2018 APPENDIX B BUILDING CODE SUMMARY

Name of Project: Rock of Salvation Church PIN: 9546-42-1124
Address: 36 Line Rd Cameron NC Zip Code 28326
Proposed Use: Church (Assembly A-3)
Owner or Authorized Agent: James W. Brown Phone (910) 391-8083 E-Mail bishopjwbrown@gmail.com
Owned By: ☐ City/County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☐ City ☑ County Harnett ☐ State

PROJECT SUMMARY:
Building Description: New Construction - Religous Assembly
Scope of Work: New Construction
Code Compliance Summary: NCDOI APPENDIX "B"
Alternative Means of Compliance Request: NONE

LEAD DESIGN PROFESSIONAL:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	N/A	N/A	N/A		
Civil					
Electrical					
Fire Alarm					
Plumbing					
Mechanical					
Sprinkler-Standpipe	N/A	N/A	N/A		
Structural :					
INTERIOR WALLS					
Retaining Walls >5' High					
Building		TIMOTHY PEPPERS JR	N/A	(910) 644-4587	tpeppers@pepdc.com

BUILDING CODE:
☑ 2018 North Carolina State Building Code (NCSBC)
☐ 2012 North Carolina State Building Code (NCSBC)
☐ 2009 North Carolina State Building Code (NCSBC)
☐ 2009 NC Rehab
☐ 2009 Chapter 34 (Attach Summary)
☐ 2015 North Carolina State Existing Building Code

☐ New Building: ☑ New Building ☐ Addition ☐ Shell Building ☐ Alteration to Shell ☐ First Time Interior Completion
☐ Existing Building: ☐ Renovation ☐ Reconstruction ☐ Change of Use Tenant Space ☐ Interior Completion ☐ Repair ☐ Tenant Alteration ☐ Alteration to Shell ☐ Change of Occupancy
Constructed: (date) N/A

Note: Zoning Review is Required for Change of Use or Occupancy
Original Use/Occupancy (Ch. 3): N/A
Current Use/Occupancy (Ch. 3): N/A
Proposed Use/Occupancy (Ch. 3): Religious Assembly A-3

BASIC BUILDING DATA: (THIS SECTION REQUIRED FOR ALL PROJECTS)
Construction Type: ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☑ V-B
(check all that apply)
Mixed Construction ☑ No ☐ Yes Types:
Sprinklers: ☑ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☑ No ☐ Yes Class: ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☐ No ☑ Yes (APPENDIX D) Flood Hazard Area: ☑ No ☐ Yes
Building Height: (feet) 16
Gross Building Area (Sq. Ft.): 3500 sqft Renovated area (Sq. Ft.) N/A

FLOOR	EXISTING (SQ FT)	NEW (UPFIT) (SQ FT)	RENOVATED (SQ FT)	SUB-TOTAL
1st Floor	NONE	3500	NONE	NONE
Basement	NONE	NONE	NONE	NONE
TOTAL	NONE	3500	NONE	NONE

AREA of Project Tenant / Alteration / Renovation: 0
AREA of New Construction: 3500

OCCUPANCY INFORMATION: Retail Tennant Space
Occupancy:
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 Deflagerate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled ☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancies: NONE
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 Deflagerate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled ☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Incidental Uses (Table 508.2.5): NONE
☐ 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 machine room
☐ Hydrogen cutoff rooms, not classified as Group H
☐ Incinerator rooms
☐ Paint shops, not classified as Group H, located in occupancies other than Group F
☐ Laboratories and vocational shops, not classified as Group H, located in a Group E or I-2 occupancy
☐ Laundry rooms over 100 square feet
☐ Group I-3 cells equipped with padded surfaces
☐ Group I-2 waste and linen collection rooms
☐ Waste and linen collection rooms over 100 square feet
☐ Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons, or a lithium-ion capacity of 1,000 pounds used for facility standby power, emergency power or uninterrupted power supplies
☐ Rooms containing fire pumps
☐ Group I-2 storage rooms over 100 square feet
☐ Group I-2 commercial kitchens
☐ Group I-2 laundries equal to or less than 100 square feet
☐ Group I-2 rooms or spaces that contain fuel-fired heating equipment

Special Uses: NONE ☐ 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

Special Provisions: ☐ 509.2 ☐ 509.3 ☐ 509.4 ☐ 509.5 ☐ 509.6 ☐ 509.7 ☐ 509.8 ☐ 509.9

Mixed Occupancy: ☑ No ☐ Yes Separation: ____ Hr. Exception: ____
☐ Incidental Use Separation (508.2.5)
This separation is not exempt as a Non-Separated Use (see exceptions).
☐ Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
☐ Separated Use (508.4) - See below for building area limitations calculated as required by paragraph 508.4.2.
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.

Separated Use Formula 508.4.2: Actual Area of Occupancy A / Allowable Area of Occupancy A + Actual Area of Occupancy B / Allowable Area of Occupancy B ≤ 1
____ + ____ + ____ = ≤ 1.25

ALLOWABLE AREA & ALLOWABLE HEIGHT INCREASES (CALCULATIONS): (THIS SECTION FOR NEW, ADDITION, CHANGE OF USE AND INTERIOR COMPLETIONS)

FRONTAGE INCREASE CALCULATIONS:

EXTERIOR WALL	ACTUAL LENGTH (FEET)		OPEN LENGTH (FEET)		WIDTH OF PUBLIC WAY OR OPEN SPACE (FEET)	
North						
South						
East						
West						
Total		P		F		W

FRONTAGE INCREASE FORMULA
$I_f = 100(F/P-25)(W/30)$ NO AREA INCREASE REQUESTED. F/P = XX PERCENT.
INCREASE FRONTAGE N/A%
SPRINKLERS N/A %

BOTH BUILDING AND TENANT MUST BE INDICATED ON CHART BELOW (THIS SECTION FOR NEW, ADDITION, CHANGE OF USE AND INTERIOR COMPLETIONS)

ALLOWABLE AREA CALCULATIONS:

STORY NO.	OCCUPANCY	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA (TYPE V-B) 5	(C) % OPEN SPACE INCREASE 1	(D) % SPRINKLER INCREASE 2	(E) ALLOWABLE FLOOR AREA OR UNLIMITED 3	RATIO OF ACTUAL/ ALLOWABLE A/E	(F) MAXIMUM BUILDING AREA 4	SEPARATION RATING REQUIRED
1	A-3	3500	6,000	NONE	NONE	6,000	0.58	6000	N/R

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 The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building I = 2 (200 percent) b. Single story building I = 3 (300 percent)
3 Unlimited area applicable under conditions of Sections Group B, F, M, S, A-4 (507.1,507.2,507.3,507.4,507.7); Group A motion picture (507.10); Malls (507.11); and H-2 aircraft paint hangers (507.8).
4 Maximum Building Area = total number of stories in the building x E (506.4).
5 The maximum area of parking garages must comply with 406.3.5. The maximum area of air traffic control towers comply with 412.1.2.

ALLOWABLE HEIGHT CALCULATIONS:

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type V-B		Type V-B	TABLE 601
Building Height in Feet	Feet 40	Feet = H + 20' = n/a	Feet 16	TABLE 504.3
Building Height in Stories	Stories 1	Stories + 1 = n/a	Stories = 1	TABLE 504.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING ** (TABLE 601) REQ'D V-B	PROVIDED (w/ ___ * REDUCTION	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses	N/R	0	N/A				
Bearing walls Exterior		0					
North		0					
East		0					
West		0					
South		0					
Interior Bearing Walls (COLUMNS)		0					
Nonbearing walls Exterior		0					
North		0					
East		0					
West		0					
South		0					
Interior Non-Bearing Walls		0					
Floor construction including supporting beams and joists		1					
Roof construction including supporting beams and joists		1					
Shafts Enclosures - Exit Enclosures		0					
Shafts Enclosures - Other (describe)		0					
Corridor Separation		0					
Occupancy Separation		0					
Party/Fire Wall Separation		0					
Smoke Barrier Separation		0					
Tenant Separation		0					
Incidental Use Separation		0					

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENINGS CALCULATIONS (THIS SECTION REQUIRED FOR ADDITIONS, NEW AND CHANGE OF USE PROJECTS)
Allowable openings per Table 705.8 ALLOWABLE OPENINGS MEET REQUIREMENTS OF 705.8.

WALL LEGENDS (THIS SECTION REQUIRED FOR ALL PROJECTS)
CHECK IF THE FOLLOWING ARE PRESENT AND INDICATE BY A ON AWALL LEGEND
☐ Fire Partitions 709 ☐ Fire Walls 706 ☐ Fire Barriers 707 ☐ Smoke Partitions 711 ☐ Smoke Barriers 710 ☐ Shaft Enclosure 708

LIFE SAFETY SYSTEM REQUIREMENTS (THIS SECTION REQUIRED FOR ALL PROJECTS)

Emergency Lighting:	☐ No	Yes	☑
Exit Signs:	☐ No	Yes	☑
Fire Alarm:	☑ No	Yes	☐
Smoke Detection Systems:	☐ No	Yes	☑ Partial _____ (DUCT DETECTORS)
Panic Hardware:	☐ No	Yes	☑
Life safety systems generator:	☑ No	Yes	☐

EXIT REQUIREMENTS NUMBER & ARRANGEMENT OF EXITS (THIS SECTION REQUIRED FOR ALL PROJECTS)

FLOOR, ROOM AND/OR SPACE DESIGNATION	MINIMUM * NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS (SECTION 1015.2)	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1017.2)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN DOORS	ACTUAL DISTANCE SHOWN ON PLANS
A-3	2	6	200 FT	65'-6"	42'-5"	50'-6"

* Corridor dead ends (Section 1018.4)
Single exits (Section 1015.1; Section 1021.2)
Common Path of Egress Travel (Section 1014.3)

OCCUPANT LOAD AND EXIT WIDTH (THIS SECTION REQUIRED FOR ALL PROJECTS)

USE GROUP AND/OR SPACE DESIGNATION	(a) AREA SQ. FT.	(b) AREA PER OCCUPANT	(a/b) NUMBER OF OCCUPANTS	(c) EGRESS WIDTH PER OCCUPANT (SECTION 1005.1)		EXIT WIDTH (in) REQUIRED WIDTH (SECTION 1005.1) (a/b)(c)		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
Sanctuary	1498		104		0.20		20.8		128
Fellowship/Offices	1292		72		0.20		14.4		128
TOTAL # OF OCCUPANTS			176				35.2		256

* See Table 1004.1.1 to determine whether net or gross area is applicable
Minimum stairway width (Section 1009.1); min. corridor width (Section 1018.2); min. door width (Section 1008.1.1)
Minimum width of exit passageway (Section 1023.2)
The loss of 1 means of egress shall not reduce the availability capacity to less than 50% of the total req'd (Sect 1005.1)
Assembly occupancies (Section 1028)

ASSEMBLY OCCUPANCY INFORMATION (THIS SECTION REQUIRED FOR ASSEMBLY USE AREAS)

(a) SPACE DESCRIPTION	(b) AREA (SQ. FT.)	(c) * OCCUPANT LOAD FACTOR	(d) OCCUPANT LOAD (b/c)	(e) EXIT WIDTH	(e) EXIT QUANTITY
Sanctuary	1498	Fixed Seating	104 Occupants	128	3
Fellowship/Kitchen	404	7 Net/200 Gross	44 Occupants	96	2
Pastor's Office	287	100 Gross	3 Occupants	64	2
Classroom 1	84	7 Net	12 Occupants	32	1
Classroom 2	88	7 Net	12 Occupants	32	1
Secretary	62	100 Gross	1 Occupant	32	1
TOTAL # OF ASSEMBLY OCCUPANTS			176 Occupants		6

LIFE SAFETY PLAN REQUIREMENTS (THIS SECTION REQUIRED FOR ALL PROJECTS)
Life Safety Plan Sheet #: Assembly A-3
☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Existing structures within 30' of the proposed building
☐ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.1)
☑ Occupant loads for each area
☑ Exit access travel distances (1016)
☑ Common path of travel distances (1014.3 & 1028.8)
☐ Dead end lengths (1018.4)
☑ Clear exit widths for each exit door
☑ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.1)
☑ 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 (1008.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1008.1.9.7)
☐ Location of doors with electromagnetic egress locks (1008.1.9.8)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1029)
☐ The square footage of each fire area (902)
☐ The square footage of each smoke compartment (407.4)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107) (THIS SECTION REQUIRED FOR ALL RESIDENTIAL PROJECTS)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
-	NONE REQUIRED						

PLUMBING FIXTURE REQUIREMENTS (THIS SECTION REQUIRED FOR ALL PROJECTS)

OCCUPANCY	WATER CLOSETS			URINALS	LAVATORIES			SHOWERS/	DRINKING FOUNTAINS	
	MALE	UNISEX	FEMALE		MALE	UNISEX	FEMALE	TUBS	REGULAR	ACCESSIBLE
Religious Assembly A-3	3	1	3	———	3	1	3	———	———	———
	———	———	———	———	———	———	———	———	———	———
	———	———	———	———	———	———	———	———	———	———
TOTAL REQUIRED	2	0	2	———	2	0	2	———	———	———
	———	———	———	———	———	———	———	———	———	———
TOTAL PROVIDED THIS PROJECT	3	1	3	———	3	1	3	———	———	———

BUILDING DRAIN SIZE	NUMBER OF BUILDING DRAINS	TOTAL FIXTURE UNIT LOAD	WATER SERVICE SIZE (INCHES)	NUMBER OF WATER SERVICES	TOTAL FIXTURE UNIT LOAD	NOTES
4"	1	24	2	1	28	

STRUCTURAL DESIGN LOADS (THIS SECTION REQUIRED FOR NEW CONSTRUCTION PROJECTS)
EXISTING OCCUPIED BUILDING NO STRUCTURAL RENOVATIONS
Structure conforms to Conventional Light Frame Provisions of 2308

1	Yes, continue No, Go to Line 9	
2	Roof Live Load =	PSF
3	Floor Live Load =	PSF
4	Ground Snow Load (Pg) =	PSF
5	Basic Wind Speed, 3 sec gust =	MPH
6	Seismic Site Class =	
7	Seismic Design Category =	
8	Go to Line 44	
9	Live Loads	Area
10	Floor Live Load (indicate area) =	
11	Floor Live Load (indicate area) =	
12	Floor Live Load (indicate area) =	
13	Live Load Reduction used in Design	☐ Yes No
14	Roof Live Load =	
15	Roof Snow Load Data	
16	Flat-Roof Snow Load (Pf) =	
17	Snow Exposure Factor (Ce) =	
18	Snow Importance Factor (Is) =	
19	Thermal Factor (Ct) =	
20	Wind Design Data	
21	Basic Wind Speed, 3 sec gust =	
22	Wind Importance Factor (Iw) =	
23	Wind Exposure	
24	Internal Pressure Coefficient	
25	Components and Cladding Loads =	
26	Wind Base Shear, Wx	
27	Wind Base Shear, Wyx	
28	Earthquake Design Data	
29	Seismic Importance Factor (Ie) =	
30	Occupancy Category	
31	Mapped Spectral Response Acceleration Ss	
32	Mapped Spectral Response Acceleration S1	
33	Site Class	(Provide soils report is Site Class is not "D")
34	Spectral Response Coefficient, Sds =	
35	Spectral Response Coefficient, Sd1 =	
36	Seismic Design Category =	
37	Building (Structural) System	
38	Basic Seismic Force Resisting System	
39	Seismic Response Coefficient (Cs) =	
40	Response Modification Factor, R =	
41	Analysis Procedure Used =	
42	Seismic Base Shear, Sx	KIPS
43	Seismic Base Shear, Sy	KIPS
44	Soils Data	
45	Presumptive Soil Bearing Pressure =	PSF
46	Bearing Pressure per Soils Report =	PSF
47	Deep Foundation Type	
48	Deep Foundation Allowable Loads	TONS, downward
49	Uplift	KIPS
50	Lateral	KIPS

ACCESSIBLE PARKING (SECTION 1106) (THIS SECTION FOR NEW, ADDITION, CHANGE OF USE AND INTERIOR COMPLETIONS)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 96" ACCESS AISLE	
EXISTING	21	34	1			1
NEW						
TOTAL	21	34	1			1

ENERGY REQUIREMENTS: ENERGY SUMMARY (THIS SECTION FOR NEW, ADDITION, CHANGE OF USE AND INTERIOR COMPLETIONS)
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 gann data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.
Climate Zone: ☑ 3 ☐ 4 ☐ 5 CUMBERLAND COUNTY
Method of Compliance:
☑ Prescriptive (Energy Code)
☐ (Energy Code)
☐ Prescriptive (ASHRAE 90.1)ance
☐ Performance (ASHRAE 90.1)

THERMAL ENVELOPE (SEE DRAWING SHEET _____) OR COMCHECK PRINTOUT.
MECHANICAL SUMMARY (SEE DRAWING SHEET _____) (THIS SECTION REQUIRED FOR ALL PROJECTS THAT INCLUDE MECHANICAL DESIGN.)
ELECTRICAL SUMMARY (SEE DRAWING SHEET _____) (THIS SECTION REQUIRED FOR ALL PROJECTS THAT INCLUDE ELECTRICAL DESIGN.)

PDC LLC
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(910) 484-7272•www.pepdc.com•tpeppers@pepdc.com

Consultant/Lead Designer:

NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT II

Gregory M Dillett Digitally signed by Gregory M Dillett Date: 2024.11.05 09:44:26 -06'00'

Rock of Salvation Church
36 Line Rd
Cameron, NC

Appendix B

Revisions:

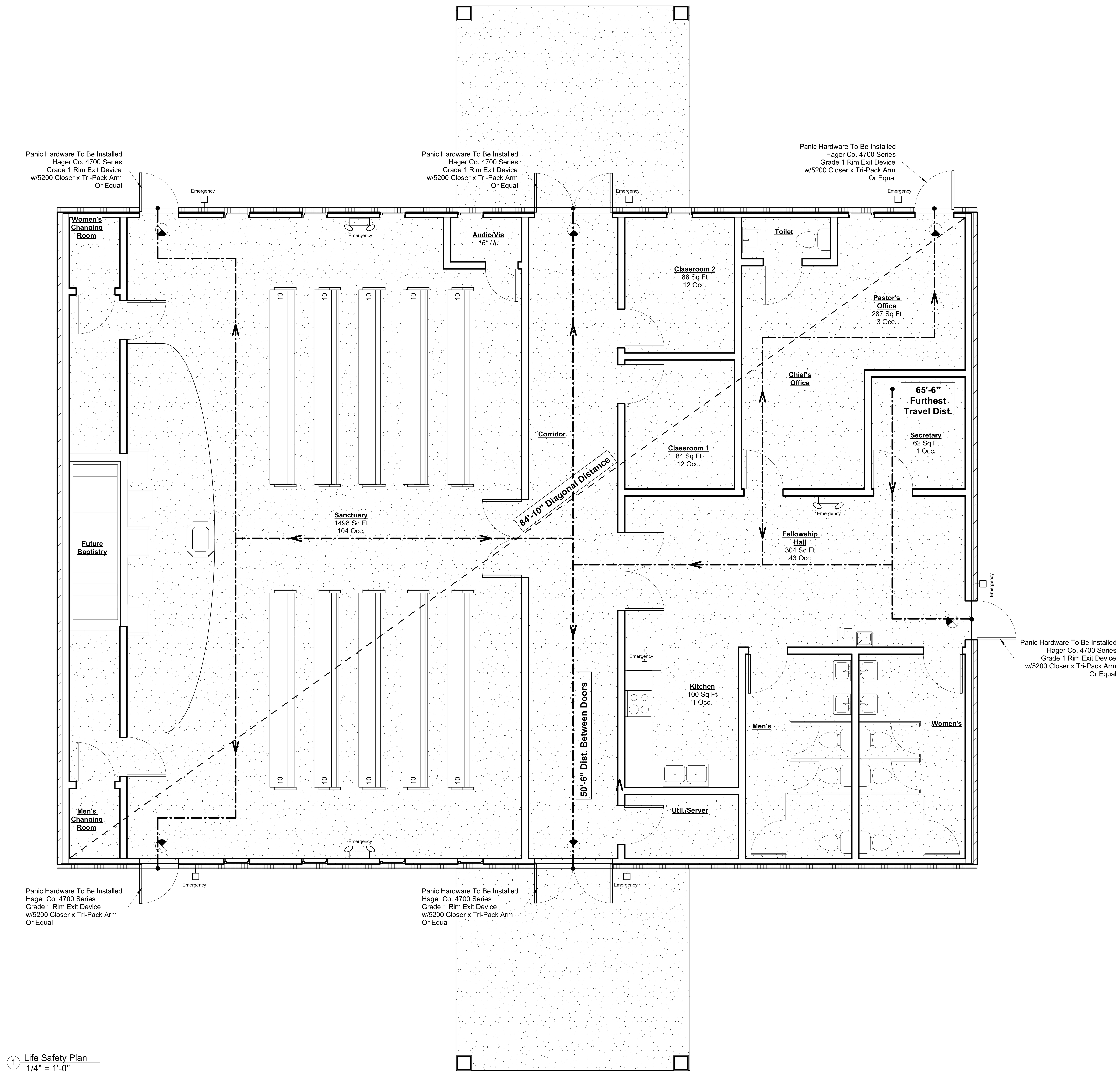
SCALE:

DATE: October 28, 2024

Project number 10282400002

Drawn by TP
Checked by TP

A-1.0



1 Life Safety Plan
1/4" = 1'-0"

Tim Peppers Design Consulting LLC

PROPERTY OF TPDCLLC

DRAWINGS AND SPECIFICATIONS AS INSTRUMENTS OF SERVICE ARE AND SHALL REMAIN PROPERTY OF THE DESIGNER WHETHER THE PROJECT FOR WHICH THEY ARE MADE FOR IS EXECUTED OR NOT. THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY THE OWNER ON OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT OR FOR COMPLETION OF THIS PROJECT BY OTHERS EXCEPT BY AGREEMENT IN WRITING WITH THE APPROPRIATE COMPENSATION TO THE DESIGNER.

IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/ OR BUILDER TO CONFORM TO ALL STANDARDS, PROVISIONS, REQUIREMENTS, METHODS OF CONSTRUCTION AND USES OF MATERIALS, IN BUILDING CODES ANY OTHER LOCAL AGENCIES AND IN ACCORDANCE WITH GOOD ENGINEERING AND CONSTRUCTION PRACTICES.

I CERTIFY THAT THE CONSTRUCTION EXHIBITS FOR IDENTIFICATION OF THE PROPERTY BY HOUSE TYPE, LOT, LOCK, SUBDIVISION NAME, AND SO ON) MEET ALL LOCAL CODE REQUIREMENTS AND ARE IN SUBSTANTIAL CONFORMITY WITH BOTH SAH AND VA MINIMUM PROPERTY REQUIREMENTS, ALL BUILDING STANDARDS AS SET FORTH BY THE INTERNATIONAL CODE COUNCIL (ICC) AND FEDERAL SAFE DRINKING WATER PLUMBING STANDARD.

Consultant/Lead Designer:

NORTH CAROLINA PROFESSIONAL SEAL 054271 ENGINEER GREGORY DILLETT II
11/5/24

Rock of Salvation Church
36 Line Rd
Cameron, NC

Life Safety

Revisions:

SCALE: 1/4" = 1'-0"

DATE: October 28, 2024

Project number 10282400002

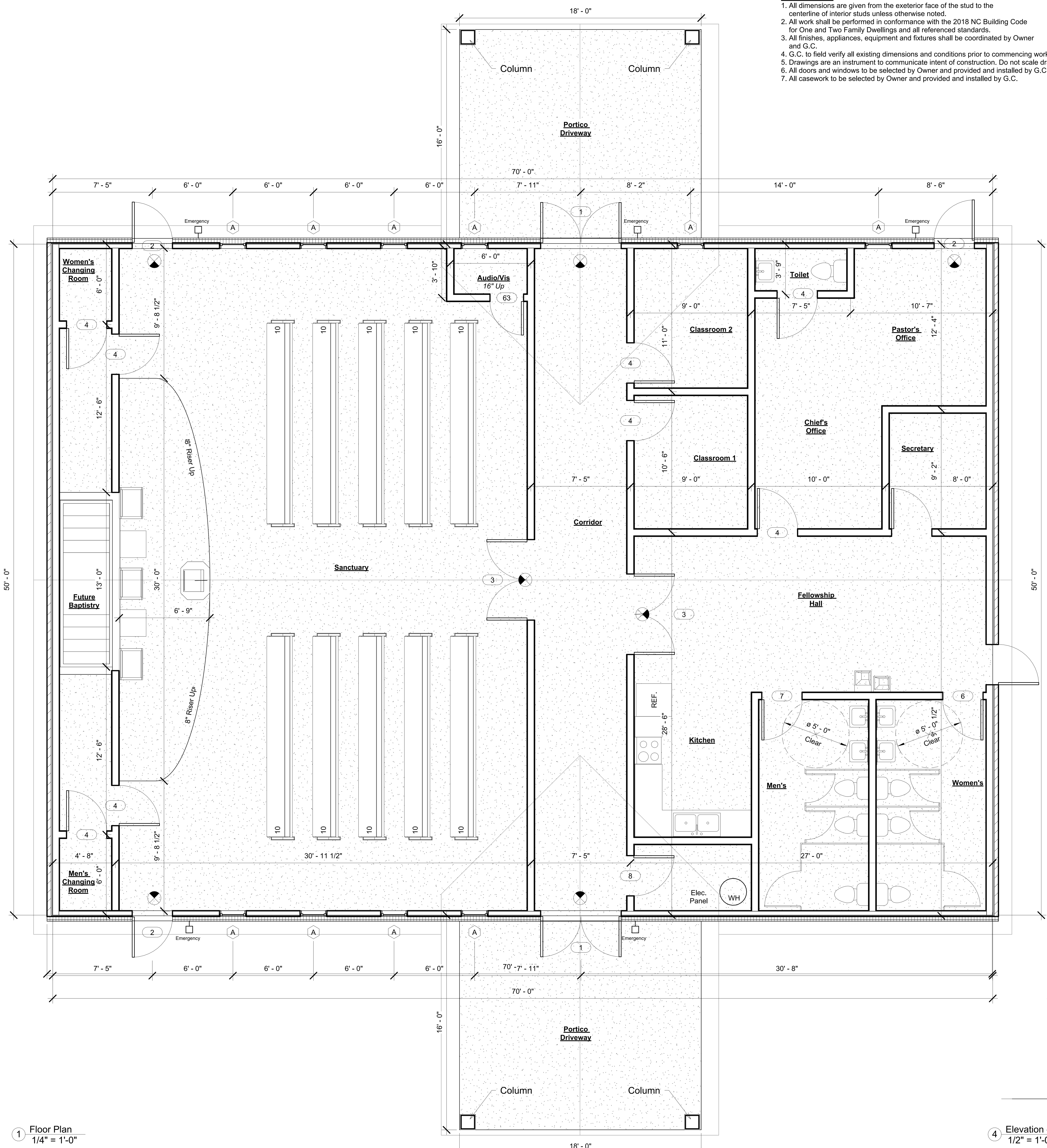
Drawn by TP

Checked by TP

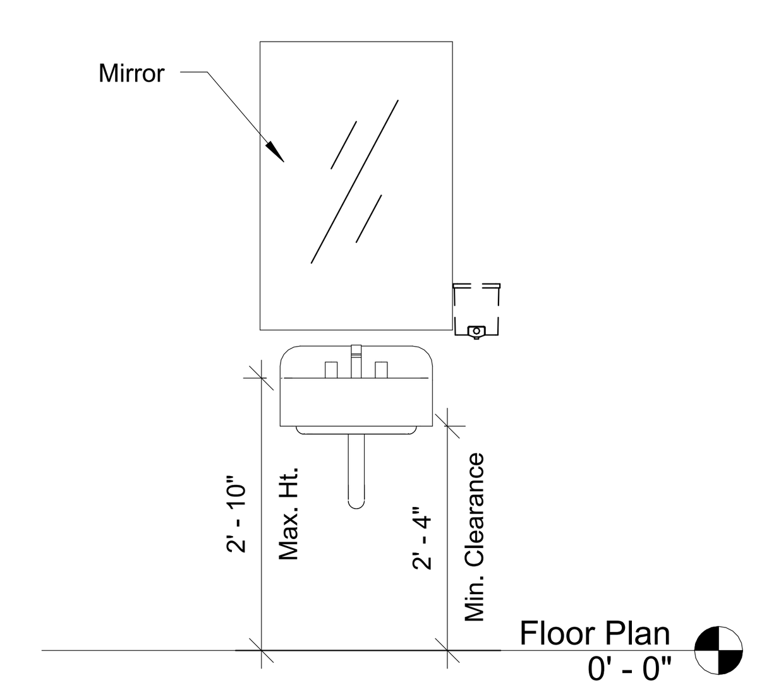
A-1.1

General Notes:

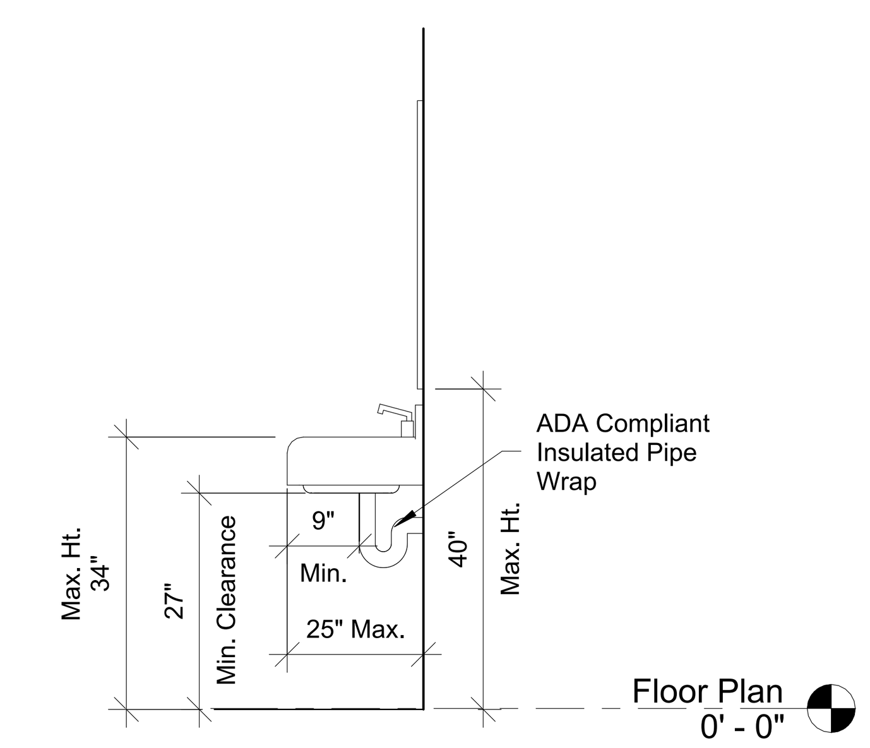
1. All dimensions are given from the exeterior face of the stud to the centerline of interior studs unless otherwise noted.
2. All work shall be performed in conformance with the 2018 NC Building Code for One and Two Family Dwellings and all referenced standards.
3. All finishes, appliances, equipment and fixtures shall be coordinated by Owner and G.C.
4. G.C. to field verify all existing dimensions and conditions prior to commencing work.
5. Drawings are an instrument to communicate intent of construction. Do not scale drawings.
6. All doors and windows to be selected by Owner and provided and installed by G.C.
7. All casework to be selected by Owner and provided and installed by G.C.



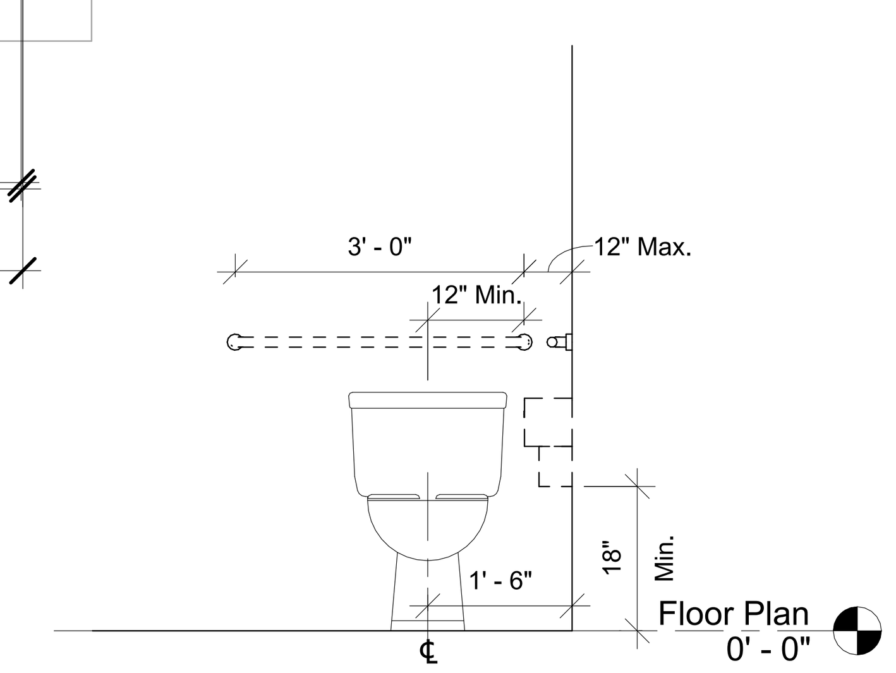
1 Floor Plan
1/4" = 1'-0"



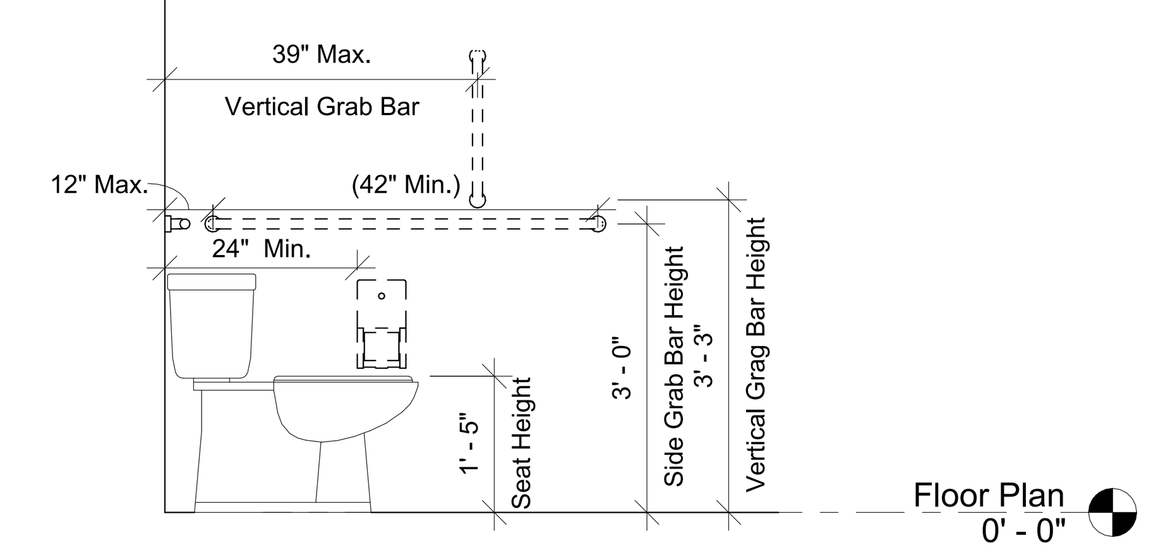
2 Elevation - ADA Lavatory Front
1/2" = 1'-0"



3 Elevation - ADA Lavatory Side
1/2" = 1'-0"



4 Elevation - ADA Toilet Front
1/2" = 1'-0"



5 Elevation - ADA Toilet Side
1/2" = 1'-0"

GENERAL CONSTRUCTION NOTES:

1. Design Loads: Local
2. Materials
   - A. Brick — Face Brick Standard: ASTM C216-84, Grade SW. Brick type and color to match existing.
   - B. Mortar — ASTM C270, Type S. Mortar style and color consult owner. Do not use calcium chloride in mortar.
   - C. Brick Ties — ASTM A82 steel wire, hot dip galvanized after fabrication to ASTM A 153/A 153M, Class B
   - D. Insulation — ASTM C665; pre-formed glass fiber batt (R-19)
   - E. Wood Framing — No wood framing shall be used for partition wall framing
   - F. Waterproofing — #15 asphalt felt
   - G. Roof Shingles — Match existing
3. Masonry:
   - A. Install mortar in accordance with premix mortar instructions or in accordance with ASTM C780.
   - B. Clean mortar off exposed finished surfaces immediately following placement.
   - C. Conform to the applicable code requirements for masonry construction and guidelines outlined by the Brick Institute of America.
   - D. Provide brick ties.
   - E. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges.
   - F. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with adhesive/sealant/tape as recommended by flashing manufacturer before covering with mortar.
   - G. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashings as follows:
     - Keep head joints free and clear of mortar.
     - Space weep holes 24 inches o/c.
   - H. Weep Holes:
   - I. After wall construction is complete, clean brick with a non-acidic solution recommended by masonry unit manufacturer.
4. Insulation
   - A. Verify that adjacent materials and insulation materials are dry.
   - B. Install insulation per manufacturer's instructions.
   - C. Tape seal tears or cuts in vapor retarder.
5. Wall Framing
   - A. All wall studs shall be metal studs according to sizes designated on drawing.
6. Miscellaneous
   - A. The contractor will be responsible for properly guying and bracing the structure to resist live, dead, wind and construction loads during construction.
   - B. Verify all existing building dimensions, elevations and details with the field conditions.

Floor Plan Notes:

1. All structural information shown for reference purposes only. Contractor shall have licensed structural engineer review and design all structural elements such as all framing walls, beams, connections, headers, joists and rafters.
2. All dimensions are from center line of stud to face of exterior stud unless noted otherwise.
3. Window sizes indicated on plans are noted by approximate rough opening size. Refer to plans and exterior elevations for window types.
4. Coordinate location of utility meters with site plan and locate away from public view visual impact shall be minimized, i.e. mount as low as possible.
5. Do not scale drawings. Follow dimensions only.
6. Contractor shall field verify all cabinet dimensions before fabrication.
7. All glass located within 18" of floor, 12" of a door of located within 60" of floor at bathtubs, whirlpools, showers, saunas, steam rooms or hot tubs shall be tempered.
8. All exposed insulation shall have a floam e spead rating of less than 25 and a smoke density rating of less than 450.
9. Provide combustion air vents, with screen and back damper, for fireplaces, wood stoves and any appliance with an open flame.
10. Bathrooms and utility rooms shall be vented to the outside with a minimum of a 90 cfm fan. Range hoods shall also be vented to outside.
11. Attic HVAC units shall be located within 20'-0" of its service opening. Return air grilles shall not be located within 10'-0" of a gas fired appliance.
12. All walls and ceilings in storage areas to have 5/8" Type-X gyp. brd. with 1-Hour fire rating.
13. All interior walls shall be covered with 1/2" gyp. brd., with metal corner reinforcing, tape float and sand. (3 coats) use 5/8" gyp. brd. on ceilings when supporting members are 24" O.C. or greater. Use 1/2" gyp. brd. on ceiling members less than 24" O.C.
14. All bath and toilet area walls and ceiling shall have water resistant gyp. brd. or FRP

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Consultant/Lead Designer:

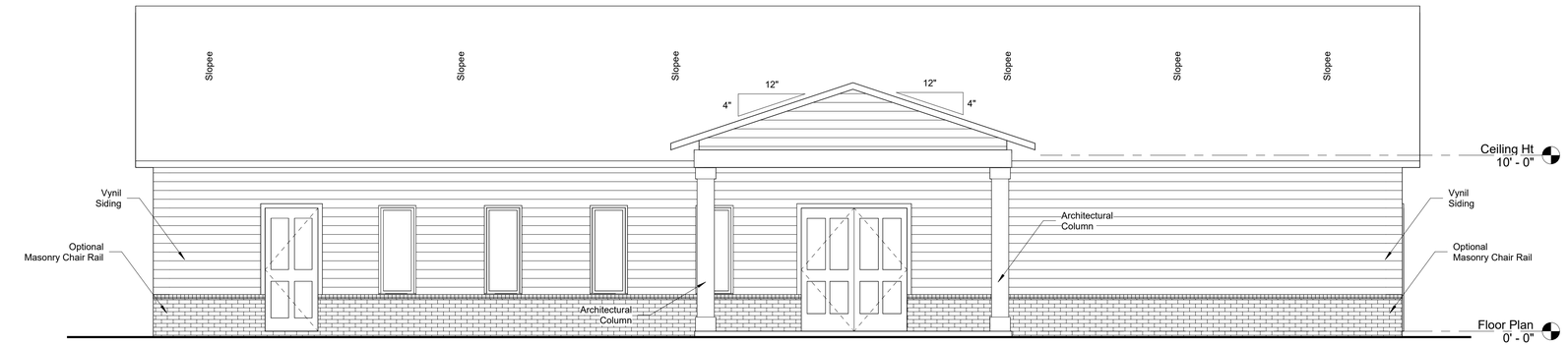
Rock of Salvation Church
36 Line Rd
Cameron, NC

Floor Plan

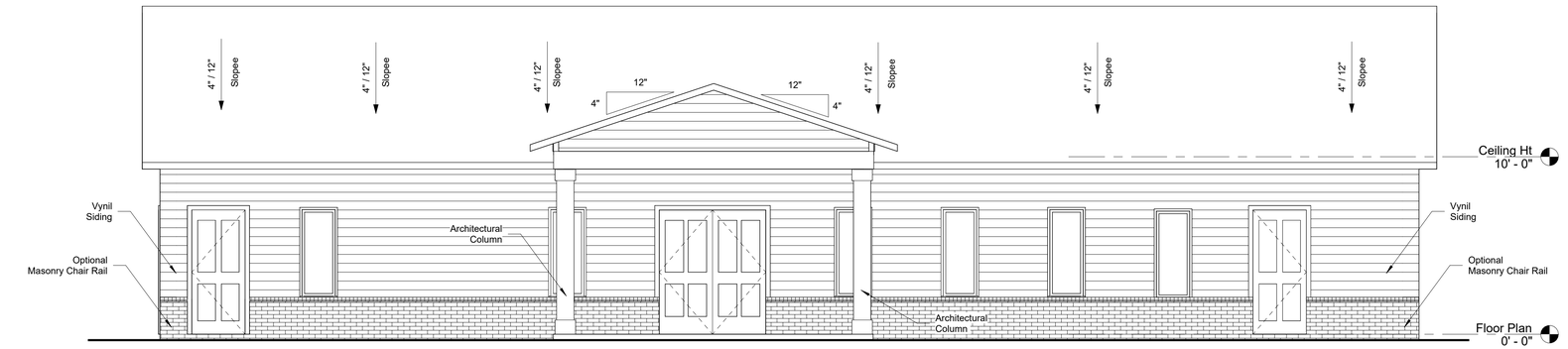
Revisions:

SCALE:	As indicated
DATE:	October 28, 2024
Project number	10282400002
Drawn by	TP
Checked by	TP

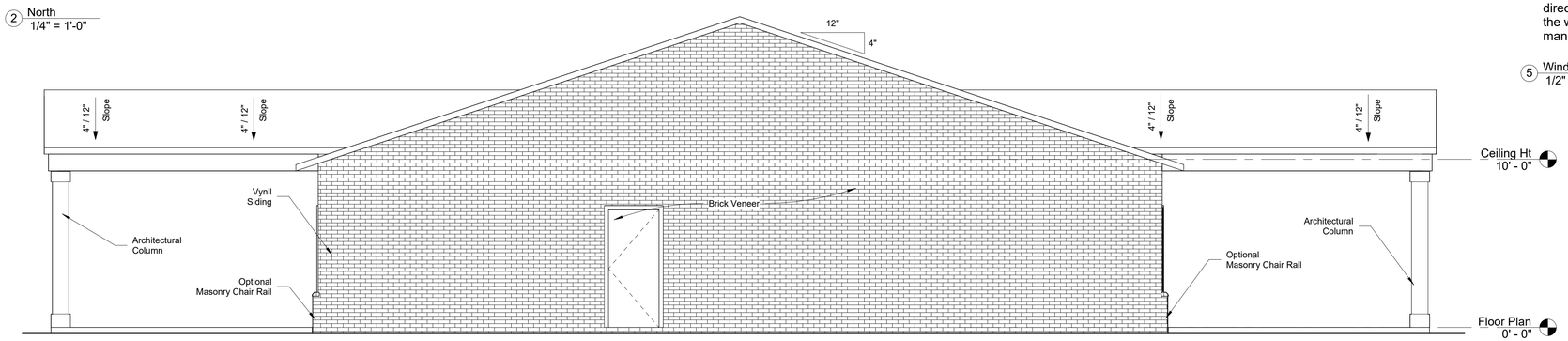
A-1.2



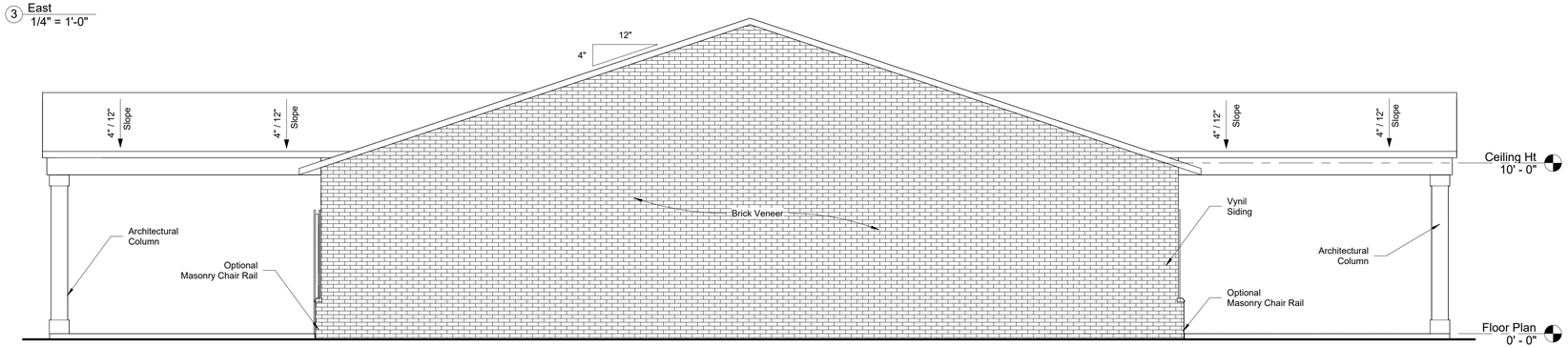
1 South
1/4" = 1'-0"



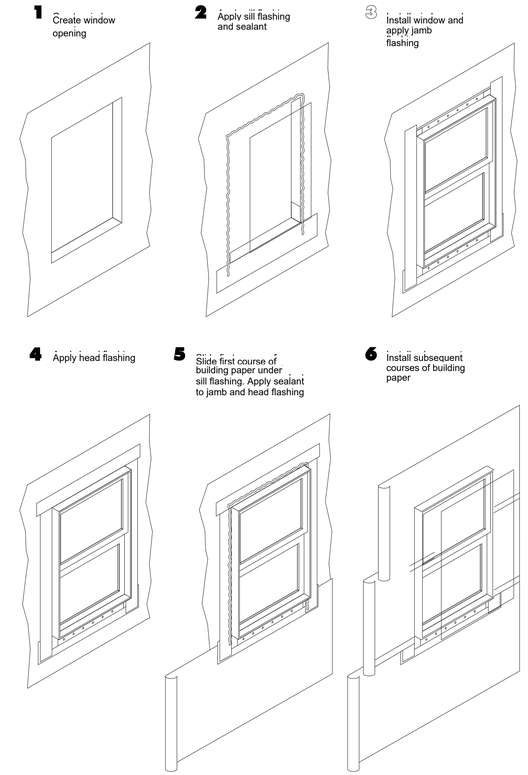
2 North
1/4" = 1'-0"



3 East
1/4" = 1'-0"

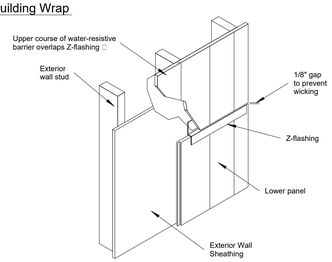


4 West
1/4" = 1'-0"



Note: In the case of single-wall construction consisting of siding applied direct to studs or over nonstructural sheathing, it may be necessary to attach the windows to the outside of the building. In such instances, refer to the manufacturer's recommended installation procedures.

5 Window Flashing w/Building Wrap
1/2" = 1'-0"



6 Z Flashing Detail
12" = 1'-0"

Elevation Notes:

1. Gutters and downspouts are not shown for clarity, downspouts shall be located towards the front and rear of the house. Locate downspouts in non-visually offensive locations. General contractor shall verify existing grades and coordinate any necessary drainage requirements with owner.
2. Plumbing and HVAC vents shall be grouped in attic to limit roof penetrations and to be located away from public view and shall be primed and painted to match roof color where necessary.
3. Provide attic ventilation per local code requirements.
4. Exterior flashing shall be correctly installed at all connections between roofs, walls, chimneys, projections and penetrations as required by approved construction practices.
5. Contractor shall provide adequate attic ventilations/roof vents per local governing code. Install continuous ridge ventilation and match to roof. Provide appropriate soffit ventilation at overhangs.

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Consultant/Lead Designer:

NORTH CAROLINA PROFESSIONAL SEAL 054271 ENGINEER GREGORY DILLETT II
11/5/24

Rock of Salvation Church
36 Line Rd
Cameron, NC

Elevations

Revisions:

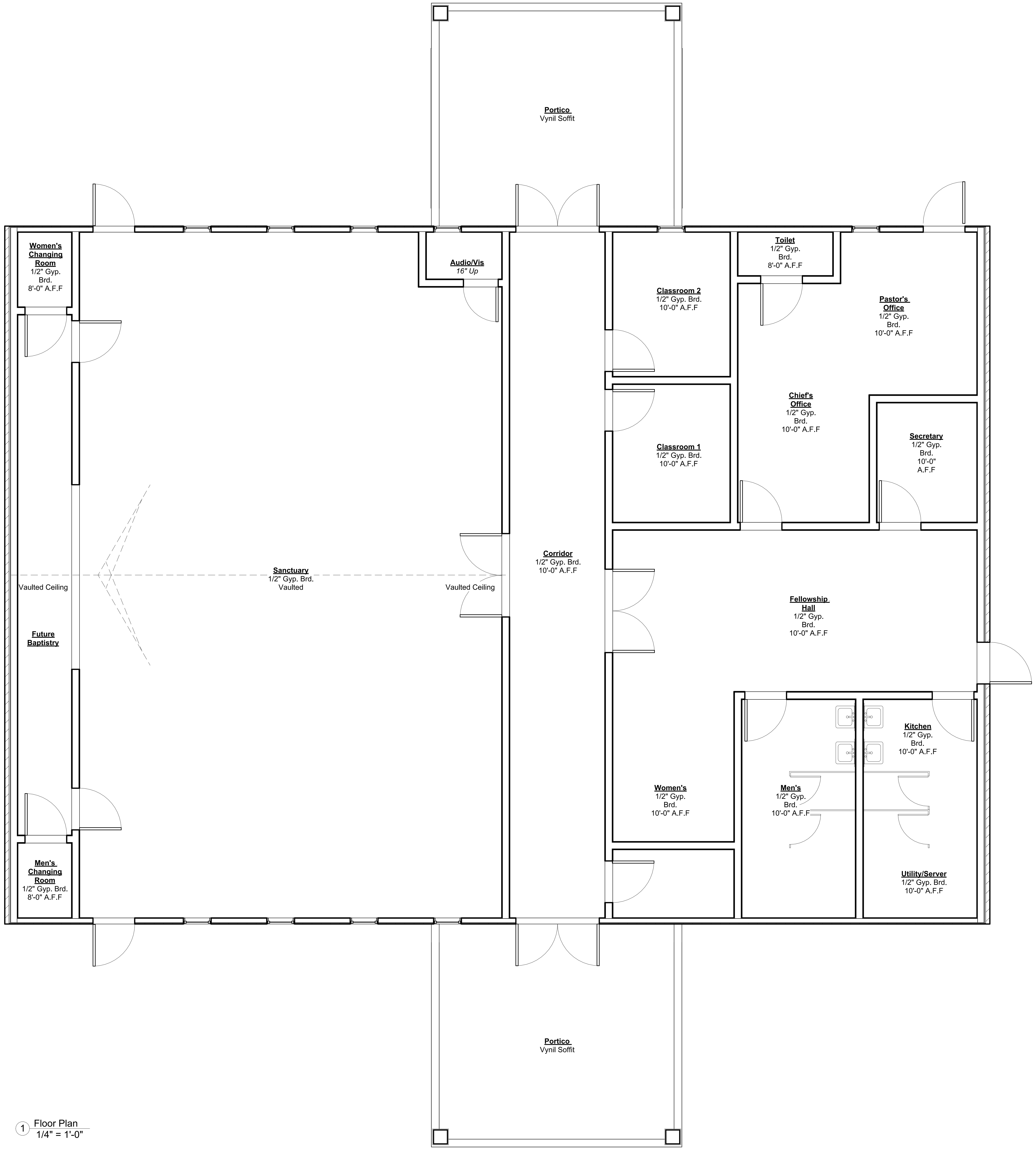
SCALE: As indicated

DATE: October 28, 2024

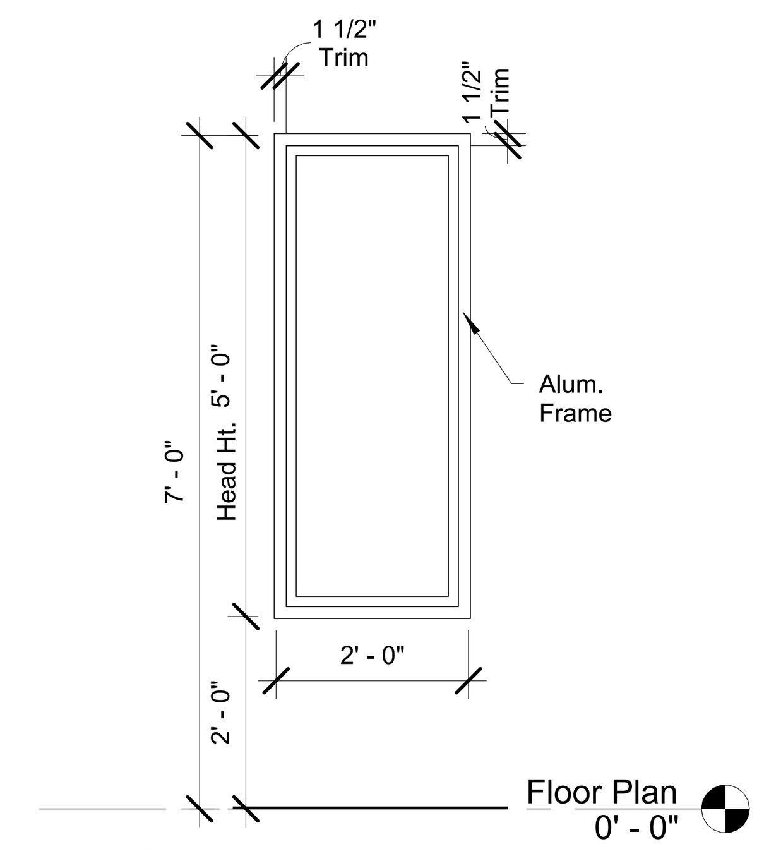
Project number 10282400002

Drawn by TP
Checked by TP

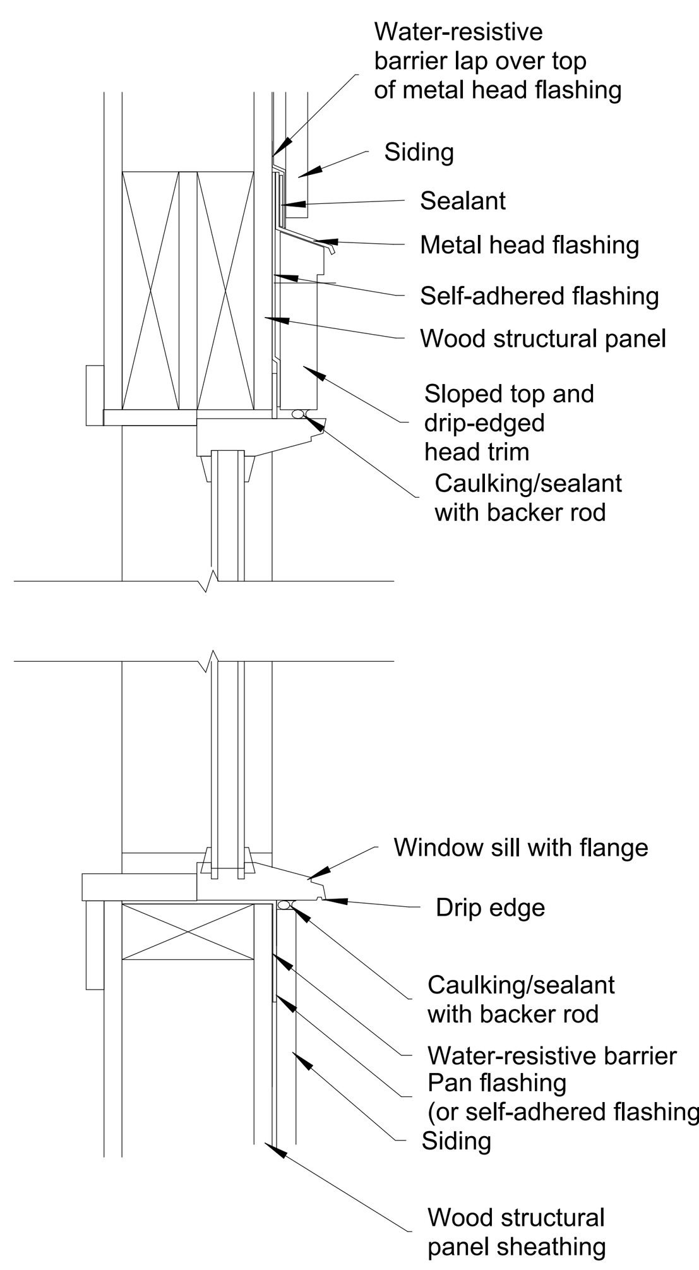
A-1.3



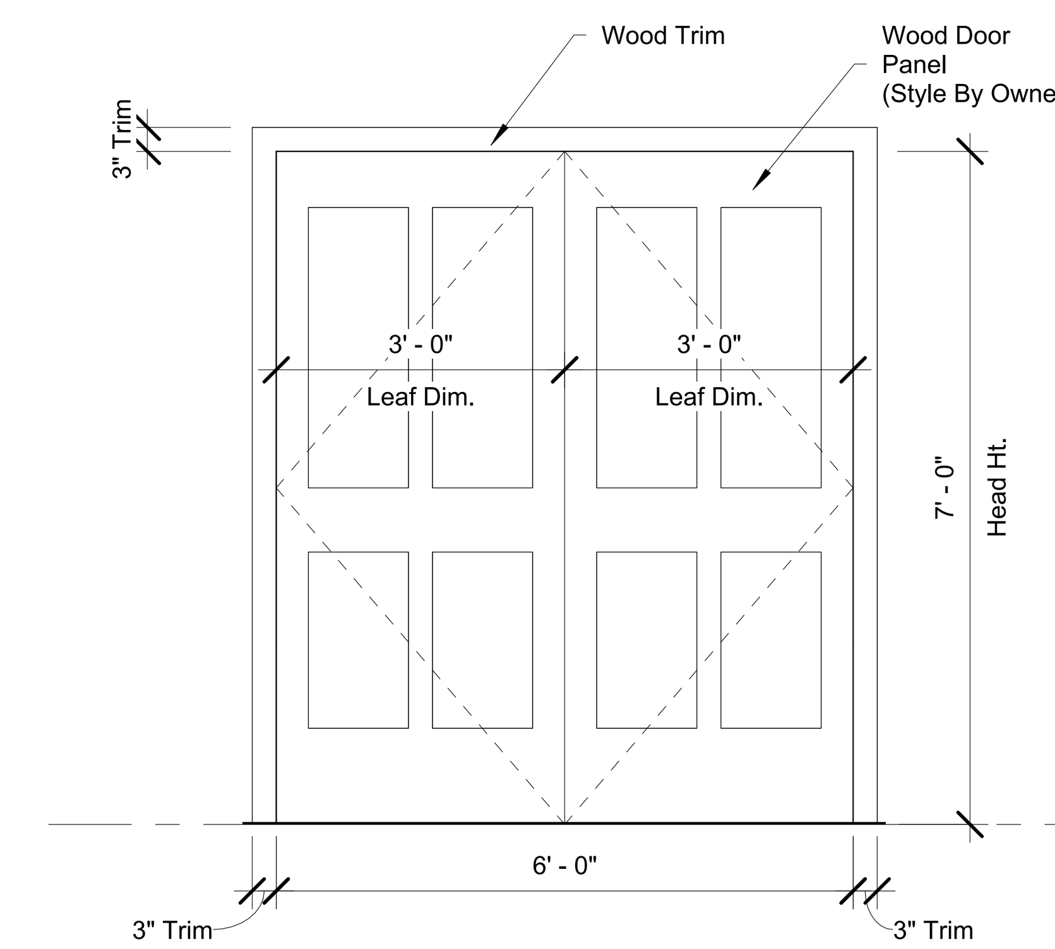
1 Floor Plan
1/4" = 1'-0"



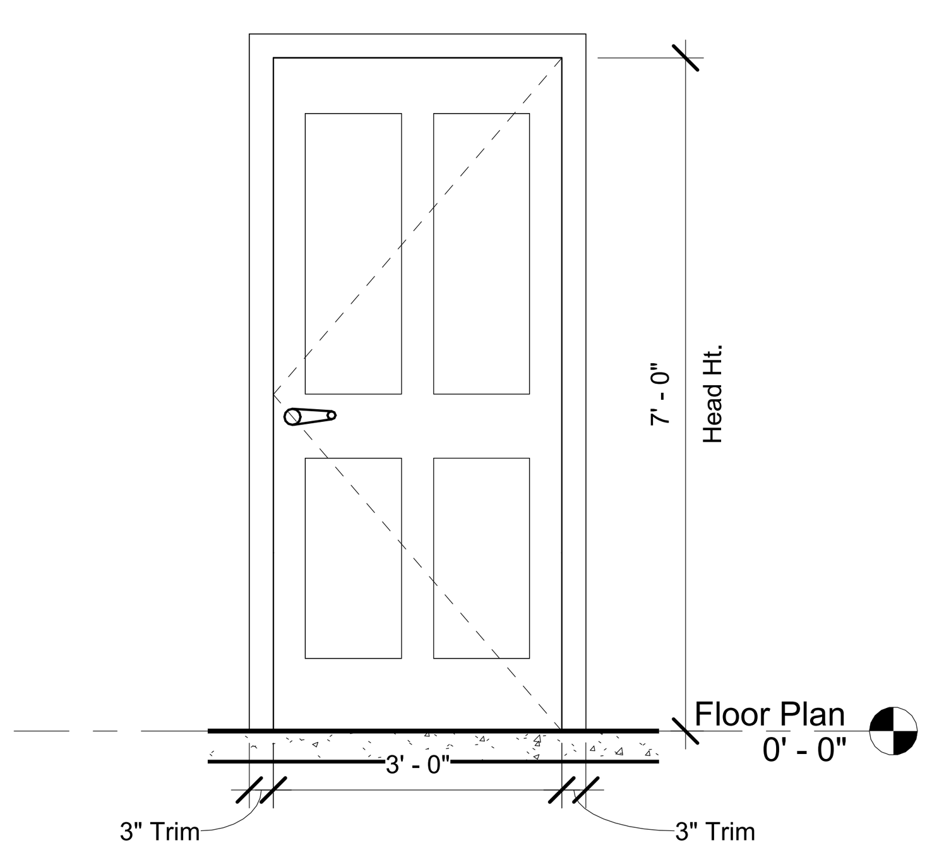
2 Window A
1/2" = 1'-0"



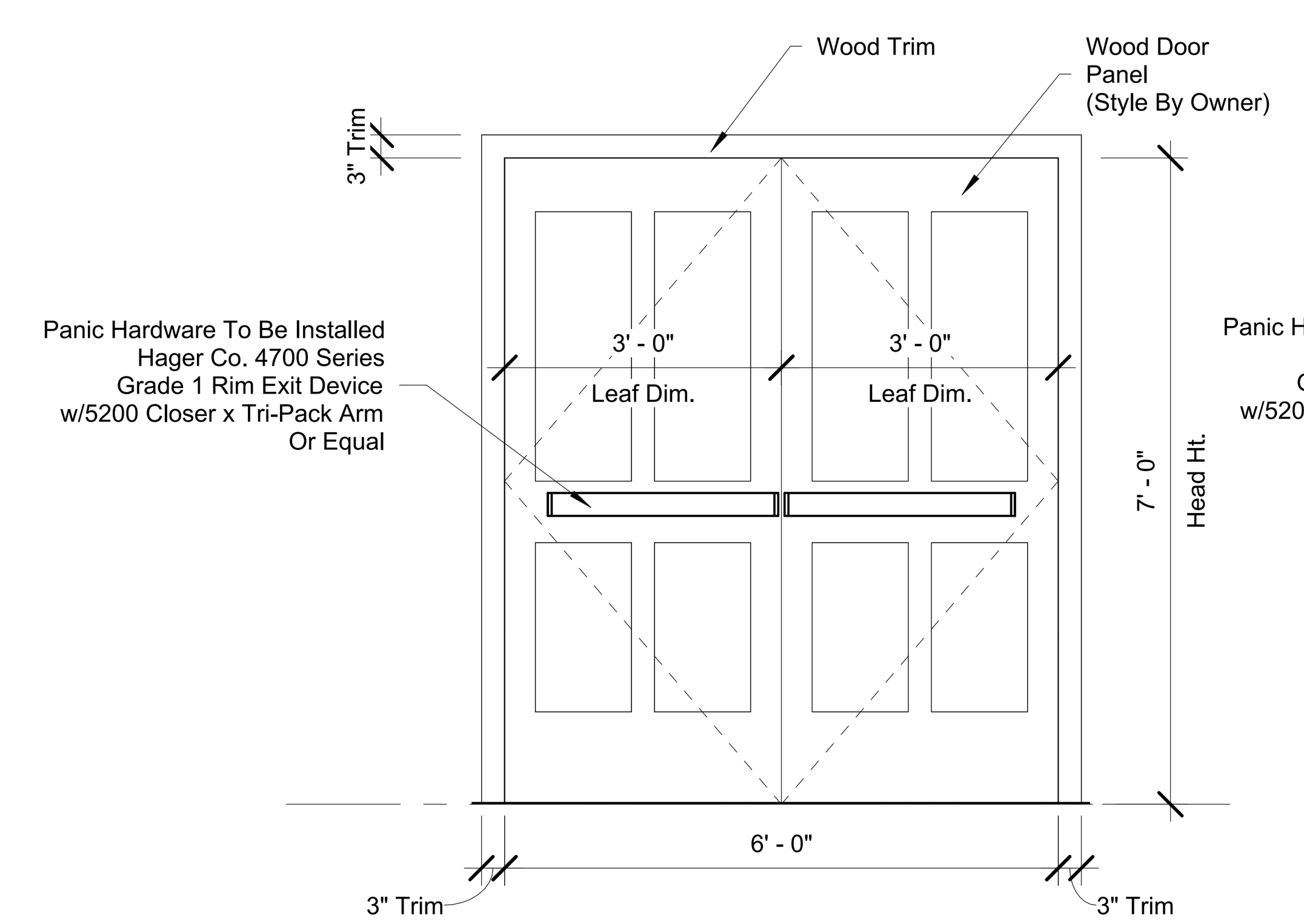
7 Window Flashing Detail
1" = 1'-0"



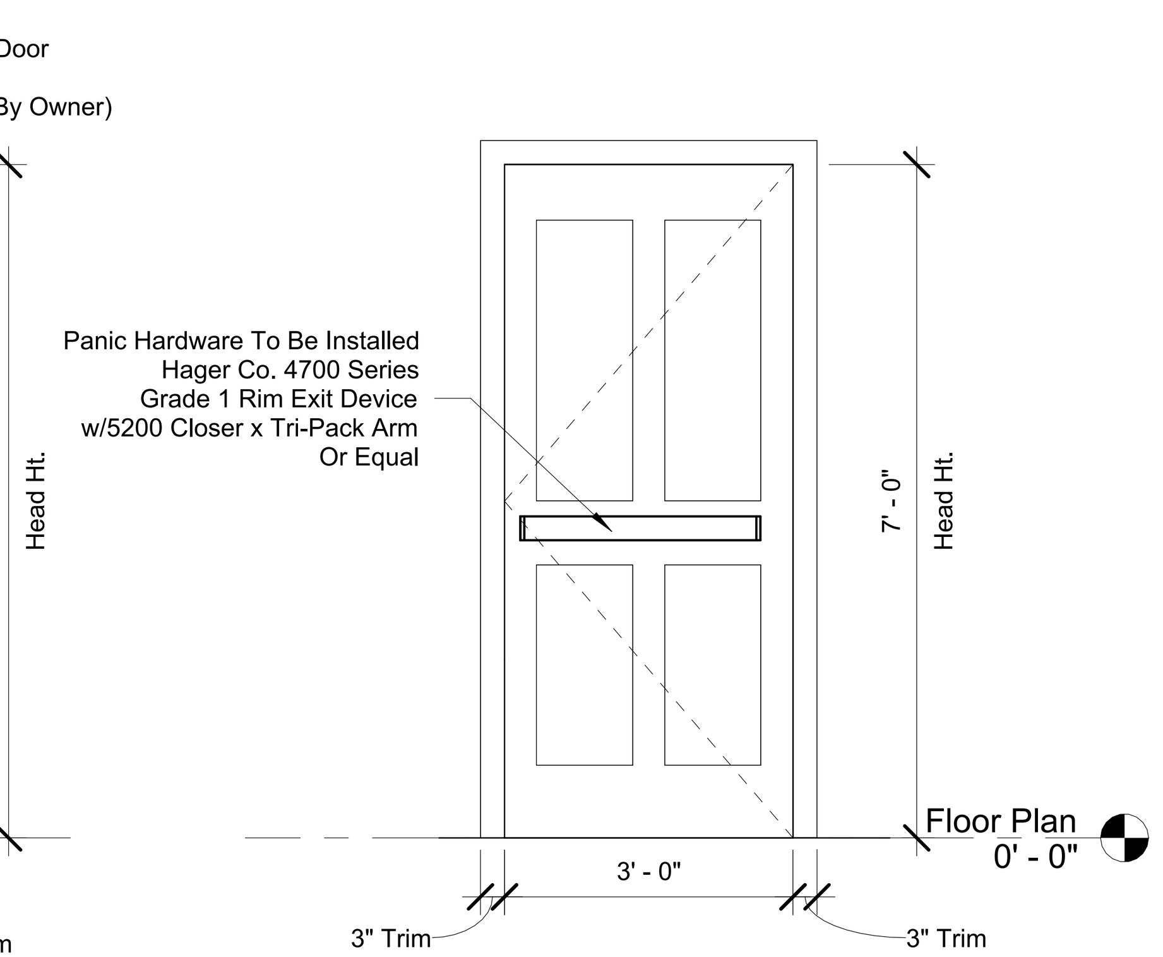
3 Interior Double Door
1/2" = 1'-0"



6 Interior Single Door
1/2" = 1'-0"



5 Exterior Double Door
1/2" = 1'-0"



4 Exterior Single Door
1/2" = 1'-0"

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IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/ OR BUILDER TO CONFORM TO ALL STANDARDS, PROVISIONS, REQUIREMENTS, METHODS OF CONSTRUCTION AND USES OF MATERIALS, IN BUILDING CODES ANY OTHER LOCAL AGENCIES AND IN ACCORDANCE WITH GOOD ENGINEERING AND CONSTRUCTION PRACTICES.

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Rock of Salvation Church
36 Line Rd
Cameron, NC

Reflected Ceiling Plan

Revisions:

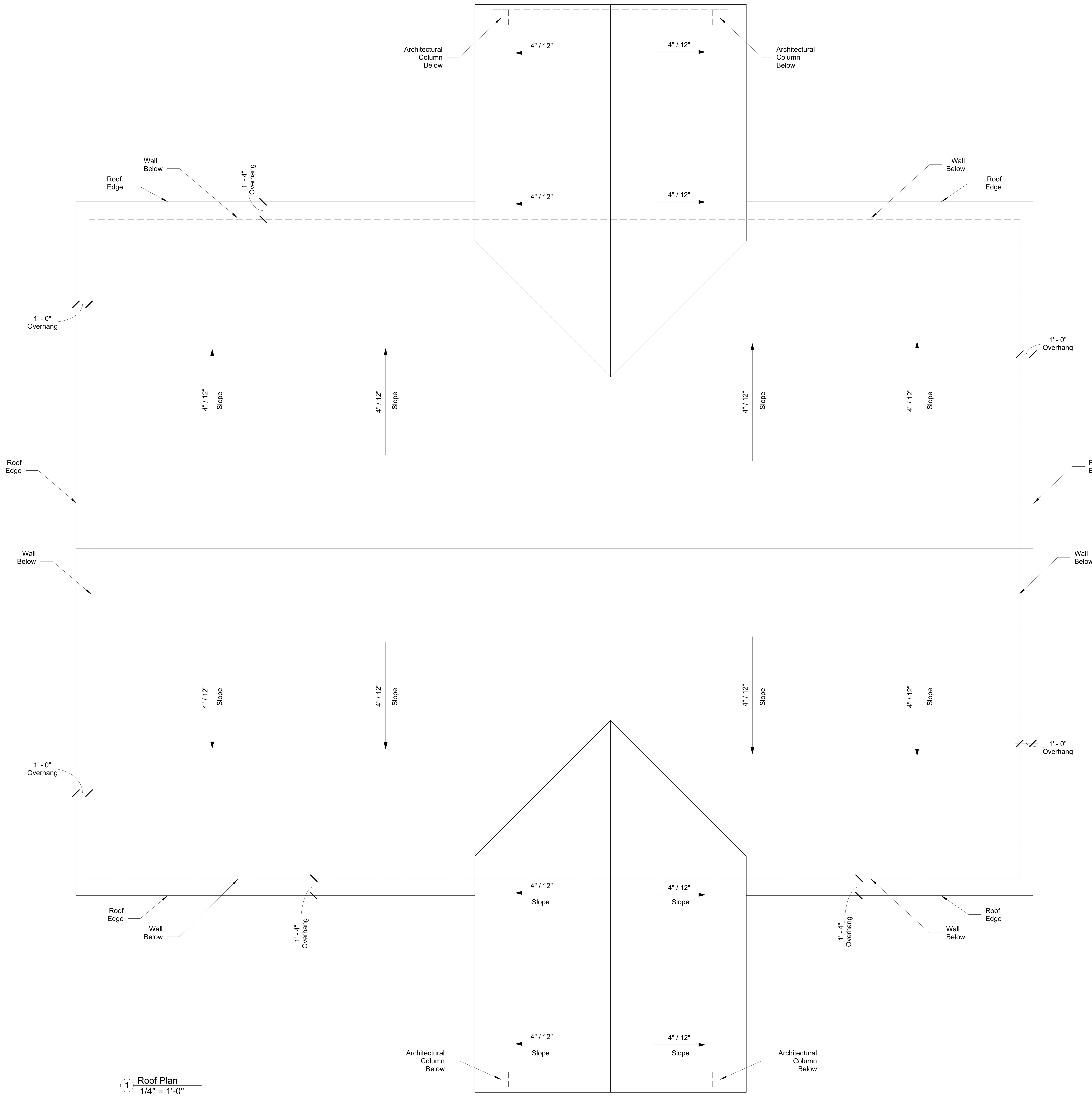
SCALE: As indicated

DATE: October 28, 2024

Project number 10282400002

Drawn by TP
Checked by TP

A-1.4

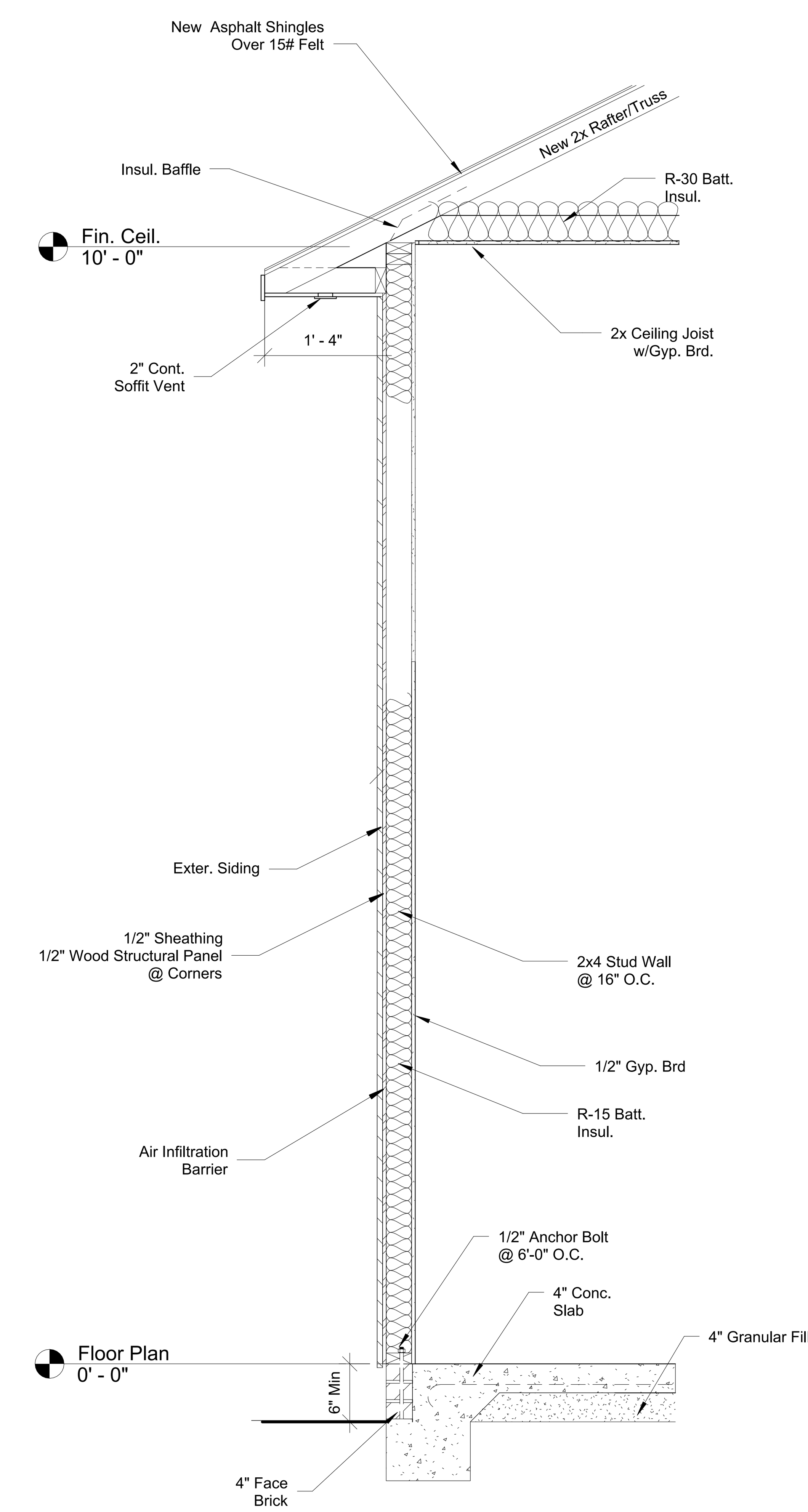


1 Roof Plan
1/4" = 1'-0"

Roofing Ventilation
Section R806
R806.1 Ventilation Required. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of the roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch minimum nad 1/4 inch maximum. Ventilation opening having a least dimension larger than 1/4 inch shall be provided with corosion-resistant wire cloth screening, hardware cloth, or similar material with openings having a least dimension of 1/16 inch minimum and 1/4 inch maximum. Openings in roof framing members shall conform to the requirements of Section 802.7.
R806.2 Minimum Area. The total net free ventilating area shall not be less than 1/150 of the area of the space ventilated except that reduction of the total area to 1/300 is permitted provided that at least 50 percent and not more than 80 percent of the required ventilating area is provided by ventilators located in teh upper portion of the space to be ventilated at least 3 feet above the eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents. As an alternative, the net free cross-ventilation area may be reduced to 1/300 when Class I or Class II vapro retarder is installed on the warm-in-winter side of the ceiling.
Exceptions:
1. Enclosed attic/rafter spaces requiring less than 1 square foot of ventilation may be vented with continuous soffit ventilation only.
2. Enclosed attic/rafter spaces over unconditioned space may be vented with continuous soffit ventilation only.

Square Footage Being Ventilated: 4124 Sq. Ft.

Net Free Cross Ventilation Needed:
- Without 50% to 80% of venting 3'-0" Above Eave: 27.50 Sq. Ft.
- With 50% to 80% of venting 3'-0" above eave or Class I or ClassII Vapor Retarder : 13.75 Sq. Ft



2 Walls Section
3/4" = 1'-0"

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Consultant/Lead Designer:

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11/5/24

Rock of Salvation Church
36 Line Rd
Cameron, NC

Roof Plan

Revisions:

SCALE: As indicated

DATE: October 28, 2024

Project number 10282400002

Drawn by TP
Checked by TP

A-1.5

PARAMETERS DESIGN IBC 2024

LOADS:

WIND DESIGN

1. BASIC WIND SPEED (3-SECOND GUST), MILES PER HOUR = 117
2. WIND IMPORTANCE FACTOR, I=1.0 AND OCCUPANCY CATEGORY = II
3. WIND EXPOSURE CATEGORY: C
4. THE APPLICABLE INTERNAL PRESSURE COEFFICIENT =0.18

SEISMIC DESIGN

1. SEISMIC IMPORTANCE FACTOR, I=1.0 , AND OCCUPANCY CATEGORY = II
2. MAPPED SPECTRA RESPONSE ACCELERATIONS, Ss=0.15g AND S1=0.071g
3. SITE CLASS = D
4. SPECTRA RESPONSE COEFFICIENTS, SDS=0.160g
5. SEISMIC DESIGN CATEGORY = C
6. CANTILEVERED COLUMN SYSTEMS DETAILED TO CONFIRM TO TIMBER FRAMES.
7. BASE SHEAR =13700 LBS
8. BUILDING WEIGHT = 141000 LBS
9. SEISMIC RESPONSE COEFFICIENT(S), Cs=0.0246 (ASD)
10. RESPONSE MODIFICATION FACTOR(s), R =1.5
11. ANALYSIS PROCEDURE USED : EQUIVALENT LATERAL FORCE PROCEDURE
12. REDUNDANCY FACTOR USED: 1.3
13. ASSUMED BEARING VALUE OF SOILS = 1500 PSF.

BASIS OF DESIGN

- ROOF DEAD LOAD = 25 PSF
- EX. WALL DEAD LOAD = 16 PSF
- INTERIOR DEAD LOAD = 10 PSF
- ROOF LIVE LOAD = 30 PSF

REINFORCING:

ALL REINFORCING SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF ACI 318, CRSI SPECIFICATIONS AND HANDBOOK, AND THE STEEL REINFORCING DETAILING MANUAL. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 (Fy = 60 KSI) DEFORMED BARS FOR ALL BARS UNLESS NOTED OTHERWISE. ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WITH THE WIRE CONFORMING TO ASTM A82. REINFORCING BARS SHALL NOT BE TACK WELDED. REINFORCING BAR SPACING AS SHOWN ARE MAXIMUM ON CENTER SPACING. CLEAR CONCRETE COVERAGE SHALL BE AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---------- 3" EXPOSED TO EARTH OR WEATHER:

#6 OR LARGER ---------- 2"
#5 AND SMALLER ---------- 1 1/2"

ALL OTHER PER LATEST EDITION OF ACI 318.

LAP SPLICES IN CONCRETE: (BARS) LAP SPLICES SHALL BE CLASS "B" TENSION LAP SPLICES AS DESCRIBED IN THE LATEST EDITION OF ACI 318 UNLESS OTHERWISE NOTED. LAP SPLICES IN CONCRETE COLUMNS SHALL BE STANDARD COMPRESSION LAP SPLICES. SPLICES SHALL BE STAGGERED A MINIMUM OF ONE LAP LENGTH.
(WELDED WIRE FABRIC) WELDED WIRE FABRIC SHALL BE LAPPED SUCH THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET, IS GREATER THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES. PLACE ALL WELDED WIRE FABRIC ON GALVANIZED CHAIRS TO ACHIEVE PROPER CLEARANCES AND CONCRETE COVER.

ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. BENT CORNER BARS SHALL BE PLACED AT ALL CORNERS AND INTERSECTIONS AND SHALL MATCH AND LAP WITH HORIZONTAL BARS AS INDICATED IN THE TYPICAL DETAILS. ALL BENT BARS SHALL BE COLD BENT. ALL VERTICAL REINFORCING SHALL BE DOWELED INTO FOOTINGS WITH STANDARD 90 DEGREE HOOKS UNLESS NOTED OTHERWISE. CONCRETE COLUMN DOWEL EMBEDMENT SHALL BE A STANDARD COMPRESSION DOWEL WITH EMBEDMENT LENGTH ACCORDING TO THE LATEST EDITION OF THE ACI 318.

ALL REINFORCING AND EMBEDDED ITEMS SUCH AS PLATES, BOLTS, ETC. SHALL BE IN PLACE AND PROPERLY SECURED PRIOR TO PLACING GROUT OR CONCRETE. IN NO CASE SHALL ITEMS BE "WET SET" OR STABBED INTO UNSET GROUT OR CONCRETE. REINFORCING SHALL BE SECURED IN PLACE SO AS TO AVOID MOVEMENT DURING PLACEMENT.

GENERAL NOTES

1. NO PROVISION OF ANY REFERENCED STANDARD SPECIFICATION, MANUAL OR CODE (WHETHER OR NOT SPECIFICALLY INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS) SHALL BE EFFECTIVE TO CHANGE THE DUTIES AND RESPONSIBILITIES OF THE OWNER, CONTRACTOR, ARCHITECT, ENGINEER, SUPPLIER, OR ANY OF THE CONSULTANTS, AGENTS, OR EMPLOYEES FROM THOSE SET FORTH IN THE CONTRACT DOCUMENTS, NOR SHALL IT BE EFFECTIVE TO ASSIGN TO THE STRUCTURAL ENGINEER OF RECORD (S.E.R.) OR ANY OF THE S.E.R. ' S CONSULTANTS, AGENTS, OR EMPLOYEES ANY DUTY OR AUTHORITY TO SUPERVISE OR DIRECT THE FURNISHING OR PERFORMANCE OF THE WORK OR ANY DUTY OR AUTHORITY TO UNDERTAKE RESPONSIBILITIES CONTRARY TO THE PROVISIONS OF THE CONTRACT DOCUMENTS.
2. REFERENCE TO STANDARD SPECIFICATIONS (CONCERNING STRUCTURAL DESIGN) OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD CODES, SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.
3. IN THE EVENT CONTRACT DOCUMENTS CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF ACI, PCI, AISC, AISI, SJI OR OTHER STANDARDS, CONTACT STRUCTURAL ENGINEER FOR CLARIFICATION.
4. NOTES AND SPECIFIC DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. CONTACT THE ARCHITECT / ENGINEER FOR A DETERMINATION OF INTENT BEFORE PROCEEDING WITH RELATED WORK IF THERE IS ANY DISCREPANCY OR QUESTION REGARDING WHICH NOTE TO FOLLOW.
5. MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE REFERENCED BUILDING CODE.
6. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ARCHITECT / ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY.
7. THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. THE CONTRACTOR SHALL COORDINATE THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL WORKS WITH THE STRUCTURAL CONTRACT DOCUMENTS. THE ARCHITECT / ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR OMISSIONS.
9. THE CONTRACTOR SHALL NOTIFY, IN WRITING, THE ENGINEER OF CONDITIONS ENCOUNTERED IN THE FIELD THAT ARE CONTRADICTORY TO THOSE SHOWN ON THE CONTRACT DOCUMENTS.
10. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS SEE THE ARCHITECTURAL DRAWINGS.

DEFERRED SUBMITTALS: (PER IBC 2024)

THE DESIGN OF THE FOLLOWING ITEMS SHALL BE PROVIDED AS "DEFERRED SUBMITTAL" ITEMS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE SECTION 106.3.4.2.

"PREFAB TRUSS"

THE DESIGN OF THE ITEMS LISTED SHALL BE SUBMITTED BY THE CONTRACTOR TO THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE WHO WILL REVIEW THE DOCUMENTS. THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE SHALL PROVIDE NOTATION ON THE DOCUMENTS AFTER THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. UPON ACCEPTANCE BY THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE, THE CONTRACTOR SHALL SUBMIT THE DOCUMENTS TO THE BUILDING OFFICIAL. DO NOT INSTALL ANY DEFERRED SUBMITTAL ITEMS UNTIL THE DESIGN HAS BEEN ACCEPTED BY THE BUILDING OFFICIAL

RESEARCH REPORT

ICC-ES REPORT #

HOLDOWNS	ESR-2330	SHOT PINS	ESR-1799
U HANGER	ESR-2549	FRAMING CLIPS	ESR-2606
CC COLUMN CAP	ESR-2604	PARALLAM	ESR-1387

WOOD CONSTRUCTION

1. STRUCTURAL LUMBER SHALL BE GRADE-MARKED DOUGLAS FIR-LARCH

BEAMS	4x OR BIGGER	No. 1 & No. 2
STUD	2x4 OR 2x6	No. 2
POSTS	4x OR BIGGER	No. 2

2. SILLS OR PLATES BEARING ON CONCRETE OR MASONRY WHICH IS WITHIN 48" OF EARTH SHALL BE PRESSURE TREATED, OR EQUAL, WOOD SILL PLATES SHALL BE BOLTED TO THE FOUNDATION WITH 5/8" DIAMETER x 10" BOLTS 4'-0" o.c. 12" MIN. FROM ENDS, OR 2 BOLTS MIN. PER PIECE. WHERE DIFFERENT SIZES AND/OR SPACING ARE REQUIRED, THEY SHALL GOVERN. INSTALL WITH 3"x3"x1/4" PLATE WASHER AT EACH ANCHOR BOLT.
3. JOISTS SHALL BE BLOCKED AT SUPPORTS AND BRIDGED OR BLOCKED AT INTERVALS OF 8 FT WHERE JOISTS ARE 2x12 OR DEEPER.
4. JOISTS UNDER NON-BEARING PARTITIONS SHALL BE DOUBLED, EXCEPT AS NOTED.
5. LAGBOLTS (& SCREWS) SHALL BE PRE-DRILLED TO SHANK DIAMETER AND FULL DEPTH AND SCREWED (NOT DRIVEN) INTO PLACE.
6. CUT WASHERS SHALL BE PLACED UNDER HEADS AND NUTS OF ALL BOLTS AND UNDER HEADS OF LAGBOLTS. ONE CUT WASHER SHALL BE USED FOR BOLTS CONNECTING WOOD LEDGERS TO CONCRETE OR MASONRY WALLS.
7. ALL HARDWARE USED FOR WOOD CONNECTION SHALL BE SIMPSON STRONG-TIE PRODUCTS. INSTALL PER MANUFACTURERS RECOMMENDATIONS. ALTERNATE PRODUCTS WILL ONLY BE PERMITTED IF WRITTEN APPROVAL AND ACCEPTANCE IS OBTAINED BY ENGINEER.
8. ALL LUMBER SHALL HAVE A MOISTURE CONTENT NOT TO EXCEED 19% AT THE TIME OF FABRICATION OR CONSTRUCTION.
9. PROVIDE LEAD HOLE 40%-70% OF THREADED SHANK DIA. AND FULL DIA. FOR SMOOTH SHANK PORTION.
10. PLACE 2" FIREBLOCKING IN STUD WALLS AT CEILING AND FLOOR LEVELS, AT EACH 10' HEIGHT OF STUDS, AND BETWEEN STAIR STRINGERS AT SUPPORTS.
11. PARALLAM COLUMNS MUST BE FABRICATED IN A LICENSED SHOP & SHALL BE **2.0E GRADE.**
12. GLU-LAM BEAMS MUST BE FABRICATED IN A LICENSED SHOP & SHALL BE **24F-V4 GRADE.**

CONCRETE:

ALL CONCRETE CONSTRUCTION AND DETAILING SHALL CONFORM TO THE LATEST EDITION OF ACI 318
MINIMUM 28 DAY COMPRESSIVE STRENGTH (F'c) SHALL BE AS FOLLOWS:

SLABS ON GRADE -	**2500 PSI**
FOUNDATIONS-	**2500 PSI**

ALL CONCRETE IS TO BE MECHANICALLY VIBRATED WHEN PLACED, EXCEPT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND UNDER-FLOOR DUCTS, PENETRATIONS, ETC. CONCRETE SHALL BE DEPOSITED AS NEAR AS POSSIBLE TO ITS FINAL POSITION AND SHALL BE PLACED SO AS TO AVOID SEGREGATION. VIBRATING EQUIPMENT SHALL NOT BE USED TO MOVE CONCRETE INTO POSITION. ALL REINFORCING, EMBED PLATES, ANCHORS, ETC, SHALL BE IN PLACE AND PROPERLY SECURED PRIOR TO PLACING CONCRETE. "WET STABBING" IS NOT ALLOWED.

CLOSURE POURS SHALL BE CAST AROUND COLUMNS ONLY AFTER THE STRUCTURE DEAD LOAD HAS BEEN APPLIED TO THE COLUMN.

ALL CONCRETE SLABS ON GRADE SHALL BE BOUND BY KEYED OR SAW CUT CONTROL JOINTS AS SHOWN ON THE FOUNDATION PLAN, SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 400 SQUARE FEET, UNLESS APPROVED OTHERWISE IN WRITING BY THE ARCHITECT. KEYED CONTROL JOINTS NEED TO OCCUR ONLY AT SLAB EDGES LEFT EXPOSED DURING PLACEMENT. ALL OTHER JOINTS MAY BE SAW CUT.

CONTRACTOR IS TO VERIFY LOCATION OF ALL CONTROL JOINTS IN CONCRETE SLABS OVER PRECAST ELEMENTS WITH THE PRECAST MANUFACTURER.

REVIBRATE TOPS OF CAISSONS 15 MINUTES AFTER PLACING CONCRETE.

FLY ASH - IF PERMITTED BY ARCHITECTURAL SPECIFICATIONS OR REQUESTED BY CONTRACTOR, SHALL BE LIMITED TO 18% OF CEMENTITIOUS MATERIALS AND SHALL HAVE A REPLACEMENT FACTOR OF 1.2 RELATIVE TO CEMENT REPLACED.

NO FLY ASH ADDITIVES SHALL BE USED IN FLATWORK OR ARCHITECTURALLY EXPOSED CONCRETE.

ALL CONCRETE THAT WILL BE SUBJECTED TO FREEZING TEMPERATURES DURING ITS LIFE, INCLUDING WHILE WET, SHALL HAVE A WATER-CEMENT RATIO NOT EXCEEDING 0.53 BY WEIGHT AND SHALL CONTAIN ENTRAINED AIR PER ACI 301. SUCH CONCRETE SHALL BE PROVIDED FOR EXTERIOR SLABS, PERIMETER STEMS AND FOUNDATIONS, EXTERIOR CURBS AND GUTTERS, ETC.

CONSTRUCTION DOCUMENTS. IN NO CASE SHALL THERE BE LESS THAN 4 SETS OF SHIMS BELOW EACH PANEL.

NAILING SCHEDULE

CONNECTIONS	NAILING
POST TO PIER PAD, TOE NAIL	3-16d OR 4-8d
GIRDER TO POST, TOE NAIL	3-16d OR 4-8d
JOIST TO SILL OR GIRDER, TOE NAIL	3-8d
BRIDGING TO JOIST, TOE NAIL EACH END	2-8d
JOISTS TO BLOCKING, END NAIL	16d TOP AND BOTT. OF EACH JOIST
RIM JOIST TO JOISTS, END NAIL	16d TOP AND BOTT. OF EACH JOIST
RIM JOIST TO SILL, TOE NAIL	16d @ 16" O.C.
FLOOR JOIST LAP @ BEARING, FACE NAIL	2-16d
1"x6" OR NARROWER SUB FLOOR SHEATHING TO EACH JOIST, FACE NAIL	2-8d
WIDER THAN 1"x6" SUB FLOOR SHEATHING TO EACH JOIST, FACE NAIL	3-8d
2" SUB FLOOR TO JOIST OR GIRDER, BLIND AND FACE NAIL	2-16d
SOLE PLATE TO JOIST OR BLOCKING NAIL	16d @ 16" O.C.
TOP PLATE TO SOLE PLATE TO STUD, END NAIL	2-16d
STUD TO SOLE PLATE	2-16d END NAIL OR 4-8d TOE NAIL
DOUBLE STUDS, FACE NAIL	16d @ 24" O.C.
DOUBLE TOP PLATES, FACE NAIL	16d @ 16" O.C.
TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	2-16d
CONTINOUS HEADER, TWO PIECES SET ON EDGE	16d @ 16" O.C. ALONG EACH EDGE
CEILING JOISTS TO PLATE, TOE NAIL	3-8d
CONTINOUS HEADER TO STUD, TOE NAIL	4-8d
CEILING JOISTS, LAP OVER PARTITIONS, FACE NAIL	3-16d
CEILING JOISTS TO PARRALEL RAFTERS, FACE NAIL	3-16d
RAFTER TO RIDGE	3-8d
RAFTER TIES, 2" LUMBER, FACE NAIL	3-16d
RAFTER TIES, 1" LUMBER, FACE NAIL	5-8d
RAFTER TO PLATE NAIL	3-8d
1"x4" MIN. BRACE TO EACH STUD AND PLATE, FACE NAIL	2-8d
1"x8" OR NARROWER SHEATHING TO EACH BEARING, FACE NAIL	2-8d
WIDER THAN 1"x8" SHEATHING TO EACH BEARING, FACE NAIL	3-8d
BUILD-UP CONNER STUDS	16d @ 24" O.C.
* COMMON OR GALVANIZED BOX NAILS	

ABBREVIATIONS

A.B.C.	AGGREGATE BASE COURSE
A.F.F.	ABOVE FINISHED FLOOR
ALT.	ALTERNATE
A.B.	ANCHOR BOLT
@	AT (MEASUREMENT)
BM	BEAM
B.F.F	BELOW FINISHED FLOOR
B.O.B.	BOTTOM OF BEAM
B.O.D.	BOTTOM OF DECK
B.O.F.	BOTTOM OF FOOTING
BRG	BEARING
C.I.P.	CAST IN PLACE
CJ	CEILING JOIST
C.L.	CENTERLINE
C.L.B.	CENTERLINE OF BEAM
C.L.C.	CENTERLINE OF COLUMN
C.L.F.	CENTERLINE OF FOOTING
C.L.L.	CENTERLINE OF LEDGER
C.L.W.	CENTERLINE OF WALL
CLR	CLEAR
CONC.	CONCRETE
CONC C.J.	CONCRETE CONTROL JOINT
CONC S.J.	CONCRETE SAWCUT JOINT
C.M.U.	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT.	CONTINUOUS
DEG	DEGREE
D.L.	DEAD LOAD
ø OR DIA.	DIAMETER
DN	DOWN
DWG(S)	DRAWING(S)
E.O.S.	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EAXP. BOLT	EXPANSION BOLT
EXP. JT (E.J.)	EXPANSION JOINT
E.W.	EACH WAY
F.F.	FINISHED FLOOR
FJ	FLOOR JOIST
F.O.M.	FACE OF MEMBER
F.O.S.	FACE OF STEEL
F.O.W.	FACE OF WALL
VERT	VERTICAL
W.W.F.	WELDED WIRE FABRIC
W/	WITH
W/O	WITHOUT

GA	GAGE
GALV	GALVANIZED
G.S.N.	GENERAL STRUCT'L NOTES
GLB	GLUED-LAMINATED BEAM
I.F.W.	INSIDE FACE OF WALL
HORIZ	HORIZONTAL
K(KIP)	1000 POUNDS
L.L.	LIVE LOAD
LBS (#)	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
MFR('S)	MANUFACTURER('S)
MAS C.J.	MASONRY CONTROL JOINT
MECH'L	MECHANICAL
MLB	MICROLLAM BEAM
N/A	NOT APPLICABLE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.F.W.	OUTSIDE FACE OF WALL
OPP	OPPOSITE
P.C.	PRECAST CONCRETE
PLF	POUNDS PER LINEAR FOOT
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
REINF	REINFORCING
RJ	ROOF JOIST
RR	ROOF RAFTER
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SIM	SIMILAR
SQ.	SQUARE
STD	STANDARD
T.L.	TOTAL LOAD
T.O.B.	TOP OF BEAM
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PLATE
T.O.AS.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE

DILLETT ENGINEERING GROUP

NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT II

Agency Approvals

Revision No.

Job Title

Job Address

36 LINE RD HAMETT COUNTY NC

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Scale N.T.S

0 2' 4' 8'

Sheet Title

GENERAL NOTES

Sheet No.

S1.1

Shear Wall Schedule

Wall ID △	Sheathing Material	Panel Nailing		Blk'g to Sill & top plate DBL plate connection	Anchor Bolt Spacing	Bolt Embedment	Bolt Edge Distance New Footing	Bolt Edge Distance Existing Footing	Shear (lbs/ft)	Sill-Plate Connection	Min. Blkg. Thk. below Sill-Plate	Special Inspection
		Edges	Fields									
1	1/2" PLY'D BLOCKED	8d @ 4" o.c.	8d @ 12" o.c.	A35 @ 36" o.c. to blk'g	⅝" @ 36" o.c.	7"	1.75"	2"	255	16d common nail @ 6" o.c.	2x-2x	YES
2	15/32" PLY'D BLOCKED	8d @ 3" o.c.	8d @ 12" o.c.	A35 @ 36" o.c. to blk'g	1" @ 36" o.c.	10"	1.75"	2"	375	16d common nail @ 4" o.c.	2x-3x	YES
3	15/32" PLY'D STR-I	8d @ 2" o.c.	8d @ 12" o.c.	A35 @ 24" o.c. to blk'g	1" @ 24" o.c.	10"	1.75"	2"	475	20d common nail @ 4" o.c.	2x-3x	YES

Notes:

1) This nailing schedule is for common nails only and all panels edges fastened to framing. Plywood can be installed either horizontally or vertically.
2) Shear Panels 3, 4 & 3-3 requires 3x framing members at the bottom sill plate when resting on concrete, and behind vertical or horizontal panel edges. Also minimum 1/2" edge nailing distance at panel ends and edges.
* Framing at adjoining panel edges shall be nominal 3" or wider. nails shall be staggered in two lines along panel edges when nail spacing is 2" o.c., or when 10d common nails spaced 3" o.c. penetrate framing more than 1-5/8".
3) Use square plate washers min. 3" x 3" x 1/4" thk. for anchor bolts.

Holdown Schedule

MARK	HOLDOWN	END POST	UPLIFT CAPACITY	WALL ATTACHMENT	SILL/STEM ATTACHMENT	HOLDOWN DETAIL
HDU2	HDU2	4x4 DF#2	2.3 kips	AS PER MANUFACTURER	5/8" DIA. ANCHOR BOLTS W/ 10" EMBEDMENT, SPL. INSPECTION REQD.	SEE DETAIL - 1/S1.3
HDU5	HDU5	4x4 DF#2	4.2 kips	AS PER MANUFACTURER	5/8" DIA. ANCHOR BOLTS W/ 10" EMBEDMENT, SPL. INSPECTION REQD.	SEE DETAIL - 1/S1.3

NOTE:-
1. HOLDOWNS SHALL BE MANUFACTURED BY SIMPSON OR SHALL BE OF EQUIVALENT CAPACITY W/ A ICC ESR REPORTS.
2. SEE "SHEAR WALL" SCHEDULE FOR SHEARWALL REQUIREMENTS AND DESIGNATIONS.
3. REFER TO PLANS FOR HOLDOWN LOCATIONS.
4. USE HOLDOWNS AS PER CAPACITY GIVEN IN THE TABLE IF CHANGE IN SHEARWALL REQUIRED ON SITE.

WALL FOOTING SCHEDULE					
MARK	SIZE	DEPTH	REINFORCEMENT	CONCRETE F'c	DEPUTY INSP.
WF-1	18" WIDE	18"	3-#4 TOP & BOTTOM.	2500 PSI	NO

COLUMN FOOTING SCHEDULE					
MARK	SIZE	DEPTH	REINFORCEMENT	CONCRETE F'c	DEPUTY INSP.
F-1	24" x 93"	18"	#4 @ 6" O.C., EA. WAY TOP & BOTTOM.	2500 PSI	NO
F-2	24" x 177"	18"	#4 @ 6" O.C., EA. WAY TOP & BOTTOM.	2500 PSI	NO
F-3	54" x 54"	18"	#5 @ 6" O.C., EA. WAY TOP & BOTTOM.	2500 PSI	NO

HDR SCHEDULE					
MARK	SIZE	HDR SIZE	HDR POST	JAMB	HDR DETAIL
HDR - 1	UP TO 2'-6"	4x6 DF#2	4x4 DF#2	2-2x4 DF#2	REFER DETAIL-1/S1.3
HDR - 2	2'-6" TO 6'-6"	4x10 DF#2	4x4 DF#2	2-2x4 DF#2	REFER DETAIL-1/S1.3

DILLETT ENGINEERING GROUP

NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT II

Agency Approvals

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COUNTY NC

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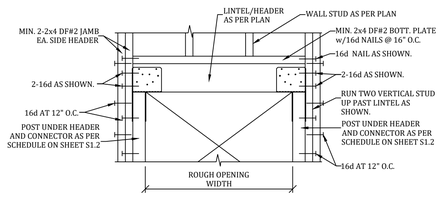
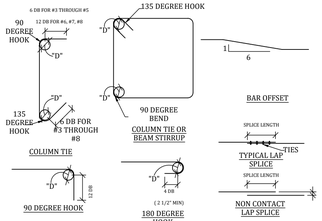
0 2' 4' 8'

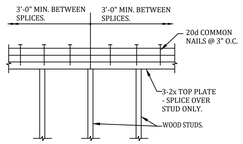
Sheet Title
SCHEDULES

Sheet No.
S1.2



1 WOOD HEADER/LINTEL DETAIL
NOT TO SCALE





NOTE:-APPLICABLE AT ONLY LOAD BEARING WALL LOCATION.

2 TYPICAL TOP PLATE SPLICE DETAIL
NOT TO SCALE

END HOOK SCHEDULE		
BAR SIZE	BAR DIA. "DB"	BEND DIA. "D"
#3	3/8"	2 1/4"
#4	1/2"	3"
#5	5/8"	3 3/4"
#6	3/4"	4 1/2"
#7	7/8"	5 1/4"
#8	1"	6"
#9	1 1/8"	9 1/2"
#10	1 1/4"	10 3/4"
#14	1 3/4"	18 1/4"
#18	2 1/4"	24"

STIRRUPS AND TIES SCHEDULE		
BAR SIZE	BAR DIA. "DB"	BEND DIA. "D"
#3	3/8"	1 1/2"
#4	1/2"	2"
#5	5/8"	2 1/2"
#6	3/4"	4 1/2"

BAR SPLICE SCHEDULE	
BAR SIZE	SPLICE LENGTH
#3	18"
#4	24"
#5	30"

5 REINF. BENDS, LAP & HOOKS DETAIL
NOT TO SCALE

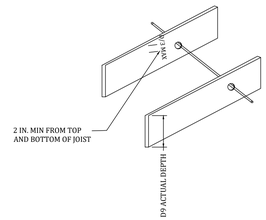
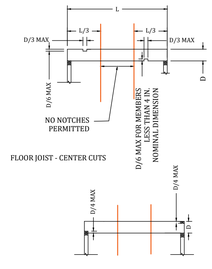
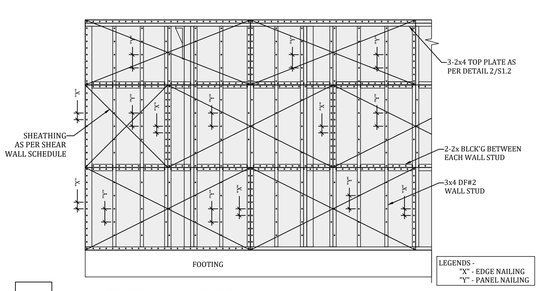


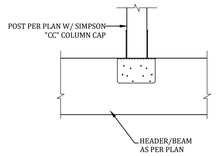
FIGURE R502.8
CUTTING, NOTCHING AND DRILLING



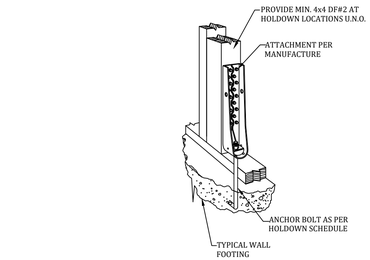
9 HOLES & NOTCHES IN JOIST FRAMING
NOT TO SCALE



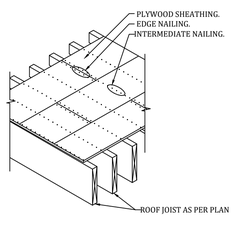
14 SINGLE FLOOR SHEAR WALL ELEVATION
NOT TO SCALE



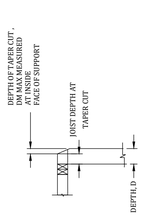
15 WOOD POST AT HEADER BEAM
NOT TO SCALE



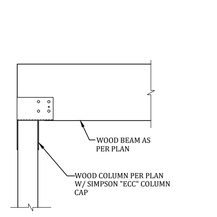
3 TYP. HOLDOWN DETAIL
NOT TO SCALE



6 TYP. PLYWOOD NAILING
NOT TO SCALE

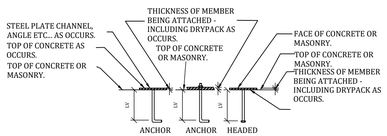


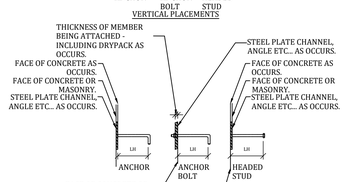
10 HOLES & NOTCHES IN JOIST FRAMING
NOT TO SCALE



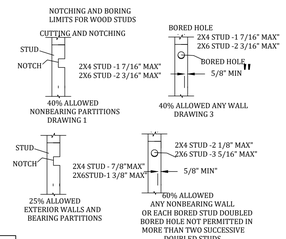
16 TYPICAL WOOD BEAM AT WOOD COLUMN
NOT TO SCALE

ANCHOR SIZE	HORIZONTAL CAST EMBEDMENT (LH)	VERTICAL CAST EMBEDMENT (LV)
3/8"	5"	7"
1/2"	5"	8"
5/8"	5"	8"
3/4"	5"	8"
7/8"	5"	8"
1"	5"	9"
1 1/4"	5"	12"
1 1/2"	5"	12"

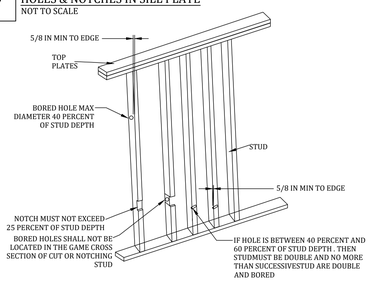




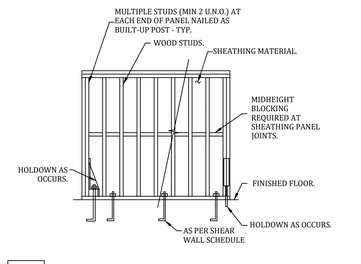
4 ANCHOR AND ANCHOR BOLT EMBEDMENTS
NOT TO SCALE



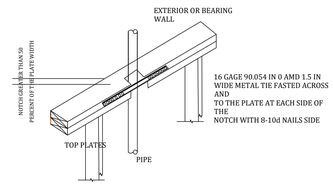
7 HOLES & NOTCHES IN SILL PLATE
NOT TO SCALE



8 HOLES & NOTCHES IN WALL STUD
NOT TO SCALE

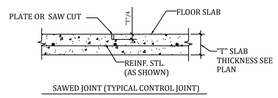


11 ONE-STORY SHEAR WALL ELEVATION
NOT TO SCALE



For SI: 1 inch = 25.4 mm.
FIGURE R602.6.1

12 HOLES & NOTCHES IN TOP PLATE
NOT TO SCALE



SAWED JOINT (TYPICAL CONTROL JOINT)

17 CONTROL JOINT DETAIL
NOT TO SCALE

DILLETT
ENGINEERING GROUP

NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT II

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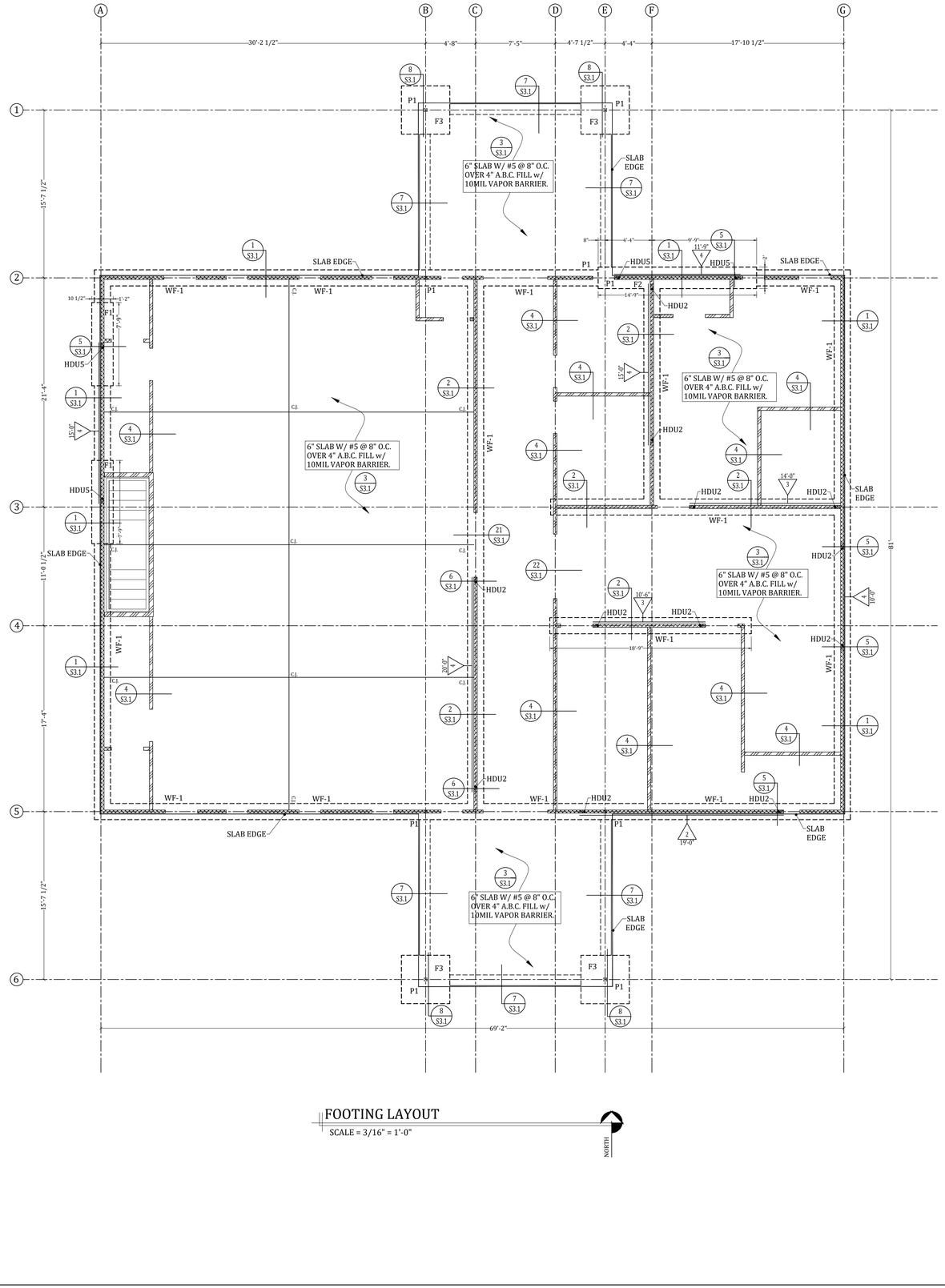
Sheet Title
TYPICAL SECTION DETAILS

Sheet No.
S1.3



FOUNDATION NOTES

1. ALL HOLDOWNS & ANCHOR BOLTS SHALL BE SET IN PLACE BY TEMPLATE PRIOR TO FOUNDATION INSPECTION.
2. ALL POSTS SHALL BE CONNECTED TO SILL PLATE WITH "A35" AT EA. SIDE TYP. UNLESS HARDWARE IS NOTED ON PLAN.
3. ALL FOOTING SHALL HAVE F'c = 2500 PSI UNLESS NOTED OTHERWISE.
4. PLATE WASHERS ARE REQUIRED FOR ALL HOLDOWNS BRACKETS.
5. ALL BOLT HOLES SHALL BE DRILLED A MAXIMUM OF 1/16" OVERSIZED. INSPECTOR TO VERIFY.
6. ALL HOLDOWN ANCHOR NUTS SHALL BE FINGER TIGHT AND 1/2 WRENCH TURN JUST PRIOR TO COVERING THE WALL FRAMING.
7. HOLD-DOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE APPROVED PLATE WASHERS.
8. CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE STEEL PLATE WASHERS IN ACCORDANCE AF&PA'S 2018 SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC (SDPWS-18)
9. FOUNDATION SILL SHALL BE NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD. FIELD-CUT ENDS, NOTCHES AND DRILLED HOLES OF PRESERVATIVE-TREATED WOOD SHALL BE FIELD-TREATED PER AWPA M4.
10. CONTRACTOR TO VERIFY ALL DIMENSIONS & ELEVATIONS WITH ARCHITECTURAL PLANS PRIOR TO STARTING ANY WORK.
11. ALL STUDS OVER 10 FEET TALL AND LESS THAN 15 FEET SHALL BE 2x4 OR 3x4 @ 16" O.C.
12. FASTENERS IN PRESERVATIVE TREATED WOOD OR FIRE RETARDANT TREATED WOOD SHALL BE OF HOT ZINC COATED GALVANIZED STEEL OR STAINLESS STEEL..

SYMBOL LEGEND

P1 ☒	P.T. 7 ¼"x7¼" PSL-2.0E W/ POST BASE SIMPSON - MPBB8Z
	3x4 DF#2 AT 16" O.C. LOAD BEARING WOOD STUD WALL
	2x4 DF#2 AT 16" O.C. LOAD BEARING WOOD STUD WALL
	2x4 DF#2 AT 16" O.C. NON LOAD BEARING WOOD STUD WALL
WF#	WALL FOOTING AS PER SCHEDULE ON SHEET S1.2
F#	POST/COLUMN FOOTING AS PER SCHEDULE ON SHEET S1.2
	SHOWING LOWER WALL
15'-0"	INDICATES SHEAR WALL; REFER SCHEDULE- ON SHEET S1.2
1	INDICATES SHEAR WALL ID.
HDU#	HOLDOWN, REFER SCHEDULE- ON SHEET S1.2
HDR#	HEADER, REFER SCHEDULE ON SHEET S1.2
C.J.	CONTROL JOINTS

DILLETT
ENGINEERING GROUP

NORTH CAROLINA
PROFESSIONAL
SEAL
054271
11/5/24
ENGINEER
GREGORY DILLETT II

Agency Approvals

Revision No.

Job Title

Job Address

36 LINE RD HAMETT
COUNTY NC

Date: October 25, 2024

Issued For

Job Number:

Drawn By: Checked By:

Scale 3/16"=1'-0"

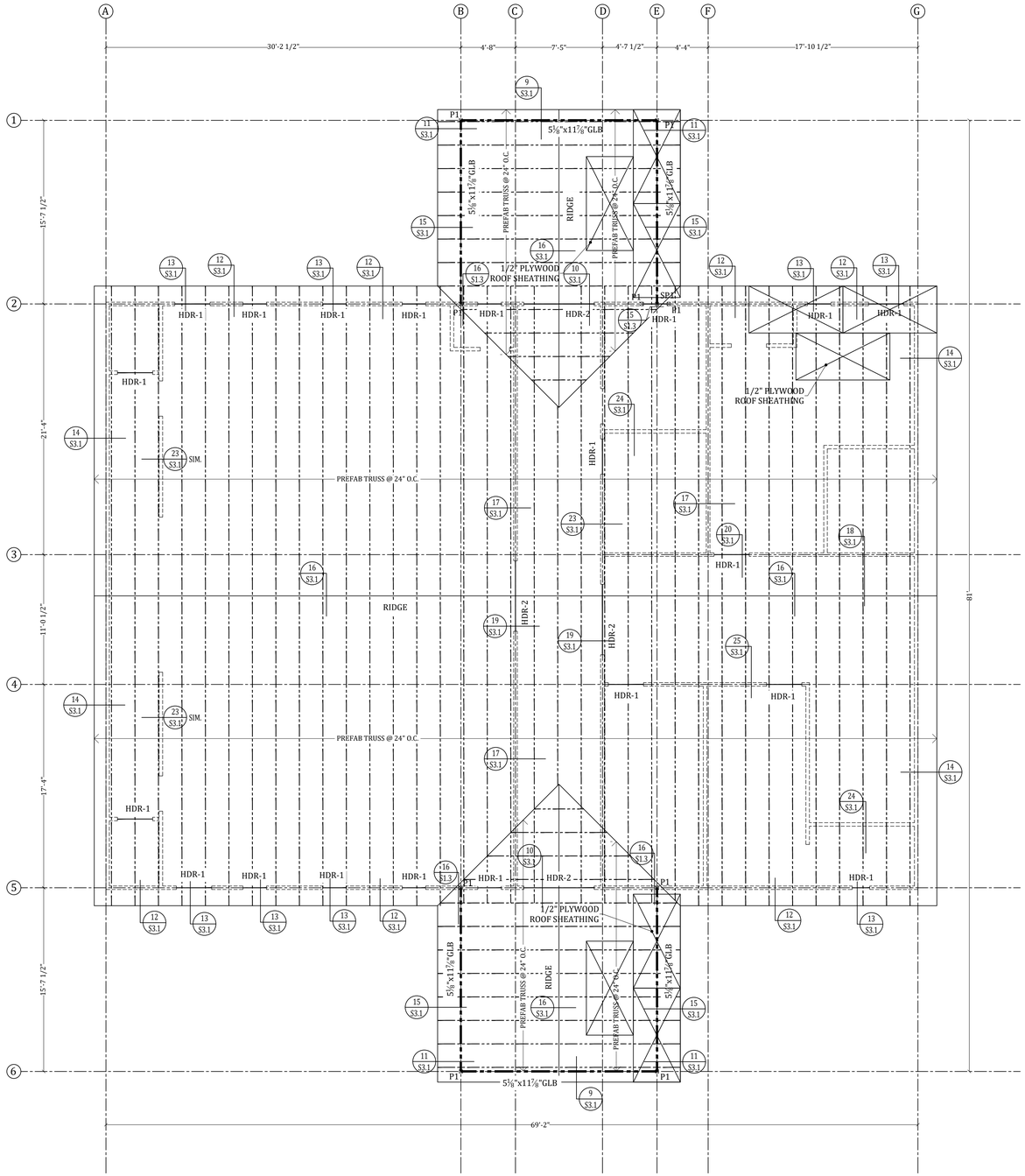
0 2' 4' 8'

Sheet Title

FOOTING
LAYOUT PLAN

Sheet No.

S2.1



ROOF FRAMING LAYOUT

SCALE = 3/16" = 1'-0"

NORTH

ROOF FRAMING NOTES

1. ROOF SHEATHING SHALL BE 1/2" PLYWOOD, CD-X P11 32/16, w/ 8d COMMON NAILS @ 6", 12" O.C.
2. ALL SHEAR WALLS ARE FULL HEIGHT TO THE ROOF AND FLOOR DIAPHRAGM.
3. ALL WALL POSTS ARE 4x4 MINIMUM U.N.O.
4. ALL POSTS SHALL BE CONNECTED TO SILL PLATE WITH "A35" AT EA. SIDE TYP. UNLESS HARDWARE IS NOTED ON PLAN.
5. ALL EXT. WALLS, SHEAR WALLS & BEARING WALLS EXCEEDING 10'-0" AND LESS THAN 15'-0" HEIGHT SHALL BE 2x6 OR 3x4 @ 16" O.C.
6. ALL WOOD BEAMS, COLUMNS & POST U.N.O. SHALL BE:
   - 2x MEMBER D.F. #1
   - 4x MEMBER D.F. #1
   - 2x STUDS D.F. #1 ,(U.N.O.).
7. ALL WOOD JOISTS, STUDS, PLATES & RAFTERS U.N.O. SHALL BE:
   - 2x MEMBER D.F. #2
   - 4x MEMBER D.F. #2
   - 2x STUDS D.F. #2 ,(U.N.O.).
8. ALL DIAPHRAGM AND SHEAR WALL NAILING SHALL UTILIZE COMMON NAILS OR GALVANIZED BOX.
9. FASTENERS IN PRESERVATIVE TREATED WOOD OR FIRE RETARDANT TREATED WOOD SHALL BE OF HOT ZINC COATED GALVANIZED STEEL OR STAINLESS STEEL.
10. ROOF DIAPHRAGM NAILING TO BE INSPECTED BEFORE COVERING FACE GRAIN OF PLYWOOD SHALL BE PERPENDICULAR TO SUPPORTS. PLYWOOD SPANS SHALL CONFORM TABLE 2304.7

SYMBOL LEGEND

P1 ☒	P.T. 7 ¼"x7¼" PSL-2.0E W/ POST BASE SIMPSON - MPB88Z
	3x4 DF#2 AT 16" O.C. LOAD BEARING WOOD STUD WALL
	2x4 DF#2 AT 16" O.C. LOAD BEARING WOOD STUD WALL
	2x4 DF#2 AT 16" O.C. NON LOAD BEARING WOOD STUD WALL
WF#	WALL FOOTING AS PER SCHEDULE ON SHEET S1.2
F#	POST/COLUMN FOOTING AS PER SCHEDULE ON SHEET S1.2
	SHOWING LOWER WALL
1 14'-6"	INDICATES SHEAR WALL; REFER SCHEDULE- ON SHEET S1.2
1	INDICATES SHEAR WALL ID.
HDU#	HOLDOWN, REFER SCHEDULE- ON SHEET S1.2
HDR#	HEADER, REFER SCHEDULE ON SHEET S1.2
C.J.	CONTROL JOINTS

DILLETT
ENGINEERING GROUP

NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT II

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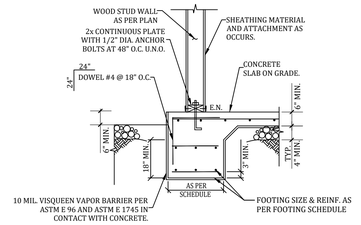
0 2' 4' 8'

Sheet Title

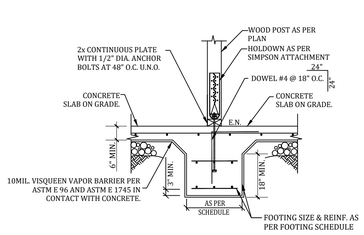
ROOF FRAMING LAYOUT PLAN

Sheet No.

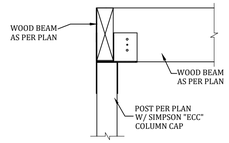
S2.2



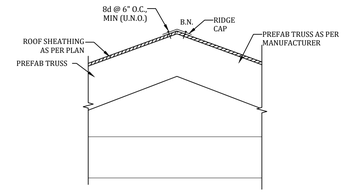
1 WOOD STUD WALL FOOTING DETAIL
NOT TO SCALE



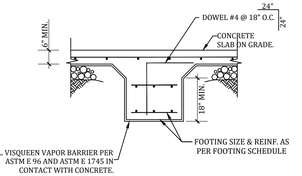
6 WOOD STUD WALL FOOTING DETAIL
NOT TO SCALE



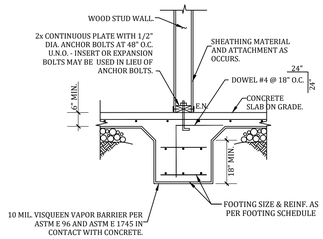
11 TYPICAL WOOD BEAM AT WOOD COLUMN
NOT TO SCALE



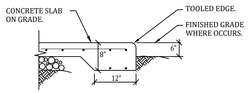
16 PREFAB TRUSS ON RIDGE
NOT TO SCALE



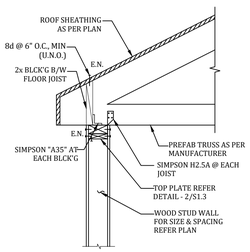
21 WOOD STUD WALL FOOTING
NOT TO SCALE



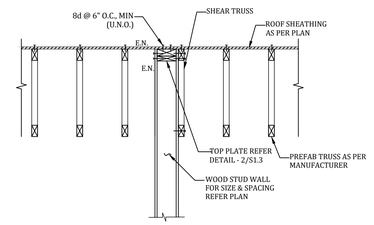
2 WOOD STUD WALL FOOTING
NOT TO SCALE



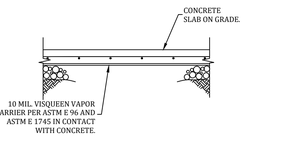
7 THICKEN SLAB DETAIL
NOT TO SCALE



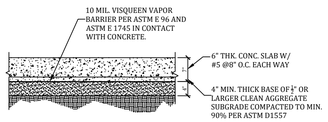
12 PREFAB TRUSS ON WOOD WALL
NOT TO SCALE



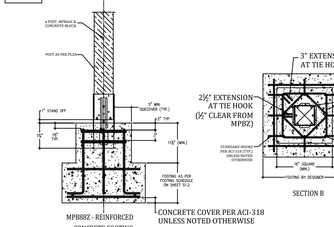
17 PREFAB TRUSS ON WOOD WALL
NOT TO SCALE

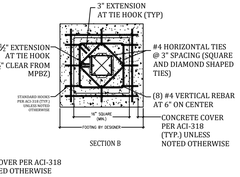


22 INTERIOR WOOD STUD DETAIL
NOT TO SCALE



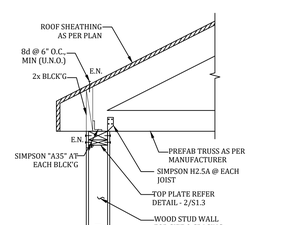
3 SLAB ON GRADE
NOT TO SCALE



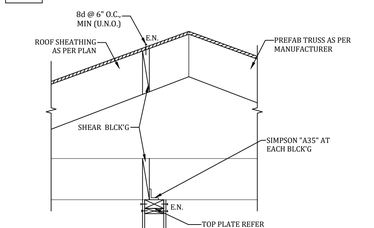


FOTTING (SIZE AND REINFORCEMENT) BY DESIGNER. STANDARD HOOK GEOMETRY IN ACCORDANCE WITH ACI 318 UNLESS NOTED OTHERWISE.

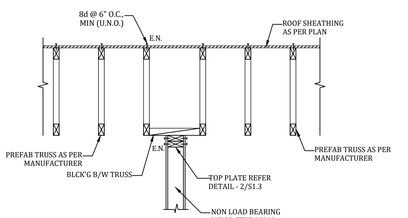
8 WOOD POST FOOTING DETAIL
NOT TO SCALE



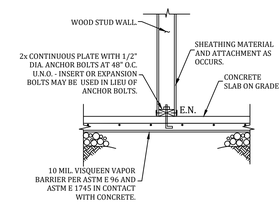
13 PREFAB TRUSS ON WOOD WALL
NOT TO SCALE



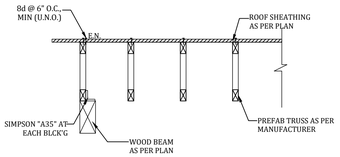
18 PREFAB TRUSS ON RIDGE
NOT TO SCALE



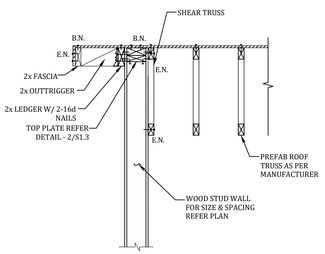
23 PREFAB TRUSS ON NON LOAD BEARING WALL
NOT TO SCALE



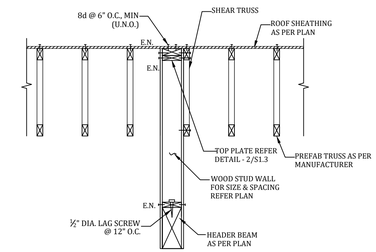
4 INTERIOR WOOD STUD DETAIL
NOT TO SCALE



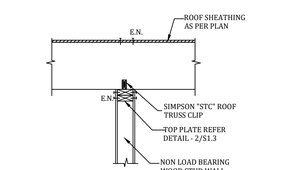
9 PREFAB TRUSS ON WOOD BEAM
NOT TO SCALE



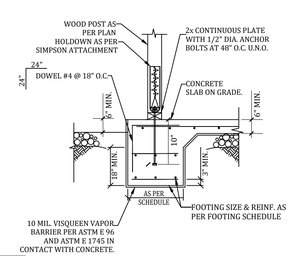
14 PREFAB TRUSS ON WOOD WALL
NOT TO SCALE



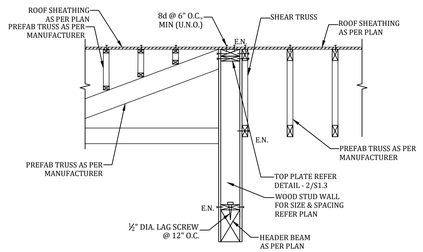
19 PREFAB TRUSS ON WOOD WALL
NOT TO SCALE



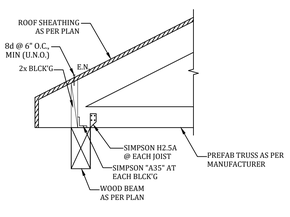
24 PREFAB TRUSS ON NON LOAD BEARING WALL
NOT TO SCALE



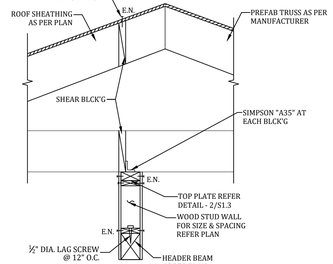
5 HOLDOWN FOOTING DETAIL
NOT TO SCALE



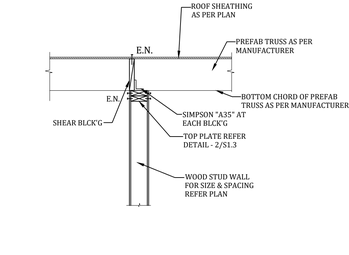
10 PREFAB TRUSS ON WOOD WALL
NOT TO SCALE



15 PREFAB TRUSS ON WOOD WALL
NOT TO SCALE



20 PREFAB TRUSS ON RIDGE
NOT TO SCALE



25 PREFAB TRUSS ON LOAD BEARING WALL
NOT TO SCALE

DILLETT ENGINEERING GROUP

NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT II

Agency Approvals

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Scale N.T.S

0 2' 4' 8'

Sheet Title
SECTION DETAILS

Sheet No.
S3.1

GENERAL ABBREVIATIONS

A	AMPERES
ADA	AMERICANS WITH DISABILITIES ACT
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
ATC	AUTOMATIC TEMPERTURE CONTROL
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISH GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATALOG
CB	CIRCUIT BREAKER
CBM	CERTIFIED BALLASTS MANUFACTURERS
CKT	CIRCUIT
CL	CENTERLINE
CLF	CURRENT LIMITING FUSE
COL	COLUMN
CPT	CONTROL POWER TRANSFORMER
CT	CVRRENT TRANSFORMER
CU	COPPER
(D)	DEMOLITION
DWG	DRAWING
(E)	EXISTING
(ER)	EXISTING TO REMAIN
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
ESB	ENERGY SAVING BALLAST
EWC	ELECTRIC WATER COOLER
F	FUSE
FA	FIRE ALARM
FB	FAN BOX
FLA	FULL LOAD AMPERES
FMC	FLEXIBLE METAL CONDUIT
FSS	FUSED SAFETY SWITCH
FT	FEET
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND,G	GROUND OR GROUNDING
GRMC	GALVANIZED RIGID METALLIC CONDUIT
HOA	HAND, OFF, AUTOMATIC SWITCH
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INT	INTERLOCK
K	KELVIN
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LTG	LIGHTING
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MH	MOUNTING HEIGHT
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTG	MOUNTING
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NFSS	NON-FUSED SAFETY SWITCH
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
P	POLE
PB	PUSHBUTTON
PH	PHASE
PNL	PANELBOARD
POS	PROVIDED UNDER OTHER SECTIONS
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANITY
REQ'D	REQUIRED
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARED
RNMC	RIGID NON-METALLIC CONDUIT
RTU	ROOF TOP UNIT
SP	SPARE
SW	SWITCH
SYM	SYMMETRICAL
TEL	TELEPHONE
TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
UG	UNDERGROUND OR UNDERGRADE
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLT
VAV	VOLUME AIR TERMINAL BOX
VT	VOLTAGE TRANSFORMER
W	WIRE
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER
△	DELTA
Y	WYE
∅	PHASE
#	NUMBER

GENERAL NOTES

1. ALL WIRING SHALL BE RUN CONCEALED UNLESS SPECIFIED OTHERWISE.
2. ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE.
3. ALL COMPONENTS SHOWN ON THE RISER DIAGRAMS, BUT NOT ON THE PLANS OR VICE VERSA, SHALL BE INCLUDED AS IF SHOWN ON BOTH.
4. EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS.
5. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT.
6. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHTS AND EXACT LOCATIONS OF ALL DEVICES.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES. IF DISCREPANCIES OCCUR, CONTRACTOR MUST NOTIFY ARCHITECT.
8. BRANCH CIRCUIT WIRING MAY NOT BE SHOWN GRAPHICALLY ON DRAWINGS AND MAY BE INDICATED BY CIRCUIT NUMBERS BESIDE FIXTURES, DEVICES AND EQUIPMENT. PROVIDE COMPLETE WIRING SYSTEM WHETHER OR NOT INDICATED GRAPHICALLY. PHASE BALANCE ALL PANELBOARDS IN THE FIELD.
9. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. THE DRAWINGS ARE NOT INTENDED TO BE ABSOLUTELY PRECISE. THE DRAWINGS ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, JUNCTION BOX, FITTING AND COMPONENT. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEMS CONCEPT, THE MAIN COMPONENTS OF THE SYSTEM AND THE APPROXIMATE GEOMETRICAL RELATIONSHIP. BASED ON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS, THE CONTRACTOR SHALL PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL.
10. ALL SYMBOLS MAY NOT BE USED IN THIS DRAWING.

LEGENDS

- A — RECESSED DOWNLIGHT
- B — RECESSED DOWNLIGHT (WET RATED)
- C — SEMI FLUSH LIGHTING FIXTURE
- P — PENDANT LIGHT
- V — VANITY LIGHT
- W — WALL LIGHTING FIXTURE
- L — 4' LED LINEAR LIGHT FIXTURE (CONTROLLED BY PULL CHAIN)
- F — LED FLOOR LIGHT
- CH — CHANDELIER LIGHTING FIXTURE
- EM — EMERGENCY LIGHT
- EX1 — EXIT SIGN
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DUPLEX RECEPTACLE.
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DOUBLE DUPLEX RECEPTACLE.
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DUPLEX CEILING RECEPTACLE.
- 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., USB RECEPTACLE.
- 208/240 VOLT RECEPTACLE.
- SC — COMBINATION FIRE & CO DETECTOR

Receptacle Subscripts:

"2"	INDICATES CIRCUIT NUMBER
"GFCI"	INDICATES RECEPTACLE EQUIPPED WITH INTERGRAL GROUND FAULT INTERRUPTER
"AFCI"	ARC-FAULT CIRCUIT INTERRUPTER
"WP"	INDICATES WEATHERPROOF
"IG"	ISOLATED GROUND
"C"	COMPUTER

Subscript — Symbol — 2

- $$$ — INDICATES TYPICAL SWITCH
- $D — INDICATES DIMMER SWITCH
- $3 — 3-WAY DIMMER SWITCH
- $4 — 4-WAY DIMMER SWITCH
- $T — BATH-FAN TIMER SWITCH
- $V — VACANCY SENSOR SWITCH

EQUIPMENT LEGEND

- PANEL-H1 — 240/120 VOLT, 1ø, 3 WIRE PANEL
- PANEL-H2 — 208/120 VOLT, 3ø, 4 WIRE PANEL
- PANEL-H3 — 480/277 VOLT, 3ø, 4 WIRE PANEL
- J — JUNCTION AND/OR PULL BOX
- M — MOTOR
- EXHAUST FAN
- GARAGE DOOR OPENER
- DISCONNECT SWITCH (FUSED); COORDINATE FUSE SIZE WITH MECHANICAL.
- OC — OCCUPANCY SENSOR
- TELEPHONE / DATA OUTLET
- TV — TV OUTLET
- DB — DOOR BELL
- ELECTRICAL CABLE

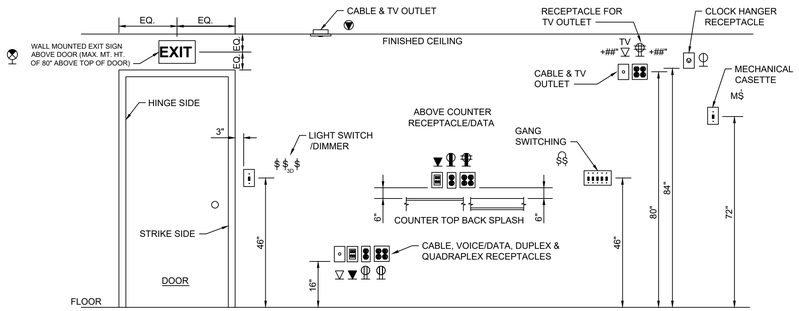
30/20/3

- POLES
- FUSE SIZE (NF = NON FUSED)
- FRAME SIZE

CIRCUITRY, RACEWAYS AND FEEDERS LEGEND

LP2B-12,14,16

- CIRCUIT HOMERUN TO PANELBOARD. PANEL DESIGNATION IS "LP2B". CIRCUIT BREAKER DESIGNATION IS CIRCUIT #1,3,5.
- GENERAL POWER BRANCH CIRCUIT HOMERUN TO PANELBOARD. WITHOUT EXCEPTION, ALL BRANCH CIRCUIT WIRING AND HOMERUNS RELATED TO GENERAL POWER AND LIGHTING CIRCUITS SHALL INCLUDE A SEPARATE GREEN EQUIPMENT GROUND CONDUCTOR.
- ALL CONDUCTORS SHALL BE SIZED IN ACCORADANCE WITH SCHEDULES, NEC AND SPECIFICATIONS.
- CIRCUITRY TURNING UP
- CIRCUITRY TURNING DOWN
- X — FEEDER SIZE TAG SYMBOL. REFER TO "LEGEND OF FEEDER SIZES".



NOTE:
DETAIL SHOWN FOR REFERENCE ONLY, NOT ALL DEVICES ARE INDICATED ON PLANS.

ELECTRICAL DEVICES - MOUNTING HEIGHT DETAIL

NOT TO SCALE

BRANCH CIRCUIT SCHEDULE

CIRCUIT TYPE	CIRCUIT BREAKER	CONDUCTORS	CONDUIT
1 POLE - 1 PHASE 2 WIRE + GROUND	20A-1P	2 #12 + 1 #12 G.	3/4"
	30A-1P	2 #10 + 1 #10 G.	3/4"
	40A-1P	2 #8 + 1 #10 G.	3/4"
	50A-1P	2 #6 + 1 #10 G.	3/4"
	60A-1P	2 #4 + 1 #10 G.	1 1/4"
2 POLE - 1 PHASE 2 WIRE + GROUND	20A-2P	2 #12 + 1 #12 G.	3/4"
	30A-2P	2 #10 + 1 #10 G.	3/4"
	40A-2P	2 #8 + 1 #10 G.	3/4"
	50A-2P	2 #6 + 1 #10 G.	3/4"
	60A-2P	2 #4 + 1 #10 G.	1 1/4"
2 POLE - 1 PHASE 3 WIRE + GROUND	20A-2P	3 #12 + 1 #12 G.	3/4"
	30A-2P	3 #10 + 1 #10 G.	3/4"
	40A-2P	3 #8 + 1 #10 G.	3/4"
	50A-2P	3 #6 + 1 #10 G.	3/4"
	60A-2P	3 #4 + 1 #10 G.	1 1/4"

Schedule Notes:

1. ROMEX CABLE SHALL BE USED FOR WIRING. SIZES AS INDICATED IN SCHEDULE.
2. REFER TO FEEDER SCHEDULE ON ELECTRICAL POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.
3. ALL CONDUCTER SIZES ARE BASED ON CONDUIT LENGTHS OF 60 FEET FOR 120 VOLT BRANCH CIRCUITS. IF LENGTH EXCEEDS 60 FEET (120V, 20A CIRCUITS), THEN USE WIRE SIZE DENOTED BELOW AND INCREASE CONDUIT SIZE AS REQUIRED BY NEC.
4. TREAT 15A CIRCUIT SIMILAR TO 20A CIRCUIT AND 25A CIRCUIT SIMILAR TO 30A CIRCUIT.

WIRE SIZE	CIRCUIT LENGTH	
	120V CIRCUIT	240V CIRCUIT
#10	60' TO 120'	150' TO 240'
#8	120' TO 180'	ABOVE 240'
#6	180' AND ABOVE	–

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MODEL NUMBER	MANUFACTURER	VOLT	LAMPS	NOTES
A	6" LED RECESSED DOWN LIGHT	65BEMW LED 27K 90CRI M6	Lithonia Lighting	120	12W LED	6 Inch White Retrofit LED Recessed Downlight, 12W Dimmable with 2700K Warm White, 750 Lumens.
B	RECESSED DOWNLIGHT (WET RATED)	90933	Globe Electric	120	12W LED	Energy Star, IC Rated, Dimmable, Wet Rated, White Finish, 6.31" Hole Size, Bathroom Lights, 800 Lumens
CH	CHANDELIER LIGHTING FIXTURE	JYL9007A	JONATHAN Y	120	160W LED	20" 4-Light Crystal LED Chandelier, 420 lumen.
V	VANITY LIGHT	T030021-AL	Tubicen	120	10W LED	Modern Dimmable Bathroom Vanity Lights Linear, 10W 3000K LED Vanity Bar Lights, 750 Lumen
W	WALL MOUNTED LIGHT	OLW14 M2	Lithonia Lighting	120	18W LED	Adjustable LED Wall Mount, 1490 Lumens, Dimmable.
EM	LED EMERGENCY UNIT	LED90	EXITRONIX	120	2.2W	250 lumens, Ultra bright 6000K SMD LEDs,
EX1	LED EXIT SIGN	VLED-U-WH-EL90R	EXITRONIX	120	3.2W	Double Face LED Combination Exit Sign - LED Lamp Heads - Self Testing - Red Letters -

CODES ANALYSIS

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES

2018 INTERNATIONAL BUILDING CODE, IBC
2018 INTERNATIONAL RESIDENTIAL CODE, IRC
2017 NATIONAL ELECTRIC CODE, NEC
2018 INTERNATIONAL MECHANICAL CODE, IMC
2018 INTERNATIONAL PLUMBING CODE, IPC
2018 INTERNATIONAL FUEL GAS CODE, IFGC
2018 INTERNATIONAL ENERGY CONSERVATION CODE

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FAYETTEVILLE NC, 28306

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Rock of Salvation Church
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ARCHITECT OF RECORD:

NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLEY

ELECTRICAL COVER SHEET

SCALE: AS SHOWN

E1.01

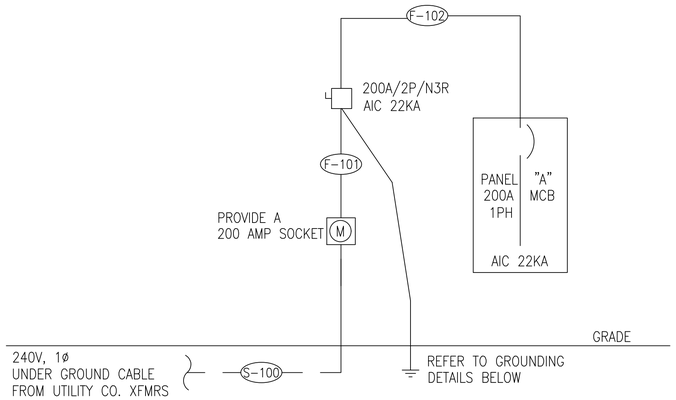
DRAWN BY: KEVIN COLE

PANELBOARD SCHEDULE - "A"

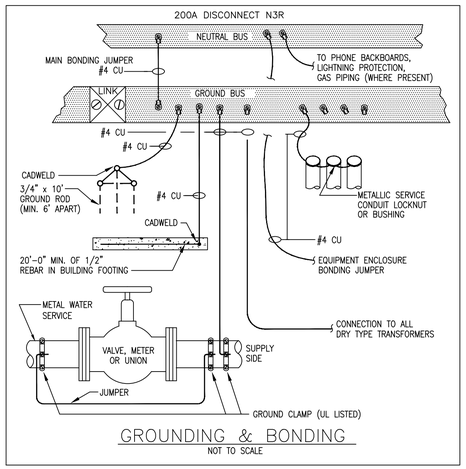
MAIN: 200A MCB | TOTAL FRESH MARKET AREA | VOLTAGE: 240/120 | PHASE: 1 | WIRE: 3 | MOUNTING: SURFACE | AIC: 22,000

CKT #	TRIP POLE	DESCRIPTION	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	PHASE A	PHASE B	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	DESCRIPTION	TRIP POLE	CKT #
1	20/1	LIGHTING_SANCTUARY AREA	0.4										1.3						REC_SANCTUARY AREA	20/1	2
3	20/1	LIGHTING_SANCTUARY AREA	0.4										1.3						REC_SANCTUARY AREA	20/1	4
5	20/1	LIGHTING_SANCTUARY AREA	0.4										1.3						REC_SANCTUARY AREA	20/1	6
7	20/1	LIGHTING_FOYER+EXTERIOR+HALL	0.4										1.1						REC_FOYER AREA	20/1	8
9	20/1	LIGHTING_OFFICES+CLASS RMS+TOILE	0.4										1.4						REC_CLASSROOM-1 & 2	20/1	10
11	20/1	LIGHTING_FRESH MARKET OPEN AREA	0.4										1.4						REC_CHIEF'S+PASTOR'S OFFICE	20/1	12
13	20/1	SMOKE ALARM+CARBON MONOXIDE ALARM							0.2				1.4						REC_FELLOWSHIP HALL+SECRETAR'	20/1	14
15	20/2	AIR HANDLING UNIT, AHU-1				0.5							0.9						REC_GFI_BATHROOMS	20/1	16
17		(2#12, #12G, 3/4"C)				0.5							0.7						REC_GFI_KITCHEN	20/1	18
19	50/2	HEATPUMP UNIT, HP-1				2.5							1.1						REC_GFI / WP_EXTERIOR	20/1	20
21		(2#6, #10G, 3/4"C)				2.5											0.8		REFRIGERATOR	20/1	22
23	20/2	AIR HANDLING UNIT, AHU-2				0.5											1.0		MICROWAVE OVEN	20/1	24
25		(2#12, #12G, 3/4"C)				0.5											0.6		GARBAGE DISPOSAL	20/1	26
27	50/2	HEATPUMP UNIT, HP-2				2.5											1.5		SMALL APPLIANCE	20/1	28
29		(2#6, #10G, 3/4"C)				2.5											2.5		RANGE (2#8, #10G, 3/4"C)	40/2	30
31	20/2	AIR HANDLING UNIT, AHU-3				0.5											2.5				32
33		(2#12, #12G, 3/4"C)				0.5								0.5					KITCHEN HOOD, KH-1	20/1	34
35	50/2	HEATPUMP UNIT, HP-3				2.5										2.3			WATER HEATER, WH-1 (2#10, #10G, 3/4"C)	30/2	36
37		(2#6, #10G, 3/4"C)				2.5										2.3					38
39	20/1	TOILET EXHAUST FAN, TEF-1			0.2													0.5	DRINKING FOUNTAIN	20/1	40
41	20/1	TOILET EXHAUST FAN, TEF-2			0.3													0.5	DRINKING FOUNTAIN	20/1	42
LIGHTING (KVA):		2.4	2.4	0.0	0.5	18.0	0.0	0.0	0.2			0.0	11.8	0.5	0.0	4.5	8.9	1.0	CONNECTED LOAD (KVA):		47.8
RECEPTACLES (KVA):		11.8																	DEMAND LOAD (KVA):		44.7
MOTORS (KVA):		1.0						PHASE A		23.9	199.1										
A/C (KVA):		18.0						PHASE B		23.9	199.3								CONNECTED LOAD (AMPS):		199.2
HEATING (KVA):		4.5								KVA	AMPS								DEMAND LOAD (AMPS):		186.1
KITCHEN (KVA):		8.9																			
MISCELLANEOUS (KVA):		1.2																	AMPACITY REQUIRED:		184.9

NOTES PROVIDE FEED THRU LUG KIT(S).
BREAKERS PROTECTING MULTI-WIRE BRANCH CIRCUITS SHALL BE FIELD-EQUIPPED WITH A MANUALLY OPERATED HANDLE-TIE DEVICE TO ENSURE THAT ALL UNGROUNDED CONDUCTORS ARE SIMULTANEOUSLY DISCONNECTED PER CEC 240.15.



ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE



GROUNDING & BONDING
NOT TO SCALE

SCHEDULE OF FEEDERS & SERVICES

Feeder/Service Description				Number of Runs	Conductor Size			Conduit Diameter	Calculated Fault Value
Designation	Equipment Served	Conductor Ampacity	Copper or Aluminum		Phase Conductor	Neutral Conductor	Equipment Ground	(in)	
S 1 00	MAIN METER	200	CU	1 set	2 # 3/0	1 # 3/0	-	2 1/2	14,430
F 1 01	DISCONNECT	200	CU	1 set	2 # 3/0	1 # 3/0	1 # 4	2 1/2	13,195
F 1 02	PANEL-A	200	CU	1 set	2 # 3/0	1 # 3/0	1 # 4	2 1/2	12,155

KEY: "CU" - COPPER "AL" - ALUMINUM
NOTES: COPPER OR ALUMINUM REFERS TO ALL CONDUCTORS (PHASE, NEUTRAL, AND GROUND)

VOLTAGE DROP CALCULATION

Feeder/Service Description				Voltage Drop					
Designation	Equipment Served	Conductor Ampacity	Length of run	Voltage	Phase	Ampacity Required	Point to Point	Fed From	Cumulative
S 1 00	MAIN METER	200	76	240	1	200	1.09%	Service	1.09%
F 1 01	DISCONNECT	200	10	240	1	200	0.15%	MAIN METER	1.24%
F 1 02	PANEL-A	200	10	240	1	200	0.15%	DISCONNECT	1.40%

ELECTRICAL LOAD CALCULATIONS (RESIDENTIAL)

	UNIT	FLOOR
	AREA (SQFT)	3,370
RESIDENTIAL LOAD - TABLE		
GENERAL LIGHTING (3W/SF)		10,110
LIGHTING AND APPLIANCES LOAD TOTAL		10,110
WATER HEATER		4,500
RANGE		5,000
REFRIGERATOR		800
MICROWAVE		1000
KITCHEN HOOD FAN		500
TOILET EXHAUST FAN		500
GARBAGE DISPOSAL		600
SMALL APPLIANCE		1500
DRINKING FOUNTAIN		1000
SMOKE DETECTOR+CARBON MONOXIDE ALARM		200
SUBTOTAL- LIGHTING LOAD + APPLIANCE LOAD TOTAL		25,710
DEMAND FACTOR LOAD		
TOTAL DEMAND LOAD 100% (PER NEC SECTION 220.82(b))		25,710
MECHANICAL LOADS	EQUIP-1	AHU-1 & HP-1
	VA LOAD	6000
	EQUIP-2	AHU-2 & HP-2
	VA LOAD	6000
	EQUIP-2	AHU-3 & HP-3
	VA LOAD	6000
TOTAL MECHANICAL LOAD		18,000
TOTAL UNIT LOADS W/O DEMAND FACTOR (DEMAND LOAD + MECHANICAL LOAD)		43,710
TOTAL UNIT LOADS (DEMAND LOAD + MECHANICAL LOAD)		43,710
AMPS @120/240V,1PH,3W		182
RECOMMENDED PANEL LOAD (AMPS)		200

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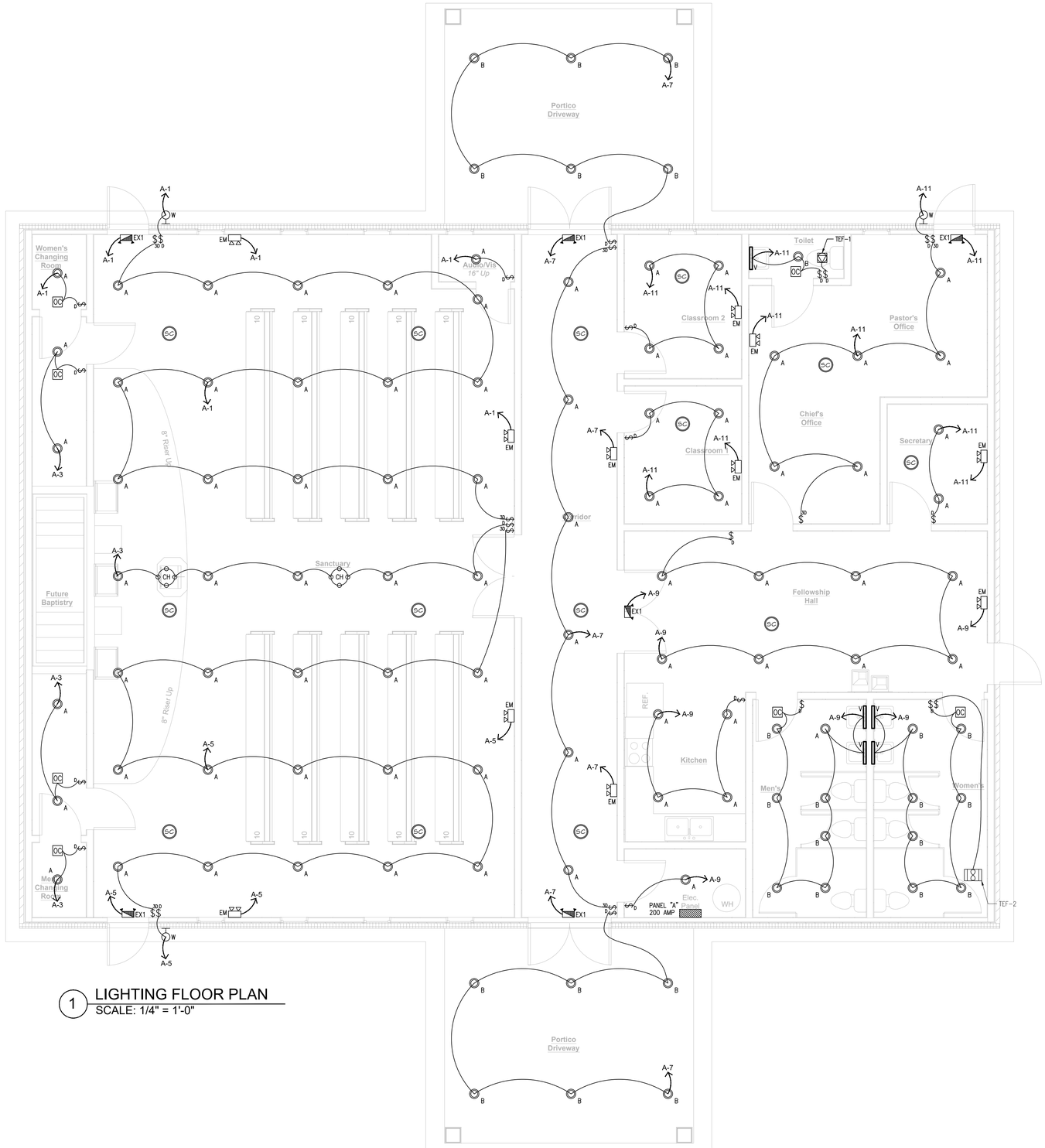
ELECTRICAL PANEL SCHEDULE, CALCULATION & SINGLE LINE DIAGRAM

SCALE: AS SHOWN

E2.01

DRAWN BY: KEVIN COLE



1 LIGHTING FLOOR PLAN
SCALE: 1/4" = 1'-0"

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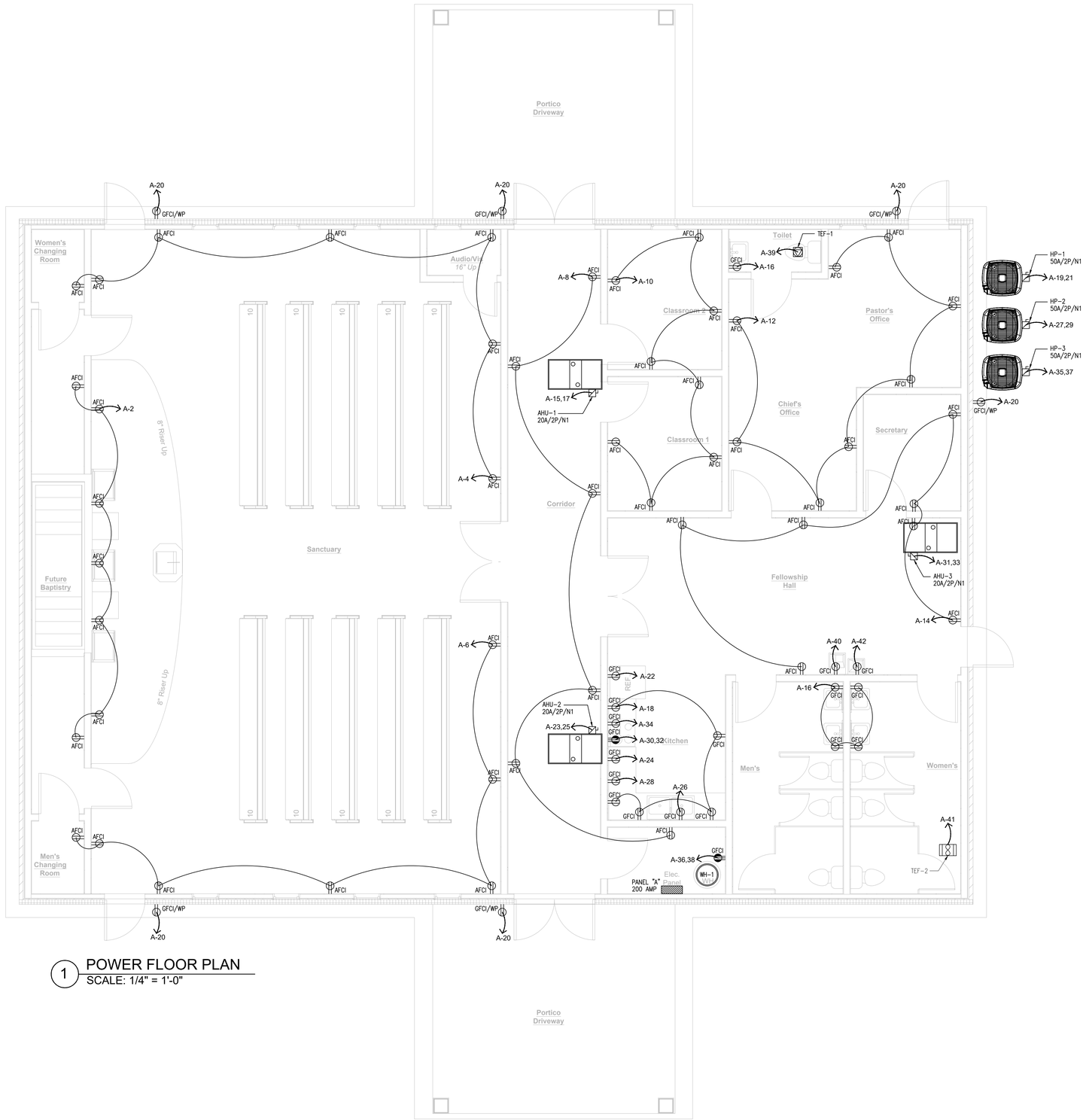
ELECTRICAL PLANS

SCALE: AS SHOWN

E3.01

DRAWN BY: KEVIN COLE



1 POWER FLOOR PLAN
SCALE: 1/4" = 1'-0"

NOTE:
ALL BRANCH CIRCUITS SUPPLYING 120V 15-AMPERE AND 20-AMPERE OUTLETS IN FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS AND SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER (AFCI).

NOTE:
ALL RECEPTACLES IN BATHROOMS, GARAGES, ACCESSORY BUILDINGS, OUTDOORS, CRAWL SPACES, UNFINISHED BASEMENTS, KITCHENS (WHERE RECEPTACLES SERVE COUNTERTOP SURFACES), LAUNDRY, UTILITY, WET BAR SINKS (WITHIN 6' OF THE EDGE OF THE SINK), SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION AS PER THE 2017 NEC.

NOTE:
THE RECEPTACLES ARE REQUIRED TO BE GROUND FAULT CIRCUIT INTERRUPTER, ARC-FAULT AND TAMPER RESISTANT THROUGHOUT AS PER THE 2017 NEC.

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11/5/24

ELECTRICAL PLANS

SCALE: AS SHOWN

E4.01

DRAWN BY: KEVIN COLE

MECHANICAL LEGEND

SYMBOL	ABBREV.	DESCRIPTION
(E)		COORDINATE WITH ELECTRICAL
CD	CD	CONDENSATE DRAIN (A.C)
D	D	DRAIN
RD	RD	REFRIGERANT DISCHARGE
RL	RL	REFRIGERANT LIQUID
RS	RS	REFRIGERANT SUCTION
		PIPE DOWN
		PIPE UP
UP		PIPE RISE (OR DN. FOR DROP)
		DIRECTION OF FLOW IN PIPE
	AV	AIR VENT (VALVE)
	CHV	CHECK VALVE
	CV (2W)	CONTROL VALVE (2-WAY)
	CV (3W)	CONTROL VALVE (3-WAY)
	FCD	AUTOMATIC FLOW CONTROL DEVICE
	SOV	SHUT OFF VALVE
		GLOBE/BALL/BUTTERFLY VALVE
	BV	COMBINATION BALANCING & SHUT-OFF VALVE
	FEV	FLOW ELEMENT VENTURI
OH		VALVE ON RISE OR DROP
	STR.	STRAINER
	CL	CAPPED LINE
	DN.	DOWN OR DROP
	UP	RISE OR RISER
	RV	PRESSURE RELIEF VALVE
	PG	PRESSURE GAUGE WITH BALL VALVE
	R.	ECCENTRIC REDUCER
	R.	CONCENTRIC REDUCER
	FC	FLEXIBLE CONNECTION (PIPE)
	PA	PIPE ANCHOR
	U	UNION
10x6		DUCTWORK (1ST NUMBER INDICATES WIDTH SHOWN), NET INSIDE DIMENSION
	TV	SQUARE ELBOW WITH TURNING VANES
		RADIUS ELBOW
	MVD	MANUAL VOLUME DAMPER
	MOD	MOTOR OPERATED DAMPER
	BDD	BACKDRAFT DAMPER
FD	FD	FIRE DAMPER
SD	SD	DUCT MOUNTED SMOKE DETECTOR
SFD	SFD	AUTOMATIC SMOKE AND FIRE DAMPER
FLEX	FLEX	FLEXIBLE CONNECTION (DUCTWORK)
	FLEX	FLEXIBLE CONNECTION OR SEISMIC JOINT

SYMBOL	ABBREV.	DESCRIPTION
		LINED DUCTWORK (OR PLENUM)
UP		DUCT RISE IN DIRECTION OF FLOW
DN		DUCT DROP IN DIRECTION OF FLOW
		ROUND DUCT UP
		ROUND DUCT DOWN
		SUPPLY DUCT UP
		SUPPLY DUCT DOWN
	RA/OA	RETURN AIR DUCT/OUTSIDE AIR DUCT UP
		RETURN AIR DUCT/OUTSIDE AIR DUCT DOWN
		EXHAUST AIR DUCT UP
		EXHAUST AIR DUCT DOWN
		DUCT TRANSITION
	CD	CEILING DIFFUSER
	RR	RETURN REGISTER
	ER	EXHAUST REGISTER
T AC-3	T'STAT	THERMOSTAT OR TEMPERATURE SENSOR (NUMBER INDICATES EQUIPMENTOR ZONE SERVED)
H	H'STAT	HUMIDISTAT
CO2		CARBON DIOXIDE SENSOR
	CFM	CUBIC FEET PER MINUTE
		4-WAY SUPPLY AIR DIFFUSER
		4-WAY RETURN AIR GRILLE
		SUPPLY AIR DIFFUSER W/ AIR DIRECTION
		SURFACE MOUNT SUPPLY AIR DIFFUSER
		SURFACE MOUNT RETURN AIR GRILLE
		SUPPLY AIR SIDEWALL DIFFUSER
		RETURN AIR SIDEWALL GRILLE
		VOLUME CONTROL DAMPER
		SUPPLY/EXHAUST AIR FAN
		DUCT PLENUM BOX
		DOOR LOUVER
		UNDER CUT
		INTAKE/ EGRESS
		DUCT HEATER
		WASHROOM VENTILATOR

MECHANICAL SPECIFICATIONS

NO.	DESCRIPTION
A)	AIR CONDITIONING SPECIFICATION
1.	DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED FOR THE EXACT LOCATION OF EQUIPMENT, PIPING, DUCTWORK, OR OTHER ITEMS.
2.	DRAWINGS DO NOT SHOW EVERY DETAIL OF CONSTRUCTION OR INSTALLATION. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE AND WORKING SYSTEM.
3.	ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR IN A FIRST CLASS, WORKMAN-LIKE MANNER. THE COMPLETED SYSTEM SHALL BE OPERATIVE AND ACCEPTANCE BY ENGINEER/ARCHITECT SHALL BE A CONDITION OF THE SUB-CONTRACT.
4.	THE CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TESTS.
5.	THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL ASPECTS OF THE PROJECT AND SHALL VERIFY ALL CONDITIONS PRIOR TO CONSTRUCTION.
6.	ALL INSTALLATION SHALL BE COORDINATED BY THE CONTRACTOR WITH OTHER TRADES TO AVOID IMPACTS.
7.	ALL REQUIRED CONSTRUCTION INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK SHALL BE PROVIDED BY THE CONTRACTOR.
8.	ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, AND ORDINANCES. THE CODES IN EFFECT FOR THIS PROJECT SHALL THE 2018 EDITION OF IBC WITH REVISIONS AND ALL ASSOCIATED INDUSTRY CODES BY REFRENCE.
9.	ALL MATERIALS SHALL BE NEW AND SHALL BEAR UNDERWRITERS LABEL WHERE APPLICABLE.
10.	EQUIPMENT SHALL BE U.L. APPROVED.
11.	THE MECHANICAL CONTRACTOR SHALL PROVIDE A WRITTEN WARRANTY THAT SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR ONE YEAR FROM THE DATE OF FINAL WORK ACCEPTANCE BY THE OWNER OR OWNERS REPRESENTITIVE.
12.	ARCHITECTURAL AND/OR ENGINEERING EXPENSES THAT ARE INCURRED DUE TO REVISIONS OR SUBSTITUTIONS REQUESTED FOLLOWING THE ISSUE OF APPROVED DRAWINGS SHALL BE PAID FOR BY THE CONTRACTOR.
B)	INSTALLATION
1.	THE MECHANICAL CONTRACTOR SHALL PROVIDE HVAC EQUIPMENT LISTED IN THE HVAC EQUIPMENT SCHEDULE AND SHALL MEET THE CAPACITIES NOTED.
2.	THE MECHANICAL CONTRACTOR SHALL SUBMIT MANUFACTURER SHOP DRAWINGS, CUT SHEETS AND PERFORMANCE DATA ON ALL EQUIPMENT AND OBTAIN THE ENGINEER'S APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
3.	THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MOTOR STARTERS, RELAYS, CONTRACTORS, SMOKE DUCT DETECTORS, ETC.
4.	THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL SWITCHES AND INSTALL ALL CONTROL WIRING.
5.	A/C UNIT SUPPLY AND RETURN AIR DUCTS SHALL BE R-6 JOHNS MANVILLE MAT-FACED MICRO-AIRE FIBERGLASS DUCT BOARD, TYPE 800 (UL APPROVED) , INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
6.	ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED TO S.M.A.C.N.A. STANDARDS. ALL DUCTWORK SIZES ARE INSIDE DIMENSIONS.
a)	ALL 90 DEGREE ELBOWS SHALL BE HAVE A MINIMUM CL RADIUS OF 1.5 R/W (1.5 R/D) OR BE FURNISHED WITH TURNING VANES.
b)	BRANCH TAKEOFFS SHALL BE PROVIDED WITH ADJUSTABLE, ACCESSIBLE AIR SPLITTER DAMPERS.
c)	ROUND DUCT ELBOWS SHALL HAVE A CENTERLINE RADIUS OF NOT LESS THAN 1.5 TIMES THE DIAMETER OF THE DUCT.
7.	SECURE FLEXIBLE DUCTS TO BRANCH TAKE-OFF COLLAR WITH HOSE CLAMP.
8.	MAXIMUM LENGTH OF ALL FLEXIBLE DUCT SHALL NOT BE MORE THAN 10 FEET, UNLESS OTHERWISE NOTED.
9.	ALL EXHAUST AND OUTSIDE AIR DUCT SHALL BE MIN. 24GA GALVANIZED SHEET METAL.
10.	ALL DUCT ABOVE THE ROOF TO BE MIN. 16GA SHEET METAL, INSULATED W/ 2?THK RIGID HULL BOARD AND SHEATHED WITH GALV. STEEL. EXTERIOR STEEL TO BE SEALED/WEATHERPROOFED, PRIMED AND PAINTED PER ARCHITECTURAL PAINT SCHEDULE.
11.	THE MECHANICAL CONTRACTOR SHALL INSTALL SMOKE DUCT DETECTORS IN THE RETURN DUCT OF ALL A/C UNITS EXCEEDING 2000 CFM. SMOKE DETECTOR SHALL BE INTERLOCKED W/ AHU CONTROLS.
12.	AIR DISTRIBUTION ACCESSORIES SHALL BE AS NOTED ON THE PLANS.
13.	REFRIGERANT PIPING SHALL BE TYPE "K" COPPER WITH SOLDER FITTINGS.
a)	ALL REFRIGERATION PIPE INSULATION SHALL BE MIN. ½?ARMAFLEX OR EQUAL APPROVED BY THE ENGINEER.
b)	ALL EXTERIOR LIQUID/SUCTION LINES SHALL BE INSULATED AND WEATHER PROOFED. ALL SUCTION LINES INSIDE THE BUILDING SHALL BE INSULATED.
c)	LIQUID/SUCTION LINES SHALL BE ROUTED INSIDE THE STRUCTURE TO THE EXTENT PRACTICABLE.
d)	THE MECHANICAL CONTRACTOR SHALL SIZE ALL PIPING FOR THE SPECIFIC APPLICATION AND ROUTE OF PIPE.
14.	THE MECHANICAL CONTRACTOR SHALL ROUTE CONDENSATE PIPING FOR A LENGTH OF 10 FEET TO A DRAIN SUPPLIED BY THE PLUMBING CONTRACTOR. THE MECHANICAL CONTRACTOR'S CONDENSATE PIPE SHALL INCLUDE A TRAP SIZED FOR AHU FAN STATIC.
15.	THE MECHANICAL CONTRACTOR SHALL SET AIR HANDLER UNIT AND CONDENSING UNIT AS SHOWN ON THE DRAWINGS. EQUIPMENT SHALL BE PROVIDED DIM PAD ISOLATORS.
16.	ALL OUTDOOR AIR INTAKES SHALL BE PROVIDED WITH BIRD AND INSECT SCREEN OF A CORROSION-RESISTANT MATERIAL. BIRD SCREEN SHALL NOT BE LARGER THAN 1/2" MESH AND INSECT SCREEN SHALL NOT BE LARGER THAN 18X14.
17.	THERMOSTATS SHALL BE SUPPLIED AND INSTALLED BY THE MECHANICAL CONTRACTOR:
a)	SHALL BE MOUNTED 5'-6' ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE.
b)	SHALL BE HEAT/OFF/COOL AND FAN/AUTO/ON SWITCHED AND SHALL BE APPROVED BY AC EQUIPMENT MANUFACTURER.
c)	FURNISH AND INSTALL ALL TEMPERATURE CONTROLS, INCLUDING PROGRAMMABLE THERMOSTAT AND HUMIDISTAT CONTROLS.
18.	FIRE DAMPERS SHALL BE INSTALLED IN ALL DUCTS PENETRATING FIRE RATED ROOFS, CEILINGS AND BULKHEADS AS BY CODE. ACCESS DOORS FOR INSPECTION AND RESET SHALL BE PROVIDED AT EACH LOCATION.
a)	FIRE DAMPERS PROVIDED IN KITCHEN EXHAUST DUCT SHALL BE EQUIPPED WITH 212F FUSIBLE LINK.
C)	WARRANTIES
1.	CORRECTION OF ANY ENGINEERING DEFECT SHALL BE RECTIFIED WITHOUT ADDITIONAL CHARGE AND SHALL NOT INCLUDE REPLACEMENTS OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREBY.
2.	CONTRACTOR SHALL ADJUST, TEST AND BALANCE ALL SYSTEMS.
a)	BALANCING OF THE SYSTEM SHALL BE BY A CERIFIED THIRD PARTY.

HVAC ABBREVIATIONS

A	AMPERES	HZ	FREQUENCY
AC	AIR CONDITIONING	IN	INCH OR INCHES
AD	ACCESS DOOR	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	LG	LENGTH
AL	ACOUSTICAL LINING	LAT	LEAVING AIR TEMPERATURE
BHP	BRAKE HORSEPOWER	LBS	POUNDS
BTU	BRITISH THERMAL UNIT	LDB	LEAVING DRY BULB TEMPERATURE
BTUH	BTU PER HOUR	LIN FT	LINEAR FEET
CD	CEILING DIFFUSER	LWB	LEAVING WET BULB TEMPERATURE
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
CG	CEILING GRILLE	MBH	THOUSAND BTU PER HOUR
CLG	CEILING	MHP	MOTOR HORSEPOWER
COMPR	COMPRESSOR	MIN	MINIMUM
CR	CEILING REGISTER	NIC	NOT IN CONTRACT
DB	DRY BULB	NO.	NUMBER
DIAM	DIAMETER	NTS	NOT TO SCALE
DN	DOWN	RA	RETURN AIR
DWG	DRAWING	RM	ROOM
DX	DIRECT EXPANSION	RPM	REVOLUTIONS PER MINUTE
EAT	ENTERING AIR TEMPERATURE	SP	STATIC PRESSURE
EDB	ENTERING DRY BULB TEMPERATURE	SPEC	SPECIFICATION
EF	EXHAUST FAN	TEMP	TEMPERATURE
EWB	ENTERING WET BULB	TG	TOP GRILLE
EWT	ENTERING WATER TEMPERATURE	TV	TURNING VANES
°F	DEGREES FAHRENHEIT	TYP	TYPICAL
FC	FLEXIBLE CONNECTION	W	WIDTH
FD	FIRE DAMPER	W/	WITH
FIN FL	FINISHED FLOOR	W/O	WITHOUT
FLA	FULL LOAD AMPERES	WB	WET BULB
FPM	FEET PER MINUTE	WMS	WIRE MESH SCREEN
FT	FEET	SG	SUPPLY GRILLE
HD	HEAD	RG	RETURN GRILLE
HR	HOUR	SP	SMOKE PURGE
MAU	MAKE UP AIR UNIT		

AIR HANDLING UNIT SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	COOLING TONNAGE	SUPPLY AIR FLOW CFM	COOLING TOTAL (BTU/H)	HEATING TOTAL (BTU/H)	ELECTRICAL MCA	ELECTRICAL VOLT/PHASE	APPROX. WEIGHT (LB)	DIMENSION HXWXD	MANUF. OR EQUAL	MODEL	SYSTEM
AHU-1	FOYER CEILING SPACE	SANCTUARY & FOYER AREA	DUCTED	5.0	2000	60,000	60,000	8.6	208-230V 60/1	167	42.5"X17.5"X16"	GOODMAN	ASPT61D14*	HP-1
AHU-2	FOYER CEILING SPACE	SANCTUARY & FOYER AREA	DUCTED	5.0	2000	60,000	60,000	8.6	208-230V 60/1	167	42.5"X17.5"X16"	GOODMAN	ASPT61D14*	HP-2
AHU-3	FELLOWSHIP HALL CEILING	OFFICE, HALL, KITCHEN AREA	DUCTED	5.0	2000	60,000	60,000	8.6	208-230V 60/1	167	42.5"X17.5"X16"	GOODMAN	ASPT61D14*	HP-3

HEATPUMP UNIT SCHEDULE

TAG NUMBER	COOLING TONNAGE	COOLING TOTAL CAP.(BTU/H)	HEATING TOTAL CAP(BTU/H)	ELECTRICAL MCA	ELECTRICAL VOLT/PHASE	REFRIGERANT TYPE	MIN. EFFICIENCY EER	MIN. EFFICIENCY COP	MIN. EFFICIENCY SEER	APPROX. WEIGHT (LB)	DIMENSION HXWXD (INCH)	MANUF. OR EQUAL	MODEL
HP-1	5.0	60,000	60,000	37.0	208-230V 60/1	R410A	12.0	-	16.0	306	40"X35.5"X**29.75"**	GOODMAN	GSZ160601B
HP-2	5.0	60,000	60,000	37.0	208-230V 60/1	R410A	12.0	-	16.0	306	40"X35.5"X**29.75"**	GOODMAN	GSZ160601B
HP-3	5.0	60,000	60,000	37.0	208-230V 60/1	R410A	12.0	-	16.0	306	40"X35.5"X**29.75"**	GOODMAN	GSZ160601B

NOTES:
1) CAPACITY IS MEASURED BY MANUFACTURE TESTITNG WHEN PAIRED WITH CORRESPONDING CONDENSING UNIT (SEE CONDENSING UNIT SCHEDULE).
2) COOLING CAPACITY DATA IS BASED ON 95 DEG F OUTDOOR CONDITIONS AND 67 DEG F EADB.

FAN SCHEDULE & DATA

DWG TAG	QTY	MNF. OR EQUAL	MODEL OR EQUAL	SERVICE	CFM	FAN STATIC (IN. W.G.)	DUCT CONNECT SIZE	ELECTRIC V/PH/HZ	ELECTRIC WATTS
TEF-1	1	PANASONIC	FV-0511VC1	TOILET EXH.	70	0.2	4"	120/1/60	60
TEF-2	1	FANTECH	FG 6	TOILET EXH.	300	0.2	10"	120/1/60	170

1. PROVIDE BACKDRAFT DAMPER.
2. FAN CONTROLLED BY WALL SWITCH.

KITCHEN HOOD RANGE SCHEDULE

DWG TAG	QTY	MNF. OR EQUAL	MODEL OR EQUAL	SERVICE	CFM	FAN STATIC (IN. W.G.)	DUCT CONNECT SIZE	ELECTRIC V/PH/HZ	ELECTRIC WATT
KH-1	1	BROAN	PM300SS	KITCHEN EXH.	115-300	0.25	8"	120/1/60	276

AIR DISTRIBUTION SCHEDULE

DWG TAG	SERVICE	MOUNTING	DESCRIPTION	MNF OR EQUAL	MODEL OR EQUAL
CD-A	SUPPLY AIR	SURFACE MNT	SUPPLY AIR REGISTER WITH OPPOSED BLADE DAMPER MAX NC LEVEL 25	TITUS	300RL
RG-A	RETURN/EXHAUST AIR	"	RETURN AIR REGISTER WITH OPPOSED BLADE DAMPER, 0.67" SPACING, FIXED DEFLECTION, MAX NC LEVEL 25	"	350RL
CD-B	SUPPLY AIR	"	SUPPLY AIR REGISTER WITH OPPOSED BLADE DAMPER MAX NC LEVEL 25	"	TMS6-12X12

CODES ANALYSIS

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES

2018 INTERNATIONAL BUILDING CODE, IBC
2018 INTERNATIONAL RESIDENTIAL CODE, IRC
2017 NATIONAL ELECTRIC CODE, NEC
2018 INTERNATIONAL MECHANICAL CODE, IMC
2018 INTERNATIONAL PLUMBING CODE, IPC
2018 INTERNATIONAL FUEL GAS CODE, IFGC
2018 INTERNATIONAL ENERGY CONSERVATION CODE

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DESIGN CONSULTANT & CONSTRUCTION MANAGEMENT
FAYETTEVILLE NC, 28306

PROJECT
Rock of Salvation Church

36 Line Rd,
Harnett County,NC

TOWN, STATE

DATE: 10.30.2024
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ARCHITECT OF RECORD:

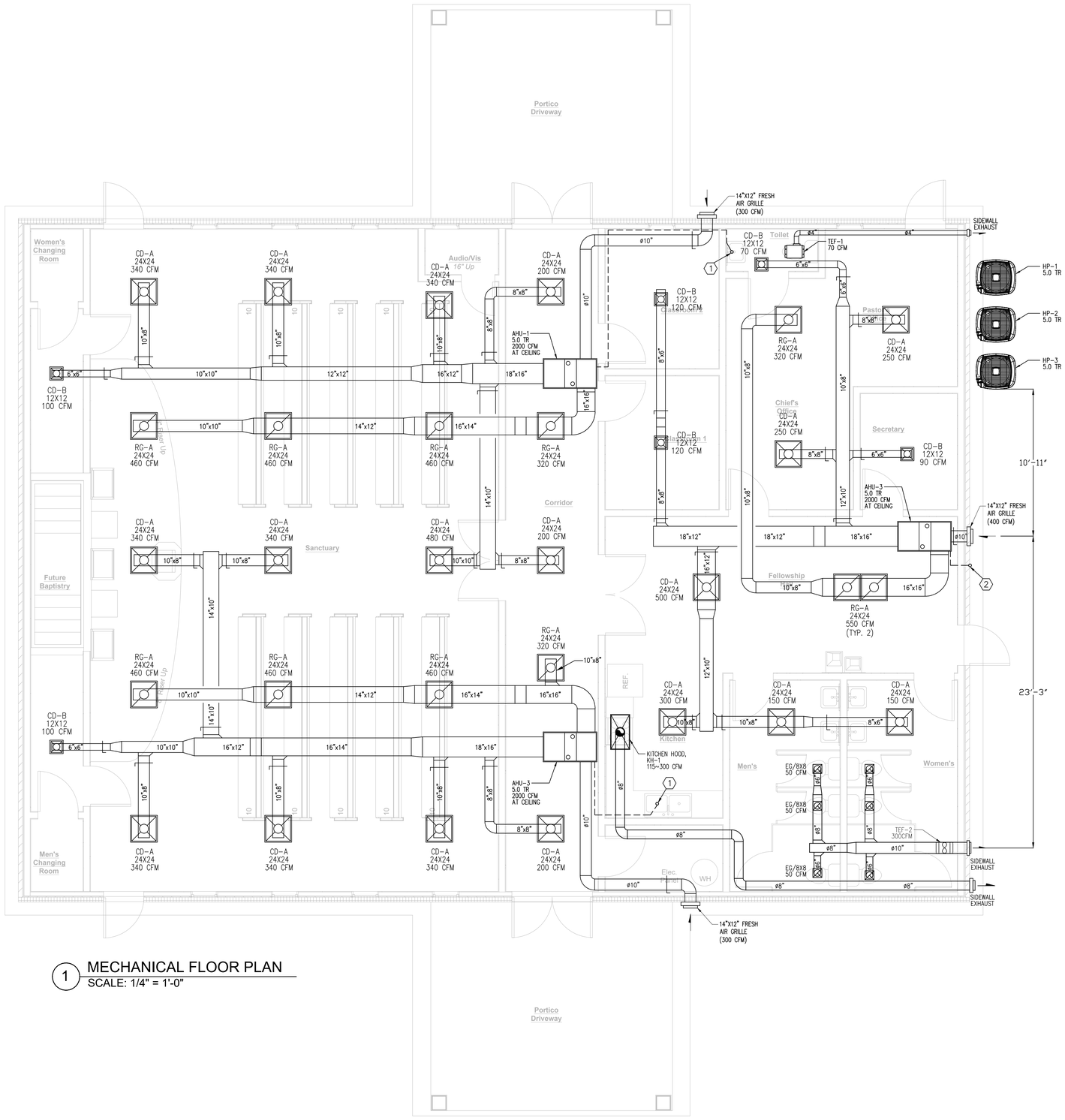
NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT

MECHANICAL COVER SHEET

SCALE: AS SHOWN

M1.01

DRAWN BY: KEVIN COLE



1 MECHANICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

KEYNOTES:

1. 3/4" PVC CONDENSATE LINE TO BE CONNECTED TO LAVATORY TRAP OR SINK.
2. 3/4" CPVC CONDENSATE LINE TO EXPOSED OFF TO THE DRYWELL.

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ARCHITECT OF RECORD:

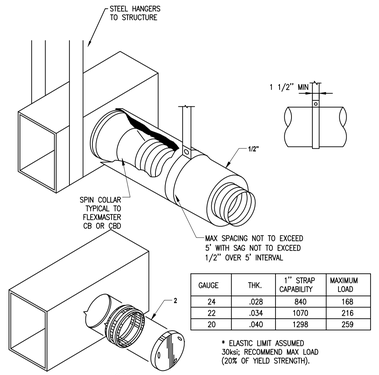
NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLEY

MECHANICAL PLANS

SCALE: AS SHOWN

M2.01

DRAWN BY: KEVIN COLE

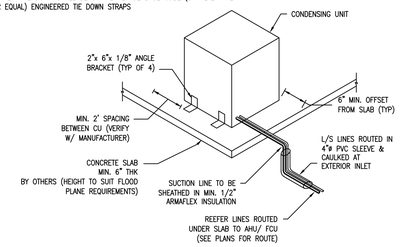


GAUGE	THK.	1" STRAP CAPABILITY	MAXIMUM LOAD
24	.028	840	168
22	.034	1070	216
20	.040	1298	259

* ELASTIC LIMIT ASSUMED
30ksi; RECOMMEND MAX LOAD (20% OF YIELD STRENGTH).

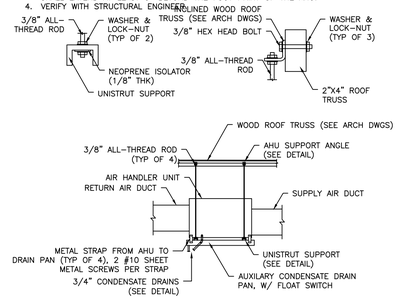
SUPPORT REQUIREMENTS FOR DUCT 1
SCALE: N.T.S.

NOTES:
1. CU SHALL BE LOCATED ONE (1) FOOT ABOVE THE BASE FLOOD ELEVATION OR THE ELEVATION REQUIRED BY THE FLORIDA BUILDING CODE, WHICHEVER IS HIGHER. SEE ARCHITECTURAL PLANS.
2. CU SHALL BE LOCATED ON 6" THICK SLAB OR EQUIVALENT.
3. EQUIPMENT TIE DOWN SHALL BE CARRIER LARGE BASE CUBE (OR ALTERNATE MNFR EQUAL) ENGINEERED TIE DOWN STRAPS

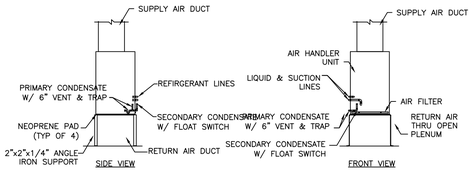


AIR COOLED CONDENSING UNIT 2
SCALE: N.T.S.

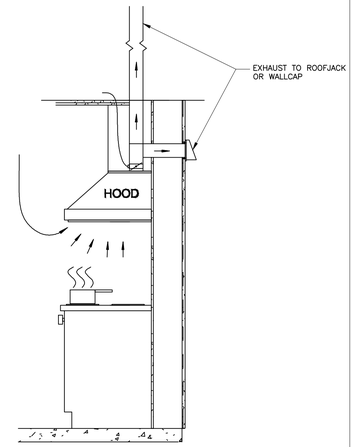
NOTES:
1. PROVIDE FLOORING AT AHU FOR MAINTENANCE NOT LESS THAN 24" IN WIDTH.
2. PROVIDE MIN 20"x30" (OR LARGE ENOUGH TO ALLOW REMOVAL OF LARGEST APPLIANCE) ACCESS SCUTTLE WITH LIGHT AND CONVENIENCE RECEPTACLE.
3. AUXILARY CONDENSATE DRAIN PAN SHALL BE A MIN 1-1/2" DEPTH AND SHALL EXTEND AT LEAST 3" BEYOND THE FOOT PRINT OF THE AHU.
4. VERIFY WITH STRUCTURAL ENGINEER.



HORIZONTAL MNT AIR HANDLER UNIT 3
SCALE: N.T.S.



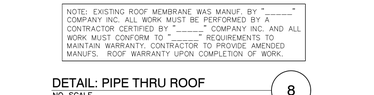
VERTICAL MNT AIR HANDLER UNIT W/ RA TO OVERHEAD 4
SCALE: N.T.S.



KITCHEN EXHAUST SYSTEM 5
SCALE: N.T.S.

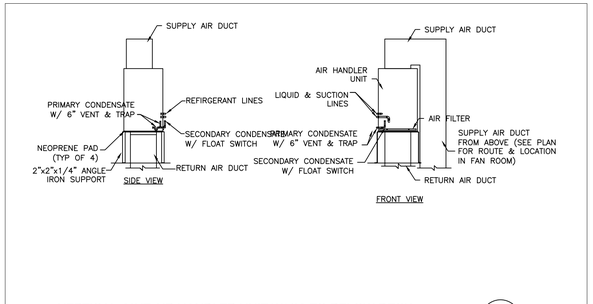
TURNING VANES DETAIL 6
SCALE: N.T.S.

BRANCH DUCT TAKEOFF DETAIL 7
SCALE: N.T.S.

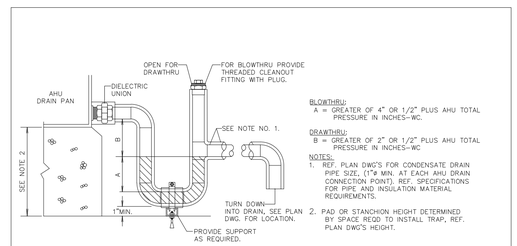


NOTE: EXISTING ROOF MEMBRANE WAS MANUF. BY "_____" COMPANY INC. ALL WORK MUST BE PERFORMED BY A CONTRACTOR CERTIFIED BY "_____" COMPANY INC. AND ALL WORK MUST CONFORM TO "_____" REQUIREMENTS TO MAINTAIN WARRANTY. CONTRACTOR TO PROVIDE AMENDED MANUFS. ROOF WARRANTY UPON COMPLETION OF WORK.

DETAIL: PIPE THRU ROOF 8
NO SCALE



VERTICAL MNT AIR HANDLER UNIT W/ SA TO BELOW DECK 9
SCALE: N.T.S.



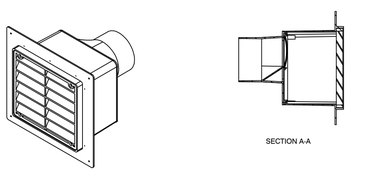
BLOWTHRU:
A = GREATER OF 4" OR 1/2" PLUS AHU TOTAL PRESSURE IN INCHES-WC.

DRAWTHRU:
B = GREATER OF 2" OR 1/2" PLUS AHU TOTAL PRESSURE IN INCHES-WC

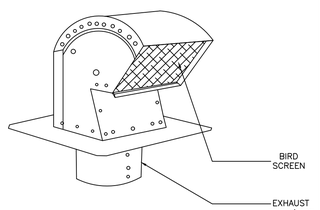
NOTES:
1. REF. PLAN DWG'S FOR CONDENSATE DRAIN PIPE SIZE, (1"ø MIN. AT EACH AHU DRAIN CONNECTION POINT). REF. SPECIFICATIONS FOR PIPE AND INSULATION MATERIAL REQUIREMENTS.
2. PAD OR STANCHION HEIGHT DETERMINED BY SPACE REQD TO INSTALL TRAP, REF. PLAN DWG'S HEIGHT.

CONDENSATE DRAIN DETAIL 10
SCALE: NONE

NOTES:
1. PROVIDE XVENT OR EQUAL NON-COORROSIVE WALL LOUVER W/ INTEGRAL NON-RETURN DAMPER RATED FOR MIAMI-DADE SERVICE.
2. MOUNT FLUSH WITH STRUCTURE AND SECURE W/ MASONARY ANCORS.
3. APPLY FINISHED WALL SURFACE TO LOUVER FLANGE.
4. PAINT TO SUIT ARCHITECTURAL FINISH.



TYPICAL VENT LOUVER TERMINATION AT WEATHER 11
SCALE: N.T.S.



ROOF CAP DETAILS 12
SCALE: N.T.S.

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ARCHITECT OF RECORD:

NORTH CAROLINA PROFESSIONAL SEAL 054271 ENGINEER GREGORY DILLETT II
11/5/24

MECHANICAL DETAILS & HEAT LOAD CALCULATION

SCALE: AS SHOWN

M3.01

DRAWN BY: KEVIN COLE

Air System Sizing Summary for AHU-1 + AHU-2 + AHU-3

Project Name: Rock of Salvation Church, NC — 09/18/2024
Prepared by: — 12:27AM

Air System Information

Air System Name ..... **AHU-1 + AHU-2 + AHU-3**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**
Number of zones **1**
Floor Area ..... **3370.0** ft²
Location ..... **Fayetteville, North Carolina**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load ..... **14.1** Tons
Total coil load ..... **169.8** MBH
Sensible coil load ..... **95.8** MBH
Coil CFM at Jul 1500 ..... **3224** CFM
Max block CFM ..... **3224** CFM
Sum of peak zone CFM ..... **3224** CFM
Sensible heat ratio **0.565**
CFM/Ton **227.9**
ft²/Ton **238.2**
BTU/(hr·ft²) **50.4**
Water flow @ 10.0 °F rise ..... **N/A**

Load occurs at ..... **Jul 1500**
OA DB / WB ..... **96.0 / 77.0** °F
Entering DB / WB ..... **81.5 / 70.1** °F
Leaving DB / WB ..... **53.7 / 53.0** °F
Coil ADP ..... **50.6** °F
Bypass Factor **0.100**
Resulting RH ..... **65** %
Design supply temp. ..... **55.0** °F
Zone T-stat Check ..... **1 of 1** OK
Max zone temperature deviation ..... **0.8** °F

Central Heating Coil Sizing Data

Max coil load ..... **63.5** MBH
Coil CFM at Des Htg ..... **3224** CFM
Max coil CFM ..... **3224** CFM
Water flow @ 20.0 °F drop ..... **N/A**

Load occurs at ..... **Des Htg**
BTU/(hr·ft²) **18.8**
Ent. DB / Lvg DB ..... **55.2 / 73.6** °F

Supply Fan Sizing Data

Actual max CFM ..... **3224** CFM
Standard CFM ..... **3196** CFM
Actual max CFM/ft² ..... **0.96** CFM/ft²

Fan motor BHP ..... **1.19** BHP
Fan motor kW ..... **0.95** kW
Fan static ..... **1.50** in wg

Outdoor Ventilation Air Data

Design airflow CFM ..... **990** CFM
CFM/ft² ..... **0.29** CFM/ft²

CFM/person ..... **8.39** CFM/person

Zone Sizing Summary for AHU-1 + AHU-2 + AHU-3

Project Name: Rock of Salvation Church, NC — 09/18/2024
Prepared by: — 12:27AM

Air System Information

Air System Name ..... **AHU-1 + AHU-2 + AHU-3**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**
Number of zones **1**
Floor Area ..... **3370.0** ft²
Location ..... **Fayetteville, North Carolina**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	3192	3192	0.95	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	61.5	Jul 1600	15.1	3370.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
Total Area	1	61.5	Jul 1600	3192	15.1	3370.0	0.95

Ventilation Sizing Summary for AHU-1 + AHU-2 + AHU-3

Project Name: Rock of Salvation Church, NC — 09/18/2024
Prepared by: — 12:27AM

1. Summary

Ventilation Sizing Method ..... **ASHRAE Std 62.1-2016**
Design Condition ..... **Heating operation**
Occupant Diversity (D) **1.000**
Uncorrected Outdoor Air Intake (Vou) ..... **792** CFM
System Ventilation Efficiency (Ev) **1.000**
Outdoor Air Intake (Vot) ..... **990** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Supply Air (CFM) (Vpz)	Space Floor Area (ft²) (Az)	Area Outdoor Air Rate (CFM/ft²) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)	Space Ventilation Efficiency (Ev)
Zone 1										
Total Area	1	3192	3370.0	0.06	118.0	5.00	0.8	**990**	792	1.000
Totals (incl. Space Multipliers)		**3192**							**792**	**1.000**

Air System Design Load Summary for AHU-1 + AHU-2 + AHU-3

Project Name: Rock of Salvation Church, NC — 09/18/2024
Prepared by: — 12:27AM

ZONE LOADS	DESIGN COOLING COOLING DATA AT Jul 1500 COOLING OA DB / WB 96.0 °F / 77.0 °F Details	Sensible (BTU/hr)	Latent (BTU/hr)	DESIGN HEATING HEATING DATA AT DES HTG HEATING OA DB / WB 22.0 °F / 18.4 °F Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	100 ft²	688	-	100 ft²	-	-
Wall Transmission	2173 ft²	1079	-	2173 ft²	2432	-
Roof Transmission	3370 ft²	2205	-	3370 ft²	3854	-
Window Transmission	100 ft²	691	-	100 ft²	1680	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	147 ft²	4095	-	147 ft²	3810	-
Floor Transmission	3370 ft²	0	-	3370 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6740 W	18411	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1000 W	3108	-	0	0	-
People	118	26140	53690	0	0	0
Infiltration	-	1231	836	-	2569	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	2682	2726	5%	717	0
>> Total Zone Loads	-	**60532**	**57252**	-	**15062**	**0**
Zone Conditioning	-	69310	57252	-	15567	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	2774 CFM	0	-	2774 CFM	0	-
Ventilation Load	990 CFM	22102	16662	990 CFM	50841	0
Supply Fan Load	3224 CFM	3227	-	3224 CFM	-3227	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	2%	1211	-	2%	301	-
>> Total System Loads	-	**95850**	**73914**	-	**63482**	**0**
Central Cooling Coil	-	95850	73920	-	0	0
Central Heating Coil	-	0	-	-	63482	-
>> Total Conditioning	-	**95850**	**73920**	-	**63482**	**0**
Key:	**Positive values are clg loads** **Negative values are htg loads**			**Positive values are htg loads** **Negative values are clg loads**		

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PROJECT
Rock of Salvation Church

36 Line Rd,
Harnett County,NC

TOWN, STATE

DATE: 10.30.2024
PROJECT NO. -

REVISION	DATE
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ARCHITECT OF RECORD:

NORTH CAROLINA PROFESSIONAL SEAL 054271 ENGINEER GREGORY DILLETT II
11/5/24

MECHANICAL HEAT LOAD CALCULATION

SCALE: AS SHOWN

M4.01

DRAWN BY: KEVIN COLE

LEGEND

ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
BHP	BRAKE HORSEPOWER
BFP	BACKFLOW PREVENTER
BTUH	BRITISH THERMAL UNIT PER HOUR
C	COMMON
CAP	CAPACITY
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING, COOLING
CO	CLEAN OUT
COMB	COMBUSTION
CONT	CONTINUE, CONTROL
CONTR	CONTRACTOR
COP	COEFFICIENT OF PERFORMANCE
CWS	CHILLED WATER RETURN
D	DIAMETER
DB	DRY BULB, DECIBEL
DEG	DEGREE
DIM	DIMENSION
DISCH	DISCHARGE
DN	DOWN
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
EG	ENGINE GENERATOR
ELEC	ELECTRIC
EQUIV	EQUIVALENT
EXH	EXHAUST
F	FAHRENHEIT
FCU	FAN COIL UNIT
FCW	FILTERED COLD WATER
FLR	FLOOR
FOF	FUEL OIL FILL
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
G	GAS
GAL	GALLONS
GPM	GALLONS PER MINUTE
GWB	GYPSUM WALLBOARD
HD	HEAD
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPU	HEAT PUMP UNIT
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
ID	INDIRECT DRAIN
	INSIDE DIAMETER
IN	INCH
KW	KILOWATT
L	LONG, LENGTH
LB	POUND
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
OD	OUTSIDE DIMENSION OR DIAMETER
	OVER FLOW DRAIN
OPNG	OPENING
P	PUMP
PD	PRESSURE DROP, PUMPED DRAIN
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAUGE
RD	ROOF DRAIN
REF	REFERENCE
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SF	SQUARE FOOT
SR	SUDS RELIEF
SS	STAINLESS STEEL SANITARY SEWER
SQ	SQUARE
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
V	VENT
VTR	VENT THRU ROOF
W	WASTE
	WATT
	WIDW

EQUIPMENT

EF-1 — TYPICAL EQUIPMENT DESIGNATION (EXHAUST FAN SHOWN)

T — ROOM THERMOSTAT OR TEMPERATURE TRANSMITTER

DSD — DUCT SMOKE DETECTOR

GENERAL

ARCHITECTURAL BACKGROUND (THIN LINE)

NEW MECHANICAL WORK (HEAVY LINE)

MATCH LINE OR PROPERTY LINE

SECTION INDENTIFICATION (DETAIL SIMILAR)

A, M-3, M-3 — INDICATES DIRECTION OF CUTTING PLANE; LETTER INDICATES SECTION (NO. INDICATES DETAIL); SHEET # WHERE SECTION IS DRAWIN; SHEET # WHERE SECTION IS TAKEN

PIPING

CD — CONDENSATE DRAINAGE

G — NATURAL GAS – STANDARD PRESSURE

MPG — NATURAL GAS – MEDIUM PRESSURE

WASTE (W)

RL — RAIN LEADER (RL)

OL — OVER FLOW RAIN LEADER (OL)

VENT (V)

COLD WATER (CW)

HOT WATER, POTABLE, 120F

HOT WATER CIRCULATING (HWC), POTABLE, 120 F

HOT WATER, POTABLE, TEMPERATURE OTHER THAN 120F

HOT WATER CIRCULATING (HWC),POTABLE, TEMPERATURE OTHER THAN 120 F

I — IRRIGATION

PIPE CAP

PIPE PLUG

UNION

FLANGE

GATE VALVE OR BALL VALVE

BALL VALVE

PRESSURE REDUCING VALVE (PRV)

BREAK IN PIPING OR DUCTWORK

CHECK VALVE

BALANCING OR PLUG VALV

BALANCING/MEASUING VALVE

ID — INDIRECT DRAIN, PIPE TO DRAIN

GLOBE VALVE

BUTTERFLY VALVE

WYE STRAINER

WYE STRAINER WITH CAPPED HOSE END BLOWDOWN VALVE

AUTOMATIC CONTROL VALVE, 2-WAY

AUTOMATIC CONTROL VALVE, 3-WAY

ID — RELIEF VALVE

RPBP — REDUCED PRESSURE BACKFLOE PREVENTER

REDUCED PRESSURE BACKFLOE PREVENTER

DCVA — FLOOR DRAIN

HOSE BIBB

PIPE ALIGNMENT GUIDE

FLEXIBLE CONNECTION IN PIPING

PS — PIPE SUPPORT

A — PIPE ANCHOR

PRESSURE GAGE

THERMOMETER

P/T — PRESSURE / TEMPERATURE TEST PORT

VALVE SATION OR ASSEMBLY

PUMP

G# — GAS RISER CALLOUT

— WASTE/VENT RISER CALLOUT

CW/HW RISER CALLOUT

TMV — THERMOSTATIC MIXING VALVE

BFP

T&P — TEMPERATURE & PRESSURE RELIEF VALVE

CODES ANALYSIS

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES

2018 INTERNATIONAL BUILDING CODE, IBC
2018 INTERNATIONAL RESIDENTIAL CODE, IRC
2017 NATIONAL ELECTRIC CODE, NEC
2018 INTERNATIONAL MECHANICAL CODE, IMC
2018 INTERNATIONAL PLUMBING CODE, IPC
2018 INTERNATIONAL FUEL GAS CODE, IFGC
2018 INTERNATIONAL ENERGY CONSERVATION CODE

GENERAL NOTES

1. ALL WORK MUST BE DONE BY A LICENSED PLUMBER AND SHALL BE DONE PER CURRENT EDITION OF NATIONAL AND LOCAL CODES.
2. THE INTENT OF THESE DRAWINGS ARE TO PROVIDE COMPLETE OPERATIONAL SYSTEMS. EVEN THOUGH ALL FITTINGS & COMPONENTS MAY NOT BE SHOWN ON THE DRAWINGS, THE CONTRACTOR WILL RESPONSIBLE FOR PROVIDING ALL SERVICES, LABOR, MATERIALS TOOLS, AND EQUIPMENT TO CONSTRUCT, INSTALL AND COMMISSION COMPLETE OPERATIONAL SYSTEMS.
3. COORDINATE ALL INSTALLATIONS WITH ALL OTHER TRADES.
4. VERIFY ALL DIMENSIONS AND FINAL LOCATIONS WITH THE OWNER OR OWNER'S REPRESENTATIVE OR ARCHITECT.
5. VERIFY THE FINISHES FOR FIXTURES WITH OWNER OR OWNER'S REPRESENTATIVE OR ARCHITECT PRIOR TO PROCUREMENT.
6. PROVIDE MINIMUM 1 YEAR WARRANTY ON WORKMANSHIP AND MATERIALS FROM THE DATE OF THE FINAL INSPECTION.
7. FURNISH TO THE OWNER A SET OF AS-BUILT DRAWINGS IN PDF FORMAT.
8. THE LOCATION OF THE PLUMBING FIXTURES SHALL BE VERIFIED WITH THE ARCHITECTURAL PLAN AND THE OWNER FOR FINAL CONNECTION.
9. THE PLUMBING ROUTING ARE SHOWN DIAGRAMMATICALLY, AND CONTRACTOR MUST FIELD VERIFY THE ROUTING AND COORDINATE IT WITH THE OWNER AND ARCHITECTURE AND ADJUST IT IF NEEDED.

PIPE MATERIALS

1. UNDERGROUND SERVICE ENTRANCE PIPING: COPPER TYPE L.
2. ABOVEGROUND WATER DISTRIBUTION PIPING: CPVC
3. UNDERGROUND WASTE & VENT PIPING: CPVC
4. ABOVEGROUND WASTE & VENT PIPING: CPVC
5. ABOVEGROUND GAS PIPING: STEEL PIPE, ASTM A 53; TYPE E OR S; GRADE B; SCHEDULE 40; BLACK.
6. UNDERGROUND GAS PIPING: POLYETHYLENE, ASTM D-2513
7. CONDENSATE DRAIN PIPING: CPVC
8. UNDERGROUND STORM PIPING: CPVC.
9. ABOVEGROUND STORM PIPING: CPVC

PIPE INSULATION SCHEDULE

SERVICE	MATERIAL	THICKNESS	FEILD APPLIED JACKET	VAPOR RETARDER REQUIRED
DOMESTIC COLD WATER AND CONDENSATE DRAINS	MINERAL-FIBER WITH JACKET	ALL SIZES: 1/2"	NONE	YES
DOMESTIC HOT WATER WITHIN THE UNITS (NON-RECIRCULATED)	MINERAL-FIBER WITH JACKET	RUNOUTS: 1/2" 1/2"-2" PIPE: 1"	NONE	YES
DOMESTIC, HOT AND RECIRCULATED WATER OPERATING TEMPERATURE: 105 TO 140 DEG F.	MINERAL-FIBER WITH JACKET	RUNOUTS: 1/2" 1/2"-2" PIPE: 1" 2"-6" PIPE: 1-1/2"	NONE	YES
HORIZONTAL RAINWATER CONDUCTORS	MINERAL-FIBER OR CELLULAR GLASS, WITH JACKET	ALL SIZES: 1/2"	FOIL AND PAPER	YES
ROOF DRAIN BODIES	MINERAL-FIBER OR CELLULAR GLASS, WITH JACKET	1"	NONE	YES
EXPOSED SANITARY DRAINS AND DOMESTIC WATER SUPPLIES AND STOPS FOR FIXTURES FOR THE DISABLED.	"LAV - GUARD" AS MANUFACTURE BY TRUEBRO	N/A	PVC P-TRAP AND SUPPLY COVERS	NO

FIXTURE UNIT CALCULATIONS FOR THE FLOOR

FIXTURE TYPE	QTY	DEMAND WEIGHT IN WSFU[1]						DRAINAGE[1]	
		COLD[2]	HOT[2]	FIXTURE DEMAND	TOTAL COLD WATER	TOTAL HOT WATER	TOTAL DEMAND	DFU	TOTAL
WATER CLOSET, 1.6 GPF	7	5.0	0	5.0	35.0	0.0	35.0	4	28.0
LAVATORY	5	1.5	1.5	2.0	7.5	7.5	10.0	2	10.0
KITCHEN SINK	1	3.0	3.0	4.0	3.0	3.0	4.0	2	2.0
BAPTISTRY	1	2.5	0.0	2.5	2.5	0.0	2.5	3	3.0
DRINKING FOUNTAIN	2	0.3	0.0	0.3	0.5	0.0	0.5	2	4.0
FLOOR DRAIN	3	0.0	0.0	0.0	0.0	0.0	0.0	2	6.0
TOTAL FIXTURE UNITS					48.5	10.5	52.0		46.0
EQUIVALENT WATER DEMAND IN GPM[3]					29.1	15.4	32.0		
OTHER REQUIRED WATER OUTLETS IN GPM					0.0	0.0	0.0		
TOTAL WATER DEMAND IN GPM					29.1	15.4	32.0		
REQUIRED MINIMUM PIPE SIZE[4]					1 1/4"	1"	1 1/4"		
PROVIED PIPE SIZE[4]						1 1/4"			4"

1. FIXTURE UNITS ARE BASED ON 2018 IPC TABLE E103.3(2) FOR WATER AND TABLE 709.1 FOR DRAINAGE.
2. THE SEPARATE COLD WATER AND HOT WATER FIXTURE UNITS ARE TAKEN AS THREE-QUARTER (3/4) OF TOTAL FIXTURE DEMAND, PER 2018 IPC TABLE E103.3(2) NOTE a.
3. GPM EQUIVALENTS ARE BASED ON 2018 IPC TABLE E103.3(3)
4. PIPE SIZE ARE BASED ON 2018 IPC CHART E103.3(3) AND E201.1 FOR WATER AND TABLE 710.1(1) AND TABLE 710.1(2) FOR SEWER.

DRAWING LEGEND

DESCRIPTION	LINE SYMBOL
SANITARY LINE	S
VENT PIPING	
FLOOR DRAIN	FD
HOT WATER SUPPLY	
COLD WATER SUPPLY	
LPG LINE	GAS GAS GAS GAS GAS GAS
CONDENSATE PIPE	
CLEAN OUT	CO
WATER METER	M
WATER SHUTOFF VALVE	
GAS SHUTOFF VALVE	
BACKFLOW PREVENTER	BFP
PRESSURE RELIEF VALVE	PRV
THERMOSTATIC MIXING VALVE	TMV
RPZ BACKFLOW DEVICE	RPZ
HOT WATER TEMPERATURE CONTROL VALVE	

FIXTURE SCHEDULE

ITEM	FIXTURE	COLD WATER	HOT WATER	WASTE	VENT	STORM DRAIN	DESCRIPTION
WC 1	WATER CLOSET	3/4"	-	3"	2"	-	1.6 GALLONS / FLUSH SELECTION TBD BY OWNER.
L 1	LAVATORY	1/2"	1/2"	2"	1-1/2"	-	0.5 GPM, SELECTION TBD BY OWNER
KS 1	KITCHEN SINK	1/2"	1/2"	2"	1-1/2"	-	2.2 GPM @60 PSI. SELECTION TBD BY OWNER.
BA 1	BAPTISTRY	3/4"	-	-	-	-	SELECTION TBD BY OWNER.
DF	DRINKING FOUNTAIN	1/2"	-	1-1/4"	1-1/4"	-	SELECTION TBD BY OWNER.

WATER HEATER SCHEDULE

FIXTURE SYMBOL	MANUFACTURER	MODEL NUMBER	CAPACITY GALLONS	ELECTRICAL CAPACITY	FIRST HOUR RATING (GALLON)	UNIFORM ENERGY FACTOR	REMARKS
WH-1	RHEEM	XE50T06ST45U1	50	4.5 KW	61	.93	SEE DETAILS IN SHEET P5

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ARCHITECT OF RECORD:

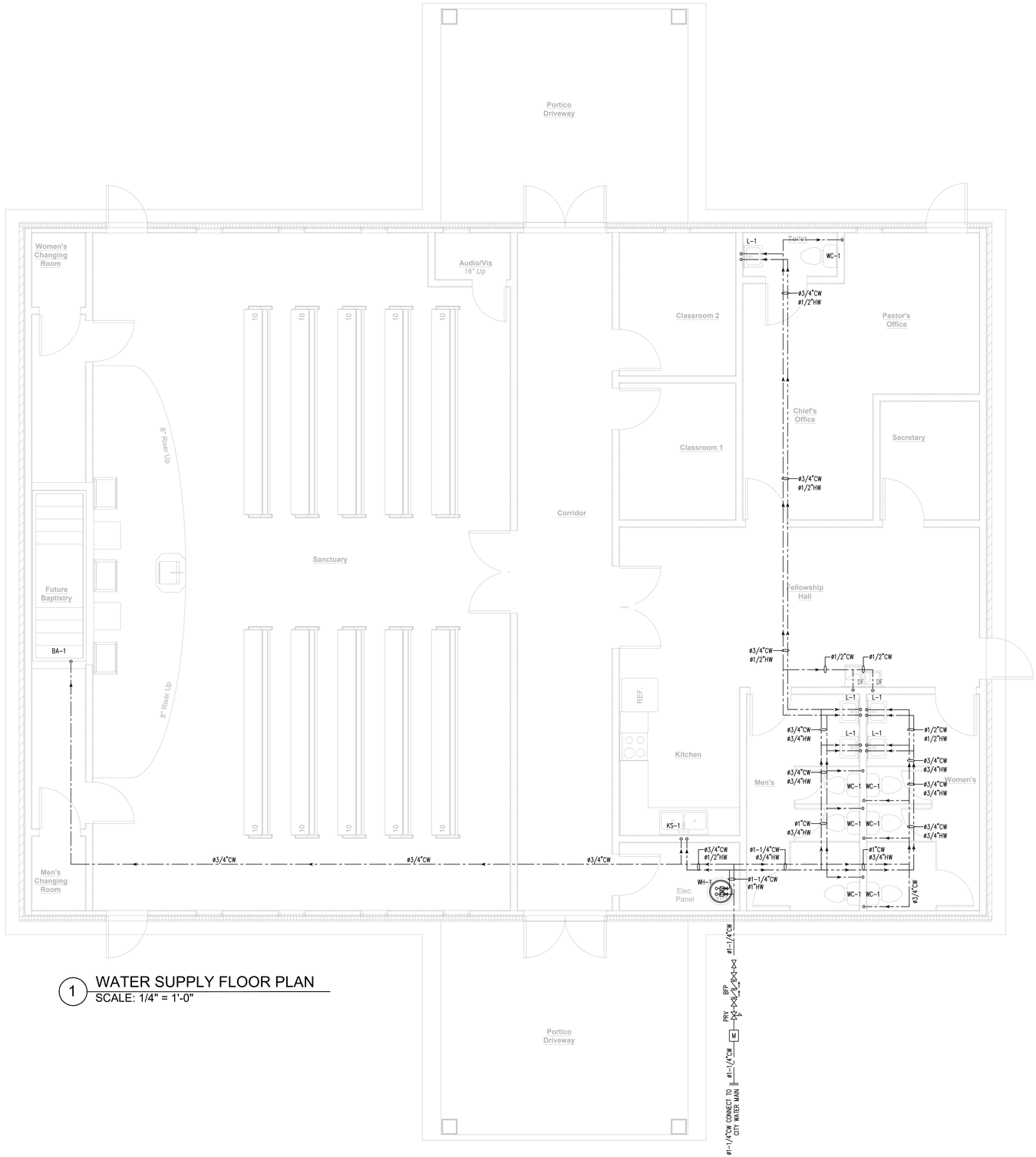
NORTH CAROLINA PROFESSIONAL SEAL 054271 11/5/24 ENGINEER GREGORY DILLETT

PLUMBING COVER SHEET

SCALE: AS SHOWN

P1.01

DRAWN BY: KEVIN COLE



1 WATER SUPPLY FLOOR PLAN
SCALE: 1/4" = 1'-0"

NOTE:
THE CONTRACTOR TO VERIFY THE LOCATION OF EXISTING WATER AND SANITARY LINES.

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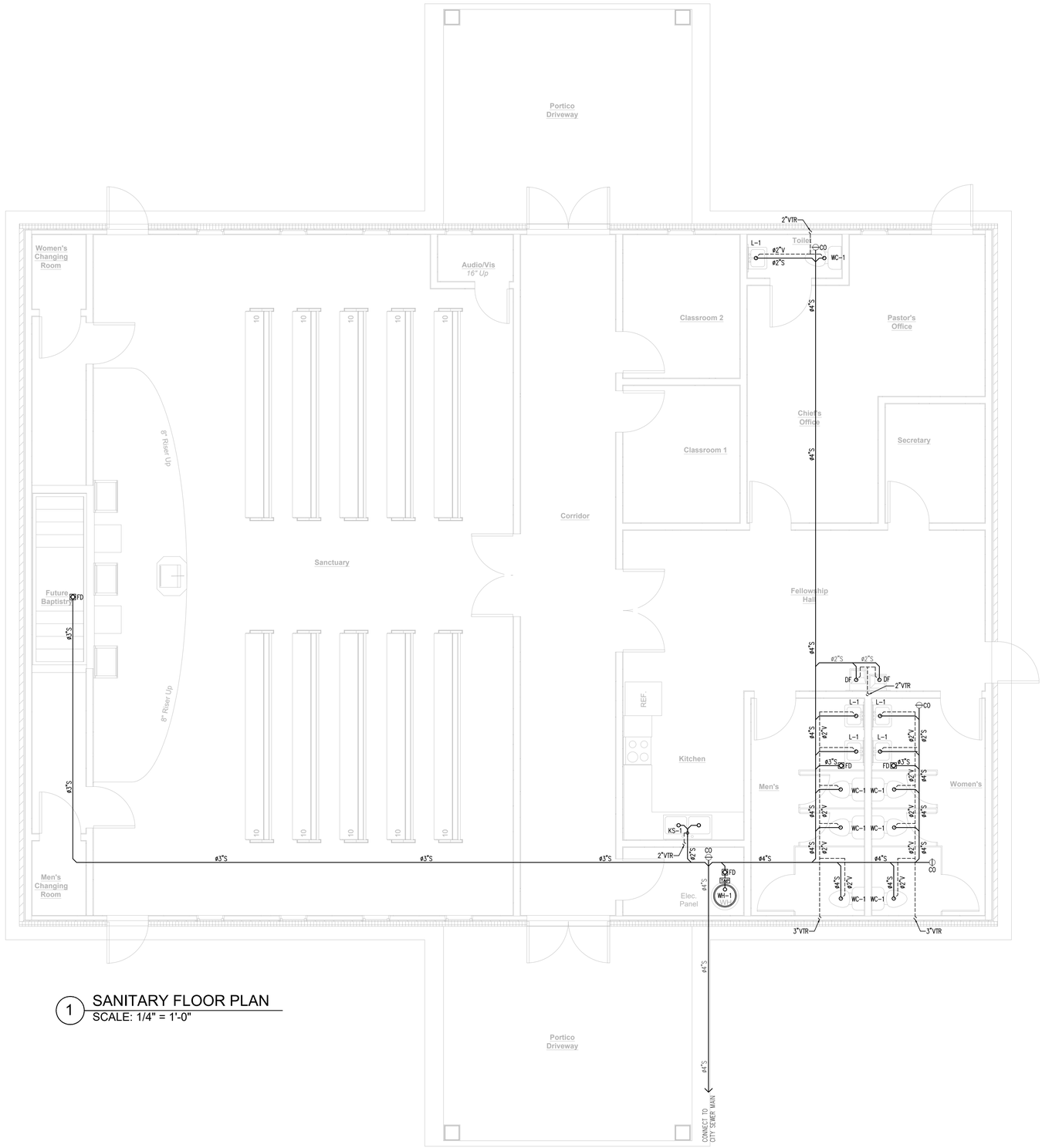
PLUMBING PLANS

SCALE: AS SHOWN

P2.01

DRAWN BY: KEVIN COLE

NOTE:
THE CONTRACTOR TO VERIFY THE LOCATION OF EXISTING WATER AND SANITARY LINES.



1 SANITARY FLOOR PLAN
SCALE: 1/4" = 1'-0"

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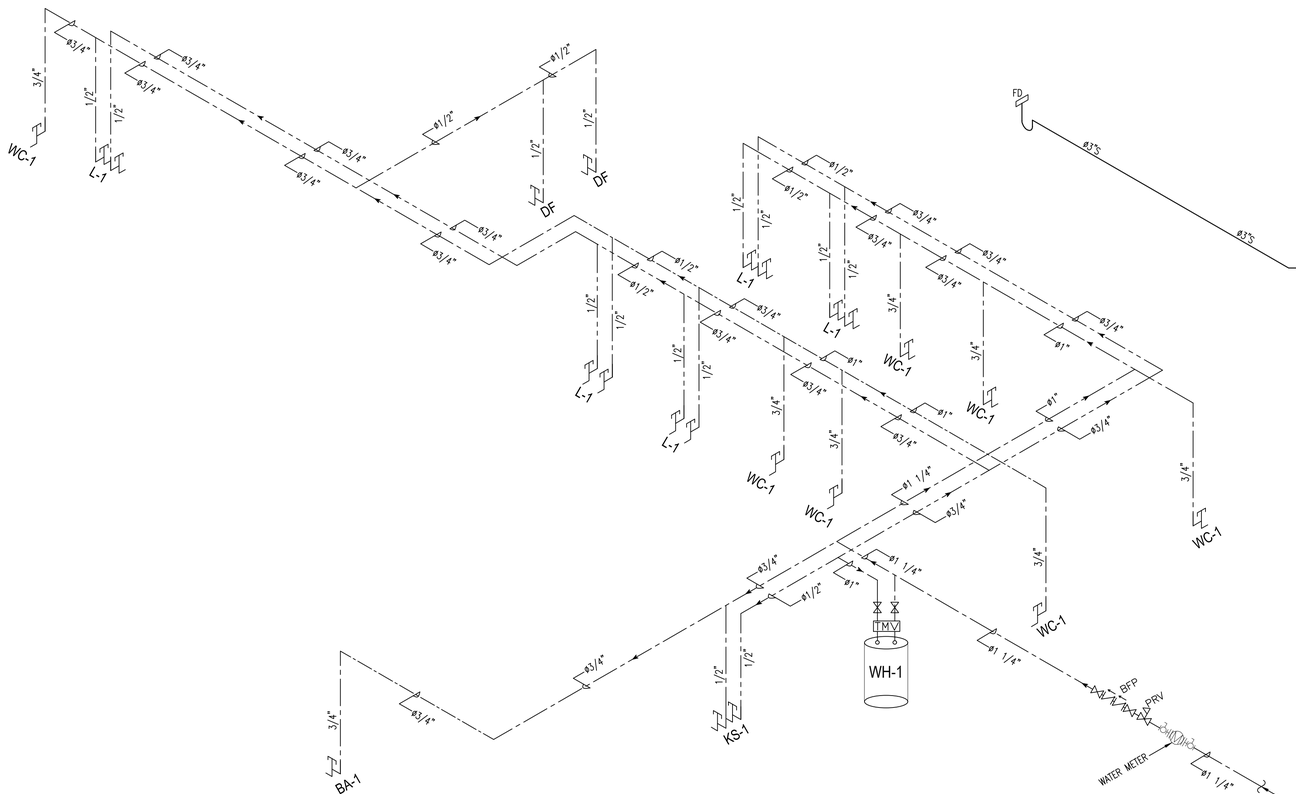
PLUMBING PLANS

SCALE: AS SHOWN

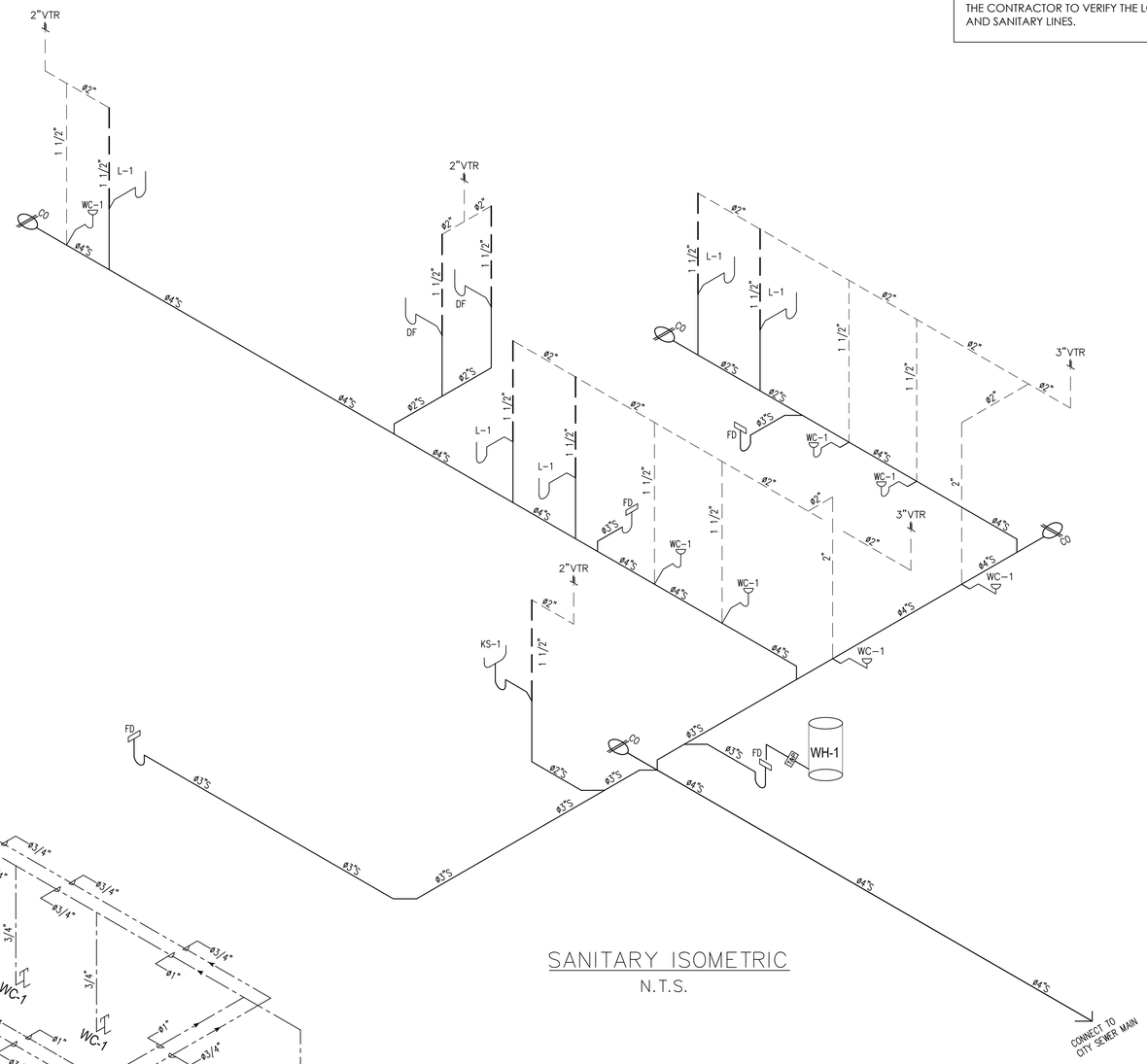
P3.01

DRAWN BY: KEVIN COLE

NOTE:
THE CONTRACTOR TO VERIFY THE LOCATION OF EXISTING WATER AND SANITARY LINES.



WATER SUPPLY ISOMETRIC
N.T.S.



SANITARY ISOMETRIC
N.T.S.

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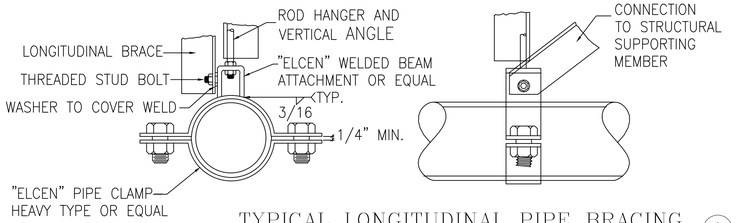
PLUMBING RISER

SCALE: AS SHOWN

P4.01

DRAWN BY: KEVIN COLE



TYPICAL LONGITUDINAL PIPE BRACING — 1

NOT TO SCALE

1. THIS BRACING DETAIL APPLIES ONLY FOR COLD WATER PIPE AND GAS PIPE WHERE MOVEMENT OF THE PIPE DUE TO TEMPERATURE DIFFERENTIAL IS NEGLIGIBLE

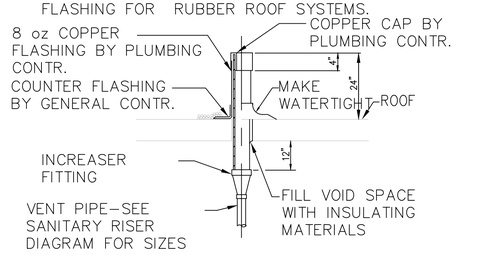
2. IT IS THE RESPONSIBILITY OF THE USER OF THIS GUIDELINE TO ASCERTAIN THAT AN ADEQUATE BRACING AND ANCHORAGE DEVICE BE DESIGNED FOR PIPE WHENEVER THE MOVEMENT DUE TO THERMAL DIFFERENTIAL EXISTS. PROVIDE ONE ANCHOR POINT IN ONE PIPE RUN. ALLOW FOR LONGITUDINAL PIPE MOVEMENT AT THE OPPOSITE END OF THE ANCHOR POINT.

LONGITUDINAL PIPE BRACING — 2

NOT TO SCALE

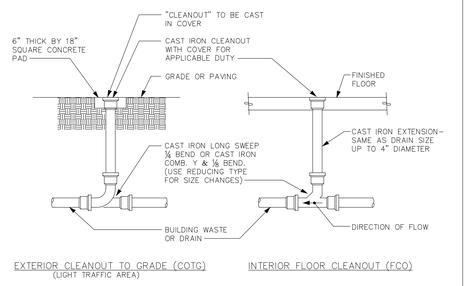
NOTES:

1. MINIMUM SIZE OF VENT EXTENSION THROUGH ROOF TO BE 4".
2. CHANGE OF DIAMETER TO BE MADE AT LEAST 12" BELOW ROOF.
3. VENT PIPE TO EXTEND 24" ABOVE ROOF AND TO BE SEALED WATERTIGHT BY PROPER FLASHING.
4. ALL VENT RISERS SHALL BE OFFSET AS REQUIRED TO CLEAR ROOF STRUCTURE DUCTWORK OR MECH.
5. ROOF TOP UNITS.
6. ROOFING CONTRACTOR SHALL SUPPLY BOOT FLASHING FOR RUBBER ROOF SYSTEMS.



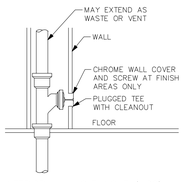
VENT INCREASER DETAIL — 3

NOT TO SCALE



EXTERIOR CLEANOUT TO GRADE (COTG) (LIGHT TRAFFIC AREA)

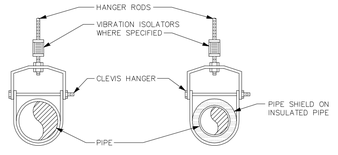
INTERIOR FLOOR CLEANOUT (FCO)



INTERIOR WALL CLEANOUT (WCO)

CLEANOUT DETAIL — 4

SCALE: NONE

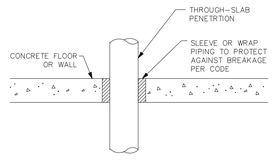


PIPE SIZE	ROD SIZE
UP TO 2"	3/8" DIA.
2 1/2" THRU 3"	1/2" DIA.
4" THRU 5"	5/8" DIA.
6" THRU 7"	3/4" DIA.
8" THRU 12"	7/8" DIA.

INDIVIDUAL PIPE SUPPORTS

DETAIL — 5

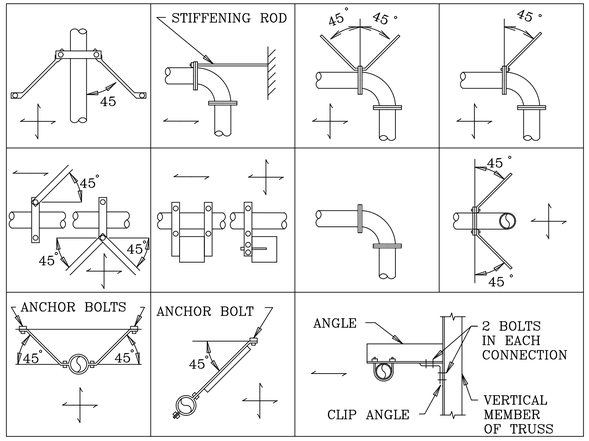
SCALE: NONE



PIPE SLAB PENETRATION

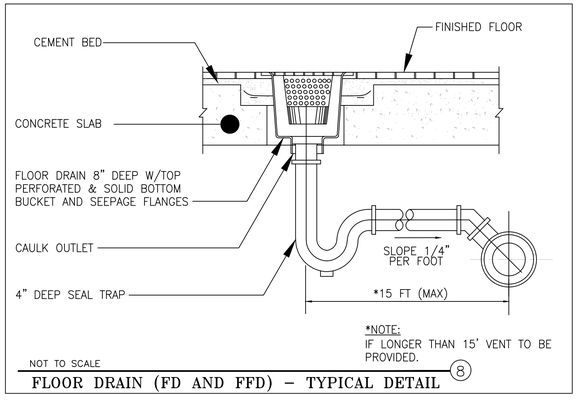
DETAIL — 6

SCALE: NONE



SEISMIC DETAILS FOR SWAY BRACING — 7

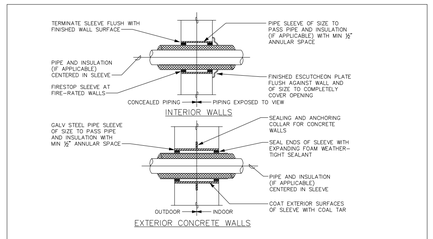
NTS



*NOTE:
IF LONGER THAN 15' VENT TO BE PROVIDED.

NOT TO SCALE

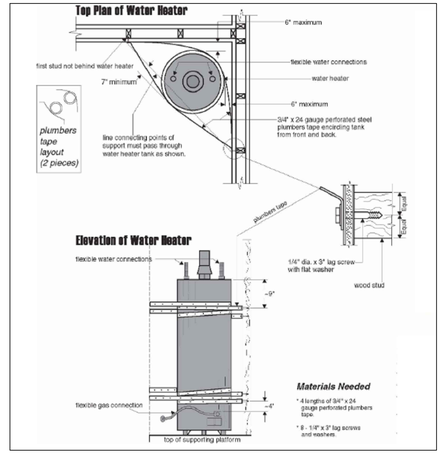
FLOOR DRAIN (FD AND FFD) – TYPICAL DETAIL — 8



PIPE SLEEVES THROUGH WALLS

DETAIL — 9

SCALE: NONE



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PLUMBING DETAILS

SCALE: AS SHOWN

P5.01

DRAWN BY: KEVIN COLE