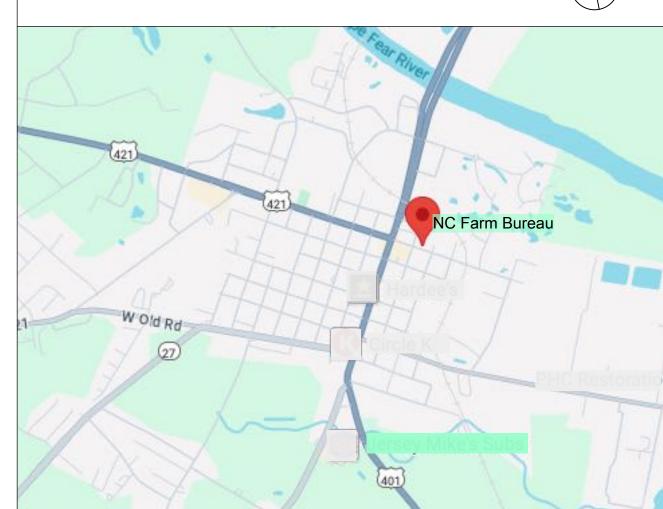
Harnett County, 105 E. Front Street Lillington, North Carolina 27546

VICINTY MAP



PROJECT DIRECTORY

OWNER:

HARNETT COUNTY FARM BUREAU P.O. BOX 369 LILLINGTON, NC 27546 910.891.6837 CONTACT: SHERRIE BYRD sherriebyrd@gmail.com

ARCHITECT:

LINEBERRY ARCHITECTURAL GROUP P.O. BOX 37456 RALEIGH, NC 27627 T: 919.616.1046 CONTACT: TONY LINEBERRY tlineberry@lineberrygroup.com

STRUCTURAL ENGINEER:

DENIS L. LAPAN, PE P.O. BOX 2285 CHAPEL HILL, NC 27515 T: 919.608.5128 CONTACT: DEAN LAPAN dean@rogerslapan.com

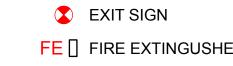
PLUMBING/MECHANICAL/ELECTRICAL:

ENGITECTURE CONSULTING ENGINEERS 1515 MOCKINGBIRD LANE, SUITE 7108 CHARLOTTE, NC 28209 T: 704.287.2193 CONTACT: GREG WILEY greg.wiley@engitecture.com

CIVIL ENGINEER:

CURRY ENGINEERING GROUP 205 S. FUQUAY AVE FUQUAY-VARINA, NC 27526 T: 7919.880.9857 CONTACT: DON CURRY don@curryeng.com

LIFE SAFETY PLAN

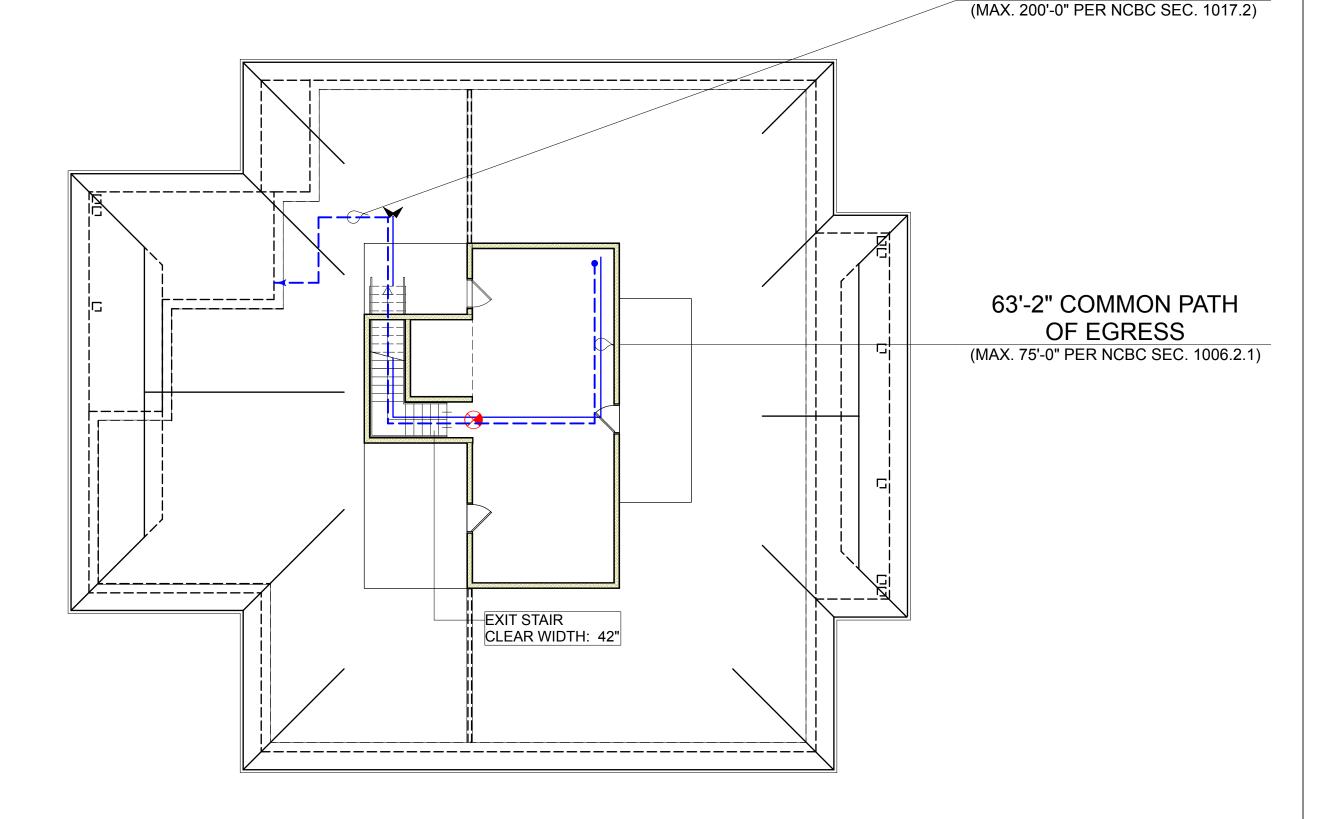


POINT WHERE TWO SEPARATE &
DISTINCT PATHS OF EGRESS TRAVEL
Scale: 3/32" = 1'-0" FE | FIRE EXTINGUSHER TO TWO EXITS ARE AVAILABLE

83'-7" TRAVEL DISTANCE

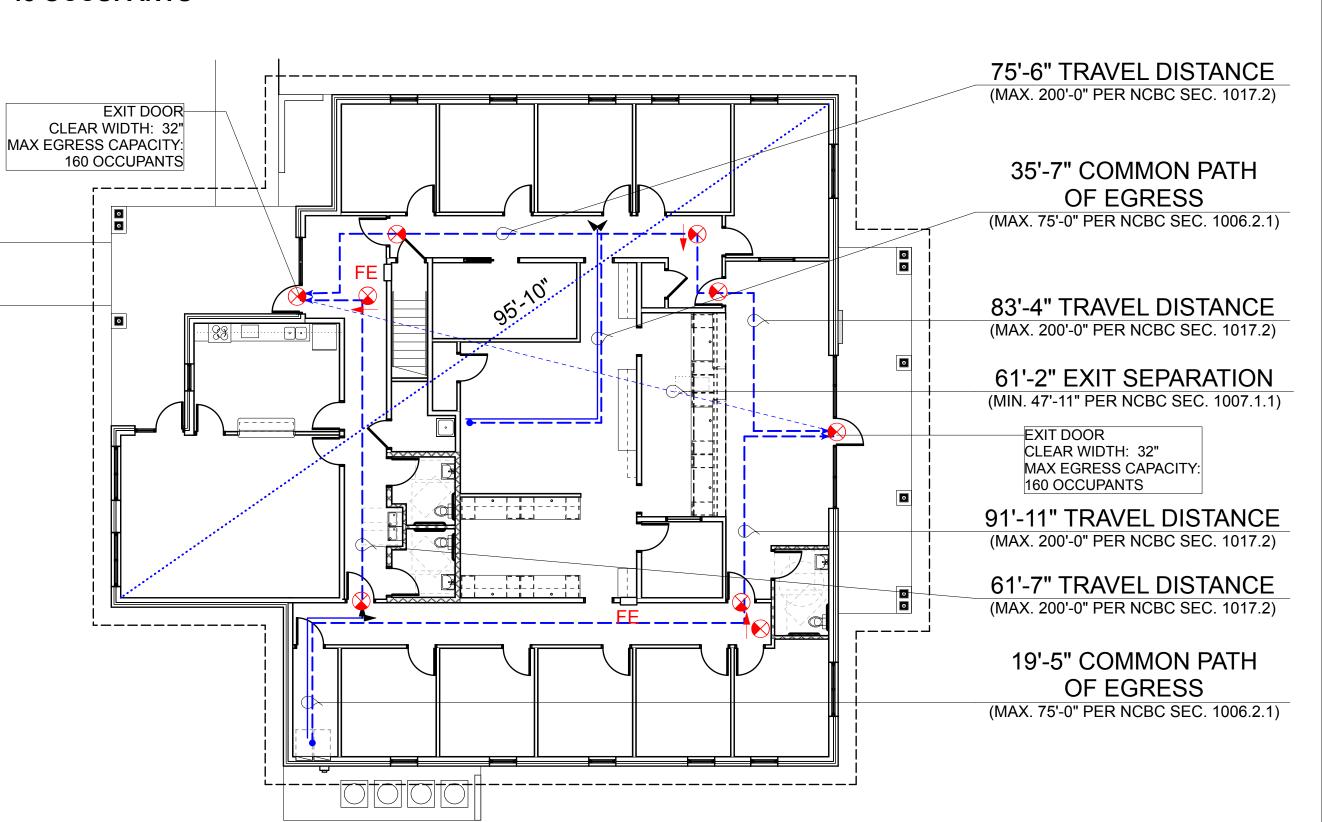
SECOND FLOOR

BUSINESS OCCUPANCY 652 SF @ 100 GROSS = 7 OCCUPANTS



FIRST FLOOR

BUSINESS OCCUPANCY 4,715 SF @ 100 GROSS = **48 OCCUPANTS**



LIST OF DRAWINGS:

DRAWING NAME <u>DATE</u>

6/3/25 TITLE SHEET 6/3/25 **CODE SUMMARY**

CIVIL DRAWINGS:

UNDER SEPARATE PERMIT

STRUCTURAL DRAWINGS:

5/14/25	S-0	STRUCTURAL NOTES
5/14/25	S-1	FOUNDATION PLAN
5/14/25	S-2	STRUCTURAL DETAILS
5/14/25	S-3	UPPER LEVEL FRAMING PLAN
5/14/25	S-4	ROOF FRAMING PLAN

ARCHITECTURAL DRAWINGS:

6/3/25	A-1	FLOOR PLAN
6/3/25	A-2	ATTIC FLOOR PLAN
6/3/25	A-3	REFLECTED CEILING PLAN
6/3/25	A-4	ROOF PLAN
6/3/25	A-5	FINISH PLAN
6/3/25	A-6	EXTERIOR ELEVATIONS
6/3/25	A-7	EXTERIOR ELEVATIONS
6/3/25	A-8	BUILDING SECTIONS
6/3/25	A-9	WALL SECTIONS
6/3/25	A-10	WALL SECTIONS
6/3/25	A-11	WALL SECTIONS
6/3/25	A-12	ENLARGED PLANS & INTERIOR ELEVATIONS
6/3/25	A-13	DOOR & WINDOW SCHEDULE & ELEVATIONS
6/3/25	A-14	CSR MILLWORK DETAILS
6/3/25	A-15	CSR MILLWORK DETAILS
6/3/25	A-16	DETAILS
6/3/25	A-17	DETAILS

PLUMBING DRAWINGS:

5/15/25 P-1 NOTES & ABBREVIATIONS- PLUMBING 5/15/25 P-2 FIRST FLOOR PLAN- SANITARY & VEN 5/15/25 P-3 FIRST FLOOR PLAN- DOMESTIC WATE 5/15/25 P-4 ATTIC FLOOR PLAN- PLUMBING	
5/15/25 P-5 DETAILS- PLUMBING	

MECHANICAL DRAWINGS:

5/15/25	M-1	MECHANICAL LEGENDS & SCHEDULES
5/15/25	M-2	SPECIFICATIONS- MECHANICAL
5/15/25	M-3	DETAILS- MECHANICAL
5/15/25	M-4	FIRST FLOOR PLAN- MECHANICAL
5/15/25	M-5	ATTIC FLOOR PLAN- MECHANICAL

ELECTRICAL DRAWINGS:

5/15/25	F-1	ELECTRICAL NOTES & ABBREVIATIONS
5/15/25	⊏- I	ELECTRICAL NOTES & ADDREVIATIONS
5/15/25	E-2	ELECTRICAL SPECIFICATIONS
5/15/25	E-3	ELECTRICAL DETAILS
5/15/25	E-4	FIRST FLOOR PLAN- LIGHTING
5/15/25	E-5	FIRST FLOOR PLAN- POWER
5/15/25	E-6	ATTIC FLOOR PLAN- ELECTRICAL

Project Number: 1910.15 Drawn By: MJ Date: 3 JUNE 2025

(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES) (Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: NC Farm Bureau Harnett County – Lillington Address: 105 E. Front Street, Lillington NC Zip Code 27546

Owner/Authorized Agent: Tony Lineberry Phone # (919) 786 - 0229 E-Mail: tlineberry@lineberrygroup.com Owned By: Private

Code Enforcement Jurisdiction: City

CONTACT:

LICENSE # TELEPHONE # E-MAIL DESIGNER Architectural <u>Lineberry Architectural Group</u> <u>Tony Lineberry</u> <u>4302</u> (919) 786-0229 <u>tlineberry@lineberrygroup.com</u> Appian Consulting Engineers David Revior 26959 (252)972-7703 drevoir@appianengineers.com Electrical Engitecture Consulting Engineers Greg Wiley 31600 (704) 287-2193 greg.wiley@engitecture.com Fire Alarm Plumbing <u>Scott Counts</u> <u>33848</u> <u>(704) 527-2112</u> <u>scounts@mswg.com</u> MSWG Engineers Mechanical
 Scott Counts
 33848
 (704) 527-2112
 scounts@mswg.com
 Sprinkler-Standpipe Structural Denis L. LaPan, PE Engineering Denis LaPan 11294 (919) 608-5128 <u>dean@rogerslapan.com</u>

Retaining Walls >5' High ("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: New Building

2018 NC EXISTING BUILDING CODE: N/A **CONSTRUCTED:** (date) N/A

CURRENT OCCUPANCY(S) (Ch. 3): N/A **RENOVATED:** (date) N/APROPOSED OCCUPANCY(S) (Ch. 3): BUSINESS

OCCUPANCY CATEGORY (Table 1604.5): Current: N/A Proposed: II

BASIC BUILDING DATA Construction Type: V-B Sprinklers: No

Standpipes: N/A **Primary Fire District:** No

Flood Hazard Area: No

Special Inspections Required: No

Gro	ss Building Area Table	
EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
	652 sf	652 sf
	4,715 sf	4,715 sf
	5,367 sf	5,367 sf
		652 sf 4,715 sf

2018 NC Administrative Code and Policies

ALLOWABLE AREA

Primary Occupancy Classification(s): Business Accessory Occupancy Classification(s): N/A

Incidental Uses (Table 509): N/A Special Uses (Chapter 4 – List Code Sections): N/A Special Provisions: (Chapter 5 – List Code Sections): N/A

Mixed Occupancy: No Separation: N/A Exception: N/A Non-Separated Use (508.3)

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

STORY	DESCRIPTION AND	(A)	(B)	(c)	(D)
NO.	USE	BLDG AREA PER	TABLE 506.2^{4}	AREA FOR FRONTAGE	ALLOWABLE AREA PER
		STORY (ACTUAL)	AREA	INCREASE ^{1,5}	STORY OR UNLIMITED ^{2,3}
1	Business	4,715 SF	9,000 SF	N/A	9,000 SF
2	Business	652 SF	9,000 SF	N/A	9,000 SF

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

c. Ratio (F/P) = ____ (F/P)
d. W = Minimum width of public way = ____

e. Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30 =$ _____ (%)

² Unlimited area applicable under conditions of Section 507.

³ Maximum Building Area = total number of stories in the building x D (maximum stories) (506.2).

⁴ The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic

control towers must comply with Table 412.3.1. ⁵ Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

		ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE			
	Building Height in Feet (Table 504.3)	40'	26'-8"				
	Building Height in Stories (Table 504.4)	2	2				
1]	Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.						

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE		RATING	DETAIL#	DESIGN#	SHEET # FOR	SHEET#
	SEPARATION	REQ'D	PROVIDED	AND	FOR	RATED	FOR
	DISTANCE		(W/*	SHEET #	RATED	PENETRATION	RATED
	(FEET)		REDUCTION)		ASSEMBLY		JOINTS
Structural Frame,		0					
including columns, girders,							
trusses							
Bearing Walls							
Exterior							
North	>30'	0					
East	>30'	0					
West	>30'	0					
South	>30'	0					
Interior		0					

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Nonbearing Walls and Partitions	0			
Exterior walls				
North				
East				
West				
South				
Interior walls and partitions	0			
Floor Construction	0			
Including supporting beams				
and joists				
Floor Ceiling Assembly	0			
Columns Supporting Floors	0			
Roof Construction, including supporting beams and joists	0			
Roof Ceiling Assembly	0			
Columns Supporting Roof	0			
Shaft Enclosures - Exit	N/A			
Shaft Enclosures - Other	N/A			
Corridor Separation	N/A			
Occupancy/Fire Barrier Separation	N/A			
Party/Fire Wall Separation	N/A			
Smoke Barrier Separation	N/A			
Smoke Partition	N/A			
Tenant/Dwelling Unit/ Sleeping Unit Separation	N/A			
Incidental Use Separation	N/A		 	

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	Degree of openings Protection (Table 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
>30"	Unprotected, Non-Sprinklered	No Limit	N/A

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	Y
Exit Signs:	Y
Fire Alarm:	N
Smoke Detection Systems:	N
Carbon Monoxide Detection:	N

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: <u>T-1</u> Fire and/or smoke rated wall locations (Chapter 7)

Assumed and real property line locations (if not on the site plan)

Exterior wall opening area with respect to distance to assumed property lines (705.8) X Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)

X Occupant loads for each area

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X Exit access travel distances (1017)

X Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1)) Dead end lengths (1020.4)

X Clear exit widths for each exit door

X Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3) X Actual occupant load for each exit door

A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for

purposes of occupancy separation

Location of doors with panic hardware (1010.1.10)

Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)

Location of doors with electromagnetic egress locks (1010.1.9.9)

Location of doors equipped with hold-open devices Location of emergency escape windows (1030)

The square footage of each fire area (202)

The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL	Accessible	Accessible	Type A	TYPE A	Type B	Type B	TOTAL	
Units	Units	NITS UNITS UNITS		Units	Units	Units	ACCESSIBLE UNITS	
	REQUIRED	Provided	Required	Provided	REQUIRED	Provided	PROVIDED	
N/A								

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING	TOTAL # OF PA	RKING SPACES	# OF ACC	TOTAL#			
AREA	REQUIRED	PROVIDED	REGULAR WITH	VAN SPAC	ACCESSIBLE		
			5' ACCESS AISLE	132" ACCESS	8' ACCESS	PROVIDED	
				AISLE	AISLE		
TOTAL	10	25			2	2	

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WATERCLOSETS			URINALS		LAVATORIE	S	SHOWERS DRINKING FOUNTAI		FOUNTAINS
MALE FEMALE UNISEX				MALE	FEMALE	UNISEX	/TUBS	REGULAR	ACCESSIBLE		
В											
	REQ'D	1	1			1	1			1	1
	PROVIDED	1	1	1		1	1	1		1	1

SPECIAL APPROVALS

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

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ENERGY SUMMARY

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

Existing building envelope complies with code: N/A

Exempt Building: No Provide code or statutory reference: N/A

Climate Zone: <u>4A</u>

Method of Compliance: Energy Code - Prescriptive (If "Other" specify source here)_

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)

Description of assembly: Wood trusses w/ 1/2" plywood sheathing, batt insulation & GWB U-Value of total assembly: 0.0238 R-Value of insulation: R-42 Skylights in each assembly: <u>N/A</u> U-Value of skylight: $\overline{N/A}$

total square footage of skylights in each assembly: N/A

Exterior Walls (each assembly) Description of assembly: Brick veneer, air space, sheathing, wood studs w/ R-20 open cell spray insulation & GWB U-Value of total assembly: 0.05

R-Value of insulation: R-20 Openings (windows or doors with glazing)

U-Value of assembly: 0.27
Solar heat gain coefficient: 0.26 N/A 2.38 projection factor: Door R-Values:

Walls below grade (each assembly) Description of assembly: U-Value of total assembly: N/AR-Value of insulation:

Floors over unconditioned space (each assembly)

Description of assembly: U-Value of total assembly: N/AR-Value of insulation:

Floors slab on grade

Description of assembly: Concrete Slab on Grade w/ vapor barrier & R-15 for 24" U-Value of total assembly: <u>0.0667</u>

R-Value of insulation: R-15 for 24" Horizontal/vertical requirement: Not Required slab heated: Not Required

2018 NC Administrative Code and Policies

(1)

0 Group Architectural

Project Number: 1910.15 Drawn By: MJ Date: 3 JUNE 2025

SUMMARY

STRUCTURAL NOTES AND SPECIFICATIONS

a.) <u>DESIGN LOADS:</u>

```
2018 NC STATE BUILDING CODE
OCCUPANCY II
IMPORTANCE FACTORS:
    SEISMIC (le)-
                           1.0
     SNOW (Is)-
                           1.0
SNOW:
     GROUND SNOW LOAD-
                            15 psf
                            1.0
    Ct-
                            1.0
    Pf & Ps-
                           11 psf
ROOF:
                           20 psf
    LIVE-
     DEAD-
                            6 psf
         SHEATHING
                           2 psf
         FRAMING
                            3 psf
         CEILING
                            3 psf
         M & E
                            3 psf
         MISC
                            <u>3 psf</u>
                            20 psf
ATTIC:
    LIVE-
                           40 psf
         MECHANICAL
                          125 psf
         WORKROOM
     DEAD-
         FLOOR
                            3 psf
         FRAMING
                            3 psf
         CEILING
                            3 psf
         M & E
                            3 psf
         MISC
                            <u>3 psf</u>
                            15 psf
SLAB-ON-GRADE:
    LIVE-
                            100 psf
WIND LOADS PER ASCE 7-10: NOMINAL LOADS
                           117 mph
     WIND VELOCITY
    EXPOSURE
                           В
    LOW-RISE METHOD
    h = 18'-5"
```

b.) MAIN WIND FORCE RESISTING SYSTEM

WIND LOADS

```
HORIZONTAL
                 + 17.8 psf
    ZONE 1
    ZONE 4
                 - <u>5.5 psf</u>
    TOTAL
                 + 23.3 psf
COMPONENTS AND CLADDING
    ZONE 1
                 +16.0/-20.5 psf
    ZONE 2
                 +16.0/-49.7 psf
    ZONE 3
                 +16.0/-56.0 psf
    ZONE 4
                 +26.0/-28.4 psf
    ZONE 5
                 +26.0/-32.7 psf
```

SEISMIC LOADS PER ASCE 7-10: NOMINAL LOADS

8'-0"

Ss	0.183	
S1	0.086	
SDS-	0.195	
SD1-	0.138	
SITE CLASS	D ASSUMED	
SEISMIC DESIGN	CATEGORY	(

EQUIVALENT LATERAL FORCE METHOD
LIGHT FRAMED WALLS WITH WOOD STRUCTURAL
PANELS RATED FOR SHEAR RESISTANCE

R = 6.5 Cs = 0.0307

SUMMARY, NOMINAL LOADS

WIND BASE SHEAR (Vx, kips)	22.3
WIND BASE SHEAR (Vy, kips)	26.8
SEISMIC BASE SHEAR (Vx, kips)	8.2
SEISMIC BASE SHEAR (Vy, kips)	8.2

MISCELLANEOUSE NOTES

- a) MINIMUM ALLOWABLE SOIL BEARING CAPACITY TO BE 3000 psf FOR SHALLOW FOUNDATIONS. A GEOTECHNICAL ENGINEER SHALL VERIFY SOIL BEARING CAPACITY PRIOR TO POURING FOOTINGS..
 b.) GENERAL CONTRACTOR SHALL PROVIDE
- TÉMPORARY BRACING AGAINST WIND AND OTHER SHORT TERM LOADS DURING THE CONSTRUCTION PHASE TO ENSURE SAFE SUPPORT OF THE STRUCTURE.
- c.) THE DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS ELECTRONICALLY OR MANUALLY. COORDINATE STRUCTURAL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- d) FOUNDATIONS GENERAL
 - 1) CONTINUOUS WALL FOOTING SHALL BE POURED MONOLITHICALLY WITH COLUMN FOOTINGS, IF REQUIRED.
 - 2) ALL BACKFILL MATERIALS SHALL BE FREE OF DEBRIS. PLACE IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS RECOMMENDATIONS.

CONCRETE

- CONCRETE SHALL BE PROPORTIONED, MIXED, PLACED AND TESTED IN ACCORDANCE WITH ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE" AND COMPLY WITH ACI 117, "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".
- b) STEEL REINFORCEMENT SHALL MEET THE FOLLOWING SPECIFICATIONS:

 i. REINFORCING BARS: ASTM A615, GRADE 60, DEFORMED

 ii PLAIN WIRF: ASTM A82 DRAWN
 - ii. PLAIN WIRE: ASTM A82, DRAWN iii. WELDED WIRE: ASTM A185, DRAWN
- c) ALL PROPOSED ADMIXTURES SHALL BE SUBMITTED WITH THE MIX DESIGNS AND SHALL INCLUDE CERTIFICATION FROM THE MANUFACTURER THAT THE ADMIXTURE IS COMPATIBLE WITH OTHER ADMIXTURES AND MEETS ACI REQUIREMENTS.
- d) CONCRETE SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS:

	MINIMUM COMPRESSIVE	
LOCATION	STRENGTH @ 28 DAYS	MAX SLUMP
FOOTINGS		

- SLABS 3000 psi 4"

 e) REINFORCING SHALL MEET CRSI's" MANUAL OF STANDARD PRACTICE" FOR FABRICATION, PLACING AND SUPPORTING OF REINFORCEMENT.
- f) WELDING OF REINFORCING S NOT PERMITTED.
- g) FIELD BENDING OF REINFORCING BARS IS NOT PERMITTED.
- h) CURE CONCRETE FOR AT LEAST SEVEN DAYS BY THE APPROPRIATE METHOD OF MOISTURE CURING, MOISTURE AND COVER CURING, CURING COMPOUND OR OTHER ALLOWED METHOD.
- i) NOTIFY ENGINEER PRIOR TO PLACEMENT OF CONCRETE WHEN EXPECTED AMBIENT TEMPERATURE IS TO BE 40 DEGREES F OR LESS. CONCRETE PROTECTION SHALL BE PROVIDED AS REQUIRED PER ACI 306 COLD WEATHER CONCRETING.

MASONRY - BRICK AND CMU

- a) MASONRY WORK SHALL COMPLY WITH TMS 402/ACI 530/ASCE 5 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES" FOR MATERIALS AND WORKMANSHIP.
- b) MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE MASONRY UNITS SHALL BE f'm = 1500 psi.
- c) GROUT SHALL CONFORM TO ASTM 476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2000 psi. GROUT IN ACCORDANCE WITH ACI 530 AND 530.1.
- d) PROVIDE REINFORCING AS SHOWN ON THE DRAWINGS. DOWEL REINFORCING INTO FOUNDATIONS AND FOOTINGS. ALL

REINFORCING SHALL CONFORM TO ASTM A615 AND BE GRADE 60.

- e) HORIZONTAL JOINT REINFORCING SHALL BE USED AT 16" o.c. REINFORCING SHALL BE TRUSS OR LADDER TYPE FABRICATED FROM GALVANIZED 9 GAGE WIRE. REINFORCING IS NOT TO EXTEND THROUGH VERTICAL CONTROL JOINTS.
- f) PROVIDE VERTICAL CONTROL JOINTS AS SHOWN ON ARCHITECTURAL DRAWINGS. MAXIMUM SPACING SHALL BE 25'-0".
 g) ALL MORTAR SHALL CONFORM TO ASTM C270 SPECIFICATIONS FOR TYPE M OR S.

WOOD FRAMING

- a) S-P-F REFERS TO #2 SPRUCE-PINE-FIR. S. PINE OR SP REFERS TO #2 SOUTHERN PINE.
- b) PLYWOOD SHALL BE MANUFACTURED AND INSTALLED IN
- c) ALL WOOD FRAMING IN CONTACT WITH CONCRETE, MASONRY OR STEEL, OR EXPOSED TO WEATHERING SHALL BE PRESSURE PRESERVATIVE TREATED TO RESIST DECAY. USE PRESERVATIVE TREATMENTS RECOMMENDED BY THE PROCESSOR FOR THE SPECIFIC

ACCORDANCE WITH THE AMERICAN PLYWOOD ASSOCIATION (APA).

- d) FASTENERS FOR TREATED LUMBER SHALL BE AS
 RECOMMENDED BY PROCESSOR AND HARDWARE MANUFACTURER.
 e) ALL CONNECTORS AND BOLTS SHALL BE HOT-DIPPED,
 GALVANIZED, MINIMUM.
- f) ROOF DIAPHRAGM SHALL BE UNBLOCKED 5/8" NOM. SEE ARCH. FOR TYPE. ATTACHED WITH 8d w/ 1-3/8" MINIMUM PENETRATION IN TRUSS TOP CHORD, NAILS @ 6" o.c. AT PERIMETER AND PANEL EDGES AND 12" o.c. IN PANEL FIELD.
- g) FLOOR DIAPHRAGM SHALL BE 3/4" NOM. T&G STUR-D-FLOOR GLUED TO FRAMING, AND ATTACHED WITH #10 SCREWS @ EDGES AND #10 SCREWS @ 8" o.c. IN PANEL FIELD.
- h) WALL SHEATHING SHALL BE 7/16" NOM. BLOCKED, SEE ARCH. FOR TYPE. ATTACHED WITH 8d w/ 1-3/8" MINIMUM PENETRATION IN STUD, NAILS @ 6' o.c. AT PANEL EDGES AND 12" o.c. IN PANEL FIELD.

ENGINEERED WOOD PRODUCTS

- a) LAMINATED VENEER LUMBER (LVL)
 MANUFACTURERS PRODUCT DATA, INCLUDING DESCRIPTIONS OF
 MATERIALS, DIMENSIONS OF PRODUCT, DESIGN PROPERTIES,
 ALLOWABLE SPANS AND CONSTRUCTION DETAILS SHALL BE
 SUBMITTED FOR REVIEW.
- b) SUBMIT DRAWINGS INDICATING MEMBER SIZES, TYPES, LOCATIONS AND CONNECTION DETAILS.
- c) HANDLE AND STORE LVL'S IN ACCORDANCE WITH THE MANUFACTURES WRITTEN REQUIREMENTS.
- d) LVL'S SHALL BE 1-3/4" THICK, GRADE 2.0E WITH PLIES AS REOUIRED ON THE PLANS.
- e) INSTALLATION SHALL COMPLY WITH MANUFACTURERS PRODUCT DATA, INLCUDING TECHNICAL BULLETINS, PRODUCT CATALOG WRITTEN INSTALLATION INSTRUCTIONS AND PRODUCT CARTON INSTRUCTIONS.

PREFABRICATED WOOD TRUSSES

- a) ALL LUMBER AND CONNECTIONS SHALL CONFORM TO
 "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION"
 (LATEST EDITION) AND TPI "DESIGN SPECIFICATIONS FOR METAL
 PLATE CONNECTED WOOD TRUSSES" (LATEST EDITION).

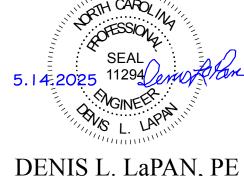
 b) POOF TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING
- b) ROOF TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS, AT A MINIMUM:

TOP CHORD DL= 20 psf PLUS OVERFRAME WEIGHT LL= 20 psf

- BOTTOM CHORD DL= 8 psf PLUS MECHANICAL LOADS
 c) UPLIFT LOADS SHALL BE DETERMINED BASED ON THE CRITERIA
 GIVEN IN THE WIND LOAD NOTES.
- d) SHOP DRAWINGS SHALL BE SUBMITTED AND SHALL INDICATE TYPE, SIZE, QUANTITY, SPACING, BRACING, SPLICES, ACCESSORIES AND DETAILS REQUIRED FOR INSTALLATION.
- e) CALCULATIONS SHALL BE SUBMITTED AND SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA. CALCULATIONS SHALL INCLUDE GRAVITY AND UPLIFT REACTIONS FOR COORDINATION WITH THE OTHER STRUCTURAL FRAMING DESIGN.
- f) ALL TRUSS TO TRUSS CONNECTIONS SHALL BE DESIGNED BY THE TRUSS ENGINEER.
- g) TRUSS HURRICANE TIES TO BE SIMPSON H2.5A TYPE. ONE SHALL BE USED AT EACH TRUSS ON TRUSS END BEARING CONDITION AND ONE EACH SIDE OF INTERIOR GIRDER LINE TRUSS BEARING CONDITION.
- h) HEEL BLOCKING, X-BRACING OR OTHER METHODS SHALL BE UTILIZED AND DESIGNED BY THE TRUSS MANUFACTURERE TO DISTRIBUTE 140 PLF ROOF DIAPHRAM LOADS AT TRUSS BEARING.

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Lillington, North Carolina 27546

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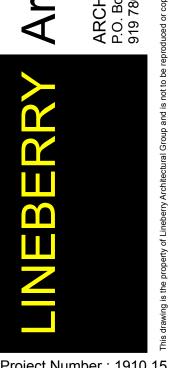
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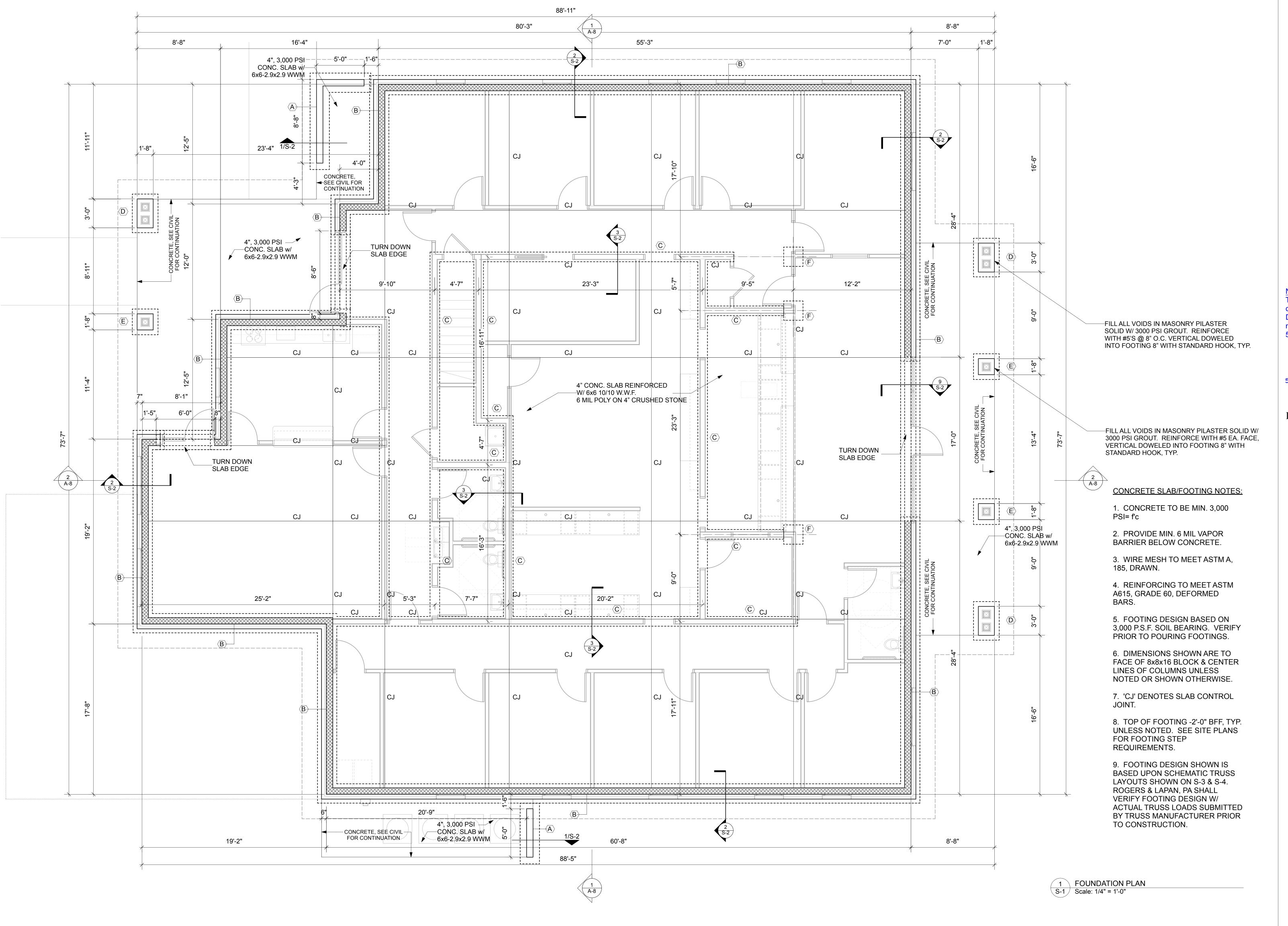
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Project Number : 1910.15 Drawn By: MJ Date: 14 MAY 2025

S-0
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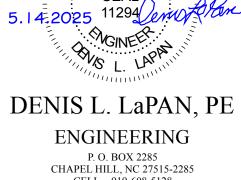
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Project Number: 1910.15 Drawn By: MJ Date: 14 MAY 2025

FOUNDATION PLAN

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> STRUCTURAL **DETAILS**

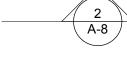


CLEAR OPENING	LINTEL ANGLE	BEARING LENGTH
0'-1" TO 4'-0"	L4x4x5/16	4" MINIMUM
4'-1" TO 6'-0"	L6x4x5/16 LLV	8" MINIMUM
6'-1" TO 10'-0"	L7x4x3/8 LLV	8" MINIMUM
10'-1" TO 12'-0"	L8x4x1/2 LLV	12" MINIMUM

- OF BRICK VENEER ONLY.
- 2. ALL LOOSE LINTELS SHALL BE HOT-DIPPED GALVANIZED.
- 3. LOOSE LINTELS ARE NOT SHOWN ON THE FRAMING PLANS. SEE ARCHITECTURAL DRAWINGS FOR VENEER

BEAM SCHEDULE

A	(2) 2 x 10 SYP
В	(2) 1-3/4" x 9-1/4" LVL
C	NOT USED
D	(3) 2 x 10 SYP
E	(3) 1-3/4" x 16" LVL
F	(3) 1-3/4" x 11-7/8" LVL
G	(3) 1-3/4" x 9-1/4" LVL



NOTE:

1. BEAM DESIGN SHOWN IS BASED **UPON SCHEMATIC TRUSS** LAYOUTS SHOWN ON S-3 & S-4. ROGERS & LAPAN, PA SHALL VERIFY BEAM DESIGN W/ ACTUAL TRUSS LOADS SUBMITTED BY TRUSS MANUFACTURER PRIOR TO CONSTRUCTION. 2. USE DOUBLE 2x4 AND 2x6 POSTS, MINIMUM AT EACH END OF BEAMS/HEADERS UNLESS OTHERWISE NOTED ON PLAN. 3. SEE A-2 FOR ATTIC WALL OPENING HEADERS. 4. SHADED AREAS TO BE DESIGNED FOR 40 psf MECHANICAL LIVE LOAD AND ACTUAL EQUIPMENT WEIGHT.

5. PROVIDE BLUKHEAD FRAMING @ CSR PER REFER TO ARCH. RCP

1 ATTIC FRAMING PLAN
S-3 Scale: 1/4" = 1'-0"

LOOSE LINTEL ANGLE SCHEDULE

CLEAR OPENING	LINTEL ANGLE	BEARING LENGTH
0'-1" TO 4'-0"	L4x4x5/16	4" MINIMUM
4'-1" TO 6'-0"	L6x4x5/16 LLV	8" MINIMUM
6'-1" TO 10'-0"	L7x4x3/8 LLV	8" MINIMUM
10'-1" TO 12'-0"	L8x4x1/2 LLV	12" MINIMUM
	·	

1. LOOSE LINTELS NOTED ABOVE SUPPORT ONE WYTHE

OPENING LOCATIONS & SIZES.

A	(2) 2 x 10 SYP
В	(2) 1-3/4" x 9-1/4" LVL
С	NOT USED
D	(3) 2 x 10 SYP
E	(3) 1-3/4" x 16" LVL
F	(3) 1-3/4" x 11-7/8" LVL
G	(3) 1-3/4" x 9-1/4" LVL



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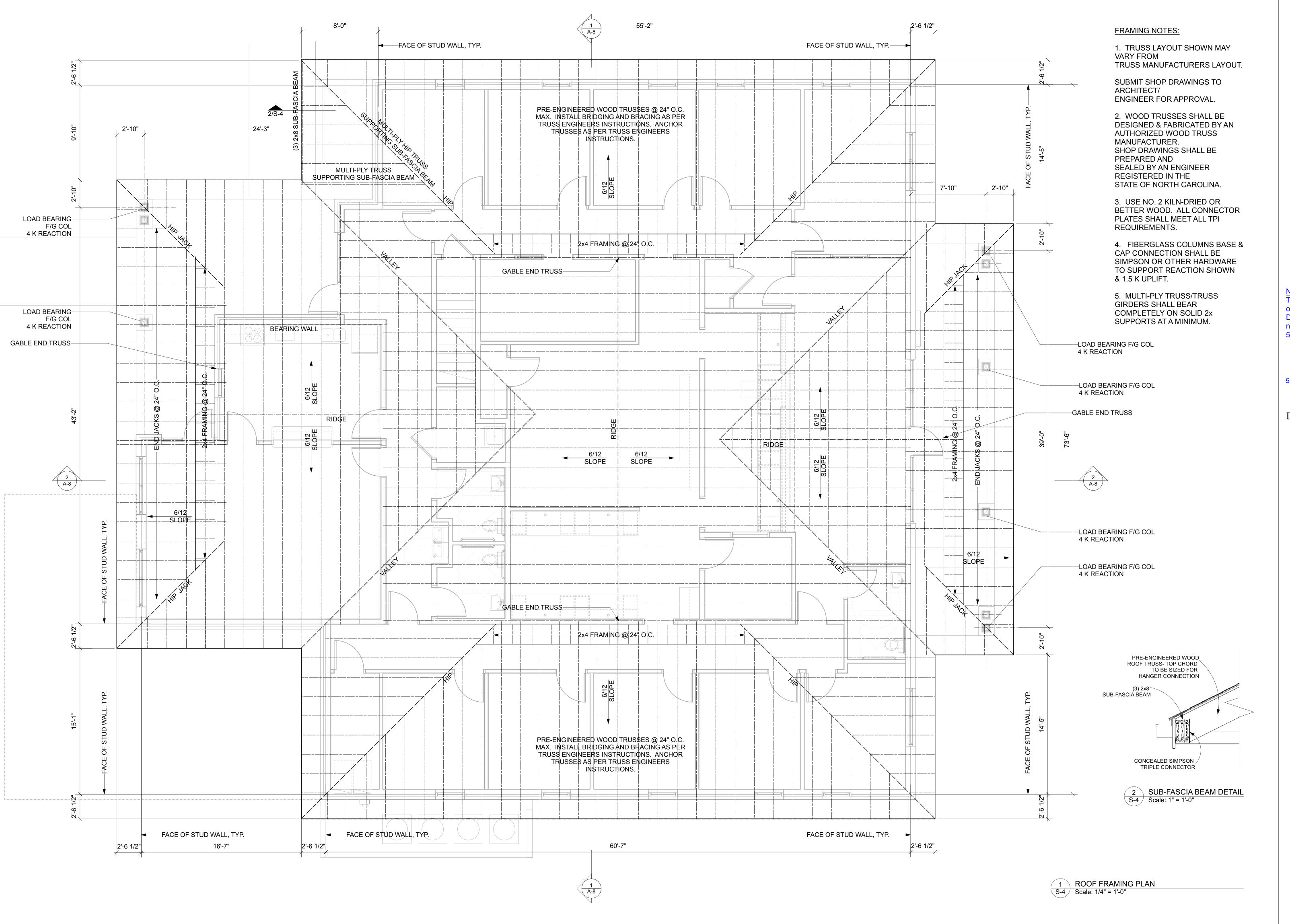
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ATTIC FRAMING PLAN



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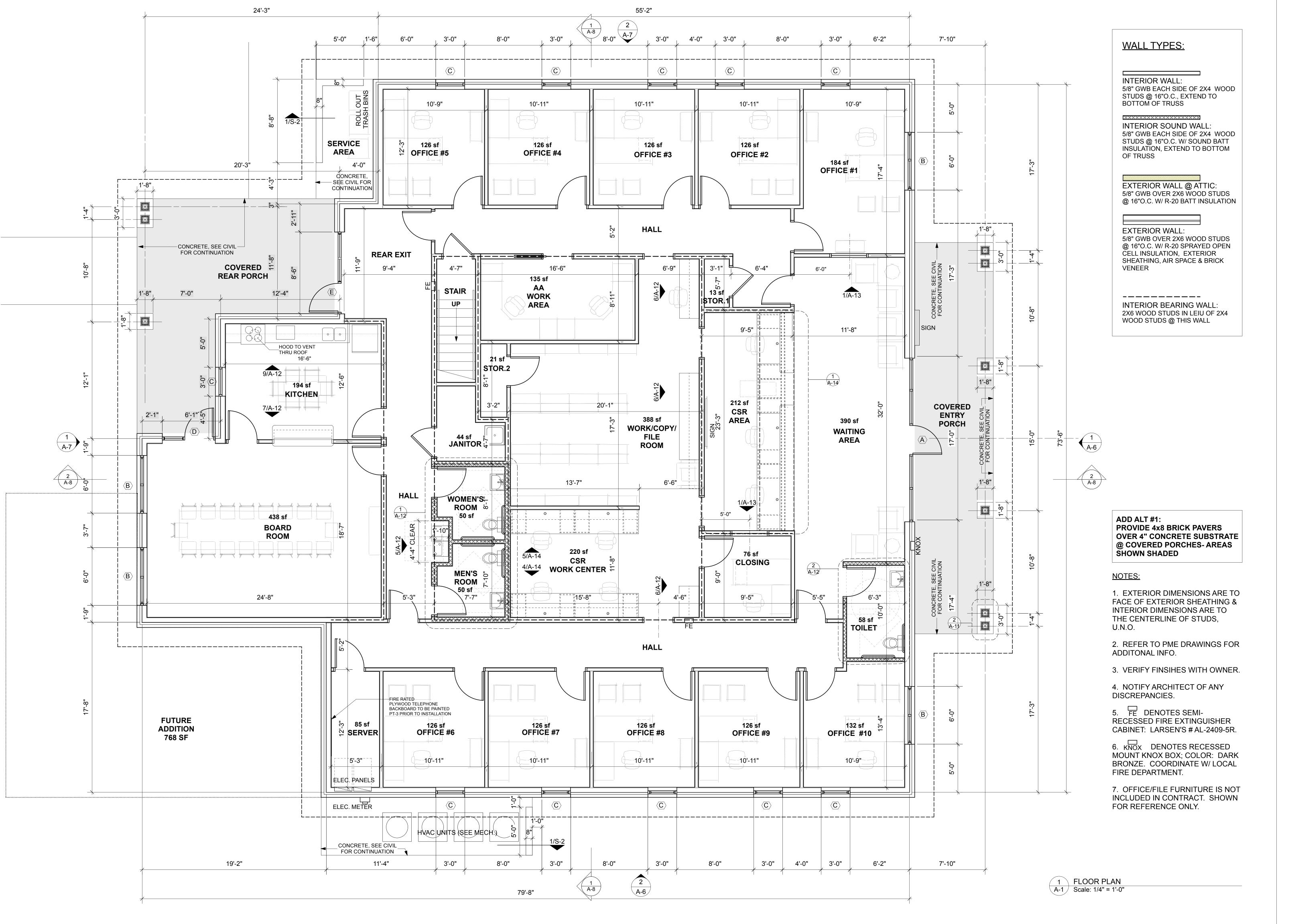
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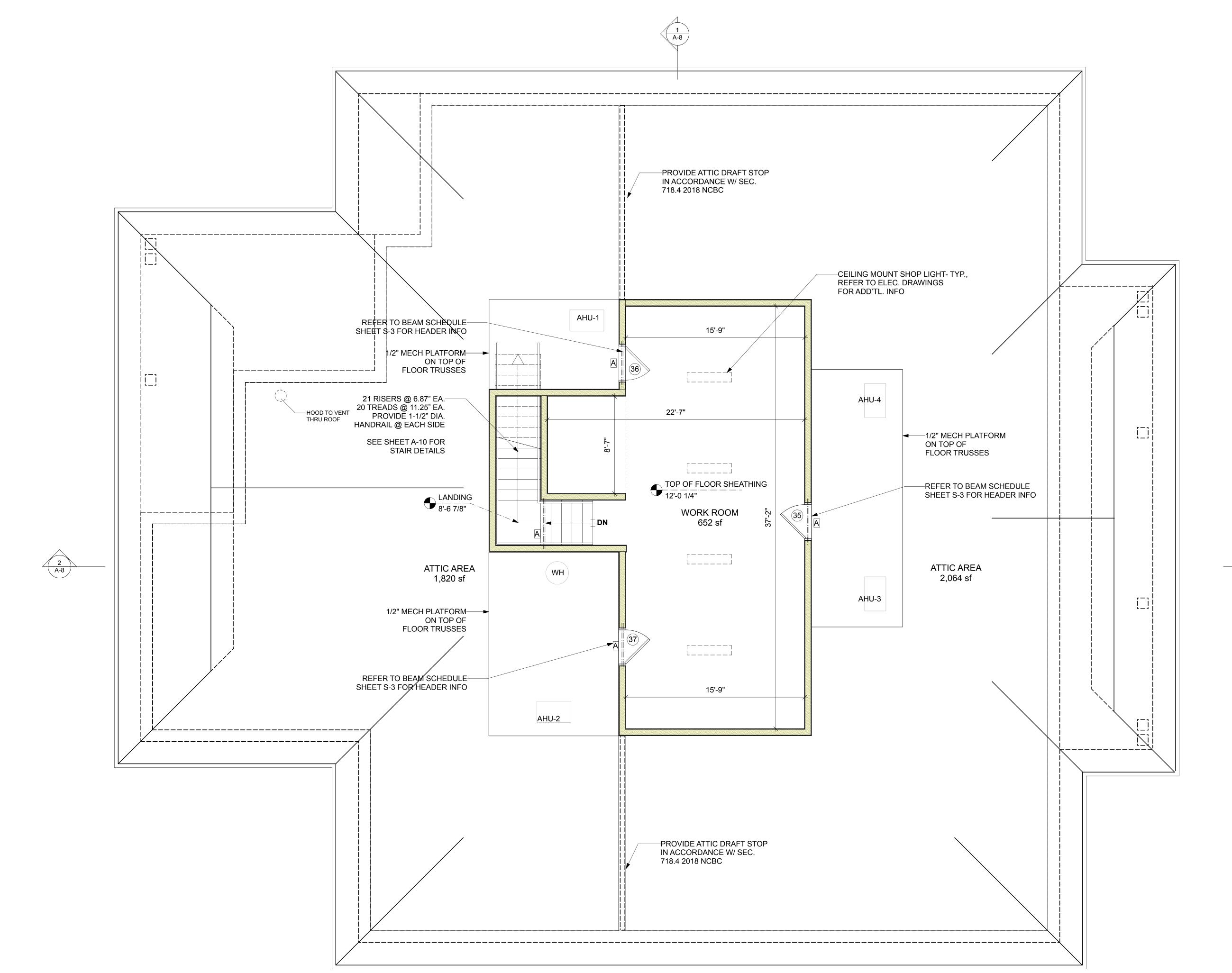
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ROOF FRAMING PLAN

A-1
FLOOR PLAN



ATTIC FLOOR PLAN



ATTIC NOTES:

1. WALLS TO BE LOCATED BASED ON CLEAR CEILING HEIGHT OF 8'-1 1/2" TO FRAMING.

WALL TYPES:

INTERIOR WALL:

OF TRUSS

5/8" GWB EACH SIDE OF 2X4 WOOD

5/8" GWB EACH SIDE OF 2X4 WOOD STUDS @ 16"O.C. W/ SOUND BATT

INSULATION, EXTEND TO BOTTOM

5/8" GWB OVER 2X6 WOOD STUDS

5/8" GWB OVER 2X6 WOOD STUDS

@ 16"O.C. W/ R-20 SPRAYED OPEN CELL INSULATION, EXTERIOR SHEATHING, AIR SPACE & BRICK

INTERIOR BEARING WALL:

WOOD STUDS @ THIS WALL

2X6 WOOD STUDS IN LEIU OF 2X4

@ 16"O.C. W/ R-20 BATT INSULATION

STUDS @ 16"O.C., EXTEND TO BOTTOM OF TRUSS

INTERIOR SOUND WALL:

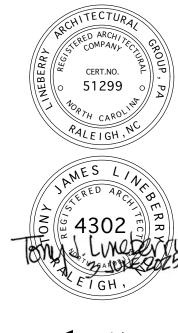
EXTERIOR WALL @ ATTIC:

EXTERIOR WALL:

VENEER

- 2. 5/8" GWB @ ALL WALLS & CEILING.
- 3. PROVIDE ATTIC DRAFT STOP IN ACCORDANCE W/ SEC. 718.4 2018
- 4. GWB WALLS AND CEILINGS ARE TO BE PAINTED, SEE A-5

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Project Number : 1910.15
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Date: 3 JUNE 2025

A-3
REFLECTED
CEILING PLAN

NC FARM BUREAU Harnett County, 105 E. Front Street

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A-4ROOF PLAN

Project Number : 1910.15 Drawn By: MJ Date: 3 JUNE 2025

	FINISH SCHEDULE:
	FLOOR FINISHES:
F-1	NOT USED
F-2	LUXURY VINYL TILE: MANF: SHAW CONTRACT; STYLE: BRANCHING OUT CORETEC #4256V; COLOR: SMOKY OAK #56516; SIZE: 9"X36"; INSTALLATION: DIRECT GLUE; BRICK PATTERN
F-3	CARPET TILE: MANF: SHAW CONTRACT; STYLE: HABITAT TILE #5T390; COLOR: BRANCH #88760; SIZE: 9" X 36"; INSTALLATION: ASHLAR
F-4	BROADLOOM CARPET: MANF: SHAW CONTRACT; STYLE: GRADIENT #5A153; COLOR: TAUPE #34760;
	WALL FINISHES:
W-1	PAINT #1: SHERWIN WILLIAMS- CASHMERE COLOR: AGREEABLE GRAY #SW 7029; FINISH: EGGSHELL
W-2	PAINT #2: SHERWIN WILLIAMS-
	CASHMERE COLOR: SYCAMORE TAN #SW 2855; FINISH: EGGSHELL (ACCENT COLOR)
	(NOTE: TOILET ROOMS TO RECEIVE EPOXY PAINT)
	BASE FINISHES:
B-1	THERMOPLASTIC RUBBER BASE: MANF: TARKETT; MILLWORK WALL BASE #MW_XX_F PROFILE: REVEAL 4-1/4"; COLOR:PEPPERCORN #TB1
	CEILING FINISHES:
C-1	ACOUSTIC CEILING TILE: MANF: ARMSTRONG; STYLE:DUNE ANGLED TEGULAR #1774 24"x24" LAY-IN; COLOR: WHITE; 15/16" PRELUDE SUPENSION GRID
C-2	GWB, PAINTED; SW CEILING WHITE SW #7007
	PLASTIC LAMINATE:
PL-1	MANF: WILSONART; COLOR: VALLEY FORGE ELM #8231K-79
	SOLID SURFACE:
SS-1	MANF: CORIAN; COLOR: LAVA ROCK
	CSR MILLWORK:
PT-4	PAINT #4: SHERWIN WILLIAMS; SEMI-GLOSS COLOR: SYCAMORE TAN #SW 2855
	HORIZONTAL BLINDS:
	MANF: HUNTER DOUGLAS CONTRACT; STYLE: EVERWOOD ALTERNATIVE WOOD BLINDS; COLOR: #984 EXTREME WHITE
	DOORS:
	PREFINISHED WOOD VENEER: MANF: MASONITE ARCHITECTURAL; ASPIRO SERIES; SPECIES: WHITE BIRCH (ROTARY); STAIN COLOR: COCOA BEAN; LITE KIT: W-7
	HOLLOW METAL DOOR FRAMES:
PT-3	PAINT #3: SHERWIN WILLIAMS; SEMI-GLOSS COLOR: SNOWBOUND #SW 7004
	WOOD WINDOW SILLS:
PT-3	PAINT #3: SHERWIN WILLIAMS; SEMI-GLOSS COLOR: SNOWBOUND #SW 7004

FINISH NOTES:

- 1. CAULK PERIMETER @ ALL TRIM, BASE & JAMBS
- 2. PROVIDE TRANSITIONS BETWEEN FLOORING TYPES AS REQ'D, SEE DETAILS ON SHEET A-16.
- 3. HORIZONTAL BLINDS TO BE INSTALLED @ ALL EXT. WINDOWS & @ INTERIOR OFFICE WINDOWS.
- 4. FURNISH MAINTENANCE STOCK OF EXTRA MATERIALS TO OWNER. DELIVER EXTRA MATERIALS FROM SAME MANUFACTURED LOT AS MATERIALS INSTALLED MIN. TWO BOXES FOR EACH TYPE, COLOR, PATTERN & SIZE INSTALLED. ENCLOSED IN PROTECTIVE PACKAGING W/APPROPRIATE IDENTIFYING LABELS.
- 5. FLOORING TO BE INSTALLED PRIOR TO CSR MILLWORK INSTALLATION.
- 6. ALL FURNITURE @ ROOMS WITH LVT FLOORING SHOULD HAVE SOFT GLIDES FOR LVT FLOORING. NOTIFY FURNITURE SUPPLIER TO PROVIDE AS NOTED.





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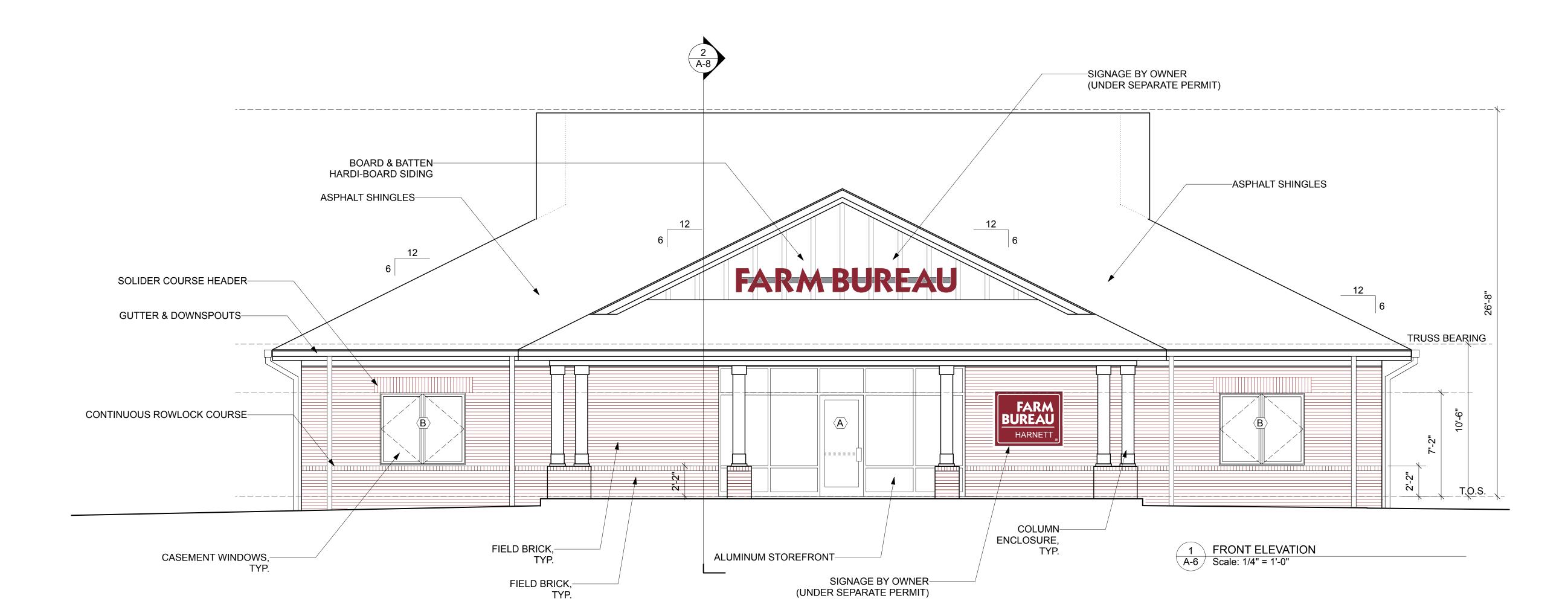
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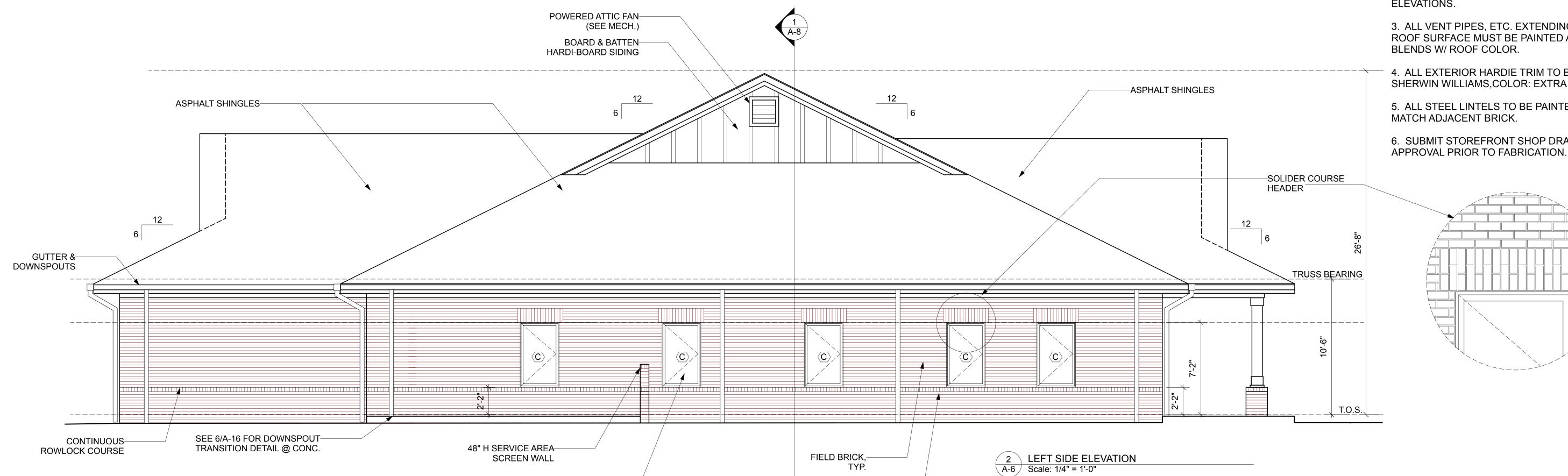
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A-5 FINISH PLAN

Date: 3 JUNE 2025

EXTERIOR ELEVATIONS





FIELD BRICK,

TYP.

CASEMENT WINDOWS

TYP.

EXTERIOR FINISHES:

BRICK

BORAL BRICK- RED RANGE WIRE CUT (MODULAR)

TRIANGLE BRICK- NORTH CAROLINA RED WIRE CUT (MODULAR)

MORTAR

COLOR: KHAKI

ASPHALT SHINGLES

MANF: CERTAINTEED; SYTLE: LANDMARK PRO COLOR: WEATHERED WOOD

ALUMINUM DRIP EDGE

COLOR: WHITE

STOREFRONT

CLEAR ANNODIZED ALUMINUM FRAMES W/ 1" LOW-E INSULATED GLAZING; TINTED (@ FRONT)

WINDOWS

PELLA IMPERVIA FIBERGLASS CASEMENT INTERIOR FINISH: WHITE, EXTERIOR FINISH: WHITE, HARDWARE FINISH: WHITE, NO GRILLES; PROVIDE W/ NAILING FIN & SCREENS

GUTTER & DOWNSPOUT

GUTTERS: SQUARE BOX PROFILE- MIN 6" DOWNSPOUT: MIN. 5"X"5; COLOR: WHITE ALUMINUM

COLUMN ENCLOSURE

HARDIE-TRIM HZ10, CUT TO MATCH COLUMN DETAIL

TRIM BOARDS

HARDIE-TRIM HZ10, SIZES PER DRAWINGS

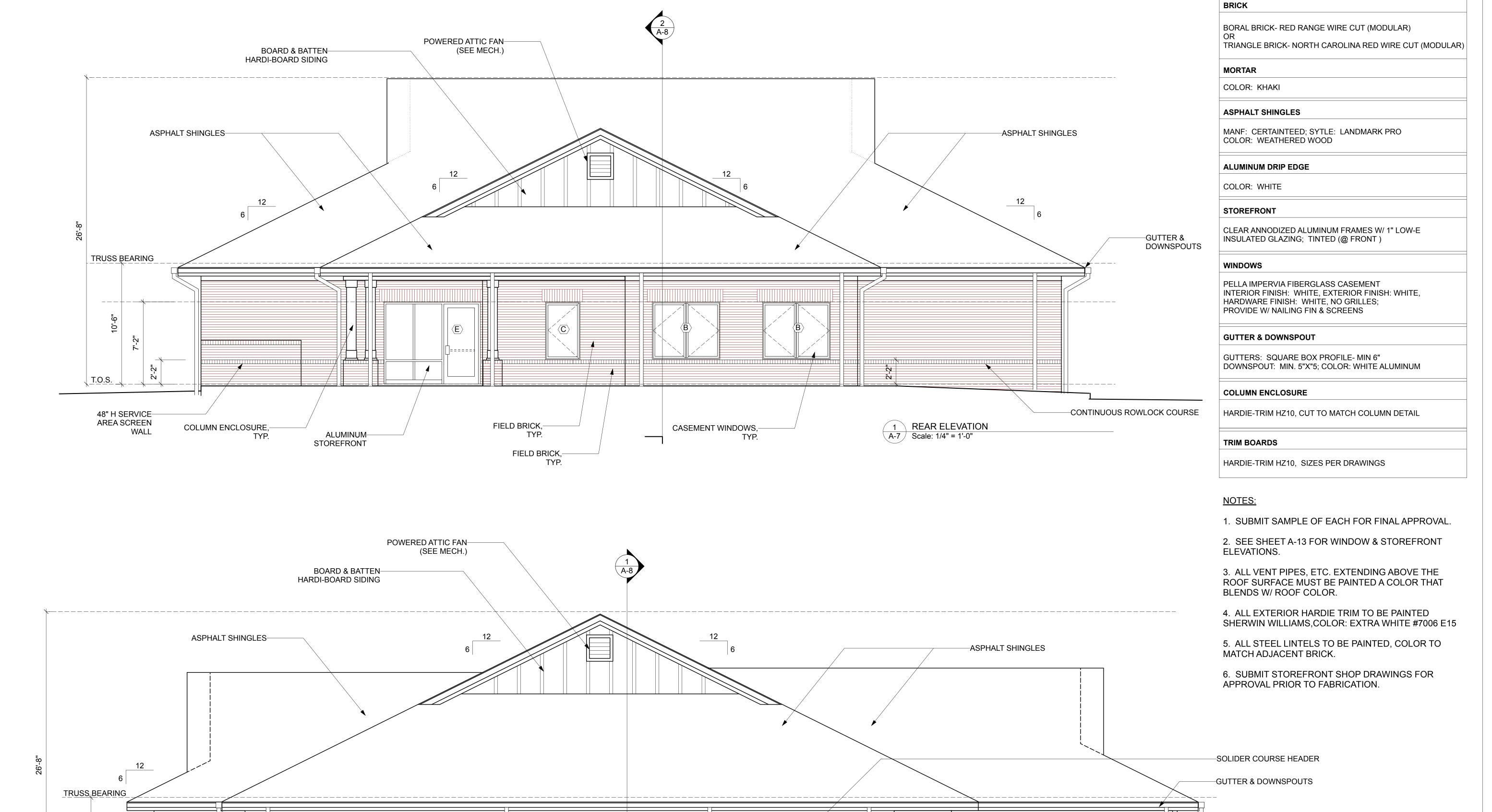
NOTES:

- 1. SUBMIT SAMPLE OF EACH FOR FINAL APPROVAL.
- 2. SEE SHEET A-13 FOR WINDOW & STOREFRONT ELEVATIONS.
- 3. ALL VENT PIPES, ETC. EXTENDING ABOVE THE ROOF SURFACE MUST BE PAINTED A COLOR THAT
- 4. ALL EXTERIOR HARDIE TRIM TO BE PAINTED SHERWIN WILLIAMS, COLOR: EXTRA WHITE #7006 E15
- 5. ALL STEEL LINTELS TO BE PAINTED, COLOR TO
- 6. SUBMIT STOREFRONT SHOP DRAWINGS FOR

EXTERIOR FINISHES:

EXTERIOR ELEVATIONS

Date: 3 JUNE 2025



48" H SERVICE-

AREA SCREEN

WALL, BEYOND

2 RIGHT SIDE EL A-7 Scale: 1/4" = 1'-0"

RIGHT SIDE ELEVATION

-ALUMINUM STOREFRONT

T.O.S.

CONTINUOUS-

FIELD BRICK,

TYP.

TYP.

FIELD BRICK,

CASEMENT WINDOWS,

ROWLOCK COURSE

COLUMN ENCLOSURE,

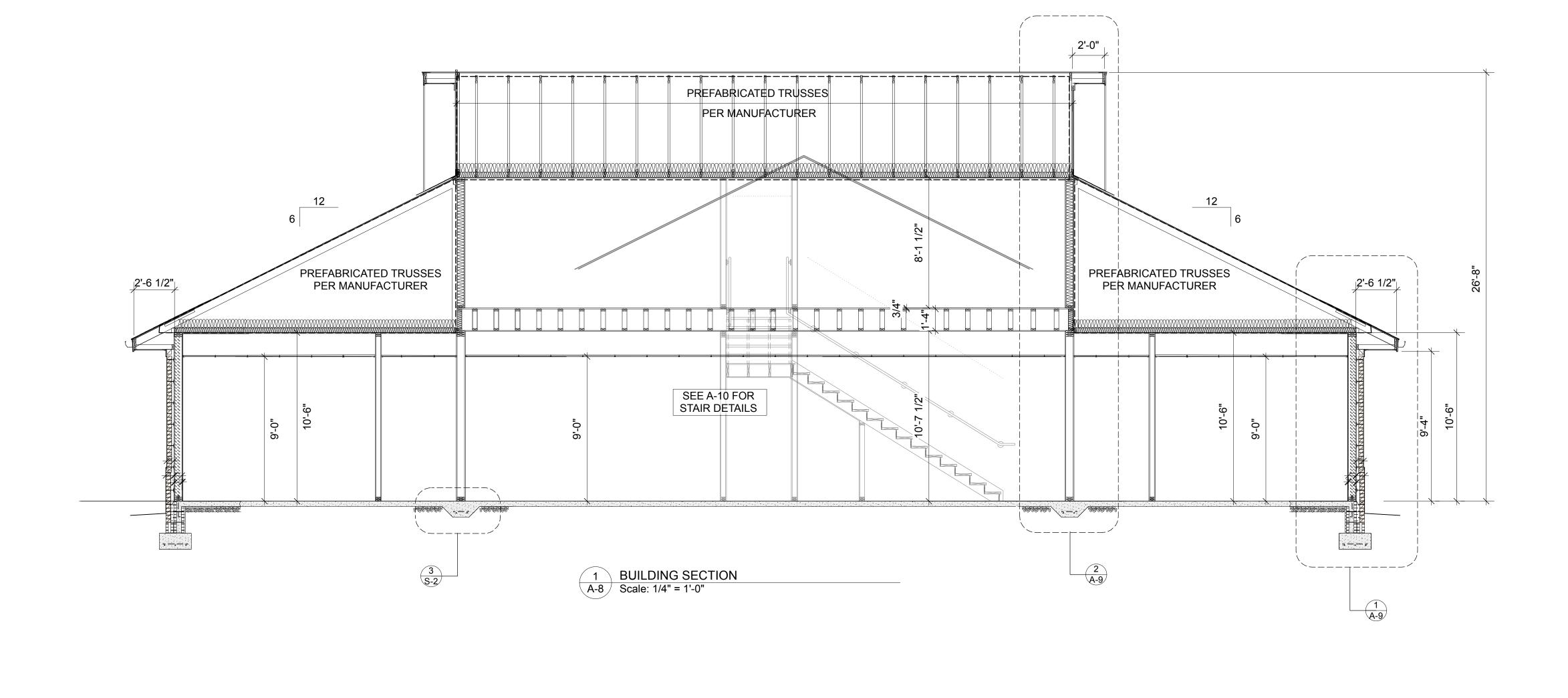


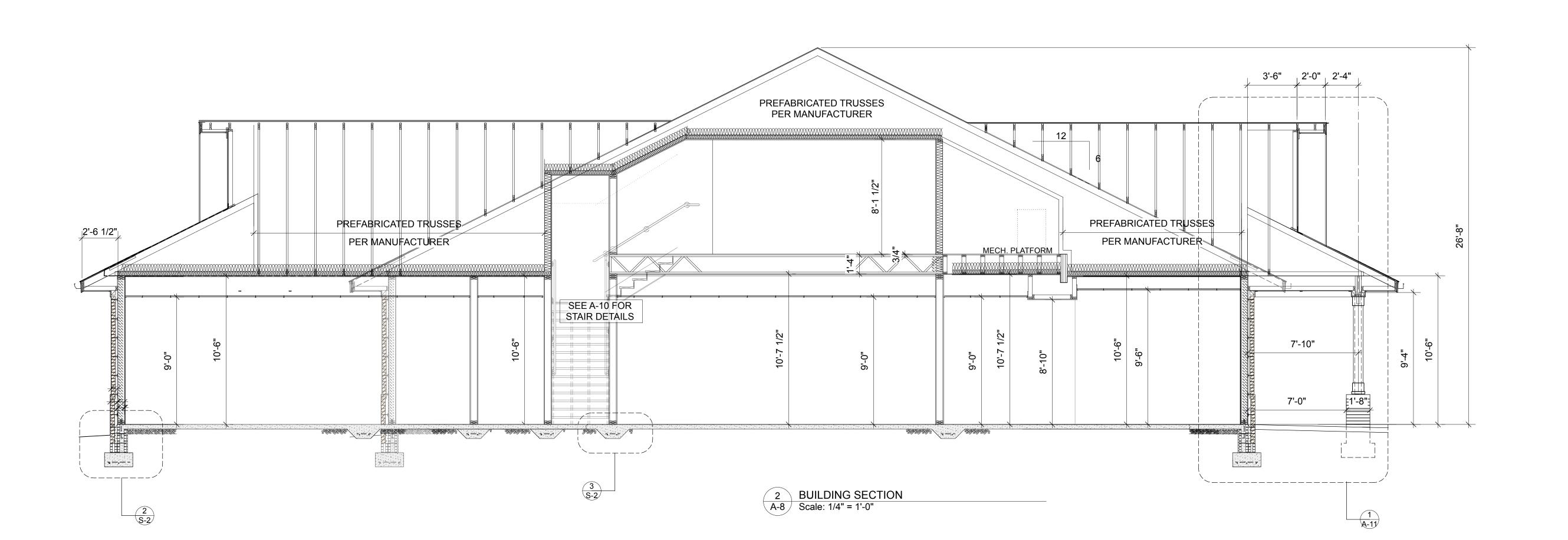




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BUILDING SECTIONS





SEE FOUNDATION PLAN FOR REINFORCEMENT -

1 WALL SECTION @ EXTERIOR WALL
A-9 Scale: 1" = 1'-0"

-30 YEAR ASPHALT SHINGLE TIMBERLINE TYPE SHINGLE COLOR TO BE SELECTED

CONTINOUS PRE FINISHED

2'-0"

ZIP SYSTEM 5/8 CAT PS2-10 TONGUE

AND GROOVE OSB SHEATHING -

R-42 INSULATION-

R-20 BATT

@ 16" O.C.

5/8" GWB---

SEE FOUNDATION PLAN FOR REINFORCEMENT

2 WALL SECTION @ INTERIOR BEARING WALL
A-9 Scale: 1" = 1'-0"



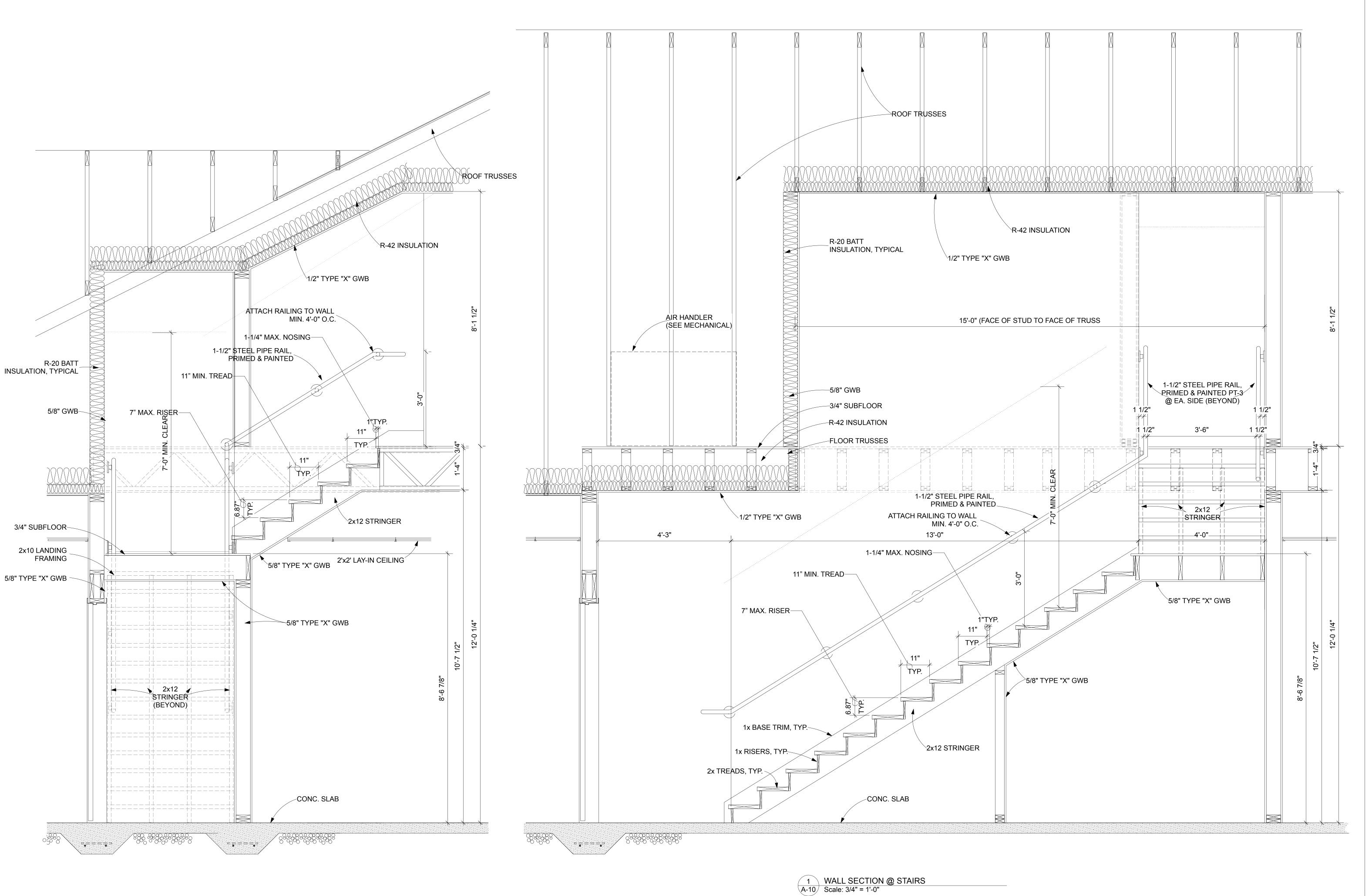




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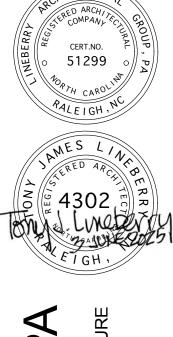
WALL SECTIONS

A-10
WALL SECTION





5



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Project Number: 1910.15
Drawn By: MJ
Date: 3 JUNE 2025
Updated: 2 MAY 2024

A-11
WALL SECTION

-WALL MOUNT LIGHT FIXTURE,

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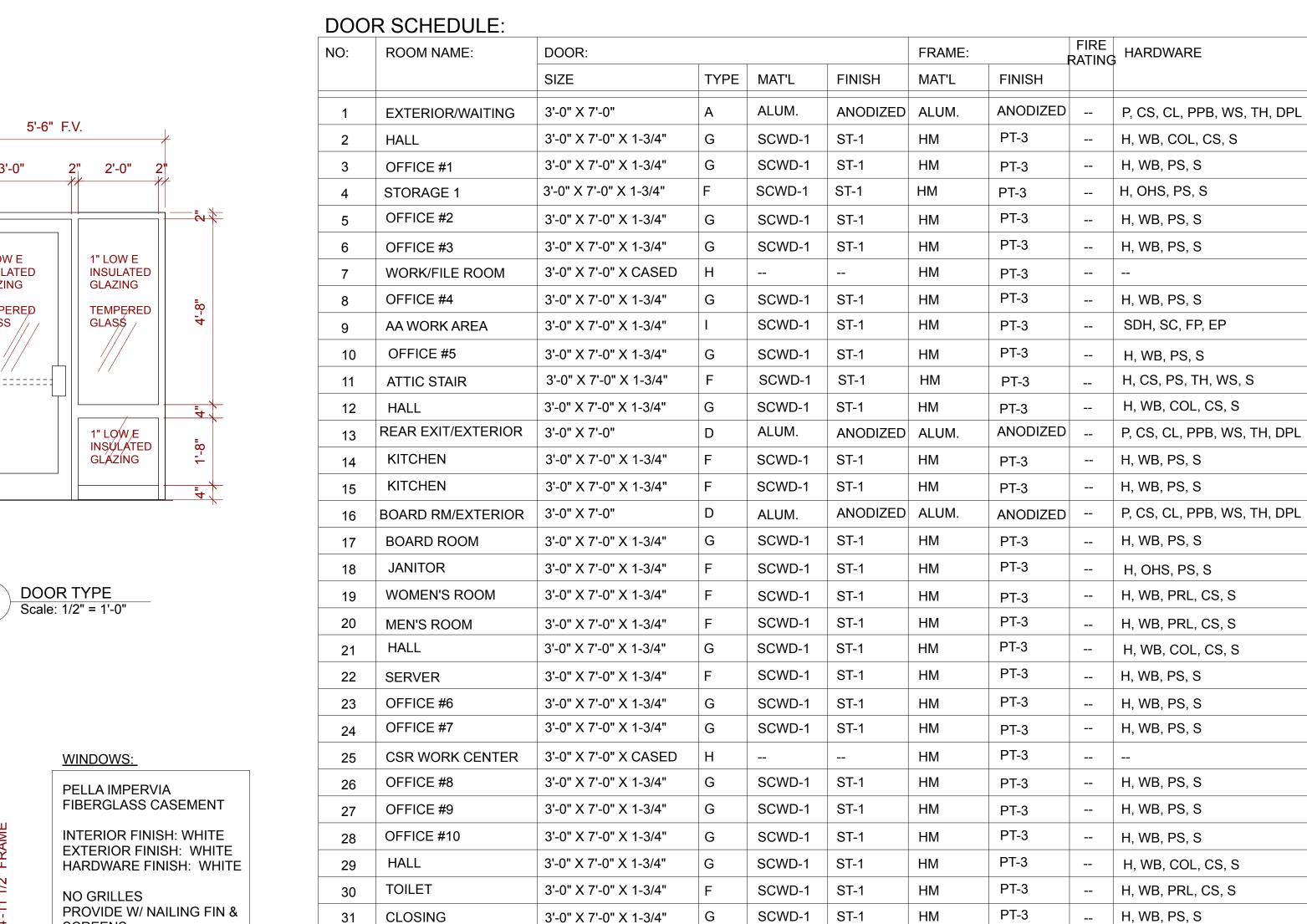
ENLARGED PLANS & **ELEVATIONS**

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DOOR & WINDOW SCHEDULE

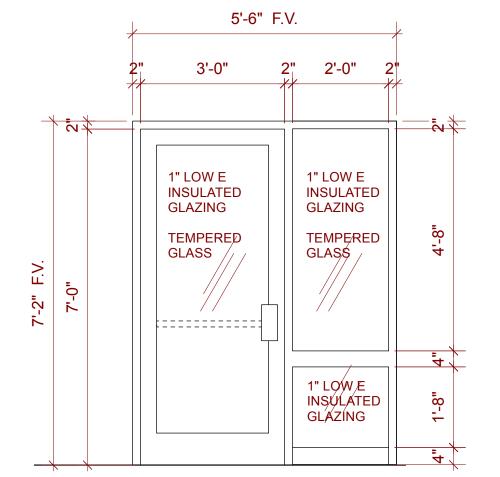


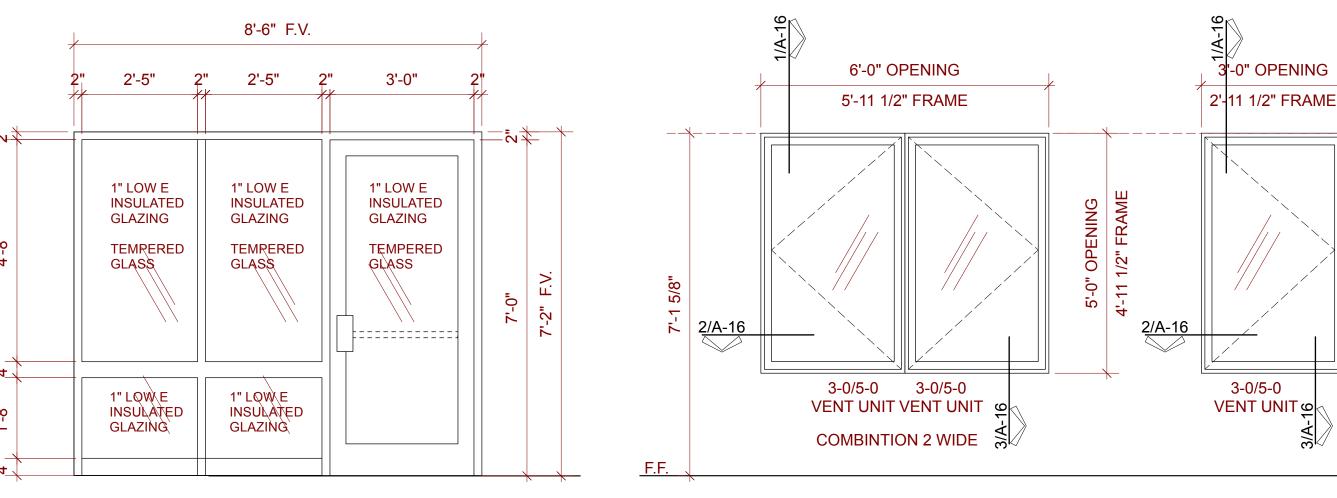
3'-0" X 7'-0" X CASED

3'-0" X 7'-0" X 1-3/4"

3'-0" X 7'-0" X CASED H

17'-0" F.V. 3'-3" 3'-3" 3'-0" 3'-3" 3'-3" 1" LOW E 1"\LOW E 1" LOW E 1"\LOW E INSULATED INSULATED INSULATED INSULATED INSULATED GLAZING GLAZING GLAZING GLAZING GLAZING 1" LOW E **INSULATED** INSULATED INSULATED INSULATED **INSULATED GLAZING GLAZING** GLAZING GLAZING GLAZING TEMPERED **TEMPERED** TEMPERED TEMPERED TEMPERED GLA\\$\\$ GLASS \ GLAS'\$\ \GLASS \G\ASS 1" LOW € \ 1'\LOW E \1'\LOW E 1" LQW E INSULATED INSULATED INSULATED INSULATED GLAZING GLAZING GLAZING GLAZINĞ A DOOR TYPE
Scale: 1/2" = 1'-0" 8'-6" F.V.



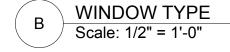


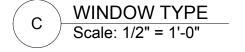
SCREENS

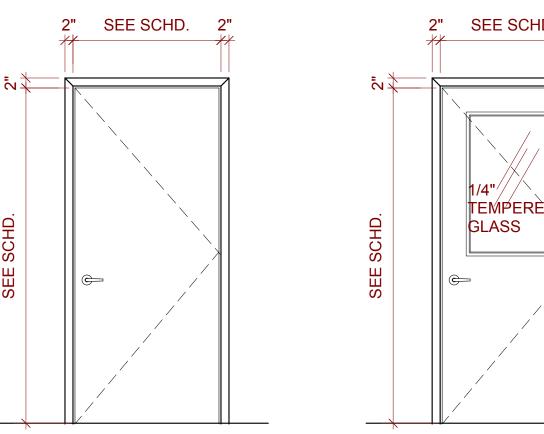
VERIFY OPENING SIZE W/ MANUFACTURER

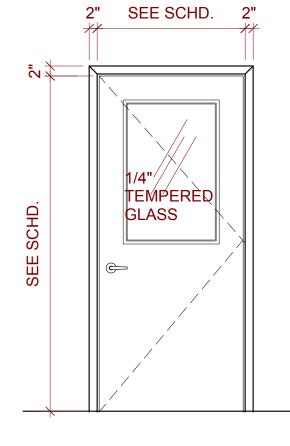
DOOR TYPE Scale: 1/2" = 1'-0"

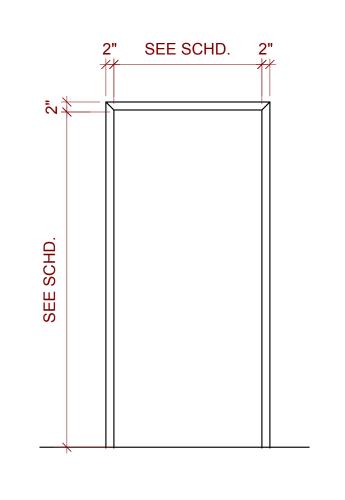
F DOOR TYPE
Scale: 1/2" = 1'-0"

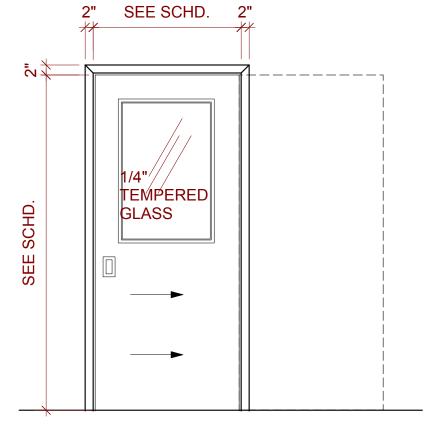


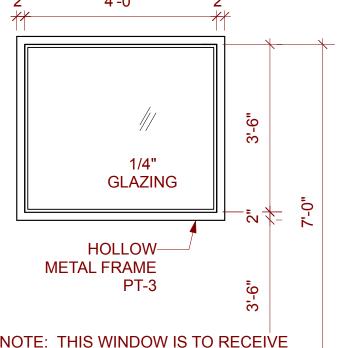












32 | CSR AREA

33 CSR AREA

35

STORAGE 2

UNFINISHED ATTIC

UNFINISHED ATTIC

UNFINISHED ATTIC

ELEVATION @ AM OFFICE #1 A-13 Scale: 1/2" = 1'-0"

4'-0" NOTE: THIS WINDOW IS TO RECEIVE WINDOW BLINDS @ OFFICE SIDE

GENERAL NOTES:

SERIES- ATHENS, SATIN CHROMIUM PLATED FINISH #626; UNO.

2. ALL WOOD DOORS TO BE MASONITE ARCHITECTURAL ASPIRO SERIES PREFINISHED WOOD VENEER DOORS (SEE FINISH SCHEDULE). PBL

3. SUBMIT DOOR, FRAME & HARDWARE FOR ARCHITECT'S APPROVAL PRIOR TO ORDERING.

4. ALL HARDWARE TO BE SATIN CHROMIUM FINISH # 626

1. ALL DOOR HANDLES TO BE SCHLAGE "ND"

SCWD-1

SCWD-1

SCWD-1

SCWD-1

ST-1

ST-1

ST-1

ST-1

NOTE: DOORS ARE A LONG LEAD ITEM.

PIVOT AFB **AUTOMATIC FLUSH BOLTS** SURFACE MOUNTED CLOSER CL CYLINDER LOCK NARROW STILE PUSHBUTTON LOCK **DUMMY LOCK** FS FLOOR STOP PRL PRIVACY LOCK SRL STORAGE ROOM LOCK COL CORRIDOR LOCK PS PASSAGE LOCK SET PPB PUSH BAR/PULL HANDLE OFFICE LOCKSET OHS OVERHEAD STOP EL **ENTRANCE LOCKSET** MC MAGNETIC CATCH SILENCERS TH THRESHOLD WS WEATHERSTRIPING WB WALL BUMPER DLP PULL/PUSH DEAD LATCH PADDLE SDH SLIDING DOOR HARDWARE SC SOFT CLOSE FP FLUSH PULL **EDGE PULL**

H, OHS, PS, S

H, OHS, PS, TH, WS, S

H, OHS, PS, TH, WS, S

H, OHS, PS, TH, WS, S

HEAVY DUTY HINGE STOP

SCWD-1 SOLID CORE WOOD (SEE FINISH SCHEDULE) PREFINISHED WOOD VENEER PT-3

PT-3

PT-3

PT-3

HS

DOOR SCHEDULE LEGEND:

(SEE FINISH SCHEDULE) PAINT (SEE FINISH SCHEDULE) HM **HOLLOW METAL** ALUMINUM STOREFRONT ANODIZED CLEAR ANODIZED

DOOR TYPE
Scale: 1/2" = 1'-0"

Scale: 1/2" = 1'-0"

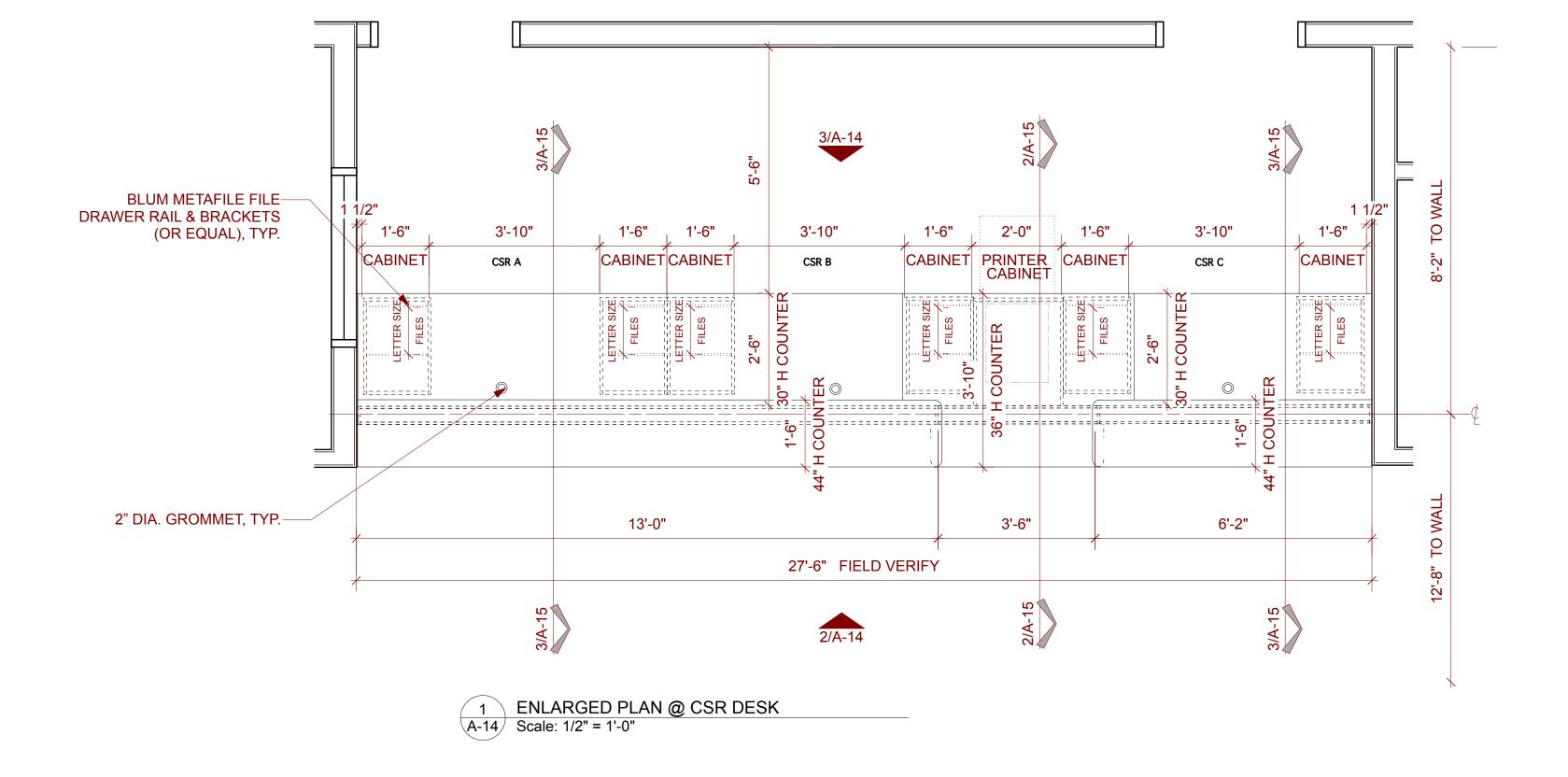


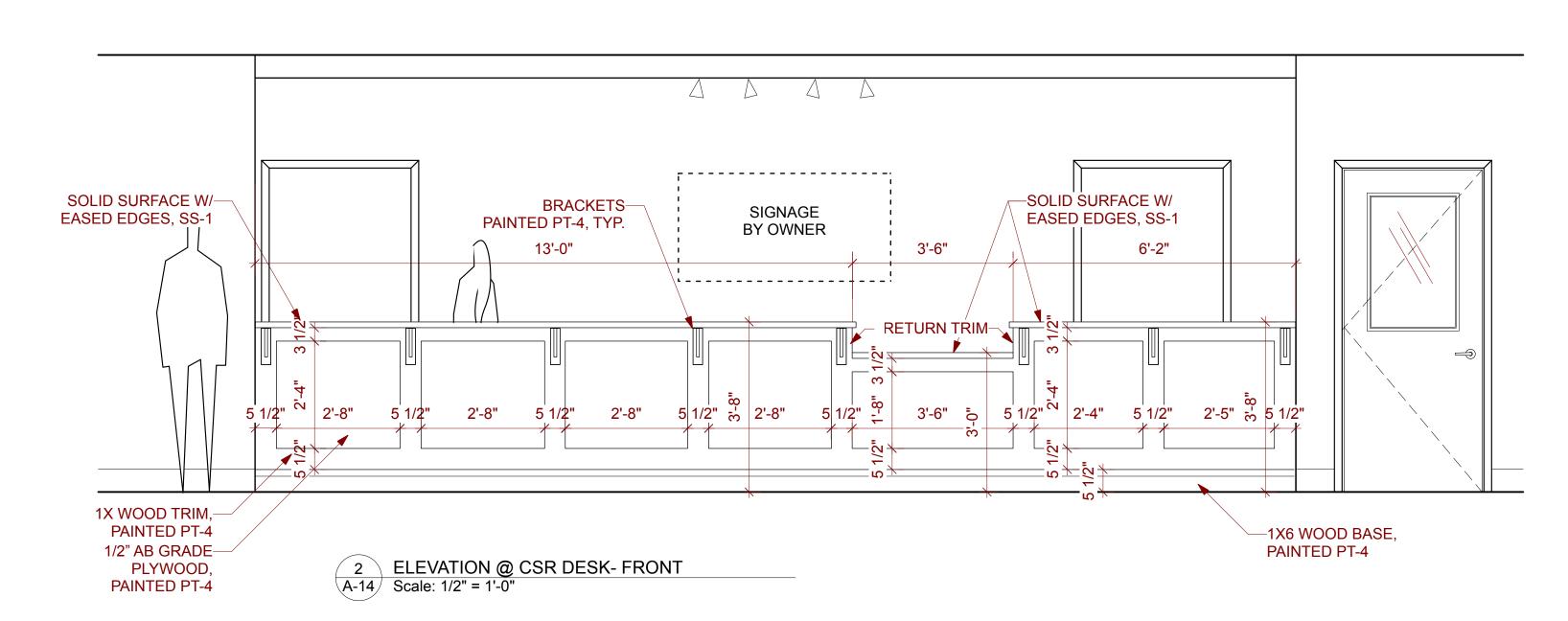


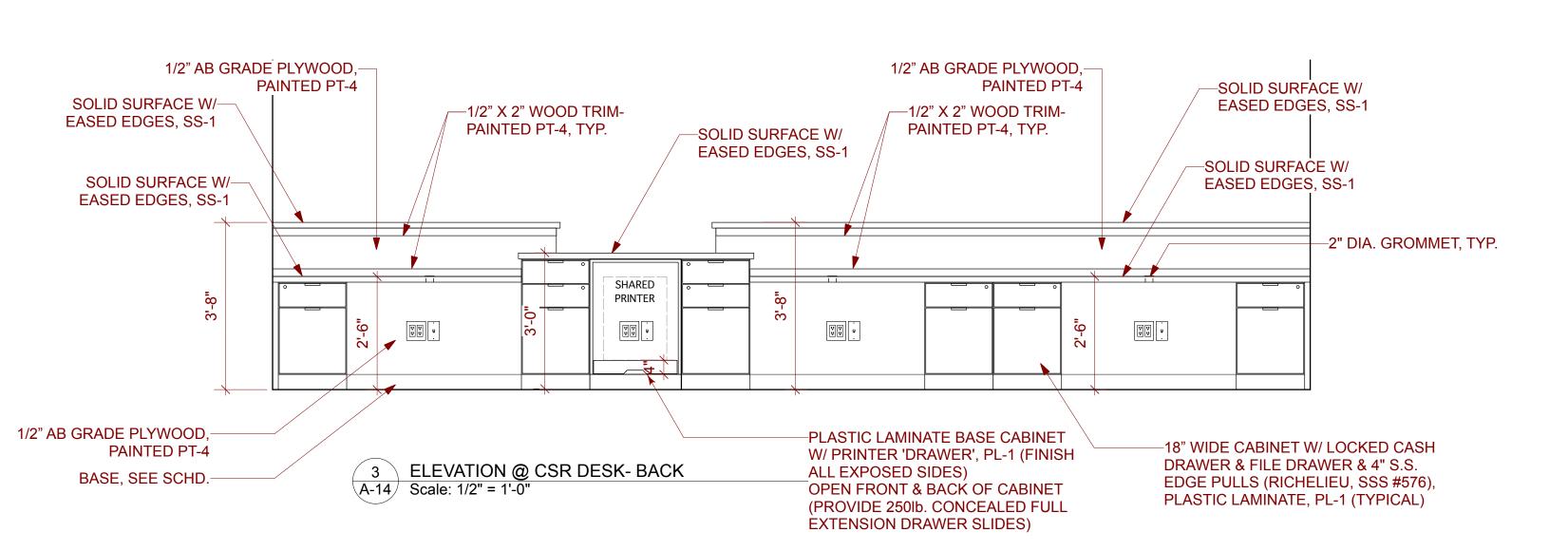
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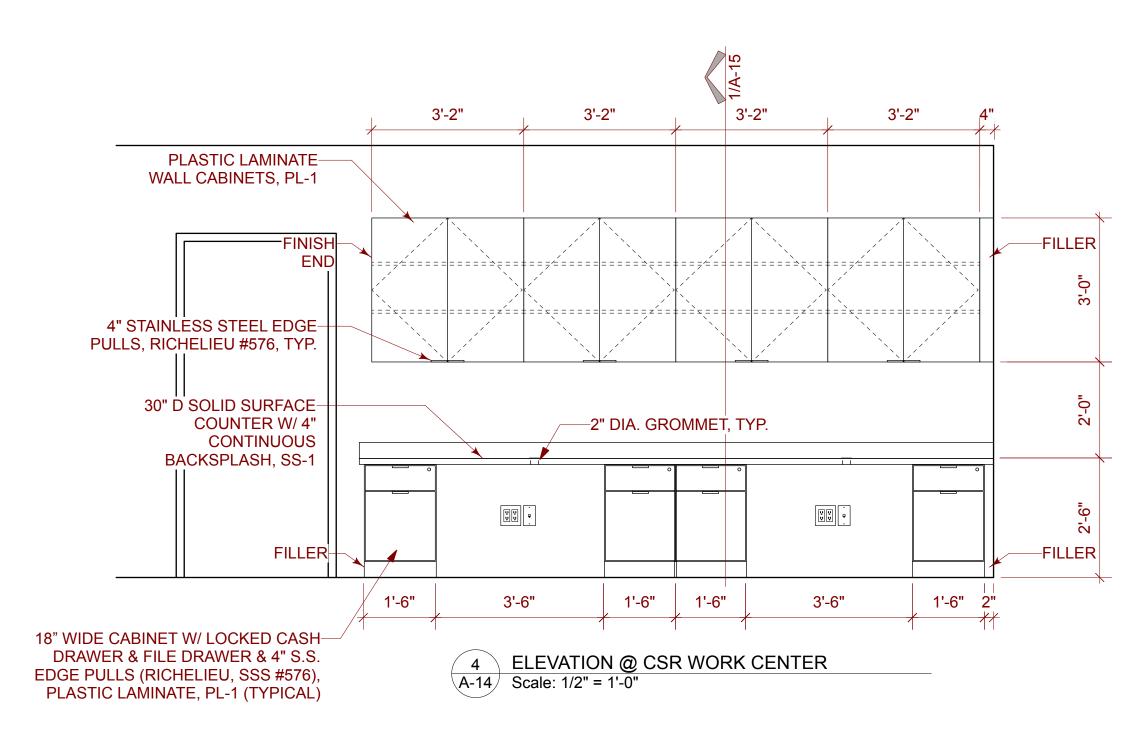
Project Number : 1910.15 Drawn By: MJ Date: 3 JUNE 2025

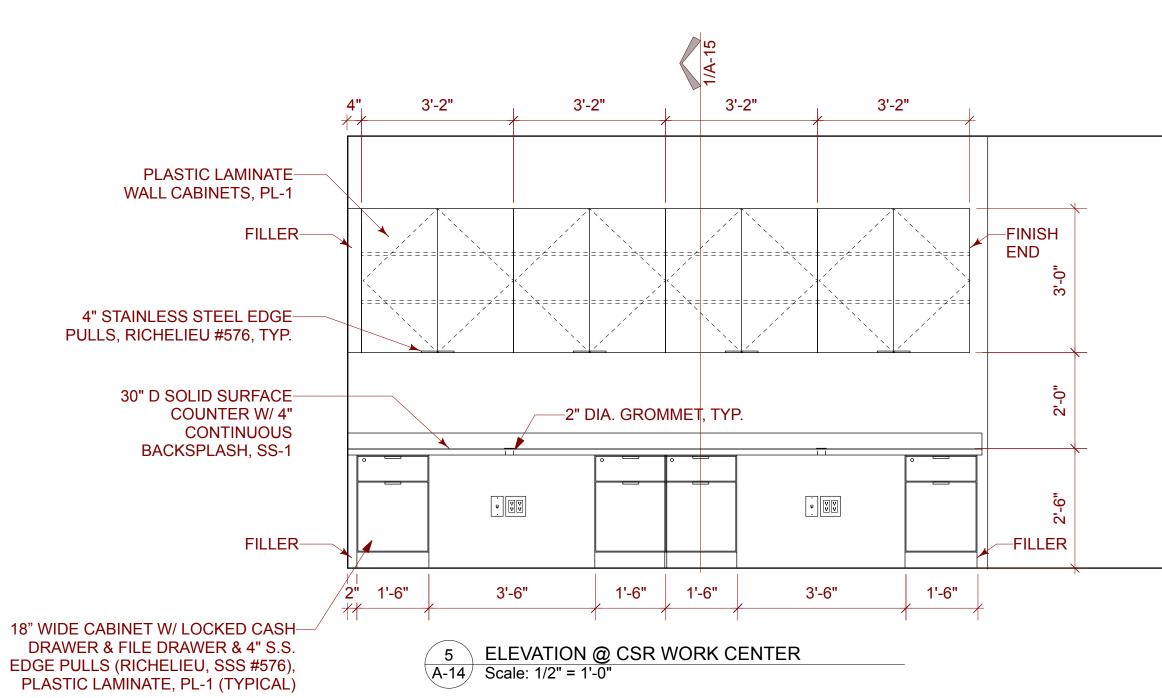
CSR MILLWORK



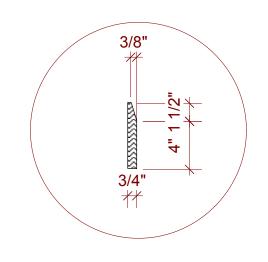




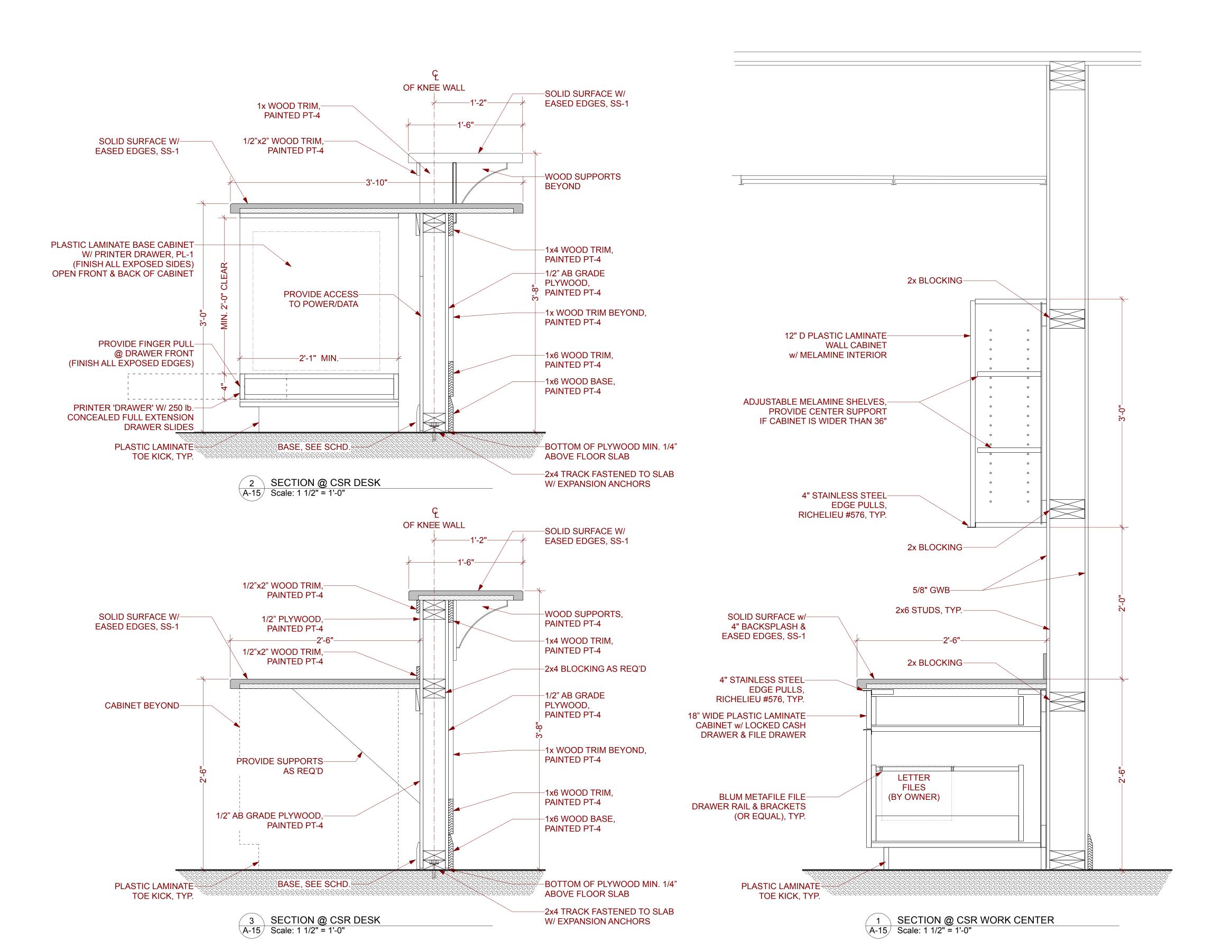




- 1. DOOR HINGES ARE TO BE HEAVY DUTY CONCEALED, SELF CLOSING ADJUSTABLE HINGES; CHROME FINISH.
- 2. ALL DRAWERS ARE TO HAVE FULL EXTENSION GUIDES W/ SOFT CLOSE FEATURE.
- 3. ALL CABINETS ARE TO HAVE 3/4" PLYWOOD SUBSTRATE CONSTRUCTION & WHITE MELAMINE FINISH ON INTERIOR SURFACES.
- 4. ALL EXPOSED SURFACES OF CABINETS TO BE PLASTIC LAMINATE.
- 5. FLOORING IS TO BE INSTALLED PRIOR TO CSR MILLWORK INSTALLATION.
- CASH DRAWERS ARE TO HAVE INDIVIDUAL LOCK
 KEY UNIQUE FOR EACH CSR.
- 7. SHOP DRAWINGS FOR MILLWORK TO BE APPROVED PRIOR TO FABRICATION.



4 1x6 WOOD BASE DETAIL A-15 Scale: 1 1/2" = 1'-0"



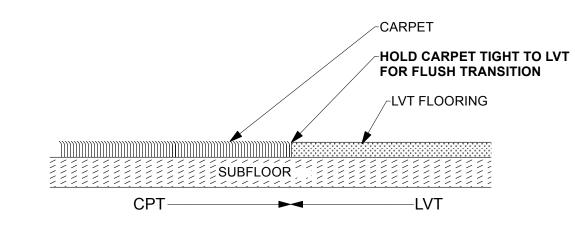




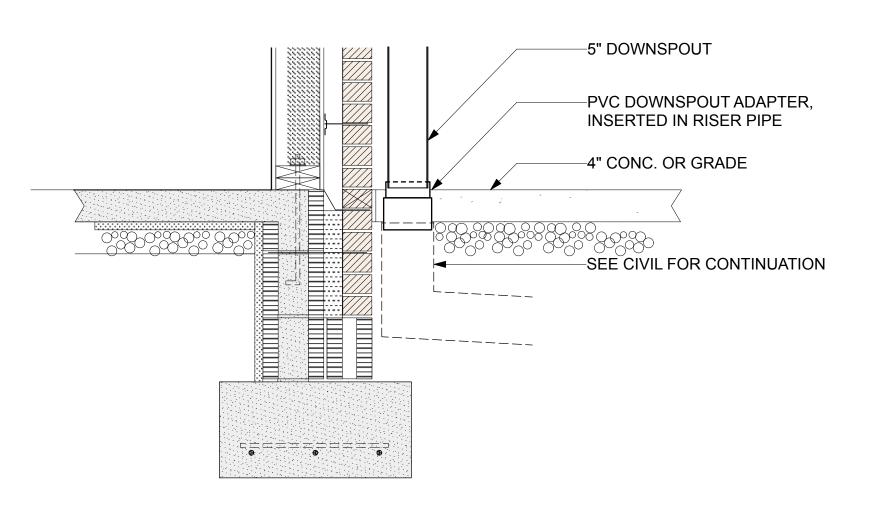
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A-15
CSR MILLWORK

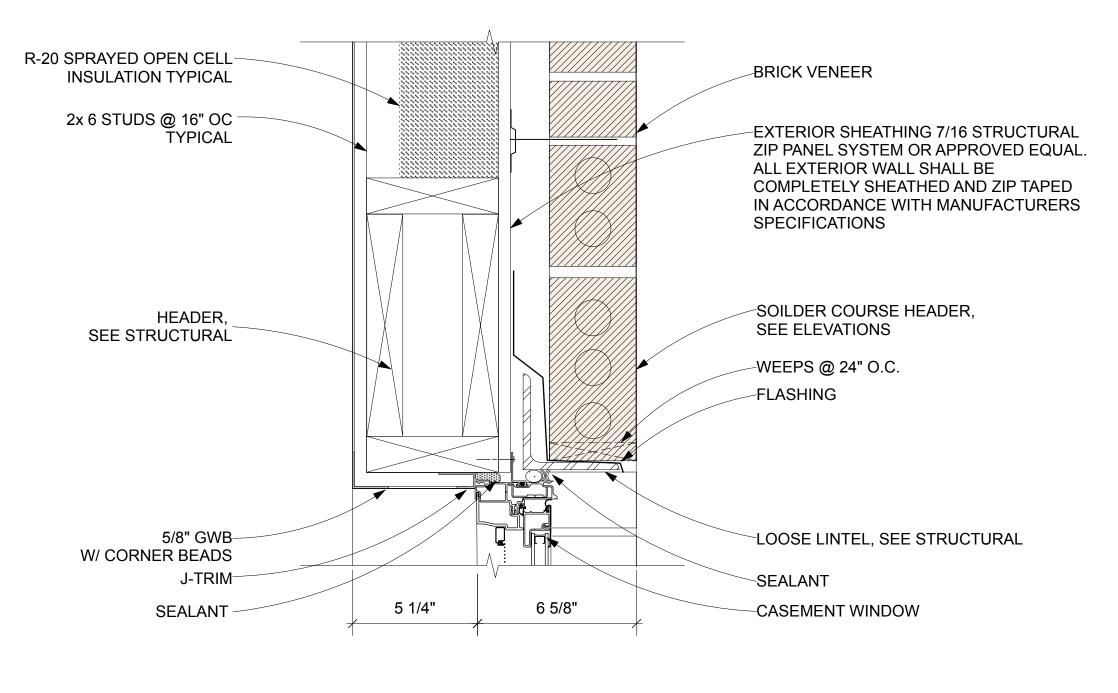
4 EDGE DETAIL - TILE/STONE TO LVT

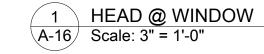


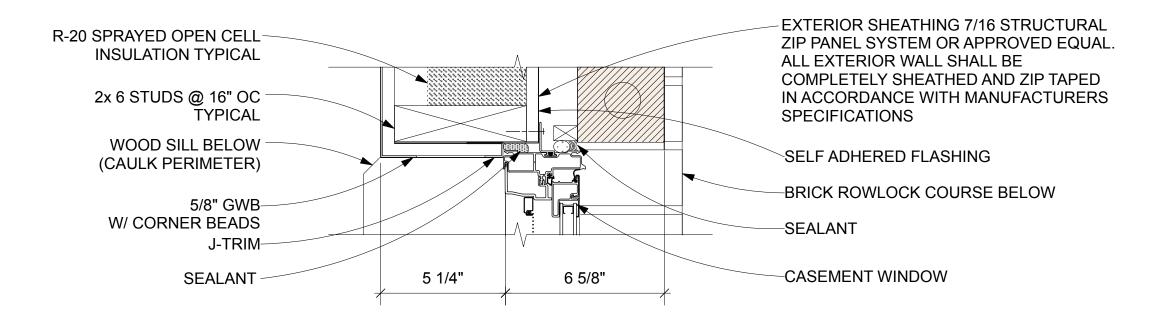
5 EDGE DETAIL - LVT TO CARPET

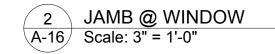


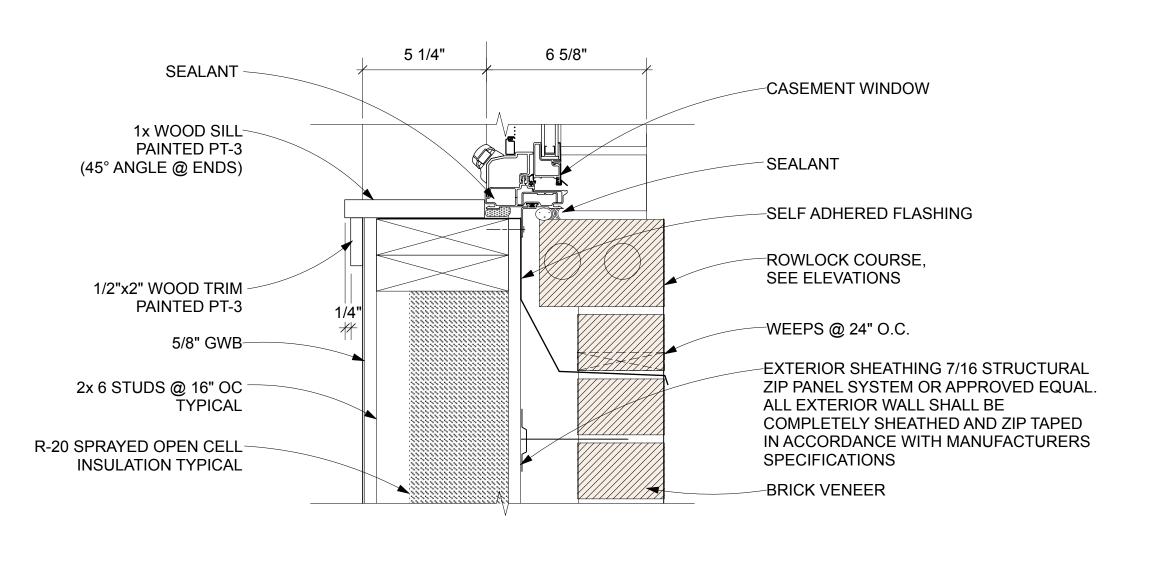
6 DOWNSPOUT TRANSITION DETAIL
A-16 Scale: 1" = 1'-0"

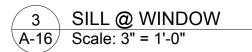














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Project Number: 1910.15 Drawn By: MJ Date: 3 JUNE 2025

DETAILS

Sign Base Elevation
A-17 Scale: 1 1/2" = 1'-0"

Project Number : 1910.15 Drawn By: MJ Date: 3 JUNE 2025

DETAILS

3'-8"

Sign Base Section
A-17 Scale: 1 1/2" = 1'-0"

PLUMBING GENERAL NOTES

GENERAL REQUIREMENTS

- . THE P.C. SHALL FURNISH AND PAY FOR ALL LABOR, MATERIAL, EQUIPMENT, PERMITS, AND FEES REQUIRED FOR THE COMPLETE INSTALLATION OF ALL SYSTEMS IN THIS SECTION OF WORK.
- ALL WORK IS SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODE AND ALL OTHER APPLICABLE CODES. THE P.C. SHALL COORDINATE WITH G.C. IN REGARDS TO PROJECT TIMELINE, WORK HOURS, AND ANY BONDING OR INSURANCE REQUIREMENTS.
- ALL PLUMBING FIXTURES AND PLUMBING SYSTEM EQUIPMENT SHALL BE PROVIDED COMPLETE WITH ALL ACCESSORIES, HANGERS, VALVES, STOPS, TAILPIECES, TRAPS, FAUCETS, STRAINERS, ETC. REGARDLESS OF PRESENCE ON PLANS. SEE FIXTURE SCHEDULE.
- ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER. EXISTING EQUIPMENT IS EXCLUDED FROM WARRANTY REQUIREMENT.
- THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT.
- 6. DO NOT SCALE DRAWINGS FOR MEASUREMENT.
- INFORMATION GIVEN IN SCHEDULES INCLUDES BOTH DESCRIPTION OF PRODUCT AND MANUFACTURER'S MODEL NUMBER. IF A CONFLICT IS PRESENT BETWEEN DESCRIPTION AND MODEL NUMBER, THE EQUIPMENT DESCRIPTION SHALL TAKE PRECEDENT. IN THE CASE OF A CONFLICT BETWEEN THE PLANS AND NOTES/SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE NOTES/SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- 8. THE P.C. IS RESPONSIBLE FOR CLARIFYING ANY CONFUSION IN REGARDS TO RESPONSIBILITY OF WORK TO BE PERFORMED OR MATERIALS TO BE PROVIDED WITH THE G.C. PRIOR TO SUBMITTING A BID. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS PROOF THAT THE CONTRACTOR UNDERSTANDS THOROUGHLY AND COMPLETELY THE SCOPE OF THE WORK INVOLVED, AND HAS INCLUDED ON THE BID ALL THE NECESSARY ITEMS TO CARRY OUT THIS SECTION OF WORK
- 9. ALL QUESTIONS SHALL BE SUBMITTED IN RFI FORMAT TO THE ARCHITECT AND SHALL BE ADDRESSED BY THE APPROPRIATE DESIGNER OF RECORD PRIOR TO BECOMING A PROPOSED
- 10. THE P.C. SHALL REVIEW THE COMPLETE DRAWING SET. THE P.C. IS RESPONSIBLE FOR WORK EXPLICITLY SHOWN AND WORK IMPLIED. UNLESS OTHERWISE NOTED FINAL PLUMBING CONNECTION TO ALL EQUIPMENT, FIXTURES, ETC. IS THE RESPONSIBILITY OF THE P.C.

DIVISION OF WORK:

- . ALL ROOF PENETRATIONS, FLASHING, ETC. SHALL BE PERFORMED BY ROOFING CONTRACTOR. ALL LOW VOLTAGE WIRING RELATED TO PLUMBING EQUIPMENT AND SYSTEMS IS THE
- INCLUDING DISCONNECTS SHALL BE PROVIDED AND INSTALLED BY THE E.C. THE G.C. SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ACCESS DOORS RELATED TO PLUMBING SYSTEM, WITH THE EXCEPTION OF CLEANOUT COVERS BY THE P.C. THE P.C. SHALL BE RESPONSIBLE FOR COMMUNICATING SIZE AND LOCATION OF ALL REQUIRED ACCESS DOORS TO

RESPONSIBILITY OF THE P.C. ALL HIGH VOLTAGE CONNECTIONS TO PLUMBING EQUIPMENT,

- THE P.C. SHALL EMPLOY THE SERVICES OF THE G.C. FOR CUTTING AND PATCHING OF WALLS, FLOORS & CEILINGS RELATED TO THE INSTALLATION OF PLUMBING EQUIPMENT & SYSTEMS.
- THE G.C. SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY WATER HEATER PLATFORMS, EITHER FLOOR/WALL MOUNTED OR SUSPENDED. THE P.C. SHALL COMMUNICATE ALL REQUIREMENTS TO THE G.C. PRIOR TO PERFORMING WORK.

- 1. ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE SHOWN OR SPECIFIED.
- 2. PIPING MATERIALS AND FITTINGS SHALL BE AS FOLLOWS:

COCKS SHALL MEET ANSI B16.33

- A. WASTE, VENT & STORM (BELOW SLAB): PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED FITTINGS.
- B. WASTE VENT & STORM (ABOVE SLAB NON RETURN AIR PLENUM WHEN EXPLICITLY ALLOWED BY OWNER): PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED
- C. WASTE, VENT & STORM (ABOVE SLAB RETURN AIR PLENUM): HUBLESS CAST IRON. JOINTS SHALL BE MADE WITH NEOPRENE COUPLINGS AND STAINLESS STEEL CLAMPS CONFORMING TO CISPI STANDARD 310 AND MARKED WITH NSF OR ASTM C 1540.
- D. DOMESTIC WATER (BELOW SLAB -3" AND BELOW): TYPE 'K' COPPER WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS.
- E. DOMESTIC WATER (BELOW SLAB -1/2" & 3/4" ONLY): TYPE 'K' COPPER TUBING, CONTINUOUS
- F. DOMESTIC WATER (ABOVE SLAB 3" OR LESS): TYPE 'L' COPPER WITH SWEATED SOCKET FITTINGS, THREADED FITTINGS MAY BE USED AT VALVES, FIXTURES & SIMILAR.
- G. DOMESTIC WATER (ABOVE SLAB 4" AND LARGER): TYPE 'L' COPPER WITH ROLLED GROVED
- H. NATURAL GAS: SCHEDULE 40 BLACK STEEL COMPLYING WITH ANSI B36.10. ALL GAS
- ALL DOMESTIC WATER PIPING SHALL BE INSULATED IN ACCORDANCE WITH THE APPLICABLE ENERGY CONSERVATION CODE. INSULATION SHALL BE PREFORMED MINERAL FIBER PIPE INSULATION WITH AN ALL SERVICE JACKET (ASJ) AND SELF-SEALING LAP (SSL). INSULATION SHALL HAVE A THERMAL CONDUCTIVITY NOT EXCEEDING 0.27 BTU-IN/(HR-FT²-°F) OR IN ACCORDANCE WITH LOCAL CODES, WHICHEVER IS MORE STRINGENT.
- PROVIDE HANGERS AND SUPPORTS APPROVED FOR USE BY APPLICABLE PLUMBING CODE.

FIXTURE

DESIGNATION

<u>EWC-1</u>

<u>HB-1</u>

<u>LV-1</u>

KS-1

<u>SS-1</u>

WC-1

WSB-1

- INVERT ELEVATIONS SHALL BE VERIFIED PRIOR TO BEGINNING WORK. THE P.C. SHALL ENSURE PROPER SLOPES OF ALL SANITARY PIPING CAN BE MAINTAINED. THE P.C. SHALL CONTACT THE ARCHITECT AND ENGINEER IMMEDIATELY IF A PROBLEM/ISSUE IS DISCOVERED.
- THE P.C. SHALL COORDINATE THE LOCATION OF ALL ROOF PENETRATIONS WITH THE ROOFING CONTRACTOR & M.C. THE P.C. AND M.C. SHALL COORDINATE PLUMBING VENT LOCATIONS TO ENSURE THAT NO PLUMBING VENTS ARE LOCATED WITHIN 10' OF ANY OUTSIDE AIR INTAKES.

DRAIN

1-1/2"

2"

SCHEDULE OF EQUIPMENT SERVICE PROVISIONS

VENT

1-1/2"

1-1/2"

2"

1-1/2"

2"

WATER SUPPLY

-

1/2"

-

1/2"

1/2"

3/4"

1/2"

1/2"

1/2"

1/2"

1/2"

- 3. THE P.C. SHALL COORDINATE WITH THE G.C. AND ARCHITECTURAL PLANS TO ENSURE NECESSARY
- 4. THE PLUMBING CONTRACTOR SHALL COORDINATE CLOSELY WITH ALL OTHER TRADES TO AVOID
- PIPING SHALL BE COORDINATED WITH ALL STRUCTURAL FOOTINGS AND FOUNDATIONS. PIPE SHOULD BE OFFSET TO AVOID CONTACT WITH FOOTINGS AND FOUNDATION WALLS. IF PIPING MUST RUN UNDERNEATH A FOOTING OR THROUGH A FOUNDATION WALL, THE PIPE MUST BE INSTALLED WITH A RELIEVING ARCH OR IN A PIPE SLEEVE.
- THE P.C. SHALL REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF PLUMBING FIXTURES.

- THE P.C. SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS WHEN INSTALLING PLUMBING EQUIPMENT. ENSURE REQUIRED MAINTENANCE ACCESS AND CLEARANCES ARE MAINTAINED. THE P.C. SHALL CONTACT THE ARCHITECT AND ENGINEER IF A CONFLICT EXISTS BETWEEN THESE PLANS AND MANUFACTURER INSTRUCTIONS.
- 2. THE P.C. SHALL BE RESPONSIBLE FOR EXECUTING ALL CODE REQUIRED TESTS AND INSPECTIONS INCLUDING, BUT NOT LIMITED TO, LEAK & PRESSURE TESTING OF SANITARY, VENT, AND DOMESTIC
- ANY NOTCHING, DRILLING, BORING OR OTHER ALTERATION TO BUILDING STRUCTURE SHALL BE STRUCTURE.
- SUPPORT ALL PIPING IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODE. ANY SUSPENDED MATERIALS SHALL BE DIRECTLY SUPPORTED BY THE BUILDING STRUCTURE. DO NOT ATTACH
- 6. PENETRATIONS OF ALL EXTERIOR WALLS, FLOORS AND CEILINGS SHALL BE SEALED IN AN AIR TIGHT MANNER AND IN ACCORDANCE WITH THE APPLICABLE ENERGY CONSERVATION CODE.
- CLEANOUT PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH PLUMBING CODE REQUIREMENTS. PROVIDE CLEANOUTS AS PLANS INDICATED AND AT THE BASE OF ALL WASTE STACKS, AT EVERY FOUR 45 DEGREE TURNS, AT EVERY 100 FEET. CLEANOUTS SHALL BE PLACED IN READILY ACCESSIBLE LOCATIONS.
- 8. DOMESTIC WATER BRANCH LINES SERVING MORE THAN ONE (1) FIXTURE SHALL INCLUDE A
- 9. VALVES NOT DIRECTLY AT EQUIPMENT SHALL BE LABELED INDICATING THE FIXTURE OR AREA
- 10. THE WATER HEATER SHALL BE FILLED WITH WATER AND PURGED AS SOON AS INSTALLED OR IN NO
- COPPER PIPING IS CARRIED ON IRON TRAPEZE HANGERS WITH OTHER PIPING, SATISFACTORY AND PERMANENT ELECTROLYTIC ISOLATION MATERIAL SHALL PROTECT THE COPPER AGAINST
- 12. WHERE COPPER PIPING IS SLEEVED THROUGH MASONRY, SLEEVES SHALL BE COPPER OR RED BRASS. WHERE COPPER MUST BE CONCEALED IN A MASONRY PARTITION OR AGAINST MASONRY, CONTACT SHALL BE PREVENTED BY COATING THE COPPER HEAVILY WITH ASPHALTIC ENAMEL AND
- 13. ALL PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH FLOORS, WALLS, AND PARTITIONS. PIPE INSULATION SHALL BE MITERED AT ELBOWS AND TEES TO ENSURE COMPLETE COVERAGE OF
- FIXTURE, APPLIANCE, OR MECHANICAL EQUIPMENT.
- 15. VACUUM BREAKERS SHALL BE PROVIDED FOR ALL FIXTURES TO WHICH HOSES MAY BE ATTACHED. VACUUM BREAKERS SHALL BE PERMANENTLY ATTACHED.
- 16. THE P.C. SHALL PROVIDE WATER HAMMER PROTECTION ON ALL WATER DISTRIBUTION PIPING SERVING EQUIPMENT WITH QUICK-CLOSING VALVES (ICE MAKERS, FLUSH VALVES, WATER
- LOCATED IN WALLS OR ABOVE INACCESSIBLE CEILING CONSTRUCTION. ACCESS DOORS SHALL BE
- 18. THE P.C. SHALL BE RESPONSIBLE FOR PROTECTING ALL PLUMBING EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.). UPON COMPLETION OF WORK THE PLUMBING CONTRACTOR SHALL CLEAN, WASH, ETC ALL ITEMS AND EQUIPMENT WITHIN THE SCOPE OF WORK AND LEAVE ALL ITEMS BRIGHT AND CLEAN.

SPECIAL NOTICE TO CONTRACTORS

- ARE REQUIRED TO VISIT THE JOB SITE AND VERIFY THE EXISTING CONDITIONS PRIOR TO SUBMITTING THEIR BID. CONTRACTORS ARE TO CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS AND NOTE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED AT THE JOB SITE PRIOR TO SUBMISSION OF ANY BID. THE BUILDING OWNER REPRESENTATIVE MAY BE CONTACTED FOR ACCESS TO THE JOB SITE.
- NOT LIMITED TO, GAS, WATER, SEWER, VENT, ELECTRICAL, MECHANICAL SYSTEMS, DUCTWORK, EXHAUST/OUTSIDE AIR, SECURITY, FIRE/LIFE SAFETY, DATA, AND PHONE.
- C. ALL REQUIRED BUILDING PENETRATIONS. IT IS RECOMMENDED THAT THE CONTRACTOR X-RAY ALL PENETRATIONS THRU CONCRETE AND MASONRY.
- ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

BACKING/SUPPORTS ARE INSTALLED TO ALLOW INSTALLATION OF PLUMBING FIXTURES.

- CONFLICT AND ENSURE OTHER TRADES PROVIDE MEASURES TO ACCOMMODATE PLUMBING WORK (I.E. ACCESS DOORS, SLAB/WALL/ROOF OPENINGS, ELECTRICAL CONNECTIONS, ETC.).

- WATER PIPING AND SANITIZING OF WATER PIPING.
- ENSURE PIPING LOCATED ON EXTERIOR WALLS (OR OTHER WALLS EXPOSED TO FREEZING CONDITIONS) IS INSTALLED ON WARM-SIDE OF WALL INSULATION.
- PERFORMED IN A CODE APPROVED METHOD AND NOT THREATEN THE INTEGRITY OF THE BUILDING
- ANYTHING TO THE ROOF DECK.

- SHUT-OFF VALVE. LABEL VALVE AND LOCATE AS CLOSE TO RISER/MAIN AS POSSIBLE.
- SERVED.
- EVENT LATER THAN ELECTRIC HOOK-UP. 11. COPPER PIPING SHALL BE PROTECTED AGAINST CONTACT WITH MASONRY OR DISSIMILAR METALS ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER PLATED. WHERE
- CONTACT WITH OTHER METALS.
- PROVIDING 15# ASPHALT SATURATED FELT BETWEEN THE PIPE AND MASONRY.
- 14. PROVIDE QUARTER TURN SHUTOFF VALVES ON THE FIXTURE SUPPLY TO EACH PLUMBING
- COOLERS, ETC.) SEE WATER HAMMER ARRESTOR ARRESTOR SCHEDULE.
- 17. ACCESS DOORS SHALL BE PROVIDED FOR ALL VALVES AND DEVICES REQUIRING ACCESS WHEN FIRE RATED WHERE INSTALLED IN FIRE RATED ASSEMBLIES.

- ALL CONTRACTORS (GENERAL CONTRACTOR AND SUB-CONTRACTORS) BIDDING THIS PROJECT
- PRIOR TO CONSTRUCTION CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THE LOCATION AND CONDITION OF THE FOLLOWING: A. ALL POINTS OF CONNECTION TO BUILDING UTILITIES AND/OR SYSTEMS INCLUDING, BUT
 - B. ALL REQUIRED CONNECTIONS TO THE BUILDING STRUCTURE
- 3. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED SHALL BE BROUGHT TO THE ATTENTION, IN WRITING, TO THE ARCHITECT AND/OR
- 4. SEE ARCHITECTURAL PLANS FOR CONTACT INFORMATION.

			MODEL				FAUCET/VAL	.VE		DRAI	N	SUPPLIES		REMARKS
TAG FIXTURE	TYPE	MANUFACTURER	NUMBER	MATERIAL	STYLE	MANUFACTURER MODEL NO.	SPOUT	HANDLES	CENTERS	TYPE	SIZE	AND STOPS	MOUNTING	
WC-1 WATER CLOSET	FLUSH TANK	AMERICAN STANDARD	270AA.101	VITREOUS CHINA	ADA ELONGATED	-	-	-	-	-	-	BRASSCRAFT OCR1912DL	FLOOR	PROVIDE OPEN FRONT SEAT WITH NO LID RIM HEIGHT SHALL BE 16.5" AFF TO MEET ADA REQUIREMENTS
LV-1 LAVATOR	, WALL MOUNTED	AMERICAN STANDARD	0355.012	VITREOUS CHINA	ADA D-SHAPE	CFG 407171H	CENTER	LEVER	4" O.C. 3-HOLE	GRID	1-1/2"	BRASSCRAFT OCR1912A	WALL	PROVIDE WITH WALL BRACKET AND 0.5 GPM STRAINER. MOUNT AT ADA HEIGHT.
SINK (31.75" x 16.	UNDER MOUNT	ELKAY	ELUHAD3216554	STAINLESS STEEL	ADA 2-BOWL	CFG 40511	CENTER	WRIST BLADE	4" O.C. 3-HOLE	CRUMB CUP	1-1/2"	BRASSCRAFT OCR1912A	COUNTER	PROVIDE WITH OFFSET DRAIN, REAR CENTER. BOWL DEPTH = 5-3/8"
HB-1 HOSE BIBB	STRAIGHT	ZURN	Z1346	BRONZE	FREEZE PROOF	-	-	-	-	-	-	-	WALL	VERIFY WALL DEPTH/. PROVIDE WITH VACUUM BREAKER. LOOSE KEY TYPE.
SS-1 SERVICE SINK	WALL MOUNT	AMERICAN STANDARD	7692.008	ENAMELED CAST IRON	ONE PIECE 22x18	AMERICAN STANDARD 8350.235	CENTER	2	8" 2-HOLE	GRID	3"	-	WALL	PROVIDE WITH WALL HANGER AND RIM GUARD.
EWC-1 ELECTRIC WATER COOLER	BI-LEVEL	ELKAY	EMABFTL8LC	STAINLESS, VINYL	ADA	-	-	-	-	-	-	BRASSCRAFT G2CR19	WALL	120V, 4.0 AMPS. HFC-134A. PROVIDE WITH HANGER BRACKET. MOUNT AT ADA HEIGHT.
GCO-1 GRADE CLEANOU	ADJUST.	ZURN	CO-2450	PVC	NICKEL COVER	-	-	-	-	-	-	-	GRADE	COORDINATE INSTALLATION WITH CONCRETE POUR.
WCO-1 WALL CLEANOU	TEE	CHARLOTTE PIPE	PVC-445	PVC	FLUSH PLUG	-	-	-	-	-	-	-	WALL	PROVIDE WITH ZURN CO-2530 WALL COVER. PROVIDE WITH PVOPLUG WITH TREADED TAP.
WSB-1 WATER SUPPLY BO	x METAL	OATEY	386XX	STEEL	RECESSED	-	-	-	-	-	-	-	WALL	PROVIDE WITH QUARTER TURN VALVE, WATER HAMMER ARRESTOR, AND FACEPLATE.
WH-1 WATER HEATER	ELECTRIC	STATE WATER HEATERS	PCE 20 10MSA	GLASS LINED	UPRIGHT	-	-	-	-	-	-	-	PLATFORM	20 GALLON CAP., 1.5KW HEATING ELEMENT, 120V/1Ø, 8GPH RECOVERY AT 80°F RISE. SET DISCHARGE TO 140°F, INSTALL THERMOSTATIC MIXING VALVE TMV-1.

PLUMBING FIXTURE AND EQUIPMENT SCHEDULE

- WATER CLOSET HANDLES TO BE LOCATED ON "WIDE SIDE" OF STALL FOR ADA FIXTURES.
- 4. SEE DETAIL SHEET FOR ADDITIONAL ITEMS TO BE PROVIDED/INSTALLED W/ FIXTURES LISTED ABOVE.

WATER	HAMMER ARF	RESTOR SCHEDULE

FIXTURE UNITS	UNIT SIZE (CONN. SIZE)	MFG & MODEL (OR EQUAL)
IND. FIXTURE	SEE FIXTURE SCHEDULE	SIOUX CHIEF "MINI-RESTER"
1-11	A (1/2")	SIOUX CHIEF "HYDRA-RESTER"
12 - 32	B (3/4")	SIOUX CHIEF "HYDRA-RESTER"
33-60	C (1")	SIOUX CHIEF "HYDRA-RESTER"
		•

WATER HAMMER ARRESTOR NOTES: LOCATE SHOCK ARRESTORS IN ACCESSIBLE LOCATION OR PROVIDE SIOUX CHIEF

BRAND ARRESTORS ONLY. SEE PLAN, RISERS, SCHEDULES FOR ARRESTER LOCATIONS. IF LOCATION NOT INDICATED INSTALL IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.

VALVE SCHEDULE

TAG	DESCRIPTION	MFG & MODEL (OR EQUAL)
BV-1	FULL-PORT BALL VALVE	WATTS LFB6081
BV-2	BALANCING VALVE	BELL & GOSSETT CB (CIRCUIT SETTER PLUS, W/ TEST PORTS)
CV-1	BRONZE CHECK VALVE	WATTS CV
TMV-1	THERMO. MIX. VALVE	WATTS LFMMV (0.5 TO 20 GPM; 1.2" TO 1") SET TO 110°F DISCHARGE
	BV-1 BV-2 CV-1	BV-1 FULL-PORT BALL VALVE BV-2 BALANCING VALVE CV-1 BRONZE CHECK VALVE

- SEE PLAN FOR SIZE. VALVE SIZE TO EQUAL LINE SIZE.
- 2. BALL VALVES TO INCLUDE REMOVABLE HANDLES.
- 3. IF AVAILABLE, VALVES MAY BE THREADED OR SWEATED CONNECTIONS. USE EXTREME CARE AND LOW TEMP SOLDER TO PROTECT VALVE SEATS IF SWEATED CONNECTIONS ARE USED.

4. TMV-1 SHALL COMPLY WITH ASSE 1070,

	INSU	JLATION	SCHEDUI	_E		
PIPING SYSTEM	FLUID TEMPERATURE RANGE	RUN OUTS UP TO 1"	1-1/4" TO 2"	2-1/2" TO 4"	5" TO 6"	8" AND LARGER
DOMESTIC COLD WATER	40-60	1/2"	1/2"	1/2"	1/2"	1/2"
DOMESTIC HOT WATER	105 OR GREATER	1/2"	1"	1-1/2"	1-1/2"	1-1/2"

	PLUMBING AB	BB	REVIA	TIONS
AAV	AIR ADMITTANCE VALVE		HR	HOUR
ADA	AMERICANS WITH DISABILITIES ACT		HW	DOMESTIC HOT WATER
AFF	ABOVE FINISHED FLOOR		HWR	DOMESTIC HOT WATER RETURN
BFP	BACKFLOW PREVENTER		IN.	INCH(ES)
BTU	BRITISH THERMAL UNIT		KW	KILOWATT
BTU/HR	BRITISH THERMAL UNIT PER HOUR		LV	LAVATORY
CAP.	CAPACITY		MAX.	MAXIMUM
СО	CLEANOUT		MBH	ONE THOUSAND BTU/HR
CV	CHECK VALVE		M.C.	MECHANICAL CONTRACTOR
CW	DOMESTIC COLD WATER		MIN.	MINIMUM
DEMO	DEMOLISH OR DEMOLITION		N/A	NOT APPLICABLE
DIA.	DIAMETER		NTS	NOT TO SCALE
DWV	DRAIN, WASTE, AND VENT		P.C.	PLUMBING CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR		PSI	POUNDS PER SQUARE INCH
ET	EXPANSION TANK		S	SINK
°F	DEGREES FAHRENHEIT		TEMP.	TEMPERATURE
FCO	FLOOR CLEANOUT		TMV	THERMOSTATIC MIXING VALVE
FT	FOOT <u>OR</u> FEET		TYP.	TYPICAL
GAL.	GALLON(S)		V	VOLT
G.C.	GENERAL CONTRACTOR		W	WATT
GPH	GALLONS PER HOUR		WC	WATER CLOSET
GPM	GALLONS PER MINUTE		WH	WATER HEATER
HP	HORSEPOWER		WHA	WATER HAMMER ARRESTOR

	BACK FLOW PREVENTER A	ASSEMBLY REQUIREMEN	ITS
TYPE OF EQUIPMENT ON SYSTEM	METHOD OF CROSS CONNECTION CONTROL	MANUFACTURE AND MODEL NUMBER	REMARKS
WATER SERVICE	REDUCED PRESSURE ZONE ASSEMBLY	WATTS LF-919-QT	LEAD FREE CAST COPPER WITH QUATER TURN

1. CONTRACTOR SHALL PROVIDE INDIVIDUAL BACKFLOW PREVENTERS FOR EACH PIECE OF EQUIPMENT.

3. BRONZE BODIED BACKFLOW PREVENTERS ARE PERMISSABLE IF ALLOWED BY LOCAL

PLUMBING	DRAWING SYMBOLS	
<u> </u>	FULL PORT QUARTER TURN BALL VALVE	
	CHECK VALVE	Ž
—¤—	GLOBE VALVE	
— 以 —	PRESSURE REDUCING VALVE	
— }	TEMPERATURE AND PRESSURE RELIEF VALVE	
 > 	STRAINER	
WHA	WATER HAMMER ARRESTOR	

	BACK FLOW PREVENTER A	ASSEMBLY REQUIREMEN	ITS
TYPE OF EQUIPMENT ON SYSTEM	METHOD OF CROSS CONNECTION CONTROL	MANUFACTURE AND MODEL NUMBER	REMARKS
WATER SERVICE	REDUCED PRESSURE ZONE ASSEMBLY	WATTS LF-919-QT	LEAD FREE CAST COPPER WITH QUATER TURN

2. EACH BACKFLOW PREVENTER MUST HAVE TESTING PORTS.

--|--UNION \oslash PRESSURE GAUGE **———** INLINE PUMP □ FD FLOOR DRAIN $\langle x \rangle$ **KEY NOTE TAG**

Charlotte, NC 28271 F-0595 704-527-2112 MSWG Project 24-089 mswg.com



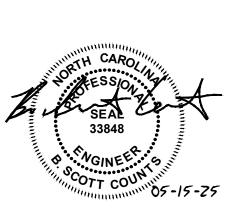
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Project Number: 1910.15 Drawn By: BSC Date: 15 MAY 2025 ISSUE FOR CONSTRUCTION

NOTES & **ABBREVIATIONS -**

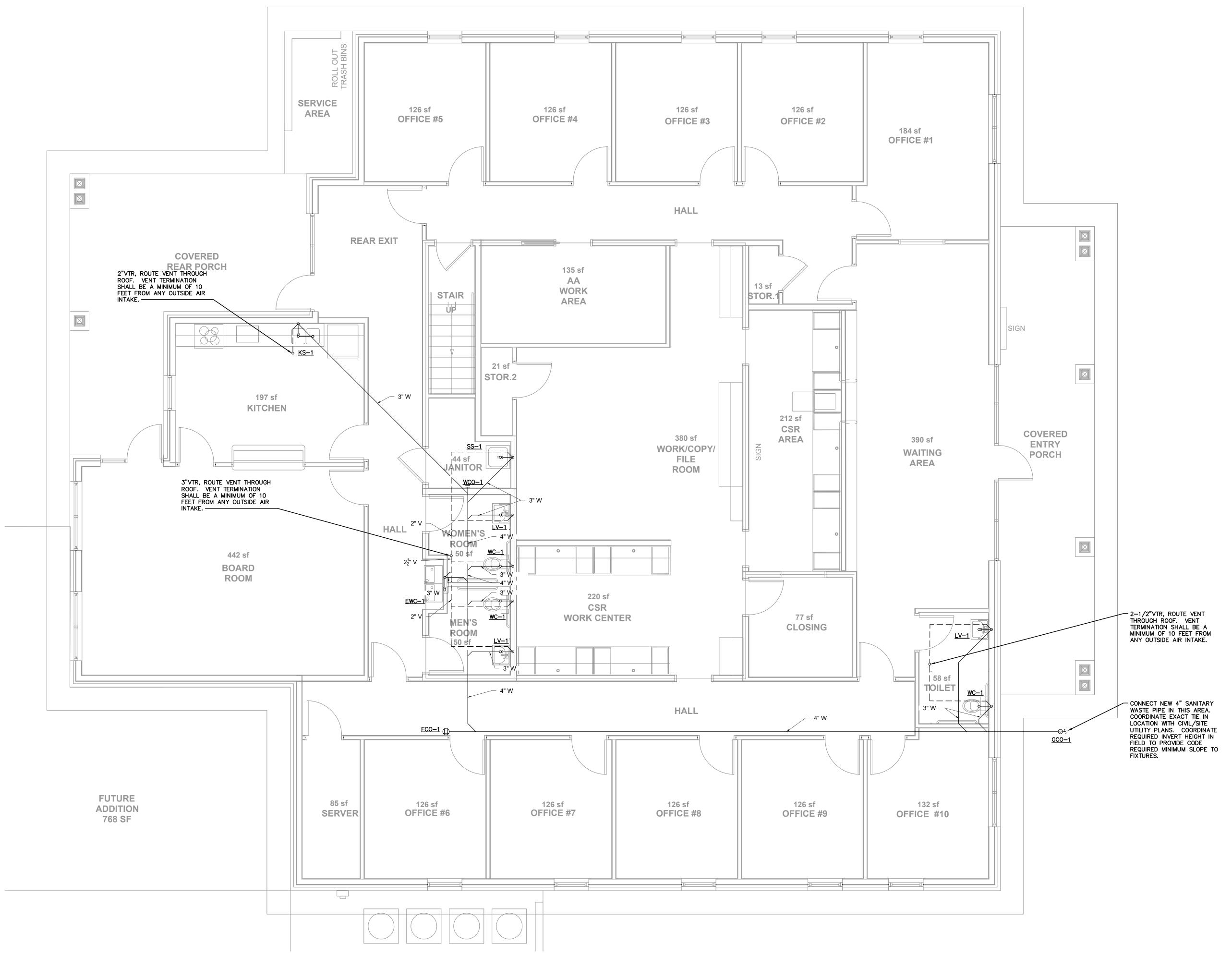
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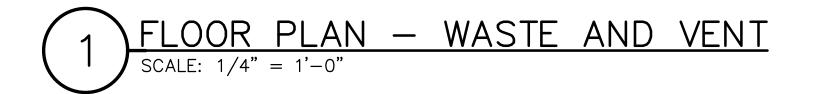


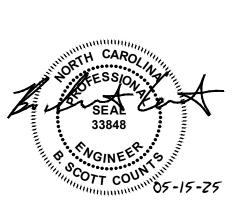


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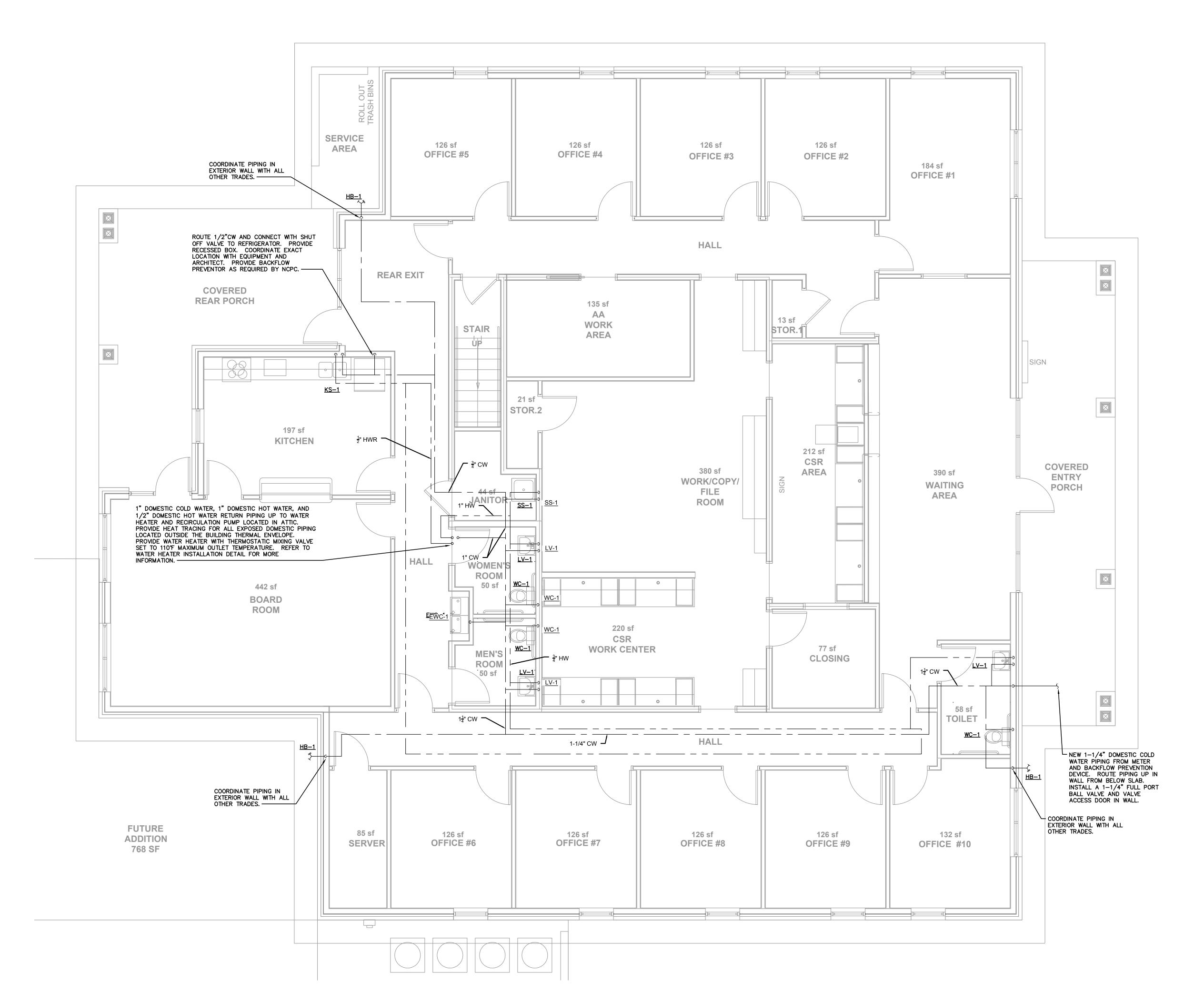


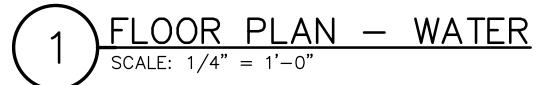


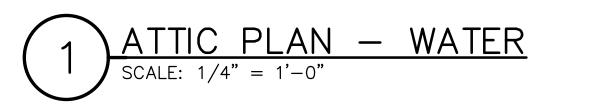


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FIRST FLOOR PLAN
- DOMESTIC WATER

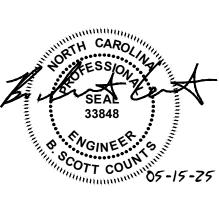






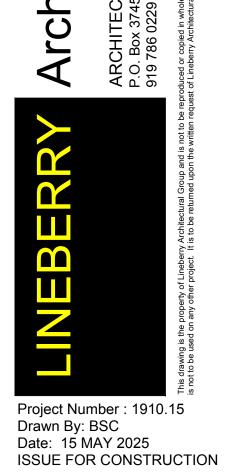


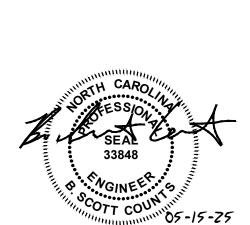










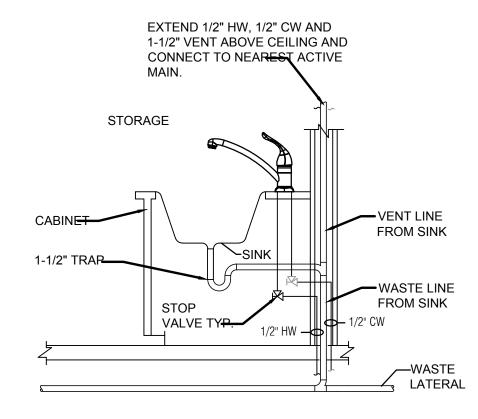


DETAILS - PLUMBING

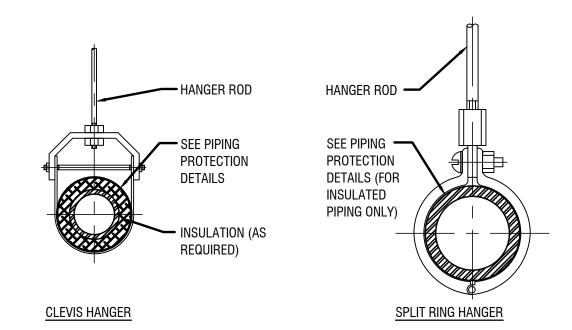
ISSUE FOR CONSTRUCTION

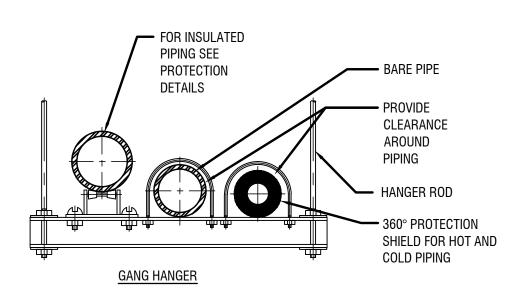
Project Number: 1910.15

Drawn By: BSC Date: 15 MAY 2025



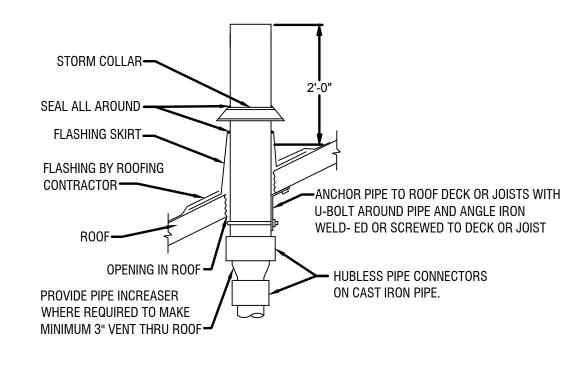
COUNTERTOP SINK DETAIL NOT TO SCALE





5 PIPE HANGER AND SUPPORT DETAILS

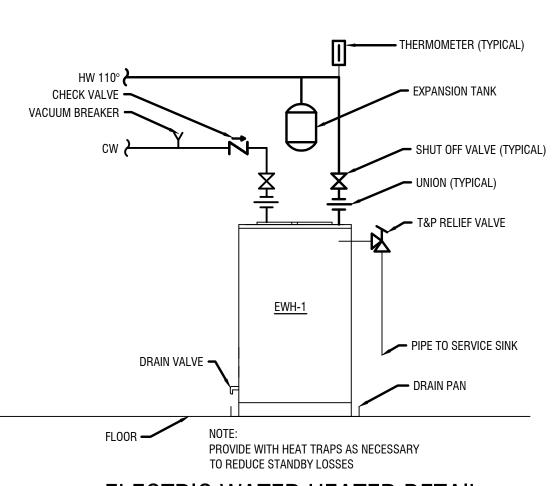
NOT TO SCALE



1. REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS.

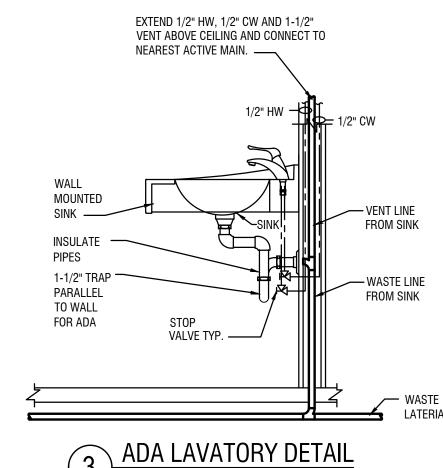
- LOCATE VTR MINIMUM THREE FEET FROM PROPERTY LINE, OR TEN FEET HORIZONTAL OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING OR FRESH AIR INTAKE, OR ONE FOOT FROM ANY VERTICAL SURFACE.
- LOCATE VTR MINIMUM 18" FROM PARAPET, EXPANSION JOINT, EQUIPMENT CURB, ETC. OFFSET IN CEILING SPACE WHERE REQUIRED TO MEET THESE

VENT THRU ROOF DETAIL NOT TO SCALE

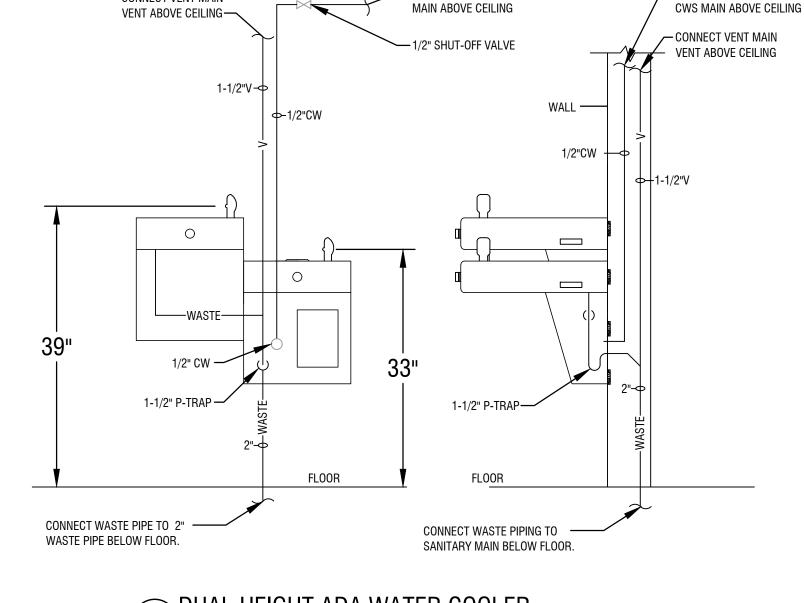


(6) NOT TO SCALE





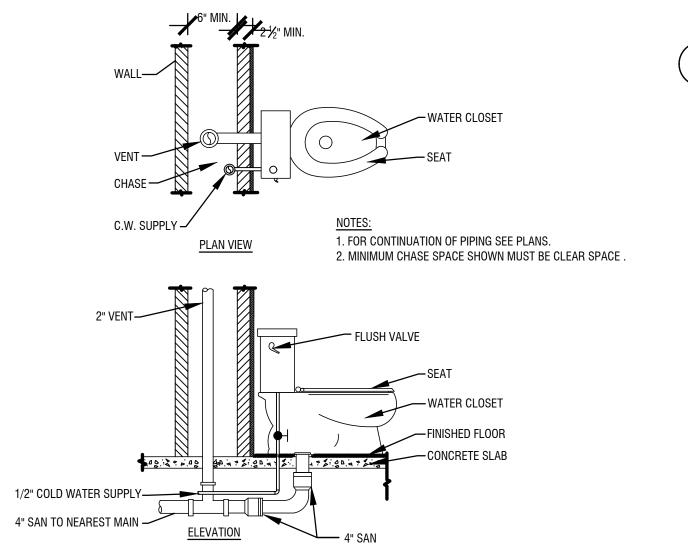




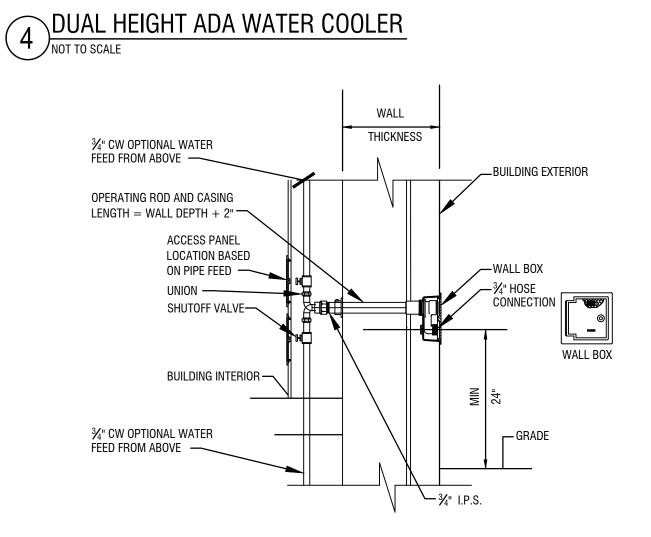
CONNECT VENT MAIN

— CONNECT 1/2" CWS TO CWS

-CONNECT 1/2"CWS TO







8 EXTERIOR WALL HYDRANT DETAIL



- SEE ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL FIXTURES.
 PROVIDE OFFSET TRAP AND TRUEBRO MODEL 102 INSULATION KIT, PLUMBEREX MODEL PRO-2000 OR McGUIRE PWV8902 PREWRAPPED CAST P-TRAP ASSEMBLY KIT ON ALL ADA LAVATORIES AND/OR SINKS.
- 3. PROVIDE CARRIERS FOR ALL WALL MOUNTED FIXTURES. FOR LAVATORIES: SINGLE HANGER FOR BLOCK WALLS; FOR GYPBOARD WALL, PROVIDE FLOOR-MOUNT ARM CARRIERS (CONCEALED OR EXPOSED PER MFR'S REQUIREMENTS).
- 4. EQUAL CHINA FIXTURE BY AMERICAN STANDARD, ZURN & SLOAN. 5. EQUAL TOILET SEAT BY BEMIS, OLSONITE & BENEKE.
- 6. EQUAL FLUSH VALVES BY ZURN & TOTO. 7. TOP OF FLUSH VALVE SHALL BE LOCATED MINIMUM 3" BELOW BOTTOM OF GRAB BAR. P.C. TO CUT OUTLET TUBE AS REQUIRED.
- 8. FLUSH VALVE MECHANISM SHALL BE LOCATED OPPOSITE OF HAND RAIL AS PER ADA REQUIREMENT. 9. EQUAL FAUCETS BY SYMMONS, CHICAGO FAUCETS, DELTA, MOEN & AMERICAN STANDARD.
- 10. EQUAL STAINLESS STEEL SINK BY FRANKE & JUST.
- 11. PROVIDE WALL HANGER AND RIM GUARD. 12. EQUAL SHOWER TRIM BY LEONARD & SPEAKMAN (PROVIDE SHOWER PAN AS REQ'D PER CODE SECTION 417.4 & 417.5: SEE ARCH DWGS/SPECS FOR DETAILS).
- 13. EQUAL WATER COOLER/DRINKING FOUNTAIN BY HALSEY TAYLOR, SUNROC, HAWS & ELKAY.
- 14. EQUAL MOP BASIN BY SWANSTONE, E.L.MUSTEE. 15. WHEN ASTERISK ("*") PREFIX IS USED, PROVIDE TRAP PRIMER AND PIPE 1/2" LINE BELOW SLAB TO FLOOR DRAIN. 16. EQUAL FAUCETS BY CHICAGO FAUCETS, T&S, ELKAY, ZURN & AMERICAN STANDARD. SINGLE SINK = RIGID SPOUT; DOUBLE SINK = RESTRICTED SPOUT.
- 17. EQUAL CAST IRON LAVATORIES BY CECO & ZURN. 18. ACCESSORY APRON MAY BE OMITTED IF WATER COOLER IS RECESSED.
- 19. PROVIDE INTEGRAL CHECK STOPS AT ALL WALL FAUCETS.
- 20. EQUAL SPECIALTY FIXTURE BY OATEY, SIOUX CHIEF.
- 21. MANUFACTURERS LISTED ARE FOR BASIS OF TYPE, STYLE, AND QUALITY; ACCEPTABLE EQUALS MAY BE SUBMITTED TO THE ARCHITECT/OWNER FOR

												NON	I-DUCTI	ED MIN	II-SPLI	T HEAT	PUM	IP SC	HED	ULE									
Unit Tag	Area Served	CFM	F	an Motor	•		Cooling	g Performano	ce	He	ating Perfor	mance			0	utdoor Unit	t						Refriger	ant Piping			Mitsubishi	Mitsubishi	Remarks
			Watts	Volts	Phase	EAT	BTU	BTU	Efficiency	EAT	BTU	Efficiency	Unit Tag	Weight	Fa	an	MCA	Fuse	Volts	Phase	Design Pipe	Design Elevation	Design	Mfg. Max Pipe	Mfg. Max Elevation	Mfg Max	Indoor	Outdoor	
							Total	Sensible	SEER		Total	СОР			No.	Watts		Size			Length (ft)	Between Units (ft)	# of Bends	Length (ft)	Between Units (ft)	# of Bends	Unit	Unit	
MSAH-A	ATTIC STORAGE	375	30	DC	1	80/67	12,000	8,760	21.1	70	18,000	3.1	MSHP-A	100	1	51	16	20	208	1	85	15	6	100	100	15	PKA-AL12NL	PUZ-AK12NL	1-10
																												,	

V25.02.28

- 1. REFER TO APPROVED MANUFACTURER LIST FOR ACCEPTABLE EQUAL MANUFACTURERS. COORDINATE POWER REQUIREMENTS FOR ALL SUBSTITUTIONS.
- 2. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND LOCAL CODES.
- 3. WIRED REMOTE CONTROLLER.
- 4. REFRIGERANT LINES AND ACCESSORIES FOR R-454B AS RECOMMENDED BY MANUFACTURER.
- 5. PROVIDE FACTORY CONDENSATE PUMP POWERED FROM AIR HANDLER. ROUTE 3/4" PUMPED CONDENSATE ALONG REFRIGERANT LINE-SET TO OUTDOOR UNIT.
- 6. VARIABLE SPEED, INVERTER DRIVEN.
- 7. INDOOR UNIT IS POWERED BY OUTDOOR UNIT. COORDINATE SUBSTITUTE MANUFACTURER ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
- 8. PROVIDE ACCESSORIES AS REQUIRED TO ALLOW FOR LOW AMBIENT COOLING DOWN TO 18°F.
- 9. PROVIDE WITH MANUFACTURER'S 5-YEAR WARRANTY.
- 10. MAXIMUM PIPING LENGTH, MAXIMUM HEIGHT DIFFERENCE BETWEEN INDOOR AND OUTDOOR UNIT, AND THE MAXIMUM # OF BENDS ARE BASED ON BASIS OF DESIGN MANUFACTURER'S EQUIPMENT CUTSHEET. MECHANICAL CONTRACTOR SHALL CONFIRM WITH ALL SUBSTITUTE EQUIPMENT THAT THE

MANUFACTURER'S INSTALLATION GUIDELINES FOR MAXIMUM PIPE LENGTH, MAXIMUM ELEVATION BETWEEN INDOOR AND OUTDOOR UNITS, AND MAXIMUM NUMBER OF BENDS MEET OR EXCEED THE REQUIREMENTS FOR INSTALLATION OF REFRIGERANT PIPING

													S	PLIT	SYST	TEM I	HEAT PU	MP S	CHED	ULE														
Unit Tag	SEER	СОР	SA	OA	ESP						Air Ho	andling Un	it					DX (Coil Perfor	mance	Не	ating F	Performance					Electri	ical Data	ı (Outdo	or Unit,)		Remarks
	(EER)	@47	CFM	CFM			Fan Moto	or		1	Electric I	Heating Co	oil		MCA	МОСР	Trane	EAT	МВН	МВН	EAT	LAT	Capacity	F	an	Con	press	or	Volts	Phase	MCA	МОСР	Trane]
		DEG. F				HP	Volts	Phase	kW	Steps	Volts	Phase	EAT	LAT			Model		Total	Sens.			MBH@47 F	No.	FLA	No. L	R <i>A</i>	RLA					Model	
AH-1/HP-1	14.25	3.88	1000	165	0.4	1/2	208	1	7.2	1	208	1	70	92	49	50	5TEM6D03A	80/67	30	22.5	70	86.4	30	1	0.64	1	71	10.4	208	1	16	25	5TWR030A1000A	1 - 10
AH-2/HP-2	14.25	3.88	1000	210	0.4	1/2	208	1	7.2	1	208	1	70	92	49	50	5TEM6D03A	80/67	30	22.5	70	86.4	30	1	0.64	1	71	10.4	208	1	16	25	5TWR030A1000A	1 - 10
AH-3/HP-3	14.25	3.88	800	125	0.4	1/2	208	1	5.76	1	208	1	70	95	40	40	5TEM6D03A	80/67	24	18	70	86.4	24	1	0.64	1 !	59	9.1	208	1	13	20	5TWR024A1000A	1 - 10
AH-4/HP-4	14.25	3.88	600	80	0.4	1/3	208	1	3.6	1	208	1	70	90	25	25	5TEM6D02A	80/67	18	13.5	70	86.4	18	1	0.64	1 4	7.5	7.8	208	1	12	20	5TWR018A1000A	1 - 10

- 1. REFER TO APPROVED MANUFACTURER LIST FOR ACCEPTABLE EQUAL MANUFACTURERS. COORDINATE POWER REQUIREMENTS FOR ALL SUBSTITUTIONS.
- 2. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND LOCAL CODES.
- 3. CONTRACTOR SHALL VERIFY SERVICE CLEARANCES FOR ALL SUBSTITUTIONS.
- 4. SINGLE POINT ELECTRICAL CONNECTION AT AIR HANDLING UNIT UNLESS TWO CIRCUITS SHOWN ON SCHEDULE.
- 5. FOR LINE SETS BETWEEN 50 AND 175 FEET, INCLUDE THE FOLLOWING:
- CRANKCASE HEATER

COMPRESSOR START ASSIST CAPACITOR AND RELAY

- LIQUID LINE SOLENOID VALVE OR HARD SHUTOFF TXV
- 6. PROVIDE MANUFACTURER'S REMOTE THERMOSTAT WITH TEMPERATURE/HUMIDITY SENSOR FOR COOLING/HEATING/DEHUMIDIFICATION.
- 7. R-454B REFRIGERANT, REFRIGERANT LINES AND ACCESSORIES PER UNIT MFG. RECOMMENDATIONS.
- 8. AIR HANDLER CONVERTIBLE FOR VERTICAL / HORIZONTAL INSTALLATION.
- 9. UNIT SHALL BE INSTALLED ON STAND IN CLOSET.
- 10. PROVIDE OVERFLOW DRAIN PAN BELOW UNIT WITH MICROSWITCH TO SHUT OFF UNIT PRIOR TO PAN OVERFLOW.

https://mswgengineers.sharepoint.com/sites/Projects/Shared Documents/25-045 NCFB Harnett Co - Lillington/0	5/29/202
APPROVED MANUFACTURER LISTING - MECHANICAL	
THE FOLLOWING MANUFACTURER'S LISTING (ALPHABETICALLY ORDERED) IS PROVIDED FOR BIDDING PURPOSE	ES AND DOES NOT IMPL
OR PROVIDE A GUARANTEE OF SUBMITTAL APPROVAL. ALL ITEMS SUBMITTED SHALL MEET OR EXCEED THE DESIGN AND QUALITY CRITERIA IN THIS SET OF CONSTRUCTION DOCUMENTS. ANY BIDDER THAT INTENDS	
MANUFACTURER NOT LISTED BELOW MAY REQUEST A PRIOR APPROVAL IN ACCORDANCE WITH THE ENTIRET	

DOCUMENTS, REFER TO THE ARCHITECT'S GENERAL CONDITIONS AND BIDDING REQUIREMENTS.

THE BIDDER IS RESPONSIBLE FOR INCLUDING ALL COSTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO, CODE AND MANUFACTURER'S REQUIRED MAINTENANCE AND ACCESS CLEARANCE, COORDINATION WITH ALL OTHER BUILDING TRADES, AND INSTALLATION OF DUCTWORK, PIPING, ETC. BIDDER SHALL BEAR RESPONSIBILITY FOR ALL ASSOCIATED COSTS AND ADDITIONAL COSTS RESULTING FROM SUBSTITUTED ITEMS SHALL NOT BE CONSIDERED FOR APPROVAL AFTER BIDS ARE AWARDED.

MANUFACTURER'S

AIR DISTRIBUTION

ROOF HOODS CARNES, COOK, GREENHECK

SPLIT SYSTEM HEAT PUMPS

CARNES, METAL*AIRE, NAILOR, PRICE, TITUS, TUTTLE & BAILEY

COOK, GREENHECK, PENN, TWIN CITY

CARRIER, DAIKIN-MCQUAY, JCI/YORK, TRANE

						FAN SC	HED	ULE						
Unit	Area Served	CFM	ESP	Fan	Sones	Drive	ВНР	HP	Volts	Phase	Manufacturer	Model	Weight	Remarks
Tag			(IN.)	RPM				(Watts)					(lbs)	
EF-1	WOMEN'S ROOM	75	0.25	1	1	DIRECT	0.01	-	115	1	GREENHECK	SP-A125	-	1,3,6,7
EF-2	MEN'S ROOM	75	0.25	1	1	DIRECT	0.01	1	115	1	GREENHECK	SP-A125	-	1,3,6,7
EF-3	TOILET	75	0.25	1	1	DIRECT	0.01	-	115	1	GREENHECK	SP-A125	-	1,3,6,7
EF-4	SERVER	140	0.25	ı	1	DIRECT	0.03	-	115	1	GREENHECK	SP-A190	-	1,3,6,8
EF-5	JANITOR	75	0.25	-	ı	DIRECT	0.01	-	115	1	GREENHECK	SP-A125	-	1,3,6,7
AV-1	ATTIC	300	0.25	978	4	DIRECT	0.05	1/20	115	1	GREENHECK	SS1-12-432-E	24	1,3,4,6,9
AV-2	ATTIC	300	0.25	978	4	DIRECT	0.05	1/20	115	1	GREENHECK	SS1-12-432-E	24	1,3,4,6,9
AV-3	ATTIC	300	0.25	978	4	DIRECT	0.05	1/20	115	1	GREENHECK	SS1-12-432-E	24	1,3,4,6,9

- 1. REFER TO APPROVED MANUFACTURER LIST FOR ACCEPTABLE EQUAL MANUFACTURERS. COORDINATE POWER REQUIREMENTS FOR ALL SUBSTITUTIONS.
- 2. STARTER BY E.C. / DISCONNECT BY MFG.
- 3. PROVIDE BIRDSCREEN AND BACKDRAFT DAMPER. 4. PROVIDE MANUFACTURER'S ROOF CURB.
- 5. PROVIDE 277V STEP-DOWN TRANSFORMER AS REQUIRED. 6. UNIT MOUNTED SOLID STATE SPEED CONTROL.
- 7. INTERLOCK WITH SPACE LIGHTING CONTROLS, COORDINATE WITH ELECTRICAL CONTRACTOR.
- 8. WALL MOUNTED THERMOSTAT, COORDINATE WITH ELECTRICAL CONTRACTOR.
- 9. PROVIDE WITH MANUFACTURER SUPPLIED ELECTRONIC VARIABLE SPEED CONTROL AND ADJUSTABLE THERMOSTAT TO TURN FAN ON AT 75F.

	GRILLE & DIFFUSER SCHEDULE												
SYM	TYPE	USE	MAXIMUM	NECK	FRAME	FINISH	FRAME	PRICE	REMARKS				
			PRESSURE	SIZE	SIZE			MODEL					
			DROP					NO					
CD	PERFORATED 4-WAY	SUPPLY	0.1	SEE PLANS	24X24	OFF WHITE	RMK 3	PDF	1-5, 7, 12				
RAG	PERFORATED	RETURN	0.1	SEE PLANS	24X24	OFF WHITE	RMK 3	PFRF	1-3, 5, 7, 12				
SR	DOUBLE DEFLECTION REGISTER	SUPPLY	0.1	SEE PLANS	RMK 4	RMK 5	RMK 3	520D	1-4, 8, 9				
RR	SIDEWALL GRILLE	RETURN	0.1	SEE PLANS	RMK 4	RMK 5	RMK 3	530	1-4, 8, 9				
TG	PERFORATED	RETURN	0.1	SEE PLANS	24X24	OFF WHITE	RMK 3	PFRF	1-3, 5, 7, 12				

REMARKS

- 1. REFER TO APPROVED MANUFACTURER LIST FOR ACCEPTABLE EQUAL MANUFACTURERS.
- 2. SYMBOL EXPLANATION: *##/CFM = SYM/CFM
- 3. FRAME TYPES: PROVIDE FRAME SUITABLE FOR CEILING INSTALLATION, REFER TO ARCHITECTURAL REFLECTED CEILING PLANS.
- 4. ADJUSTABLE: HORIZONTAL/VERTICAL "PIANO HINGE" DEVICE.
- 5. FINISH SHALL MATCH ADJACENT SURFACES, PAINT ALL INSIDE VISIBLE SURFACES FLAT BLACK. 6. OBD IF USED AS SUPPLY OR EXHAUST.
- 7. ALL ALUMINUM CONSTRUCTION (INCLUDING BACKPAN) AND INSULATED BACK TO PREVENT CONDENSATION.
- 8. VOLUME EXTRACTOR WHERE SHOWN ON PLANS. 9. VERTICAL FRONT BLADES.
- 10. PROVIDE FULLY INSULATED PLENUM BOOT WITH DUCT COLLARS.
- 11. REFER TO PLANS FOR NECK SIZE
- 12. PROVIDE SQUARE TO ROUND TRANSITION AS REQUIRED.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

Prescriptive

Energy Cost Budget

Thermal Zone: Harnett County, North Carolina (4A)

Exterior Design Conditions

Winter Dry Bulb: Summer Dry Bulb:

Interior Design Conditions

Winter Dry Bulb: Summer Dry Bulb: 75 Relative Humidity: 50%

Building Heating Load: 117 **M**BH

161 MBH Building Cooling Load:

Mechanical Space Conditioning System

Refer to HVAC Equipment Schedules Description of Unit:

Heating Efficiency: Refer to HVAC Equipment Schedules Cooling Efficiency: Refer to HVAC Equipment Schedules Heat Output of Unit: Refer to HVAC Equipment Schedules Cooling Output of Unit: Refer to HVAC Equipment Schedules

List Equipment Efficiencies:

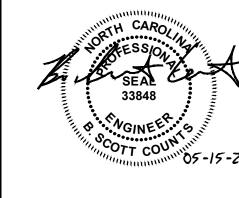
Equipment Schedules with Motors (Mechanical Systems)

Comply w/ 2018 NC Energy Conservation Code Motor Horsepower: Number of Phases: Comply w/ 2018 NC Energy Conservation Code Comply w/ 2018 NC Energy Conservation Code Minimum Efficiency: Motor Type: Comply w/ 2018 NC Energy Conservation Code Number of Poles: Comply w/ 2018 NC Energy Conservation Code

Designer Statement:

To the best of my knowledge and belief, the design of this building complies with the 2018 North Carolina Energy Conservation Code. The requirements of Section C406 are met through the Subsection C406.3 (Reduced Lighting Power Density).

Charlotte, NC 28271 F-0595 704-527-2112 MSWG Project



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rchitectural CHITECTU. Box 37456, 786 0229 C

Drawn By: BSC Date: 15 MAY 2025 ISSUE FOR CONSTRUCTION MECHANICAL LEGENDS AND

SCHEDULES

Project Number: 1910.15

IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE".

THE WORD "PROVIDE" MEANS FURNISH, FABRICATED, COMPLETE, INSTALL, ERECT, INCLUDING LABOR AND INCIDENTAL MATERIALS NECESSARY TO COMPLETE IN PLACE AND READY FOR OPERATION OR USE THE ITEM REFERRED TO OR DESCRIBED HEREIN AND/OR SHOWN OR REFERRED TO ON THE CONTRACT DRAWINGS.

EQUIPMENT APPLICATION AND PERFORMANCE

THE CONTRACTOR AND/OR EQUIPMENT SUPPLIER SHALL BE RESPONSIBLE TO SEE THAT EQUIPMENT SUPPLIED IS CORRECT FOR THE INTENDED APPLICATION AND WILL PERFORM WITHIN THE LIMITS OF CAPACITY. NOISE, LIFE EXPECTANCY, PRESSURE DROP AND SPACE LIMITATIONS INTENDED FOR THAT EQUIPMENT AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIFICATIONS. THE SHOP DRAWINGS SHALL SHOW THE CAPACITY AND OPERATING CHARACTERISTICS OF THE EQUIPMENT.

WHERE THE CONTRACTOR PROPOSES TO USE AN ITEM OF EQUIPMENT OTHER THAN THAT SPECIFIED OR DETAILED ON THE DRAWINGS, WHICH REQUIRES ANY REDESIGN OF THE STRUCTURE, PARTITIONS, FOUNDATIONS, PIPING, WIRING OR ANY OTHER PART OF THE MECHANICAL, ELECTRICAL, OR ARCHITECTURAL LAYOUT, ALL SUCH REDESIGN. IN GENERAL, ALL PIPES IN FINISHED SPACES SHALL BE RUN CONCEALED IN FLOORS. AND ALL NEW DRAWINGS AND DETAILING REQUIRED THEREFORE, SHALL BE PREPARED BY THE SUBCONTRACTOR AT HIS OWN EXPENSE AND SUBMITTED FOR APPROVAL BY THE ARCHITECT.

APPROVED DEVIATION REQUIRES A DIFFERENT QUANTITY AND OF DUCTWORK, PIPING, WIRING, CONDUIT, AND EQUIPMENT FROM THAT SPECIFIED OR INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL FURNISH AND INSTALL ANY SUCH DUCTWORK, PIPING, STRUCTURAL SUPPORTS, INSULATION, CONTROLLERS, MOTORS, STARTERS, ELECTRICAL WIRING AND CONDUIT, AND ANY OTHER ADDITIONAL EQUIPMENT REQUIRED BY THE SYSTEM, AT NO ADDITIONAL COST TO THE OWNER.

DIELECTRIC CONNECTIONS

DIELECTRIC CONNECTIONS SHALL BE USED AT ANY POINTS WITHIN THE PIPING ENTRY OF OBSTRUCTING MATERIALS OR DUST AND DEBRIS. SYSTEMS WHERE DISSIMILAR METALS MEET. CAREFUL ATTENTION SHALL BE GIVEN TO SUPPORT BRACKETS AND HANGERS TO SELECT PROPER MATERIALS TO AVOID DISSIMILAR METAL CONTACT AT THESE POINTS.

DUTIES OF CONTRACTOR

CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS CALLED FOR IN THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS. AND MUST FURNISH THE APPARATUS COMPLETE IN EVERY RESPECT. ANYTHING CALLED FOR IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS OR SHOWN ON THE DRAWINGS AND NOT CALLED FOR CLEANING IN THE SPECIFICATIONS MUST BE FURNISHED BY THE CONTRACTOR.

CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH THE DETAILS OF THE CONSTRUCTION OF THE BUILDING. WORK UNDER THESE SPECIFICATIONS INSTALLED IMPROPERLY OR WHICH REQUIRES CHANGING DUE TO IMPROPER READING OR INTERPRETATION OF BUILDING PLANS SHALL BE CORRECTED AND CHANGED AS DIRECTED BY THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.

CONDITIONS SOMETIMES OCCUR WHICH REQUIRE CERTAIN CHANGES IN DRAWINGS AND SPECIFICATIONS. IN THE EVENT THAT SUCH CHANGES IN DRAWINGS AND SPECIFICATIONS ARE NECESSARY, THE SAME ARE TO BE MADE BY THE CONTRACTOR WITHOUT EXPENSE TO THE OWNER. PROVIDING SUCH CHANGES DO NOT REQUIRE FURNISHING MORE MATERIALS, OR PERFORMING MORE LABOR THAN THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS DEMANDS. IT IS UNDERSTOOD THAT WHILE THE DRAWINGS ARE TO BE FOLLOWED AS CLOSELY AS CIRCUMSTANCES WILL PERMIT. THE CONTRACTOR IS HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEM ACCORDING TO THE TRUE INTENT AND MEANING OF THE DRAWINGS. ANYTHING NOT ENTIRELY CLEAR IN THE DRAWINGS AND SPECIFICATION WILL BE FULLY EXPLAINED IF APPLICATION IS MADE TO THE ARCHITECT. SHOULD, HOWEVER, CONDITIONS ARISE WHERE IN THE JUDGMENT OF THE CONTRACTOR CERTAIN CHANGES WILL BE ADVISABLE, THE CONTRACTOR WILL COMMUNICATE WITH THE ARCHITECT AND SECURE HIS APPROVAL OF THESE CHANGES BEFORE GOING AHEAD WITH THE WORK.

THE RIGHT TO MAKE ANY RESPONSIBLE CHANGE IN LOCATION OF APPARATUS, EQUIPMENT, ROUTING OF PIPING UP TO THE TIME OF ROUGHING IN, IS RESERVED BY THE ARCHITECT WITHOUT INVOLVING ANY ADDITIONAL EXPENSE TO THE OWNER.

BECAUSE OF EVIDENT JOB CONDITIONS, THAT ARE NOT INDICATED ON THE DRAWINGS.

CODES, RULES, PERMITS AND FEES

THE REQUIREMENTS OF ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION

ALL MATERIALS AND EQUIPMENT FOR THE ELECTRICAL PORTION OF THE MECHANICAL GUARANTEE SYSTEM SHALL BEAR THE APPROVAL LABEL, AND SHALL BE LISTED BY THE UNDERWRITERS' LABORATORIES, INC.

JURISDICTION.

COOPERATION WITH OTHER TRADES

THIS CONTRACTOR SHALL GIVE FULL COOPERATION TO OTHER TRADES AND SHALL FURNISH ANY INFORMATION NECESSARY TO PERMIT THE WORK OF ALL TRADES TO BE INSTALLED SATISFACTORILY AND WITH THE LEAST POSSIBLE INTERFERENCE OR DELAY.

WHERE THE WORK OF THE CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO. OR MAY INTERFERE WITH THE WORK OF OTHER TRADES, HE SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF SO DIRECTED BY THE ARCHITECT, THE CONTRACTOR SHALL PREPARE COMPOSITE BACKFILL, CONCRETE, FLASHING, WIRING, ETC.. WHICH IS REQUIRED BY THE WORK OF WORKING DRAWINGS AND SECTIONS AT A SUITABLE SCALE NOT LESS THAN 3/8" = THIS SECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF 1'-0", CLEARLY SHOWING HOW HIS WORK IS TO BE INSTALLED IN RELATION TO THE IF THE CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATION WITH OTHER TRADES, OR SO AS TO CAUSE ANY INTERFERENCE WITH WORK OF OTHER TRADES, HE SHALL MAKE THE NECESSARY CHANGES IN HIS WORK TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

> THE CONTRACTOR SHALL FURNISH TO OTHER TRADES, AS REQUIRED, ALL NECESSAR'S TEMPLATES. PATTERNS. SETTING PLANS. AND SHOP DETAILS FOR THE PROPER INSTALLATION OF WORK AND FOR THE PURPOSE OF COORDINATING ADJACENT WORK.

<u>SAFETY REQUIREMENTS</u>

ALL SYSTEMS SHALL BE INSTALLED SO AS TO BE SAFE OPERATING AND ALL MOVING 4-1 AND 4-2 OF SMACNA HVAC DUCTWORK 1985. 1ST EDITION. PARTS SHALL BE COVERED WHERE SUBJECT TO HUMAN CONTACT. ALL ROUGH EDGES OF EQUIPMENT AND MATERIALS SHALL BE MADE SMOOTH.

SAFETY CONTROLS SHALL BE CHECKED UNDER THE SUPERVISION OF THE ARCHITECT'S REPRESENTATIVE AND EIGHT (8) COPIES OF TEST DATE SHOWING SETTING AND PERFORMANCE OF SAFETY CONTROLS SHALL BE SUBMITTED TO THE ARCHITECT. ALL PRESSURE VESSELS SHALL BE ASME STAMPED AND SHALL HAVE STAMPED RELIEF VALVES. WATER HEATERS SHALL BE PROVIDED WITH ASME STAMPED T & P RELIEF VALVE.

WALLS, PARTITIONS AND ABOVE CEILINGS. UNLESS OTHERWISE NOTED, ALL PIPE SHALL RUN INSIDE THE INSULATED PERIMETER OF THE BUILDING.

THE CONTRACTOR SHALL PROTECT ALL WORK AND MATERIAL FROM DAMAGE AND SHALL BE LIABLE FOR ALL DAMAGE DURING CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR WORK AND EQUIPMENT UNTIL ALL CONSTRUCTION IS FINALLY INSPECTED, TESTED AND ACCEPTED. HE SHALL PROTECT WORK AGAINST THEFT, INJURY OR DAMAGE; AND SHALL CAREFULLY STORE MATERIAL AND EQUIPMENT RECEIVED ON SITE WHICH IS NOT IMMEDIATELY INSTALLED. HE THREE VERTICAL SPLITTERS SHALL BE PROVIDED WHERE THESE RATIOS CANNOT SHALL CLOSE OPEN ENDS OF WORK INCLUDING PIPE, DUCT, OR EQUIPMENT WITH TEMPORARY COVERS OR PLUGS DURING STORAGE AND CONSTRUCTION TO PREVENT

PROVIDE A PROTECTIVE COVERING OF NOT LESS THAN 0.004" THICK VINYL SHEETING (OR A SIMILAR APPROVED MATERIAL) TO BE USED IN COVERING ALL ITEMS OF EQUIPMENT, IMMEDIATELY AFTER THE EQUIPMENT HAS BEEN SET IN PLACE, (OR IF IN A PLACE OF STORAGE WITHIN THE BUILDING UNDER CONSTRUCTION) TO PREVENT THE ACCUMULATION OF DIRT, SAND, CEMENT, PLASTER, PAINT OR OTHER FOREIGN MATERIALS FROM COLLECTING ON THE EQUIPMENT AND OR FOULING WORKING PARTS.

CLEAN FROM ALL EXPOSED INSULATION AND METAL SURFACES GREASE, DEBRIS OR OTHER FOREIGN MATERIAL.

EQUIPMENT SERVICEABILITY

ALL EQUIPMENT SHALL BE SERVICEABLE. ALL EQUIPMENT SHALL BE INSTALLED SO THAT IT CAN BE REMOVED. ALL EQUIPMENT IN OR CONNECTED TO PIPING SYSTEMS SHALL HAVE VALVES TO ISOLATE THIS EQUIPMENT FROM THE PIPING SYSTEM. THIS INCLUDES, BUT NOT NECESSARILY LIMITED TO CONTROL VALVES, WATER HEATERS, HANDHOLES OF NOT LESS THAN 6" X 6" SHALL BE PROVIDED AT ALL POINTS SENSORS, SWITCHES, PUMPS, TRAPS AND STRAINERS, UNIONS (SCREWED OR FLANGED) SHALL BE PROVIDED SO THAT ALL EQUIPMENT IS REMOVABLE.

ACCEPTANCE OF EQUIPMENT

CONTRACTOR SHALL MAKE ALL NECESSARY TESTS. TRIAL OPERATION BALANCING AND ALL DUCTWORK MUST BE SEALED IN ACCORDANCE WITH SEAL CLASS C AS BALANCE TESTS, ETC., AS MAY BE REQUIRED AS DIRECTED BY THE ENGINEER TO DEFINED IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND PROVE THAT ALL WORK UNDER THESE PLANS AND SPECIFICATION IS IN COMPLETE FLEXIBLE, 2015. SERVICEABLE CONDITION AND WILL FUNCTION AS INTENDED. OIL BURNERS, GAS BURNERS, AND WATER CHILLERS SHALL BE STARTED BY A REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER. ALL COSTS OF THESE PROCEDURES SHALL BE BORNE BY THIS CONTRACTOR.

UPON COMPLETION OF ALL WORK THE SYSTEM SHALL BE TESTED TO DETERMINE IF ANY EXCESS NOISE OR VIBRATION IS APPARENT DURING OPERATION OF THE SYSTEM. IF ANY SUCH OBJECTIONS ARE DETECTED IN THE SYSTEM OR NOISY EQUIPMENT IT SHALL BE THE DUTY OF PROSPECTIVE CONTRACTORS TO VISIT THE JOB SITE AND FOUND, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING SAME. DUCTS, FAMILIARIZE THEMSELVES WITH JOB CONDITIONS. NO EXTRAS WILL BE ALLOWED PLENUMS AND CASINGS SHALL BE CLEANED OF ALL DEBRIS AND BLOWN FREE OF ALL BECAUSE OF ADDITIONAL WORK NECESSITATED BY, OR CHANGES IN PLANS REQUIRED PARTICLES OF RUBBISH AND DUST BEFORE INSTALLING OUTLET FACES. EQUIPMENT SHALL BE WIPED CLEAN WITH ALL TRACES OF OIL, DUST, DIRT AND PAINT SPOTS REMOVED. TEMPORARY FILTERS SHALL BE PROVIDED FOR ALL FANS THAT ARE NOTIFY THE ENGINEER 72 HOURS IN ADVANCE OF TEST. DUCT LEAKAGE TEST OPERATED DURING CONSTRUCTION AND AFTER ALL CONSTRUCTION DIRT HAS BEEN SHALL BE IN ACCORDANCE WITH THE CURRENT ENERGY CODE. TOTAL LEAKAGE REMOVED FROM THE BUILDING, NEW FILTERS SHALL BE INSTALLED. BEARINGS SHALL OF THE SYSTEM SHALL NOT EXCEED THE CALCULATED LEAKAGE IN ACCORDANCE BE LUBRICATED AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER. ALL WITH THE CURRENT ENERGY CODE. ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE CONTROL VALVES AND EQUIPMENTS SHALL BE ADJUSTED TO SETTING INDICATED. NATIONAL FIRE CODES OF THE NATIONAL FIRE PROTECTION ASSOCIATION, AND WITH FANS SHALL BE ADJUSTED TO THE SPEED INDICATED BY THE MANUFACTURER TO MEET SPECIFIED CONDITIONS.

THE CONTRACTOR SHALL GUARANTEE THE COMPLETE MECHANICAL SYSTEM AGAINST DEFECT DUE TO FAULTY MATERIALS, FAULTY WORKMANSHIP OR FAILURE ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NORTH CAROLINA STATE DUE TO NEGLIGENCE OF THE CONTRACTOR. THIS GUARANTEE WILL EXCLUDE BUILDING CODE, AND REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING NORMAL WEAR AND TEAR, MAINTENANCE LUBRICATION, REPLACEMENT OF EXPENDABLE COMPONENTS, OR ABUSE. THE GUARANTEE PERIOD SHALL BEGIN ON THE DATE OF THE FINAL ACCEPTANCE AND SHALL CONTINUE FOR A PERIOD OF 12 MONTHS DURING WHICH TIME THE CONTRACTOR SHALL MAKE GOOD SUCH LEAKAGE CONCENTRATED AT ONE POINT MAY RESULT IN OBJECTIONABLE NOISE DEFECTIVE WORKMANSHIP AND MATERIALS AND ANY DAMAGE RESULTING THERE FROM, WITHIN A REASONABLE TIME OF NOTICE GIVEN BY THE OWNER. REFRIGERATION COMPRESSORS SHALL HAVE A FIVE (5) YEAR WARRANTY.

DUCTWORK

LOW-PRESSURE DUCTWORK SHALL BE CONSTRUCTED OF ZINC COATED SHEET STEEL AND SHALL CONFORM TO THE 1ST EDITION OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS -METAL AND FLEXIBLE, 1985 AS FOLLOWS:

RECTANGULAR DUCT: 1" W.G. PRESSURE CLASS - TABLE 1-4.

ROUND DUCT: 2" W.G. PRESSURE CLASS - TABLE 3-2.

ALL DUCTWORK MUST BE SEALED IN ACCORDANCE WITH SEAL CLASS C AS DEFINED IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE, 1985.

DUCT HANGERS AND SUPPORTS SHALL CONFORM TO THOSE SHOWN IN TABLES

DUCT AIR BALANCING DAMPERS

MANUAL VOLUME DAMPERS WITH LOCKING QUADRANTS SHALL BE PROVIDED AT EACH SUPPLY, RETURN, AND OUTSIDE AIR BRANCH DUCT AND/OR TAKE-OFF TO FACILITATE COMPLETE BALANCING OF THE HVAC SYSTEMS WHETHER EXPLICITLY SHOWN ON PLANS AND DETAILS OR NOT.

DUCTWORK INSTALLATION:

ALL DUCTWORK SHALL BE PROVIDED IN A NEAT WORKMANLIKE MANNER. THE DUCTS SHALL BE PROPERLY BRACED AND REINFORCED. ALL SLIP JOINTS SHALL BE MADE IN THE DIRECTION OF FLOW. ALL DUCTS SHALL BE TRUE TO THE DIMENSION INDICATED AND SHALL BE STRAIGHT AND SMOOTH ON THE INSIDE WITH NEATLY FINISHED AIRTIGHT JOINTS. THE DUCTS SHALL BE SECURELY ANCHORED INTO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER AND SHALL BE COMPLETELY FREE FROM VIBRATION UNDER ALL CONDITIONS OF OPERATION. ALL SUPPLY, RETURN FRESH-AIR AND EXHAUST SYSTEMS SHALL BE COMPLETELY BALANCED.

NO DUCT TRANSFORMATION SHALL BE OF A RATIO LESS THAN FOUR TO ONE AND WHERE POSSIBLE, SHALL BE OF A RATIO OF SIX TO ONE. NO LESS THAN BE MET. NO ELBOW SHALL HAVE A THROAT CENTER LINE RADIUS OF LESS THAT ONE AND ONE-HALF TIMES THE DUCT WIDTH AT THE TURN. ALL TURNS OF LESS THAN THIS AMOUNT IN RECTANGULAR DUCT SHALL BE PROVIDED WITH DUCT TURNING VANES OF STANDARD DESIGN. SPLITTERS OR MULTI-BLADE VOLUME DAMPERS, WHERE INDICATED, SHALL BE PROVIDED IN ALL BRANCH.

TURNING VANES SHALL BE PROVIDED AT ALL TEES AND SQUARE ELBOWS. TURNING VANES SHALL BE FACTORY FABRICATED AND DESIGNED IN ACCORDANCE WITH THE SMACNA OR ASHRAE GUIDE FOR FORMED VANES. THE FIRST SET OF TURNING VANES ON THE LEAVING SIDE OF FANS SHALL BE OF THE ACOUSTICAL TYPE TO AID IN THE ELIMINATION OF UNIT NOISE WITH THE EXCEPTION OF ROOM FAN COIL UNITS.

SPLITTER DAMPERS AND VOLUME EXTRACTORS SHALL BE PROVIDED IN ALL LOW VELOCITY DUCTWORK FOR PROPER AIR DISTRIBUTION. EACH DAMPER SHALL BE PROVIDED, LUBRICATED BEARINGS AT BOTH ENDS OF THE SHAFTS, ADJUSTMENTS QUADRANT, AND LOCKING DEVICES AND SHALL BE CONSTRUCTED OF GALVANIZED IRON OR STEEL SHEET ONE GAUGE HEAVIER THAN THE DUCT IN WHICH THEY ARE INSTALLED. ACCESS DOORS SHALL BE LOCATED AT ALL SPLITTER DAMPERS.

WHERE ACCESS IS REQUIRED. MANHOLES OF NOT LESS THAN 18" X 24" SHALL BE PROVIDED AT ALL POINTS WHERE IT IS NECESSARY TO CLEAN OR REMOVE PARTS OF EQUIPMENT. ALL ACCESS DOORS AND HANDHOLES SHALL BE RUBBER GASKETED INSULATED TYPE WITH FRAME AND LATCHES.

DUCT HANGERS AND SUPPORTS:

DUCT HANGERS AND SUPPORTS SHALL CONFORM TO THOSE SHOWN IN TABLES 4-1 AND 4-2 OF SMACNA HVAC DUCTWORK 1985, 1ST EDITION.

DUCT LEAKAGE TEST:

AFTER INSTALLATION AND PRIOR TO INSULATING, THE CONTRACTOR SHALL PERFORM A DUCT LEAKAGE TEST ON ALL DUCTWORK. CONTRACTOR SHALL

THE CONTRACTOR MAY AT HIS OPTION TEST PORTIONS OF THE DUCT SYSTEM IN LIEU OF TESTING THE ENTIRE SYSTEM AT ONCE. IF THE SYSTEM IS TESTED IN SECTIONS, THE LEAKAGE RATES SHALL BE ADDED TO GIVE THE PERFORMANCE OF THE WHOLE SYSTEM.

THE AIR LEAKAGE AT THE TEST PRESSURE SHALL BE MEASURED BY A CALIBRATED OFFICE TYPE FLOW METER. THE ORIFICE FLOW MEASUREMENT DEVICE MUST HAVE INDIVIDUALLY CALIBRATED AGAINST A PRIMARY STANDARD. AND THIS CALIBRATED CURVE PERMANENTLY ATTACHED TO THE ORIFICE TUBE ASSEMBLY.

EVEN IF THE SYSTEM PASSES THE LEAKAGE RATE CRITERIA. NOISE SOURCES MUST BE CORRECTED TO THE SATISFACTION OF THE ENGINEER.

DUCT INSULATION

INSULATION SHALL BE OWENS-CORNING, CERTAIN-TEED/ST. GOBAIN, MANVILLE OR APPROVED EQUIVALENT. ADHESIVES SHALL BE AS MANUFACTURED BY 3-M FOSTER OR INSULATION MANUFACTURER. INSULATION SHALL HAVE COMPOSITE (INSULATION, JACKET AND ADHESIVE) FIRE AND SMOKE HAZARD RATING AS TESTED BY ASTM E-84, NOT EXCEEDING FLAME SPREAD -25 AND SMOKE

ALL VAPOR BARRIERS AND JOINTS SHALL BE SEALED TO PREVENT CONDENSATION. CLEAN AND DRY ALL DUCTWORK BEFORE INSTALLING INSULATION. ALL WELD JOINTS SHALL BE WIRE BRUSHED AND GIVE ONE (1) COAT OF RED LEAD BEFORE INSULATING. STAPLES WILL NOT BE PERMITTED IN INSULATION.

ALL INDOOR CONCEALED SUPPLY AIR. RETURN AIR. AND OUTSIDE AIR DUCTS UNLESS NOTED OTHERWISE ON PLANS SHALL BE INSULATED BY WRAPPING WITH 2" THICK, MINIMUM INSTALLED R VALUE = 6.0 FIBERGLASS WITH VAPOR BARRIER JACKET WITH JOINTS OVERLAPPED A MINIMUM OF TWO INCHES. INSULATION SHALL BE ADHERED TO DUCT WITH NON-COMBUSTIBLE INSULATION BONDING ADHESIVE APPLIED IN 4" STRIPS, 8" ON CENTER. ALL JOINTS SHALL BE SECURED WITH FLARE DOOR STAPLES ON 3" CENTERS THROUGH ALL LAPS OVER DUCT TAPE.

ALL OUTDOOR EXPOSED SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR DUCTS UNLESS NOTED OTHERWISE ON PLANS SHALL BE INSULATED WITH MINIMUM 2" THICK RIGID POLYSTYRENE INSULATION. MINIMUM INSTALLED R VALUE = 8.0. COVER WITH TWO LAYERS OF GLASSFAB AND WHITE MASTIC. PROVIDE FINISHED OUTER ENCLOSURE OF STAMPED ALUMINUM SHEET METAL.

CONTROLS

DEVELOPED -50.

REFER TO EQUIPMENT SCHEDULES.

TESTING AND BALANCING

WORK SHALL BE PERFORMED BY TECHNICIANS COMPETENT IN THE TRADE OF TESTING AND BALANCING ENVIRONMENTAL SYSTEMS AND SHALL BE DONE IN AN ORGANIZED MANNER UTILIZING APPROPRIATE TEST AND BALANCE FORMS. ALL EQUIPMENT SHALL BE BALANCED TO WITHIN +/- 10% OF THE SCHEDULED VALUE. TEST AND BALANCE TECHNICIANS SHALL BE A SUB-CONTRACTOR TO THE HVAC CONTRACTOR AND SHALL BE CERTIFIED BY EITHER AABC OR NEBB.

INSTRUMENTS FOR USE IN THE TEST AND BALANCING PROCEDURES SHALL BE OF FIRST QUALITY AND BE ACCURATELY CALIBRATED AT THE TIME OF USE. ALL FIELD INSTRUMENTS USED IN THE BALANCE SHOULD HAVE BEEN CALIBRATED AT LEAST WITHIN THE PREVIOUS THREE MONTHS.

STARTING DATE FOR MECHANICAL SYSTEM SHALL BE SCHEDULED WELL IN ADVANCE OF EXPECTED COMPLETION DATE AND SHALL BE ESTABLISHED A MINIMUM OF TWO WEEKS PRIOR TO ACCEPTANCE DATE. THE SYSTEM SHALL BE IN FULL OPERATION WITH ALL EQUIPMENT FUNCTIONAL PRIOR TO ACCEPTANCE DATE.

PERFORMANCE READINGS SHALL BE TAKEN AND RECORDED ON ALL AIR DISTRIBUTION DEVICES AND THE SYSTEM SHALL BE BALANCED OUT PRIOR TO ACCEPTANCE. BALANCING OF THE SYSTEM SHALL BE ACCOMPLISHED WITH SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR DUCT DAMPERS AND ONLY MINOR ADJUSTMENTS MADE WITH GRILLE DAMPERS. RECORD AND SUBMIT RESULTS IN TABLE FORM ALONG SIDE OF SCHEDULED QUANTITIES.

ALL UNITS SHALL BE CHECKED OUT THOROUGHLY AND THE INFORMATION RECORDED ON EACH MACHINE. CHECK SHEETS SHALL BE INCLUDED IN OPERATING AND MAINTENANCE INSTRUCTIONAL MANUAL.

CONDENSATE DRAIN PIPING

CONDENSATE DRAIN LINES ROUTED THROUGH RETURN AIR PLENUMS SHALL BE TYPE K COPPER CONFORMING TO ASTM B88. ALL OTHER CONDENSATE DRAIN LINES SHALL BE SCHEDULE 40 PVC CONFORMING TO ASTM D 2665. UNLESS SHOWN OTHERWISE ON PLANS, ROUTE CONDENSATE DRAINS FROM ROOFTOP UNITS TO NEAREST ROOF DRAIN AND ROUTE CONDENSATE DRAINS FROM INDOOR AIR HANDLING UNITS TO NEAREST FLOOR DRAIN, FLOOR SINK, OR HUB DRAIN AND PROVIDE A MINIMUM 1" AIR GAP. COORDINATE DRAIN LOCATIONS WITH PLUMBING CONTRACTOR. ALL CONDENSATE DRAIN LINES SHALL BE ROUTED IN A NEAT MANNER AND SO AS TO NOT CREATE A TRIPPING HAZARD.

REFRIGERANT PIPING

CONNECT SPLIT SYSTEM AIR HANDLING UNITS TO HEAT PUMPS WITH REFRIGERANT PIPING. TYPE "K" HARD DRAWN COPPER "ACR" TUBING WITH WROUGHT COPPER SWEAT FITTINGS. ALL JOINTS ARE TO BE MADE WITH HARD SOLDER SUCH AS "SIL-FOS" OR "SILVER SOLDER.

PIPE INSULATION - REFRIGERANT SUCTION PIPING - FLEXIBLE FOAMED ELASTOMERIC PLASTIC TUBING WITH A DENSITY OF 6 LBS./CF. K OF 0.27 @ 70 DEGREES F., SELF-EXTINGUISHING, AND A WATER VAPOR TRANSMISSION OF LESS THAN 0.05 PERM IN., FLAME SPREAD RATING 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS (ASTM E84-75). REFRIGERANT PIPING EXPOSED TO THE OUTDOORS SHALL BE ENCLOSED IN AN ALUMINUM OUTER ENCLOSURE.

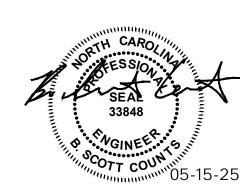
HANGERS

ALL PIPING SHALL BE SUPPORTED ON NOT LESS THAN 10' CENTERS AND WITHIN 30" OF EACH CHANGE OF DIRECTION EXCEPT THAT PIPING 1 1/4" SIZE AND SMALLER SHALL BE SUPPORTED ON 8' 0" CENTERS.

PIPE HANGERS SHALL BE SUPPORTED BY MEANS OF IRON HANGER RODS FROM THE BUILDING CONSTRUCTION OR FROM STRUCTURAL STEEL MEMBERS. AND IN AN APPROVED MANNER. WHERE REQUIRE, PIPING SHALL BE HUNG FROM ANGLE IRON CLIPS OR SUITABLE BRACKETS ATTACHED TO SIDES OF MASONRY CONSTRUCTION.

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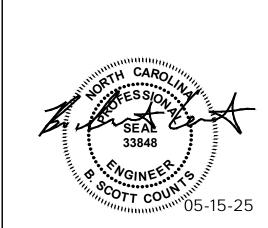
SPECIFICATIONS

- MECHANICAL

-SIZE OF UNIT DRAIN

PAN PLUS 3" IN

EACH DIRECTION

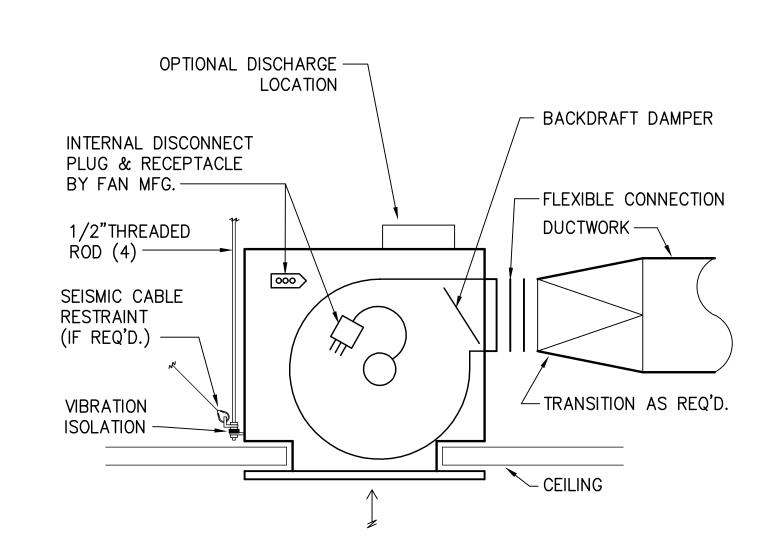


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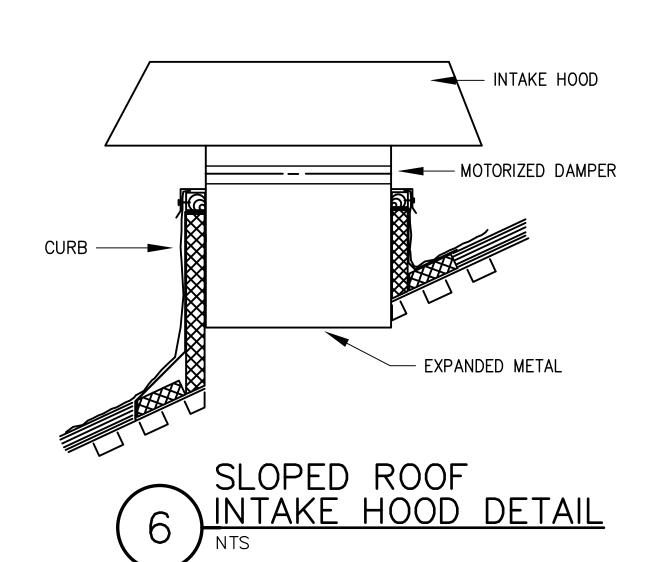
M-3 **MECHANICAL DETAILS**

FINISHED FLOOR GRADE NOTE: ARCHITECTURAL DETAILS
ARE CONCEPTUAL ONLY AND NOT
INTENDED TO BE EXACT. SEE
ARCHITECTURAL DRAWINGS FOR
EXACT BUILDING SECTION DETAILS.

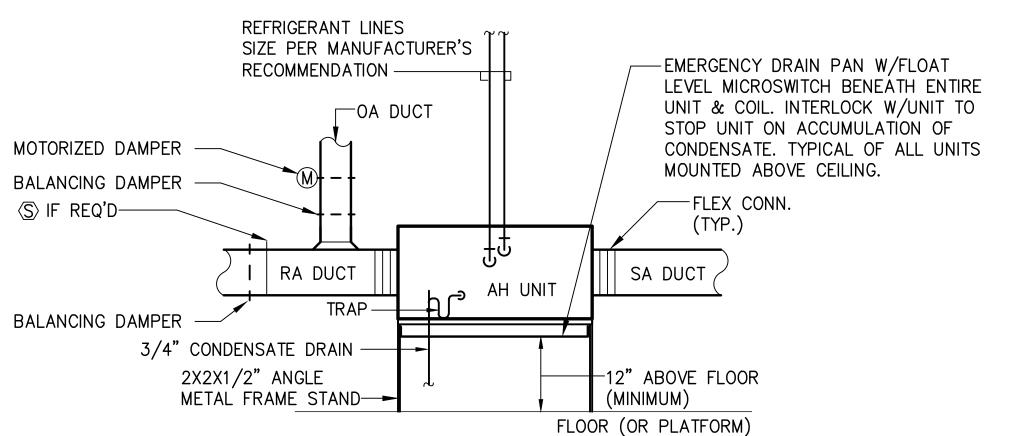
CONDENSING UNIT ON GRADE AND REFRIGERANT PIPING DETAIL



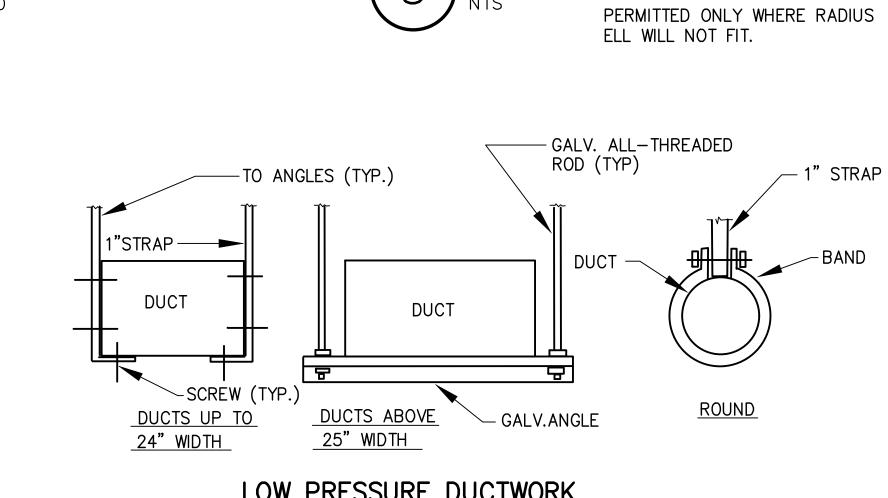
CEILING EXHAUST FAN DETAIL



PROVIDE CONICAL SPIN-IN WHERE DAMPER IS NOT READILY FITTING WITH BUTTERFLY ACCESSIBLE FROM LAY-IN CEILING BALANCING DAMPER PROVIDE DURO DYNE GCOD W/LOCKING QUADRANT. GEAR-DRIVEN CABLE OPERATED DAMPERS. INSTALL REMOTE RIGID ROUND BRANCH DUCT ADJUSTING CONTROL WITH EXTERIOR INSULATION DIFFUSER. - ATTACH WITH DRAWBAND AND SEAL AIRTIGHT (TYPICAL) FLEXIBLE DUCT (INSULATED) (MAXIMUM OF 6'-0")- HARD DUCT ELBOW - MANUAL VOLUME DAMPER AT ALL BRANCH DUCTS - ROUND NECK ADAPTER INSULATE SURFACE OF DIFFUSER SQUARE TO ROUND PAINT ALL SURFACES TRANSITION WHERE VISIBLE THROUGH AIR REQUIRED -- CROSS SECTION AREA = ROUND DUCT AREA. DISTRIBUTION DEVICE FLAT BLACK. TAKE-OFF DETAIL DAMPERS NOT REQUIRED FOR MEDIUM PRESSURE DUCTWORK



HORIZONTAL AIR HANDLER DETAIL



24 GA. SOLID

SHEET METAL

VANE

24 GA. MIN. VANE RUNNER -

TURNING VANE DETAIL

MICROSWITCH SHALL SHUT DOWN-

HOSE END GATE VALVE—

FABRICATE DRAIN PAN FROM 22 GA.

& JOINTS. PAN SHALL BE EASILY

GALV. SHEET METAL. WELD ALL SEAMS

REMOVABLE TO ALLOW ACCESS TO UNIT-

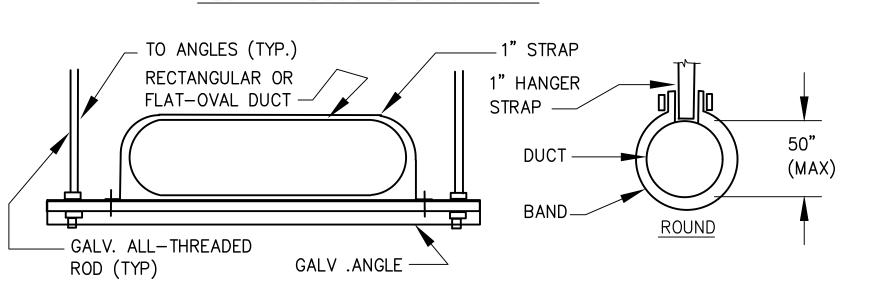
AUXILIARY DRAIN PAN DETAIL

1" WHITE PVC

UNIT PRIOR TO CONDENSATE OVERFLOW; AQUAGUARD RCT FLOAT SWITCH MODEL AG-1200

OR EQUAL.

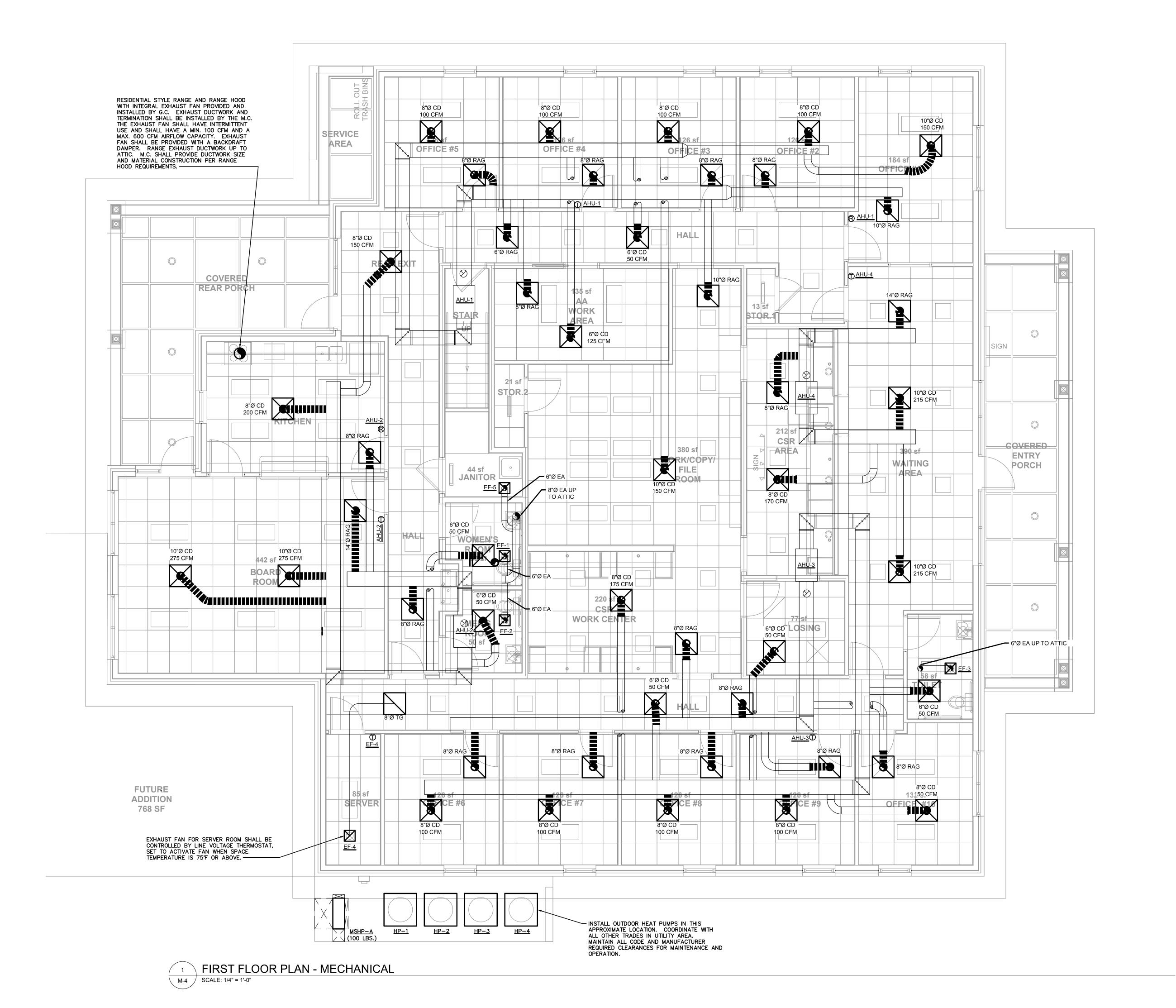


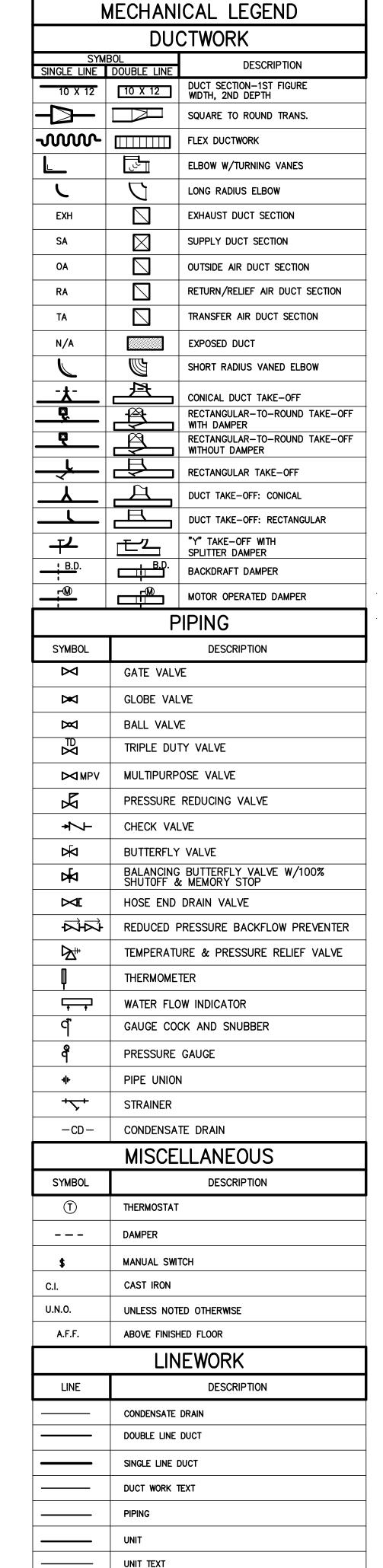


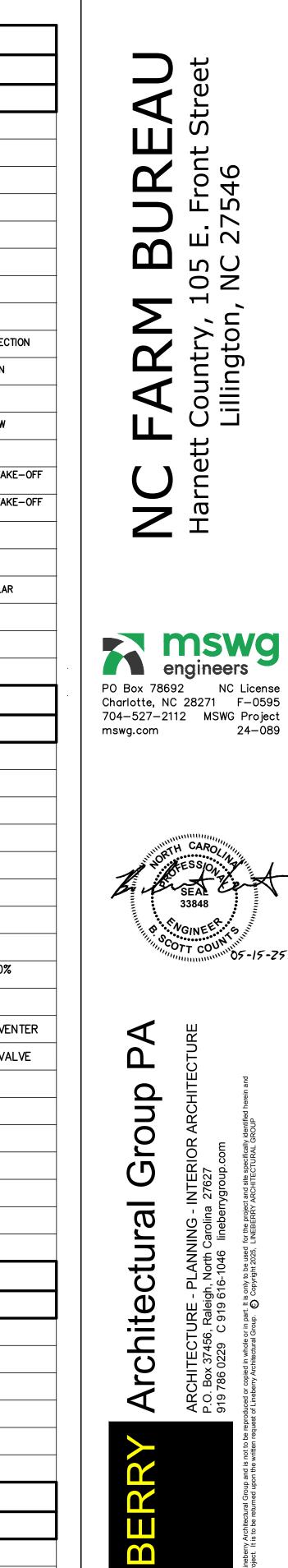
MEDIUM PRESSURE DUCTWORK

DUCTWORK HANGER DETAILS











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NC License

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FIRST FLOOR PLAN - MECHANICAL

Project Number : 1910.15

ISSUE FOR CONSTRUCTION

Drawn By: BSC Date: 15 MAY 2025



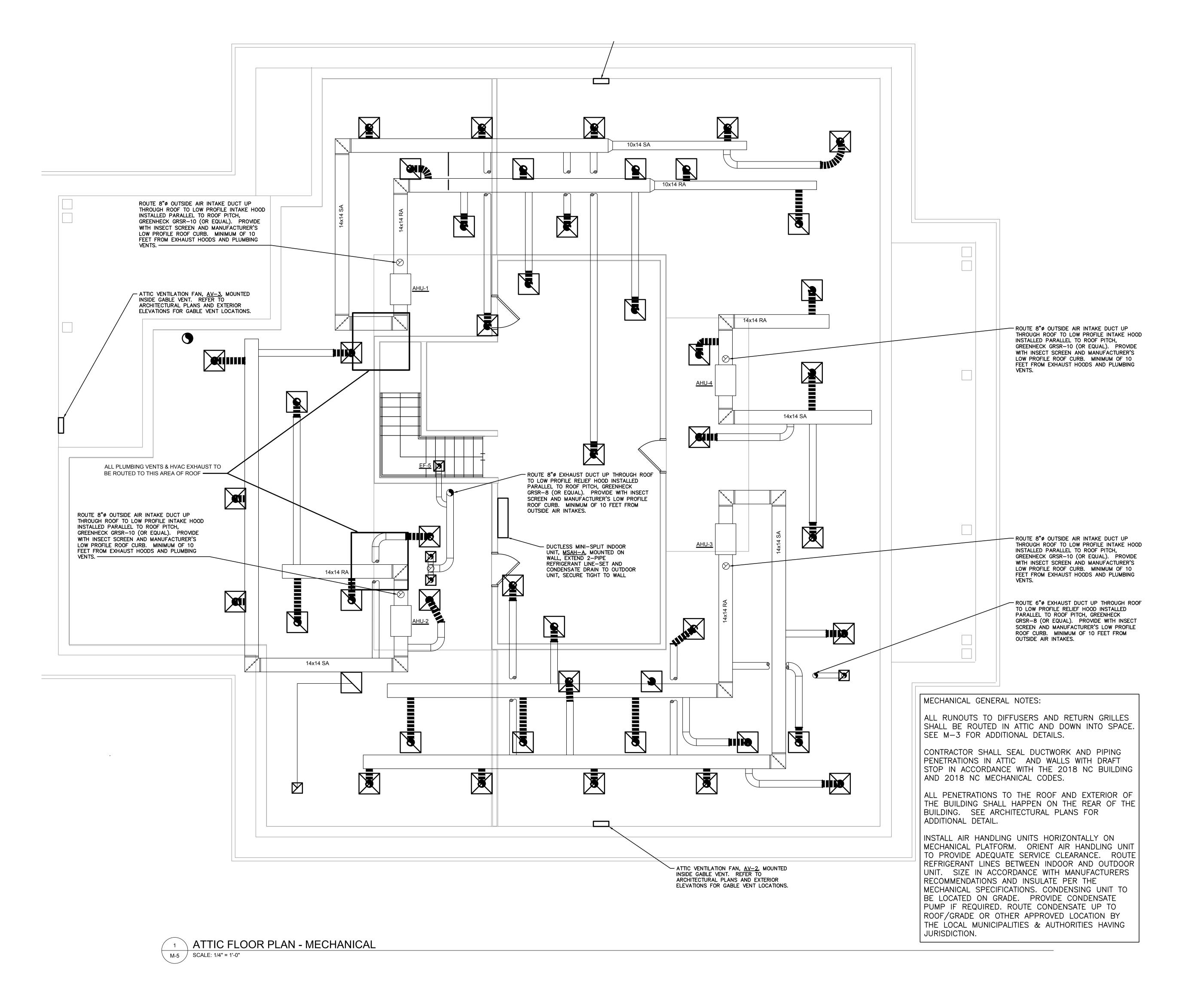


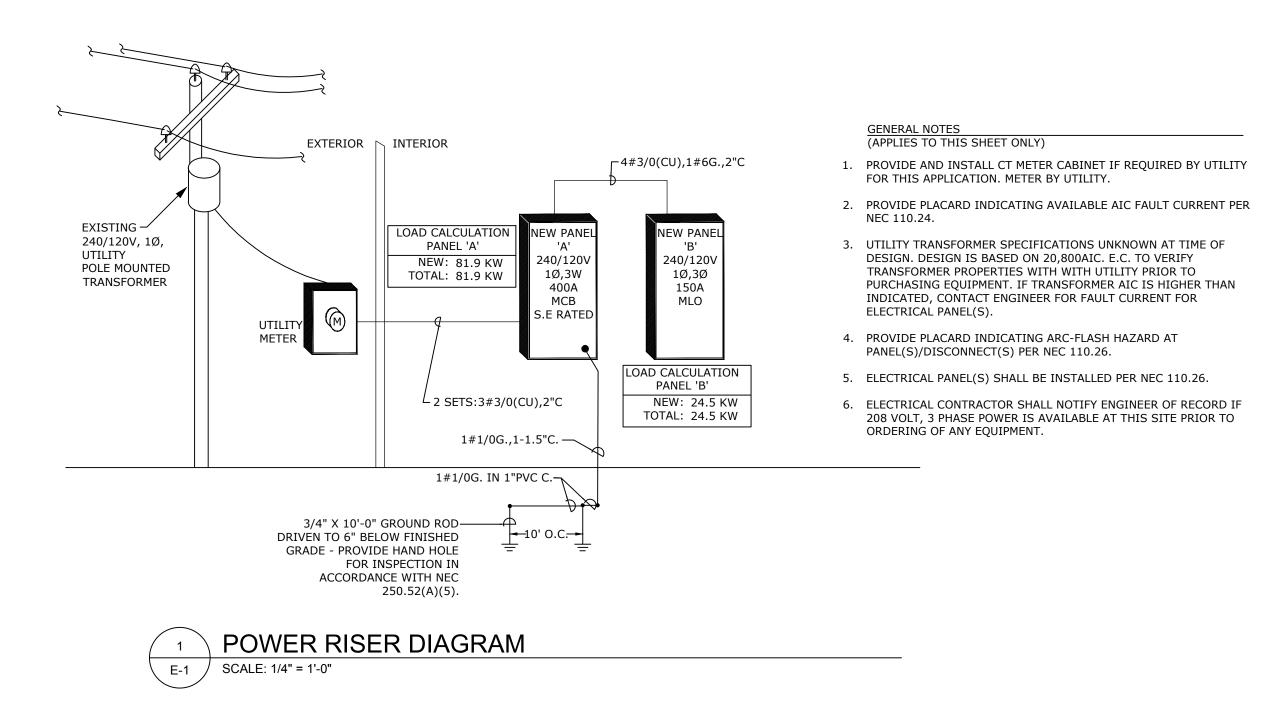
CHITECTURE - PLANNING -Box 37456, Raleigh, North Carolina 786 0229 C 919 616-1046 lineber



Project Number: 1910.15 Drawn By: BSC Date: 15 MAY 2025 ISSUE FOR CONSTRUCTION

ATTIC FLOOR PLAN -**MECHANICAL**





1										NEW	PANEL	A											
1	VOLTAGE:	120/	240		AMPS:	400) MLO						TING:	SUR	RFACE								
1	1 PHASE, 3	3 WIRE		TOTAL	L LOAD:	81.8	, KVA				A!	íC_RA	ATING:	10,	,000								
No.	CIRCUIT DESCRIPTION			LOAD ((KVA)			BREA	KER	PH/	ASE	BRF	EAKER			LOAD (KVA)			CIRCUIT DESCRIPTION	No.		
NO.			RCPT	MTR	A/C	KITCH	MISC		P	Α	В	P '	TRIP	MISC	KITCH	-	MTR	RCPT	CONT	CIRCUIT DESCRIPTION			
1	CORRIDOR LTG	0.94			'			20	1	5.02		2	50			4.08				AHU-1	2		
3	OFFICE LTG	1.51			<u> </u>			20	1		5.59	'				4.08				Allo 1	4		
5	SIGNAGE	<u> </u>		<u> </u>	'		0.50		1	4.58		2	50			4.08				AHU-2	6		
7	PORCH LIGHTS	0.10	<u> </u>	Ĺ'	'			20	1		4.18	'				4.08				AHO Z	8		
9	BOARD/BATH/SERV LTG	0.52	<u></u>		'			20	1	3.85		2	40			3.33				AHU-3	10		
11	SITE LITE	0.09	<u> </u>		'			20	1		3.42	'	1			3.33				A110 3	12		
13	ATTIC LTG	0.16			'			20	1	2.24		2	25			2.08				AHU-4	14		
15	MONUMENT SIGNAGE	0.50						20	1		2.58		23			2.08				A110-4	16		
17	HEAT TAPE				· ['		1.50	20	1	2.83		2	25			1.33				CU-1	18		
19	SPARE			<u> </u>	<u> </u>			20	1		1.33	'				1.33					20		
21	SPARE				\[\begin{align*}			20	1	1.33		2	25			1.33				CU-2	22		
23	SPARE				'			20	1		1.33					1.33					24		
25	SPARE		·		\['			20	1	1.08		2	20			1.08				CU-3	26		
27	SPARE				<u> </u>			20	1		1.08	'	20			1.08					28		
29	SPARE			<u> </u>	<u> </u>			20	1	1.00		2	20			1.00				CU-4	30		
31	SPARE				<u> </u>			20	1		1.00	_ '	20			1.00					32		
33	MCAU 1/MCHD-1				<u> </u>		1.33	20	2	2.83		1	20	1.50						WH-1	34		
35	MSAH-1/MSHP-1				<u> </u>		1.33	1 20_	4		1.33	1	20					<u> </u>		SPARE	36		
37	PANEL B	1.20	8.28	0.00	0.00	0.00	5.50	150	2	15.16	·	1	20	0.18						RP-1	38		
39	PAINEL D	0.00	9.18	0.50	0.00	0.00	3.10	1 130	4		13.28	1	20				0.50			AV 1/2	40		
41	SPARE	· · · · · · · · · · · · · · · · · · ·	7		1'			20	1		· · · · · · · · · · · · · · · · · · ·	1	20	0.50						TIMECLOCK	42		
	L				EMAND F				T A I	39.92	35.12			15.44	0.00	36.62	1.00	17.46	5.02	CONNECTED KVA 75.54			
			RCPT			KITCH																	
	A PHASE		8.28		22.89		10.51			NE	EC 220 DE	MAN	D FAC	TORS						NEL NOTES			
	B PHASE	2.75	9.18		22.89		4.43	40.	.50	CON	NTINUOUS:	125°	% LOA	.D			1.	B R E A K E R	FRAMESH.	ALL BE AS REQUIRED PER PANEL AIC RAT	FIN G .		
	TOTALS FOR PANEL	6.28			45.78		14.94			RECE	EPTACLES:	100°	% 1ST 1	.0 KW +	50% REM	IAINING	2.	SHALL	BE FULLY	RATED - SERIES RATINGS NOT A	LLOWE		
					OAD (K			45.	.20	İ	MOTORS:	125%	LARGEST 1	MOTOR + 1	LOO% REMAIN	NING	3.	ALL BUS	SSING, IN	ICL GND AND NEUTRAL, SHALL BI	E COPP		
,	,	<u></u>	FOF	₹ LARG	SEST PH	ASE		376.0		İ	A/C:	100°	% LOAI	'D		ľ	4.	A L L IN C O	M IN G P A N E	L & B R K R L U G S S H A L L M A T C H F E E D E R S	s .		
,	Ţ				(KVA) FC	~ D DAI		81.	.85	İ	KITCHEN:	65%	LOAD د)		ľ	5.	P R O V ID E	H IN G E D D D	0 0 0 0 8 - IN - 0 0 0 8 W IT M 0 U T E R 0 0 0 R L 0 C K .			
			SIGN L	.UAD (r	AVA) FU	JK PAIN	/EL	341.0	02A		MISC:	100°	% LOA	.D			6.	PROVIC	DE METAL	DIRECTORY FRAME.			
																	7.	PANEL S	SHALL BE	SERVICE ENTRANCE RATED.			
																	_						

										NEW	PANEL										
	VOLTAGE:	-			AMPS:								NT ING:		FACE						
	1 PHASE, 1	3 WIRE			LOAD:	24.5	KVA						ATING:	10,	,000				,		
No.	CIRCUIT DESCRIPTION			LOAD (<u> </u>		T	BREA			ASE		AKER			LOAD (CIRCUIT DESCRIPTION	No.
		CONT	RCPT	MTR	A/C	KITCH	MISC	TRIP	Р	Α	В	+		MISC	KITCH	A/C	MTR		CONT		
1	KITCHEN COUNTER REC		0.18					20	1	0.36		1						0.18		FILE REC	2
3	KITCHEN REC		0.54					20	1		1.26	1						0.72		CSR REC	4
5	MICROWAVE						1.50	20	1	2.22		1	20					0.72		CSR REC	6
7	FRIDGE						0.60	20	1		1.32	1	20					0.72		CSR REC	8
9	RANGE						2.50	50	2	3.76		1	20					1.26		ATTIC REC	10
11							2.50	30			3.04	1	20					0.54		BOARD ROOM REC	12
13	BOARD RM REC		0.90					20	1	2.10		1	20						1.20	GABLE SIGN	14
15	SERVER - IT REC		0.72					20	1		1.22	1	20				0.50			RANGE HOOD	16
17	ELEC RM REC		0.36					20	1	1.86		1	20	1.50						FILE RM COPIER	18
19	EXTERIOR REC		0.36					20	1		1.08	1	20					0.72		WORK CENTER REC	20
21	EWC/BATH REC		0.90					20	1	0.90		1	20							SPARE	22
23	OFFICE 8/9 REC		0.90					20	1		0.90	1	20							SPARE	24
25	OFFICE 10/11 REC		0.90					20	1	0.90		1	20							SPARE	26
27	OFFICE 11/12 REC		1.08					20	1		1.08	1	20							SPARE	28
29	OFFICE 7/FILE REC		0.72					20	1	0.72		1	20							SPARE	30
31	OFFICE 1/2 REC		0.90					20	1		0.90	1	20							SPARE	32
33	OFFICE 2/3 REC		0.90					20	1	0.90		1	20							SPARE	34
35	OFFICE 4/5 REC		0.90					20	1		0.90	1								SPARE	36
37	OFFICE 6/FILE REC		0.90					20	1	0.90		1	20							SPARE	38
39	WAITING/PORCH REC		1.08					20	1		1.08	1	20							SPARE	40
41	FILES RM REC		0.36					20	1	0.36		1								SPARE	42
		LOADS	W/ NEC	220 DI	EMAND	FACTOR	S (KVA)							8.60	0.00	0.00	0.50	17.46	1.20	CONNECTED KVA 27.76	
			RCPT	MTR		кітсн		ТОТ	AL	14.98	12.78										
	A PHASE			0.00		0.00	5.50	15.	28	N	EC 220 DE	MAN	ND FAC	TORS					PA	NEL NOTES	
	B PHASE			0.63		0.00	3.10	12.		COI	NTINUOUS:	125	% LOA	'D			1.	B R E A K E R	F B A M E S H	A LL B E A S R E Q U IR E D P E R P A N E L A IC R A T	IN G .
	TOTALS FOR PANEL					0.00	8.60	24.		REC	EPTACLES:	100	% 1ST :	L0 KW +	50% REN	1AINING	2.	SHALL	BE FULLY	RATED - SERIES RATINGS NOT AL	LOWED
			DES	SIGN LO	OAD (K	VA)	•	15.	28		MOTORS:	125%	LARGEST	MOTOR + :	100% REMAI	NING	3.	ALL BU	SSING, IN	NCL GND AND NEUTRAL, SHALL BE	COPPE
			FOR	LARG	EST PH	ASE		127.	33A		A/C:	100	% LOA	'D			4.	A L L IN C O	M IN G PANE	EL & BRKRLUGS SHALL MATCH FEEDERS	
					10 (4) =			24.	46		KITCHEN:	65%	6 LOAE)			5.	P R O V ID E	H IN G E D D O	1 O R - IN - D O O R W IT H O U T E R D O O R L O C K .	
		^{DE}	SIGN L	.UAD (KVA) F	JR PAN	EL	101.			MISC:	100	% LOA	ر.			6.	PROVIE	DE METAL	DIRECTORY FRAME.	
		-						•									7.	PANEL:	SHALL BE	SERVICE ENTRANCE RATED.	
																	8.	B R E A K E R	S F O R M E C	H A N IC A L E O U IP M E N T S H A L L B E H A C R R A	тер.

GENERAL ELECTRICAL NOTES:

- 1. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT NECESSARILY SHOW EVERY FITTING AND DETAIL. ALL WORK SHALL BE COMPLETED SO THE JUNCTION BOXES AND COMPONENTS WILL BE ACCESSIBLE FOR SERVICING.
- 2. ALL ELECTRICAL WORK PERFORMED DURING THIS SCOPE OF WORK SHALL COMPLY WITH ALL LOCAL BUILDING CODES, LAWS, REGULATIONS, ORDINANCES, AND THE REQUIREMENTS OF THE 2017 NATIONAL ELECTRICAL CODE. ALL WORK SHALL COMPLY WITH ANY OWNER SPECIFICATIONS NOT CALLED OUT ON THIS SET OF DRAWINGS.
- 3. WHERE ELECTRICAL CONTINUITY TO EXISTING TO REMAIN RECEPTACLES/LIGHTS/EQUIPMENT IS DISRUPTED BY DEMOLITION DURING THIS SCOPE OF WORK, RECONNECT THE DEVICE TO THE CIRCUIT IT WAS CONNECTED TO BEFORE DEMOLITION TOOK PLACE UNLESS THE DRAWINGS SHOW OTHERWISE.
- 4. ALL CONDUCTORS SHALL BE COPPER WITH TYPE "THHN" OR "THW" INSULATION. USE "THHN" FOR #10 OR SMALLER CONDUCTORS. USE "THW" FOR CONDUCTORS #8 OR LARGER.
- 5. THE MINIMUM WIRE SIZE SHALL BE #12 A.W.G.
- 6. ALL PENETRATIONS THRU RATED WALLS, FLOORS AND CEILINGS SHALL BE FIRE STOPPED PER N.E.C. 300-21 AND NFPA 221.
- 7. PROVIDE GROUNDING AS REQUIRED BY N.E.C..
- 8. WHERE MOUNTING HEIGHTS ARE SHOWN ON THE DRAWINGS, THE MEASUREMENT IS TO BE TAKEN FROM THE CENTERLINE OF THE DEVICE.
- 9. TYPICAL CONDUIT SIZES ARE 3/4" EMT WITH 2#12, 1#12G. AWG UNLESS OTHERWISE NOTED.
- 10. A #12 GROUND SHALL BE PROVIDED FOR ALL MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE. ALL EQUIPMENT SHALL BE GROUNDED AT THE PANEL THAT FEEDS THE EQUIPMENT.
- 11. CONTRACTOR SHALL PROVIDE A PANEL SCHEDULE DIRECTORY LOCATED ON THE INSIDE COVER OF THE ELECTRICAL PANEL. ALL CIRCUITS, SPARES, AND SPACES SHALL BE CORRECTLY LABELED.
- 12. ALL BRANCH CIRCUIT HOMERUN CONDUCTORS SHALL BE PROVIDED WITH A SEPERATE INSULATED #12 AWG EQUIPMENT
- 13. IF THE GENERAL CONTRACTOR DOES ANY WORK THAT CAUSES DISRUPTION TO ANY ELECTRICAL CIRCUITS OR SYSTEMS, THE ELECTRICAL CONTRACTOR SHALL CONNECT ALL REMAINING WORKING DEVICES ON THAT CIRCUIT AS REQUIRED TO ENSURE PROPER WORKING SYSTEM.
- 14. BUILDING CODE SECTION 705.4 SHALL BE MET WITH ELECTRICAL DEVICES TO BE INSTALLED IN RATED WALLS.
- 15. ALL ELECTRICAL MATERIALS, DEVICES, AND EQUIPMENT SHALL BE LISTED BY UL OR OTHER STATE APPROVED THIRD PARTY TESTING AGENCY.
- 16. FIRE RATED SLEEVES SHALL BE PROVIDED AND ALL FIRESTOPPING SHALL BE PROVIDED AS REQUIRED BY CODE WHEN CABLING IS ROUTED THROUGH A FIRE RATED PARTITION. BLANK COVERS SHALL BE INSTALLED ON RINGS.
- 17. ALL ELECTRICAL EQUIPMENT SHALL BE PROTECTED FROM DAMAGE AFTER BEING INSTALLED. CONTRACTOR SHALL NOT INSTALL TRIM AND COVER PLATES UNTIL AFTER ALL FINISHES TO ARCHITECTURAL ELEMENTS HAVE BEEN COMPLETED.
- 18. MOUNT ALL DISCONNECT SWITCHES TO STRUCTURE. DISCONNECTS SHALL NOT BE MOUNTED TO DUCTWORK OR
- MECHANICAL EQUIPMENT.
- 19. ANY CABLING TO BE INSTALLED DURING THIS SCOPE OF WORK THAT IS ROUTED THROUGH ANOTHER TENANT SPACE OR COMMON AREA SHALL BE ENCLOSED IN CONDUIT.
- 20. ALL LIGHT FIXTURE SHALL BE CLEANED, AND FULLY FUNCTIONAL AT MOVE-IN. THIS INCLUDES RE-LAMPING.
- 21. CONTRACTOR SHALL PROVIDE AND INSTALL NAMEPLATE FOR ALL RECEPTACLES AND POWERED DEVICES. INFORMATION ON NAMEPLATE SHALL INCLUDE ELECTRICAL PANEL AND CIRCUIT NUMBER FROM WHICH DEVICE IS POWERED.
- 22. WHERE TWO SWITCHES OR MORE (INCLUDING DIMMERS) ARE LOCATED NEXT TO EACH OTHER, CONTRACTOR SHALL PROVIDE AND INSTALL A SINGLE SWITCHPLATE TO PROVIDE A NEATER APPEARANCE.
- 23. MC CABLE IS NOT ALLOWED WHERE VISIBLE TO THE END USER.
- 24. ALL CONDUCTORS #1 AND UNDER SHALL BE RATED FOR 60 DEGREES CELSIUS. ALL CONDUCTORS LARGER THAN #1 SHALL BE RATED FOR 75 DEGREES CELSIUS.
- 25. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED. SERVICE ENTRANCE FEEDERS MAY BE ALUMINUM BUT SIZED PER NEC 2017 IF ALUMINUM IS UTILIZED.

MOUNTING HEIGHT NOTES:

REQUIREMENTS TO PROVIDE SOLUTION.

- 1. WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES MUST BE MOUNTED MOUNTED NO LOWER THAN 80" AFF TO BOTTOM OF DEVICE AND NO HIGHER THAN 96" TO TOP OF THE DEVICE. CONTRACTOR SHALL MOUNT THESE DEVICES AT 88" TO THE MIDDLE OF THE DEVICE UNLESS FIELD CONDITIONS DO NOT ALLOW TO MOUNT AT THIS HEIGHT. IF THE DEVICE CAN NOT BE LOCATED BETWEEN 80" AND 96", CONTACT ENGINEER IMMEDIATELY FOR SOLUTION.
- 2. MOUNT CENTER LINE OF EXIT SIGN 24" ABOVE DOOR WHERE CEILING IS OVER 12'-0"AFF OR TO STRUCTURE WHERE NO CEILING IS PRESENT. IF CEILING IS 12'-0"AFF OR UNDER, CONTRACTOR SHALL MOUNT CENTER LINE OF EXIT SIGN 12" BELOW CEILING.
- 3. WALL MOUNTED TELEPHONES, FIRE ALARM PULL STATIONS, AND LIGHT SWITCHES SHALL BE MOUNTED AT 48"AFF TO TOP OF THE
- 4. ALL RECEPTACLES SHALL BE MOUNTED AT 18"AFF TO THE CENTER LINE OF THE DEVICE UNLESS OTHERWISE NOTED.
- 5. THE NEAREST EDGE OF ALL CEILING MOUNTED SMOKE OR HEAT DETECTORS SHALL BE LOCATED NO LESS THAN 4" FROM THE WALL.

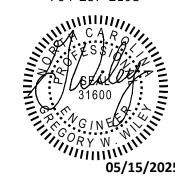
\mathbb{P}_{GFI}	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION
Ψ	DUPLEX RECEPTACLE. MOUNT AT 18"AFF UNLESS OTHERWISE NOTED.
Pwp/gfi	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION AND WEATHERPROOF HOUSING
₩₽/ĠFI	QUADRAPLEX RECEPTACLE. MOUNT AT 18"AFF UNLESS OTHERWISE NOTED.
	TELE/COMMUNICATIONS JACK (CONTRACTOR SHALL PROVIDE AND INSTALL JUNCTION BOX CONNET O PULLSTRING TO UP ABOVE ACCESSIBLE CEILING)
\$	WALL MOUNTED STANDARD COMMERCIAL GRADE TOGGLE LIGHT SWITCH (SWITCH SHALL BE TYPE RECOMMEND LIGHTING MANUFACTURER TO OPERATE THE LIGHTING TYPE WITH FEATURES AS SELECTED/PROVIDED) PROVID INSTALL ACCESSORIES REQUIRED FOR FULL OPERATION OF DEVICE.
\$ ^{os}	WALL MOUNTED OCCUPANCY SENSOR / LIGHT SWITCH COMBINATION UNIT (SWITCH SHALL BE TYPE RECOMMEN BY LIGHTING MANUFACTURER TO OPERATE THE LIGHTING TYPE WITH FEATURES AS SELECTED/PROVIDED) BASI DESIGN IS GREENGATE 'OSW-P-010-W' WIRED FOR SINGLE POLE OPERATION. EQUALS ALLOWED ARE NLIGHT, SE SWITCH, WATTSTOPPER, LEVITON, OR OTHER PREAPPROVED EQUAL. SET TIMEOUT TO MAXIMUM LENGTH OF TIMEOUT. PROVIDE AND INSTALL ACCESSORIES REQUIRED FOR FULL OPERATION OF DEVICE.
\$ ³	WALL MOUNTED STANDARD COMMERCIAL GRADE THREE-WAY TOGGLE LIGHT SWITCH (SWITCH SHALL BE TYPE RECOMMENDED BY LIGHTING MANUFACTURER TO OPERATE THE LIGHTING TYPE WITH FEATURES AS SELECTED/PROVIDED) PROVIDE AND INSTALL ACCESSORIES REQUIRED FOR FULL OPERATION OF DEVICE.
\$ ^{OSD}	WALL MOUNTED DIMMING LIGHT SWITCH (SWITCH SHALL BE TYPE RECOMMENDED BY LIGHTING MANUFACTURE OPERATE THE LIGHTING TYPE WITH FEATURES AS SELECTED/PROVIDED) BASIS OF DESIGN IS GREENGATE 'OSW-P-010' WIRED FOR SINGLE POLE OPERATION. EQUALS ALLOWED ARE NLIGHT, SENSOR SWITCH, WATTSTON LEVITON, OR OTHER PREAPPROVED EQUAL. SET TIMEOUT TO MAXIMUM LENGTH OF TIMEOUT. PROVIDE AND INSTACCESSORIES REQUIRED FOR FULL OPERATION OF DEVICE.
\$ ^{3D}	WALL MOUNTED 3-WAY DIMMING LIGHT SWITCH (SWITCH SHALL BE TYPE RECOMMENDED BY LIGHTING MANUFACTURER TO OPERATE THE LIGHTING TYPE WITH FEATURES AS SELECTED/PROVIDED) BASIS OF DESIGN GREENGATE 'WBSD-010SLD' WIRED FOR 3-WAY OPERATION. EQUALS ALLOWED ARE NLIGHT, SENSOR SWITCH, WATTSTOPPER, LEVITON, OR OTHER PREAPPROVED EQUAL. SET TIMEOUT TO MAXIMUM LENGTH OF TIMEOUT. PROVIDE AND INSTALL ACCESSORIES REQUIRED FOR FULL OPERATION OF DEVICE.
\$ °	WALL MOUNTED DIMMING LIGHT SWITCH (SWITCH SHALL BE TYPE RECOMMENDED BY LIGHTING MANUFACTURE OPERATE THE LIGHTING TYPE WITH FEATURES AS SELECTED/PROVIDED) BASIS OF DESIGN IS GREENGATE 'WBSD-010SLD' WIRED FOR SINGLE POLE OPERATION. EQUALS ALLOWED ARE NLIGHT, SENSOR SWITCH, WATTSTOPPER, LEVITON, OR OTHER PREAPPROVED EQUAL. SET TIMEOUT TO MAXIMUM LENGTH OF TIMEOUT. PROVIDE AND INSTALL ACCESSORIES REQUIRED FOR FULL OPERATION OF DEVICE.
<u>©</u>	DUAL TECHNOLOGY OCCUPANCY SENSOR (AUTO-ON/AUTO-OFF). GREENGATE SERIES 'OAC-DT-2000 EQUAL BY NLIGHT, WATTSTOPPER, LEVITON, SENSOR SWITCH OR OTHER PREAPPROVED EQUAL. MO IN CEILING. SET TIMEOUT TO MAXIMUM LENGTH OF TIMEOUT. ARROWS DENOTES ORIENTATION OF DEVICE SO THE WIDER PORTION OF THE COVERAGE AREA EXTENDS IN THE DIRECTION OF THE ARROWS.
PP	ABOVE ACCESSIBLE CEILING MOUNTED POWER PACK. GREENGATE 'SP20' SERIES OR EQUAL BY SENSIBLE CEILING MOUNTED POWER PACK. GREENGATE 'SP20' SERIES OR EQUAL BY SENSIBLE CONTROL, WATTSTOPPER, LEVITON, NLIGHT. WHERE THERE ARE TWO POWER PACKS IN A ROOM/ARE ONE POWER PACK IS TO CONTROL ONE OF THE LIGHTING ZONES AND THE OTHER POWER PACK(S) SHALL CONTROL THE OTHER(S). POWER PACKS SHALL BE PROVIDED WITH DEFAULT MODES TO MAT DEFAULTS OF SWITCHES THAT ARE TO BE PAIRED WITH SENSORS.
_	120/208V ELECTRICAL PANELBOARD
0	JUNCTION BOX
	CONCEALED CONDUIT
	CONCEALED CONDUIT IN FLOOR OR UNDERGROUND
	CIRCUIT HOMERUN TO PANEL; EACH ARROWHEAD = 1 CIRCUIT
	HASH MARKS ACROSS CONDUIT INDICATE THE NUMBER OF #12 CONDUCTORS (# OF PHASES + NEUTRAL AND SHORT WIRE INDICATES THE GROUND) UNLESS OTHERWISE NOTED. NO HASH MARK INDICATE TWO #12 CONDUCTORS.
○ □ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	LIGHT FIXTURE (LETTER NEXT TO LIGHT SIGNIFIES LIGHTING TYPE - REFER TO LIGHTING FIXTURE SCHEDULE) EXIT SIGN (COORDINATE ARROWS AND FACES WITH DRAWINGS)
₩	EMERGENCY "BUG EYE" LIGHT FIXTURE
420	COMBINATION EXIT SIGN / EMERGENCY "BUG EYE" LIGHT FIXTURE
H_TV	TELEVISION. REFER TO DETAIL 6/E-3 FOR FURTHER INFORMATION ON INSTALLATION. CONTRACTOR SHALL INSTALL AT MOUNTING HEIGHTS SHOWN ON E1/THIS DRAWING UNLESS OTHERWISE NOTED
①	JUNCTION BOX
Ю	WALL MOUNTED JUNCTION BOX
\F\	MOTOR WITH HORSEPOWER NOTED ('F' DENOTES 'FRACTIONAL')
	3-GANG CAST IRON FLOOR BOX WITH QUADRAPLEX RECEPTACLE AND DATA/COMMUNICATIONS JACK NUMBER NEXT TO DEVICE INDICATES NUMBER OF DATA/COMMUNICATIONS JACKS IN BOX. BASIS O DESIGN IS LEGRAND EVOLUTION SERIES. PROVIDE COVER PLATES AND FLANGES AS REQUIRED. COORDINATE EXACT LOCATION AND COVER FINISH WITH ARCHITECT.
XX" AFF	"+XX" DENOTES INCHES TO MOUNT CENTERLINE OF DEVICE ABOVE FINISHED FLOOR. "XX" SHALL B SUBSTITUTED WITH NUMBER OF INCHES ABOVE FINISHED FLOOR TO MOUNT DEVICE.
AC	ABOVE COUNTER
NL	NIGHT LIGHT
EC	EMPTY CONDUIT
_M \$	MOTORATED SWITCH RATED AT 120V, 20A
┌ □ #/#/#	DISCONNECT SWITCH (FRAME/POLES/FUSE) - IF NO FUSE SIZE IS INDICATED, THEN PROVIDE NON-FUSED DISCO

DESCRIPTION	QUANTITY	VOLTAGE	PHASE	HORSEPOWER	AMPS	KILOWATTS	MOCP	CIRCUIT NUMBER	BREAKER/FUSE	FEEDER		NOTES
AH-1	1	208	1		49		50	A-2,4	50/2	2#6(CU),1#10,.75"C	60AF	
AH-2	1	208	1		49		50	A-6,8	50/2	2#6(CU),1#10G,.75"C	60AF	
AH-3	1	208	1		40		40	A-10,12	40/2	2#8(CU),1#10G,.75"C	60AF	
AH-4	1	208	1		25		25	A-14,16	25/2	2#10(CU),1#10G,.75"C	30AF	
HP-1	1	208	1		16		25	A-18,20	25/2	2#10(CU),1#10G,.75"C	30AF	
HP-2	1	208	1		16		25	A-22,24	25/2	2#12(CU),1#12G,.75"C	30AF	
HP-3	1	208	1		13		20	A-26,28	20/2	2#12(CU),1#12G,.75"C	30AF	
HP-4	1	208	1		12		20	A-30,32	20/2	2#12(CU),1#12G,.75"C	30AF	
AV1/AV2/AV3	1	120	1		20		20	A-40	20/1	2#12(CU),1#12G,.75"C		
EF-1/2/3/4/5	1	120	1		20		20	=	20/1	2#12(CU),1#12G,.75"C		SEE MECHANICAL SHEET M-5 FOR CONTROLS
WH-1	1	208	1			5	30	A-34,36	30/2	2#12(CU),1#12G,.75"C	30AF	
MSAH-1/MSHP-1	1	208	1		16		20	A-33,35	20/2	2#12(CU),1#12G.,.75"C.	30AF	MSHP-A POWERS MSAH-A
NOTES:												
COORDINATE MO	JNTING	HEIGHT	S WI	TH ARC	HITECT	PRIOR	TO RC	UGH-IN.				
COORDINATE EXA	CT CON	NECTION	N TYP	E WITH	MANU	JFACT	JRER P	RIOR TO ROU	GH-IN AI	ND FURNISH ACCORDINGL	Υ.	

ELECT	RICAL SHEET LIST
E-1	ELECTRICAL NOTES, LEGENDS & SCHEDULES
E-2	ELECTRICAL SPECIFICATIONS
E-3	ELECTRICAL DETAILS
E-4	FLOOR PLAN - LIGHTING
E-5	FLOOR PLAN - POWER
E-6	ATTIC PLAN - ELECTRICAL

FARM BUREAL Country, 105 E. Front Street





Architecture - PLANNING - INTERIOR ARCHITECTURE

ARCHITECTURE - PLANNING P.O. Box 37456, Raleigh, North Caro 919 786 0229 C 919 616-1046 line



Project Number : 1910.15
Drawn By: GW
Date: 9 APRIL 2025
ISSUE FOR CONSTRUCTION

ELECTRICAL NOTES

LEGENDS AND

SCHEDULES

METAL CONDUIT LARGER THAN 2 INCH (50 MM) SIZE.

A. ALL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED FROM STRUCTURE

C. NAILS OR POWDER ACTUATED FASTENERS SHALL NOT BE USED.

WORK. USE U.L. LISTED GRID CLIPS ON ALL LAY-IN FIXTURES.

JUNCTION BOXES ON PROJECT RECORD DOCUMENTS.

CONNECTIONS, AND AS REQUIRED BY NFPA 70.

DEVICE PLATES AND DECORATIVE BOX COVERS.

A. CONFORM TO REQUIREMENTS OF NFPA 70.

THE PURPOSE SPECIFIED AND INDICATED.

D. MAINTAIN HEADROOM AND PRESENT NEAT MECHANICAL APPEARANCE.

CONDUITS BOTH SUPPORTED WITHIN 12 INCHES (305 MM) OF BOX.

SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.

. RATINGS: MATCH BRANCH CIRCUIT AND LOAD CHARACTERISTICS.

2. CONFIGURATION: NEMA WD 6, TYPE AS SPECIFIED AND INDICATED.

C. WEATHERPROOF COVER PLATES: GASKETED CAST METAL WITH HINGED.

A. VERIFY THAT OUTLET BOXES ARE INSTALLED AT PROPER HEIGHT.

A. RECEPTACLES: HEAVY DUTY, COMPLYING WITH NEMA WD 6 AND WD 1.

B. SWITCH TYPES: SINGLE POLE, DOUBLE POLE, AND 3-WAY.

B. CONVENIENCE RECEPTACLES: TYPE 5 TO 20.

. SINGLE CONVENIENCE RECEPTACLES.

D. DUPLEX CONVENIENCE RECEPTACLES

REGULATORY REQUIREMENTS.

PART 1 GENERAL

1.02 SUBMITTALS

PART 2 EXECUTION

B. RECEPTACLES

1.03 QUALITY ASSURANCE

CONFIGURATIONS.

1.02 SUBMITTALS

PART 2 PRODUCTS

2.02 WALL SWITCHES

2.04 WALL PLATES

PART 3 EXECUTION

3.02 PREPARATION

WIRING DEVICES.

3.04 INTERFACE WITH OTHER PRODUCTS

FIELD QUALITY CONTROL

3.06 ADJUSTING

B. CLEAN DEBRIS FROM OUTLET BOXES.

B. INSTALL DEVICES PLUMB AND LEVEL.

INSTALL SWITCHES WITH OFF POSITION DOWN.

D. INSTALL RECEPTACLES WITH GROUNDING POLE ON TOP.

3.01 EXAMINATION

1.01 SECTION INCLUDES

A. PULL AND JUNCTION BOXES.

Q. AVOID MOISTURE TRAPS; PROVIDE JUNCTION BOX WITH DRAIN FITTING AT LOW POINTS IN CONDUIT SYSTEM.

S. PROVIDE SUITABLE PULL STRING IN EACH EMPTY CONDUIT EXCEPT SLEEVES AND NIPPLES.

B. INSERTS IN MASONRY SHALL BE LEAD OR FIBER IN DRILLED HOLES, OR CAST IN PLACE.

A. INSTALL BOXES SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1.

C. ORIENT BOXES TO ACCOMMODATE WIRING DEVICES ORIENTED AS SPECIFIED IN SECTION 16140.

E. ALIGN ADJACENT WALL MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES.

G. USE GANG BOX WHERE MORE THAN ONE DEVICE IS MOUNTED TOGETHER. DO NOT USE SECTIONAL BOX.

F. SUPPORT BOXES INDEPENDENTLY OF CONDUIT, EXCEPT CAST BOX THAT IS CONNECTED TO TWO RIGID METAL

WIRING DEVICES

A. PRODUCT DATA: PROVIDE MANUFACTURER'S CATALOG INFORMATION SHOWING DIMENSIONS, COLORS, AND

A. WALL SWITCHES: HEAVY DUTY, AC ONLY GENERAL-USE SNAP SWITCH, COMPLYING WITH NEMA WD 6 AND WD 1.

. DEVICE BODY: FINISH/COLOR TO BE SELECTED BY ARCHITECT. DEVICE SHALL BE MADE OF PLASTIC.

E. GFCI RECEPTACLES: CONVENIENCE RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER TO MEET

C. VERIFY THAT BRANCH CIRCUIT WIRING INSTALLATION IS COMPLETED, TESTED, AND READY FOR CONNECTION TO

A. DECORATIVE COVER PLATES: FINISH/COLOR TO BE SELECTED BY ARCHITECT. SMOOTH PLASTIC.

B. VERIFY THAT WALL OPENINGS ARE NEATLY CUT AND WILL BE COMPLETELY COVERED BY WALL PLATES.

B. JUMBO COVER PLATES: COORDAINTE DEVICE COLOR WITH ARCHITECT, SMOOTH PLASTIC.

A. PROVIDE EXTENSION RINGS TO BRING OUTLET BOXES FLUSH WITH FINISHED SURFACE.

A. INSTALL SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1.

G. CONNECT WIRING DEVICES BY WRAPPING CONDUCTOR AROUND SCREW TERMINAL.

H. INSTALL PROTECTIVE RINGS ON ACTIVE FLUSH COVER SERVICE FITTINGS.

ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS.

(1.2 M) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS.

B. OPERATE EACH WALL SWITCH WITH CIRCUIT ENERGIZED AND VERIFY PROPER OPERATION.

F. VERIFY THAT EACH TELEPHONE JACK IS PROPERLY CONNECTED AND CIRCUIT IS OPERATIONAL.

E. CONNECT WIRING DEVICE GROUNDING TERMINAL TO OUTLET BOX WITH BONDING JUMPER

F. INSTALL DECORATIVE PLATES ON SWITCH, RECEPTACLE, AND BLANK OUTLETS IN FINISHED AREAS.

A. INSTALL WALL SWITCH 48 INCHES (1.2 M) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS.

B. INSTALL CONVENIENCE RECEPTACLE 18 INCHES (450 MM) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON

D. INSTALL TELEPHONE JACK 18 INCHES (450 MM) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS.

1. BODY AND HANDLE: FINISH/COLOR SHALL BE SELECTED BY ARCHITECT. PROVIDE PLASTIC WITH TOGGLE HANDLE.

T. USE SUITABLE CAPS TO PROTECT INSTALLED CONDUIT AGAINST ENTRANCE OF DIRT AND MOISTURE.

D. EMT/IMC/RGS SUPPORTS SHALL BE A MAXIMUM OF 8'-0" APART AND A MAXIMUM OF 3'-0" FROM BOXES.

CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL NECESSARY ITEMS FOR A COMPLETE AND OPERATING SYSTEM. 3.01 EXAMINATION

R. THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FURNISH, FABRICATE, ERECT, CONNECT, AND COMPLETELY INSTALL SYSTEMS IN PROPER OPERATING CONDITION. ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED SHALL BE INCLUDED AS PART OF THIS WORK TO COMPLETE THE INSTALLATION.

Q. IT SHALL NOT BE THE INTENT OF ISSUED PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF

S. THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS, OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS.

T. CONTRACTOR SHALL COORDINATE THE ROUGH-IN OF ALL OUTLET LOCATIONS WITH ARCHITECTURAL FLOOR PLANS, ELEVATIONS, AND MILLWORK SHOP DRAWINGS PRIOR TO ROUGH-IN. U. ELECTRICAL CONTRACTOR SHALL NOT SCALE PLANS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS OTHERWISE NOTED

V. IF DURING THE COURSE OF WORK, THE CONTRACTOR DISCOVERS A PROBLEM WITH THE PERFORMANCE OF THE INSTALLATION RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC, OR OTHER CODES OR REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY BRING THE PROBLEM TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK.

W. WHERE THERE ARE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BRING THE ISSUE TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK OR ORDERING ANY MATERIALS. NO ADDITIONAL COSTS SHALL BE WARRANTED WITHOUT A CHANGE TO THE PROJECT SCOPE. X. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PROVIDING TEMPORARY POWER AND

LIGHTING FOR ALL TRADES. AT NO TIME SHALL EXISTING BUILDING POWER SYSTEMS BE UTILIZED WITHOUT WRITTEN PERMISSION FROM THE OWNER Y. COORDINATE LOCATION AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH THE POWER COMPANY. WHERE MORE THAN ONE SERVICE IS SUPPLIED TO A BUILDING, PROVIDE IDENTIFICATION AT EACH SERVICE PER NEC 230-2(E).

Z. COORDINATE LOCATION AND REQUIREMENTS FOR TELEPHONE SERVICE WITH THE TELEPHONE COMPANY.

A. CONDUCTORS SHALL BE MANUFACTURED BY SOUTHWIRE (SIMPULL), ENCORE (SUPERSLICK), UNITED COPPER (SLK), PART 2 EXECUTION CERRO (SLP), OR APPROVED EQUAL, "PRE-LUBRICATED" BY THE MANUFACTURER. B. ALL CONDUCTORS SHALL BE COPPER, RATED 75° C WET/DRY EXCEPT WHERE OTHERWISE NOTED OR REQUIRED BY U.L.

C. ALL CONDUCTORS SHALL BE SINGLE INSULATED CONDUCTOR, THHN/THWN-2. SIZES #10 AWG AND SMALLER SHALL BE SOLID, SIZES #8 AWG AND LARGER SHALL BE STRANDED. D. BRANCH CIRCUITS SHALL NOT BE SMALLER THAN #12 AWG. CONTROL WIRING MAY BE #14 AWG F. CONDUCTORS SHALL BE COLOR CODED BLACK/RED/BLUE FOR 120/208 VOLT SYSTEMS AND BROWN/ORANGE/YELLOW

FOR 277/480 VOLT SYSTEMS FOR A, B, AND C PHASES, RESPECTIVELY. NEUTRAL SHALL BE WHITE FOR 120/208 VOLT SYSTEMS AND NATURAL GRAY FOR 277/480 VOLT SYSTEMS. GROUND CONDUCTOR SHALL BE GREEN ON ALL SYSTEMS. ALL CONDUCTOR SIZES SHALL HAVE COLOR-CODED INSULATION. THE USE OF COLORED TAPE ON LARGER WIRE SIZES F. INSULATION SHALL BE DUAL RATED TYPE THHN/THWN-2 FOR FEEDERS AND BRANCH CIRCUITS. FIXTURE TAPS SHALL

BE #12 THHN/THWN-2 IN FLEX WITH GREEN #12 AWG GROUNDING CONDUCTO G. ALL CONDUCTORS SHALL BE IN CONDUIT

H. WIRING TO LIGHTING FIXTURES SHALL BE AS REQUIRED BY UL LABEL.

I. MULTI-WIRE BRANCH CIRCUITS SHALL NOT BE ALLOWED, UNLESS EXPLICITLY INDICATED ON THE DRAWINGS OR PART 1 GENERAL WHEN POWERING MODULAR SYSTEMS FURNITURE. WHERE EXPLICITLY INDICATED ON THE DRAWINGS: 1) ALL 20A MULTI-WIRE RECEPTACLE CIRCUITS SHALL UTILIZE A #10 AWG NEUTRAL CONDUCTOR.

WHERE MULTI-WIRE BRANCH CIRCUITS ARE EXPLICITLY INDICATED ON THE DRAWINGS, THEY SHALL BE INSTALLED PER NEC 210.4. MEANS SHALL BE PROVIDED TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES IN ADDITION TO OTHER REQUIREMENTS J. JOINTS IN #10 AWG AND SMALLER SHALL BE MADE UP WITH CRIMPED CONNECTORS WITH INSULATING CAPS (NO 1.02 SUBMITTALS

TAPE) OR WIRENUTS (MAXIMUM OF 3 CONDUCTORS UNDER ANY CONNECTOR OR WIRENUT). LARGER WIRE SHALL USE SPLIT BOLTS OR BOLTED CLAMPS. K. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING, BUT NOT LIMITED TO, BREAKERS.

PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, MOTOR STARTER LUGS, TRANSFORMERS LUGS, WIRING

1.03 QUALITY ASSURANCE
DEVICE TERMINALS, AND ALL EQUIPMENT LUGS/TERMINALS SHALL BE RATED FOR USE WITH 75 DEGREE INSULATED

A. CONFORM TO REC CONDUCTORS AT THEIR 75 DEGREE AMPACITY AND SHALL BE SIZED AND SELECTED TO MATCH THE CONDUCTOR SIZE AND MATERIAL. . CIRCUIT JOINTS SHALL NOT BE MADE ON DEVICE TERMINALS.

M. WIRE WITHIN PANELBOARDS SHALL BE NEATLY TRAINED, SQUARED, BUNCHED, AND TAGGED. N. ALL SYSTEM FURNITURE CONNECTIONS SHALL COMPLY WITH NEC 605.

O. GROUND ALL EQUIPMENT PER NEC ARTICLE 250. BOND WHERE CONDUITS ENTER ENCLOSURES THROUGH CONCENTRIC KNOCKOUTS. ALL FLEX, INCLUDING FIXTURE TAPS, SHALL INCLUDE GREEN GROUNDING CONDUCTOR, #12 AWG MINIMUM. PROVIDE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT, SIZED PER NEC 250-122

P. ALL CONDUCTORS INSTALLED IN VERTICAL RACEWAYS SHALL BE SUPPORTED AT INTERVALS AS REQUIRED PER NEC 2.02 CONDUIT MARKERS O. THE FLECTRICAL CONTRACTOR SHALL FOLLOW AND APPLY THE TABLE BELOW, REGARDLESS WHAT THE PANEL

SCHEDULE INDICATES, FOR SIZING ALL 120V & 277V, 20 AMP BRANCH CIRCUITS (COPPER CONDUCTORS) TO ALLOW A MAXIMUM OF 3% VOLTAGE DROP FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE ON THE BRANCH CIRCUIT AND ACHIEVE A MAXIMUM OF 5% VOLTAGE DROP ACROSS THE ENTIRE BRANCH CIRCUIT:

<u>VOLTAGE</u>	CONDUCTOR LENGTH *	BRANCH CIRCUIT
120	0' - 50'	#12
120	51' - 90'	#10
120	91' - 140'	#8
120	141' - 225'	#6
277	0' - 125'	#12
277	126' - 200'	#10
277	201' - 330'	#8
277	331' - 525'	#6

* - THE LENGTH IS MEASURED FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE WHICH THE BRANCH CIRCUIT PART 1 GENERAL SERVES. WHERE THE DISTANCE EXCEEDS ABOVE, CONSULT WITH THE ENGINEER.

A. SUITABLE FINISH COAT SHALL BE PROVIDED FOR ALL EQUIPMENT. PANEL TUBS, COVERS, ETC. SHALL BE PRIMED AND $^{1.02}$ SUBMITTALS ENAMELED TO BLEND WITH ADJACENT SURFACES, OR SHALL BE MANUFACTURER'S STANDARD COLOR BAKED ENAMEL FINISH, OR AS DIRECTED BY THE ARCHITECT.

TELECOMMUNICATIONS PART 1 GENERAL

A. CONTRACTOR SHALL UTILIZE EXISTING TELEPHONE CONDUIT SYSTEM. CONTRACTOR SHALL COORDINATE ANY NEW CONDUIT REQUIREMENTS WITH TELEPHONE PROVIDER AND FURNISH ACCORDINGLY.

B. TELECOMMUNICATION OUTLETS SHALL CONSIST OF A 4" SQUARE DEEP BOX WITH SINGLE GANG PLASTER RING. PROVIDE BLANK PLATE WITH KNOCKOUTS FOR OUTLETS, AS PERMANENT COVERS WILL BE PROVIDED BY A SEPARATE C. PROVIDE MINIMUM 210# TEST NYLON PULL CORD AND NYLON BUSHINGS IN ALL EMPTY RACEWAYS.

D. PROVIDE GROUNDING FOR ALL TELEPHONE/DATA SYSTEMS AND EQUIPMENT PER REQUIREMENTS AND SPECIFICATIONS C. PROTECT PVC CONDUIT FROM SUNLIGHT. PROVIDED BY THE OWNERS DESIGNATED VENDOR.

E. ALL LOW-VOLTAGE CABLING SHALL BE PLENUM-RATED F. VERIFY SITE LOCATION OF TELEPHONE SERVICES WITH APPROPRIATE VENDOR, PRIOR TO SUBMITTING BID.

GROUNDING AND BONDING

PART 1 GENERAL 1.01 SECTION INCLUDES

A. GROUNDING AND BONDING COMPONENTS. B. PROVIDE ALL COMPONENTS NECESSARY TO COMPLETE THE GROUNDING SYSTEM(S) CONSISTING OF:

EXISTING METAL UNDERGROUND WATER PIPE . METAL UNDERGROUND WATER PIPE. METAL FRAME OF THE BUILDING.

4. STEEL WATER STORAGE TANK AND SUPPORTS CONCRETE-ENCASED ELECTRODE. . ROD ELECTRODES PLATE ELECTRODES

ACTIVE ELECTRODES A. NETA STD ATS - ACCEPTANCE TESTING SPECIFICATIONS FOR ELECTRICAL POWER DISTRIBUTION EQUIPMENT AND

SYSTEMS; INTERNATIONAL ELECTRICAL TESTING ASSOCIATION; 2007.

BRANCH CIRCUIT RACEWAY. TERMINATE EACH END ON SUITABLE LUG, BUS, OR BUSHING. 1.01 SECTION INCLUDES A. CONDUIT AND EQUIPMENT SUPPORTS.

B. ANCHORS AND FASTENERS.

FINISHED GRADE.

A. VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING WORK.

ACHIEVE SPECIFIED RESISTANCE TO GROUND

WHERE INDICATED. BOND STEEL TOGETHER.

A. CONFORM TO REQUIREMENTS OF NFPA 70. B. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND INDICATED.

B. VERIFY THAT FINAL BACKFILL AND COMPACTION HAS BEEN COMPLETED BEFORE DRIVING ROD ELECTRODES.

B. PROVIDE GROUNDING WELL PIPE WITH COVER AT EACH ROD LOCATION. INSTALL WELL PIPE TOP FLUSH WITH

INSTALL 4 AWG BARE COPPER WIRE IN FOUNDATION FOOTING WHERE INDICATED

PROVIDE BONDING TO MEET REQUIREMENTS DESCRIBED IN QUALITY ASSURANCE

F. BOND TOGETHER METAL SIDING NOT ATTACHED TO GROUNDED STRUCTURE; BOND TO GROUND

A. INSTALL GROUND ELECTRODES AT LOCATIONS INDICATED. INSTALL ADDITIONAL ROD ELECTRODES AS REQUIRED TO

PROVIDE GROUNDING ELECTRODE CONDUCTOR AND CONNECT TO REINFORCING STEEL IN FOUNDATION FOOTING

G. EQUIPMENT GROUNDING CONDUCTOR: PROVIDE SEPARATE, INSULATED CONDUCTOR WITHIN EACH FEEDER AND

A. INSTALL HANGERS AND SUPPORTS AS REQUIRED TO ADEQUATELY AND SECURELY SUPPORT ELECTRICAL SYSTEM COMPONENTS, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1.

 DO NOT FASTEN SUPPORTS TO PIPES, DUCTS, MECHANICAL EQUIPMENT, OR CONDUIT. 2. OBTAIN PERMISSION FROM ARCHITECT BEFORE DRILLING OR CUTTING STRUCTURAL MEMBERS. B. RIGIDLY WELD SUPPORT MEMBERS OR USE HEXAGON-HEAD BOLTS TO PRESENT NEAT APPEARANCE WITH ADEQUATE STRENGTH AND RIGIDITY. USE SPRING LOCK WASHERS UNDER ALL NUTS.

INSTALL SURFACE-MOUNTED CABINETS AND PANELBOARDS WITH MINIMUM OF FOUR ANCHORS IN WET AND DAMP LOCATIONS USE STEEL CHANNEL SUPPORTS TO STAND CABINETS AND PANELBOARDS 1 INCH (25 PART 1 GENERAL

E. USE SHEET METAL CHANNEL TO BRIDGE STUDS ABOVE AND BELOW CABINETS AND PANELBOARDS RECESSED IN HOLLOW PARTITIONS.

ELECTRICAL IDENTIFICATION

1.01 SECTION INCLUDES A. NAMEPLATES AND LABELS. B. WIRE AND CABLE MARKERS.

> CONDUIT MARKERS. FIELD-PAINTED IDENTIFICATION OF CONDUIT.

A. MANUFACTURER'S INSTRUCTIONS: INDICATE APPLICATION CONDITIONS AND LIMITATIONS OF USE STIPULATED BY

PRODUCT TESTING AGENCY SPECIFIED UNDER QUALITY ASSURANCE. INCLUDE INSTRUCTIONS FOR STORAGE, HANDLING, PROTECTION, EXAMINATION, PREPARATION AND INSTALLATION OF PRODUCT.

A. CONFORM TO REQUIREMENTS OF NFPA 70.

2.01 MANUFACTURERS PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR PURPOSE SPECIFIED A. COOPER WIRING DEVICES: B. GE INDUSTRIAL C. LEVITON MANUFACTURING, INC:

PART 2 PRODUCTS 2.01 NAMEPLATES AND LABELS

A. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND. B. LOCATIONS 1. EACH ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT ENCLOSURE.

A. LOCATION: FURNISH MARKERS FOR EACH CONDUIT LONGER THAN 6 FEET (2 M). B. SPACING: 20 FEET (6 M) ON CENTER.

2.03 UNDERGROUND WARNING TAPE A. DESCRIPTION: 4 INCH (100 MM) WIDE PLASTIC TAPE, DETECTABLE TYPE COLORED RED WITH SUITABLE WARNING LEGEND DESCRIBING BURIED ELECTRICAL LINES.

PART 3 EXECUTION 3.01 INSTALLATION

A. INSTALL NAMEPLATES AND LABELS PARALLEL TO EQUIPMENT LINES B. SECURE NAMEPLATES TO EQUIPMENT FRONT USING SCREWS.

C. SECURE NAMEPLATES TO INSIDE SURFACE OF DOOR ON PANELBOARD THAT IS RECESSED IN FINISHED LOCATIONS. D. IDENTIFY UNDERGROUND CONDUITS USING UNDERGROUND WARNING TAPE. INSTALL ONE TAPE PER TRENCH AT 3

INCHES (75 MM) BELOW FINISHED GRADE.

1.01 SECTION INCLUDES A. CONDUIT, FITTINGS AND CONDUIT BODIES.

A. PRODUCT DATA: PROVIDE FOR METALLIC CONDUIT, FLEXIBLE METAL CONDUIT, LIQUIDTIGHT FLEXIBLE METAL CONDUIT, METALLIC TUBING, NONMETALLIC CONDUIT, FLEXIBLE NONMETALLIC CONDUIT, NONMETALLIC TUBING, FITTINGS, AND CONDUIT BODIES.

B. PROJECT RECORD DOCUMENTS: ACCURATELY RECORD ACTUAL ROUTING OF CONDUITS LARGER THAN 2 INCHES (51 3.03 INSTALLATION 1.03 QUALITY ASSURANCE CONFORM TO REQUIREMENTS OF NFPA 70.

B. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR PURPOSE SPECIFIED

1.04 DELIVERY, STORAGE, AND HANDLING A. ACCEPT CONDUIT ON SITE. INSPECT FOR DAMAGE. B. PROTECT CONDUIT FROM CORROSION AND ENTRANCE OF DEBRIS BY STORING ABOVE GRADE. PROVIDE APPROPRIATE COVERING.

PART 2 PRODUCTS 2.01 CONDUIT REQUIREMENTS

A. CONDUIT SIZE: COMPLY WITH NFPA 70.

1. MINIMUM SIZE: 3/4 INCH (13 MM) UNLESS OTHERWISE SPECIFIED. B. UNDERGROUND INSTALLATIONS: 1. MORE THAN 5 FEET (1.5 METERS) FROM FOUNDATION WALL: USE RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, OR PLASTIC COATED CONDUIT.

2. WITHIN 5 FEET (1.5 METERS) FROM FOUNDATION WALL: USE RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, PLASTIC COATED CONDUIT, OR THICKWALL NONMETALLIC CONDUIT. 3. IN OR UNDER SLAB ON GRADE: USE RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, OR PLASTIC COATED 4. MINIMUM SIZE: 3/4 INCH (19 MM).

C. OUTDOOR LOCATIONS ABOVE GRADE: USE RIGID STEEL CONDUIT, RIGID ALUMINUM CONDUIT, INTERMEDIATE METAL CONDUIT, OR ELECTRICAL METALLIC TUBING. D. IN SLAB ABOVE GRADE: 1. USE RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, ELECTRICAL METALLIC TUBING, OR THICKWALL NONMETALLIC CONDUIT 2. MAXIMUM SIZE CONDUIT IN SLAB: 3/4 INCH (19 MM); 1/2 INCH (13 MM) FOR CONDUITS CROSSING EACH OTHER.`

A. CLEAN EXPOSED SURFACES TO REMOVE SPLATTERS AND RESTORE FINISH WET AND DAMP LOCATIONS: USE RIGID STEEL CONDUIT, RIGID ALUMINUM CONDUIT, INTERMEDIATE METAL CONDUIT, ELECTRICAL METALLIC TUBING, THICKWALL NONMETALLIC CONDUIT, OR NONMETALLIC TUBING.

. VERIFY THAT EACH RECEPTACLE DEVICE IS ENERGIZED.

E. TEST EACH GFCI RECEPTACLE DEVICE FOR PROPER OPERATION

A. ADJUST DEVICES AND WALL PLATES TO BE FLUSH AND LEVEL.

D. TEST EACH RECEPTACLE DEVICE FOR PROPER POLARITY

A. INSPECT EACH WIRING DEVICE FOR DEFECTS.

G. INSTALL DISCONNECT SWITCHES, CONTROLLERS, CONTROL STATIONS, AND CONTROL DEVICES TO COMPLETE I. INSTALL INTERCONNECTING CONDUIT AND WIRING BETWEEN DEVICES AND EQUIPMENT TO COMPLETE EQUIPMENT

A. SHOP DRAWINGS: INDICATE DIMENSIONS AND COMPONENTS FOR EACH LUMINAIRE THAT IS NOT A STANDARD PRODUCT OF THE MANUFACTURER. B. PRODUCT DATA: PROVIDE DIMENSIONS, RATINGS, AND PERFORMANCE DATA.

R. PROVIDE SUITABLE FITTINGS TO ACCOMMODATE EXPANSION AND DEFLECTION WHERE CONDUIT CROSSES SEISMIC. 1.03 QUALITY ASSURANCE

A. CONFORM TO REQUIREMENTS OF NFPA 70 AND NFPA 101 B. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.

C. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE

PART 2 PRODUCTS

A. FURNISH PRODUCTS AS INDICATED IN SCHEDULE INCLUDED ON THE DRAWINGS.

E. LIGHTING FIXTURES MOUNTED IN OR ON CEILING SHALL BE SUPPORTED FROM STRUCTURE VIA 12 GAUGE STEEL WIRE.2.02 BALLASTS AND CONTROL UNITS PROVIDE A MINIMUM OF FOUR WIRES, ONE ATTACHED TO EACH CORNER OF LAY-IN FIXTURES. RECESSED DOWNLIGHT A. FLUORESCENT BALLASTS: ANSI C82.1, HIGH POWER FACTOR TYPE ELECTROMAGNETIC BALLAST, SUITABLE FOR LAMPS FIXTURES SHALL BE SUPPORTED THE SAME. DO NOT SUPPORT RACEWAY OR FIXTURES FROM CEILING GRID OR DUCT 1. VOLTAGE: AS INDICATED ON LIGHTING FIXTURE SCHEDULE

2.03 LAMPS A. MANUFACTURERS: 1. GE LIGHTING MODEL

2. PHILIPS LIGHTING CO

SPECIFIED AND INDICATED.

A. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS AND MOUNTING HEIGHTS OF OUTLET, PULL, AND

3.01 INSTALLATION A. INSTALL FIXTURES SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 500 (COMMERCIAL

B. INSTALL SUSPENDED LUMINAIRES AND EXIT SIGNS USING PENDANTS SUPPORTED FROM SWIVEL HANGERS. PROVIDE PENDANT LENGTH REQUIRED TO SUSPEND LUMINAIRE AT INDICATED HEIGHT. SUPPORT LUMINAIRES LARGER THAN 2 X 4 FOOT (600 X 1200 MM) SIZE INDEPENDENT OF CEILING FRAMING. D. LOCATE RECESSED CEILING LUMINAIRES AS INDICATED ON REFLECTED CEILING PLAN. B. INSTALL IN LOCATIONS AS SHOWN ON DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT

INSTALL RECESSED LUMINAIRES USING ACCESSORIES AND FIRESTOPPING MATERIALS TO MEET REGULATORY REOUIREMENTS FOR FIRE RATING. F. INSTALL CLIPS TO SECURE RECESSED GRID-SUPPORTED LUMINAIRES IN PLACE.

G. INSTALL ACCESSORIES FURNISHED WITH EACH LUMINAIRE. H. CONNECT LUMINAIRES AND EXIT SIGNS TO BRANCH CIRCUIT OUTLETS PROVIDED UNDER SECTION 16138 USING FLEXIBLE CONDUIT.

I. MAKE WIRING CONNECTIONS TO BRANCH CIRCUIT USING BUILDING WIRE WITH INSULATION SUITABLE FOR TEMPERATURE CONDITIONS WITHIN LUMINAIRE BOND PRODUCTS AND METAL ACCESSORIES TO BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR. K. INSTALL SPECIFIED LAMPS IN EACH EMERGENCY LIGHTING UNIT, EXIT SIGN, AND LUMINAIRE.

3.02 FIELD OUALITY CONTROL E. OPERATE EACH LUMINAIRE AFTER INSTALLATION AND CONNECTION. INSPECT FOR PROPER CONNECTION AND OPERATION.

A. CLEAN ELECTRICAL PARTS TO REMOVE CONDUCTIVE AND DELETERIOUS MATERIALS B. REMOVE DIRT AND DEBRIS FROM ENCLOSURES.

C. CLEAN FINISHES AND TOUCH UP DAMAGE. 3.04 DEMONSTRATION AND INSTRUCTIONS A. DEMONSTRATE LUMINAIRE OPERATION FOR MINIMUM OF TWO HOURS.

3.05 PROTECTION B. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS SPECIFIED IN THIS A. RELAMP LUMINAIRES THAT HAVE FAILED LAMPS AT SUBSTANTIAL COMPLETION

C. PRODUCTS: PROVIDE PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR 3.06 SCHEDULE - SEE DRAWINGS DISCONNECTS

2.1. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE IN NEMA 1 ENCLOSURES, UNLESS OTHERWISE NOTED, FUSED OR NON-FUSED AS INDICATED. SWITCHES SHALL HAVE REJECTION-TYPE FUSE CLIPS. SWITCHES SHALL BE BY EATON,

SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL. WHERE FED FROM A LOAD CENTER, GENERAL-DUTY SWITCHES SHALL BE PERMITTED 2.2. FUSES LESS THAN 60A SHALL BE CLASS RK5, DUAL-ELEMENT, TIME-DELAY WITH INDICATION

2.3. FUSES GREATER THAN 60A SHALL BE CLASS J, DUAL-ELEMENT, TIME-DELAY WITH INDICATION.

PANELBOARDS

1.01 PANELBOARDS SHALL BE PROVIDED AS MANUFACTURED BY EATON, SQUARE-D, GENERAL ELECTRIC, SIEMENS, OR

APPROVED EQUAL. ALL NEW EQUIPMENT FOR THE PROJECT SHALL BE BY THE SAME MANUFACTURER. LOAD CENTER TYPE PANELBOARDS SHALL BE USED WHERE THE PANELBOARD SERVES A DWELLING UNIT ONLY. 1.02 ALL BUSSING, INCLUDING NEUTRAL AND GROUND, SHALL BE COPPER 1.03 ALL BREAKERS SHALL BE AUTOMATIC THERMAL-MAGNETIC TYPE MOLDED CASE BOLT-ON TYPE, CALIBRATED FOR 40 DEGREE C, OR AMBIENT COMPENSATION, UNLESS OTHERWISE NOTED.

1.04 PANELS SHALL BE FULLY RATED (AIC). NO SERIES AIC RATINGS ARE ALLOWED. 1.05 PANELS SHALL HAVE FULL SIZE EQUIPMENT GROUNDING BARS AND NEUTRAL BARS, EXCEPT WHERE INDICATED TO BE 1.06 ALL PANELBOARD AND BREAKER LUGS SHALL BE SIZED AND RATED PER THE CONDUCTOR SIZE AND MATERIAL.

1.07 LIGHTING AND APPLIANCE PANELS (100A-600A) SHALL HAVE FRONT ACCESSIBLE HINGED DOOR-IN-DOOR COVERS WITH DEAD FRONT, SHALL BE 20" WIDE MINIMUM WITH MINIMUM 4" WIDE WIRING GUTTERS. 1.08 DISTRIBUTION PANELS (600A-1200A) SHALL HAVE FRONT ACCESSIBLE DEAD FRONT COVERS 1.09 PROVIDE HANDLE LOCK-ON DEVICES FOR ALL CIRCUIT BREAKERS CONNECTED TO EMERGENCY, EXIT, NIGHT LIGHTING,

FIRE ALARM, TELEPHONE BOARDS, AND SECURITY SYSTEMS. 1.10 BREAKERS USED FOR SWITCHING SHALL BE SWITCHING DUTY (SWD) RATED. 1.11 BREAKERS USED FOR HEATING, AIR-CONDITIONING AND/OR REFRIGERATION SHALL BE HACR RATED. 1.12 GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL SHALL BE PROVIDED IN ALL LOCATIONS PER

NEC 210.8. WHERE A DEVICE LOCATION IS NOT ACCESSIBLE, THE GFCI PROTECTION SHALL BE PROVIDED WITH THE 1.13 ALL OVERCURRENT DEVICES WHICH COMPRISE THE EMERGENCY SYSTEM OR LEGALLY REQUIRED STANDBY SYSTEM SHALL BE SELECTIVELY COORDINATED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE MANUFACTURER DOCUMENTATION INDICATING COMPLIANCE WITH THE SELECTIVE COORDINATION REQUIREMENTS PER THE NEC.

FIRE STOPPING

1.01 ALL PENETRATIONS OF RATED ASSEMBLIES SHALL BE SEALED WITH RATED MATERIALS MEETING ASTM E-814. 1.02 PROVIDE FIRESTOPPING DEVICE(S) OR SYSTEM(S) WHICH HAVE BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814. INSTALL THE DEVICE(S) OR SYSTEM(S) IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE THE APPROPRIATE DEVICE(S) OR SYSTEM(S) WITH AN 'F' RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING

1.03 DEVICE(S) AND/OR SYSTEM(S) SHALL BE BY HILTI, 3M OR EQUIVALENT.

LOCATIONS WITH THE MECHANICAL CONTRACTOR.

ELECTRICAL COORDINATION WITH OTHER TRADES 1.01 THE ELECTRICAL CONTRACTOR SHALL CONNECT AND/OR PROVIDE FINAL CONNECTIONS TO ALL EQUIPMENT SUPPLIED BY OTHERS APPLICABLE TO THE PROJECT, INCLUDING BUT NOT LIMITED TO, MECHANICAL, PLUMBING, FIRE PROTECTION AND SUPPRESSION, OWNER FURNISHED, KITCHEN, LABORATORY, ETC. UNLESS OTHERWISE NOTED. 1.02 THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONNECTIONS PRIOR TO ROUGH-IN USING APPROVED CATALOG

SHEETS AND SHOP DRAWINGS THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANUAL MOTOR STARTER SWITCHES, DISCONNECT C. INSTALL CONVENIENCE RECEPTACLE 6 INCHES (150 MM) ABOVE COUNTER UNLESS OTHERWISE NOTED ON DRAWINGS. $^{1.03}$ SWITCHES, RECEPTACLES, ETC. TO MECHANICAL AND PLUMBING EQUIPMENT. ALL STARTERS, OTHER THAN MANUAL STARTER SWITCHES, SHALL BE PROVIDED BY OTHERS, BUT INSTALLED BY THE ELECTRICAL CONTRACTOR. E. INSTALL TELEPHONE JACK FOR SIDE-REACH WALL TELEPHONE TO POSITION TOP OF TELEPHONE AT 54 INCHES (1.4 M)

1.04

ALL DISCONNECT SWITCHES AND FUSE SIZES SHALL BE COORDINATED WITH SHOP DRAWINGS PRIOR TO ORDERING OR INSTALLING. ANY EQUIPMENT INSTALLED INCORRECTLY BECAUSE OF LACK OF COORDINATION WILL BE REMOVED AND

F. INSTALL TELEPHONE JACK FOR FORWARD-REACH WALL TELEPHONE TO POSITION TOP OF TELEPHONE AT 48 INCHES INSTALLED CORRECTLY AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR. 1.05 THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT RUNS AND LIGHT FIXTURE LOCATIONS ABOVE THE CEILING WITH OTHER TRADES PRIOR TO INSTALLATION. 1.06 ALL DUCT SMOKE DETECTORS SHALL BE PROVIDED AND CONNECTED BY THE ELECTRICAL CONTRACTOR, BUT INSTALLED

> BY THE MECHANICAL CONTRACTOR. 1.07 THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY OUTLETS FOR HEAT TAPE CONNECTIONS FOR MECHANICAL SYSTEMS. PROVIDE CLASS B (30mA) GFCI PROTECTION ON THE BREAKER SUPPLYING THE HEAT TAPE. 1.08 THE ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AT EACH HVAC UNIT HAVING A CONTROLS POWER SUPPLY. CIRCUIT(S) SHALL BE DEDICATED 20A SERVING A MAXIMUM OF 10 HVAC UNITS PER CIRCUIT. COORDINATE ALL

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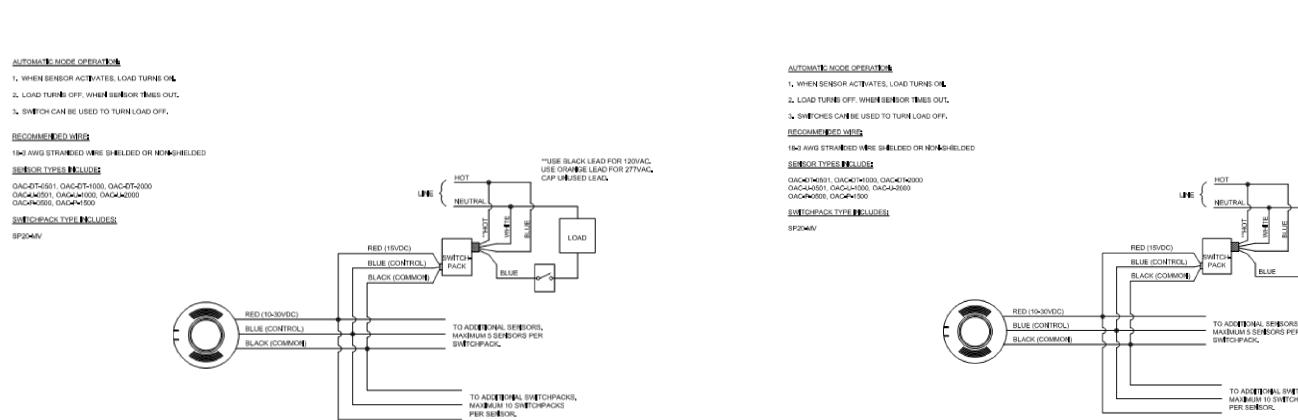
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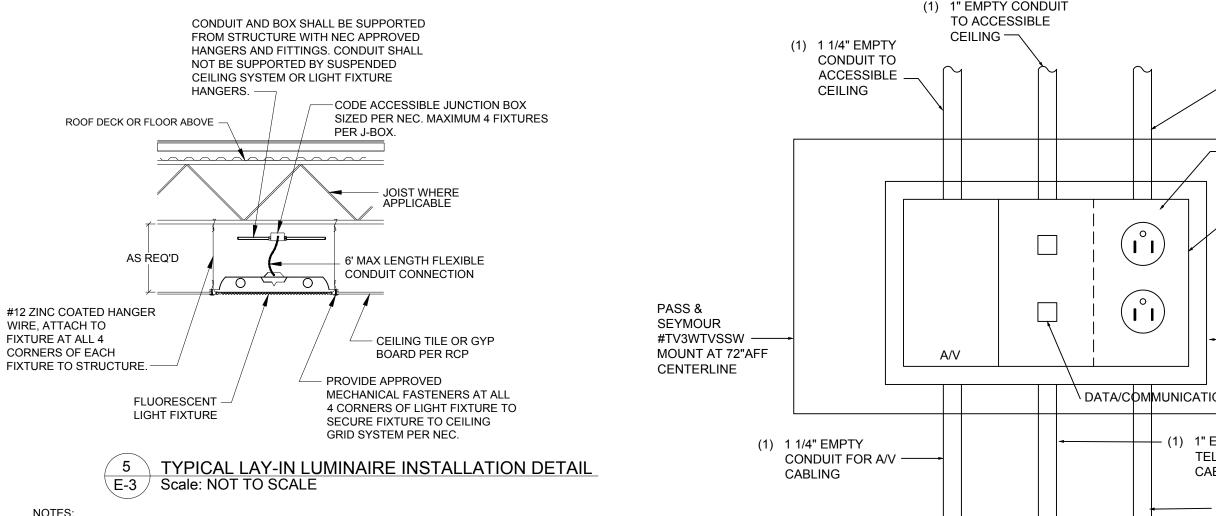
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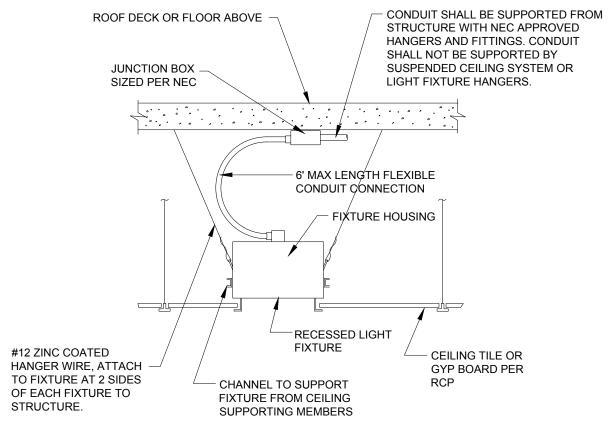
ELECTRICAL DETAILS



1 STANDARD SWITCHING WITH CEILING MOUNTED OCCUPANCY SENSOR DETAIL Scale: NOT TO SCALE

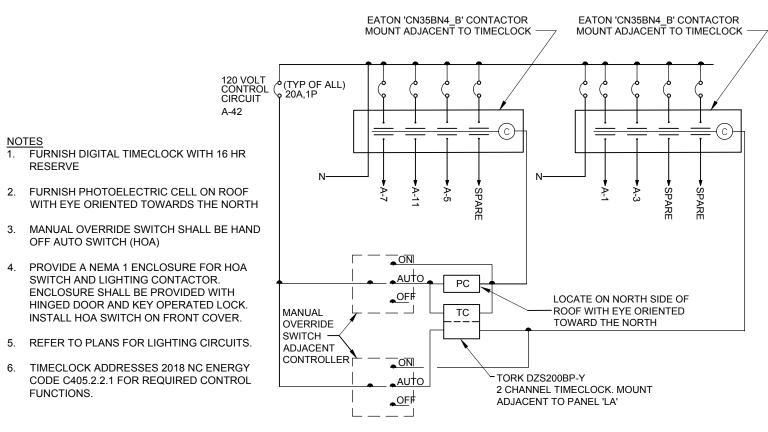


1. WHERE ROOF DECKING IS THE IS THE ALLOWABLE SUPPORT STRUCTURE, AND PATHWAY SYSTEM IS NOT IMC OR RMC, THE MINIMUM DISTANCE FROM ROOF DECKING SHALL BE 1.5" FOR ALL BOXES AND



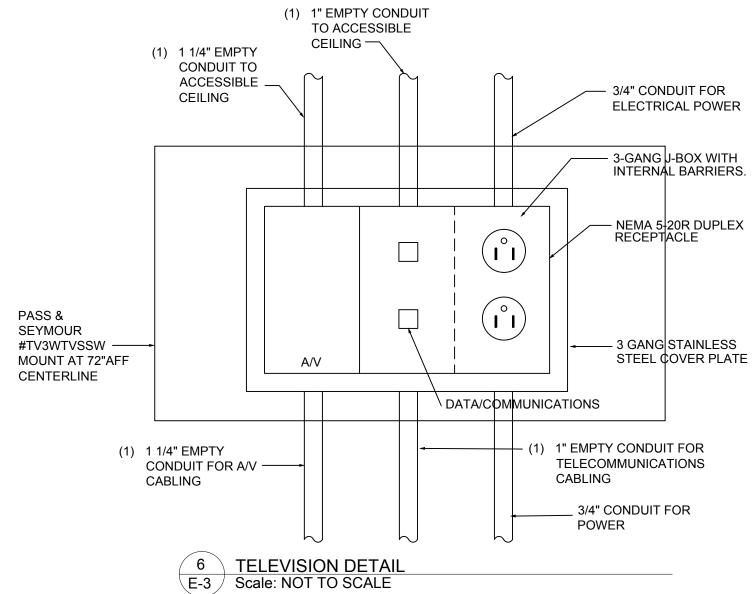
8 TYPICAL DOWNLIGHT LUMINAIRE INSTALLATION DETAIL Scale: NOT TO SCALE

1. WHERE ROOF DECKING IS THE IS THE ALLOWABLE SUPPORT STRUCTURE, AND PATHWAY SYSTEM IS NOT IMC OR RMC, THE MINIMUM DISTANCE FROM ROOF DECKING SHALL BE 1.5" FOR ALL BOXES AND CONDUIT.



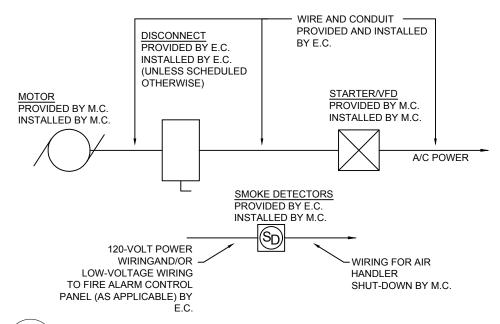
RESERVE

LIGHTING TIMECLOCK / PHOTOCELL DETAIL Scale: NOT TO SCALE

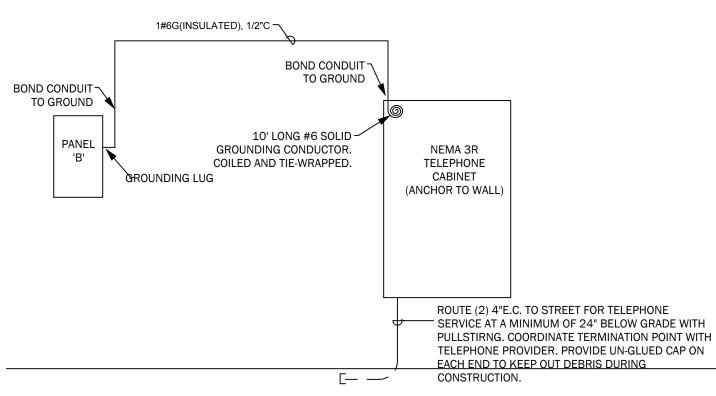


2 THREE-WAY SWITCHING WITH CEILING MOUNTED OCCUPANCY SENSOR DETAIL Scale: NOT TO SCALE

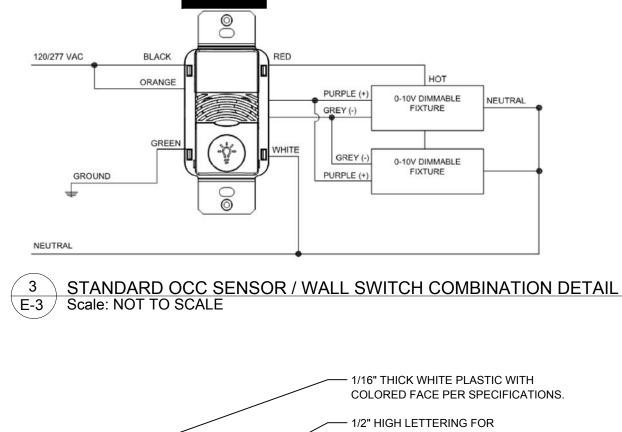
1. MOUNT CENTER OF DEVICE AT 6'-0"AFF UNLESS OTHERWISE NOTED. 2. ALL CONDUITS SHALL BE INSTALLED WITH BUSHINGS AND PULLSTRINGS.

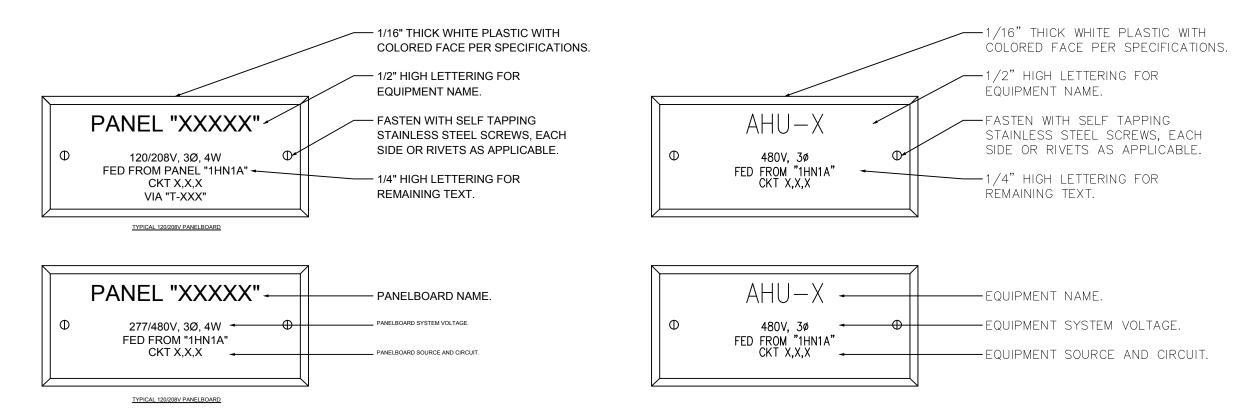


9 MECHANICAL / ELECTRICAL COORDINATION E-3 Scale: NOT TO SCALE









PANELBOARD NAMEPLATES

5 ALL LIGHTS SHALL BE LED

EQUIPMENT NAMEPLATES

Wiring Diagram

4 STANDARD SWITCHING DETAIL E-3 Scale: NOT TO SCALE



TYPE	DESCRIPTION	LUMENS	TOTAL FIXTURE WATTS	COLOR TEMP	BALLAST/ DRIVER	VOLTAGE	MOUNTING	MANUFACTURER/MODEL	NOTES
A	2X4 LED ACRYLIC LENSED LAY-IN RECESSED TROFFER	4800	38	3500K	LED	MVOLT	LAY-IN	LITHONIA 2BLT4-48L-ADSM-MVOLT-GZ10- LP835	DIFFUSER TO BE SELECTED BY ARCHITECT. 0- 10V DIMMING TO 10% MIN.
В	2X2 LED ACRYLIC LENSED LAY-IN RECESSED TROFFER	3300	26	3500K	LED	MVOLT	LAY-IN	LITHONIA 2BLT2-33L-ADSM-MVOLT-GZ10- LP835	DIFFUSER TO BE SELECTED BY ARCHITECT. 0- 10V DIMMING TO 10% MIN.
С	6" RECESSED LED DOWNLIGHT	900	11.5	3500K	LED	MVOLT	LAY-IN	JUNO IC22LED-G4-09LM-35K-90CRI-MVOLT ZT10	IC RATED. BAFFLE TRIM. 0-10V DIMMING TO 10% MIN.
D	6" EXTERIOR RECESSED LED DOWNLIGHT	1000	13	3500K	LED	MVOLT	LAY-IN	LITHONIA LDN6- 35/10/LO6/AR/LSS/MVOLT-GZ10	SEMI-SPECULAR REFLECTOR. PROVIDE WITH COLD WEATHER PACKAGE. NO DIMMING.
DE	6" EXTERIOR RECESSED LED EMERGENCY DOWNLIGHT	1000	13	3500К	LED	MVOLT	LAY-IN	LITHONIA LDN6- 35/10/LO6/AR/LSS/MVOLT-GZ10- E10WCPR	SEMI-SPECULAR REFLECTOR. PROVIDE WITH COLD WEATHER PACKAGE. REMOTE EMERGENCY BATTERY PACK. NO DIMMING.LOCATE REMOTE TEST SWITCH IN CEILING JUST INSIDE BUILDING FROM LIGHT FIXTURE.
F	TRACK / TRACK HEAD	1000	10	3500К	LED	MVOLT	TRACK	TRACK HEAD: JUNO R600L-35K-90CRI-UNF- SL TRACK: JUNO T4 TRAC-MASTER TRACK	UNIVERSAL DISTRIBUTION. SILVER FINISH. 4' TRACK. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. 0-10 DIMMING TO 10% MIN.
G	4' SURFACE MOUNTED LED WRAPAROUND LIGHT	3000	25.6	3500K	LED	MVOLT	SURFACE	LITHONIA LBL4-3000L-80CRI-35K-NODIM- MVOLT	NO DIMMING. SURFACE MOUNT
K	24" LED VANITY LIGHT	2762	23	3500K	LED	MVOLT	WALL	BROWNLEE LIGHTING 5176-L24-BN-F23LED	BRUSHED NICKEL FINISH. NO DIMMING.
L	2' SURFACE MOUNTED LED WRAPAROUND LIGHT	2000	20	3500K	LED	MVOLT	SURFACE	LITHONIA LBL2-3000L-80CRI-35K-NODIM- MVOLT	NO DIMMING. SURFACE MOUNT
S1A	DUAL HEAD LED SITE LIGHT	10000	85	4000K	LED	MVOLT	POLE	BEACON - VIPER - STRIKE - AREA LIGHT - VP-ST-1-36L-85-4K8-3-UNV-AAU-BLT-PC OR PREAPPROVED EQUAL	
х	EXIT LIGHT WITH BATTERY BACKUP		1.5		LED	MVOLT	CEILING	LITHONIA LQM-S-3-R-120/277-EL N	HOUSING COLOR BY ARCHITECT, 90 MIN. BATTERY PACK.
Y	"BUG EYE" EMERGENCY EGRESS FIXTURE	640	6.6		LED	MVOLT	CEILING	LITHONIA ELM4L SERIES	HOUSING COLOR BY ARCHITECT, 90 MIN. BATTERY PACK.
	,			t:		SCHEDULE	NOTES	!	
1	SUBMITTAL SHEETS SHALL BE SUBMITTED	WITH FIXTUR	RE SUBMITTALS	S.			-	BATTERY BALLASTS SHALL PROVIDE 90 MINUTES	OF BATTERY BACKUP AND BE EQUIPPED WITH
2	NO SUBSTITUTIONS ARE ALLOWED DUE TO CONSTRUCTION SCHEDULE AT ANY TIME I			OF DELIVERY	DATES AND		6	INTEGRAL INDICATOR LIGHT. FLUORESCENT LIGHTS THAT HAVE DOUBLE ENDE	
3	ALL EXPEDITED COSTS SHALL BE THE RES	PONSIBILITY	OF THE CONTR	ACTOR.			7	SERVICED IN PLACE SHALL MEET THE REQUIREM	
4	THE CONTRACTOR SHALL VERIFY THE LEATIME OF THE SUBMITTAL ISSUANCE. AND DELIVERY CHALLENGES.						8	EXIT AND EMERGENCY LIGHTING FIXTURES SHALLOCAL LIGHTING CIRCUIT (UNLESS OTHERWISE TESTING MEANS.	L BE CIRCUITED TO AN UNSWITCHED LEG OF A NOTED). INCLUDE 90 MINUTE BATTERY BACKUP AN
	ALL LIGHTS SHALL BELED								

FIRST FLOOR PLAN - LIGHTING

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

GENERAL NOTES:

(APPLIES TO 1/THIS DRAWING ONLY)

- 1. CONNECT ALL TYPE 'X', AND 'Y' LIGHTS TO NEAREST LIGHTING CIRCUIT SERVING THIS AREA AHEAD OF LOCAL SWITCHING.
- 2. COORDINATE EXACT LOCATION OF ALL DEVICES WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.
- 3. REFER TO E-6 FOR ATTIC PLAN.

LEGEND NOTES:

(APPLIES TO 1/THIS DRAWING ONLY)

1) ROUTE CIRCUIT THROUGH TIMELOCK. 2 ROUTE CIRCUIT THROUGH PHOTOCELL.

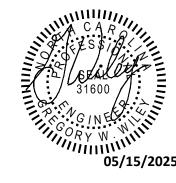
(3) PROVIDE PLACARD AT EACH SWITCH INDICATING AREA CONTROLLED FOR THIS LIGHT SWITCH.

(4) INTERLOCK EXHAUST FAN WITH LIGHTS IN THIS ROOM. EXHAUST FAN SHALL BE CONTROLLED FROM OCCUPANCY SENSOR THAT SERVES THE LIGHTS IN THIS ROOM.

(5) COORDINATE EXACT FIXTURE LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT.



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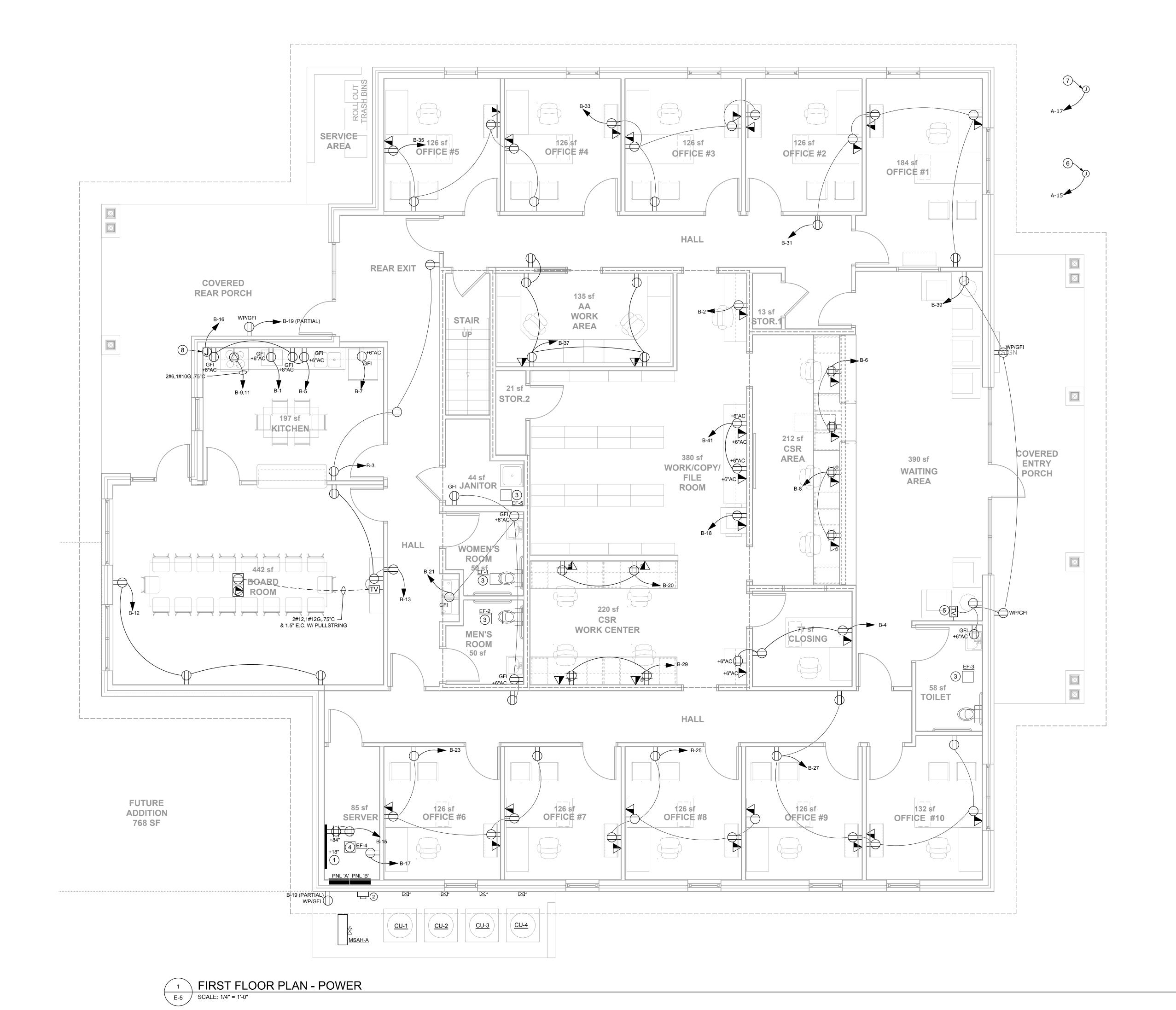
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FIRST FLOOR PLAN - LIGHTING

FIRST FLOOR PLAN
- POWER



(APPLIES TO ALL DRAWINGS ON THIS SHEET)

GENERAL NOTES:

1 COORDINATE EVACT LOCATION FOR DEVI

 COORDINATE EXACT LOCATION FOR DEVICES WITH ARCHITECTURAL PLANS AND OWNER PRIOR TO ROUGH-IN.

2. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE ON DRAWING E0.1 FOR ELECTRICAL CONNECTIONS FOR ALL MECHANICAL EQUIPMENT SHOWN ON THIS DRAWING.

3. REFER TO DRAWING E-6 FOR ATTIC PLAN.

4. CONNECT ALL TYPE 'X', AND 'Y' LIGHTS TO NEAREST LIGHTING CIRCUIT SERVING THIS AREA AHEAD OF LOCAL SWITCHING.

LEGEND NOTES:

(APPLIES TO ALL DRAWINGS ON THIS SHEET)

(1) PROVIDE FIRE RATED PLYWOOD TELEPHONE BACKBOARD. PROVIDE #6 CU BONDING WIRE TO BUILDING GROUNDING SYSTEM AND (2) 4" CONDUITS FROM THIS LOCATION TO UTILITY DEMARC POINTS. COORDINATE UTILITY DEMARC POINT WITH TELE/DATA PROVIDER PRIOR TO ROUGH-IN.

(2) APPROXIMATE LOCATION OF UTILITY METER. COORDINATE EXACT LOCATION WITH OWNER AND UTILITY POWER PROVIDER PRIOR TO ROUGH-IN.

(3) INTERLOCK EXHAUST FAN WITH LIGHTS IN THIS ROOM. EXHAUST FAN SHALL BE CONTROLLED FROM OCCUPANCY SENSOR THAT SERVES THE LIGHTS IN THIS ROOM.

SEE MECHANICAL DRAWINGS FOR EXHAUST FAN CONTROLLING METHODS FOR THIS UNIT.

 $\ensuremath{\bigcirc}$ COORDINATE EXACT TV LOCATION WITH ARCHITECT PRIOR TO ROUGH IN.

6 PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO MONUMENT SIGNAGE. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.

7 PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO HEAT TAPE FOR BACKFLOW PREVENTER ENCLOSURE. COORDINATE EXACT LOCATION OF BACKFLOW PREVENTER WITH ARCHITECT AND CIVIL PLANS PRIOR TO INSTALL. SEE CIVIL SHEET C601.

(8) PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO RANGE
HOOD. COORDINATE LOCATION WITH MANUFACTURER PRIOR TO
ROLIGH-IN

GENERAL NOTES:

(APPLIES TO 1/THIS DRAWING ONLY)

- CONNECT ALL TYPE 'X', AND 'Y' LIGHTS TO NEAREST LIGHTING CIRCUIT SERVING THIS AREA AHEAD OF LOCAL SWITCHING.
- COORDINATE EXACT LOCATION OF ALL DEVICES WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.
- REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE ON DRAWING E1 FOR ELECTRICAL CONNECTIONS FOR ALL MECHANICAL EQUIPMENT SHOWN ON THIS DRAWING.

KEYED NOTES:

(APPLIES TO ALL DRAWINGS ON THIS SHEET)

- 1 PROVIDE AND INSTALL WEATHER PROOF JUNCTION BOX FOR GABLE SIGN. COORDINATE EXACT LOCATION WITH ARCHITECT.
- 2) ROUTE CIRCUIT THROUGH TIMECLOCK.





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E-6

ATTIC FLOOR PLAN -