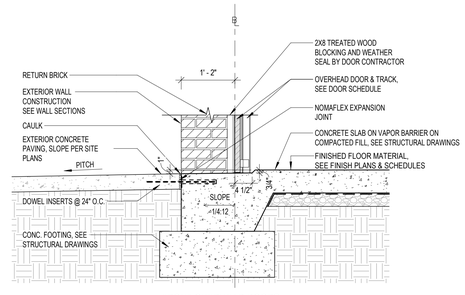
1/4" = 1'-0"



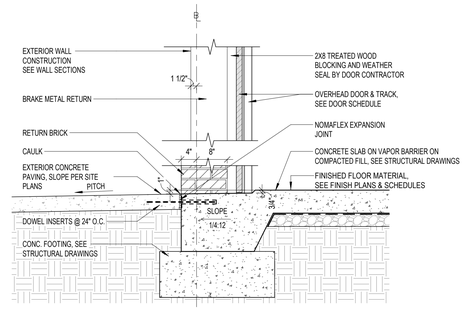


3 SLAB, BOLLARD, AND RETURN DETAILS @ OVERHEAD DOOR

3/4" = 1'-0"



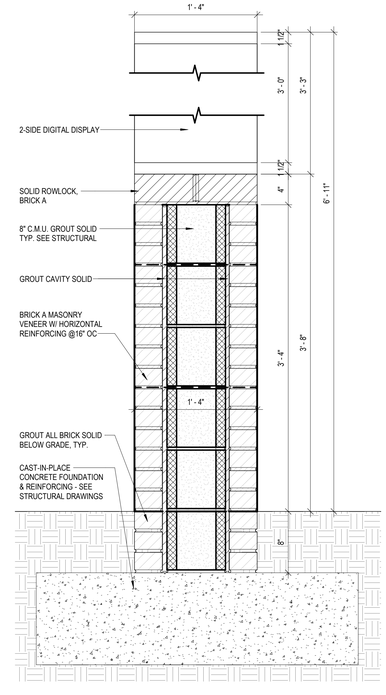
FRONT OVERHEAD DOORS



REAR OVERHEAD DOORS

2 SLAB EDGE AND BOLLARDS @ OVERHEAD DOOR

3/4" = 1'-0"



1 MONUMENT WALL SECTION

1 1/2" = 1'-0"

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CONSTRUCTION DOCUMENTS

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COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2

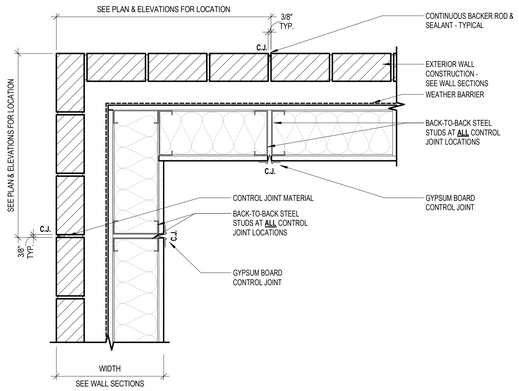
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006
ENLARGED EXTERIOR DETAILS

A6-21

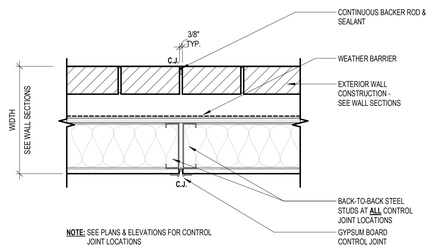
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Revisions			
#	Date	By	Description



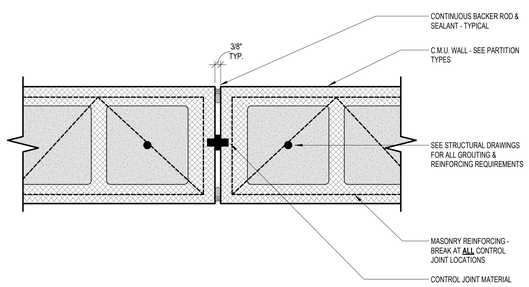
NOTE: SEE PLANS & ELEVATIONS FOR CONTROL JOINT LOCATIONS

12 CONTROL JOINT DETAIL AT BRICK/C.M.U. WALL CONSTRUCTION (CORNER)
1 1/2" = 1'-0"

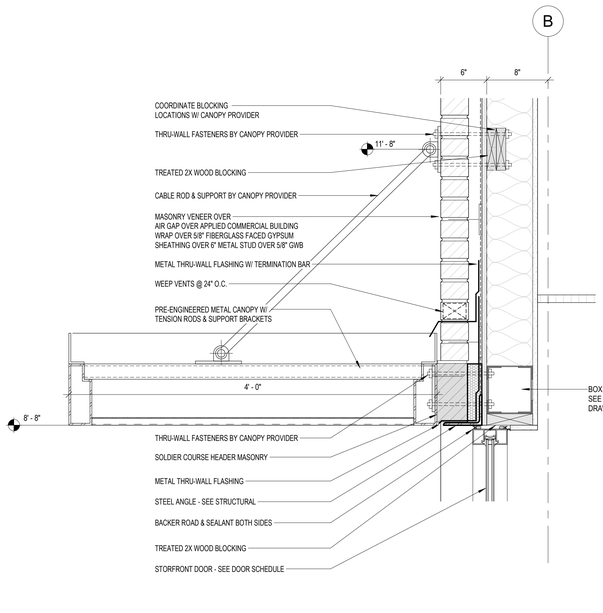


NOTE: SEE PLANS & ELEVATIONS FOR CONTROL JOINT LOCATIONS

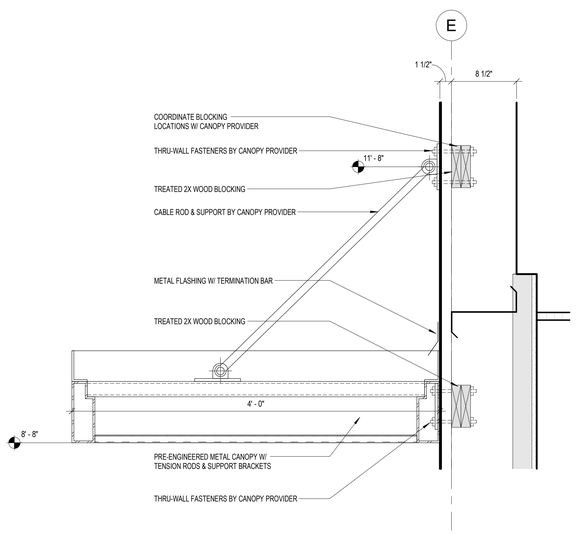
11 CONTROL JOINT DETAIL AT BRICK/STEEL STUD WALL CONSTRUCTION
1 1/2" = 1'-0"



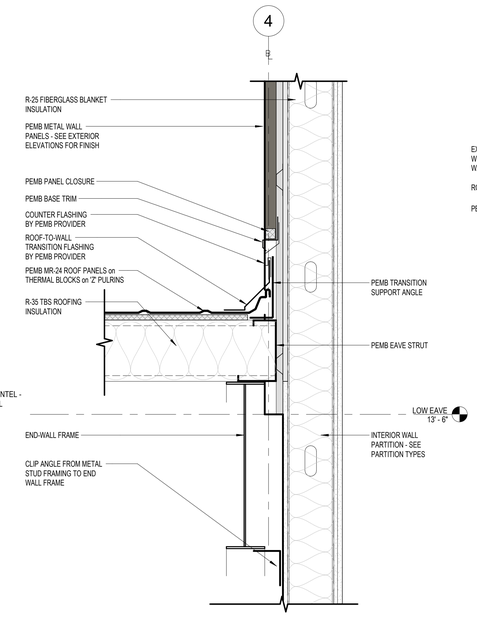
10 CONTROL JOINT @ C.M.U. WALL COSTRUCTION
3" = 1'-0"



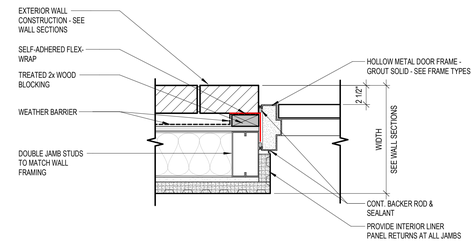
8 PRE ENGINEEREED CANOPY DETAIL @ MASONRY WALL
1 1/2" = 1'-0"



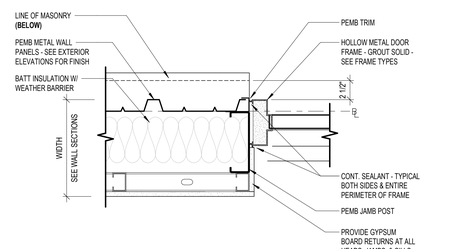
3 PRE ENGINEERED CANOPY DETIAL @ METAL WALL PANEL
1 1/2" = 1'-0"



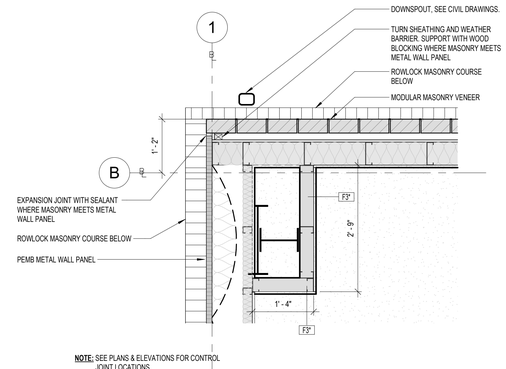
7 ROOF CONNECTION DTL
1 1/2" = 1'-0"



5 TYPICAL H.M. DOOR JAMB DETAIL @ MASONRY WALL
1 1/2" = 1'-0"

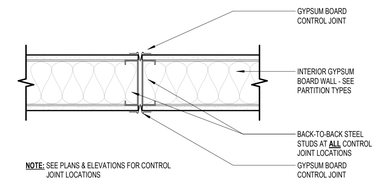


2 TYPICAL H.M. DOOR JAMB DETAIL @ PEMB
1 1/2" = 1'-0"

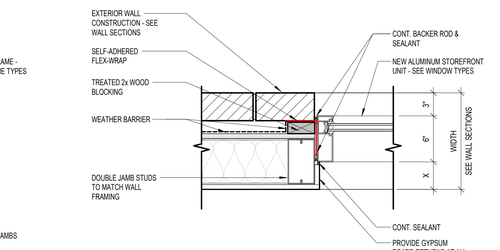


NOTE: SEE PLANS & ELEVATIONS FOR CONTROL JOINT LOCATIONS

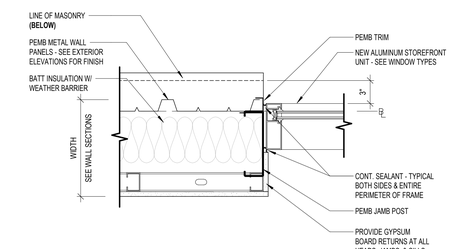
9 CORNER PLAN DETAIL @ MASONRY / METAL WALL PANEL
3/4" = 1'-0"



NOTE: SEE PLANS & ELEVATIONS FOR CONTROL JOINT LOCATIONS



4 TYP. ALUMINUM STOREFRONT JAMB DETAIL @ MASONRY WALL
1 1/2" = 1'-0"



1 TYP. ALUMINUM STOREFRONT JAMB DETAIL @ PEMB
1 1/2" = 1'-0"

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CONSTRUCTION DOCUMENTS

APPROVAL:
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COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006
ENLARGED EXTERIOR DETAILS
A6-22

10/7/2026 11:15:26 AM Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS r23.rvt

Revisions			
#	Date	By	Description

WINDOW FRAME TYPES:

CW-# = CURTAINWALL WINDOW SYSTEM

S-# = STOREFRONT WINDOW SYSTEM

W-# = INTERIOR WINDOW TYPE

GLAZING LEGEND:

G	INTERIOR GLASS
IG	INSULATED GLASS
SP	SINGLE PANE
DP	DOUBLE PANE
IG	INSULATED GLASS
SG	SPANDREL GLASS
FG	FROSTED GLASS
T	TEMPORED GLASS
R#	FIRE RATED GLASS
UL#	BALLISTIC RATED GLASS
ACM	INSULATED ALUMINUM COMPOSITE PANEL

GLAZING TYPES:

INTERIOR:

G-SP-1	SINGLE PANE GLAZING UNIT
G-SP-1T	SINGLE PANE GLAZING UNIT - TEMPERED
G-SP-R45	SINGLE PANE GLAZING UNIT - 45 MINUTE RATED
G-SP-R90	SINGLE PANE GLAZING UNIT - 45 MINUTE RATED

EXTERIOR:

IG-1	DOUBLE INSULATED GLAZING UNIT
IG-1T	DOUBLE INSULATED GLAZING UNIT - TEMPERED
FG-1	DOUBLE INSULATED GLAZING UNIT - FROSTED
SG-1	INSULATED SPANDREL GLAZING UNIT

GLAZING NOTES:

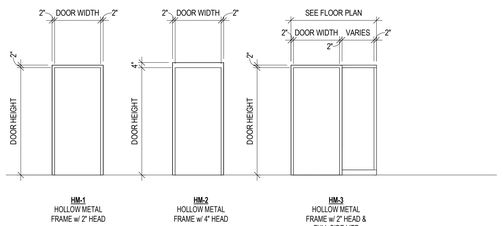
1. **ALL** GLAZING TO BE TYPE **IG-1** UNLESS NOTED OTHERWISE.
2. **ALL** GLAZING IN DOORS TO BE FULLY TEMPERED.
3. **ALL** GLAZING RATED ASSEMBLIES TO BE FIRE RATED.
4. TEMPERED GLASS REQ'D AT **ALL** OF THE FOLLOWING LOCATIONS:
   a. **ALL** GLAZING LOCATIONS WHERE GLASS IS LESS THAN 18" ABOVED THE FINISHED FLOOR.
   b. **ALL** GLAZING LOCATIONS WHERE THE TOP OF GLASS IS LESS THAN 36" ABOVED THE FINISHED FLOOR.
   c. **ALL** GLAZING PANELS WITHIN 36" OF WALKING SURFACES.
   d. **ALL** GLAZING LOCATIONS WHERE THE PANEL SIZE EXCEEDS 9 SQUARE FEET.

WOOD & HOLLOW METAL DOOR SCHEDULE

DOOR NO	DOOR INFORMATION TYPE	MATERIAL	DESCRIPTION	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	FRAME TYPE	FRAME MATERIAL	FUNCTION	WALL STOP	OVERHEAD STOP	CLOSER	KICKPLATE	HOLD OPEN	DELAYED EGRESS	PANIC HARDWARE	CARD READER	FIRE RATING	COMMENTS	DOOR NO
002	HM-3	HOLLOW METAL	FLUSH HOLLOW METAL DOOR w/ HALF LITE	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	ENTRANCE		•	•	•					0		002
003	OH-1	STEEL	STEEL SECTIONAL W/ LOW-E GLASS	14' - 0"	14' - 0"	MANUF	METAL	-									0	DOOR HARDWARE BY O. H. DOOR PROVIDER	003
004	OH-1	STEEL	STEEL SECTIONAL W/ LOW-E GLASS	14' - 0"	14' - 0"	MANUF	METAL	-									0	DOOR HARDWARE BY O. H. DOOR PROVIDER	004
005	HM-3	HOLLOW METAL	FLUSH HOLLOW METAL DOOR w/ HALF LITE	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	ENTRANCE		•	•	•					0		005
006	OH-3	STEEL	INSULATED STEEL OHD	8' - 0"	7' - 0"	MANUF	STEEL	-									N/A	DOOR HARDWARE BY O. H. DOOR PROVIDER	006
007	OH-2	STEEL	STEEL SECTIONAL W/ LOW-E GLASS	14' - 0"	14' - 0"	MANUF	METAL	-									N/A	DOOR HARDWARE BY O. H. DOOR PROVIDER	007
008	OH-2	STEEL	STEEL SECTIONAL W/ LOW-E GLASS	14' - 0"	14' - 0"	MANUF	METAL	-									N/A	DOOR HARDWARE BY O. H. DOOR PROVIDER	008
009	HM-3	HOLLOW METAL	FLUSH HOLLOW METAL DOOR w/ HALF LITE	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	ENTRANCE		•	•	•					0		009
010	HM-1	HOLLOW METAL	FLUSH HOLLOW METAL DOOR	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	ENTRANCE		•	•	•					0		010
011	HM-3	HOLLOW METAL	FLUSH HOLLOW METAL DOOR w/ HALF LITE	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	ENTRANCE		•	•	•					0		011
012	HM-2	HOLLOW METAL	FLUSH HOLLOW METAL DOOR w/ NARROW LITE	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	ENTRANCE		•	•	•					0		012
101	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR w/ FULL SIDE LITE	3' - 0"	7' - 0"	HM-3	HOLLOW METAL	OFFICE	•								0		101
102	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	OFFICE		•							0		102
103	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	STORAGE		•	•	•					0		103
104	WD-2	WOOD	FLUSH SOLID CORE WOOD DOOR w/ NARROW LITE	6' - 0"	7' - 0"	HM-1	HOLLOW METAL	PASSAGE		•	•	•					0		104
105	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	STORAGE		•							0		105
106	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PRIVACY	•	•	•	•					0		106
107	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PASSAGE	•		•	•					0		107
108	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	STORAGE	•								0		108
109	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PRIVACY	•		•	•					0		109
110	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PRIVACY	•		•	•					45 MIN		110
111	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PRIVACY	•		•	•					0		111
112	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PRIVACY	•		•	•					45 MIN		112
113	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PRIVACY	•		•	•					45 MIN		113
114	WD-1	WOOD	FLUSH SOLID CORE WOOD DOOR	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PRIVACY	•		•	•					45 MIN		114
120	HM-2	HOLLOW METAL	FLUSH HOLLOW METAL DOOR w/ NARROW LITE	3' - 0"	7' - 0"	HM-1	HOLLOW METAL	PASSAGE		•	•	•					45 MIN		120
121	HM-1	HOLLOW METAL	FLUSH HOLLOW METAL DOOR	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	PRIVACY	•			•					0		121
122	HM-4	HOLLOW METAL	FLUSH HOLLOW METAL DOOR w/ 24"X24" LOUVER	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	STORAGE	•			•					0		122
123	HM-1	HOLLOW METAL	FLUSH HOLLOW METAL DOOR	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	STORAGE	•			•					0		123
124	HM-1	HOLLOW METAL	FLUSH HOLLOW METAL DOOR	3' - 0"	7' - 0"	HM-2	HOLLOW METAL	STORAGE	•			•					0		124

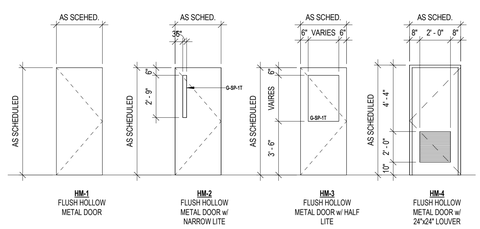
ALUMINUM DOOR SCHEDULE

DOOR NO	DOOR INFORMATION TYPE	MATERIAL	DESCRIPTION	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	FRAME TYPE	FRAME MATERIAL	FUNCTION	WALL STOP	OVERHEAD STOP	CLOSER	KICKPLATE	HOLD OPEN	DELAYED EGRESS	PANIC HARDWARE	CARD READER	FIRE RATING	COMMENTS	DOOR NO
001	AL-1	ALUMINUM	ALUMINUM DOOR - MEDIUM STYLE	6' - 0"	7' - 0"	S-3	ALUMINUM	ENTRANCE		•	•	•					0	PROVIDE ADA EXIT DEVICE	001



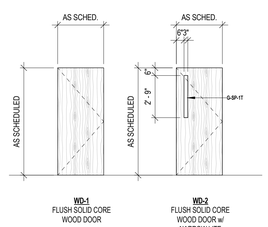
HM-1 HOLLOW METAL FRAME w/ 2" HEAD
HM-2 HOLLOW METAL FRAME w/ 4" HEAD
HM-3 HOLLOW METAL FRAME w/ 2" HEAD & FULL SIDE LITE

STANDARD HOLLOW METAL FRAME TYPES
1/4" = 1'-0"



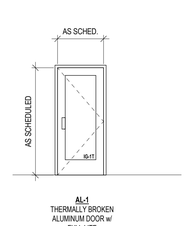
HM-1 FLUSH HOLLOW METAL DOOR
HM-2 FLUSH HOLLOW METAL DOOR w/ NARROW LITE
HM-3 FLUSH HOLLOW METAL DOOR w/ HALF LITE
HM-4 FLUSH HOLLOW METAL DOOR w/ 24"x24" LOUVER

STANDARD HOLLOW METAL DOOR TYPES
1/4" = 1'-0"



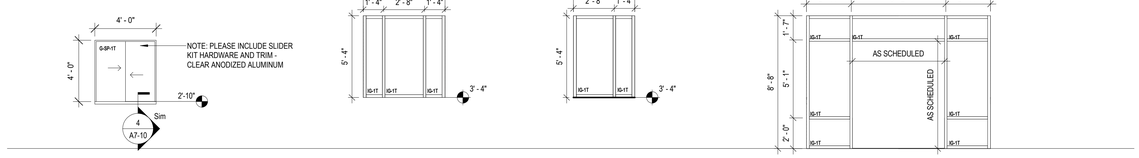
WD-1 FLUSH SOLID CORE WOOD DOOR
WD-2 FLUSH SOLID CORE WOOD DOOR w/ NARROW LITE

STANDARD WOOD DOOR TYPES
1/4" = 1'-0"



AL-1 THERMALLY BROKEN ALUMINUM DOOR w/ FULL LITE (MEDIUM STYLE)

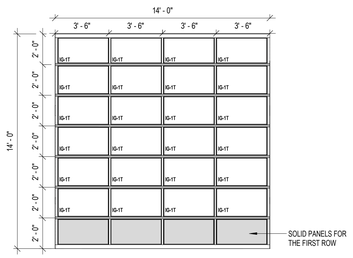
STANDARD ALUMINUM DOOR TYPES
1/4" = 1'-0"



W1 INTERIOR ALUMINUM WINDOW UNIT
S1 ALUMINUM STOREFRONT UNIT
S2 ALUMINUM STOREFRONT UNIT
S3 ALUMINUM STOREFRONT UNIT

WINDOW TYPES
1/4" = 1'-0"

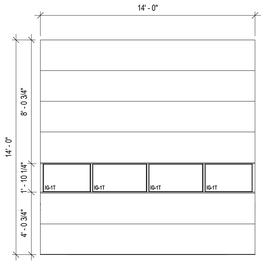
BASIS OF DESIGN: CLOPAY 904U
- STANDARD LIFT
- FRAME COLOR: SEE EXTERIOR FINISH SELECTIONS
- GLAZING: LOW-E, CLEAR, 3/4" INSULATED, TEMPERED
- AUTOMATIC OPERATION W/ INTERIOR SIDE BOLT
- WEATHERSEAL PACKAGE
- HIGH CYCLE SPRING, 50K CYCLES



OVERHEAD DOOR 1 (OH-1)

3 STANDARD FRONT OVERHEAD DOOR
1/4" = 1'-0"

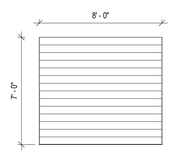
BASIS OF DESIGN: CLOPAY 904U
- STANDARD LIFT
- FRAME COLOR: SEE EXTERIOR FINISH SELECTIONS
- GLAZING: LOW-E, CLEAR, 3/4" INSULATED, TEMPERED
- AUTOMATIC OPERATION W/ INTERIOR SIDE BOLT
- WEATHERSEAL PACKAGE
- HIGH CYCLE SPRING, 50K CYCLES



OVERHEAD DOOR 2 (OH-2)

2 STANDARD REAR OVERHEAD DOOR
1/4" = 1'-0"

BASIS OF DESIGN: MODEL "THERMISER" COILING DOOR BY CORNELL/COOKSON
- 3" FLAT SLATS TO BE 24 GAUGE AND INSULATED
- FRAME COLOR: SEE EXTERIOR FINISH SELECTIONS
- 3/16" HEAVY DUTY GUIDES. 24 GAUGE HOOD.
- MOTOR OPERATED W/ EMERGENCY HAND CHAIN, SAFETY EDGE
- WEATHERSEAL PACKAGE



OVERHEAD DOOR 3 (OH-3)

1 UTILITY ROOM OVERHEAD DOOR
1/4" = 1'-0"

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COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

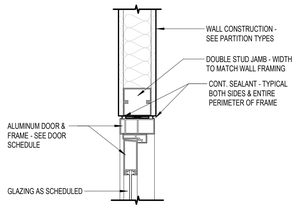
30 X 42
As indicated
10 JULY 2026
25-0006

OPENING SCHEDULE, DOOR & FRAME TYPES

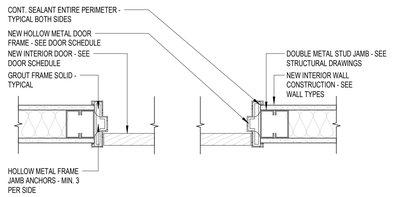
A7-01

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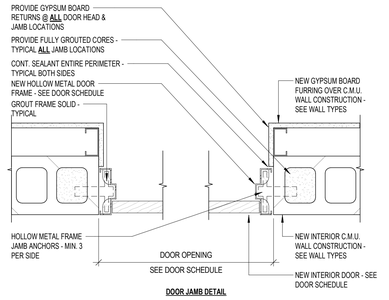
Revisions			
#	Date	By	Description



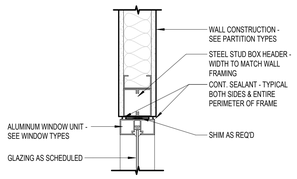
WINDOW JAMB DETAIL



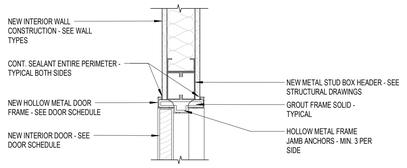
DOOR JAMB DETAIL



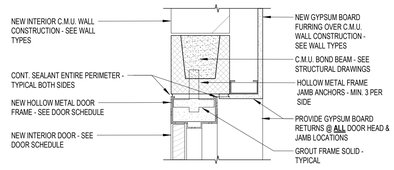
DOOR JAMB DETAIL



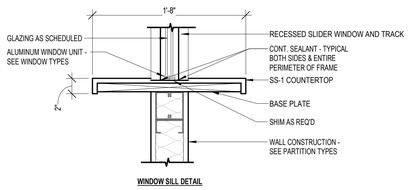
WINDOW HEAD DETAIL



DOOR HEAD DETAIL



DOOR HEAD DETAIL



WINDOW SILL DETAIL

INTERIOR ALUMINUM WINDOW FRAME DETAILS @ GYPSUM BOARD/STEEL STUD WALL CONSTR.

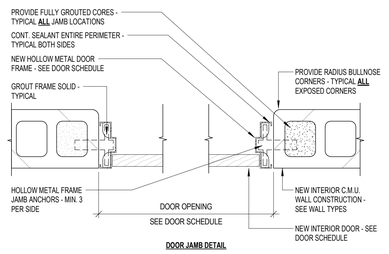
SCALE" 1 1/2" = 1'-0"

INTERIOR HOLLOW METAL DOOR FRAME DETAILS @ GYPSUM BOARD/METAL STUD WALL CONSTR.

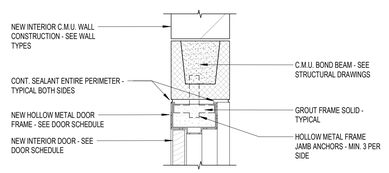
SCALE" 1 1/2" = 1'-0"

INTERIOR HOLLOW METAL DOOR FRAME DETAILS @ C.M.U. WALL CONSTR. w/ FURRING

SCALE" 1 1/2" = 1'-0"



DOOR JAMB DETAIL



DOOR HEAD DETAIL

INTERIOR HOLLOW METAL DOOR FRAME DETAILS @ C.M.U. WALL CONSTR.

SCALE" 1 1/2" = 1'-0"

1 STANDARD INTERIOR WINDOW/DOOR DETAILS

1 1/2" = 1'-0"

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ANGIER, NC 27501

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10 JULY 2026

25-0006

STANDARD INTERIOR DOOR & WINDOW DETAILS

A7-10

C:\Users\Mark Davis\Angier & Black River Fire Station #2\Angier and Black River FS 2_...

WALL TYPE MARK LEGEND:

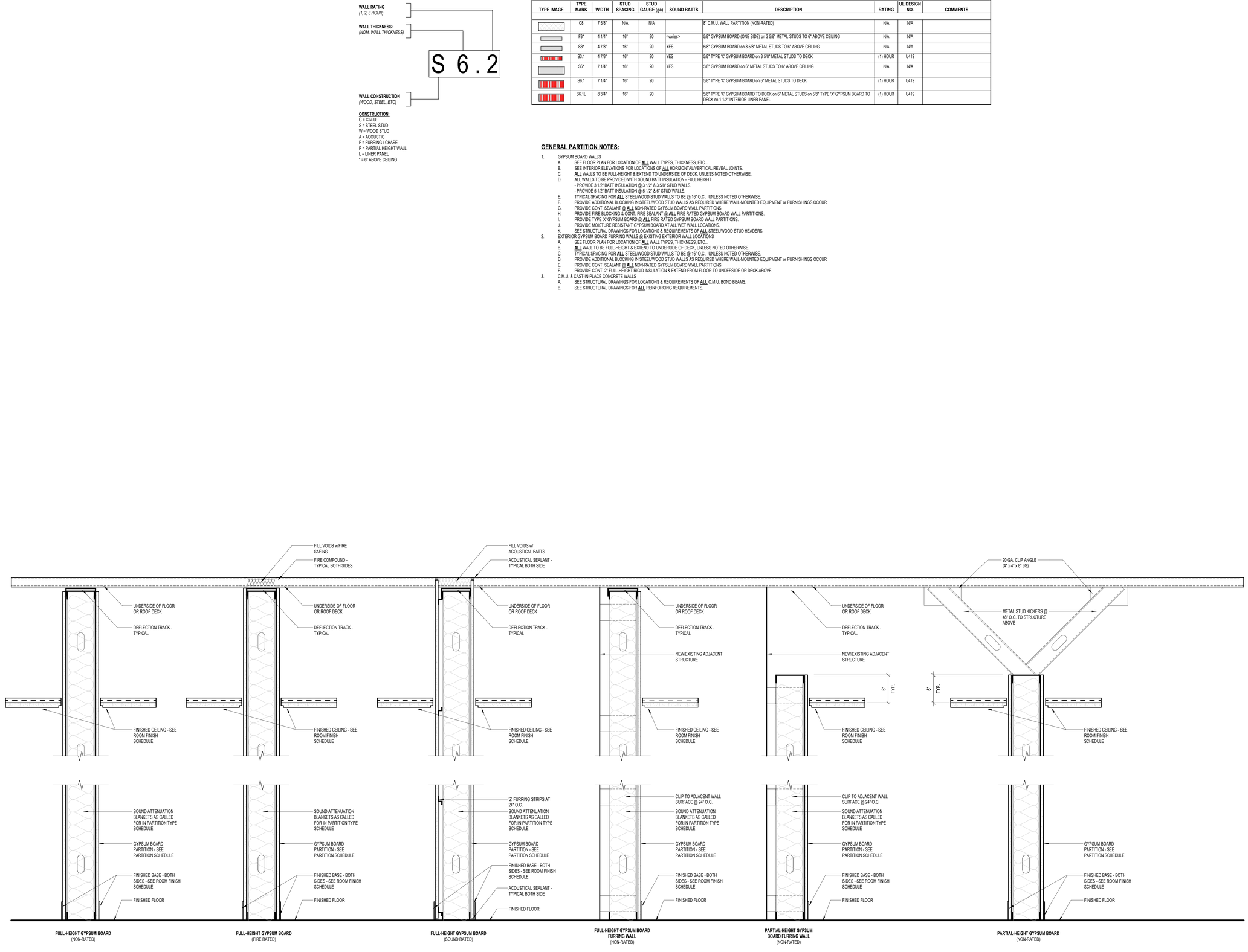
CONSTRUCTION:
C = C.M.U.
S = STEEL STUD
W = WOOD STUD
A = ACOUSTIC
F = FURRING / CHASE
P = PARTIAL HEIGHT WALL
L = LINER PANEL
* = 6" ABOVE CEILING

INTERIOR WALL TYPE SCHEDULE

TYPE IMAGE	TYPE MARK	WIDTH	STUD SPACING	STUD GAUGE (ga)	SOUND BATTS	DESCRIPTION	RATING	UL DESIGN NO.	COMMENTS
	C8	7 5/8"	N/A	N/A		8" C.M.U. WALL PARTITION (NON-RATED)	N/A	N/A	
	F3*	4 1/4"	16"	20	<varies>	5/8" GYPSUM BOARD (ONE SIDE) on 3 5/8" METAL STUDS TO 6" ABOVE CEILING	N/A	N/A	
	S3*	4 7/8"	16"	20	YES	5/8" GYPSUM BOARD on 3 5/8" METAL STUDS TO 6" ABOVE CEILING	N/A	N/A	
	S3.1	4 7/8"	16"	20	YES	5/8" TYPE 'X' GYPSUM BOARD on 3 5/8" METAL STUDS TO DECK	(1) HOUR	U419	
	S6*	7 1/4"	16"	20	YES	5/8" GYPSUM BOARD on 6" METAL STUDS TO 6" ABOVE CEILING	N/A	N/A	
	S6.1	7 1/4"	16"	20		5/8" TYPE 'X' GYPSUM BOARD on 6" METAL STUDS TO DECK	(1) HOUR	U419	
	S6.1L	8 3/4"	16"	20		5/8" TYPE 'X' GYPSUM BOARD TO DECK on 6" METAL STUDS on 5/8" TYPE 'X' GYPSUM BOARD TO DECK on 1 1/2" INTERIOR LINER PANEL	(1) HOUR	U419	

GENERAL PARTITION NOTES:

1. GYPSUM BOARD WALLS
   - A. SEE FLOOR PLAN FOR LOCATION OF **ALL** WALL TYPES, THICKNESS, ETC...
   - B. SEE INTERIOR ELEVATIONS FOR LOCATIONS OF **ALL** HORIZONTAL/VERTICAL REVEAL JOINTS.
   - C. **ALL** WALLS TO BE FULL-HEIGHT & EXTEND TO UNDERSIDE OF DECK, UNLESS NOTED OTHERWISE.
   - D. ALL WALLS TO BE PROVIDED WITH SOUND BATT INSULATION - FULL HEIGHT
     - PROVIDE 3 1/2" BATT INSULATION @ 3 1/2" & 3 5/8" STUD WALLS.
     - PROVIDE 5 1/2" BATT INSULATION @ 5 1/2" & 6" STUD WALLS.
   - E. TYPICAL SPACING FOR **ALL** STEEL/WOOD STUD WALLS TO BE @ 16" O.C., UNLESS NOTED OTHERWISE.
   - F. PROVIDE ADDITIONAL BLOCKING IN STEEL/WOOD STUD WALLS AS REQUIRED WHERE WALL-MOUNTED EQUIPMENT or FURNISHINGS OCCUR
   - G. PROVIDE CONT. SEALANT @ **ALL** NON-RATED GYPSUM BOARD WALL PARTITIONS.
   - H. PROVIDE FIRE BLOCKING & CONT. FIRE SEALANT @ **ALL** FIRE RATED GYPSUM BOARD WALL PARTITIONS.
   - I. PROVIDE TYPE 'X' GYPSUM BOARD @ **ALL** FIRE RATED GYPSUM BOARD WALL PARTITIONS.
   - J. PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT ALL WET WALL LOCATIONS.
   - K. SEE STRUCTURAL DRAWINGS FOR LOCATIONS & REQUIREMENTS OF **ALL** STEEL/WOOD STUD HEADERS.
2. EXTERIOR GYPSUM BOARD FURRING WALLS @ EXISTING EXTERIOR WALL LOCATIONS
   - A. SEE FLOOR PLAN FOR LOCATION OF **ALL** WALL TYPES, THICKNESS, ETC...
   - B. **ALL** WALL TO BE FULL-HEIGHT & EXTEND TO UNDERSIDE OF DECK, UNLESS NOTED OTHERWISE.
   - C. TYPICAL SPACING FOR **ALL** STEEL/WOOD STUD WALLS TO BE @ 16" O.C., UNLESS NOTED OTHERWISE.
   - D. PROVIDE ADDITIONAL BLOCKING IN STEEL/WOOD STUD WALLS AS REQUIRED WHERE WALL-MOUNTED EQUIPMENT or FURNISHINGS OCCUR
   - E. PROVIDE CONT. SEALANT @ **ALL** NON-RATED GYPSUM BOARD WALL PARTITIONS.
   - F. PROVIDE CONT. 2" FULL-HEIGHT RIGID INSULATION & EXTEND FROM FLOOR TO UNDERSIDE OR DECK ABOVE.
3. C.M.U. & CAST-IN-PLACE CONCRETE WALLS
   - A. SEE STRUCTURAL DRAWINGS FOR LOCATIONS & REQUIREMENTS OF **ALL** C.M.U. BOND BEAMS.
   - B. SEE STRUCTURAL DRAWINGS FOR **ALL** REINFORCING REQUIREMENTS.



1 TYPICAL INTERIOR WALL PARTITION DETAILS

1 1/2" = 1'-0"

Revisions			
#	Date	By	Description

APPROVAL:
DATE:

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CHECKED BY: L.PARKER

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2

783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006

PARTITION TYPE SCHEDULE & DETAILS

A7-20

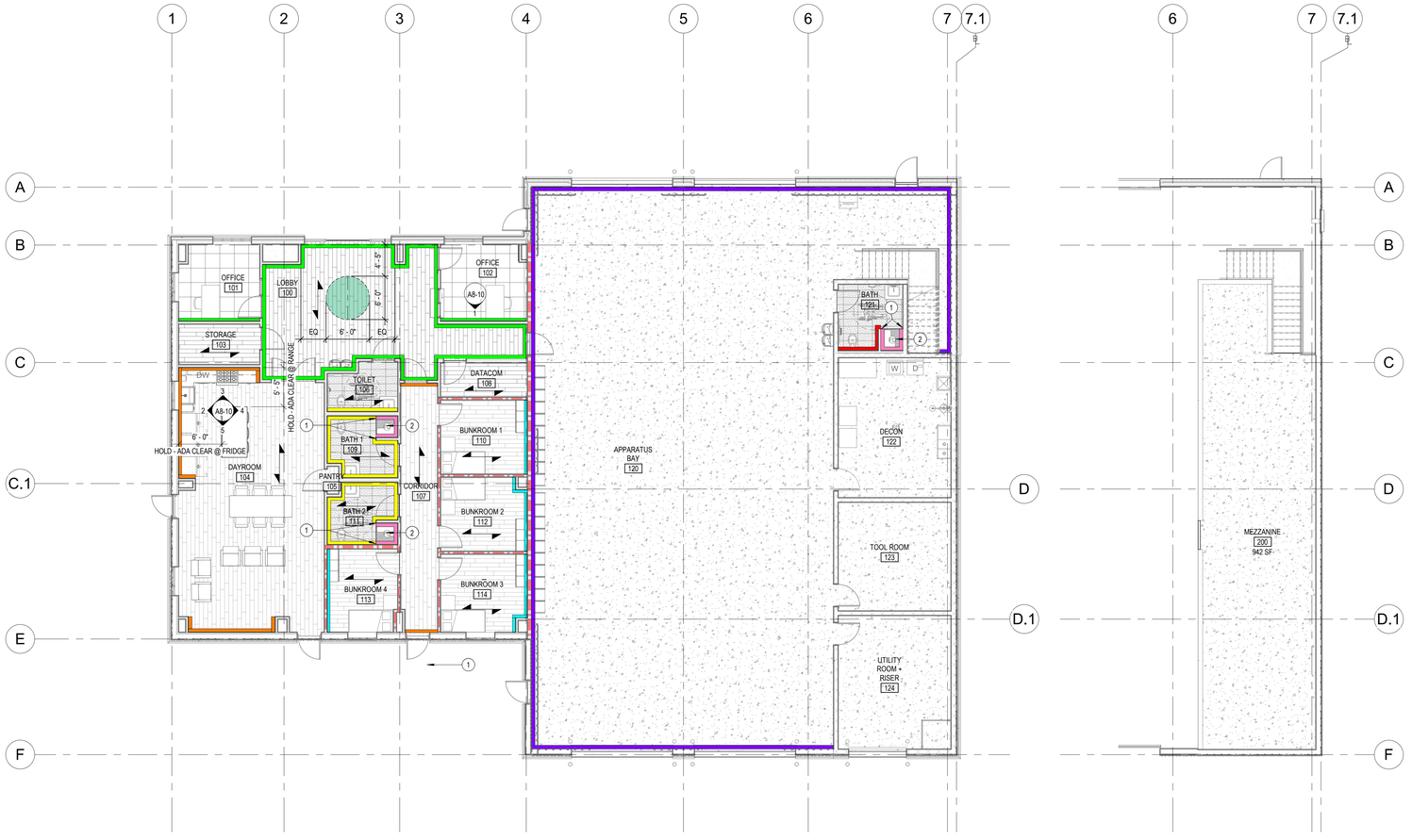
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3 WATER JET LOGO RENDER AND IMAGE

NOT TO SCALE



1 GROUND FLOOR LEVEL FINISH PLAN

1/8" = 1'-0"

2 MEZZANINE LEVEL FINISH PLAN

1/8" = 1'-0"

GENERAL FINISH PLAN NOTES

1. FLOOR FINISH CONTRACTOR TO PROVIDE LAYOUT OF FOR ALL FLOOR FINISHES FOR OWNER/ARCHITECT TO REVIEW PRIOR TO START OF WORK.
2. WHERE TILE TRANSITIONS FROM FLOOR TO WALL, OR FROM WALL TO CEILING, ALIGN CORRESPONDING GROUT LINES.
3. ALL FLOOR & WALL TILE JOINTS ARE TO BE MINIMUM ALLOWABLE BY THE TILE MANUFACTURER. CONTRACTOR TO USE SPACERS AND/OR OTHER ASSITIVE MATERIALS DURING INSTALLTION TO ENSURE CONSISTANT GROUT LINES FOR WALL TILE @ ALL LOCATIONS.
4. ALL WET WALLS RECEIVING WALL TILE SHALL INLCUDE BACKER BOARD BETWEEN GYPSUM WALL BOARD AND FINISH MATERIALS, TYP.
5. CONTRACTOR TO SUBMIT ALL FINISH SAMPLES TO ARCHITECT FOR APPROVAL PRIOR TO PROCUREMENT OR START OF FABRICATION. LABEL EACH SAMPLE TO MATCH DESIGNATION AS NOTED ON THE FINISH PLANS. INCLUDE PRODUCT DATA, SEAMING DIAGRAMS, & ALL RELATED FABRICATION/SHOP DRAWINGS.
6. ALL WALLS TO BE PRIMED & SEALED PRIOR TO THE APPLICATION OF NEW FINISH MATERIALS. USE PRIMER PRODUCT PER MANUFACTURER'S SPECIFICATIONS.
7. WHERE PAINT COLORS CHANGE, CORNERS ARE TO BE 'CUT-IN', FREE OF OVERLAPPING.
8. USE TRANSITION STRIP AT ALL LOCATIONS WHERE DISSIMILAR MATERIALS ARE USED & INTERACT.
9. TYPICAL TRANSITIONS BETWEEN DISSIMILAR FLOOR MATERIALS TO OCCUR AT CENTERLINE OF DOOR IN CLOSED POSITION.
10. ALL NEW RUBBER BASE SHALL HAVE PREFORMED CORNERS.
11. ALL GRILLES, WALL DIFFUSERS, ELECTRICAL PANELS, WALL-MOUNTED BOXES, ACCESS PANELS, ETC., WHICH ARE EXPOSED IN FINISHED SURFACES, SHALL BE FINISHED IN MANUFACTURERS MATTE BLACK EQUIVALENT.
12. HEAT WELD ALL RESILIENT SHEET FLOORING SEAMS & SEAL. PROVIDE COLOR TO MATCH WELDING RODS.
13. PAINT IN BATHROOM WALLS TO BE SEMI-GLOSS PAINT UNLESS NOTED OTHERWISE.
14. PAINT @ ALL HOUSEKEEPING & JANITOR'S CLOSETS TO BE EPOXY PAINT UNLESS NOTED OTHERWISE.
15. SEE INTERIOR ELEVATION SHEET FOR ADDITIONAL INFORMATION, INCLUDING VERTICAL PLACEMENT OF ALL RELATED WALL/CEILING FINISHES.
16. SEE REFLECTED CEILING PLAN FOR ALL CEILING FINISHES & ASSOCIATED ACCENT COLORS.
17. ALL EXISTING/NEW STEEL PAN CONCRETE STAIRS, INCLUDING THE UNDERSIDE OF STAIR & ALL EXPOSED STEEL STAIR STRINGERS & ASSOCIATED FRAMING TO BE PAINTED P-2.
18. ALL EXISTING/NEW STAIR HANDRAILS TO BE PAINTED P-2.
19. WHERE OPEN CEILING DRYFALL PAINT IS SPECIFIED, PAINT ALL EXPOSED STRUCTURE, CONDUIT, AND PIPING TO MATCH

FLOOR FINISH LEGEND

- REPRESENTS FLOOR PATTERN DIRECTION
- CONC-1
- CPT-1
- PT-1
- PT-2
- LVT-1
- LVT-2, LVT-3, LVT-4 - WATER JET CUT LOGO - SEE (3 / A8-01) FOR REFERENCE

WALL FINISH LEGEND

- CT-1, CT-2 TO 60", P-4 TO CEILING - SEE (7 / A2-01)
- CT-2 FULL HT.
- P-2 FULL HT.
- P-2, P-3 - SEE (1 / A8-10)
- P-4 FULL HT.
- LP-1 UP TO 8'-0", P-6 TO CEILING
- CT-2 TO 60", P-2 EPOXY TO CEILING

FINISH PLAN KEYNOTES LEGEND

Keynote Number	Keynote Description
1	ALIGN WALL TILE AT SHOWERS EGDE
2	FLOOR TILE @ SHOWERS TO BE PLACED ON SETTING BED. PITCHED TO DRAIN.

Revisions			
#	Date	By	Description

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GROUND FLOOR FINISH PLAN

A8-01

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ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR	BASE	WALLS	SILLS	CEILING	CASEWORK	DOOR FINISH	DOOR FRAMES	SWITCH/OUTLET PLATES	NOTES	ROOM NO
100	LOBBY	LVT-1, LVT-2, LVT-3, LVT-4	RB-1	P-2 P-3 SEE 1/A8-10		ACT-1		STAIN-1	P-5	WHITE		100
101	OFFICE	CPT-1	RB-1	P-1, P-2, P-3 SEE 1/A8-10		ACT-1		STAIN-1	P-5	WHITE		101
102	OFFICE	CPT-1	RB-1	P-1, P-2, P-3 SEE 1/A8-10		ACT-1	SS-1	STAIN-1	P-5	WHITE		102
103	STORAGE	LVT-1	RB-1	P-1		ACT-1		STAIN-1	P-5	WHITE		103
105	DAYROOM	LVT-1	RB-1	P-1, P-4		ACT-1	LAM-1, SS-1	STAIN-1	P-5	WHITE		105
105	PANTRY	LVT-1	RB-1	P-1		ACT-1		STAIN-1	P-5	WHITE		105
106	TOILET	PT-1, PT-2 @ SHOWER	PTB-1	P-2 EPOXY, CT-1,CT-2		ACT-2	LAM-1, SS-1	STAIN-1	P-5	WHITE		106
107	CORRIDOR	LVT-1	RB-1	P-1, P-2		ACT-1		STAIN-1	P-5	WHITE		107
108	DATACOM	LVT-1	RB-1	P-1		ACT-1		STAIN-1	P-5	WHITE		108
109	BATH 1	PT-1, PT-2 @ SHOWER	PTB-1	P-2 EPOXY, CT-1,CT-2 - CT-2 @ SHOWER		ACT-2, GYP @ SHOWER P-1 EPOXY	LAM-1, SS-1	STAIN-1	P-5	WHITE		109
110	BUNKROOM 1	LVT-1	RB-1	P-1, P-2		ACT-1		STAIN-1	P-5	WHITE		110
111	BATH 2	PT-1, PT-2 @ SHOWER	PTB-1	P-2 EPOXY, CT-1,CT-2 - CT-2 @ SHOWER		ACT-2, GYP @ SHOWER P-1 EPOXY	LAM-1, SS-1	STAIN-1	P-5	WHITE		111
112	BUNKROOM 2	LVT-1	RB-1	P-1, P-2		ACT-1		STAIN-1	P-5	WHITE		112
113	BUNKROOM 4	LVT-1	RB-1	P-1, P-2		ACT-1		STAIN-1	P-5	WHITE		113
114	BUNKROOM 3	LVT-1	RB-1	P-1, P-2		ACT-1		STAIN-1	P-5	WHITE		114
120	APPARATUS BAY	CONC-1	RB-1 @ GWB WALLS	P-6 EPOXY, LP-1		OPEN, DRYFALL P-6 @ ALL STRUCTURE AND CONDUIT		PER MANUF.	PER MANUF.	WHITE	ALL PRIMER SHOULD INCLUDE BLOCK FILLER @ CMU WALLS	120
120a	STAIR	CONC-1	RB-1 @ GWB WALLS	P-2 EPOXY		OPEN, DRYFALL P-6 @ ALL STRUCTURE AND CONDUIT					STRINGER, ALL RAILINGS, AND THE RISE OF EACH STAIR TO BE PAINTED P-2 EPOXY	120a
121	BATH	PT-1, PT-2 @ SHOWER	PTB-1	P-2 EPOXY, CT-2 @ SHOWER		OPEN, DRYFALL P-6 @ ALL STRUCTURE AND CONDUIT		P-5	P-5	WHITE	ALL PRIMER SHOULD INCLUDE BLOCK FILLER @ CMU WALLS	121
122	DECON	CONC-1	-	P-2 EPOXY		OPEN, DRYFALL P-6 @ ALL STRUCTURE AND CONDUIT		P-5	P-5	WHITE	ALL PRIMER SHOULD INCLUDE BLOCK FILLER @ CMU WALLS	122
123	TOOL ROOM	CONC-1	-	P-2 EPOXY		OPEN, DRYFALL P-6 @ ALL STRUCTURE AND CONDUIT		P-5	P-5	WHITE	ALL PRIMER SHOULD INCLUDE BLOCK FILLER @ CMU WALLS	123
124	UTILITY ROOM + RISER	CONC-1	-	P-2 EPOXY		OPEN, DRYFALL P-6 @ ALL STRUCTURE AND CONDUIT		P-5 @ MAN DOORS	P-5	WHITE	ALL PRIMER SHOULD INCLUDE BLOCK FILLER @ CMU WALLS	124
200	MEZZANINE	CONC-1	-	P-6 EPOXY		OPEN, DRYFALL P-6 @ ALL STRUCTURE AND CONDUIT		-	-	WHITE	ALL PRIMER SHOULD INCLUDE BLOCK FILLER @ CMU WALLS	200

DETAILED INTERIOR FINISH LEGEND

NIC = NOT IN CONTRACT
1. WINDOW SILLS - GYP BOARD PAINTED TO MATCH WALLS WHERE APPLICABLE
2. WALL FINISH - LEVEL 4 (TYP.)
3. UNDERMOUNT SINKS @ SS-1 COUNTERTOP
4. WHERE OPEN CEILING DRYFALL PAINT IS SPECIFIED, PAINT ALL EXPOSED STRUCTURE, CONDUIT, AND PIPING TO MATCH

ACOUSTICAL CEILING TILE (ACT):

ACT-1:
- MANUFACTURER: USG
- COLLECTION: OLYMPIA MICRO PANELS 50 NRC
- COLOR: WHITE
- ITEM #: SQ 4211
- SIZE: 24"x24"
- INSTALLATION: USG DX
- GRID: WHITE
- LOCATION: THROUGHOUT PER CEILING PLAN

REP: ADAM DAVIS - ADADAVIS@USG.COM - 919.454.0230

ACT-2:
- MANUFACTURER: USG
- COLLECTION: KITCHEN LAY-IN PANELS
- COLOR: FLAT WHITE 050
- ITEM #: 3210
- SIZE: 24"x24"
- INSTALLATION: USG DX
- GRID: WHITE
- LOCATION: BATHROOMS

REP: ADAM DAVIS - ADADAVIS@USG.COM - 919.454.0230

CONCRETE (CONC):

CONC-1:
- CURE AND SEAL
- MANUFACTURER: W.R.MEADOWS
- PRODUCT: VOCOMP-20
- FINISH: CLEAR SHEEN
- LOCATION: APPARATUS BAY

CARPET (CPT):

CPT-1:
- MANUFACTURER: MOHAWK
- COLLECTION: LEARN AND LIVE
- STYLE: SIDE STRIPE (GT419)
- COLOR: HERITAGE 963
- SIZE: 24" x 24"
- INSTALLATION: QUARTER TURN
- LOCATION: OFFICES

REP: LORI ZETO - LORI_ZETO@MOHAWKIND.COM - 919.302.6652

LUXURY VINYL TILE (LVT):



LVT-1:
- MANUFACTURER: MOHAWK
- COLLECTION: LIVING LOCAL
- STYLE: PREMIUM WOODS 2.5 (C2121)
- COLOR: TWO TONE 968
- FINISH: M-FORCE ULTRA
- WEAR LAYER: 20 mil
- SIZE: 7" x 48"
- INSTALLATION: 1/2 LAP
- LOCATION: THROUGHOUT PER FINISH PLAN

REP: LORI ZETO - LORI_ZETO@MOHAWKIND.COM - 919.302.6652

LVT-2:
- MANUFACTURER: TARKETT
- COLLECTION: EVENT+ ABSTRACT
- STYLE: MELANGE PEME
- COLOR: HEART THROB 11185
- WEAR LAYER: 30 mil
- SIZE: 18" x 18"
- INSTALLATION: CUSTOM WATERJET LOGO
- LOCATION: LOBBY

REP: STEPHANIE HARRIS - STAPHANIE.HARRIS@TARKETT.COM - 910.710.3900

LVT-3:
- MANUFACTURER: TARKETT
- COLLECTION: EVENT+ ABSTRACT
- STYLE: MELANGE PEME
- COLOR: GLIMMER 12036
- WEAR LAYER: 30 mil
- SIZE: 18" x 18"
- INSTALLATION: CUSTOM WATERJET LOGO
- LOCATION: LOBBY

REP: STEPHANIE HARRIS - STAPHANIE.HARRIS@TARKETT.COM - 910.710.3900

LVT-4:
- MANUFACTURER: TARKETT
- COLLECTION: EVENT+ ABSTRACT
- STYLE: MELANGE PEME
- COLOR: LATTICE 12037
- WEAR LAYER: 30 mil
- SIZE: 18" x 18"
- INSTALLATION: CUSTOM WATERJET LOGO
- LOCATION: LOBBY

REP: STEPHANIE HARRIS - STAPHANIE.HARRIS@TARKETT.COM - 910.710.3900

PORCELAIN TILE (PT):

PT-1:
- MANUFACTURER: GARDEN STATE TILE
- COLLECTION: TRIBECA
- COLOR: METROPOLIS
- SIZE: 12" x 24"
- FINISH: MATTE
- GROUT: EPOXY LATICRETE - BLACK
- INSTALLATION: STACKED - SEE FINISH FLOOR PLAN
- LOCATION: TOILET & BATHROOMS

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

PT-2:
- MANUFACTURER: GARDEN STATE TILE
- COLLECTION: TRIBECA
- COLOR: METROPOLIS
- SIZE: 2" x 2"
- FINISH: MATTE
- GROUT: EPOXY LATICRETE - BLACK
- LOCATION: SHOWER FLOORS

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

PORCELAIN TILE COVE BASE (PTB):

PTB-1:
- MANUFACTURER: GARDEN STATE TILE
- COLLECTION: TRIBECA
- COLOR: METROPOLIS
- SIZE: 6" x 12" COVE BASE
- FINISH: MATTE
- GROUT: EPOXY LATICRETE - BLACK
- LOCATION: TOILET & BATHROOMS

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

CERAMIC WALL TILE (CT):

CT-1:
- MANUFACTURER: GARDEN STATE TILE
- COLLECTION: LIVING
- COLOR: FUMEE
- SIZE: 3" x 10"
- FINISH: MATTE
- GROUT: EPOXY LATICRETE - CHARCOAL GREY
- INSTALLATION: STACKED - SEE A2-01
- LOCATION: DAYROOM, TOILET, & BATHROOMS

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

CT-2:
- MANUFACTURER: GARGEN STATE TILE
- COLLECTION: LIVING
- COLOR: FUMEE
- SIZE: 3" x 10"
- FINISH: LIGNE DECO
- GROUT: EPOXY LATICRETE - CHARCOAL GREY
- INSTALLATION: STACKED - SEE A2-01
- LOCATION: DAYROOM & SHOWERS

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

SCHLUTER FLOOR TRANSITIONS (ST):

ST-1:
- MANUFACTURER: SCHLUTER SYSTEMS
- COLLECTION: RENO-U
- COLOR: BRUSHED ANTIQUE BRONZE ANODIZED
- LOCATION: PORCELAIN TILE TO LVT/CONCRETE

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

ST-2:
- MANUFACTURER: SCHLUTER SYSTEMS
- COLLECTION: VINPRO-S
- COLOR: BRUSHED ANTIQUE BRONZE ANODIZED
- LOCATION: CARPET TO LVT

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

ST-3:
- MANUFACTURER: SCHLUTER SYSTEMS
- COLLECTION: VINPRO-U
- COLOR: BRUSHED ANTIQUE BRONZE ANODIZED
- LOCATION: LVT TO CONCRETE

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

SCHLUTER TILE TRIM (TRIM):

TRIM-1:
- MANUFACTURER: SCHLUTER SYSTEMS
- COLLECTION: JOLLY
- COLOR: BRUSHED NICKEL ATGB
- LOCATION: DAYROOM & TOILET

REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768

LINER PANEL (LP-1):

LP-1:
- MANUFACTURER: BUTLER
- TYPE: MOD 36 LINER PANEL
- COLOR: COOL IGLOO WHITE
- HEIGHT: 8' AFF
- LOCATION: APPARATUS BAY PER FINISH PLANS

PAINT (P):

P-1:
- MANUFACTURER: SHERWIN WILLIAMS
- COLOR: SW7064 PASSIVE
- LOCATOR #: 236-C1
- FINISH: EGGSHELL
- LOCATION: FIELD PAINT (EPOXY @ BATHROOMS)

REP. JEFF M BATTEN - JEFF.BATTEN@SHERWIN.COM - 646.668.6289

P-2:
- MANUFACTURER: SHERWIN WILLIAMS
- COLOR: SW9163 TIN LIZZIE
- LOCATOR #: 236-C4
- FINISH: EGGSHELL
- LOCATION: FIELD PAINT (EPOXY @ BATHROOMS)

REP. JEFF M BATTEN - JEFF.BATTEN@SHERWIN.COM - 646.668.6289

P-3:
- MANUFACTURER: SHERWIN WILLIAMS
- COLOR: SW7600 BOLERO
- LOCATOR #: 108-C7
- FINISH: EGGSHELL
- LOCATION: LOBBY, OFFICES

REP. JEFF M BATTEN - JEFF.BATTEN@SHERWIN.COM - 646.668.6289

P-4:
- MANUFACTURER: SHERWIN WILLIAMS
- COLOR: SW9624 SLATE TILE
- LOCATOR #: 233-C6
- FINISH: EGGSHELL
- LOCATION: BEDROOMS, DAYROOM, HALLWAY

REP. JEFF M BATTEN - JEFF.BATTEN@SHERWIN.COM - 646.668.6289

P-5:
- MANUFACTURER: SHERWIN WILLIAMS
- COLOR: SW6258 TRICORN BLACK
- LOCATOR #: 251-C1
- FINISH: EGGSHELL
- LOCATION: DOOR FRAMES

REP. JEFF M BATTEN - JEFF.BATTEN@SHERWIN.COM - 646.668.6289

P-6:
- MANUFACTURER: SHERWIN WILLIAMS
- COLOR: SW6252 ICE CUBE
- LOCATOR #: 257-C3
- FINISH: FLAT - DRYFALL
- LOCATION: ALL EXPOSED STRUCTURE & CONDUIT @ APPARATUS BAY & MEZZANINE

REP. JEFF M BATTEN - JEFF.BATTEN@SHERWIN.COM - 646.668.6289

LAMINATE (LAM):

LAM-1:
- MANUFACTURER: FORMICA
- COLLECTION: STANDARD LAMINATE
- COLOR: WINTER SKY 8792-58
- FINISH: MATTE
- LOCATION: DAYROOM

REP: BLAIR BRYSON - BLAIR_BRYSON@PANOLAM.COM - 704.614.3985

SOLID SURFACE (SS):

SS-1:
- MANUFACTURER: CORIAN
- COLOR: ARTISTA GRAY
- THICKNESS: 1/2"
- EDGE: CRESENT
- LOCATION: DAYROOM & OFFICE 102

REP: BARBARA DAVIS - BDAVIS@HLLMARK.COM - 704.654.8498

PRE-FINISHED WOOD DOORS (STAIN):

STAIN-1:
- MANUFACTURER: FORTE OPENING SOLUTIONS
- SPECIES: ROTARY WHITE BIRCH
- COLOR: COCOA BEAN
- LOCATION: INTERIOR WOOD DOORS

RUBBER BASE (RB):

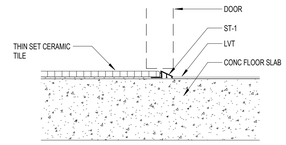
RB-1:
- MANUFACTURER: ROPPE
- COLLECTION: PINNACLE WITH STANDARD TOE
- COLOR: 100 BLACK
- SIZE: 4" (120' ROLL)
- LOCATION: PER FINISH SCHEDULE

REP: BLAIR BRYSON - BBRYSON@WMBRD.COM - 980.288.9138

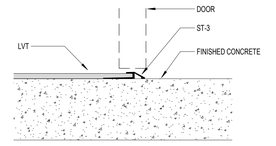
SHOWER THRESHOLD (STH):

STH-1:
- MANUFACTURER: GARDEN STATE TILE
- COLLECTION: SADDLES / SILLS / SHELVES
- SHAPE: SADDLE
- FINISH: POLISHED
- COLOR: ABSOLUTE BLACK
- SIZE: 4"X36"
- LOCATION: SHOWERS

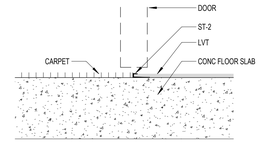
REP: AMANDA SCHWARZ - ASCHWARZ@GSTILE.COM - 843.323.5768



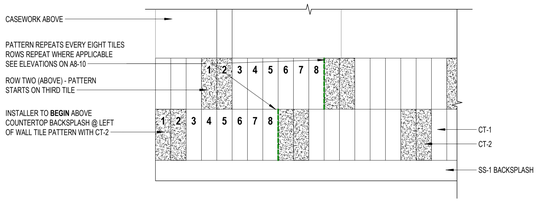
7 **TRANSITION DETAIL - PORCELAIN TILE TO LVT @ DOOR**
3" = 1'-0"



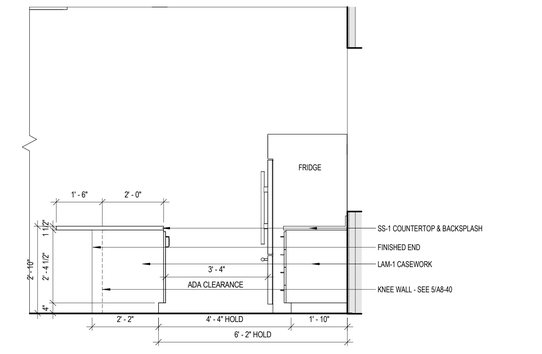
8 **TRANSITION DETAIL - PORCELAIN TILE TO CONC @ DOOR**
3" = 1'-0"



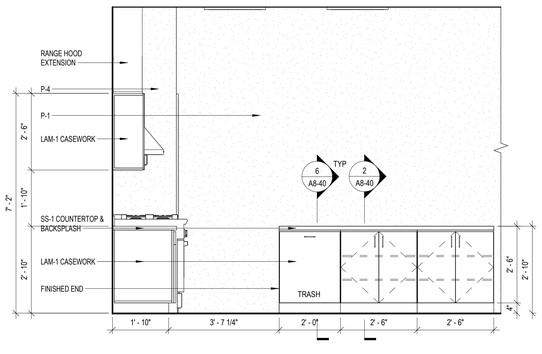
6 **TRANSITION DETAIL - CARPET TO LVT @ DOOR**
3" = 1'-0"



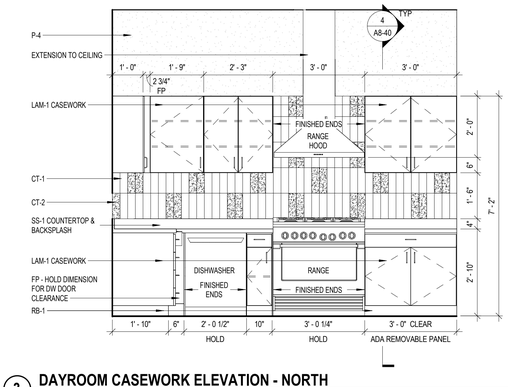
9 **DAYROOM WALL TILE PATTERN - ENLARGED DETAIL TYP**
1" = 1'-0"



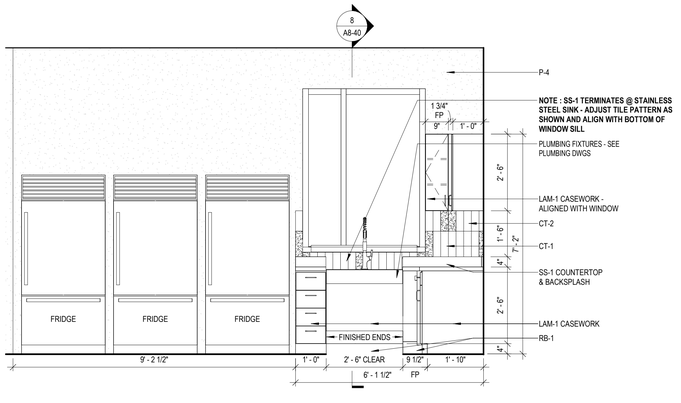
5 **DAYROOM KITCHEN ISLAND ELEVATION - SOUTH**
1/2" = 1'-0"



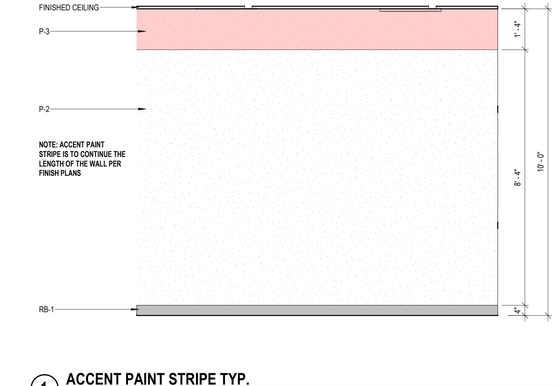
4 **DAYROOM KITCHEN ISLAND ELEVATION - EAST**
1/2" = 1'-0"



3 **DAYROOM CASEWORK ELEVATION - NORTH**
1/2" = 1'-0"



2 **DAYROOM CAESWORK ELEVATION - WEST**
1/2" = 1'-0"



1 **ACCENT PAINT STRIPE TYP.**
1/2" = 1'-0"

Revisions			
#	Date	By	Description

APPROVAL:
DATE:

BOBBITT A&E, PLLC
Headquarters Office
2400 Weston Pkwy
Cary, NC 27513-5519

CONSTRUCTION DOCUMENTS

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Headquarters Office
2400 Weston Pkwy, Cary, NC 27513-5519
Phone (919) 851-1982 | Fax (919) 851-1982
bobbittpllc.com

COORDINATOR: J.OBERHEIM
DRAWN BY: S.ROBIN
CHECKED BY: R.RODRIGUEZ
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

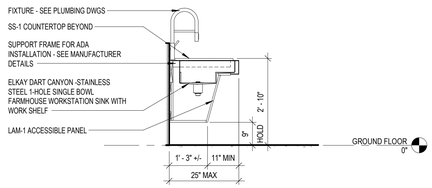
30 X 42
As indicated
10 JULY 2026
25-0006

INTERIOR ELEVATIONS, FINISH SPECIFICATIONS & SCHEDULE

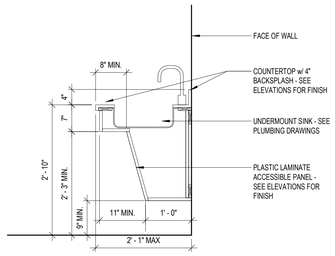
A8-10

Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS1.rvt

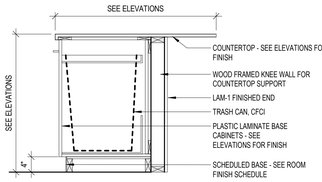
Revisions			
#	Date	By	Description



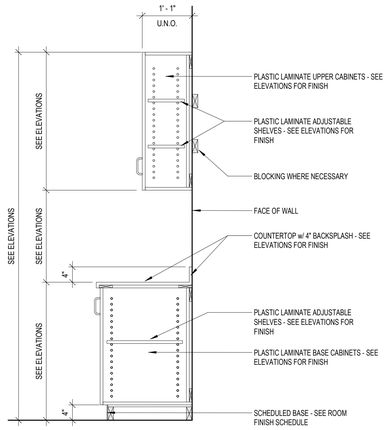
8 ADA FARMHOUSE SINK AND LAMINATE PANEL - DEATIL
1/2" = 1'-0"



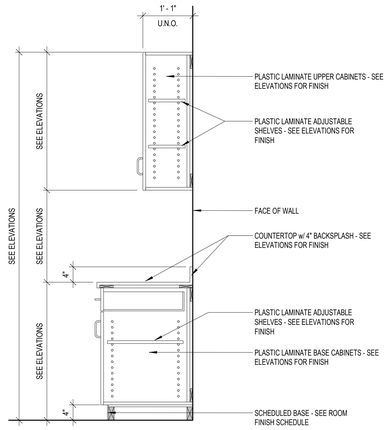
7 TYPICAL DETAIL @ ADA VANITY @ UNDER-MOUNT SINK
3/4" = 1'-0"



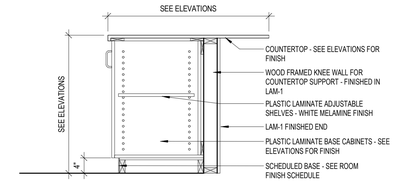
6 TYPICAL DETAIL @ LOWER ISLAND CABINET WITH PULL OUT TRASH CAN
3/4" = 1'-0"



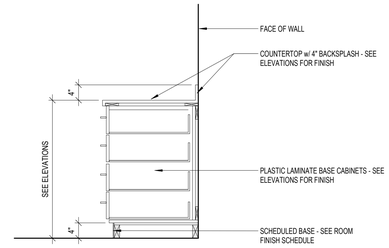
4 TYPICAL DETAIL @ UPPER AND LOWER CABINETS
3/4" = 1'-0"



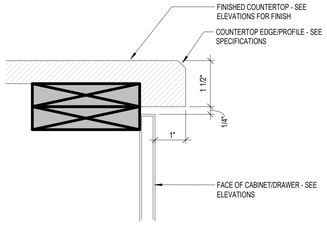
3 TYPICAL DETAIL @ UPPER & LOWER CABINETS w/ DRAWERS
3/4" = 1'-0"



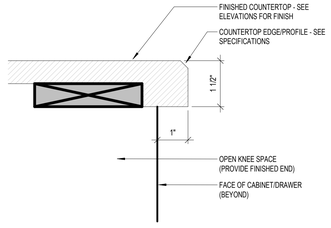
2 TYPICAL DETAIL @ LOWER ISLAND CABINETS
3/4" = 1'-0"



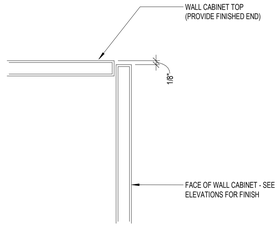
9 TYPICAL DETAIL @ LOWER CABINETS w/ ALL DRAWERS
3/4" = 1'-0"



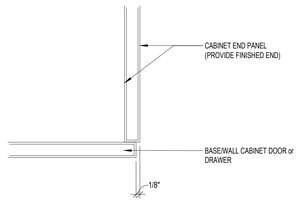
A TYPICAL SECTION DETAIL @ COUNTERTOP EDGE @ BASE CABINET
SCALE: 6" = 1'-0"



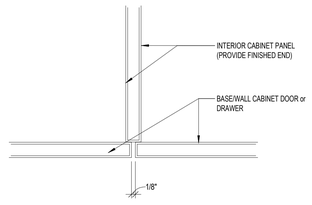
B TYPICAL SECTION DETAIL @ COUNTERTOP EDGE @ OPEN KNEE SPACE
SCALE: 6" = 1'-0"



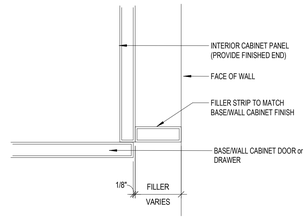
C TYPICAL SECTION DETAIL @ TOP OF WALL CABINET
SCALE: 6" = 1'-0"



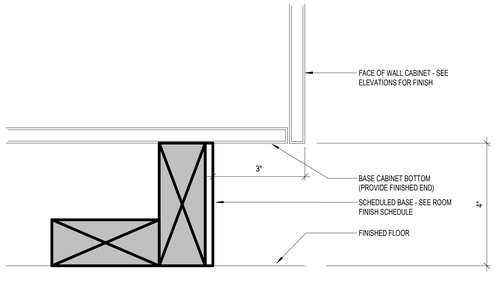
D TYPICAL PLAN DETAIL @ CABINET END
SCALE: 6" = 1'-0"



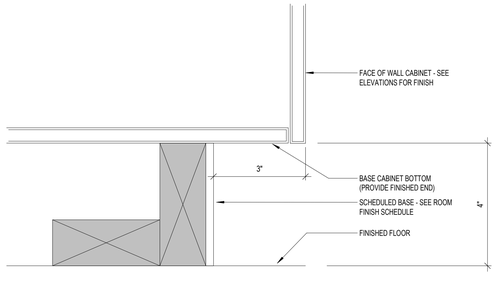
E TYPICAL PLAN DETAIL @ CABINET DOOR-TO-DOOR
SCALE: 6" = 1'-0"



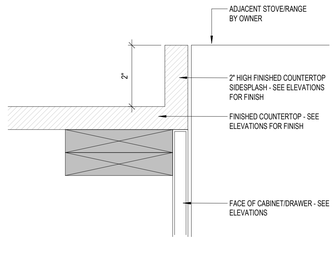
F TYPICAL PLAN DETAIL @ CABINET FILLER STRIP
SCALE: 6" = 1'-0"



G TYPICAL TOE KICK DETAIL @ CABINET BASE
SCALE: 6" = 1'-0"



H TYPICAL TOE KICK DETAIL @ CABINET BASE
SCALE: 6" = 1'-0"



J TYPICAL SECTION DETAIL @ ADA COUNTERTOP SIDESPLASH
SCALE: 6" = 1'-0"

GENERAL CASEWORK NOTES:

1. **HARDWARE SPECIFICATIONS**
   - A. DRAWER SLIDES: FULL EXTENSION SLIDES, 100 LB RATED, CLEAR ZINC FINISH. ACCURIDE NO. 3832, 20" LONG. TYPICAL ALL DRAWERS.
   - B. DRAWER HARDWARE PULLS: 4" CENTER-TO-CENTER PULLS, STAINLESS STEEL, BAR PULLS HARDWARE COLLECTION FROM AMROCK.
   - C. HINGES: BLUM MODEL CONCEALED (EUROPEAN) HINGES, OPERABLE SELF-CLOSING, BLUM STANDARD FINISH.
     1. WALL CABINETS - 110 DEGREE SWING
     2. BASE CABINETS - 170 DEGREE SWING

1 TYPICAL CASEWORK FINISHING DETAILS
6" = 1'-0"

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Autodesk Docs://Angier & Black River Fire Station #2/Angier and Black River FS.rvt

APPROVAL:
DATE:

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CERT. NO. 52583
RALEIGH, NC

K.S.C. PARKER
CERT. NO. 12353
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CONSTRUCTION DOCUMENTS

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COORDINATOR: J.OBERHEIM
DRAWN BY: S.ROBIN
CHECKED BY: R.RODRIGUEZ
TRUE NORTH:

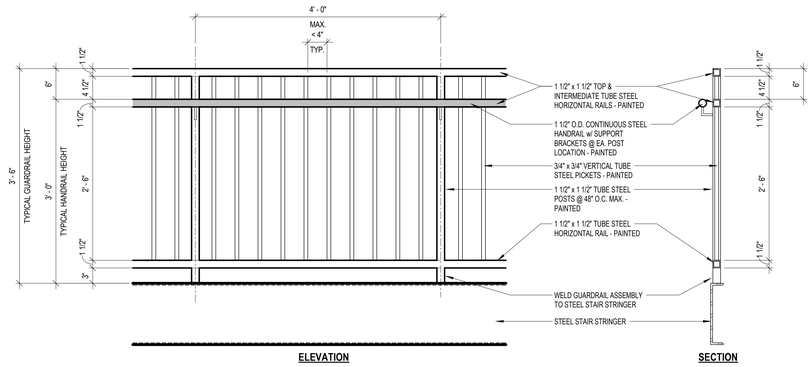
ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006

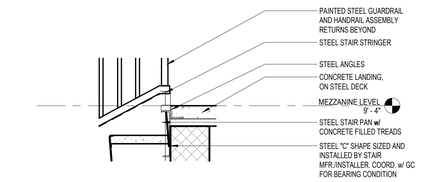
TYPICAL ENLARGED CASEWORK DETAILS

A8-40

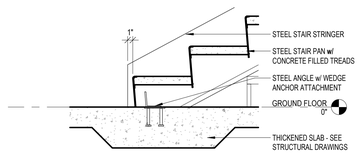
Revisions			
#	Date	By	Description



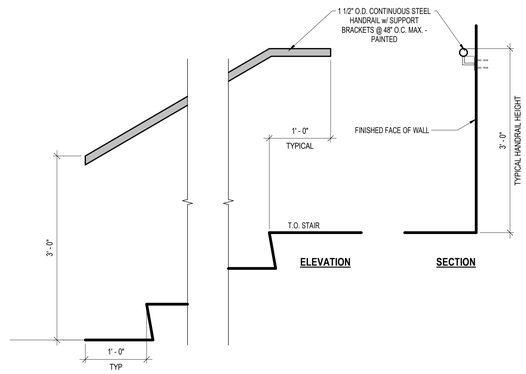
4 STANDARD VERTICAL PICKET GUARDRAIL SYSTEM w/ HANDRAIL (SURFACE MOUNT)
1" = 1'-0"



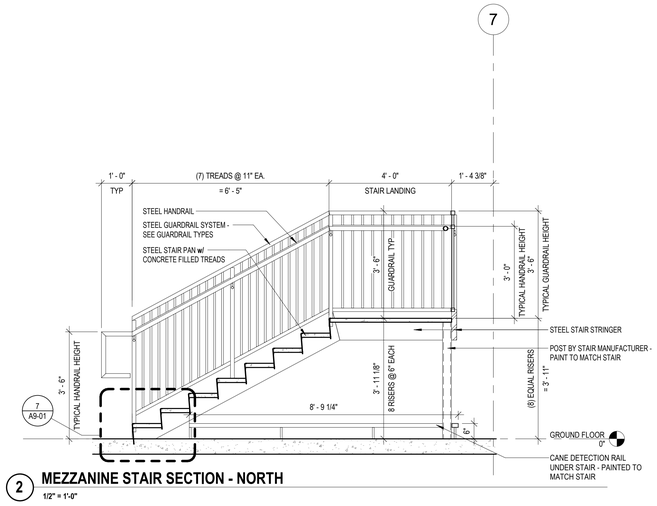
5 TOP OF STAIR - DETAIL - TYP
1" = 1'-0"



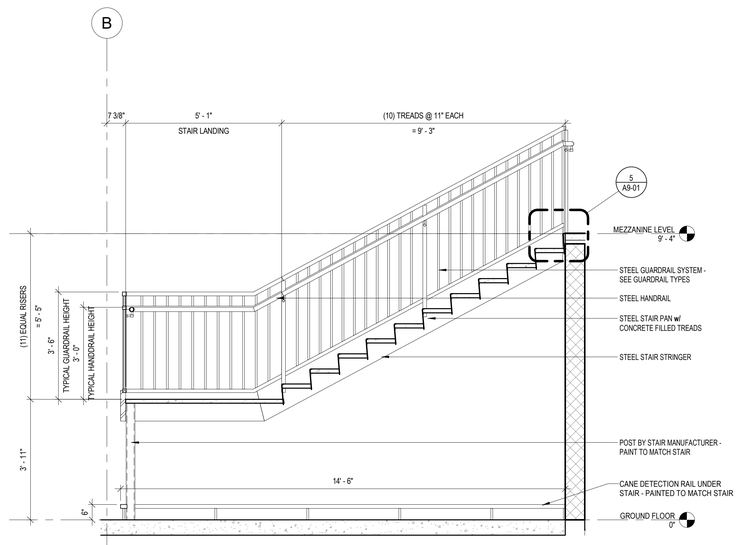
7 BOTTOM OF STAIR LANDING - DETAIL - TYP
1" = 1'-0"



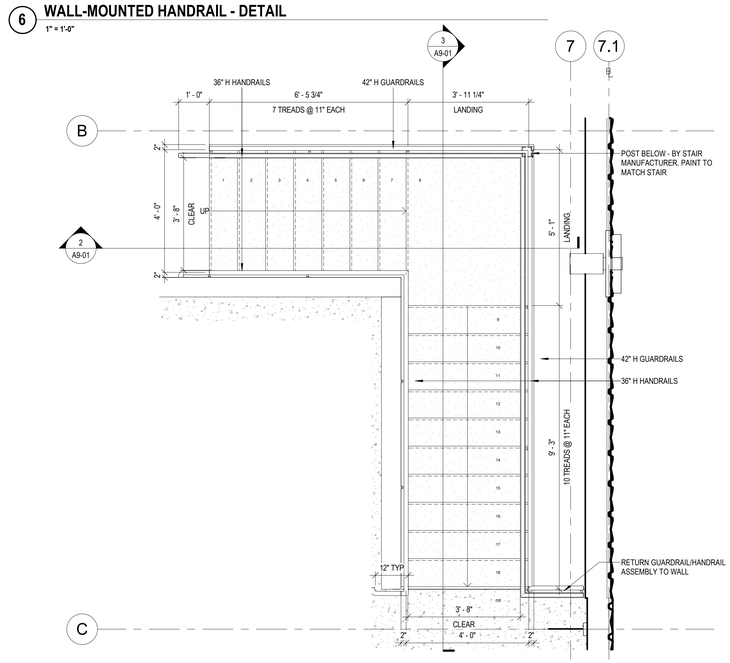
6 WALL-MOUNTED HANDRAIL - DETAIL
1" = 1'-0"



2 MEZZANINE STAIR SECTION - NORTH
1/2" = 1'-0"



3 MEZZANINE STAIR SECTION - EAST
1/2" = 1'-0"



1 ENLARGED MEZZANINE STAIR PLAN
1/2" = 1'-0"

APPROVAL:
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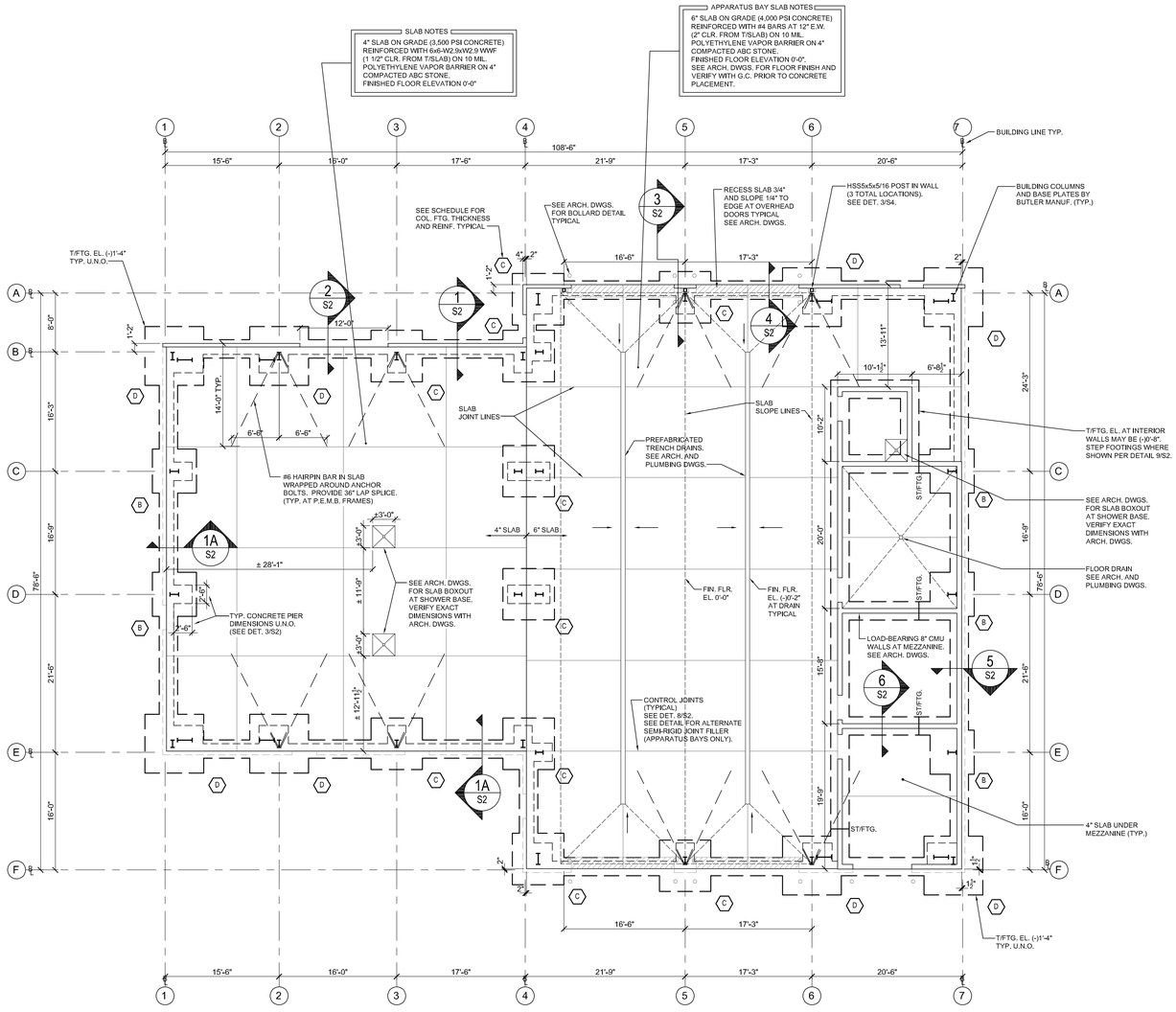
COORDINATOR: J.OBERHEIM
DRAWN BY: M.MORRISSETTE
CHECKED BY: L.PARKER
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
As indicated
10 JULY 2026
25-0006
ENLARGED VERTICAL CIRCULATION PLANS & DETAILS

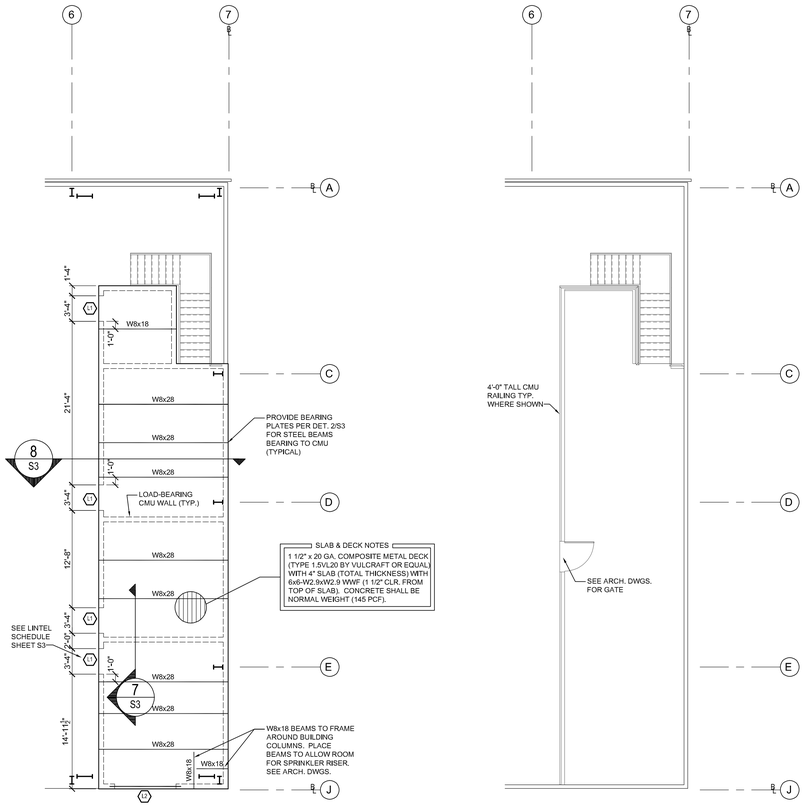
A9-01

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1 S1 SLAB AND FOUNDATION PLAN
1/8" = 1'-0"

FOOTING SCHEDULE					
MARK	SIZE			REINFORCEMENT	
⬡	N-S	E-W	THK.	N-S	E-W
A	5'-0"	5'-0"	1'-4"	#5 AT 12"	#5 AT 12"
B	6'-0"	6'-0"	1'-6"	#5 AT 12"	#5 AT 12"
C	7'-0"	7'-0"	2'-0"	#6 AT 12"	#6 AT 12"
D	8'-0"	8'-0"	2'-0"	#6 AT 12"	#6 AT 12"



2 S1 MEZZANINE FRAMING PLAN
1/8" = 1'-0"
F.F.E. 9'-4"
LIVE LOAD: 125 PSF

3 S1 MEZZANINE FLOOR PLAN
1/8" = 1'-0"
F.F.E. 9'-4"

NORTH CAROLINA PROFESSIONAL SEAL 25530 ENGINEER BRIAN M. ROSS
SEAL NOT VALID UNLESS SIGNED AND DATED

DESIGN: B. ROSS

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WWW.ROSSLINDEN.COM NC LICENSE NO. C-2364

DRAWN BY: BR
CHK BY: BR/JO

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 x 42
1/8" = 1'-0"
7/10/2026
C250803
STRUCTURAL PLANS

S1
OF S3

STRUCTURAL NOTES

I. GENERAL

1. DESIGN CODES

NORTH CAROLINA BUILDING CODE, 2018 EDITION
(AMENDED 2015 INTERNATIONAL BUILDING CODE)

ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
(ACI 318-14)

AISC MANUAL OF STEEL CONSTRUCTION - ALLOWABLE STRESS DESIGN
NINTH EDITION

ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER
STRUCTURES

2. DESIGN LOADS

LIVE LOADS: FLOOR: 100 PSF
MEZZANINE: 125 PSF (LIGHT STORAGE)
ROOF: 20 PSF

ULTIMATE DESIGN WIND SPEED: 124 MPH (RISK CATEGORY IV)

GROUND SNOW LOAD: 15 PSF

SITE CLASS D
Ss = 0.176
S1 = 0.084
SEISMIC DESIGN CATEGORY D

SEE PRE-ENGINEERING METAL BUILDING DRAWINGS BY OTHERS FOR FULL STRUCTURAL DESIGN LOAD SUMMARY USED FOR BUILDING DESIGN.

3. ALL ELEVATIONS ARE REFERENCED FROM FINISHED FLOOR ELEVATION OF 0'-0".

4. BUILDING DESIGN AND MAXIMUM FOUNDATION REACTIONS PROVIDED BY BUTLER MANUFACTURING (SEE PRELIMINARY REACTIONS DATED 10 JUNE 2026). FOUNDATION DESIGN IS BASED ON MAXIMUM AND MINIMUM LOADING CONDITIONS PROVIDED BY THE BUILDING DESIGNER. FINAL SEALED FOUNDATION REACTIONS SHALL BE PROVIDED OR REVIEW PRIOR TO CONSTRUCTION.

5. SEE BUILDING DRAWINGS FOR COLUMN AND BASE PLATE SIZES AND LOCATIONS.

6. ANCHOR BOLT DESIGN PROVIDED BY BUILDING DESIGNER. ANCHOR BOLT EMBEDMENT ONLY IS PROVIDED ON DRAWING S2.

7. ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY.

8. ROSS LINDEN ENGINEERS PC ASSUMES NO LIABILITY FOR CHANGES OR MODIFICATIONS MADE TO THESE DRAWINGS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THESE DRAWINGS.

II. CONCRETE

1. UNLESS OTHERWISE NOTED, ALL CONCRETE SHALL HAVE THE FOLLOWING STRENGTH AND SLUMP REQUIREMENTS:
3,500 PSI 28-DAY COMPRESSIVE STRENGTH, MAX. 5" SLUMP.

2. ALL CONCRETE SHALL BE MOIST CURED PER ACI 301 OR CURED WITH AN APPROVED CURING COMPOUND. CONTRACTOR SHALL VERIFY THAT THE CURING COMPOUND IS COMPATIBLE WITH FLOOR COVERING ADHESIVES, COATINGS, OR TOPPINGS TO BE USED. CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS.

2A. PROVIDE EUCO DIAMOND HARD SEALER BY EUCLID CHEMICAL CO. AT APPARATUS BAY. SEE ARCH. DWGS. FOR ALTERNATES AND VERIFY WITH G.C. PRIOR TO CONCRETE PLACEMENT.

3. UNLESS OTHERWISE NOTED, ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL, CONFORMING TO ASTM A-615, GRADE 60, DEFORMED.

4. UNLESS OTHERWISE NOTED, ALL DETAILING, FABRICATION, AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. (ACI 315)

5. ALL BAR SPLICES SHALL BE CLASS "B" TENSION SPLICES PER ACI 318-08, UNLESS OTHERWISE SHOWN.

6. ANCHOR BOLTS TO BE ASTM A36 OR A307.

7. CONTRACTOR SHALL REFER TO DRAWINGS OF OTHER TRADES AND VENDOR DRAWINGS FOR EMBEDDED ITEMS AND RECESSES NOT SHOWN ON THE STRUCTURAL DRAWINGS.

8. ALL SPREAD FOOTINGS BEARING ON NATIVE SOIL OR STRUCTURAL FILL ARE DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 3,000 PSF. A GEOTECHNICAL REPORT BY ECS SOUTHEAST LLC DATED 15 OCTOBER 2025 HAS BEEN USED AS THE BASIS OF THIS DESIGN. A GEOTECHNICAL REPRESENTATIVE SHALL INSPECT ALL FOOTING EXCAVATIONS TO CONFIRM ALLOWABLE BEARING PRESSURES.

9. PROVIDE TWO (2) #5 x 4'-0" LONG DIAGONAL BARS IN TOP FACE OF ALL SLABS (1" CLEAR) AT ALL RE-ENTRANT CORNERS. SEE PLAN FOR LOCATIONS.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, PROTECTING, AND RELOCATING AS REQUIRED ALL SERVICE AND UTILITY LINES IN VICINITY OF THE WORK SITE.

11. CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS OF ALL MECHANICAL AND ELECTRICAL OPENINGS AND EQUIPMENT PADS WITH THE MECHANICAL AND ELECTRICAL DETAILS AND SHOP DRAWINGS BY OTHERS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL OPENINGS AND SLEEVES FOR PROPER DISTRIBUTION FOR ALL UTILITIES THROUGHOUT THE BUILDING.

12. ALL DOWELS WHICH ARE TO BE DRILLED AND GROUTED INTO EXISTING CONCRETE SHALL BE DONE WITH AN EPOXY GROUT. DRILL HOLE WITH DIAMETER 1/8" LARGER THAN DOWEL OR AS RECOMMENDED BY GROUT SUPPLIER. USE HIT-RE 500 V3 BY HILTI OR APPROVED EQUAL.

III. MASONRY

1. MASONRY CONSTRUCTION SHALL COMPLY WITH ACI 530.1-02/ASCE 6-02: "SPECIFICATION FOR MASONRY STRUCTURES."

2. ASSUMED MASONRY PROPERTIES: UNIT COMPRESSIVE STRENGTH 1900 PSI, TYPE S MORTAR, PARTIAL GROUT, RUNNING BOND.

3. SEE THE DRAWINGS FOR LINTEL INFORMATION.

4. PROVIDE 9 GA. LADDER-TYPE JOINT REINFORCEMENT AT 16" O.C.

5. PROVIDE A CONTINUOUS BOND BEAM (WITH TWO #4 BARS MINIMUM) AT THE TOP OF ALL WALLS AND AT LOCATIONS WHERE A ROOF OR ELEVATED FLOOR IS STRUCTURALLY CONNECTED TO THE WALL.

6. PROVIDE CONTINUOUS BOND BEAMS (WITH TWO #4 BARS MINIMUM) AT A MAXIMUM SPACING OF 8 FEET.

7. BOND BEAM BLOCK UNITS SHALL HAVE OPENINGS IN THE BOTTOM TO ALLOW VERTICAL REINFORCEMENT TO PASS. U-BLOCKS SHALL BE USED AT LINTELS ONLY.

8. SEE DRAWINGS FOR VERTICAL REINFORCING. THE FOLLOWING MINIMUM VERTICAL REINFORCING SHALL BE IN ADDITION TO REINFORCING SHOWN ON DRAWINGS: ONE #5 BAR AT EACH CORNER, ONE #5 BAR EACH SIDE OF OPENINGS, ONE #5 BAR AT ENDS OF WALLS.

9. ALL VERTICAL REINFORCING SHALL BE CONTINUOUS FROM TOP TO BOTTOM OF WALL EXCEPT WHERE INTERRUPTED BY AN OPENING.

10. PROVIDE DOWELS INTO FOOTING OR SLAB TO MATCH VERTICAL REINFORCING.

11. FILL ALL REINFORCED CELLS AND BOND BEAMS WITH 3000 PSI GROUT. PLACE GROUT IN VERTICAL LIFTS NOT EXCEEDING 6 FEET.

12. EXPANSION ANCHORS SHALL BE HILTI KWIK HUS-EZ EXPANSION ANCHORS OR APPROVED EQUAL. INSTALLATION AND EMBEDMENT DEPTH SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

IV. STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WIDE FLANGE BEAMS AND COLUMNS, UNLESS NOTED, SHALL CONFORM TO THE REQUIREMENTS OF ASTM A992 OR ASTM A572, GRADE 50. ANGLES AND CHANNELS SHALL CONFORM TO ASTM A36. TUBES SHALL CONFORM TO ASTM A500, GRADE B.

2. ALL DETAILING, FABRICATION, AND ERECTION OF STRUCTURAL STEEL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE REQUIREMENTS OF THE AISC SPECIFICATIONS FOR BUILDINGS, LATEST EDITION.

3. UNLESS OTHERWISE NOTED, ALL SHOP CONNECTIONS SHALL BE MADE BY WELDING OR HIGH STRENGTH BOLTING. (3/4" DIAMETER BOLTS, MINIMUM)

4. WELDS SHALL BE MADE WITH E-70XX ELECTRODES BY CERTIFIED WELDERS.

5. ALL COLUMN ANCHOR BOLT HOLES TO BE OVERSIZED IN ACCORDANCE WITH RECOMMENDATIONS OF "AISC" MANUAL FOR "DETAILING FOR STEEL CONSTRUCTION."

6. UNLESS OTHERWISE NOTED, ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER HIGH STRENGTH BOLTS (ASTM A-325). CONNECTIONS SHALL BE DESIGNED AS BEARING TYPE WITH THREADS IN SHEAR PLANE. BOLTS SHALL BE TIGHTENED TO THE SNUG TIGHT CONDITION PER "AISC" UNLESS NOTED OTHERWISE ON THE DRAWINGS.

7. UNLESS OTHERWISE SHOWN, ALL BEAM CONNECTIONS SHALL BE STANDARD FRAMED OR SEATED CONNECTIONS AS SHOWN IN PART 4 OF THE AISC MANUAL OF STEEL CONSTRUCTION. REACTIONS ARE INDICATED ON THE DRAWINGS.

8. GUSSET PLATES SHALL BE 3/8" THICK MINIMUM.

9. CONTRACTOR TO PROVIDE ADEQUATE BRACING FOR STRUCTURE SO THAT IT WILL BE STABLE DURING ALL STAGES OF CONSTRUCTION. THE STRUCTURE IS DESIGNED FOR A COMPLETED CONDITION ONLY AND THEREFORE MAY REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION.

V. METAL FLOOR DECK

1. COMPOSITE METAL FLOOR DECK SHALL BE 1 1/2" DEEP x 20 GAGE (EQUAL TO 1.5VL20 BY VULCRAFT) FOR FLOOR SLABS. THREE-SPAN CONDITION IS ASSUMED FOR CONSTRUCTION. CONCRETE UNIT WEIGHT IS 145 PCF (NORMAL WEIGHT CONCRETE). THE TOTAL SLAB DEPTH SHALL BE 4". PROVIDE 5/8" PUDDLE WELDS IN A 36/4 PATTERN WITH MIN. (2) SIDELAP FASTENERS PER SPAN.

VI. LIGHT GAUGE STEEL FRAMING

1. INSTALLATION OF LIGHT GAUGE STEEL FRAMING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

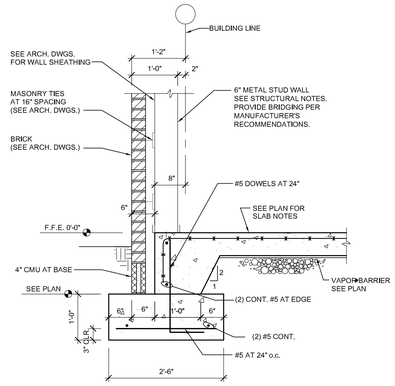
2. WALL STUDS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
16" MAX. SPACING
STUD DEPTH = 6" (SEE ARCH. DWGS.)
FLANGE WIDTH = 1 5/8" MIN.
18 GAUGE STEEL
L/600 MAX. DEFLECTION AT BRICK VENEER
SEE ARCH. DWGS. FOR GIRT HEIGHT

3. PROVIDE MIN. 18 GA. BOTTOM TRACK AND ANCHOR TO SLAB WITH POWDER ACTUATED FASTENERS AT 16" O.C. USE HILTI DS FASTENERS WITH 0.177" SHANK DIAMETER AND 1 7/16" EMBEDMENT. WELD STUDS TO TRACK EACH SIDE -or- PROVIDE (2) NO. 10 SCREWS (ONE EACH SIDE OF TRACK).

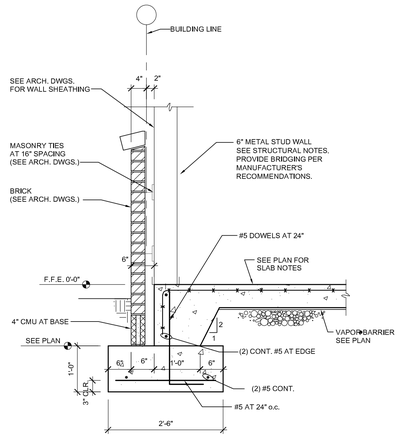
4. ATTACH STUDS TO BUILDING STRUCTURE WITH CLIP ANGLE AND SCREW CONNECTION DETAILS PROVIDED BY SUPPLIER. CONNECTION OF EACH WALL STUD TO TO BUILDING STRUCTURE SHALL CONSIST OF A MINIMUM OF (3) No. 12 SCREWS. CLIP ANGLE CONNECTIONS (MIN. 16 GA.) TO STRUCTURAL STEEL MAY BE MADE USING POWDER ACTUATED FASTENERS. PROVIDE MINIMUM (2) FASTENERS PER CLIP. USE HILTI DS FASTENERS WITH 0.177" SHANK DIAMETER OR APPROVED EQUAL.

5. PROVIDE MINIMUM (2) 8" x 18 GA. BOX HEADER AT ALL FRAMED WINDOW AND DOOR OPENINGS UP TO A CLEAR SPAN OF 6'-0". PROVIDE MINIMUM (2) 10" x 18 GA. BOX HEADER AT FRAMED OPENINGS AT CLEAR SPANS GREATER THAN 6'-0". PROVIDE A MINIMUM OF (2) KING STUDS AT EACH END OF EACH HEADER. PROVIDE INSULATION PER ARCHITECTURAL DRAWINGS.

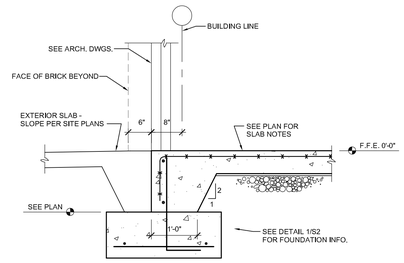
6. DETAILED SHOP DRAWINGS SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.



1 S2 DETAIL - SLAB EDGE
3/4" = 1'-0" METAL STUD WALLS WITH VENEER



1A S2 DETAIL - SLAB EDGE
3/4" = 1'-0" LOW BRICK VENEER

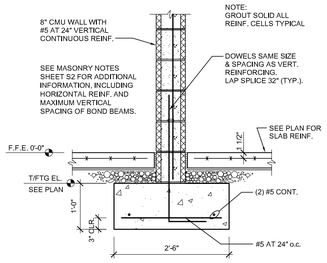


2 S2 DETAIL - SLAB EDGE AT DOORS
3/4" = 1'-0" METAL STUD WALLS WITH VENEER

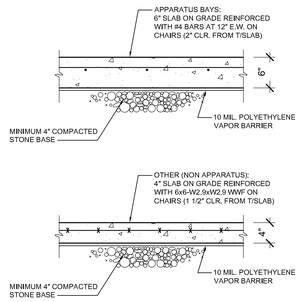
3 S2 SECTION - COLUMN FOOTING
3/4" = 1'-0" MASONRY VENEER

4 S2 DETAIL - SLAB EDGE AT OVERHEAD DOORS
3/4" = 1'-0" APPARATUS BAYS

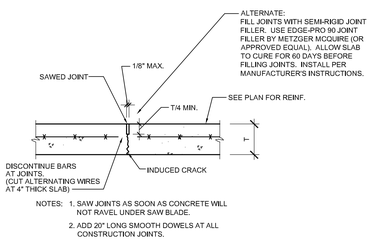
5 S2 DETAIL - SLAB EDGE
3/4" = 1'-0" 8" CMU WITH BRICK



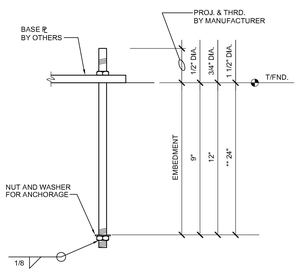
6 S2 SECTION - INTERIOR WALL FOOTING
3/4" = 1'-0"



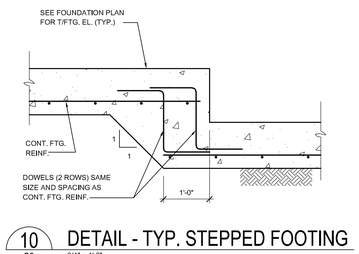
7 S2 TYP. SLAB DETAILS
1" = 1'-0"



8 S2 DETAIL - TYP. SLAB CONTROL JOINT
1" = 1'-0"



9 S2 TYP. ANCHOR ROD DETAIL
NO SCALE



10 S2 DETAIL - TYP. STEPPED FOOTING
3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25530 7/10/2026 BRIAN M. ROSS
SEAL NOT VALID UNLESS SIGNED AND DATED

DESIGN: B. ROSS

DRAWN BY: BR

CHK BY: BR/JO

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 x 42
SCALE VARIES

7/10/2026

C250803

STRUCTURAL DETAILS

S2
OF S3

SPECIAL INSPECTIONS REQUIREMENTS

THE FOLLOWING LIST OF STRUCTURAL ELEMENTS SHALL REQUIRE SPECIAL INSPECTIONS PER CHAPTER 17 OF THE NORTH CAROLINA BUILDING CODE. SPECIAL INSPECTIONS DO NOT RELIEVE THE CONTRACTOR OR ANY OTHER ENTITY OF ANY CONTRACTUAL DUTIES, INCLUDING QUALITY CONTROL, QUALITY ASSURANCE, OR SAFETY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR FOR CONSTRUCTION MEANS, METHODS AND JOB SITE SAFETY.

VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	
SPECIAL INSPECTIONS AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS OF BUILDINGS SHALL BE PERFORMED IN ACCORDANCE WITH THE QUALITY ASSURANCE REQUIREMENTS OF AISC 360-10.	SEE 1705.2.1
SPECIAL INSPECTIONS AND QUALIFICATION OF WELDING SPECIAL INSPECTORS FOR COLD-FORMED STEEL FLOOR AND ROOF DECK SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF SDI QA/QC 2011.	SEE 1705.2.2

SEE SECTION 1705.2 IN THE NC BUILDING CODE FOR REFERENCED STANDARDS, IBC REFERENCES, AND ADDITIONAL INFORMATION.

VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
INSPECTION OF REINFORCING STEEL AND PLACEMENT		X
INSPECTION OF ANCHORS CAST INTO CONCRETE		X
INSPECTION OF POST-INSTALLED ANCHORS INTO HARDENED CONCRETE		X
VERIFY USE OF REQUIRED DESIGN MIX		X
AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.		X

SEE TABLE 1705.3 IN THE NC BUILDING CODE FOR REFERENCED STANDARDS, IBC REFERENCES, AND ADDITIONAL INFORMATION.

VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

VERIFICATION AND INSPECTION	
SPECIAL INSPECTIONS AND TESTS OF MASONRY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE QUALITY ASSURANCE PROGRAM REQUIREMENTS OF TMS 402/ACI 530/ASCE 5, AND TMS 602/ACI 530.1/ASCE 6.	SEE 1705.4

SEE SECTION 1705.4 IN THE NC BUILDING CODE FOR REFERENCED STANDARDS, IBC REFERENCES, AND ADDITIONAL INFORMATION.

VERIFICATION AND INSPECTION OF SOILS

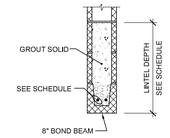
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC
VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		X
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		X
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X

SEE SECTION 1705.6 IN THE NC BUILDING CODE FOR REFERENCED STANDARDS, IBC REFERENCES, AND ADDITIONAL INFORMATION.

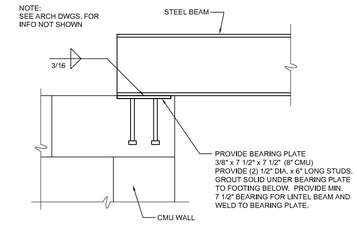
LINTEL SCHEDULE

LINTEL MARK	WALL TYPE	CLEAR OPENING WIDTH	DESCRIPTION	LINTEL DEPTH	NOTES
TYPICAL	4" BRICK VENEER	UP TO 3'-4"	L 3 1/2 x 3 1/2 x 1/4		
TYPICAL	4" BRICK VENEER	UP TO 6'-4"	L 6 x 4 x 3/8 (LLV)		
TYPICAL	4" BRICK VENEER	12'-0"	L 8 x 4 x 1/2 (LLV)		
L1	8" CMU	3'-4"	8" BOND BEAM WITH (2) #5 BARS	8" (1 COURSE)	CMU WALLS AT MEZZANINE
L2	8" CMU	8'-0"	W8x18 STEEL BEAM		SET TOP OF STEEL AT 9'-0"

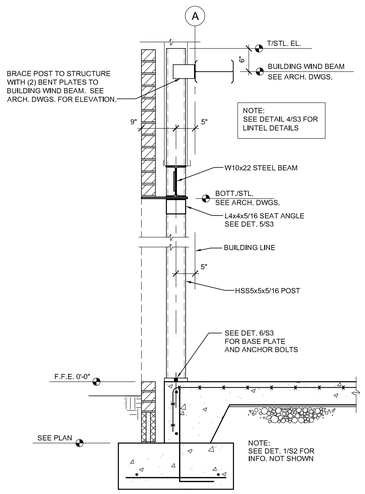
LINTEL NOTES:
1. LINTEL SCHEDULE SHALL APPLY UNLESS NOTED OTHERWISE
2. PROVIDE MIN. 8" BEARING FOR ALL LINTEL ANGLES U.N.O.
3. PROVIDE MIN. 8" BEARING FOR CMU LINTELS U.N.O.
4. PLACE BARS IN BOTTOM OF BOND BEAM.
5. FOR LINTELS CONSISTING OF MULTIPLE COURSES OF CMU, PLACE BARS IN BOTTOM OF BOND BEAM AND GROUT THE ENTIRE LINTEL SOLID IN ONE LIFT.
6. SEE DETAIL 1/S3 FOR DEFINITION OF LINTEL DEPTH.
7. SEE STRUCTURAL NOTES SHEET S2 FOR TYPICAL BOX HEADER FOR FRAMED OPENINGS.



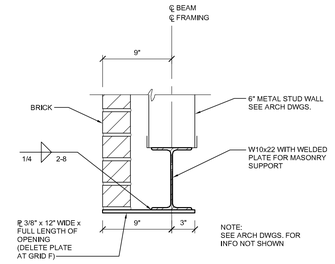
1 S3 LINTEL DETAIL 3/4" = 1'-0"



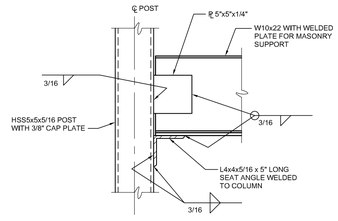
2 S3 TYP. STEEL BEAM BEARING 1 1/2" = 1'-0" ALL STEEL BEAMS BEARING TO CMU



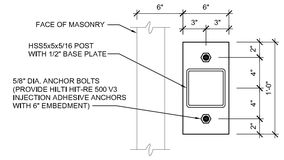
3 S3 SECTION AT STEEL POST 3/4" = 1'-0"



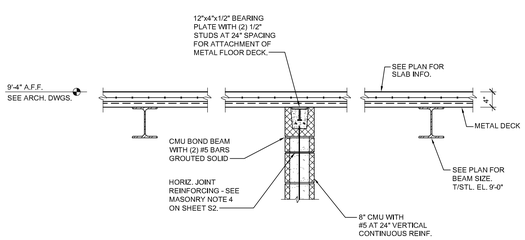
4 S3 LINTEL DETAIL 1 1/2" = 1'-0"



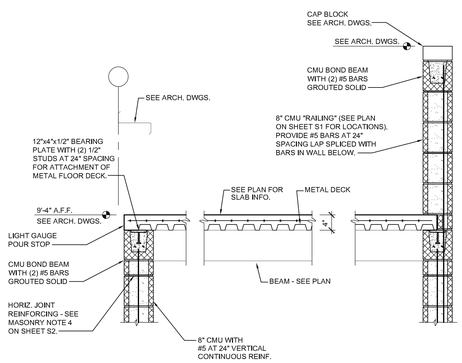
5 S3 CONNECTION DETAIL 1 1/2" = 1'-0"



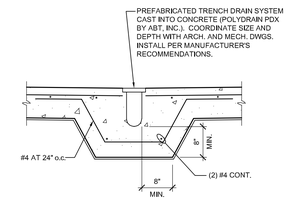
6 S3 POST BASE PLATE 1 1/2" = 1'-0"



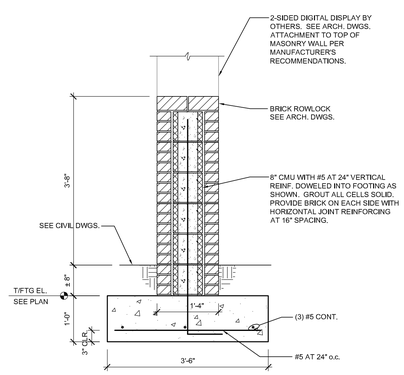
7 S3 SECTION - MEZZANINE 3/4" = 1'-0"



8 S3 SECTION - MEZZANINE 3/4" = 1'-0"



9 S3 SECTION - TRENCH DRAIN 3/4" = 1'-0"



10 S3 SECTION - MONUMENT SIGN 3/4" = 1'-0"

BOBBITT
Headquarters Office
2400 Weston Pkwy, Cary, NC 27513-5519
Phone (919) 851-1580 | Fax (919) 851-1582

ROSS LINDEN ENGINEERS PC
709 W. JONES STREET RALEIGH, NC 27603
TEL 919.832.5680 FAX 919.832.3675
WWW.ROSSLINDEN.COM NC LICENSE NO. C-2364

NORTH CAROLINA PROFESSIONAL SEAL 25530 ENGINEER BRIAN M. ROSS SEAL NOT VALID UNLESS SIGNED AND DATED

DESIGN: B. ROSS

DRAWN BY: BR

CHK BY: BR/JO

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 x 42
SCALE VARIES

7/10/2026

C250803

STRUCTURAL DETAILS

S3
OF S3

ALIGN engineering
919.275.1935
NC License No. P-2396
PO Box 2833, Raleigh, NC 27611

APPROVAL:
DATE:



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Headquarters Office
2400 Weston Pkwy
Cary, NC 27513-5519

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Headquarters Office
2400 Weston Pkwy, Cary, NC 27513-5519
Phone (919) 557-7745 Fax (919) 557-7802
design@bobbitt.com

COORDINATOR:

DRAWN BY:

CHECKED BY:

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

PLUMBING
COVER SHEET

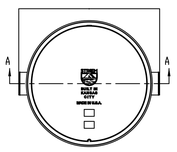
P0-01

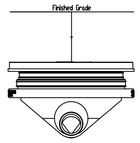
SPECIFICATIONS
1. 4" Main End inlet/outlet, H20 traffic-rated cast iron cover standard.
2. Unit weight w/ standard cover: 105 lbs.
3. Maximum operating temperature 140°F continuous.
4. Maximum burial depth: 180" from standard cover height.

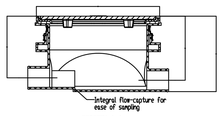
ENGINEER'S SPECIFICATION GUIDE
Striem sampling port model INSPECTOR-4 shall be lifetime guaranteed and made in the USA. Sampling port shall be constructed of polyethylene. Sampling port shall be manufactured for above- or below-grade installation. Sampling port shall provide integral flow-capture feature for ease of sampling. Field-adjustable riser system is available as an option to bring manhole cover to grade. Cover shall be H20 traffic-rated pickable cast iron.

Riser Options
From Factory: Up to 5'
☐ Up to 24": SR24
☐ Up to 29": LR24
☐ Up to 43": SR24 (2)
☐ Up to 58": SR24 + LR24
☐ Up to 72": LR24 (2)
☐ Up to 98": SR24 + LR24 (2)
☐ Up to 186": LR24 (3)
- OR -
☐ CPRK (2)- 11" - 186" (See specification for more detail)

Additional Options
☐ C24-M - 2,000 lbs. Rated Bolted Composite Cover









MODEL NUMBER:	INSPECTOR-4		
DESCRIPTION:	POLYETHYLENE WASTEWATER SAMPLING PORT		
DWG BY: ENG	DATE: 2/23/2026	REV: 2	

STRIEM

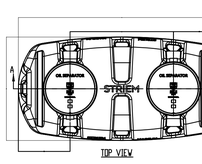
1 Sample Port Detail
Scale: None

SPECIFICATIONS
1. 4" Main End inlet/outlet, 2" Main End vents, H20 traffic-rated cast iron covers standard.
2. Certified max flow rate 100 GPM.
3. Liquid capacity: 500 Gallons (66.8 cu. ft.).
4. Oil capacity: 125 Gallons.
5. Solids capacity: 164 Gallons.
6. Unit weight w/ standard covers: 456 lbs.
7. Maximum operating temperature 140 °F continuous.

NOTES
1. Engineered inlet diffuser efficiently separates oil from water.
2. Capped auxiliary vent provided to allow flexibility with vent piping and design. Provided cap can be moved to unused vent location, or abandoned if two chamber vents are required per local code.
3. For gravity drainage applications only.
4. Do not use for pressure applications.
5. Cover placement allows full access to tank for proper maintenance.
6. Maximum burial depth: 186" from standard cover height.

ENGINEER SPECIFICATION GUIDE
Striem high efficiency oil/water separator model DS-500 shall be lifetime guaranteed and made in the USA. Separator shall be certified to IAPMO IGC 325 and carry a UPC listing. Separator shall be constructed of polyethylene. Separator shall be manufactured for above- or below-grade installation. Field-adjustable riser system is available as an option to bring manhole covers to grade. Separator flow rate shall be 100 GPM. Separator liquid holding capacity shall be 500 gallons and oil capacity shall be 125 gallons. Solids capacity shall be 164 gallons. Covers shall be H20 traffic-rated pickable cast iron.

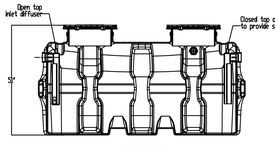
IAPMO IGC 325 CERTIFICATION
The DS-500 has been third-party certified by IAPMO to the IGC 325 standard. The DS-500 achieved an average 99% efficiency rating with 37 mg/L at 100 GPM up to the maximum oil capacity of 125 gallons. The structural design has been approved and stamped by a structural engineer for direct burial in accordance with Striem's installation instructions.

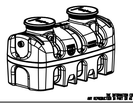


Connection Options (Main End Only)
Inlet / Outlet
☐ 4"
☐ 6"

Riser Options
From Factory: Up to 5'
☐ Up to 24": SR24 (2)
☐ Up to 29": LR24 (2)
☐ Up to 43": SR24 (4)
☐ Up to 58": SR24 (2) + LR24 (2)
☐ Up to 72": LR24 (4)
☐ Up to 98": SR24 (2) + LR24 (4)
☐ Up to 186": LR24 (6)
-OR-
☐ CPRK (2)- 11" - 186" (See specification for more detail)

Additional Options
High Water Table Hold Down Kits (Choose One)
☐ HDK-13 With Steel Plates Included
☐ HDK-14 For Concrete Deadmen (By Others)
☐ C24-M (2)- 2,000 lbs. Rated Bolted Composite Covers
☐ SD Stick Stick DX Level Monitoring System★
★Monitoring system will raise covers by 3".





MODEL NUMBER:	DS-500		
DESCRIPTION:	100 GPM POLYETHYLENE HIGH EFFICIENCY OIL/WATER SEPARATOR		
DWG BY: ENG	DATE: 2/26/2026	REV: 1	

Striem
Kansas City, KS
Tel: 913-222-1588
orders@striemcs.com
www.striemcs.com
Made in the USA

STRIEM

2 Oil Separator Detail
Scale: None

Plumbing Specifications:

1. These plans are diagrammatic only. Contractor shall provide all necessary offsets, elbows, tees, etc for a complete working system.
2. Contractor shall obtain and pay all fees related to permitting, inspections, taps, etc. Coordinate with GC to confirm none of these costs are covered by them.
3. All work shall be coordinated with all other trades prior to installation. Contractor shall coordinate routing of all piping with existing and new conditions and shall provide any necessary rerouting, offsets, etc. required for a completely coordinated and working system.
4. The plumbing system shall be installed in accordance with 2018 NC plumbing code and local AHJ requirements.
5. New portion of the domestic water system shall be purged of damaging matter and disinfected in accordance with 2018 NC Plumbing code. Remove dirt and debris as work progresses. Submit third-party witness reports of purging and disinfecting activities.
6. All plumbing systems shall be tested as required per 2018 NC Plumbing Code.
7. All piping systems shall be strapped and supported as required by 2018 NC Plumbing Code & the manufacturer's recommendations.
8. Plumbing contractor shall provide cleanouts in compliance with IPC section 708, as well as the following locations:
   - as indicated on plans
   - at the base of the waste stack
   - at every two 90° turns or every four 45° turns
   - on all horizontal waste line, no further than 100 feet apart
9. Plumbing fixtures with automatic or quick-closing valves and kitchen equipment shall have a shock arrestors, piston type water hammer arrestor, sized according to manufacturer's recommendations & PDI standards.
10. All overhead domestic water piping (above slab) shall be type "L" copper with 95/5 lead free solder. All below grade water piping shall be type "K" soft copper. Each complying with ASTM B-88. All piping shall have manufacturers name and the applicable standard to which it was made clearly labeled on each length. Contractor shall use brazed joints on all piping 1 1/2" and larger.
11. Water piping shall be insulated with closed cell (Armacell) type insulation with a smoke density rating not exceeding 50 and a flame density rating not exceeding 25. Thickness for cold water piping insulation shall be 1/2" thick, thickness for hot water & return piping insulation shall be 1" thick.
12. Branch lines and base of risers shall have, shut-off valves. All domestic water ball valves shall be a brass body, full port, with a chrome plated ball. Teflon seals, 600 WOG, for sizes 1/2" thru 3". Sizes above 3" shall be a bronze gate valve, NRS, solid disc, cutoff valve, screw-over bonnet, 400 WOG. Provide valve handle extensions if necessary due to insulation.
13. Storm, waste, and vent piping, above slab, shall be PVC Schedule 40 DWV with piping and fittings conforming to ASTM D-2665.
14. The backflow prevention device shall be installed as required per local AHJ. Purge water piping before setting backflow preventer.
15. Sanitary sewer piping shown is below slab or within walls unless otherwise noted. Sanitary vent piping shown is within wall and above ceiling unless otherwise noted.
16. Domestic water piping shown on drawing is above ceiling or within walls unless otherwise noted.
17. The plumbing contractor shall coordinate all underslab plumbing piping with all structural foundations and footings and all underslab plumbing piping elevation inverts with site utility.
18. All piping penetrations thru new or existing walls and/or floors shall be sealed to equal the rating of the new or existing wall or floor.
19. All vent thru the roof penetrations shall be coordinated with the general contractor. Plumbing contractor shall provide all flashing material required for vent thru roof. Vents thru the roof shall be located a minimum of 10'-0" away from all fresh air intakes.
20. Contractor shall coordinate any plumbing work requiring shutdown with the owner 72 hours in advance. If other users will be affected, coordinate with owner/building management at the beginning of the project to find a workable solution.
21. Plumbing contractor shall provide shop drawings to the engineer for review and approval prior to beginning work.

BABA Compliance Note:

All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Contractor shall provide BABA compliance certificates to accompany all equipment and material submittals. More details regarding BABA compliance can be found at the US Department of Agriculture website (usda.gov).

Plumbing Legend and Abbreviations

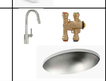
GW	Grease Waste Piping "GW"
	Sanitary Sewer Piping "W"
	Existing Sanitary Sewer Piping "EX W"
	Vent Piping "V"
	Existing Vent Piping "EX V"
	Cold Water Piping "CW"
	Existing Cold Water Piping "EX CW"
	Hot Water Piping "HW"
140 140	Hot Water Piping "140°F HW"
	Existing Hot Water Piping "EX HW"
	Hot Water Return Piping "HWR"
	Check Valve
	Ball Valve
	Pressure Reducing Valve "PRV"
	Gate Valve "GV"
	Tee Turns Up
	Tee from Below
	Ell Turns Up
	Ell Turns Down
	Capped Line
	Connect to Existing
	Existing to Remain
ETR	Electric Water Heater
EWH	Gas Water Heater
GWH	Instantaneous Water Heater
IWH	Recirculation Pump
RP	Vent Through Roof
VTR	Air Admittance Valve
AAV	Primary Roof Drain
RD	Secondary Roof Drain
SRD	



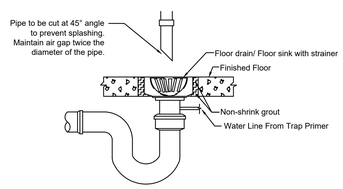
3 Compressed Air Drop Detail
Scale: None

Compressed air piping shall be either type K copper with brazed connections, or schedule 40 black steel piping.

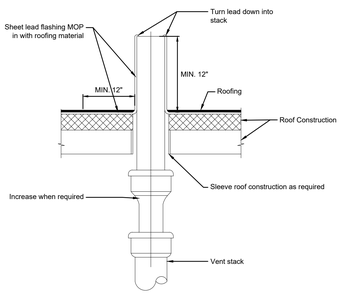
Plumbing Fixtures, Equipment, & Accessories

Tag	Description		Fixture Specification	Water Line & Connection Size CW	HW	W
W1	Water Closet Floor Mounted ADA		Toilet: Kohler Highcliff Ultra #K-96057 white vitreous china water closet with elongated bowl, 1 1/2" top spud, siphon jet flushing, 12" rough-in 16 1/2" high to the seat with 2 bolt caps. Seat: Kohler Lustra #K-4669-SC extra heavy duty white elongated with open front seat Valve: Sloan Regal 111 Manual flushometer, 1.6 GPF.	1"	-	4"
L1	Undermount Lavatory Single Bowl, Center Mount		Lavatory Basin: Kohler Rhythm K-2602-SU-NA 23"x15" stainless steel basin, satin finish. Faucet: Moen Align #7565, Stainless, 1 hole faucet, 1.8 gpm flow rate. Mixing Valve: Watts LFUSG-B thermostatic mixing valve at each lav. ASSE 1070 approved. Trap & Supplies: McGuire #8902, 17 gauge 1 1/4" x 1 1/2" P-trap and nipple. McGuire #2165 angle supply stops. Mount P-trap such that ADA clearance requirements are maintained. Accessories: Truebro 82192 Lav Guard 2 molded insulation # 102-EZ, 3 piece interlocking trap assembly and 2 piece interlocking hot water angle valve assembly, with nylon type fasteners.	1/2"	1/2"	2"
S1	Decon Sink, Double Bowl		Sink Basin: Just #INSFB230-24L-2-J 14ga Stainless steel, floor mount-double bowl. Dimensions 55"x27"x14" deep, 2 holes. Faucet: T&S Brass #S-0231, Stainless, 2 hole faucet on 8" centers with 12" spout. Trap & Suppliers: McGuire #8902, 17 gauge 1 1/4" x 1 1/2" P-trap and nipple. McGuire #LFB02angle supply stops. Indirect drain to floor sink.	1/2"	1/2"	1 1/2"
S2	Break Sink, Single Bowl		Sink Basin: Elkay #ELDSSF30279OBG, 18 ga Stainless steel, undermount single bowl farmhouse style sink. Dimensions 29"x27"x9 1/2" deep, 1 hole. Faucet: Moen Align #7565, Stainless, 1 hole faucet, 1.8 GPM flow rate. Trap & Suppliers: McGuire #8902, 17 gauge 1 1/4" x 1 1/2" P-trap and nipple. McGuire #LFB02angle supply stops. Mount P-trap such that ADA clearance requirements are maintained. Accessories: Truebro 82192 Lav Guard 2 molded insulation # 101-EZ, 3 piece interlocking trap assembly and 2 piece interlocking hot water angle valve assembly, with nylon type fasteners.	1/2"	1/2"	1 1/2"
SH	Shower		Shower: Tile by others. Valve: Delta #T17TH325 single handle, with pressure balancing shower valve and diverter. Fixed shower head as well as handshower head mounted on grab bar. 1.5 GPM shower heads. Drain: Floor drain, See spec below	1/2"	1/2"	2"
EWC	Electric Water Cooler & Bottle filler		Elkay #EZSTL8WSLK dual level, ADA, wall mounted water cooler and and bottle filler; hermetically sealed and air cooled refrigeration unit. Electric push buttons on front and side with vinyl covered steel skirt and stainless steel hood receptor. Mount spout on lower side at 36" AFF and provide cane apron option on higher side of water cooler.	1/2"	-	1 1/2"
WCO	Wall Clean Out		Zurn #Z1446 wall cleanout tee, dura-coated cast iron body, gas and watertight ABS tapered thread plug, and round, smooth stainless steel wall access cover with securing screw.	-	-	see plans
TP	Trap Primer		Watts #200 Flow through trap primer	1/2"	-	-
SA	Shock Absorber		Watts series #15M2 water hammer arrestor, sized to match associated line. Shock absorber shall meet all requirements ASSE 1010, ANSI A1 12.261M as well as the 2018 NCSBC and the 2018 NCSPC, section 604.9	see plans	see plans	-
VB	Vacuum Breaker		Watts #LF7 vacuum breaker, sized to match associated line. Vacuum breaker shall meet all requirements ASSE 1024, as well as the 2018 NCSBC.	-	-	-
IM	Ice Maker Box		Oatey #39152 square, 1/4 turn, copper, hammer, low lead, water outlet box. Wall mount at 24" AFF, confirm height with architect. Plumbing to provide necessary lines and fitting for connection to equipment.	1/2"	-	-
WB	Washer Box		Oatey #38540 washing machine supply box with 1/4 turn, copper, hammer, low lead, valves. Wall mounted 40", confirm height with architect. Plumbing to provide necessary lines and fitting for connection to equipment.	1/2"	1/2"	3"
FD	Floor Drain		Zurn #Z415B floor drain. Dura-Coated cast iron body with bottom outlet, combination invertible membrane clamp and adjustable collar with seepage slots and type "B" polished nickel bronze, light duty heel proof strainer. Connect to trap primer as required.	-	-	3" see plans
MS	Mop Sink		Mop Sink: Fiat #MSB2424 molded stone mop service basin, 24" x 24" x 10" tall sides. Faucet: Chicago faucets #44-897SRXKCP with integral vacuum breaker, lever type ceramic 1/4 turn handles, and adjustable arms. Polished chrome finish. Faucet to have 3/4" hose thread on spout.	1/2"	1/2"	3"
RP	Recirculation Pump		Taco #007e High Efficiency Circulator with stainless steel lead free casing, aquastat and timer	-	1/2"	-
TD	Trench Drain		ABT Model #PDX with PD 2410 Grate, 2902 Catch Basin, 2903 Trash Bucket and end connection. Cut trench to length with bottom sloped to outlet.	-	-	4"
FS	Floor Sink		Plastic Oddities PDS400H floor sink, 14"x14" with 3" outlet plastic floor sink. Connect to trap primer as required.	-	-	3" see plans
HB	Hose Bibb		Woodford #24 wall hydrant. 3/4" Brass hose threaded nozzle. Provide tamper proof vacuum breaker, Nidel #50H or equal.	3/4"	-	-
FPWH	Freezeless Wall Hydrant		Woodford #24 freezeless wall hydrant. 3/4" Brass hose threaded nozzle. Provide tamper proof vacuum breaker, Nidel #50H or equal.	3/4"	-	-
EW	Eye Wash/Shower Combo Unit		Eye Wash: Guardian #G1902P Free standing pedistal mounted eyewash/shower with plastic bowl and 2 spray heads with covers. Accessories: Guardian #G6040 Thermostatic mixing valve conforming to ANSI 1071.	1/2"	1/2"	to FD

The intention of the depicted images above are to show the general appearance of the fixtures being specified. Exact representation is not necessarily shown nor are accessories for models or some variation of the model. The fixture specification should take precedent over the photo.

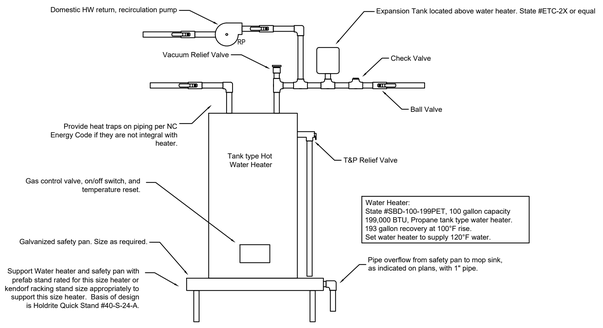


4 Floor Sink/Drain Detail
Scale: None



5 Vent Through Flat Roof Detail
Scale: None

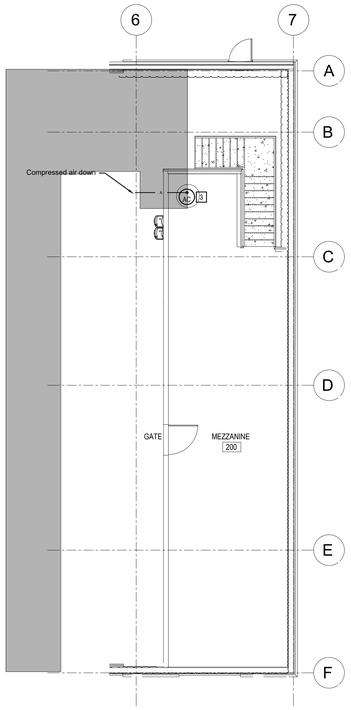
Gas Water heater Venting
Provide combustion air intake from roof with a 3" 180° return termination on top of the intake. Provide exhaust from unit to the roof with a 3" straight tee termination on top of the exhaust. Maintain 10' clear from any building intake or opening. Maintain a minimum of 3' horizontally and 12" vertically between the intake and exhaust. Protect, seal and properly flash each roof penetration. Combustion and exhaust can be combined. Coordinate exact requirements with equipment supplier.



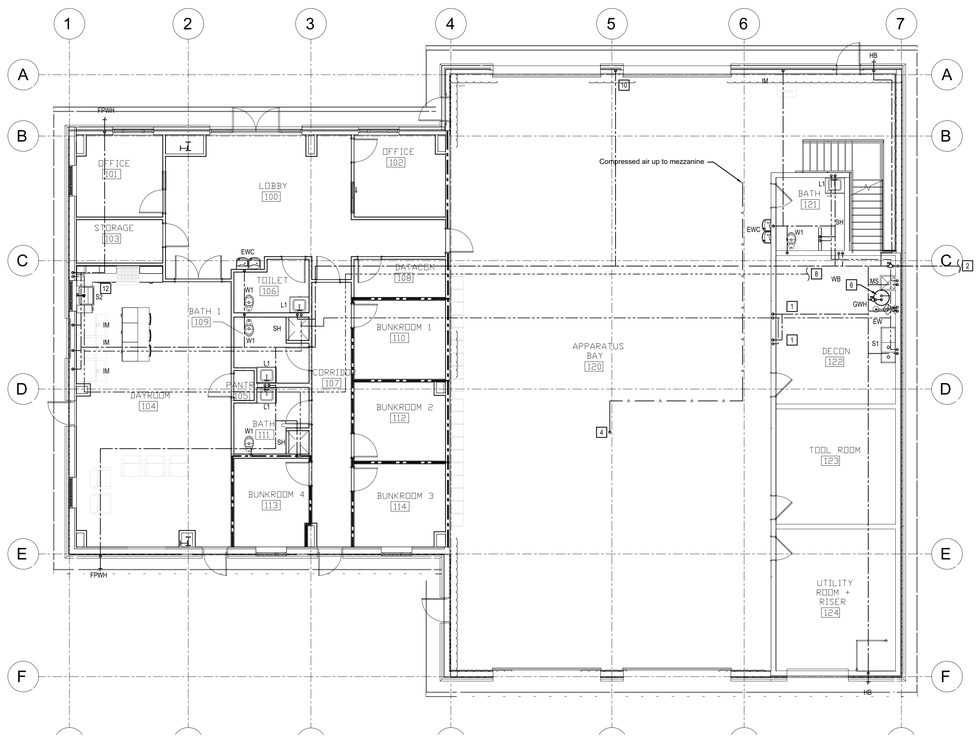
6 Water Heater Detail
Scale: None

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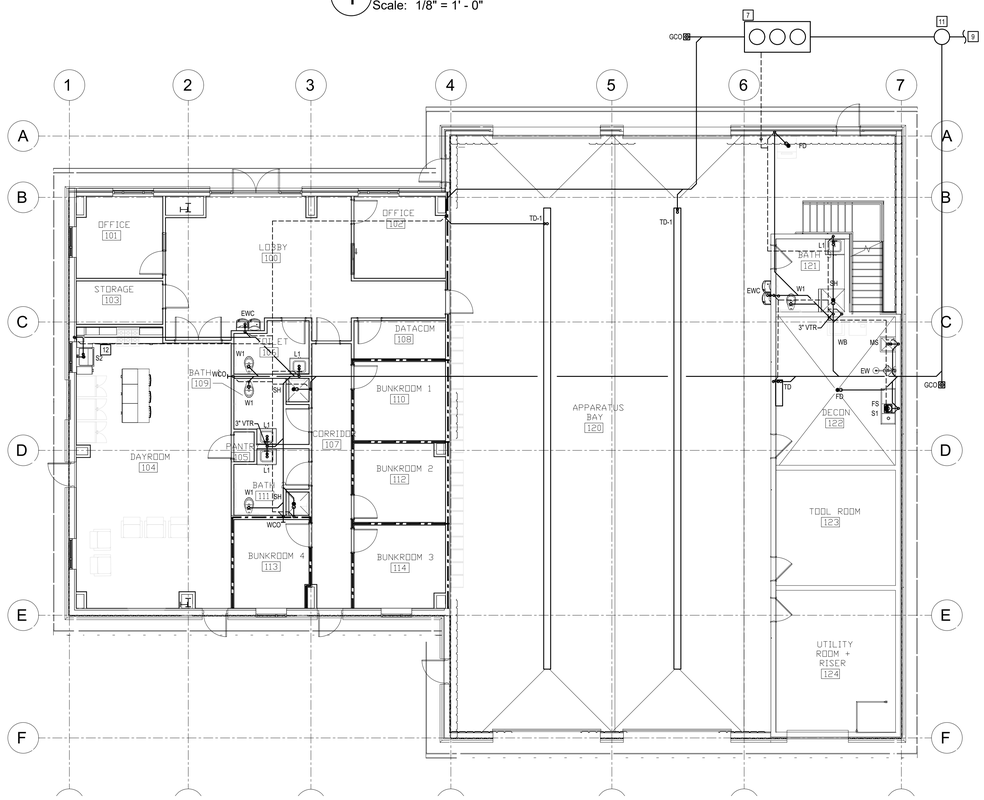
These drawings will be at the scale indicated when plotted at 30" x 42"



3 Mezzanine Plan - Air
Scale: 1/8" = 1' - 0"



1 Ground Floor Level Plan - Water
Scale: 1/8" = 1' - 0"



2 Ground Floor Level Plan - S, W, & V
Scale: 1/8" = 1' - 0"

General Notes:

- The domestic water for the building is protected by an existing 2" RPZ backflow preventer. The backflow preventer is located in a hot box on site.
- Contractor shall provide Schedule 40 PVC-DWV (conforming to ASTM D2665) fittings for S.W. & V indicated on plans.
- Contractor may run 3" waste pipe at 1/8" slope where 2 1/2" or smaller would be acceptable for the DFUs but not allow for the proper code required 1/4" sloping and fit in the given space.
- This building is required to be seismically rated as Zone D. See sheet MEP1.1 for Component Importance factors and fire penetration details.

Plan Notes:

1. Provide 3/4" HW & CW connections for washer/extractor
2. See site plan for continuation of 2" water service. RPZ backflow preventer is in hot box on site.
3. Install air compressor on mezzanine. Air compressor shall be a 5 horsepower reciprocating 2-stage compressor with 80 gallon tank and 15 CFM refrigerated air dryer. Air compressor is contractor furnished, contractor installed.
4. Provide air hose reel installed suspended from structure. Hose reel should be equal to Coxreel P Series spring driven hose reel with 1/2" dia. 50' hose.
5. Provide water hose reel installed suspended from structure. Hose reel should be equal to Macnaught DR460S-05 spring driven hose reel with 3/4" dia. 60' hose.
6. Install new water heater in drain pan in mezzanine. See water heater detail for GWH for more information.
7. Provide oil separator equal to Striem OT-500 560 gallon oil interceptor or approved equal.
8. See water heater detail for continuation of hot water recirculation piping.
9. See site plan for continuation of 4" sanitary service.
10. Provide 2" ball valve to pump truck filling. Verify height with owner prior to rough in.
11. Provide sampling port at this location.
12. Connect to dishwasher, route waste discharge up to bottom of countertop in accordance to manufacturer's recommendations.

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Wall Ratings and Types Legend

See architectural sheets for more information on ratings and additional rated constructions including structure where applicable. Protect all rated constructions as required.

- New Wall being Constructed
- One Hour Fire Barrier
- Wall to Deck

These drawings will be at the scale indicated when plotted at 30" x 42"

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PO Box 2833, Raleigh, NC 27611

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 34327 ENGINEER: R. MATT WILLIS

7-10-26

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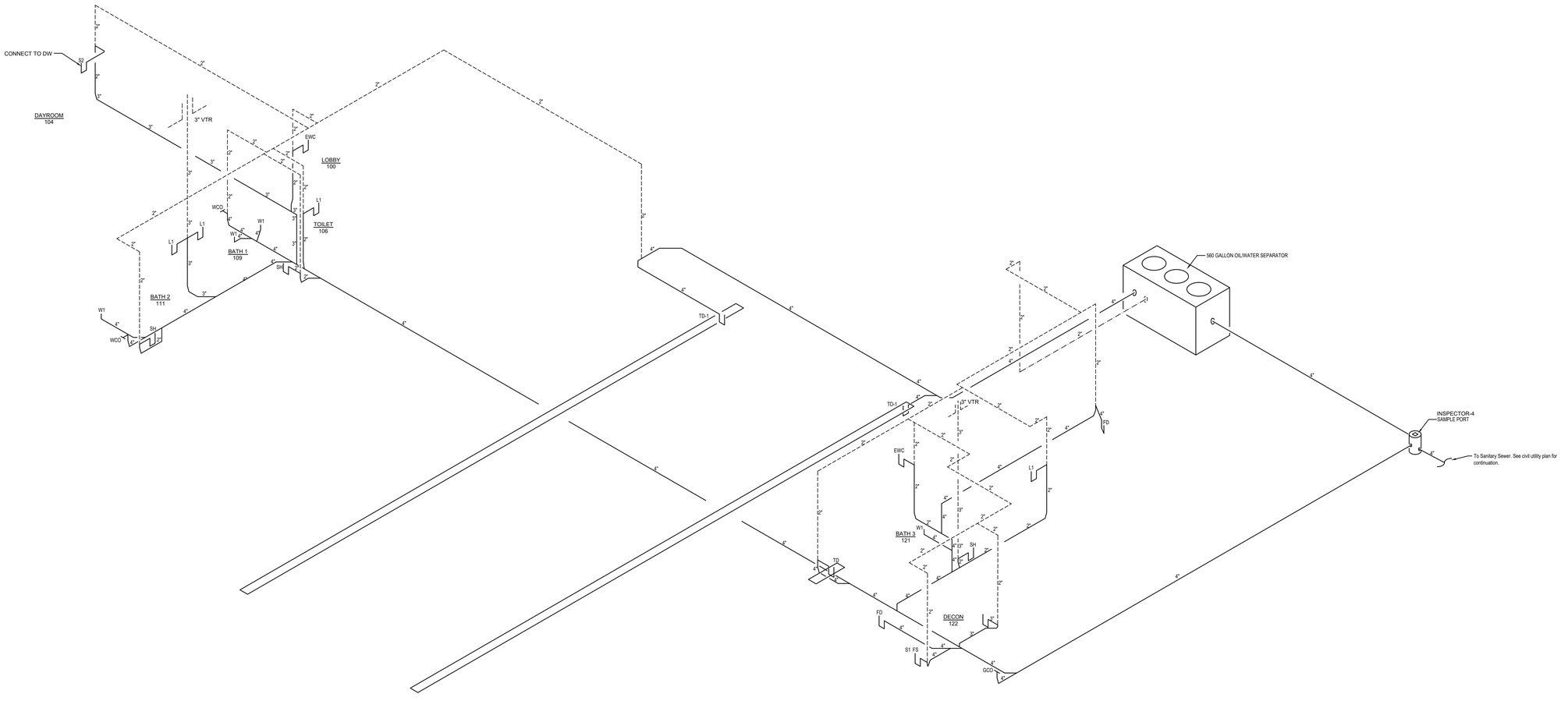
COORDINATOR:
DRAWN BY:
CHECKED BY:

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE
10 JULY 2026
25-0006
FLOOR PLANS - POWER

P1-01



1 RISER - WASTE AND VENT
Scale: None

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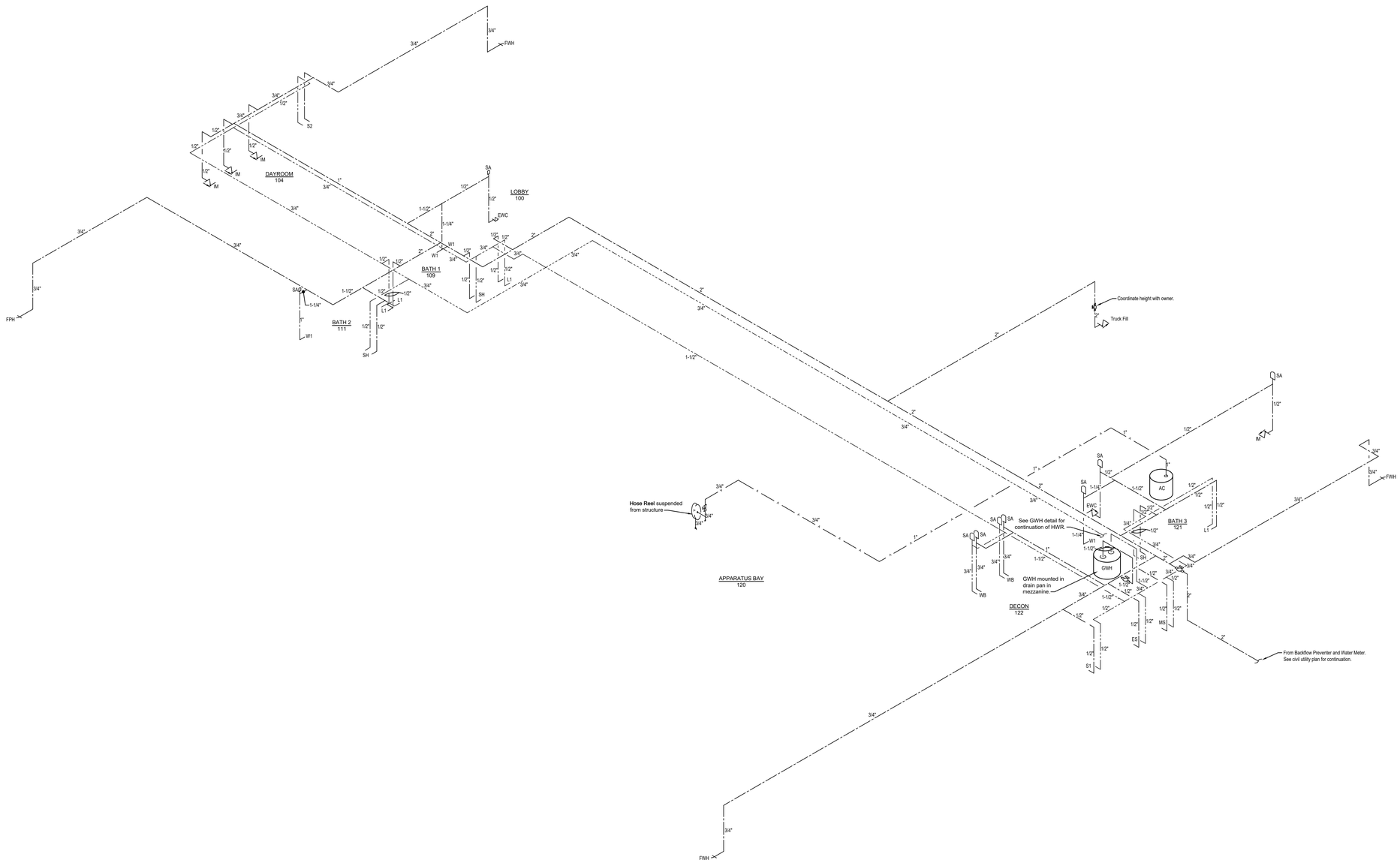
30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

PLUMBING RISER DIAGRAM - W & V

P2-01



1 RISER - WATER & AIR
Scale: None

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ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE
10 JULY 2026
25-0006

PLUMBING RISER DIAGRAM - WATER

P2-02

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052489 MICHAEL T. CRUMBACHER

07/10/2026

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COORDINATOR:

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CHECKED BY:

TRUE NORTH:

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783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

MECHANICAL
COVER SHEET

M0-01

Refrigerant Calculation

Mark	Chemical Refrigerant	Refrigerant Classification	RCL Allowable Qty. (lbs per 1000 cu. ft.)	LFL Allowable Qty. (lbs per 1000 cu. ft.)	Space Area (SF)	Average Space Height (ft)	Volume (cu. ft.)	Calculated Allowable Refrigerant (lbs)	Actual Refrigerant (lbs)	Compliant	Remarks
AHU/HP-1	R-454B	A2L	4.6	18.5	756	10.0	7560	34.7	6.2	Yes	1,2
AHU/HP-2	R-454B	A2L	4.6	18.5	710	10.0	7100	32.6	6.2	Yes	1,2
AHU/HP-3	R-454B	A2L	4.6	18.5	861	10.0	8610	39.5	6.2	Yes	1,2
DAHU/DHP-1	R-454B	A2L	4.6	18.5	58	15.0	580	4.0	3.4	Yes	1,2,3

1. Calculations provided to indicate compliance with the 2018 NC Mechanical Code, Section 105.2 utilizing ASHRAE Standard 15 - 2024 compliance requirements and ASHRAE Standard 34 - 2024, Tables 4-1 & 4-2 allowable refrigerant quantities.
2. The lower concentration level (RCL vs. LFL) of refrigerant shall be the basis of design for the "Calculated Allowable Refrigerant (lbs)".
3. The system is compliant based on exemptions listed per ASHRAE Standard 15, Section 7.5.2.1.

Mechanical Notes and Specifications

General Requirements:

1. The heating and air conditioning contractor (the contractor) shall provide all specified and miscellaneous material and labor as required for a complete and operating system as described by these plans and specifications.
2. All equipment and materials shall be installed in accordance with all local, state, and national codes and recommendations of the manufacturers. If there is a conflict in the above requirements, the more stringent shall be used.
3. The contractor shall obtain and pay for all permits, fees, and inspections necessary to complete their work under this contract.
4. Prior to bidding, the contractor shall visit the site to familiarize themself with existing conditions and resolve any conflicts between existing conditions and these plans with the engineer.
5. All ductwork and equipment shown on these drawings is strictly diagrammatic. All ductwork sizes shown are free area sizes. It shall be the responsibility of the contractor to ensure that items furnished under this contract will fit in the space available. The contractor shall make necessary field measurements to ascertain space requirements, including those for connections, and shall provide such sizes and shapes of equipment that are the true intent and meaning of these drawings and specifications. Any conflicts shall be resolved with the engineer.
6. Prior to construction, the contractor shall coordinate their work with all other trades. All drawings indicate the general arrangement desired. The exact locations and details of construction may be such that variances are required. The drawings do not show all bends, offsets, and fittings that may be required for the complete execution of this contract. Such variances and contingencies shall be allowed for in the contractor's bid and shall be accomplished without additional cost to the owner. Prior to ordering equipment, the contractor shall prepare coordination drawings showing how their equipment is to be located in the space indicated. This drawing shall show the new and existing work of all other trades. The contractor shall contact the other contractors involved for dimensions, locations, and required clearances of the equipment they intend to provide for this job. The aforementioned coordination drawings shall be submitted to the engineer for approval.
7. Do not scale these drawings. Refer to the architectural plans for dimensions.
8. All equipment shall be located and installed to provide maximum space for maintenance and service.
9. All materials used shall be new and free of defects. Where trade names are mentioned, they are given as a reference to the quality of the apparatus required. All materials and equipment shall bear the UL label or equivalent where applicable. Other makes may be used if approved in writing by the engineer. Provide a complete list of materials and equipment proposed for use in this contract to the engineer within ten days following the award of contract. If such list is not submitted, the contractor shall supply the materials and equipment specified or as directed by the engineer. The contractor shall provide digital copies of submittals to the engineer for review and approval prior to ordering equipment.
10. Workmanship shall be first-class and performed by experienced and skilled craftsmen.
11. Coordinate exact location of all diffusers/grilles with lights, sprinkler heads, and other ceiling mounted devices. See the reflected ceiling plan.
12. Upon completion of the work, a certified test and balance shall be performed in accordance with "AABC" requirements. Furnish a final copy of all testing, adjusting, and balancing reports as a part of the operating and maintenance manuals. Indicate deficiencies preventing proper testing, adjusting, and balancing of systems and equipment to achieve specified performance. Adjust air handling systems to within plus or minus 10 percent of design. Adjust total air to all air outlets and inlets to within plus 10 percent and minus 5 percent of design to space. Adjust individual outlets and inlets in space to within plus or minus 10 percent of design. Adjust air handling and distribution systems to obtain required or design supply, return, and exhaust air quantities. Measure air quantities at air inlets and outlets. Vary total system air quantities by adjustment of fan speeds. Provide sheave drive changes to vary fan speed if required. Vary branch air quantities by damper regulation. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across fan. Make allowances for 50 percent loading of filters. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions. At modulating damper locations, take measurements and balance at extreme conditions.
13. As applicable, the contractor shall verify the operation of all existing mechanical equipment in the area of work. All measurements shall be recorded necessary to ascertain the proper operation of the equipment including, but not limited to, amperage, gpm flow, inlet and outlet temperatures, airflow, and inlet and outlet static pressures. Any deficiency in the rated output of the equipment shall be reported to the engineer. In any case, said report shall be submitted to the engineer upon request.
14. All equipment shall be provided with permanent labels for identification. All pipe shall be labeled to indicate pipe function and direction of flow. Provide valve tags for all valves. Coordinate nomenclature and numbering with owner prior to installation.
15. The contractor shall furnish a bound set of operating and maintenance instructions for all equipment to the owner upon completion of project.
16. The contractor shall, at the completion of the work, clean, polish, and/or wash all exposed items of materials, equipment, and fixtures in their contract to leave such items bright and clean. The contractor shall keep the premises clear of debris from their work during construction and leave the area and building clean at completion of the contract.
17. Mechanical and electrical equipment shall operate without objectionable noise or vibration, as determined by the engineer. If such objectionable noise or vibration should be produced and transmitted to occupied portions of the building, the contractor shall make the necessary changes to correct the noise or vibration without additional cost to the owner.
18. The contractor shall provide a complete 1-year warranty on all labor and materials under this contract. Refrigeration compressors provided under this contract shall carry the manufacturer's published 5-year non-prorated warranty.
19. The electrical contractor shall be responsible for all power connections to the equipment provided under this contract.
20. The mechanical contractor shall be responsible for all control wiring for their equipment.
21. Outside air intakes shall be located a minimum of 10 feet from all exhaust discharge and plumbing vents.
22. Replace all filters just prior to acceptance by the owner.
23. Contractors and sub-contractors shall carefully review the construction documents. Information regarding the complete work is dispersed throughout the document set and cannot be accurately determined without reference to the complete document sets.
24. Route refrigerant lines from outdoor condensing units in the most direct path to the air handler. Insulate with foam insulation. Provide long line refrigeration kit as required.
25. Provide an auxiliary drain pan for any air conditioning equipment. Provide the auxiliary drain pan with a float switch that stops the fan upon accumulation of condensate in the pan. Locate all equipment above the ceiling so that adequate slope is provided for all drain lines. If a condensate pump is specified, extend the auxiliary drain pan under the condensate pump. Condensate drain lines in return air plenums shall be made of type 'K' copper pipe. Insulate drain lines to prevent sweating. Route condensate drains as directed on plans.

Materials and Equipment:

Ductwork:

- All sheet metal ductwork, unless otherwise specified, shall be constructed of galvanized steel sheets in accordance with SMACNA gages and standards. Duct shall be constructed for 1" static pressure and sealed to SMACNA Classification "B". Insulate all ductwork, unless otherwise noted, with foil-faced 1 psf density fiberglass duct wrap. Insulation R-value shall be per the 2018 NC Energy Conservation Code. Where specified, duct liner shall be 1" thick, 1.5 pound density acoustical liner.

Flexible Duct

- Shall be insulated, sound attenuating, low velocity type, and shall comply with NFPA 90A and 90B. Flexible duct shall bear the UL Class 1 air duct label as tested under UL 181. Flexible duct shall be factory-formed, composed of spiral wound corrosion resistant wire bonded to an inner fabric liner. Duct shall be factory insulated with a foil vapor barrier jacket. Insulation R-value shall be per 2018 NC Energy Conservation Code.
- The installation of flex duct shall conform to the requirements of Chapter 3 of the SMACNA HVAC Duct Construction Standards, (latest edition). Bends in flexible duct shall not be less than two duct diameters centerline radius and bends shall not begin within three inches of a sheet metal connection. Duct shall not be compressed. Support duct from the structure at intervals not to exceed ten feet. Maximum permissible sag is 1/2 inch per foot of spacing between supports. Hanger or saddle material in contact with the duct shall be wide enough so that it does not reduce the internal diameter of the duct when the supported section rests on the support and in no case shall be less than 1" wide.

Duct Elbows:

- Use full-radius elbows or square bends with turning vanes.

System Balancing:

- Provide locking quadrant type manual volume damper at each flexible duct runout. Provide splitter dampers at supply tees and extractors at all supply air branches. Provide balancing dampers in all ducts where required for system balancing as shown or as required.

Air Distribution:

- Provide all grilles, registers, and diffusers per the schedule on the drawings. Provide support from the structure for each diffuser and damper installed in a lay-in ceiling. Linear slot diffusers shall be constructed so that each slot may be independently configured to insure a full 180° air control pattern. The contractor shall coordinate finish styles and colors with the architect prior to ordering equipment. The backs of all air distribution shall be insulated from unconditioned space.

Fire Dampers:

- The contractor shall provide fire dampers at all duct penetrations of rated walls as indicated on the drawings or where required by the authority having jurisdiction. Fire dampers shall be UL labeled, Style "B" curtain type, and dynamically rated with integral factory sleeve. Blades shall be located out of the airstream for minimum airflow restriction. Installation shall be in accordance with the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC, (latest edition). Provide suitable access door for testing and servicing damper mechanism. Prior to completion of job, the contractor shall test each damper for proper operation and make adjustments as necessary.

Flexible Duct Connections:

- Furnish and install flexible duct connectors on supply and return connections of all air handling units.

Escutcheons:

- Furnish and install escutcheons in all places where piping or mechanical equipment penetrates a finished wall or ceiling in an exposed location.

Smoke Detectors:

- Smoke detectors shall be provided per the 2018 NC Mechanical Code, Section 606.2.1. Smoke detectors shall be UL listed for duct installation and be located in the return airstream to shut down the supply air fan upon activation. The system shall be wired so that the fan immediately shuts down upon a signal from the fire alarm system and bypasses any built-in time delays. The Fire Alarm Contractor shall furnish the smoke detector, wire the detector to the fire alarm control panel, and provide a shut down relay at the equipment. The Mechanical Contractor shall install the smoke detector in the duct and wire from the shut down relay to the supply fan. Audible and visible alarms shall be provided through the fire alarm system. Duct detectors shall be installed per the manufacturer's recommendations. Coordinate smoke detector requirements with the fire alarm contractor prior to installation.

Access Panels:

- The Mechanical Contractor shall provide access panels as required for access to valves, dampers, controls, or any other item installed under this contract where such item is concealed behind construction which renders the item inaccessible for service or adjustment. Said access panels or doors shall be fire rated as necessary to maintain the integrity of the construction wherein the panel or door is installed.

HVAC Equipment:

- All equipment shall bear the UL, CSA, met or other accredited testing laboratory label where appropriate. All equipment shall conform to the type, size, rating, and performance of that listed on the drawings under this contract. Submit shop drawings per the specifications.

Control Wiring:

- All control wiring shall be run in a metallic raceway. Raceway shall be routed parallel and perpendicular with the building structure. The metallic raceway may be omitted where plenum-rated cable is installed above an accessible ceiling within the building envelope. There shall be no splices in the control system wiring other than at terminal blocks. Wire nuts and crimp splices are not permitted.

Propane Gas Piping:

- All gas piping shall be installed by the mechanical contractor. Propane Gas pipe shall be Schedule 40 black steel. Provide all valves, fittings, and controls as required by local, state, and national codes or by manufacturer's written recommendations for a complete and operational system.

Refrigerant Piping:

- All refrigerant piping shall be copper, sized per HVAC equipment manufacturer's recommendations. all piping shall be insulated per 2018 NC Energy Conservation Code. All insulated piping exposed to weather shall be provided with a UV resistant coating. All A2L refrigerant piping shall be labeled as "Flammable" in visible intervals.

Drawing Legend

	Ceiling Supply Diffuser
	Sidewall Supply Diffuser
	Ceiling Return Grille
	Ceiling Exhaust Grille
	Sidewall Return/Exhaust Grille
WxH	Rectangular Duct (W = Width, H = Height)
D"Ø	Round Duct (D = Diameter)
	Duct Tap with Transition from Hard to Flexible Duct
	Manual Volume Damper
	Rectangular Duct Turns Down
	Rectangular Duct Turns Up
	Round Duct Turns Down
	Round Duct Turns Up
	Fire Damper
DS	Duct Mounted Smoke Detector
SA1 200	Diffuser Tag Diffuser Type / CFM
G	Propane Plping
	Piping Elbow Turns Down
	Piping Elbow Turns Up
	Gas Shutoff Valve
	Medium Pressure Gas Regulator
T	Wall Mounted Thermostat
CO	Carbon Monoxide Sensor
NO	Nitrogen Dioxide Sensor
FC	HVLS Fan Controller
M	Motorized Damper

Marks

AHU	Air Handling Unit
DAHU	Ductless Air Handling Unit
DHP	Ductless Heat Pump
EF	Exhaust Fan
EH	Electric Wall Heater
EUH	Electric Unit Heater
HP	Heat Pump
HVLS	High Volume, Low Speed Fan
IRH	Infrared Gas Heater
L	Louver

Garage Ventilation Calculation

Unit Identification	Space Classification	Floor Area (SF)	Required CFM per SF	Minimum CFM per SF	Required CFM	Design CFM	Minimum Design CFM	Remarks
EF-7, EF-8	Garage	4524	0.75	0.05	3393	3500	300	1

1. Per 2018 NC Mechanical Code, Table 403.3.1.1.

Outside Air Calculation

Unit Identification	Space Classification	Floor Area (SF)	People per 1000 SF	Total People	CFM per Person	CFM per SF	Zone Air Dist. Eff.	Required CFM	Design CFM	Remarks
AHU-1	Office Space	234	5	2	5	0.06	0.8	30	65	1
	Main Entry Lobby	160	10	2	5	0.06	0.8	25		1
	Storage	62	NA	NA	NA	0.12	0.8	9		1
AHU-2	Conference/Meeting	697	50	35	5	0.06	1.0	217	220	1
AHU-3	Dormitory Sleeping Areas	454	20	10	5	0.06	0.8	97	115	1
	Corridor	210	NA	NA	NA	0.06	0.8	16		1

1. Per 2018 NC Mechanical Code, Table 403.3.1.1.

Additional Efficiency Compliance:

This project is complying with Section C406 of the 2018 NC Energy Conservation Code under the provisions of Section C406.1, Option 2. The remaining provisions are therefore not required and have not been included in this design.

Mechanical Systems and Equipment:

Method of Compliance: Prescriptive

Climate Zone: 4A

Exterior Design Conditions:
Winter Dry Bulb: 16°F
Summer Dry Bulb: 93°F

Interior Design Conditions:
Winter Dry Bulb: 70°F
Summer Dry Bulb: 75°F
Relative Humidity: 50%

Calculated Space Loads:
Heating Load: 183,100 BTUH
Cooling Load: 66,700 BTUH

Space Conditioning System:
Unitary: The space is served by split-system heat pumps with auxiliary electric heat and natural gas radiant heaters.
Boiler: Not applicable to this project.
Chiller: Not applicable to this project.

Equipment Efficiencies:
Refer to mechanical schedules within drawings for efficiencies.

Equipment Schedules with Motors:
Multi-speed motors are used on this project and are included in the efficiency rating of the equipment. See drawings for efficiencies.

Designer Statement:
To the best of my knowledge and belief, the design of this project complies with the mechanical system and equipment requirements of the 2018 NC Mechanical Code.

BABA Compliance Note:

All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Contractor shall provide BABA compliance certificates to accompany all equipment and material submittals. More details regarding BABA compliance can be found at the US Department of Agriculture website (usda.gov).

General Notes:

1. The contractor shall comply with all requirements of the 2018 NC Mechanical Code with regards to all mechanical work.
2. The Mechanical Contractor shall coordinate the installation of all equipment, piping, and ductwork under this contract with the building structure. Contractor shall make adjustments where necessary without additional cost to owner.
3. Coordinate all supply, return, and exhaust grille locations with architectural reflected ceiling plan.
4. Limit all flexible supply duct lengths to a maximum of 8'. Limit all flexible return duct lengths to 4'.
5. Where ducts and/or equipment are shown crossing, the larger duct or equipment shall take precedence. The contractor must provide transitions so that the smaller of the ducts is routed up and over the top of larger ducts.
6. Install fire dampers as required for all ducts penetrating rated partitions.
7. Locate thermostat and/or temperature sensor devices as shown on mechanical plans. Verify that all device locations are acceptable to owner/tenant prior to construction.
8. Insulate all new supply, return, and outside air ductwork concealed above ceilings with exterior duct wrap.
9. Refer to drawing B-081465 for roof/structural equipment hanger details.

These drawings will be at the scale indicated when plotted at 30" x 42"

Ductless Split System Schedule

Outdoor Unit Mark	Indoor Unit Mark	Manufacturer	Outdoor Unit										Indoor Unit					Remarks
			Tonnage	Refrigerant	Model	ARI Cooling (MBH)	ARI Heating (MBH)	SEER2	HSPF2	Volt/Ph	MCA	MOCP	Weight (LBS)	Model	Type	SA (CFM)	Volt/Ph	Weight (LBS)	
DHP-1	DAHU-1	Mitsubishi/Trane	2.0	R-454B	MUZ-WX24NL	22.4	26.0	18.0	8.5	208/1	16.0	20	28	MSZ-WX24NL	Wall Hung	622	230/1	28	1,2,3,4,5,6,7

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Cooling capacity based on indoor entering air condition of 80°F dry bulb, 67°F wet bulb and outdoor air condition of 95°F dry bulb. Heating capacity based on indoor entering air condition of 70°F dry bulb and outdoor air condition of 47°F dry bulb.
3. Provide unit with wired, wall mounted thermostat.
4. Provide unit with manufacturer's accessory Blue Diamond (Advanced), Model: X87-721, 208/230 volt condensate pump with reservoir and sensor. Pump shall be powered through air handing unit. Refer to mechanical drawing for condensate termination location.
5. Indoor unit shall be powered from outdoor unit. All power wiring by the electrical contractor.
6. Provide unit with manufacturer's integral refrigerant leak detection system. In the event of a leak, the indoor unit supply fan should increase to maximum speed and send a signal to the compressor to shut down.
7. Refer to MEP seismic details for mechanical equipment restraint requirements.

Electric Heater Schedule

Mark	Manufacturer	Model	Type	Heat (KW)	Airflow (CFM)	Volt/Ph	Weight (LBS)	Remarks
EH-1	Raywall	AFA230D	Cabinet Console	2.25	175	208/1	29	1,2,3,5
EUH-1	Raywall	F1FUH03003	Unit Heater	3.3	400	208/1	36	1,4,5
EUH-2	Raywall	F1FUH03003	Unit Heater	3.3	400	208/1	36	1,4,5
EUH-3	Raywall	F1FUH03003	Unit Heater	3.3	400	208/1	36	1,4,5

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Provide with tamperproof grille, built-in adjustable thermostat (set for 50°F), thermal overheat protection, and built-in disconnect.
3. Provide with surface mounting box.
4. Provide with wall/ceiling mounting bracket, wall mounted thermostat (set for 50°F), and thermal overheat protection. Electrical contractor shall provide disconnect and power wiring.
5. Refer to MEP seismic details for mechanical equipment restraint requirements.

High-Volume Low-Speed Fan Schedule

Mark	Manufacturer	Model	Diameter (ft)	Number of Blades	Maximum RPM	Motor (HP)	Drive	Volt/Ph	MOCP	Weight (LBS)	Remarks
HVLS-1	Greenheck	DS-6-14-LV	14	6	126	1.5	Direct	208/1	25	184	1,2,3,4,5

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Fan to be installed with a minimum 2'-0" clearance from the underside of the roof deck and on all sides. Verify extension tube length and mounting bracket with manufacturer prior to ordering. Coordinate exact fan mounting height with General Contractor.
3. Provide fan with manufacturer's variable speed wired wall controller. All fans shall be controlled through a single controller. Controls wiring shall be through Cat5 wiring and provided by mechanical contractor. Control wiring shall be within conduit provided by Mechanical Contractor. Electrical contractor shall provide power wiring to variable frequency drive (VFD) and whip to fan.
4. Provide fan with relay to shutdown upon signal from fire alarm system. Wiring by Fire Alarm Contractor.
5. Refer to MEP seismic details for mechanical equipment restraint requirements.

Infrared Gas Heater Schedule

Mark	Manufacturer	Model	Input (MBH)	Tube Length	Overall Length	Fuel	Volt/Ph	Weight (LBS)	Remarks
IRH-1	Detroit Radiant	HL3-40-100	100.0	40 ft	41' 1"	Propane	120/1	190	1,2,3,4,5
IRH-2	Detroit Radiant	HL3-40-100	100.0	40 ft	41' 1"	Propane	120/1	190	1,2,3,4,5

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Provide with direct spark ignition and maintenance-free draft inducer.
3. Provide with manufacturer's 24V wall mounted thermostat.
4. Provide with 5" exhaust flue duct and 5" outside air duct.
5. Refer to MEP seismic details for mechanical equipment restraint requirements.

Air Distribution Schedule

Mark	Manufacturer	Model	Description	Panel Size	Type	Neck Size	Remarks
SA1	Titus	TMS-AA	Aluminum, High Performance, Full Face, Stamped Square, 4-Way	24x24	Lay-In	6"Ø	1,2,3,4
SB1	Titus	TMS	Steel, High Performance, Full Face, Stamped Square, 4-Way	24x24	Lay-In	6"Ø	1,2,3,4
SB2	Titus	TMS	Steel, High Performance, Full Face, Stamped Square, 4-Way	24x24	Lay-In	8"Ø	1,2,3,4
SB2	Titus	TMS	Steel, High Performance, Full Face, Stamped Square, 4-Way	24x24	Lay-In	10"Ø	1,2,3,4
RA1	Titus	PAR	Steel, Perforated, Duct Collar	24x24	Lay-In	8"Ø	1,2,3,4
RA2	Titus	PAR	Steel, Perforated, Duct Collar	24x24	Lay-In	10"Ø	1,2,3,4
RA3	Titus	PAR	Steel, Perforated, Duct Collar	24x24	Lay-In	12"Ø	1,2,3,4

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Verify all ceiling and wall types with architectural plans. Coordinate color with Architect.
3. Insulate all diffusers and grilles from ceiling space. Provide with foil-faced backpan insulation.
4. Refer to MEP seismic details for mechanical equipment restraint requirements.

Louver Schedule

Mark	Manufacturer	Model	Service	Type	Airflow (CFM)	Size, WxH (in.)	Depth (in.)	Min. Free Area (SF)	Max. P.D. (in. W.G.)	Damper Type	Actuator (Volt/Ph)	Fan Interlock	Remarks
L-1	Greenheck	ESD-435	Intake	Fixed	400	16x16	4	0.6	0.1	Barometric	NA	NA	1,2,3,4,6
L-2	Greenheck	ESD-435	Exhaust	Fixed	190	12x12	4	0.3	0.1	NA	NA	NA	1,2,3,6
L-3	Greenheck	ESD-435	Exhaust	Fixed	70	12x12	4	0.3	0.1	NA	NA	NA	1,2,3,6
L-4	Greenheck	ESD-435	Exhaust	Fixed	310	16x12	4	0.4	0.1	NA	NA	NA	1,2,3,6
L-5	Greenheck	ESD-435	Intake	Fixed	300	24x12	4	0.7	0.1	Motorized	120/1	EF-7	1,2,3,5,6
L-6	Greenheck	ESD-435	Intake	Fixed	3500	48x30	4	5.1	0.1	Motorized	120/1	EF-8	1,2,3,5,6
L-7	Greenheck	ESD-435	Exhaust	Fixed	70	12x12	4	0.3	0.1	NA	NA	NA	1,2,3,6
L-8	Greenheck	ESD-435	Intake	Fixed	-	24x24	4	1.8	0.1	NA	NA	NA	1,2,3,6

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Provide color selection chart with submittals. Final color selection shall be made by architect during submittal review.
3. Louver shall be extruded aluminum with drainable blades. Provide with flanged frame and bird screen.
4. Provide barometric damper with counterbalance.
5. Provide separate field installed damper with electric actuator, linkage, and mounting hardware. Provide 24 volt step down transformer as required. Interlock damper to open with specified fan is engaged.
6. Refer to MEP seismic details for mechanical equipment restraint requirements.

Fan Schedule

Mark	Manufacturer	Model	Service	Type	Airflow (CFM)	ESP (in. W.G.)	Motor Size	RPM	Drive	Volt/Ph	Weight (LBS)	Remarks
EF-1	Greenheck	SP-A90	105 T.R.	Ceiling Cabinet	70	0.25	13 W	855	Direct	120/1	20	1,2,3,7
EF-2	Greenheck	SP-A200	109 Bath 1	Ceiling Cabinet	120	0.25	19 W	650	Direct	120/1	32	1,2,3,7
EF-3	Greenheck	SP-A200	111 Bath 2	Ceiling Cabinet	120	0.25	19 W	650	Direct	120/1	32	1,2,3,7
EF-4	Greenheck	SP-A200	121 Bath 5	Ceiling Cabinet	120	0.25	19 W	650	Direct	120/1	32	1,2,3,7
EF-5	Greenheck	SP-A90	122 Decon	Ceiling Cabinet	70	0.25	13 W	855	Direct	120/1	20	1,2,3,7
EF-6	Greenheck	SP-A90	124 Utility Room	Ceiling Cabinet	70	0.25	13 W	855	Direct	120/1	20	1,2,3,7
EF-7	Greenheck	AER-20-03-1215-VG	120 Apparatus	Wall, Propeller	300	0.25	0.25 HP	608	Direct	208/1	130	1,4,5,6,7
EF-8	Greenheck	AER-30-03-0610-VG	120 Apparatus	Wall, Propeller	3500	0.25	1.0 HP	965	Direct	208/1	222	1,4,5,6,7
EF-9	Greenheck	SP-A90	123 Tool Room	Ceiling Cabinet	70	0.25	13 W	855	Direct	120/1	20	1,2,3,7

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Provide fan with backdraft damper, polystyrene grille, and hanging isolator kit to support fan from structure.
3. Fan to be controlled by wall switch provided by Electrical Contractor.
4. Provide fan with 24V on/off controls contacts, 120/24V controls transformer, cast aluminum propeller fan, integral housing, weather hood, outlet shutter, and inlet guard.
5. Provide fan with speed controller for balancing.
6. Provide ACME: Model CEL-LS MegaSet, CO / NO2 monitoring system with remote sensors, audible/visible alarms, and 120/24V controls transformer as required. Fan shall be controlled through CO / NO2 monitoring system. EF-7 shall be programmed to operate continuously in order to provide minimum required ventilation. EF-8 shall be programmed to engage and open associated louver/damper when exposure levels exceed set point. Refer to manufacturer's installation instructions for exposure limits and alarm levels.
7. Refer to MEP seismic details for mechanical equipment restraint requirements.

Split System Heat Pump Schedule

Mark	Manufacturer	Tonnage	Model	Refrigerant	ARI Cooling (MBH)	ARI Heating (MBH)	SEER2	HSPF2	Volt/Ph	MCA	MOCP	Weight (LBS)	Remarks
HP-1	Trane	2.0	5TWR4024	R-454B	22.8	22.4	14.3	7.5	208/1	13.0	20	174	1,2,3,4,5,6
HP-2	Trane	2.5	5TWR4030	R-454B	26.6	26.0	14.3	7.5	208/1	16.0	25	174	1,2,3,4,5,6
HP-3	Trane	2.0	5TWR4024	R-454B	22.8	22.4	14.3	7.5	208/1	13.0	20	174	1,2,3,4,5,6

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Cooling capacity based on indoor entering air condition of 80°F dry bulb, 67°F wet bulb and outdoor air condition of 95°F dry bulb. Heating capacity based on indoor entering air condition of 70°F dry bulb and outdoor air condition of 47°F dry bulb.
3. Standard unit features shall include filter drier, front seating service valves, internal pressure relief valve, internal thermal overload, suction line accumulator, high pressure switch, and loss of charge switch.
4. Accessory unit features shall include; compressor start assist, crankcase heater, thermostatic expansion valve, and time delay relay.
5. Refrigerant lines shall be sized and approved by the equipment manufacturer based upon field measured piping lengths. Mechanical contractor shall provide lengths, bends, and routing to manufacturer for proper pipe sizing. Provide all of the manufacturer's recommended components. Piping shall be sized so that maximum capacity loss due to line length is 3%. All piping shall be hard copper pipe.
6. Refer to MEP seismic details for mechanical equipment restraint requirements.

Split System Air Handling Unit Schedule

Mark	Manufacturer	Model	Refrigerant	SA (CFM)	OA (CFM)	ESP (In. W.G.)	Fan (HP)	Heat (KW)	Heat Stages	Volt/Ph	MCA	MOCP	Weight (LBS)	Remarks
AHU-1	Trane	5TEM4B02AC21	R-454B	800	65	0.5	1/3	5.8	1	208/1	38.0	40	110	1,2,3,4,5,6,7
AHU-2	Trane	5TEM4B03AC31	R-454B	1000	220	0.5	1/2	5.8	1	208/1	39.0	40	117	1,2,3,4,5,6,7
AHU-3	Trane	5TEM4B02AC21	R-454B	800	115	0.5	1/3	5.8	1	208/1	38.0	40	110	1,2,3,4,5,6,7

1. All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Provide BABA compliance certificates to accompany all equipment and material submittals.
2. Provide air handling unit with factory installed electric heater, filter rack, disconnect switch, and single point wiring connection.
3. Provide unit with manufacturer's touchscreen display, 7-day programmable thermostat.
4. Provide unit with 120 Volt, hardwired, plenum rated condensate pump, auxiliary drain pan, and float switch.
5. Unit shall shutdown upon signal from fire alarm system. Duct mounted smoke detector shall be furnished and wired by the Fire Alarm Contractor. The Mechanical Contractor shall install the detector in the duct. All controls, including audible/visual alarms, shall be provided by the Fire Alarm Contractor.
6. Provide unit with manufacturer's integral refrigerant leak detection system. In the event of a leak, the indoor unit supply fan should increase to maximum speed and send a signal to the compressor to shut down.
7. Refer to MEP seismic details for mechanical equipment restraint requirements.

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NORTH CAROLINA PROFESSIONAL SEAL 052489 ENGINEER MICHAEL T. CRUMBACHER

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APPROVAL:
DATE:

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DRAWN BY:

CHECKED BY:

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

MECHANICAL SCHEDULES

M0-02

These drawings will be at the scale indicated when plotted at 30" x 42"

ALIGN engineering
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NORTH CAROLINA PROFESSIONAL SEAL 052489 MICHAEL P. CRAWFORD ENGINEER

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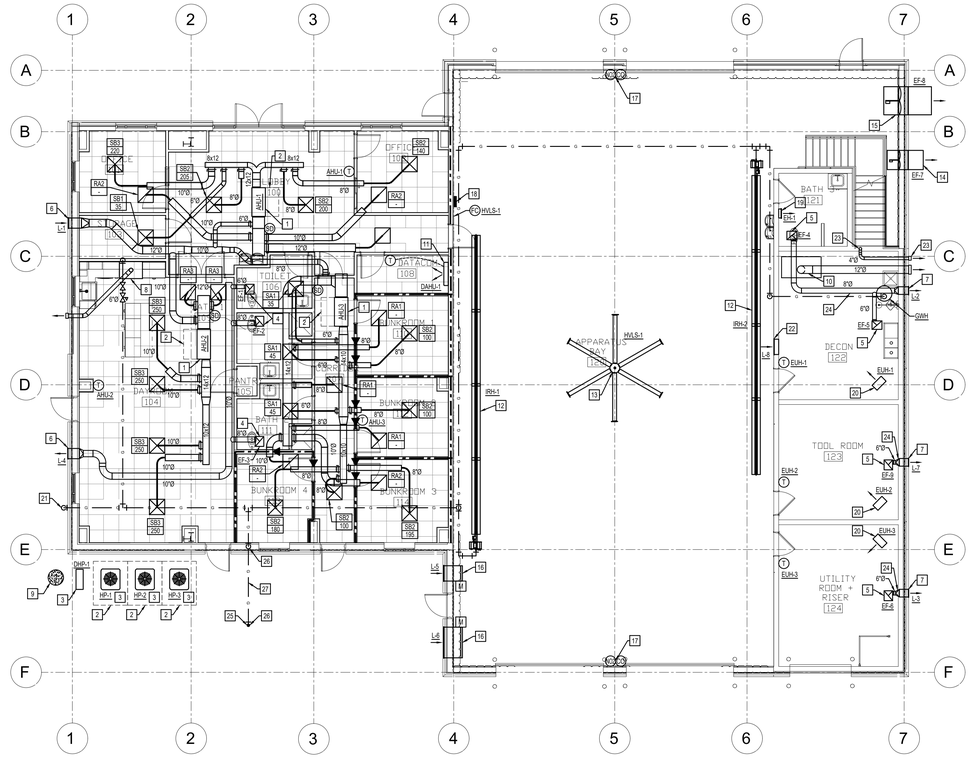
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DRAWN BY:

CHECKED BY:

TRUE NORTH:



1 Floor Plan - Mechanical
Scale: 1/8" = 1' - 0"

Plan Notes:

1. Install air handling unit above ceiling per manufacturer's installation instructions and clearances. Provide return duct same size as unit connection. Route refrigerant piping through ceiling and turn down within exterior wall to heat pump. Pump condensate adjacent to refrigerant piping and spill into nearest dry well. Refer to "Air Handling Unit Hanging Detail" for additional information.
2. Manufacturer's required installation clearances. (Typical)
3. Install new heat pump on concrete housekeeping pad per manufacturer's installation instructions and clearances. Refer to "Heat Pump Mounting Detail" for additional information. (Typical)
4. Install ceiling mounted exhaust fan per manufacturer's installation instructions and clearances.
5. Install ceiling mounted exhaust fan per manufacturer's installation instructions and clearances. Fan shall be suspended within structural joists.
6. Install louver high in exterior wall per manufacturer's installation instructions and clearances. Maintain 10'-0" between outside air intakes and exhaust outlets. Maintain 3'-0" between exhaust outlets and any operable openings into the building.
7. Install louver in exterior wall tight to underside of mezzanine structure per manufacturer's installation instructions and clearances. Maintain 10'-0" between outside air intakes and exhaust outlets. Maintain 3'-0" between exhaust outlets and any operable openings into the building.
8. Install domestic range hood, furnished by General Contractor, above domestic range per manufacturer's installation instructions and clearances (hood shall not exceed 400 CFM). Route exhaust duct through exterior wall and terminate with manufacturer's approved wall cap. Maintain 10'-0" between exhaust outlets and any outside air intakes. Maintain 3'-0" between exhaust outlets and any operable openings into the building.
9. Provide dry well at exterior equipment area. Drain all HVAC equipment condensate into nearest dry well. Refer to "Dry Well Detail" for additional information.
10. Route 12" rigid exhaust duct (verify exact size with final equipment manufacturer/model) up from decon drying rack. Route duct tight to bottom of mezzanine structure and terminate with wall cap including backdraft damper (no bird/insect screen). Duct shall be sized and installed per the drying rack manufacturer's installation instructions. Wall cap color shall match adjacent exterior wall color. Maintain 10'-0" between outside air intakes and exhaust outlets. Maintain 3'-0" between exhaust outlets and operable openings into the building.
11. Install wall mounted air handling unit per manufacturer's installation instructions and clearances. Route refrigerant piping through ceiling and turn down within exterior wall to heat pump. Pump condensate adjacent to refrigerant piping and spill into nearest dry well.
12. Install propane infrared heater per manufacturer's installation instructions and clearances. Coordinate final heater mounting height with the general contractor. Route 6"Ø intake duct and 4"Ø flue duct up through roof as indicated and terminate with manufacturer approved roof cap. Maintain 10'-0" between outside air intakes and exhaust terminations.
13. Install high-volume low-speed fan per manufacturer's installation instructions and clearances. Coordinate final fan location and mounting height with the general contractor.
14. Install new wall mounted propeller style exhaust fan high on wall per manufacturer's installation instructions and clearances. Fan intake shall be open to apparatus bay. Refer to architectural/structural drawings for exact location. All structural supports shall be provided by General Contractor. Maintain 10' between outside air intake and any exhaust terminations. Fan shall be programmed through CO/NO2 monitoring system to operate continuously. Fan shall be interlocked with L-5 intake louver motorized damper.
15. Install new wall mounted propeller style exhaust fan high on wall per manufacturer's installation instructions and clearances. Fan intake shall be open to apparatus bay. Refer to architectural/structural drawings for exact location. All structural supports shall be provided by General Contractor. Maintain 10'-0" between outside air intake and any exhaust or plumbing vent terminations. Fan shall be programmed to engage through CO/NO2 monitoring system when exposure set point is exceeded. Fan shall be interlocked with L-6 intake louver motorized damper.
16. Install intake louver high in exterior wall per manufacturer's installation instructions and clearances. Provide minimal duct and motorized damper. Interlock motorized damper with associated exhaust fan, so that damper opens when fan engages. Maintain 10'-0" between outside air intakes and exhaust outlets. Maintain 3'-0" between exhaust outlets and any operable openings into the building.
17. Provide dual detection CO/NO2 gas detector. Provide with manual switch. Install CO/NO2 sensors at mounting specified within manufacturer's installation manual. Interlock EF-8 to engage when expose set point is exceeded.
18. Install CO/NO2 monitoring system control panel in accessible location on wall. Monitoring system shall be Honeywell, Model: 301C or equivalent with remote CO/NO2 sensors, audible/visible alarms, and 120/24V controls transformer as required. Garage exhaust fans shall be controlled through the CO/NO2 monitoring system. EF-7 shall be programmed to operate continuously in order to provide the minimum required ventilation. EF-8 shall be programmed to engage and open associated intake damper when exposure levels exceed set point. Refer to manufacturer's installation instructions for exposure limits and alarm levels.
19. Install electric wall heater per manufacturer's installation instructions and clearances.
20. Install electric unit heater per manufacturer's installation instructions and clearances.
21. Connect to propane gas piping from propane tank at entry point to building, and provide a 2.0 PSI propane gas regulator and shutoff valve in the vertical pipe at the location indicated.
22. Install louver in wall tight to underside of mezzanine structure per manufacturer's installation instructions and clearances. Maintain 10'-0" between outside air intakes and exhaust outlets.
23. Provide "Dryer Box" centered behind domestic clothes dryer (high where stacked). Route dryer duct up within stud cavity, tight to bottom of mezzanine structure, and to exterior wall as indicated. Terminate dryer duct with wall cap including backdraft damper (no bird/insect screen). Wall cap color shall match adjacent exterior wall color. Maintain 10'-0" between outside air intakes and exhaust outlets. Maintain 3'-0" between exhaust outlets and operable openings into the building. Refer to "Dryer Venting Placard Detail" for additional information and requirements.
24. Route duct tight to bottom of mezzanine structure.
25. Provide Firemagic, Model: 5520-01T or equivalent, stainless steel enclosure with manual shut-off valve and automatic shut-off valve with 1-hour timer. Coordinate mounting location with general contractor. Make final connection to appliance. Coordinate with appliance manufacturer's installation instructions. Refer to gas riser and gas details for pipe routing, sizes, and additional requirements.
26. Provide prefabricated plastic-to-steel riser where gas piping turns up from underground. Steel pipe in contact with ground to be provided with coating to prevent corrosion. Refer to gas riser and gas details for pipe routing, sizes, and additional requirements.
27. Route gas piping underground to appliances. All underground piping to be medium density polyethylene pipe. All underground piping to be installed a minimum of 12" below grade. Install piping per NFPA 54. Refer to gas riser and gas details for pipe routing, sizes, and additional requirements.

Wall Ratings and Types Legend

See architectural sheets for more information on ratings and additional rated constructions including structure where applicable. Protect all rated constructions as required.

- New Wall being Constructed
- One Hour Fire Barrier
- Wall to Deck

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

FLOOR PLAN - MECHANICAL

M1-01

These drawings will be at the scale indicated when plotted at 30" x 42"

Low Pressure LP Gas Service Notes:

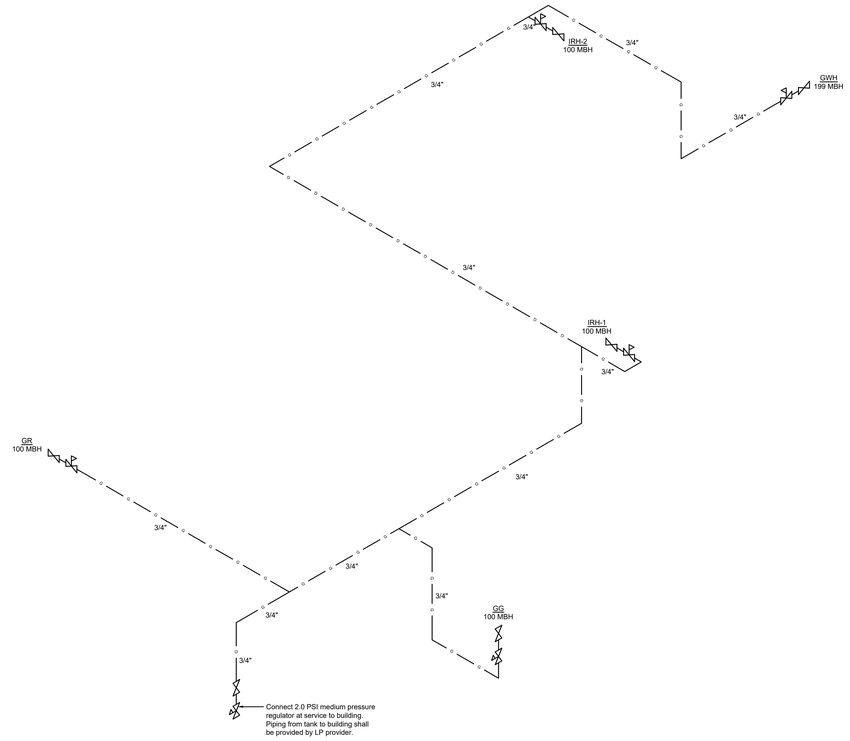
Gas piping sizes upstream of medium pressure (MP) regulators are based on an initial pressure of 2 PSI, a pressure drop of 1 PSI, 1.5 specific gravity gas and Schedule 40 pipe. Sizes are based on Table 402.4(27) of the 2018 NC Fuel Gas Code. Gas piping sizes downstream of MP regulators are based on a low pressure system (11.0 " water column), a pressure drop of 0.5" water column, 1.5 specific gravity gas and Schedule 40 pipe. Sizes are based on Table 402.4(28) of the 2018 NC Fuel Gas Code.

1. All gas piping shall be installed per the requirements of the 2018 NC Fuel Gas Code and NFPA 54.
2. Provide manual shutoff valve for each piece of gas equipment.
3. Contractor shall verify gas requirements for each piece of equipment prior to installing gas piping. Confirm equipment with owner.
4. Above grade as piping shall be Schedule 40 ASTM A53 or A120, T&C. Where exposed to weather, paint to prevent corrosion. Underground gas piping shall be Medium Density Polyethylene pipe. All underground piping to be installed a minimum of 12" below grade. Provide underground piping with tracer wire. Install per NFPA54.
5. Contractor to verify service location and maximum line lengths prior to installation. If conditions vary from those shown on the drawings, contact engineer for line sizing.

LP Gas Connected Load

Mark	Quantity	Equipment Type	BTUH Input	Remarks
Gas Range	1	Range	100,000	1
Gas Grill	1	Grill	100,000	1
IRH-1	1	Infrared Radiant Heater	100,000	1
IRH-2	1	Infrared Radiant Heater	100,000	1
GWH	1	Water Heater	199,000	1
		Total	398,000	

1. Maximum equivalent length from the gas meter to the most equipment served = 300'. Transition pipe to equipment inlet as required.
2. Maximum length from any MP regulator to the equipment served = 10'. Gas piping shall be 3/4" from MP regulator to equipment inlet unless otherwise noted on gas riser. Transition pipe to equipment inlet as required. All MP regulators shall be vent limiting type.



1 LP Gas Riser
Scale: None

MAXIMUM DRYER VENTING LENGTH	
TOTAL LENGTH OF STRAIGHT 4" RIGID DRYER VENT:	(XXXX) FEET
NUMBER OF ELBOWS (DEDUCTION):	QTY:
4" RADIUS MITERED 45-DEGREE ELBOW (2'-6"):	(XXXX)
4" RADIUS MITERED 90-DEGREE ELBOW (5'-0"):	(XXXX)
TOTAL EQUIVALENT LENGTH OF DRYER VENT:	(XXXX) FEET
MAXIMUM LENGTH OF DRYER VENT (NCMC 504.8.4):	35'-0" FEET
MANUFACTURER'S EXCEPTION: TOTAL EQUIVALENT LENGTH OF DRYER VENT MAY EXCEED 35'-0" WHERE DRYER'S MANUFACTURER'S INSTALLATION INSTRUCTIONS ALLOW. INSTALLATION INSTRUCTIONS MUST INCLUDE A MAXIMUM VENTING LENGTH AND DEDUCTIONS FOR FITTINGS.	

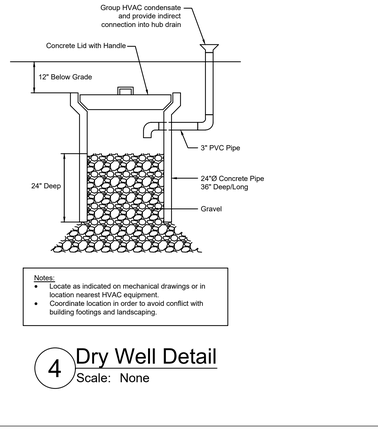
Notes:
1. Mechanical contractor shall provide a 1/16" thick red plastic placard with white 1/4" high lettering indicating each dryer vent installation. The mechanical contractor shall install the placard prior to ceiling installation, but not before dryer vent installation has been completed. Dryers venting systems exceeding 35'-0", or the maximum distance allowable per the dryer manufacturer's installation instructions, are prohibited from being installed.
2. Placard shall include four pre-drilled holes, to be attached adjacent to the wall adjacent to the dryer connection with four screws.
3. All sections including "(XXXX)" must be completed and reflect the dryer vent installation prior to installing placard.
4. Provide placard with pre-drilled holes in each of the four corners. Attach placard to wall within 5'-0" of dryer box with four screws.

2 Dryer Venting Placard Detail
Scale: None



Notes:
- All duct dimensions shown on these drawings are inside clear.
- Provide a minimum of R-6 insulation when duct is located in unconditioned space.
- Provide a minimum of R-8 insulation when duct is located outside the building envelope.

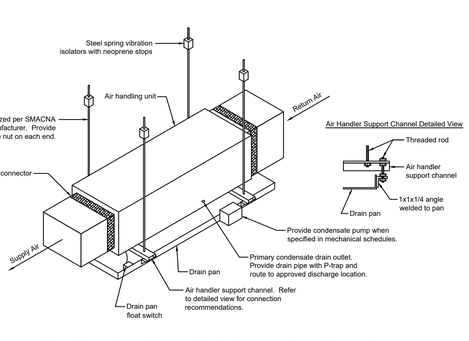
3 Duct Fabrication Detail
Scale: None



Notes:
- Locate as indicated on mechanical drawings or in location nearest HVAC equipment.
- Coordinate location in order to avoid conflict with building footings and landscaping.

4 Dry Well Detail
Scale: None

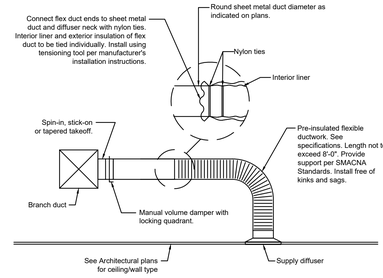
5 Fire Damper Detail
Scale: None



6 Air Handling Unit Hanging Detail
Scale: None



7 Heat Pump Mounting Detail
Scale: None



8 Flexible Duct Installation Detail
Scale: None

These drawings will be at the scale indicated when plotted at 30" x 42"

ALIGN engineering
919.275.1935
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PO Box 2833, Raleigh, NC 27611

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052489 MICHAEL T. CRUMBACHER
07/10/2026

This is not a certified drawing, but a copy of a certified drawing that has been unlocked. This document has been unlocked for the ease of use of the AHJ, contractor, etc. and was originally accompanied with the actual certified document meeting the boards rule for electronic signatures

APPROVAL:
DATE:

BOBBITT A&E, PLLC
Headquarters Office
2400 Weston Pkwy
Cary, NC 27513-5519

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Headquarters Office
2400 Weston Pkwy, Cary, NC 27513-5519
Phone (919) 557-7300 Fax (919) 557-1802
design@bobbitt.com

COORDINATOR:
DRAWN BY:
CHECKED BY:

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE
10 JULY 2026
25-0006
MECHANICAL DETAILS

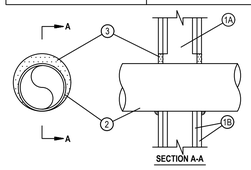
M2-01

System No. W-L-1054

WL 1054

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL 1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 and 2 Hr (See Items 1 and 3)	F Ratings — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating (Without Movement) at Ambient — Less Than 1 CFM/sq ft	FH Ratings —1 and 2 Hr (See Items 1 and 3)
L Rating (Without Movement) at 400°F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
M Rating (Movement) — See Table 1	FTH Rating — 0 Hr
	L Rating at Ambient — Less Than 5.1 L/s/in2
	L Rating at 204°C — Less Than 5.1 L/s/in2



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. For M Rating, steel studs to be min 3-5/8 in. (92 mm) wide. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, factory-applied face and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls. The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly. The M Rating is applicable only to 1 hr rated walls.
2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous joint contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
   C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Y	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

HILTI
Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 21, 2020

Gypsum Framed Walls
1 or 2 Hour Penetration Firestop
Metallic Pipe, Conduit, or Tubing

1 Scale: None

GENERAL NOTES AND REQUIREMENTS.

1. Workmanship shall conform to NECA installation standards including NECA 1.
2. Installation shall comply with National Electrical Code (NEC/ NFPA 70), state building code, and all requirements of the local inspector (furnish inspection certificate). All work shall be by licensed electrical contractor.
3. The contractor shall refer to the architectural plans for floor plan dimensions and not scale these drawings. The location of all wall mounted devices, including mounting heights, shall be field verified with the architect prior to rough-in. Coordinate locations of all light fixtures with the reflected ceiling plans. Light fixtures installed in mechanical areas shall avoid mechanical piping, equipment, ductwork, etc.
4. Contractor shall comply with all requirements of the 2018 NC Building Code and Accessibility Code which are applicable to this project regardless of whether all details are indicated on plans. All receptacles, switches, and other electrical devices required to be ADA accessible shall be mounted per ANSI 117.1 sections 308 AND 309.
5. All electrical equipment shall be installed so that all code required and manufacturer recommended working/ servicing clearances are maintained. Installation shall fully comply with NEC 110.26 and NEC 408.18 for clearance requirements.
6. All wall outlet boxes, receptacles, switches, cover plates, etc. shall be commercial grade, standard or heavy duty except where specified. Verify color/ material for all devices and cover plates prior to order. Provide label for each device identifying the circuit serving the device. Verify if label should be on inside our outside face of cover plate with building management. At tenant, All 15 and 20 amp, 125V and 250V non-locking receptacles shall be listed as tamper resistant, in all location outlined per NEC 406.12.
7. The electrical contractor shall coordinate any and all work with other trades involved in the project, prior to installation of electrical equipment, so as to avoid conflicts during construction and to allow for optimum maintenance and working space.
8. All branch circuits shall be in 3/4" minimum zinc-coated EMT, IMC, or RMC as permitted or required by the NEC. LFMC (or FMC as permitted) shall be used for final connections to equipment subject to vibration. A deduct price for MC cable may be offered for approval, where permitted by owner and NEC and conduits completely concealed from view. Schedule 40 PVC conduit may be used for underground feeders/ branch circuits or underground low voltage system conduits located below slab on grade or buried outside of the building, or in concrete block walls. PVC schedule 80 conduit may be used on the building exterior (expansion fittings may be used above grade) where permitted by code. Contractor shall include cost of painting all exposed conduits subject to public view. Conduit sizes noted on these plans are based on EMT conduit. Where other permitted raceway types are used, contractor shall adjust conduit sizes as necessary based on type of raceway used and allowable fill. Provide pull wire in all empty conduit. Junction box covers shall be permanently labeled and conduit shall be labeled every 10'. All labels shall be machine generated onto adhesive labels or tags, or engraved on plastic laminated placards or brass tags.
9. All wire and conduit sizes are based on 75° C THHN/THWN copper conductors unless otherwise noted. All conductors, terminations larger than 30A & devices shall be rated for minimum 75°C. All conductor and conduit sizes are calculated based on installation of no more than 3 current carrying conductors per conduit, neutral(s) included. Unless otherwise noted, contractor shall not install more than 3 current carrying conductors per conduit with the following exception: up to 9 current carrying conductors may be used in a single raceway where permitted by the NEC when minimum #12 AWG (THHN 90°c) is used and where all included circuits are protected upstream by 20 amp overcurrent devices and no other derating conditions exist.
10. All conductors shall be copper type THHN, or XHHW, solid for #10 AWG or #12 AWG, and stranded for all larger sizes. Minimum conductor size shall be #12.
11. Conduits and cables shall be concealed wherever possible by either routing above ceiling, in interstitial spaces or running exposed in unfinished spaces where possible. Conduits may be run exposed in mechanical areas or other areas not subject to public view where approved by the owner. Wherever conduits or cables are approved to be exposed, conduits and cables shall be run parallel or perpendicular to structural elements and shall be run and bundled in groups, and the installation shall be neat and orderly. Even when exposed, conduits and cables shall be routed to minimize view from personnel. Seal all penetrations air tight around all conduits passing through walls or floors. Escutcheon plates shall be used when passing through walls that are visible to the public. Use appropriate penetration protection when conduit passes into or through rated assemblies.
12. Where branch circuit total length is greater than sixty five (65') feet from the panel, see voltage drop schedule for wire size adjustment.
13. All mounting heights indicated are given to the bottom of the device, unless noted otherwise.
14. Where used in these documents, the word "provide" shall mean to furnish and install the item or equipment as well as make the final connection required.
15. All light fixtures shall be supported independently of the suspended ceiling system.
16. The electrical contractor shall provide all necessary disconnects, switches, receptacles, etc. under the electrical bid and shall include all necessary circuits to and make final connections to the equipment furnish by all suppliers. Coordinate closely with other trades.
17. All breakers, disconnect switches, and fuses sizes, indicated for mechanical equipment, shall be verified with equipment supplier and mechanical contractor, before the purchase or installation of that equipment.
18. All disconnect switches are to be fusible type. Fuses shall be the appropriate type for the load served by Bussmann or equal. Unless unsuitable, fuses rated 1200A or higher shall be Class L, fast-acting, and shall have a clearing time of 0.07 seconds at the available fault current per NEC 240.67. Submit fuse trip curves along with available fault current at the service entrance for engineer verification prior to beginning work or ordering equipment. The contractor shall compare all installed equipment nameplate information with the electrical plans/ schedules and notify the engineer immediately of any discrepancies. The contractor shall coordinate all fuse sizes with actual installed equipment nameplate information prior to purchasing or installing fuses. Where the nameplate information does not indicate an overcurrent protection size or maximum ampacity rating, fuses shall be installed per the electrical plans assuming other equipment parameters are in agreement with nameplate data.
19. Provide grounding conductor for all circuits per NEC. Building ground shall meet all requirements of NEC 250.
20. Ground telephone equipment per NEC. If telephone service is not located within 20' of electrical service, then provide separate grounding electrode as required per NEC 800.
21. All multiwire branch circuits shall have multipole breakers as required by NEC 210.7.
22. All new circuits 100 amps and larger shall be megger tested prior to energizing. All other circuits shall be tested for continuity prior to energizing.
    Testing Requirements
    - Dielectric absorption tests shall be performed with a 2,500 volt DC megger.
    - Megger tests shall be performed at a DC voltage of 1,000 volts for 600 volt rated equipment, and at a DC voltage of 500 volts for 120-300 volt rated equipment.
    - The megger test shall be performed between each pair of conductors and from each conductor to ground. Each test shall be performed for 15 seconds or until the insulation resistance value stabilizes. The insulation resistance between conductors, and from each conductor to ground, shall be 25 megaohms (120-300V) or 100 megaohms (600V) minimum in one minute or less. In addition, the lowest insulation resistance value shall not differ from the highest value by more than 20 percent. If all megger readings for a given circuit or feeder are above 1000-megaohms, the 20% balance requirement may be waived
    - Continuity checks shall be performed with a low voltage DC meter, light or bell.
    - The resistance to ground shall be measured using either the three point method or the fall-of potential method.
    - Test instruments shall be calibrated to national standards to insure accuracy of tests. These calibration reports shall be made available to the Owner when requested. Depending upon frequency of use, the instruments shall be calibrated at least every 12-months.
23. The electrical contractor shall patch any wall, ceiling, or floor opening (or penetration) resulting from demolition or new work in existing areas. Any rated constructions or assemblies affected shall be patched, protected and refinished as necessary to maintain the original appearance as well as the rating.
24. The contractor is responsible for properly disposing of all waste materials, demo materials and other trash. This includes but is not limited to proper disposal of mercury containing lamps, batteries, recyclable materials.
25. Contractor shall provide the engineer with shop drawings/submittal data for lights, switches, switchgear/panels, floor boxes, fire alarm devices, and any other products deemed necessary for review. These shall be provided in editable PDF format via email through project manager, general contractor, architect, or other proper channel. Expected review duration, and industry standard, is ten business days from date of receipt by engineer. Similarly, RFI response duration, and industry standard, is five business days from date of receipt by engineer. All submissions should include and acknowledge this review duration unless otherwise specifically discussed and agreed upon in advance.
26. It is the sole responsibility of the contractor to coordinate w/ all other trades regarding voltages, loads, circuit breakers, etc. prior to beginning any work.
27. All switchgear/ panels shall be commercial grade from a reputable national manufacturer such as Square D, Eaton, Siemens and ABB. Panels shall be rated as indicated on panel schedules/ electrical riser diagram. If discrepancies are found, contact engineer immediately.
28. Engineer has reserved the right to choose the software package(s) deemed most efficient to deliver these plans for permitting, bid, and construction. Engineer considers any other digital files created during this process as instruments of service, and as such remain the property of the engineer. The contractor should not assume that digital files in any format will be made available during bidding or after award other than PDFs. If digital files are requested, engineer reserves the right to selectively provide them when available and/or may request additional considerations for the time incurred to prepare them.
29. Contractor shall verify all areas that are used as a return plenum with mechanical contractor and provide plenum rated cable for all cables not run in metal conduit. PVC is not allowed in plenum space. This "cable" includes all telecommunications, fire alarm, or control wiring above ceiling.
30. Contractor shall comply with all applicable seismic requirements of the area.
31. All underground raceway entering the building, (i.e. through a foundation wall or through the floor) shall be sealed in accordance with NEC 225.27 and 300.5(F). Raceway seals and sealants shall be approved and listed for the specific application and materials.
32. Contractor shall provide support bushings/conduit stops for vertical branch circuits and feeders where required per NEC 300.19(A).
33. Bi-Directional Antenna system (BDA) could be required for this facility. Contractor shall test the site before and after construction activities per NC Fire Code section 510.4. If it is deemed that a BDA system is necessary based on these tests, a full BDA systems shall be installed that meets all requirements of NC Fire Code section 510.
34. Electrical boxes, conduit, and wiring shall not be recessed into or penetrate structural members. Boxes/conduits shall be surface mounted to structural member and/or recessed in stud wall where possible. Coordinate with architect.
35. All equipment associated with or connected to the electrical, fire alarm or data systems or otherwise included in the drawings/ scope of work shall be listed and labeled by a third party that is acceptable to the AHJ.
36. All non-locking type 125 volt, 15 and 20 amp receptacles that are controlled by an automatic control device or that incorporate control features that remove power from the outlet for the purpose of energy management or building automation shall be labeled per NEC 406.3(E).
37. These plans are based on the 2020 NEC.

Electrical Abbreviations

A	above- indicates a device is to be mounted with the bottom of box 2" above back splash unless noted otherwise.
AFF	above finished floor
AG	combination of 'A' and 'GFCI' (above counter and ground fault circuit interrupter)
ARCH	architect
C	ceiling- indicates a device is to be mounted in flush ceiling tile.
EC	electrical contractor
EX	existing
EXT	exterior
FA	fire alarm
FURN	furniture
G	GFCI- indicates a device with integral ground fault circuit interrupter (GFCI) protection and/or protected by upstream GFCI outlet.
GFI/ GFIC	same as 'G'
H	horizontal orientation of device
HG	hospital grade
IG	device shall have isolated ground and will require isolated ground circuitry back to an isolated ground bar in panelboard.
JB	junction box
MC	MC cable (when referring to NEC, wiring methods, or wiring type)
MC	mechanical contractor (when not referring to NEC wiring methods or type
MECH	mechanical contractor
NTS	not to scale
OC	on center
PC	plumbing contractor
PLUMB	plumbing contractor
S	surface- indicates device is to be surface mounted.
TP	tamper proof device per NEC 406.12
W/	with
WP	indicates a device rated for exterior use and is weatherproof or weather resistant with an approved weatherproof in-use cover.

Voltage Drop Schedule

120 V branch circuits up to 8 amps (1.0 kVA)

Distance of run, in feet			Wire size
1'	-	120'	#12
121'	-	190'	#10
191'	-	300'	#8
301'	-	470'	#6

120 V branch circuits from 8 to 14 amps (1.7 kVA)

Distance of run, in feet			Wire size
1'	-	65'	#12
66'	-	110'	#10
111'	-	170'	#8
171'	-	270'	#6

277 V branch circuits up to 14 amps (3.9 kVA)

Distance of run, in feet			Wire size
1'	-	160'	#12
161'	-	250'	#10
251'	-	390'	#8
391'	-	620'	#6

Contractor shall upsize branch circuit conductors based on load and length as indicated in schedule above. Wire sizes indicated in general notes and schedules are minimum wire sizes and shall be adjusted for length.

Electrical Legend

This is not a certified drawing, but a copy of a certified drawing that has been unlocked. This document has been unlocked for the ease of use of the AHJ's contractor, etc., and was originally electronically signed by the actual certified document holding the blame/ rule for electronic signatures

Symbols shown below are indicative of new devices. See Linetype Legend for distinction of existing and demolition devices.

Floor Plans

- Home run to panel/ branch circuit connection- short cross line(s) represent phase conductor(s) (hot), long cross line(s) represent grounded conductor(s) (neutral), equipment grounding conductor (ground) required but not shown. Minimum size per NEC requirements based on circuit breaker / schedule / voltage drop table.

All duplex and quad receptacles shall be NEMA 5-20R unless otherwise noted.

- Duplex receptacle
- Simplex receptacle
- Power receptacle
- Quad receptacle
- Switched receptacle
- Isolated ground duplex receptacle

(16" AFF or as otherwise noted)

- USB — 16" AFF or as otherwise noted. Duplex receptacle with (2) USB ports. Nema 5-20R Duplex Cooper TR7756 or equal.
- Telecommunications wall outlet - 16" AFF or as noted (run 3/4" EMT to accessible point above ceiling.) Provide pull wire. Outlet/devices, bushings, and cables provided by tenant/ cabling contractor.
- Junction box
- Telephone backboard - 4'x8'x3/4" fire-treated plywood. Pull #6 ground wire and terminate with 1/4" x 2" x 12" ground bar with holes every 1". Mount to backboard with stand-off insulators.
- Electrical panel
- Step-down transformer
- Electrical disconnect
- Motor rated switch
- Meter Base

All lighting control switches shall be mounted at 44" AFF unless otherwise noted. (All motion sensors shall be set to 30 minute delay)

- Single pole switch - BABA Certified
- Dimmer switch (slide type) appropriate for load served. 3-way switching capable. All dimmers shall match in appearance regardless of dimming technology. Forward Phase: Sensorworx #SWX-864-ELV-WH w/ SWX-199-WH Reverse Phase: Sensorworx #SWX-864-ELV-WH w/ SWX-199-WH 0-10V: Sensorworx #SWX-823-WH w/ SWX-199-WH
- 3-way wall switch - BABA Certified
- 4-way wall switch - BABA Certified
- Line voltage motion-sensing Dual Technology switch. Sensorworx #SWX-121
- Line voltage motion-sensing 0-10v Dual Technology dimmer switch. Sensorworx #SWX-121-D
- Line voltage dual relay motion-sensing switch. Leviton #OSMD-MAW. To be connected as double switch control.
- Low voltage wall/ceiling mounted motion sensor. Sensorworx #SWX-421. Mount on wall at 10' AFF where ceilings are not present or are over 10' AFF. Mount to ceiling where ceilings are 10' AFF or lower.
- 120/277V to 24V power pack. Sensorworx #SWX-900-AX
- Low voltage 360° ceiling mounted motion Dual Technology sensor. Sensorworx #SWX-222-1
- Low voltage 360° ceiling mounted motion sensor PIR sensor. Sensorworx #SWX-201-1
- Low voltage 360° ceiling mounted 0-10V dimming daylighting sensor. Sensorworx #SWX-250-1-D.

- Overhead fixture unless otherwise noted. See fixture schedule
- Downlight / pendant style fixture. See fixture schedule.
- Slash or shading indicates fixture connected ahead of switch/controls and to operate as night lights (fixture will be on 24/7 unless otherwise noted)
- Exit sign, faces and arrows as indicated. See fixture schedule.
- Emergency wallpack fixture. See fixture schedule.
- Combo emergency / exit fixture. See fixture schedule.
- Wall sconce/ mount fixture. See fixture schedule.
- Flood light/ track head style fixture. See fixture schedule.
- Pole mounted fixture. See fixture schedule.

Detail Sheets

- P / 2003 — Electrical panelboard; Main breaker or minimum ampacity
- M — Meter in meter base
- CT — CT cabinet
- 200/3 / 150A — Frame size/ number of poles; Fusible disconnect, frame and fuse size as indicated or noted; Fuse size
- T1 / 75 KVA — Transformer designation; Transformer size; Transformer, size and designation as indicated. Primary voltage as noted in panel schedule/ for primary feed. Secondary voltage as noted in panel schedule/ for load supplied.
- Service ground

Linetypes

- New device unless otherwise noted
- Existing device to remain
- Existing device to be demolished
- New underslab or underground connection. Existing and demo underground noted with existing or demo linetype. New connections not specifically shown to be underground are not necessarily required to be run overhead unless noted as such.
- Low voltage wiring

Examples of existing and demolition symbols using above linetypes.

- Existing floor box to remain
- Existing duplex receptacle to remain
- Existing panel to remain
- XR — Existing light fixture to remain
- Existing switch to remain
- Existing light fixture to remain
- Existing sign to remain
- Existing duplex receptacle to be demolished
- Existing panel to be demolished or relocated
- XD — Existing light fixture to be demolished or relocated
- Existing switch to be demolished or relocated

See fire alarm legend for fire alarm symbols & specifications

See wall rating legend for wall types and symbols

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PROFESSIONAL ENGINEER — SEAL 57323 — ENGINEERING

APPROVAL:
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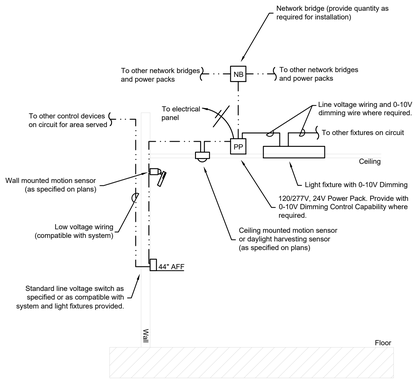
COORDINATOR:
DRAWN BY:
CHECKED BY:
TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE
10 JULY 2026
25-0006
ELECTRICAL COVER SHEET

E0-01

These drawings will be at the scale indicated when plotted at 30" x 42"

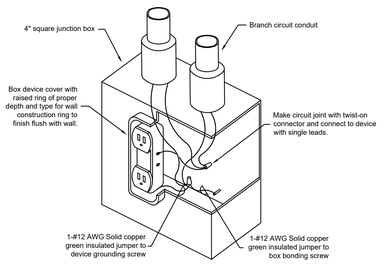


Notes:

1. A maximum of two motion sensors shall be connected to each power pack.
2. Ceiling-mounted motion sensors shall be installed at least 6 feet away from any diffuser.
3. Motion sensors and motion sensor switches shall be set to a 30-minute time delay. The contractor shall adjust the sensor's sensitivity as required to suit room conditions and size.
4. The contractor shall provide the appropriate quantity of power packs as per the design requirements. In rooms utilizing both 277-volt and 120-volt lighting, a minimum of two power packs shall be provided (one for each voltage).
5. Dual-technology sensors shall be programmed so that both technologies are required to turn the lights on initially, but only one technology is necessary to keep the lights on.

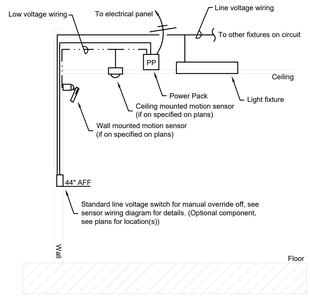
1 Typical Motion Sensor with Low Voltage Switch Connection Detail

Scale: None



2 Receptacle Grounding Detail

Scale: None

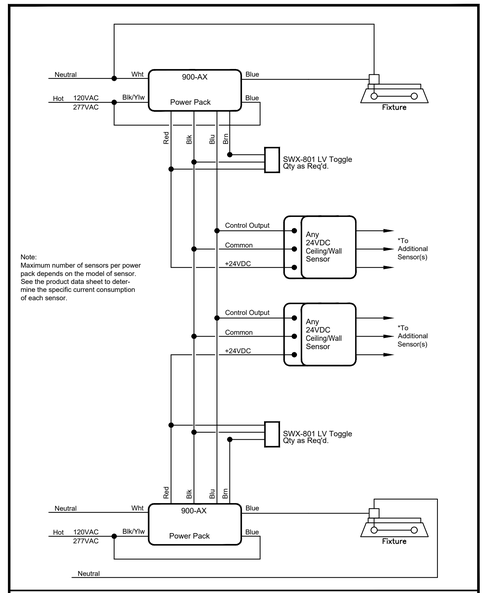


Notes:

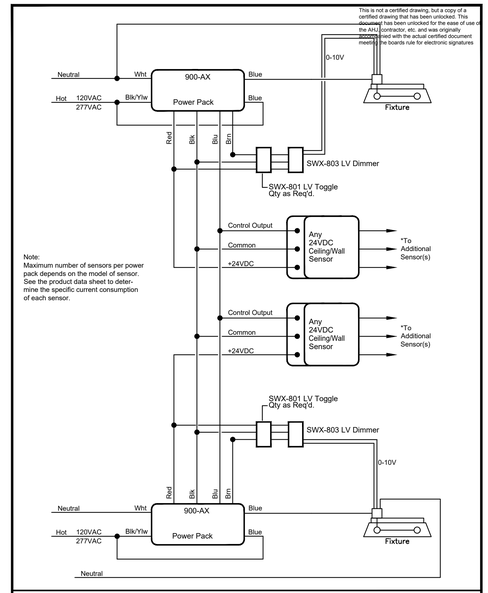
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5. Dual-technology sensors shall be programmed so that both technologies are required to turn the lights on initially, but only one technology is necessary to keep the lights on.

3 Typical Motion Sensor with Line Voltage Switch Connection Detail

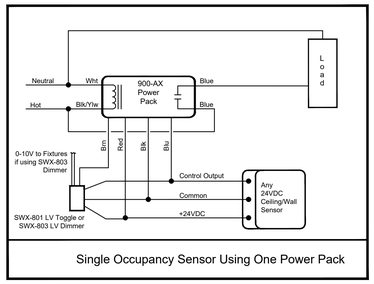
Scale: None



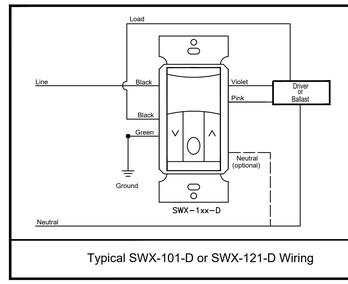
Non-Dimming Multiple Zone, Multiple Sensor and Multiple on/off Switch Control



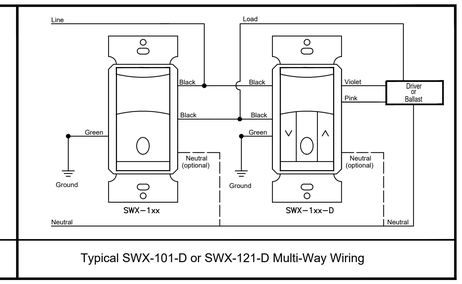
Multiple Zone, Multiple Sensor and Multiple Dimming Switch Control



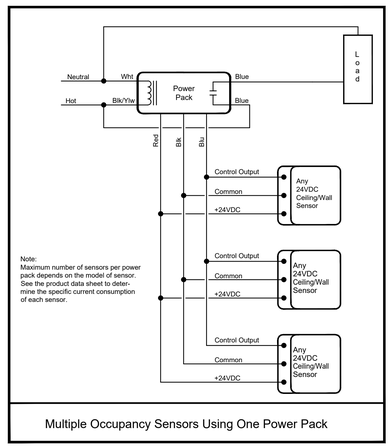
Single Occupancy Sensor Using One Power Pack



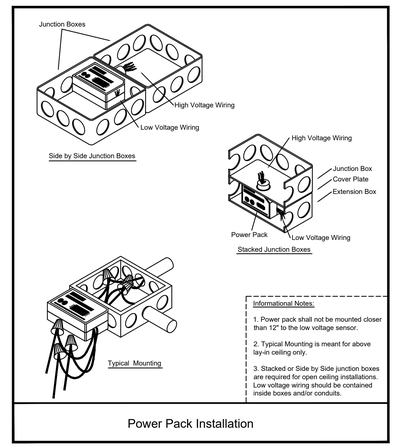
Typical SWX-101-D or SWX-121-D Wiring



Typical SWX-101-D or SWX-121-D Multi-Way Wiring



Multiple Occupancy Sensors Using One Power Pack



Power Pack Installation

* Wiring diagrams/part numbers are based on Sensorwork. Manufacturers or models may be substituted for those indicated where specifications , functions, and configurations are equivalent to the basis-of-design manufacturer. Refer to manufacturer wiring diagrams and instructions for connecting system components and loads. Requirements of Division 26 specifications shall superceded requirements suggested by these details.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 57323 ENGINEERING ALIGN ENGINEERING, PLLC
7/10/26

APPROVAL:
DATE:

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COORDINATOR:

DRAWN BY:

CHECKED BY:

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

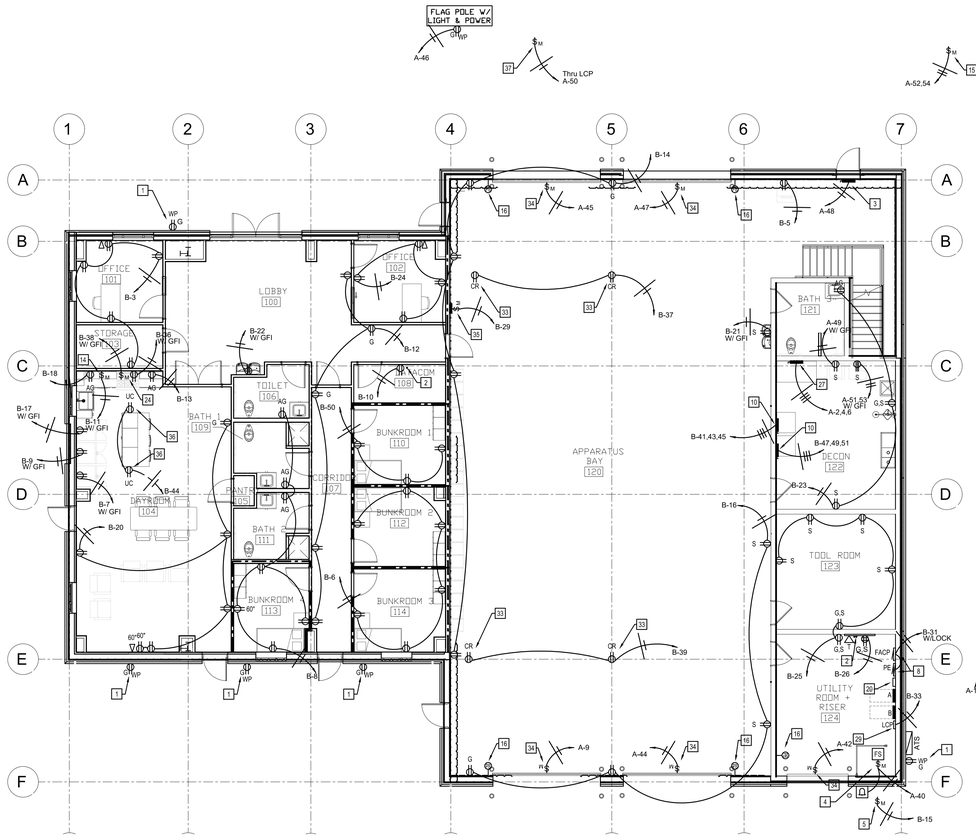
10 JULY 2026

25-0006

STANDARD ELECTRICAL DETAILS

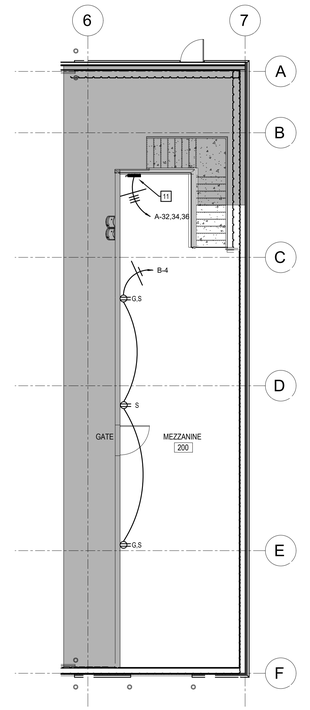
E0-02

These drawings will be at the scale indicated when plotted at 30" x 42"



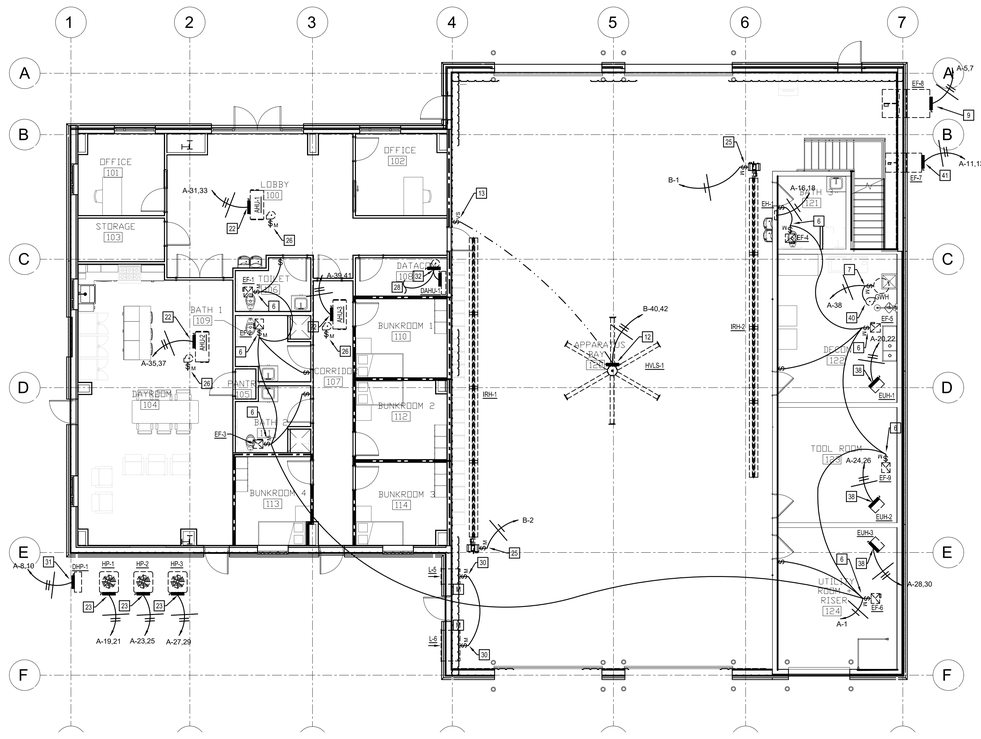
1 Ground Floor Level Plan - Power

Scale: 1/8" = 1' - 0"



2 Mezzanine Level Plan - Power

Scale: 1/8" = 1' - 0"



3 Ground Floor Level Plan - Mechanical Connections

Scale: 1/8" = 1' - 0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 57323 MATTHEW C. TAYLOR
7/10/26

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COORDINATOR:

DRAWN BY:

CHECKED BY:

TRUE NORTH:

Sheet Notes:

- All electrical boxes mounted in rated walls shall comply with all requirements of the 2018 NCSBC, section 714.3.2. All electrical boxes mounted in rated ceilings/horizontal assemblies shall comply with all requirements of the 2018 NCSBC, section 714.4.2. Devices shown in rated assemblies shall be flush with conduit concealed, unless otherwise indicated. Provide rated boxes, horizontal separation, putty pads, etc. as required for proper installation. Low voltage electrical devices mounted in rated assemblies shall be protected in accordance with the sections listed above as well.
- Individual branch circuits are shown with a dedicated neutral unless otherwise noted. When multi-wire branch circuits are to be installed, provide multi-pole circuit breakers as required. NEC 210.7
- See voltage drop schedule for wire sizing information for all branch circuits over 65' in length.
- All receptacles within 6 feet from the outside edge of any sink shall be GFCI. NEC 210.8(B)(5). All GFCI trip-reset receptacles shall be readily accessible. NEC 210.8. If an outlet is shown as GFCI protected and would be installed behind a piece of equipment (IE a dishwasher), a remote trip unit shall be installed and/or the outlet should be protected by a GFCI breaker. Where a remote trip unit is used, it should be located above the equipment (IE dishwasher) and in line with other above counter outlets. The trip unit shall be the type that indicates on/off (basis of design is the Legrand #2087WCCD4).
- All 120V, 15 and 20 A receptacles in this facility shall be listed as tamper resistant.
- Contractor shall use rigid conduit/wire mold to neatly route the conductors between devices in all exposed areas. The general intent is that the exposed conduit runs would be as short as possible. Switches for lights and outlets on one side of beam would be switched from one location and the other side of the beam switched from another location to reduce exposed conduit. Conduit shall not cross the beam in unit if at all possible. Conduits shall be installed perpendicular/ parallel to and at the structure. Typical for all. All other conduits shall be concealed in walls and/or above ceiling wherever possible.
- Refer to MEP seismic details for restraint requirements.

Plan Notes:

1. WP GFI receptacle on exterior wall for maintenance. Connect to circuit 'B-35' as required. Coordinate exact locations with mechanical. Typical.
2. Stub 1-2" conduits to property line for telephone service. Provide pull wire in each conduit. Coordinate exact location and requirements with telephone company.
3. Provide lockable 30/1 disconnect fused at 20 amps above ceiling/up high on wall for sign circuit per NEC 600.5. Connect as required.
4. Junction box for sprinkler bell. Bell furnished by sprinkler contractor, installed and connected by electrical contractor. Connect to circuit 'A-40' through main sprinkler riser flow switch to be energized during a waiter flow in the sprinkler system. Coordinate with sprinkler contractor.
5. Connect hot box heater as required. Verify heater nameplate requirements as well as voltage drop requirements prior to beginning work. Coordinate with civil/sprinkler.
6. Connect exhaust fan controlled by wall switch as required. Coordinate with mechanical.
7. Connect gas water heater as required. Coordinate with plumbing.
8. Connect fire alarm control panel and power extender to circuit 'B-31' w/ locked breaker.
9. Connect exhaust fan to be controlled by CO/NO2 control panel via 24V controls as required. Fan interlocked with louver 'L-6 .' Coordinate with mechanical.
10. Connect washer-extractor as required. Coordinate exact location and requirements with equipment supplier.
11. Connect air compressor as required. Coordinate exact location and requirements with equipment supplier.
12. Connect HVLS fan as required. Coordinate with mechanical.
13. Low voltage variable speed standard controller. Connect as required. Coordinate exact location and requirements with owner/equipment supplier.
14. Provide motor switch for dishwasher connection in adjacent base cabinet under sink. Coordinate exact requirements with equipment supplier.
15. Connect grinder pump as required. Coordinate exact location and requirements with plumbing.
16. Push-button for door opener. Provide junction box and 3/4" conduit to door opener control panel. Coordinate exact location and requirements with equipment supplier. Typical.
17. Approximate location of new generator on concrete pad. See civil for exact location. See structural for concrete pad details. See electrical riser diagram for specification and more information.
18. Connect Generator block heater as required. Coordinate exact location and requirements and location with equipment supplier.
19. Provide 2-1" conduits from generator to ATS for controls. Provide pull wire in each. Coordinate location and requirements with equipment supplier and tenant prior to installation.
20. Generator annunciator panel. Verify location with tenant prior to installation. See riser diagram for annunciator requirements.
21. Connect generator battery charger as required. Coordinate exact requirements and location with equipment supplier.
22. Connect air handler as required. Coordinate with mechanical.
23. Connect heat pump as required. Coordinate with mechanical.
24. Connect hood above gas range as required. Coordinate exact location and requirements with architect prior to rough-in.
25. Connect infrared radiant heater as required. Coordinate with mechanical.
26. Connect to circuit 'A-3' with other condensate pumps as required.
27. Connect gear dry cabinet as required. Coordinate exact location and requirements with equipment supplier.
28. Connect ductless air handler as required. Outdoor unit powers indoor unit. Coordinate exact location and requirements with mechanical prior to beginning work.
29. Lighting control panel. See riser diagram and details for additional information. Connect as required.
30. Connect louver to be interlocked with associated exhaust fan as required. Coordinate with mechanical.
31. Connect outdoor unit on roof as required. Outdoor unit powers indoor unit. Coordinate exact location and requirements with mechanical prior to beginning work.
32. Connect condensate pump as required. Indoor unit powers condensate pump. Coordinate exact location and requirements with mechanical prior to beginning work.
33. Connect cord reel at structure as required.
34. Connect door opener as required. Coordinate exact location and requirements with equipment supplier.
35. Connect CO/NO2 monitoring control panel as required. Coordinate with mechanical.
36. Mount device in millwork. Coordinate exact location and requirements with architect/millwork contractor prior to rough-in.
37. Connect monument sign as required. Coordinate exact location and requirements with civil.
38. Connect electric unit heater as required. Coordinate with mechanical.
39. Connect electric heater as required, unit has integral disconnect . Coordinate with mechanical.
40. Connect recirculation pump as required. Coordinate with plumbing.
41. Connect exhaust fan to run continuously as required. Fan to be interlocked with louver 'L-5 .' Coordinate with mechanical.

Wall Ratings and Types Legend

See architectural sheets for more information on ratings and additional rated constructions including structure where applicable. Protect all rated constructions as required.

New Wall being Constructed

One Hour Fire Barrier

Wall to Deck

ANGIER & BLACK RIVER FIRE STATION #2

783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

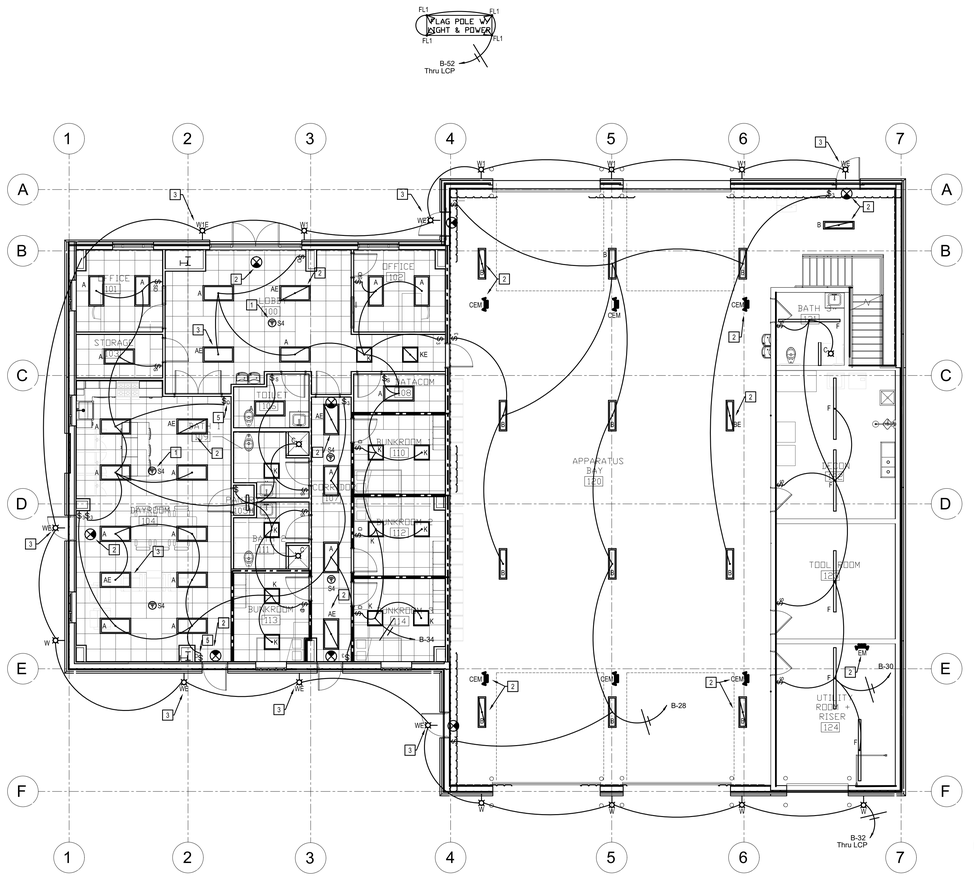
10 JULY 2026

25-0006

FLOOR PLANS - POWER

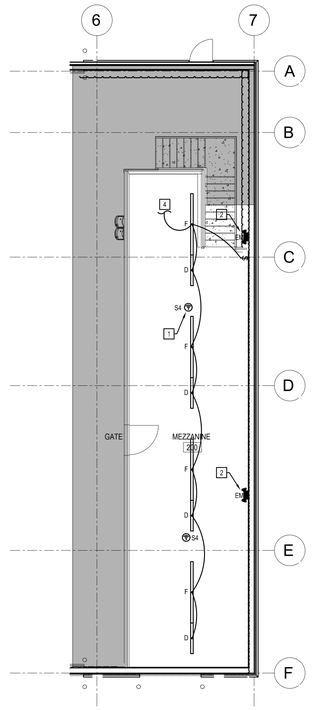
E1-01

These drawings will be at the scale indicated when plotted at 30" x 42"



1 Ground Floor Level Plan - Lighting

Scale: 1/8" = 1' - 0"



2 Mezzanine Level Plan - Lighting

Scale: 1/8" = 1' - 0"

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NORTH CAROLINA PROFESSIONAL SEAL 57323 ENGINEER JEFFREY ALAN ALIGHT
7/10/26

Sheet Notes:

- All electrical boxes mounted in rated walls shall comply with all requirements of the 2018 NCSBC, section 714.3.2. All electrical boxes mounted in rated ceilings/horizontal assemblies shall comply with all requirements of the 2018 NCSBC, section 714.4.2. Devices shown in rated assemblies shall be flush with conduit concealed, unless otherwise indicated. Provide rated boxes, horizontal separation, putty pads, etc. as required for proper installation. Low voltage electrical devices mounted in rated assemblies shall be protected in accordance with the sections listed above as well.
- Connect wall packs or other normally off emergency lights, exit signs and night lights ahead of local switches and/or controls. (total fixture unswitched). Where lights are not indicated as night lights, fixtures with emergency batteries shall be connected with the battery ahead of switch so that the emergency battery comes on only in the event of power loss. Fixture is normally controlled with the other lights under normal conditions.
- See motion sensor details for specifications and wiring details. All motion sensors, new and existing, shall be set to a 30 minute time delay.
- Lighting controls including occupancy sensors, automatic time switches, automatic shut-off controls, or daylight/ occupant sensing automatic controls, the electrical contractor shall be responsible for testing the lighting controls per section C408.3 of the 2018 NC Energy Conservation Code. Ensure that control devices, components, and systems are calibrated, adjusted and operate in accordance with the approved plans and/or specifications. Sequences of operation shall be functionally tested to ensure they operate in accordance with the approved plans and/or specifications.
- Individual branch circuits are shown with a dedicated neutral unless otherwise noted. When multi-wire branch circuits are to be installed, provide multi-pole circuit breakers as required. NEC 210.7
- See voltage drop schedule for wire sizing information for all branch circuits over 65' in length.
- Circuit breakers used for switching lights shall be rated for switching. NEC 240.83(D)
- Refer to MEP seismic details for restraint requirements.

Plan Notes:

1. Motion sensor to control all lights in this room. See motion sensor wiring diagrams. Provide required power packs to control all lights with override off switches as shown. Typical.
2. Connect emergency, night light, and exit lights ahead of local switch/controls so that total fixture is unswitched. Connect as required.
3. Contractor shall connect battery in/for light fixture ahead of switch/controls so that emergency ballast/inverter comes on only in the event of power loss. Fixture is switched with other normal lights under normal conditions.
4. Connect to circuit 'B-30' with other lights as required.
5. This denotes a 3-way on/off and a dimming control of the connected zone. Confirm location of dimmer with tenant and install 3-way in other location. Connect as required.

Wall Ratings and Types Legend

See architectural sheets for more information on ratings and additional rated constructions including structure where applicable. Protect all rated constructions as required.

- New Wall being Constructed
- One Hour Fire Barrier
- Wall to Deck

These drawings will be at the scale indicated when plotted at 30" x 42"

APPROVAL:
DATE:

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COORDINATOR:

DRAWN BY:

CHECKED BY:

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

FLOOR PLANS - LIGHTING

E2-01

Generator Test and Startup Notes

Hire a certified testing agency to conduct tests, inspections, and generate reports for the generator.

Engage a factory-authorized service representative to inspect, test, and calibrate components, assemblies, and installations, including connections.

Conduct manufacturer-recommended tests, including but not limited to:

1. Single-step full-load pickup test.
2. Battery tests:
   - 2.1. Equalize the charging of battery cells per the manufacturer's instructions. Record the voltage of each cell.
   - 2.2. Measure the charging voltage and the voltages between available battery terminals for both full-charge and float-charge conditions. Check electrolyte levels and specific gravity in both conditions.
   - 2.3. Test the contact integrity of all connections, and perform both integrity and capacity load tests on the battery.
   - 2.4. Confirm that each battery element accepts a charge after discharge.
   - 2.5. Ensure all measurements meet the manufacturer's specifications.
3. Battery-charger tests: Verify the charge rates for both equalizing and float-charging conditions as specified.
4. System integrity tests: Methodically verify the proper installation, connection, and functionality of each component of the engine-generator system both before and during operation. Check for air, exhaust, and fluid leaks.
5. Exhaust-system back-pressure test: Connect to the exhaust line near the engine manifold and ensure that back pressure at full-rated load stays within the manufacturer's specified limits.
6. Exhaust emissions test: Adhere to applicable government and environmental testing criteria.
7. Voltage and Frequency transient stability tests: Measure voltage and frequency transients for 50% and 100% step-load changes, and confirm performance matches specifications.
8. Harmonic-content tests: Measure the harmonic content of the output voltage under 25% and 100% of rated linear load, ensuring it stays within specified limits.
9. Noise level tests: Measure the A-weighted noise level from the generator installation, including the engine exhaust and cooling-air intake and discharge. Compare the levels with the required values.
10. Coordinate generator tests with tests for transfer switches and run them concurrently.
11. Leak test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
12. Operational test: Once the electrical circuitry is energized, start the unit to verify proper motor rotation and operation.
13. Test and adjust controls and safeties. Replace any damaged or malfunctioning controls and equipment.
14. Remove and replace malfunctioning units and retest according to the specified procedures above.
15. Retest: Address any deficiencies identified during tests and observations, and retest until all specified requirements are satisfied.

Generator Note:

Contractor must submit plans for generator, tank, and shop drawings to the fire marshal for their approval prior to rough-in or installation of the generator. Fire marshal must approve location and specifications for generator prior to beginning work.

Panel: A

Enclosure: NEMA 1
Mounting: Surface
Voltage: 120/208
Poles: 54
Phase: 3
Wires: 4
Panel Bus Rating: 600 Amp Bus
Main Rating: 600/3 Main Breaker
Fed From: Utility
Manufacture: Square D NQ

Load Type	kVA	Breaker Size		ø		Breaker Size	kVA	Load Type
EF-1 thru EF-6, EF-9	0.7	20/1	1	A	2		4.8	
Condensate Pumps	0.4	15/1	3	B	4	50/3	4.8	Gear Dry Cab
EF-8	0.9	15/2	5	C	6		4.8	
	0.9		7	A	8	20/2	1.6	DHP-1
Door Opener	1.0	20/1	9	B	10		1.7	
EF-7	0.3	15/2	11	C	12	25/2	2.0	Generator Block Heater
	0.4		13	A	14		2.0	
Generator Battery Charger	1.1	20/2	15	B	16	20/2	1.2	EIH-1
	1.0		17	C	18		1.1	
HP-1	1.4	25/2	19	A	20	20/2	1.7	EUH-1
	1.3		21	B	22		1.6	
HP-2	1.6	25/2	23	C	24	20/2	1.7	EUH-2
	1.7		25	A	26		1.6	
HP-3	1.4	25/2	27	B	28	20/2	1.7	EUH-3
	1.3		29	C	30		1.6	
AHU-1	3.9	40/2	31	A	32		3.4	
	4.0		33	B	34	50/3	3.4	Air Compressor
AHU-2	4.1	40/2	35	C	36		3.3	
	4.0		37	A	38	15/1	0.5	GWH
AHU-3	3.9	40/2	39	B	40	20/1	0.5	Sprinkler/Flow Switch
	4.0		41	C	42	20/1	1.0	Door Opener
Space		-	43	A	44	20/1	1.0	Door Opener
Door Opener	1.0	20/1	45	B	46	20/1	0.2	Flag Pole Rec
Door Opener	1.0	20/1	47	C	48	20/1	1.5	Sign Circuit
Washer	1.4	20/1(G)	49	A	50	20/1	1.5	Monument Sign
Dryer	2.5	30/2(G)	51	B	52	20/2	1.4	Grinder Pump
	2.5		53	C	54		1.3	

Demand Load Summary:

Lighting:	4.2	kVA	@ 125%	5.3	kVA		
Largest Motor:		kVA	@ 125%		kVA		
Gen Receptacles:	17.0	kVA	Diversified:	13.5	kVA		
Kitchen Equipment:	4.6	kVA	Diversified:	3.0	kVA		
All Other:	120.6	kVA	@ 100%	120.6	kVA		
						Phase A:	46.1 kVA 384.0 Amps
						Phase B:	48.3 kVA 402.5 Amps
						Phase C:	48.2 kVA 401.4 Amps
						Total Panel Load:	142.5 kVA 395.7 Amps

[X] UL SE rated
[X] Separate Neutral Bar
[X] Ground bar
[X] Feed thru lugs
[ ] Existing Panel
[ ]

1. All breakers shall be 10,000 AIC and series rated to 30,000 AIC with breaker feeding this panel.
2. Receptacle diversification taken per NEC 220.44.

Panel: B

Enclosure: NEMA 1
Mounting: Surface
Voltage: 120/208
Poles: 60
Phase: 3
Wires: 4
Panel Bus Rating: 600 Amp Bus
Main Rating: 600A Main Lugs Only
Fed From: Panel A
Manufacture: Square D NQ

Load Type	kVA	Breaker Size		ø		Breaker Size	kVA	Load Type
IRH-1	0.2	15/1	1	A	2	15/1	0.2	IRH-2
Office 101 Recs	1.0	20/1	3	B	4	20/1	0.6	Mezzanine Recs
Ice Machine	1.4	20/1	5	C	6	20/1	1.2	Bunk 110/114 Recs
Freezer	0.4	20/1(G)	7	A	8	20/1	1.4	Bunk 113 & Bath Recs
Fridge	0.8	20/1(G)	9	B	10	20/1	1.0	DataCom 107 Ded
Dishwasher	1.0	20/1(G)	11	C	12	20/1	1.0	Convenience Recs
Dayroom 104 Counter Rec	1.0	20/1	13	A	14	20/1	1.0	Apparatus Bay Recs
Hot Box Heater	1.0	20/1	15	B	16	20/1	0.8	Apparatus Bay Recs
Fridge	1.0	20/1	17	C	18	20/1	1.0	Dayroom 104 Counter Rec
Sign	1.5	20/1	19	A	20	20/1	1.2	TV & Convenience Recs
EWC	0.7	20/1(G)	21	B	22	20/1(G)	0.7	Lobby 100 EWC
Decon 154 Recs	0.8	20/1	23	C	24	20/1	0.8	Office 108 Recs
Tool Room 123 Recs	1.2	20/1	25	A	26	20/1	0.4	Utility Room Quad Rec
Space		-	27	B	28	20/1	2.3	Bay Lights
CO Control Panel	0.5	20/1	29	C	30	20/1	0.4	Mezzanine Lights
FACP & Booster	0.5	20/1(L)	31	A	32	20/1	0.4	Exterior Lights
LCP	0.5	20/1	33	B	34	20/1	1.1	Interior Lights
Exterior GFI Maint. Recs	0.4	20/1	35	C	36	20/1(G)	0.9	Gas Range
Cord Reels	0.4	20/1	37	A	38	20/1(G)	0.5	Hood
Cord Reels	0.4	20/1	39	B	40	25/2	1.2	HVSL-1
Washer-Extractor	1.8	20/3(G)	41	C	42		1.1	
	1.8		43	A	44	20/1	0.4	Dayroom 104 Island Recs
	1.8		45	B	46	-		Space
	1.8		47	C	48	-		Space
Washer-Extractor	1.8	20/3(G)	49	A	50	20/1	0.8	Bunkroom #1 110 Recs
	1.8		51	B	52	20/1	0.1	Exterior Flag Pole Lights
Space		-	53	C	54	-		Space
Space		-	55	A	56	-		Space
Space		-	57	B	58	-		Space
Space		-	59	C	60	-		Space

See Panel A for Demand Loads

[ ] UL SE rated
[X] Separate Neutral Bar
[X] Ground bar
[ ] Feed thru lugs
[ ] Existing Panel
[ ]

1. All breakers shall be 10,000 AIC and series rated to 30,000 AIC with breaker feeding this panel.
2. Receptacle diversification taken per NEC 220.44.

Panel Schedule Notes (All Panels, All Sheets)

1. All panel directories shall be completed in accordance with NEC 408.4.
2. Values for demand loads include all code factors such as 125% for continuous loads, 125% largest motor, etc.
3. Breaker sizes shown in panel schedules for new equipment are for reference only, see equipment connection schedule for additional information. Where breaker / fuse size between schedules conflict, the equipment connection schedule shall take precedence. Contractor shall ultimately confirm breaker size with equipment provider
4. Circuit breakers used as overcurrent protection for HVAC equipment shall be "HACR" type.
5. Contractor shall provide identification for new feeders and any new branch circuits per NEC 200.6, 210.5, and 215.12 .
6. Contractor shall label breakers feeding emergency and exit lighting per NEC 700.12(f) .
7. Spare circuits found or created during demolition shall be labeled at the junction box or demolished back to the panel, panel directory shall be updated, and breaker set to the off position.
8. Provide arc flash hazard warning labels as required on all panels affected by this work to comply with NEC 110.16 .
9. Where circuit breakers or fuses are noted to be series rated, the equipment shall be listed per NEC 110.22 as applicable. Tested series combination systems, the placard shall state the following "Caution - Series Combination System Rated ____ Amperes. Identified Replacement Components Required." See NEC 110.22(b) , for engineered series combination systems placarding language.
10. Bolded text indicates a new or changed breaker, label, load on an existing panel. Bolded breakers are new or relocated breakers to location shown.
11. Contractor shall provide handle ties as required for cubicle circuits per NEC 210.4 .
12. New circuits in locations determined to be spare or space based on panel directories and other available information from site visit or existing plans. Contractor shall confirm that placement shown does not interfere with existing circuits necessary to remain. Confirm available circuits based on new and demo plans and contact engineer with conflicts.
13. Breakers indicated as (L) shall have a breaker lock provided. 20/1(L) means a 20 amp single pole breaker with lock. Breaker lock shall be accessible from outside of panel and shall not require the removal of panel cover in order to reset the breaker.
14. Breakers indicated as (G) shall have GFCI protection provided. 20/1(G) means a 20 amp single pole breaker with GFCI protection. Label GFCI protected circuit in panel schedule per NEC 408.4.
15. Circuit breakers used for switching lights shall be listed for switching and marked per NEC 240.83(D) .
16. Shunt trip type breakers shall be 120V shunt trip actuated unless noted otherwise.
17. Circuit supplying power to fire alarm or similar system shall comply with all requirements of the 2013 edition of NFPA 72, Sections 10.6.5.2 through 10.6.5.5.

Demand Loads

	Load Type		Load	
	Lights (Calculated Per NEC 220.12(A) 1.3W/SF for 7,133.5 SF)		9.3	KVA
	Receptacles and Miscellaneous		63.7	KVA
	Heat Pumps (includes 125% factor for largest motor)		8.7	KVA
	Gas Water Heaters		0.5	KVA
	Air Handling Units		23.9	KVA
	Fans		3.2	KVA
	Sign Circuit		1.5	KVA
	Infrared Gas Heaters		0.4	KVA
	Air Compressor		10.1	KVA
	Condensate Pumps		0.4	KVA
	Electric Unit Heaters		9.9	KVA
	Electrical Heater		2.3	KVA
		Total:	133.9	KVA
	371.7 AMPS @ 208V/3Ø			

Electrical Riser Notes

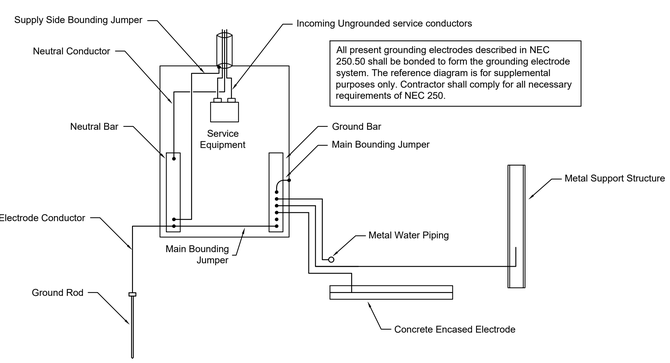
1. Grounds for all services shall be bonded together per NEC 250.58 and shall meet all requirements of NEC 250.104.
2. The design is based on an estimated fault current of 30,000. The contractor shall coordinate with the utility/ power company to confirm the available fault current at the transformer and service entrance conductor length. This information shall be submitted to engineer as part of the gear submittal, prior to beginning work.
3. The service equipment enclosure(s) and new panelboards shall be legibly marked in the field to indicate the available fault current prior to final inspection. NEC 110.24 and 408.6 The electrical contractor shall contact the power company and obtain the actual available fault current at the transformer. The contractor shall contact the engineer with this value, the conductor type, the verified length of conductors from the transformer to the service enclosure, as well as any and all feeders serving the new panel. With this information, the engineer can calculate the available fault current. The resulting calculated value shall be placarded on the exterior of the service enclosure/ new panel and shall read as follows:

   AVAILABLE FAULT CURRENT: _____
   CALCULATED DATE: _____

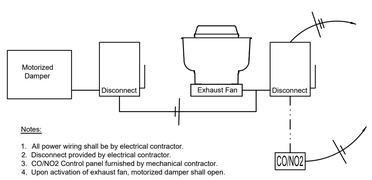
4. Provide plaques per NEC 230.2(E) and graphic key plans for each service and service disconnecting means for each building service. All disconnecting means for each service shall be grouped. Label each disconnecting means for each service as disconnect # 1 of 1 for service number # 1 of 1. Provide labeling and graphic key plan at main electrical panel (or panels) showing the location and identification of their disconnecting means.
5. Provide signage at the service entrance equipment indicating the location and type of optional standby emergency power source. NEC 702.8
6. Where circuit breakers or fuses are applied in compliance with the series combination ratings marked on the equipment by the manufacturer, the equipment enclosure(s) shall be legibly marked in the field to indicate the equipment has been applied with a series combination rating. The placard shall be readily visible and state the following "CAUTION – SERIES COMBINATION SYSTEM RATED ____ AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED." NEC 110.22
7. New service entrance conductors for panel 'A' shall not be more than twice the nominal width of the service enclosure routed horizontally and shall not be more than the greater of 5' or twice the nominal height of the service enclosure routed vertically inside the building ahead of the main breaker. Service disconnects in panels 'A' shall be labeled on site as service disconnects per NEC 230.70(B).
8. Contractor shall meet all requirements of NEC 250.50 for service grounding. Connect to structural steel, rebar, metal water piping and any other available at the structured served. See service ground detail for more information.

BABA Compliance Note:

All equipment and materials must comply with the "Build America, Buy America Act" (BABA). Contractor shall provide BABA compliance certificates to accompany all equipment and material submittals. More details regarding BABA compliance can be found at the US Department of Agriculture website (usda.gov).



2 Grounding Electrode System Detail
Scale: None



Notes:
1. All power wiring shall be by electrical contractor.
2. Disconnect provided by electrical contractor.
3. CO/NO2 Control panel furnished by mechanical contractor.
4. Upon activation of exhaust fan, motorized damper shall open.

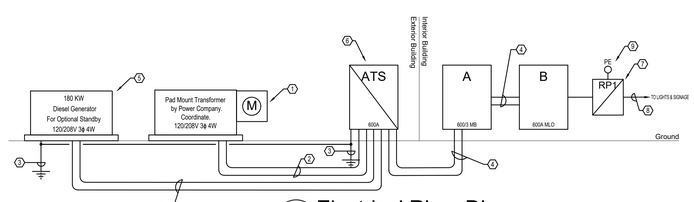
3 Fan Interlock Detail
Scale: None

Riser Key Notes:

1. Meter by power company. Coordinate requirements w/ power company.
2. 2 runs of 4-#500 KCM (AL), in 4" conduit. Each run.
3. #3/0 ground. Bond all service grounds together per NEC 250.58 and 250.104
4. 2 runs of 4-#500 KCM (AL), #2/0 (AL) ground, in 4" conduit. Each run.
5. Minimum 180 KW (or as required to serve indicated loads), 208/3V, 60Hz, 0.8 power factor, 1800 RPM, optional standby diesel generator set w/ brushless synchronous generator (permanent magnet excited w/ volts/hertz voltage regulator & space heater)

Features shall include:
- "Non-walk in" type weather-proof enclosure (sound attenuated as required to meet local ordinances) w/ hinged lockable doors and oil/water drain group.
- Generator shall meet requirements of U.L. 2200 and be listed as such.
- Dual-rate battery charger w/ alarm contacts.
- Radiator w/ engine driven fan.
- Critical degree exhaust silencer mounted in outside enclosure for corrosion protection provided with flexible fitting and stainless steel components.
- Electronic isochronous speed control governor
- Control panel w/ AC metering, engine metering, auto start-stop logic w/ indicators alarm module
- Provide PMG excitation and digital voltage regulation of +/- 0.25%
- 600 Amp generator mounted output circuit breaker
- Structural steel base w/ vibration mounts
- Lead acid starting batteries w/ battery charger, tray and cables
- Jacket heater tank-type with isolation valves and adjustable thermostat.
- Provide separate line item cost for a remote annunciator (8 point minimum) and associated control wiring for a fully functional system. Verify location of annunciator panel with tenant prior to installation.
- Provide standard 24 month parts & labor warranty for standby usage.

6. New 208V, 3-Phase, 600 Amp, 3 pole, NEMA 3R rated, open transition, automatic transfer switch. Do not bond neutral to ground at ATS.
7. Lighting relay panel. See lighting control system data riser diagram for specifications.
8. Circuits as specified on plans. All tenant lighting loads shall be connected thru lighting control system.
9. Photocell on roof facing north. Adjust sensitivity as required for proper operation.



1 Electrical Riser Diagram
Scale: None

These drawings will be at the scale indicated when plotted at 30" x 42"

This is not a certified drawing, but a copy of a document prepared by ALIGN engineering. Any alteration of use of the ALIGN engineering, inc. seal was prohibited. Any unauthorized alteration or misuse is subject to legal action. Only originals bearing ink or blue embossed seal signatures are certified.

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7/10/26

APPROVAL:
DATE:

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CHECKED BY:
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ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE
10 JULY 2026
25-0006
ELECTRICAL DETAILS

E3-01

Mechanical/Plumbing Equipment Connection Schedule

Tag	Callout	Furnished By	KVA	HP	Voltage	FLA	MCA	Disconnect Size	Provided By	Nema Configuration	Fuse/Breaker Size	Feeder Size	Ground Size	Conduit Size
AHU-1	Air Handler	Mechanical	7.9	0.333	208/1	-	38.0	60/2	Electrical	1	40/2	3 - #8	#10	3/4"
AHU-2	Air Handler	Mechanical	8.1	0.5	208/1	-	39.0	60/2	Electrical	1	40/2	3 - #8	#10	3/4"
AHU-3	Air Handler	Mechanical	7.9	0.333	208/1	-	38.0	60/2	Electrical	1	40/2	3 - #8	#10	3/4"
HP-1	Heat Pump	Mechanical	2.7	-	208/1	-	13.0	60/2	Electrical	3R	20/2	3 - #12	#12	3/4"
HP-2	Heat Pump	Mechanical	3.3	-	208/1	-	16.0	60/2	Electrical	3R	25/2	3 - #10	#10	3/4"
HP-3	Heat Pump	Mechanical	2.7	-	208/1	-	13.0	60/2	Electrical	3R	20/2	3 - #12	#12	3/4"
EF-1	Exhaust Fan	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
EF-2	Exhaust Fan	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
EF-3	Exhaust Fan	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
EF-4	Exhaust Fan	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
EF-5	Exhaust Fan	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
EF-6	Exhaust Fan	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
EF-7	Exhaust Fan	Mechanical	0.7	0.25	208/1	3.2	-	30/2	Electrical	3R	15/2	3 - #12	#12	3/4"
EF-8	Exhaust Fan	Mechanical	1.8	1	208/1	8.8	-	30/2	Electrical	3R	15/2	3 - #12	#12	3/4"
EF-9	Exhaust Fan	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
L-5	Motorized Louver	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
L-6	Motorized Louver	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
DHP-1	Ductless Heat Pump	Mechanical	3.3	-	208/1	-	16.0	30/2	Electrical	3R	20/2	3 - #12	#12	3/4"
DAHU-1	Ductless Air Handler	Mechanical	##	-	208/1	-	1.0	30/2	Electrical	1	20/2	3 - #12	#12	3/4"
EH-1	Elec. Heater	Mechanical	2.3	-	208/1	10.8	-	$$	Electrical	1	20/2	3 - #12	#12	3/4"
EUH-1	Elec. Unit Heater	Mechanical	3.3	-	208/1	15.9	-	$$	Electrical	1	20/2	3 - #12	#12	3/4"
EUH-2	Elec. Unit Heater	Mechanical	3.3	-	208/1	15.9	-	$$	Electrical	1	20/2	3 - #12	#12	3/4"
EUH-3	Elec. Unit Heater	Mechanical	3.3	-	208/1	15.9	-	$$	Electrical	1	20/2	3 - #12	#12	3/4"
HVLS-1	High Volume Low Speed Fan	Mechanical	2.3	1.5	208/1	11.0	-	30/2	Electrical	1	25/2	3 - #10	#10	3/4"
IRH-1	Infrared Gas Heater	Mechanical	0.2	-	120/1	1.5	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
IRH-2	Infrared Gas Heater	Mechanical	0.2	-	120/1	1.5	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
GWH	Gas Water Heater	Plumbing	0.5	-	120/1	4.2	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
-	Condensate Pump	Mechanical	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
-	Ductless Condensate Pump	Mechanical	##	-	208/1	0.8	-	M	Electrical	1	20/2	3 - #12	#12	3/4"
-	Grinder Pump	Plumbing	2.7	-	208/1	13.2	-	30/2	Electrical	3R	20/2	3 - #12	#12	3/4"
-	Recirculation Pump	Plumbing	0.1	-	120/1	0.8	-	M	Electrical	1	15/1	2 - #12	#12	3/4"
-	Air Compressor	Others	11.1	10	208/3	30.8	-	60/3	Electrical	1	40/3	4 - #8	#10	3/4"

- All wire sizing in the schedule above is based on minimum 75° C terminations. 75° C terminations are required for every component in the branch circuit including equipment terminals, as any new or existing panel, and any other in-line electrical device. Contractor shall verify in field and with other trades that these minimums can be maintained. If not, the use of the 60° C column will be required, which will likely increase the wire size. Contact engineer if there are questions about application.
- Breaker sizes for all equipment sized at MOCP where applicable.
- All disconnects for equipment shall be of fusible type and shall be fused as indicated.

Indoor unit is powered through outdoor unit. Condensate pump is powered through indoor unit.

Equipment Connection Schedule

Tag	Callout	Furnished By	KVA	HP	Voltage	FLA	MCA	Disconnect Size	Provided By	Nema Configuration	Fuse/Breaker Size	Feeder Size	Ground Size	Conduit Size	Note
-	Ice Machine	Others	1.4	-	120/1	11.5		5-20R	Electrical	1	20/1	2 - #12	#12	3/4"	-
-	Freezer	Others	0.4	-	120/1	3.7		5-20R	Electrical	1	20/1	2 - #12	#12	3/4"	-
-	Fridge	Others	0.8	-	120/1	6.9		5-20R	Electrical	1	20/1	2 - #12	#12	3/4"	-
-	Washer	Others	1.4	-	120/1	12.0		5-20R	Electrical	1	20/1	2 - #12	#12	3/4"	-
-	Dryer	Others	5.0	-	208/1	24.0		14-30R	Electrical	1	30/2	3 - #10	#10	3/4"	-
-	Washer-Extractor	Others	1.4	-	120/1	12.0		5-20R	Electrical	1	20/1	2 - #12	#12	3/4"	-
-	Gear Dry Cab	Others	14.4	-	208/3	40.0		60/3	Electrical	1	50/3	4 - #8	#10	3/4"	-
-	Dishwasher	Others	1.0	-	120/1	8.0		M	Electrical	1	20/1	2 - #12	#12	3/4"	-
-	Gas Range	Others	1.0	-	120/1	8.0		5-20R	Electrical	1	20/1	2 - #12	#12	3/4"	-
-	Hood	Others	0.5	-	120/1	4.2		M	Electrical	1	20/1	2 - #12	#12	3/4"	-

Electrical contractor shall verify all requirements, mounting height, voltage, load, connection type, etc. with equipment supplier.

Electrical System and Equipment: Energy Code Compliance

Compliance Method: Prescriptive

Total Exterior Wattage Calculation per table C405.5.1(2)
Specified vs Allowed: 370 vs 1,420.2

Base Site Allowance Zone 3 750 W

Building Entrances and Exits:

Main Entries 30 W/LF for 6 LF of door width
Other Doors 20 W/LF for 18 LF of door width
Entry Canopies 0.40 W/SF for - 325.4 SF

See Light Fixtures Schedule for fixture lamp type, quantity, driver, total fixture wattage and additional information.

Engineer Statement:

To the best of my belief, understanding, and knowledge; the design of electrical system of this building complies with NC State Building Code and the 2018 NC Energy Conservation Code.

Name: W. Jacob Taylor, PE

Electrical System and Equipment: Energy Code Compliance

Document has been provided for the use of one of the A/U, contractor, etc. and was originally accompanied with the actual certified document. Copyright the boards rule for electronic signatures

Compliance Method: Prescriptive

Total Interior Wattage Specified vs Allowed: **3,805 vs 4,788.7**
See Exterior Lighting Summary for exterior lighting energy code calculations (if required)
See Light Fixtures Schedule for interior fixture lamp type, quantity, driver, total fixture wattage and additional information.

Engineer Statement:

To the best of my belief, understanding, and knowledge: the design of electrical system of this building complies with the NC State Building Code and the 2018 NC Energy Conservation Code.

Name: W. Jacob Taylor, PE

Energy Code Section C406 Compliance:

This project is complying with section C406 for the energy code under the provisions of C406.2 (Reduced lighting power density). The remaining provisions are therefore not required and have not been included in this design.

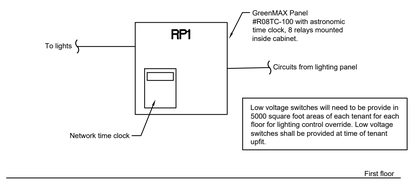
Light Fixture Schedule

Mark	Manufacturer	Fixture Description	Voltage	Driver Type	Lamp Type/Quantity	Total Wattage
A	ILP #VOLA24-43L-U-40-BABA	2X4 LED Volumetric Troffer	120/1	1- LED Driver	4300 Lumen LED Light Engine	29
AE	Same as 'A' with battery	2X4 LED Volumetric Troffer	120/1	1- LED Driver	4300 Lumen LED Light Engine	29
B	ORION #HHSL2430LUNVFD840LA**HWSP-BABA	LED High Bay	120/1	1-LED Driver	30,000 Lumen LED Light Engine	180
BE	Same as 'B' with battery	LED High Bay	120/1	1-LED Driver	30,000 Lumen LED Light Engine	180
C	Elite Lighting #HH6-LED-1200L-DIM10-40K-WD-90-HH6-6501-CL-WH-BABA	6" LED Wet location Downlight	120/1	1-LED Driver	1200 Lumen LED Light Engine	12
D	ILP #DSC4-6L-HE-U-40-FCLGR-BABA	4' LED Linear	120/1	1-LED Driver	6000 Lumen LED Light Engine	41
F	ILP #DSC8-6L-HE-U-40-FCLGR-BABA	8' LED Linear	120/1	1-LED Driver	6000 Lumen LED Light Engine	40
FL1	B-K Lighting #RI-FL-LID-LHP-AL-SQ-TKM-CA-E131-WFL-010-09-00-WL00-___-TE	Exterior Flood	120/1	1-LED Driver	1-LED	14
H	ILP #DSC2-2L-HE-U-40-FCLGR-BABA	2' Surface Linear	120/1	1-LED Driver	2000 Lumen LED Light Engine	16
K	ILP #VOLA22-39L-U-40-BABA	2X2 LED Volumetric Troffer	120/1	1-LED Driver	3900 Lumen LED Light Engine	29
KE	Same as 'K' with battery	2X2 LED Volumetric Troffer	120/1	1-LED Driver	3900 Lumen LED Light Engine	29
W	NLS #HRM-1-T2-16L-40-40K8-UNV-WM-BRZ-BABA	Exterior LED Wall Pack (Full cut-off)	120/1	1- LED Driver	1-LED	22
WE	Same as 'W' with battery	Exterior LED Wall Pack (Full cut-off)	120/1	1- LED Driver	1-LED	22
W1	Elite Lighting # SCH6-WL-LED-WM-**-2400L-DIM10-MVOLT-WD-40K-90-BABA	Exterior Wall Mounted Cylinder Direct	120/1	1- LED Driver	1-LED	28
W1E	Same As 'W1' with battery	Exterior Wall Mounted Cylinder Direct	120/1	1- LED Driver	1-LED	28
EM	Isolite #BUG-3W-WH-SD	Emergency Wallpack (w/ Battery)	120/1			
CEM	Isolite #BUG-3W-WH-SD	Ceiling Mounted Emergency Wallpack (w/ Battery)	120/1			
	Elite Lighting #ELX-LED-619-BABA (1 Face)	Emergency Exit Light (w/ Battery)	120/1			
	Elite Lighting #ELX-LED-619-BABA (2 Face)	Emergency Exit Light (w/ Battery)	120/1			

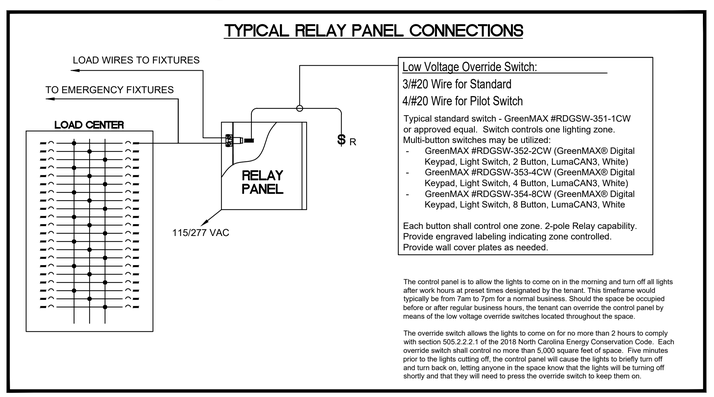
General Notes:

1. All fixtures and components shall comply with NC Building Code, 2018 North Carolina Energy Conservation Code and shall be UL listed. All led drivers shall comply with NEMA 410.
2. All new, relocated, or reswitched fixtures that utilize ballasts shall be provided with a luminaire disconnect where required per NEC section 410.130(G). Use Ideal PowerPlug or equal inside fixture.
3. All fixtures noted as emergency shall have emergency illumination functionality as described below. Batteries must be rated for the environment in which they are installed, in all cases.
   - Interior linear LED and fluorescent fixtures shall have 1,100 lumen (minimum) output, 90 minute battery. LED and fluorescent downlights shall have a 500 lumen (minimum) output, 90 minute battery. Otherwise fixture shall be provided with a full output inverter.
   - Exterior emergency fixtures shall have an integral exterior rated (0° F) or remotely mounted 1,100 lumen (minimum) output, 90 minute battery.
   - Test switches for emergency batteries/inverter shall be integral to the fixture/device served, unless otherwise noted.
   - Emergency fixtures shall operate at least one lamp where multiple emergency fixtures are to be installed in that area, and shall operate at least two lamps where the loss of a single lamp would leave the space in total darkness during emergency operation.
   - Emergency lighting design is based on fixtures lumen outputs as described above. Contractor shall verify all existing emergency batteries to ensure lumen outputs are as indicated and shall replace any batteries rated less outlined above.
   - Emergency lighting units with dedicated emergency heads are spaced based on their unique output. If contractor selects an alternate fixture, they are responsible for ensuring an average of 1 foot candle is provided along the paths of egress for at least 90 minutes.
4. Lamp color temperature for new lamps shall match existing to remain lamps, and all lamp colors for different fixture types and sources shall be consistent throughout the space or area unless specifically noted otherwise. Contractor shall ensure that all interior and exterior lamps are the same color temperature.
5. Light fixtures indicated as dimmable shall be provide with all necessary components (driver, switch etc.) necessary to achieve 5% minimum dimming unless another specific minimum dimming level is noted.

GreenMAX Panel Specs
R0800-000 - GreenMAX Relay Insert Panel, empty with (8) spaces
RPM16-316 - GreenMAX Main Command Module for Relay Panel with 16-port low voltage input card, 100-277VAC, 50/60Hz, LumaCAN 3
RELAY-1CB - GreenMAX latching relay, 1-pole RTC basic
RHDU1-300 - GreenMAX Handheld Display Unit for Relay Panel, Cabinet Mounting, LumaCAN 3
DRD07-ED0-US - GreenMAX DRC, Smart Pack, LED Controller, 120-277VAC
PCOUT - Outdoor Photocell



1 Lighting Control System Data Riser Detail
Scale: None



Lighting Control System Description

1. The Lighting Control System shall consist of any of the following components: relay panels, Dataline wiring, front end equipment, switches, sensors, and remote override devices. All equipment to be UL certified to meet UL 916.
2. The relay panels shall be suitable for mounting in electrical closets and mounted in accordance with national and local electrical codes. The relays will control individual circuits or branch circuits as indicated in the Relay Panel Schedules. All power wiring will be identified at the relay by its controlling circuit breaker and branch letter.
3. Low voltage switches, occupancy sensors, and/or photocells shall be mounted in the spaces as indicated on the Reflected Ceiling Plans. Low voltage wiring from the switches and sensors to the relay panel shall be plenum rated as required by the National Electrical Code and local standards. All wiring shall be compatible with and per LCP manufacturer's specification.
4. Control electronics in the low voltage section shall be capable of driving 1 to 24 relays as specified on plans, control any individual or group of relays, provide individual relay overrides, provide a master override for each panel, store all programming in non-volatile memory, after power is restored return system to the correct state for time of day, provide programmable dual blink warn timers for each relay or zone of relays, and be able to control Normally Open Latching (NOL) or Normally Closed Latching (NCL) relays.
5. Each relay panel shall use UL Listed 30 Amp @ 277VAC Ballast and HID and 20 Amp Tungsten at 120 Vac. 347V Ballast and HID at 20 amps Latching Relay wit 18,000A SCCR at 277Vac. Relays shall be individually replaceable.
6. Relay Panels will be capable of following standard features: Scheduled ON/OFF, Astronomical Time of Day, Flick Warning, True after hours Time Delay, Telephone overrides, Pulse ON/OFF, common area scenario. Panels will log every relay change by time and initiator for troubleshooting and operational reports.
7. System shall be capable of warning of an impending off sweep by flashing lights Off/On once or twice (programmable) by relay or by zone prior to the lights being turned off. The warning interval times between the flash and the final lights off signal shall be definable for each zone. Additionally an audible signal shall be able to be programmed that gives a mild note on the first flash and a more insistent signal on the second one. Occupant shall be able to override any scheduled Off sweep using local wall switches within the occupied space. Occupant override time shall be locally and remotely programmable and not exceed 2 hours.
8. All components shall be supplied as necessary to ensure the overall operation of the system. Components may include networking devices, dataline power supply, dataline interface portal, and system software.
9. Where specified on plans, provide photocell package compatible with LCP. Photocells to be mounted in location indicated on the plans. Photocells used for exterior lights shall provide multiple trip points from 1 roof mounted unit. All trip points shall be able to be changed remotely via Internet or dial up modem. Photocells requiring manual trip point adjustment are not acceptable. Photocell used for interior lighting control shall have multiple settings such as start-point, mid-point, off-point, fade-up, fade-down, etc. All settings shall be remotely accessible and adjustable. Systems providing local adjustment only (at the photocell) are not acceptable. Photocells to be certified to comply with the current energy code covering this project at time of submittal of plans for building permit.
10. Manufacturer shall provide a factory authorized technician to confirm proper installation and operation of all system components.
11. Manufacturer shall provide factory authorized application engineer to train owner personnel in the operation and programming of the lighting control system.
12. Manufacturer shall provide system documentation including: a) System 1-line showing all panels, number and type of switches and sensors, dataline, programmable system switches, front end material, b) Drawings for each panel showing hardware configuration and numbering, c) Panel wiring schedules, and d) Typical wiring diagrams for each component. Provide a point-to-point wiring diagram for the entire lighting control system. Diagram must indicate exact mounting location of each system device. Diagram shall indicate the loads controlled by each relay and the identification number for that relay, placement of switches and location of photocell. Original to be given to owner, copies placed inside the door of each LCP.
13. Lighting schedule shall be determined by owner and be programmed by the system installer and shall comply with section 2015 International Energy Conservation Code.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 57323 W. JACOB TAYLOR
7/10/26

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DATE:

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CHECKED BY:

TRUE NORTH:

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

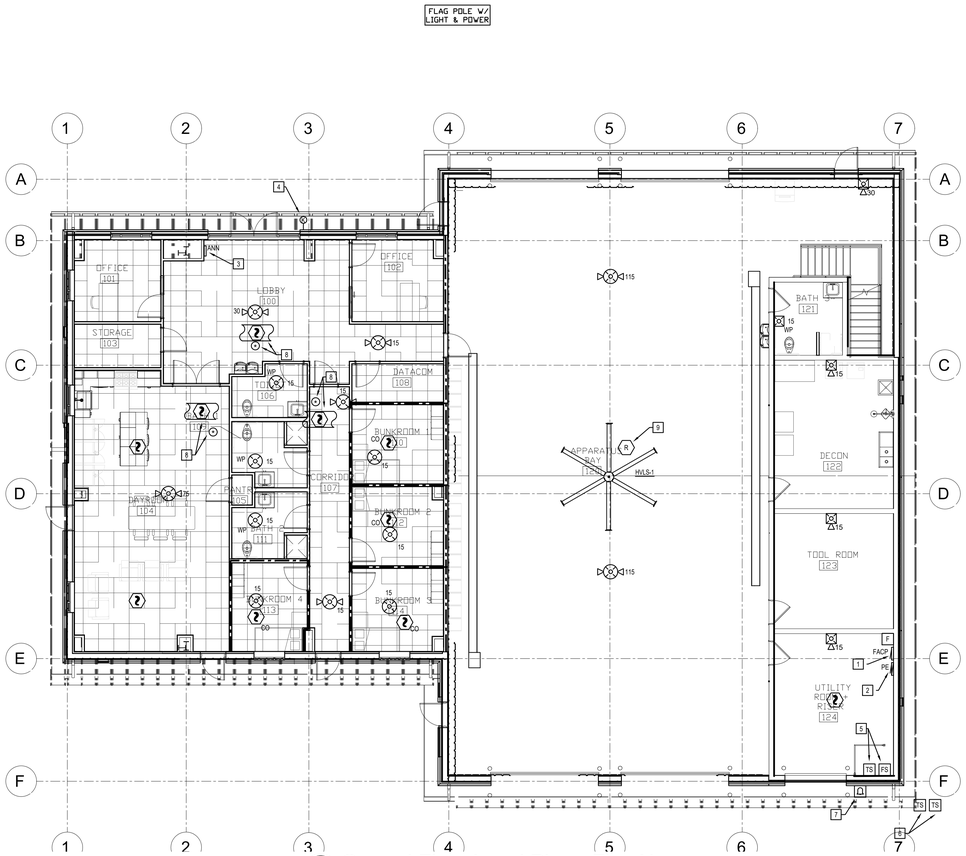
ELECTRICAL DETAILS

E3-02

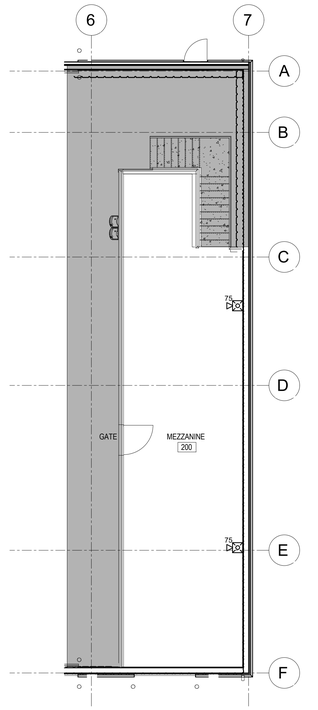
These drawings will be at the scale indicated when plotted at 30" x 42"

This is not a certified drawing, but a copy of a certified drawing that has been unlocked. This document has been unlocked for the ease of use of the AHJ, contractor, etc. and was originally accompanied with the actual certified document meeting the boards rule for electronic signatures

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1 Ground Floor Level Plan - Fire Alarm
Scale: 1/8" = 1' - 0"



2 Mezzanine Level Plan - Fire Alarm
Scale: 1/8" = 1' - 0"

Sheet Notes:

- All electrical boxes mounted in rated walls shall comply with all requirements of the 2018 NCSBC, section 714.3.2. All electrical boxes mounted in rated ceilings/horizontal assemblies shall comply with all requirements of the 2018 NCSBC, section 714.4.2. Devices shown in rated assemblies shall be flush with conduit concealed, unless otherwise indicated. Provide rated boxes, horizontal separation, putty pads, etc. as required for proper installation. Low voltage electrical devices mounted in rated assemblies shall be protected in accordance with the sections listed above as well.
- The lay-in ceiling is 10'-0" AFF throughout the space and 24'-2" AFF in the apparatus bay. Therefore, fire alarm system has been designed based on a maximum ceiling height of 10'-0" AFF in the lay-in areas and 30'-0" in the apparatus bay.
- Refer to MEP seismic details for restraint requirements.

2 Plan Notes:

1. Fire alarm control panel. See fire alarm riser diagram.
2. Fire alarm power extender. See fire alarm riser diagram.
3. Provide flush fire alarm annunciator and connect as required. Maintain rating around box as required. Confirm location of annunciator with Fire Marshal prior to rough-in.
4. Provide Knox box at location acceptable to the Fire Marshall. Confirm exact location prior to rough- in.
5. Provide tamper and flow switches for sprinkler system. Connect tamper and flow switches to fire alarm control panel as required. Confirm quantities, locations, and requirements with sprinkler contractor prior to rough-in.
6. Connect tamper switches in hot box as required. Provide low voltage surge suppression for circuit.
7. Junction box for sprinkler bell connection. Bell furnished by sprinkler contractor, installed and connected by electrical contractor. Connect to "A-40" circuit through main riser flow switch to be energized upon a water flow in the sprinkler system. Coordinate with sprinkler contractor.
8. Provide duct detector in return air duct and remote led indicator in ceiling grid. Connect as required. Coordinate with mechanical. Typical.
9. Provide relay to HVLS fan to shut down upon activation of fire alarm.

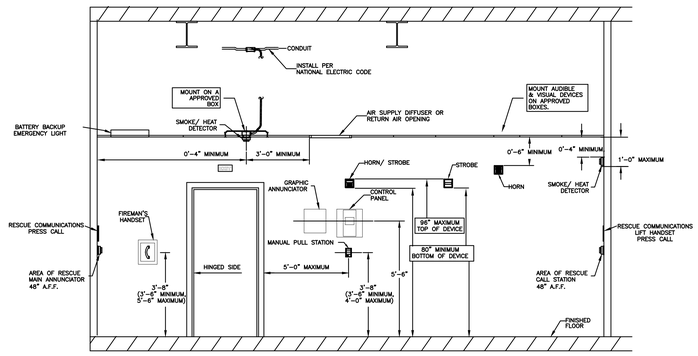
Fire Alarm Synchronization Note:

All fire alarm devices in common sight lines must be visually synchronized and all audible fire alarm devices must be audibly synchronized for a consistent sound throughout. All cost associated with synchronization should be identified and included in any pricing or bids.

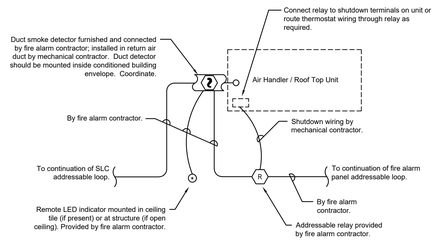
Fire Alarm Scope Note:

The scope of fire alarm work for this project is to add new notification and/or initiating devices as indicated on plan to provide code required coverage for the tenant space. The existing system utilizes horn/strobe notification.

INSTALLATION REQUIREMENTS



3 Fire Alarm Device Mounting Details
Scale: None



4 HVAC Unit Shutdown Wiring Diagarm
Scale: None

Wall Ratings and Types Legend
See architectural sheets for more information on ratings and additional rated constructions including structure where applicable. Protect all rated constructions as required.
New Wall being Constructed
One Hour Fire Barrier
Wall to Deck

These drawings will be at the scale indicated when plotted at 30" x 42"

APPROVAL:
DATE:

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10 JULY 2026

25-0006

FLOOR PLANS - FIRE ALARM

FA1-01

Addressable Fire Alarm Specifications

General:

The electrical contractor shall provide all specified and necessary material and labor required for a complete and operational Fire Alarm system in accordance with the code, specifications and the contract documents.

All work shall be in accordance with NFPA 72, all manufacturers requirements and recommendations, all city & local and state requirements as well as other applicable requirements or guidelines.

Definitions: "provide" shall mean furnish and install; "furnish" shall mean to supply for installation or use by others; "install" shall mean installation of items furnished by others.

The drawings are diagrammatic and are not intended to show every detail and/or exact locations. Installation shall be adjusted to accommodate interferences encountered in field.

See Fire Alarm System Matrix for required programming/control sequence.

Contractor shall provide and submit shop drawings for approval as required.

Equipment:

Equipment shall be provided as specified in legend and in this section or equal.

1. The Fire Alarm Control Panel (FACP) shall be provided with modules necessary to accomplish the functions specified herein. The panel shall have sealed, maintenance free, lead-calcium battery back up with capacity to power all functions and devices for standby and alarm per NFPA 72 section 4.4.1.5.3. Battery calculations are to be provided as part of submittal data. The panel shall be surface or semi-recessed. The panel shall have addressable detection loops as indicated and/or required plus at minimum 20% spare capacity on each loop. Provide lightning arrestors and transient suppression where recommend by manufacturer. Install lightning arrestors at circuit breaker in panel serving fire alarm panel. Provide auxiliary relays, switches, and modules as required to perform indicated functions. Base system shall have at least 198 intelligent device capacity.

2. Digital Communicator shall be a listed cellular dialer system (with integral 24 hour battery backup) that complies with 2013 NFPA 72, Section 26.6.3 and provides for a second method of communication where required by the AHJ. Note that 2013 NFPA 72 does not permit telephone line(s) as the sole means of communication. If another approved communication method is elected, the fire alarm contractor shall coordinate installation of all necessary communication equipment and provide 24 hour battery backup for all such equipment as part of the fire alarm scope.

3. Remote Annunciator shall be backlit, 80 character minimum, LCD annunciator located as indicated on the plans with the understand that final location shall be approved by the fire marshal.

4. The remote NAC Power Supplies shall be have built-in synchronization for all strobe lights. Each Power Supply shall have battery back-up sized per NFPA 72.

5. Manual Pull Stations shall be addressable, double action devices, with terminal strip. Glass rods are prohibited.

6. Space Smoke Detectors shall be addressable photoelectric type detector. Detectors shall be listed to U.L. standard UL268 and shall be compatible with the control equipment to which they are connected. The detectors shall obtain their power from the fire alarm supervised detection loop. Removal of the detector from its base shall cause a trouble signal to be generated at the control panel indicating the specific location of the issue. Activating the reset switch on the control panel shall reset the detector. The detectors shall have an LED indicator to show the normal and alarm state.

7. Automatic Heat Detectors shall be addressable combination fixed temperature and rate-of-rise type.

8. Audio/Visual devices shall be combination electronic horn and field selectable candela strobe light set as indicated on plans. The device shall comply with the requirements of the American with Disabilities Act.

9. Visual Only devices shall be strobe light with field selectable candela strobe light set as indicated on plans. The device shall comply with the requirements of the American with Disabilities Act.

10. Water flow, Tamper, and, Pressure Switches shall be furnished and installed by the sprinkler contractor and connected by the electrical contractor and monitored by the fire alarm control panel. Monitoring shall be accomplished by use of monitor modules.

11. Duct Mounted Smoke Detectors shall be an addressable photoelectric smoke detector unless otherwise noted. Removal of the detector head shall cause a trouble signal to be generated at the fire alarm control panel indicating the specific detector in trouble. The detector shall obtain its operating power from the supervised detection loop. An LED indicator shall be visible through the cover that indicates the alarm state of the detector. Where indicated furnish a remote indicator/test switch. The duct detector shall be supplied complete with proper size duct sampling tubes and any other required accessories.

12. Control Module shall be located as indicated on the plans and/or as required for control functions and notification applications.

13. Door Holders shall be flush wall mounted, as indicated on the plans, and compatible with control system.

14. Relay Module shall be located as indicated on the plans and/or as required for control functions, IE duct detectors.

MATERIALS:

All materials and equipment shall be new and of the highest quality in the class specified. Where manufacture names are mentioned they are given as a reference to the quality of component required. All materials shall bear UL label or equivalent where applicable. Other makes may be used if equal and the equipment meets all of the requirements of these specifications. All items in the equipment section of these specifications may not be necessary in this system, refer to the drawings for locations and equipment to be used.

Conduit, conductors, boxes, hangers, supports, etc. shall be provided as required.

System description - The fire detection and alarm system shall be the addressable type, with each initiating device individually addressed and reporting to the fire alarm control panel (FACP).

The addressable fire alarm system shall be connected, programmed, and tested only by the manufacturer or by an authorized distributor who stocks a full compliment of spare parts for the system. Technicians performing this service shall be trained and individually certified by the manufacturer for the model of system being installed.

The complete programming for the addressable fire alarm system shall be permanently stored on removable media and archived by the manufacturer or authorized distributor. A backup copy of the program on removable media shall be provided to the owner when the system is commissioned.

The manufacturer or authorized distributor shall maintain software version records on the system installed. The system software shall be upgraded free of charge if the manufacturer releases a new version of the software during the warranty period.

Each signaling line circuit (addressable loop controller) shall have a minimum of 20% spare capacity for future use.

The connections between individual addressable modules and their initiating devices must be supervised.

The system shall have multiple access levels, which permit the owner's authorized personnel to make temporary changes in the system alarm response matrix, without actually changing the system programming. This must include the ability to override selected alarm inputs or system responses to alarms, without affecting the remaining portions of the system.

The manufacturer or authorized distributor must test all software logic functions for the system and provide a written test report of checklist. This documentation must include a system function matrix, which gives the fire alarm control panel response for each initiating device input.

The system shall be nominal 24VDC; non coded, and supervised (including control circuits). All equipment supplied must be listed for the purpose for which it is used, and installed in accordance with any instructions from the manufacturer and/or included in its listing.

The FACP power supply shall have a continuous rating adequate to power all zones and functions in full alarm continuously.

The FACP must have an Alarm Silence switch and be equipped with the subsequent alarm (alarm resound) feature.

The system includes air handling unit shutdown. Silencing the alarm (without resetting) shall not reverse the shutdown. A supervised "AHU Shutdown Defeat" switch must be provided in the FACP, with its "Normal" position indicated.

Systems are to be provided with a separate and independent source of emergency power. Switching to emergency power during alarm shall not cause signal dropout. Batteries must meet the appropriate NFPA capacity requirements.

The system shall be electrically supervised for open or ground fault conditions in detection, alarm and control circuits. Removal of any detection device, alarm appliance, relay, module or standby battery connection shall also result in a trouble signal. Fire alarm signal shall override trouble signals, but any pre-alarm trouble signal shall reappear when the panel is reset.

Execution:

All work shall be installed as required per NFPA 72, manufacturers requirements and recommendations, city & local and state requirements as well as other applicable requirements. All connections at the FACP must be made by the manufacturer's authorized, factory trained representative (rather than by the electrical contractor).

Provide and install the system in accordance with the plans and specifications, all applicable codes and the manufacturer's recommendations. Use conduit where specified/ required. Notification Appliance circuit conductors shall be new, copper type THHN or XHHW and shall be number 14 AWG stranded minimum.

Permanent wire markers shall be used to identify all connections and terminations for each circuit. Identification for all splices shall indicate which conductor leads to the control panel.

Wiring must be in metal conduit (3/4"minimum diameter), or surface metal raceway. Initiating circuit conductors must be new, solid copper, type THHN/THWN, 18 AWG minimum shielded, except that wiring between the FACP and any Remote Annunciator may optionally be listed multi-conductor cable with 18 AWG solid copper conductors. All junction boxes shall be sprayed red and be permanently labeled "Fire Alarm". Wiring color code shall be maintained throughout the installation and labelled on FACP/PE. Provide terminal blocks in all junction boxes where connections are made.

Detection or alarm circuits shall not be installed in raceways containing power or line voltage control wiring. Within the FACP, any AC control wiring must be properly separated from other circuits and the enclosure must have an appropriate warning label to alert service personnel to the hazard.

Location of devices and equipment: All devices shall be located as detailed or indicated. In general devices shall be centered in spaces or above other outlets.

Install lightning arrestor at circuit breaker in panel serving fire alarm panel.

Provide an engraved or other permanent type marker on each device installed indicating the device number and addressable loop number.

Provide framed operating instructions mounted adjacent to the fire alarm control panel.

Smoke detectors shall not be located closer than three feet to an air conditioning supply or return. Locate wall mounted smoke detectors at maximum of twelve inches from ceiling.

Testing shall include all tests noted by NFPA, for electrical systems, and testing/ certification by the fire alarm system supplier. Test results shall be provided to the owner.

Certification for system shall be provided from installer/ supplier of the equipment furnished. Provide instruction manuals and instruction to owner's personnel.

Upon completion of the system testing shall be performed by the contractor and the manufacturer's authorized representative. The test shall include testing of every alarm initiating device for proper response and device indication, every alarm signaling device for effectiveness and all other functions such as HVAC shut down, door release, elevator recall, control of smoke doors/dampers, and pressurization fans. All supervised circuits must also be tested to verify proper supervision (control circuits and remote annunciation lines are among those required to be supervised).

The contractor shall submit the following test documentation:

1. NFPA "Fire Alarm System Certification and Description"
2. Written verification that the fire alarm 100% system test was performed
3. Measured sensitivity of each smoke detector

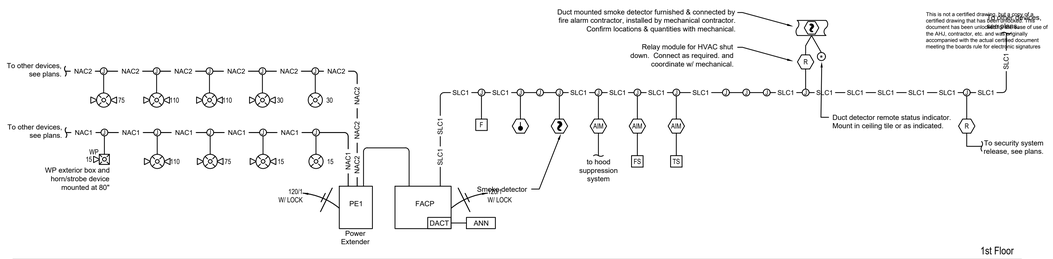
The system will be inspected and functionally tested by the AHJ. Equipment intended for open area protection or releasing device service may be subjected to simulated or actual test fires, in accordance with ANSI/UL guidelines, to verify proper response.

After successful completion of AHJ inspections and tests and final acceptance, the warranty period begins. In the event of malfunctions or excessive nuisance alarms, the contractor must take prompt corrective action. The engineer may require a repeat of the contractor's 100% system test. Continued improper performance during the warranty period shall be cause to require the Contractor to replace the system and/or its components.

System documentation, training and maintenance:

The contractor shall provide the engineer with electronic copies of the following, to be forwarded to the owner:

1. Full as-built wiring and conduit layouts, including wire color code, and addresses, and showing all interconnections in the system.



1 Fire Alarm Riser Diagram
Scale: none

Fire Alarm Legend (NFPA 170 Symbols)

Symbol (New)	Device Common Name	Description/Notes	Model	Model	Model (FCI)	Model (Mircom)
FACP	Fire Alarm Control Panel	24V, addressable system, with 318-point SLC loop	Fire-Lite #MS9200UDLS	Notifier #N16e	Gamewell FCI #E3 Series	FX-3318
PE	Fire Alarm Power Extender	4 notification appliance circuit outputs with total of 8.0 amp full load output (3.0 amp max per circuit).	Fire-Lite #FCPS-24FS8	Notifier #FCPS-24S8	Gamewell FCI #IHPF-PS8	QX-Mini
FAAN	Fire Alarm Annunciator Panel	-	Fire-Lite #LCD-80F	Notifier #FDU-80	Gamewell FCI #LCD-SLP	RAM-3318-LCD
DC	Internal Digital Communicator	Mount inside FACP enclosure or provide remote enclosure (Notifier #ABS-6RB) as required.	N/A	Notifier #UDACT	Teleguard #TG7VFS04	
F	Addressable Manual Pull Station	Mount at 44" aff to center of box.	Fire-Lite #BG-12LX	Notifier #NBG-12LX	Gamewell FCI #MS-7AF	MS-710AP
F WP	Manual Pull Station	Rated for outdoor use with backbox. Mount at 44" aff to center of box. Connect via monitor module located within conditioned space.	Fire-Lite #BG-12LOB	Notifier #NBG-12LOB		
	Fire Alarm Smoke Detector	-	Fire-Lite #SD355	Notifier #FSP-851	Gamewell FCI #ASD-PL2F	
CO	Fire Alarm Smoke Detector/Carbon Monoxide Detector Combination Device	Dual purpose fully addressable smoke detector and carbon monoxide device.	System Sensor #4 Series	System Sensor #4 Series	System Sensor #4 Series	System Sensor #4 Series
	Fire Alarm Heat Detector	Fixed temperature only for elevator shunt trip activation, fixed temp. and rate of rise for all other applications not noted otherwise.	Fire-Lite #H355 series	Notifier #FST-851 SERIES		
	Duct Smoke Detector with Remote Led Indicator	-	Fire-Lite #D350PL W/ Fire-Lite #RTS451	Notifier #FSD-751PL W/ Notifier #RTS451	Gamewell FCI #DNR w/RTS-451KEY	DNR
	Remote Led Indicator	-				
FS	Flow Switch	-	Actual device provided by sprinkler contractor. provide monitor module.	Actual device provided by sprinkler contractor. provide monitor module.	Actual device provided by sprinkler contractor. provide monitor module.	
TS	Tamper Switch	-	Actual device provided by sprinkler contractor. provide monitor module.	Actual device provided by sprinkler contractor. provide monitor module.	Actual device provided by sprinkler contractor. provide monitor module.	
R	Relay Module	-	Fire-Lite #CRF-300	Notifier #FRM-1	AOM-2RF	MIX-500RAP
PR	Pam Relay Module	-	Fire-Lite #PAM-1	Notifier #PAM-1	Notifier #PAM-1	
AIM	Monitor Module	-	Fire-Lite #MMF-300	Notifier #FMM-1	AMM-4F	
ACM	Control Module	-	Fire-Lite #MMF-300	Notifier #FCM-1	AOM-2SF	MIX-M500SAP
XX	Ceiling Mounted Fire Alarm Visual Strobe Only - White	Center device in ceiling tile, device shall be U.L. listed for use in ceilings. Connect as required. Strobe as indicated on plans.	System Sensor Spectralert #SCWL	System Sensor Spectralert #SCWL	System Sensor Spectralert #SCWL	System Sensor Spectralert #SCWL
XX	Ceiling Mounted Fire Alarm Horn/Strobe - White	Center device in ceiling tile, device shall be U.L. listed for use in ceilings. Connect as required. Strobe as indicated on plans.	System Sensor Spectralert #PC2WL	System Sensor Spectralert #PC2WL	System Sensor Spectralert #PC2WL	System Sensor Spectralert #PC2WL

Fire Alarm Symbols Linetype Legend

————	New device or relocated existing device
– – – – – – – – – –	Existing device to remain
. . . . .	Existing device to be demolished or relocated
— — NAC1 — — NAC1 — —	Existing NAC circuitry to remain. Number on line indicates circuit in panel.
— — SLC1 — — SLC1 — —	Existing SLC circuitry to remain. Number on line indicates circuit in panel.
— SPK — SPK —	New SPEAKER WIRE circuit. Number on line indicates circuit in panel.
— NAC1 — NAC1 —	New NAC circuit. Number on line indicates circuit in panel.
— SLC1 — SLC1 —	New SLC circuit. Number on line indicates circuit in panel.
EOL	End of line resistor

* New devices shall match existing, verify in field. Engineer has attempted to document existing model numbers for convenience of contractors.

FIRE ALARM SYSTEM INPUT/OUTPUT MATRIX

SYSTEM OUTPUTS

FACP ANNUNCIATION | NOTIFICATION | REQUIRED FIRE SAFETY CONTROL

SYSTEM INPUTS		ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE ZONE OR DEVICE ADDRESS ALARM INDICATOR	ACTUATE GENERAL EVACUATION SIGNAL	DISPLAY CHANGE OF STATUS	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	RELEASE MAGNETICALLY HELD DOORS	UNLOCK EXITS AND CONTROL DOORS	SHUT DOWN RESPECTIVE AIR HANDLING EQUIPMENT		
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	FIRE ALARM SYSTEM AC POWER FAILURE					●	●						●					
2	FIRE ALARM SYSTEM LOW BATTERY					●	●						●					
3	OPEN CIRCUIT					●	●						●					
4	GROUND FAULT					●	●						●					
5	NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●						●					
6	BUILDING MANUAL PULL STATIONS	●	●					●	●	●	●			●	●			
7	CORRIDOR SMOKE DETECTORS	●	●					●	●	●	●			●	●			
8	AREA SMOKE DETECTORS	●	●					●	●	●	●			●	●			
9	HVAC AIR DUCT SMOKE DETECTORS			●	●			●				●				●		
10	SPRINKLER TAMPER SWITCH			●	●			●		●		●						
11	SPRINKLER WATER FLOW IN BUILDING	●	●					●	●	●	●			●	●			
12	SPRINKLER WATER FLOW IN ELEV EQUIP RM OR SHAFT	●	●					●	●	●	●			●	●			
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

		R	S	T	U	V	W	X	Y																			
1	FIRE ALARM SYSTEM AC POWER FAILURE									1																		
2	FIRE ALARM SYSTEM LOW BATTERY									2																		
3	OPEN CIRCUIT									3																		
4	GROUND FAULT									4																		
5	NOTIFICATION APPLIANCE CIRCUIT SHORT									5																		
6	BUILDING MANUAL PULL STATIONS									6																		
7	CORRIDOR SMOKE DETECTORS									7																		
8	AREA SMOKE DETECTORS									8																		
9	HVAC AIR DUCT SMOKE DETECTORS									9																		
10	SPRINKLER TAMPER SWITCH									10																		
11	SPRINKLER WATER FLOW IN BUILDING									11																		
12	SPRINKLER WATER FLOW IN ELEV EQUIP RM OR SHAFT									12																		
		R	S	T	U	V	W	X	Y	19																		

Fire Alarm Notes:

1. See legend for device model numbers.
2. Contractor shall ensure that this installation and design of the fire alarm system complies with all requirements of the 2018 NC Fire Code chapter 9, 2018 NCSBC chapter 9, 2013 NFPA 72, and NFPA 70. Contractor shall review design drawings prior to bid/ rough-in and shall notify engineer immediately of any items they feel may be necessary, omitted, insufficient, etc. Contractor shall be responsible to provide any additional required items necessary for complete and code compliant system prior to beginning work.
3. Contractor shall verify that the existing to remain system is connected to a UL approved central monitoring station as required by the applicable codes at the time of connection. If an approved connection does not exist, the contractor shall provide a listed cellular dialer system (with integral 24 hour battery backup) that complies with 2013 NFPA 72, section 26.6.3 and provide for a second method of communication where required by the AHJ. 2013 NFPA 72 does not permit POTs telephone line(s) as the sole means of communication. If another communication method is elected and approved by the AHJ, the fire alarm contractor shall coordinate installation of all required communication equipment and 24 hour battery backup as part of the fire alarm scope.
4. A decibel level of 15 dBA above average ambient (2013 NFPA 72, Table A.18.4.3) shall be maintained in all occupiable areas measured 5' above the floor using the A-weighted scale. 90 dBA shall be maintained in all mechanical equipment rooms per the 2018 NC Fire Code, section 907.5.2.1.1. The total sound pressure level produced by combining ambient and notification levels shall not exceed 110 dBA anywhere. Devices have been shown to provide the general components necessary to achieve such levels. However, due to site specific attributes including wall construction and sound attenuation, it is the responsibility of the contractor to adjust the level of audible devices as needed and provide additional audible devices where required to meet these audibility requirements.
5. The contractor shall prepare fire alarm shop drawings including a floor plan(s) showing device and circuit layouts with a detailed riser diagram showing each device and all circuitry. Fire alarm shop drawings shall include battery and voltage drop calculations as required by the 2018 NC Fire Code, section 907. Battery calculations shall show battery requirements for the entire system (including any existing loads). If battery calculations show the existing or as designed system as insufficient, contractor shall provide a separately line item price to add a new 8 amp, 4 circuit power extender and connect the required devices to it. Contractor shall submit a plan indicating device layout, riser diagram, battery & voltage drop calculations with device submittal data to engineer for review prior to beginning any work or submitting to the AHJ.
6. Contractor shall provide all documentation and testing required by the local Fire Marshal and state and local codes, including but not limited to:
   1. Acceptance tests per 2018 NC Fire Code, section 907.7.
   2. Required inspections, testing and maintenance required by the 2018 NC Fire Code.
   3. Instructions per 2018 NC Fire Code, section 907.7.3 and record of completion per 2018 NC Fire Code, section 907.7.2.
7. The contractor shall submit fire alarm shop drawings to the AHJ fire prevention office prior to beginning work. No inspections can be scheduled prior to approval of the shop drawings from the Fire Marshal.
8. All audible fire alarm devices must be audibly synchronized and have a consistent audible sound throughout the building. All fire alarm devices in common sight lines must be visually synchronized. Device shall synchronization as required per ADA. Replace devices and/or provide synchronization modules in booster/NAC panels as necessary to achieve synchronization throughout. Existing devices and booster panels shown to remain on these drawings should be considered existing to remain only contractor verifies their ability to synchronize on site, and should be considered new otherwise. All cost related to synchronization should be identified and included in bid.
9. Interlock fire alarm system with security system such that upon activation of the fire alarm system, security system unlocks doors as required by 2018 NCSBC, section 1008.1.9.8, note **#4**. Coordinate exact requirements with security contractor. Security system shall fail safe open upon power loss.
10. All fire alarm system conductors shall be run in 3/4" EMT conduit, in open ceiling areas, unless noted otherwise. Provide all junction boxes, hangers, fittings, supports etc. as required. JB cover for all fire alarm junction boxes shall be labeled and painted red. Circuits can be combined in common conduit where convenient or as necessary.
11. Pull stations are only provided at required exits.
12. Initiating device circuits shall be loaded to no more than 75% of capacity.
13. Audio/visual circuits shall be loaded no more than 75% of capacity.
14. Provide power extenders as required for notification appliance circuit devices (existing and new).
15. Riser diagram devices are generic and do not represent exact/actual device quantities required for this project. See plans for total quantities.
16. Provide labeling for the entire fire alarm system and device addresses. Provide panel and circuit numbers on a zone map adjacent to the FACP or in location required by the Fire Marshal.
17. The method of functional testing to ensure proper operation of smoke detectors shall be determined by AHJ.
18. Devices shall match the color specified or match the color of any existing devices to remain or be reused in the area of work, if applicable, unless otherwise noted.

General Notes and Requirements:

1. The contractor is responsible to comply with all requirements of the 2018 NCSBC and accessibility code that are applicable to this project regardless of whether all details are indicated on plans.
2. Pull stations shall comply with all requirements of 2018 NCSBC, chapter 11 accessibility code.
3. All boxes mounted in rated walls shall comply with all requirements of the 2018 NCSBC, section 714.3.2. Unless noted otherwise, devices shown in rated walls shall be flush with conduit concealed in wall. Provide horizontal separation, putty pads, rated boxes etc. as required for installation.
4. See architectural ceiling plans for ceiling types. Where new inaccessible gyp. ceilings are being installed the contractor shall not mount any junction boxes, conduit bodies or other equipment or fittings requiring access above the new inaccessible ceiling, and shall relocate all to adjacent areas where accessible area. No access panels in the hard ceiling are allowed without approval.
5. Contractor shall not put an access panel in hard ceiling for any reason. Contractor shall install appropriate junction boxes, etc above the ceiling in areas that can be accessed by the removal of lay-in grid.
6. The word "provide" shall mean to furnish and install the item or equipment and make the final connection necessary.
7. All mounting heights are given to the bottom of the device unless otherwise noted.
8. Do not scale these drawings. The contractor shall refer to the architectural plans for floor plan dimensions. The location of all wall mounted devices, including mounting heights, shall be field verified with the architect prior to installation. Coordinate locations of all light fixtures with the reflected ceiling plans.
9. The contractor shall coordinate any and all work with other trades involved in the project, prior to installation of fire alarm equipment, so as to avoid conflicts during construction and to allow for optimum maintenance and working space.
10. Conduits and cables shall be concealed wherever possible by either routing above ceiling, in interstitial spaces or running exposed in unfinished spaces where feasible/ allowed. Conduits may be run exposed in mechanical areas or other areas not subject to public view where approved by the owner. Wherever conduits or cables are exposed, conduits and cables shall be run parallel or perpendicular to structural elements and shall be run and bundled in groups, and the installation shall be neat and orderly. Even when exposed, conduits and cables shall be routed to minimize view from personnel. Seal all penetrations air tight around conduits passing through walls or floors using appropriate penetration protection when passing through or into rated assemblies.
11. Boxes, conduit, and wiring shall not be recessed into or penetrate structural columns. They shall be surface mounted to column and/or recessed in stud wall where possible. Coordinate with architect/tenant.
12. Junction box covers shall be permanently labeled and conduit shall be labeled every 10'. Contractor shall include cost of painting all exposed conduits subject to public view.
13. The contractor shall patch any ceiling, wall, or floor openings and penetrations resulting from demolition or new work in existing areas.
14. Contractor is responsible for properly disposing of all waste materials, demo materials and other trash. This includes but is not limited to proper disposal recyclable materials.
15. Any necessary core drills shall be coordinated and located with the affected tenant spaces above or below as well as the owner/ building manager, prior to beginning work. Schedule core drills to address security concerns, minimize interruption, etc.
16. Contractor shall verify all areas that are used as a return plenum with mechanical contractor and provide plenum rated cable for all cables not run in metal conduit. This includes all fire alarm or control wiring above ceiling.
17. Contractor shall meet all applicable seismic requirements.
18. Equipment connected to or associated with fire alarm system shall be listed and labeled by a third party acceptable to the authority having jurisdiction.

These drawings will be at the scale indicated when plotted at 30" x 42"

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783 MANGUM ROAD
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30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

FIRE ALARM DETAILS

FA2-01

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NORTH CAROLINA PROFESSIONAL SEAL 57523 ENGINEER JEFFREY A. TAYLOR
7/10/26

Building Bi-Directional Amplifier (BDA) and Distributed Antenna System (DAS) for Emergency Services Response Communication - Applicability

General:
These plans acknowledge that, first and foremost, the code mandates a minimum signal strength for emergency services response communication within the building. The included details for a Bi-Directional Amplifier (BDA) illustrate the requirements for a BDA system should testing within the building reveal its necessity to meet these minimum signal strength standards or if required by applicable codes and the Authority Having Jurisdiction (AHJ). If a BDA system is not necessary to meet code requirements or otherwise mandated by applicable codes or the AHJ, these plans do not imply that such a system is required.

Building size, construction, and proximity to the nearest repeater tower, among other factors, affect signal strength within the building. The contractor must include all necessary floor cores, raceways, and pathways in their work, and perform preliminary testing with a BDA vendor to determine if a BDA is needed. The results of this testing must be provided in a detailed report to the owner and design team as soon as possible. The report should include building floor plans showing signal strength measurements at each test point and a summary of the findings.

Pricing Note:
The contractor must clearly state in their base pricing that it includes preliminary BDA testing to determine if a system is required, as well as any additional services and equipment if a system is deemed necessary. Additionally, the contractor should include a separate line item for any equipment or services not included but reasonably expected if a BDA system is required.

Specifications

General:
The BDA system design shown in these plans is a general arrangement meant to identify expected components but is not intended to provide a detailed or biddable quantity of components for this specific installation. The contractor must supply all components, connections, installation, testing, compliance certifications, and other requirements to ensure proper coverage and functionality of the BDA system as per applicable codes and requirements set by the Authority Having Jurisdiction (AHJ). The contractor must provide all specified and miscellaneous materials and labor necessary for a complete and operational communication system.

After installation, the contractor shall measure signal strength at all points within the building and adjust or add DAS antennas as needed to ensure full coverage. A report documenting the locations and readings of key measurements, along with a certificate of installation verifying the system's operational status and complete building coverage, must be provided.

The design, equipment, installation, and maintenance of the system must comply with the 2018 NC Fire Code, including Section 510, NFPA 1221, NFPA 70, and NFPA 72, as well as all FCC regulations, manufacturer's recommendations, and local, state, and other applicable requirements.

Definitions:
- "Provide" means to furnish and install.
- "Furnish" means to supply for installation or use by others.
- "Install" means to set up items provided by others.

Drawings and riser diagrams are for general reference and do not detail quantities or minor specifics. Installation must be adjusted for any anticipated or encountered interferences. The contractor must submit shop drawings for approval as required.

Materials:
All materials and equipment must be new and of the highest quality specified. Trade names are references for quality, but other brands may be used if approved by the engineer, provided they meet all specifications. All materials should bear a UL label or equivalent where applicable. Not all items listed in the specifications may be used; refer to drawings for equipment locations.

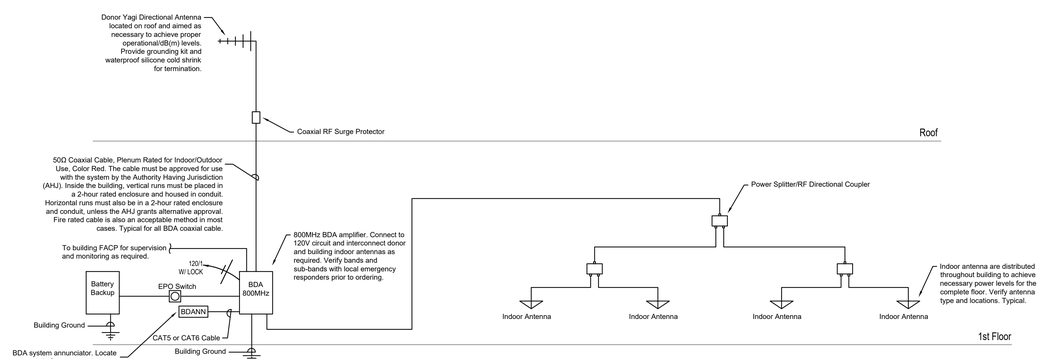
The manufacturer or authorized distributor must keep records of the system's software versions. Software upgrades released during the warranty period should be provided free of charge. The manufacturer or authorized distributor must test the system and software, providing a written test report and completed checklist, including a system function matrix and output monitoring points list.

The system must be supervised, including control and power circuits. All equipment must be listed for its intended use and installed according to listing instructions. The power supply must support all devices and 50% additional capacity for future devices. The system must have a separate emergency power source (batteries or other approved sources) per NC Fire Code Section 510.4.2.3. Switching to emergency power must be automatic and not cause signal dropout. Batteries must meet NFPA capacity requirements. Signal boosters, where necessary, must comply with NC Fire Code Section 510.4.2.4. Antennas must be provided as needed to meet coverage requirements determined during testing. The quantities and locations of antennas are not specified in the design floor plans. All cabinets and enclosures for the BDA system must be NEMA 4 or NEMA 4X rated.

Execution:
All work must comply with the NC Fire Code Section 510 and applicable standards, including NFPA 1221, 70, and 72, as well as manufacturer requirements, local and state regulations, and other relevant requirements. All connections must be made by the manufacturer's authorized, factory-trained representative. Permanent wire markers must identify all connections and terminations. Identification for all splices must indicate the connected device. Provide framed operating instructions next to the BDA.

Certification for the system must come from the installer/supplier of the equipment. Instruction manuals and training for owner personnel must be provided. After completion, the contractor and the manufacturer's authorized representative must perform system testing, including testing every device for proper response and functionality, complying with NC Fire Code Section 510.5.3. The warranty period begins after successful testing and certification. The contractor must promptly address any malfunctions or nuisance reports related to the fire alarm system, and the engineer may require a repeat of the contractor's 100% system test. Continued improper performance may necessitate system replacement by the contractor.

System Documentation, Training, and Maintenance:
The contractor must provide the engineer with three copies of the closeout documents for the owner. These documents must include all necessary information for operating, servicing, and maintaining the system, warranty information, as-built wiring and conduit layout diagrams (including wire color codes or labels), and all system interconnections.



1 Emergency Responder Bi-Directional Antenna (BDA) Building Riser Diagram
Scale: None

These drawings will be at the scale indicated when plotted at 30" x 42"

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30 X 42
REFER TO DRAWING FOR SCALE
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25-0006
BDA DETAILS

FA2-02

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NORTH CAROLINA PROFESSIONAL SEAL 052489 ENGINEER MICHAEL P. CRAWFORD

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SEISMIC REQUIREMENTS
RISK CATEGORIES I, II & III
INFORMATION FOR NCBC-2018 / ASCE 7-10

THE BUILDING IS RISK CATEGORY: IV, SEISMIC DESIGN CATEGORY: D

THE INFORMATION CONTAINED HEREIN IS ONLY APPLICABLE TO RISK CATEGORY I, II AND III STRUCTURES. FOR RISK CATEGORY IV STRUCTURES, PROJECT SPECIFIC CONSULTATION SHOULD BE PROVIDED TO DETERMINE SPECIFIC SEISMIC RESTRAINT REQUIREMENTS.

REFER TO ARCHITECTURAL DRAWINGS TO DETERMINE FINAL RISK CATEGORY AND SEISMIC DESIGN CATEGORY. THE SUB-CONTRACTOR SHALL PROVIDE SEISMIC RESTRAINTS ON ALL MECHANICAL COMPONENTS AS REQUIRED PER THE FOLLOWING REQUIREMENTS. THE SUB-CONTRACTOR SHALL SUBMIT DETAILED SEISMIC RESTRAINT SHOP DRAWINGS SHOWING ALL DESIGN COMPONENTS. THE SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A REGISTERED ENGINEER.

COMPONENT IMPORTANCE FACTOR (Ip)	
Ip = 1.0	Ip = 1.5
• AIR HANDLING UNITS (FLOOR) • AIR HANDLING UNITS (SUSP) • AIR SEPARATOR • AIR SEPARATORS & EXP. TANKS • CABINET HEATERS (SUSP) • CABLE TRAY, BUS DUCT, TRAPEZE SUPPORTED CONDUIT > 10 LB/FT (NOTE 6) • CEILING DIFFUSERS ≥ 20 LB • CEILING FANS ≥ 20 LB • CEILING FANS < 20 LB • CHILLED WATER PIPING • CHILLERS (ROOF OR UPPER FLOORS) • CHILLERS (ON GRADE) • CONDUIT ≥ 2.5" DIA. • COOLING TOWERS (ON GRADE) • COOLING TOWERS (ROOF) • DOMESTIC WATER • DUCT • ELECTRIC WATER HEATERS • EXPANSION TANK • FAN COILS • FAN VAV TERMINAL • GENERATORS (ON GRADE) • GENERATORS (UPPER FLOORS) • HOT WATER PIPING • INLINE FANS • INLINE PUMPS < 5 HP • INLINE PUMPS ≥ 5 HP • INSTRUMENTATION CABINETS • MOTOR CONTROL CENTERS • PACKAGED RTU ≤ 5 TONS • PACKAGED RTU > 5 TONS • PANEL BOARDS • PENDANT LIGHTING • PUMPS (ON GRADE) < 7.5 HP • PUMPS (ON GRADE) ≥ 7.5 HP • PUMPS (UPPER FLOORS) • RECESSED LIGHTING • ROOF EXHAUST FANS • SPLIT SYSTEM CONDENSER / HEAT PUMP (ON GRADE) ≤ 5 TONS • SPLIT SYSTEM CONDENSER / HEAT PUMP (ON ROOF) < 5.0 TONS • STORM DRAIN PIPING • SWITCHGEAR • TRANSFORMERS • UNIT HEATERS (SUSP) • UTILITY SETS (FLOOR) • UTILITY SETS (SUSP.) • VACUUM PUMPS • VAV (NON-FAN) TERMINAL < 20 LB • VAV (NON-FAN) TERMINAL ≥ 20 LB • WALL MOUNT FANS • WALL-MOUNTED LIGHTING • WASTE, VENT PIPING • WATER SOURCE HEAT PUMP (FLOOR) • WATER SOURCE HEAT PUMP (SUSP.) • WATER TO WATER HEAT EXCHANGER	• AIR COMPRESSORS • BOILERS (ON GRADE) • BOILERS (UPPER FLOORS) • COMPRESSED AIR PIPING • DUCT USED FOR SMOKE CONTROL • EMERGENCY, STANDBY, LIFE SAFETY COMPONENTS • FLASH TANK • GAS GENERATORS • GAS INFRARED HEATERS • GAS PACKAGED RTU ≤ 5 TONS • GAS PACKAGED RTU > 5 TONS • GAS PIPING • GAS UNIT HEATERS (SUSP) • GAS WATER HEATERS • KITCHEN HOODS • STEAM CONDENSATE PIPING • STEAM PIPING • STEAM TO WATER HEAT EXCHANGERS • STEAM WATER HEATERS • SUSPENDED GAS FURNACE

GENERAL NOTES:
A. PER THE 2015 INTERNATIONAL BUILDING CODE, MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND COMPONENTS, INCLUDING THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE 7-10.
B. EXTERIOR EQUIPMENT (INCLUDING ROOF CURBS, RAILS, SUPPORTS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH CHAPTERS 26 TO 29 OF ASCE 7-10.
C. WHERE DESIGN FOR SEISMIC AND WIND LOADS IS REQUIRED, THE MORE DEMANDING FORCE MUST BE USED.
D. REFERENCE THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY, WIND SPEEDS, ETC.
E. SEE EQUIPMENT SCHEDULES AND DETAILS FOR SPECIFIC COMPONENT IMPORTANCE FACTOR DESIGNATIONS.
F. USE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT.
G. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL.
H. WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE THE RECEIPT OF THE APPROVED SEISMIC SUBMITTAL.
I. SEISMIC RESTRAINTS FOR DUCTWORK, PIPING, CONDUIT, CABLE TRAY AND BUS DUCT MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.

SEISMIC DESIGN CATEGORY C

COMPONENT IDENTIFICATION		COMPONENT IMPORTANCE FACTOR (Ip)			
		1.0		1.5	
		SEISMIC RESTRAINT REQUIREMENT	ASCE 7-10 REFERENCE	SEISMIC RESTRAINT REQUIREMENT	ASCE 7-10 REFERENCE
ROOF MOUNTED		NOT REQUIRED	13.1.4.5	RESTRAIN ALL	13.1.4.5
FLOOR MOUNTED		NOT REQUIRED	13.1.4.5	RESTRAIN ALL	13.1.4.5
WALL MOUNTED		NOT REQUIRED	13.1.4.5	RESTRAIN ALL	13.1.4.5
COMPONENT SUPPORTS		NOT REQUIRED	13.1.4.5	RESTRAIN ALL	13.6.5
SUSPENDED EQUIPMENT	INLINE W/ DUCT/PIPE	NOT REQUIRED	13.1.4.5	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN. (SEE NOTE 1)	13.6.7
	NOT INLINE W/ DUCT/PIPE	NOT REQUIRED	13.1.4.5	RESTRAIN ALL	13.1.4.5
SUSPENDED DUCTILE PIPING (STEEL, ALUMINUM, COPPER, ETC.)		NOT REQUIRED	13.1.4.5	RESTRAINT IF > 2" (SEE NOTE 2)	13.6.8.3.3.a
SUSPENDED NON DUCTILE PIPING (CAST IRON, PLASTIC, CERAMIC)		NOT REQUIRED	13.1.4.5	RESTRAIN ALL (SEE NOTE 2)	13.6.8.3.3
SUSPENDED PIPE ON TRAPEZE		NOT REQUIRED	13.1.4.5	RESTRAIN IF ANY PIPE ON TRAPEZE > 2" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT (SEE NOTE 2)	13.6.8.3.1
DUCTWORK		NOT REQUIRED	13.6.7	RESTRAIN IF > 6 SQ.FT. AND > 17 LBS/FT (SEE NOTE 2.3)	13.6.7
MULTIPLE DUCTS ON TRAPEZE		NOT REQUIRED	13.6.7	RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT (SEE NOTE 2.3)	13.6.7
SINGLE CONDUIT		NOT REQUIRED	13.6.5.6	RESTRAIN IF ≥ 2.5" (SEE NOTE 2)	13.6.5.6
CABLE TRAY/BUS DUCT/ TRAPEZED CONDUIT		NOT REQUIRED	13.6.5.6	RESTRAIN IF TOTAL WEIGHT OF RACEWAY > 10 LBS/FT (SEE NOTE 2)	13.6.5.6
PENDANT, LAY-IN, & CAN LIGHTS		REQUIRED (SEE NOTE 4)	13.5.6.2	REQUIRED (SEE NOTE 4)	13.5.6.2
COMPONENT CERTIFICATION		NOT REQUIRED	13.2.2	REQUIRED (SEE NOTE 5)	13.2.2

TABLE NOTES:
1. FLEXIBLE CONNECTIONS REQUIRED FOR PIPE CONNECTIONS ONLY.
2. RESTRAINT IS NOT REQUIRED IF THE PIPING / DUCTWORK / CONDUIT IS SUPPORTED BY HANGERS AND EACH HANGER IN THE PIPING RUN IS 12 IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
3. ALL DUCTWORK, REGARDLESS OF SIZE, DESIGNED TO CARRY TOXIC, HIGHLY TOXIC, OR EXPLOSIVE GASES OR USED FOR SMOKE CONTROL MUST BE RESTRAINED.
4. THE RESTRAINT OF PENDANT, LAY-IN, & CAN LIGHTS IS ADDRESSED IN ASTM C636 & E580.
5. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.

SEISMIC DESIGN CATEGORIES D, E, F

COMPONENT IDENTIFICATION		COMPONENT IMPORTANCE FACTOR (Ip)			
		1.0		1.5	
		SEISMIC RESTRAINT REQUIREMENT	ASCE 7-10 REFERENCE	SEISMIC RESTRAINT REQUIREMENT	ASCE 7-10 REFERENCE
ROOF MOUNTED		RESTRAIN ALL (SEE NOTE 1)	13.1.4.6	RESTRAIN ALL	13.1.4.6
FLOOR MOUNTED		RESTRAIN ALL (SEE NOTES 1,2)	13.1.4.6	RESTRAIN ALL	13.1.4.6
WALL MOUNTED		RESTRAIN ALL (SEE NOTE 1,2)	13.1.4.6	RESTRAIN ALL	13.1.4.6
COMPONENT SUPPORTS		RESTRAIN ALL (SEE NOTE 1)	13.6.5	RESTRAIN ALL	13.6.5
SUSPENDED EQUIPMENT	INLINE W/ DUCT/PIPE	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN. (SEE NOTE 3)	13.6.7	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN. (SEE NOTE 3)	13.6.7
	NOT INLINE W/ DUCT/PIPE	RESTRAIN ALL (SEE NOTE 1)	13.1.4.6	RESTRAIN ALL	13.1.4.6
SUSPENDED DUCTILE PIPING (STEEL, ALUMINUM, COPPER, ETC.)		RESTRAIN IF > 3" (SEE NOTE 4)	13.6.8.3.3.c	RESTRAINT IF > 1" (SEE NOTE 4)	13.6.8.3.3.b
SUSPENDED NON DUCTILE PIPING (CAST IRON, PLASTIC, CERAMIC)		RESTRAIN ALL (SEE NOTE 4)	13.6.8.3.3	RESTRAIN ALL (SEE NOTE 4)	13.6.8.3.3
SUSPENDED PIPE ON TRAPEZE		RESTRAIN IF ANY PIPE ON TRAPEZE > 3" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT (SEE NOTE 4)	13.6.8.3.1	RESTRAIN IF ANY PIPE ON TRAPEZE > 1" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT (SEE NOTE 4)	13.6.8.3.1
DUCTWORK		RESTRAIN IF > 6 SQ.FT. AND > 17 LBS/FT (SEE NOTE 4.5)	13.6.7	RESTRAIN IF > 6 SQ.FT. AND > 17 LBS/FT (SEE NOTE 4.5)	13.6.7
MULTIPLE DUCTS ON TRAPEZE		RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT (SEE NOTE 4.5)	13.6.7	RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT (SEE NOTE 4.5)	13.6.7
SINGLE CONDUIT		RESTRAIN IF ≥ 2.5" (SEE NOTE 4)	13.6.5.6	RESTRAIN IF ≥ 2.5" (SEE NOTE 4)	13.6.5.6
CABLE TRAY/BUS DUCT/ TRAPEZED CONDUIT		RESTRAIN IF TOTAL WEIGHT OF RACEWAY > 10 LBS/FT (SEE NOTE 4)	13.6.5.6	RESTRAIN IF TOTAL WEIGHT OF RACEWAY > 10 LBS/FT (SEE NOTE 4)	13.6.5.6
PENDANT, LAY-IN, & CAN LIGHTS		REQUIRED (SEE NOTE 6)	13.5.6.2	REQUIRED (SEE NOTE 6)	13.5.6.2
COMPONENT CERTIFICATION		NOT REQUIRED	13.2.2	REQUIRED (SEE NOTE 7)	13.2.2

TABLE NOTES:
1. EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF THE COMPONENT IS POSITIVELY ATTACHED TO THE STRUCTURE, AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
2. RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHTS 400 LBS. OR LESS, IS MOUNTED WITH THE CENTER OF MASS AT 4 FT. OR LESS ABOVE A FLOOR, IS POSITIVELY ATTACHED TO THE STRUCTURE, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
3. FLEXIBLE CONNECTIONS REQUIRED FOR PIPE CONNECTIONS ONLY.
4. RESTRAINT IS NOT REQUIRED IF THE PIPING / DUCTWORK / CONDUIT IS SUPPORTED BY HANGERS AND EACH HANGER IN THE PIPING RUN IS 12 IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
5. ALL DUCTWORK, REGARDLESS OF SIZE, DESIGNED TO CARRY TOXIC, HIGHLY TOXIC, OR EXPLOSIVE GASES OR USED FOR SMOKE CONTROL MUST BE RESTRAINED.
6. THE RESTRAINT OF PENDANT, LAY-IN, & CAN LIGHTS IS ADDRESSED IN ASTM C636 & E580.
7. COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.

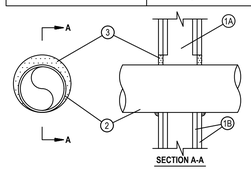
2 Seismic Design Requirements
Scale: None

CLASSIFIED C UL US
Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

System No. W-L-1054

WL 1054

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 and 2 Hr (See Items 1 and 3)	F Ratings — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating (Without Movement) at Ambient — Less Than 1 CFM/sq ft	FH Ratings —1 and 2 Hr (See Items 1 and 3)
L Rating (Without Movement) at 400°F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
M Rating (Movement) — See Table 1	FTH Rating — 0 Hr
	L Rating at Ambient — Less Than 5.1 L/s/m2
	L Rating at 204°C — Less Than 5.1 L/s/m2



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. For M Rating, steel studs to be min 3-5/8 in. (92 mm) wide. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls. The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly. The M Rating is applicable only to 1 hr rated walls.
2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
   C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
   E.Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Y	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

HILTI Hilti Firestop Systems

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1 Gypsum Framed Walls
1 or 2 Hour Penetration Firestop
Metallic Pipe, Conduit, or Tubing
Scale: None

ANGIER & BLACK RIVER FIRE STATION #2
783 MANGUM ROAD
ANGIER, NC 27501

30 X 42
REFER TO DRAWING FOR SCALE

10 JULY 2026

25-0006

MEP DETAILS

MEP1-01

These drawings will be at the scale indicated when plotted at 30" x 42"