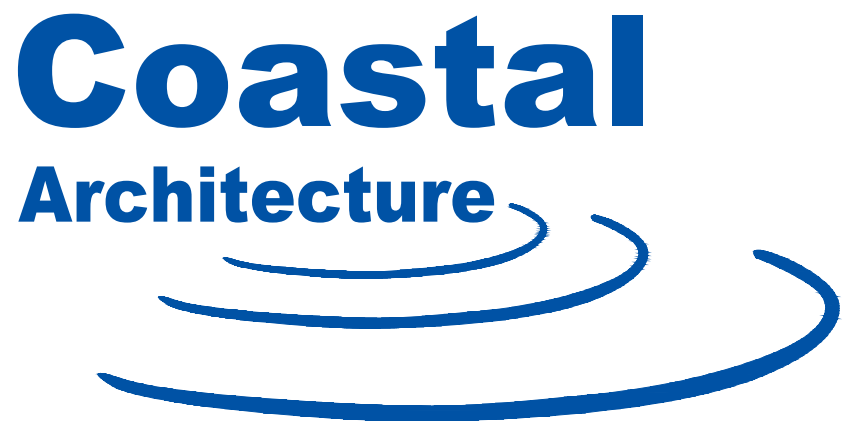


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BELL FORK SHOPS

JACKSONVILLE, NORTH CAROLINA

DRAWING LIST

CS-1	COVER SHEET
G-1	GENERAL DATA
G-2	LIFE SAFETY PLAN
G-3	U.L. DETAILS
A-1A	FLOOR PLAN "A"
A-1B	FLOOR PLAN "B"
A-2	ENLARGED FLOOR PLAN
A-3	NOT USED
A-4	DOOR AND WINDOW SCHEDULE
A-5	ELEVATIONS
A-5.1	ELEVATIONS
A-6	BUILDING SECTIONS
A-7	BUILDING SECTIONS
S-1.1	FEMB FOUNDATION PLAN
S-4.1	FOUNDATION DETAILS
P-1	PLUMBING SPECIFICATIONS
P-2	DWV PLAN - SIDE A
P-2.1	DWV PLAN - SIDE B
P-3	WATER PLAN - SIDE A
P-3.1	WATER PLAN - SIDE B
P-4	NATURAL GAS PLAN - SIDE A
P-4.1	NATURAL GAS PLAN - SIDE B
M-1	HVAC SCHEDULES AND NOTES
M-2	HVAC PLAN - SIDE A
M-2.1	HVAC PLAN - SIDE B
M-3	HVAC SPECS AND DETAILS
E-1	ELECTRICAL SPECS
E-2	LIGHTING PLAN - SIDE A
E-2.1	LIGHTING PLAN - SIDE B
E-3	POWER PLAN - SIDE A
E-3.1	POWER PLAN - SIDE B
E-4	PANELS AND RISERS

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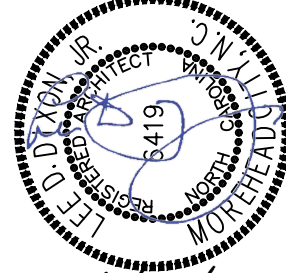
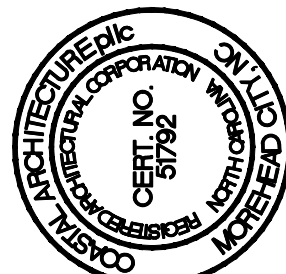
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BELL FORK SHOPS
JACKSONVILLE, NORTH CAROLINA



06/18/25

COVER SHEET

25014

ISSUED: 06/18/2025

DWG BY: CRF

CKD BY: LDD

REVISIONS

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APPENDIX B

2018 BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES)

Name of Project: BELL FORK SHOPS
Address: 823 BELL FORK RD JACKSONVILLE, NC
Owner/Authorized Agent: LLOYD MATTINGLY Phone # (919) 810 0833 E-Mail: lloydmattingly@earthlink.net
Owned by: ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☒ City JACKSONVILLE ☐ County ☐ State

CONTACT:
DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL
Architectural Coastal Architecture Lee Dixon 6419 (252) 241-2121 lee@coastalarchitecture.net
Civil Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com
Electrical Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com
Fire Alarm Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com
Plumbing Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com
Mechanical Burke Design Group Ben Burke 22038 (919) 111-1916 benburke@ncrr.com
Sprinkler-Standpipe ()
Structural FDR ENGINEERS Heath Hendrick 035655 (919) 421-0501 hendrick@fdr-eng.com
Retaining Walls > 5 feet High ()
Other ()

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

2018 NC BUILDING CODE: ☒ New Building ☐ Shell/Core ☐ 1st Time Interior Completions
☐ Addition ☐ Phased Construction—Shell Core
2018 NC EXISTING BUILDING CODE: ☐ Prescriptive ☐ Alteration Level I ☐ Historic Property
(check all that apply) ☐ Repair ☐ Alteration Level II ☐ Change of Use
☐ Chapter 14 ☐ Alteration Level III

CONSTRUCTED: (date) _____ CURRENT USE(S) (Ch. 3): _____
RENOVATED: (date) _____ PROPOSED USE(S) (Ch. 3): BUSINESS - NON SEPARATED MIXED USE
OCCUPANCY CATEGORY (Table 1604.5): Current: _____ Proposed: II

BASIC BUILDING DATA

Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
(check all that apply) ☐ I-B ☒ II-B ☐ III-B ☐ V-B
Sprinklers: ☒ No ☐ Partial ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Primary Fire District: ☐ No ☐ Yes Flood Hazard Area: ☒ No ☐ Yes
Special Inspections Required: ☒ No ☐ Yes

GROSS BUILDING AREA TABLE

Floor	Existing (sq ft)	New (sq ft)	Subtotal
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor	<u>N/A</u>	<u>20,000 SF</u>	
Basement			
TOTAL	<u>N/A</u>	<u>20,000 SF</u>	

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 versus the annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ (If checked, the remainder of this section is not applicable.)

Exempt Building: ☐ Provide code or statutory reference: _____

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance:

Energy Code: ☐ Performance ☒ Prescriptive
ASHRAE 90.1: ☐ Performance ☐ Prescriptive
Other: ☐ Performance (specify source) _____

THERMAL ENVELOPE: (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: METAL ROOF ON FEM-B FURLINS W/ SIMPLE SAVOR INSULATION
U-Value of total assembly: R-38
R-Value of insulation: _____
Skylights in each assembly: N/A
U-Value of skylight: N/A
total square footage of skylights in each assembly: N/A

Exterior Walls (each assembly)
Description of assembly: BRICK/METAL SIDING ON FEM-B GIRTS W/ SIMPLE SAVOR INSULATION
U-Value of total assembly: _____
R-Value of insulation: R-19
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
projection factor: _____
Door R-Values: _____

Walls below grade (each assembly)
Description of assembly: NOT APPLICABLE
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)
Description of assembly: NOT APPLICABLE
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: CONC SLAB ON VAPOR BARRIER ON GRADE
U-Value of total assembly: _____
R-Value of insulation: R-8
Horizontal/vertical requirement: _____
slab heated: _____

ALLOWABLE AREA

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

Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): _____
This separation is not exempt as a Nonseparated Use (see exceptions).
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: ☐ No ☒ Yes Separation: 0 Hr: Exception: 508.3
☒ Non-separated Use (508.3)
Separated Use (508.4) – See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

Select one

Actual Area of Occupancy A

Actual Area of Occupancy B

Allowable Area of Occupancy A

Allowable Area of Occupancy B

15

_____ + _____ = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.24 AREA	(C) AREA FOR FRONTAGE INCREASES 1	(D) ALLOWABLE AREA PER STORY OR INCREASES 1
1	BUSINESS/S-2	10,000	23,000	17,250	40,150
1	BUSINESS/S-2	10,000	23,000	17,250	40,150

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 = 160 (F)
b. Total Building Perimeter = 160 (P)
c. Ratio (F/P) = 1 (F/P)
d. W = Minimum width of public way = 30 (W)
2. Unlimited area applicable under conditions of Section 507.
3. Maximum Building Area = total number of stories in the building × D (maximum 3 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.

STRUCTURAL DESIGN

SEE ALSO FEM-B SHOP DRAWING

DESIGN LOADS:
Importance Factors: Wind (IW) SEE FEM-B
Snow (IS) SEE FEM-B
Seismic (IE) SEE FEM-B
Live Loads: Roof 20 psf
Mezzanine 0 psf
Floor 100 psf
Ground Snow Load: 10 psf
Wind Load: Basic Wind Speed 139 mph (ASCE-7)
Exposure Category C
SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☒ C ☒ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☒ II ☐ III ☐ IV
Spectral Response Acceleration SS % S1
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic structural system (check one) TO BE VERIFIED W/ FEM-B DRAWINGS
☐ Bearing Wall ☐ Dual w/Special Moment Frame
☒ Building Frame ☐ Dual w/Intermediate R/C or Special Steel SEE FEM-B
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ☒ No
LATERAL DESIGN CONTROL: ☐ Earthquake ☒ Wind
SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing Capacity 1500 psf
Pile size, type, and capacity _____

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	<u>55</u>	<u>22'-6"</u>	<u>T-504.3</u>
Building Height in Stories (Table 504.4)	<u>3</u>	<u>1</u>	<u>T-504.3</u>

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

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (feet)	RATING		DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
		REQ'D	PROVIDED (W/ REDUCTION)				
Structural Frame Including columns, girders, trusses	<u>1830</u>	<u>0</u>	<u>0</u>				
Bearing Walls							
Exterior							
North		-	-				
East		-	-				
West		-	-				
South		-	-				
Nonbearing walls and partitions							
Exterior walls							
North	<u>1830</u>	<u>0</u>	<u>0</u>				
East	<u>1830</u>	<u>0</u>	<u>0</u>				
West	<u>1830</u>	<u>0</u>	<u>0</u>				
South	<u>1830</u>	<u>0</u>	<u>0</u>				
Interior walls and partitions							
Floor Construction Including supporting beams and joists							
Floor Ceiling Assembly		<u>0</u>	<u>0</u>				
Columns Supporting Floors		<u>0</u>	<u>0</u>				
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly		<u>0</u>	<u>0</u>				
Columns Supporting Roof		<u>0</u>	<u>0</u>				
Shaft Enclosures—Exit		-	-				
Shaft Enclosures—Other		-	-				
Corridor Separation		<u>0</u>	<u>0</u>				
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation		<u>2 HR</u>	<u>2 HR</u>	<u>G-3</u>	<u>UL U419</u>	-	-
Smoke Barrier Separation		-	-				
Smoke Partition		-	-				
Tenant/Dwelling Unit/ Sleeping Unit Separation		<u>1 HR</u>	<u>1 HR</u>	<u>G-3</u>	<u>UL U419</u>	-	-
Incidental Use Separation		-	-				

* Indicate section number permitting reduction

MECHANICAL DESIGN

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: _____
summer dry bulb: _____
Interior design conditions
winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____
SEE MECHANICAL
heating load: _____
cooling load: _____
Boiler
Size category, if oversized, state reason: _____
Chiller
Size category, if oversized, state reason: _____
List equipment efficiencies: _____

MECHANICAL SPACING CONDITIONING SYSTEM

Unitary
description of unit: _____
heating efficiency: _____
cooling efficiency: _____
size category of unit: _____
Boiler
Size category, if oversized, state reason: _____
Chiller
Size category, if oversized, state reason: _____
List equipment efficiencies: _____

ELECTRICAL DESIGN

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:
Energy Code: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance
Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps 0
ballast type used 0
number of ballasts in fixture
total wattage per fixture
total interior wattage specified versus allowed (whole building or space by space)
total exterior wattage specified versus allowed
Additional Prescriptive Compliance
☐ 506.2.1 More Efficient Mechanical Equipment
☐ 506.2.2 Reduced Lighting Power Density
☐ 506.2.3 Energy Recovery Ventilation Systems
☐ 506.2.4 Higher Efficiency Service Water Heating
☐ 506.2.5 On-Site Supply of Renewable Energy
☐ 506.2.6 Automatic Daylighting Control Systems

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (feet) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.3)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
<u>NEWS 1830</u>	<u>UP NS</u>	<u>NO LIMIT</u>	<u>NO LIMIT</u>
			<u>-</u>

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☒ Yes ☐ No
Exit Signs: ☒ Yes ☐ No
Fire Alarm: ☒ Yes ☐ No
Smoke Detection Systems: ☐ Yes ☒ No
Carbon Monoxide Detection: ☐ Yes ☒ No

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G-2
☒ Fire and/or smoke rated wall locations (Chapter 7)
☒ Assumed and real property line locations (if not on the site plan)
☒ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☒ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☒ Occupant loads for each area
☒ Exit access travel distances (1017)
☒ Common path of travel distances [Tables 1006.2.1 & 1006.3.2(1)]
☒ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☒ Actual occupant load for each exit door
☒ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☒ Location of doors with panic hardware (1010.1.10)
☒ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☒ Location of doors with electromagnetic egress locks (1010.1.9.9)
☒ 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 1-2 (407.5)
☒ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS

SECTION 1107

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
		<u>N/A</u>					

ACCESSIBLE PARKING

SECTION 1106

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE UNITS PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	8' ACCESS AISLE	
TOTAL						

PLUMBING FIXTURE REQUIREMENTS

TABLE 2902.1

USE	WATERCLOSETS			URINALS	LAVATORIES		SHOWERS/TUBS	DRINKING FOUNTAINS	
	Male	Female	Unisex		Male	Female		Regular	Accessible
SPACE	PROVIDED	-	1	-	-	-	1	-	-
	REQ'D	-	1	-	-	-	1	-	-

1215 OCCUPANTS
DRINKING FOUNTAIN NOT REQUIRED

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)
NONE

PROJECT SIGN

NOT TO SCALE

NOTE: SUBMIT SHOP DRAWING FOR COORDINATION OF LETTER HEIGHTS SPECIFIC SIGN COLORS.

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BELL FORK SHOPS
JACKSONVILLE, NORTH CAROLINA

06/18/25

GENERAL DATA

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LEGEND:

- FE

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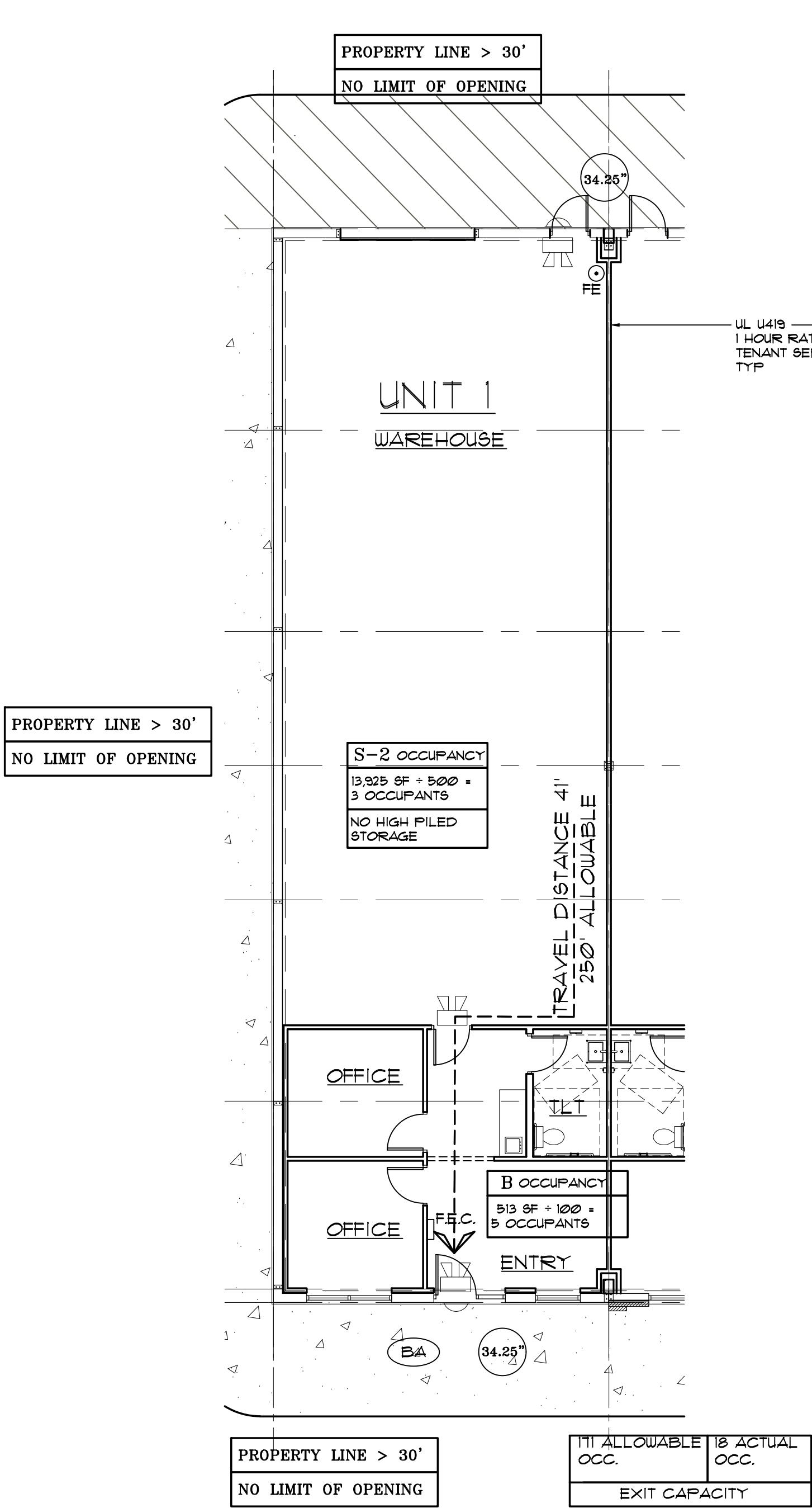
FIRE EXTINGUISHER ON STANDARD HOOK
(VERIFY LOCATION W/ FIRE MARSHALL)
- FE.C.

FIRE EXTINGUISHER AND CABINET
LARGEN SEMI-RECESSED F8 2409-R3
BRUSHED CHROME W/ MP5 FIRE EXTINGUISHER
(VERIFY LOCATION W/ FIRE MARSHALL)
- 2 HR RATED WALL
(U.L. U419 - 2 HOUR)
- 1 HR RATED TENANT SEPARATION WALL
(U.L. U419 - 1 HOUR)
- 34.25"

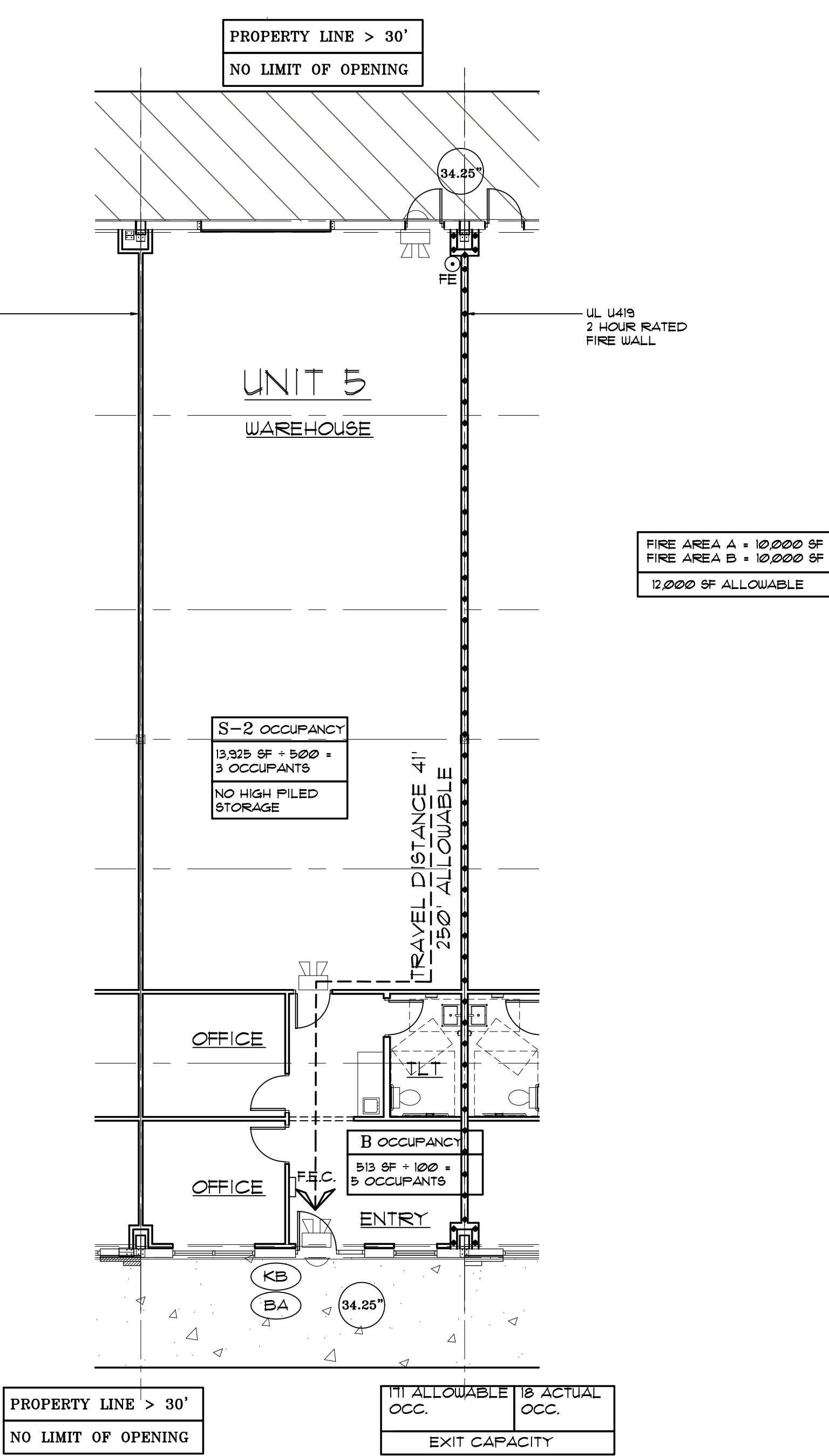
CLEAR EXIT WIDTH
- EXIT/EMERGENCY LIGHT- REFER TO ELECTRICAL DRAWINGS
- EGRESS LIGHT
- KB

FIRE DEPARTMENT KNOX BOX
(VERIFY LOCATION W/ FIRE DEPT.)
PROVIDE ONE K.B. W/ MASTER KEY FOR ALL UNITS
- BA

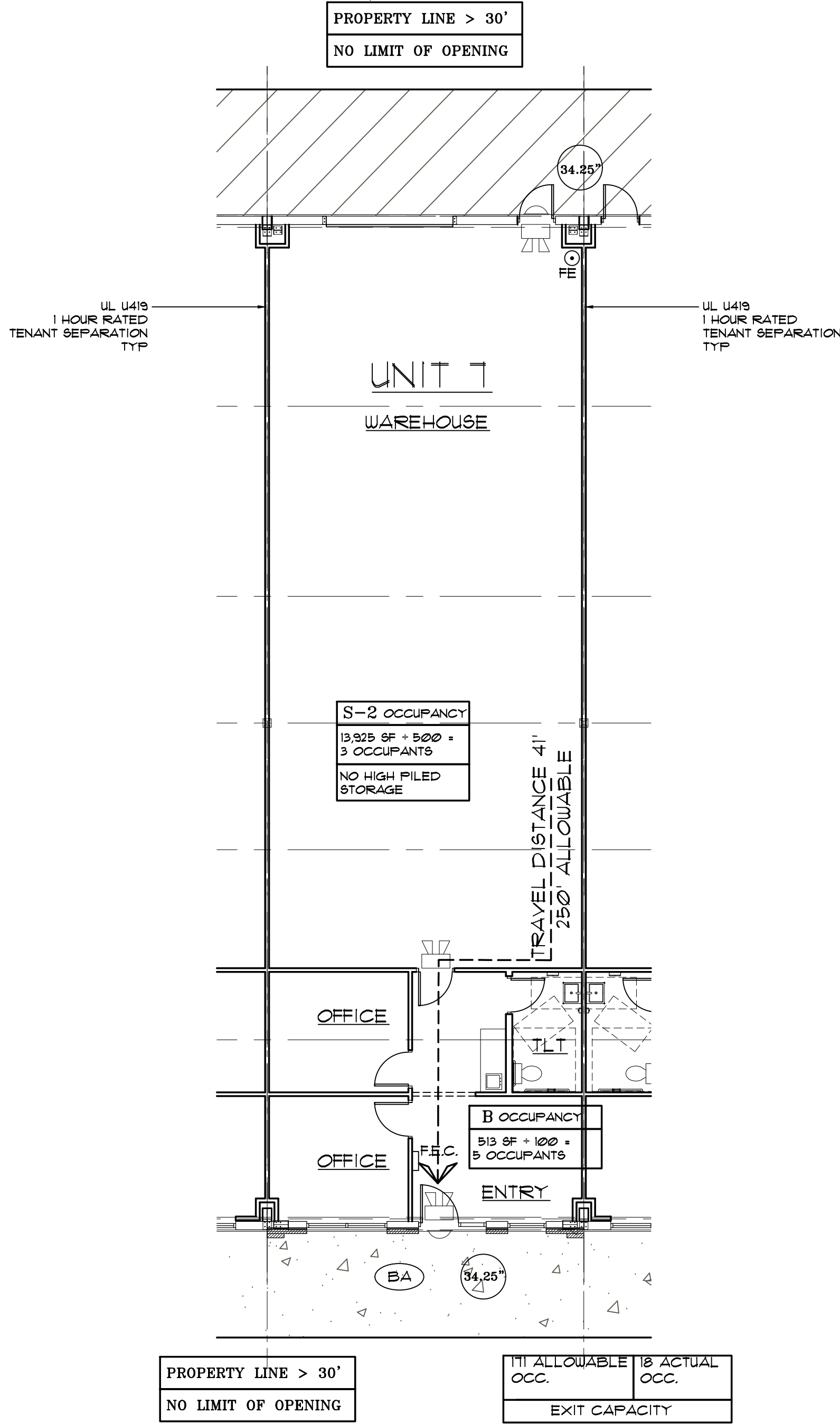
BUILDING ADDRESS - CONFIRM LOCATION W/ TOWN



1
G-2
ENLARGED END UNIT
LIFE SAFETY PLAN
SCALE: 1/8"=1'-0"
UNIT 10 SIM OPPOSITE HAND



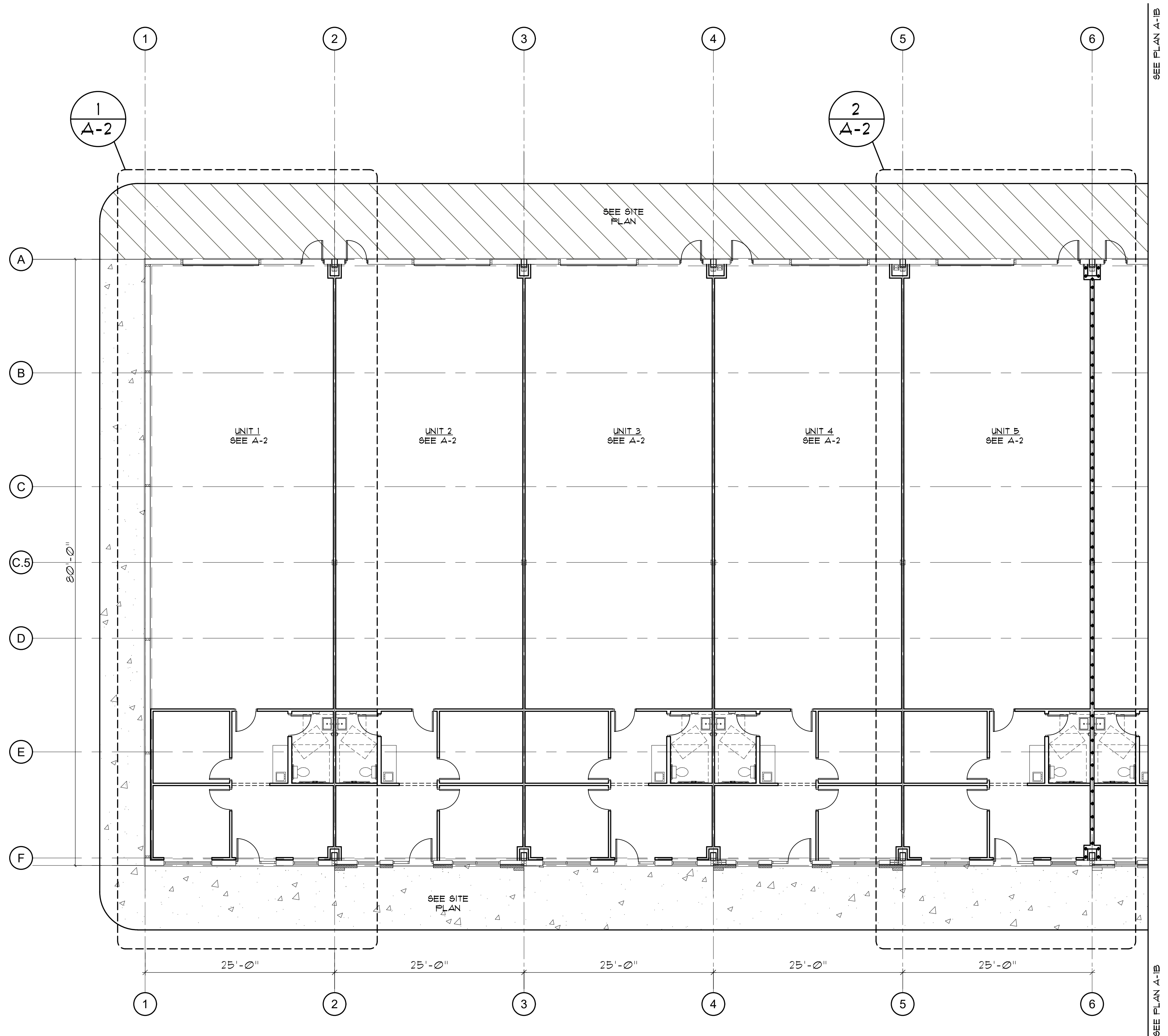
2
G-2
ENLARGED INTERIOR UNIT @2HR
LIFE SAFETY PLAN
SCALE: 1/8"=1'-0"
UNIT 6 SIM OPPOSITE HAND



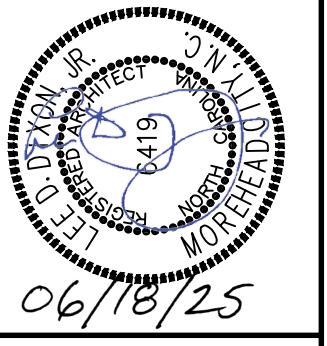
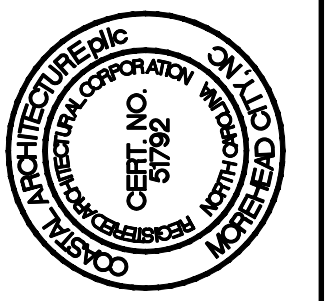
3
G-2
ENLARGED INTERIOR BRICK FACED UNIT
LIFE SAFETY PLAN
SCALE: 1/8"=1'-0"
UNIT 3, 9 SIM
UNIT 2, 4, 8 SIM OPPOSITE HAND

[illegible]

KEY PLAN



1 FLOOR PLAN "A"
A-1A SCALE: 1/8"=1'-0"



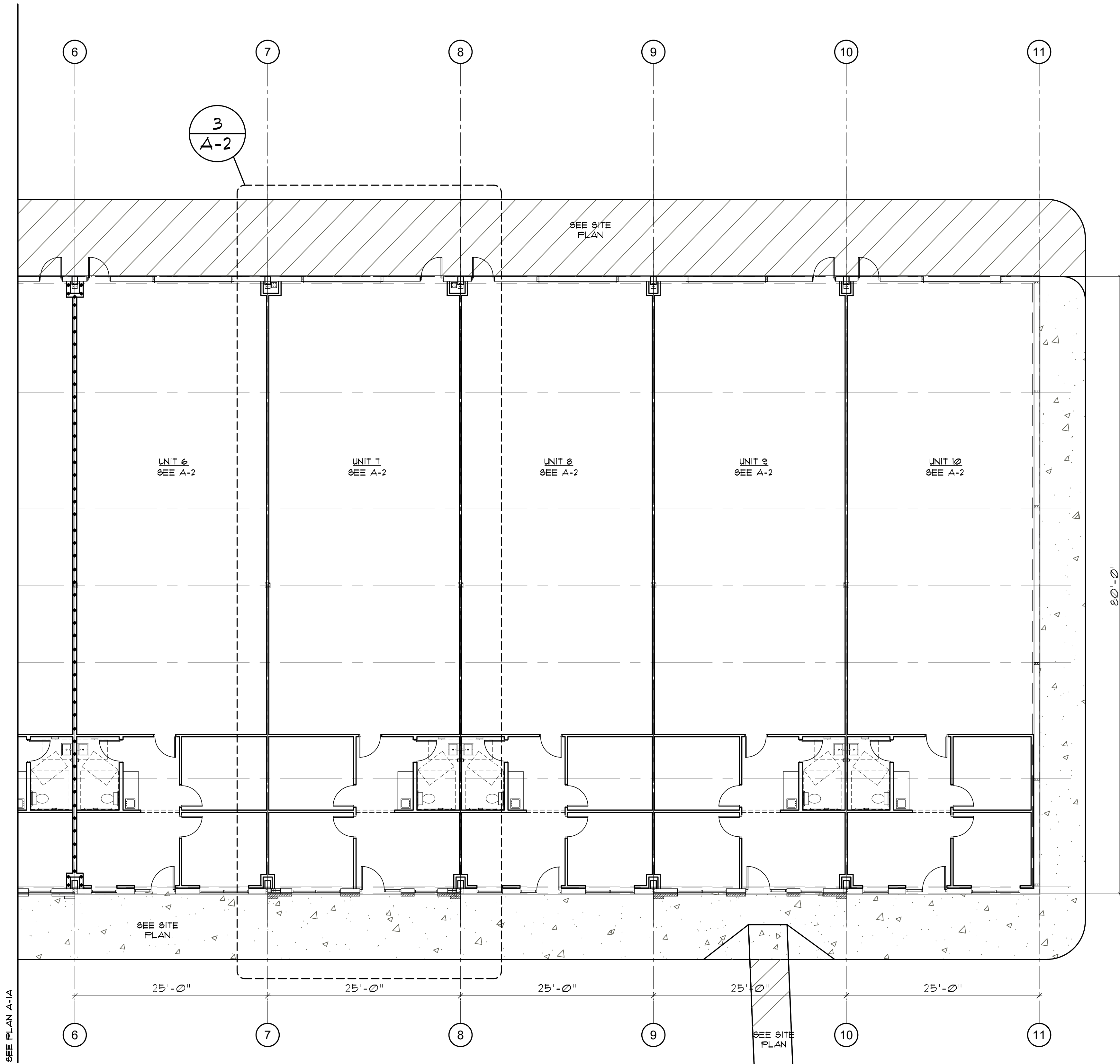
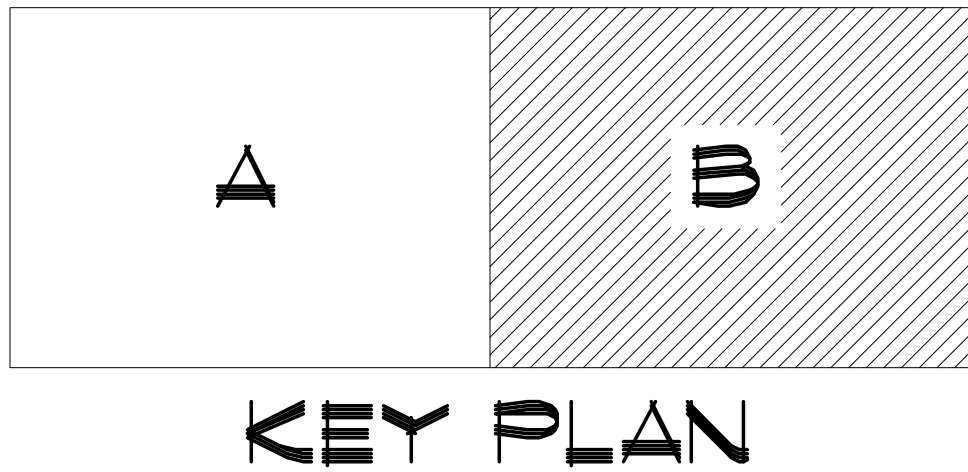
FLOOR PLAN "A"

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1 FLOOR PLAN "B"
A-1B SCALE: 1/8"=1'-0"

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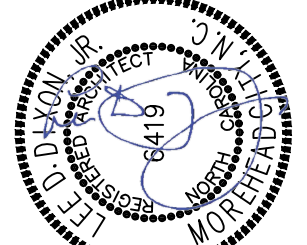
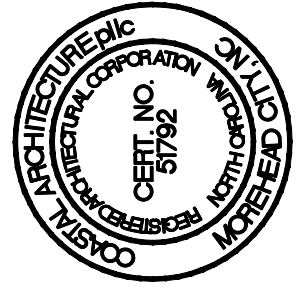
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BELL FORK
SHOPS
JACKSONVILLE, NORTH CAROLINA



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FLOOR PLAN "B"

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WALL TYPE LEGEND

- A** 3 5/8" METAL STUDS (18 GA)
• 16" O.C. INTERIOR
W/ 5/8" GUB EACH SIDE
FROM FLOOR TO ROOF DECK (TYP)
NON LOADBEARING WALL
WITH SOUND INSULATION
1 HOUR RATED UL U419

B 6" METAL STUDS
• 16" O.C. INTERIOR
W/ 5/8" GUB EACH SIDE
FROM FLOOR TO ABOVE CEILING
WITH SOUND INSULATION

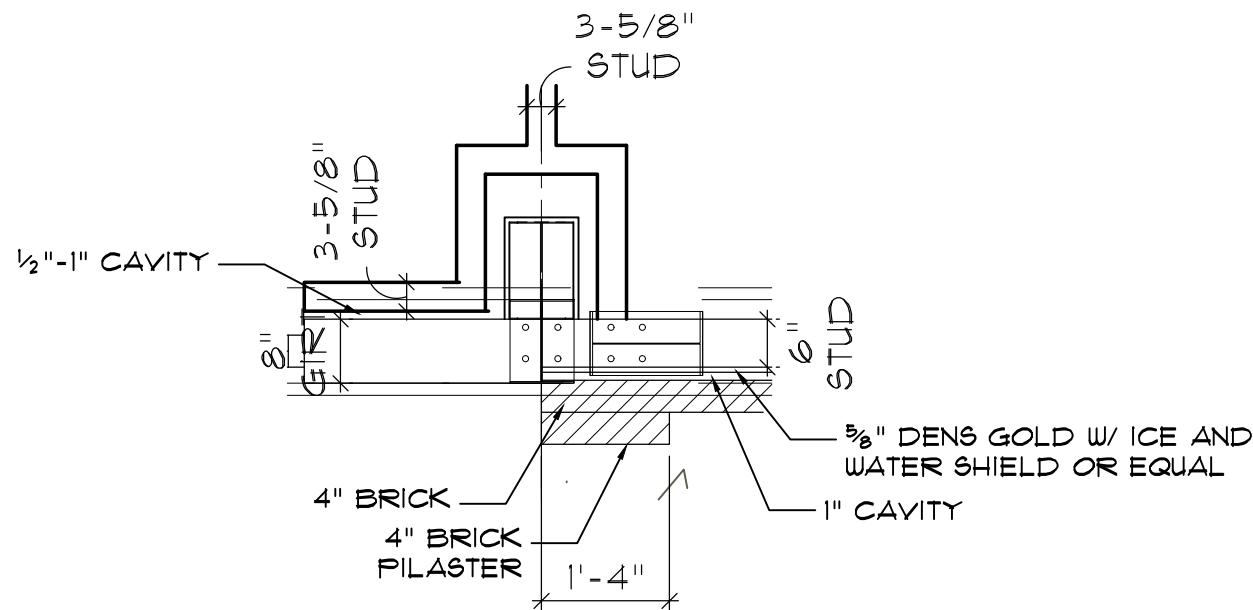
C 3 3/4" METAL STUDS • 16" O.C.
W/ 5/8" GUB EACH SIDE W/
SOUND INSULATION

D (2HR-RATED) UL U419
6" METAL STUDS
• 16" O.C. INTERIOR
W/ 2X 5/8" GUB EACH SIDE
FROM FLOOR TO ROOF DECK (TYP)
NON LOADBEARING WALL
WITH SOUND INSULATION
- E** PERM WALL/ STRUCTURE EXPOSED
W/ EXPOSED INSULATION

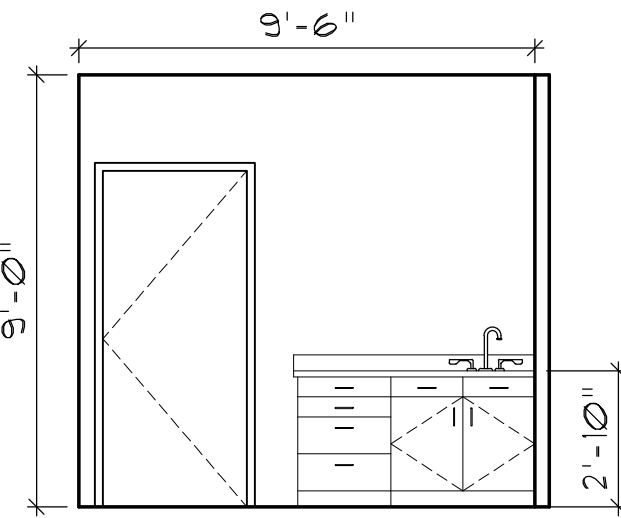
F 3 3/4" METAL STUDS • 16" O.C. W/ 5/8"
GUB TYPE X FLOOR TO ROOF
DECK ON WAREHOUSE SIDE
5/8" TYPE X ON OFFICE SIDE TO GO
ABOVE CEILING

G PERM WALL W/ 3 3/4" METAL STUDS •
16" O.C. W/ 5/8" GUB

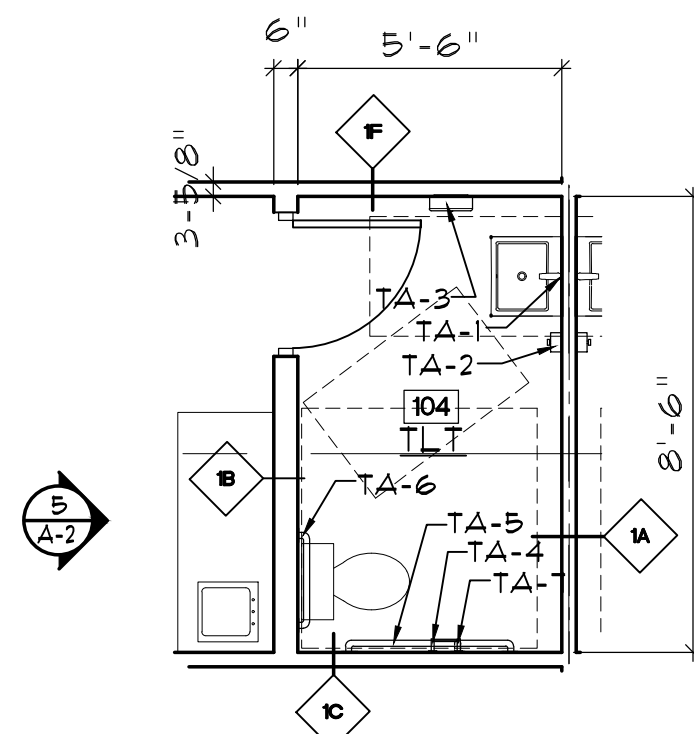
H 6" METAL STUDS W/ 5/8" GUB
INTERIOR AND 5/8" DENS GOLD
SHEATHING W/ ICE AND WATER
SHIELD OR EQUAL AND BRICK
FACADE



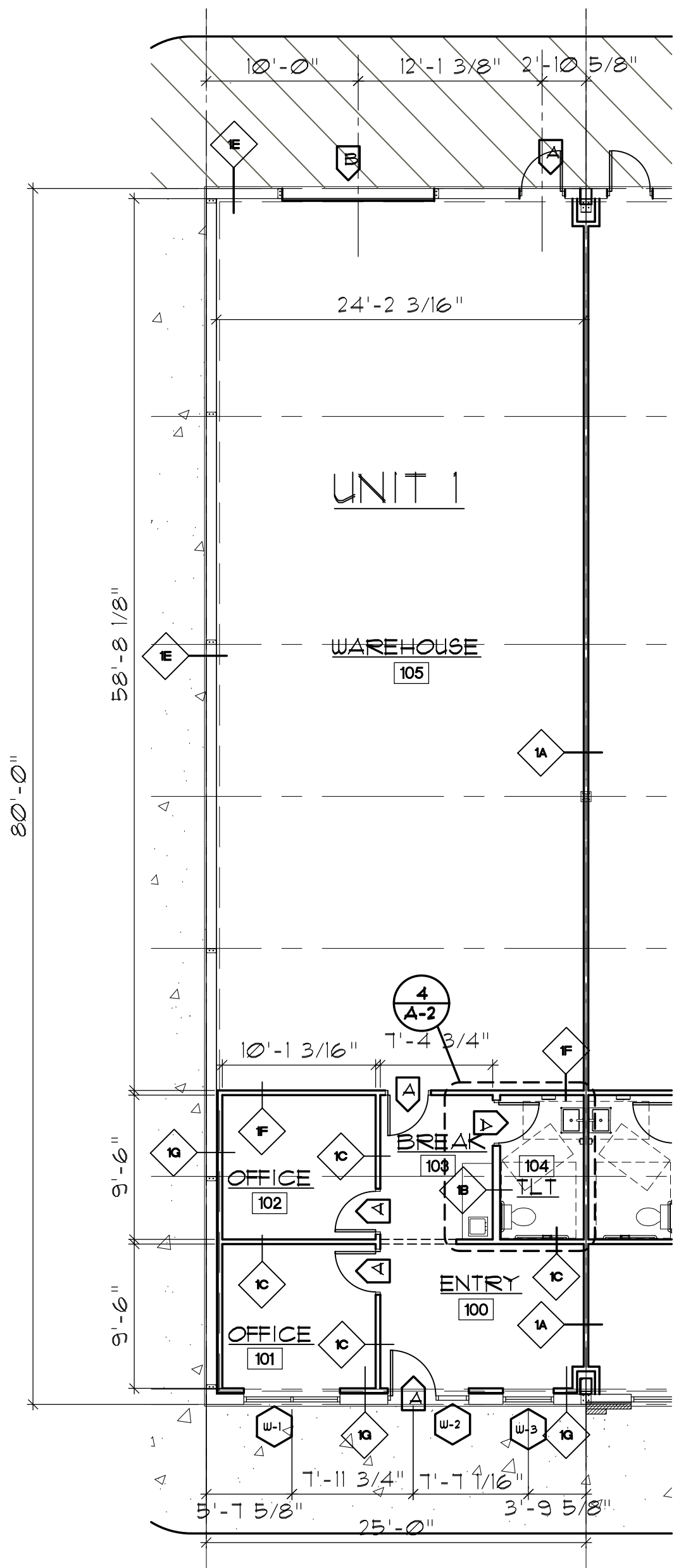
6 DETAIL @ WALL
SCALE: 1/2"=1'-0"



5 COUNTER ELEVATION
SCALE: 1/4"=1'-0"

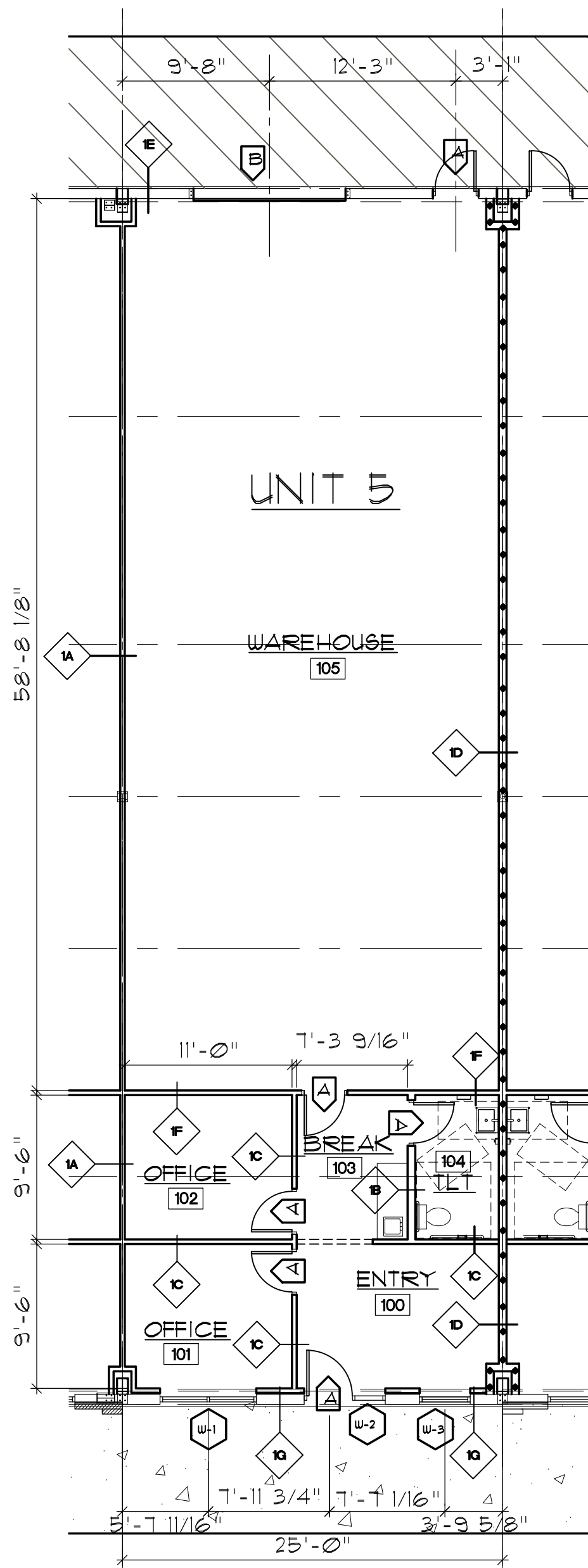


4 ENLARGED TOILET PLAN
SCALE: 1/4"=1'-0"



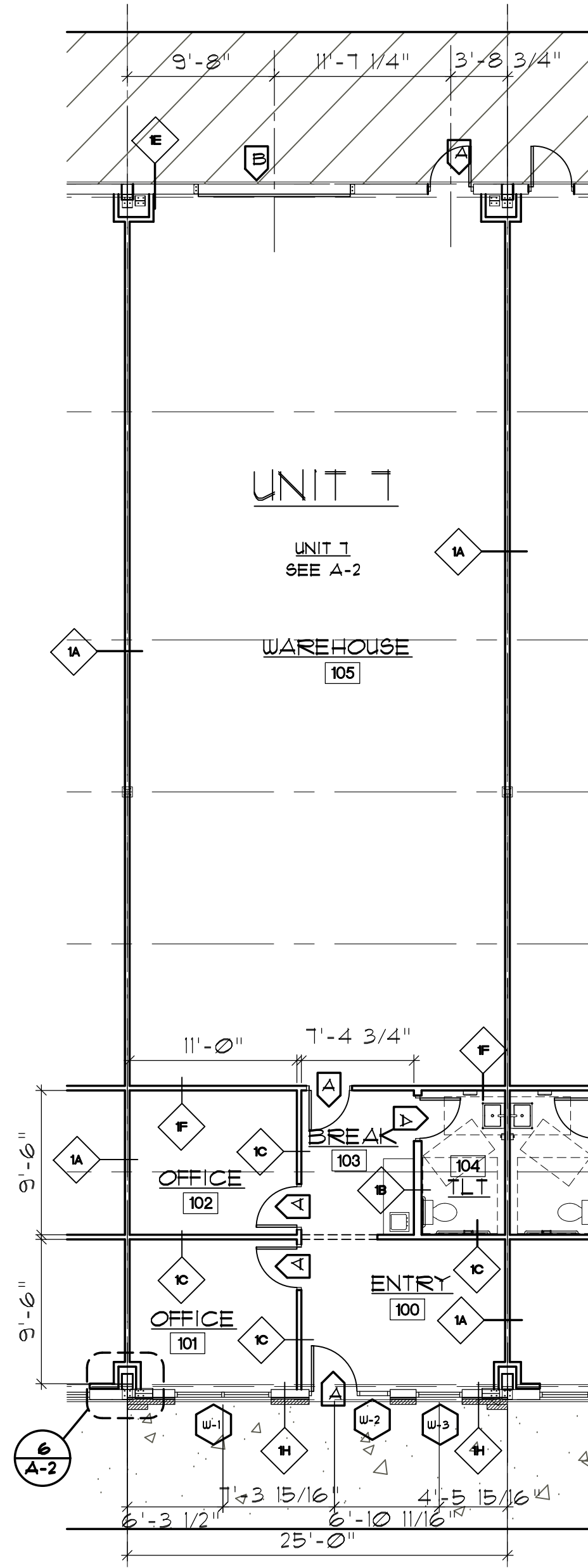
1 ENLARGED END UNIT FLOOR PLAN
SCALE: 1/8"=1'-0"

UNIT 10 SIM OPPOSITE HAND



2 INTERIOR FLOOR PLAN @2HR
SCALE: 1/8"=1'-0"

UNIT 6 SIM OPPOSITE HAND



3 INTERIOR FLOOR PLAN BRICK FACED UNIT
SCALE: 1/8"=1'-0"

UNIT 3, 9 SIM
UNIT 2, 4, 8 SIM OPPOSITE HAND

DOOR
FOYER 102
DOOR 102A
ROOM *

LEGEND
DOOR INDICATOR

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BELL FORK SHOPS
JACKSONVILLE, NORTH CAROLINA

ARCHITECTURE
2455
OFFICE
JACKSONVILLE
FLORIDA
06/18/25

ENLARGED FLOOR PLAN

25014

ISSUED: 06/18/2025
DWG BY: CRF/SKC
CKD BY: LDD
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SHEET NO.
A-2
OF

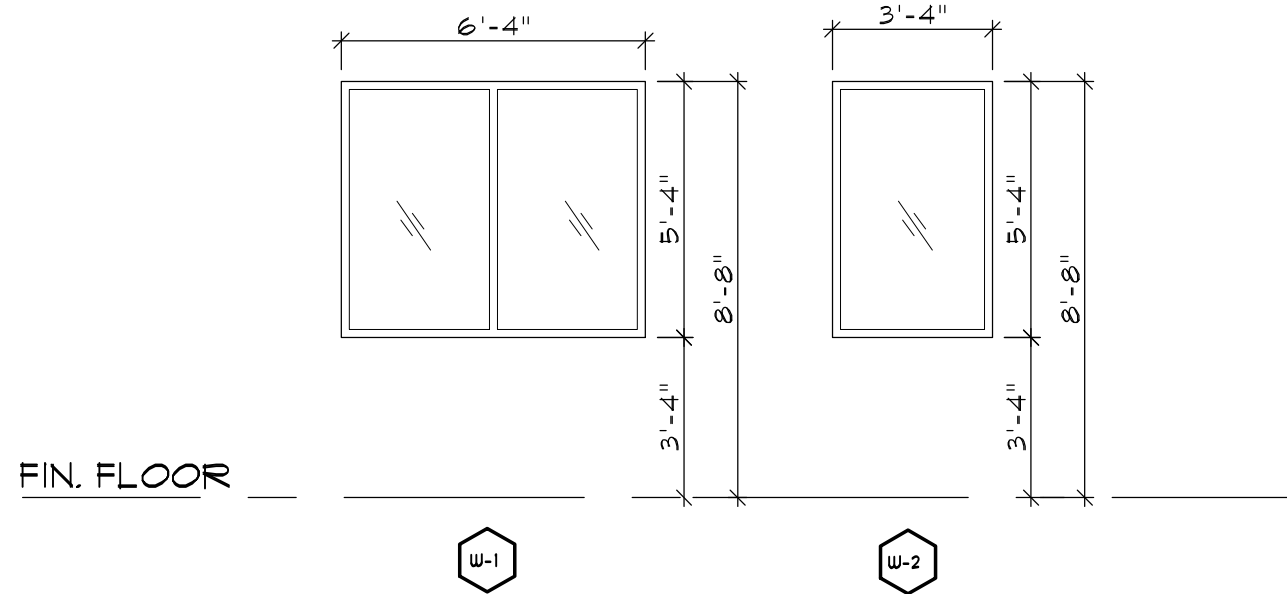
Wednesday, June 25, 2025 9:00:02 AM

WINDOW SCHEDULE					
MARK	SIZE	TYPE	MATERIAL	GLAZING	REMARKS
W-1	6'-4" X 5'-4"	FIXED	ALUM.	1" LOW E	MEET WIND LOADS
W-2	3'-4" X 5'-4"	FIXED	ALUM.	1" LOW E	MEET WIND LOADS
WINDOW SCHEDULE REMARKS					
• ALL GLAZING TO BE 1" INSULATING LOW E. • WINDOWS SHALL MEET APPLICABLE WIND ZONE CODE DESIGN PRESSURE REQUIREMENTS. • PROVIDE HEAD AND SILL FLASHING AT ALL WINDOWS.					

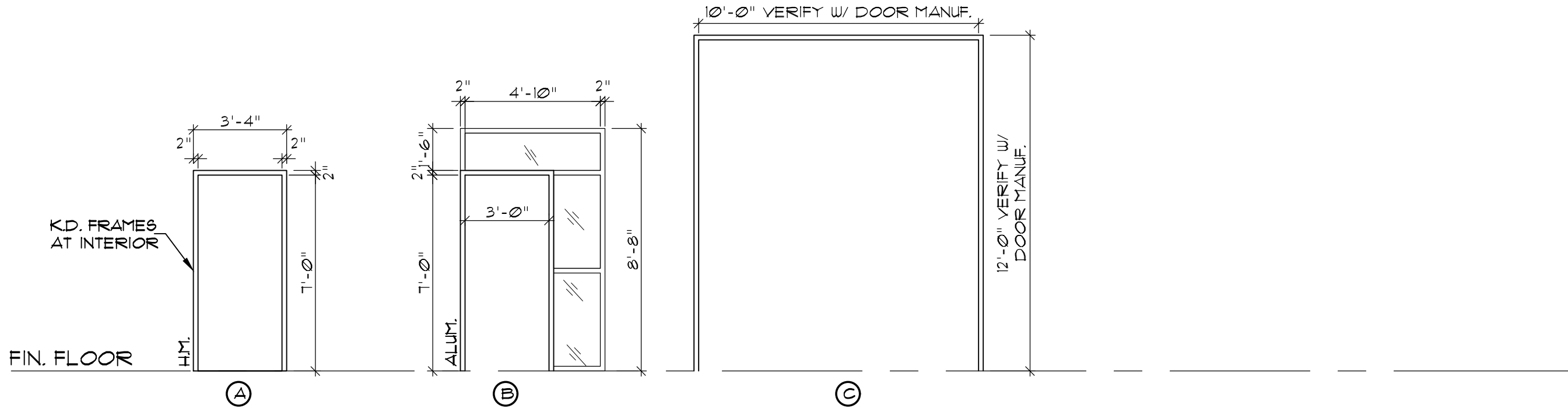
DOOR SCHEDULE				
DOOR NO.	SIZE	DOOR		REMARKS
		TYPE	FRAME	
100A	3'-0" X 1'-0"	2	B	①
101A	3'-0" X 1'-0"	1	A	
102A	3'-0" X 1'-0"	1	A	
103A	3'-0" X 1'-0"	3	A	① ②
104A	3'-0" X 1'-0"	3	A	①
105A	3'-0" X 1'-0"	5	A	①
105B	10'-0" X 12'-0"	4	C	OVERHEAD ROLL UP DOOR
DOOR SCHEDULE REMARKS				
1. CLOSER 2. H.M. DOOR OPTIONAL				

ROOM FINISH SCHEDULE							
ROOM NUMBERS	ROOM	FLOORS	BASE	WALLS	CEILINGS	HEIGHT (NOMINAL)	REMARKS
100	ENTRY	LVP	VINYL BASE	GWB-PTD	S.A.T.	10'-0"	
101	OFFICE				S.A.T.	9'-0"	
102	OFFICE				S.A.T.	9'-0"	
103	BREAK				S.A.T.	9'-0"	
104	TOILET				S.A.T.	9'-0"	
105	WAREHOUSE	CONC SEALED	-	EXPOSED PEMB	EXPOSED	EXPOSED	5/8" TYPE X
ROOM FINISH SCHEDULE REMARKS							
• ALL GWB TO BE MILDEW RESISTANT • SEE G-2 FOR RATING REQUIREMENT • S.A.T. = ARMSTRONG 160 OR EQUAL, 2' X 2'							

TOILET ACCESSORY SCHEDULE				
Mark	Item	MFG	MODEL #	Mtg. Ht. Remarks
TA-1	FRAMELESS MIRROR 2'-0"W X 3'-0"H	BOBRICK	B-230 SERIES	3'-4" MAX. HEIGHT TO BOTTOM OF MIRROR
TA-2	HANDICAP SOAP DISPENSER	BOBRICK	B-4112	4'-0" MAX. HEIGHT TO DISP. OUTLET OR DISPENSER LEVER
TA-3	PAPER TOWEL DISPENSER	BOBRICK	B-4262	4'-0" MAX. HEIGHT TO DISP. OUTLET OR DISPENSER LEVER
TA-4	TOILET TISSUE DISPENSER	BOBRICK	B-4288	15"-48" MAX. HEIGHT TO DISP. OUTLET OR DISPENSER LEVER
TA-5	GRAB BAR 42" CONCEALED MOUNTING W/ SNAP FLANGE	BOBRICK	B-5806 SERIES	3'-0" MAX. HEIGHT TO CENTER
TA-6	GRAB BAR 36" CONCEALED MOUNTING W/ SNAP FLANGE	BOBRICK	B-5806 SERIES	3'-0" MAX. HEIGHT TO CENTER
TA-7	GRAB BAR 18" CONCEALED MOUNTING W/ SNAP FLANGE (VERTICAL)	BOBRICK	B-5806 SERIES	3'-4" HEIGHT TO BOTTOM
NOTES: • ALL HANDRAILS SHALL BE BLOCKED TO SUPPORT A 250 LB. LOAD MINIMUM • EQUALS BY BRADLEY OR FRANKLIN OR APPROVED EQUAL ARE ACCEPTABLE				

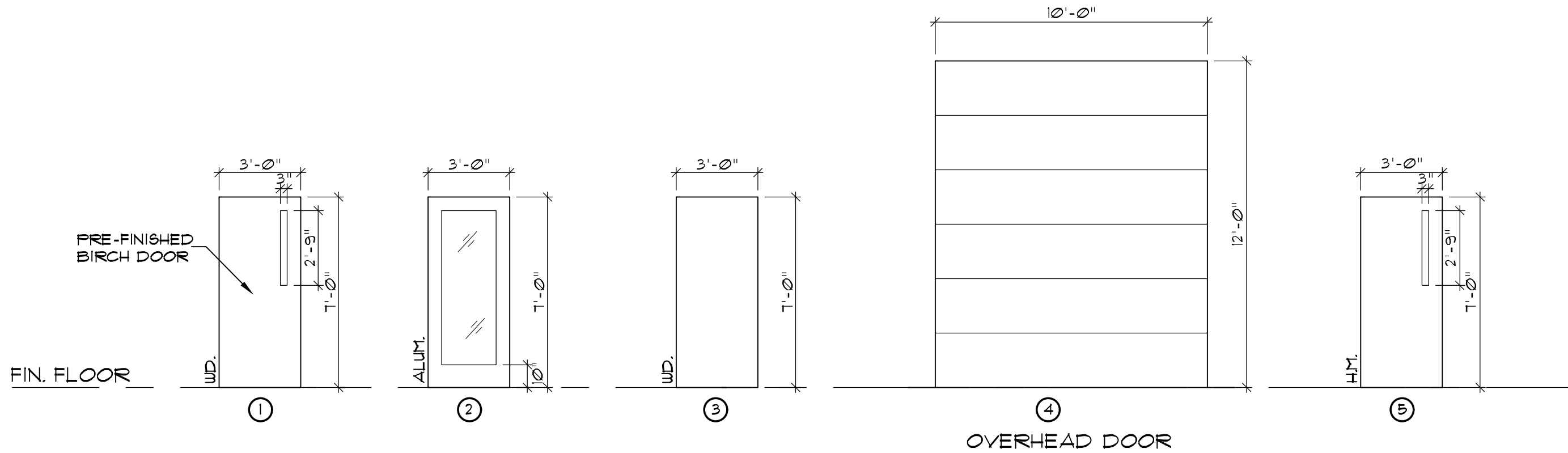


3 WINDOW ELEVATIONS
A-4 SCALE: 1/4" = 1'-0"

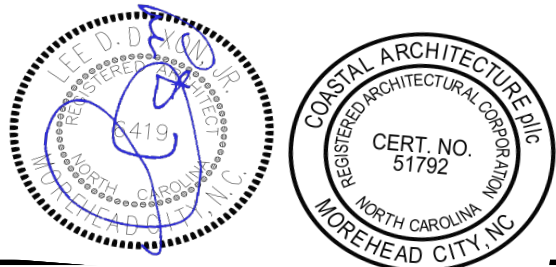


2 DOOR FRAME ELEVATIONS
A-4 SCALE: 1/4" = 1'-0"

NOTE: GLAZING COMPLIANCE - FRONT ELEVATION	
OCCUPANCY	(B) BUSINESS - SMALL NON-RESIDENTIAL (<40,000 SF)
UDO REQUIREMENT	15% MIN TRANSPARENT GLAZING ON GROUND FLOOR STREET-FACING FACADE
STREET FACING FACADE WIDTH	250 FT
GROUND FLOOR HEIGHT TO ROOF	18 FT
TOTAL GROUND FLOOR FACADE AREA	250 FT X 18 FT = 4500 SF
REQUIRED GLAZING AREA (15%)	675 SF
ACTUAL GLAZING PROVIDED	133 SF
GLAZING LOCATIONS INCLUDE WINDOWS AND DOORS INSTALLED BETWEEN GRADE AND 18 FT ABOVE GRADE ON THE STREET-FACING FRONT ELEVATION.	



1 DOOR ELEVATIONS
A-4 SCALE: 1/4" = 1'-0"



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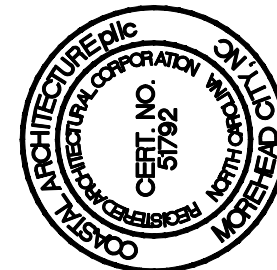
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BELL FORK
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06/18/25

DOOR AND WINDOW SCHEDULE

25014

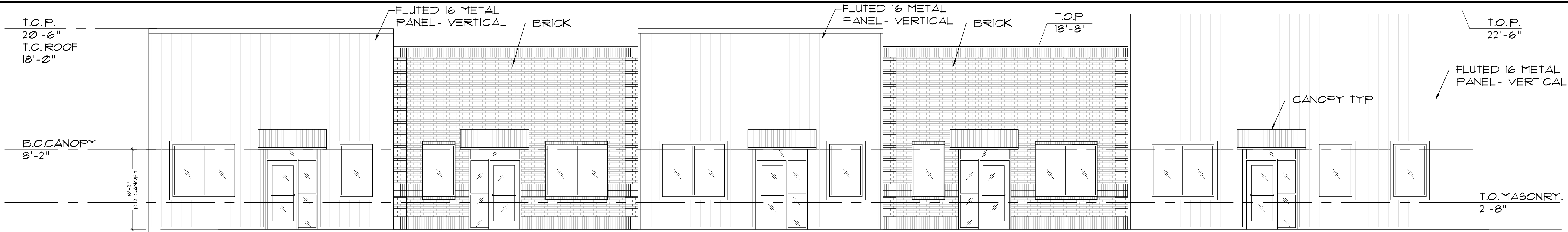
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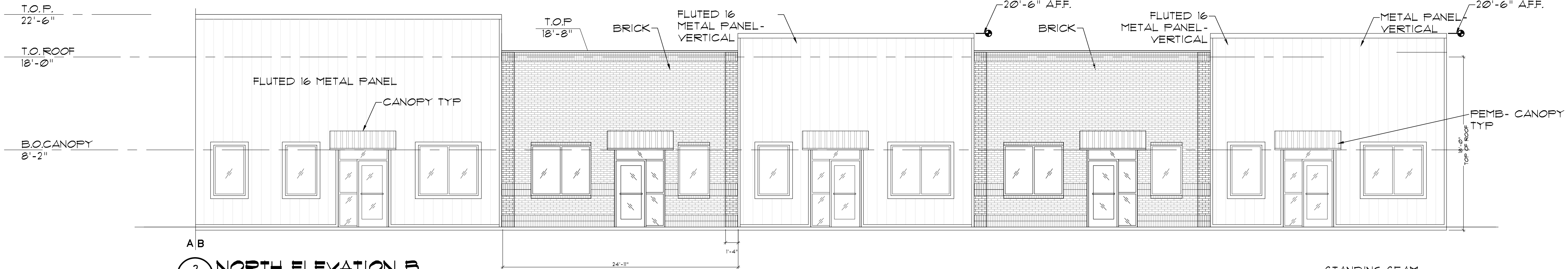
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A-4
OF

Wednesday, June 25, 2025 9:00:09 AM



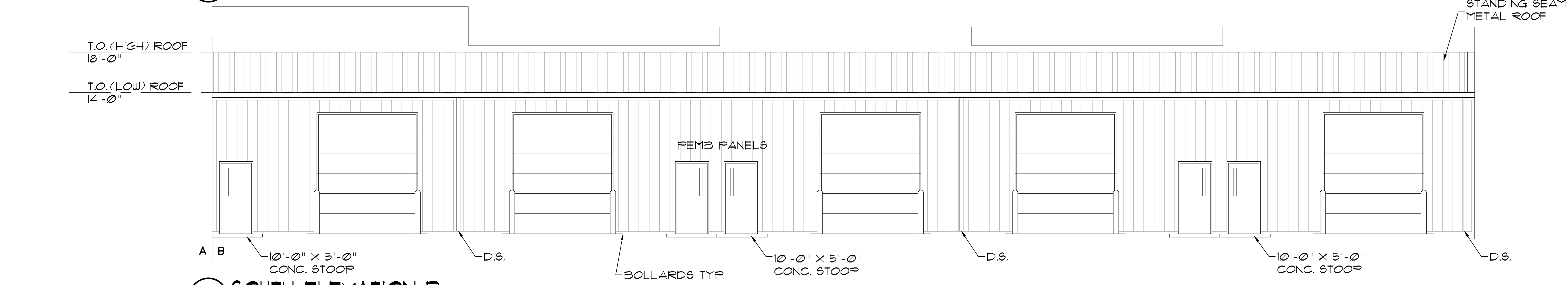
1 NORTH ELEVATION B
A-5 SCALE: 3/16"=1'-0"



2 NORTH ELEVATION B
A-5 SCALE: 3/16"=1'-0"



3 SOUTH ELEVATION A
A-5 SCALE: 3/16"=1'-0"



4 SOUTH ELEVATION B
A-5 SCALE: 3/16"=1'-0"

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06/18/25

ELEVATIONS

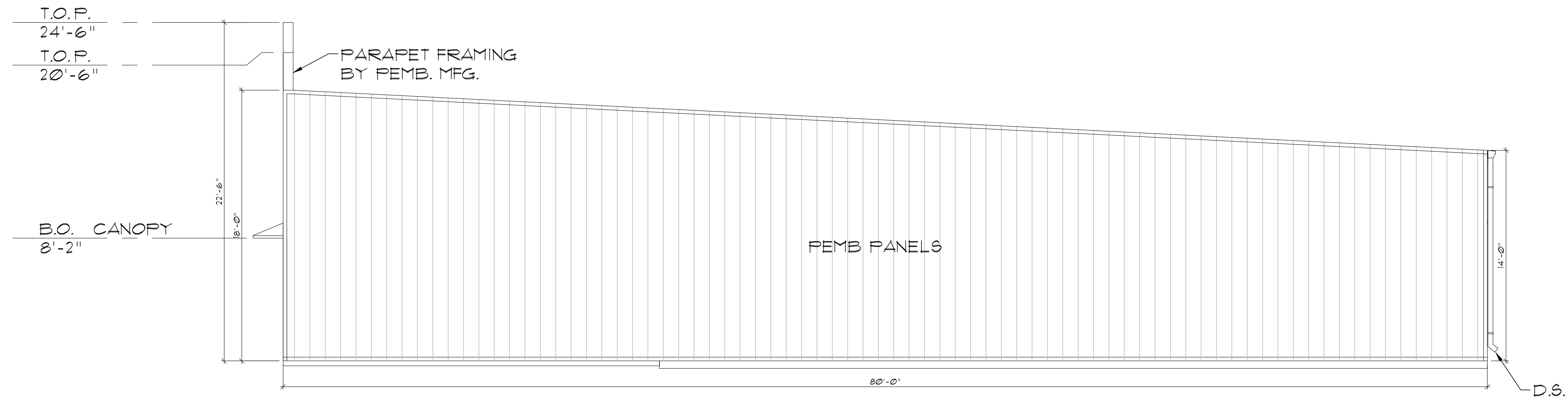
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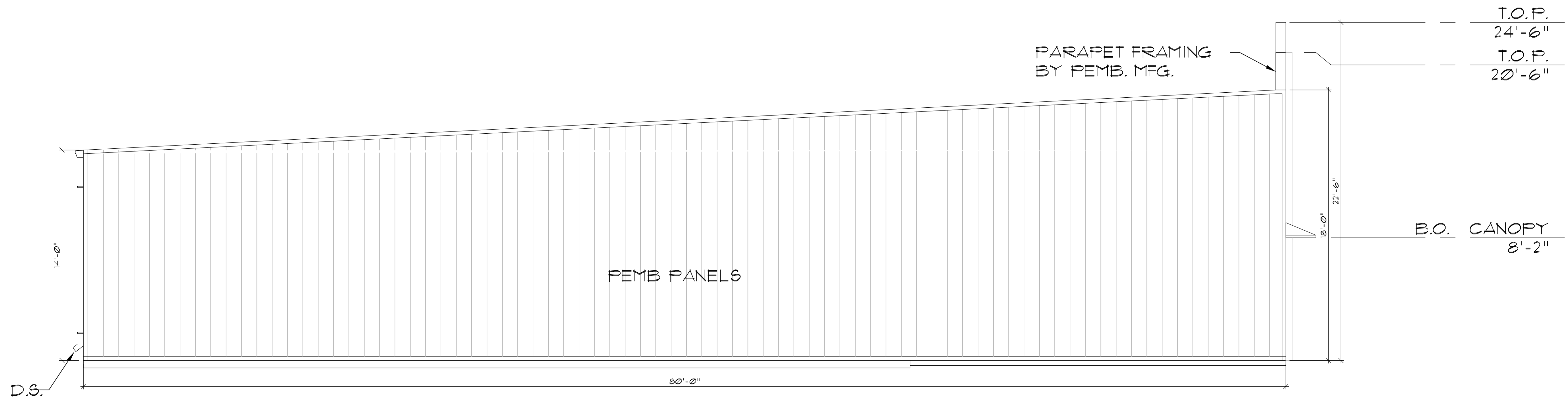
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A-5
OF

Wednesday, June 25, 2025 9:00:16 AM



1 EAST ELEVATION
A-5.1 SCALE: 1/4" = 1'-0"



2 WEST ELEVATION
A-5.1 SCALE: 1/4" = 1'-0"

- **Architectural Design**
- **Planning**
- **Interiors**



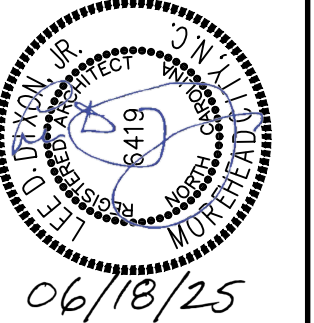
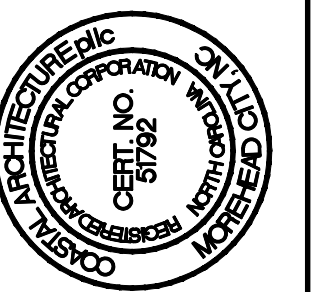
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ELEVATIONS

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ISSUED: 06/18/2025

WG BY:	CRF
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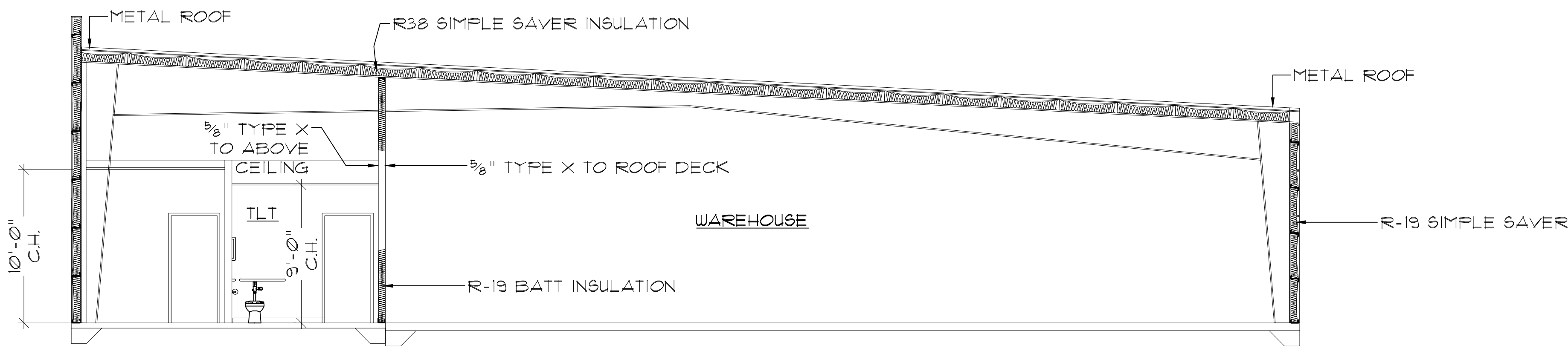
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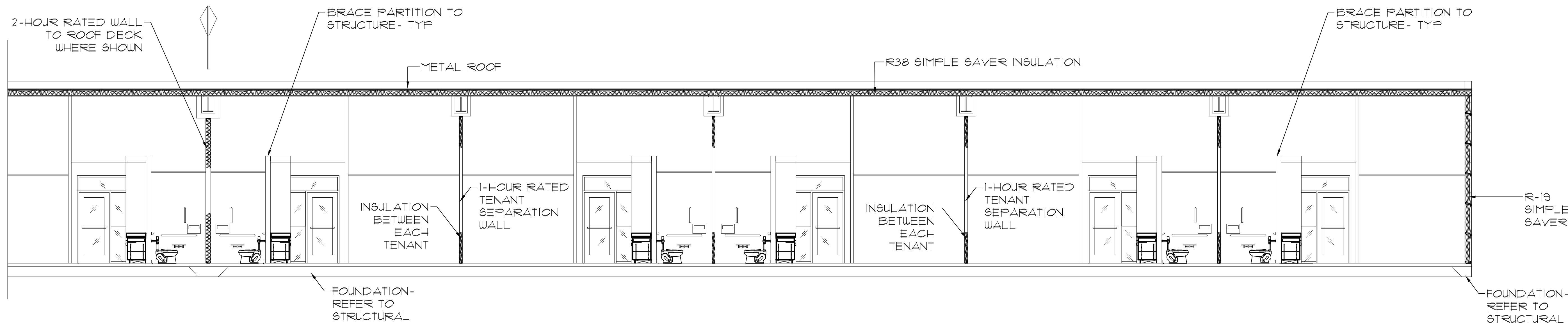
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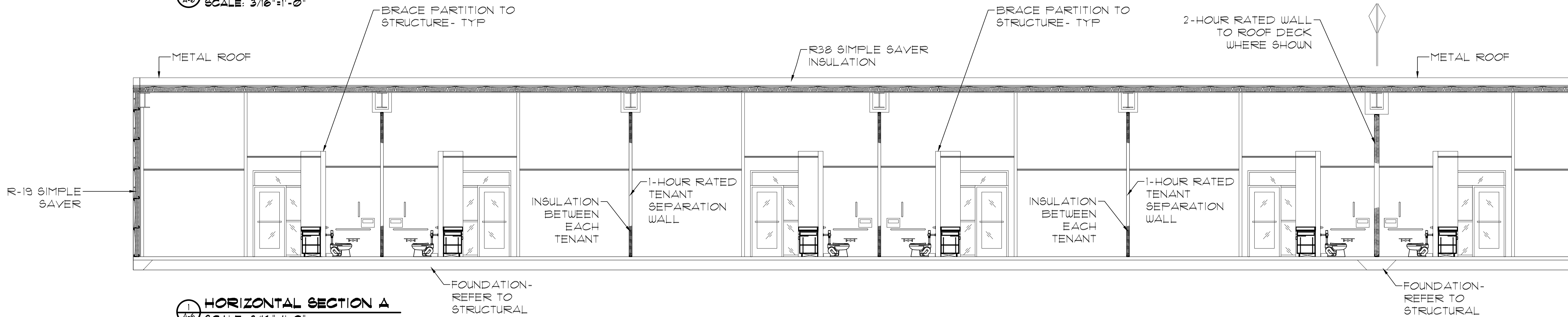
Wednesday, June 25, 2025 9:00:22 AM



3 TRANSVERSE SECTION
SCALE: 3/16"=1'-0"

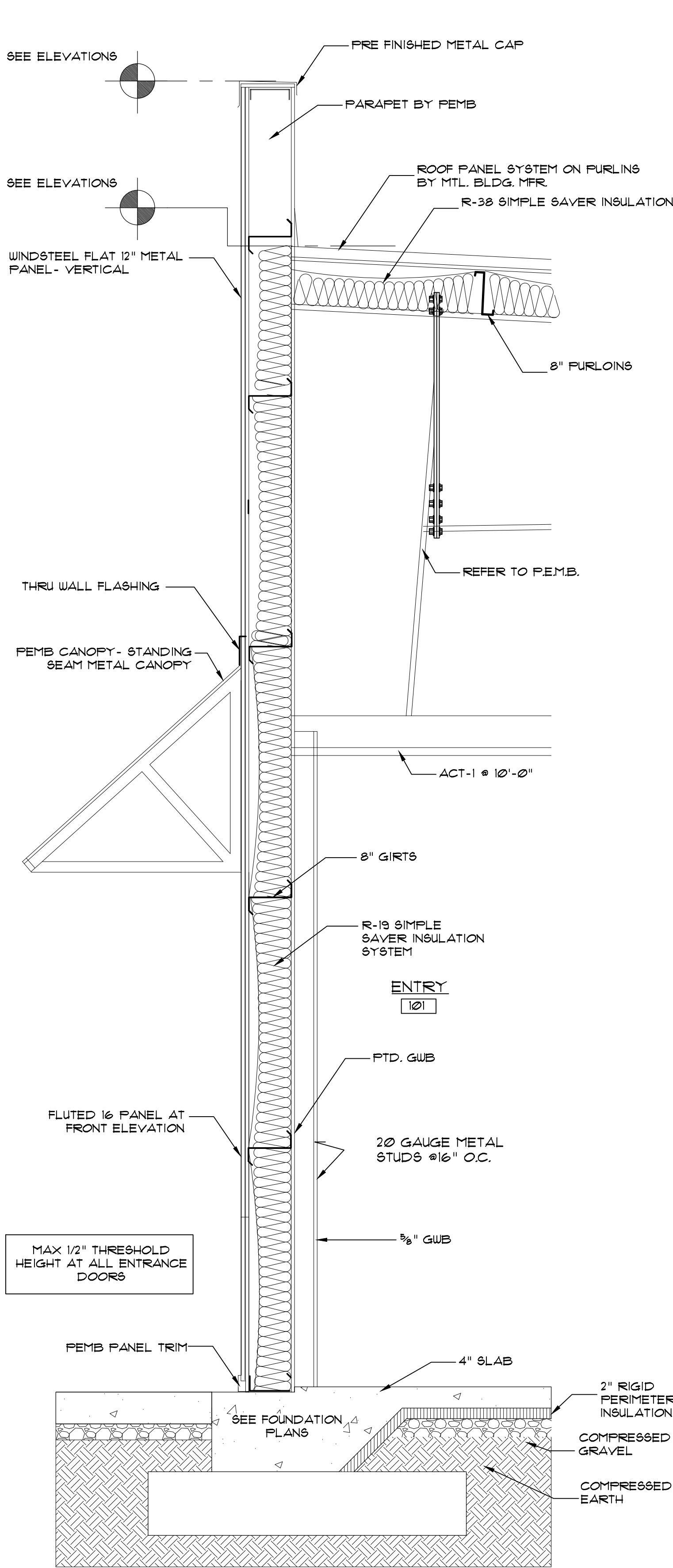


2 HORIZONTAL SECTION B
SCALE: 3/16"=1'-0"

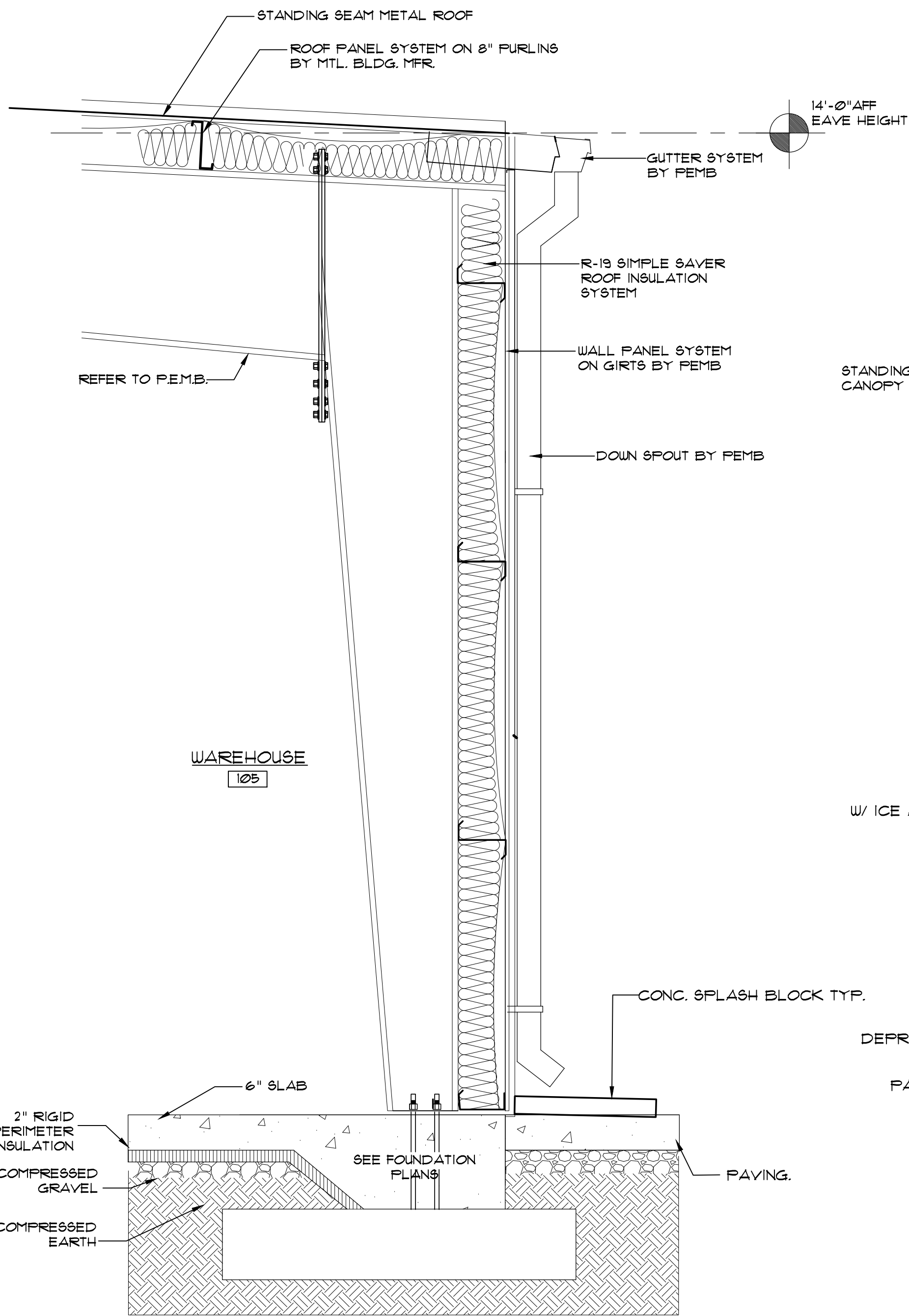


1 HORIZONTAL SECTION A
SCALE: 3/16"=1'-0"

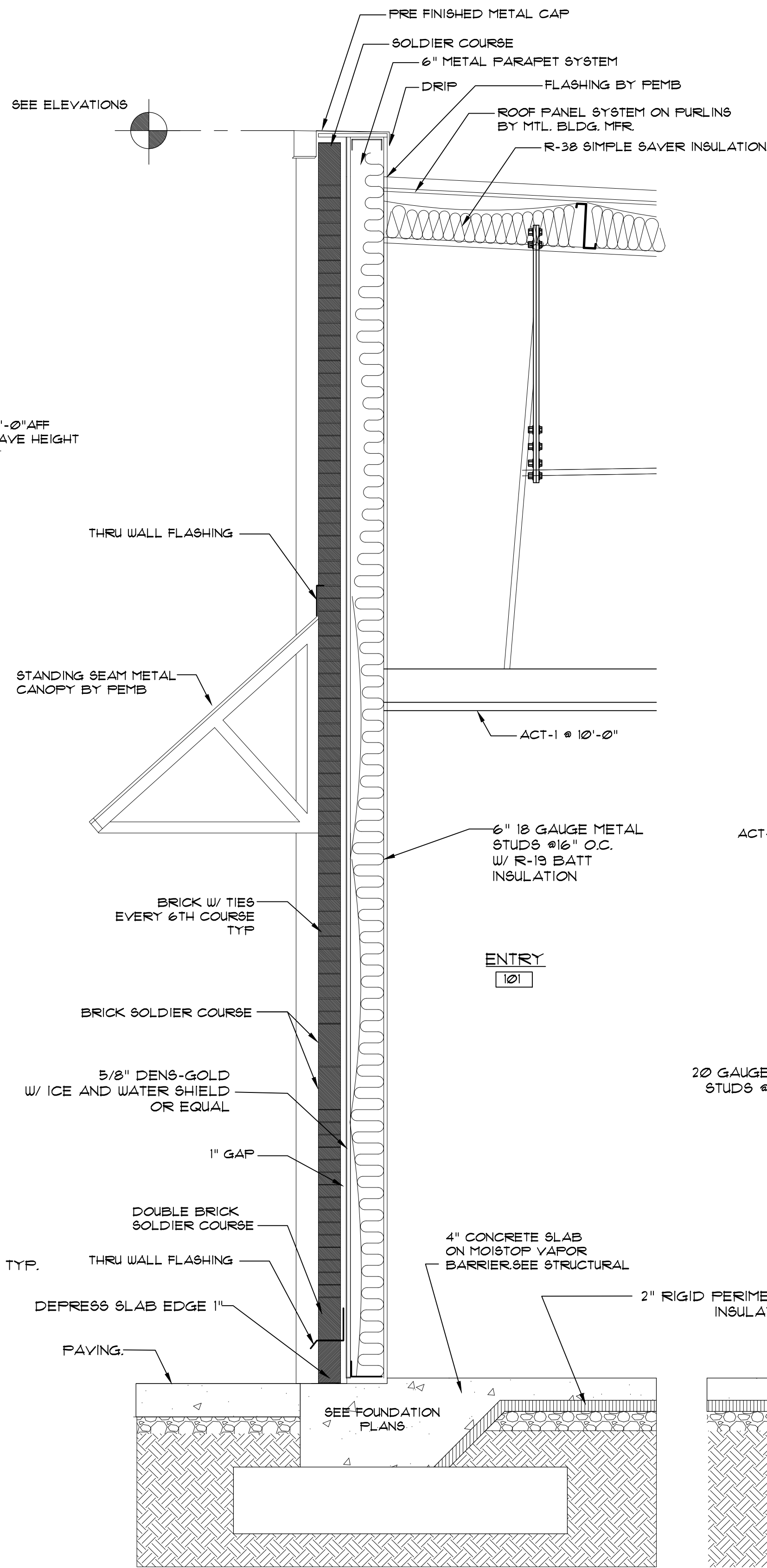
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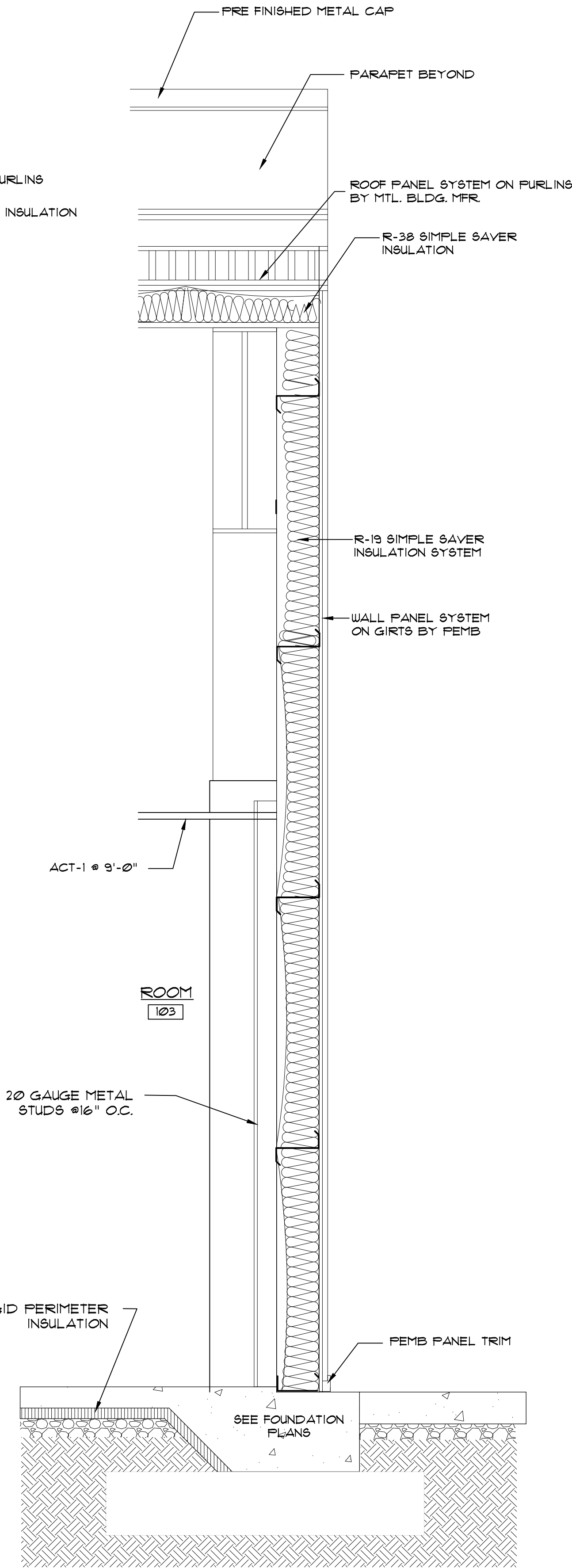
2 WALL SECTION
A-7 SCALE: 3/4"=1'-0"



2 WALL SECTION
A-7 SCALE: 3/4"=1'-0"



2 WALL SECTION
A-7 SCALE: 3/4"=1'-0"



2 WALL SECTION
A-7 SCALE: 3/4"=1'-0"



- Architectural Design
- Planning
- Interiors



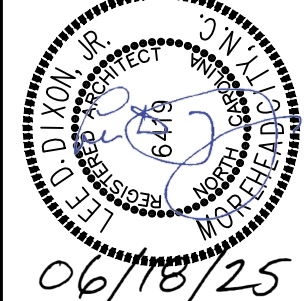
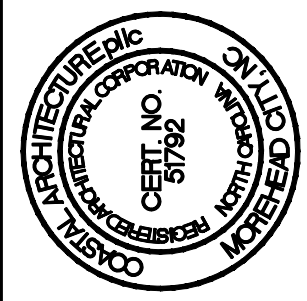
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WALL SECTIONS

25014

ISSUED: 06/18/2025

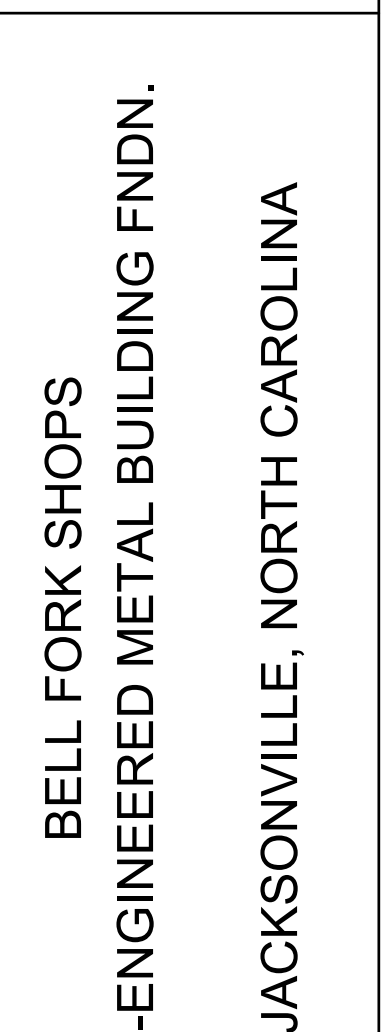
DWG BY: CRF/SKC

CKD BY: LDD

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SHEET NO.

A-7
OF



BELL FORK SHOPS
PRE-ENGINEERED METAL BUILDING FNDN.
JACKSONVILLE, NORTH CAROLINA

PEMB FOUNDATION PLAN

DESIGNED BY: HMH

RAWN BY: HMH

APPROVED BY: HMH

PROJECT #: 25-219

DATE: 05/20/25

No.	Revision	Date
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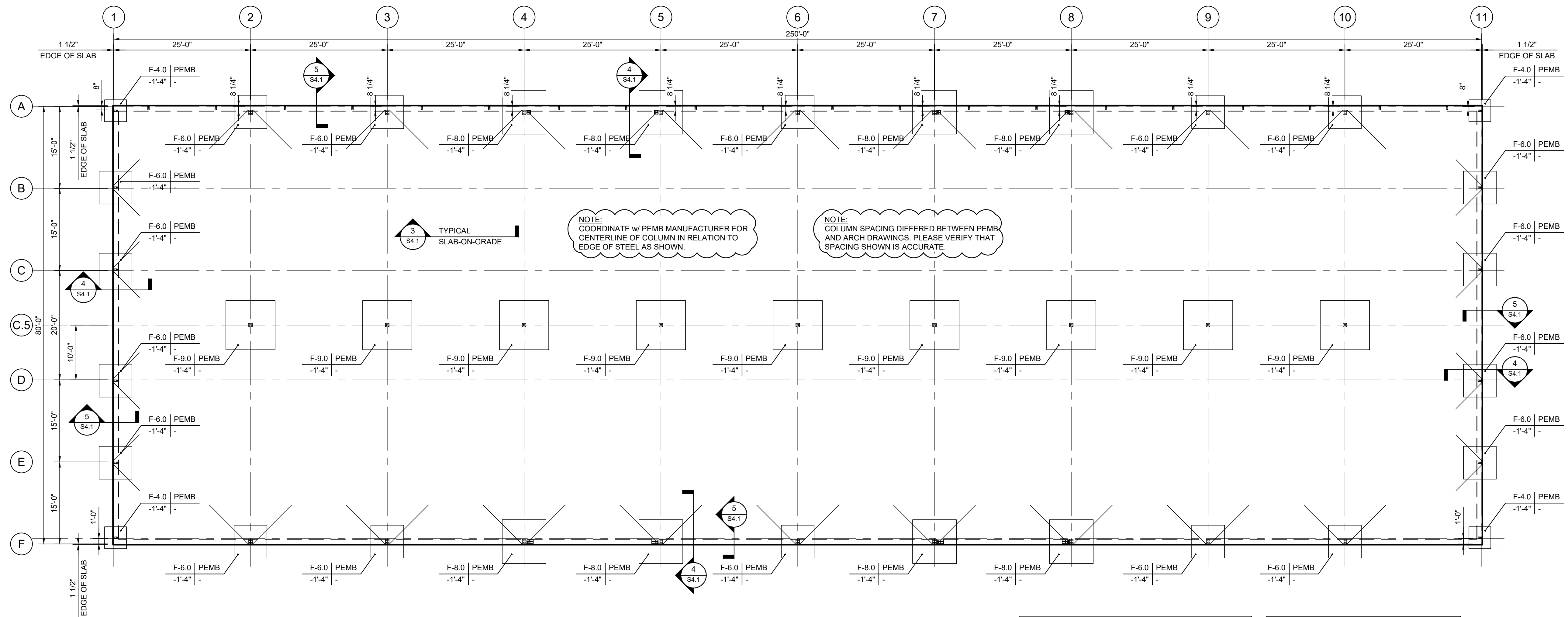
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heet

\$1 1

S1.1



1 PEMB FOUNDATION PLAN

ARCH REF: N/A

Scale: 3/32" = 1'-0"

KEYED NOTES & LEGEND

- _____ WALL & COLUMN FOOTING EXTENTS
 — — — — — TURNED DOWN SLAB BASE
 _____ EDGE OF SLAB
 _____ STRUCTURE BY OTHERS

SPREAD FOOTING SCHEDULE

MARK	SIZE	REINFORCING
F-4.0	4'-0"x4'-0"x12"	(4)-#4 E.W. TOP & BOT
F-6.0	6'-0"x6'-0"x18"	(7)-#4 E.W. TOP & BOT
F-8.0	8'-0"x8'-0"x18"	(8)-#5 E.W. TOP & BOT
F-9.0	9'-0"x9'-0"x18"	(9)-#5 E.W. TOP & BOT

Diagram illustrating the components of a column label:

- FOOTING MARK
- COLUMN SIZE
- TOP OF FOOTING ELEV. BELOW FINISHED FLOOR
- BASEPLATE MARK

The label itself is: F40 | W12x14
-1'-4" | BP1

STRUCTURAL NOTES

GENERAL NOTES:

- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR SLEEVES, DEPRESSIONS AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.
- ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD AND WITH ALL OTHER DRAWINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
- THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING (AND ACCOMPANYING FOOTINGS), GUYS OR TIEDOWNS.
- ADDITIONAL OBSERVATIONS AS A RESULT OF REJECTION OF WORK COMPLETED AND/OR ADDITIONAL OBSERVATIONS DUE TO THE DEFICIENCIES IN WORK OBSERVED WILL BE AT THE EXPENSE OF THE CONTRACTOR.
- ALL STRUCTURAL SHOP DRAWINGS TO BE REVIEWED BY JOB SUPERINTENDENT IN ADDITION TO ALL PERSONNEL DEEMED NECESSARY BY CONTRACTOR PRIOR TO SUBMITTAL TO ENGINEER FOR APPROVAL.
- ALL SHOP DRAWING RESUBMITTALS SHALL INCLUDE A WRITTEN DETAILED LIST OF LOCATIONS AND DESCRIPTIONS OF ALL CHANGES MADE FROM PREVIOUS SUBMITTAL. LIST SHALL BE SPECIFIC AND GENERAL NOTES SUCH AS 'DIMENSIONS CORRECTED' ARE NOT ACCEPTABLE.

DESIGN CODES:

2018 INTERNATIONAL BUILDING CODE.

ACI 318-18 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.

AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN.

DESIGN LOADS:

THE FOUNDATION SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED WITH THE FOLLOWING SUPERIMPOSED LOADINGS:

COLUMN REACTIONS PROVIDED BY PEMB MANUFACTURER (STAR BUILDING SYSTEMS)

WIND:
BASIC WIND SPEED (3 SEC GUST) 139 mph
EXPOSURE CATEGORY C II

COMPONENT & CLADDING:
ALL BUILDING COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR WIND LOADS DETERMINED PER THE NORTH CAROLINA STATE BUILDING CODE FOR THE BASIC DESIGN WIND VELOCITY, IMPORTANCE FACTOR AND EXPOSURE LISTED ABOVE.

FOUNDATIONS:

FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 psf. ON EXISTING SOILS. BEFORE CONSTRUCTION COMMENCES, SOIL BEARING CAPACITY SHALL BE VERIFIED BY A SUBSURFACE INVESTIGATION, A CERTIFIED TESTING LABORATORY, WHOSE REPORT SHALL INCLUDE ANALYSIS AND RECOMMENDATIONS FOR SITE PREPARATION IN ORDER TO BEAR THE FOUNDATION LOADS. ABOVE REPORT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW BEFORE FOUNDATION CONSTRUCTION BEGINS.

PLUMBING SLEEVES:

MINIMUM SLEEVE SPACING SHALL BE TWO DIAMETERS CENTER TO CENTER TO THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES, WHICHEVER IS GREATER. PRIOR TO CONSTRUCTION SLEEVE LOCATIONS AND SIZES SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

CHEMICAL ANCHORS:

SHALL BE A POLYMER INJECTION SYSTEM SUCH AS RAMSET "EPOCON", MOLLY "PARAMOUNT HVC", SIKHA "SIKADUR INJECTION SELF" "HILTI-HIGH STRENGTH EPOXY", OR APPROVED EQUAL, INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

ANCHOR BOLTS:

SHALL BE A36 THREADED ROD. PROVIDE HOT DIP GALVANIZE FINISH ON ALL ANCHOR BOLTS PERMANENTLY EXPOSED TO EXTERIOR.

CONCRETE TESTING:

1. CONCRETE TESTING SHALL BE PAID FOR BY THE OWNER. TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CAST-IN-PLACE CONCRETE:

- A) ASTM C143 - "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE."
B) ASTM C39 - "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS." A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 50 CUBIC YARDS (OR FRACTION THEREOF), PLACED PER DAY. REQUIRED CYLINDER(S) QUANTITIES AND TEST AGE AS FOLLOWS:

1 AT 7 DAYS
2 AT 28 DAYS

PROVIDE ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(S) MAY BE DISCARDED.

PENETRATIONS:

NO PENETRATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE LOCATED ON THESE DRAWINGS WITHOUT PREVIOUS APPROVAL OF THE ENGINEER.

CONCRETE MIX DESIGN:

1. SHALL BE MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

3,000 psi - FOUNDATION WALLS AND FOOTINGS
3,000 psi - INTERIOR SLABS-ON-GRADE
4,000 psi - ALL OTHER CONCRETE

2. SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE. ALL SLABS SHALL BE CURED USING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1 AND SHALL HAVE A FLUORIDE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

3. CONCRETE SHALL UTILIZE TYPE III CEMENT UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER OR GEOTECHNICAL REPORT.

4. THE CONCRETE STRENGTHS SHOWN IN THE SECTION ABOVE AND IN THE SPECIFICATIONS ARE MINIMUM COMPRESSIVE STRENGTHS. THE ENGINEER SHALL DETERMINE IF THE CONCRETE IS ACCEPTABLE, OR TO BE REMOVED, OR TO RECEIVE SPECIAL CURING IF THE COMPRESSIVE STRENGTHS ARE LESS THAN SPECIFIED.

5. ALL CONCRETE EXPOSED TO WEATHER OR EARTH SHALL BE AIR ENTRAINED TO 5% TO 7%.

6. WATER REDUCING AGENTS MAY BE USED IN THE CONCRETE MIX. PLASTICIZERS AND SUPER-PLASTICIZERS MAY BE USED ONLY WHEN WRITTEN PERMISSION OF THE ENGINEER IS GIVEN.

7. NO SALTS OF ANY KIND MAY BE USED IN CONCRETE BEFORE OBTAINING THE ENGINEER'S WRITTEN PERMISSION FOR THEIR USE.

8. CONCRETE FOR TROWEL-FINISHED INTERIOR CONCRETE FLOORS SHALL NOT EXCEED AN AIR-ENTRAINING ADMIXTURE. THE MAXIMUM AIR CONTENT IN THESE SLABS SHALL NOT EXCEED 3%.

CONCRETE AND REINFORCING PLACEMENT:

1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 301 AND ACI 117 EXCEPT AS MODIFIED BELOW:

ACI 117 ITEM 4.3.1.1
ELEVATIONS OF SLABS-ON-GRADE TOP OF SLAB ELEVATION SHALL BE WITHIN A 3/8" ENVELOPE EITHER SIDE OF THE THEORETICAL DESIGN SURFACE.

ACI 117 ITEM 4.5.7
FLOOR FINISH TOLERANCES AS MEASURED BY PLACING A FREESTANDING (UNLEVELLED) 10 FT. STRAIGHTEDGE ANYWHERE ON THE SLAB AND ALLOWING IT TO REST UPON TWO HIGH SPOTS WITHIN 28 DAYS AFTER SLAB CONCRETE PLACEMENT. THE GAP AT ANY POINT BETWEEN THE STRAIGHTEDGE AND THE FLOOR SHALL NOT EXCEED 1/4".

2. ALL REINFORCING STEEL TO BE ASTM A615, GRADE 60 (#4 AND LARGER), EXCEPT WHERE NOTED OTHERWISE. REINFORCING SHALL NOT BE WELDED.

3. WELDED WIRE FABRIC TO CONFORM TO ASTM A185 AND SHALL BE FREE FROM OIL, SCALE AND RUST. PLACE WWF IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND THE SPECIFICATIONS. MINIMUM LAPS SHALL BE ONE SPACE PLUS 2".

4. ALL REINFORCING STEEL BARS TO BE DETAILED AND PLACED IN ACCORDANCE WITH THE LATEST ACI MANUALS.

5. LAP ALL REINFORCING SPLICES IN CONCRETE A MINIMUM OF 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER, UNLESS NOTE OTHERWISE ON DRAWINGS (CLASS B SPLICE).

6. PROVIDE CORNER BARS OF SAME BAR DIAMETER AS SPECIFIED FOR THE WALL, BEAM OR FOOTING. PROVIDE MINIMUM OF 40 BAR DIAMETER LAP FOR ALL CORNER BARS, UNLESS NOTED OTHERWISE.

7. PROVIDE FOUNDATION DOWELS AS SHOWN. MINIMUM SIZE DOWELS TO BE #4, UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING STEEL IN COLUMNS AND PIERS, OR VERTICAL REINFORCING IN WALLS, SHALL BE DOWELED INTO THE FOOTINGS WITH SAME SIZE AND QUANTITY DOWEL AS THE VERTICAL REINFORCING.

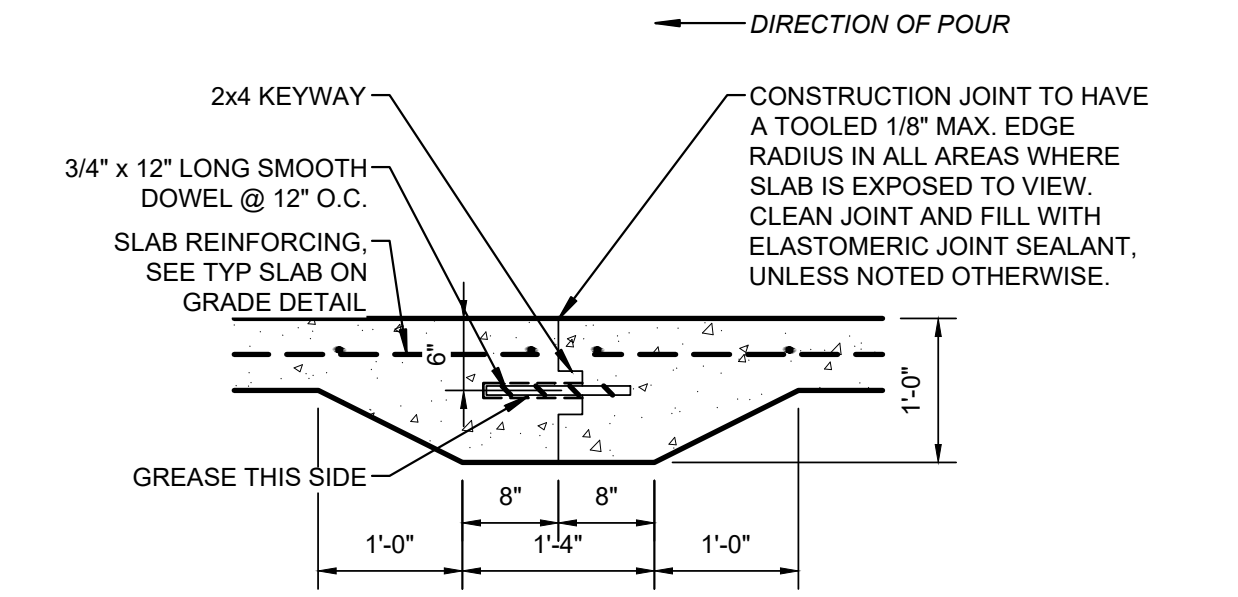
8. WHERE SHOWN ON THE DRAWINGS, PROVIDE WELD PLATES, WELDMENTS, OR CONCRETE INSERTS FOR FASTENING AND SECURING OTHER COMPONENTS. CONCRETE INSERTS SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM AND INSTALLED BY THE CONTRACTOR CASTING THE CONCRETE AROUND THEM. CLIP ANGLES SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM.

9. REINFORCING STEEL SHALL RECEIVE CONCRETE COVER AS FOLLOWS:

DESCRIPTION	MINIMUM COVER
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER	
#6 THROUGH #18 BARS	2"
#5 BARS OR SMALLER	1 1/2"
NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH THE GROUND, SLABS AND WALLS	
#11 BARS OR SMALLER	3/4"
#14 AND #18	1 1/2"
BEAMS AND COLUMNS	1 1/2"
10. PROVIDE TWO (2) #5'S, ONE AT EACH FACE, UNLESS NOTED OTHERWISE, AROUND ALL OPENINGS GREATER THAN 12"x12" IN CAST-IN-PLACE CONCRETE. EXTEND REINFORCING 2'-0" BEYOND OPENING IN BOTH DIRECTIONS. CONTACT ENGINEER FOR ALL OPENINGS GREATER THAN 12"x12" FOR DESIGN.	
11. COLD WEATHER AND HOT WEATHER PROVISIONS OF ACI 308 AND 305 (CURRENT EDITIONS), RESPECTIVELY, SHALL BE MAINTAINED.	
12. CONTRACTOR TO FURNISH AND INSTALL 500 LINEAR FT. EACH OF ADDITIONAL #4 & #5 REINFORCING STEEL TO BE USED AT ENGINEER'S DISCRETION.	

FORMWORK AND SHORING:

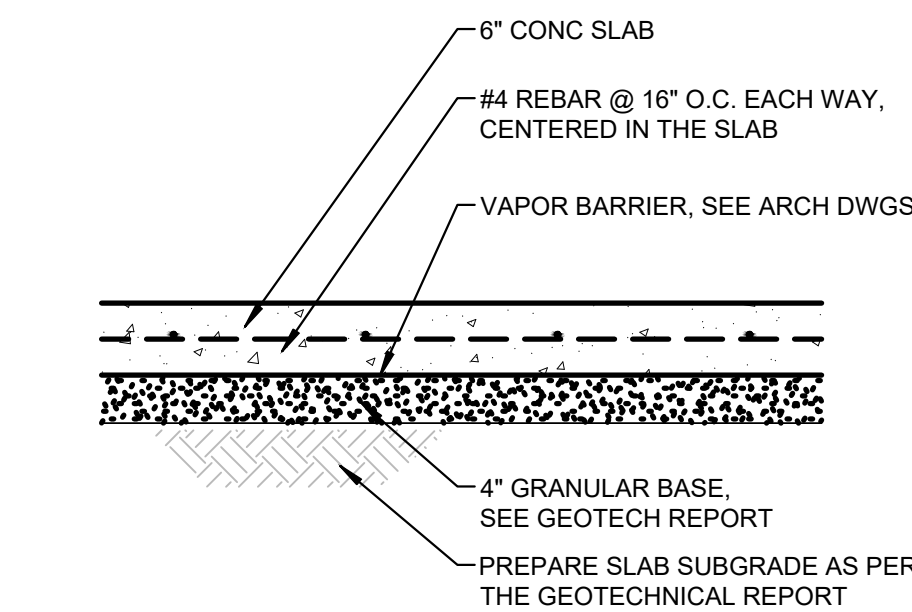
NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND RESHORES SHALL MEET THE REQUIREMENTS SET FORTH IN ACI STANDARDS 301 AND 347.



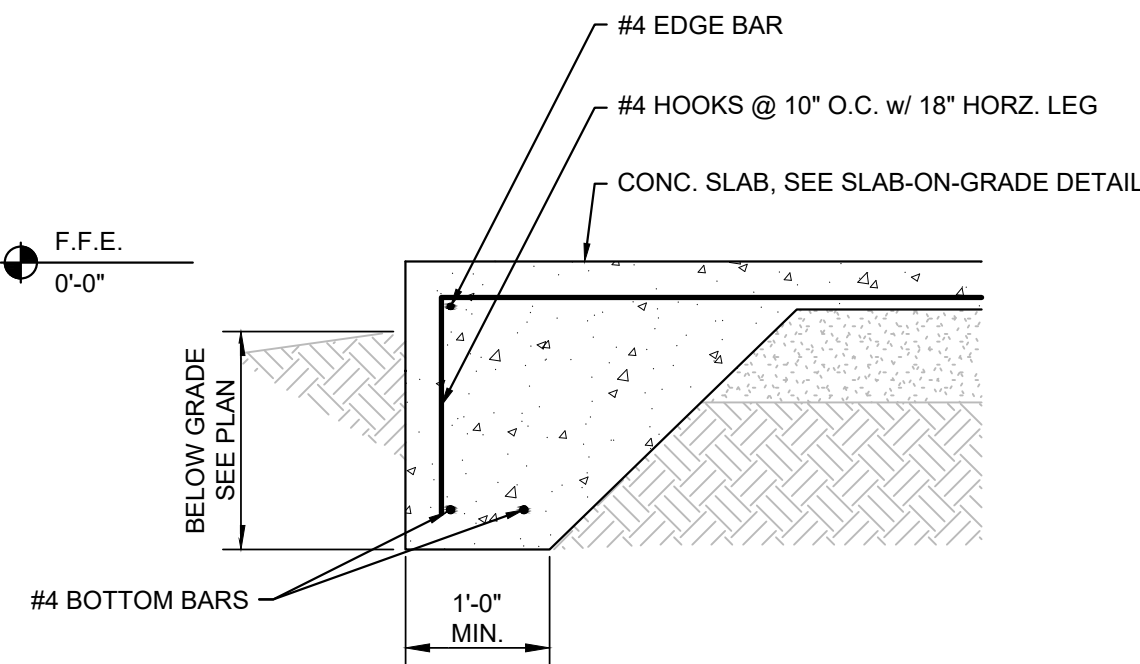
1 6" SLAB ON GRADE CONSTRUCTION JOINT
SCALE: 3/4" = 1'-0"

NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR SLOPES, DROPS, AND DRAIN LOCATIONS IN FLOOR SLABS.



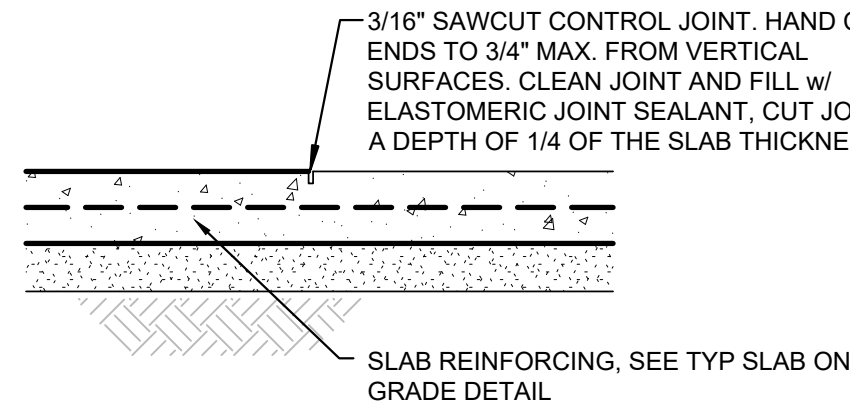
3 6" SLAB ON GRADE DETAIL
SCALE: 3/4" = 1'-0"



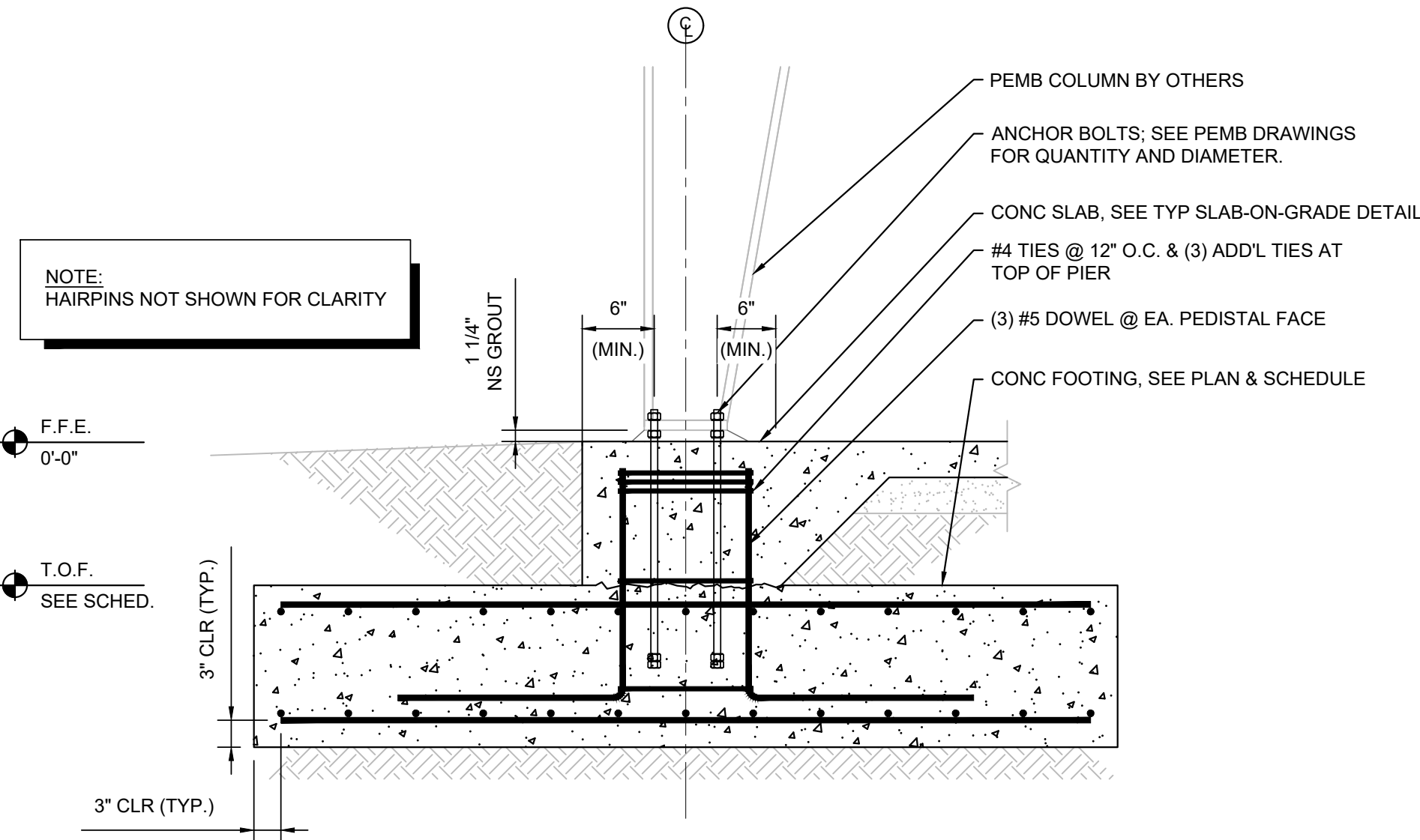
5 PERIMETER FOUNDATION
SCALE: 3/4" = 1'-0"

NOTES:

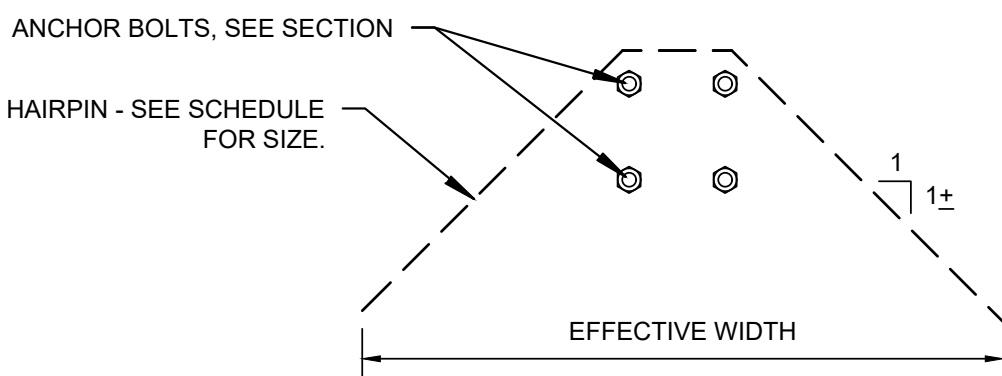
- CONTRACTORS OPTION - USE REMOVABLE CONTROL JOINT MATERIAL SUCH AS "ZIP STRIP", "STRESSLOCK", OR APPROVED EQUAL.
- SLAB ON GRADE CONTROL JOINTS SHALL BE TOOLED OR SAWCUT. THE JOINT PATTERN SHALL BE APPROXIMATELY SQUARE AND LIMITED TO AN AREA NOT TO EXCEED 225 S.F. JOINTS SHALL BE CUT WITHIN 12 HOURS OF POURING SLAB. SEE PLAN FOR PROPOSED JOINT LAYOUT. FINAL JOINT LAYOUT TO BE DETERMINED BY THE GENERAL CONTRACTOR.



2 6" SLAB ON GRADE CONTROL JOINT
SCALE: 3/4" = 1'-0"



4 SECTION - TYPICAL COLUMN
SCALE: 3/4" = 1'-0"



MARK	BAR SIZE	EFFECTIVE WIDTH
1	#5	15'-0"
2	#4	10'-0"

6 TYP. HAIRPIN DETAILS
SCALE: 1" = 1'-0"

DIVISION 15A – PLUMBING

1.1 DESCRIPTION OF THE WORK

- Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
 - Plumbing fixtures, water heaters, and any other equipment necessary.
 - Cold and hot water piping and insulation.
 - DWV piping.
 - Natural gas piping.
 - Connection of all equipment; drain, vent, water, gas.
- All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply.
 - The National Electrical Code.
 - 2018 N.C. Building Code: Plumbing, and all applicable category codes.
 - American Society of Sanitary Engineering Standard 1010.
 - All local codes and ordinances.
- These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.
- The Plumbing Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.
- Obtain all permits, licenses, inspections, etc., required for the work, and pay for the same.

1.2 INTENT

- The intent of these specifications and accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Plumbing Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner. The PC shall determine and coordinate with existing conditions.

1.3 COORDINATION

- Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.
- Locations shown are approximate. The Plumbing Contractor shall refer to the architectural drawings for placement of equipment, fixtures, etc. Where locations are not clear, the Contractor shall obtain the exact locations from the Architect.
- Coordinate all exterior piping connections w/Architect, site contractor/plans. Verify manhole elevations and provide backwater valves as required if flood level rises above next upstream manhole cover elevation. Fixtures with flood level rise above upstream manhole shall not discharge thru b/w valve. Notify engineer of backwater valve requirement, any issue prior to bid.

1.4 SHOP DRAWINGS

- Shop drawings shall be submitted for plumbing fixtures and for pipe. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 – PRODUCTS

2.1 FIXTURES

- Each fixture shall be properly supported from the building structure as required to the end effect that all fixtures and accessories will be held rigidly in place. Water pipes supplying the fixtures must also be held rigidly in place.
- Provide loose key angle stops and chrome plated supply pipe water supplies to fixtures.
- All exposed piping traps and accessories for fixtures shall be chrome plated. Provide chrome plated escutcheon plates where pipes enter walls.
- Provide shutoff valves for all sinks, water heaters, toilets, washing machines, refrigerator icemaker, exterior hose bibbs and all other plumbing fixtures.
- Provide trap primers for all floor drains in areas not served by hose bibbs.

2.2 PIPING

- Drain-Waste-Vent: All DWV piping shall be Schedule 40 PVC-DWV u.o.n., with the following exceptions: Use cast iron piping in oil return air plenums, penetrations of rated walls/floors/ceilings, and in areas/walls adjacent to cooking equipment exhaust hoods. Review Arch. and Mech. drawings. ABS or cast iron piping shall be used for drainage/discharge with a temperature greater than 140 deg. F for a minimum distance of 10'-0".
- Hot and cold water piping above grade: Joints. Support all piping with hangers. Pipe strapping will not be allowed. Provide dirtie, union, shut-off valve and flexible connection to oil equipment. Pressure test all piping prior to putting into use. Verify size requirements prior to installation. Coordinate requirements with local gas company prior to submitting bid. Provide all components necessary for a complete operation system. Label piping per code. Paint exterior and exposed gas lines per code and building owner.
- Cold water piping below grade: Type "K" copper (ASTM-B88) soft drawn.
- Natural gas piping shall be black steel pipe with screwed or welded joints. Support all piping as required by code. Use commercial style hangers, pipe strapping will not be allowed. Provide dirtie, union, shut-off valve and flexible connection to oil equipment. Pressure test all piping prior to putting into use. Verify size requirements prior to installation. Coordinate requirements with local gas company prior to submitting bid. Provide all components necessary for a complete operation system. Label piping per code. Paint exterior and exposed gas lines per code and building owner.

- Hangers: Use pipe hangers where required on 8-foot centers with saddles to avoid crushing insulation.
- Solder: 95/5. Lead free.
- Unions: Provide unions where indicated on drawings, in long runs of piping (except drainage) and at equipment to provide convenient disassembly. Provide dielectric unions when connecting copper tubing to equipment and piping made of ferrous materials.

2.3 CLEANOUTS

- Hex plugs in rough areas: Recessed plugs with cover plates in exposed locations.

2.4 SHOCK ARRESTERS

- Provide shock arresters as required by codes, manufacturer's recommendations and accepted industry standards for quality construction. Provide for all quick closing valves.

PART 3 – EXECUTION

3.1 CONNECTIONS

- This contract includes complete connection of cold water, hot water, drain, vent, and natural gas piping as required. All fittings, valves, accessories, cutoffs, drains, etc., required to complete such connections shall be included.
- The connection to water closets shall be made watertight with gasket and wax ring. Floor flanges shall be caulked into position. Plastic caps shall be provided on the tie down bolts, and shall be secured in place by screwing down on threaded brass washers.
- Where water pipes connect to exposed chrome plated trim, use proper chrome plated escutcheons.

3.2 SERVICE ACCESS

- All valves and accessories shall be installed so that they can be properly serviced. In no case shall the Plumbing Contractor install equipment or other components in situations that do not meet code requirements or manufacturer's requirements. Provide access doors as required to access valves, etc.

3.3 ROUTING OF PIPING

- Coordinate routing of piping with others, line up work true to or at right angle to adjacent surfaces and in a workmanlike manner. Support all interior piping from building structure by means of hanger or inserts to maintain pitch of lines, to prevent vibration, and to secure piping place.
- Space pipe hangers per NCSCB– Plumbing Sect. 308.5 and Fuel Gas Code Sect. 415.1.
- Pipe hangers for insulated lines shall have suitable saddles to protect insulation.

3.4 INSULATION

- All H/W and C/W piping shall be insulated with a min. of 1" inch elastomeric insulation (R-6.5 min.) in unconditioned areas. See NCSCB-Plumbing Sect. 305 for all protection requirements. All H/W piping of circulating systems shall be insulated with 1" insulation per Sect. C404.4 of the NCSCB 2018 Energy Conservation Code.
- Provide pre-fabricated insulation kits for all sink and lavatory exposed drain and supply piping.

3.5 INSPECTIONS AND TESTS

- Before being concealed, all water, soil and vent piping shall be tested to determine if they are water- and air-tight.
- Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.

3.6 STERILIZATION OF PIPING

- Sterilize the new water piping thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hydrochloride solution, introduced into the system in an approved manner. The sterilizing solution shall remain in the system for a period of 24 hours. After sterilization, flush the solution from the system with clean water until the residual chlorine content is not greater than 0.2 parts per million, unless otherwise directed.

3.7 SERVICE PRESSURE

- Provide approved water-pressure reducing valve (PRV) if service pressure exceeds 80 psi to reduce pressure to 80 psi static or less and as required per NCSCB-Plumbing Sect. 604.8.

3.8 DRAINDOWN

- Contractor to provide for complete plumbing system drain down.

3.9 CLEAN UP

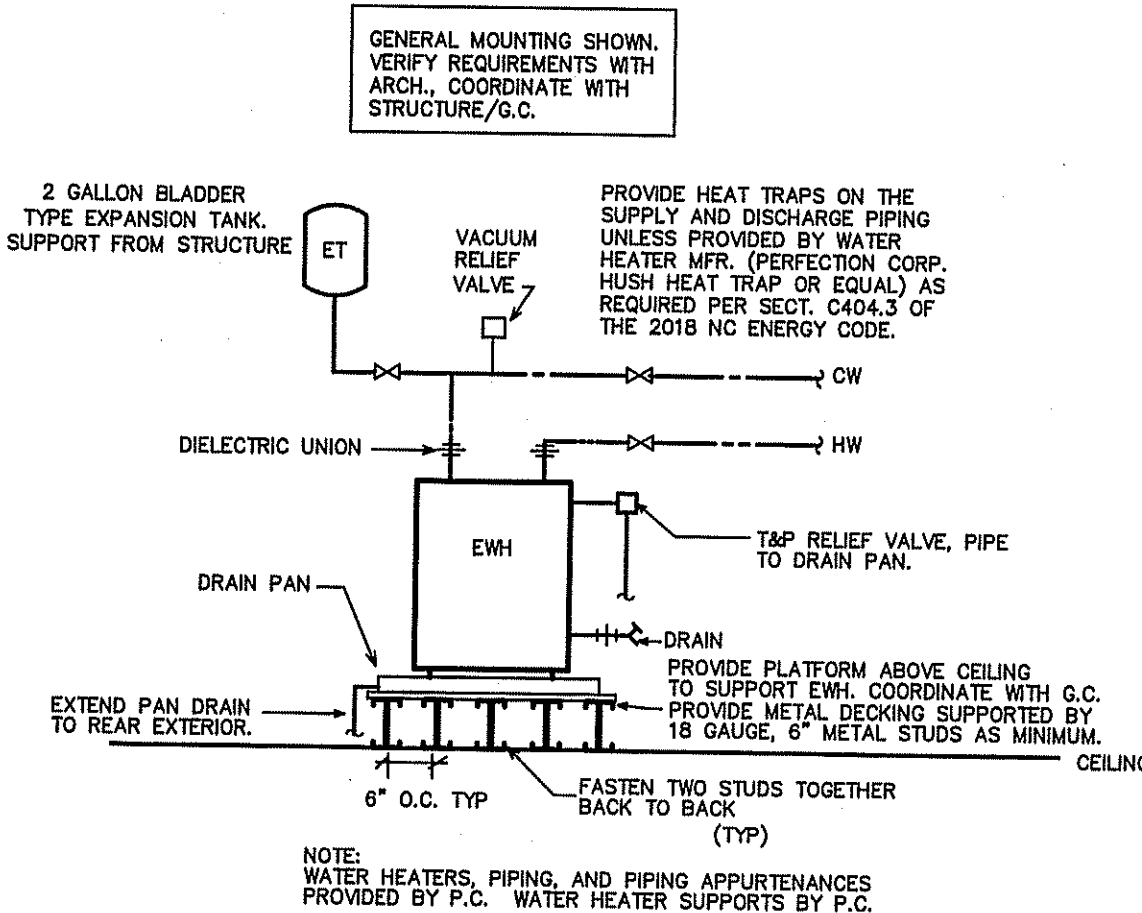
- During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of this work. In addition, upon completion of construction, clean, wash, and/or polish all fixtures, equipment and exposed material and leave them bright and clean.

3.10 GUARANTEES

- Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.
- Any defects in the system which become evident during the guarantee period shall be corrected without cost to the Owner. This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.

GENERAL NOTES – PLUMBING

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
- ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE PLUMBING CONTRACTOR (PC) SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC).
- THE PLUMBING PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO PURCHASING MATERIALS AND INSTALLATION AND ALL DISCREPANCIES OR INTERFERENCES BROUGHT TO THE ENGINEERS ATTENTION.
- THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. THE PC SHALL PROVIDE ALL MISG. ITEMS NEEDED FOR A COMPLETE SYSTEM REGARDLESS IF NOTED ON THE DRAWINGS OR NOT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FLOORPLAN LAYOUTS. DO NOT USE ENGINEERING DRAWINGS FOR ROUGH-INS.
- THE GC SHALL PROVIDE ALL WALL, FLOOR AND ROOF OPENINGS OF THE SIZE AND LOCATION REQUIRED BY THE PC AND SHALL BE RESPONSIBLE FOR PAINTING AND FLOOR FINISHES. THE PC SHALL PROPERLY SEAL ALL PENETRATIONS AND PROVIDE ESCUTCHEON PLATES AT ALL FINISHED LOCATIONS.
- ALL NEW WATER PIPING SHALL BE INSTALLED TIGHT TO STRUCTURE, ADEQUATELY SUPPORTED AND PROTECTED AND PROPERLY PITCHED TO ALLOW TOTAL DRAINAGE.
- ALL WATER PIPING SHALL BE HYDROSTATICALLY TESTED FOR 2 – HOURS AT 150 PSIG BEFORE COVERING AND ALL LEAKS CORRECTED. THE ENTIRE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
- PROVIDE MIN. 18" SHOCK ABSORBERS WITH STOPS ON ALL HOT AND COLD WATER FIXTURE RUNS AS REQUIRED BY CODE.
- VENT LINES SHALL SLOPE UP TO ALL STACKS AND TERMINATE A MIN. OF 12" ABOVE ROOF LINE.
- PROVIDE CUT SHEETS ON ALL PLUMBING FIXTURES FOR ARCHITECT AND OWNER APPROVAL PRIOR TO ORDERING ANY FIXTURES.
- PROVIDE/VERIFY HOT WATER TO FIXTURES AT 110 DEGREES (MAX) F U.O.N. PROVIDE THERMOSTATIC MIXING VALVE (TMV) IF/AS REQUIRED.
- PROVIDE CLEANOUTS AS REQUIRED BY CODE. NOT MORE THAN 100 FEET FOR 4" DRAIN.
- PROVIDE CAST IRON PIPE PER PENETRATION SYSTEM DETAIL FOR ALL DWV PIPING THROUGH FIRE BARRIER WALLS/FLOORS/CEILINGS.



EWH DETAIL
SCALE: NOT TO SCALE

SYMBOL LEGEND – PLUMBING

SYMBOL	DESCRIPTION (U.O.N.)
	SANITARY WASTE PIPING (W)
	VENT PIPING (V)
	COLD WATER PIPING (CW)
	HOT WATER PIPING (HW)
	NATURAL GAS PIPING (G)
	SHUT-OFF VALVE
	DIELECTRIC UNION
	CLEANOUT FINISH FLOOR
	WCO/HCO
	CLEANOUT FINISH GRADE
A.F.F.	ABOVE FINISHED FLOOR
A.A.V.	AIR ADMITTANCE VALVE
U.O.N.	UNLESS OTHERWISE NOTED
	1 HOUR FIRE BARRIER
	3 HOUR FIRE BARRIER

LOAD SUMMARY – PLUMBING

	WASTE LAV (P)	WATER DEMAND (P)	WATER DEMAND (GPM)
	80.0	90.0	41.0

FIXTURE SCHEDULE – PLUMBING *

- ET* EXPANSION TANK
AMTROL MODEL ST-5, 2.0 GALLON, STEEL CONSTRUCTION, NON-ASME RATED.
- EW* ELECTRIC WATER HEATER
A.O. SMITH MODEL EJC-10, 10 GALLON, 1650 WATTS, 120V, 3/4" INLET AND OUTLET. PROVIDE DRAIN PAN, EXPANSION TANK AND PRESSURE RELIEF VALVE.
- PHB* FREEZE PROOF HOSE BIBB
WOODFORD MODEL #B10, FREEZE PROOF HOSE BIBB WITH BACKFLOW PREVENTER. COORDINATE MOUNTING W/TENANT. PROVIDE TEE KEY OR LOCK SL-17 IF REQUIRED. VERIFY MOUNTING LOCATION, COORDINATE STEM LENGTH PER WALL THICKNESS.
- LAV LAVATORY (WALL MOUNT)
KOHLER CHESAPEAKE LAVATORY, K-1728, VITREOUS CHINA, 4" CENTERS, ADA COMPLIANT. PROVIDE DELTA MODEL 523LF-HGMHDF FAUCET, 0.5 GPM MAX WITH GRID STRAINER. PROVIDE P-TRAP AND SHUT-OFF VALVES.
- ST* COUNTER SINK
ELKAY LR1517 SINGLE BASIN STAINLESS STEEL SINK (MODEL LRAD1517 IF ADA COMPLIANCE REQUIRED), 18 GA., SELF-RIMMING, FURNISHED WITH THREE FAUCET HOLES AND CENTER DRAIN. PROVIDE ELKAY FAUCET MODEL LK310AT08L2 WITH TWO LEVER HANDLES. CHROME PLATED BRASS P-TRAP AND SHUT-OFF VALVES. COORDINATE EXACT UNIT WITH OWNER AND GENERAL CONTRACTOR. COORDINATE SIZE WITH CABINETS PRIOR TO ORDERING.
- TMV* THERMOSTATIC MIXING VALVE (ASSE 1070)
WATTS LFUSG-B 'LEAD FREE' GUARDIAN. INSTALL IN MAINTENANCE ACCESSIBLE LOCATION BELOW LAV/SINK OR ABOVE CEILING. SET HW OUTFLOW TO SPECIFIED TEMPERATURE (110 DEG. F (MAX.) LTHW).
- WC* WATER CLOSET (ADA FLUSH TANK)
KOHLER HIGHLINE WATER CLOSET, K-3979, ADA COMPLIANT 1.6 GPF. PROVIDE PROPER OPEN FRONT ADA SEAT, K-7637 SUPPLY AND STOP, WAX SEAL, CLOSET BOLT KIT. PROVIDE MODEL WITH FLUSH CONTROL ON SIDE OPPOSITE GRAB BAR.

* OR APPROVED EQUAL. SUBMIT ALL ITEMS FOR APPROVAL BY TENANT AND ARCHITECT PRIOR TO ORDERING.
ALL OTHER PLUMBING FIXTURES SHOWN ARE PROVIDED BY THE TENANT AND INSTALLED BY THE PLUMBING CONTRACTOR. SEE PLANS FOR NUMBER AND LOCATION. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT SERVED.

System No. WL-1527
August 24, 2016

ANSI/UL 147B (ASTM E814)	CANULC 9116
F Ratings — 1 and 2 Hr (See Item 1)	F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 1 and 2 Hr (See Item 1)	FT Ratings — 1 and 2 Hr (See Item 1)
L Rating At Ambient — Less Than 1 CFM/sq ft	FL Ratings — 1 and 2 Hr (See Item 1)
L Rating At 400 F — Less Than 1 CFM/sq ft	FTL Ratings — 1 and 2 Hr (See Item 1)
	L Rating At Ambient — Less Than 5.1 L/sqm²
	L Rating At 400 F — Less Than 5.1 L/sqm²

SECTION A-A

- Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/steel wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
 - Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
 - Gypsum Board* — One or two layers of nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Max dim of opening is 6 in. (127 mm).

The hourly F, T, FT, FH and FTL Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
- Metallic Penetrant — One metallic pipe, conduit or tube to be installed either concentrically or eccentrically, penetrating wall assembly on one side of wall. The annular space between the pipe, conduit or tubing and the periphery of opening shall be min 0 in. (not sealed) to max 7/8 in. (22 mm). Pipe, conduit or tubing shall be rigidly supported within the wall and on the penetrated side of the wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - Steel Pipe — Nom 3 in. (76 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
 - Iron Pipe — Nom 3 in. (76 mm) diam (or smaller) cast or ductile iron pipe.
 - Conduit — Nom 3 in. (76 mm) diam (or smaller) steel electrical metallic tubing (EMT), nom 3 in. (76 mm) diam steel conduit or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit.
 - Copper Tubing — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tubing.
 - Copper Pipe — Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe.
- Fill, Void or Cavity Material* — Sealant — Min 6/8 in. (16 mm) thickness of fill material applied within annulus, flush with surface of wall assembly. At point contact location, min 3/8 in. (10 mm) diam bead of fill material to be applied at the penetrant/gypsum board interface. SPECIFIED TECHNOLOGIES INC — SpecSeal Series SSS Sealant or SpecSeal LCI Sealant

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

Last Updated on 2016-08-24

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PLUMBING
SPECIFICATIONS

25014

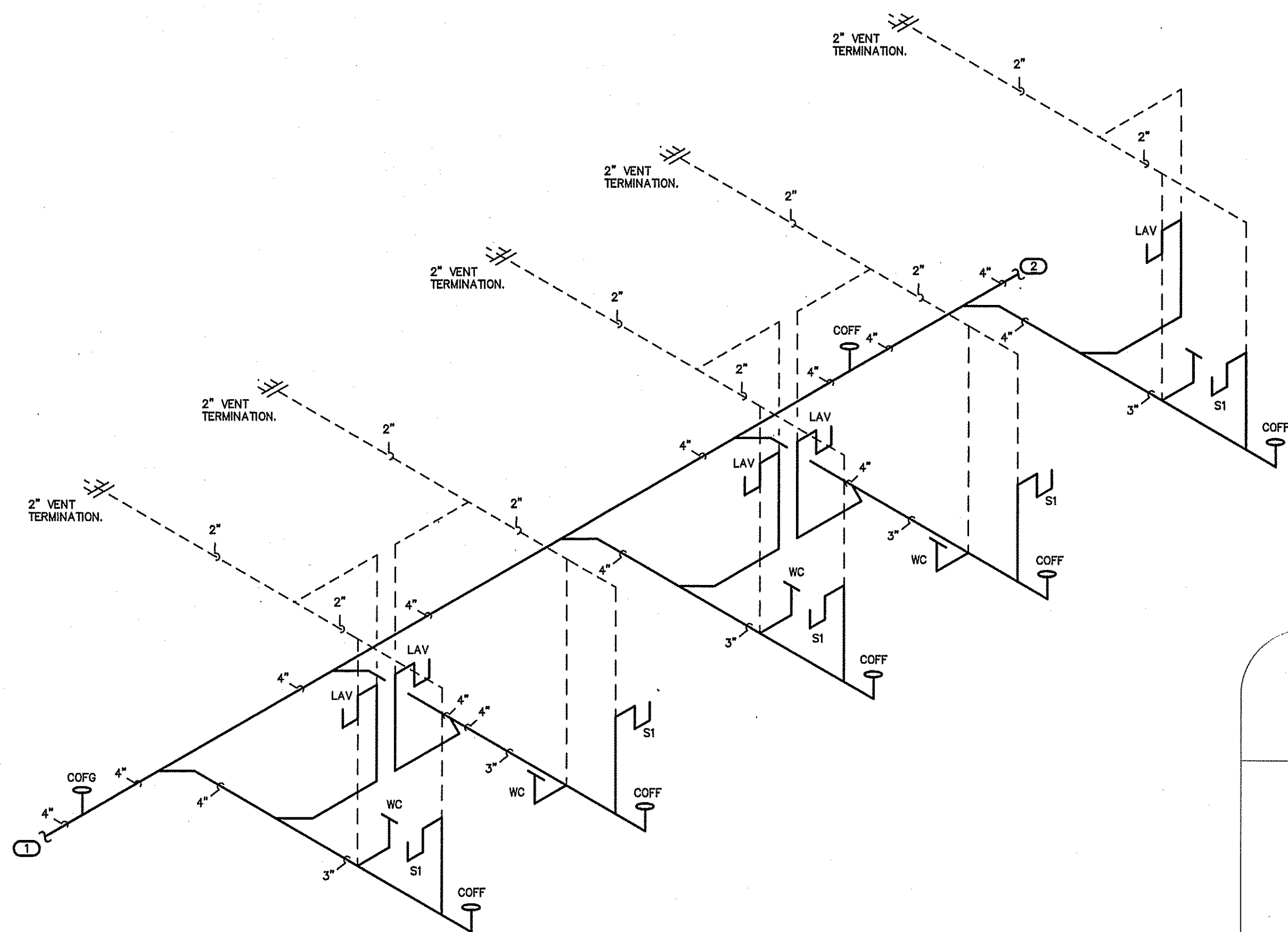
ISSUED: 06/18/2025
DWG BY: MRH
CKD BY: BEB
REVISIONS

SHEET NO.
P1.0

ENGINEER

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email: ben@bdg-nc.com
Corp. License # C-2652



2 DWV RISER - SIDE A
P2.0 SCALE: NOT TO SCALE

RISER NOTES:
REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.
MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
PROVIDE PROPER VENT TERMINATIONS.
RUN HORIZONTALLY AS REQUIRED TO
MAINTAIN 10'-0" CLEARANCE FROM ANY
INTAKES. PROPERLY FLASH ANY WALL
PENETRATION. (TYP)

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

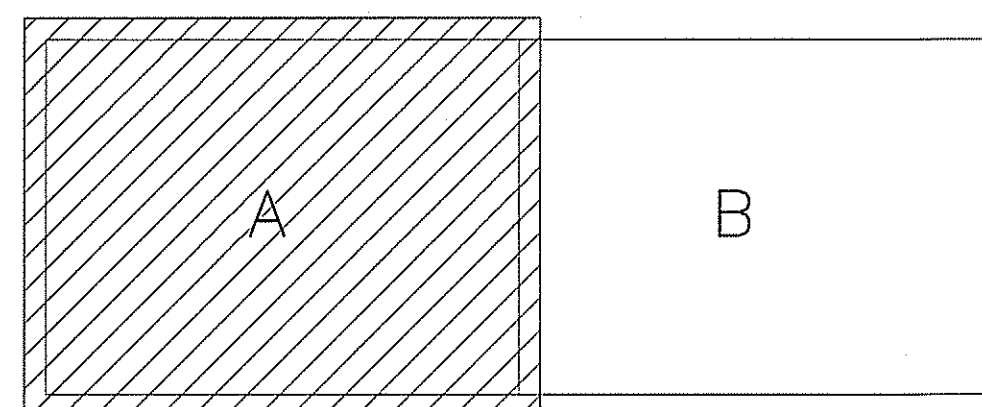
PIPE SIZING SCHEDULE		
FIXTURE TYPE	DRAIN	VENT
(LAV) LAVATORY	1-1/2"	1-1/4"
(S1) COUNTER SINK	1-1/2"	1-1/4"
(WC) FLUSH TANK WATER CLOSET	3"	1-1/2"

- KEY NOTES FOR SHEET P2.0**
- 1 EXTEND TO SANITARY SEWER IN AREA. VERIFY LOCATION.
 - 2 4" SANITARY BLDG. MAIN TO ADJACENT SPACES (SIDE B). SEE SHEET P2.1 FOR CONTINUATION.

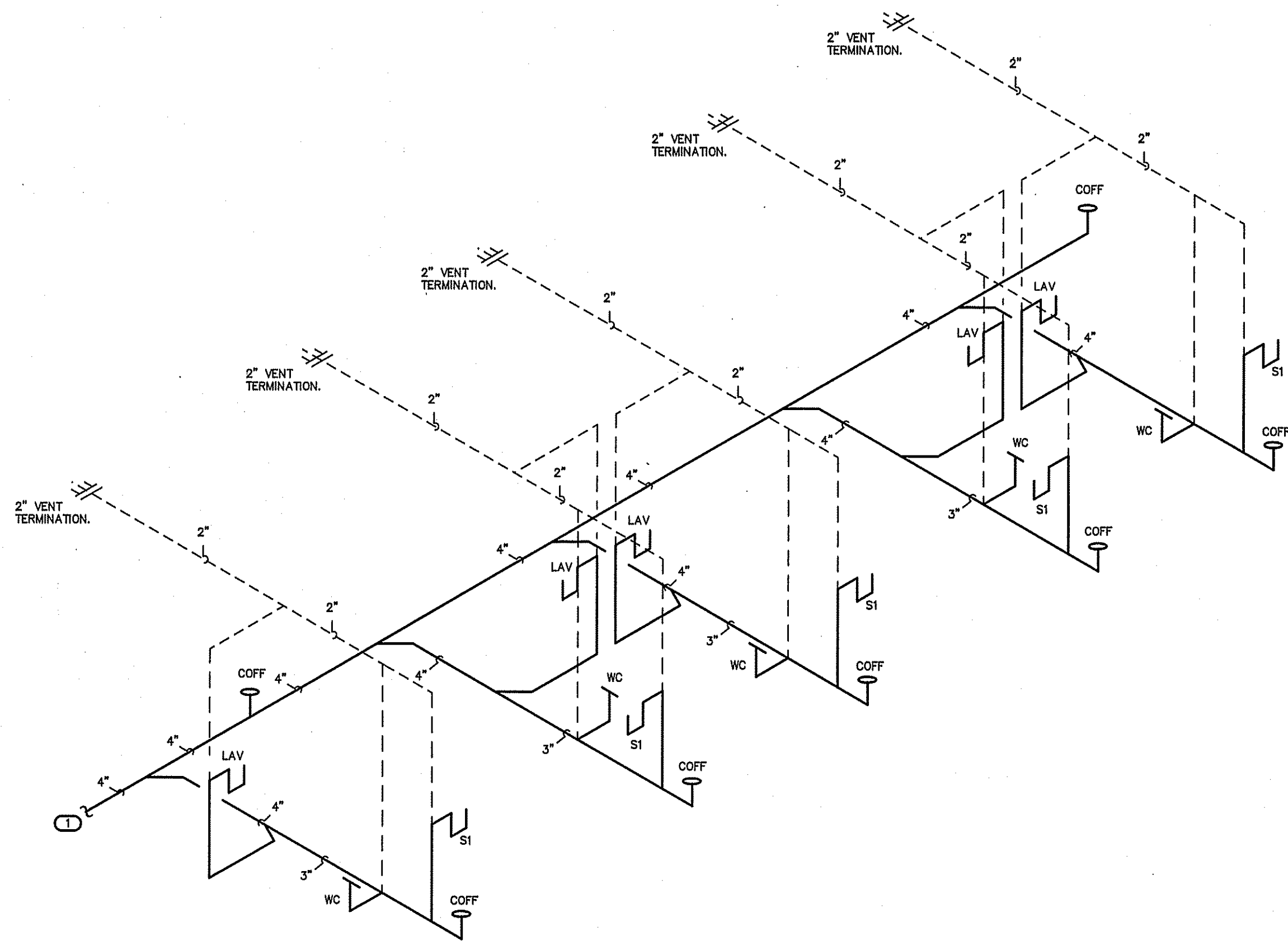
NOTE:
ALL VENT TERMINATIONS TO EXTEND THRU REAR WALL. NO ROOF PENETRATIONS PERMITTED.



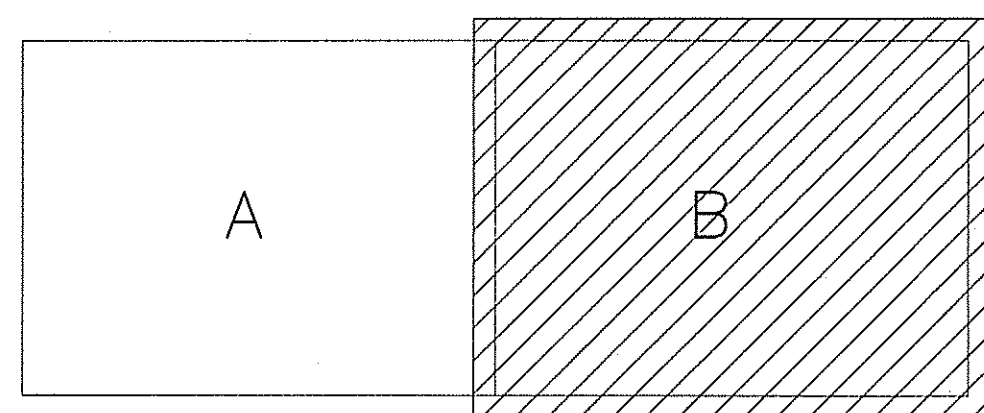
1 DWV PLAN - SIDE A
P2.0 SCALE: 1/8"=1'-0"



3 KEY PLAN
P2.0 SCALE: NTS



2 DWV RISER - SIDE B
SCALE: NOT TO SCALE



3 KEY PLAN
SCALE: NTS

RISER NOTES:
REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.
MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

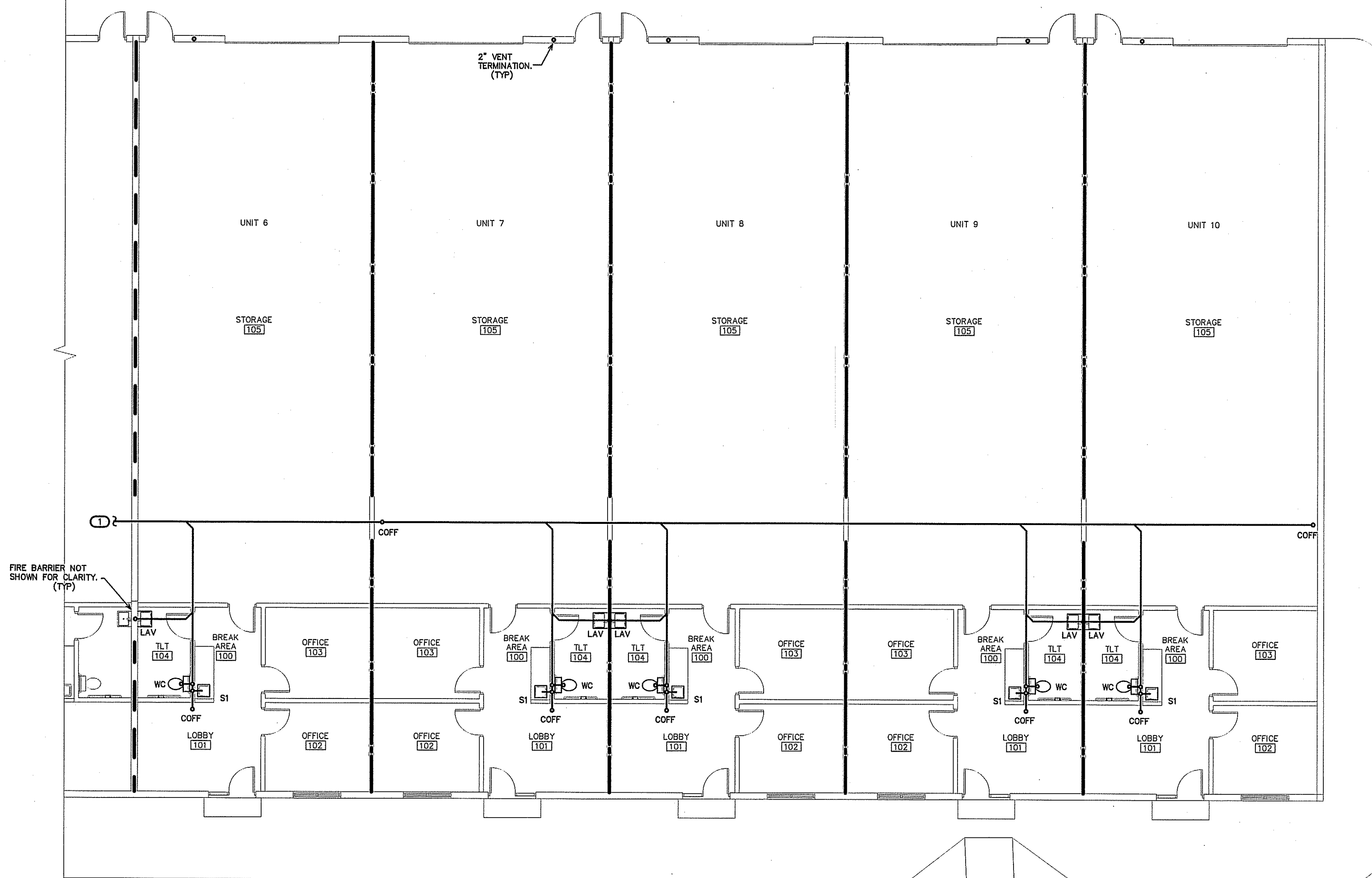
NOTE:
PROVIDE PROPER VENT TERMINATIONS.
RUN HORIZONTALLY AS REQUIRED TO
MAINTAIN 10'-0" CLEARANCE FROM ANY
INTAKES. PROPERLY FLASH ANY WALL
PENETRATION. (TYP)

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

PIPE SIZING SCHEDULE		
FIXTURE TYPE	DRAIN	VENT
(LAV) LAVATORY	1-1/2"	1-1/4"
(SI) COUNTER SINK	1-1/2"	1-1/4"
(WC) FLUSH TANK WATER CLOSET	3"	1-1/2"

KEY NOTES FOR SHEET P2.1
1 4" SANITARY BLDG. MAIN TO ADJACENT SPACES (SIDE A). SEE SHEET P2.0 FOR CONTINUATION TO SANITARY SEWER.

NOTE:
ALL VENT TERMINATIONS TO EXTEND THRU REAR WALL. NO ROOF PENETRATIONS PERMITTED.



1 DWV PLAN - SIDE B
SCALE: 1/8"=1'-0"

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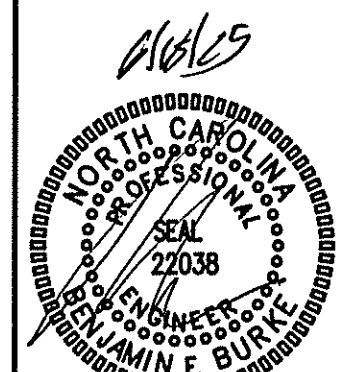
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DWV PLAN -
SIDE B

25014

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DWG BY: MRH
CKD BY: BEB

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SHEET NO.

P2.1

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

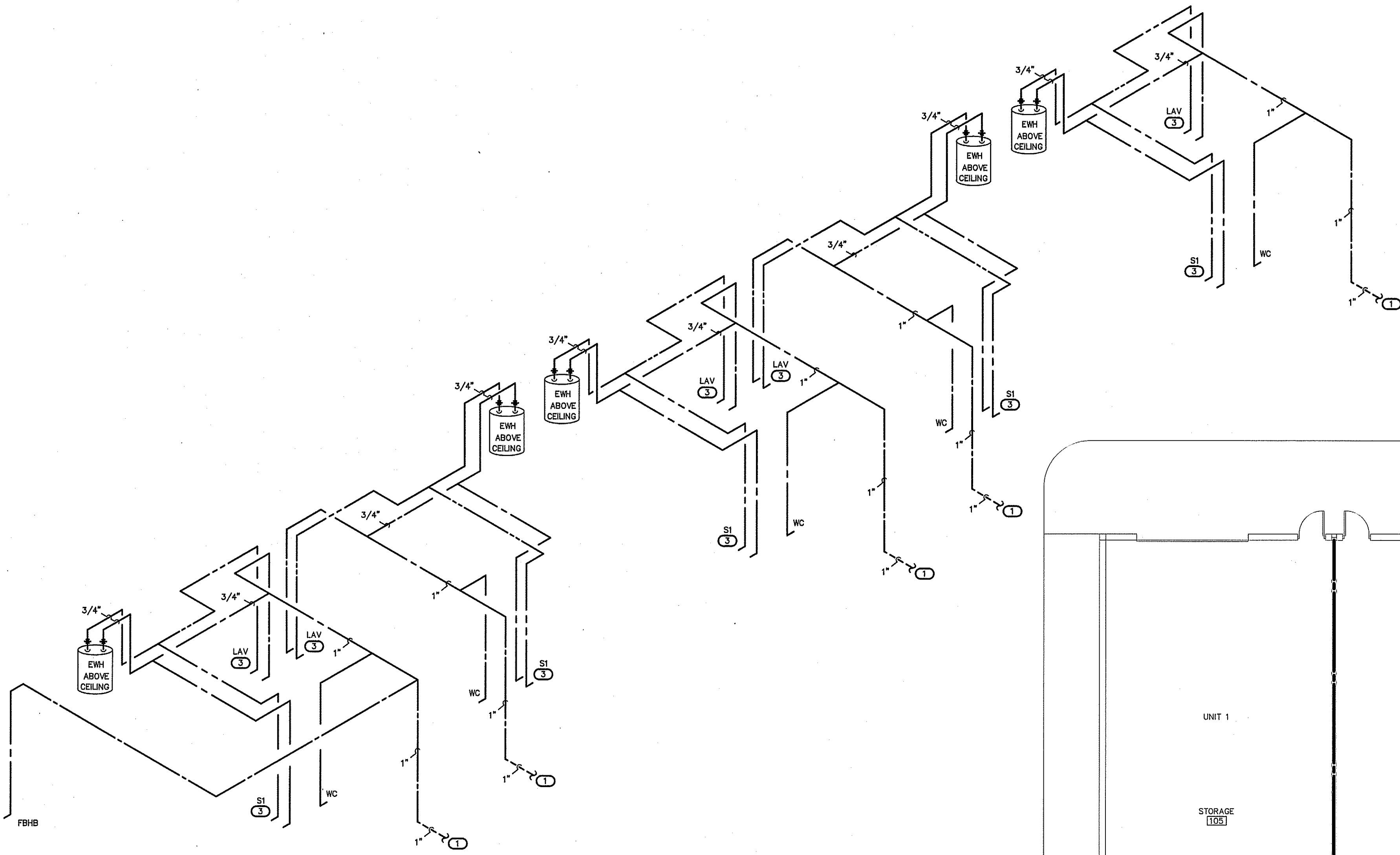
PIPE SIZING SCHEDULE		
FIXTURE TYPE	CW	HW
(FPHB) FREEZE PROOF HOSE BIBB	1/2"	-
(LAV) LAVATORY	1/2"	1/2"
(S1) COUNTER SINK	1/2"	1/2"
(WC) FLUSH TANK WATER CLOSET	1/2"	-

RISER NOTES:
REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

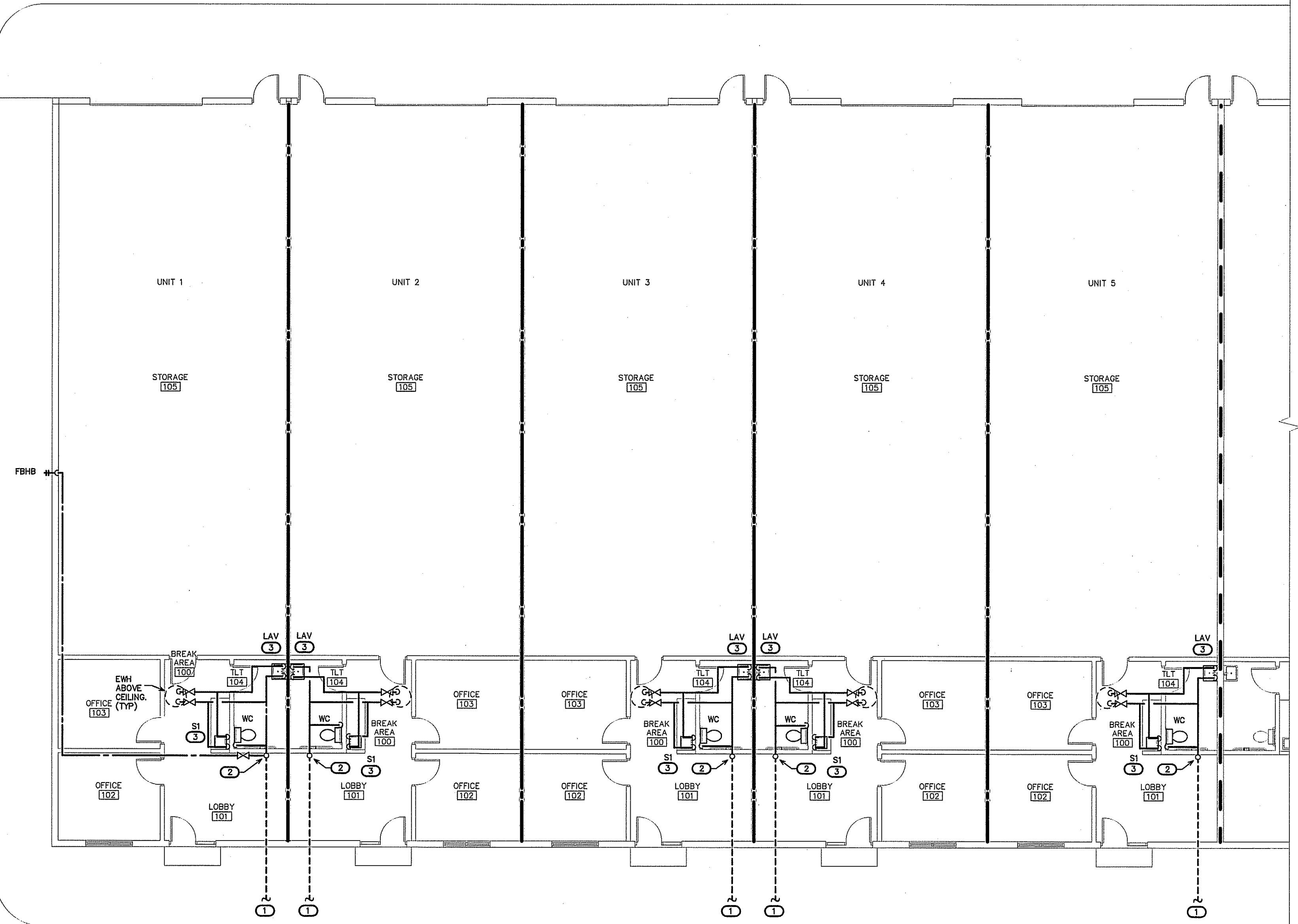
NOTE:
SEE PLAN FOR SHUT-OFF VALVE LOCATIONS.
COORDINATE LOCATION AND NUMBER
WITH LOCAL INSPECTIONS DEPARTMENT.
PROVIDE ACCESS DOORS IF REQUIRED.

KEY NOTES FOR SHEET P3.0

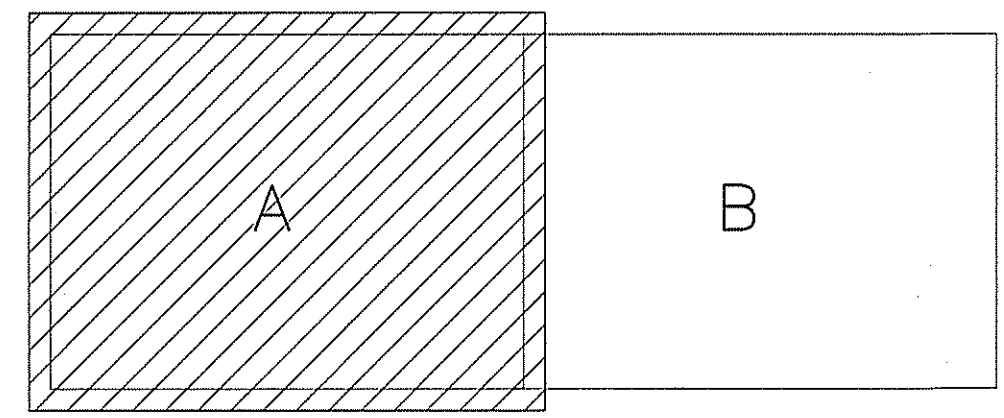
- 1" CW BELOW GRADE TO TENANT RPZ/METER.
COORDINATE W/SITE.
- RISE CW FROM BELOW GRADE TO MAIN
SHUT-OFF VALVE A.F.F., RISE TO RUN CW
MAIN ABOVE CEILING. VERIFY LOCATION.
RISE IN WALL W/ACCESS DOOR IF REQUIRED.
- PROVIDE TMV AT SINK/LAVATORY FOR CW
AND 110 DEG. F (MAX) LTHW TO FAUCET.
LOCATE TMV (NOT SHOWN) IN PROPER
MAINTENANCE ACCESSIBLE AREA BELOW
FIXTURE, OR AS REQUIRED.



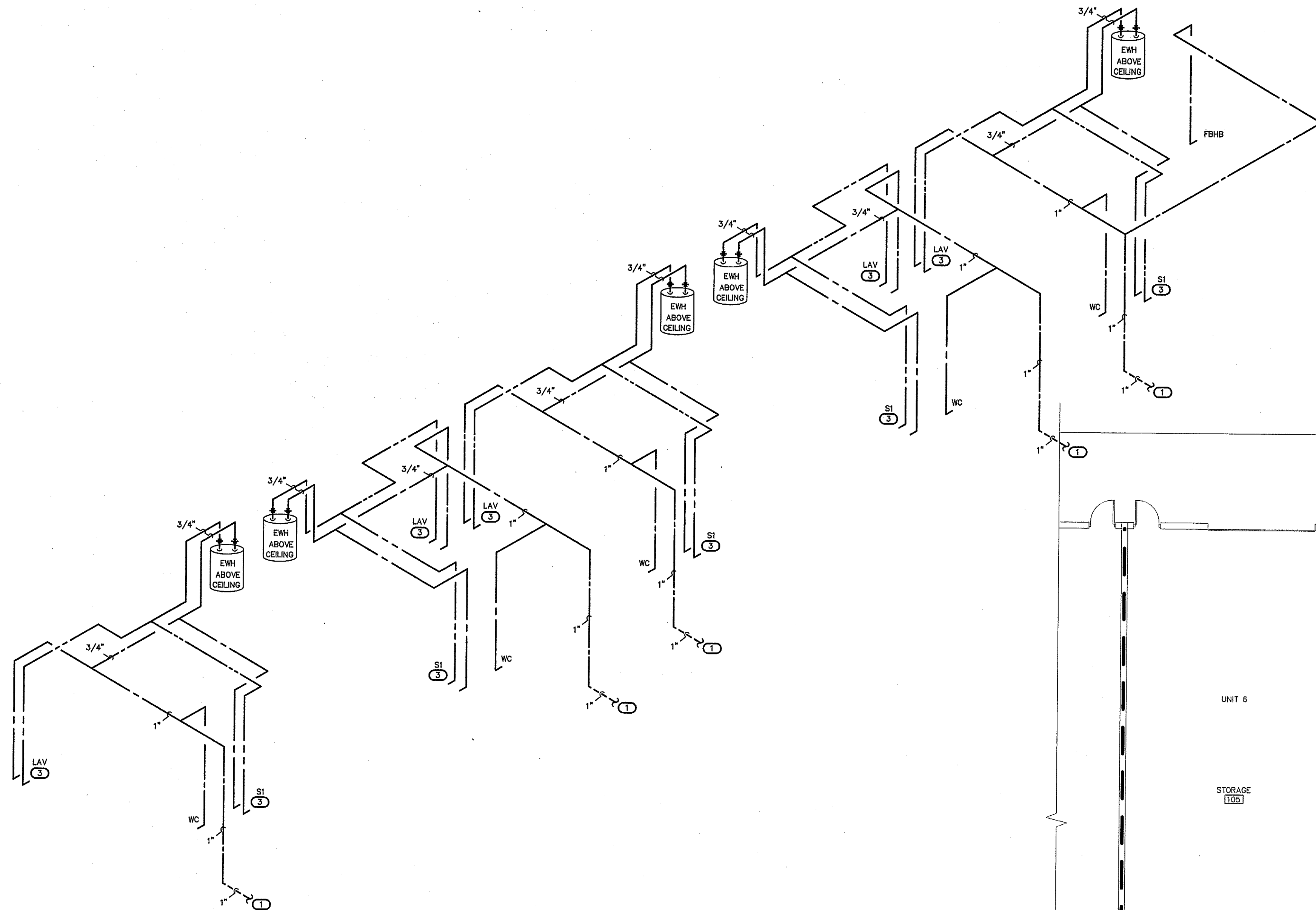
2 WATER RISER - SIDE A
SCALE: NOT TO SCALE



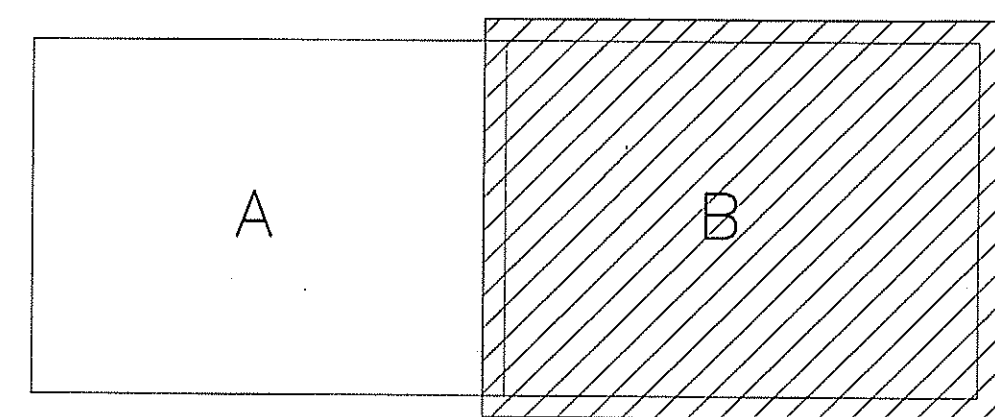
1 WATER PLAN - SIDE A
SCALE: 1/8"=1'-0"



3 KEY PLAN
SCALE: NTS



2 WATER RISER - SIDE B
P3.1 SCALE: NOT TO SCALE



3 KEY PLAN
P3.1 SCALE: NTS

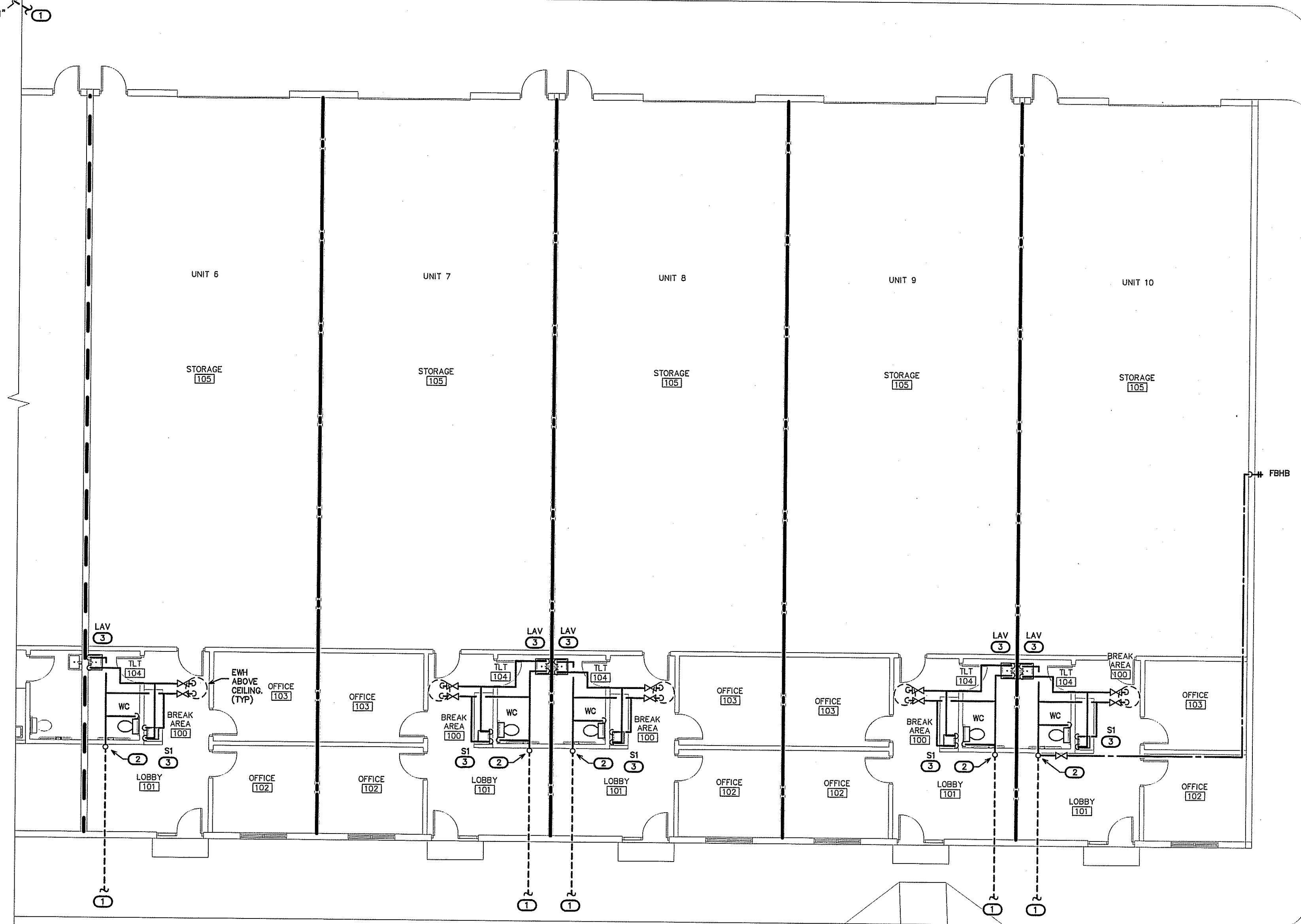
(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

PIPE SIZING SCHEDULE		
FIXTURE TYPE	CW	HW
(FPHB) FREEZE PROOF HOSE BIBB	1/2"	-
(LAV) LAVATORY	1/2"	1/2"
(SI) COUNTER SINK	1/2"	1/2"
(WC) FLUSH TANK WATER CLOSET	1/2"	-

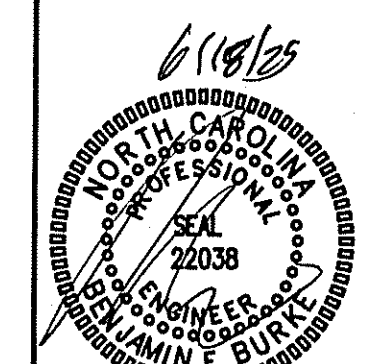
RISER NOTES:
REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE.
SEE PIPE SIZING SCHEDULE.
MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
SEE PLAN FOR SHUT-OFF VALVE LOCATIONS.
COORDINATE LOCATION AND NUMBER
WITH LOCAL INSPECTIONS DEPARTMENT.
PROVIDE ACCESS DOORS IF REQUIRED.

- KEY NOTES FOR SHEET P3.1
- 1" CW BELOW GRADE TO TENANT RPZ/METER. COORDINATE W/SITE.
 - RISE CW FROM BELOW GRADE TO MAIN SHUT-OFF VALVE A.F.F. RISE TO RUN CW MAIN ABOVE CEILING. VERIFY LOCATION, RISE IN WALL W/ACCESS DOOR IF REQUIRED.
 - PROVIDE TMV AT SINK/LAVATORY FOR CW AND 110 DEG. F (MAX) LTHW TO FAUCET. LOCATE TMV (NOT SHOWN) IN PROPER MAINTENANCE ACCESSIBLE AREA BELOW FIXTURE, OR AS REQUIRED.



1 WATER PLAN - SIDE B
P3.1 SCALE: 1/8"=1'-0"



WATER PLAN -
SIDE B

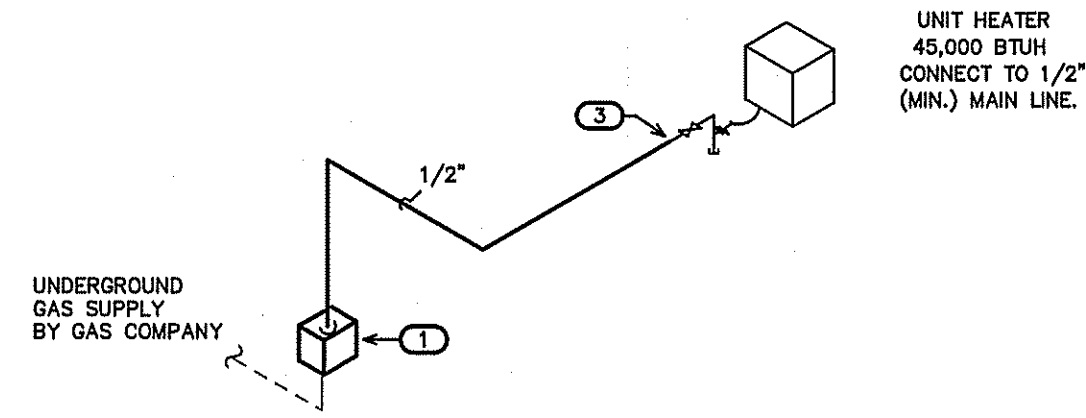
25014

ISSUED: 06/18/2025
DWG BY: MRH
CKD BY: BEB

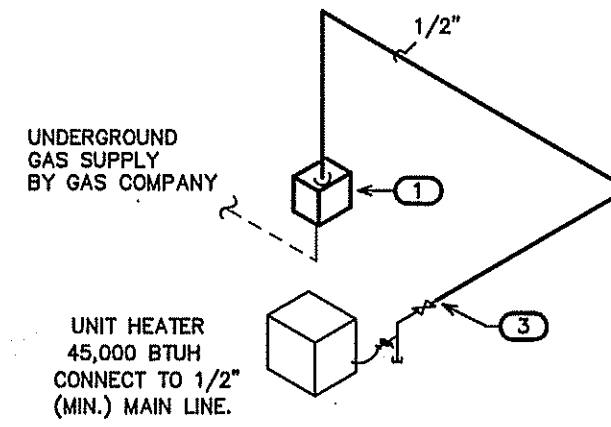
REVISIONS

SHEET NO.

P3.1



2
P4.0 NATURAL GAS RISER - UNITS #1/#3/#5
SCALE: NOT TO SCALE



3
P4.0 NATURAL GAS RISER - UNITS #2/#4
SCALE: NOT TO SCALE

2018 NCSBC, FUEL GAS CODE- TABLE 402.4(2)
NOTE:
GAS PIPE SIZES BASED UPON AN INITIAL PRESSURE OF LESS THAN 2 PSI
AND A PRESSURE DROP OF 1/2" WC AT 40 FEET IN DEVELOPED LENGTH.
PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER.
TOTAL CONNECTED LOAD = 45,000 BTUH (EACH TENANT)

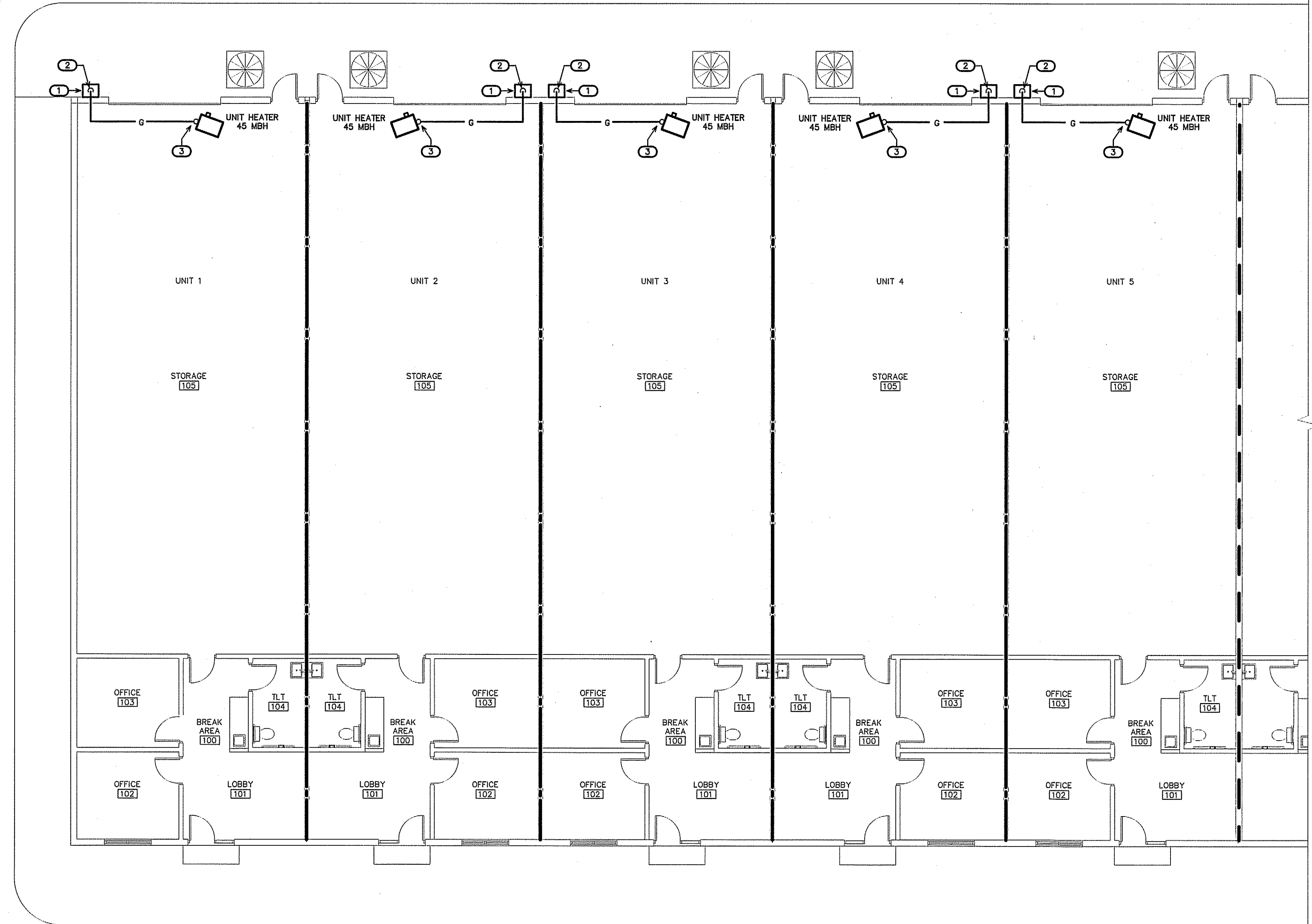
NOTE:
GAS PIPING SHALL BE BLACK STEEL, SCHEDULE 40 WITH
SCREWED (LESS THAN 2-1/2" DIA. PIPING) OR WELDED
(GREATER THAN OR EQUAL TO 2-1/2" DIA. PIPING) FITTINGS.
TEST, LABEL AND INSTALL ALL PIPING PER THE NCSBC.

NOTE:
PROVIDE SHUT-OFF VALVE,
DIRTLEG, UNION, AND FLEXIBLE
CONNECTION OR AS REQUIRED
TO EACH PIECE OF EQUIPMENT.
VERIFY CONNECTION TYPE/SIZE
WITH EACH PIECE OF EQUIPMENT.

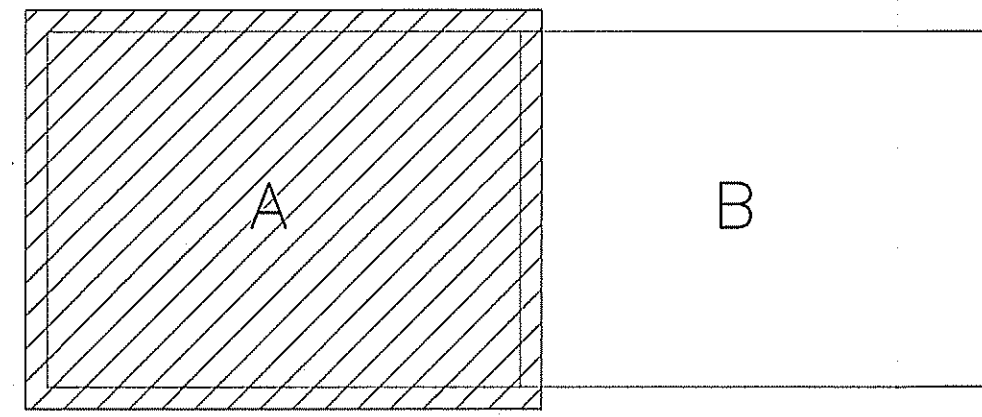
NOTE:
VERIFY ALL GAS EQUIPMENT LOAD TOTALS.
VERIFY GAS METER LOCATION PRIOR TO
BID. VERIFY LINE SIZES, TOTAL DEVELOPED
LINE LENGTHS. NOTIFY THE ENGINEER OF
ANY DISCREPANCIES FOR REQUIRED REVIEW
AND/OR RE-SIZING OF GAS LINES.

NOTE:
ALL GAS LINES SHOWN FOR CLARITY.
VERIFY ROUTING OF ALL GAS LINES-
COORDINATE WITH TENANT, ARCHITECT,
G.C., STRUCTURE, ALL TRADES, ETC.
(TYP)

- KEY NOTES FOR SHEET P4.0
- 1 PROVIDE LOW PRESSURE (0.5 PSI/LESS THAN 2 PSI) NATURAL GAS METER/SERVICE. COORDINATE WITH GAS COMPANY. VERIFY LOCATION.
 - 2 RISE TO RUN ABOVE CEILING/BELOW ROOF STRUCTURE. VERIFY LOCATION/ROUTING.
 - 3 CONNECT TO UNIT HEATER (UH) BELOW ROOF. COORDINATE LOCATION WITH EQUIPMENT.



1
P4.0 NATURAL GAS PLAN - SIDE A
SCALE: 1/8"=1'-0"

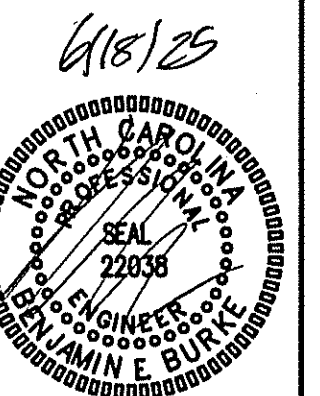


3
P4.0 KEY PLAN
SCALE: NTS

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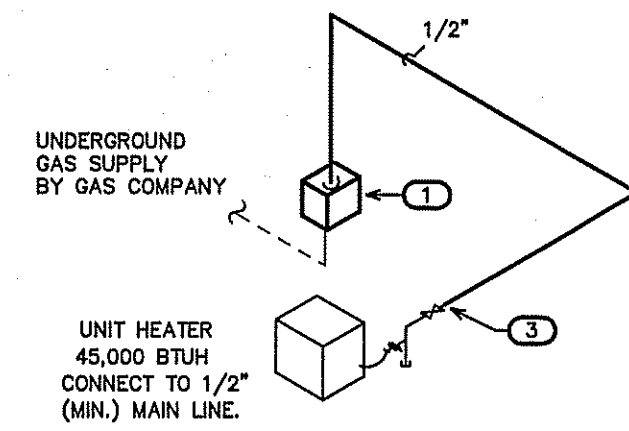
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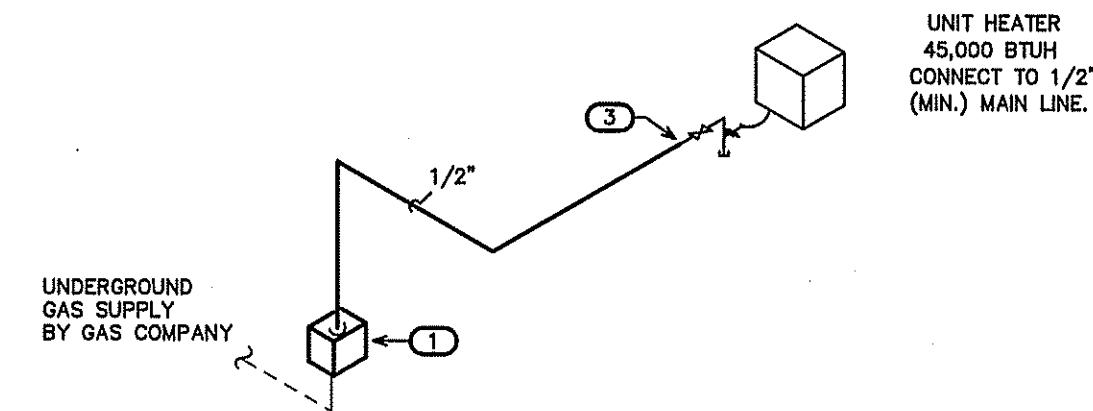
NATURAL GAS PLAN -
SIDE A

25014
ISSUED: 06/18/2025
DWG BY: MRH
CKD BY: BEB
REVISIONS

SHEET NO.
P4.0



2
P4.1 NATURAL GAS RISER - UNITS #6/#8/#10
SCALE: NOT TO SCALE



3
P4.1 NATURAL GAS RISER - UNITS #7/#9
SCALE: NOT TO SCALE

2018 NCSBG, FUEL GAS CODE- TABLE 402.4(2)
NOTE:
GAS PIPE SIZES BASED UPON AN INITIAL PRESSURE OF LESS THAN 2 PSI
AND A PRESSURE DROP OF 1/2" WC AT 40 FEET IN DEVELOPED LENGTH.
PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER.
TOTAL CONNECTED LOAD = 45,000 BTUH (TYP OF EACH TENANT)

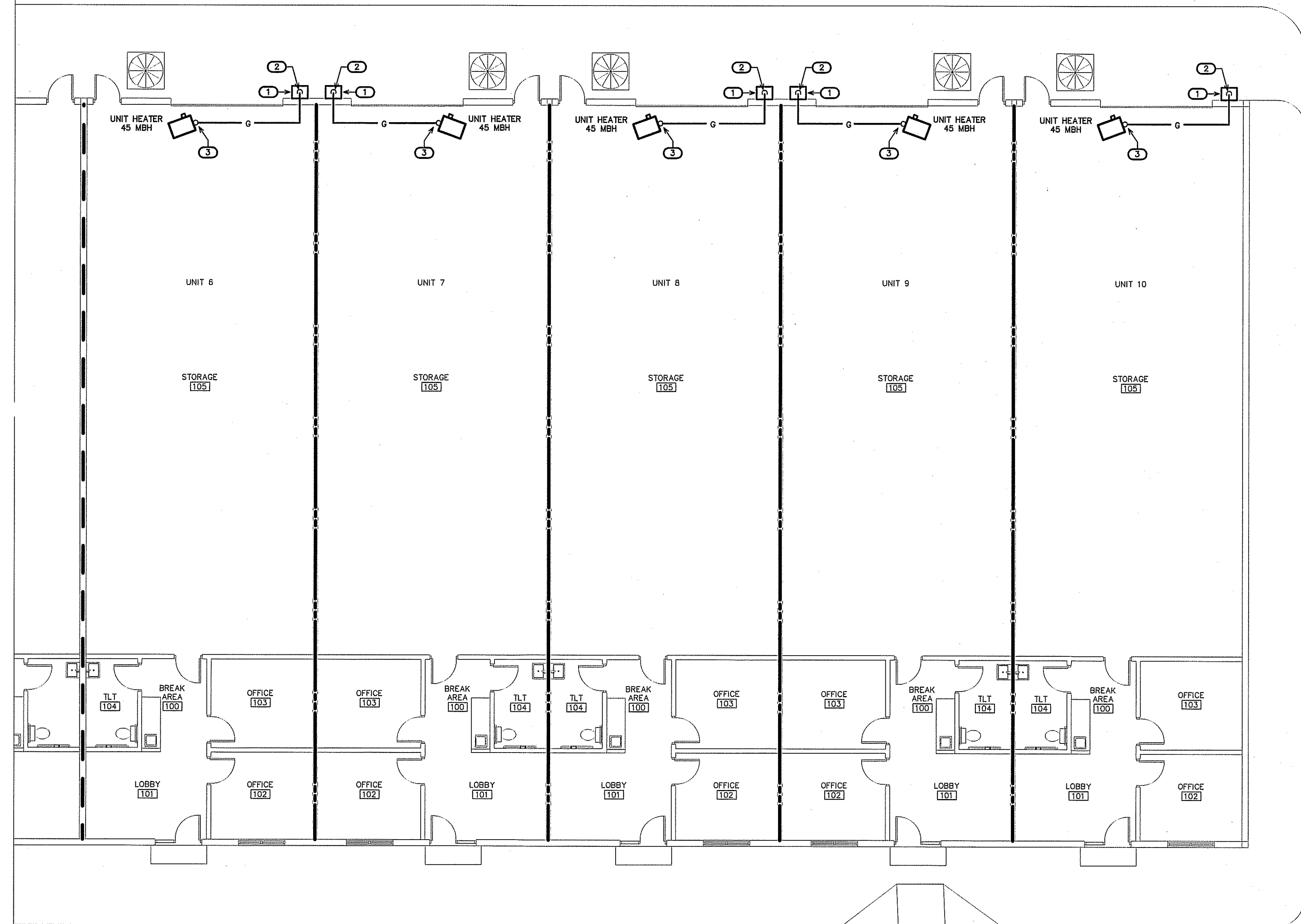
NOTE:
GAS PIPING SHALL BE BLACK STEEL, SCHEDULE 40 WITH
SCREWED (LESS THAN 2-1/2" DIA. PIPING) OR WELDED
(GREATER THAN OR EQUAL TO 2-1/2" DIA. PIPING) FITTINGS.
TEST, LABEL AND INSTALL ALL PIPING PER THE NCSBG.

NOTE:
PROVIDE SHUT-OFF VALVE,
DIRTLES, UNION, AND FLEXIBLE
CONNECTION OR AS REQUIRED
TO EACH PIECE OF EQUIPMENT.
VERIFY CONNECTION TYPE/SIZE
WITH EACH PIECE OF EQUIPMENT.

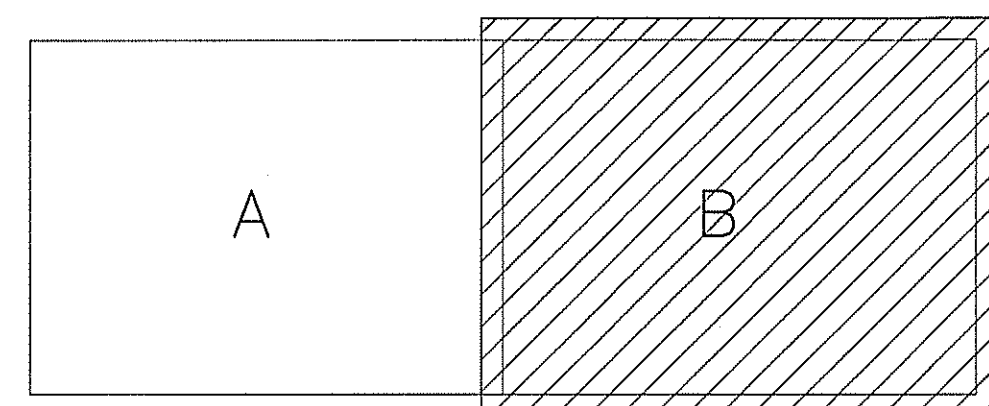
NOTE:
VERIFY ALL GAS EQUIPMENT LOAD TOTALS.
VERIFY GAS METER LOCATION PRIOR TO
BID. VERIFY LINE SIZES, TOTAL DEVELOPED
LINE LENGTHS. NOTIFY THE ENGINEER OF
ANY DISCREPANCIES FOR REQUIRED REVIEW
AND/OR RE-SIZING OF GAS LINES.

NOTE:
ALL GAS LINES SHOWN FOR CLARITY.
VERIFY ROUTING OF ALL GAS LINES--
COORDINATE WITH TENANT, ARCHITECT,
G.C., STRUCTURE, ALL TRADES, ETC.
(TYP)

- KEY NOTES FOR SHEET P4.1
- 1 PROVIDE LOW PRESSURE (0.5 PSI/LESS THAN 2 PSI) NATURAL GAS METER/SERVICE. COORDINATE WITH GAS COMPANY. VERIFY LOCATION.
 - 2 RISE TO RUN ABOVE CEILING/BELOW ROOF STRUCTURE. VERIFY LOCATION/ROUTING.
 - 3 CONNECT TO UNIT HEATER (UH) BELOW ROOF. COORDINATE LOCATION WITH EQUIPMENT.



1
P4.1 NATURAL GAS PLAN - SIDE B
SCALE: 1/8"=1'-0"

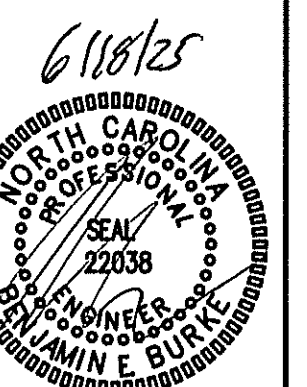


3
P4.1 KEY PLAN
SCALE: NTS

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NATURAL GAS PLAN -
SIDE B

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ISSUED: 06/18/2025
DWG BY: MRH
CKD BY: BEB
REVISIONS

SHEET NO.

P4.1

HVAC EQUIPMENT SCHEDULE	
HVAC SYSTEM #1	
AHU #1 DIRECT EXPANSION FAN COIL UNIT	* CARRIER MODEL #FV4CNB002, 4-WAY, MULTIPOISE FAN COIL UNIT, 5 KW HEATER, NOMINAL CAPACITY = 18,000 BTUH, 800 CFM NOMINAL, PROVIDE HARD SHUT-OFF TVX VALVE, 1.5 TON NOMINAL, PROVIDE PROGRAMMABLE THERMOSTAT AND FILTER RACK WITH HINGED DOOR, 1/3HP, 2.6A MOTOR FLA, 20.0A HEAT FLA, 240V, 1 PH, 28.4A MCA, 30A MOCP AHU & HEAT.
HP #1 OUTDOOR HEAT PUMP UNIT	* CARRIER MODEL #25SPA51BA003, 1.5 TON OUTDOOR HEAT PUMP UNIT, 15 SEER, PROVIDE CYCLE PROTECTOR, LOW PRESSURE SWITCH, CRANKCASE HEATER, 240 VOLT, 1 PHASE, COMP 10.3A RLA, FAN 0.5A FLA, OUTDOOR HEAT PUMP 13.4A MCA, 20A MOCP.

* OR APPROVED EQUAL

EXHAUST FAN SCHEDULE	
EXHAUST FAN #1 (EF-1)	* CARNES MODEL# VCDG10C EXHAUST FAN, 93 CFM @ 1/4" SP, 640 RPM, 1.1 AMPS, 120V, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT. THE HVAC CONTRACTOR SHALL PROVIDE UNIT, 6" RIGID DUCT TO ROOF CAP, LOCATE EXHAUST TERMINATION A MINIMUM OF 10'-0" FROM ANY INTAKES.
EXHAUST FAN #2 (EF-2)	* CARNES MODEL# LYDK-6R2 SIDEWALL PROPELLER EXHAUST FAN, 3/4 HP, 1200 RPM, 1500 CFM AT 0.25" SP, PROVIDE WALL BOX WITH MOTOR/SHIELD GUARD, PROVIDE BACKDRAFT DAMPER ON EXTERIOR SIDE OF FAN, DIRECT DRIVE MOTOR, 115 VOLT SINGLE PHASE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE SWITCH AND WIRE THE UNIT, PROVIDE FACTORY SPEED CONTROLLER.

* OR APPROVED EQUAL

AIR DISTRIBUTION SCHEDULE							
MARK	* MANUFACTURER	MODEL NO.	NECK SIZE	FACE SIZE	MATERIAL	SERVICE	NOTES
A	CARNES	SPAB224	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	SUPPLY	LAY-IN CEILING, WHITE 4-WAY BLOW
RA	CARNES	SPRB22	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	RETURN	LAY-IN CEILING, WHITE

* OR APPROVED EQUAL

COORDINATE BORDER TYPE WITH THE CEILING TYPE. SEE ARCH SHEETS
PROVIDE CUT SHEETS TO OWNER/ARCH. PRIOR TO ORDERING.

OA SCHEDULE									OUTDOOR VENTILATION AIR PROVIDED PER TABLE 403.3 NCSCB MECHANICAL CODE.	
APPLICATION	SQUARE FOOTAGE (SF)	AREA OUTDOOR AIR FLOW RATE (CFM/SF)	PEOPLE OUTDOOR AIR FLOW RATE (CFM/PERSON)	OCCUPANCY DENSITY RATE (# PEOPLE/1000SF)	OCCUPANCY (# PEOPLE)	AREA OUTDOOR AIR FLOW (CFM)	PEOPLE OUTDOOR AIR FLOW (CFM)	TOTAL (CFM)		
OFFICE	397	0.06	5	5	2	24	10	34		
TOTAL REQUIRED								34		
OUTDOOR AIR PROVIDED FROM EACH HVAC UNIT									**	
HVAC UNIT				OUTDOOR AIR (CFM)						
AHU-X				50 - 6" DIA. O.A. DUCT						
TOTAL PROVIDED				50						
APPLICATION				CFM						
TOILETS				70 CFM/FLUSHING FIXTURE						
1 FLUSHING FIXTURE X 70 CFM = 70 CFM										
EXHAUST PROVIDED BY ONE EXHAUST FANS, MAKE UP AIR BY TRANSFER AIR										

* ACTUAL OCCUPANCY PER BUILDING TENANT AS ALLOWED BY 2018 NCSCB; MECHANICAL CODE, SECTION 403.3.1.1, EXCEPTION.

** SET OUTDOOR AIR DAMPER CONTROLS TO PROVIDE OUTDOOR AIR AS INDICATED IN THIS SCHEDULE.

FLEXIBLE DUCTWORK SIZES MAXIMUM CFM'S		
SIZES	SUPPLY	RETURN
4"	100	100
6"	175	175
10"	250	250
12"	400	350
14"	550	500
16"	NA	900

(CHANGE OUT EXISTING FLEX DUCTS AND COLLARS AS REQUIRED TO GET NEW CFM'S SHOWN)

FLEXIBLE DUCTWORK NOTES

- 1) INSTALL FLEXIBLE DUCTWORK RUNS AS STRAIGHT AS POSSIBLE.
- 2) DO NOT ALLOW FLEXIBLE DUCT TO SAG BETWEEN SUPPORTS.
- 3) DO NOT STRETCH A SHORT SECTION TO FIT A SLIGHTLY LONGER SECTION. THIS DISTORTS THE DUCT SHAPE AND IMPEDES AIR FLOW.
- 4) DO NOT CRUSH DUCTWORK TO FIT IN A SPACE SMALLER THAN ITS ORIGINAL OUTSIDE DIAMETER. MAXIMUM ALLOWABLE DEFORMATION IS 15% OF ORIGINAL VOLUME.
- 5) USE RIGID 90 DEGREE ELBOWS AT ANY LOCATION WHERE THE DUCTWORK BECOMES DISTORTED.
- 6) EXTREME CARE SHALL BE TAKEN TO ELIMINATE ANY REDUCTION IN FLOW WITHIN THE FLEXIBLE DUCTS. THE MECH. CONTRACTOR WILL BE REQUIRED TO REPLACE THE FLEXIBLE DUCT WITH RIGID IF PROPER FLOW IS NOT OBTAINED.
- 7) SIZE ALL FLEXIBLE DUCT SO AS NOT TO EXCEED MAXIMUM CFM'S GIVEN IN TABLE.

GENERAL NOTES - MECHANICAL

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
2. ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
3. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.
5. THESE PLANS ARE DIAGNOMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
6. THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED ELECTRICIAN.
7. THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS.
8. INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
9. INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING.
10. DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.
11. THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
12. PROVIDE ALL REQUIRED ROOF PENETRATIONS FOR THE INSTALLATION OF THE NEW EQUIPMENT. ALL FLASHINGS ARE BY THE MECHANICAL CONTRACTOR. ALL ROOFING WORK SHALL BE DONE BY A LICENSED ROOFING CONTRACTOR SO AS TO MAINTAIN ORIGINAL WARRANTY.
13. THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
14. PROPERLY SUPPORT ALL DUCT WORK, AND EQUIP FROM STRUCTURE. PROVIDE ALL STRUCTURAL SUPPORTS FOR THE LOADS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

LEGEND - MECHANICAL

- 12 X 8 RECTANGULAR DUCTWORK, INSIDE CLEAR DIMENSION INDICATED (WIDTH X HEIGHT)
- FLEXIBLE DUCTWORK
- 12" DIA. ROUND GALVANIZED STEEL DUCT INSIDE CLEAR DIMENSION INDICATED.
- SUPPLY DIFFUSER
- RETURN GRILLE
- WALL MOUNTED THERMOSTAT (UNIT SERVED IS INDICATED)
- GRILLE TYPE (XXX)
- MIN. CFM
- 1 HOUR FIRE BARRIER
- 3 HOUR FIRE BARRIER
- CONDENSATE PIPING
- REFRIGERANT PIPING

APPENDIX B

2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)
MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEM AND EQUIPMENT

Thermal Zone	4A
winter dry bulb	23F
summer dry bulb	93F
Interior Design Conditions	
winter dry bulb	72F
summer dry bulb	75F
relative humidity	50%
Building Heating Load (Tenant space only)	7,900 BTU/hr
Building Cooling Load (Tenant space only)	12,800 BTU/hr
Mechanical Spacing Conditioning System	
Unitary --	The tenant space is served the following systems: (1) 1.5 Ton split system heat pump unit
Boiler --	Not applicable to this project.
Chiller --	Not applicable to this project.
Equipment efficiencies	
Efficiencies and outputs are listed on equipment schedules -- See drawings.	

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Coastal
Architecture
P.L.L.C.

Architectural
Design
Planning
Interiors

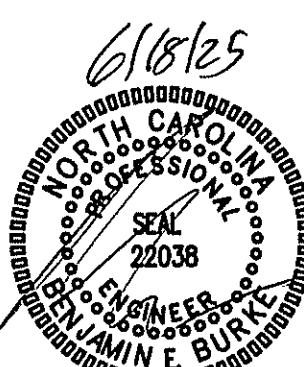


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HVAC SCHEDULES
AND NOTES

25014

ISSUED: 06/18/2025

DWG BY: ---

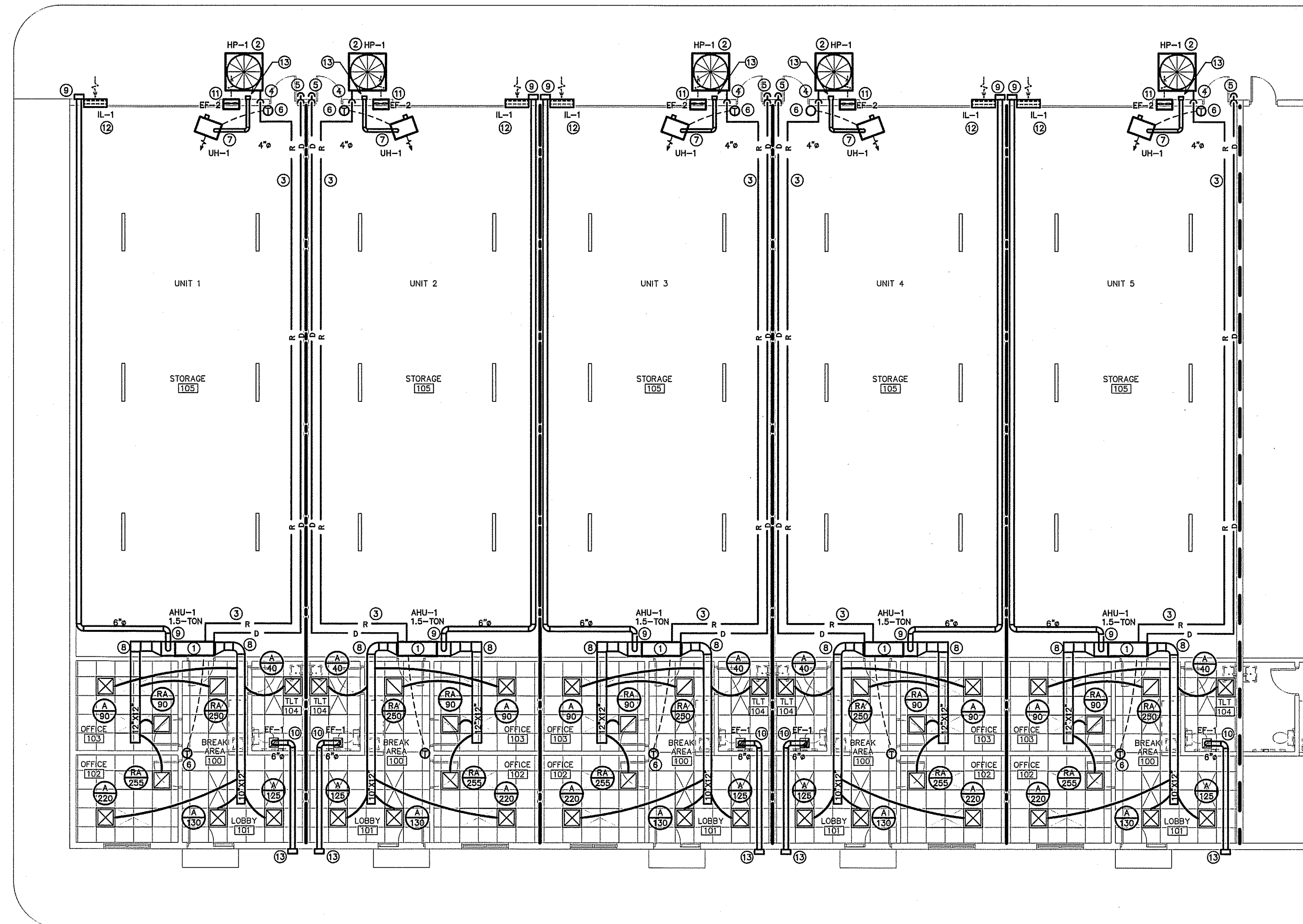
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REVISIONS

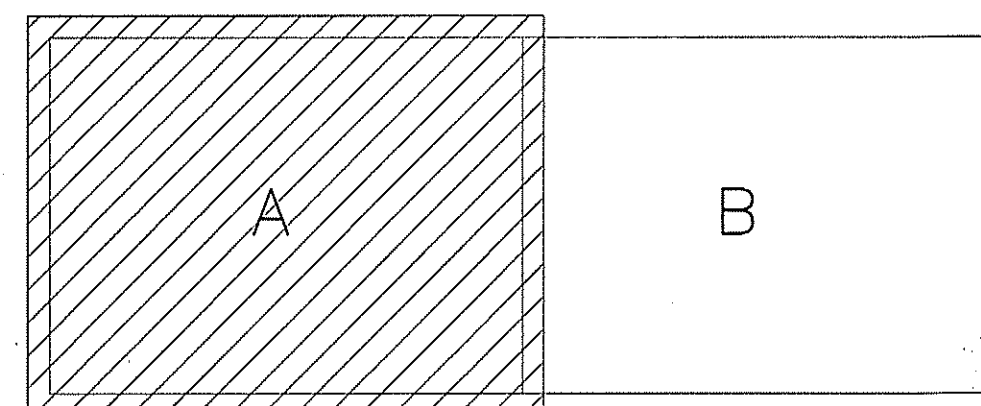
SHEET NO.

M1.0

- KEY NOTES FOR M3.0
- AIR HANDLING UNIT MOUNTED OVERHEAD SUSPENDED FROM ROOF STRUCTURE. SEE DETAIL 1/M3.0.
 - HEAT PUMP MOUNTED ON CONCRETE PAD. PROVIDE ALL MANUFACTURER'S REQUIRED CLEARANCES AROUND UNIT.
 - RUN REFRIGERANT AND CONDENSATE PIPING OVERHEAD AS HIGH AS POSSIBLE AND TIGHT TO STRUCTURE. (TYPICAL).
 - RUN REFRIGERANT PIPING DOWN CONCEALED IN EXTERIOR WALL.
 - RUN CONDENSATE PIPING DOWN CONCEALED IN EXTERIOR WALL TO 6" ABOVE FINISH GRADE, IN PLANTING AREA. TERMINATE IN ELBOW TURNED DOWN WITH BUG SCREEN.
 - THERMOSTAT, MOUNT AT 48" AFF.
 - NEW GAS FIRED UNIT HEATER, MOUNTED TO ROOF STRUCTURE. MOUNT BOTTOM OF UNIT 10'-0" A.F.F. SEE DETAIL 1/M1. RUN 4" DIA. RIGID EXHAUST DUCT TO WALL MOUNTED EXHAUST CAP. DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
 - RUN DUCTWORK CONCEALED ABOVE CEILING.
 - 6" DIA. RIGID OUTSIDE AIR DUCT SIDE WALL MOUNTED INTAKE HOOD. AIR INTAKE SHALL BE 10'-0" MIN. FROM ANY EXHAUST DISCHARGE OR PLUMBING VENT.
 - RUN 6" DIA. RIGID EXHAUST DUCT TO WALL MOUNTED EXHAUST CAP. DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
 - SIDE WALL MOUNT PROPELLER EXHAUST FAN. MOUNT WITH BOTTOM AT 12'-0" AFF.
 - 24" X 30" WALL INTAKE LOUVER EQUAL TO CARNES MODEL FKDC. PROVIDE MOTORIZED DAMPER ON BACK OF LOUVER. INTERLOCK MOTORIZED HOOD CONTROLS WITH CONTROLS FOR CORRESPONDING SIDE WALL EXHAUST FAN SO THAT WHEN FAN IS RUNNING THE DAMPER OPENS AND WHEN FAN IS NOT RUNNING THE DAMPER IS CLOSED. MOUNT BOTTOM OF LOUVER AT 3'-0" AFF.
 - EXHAUST WALL CAP. DISCHARGE SHALL BE 10'-0" MIN. FROM ANY AIR INTAKE. COORDINATE CAP STYLE AND COLOR WITH OWNER.

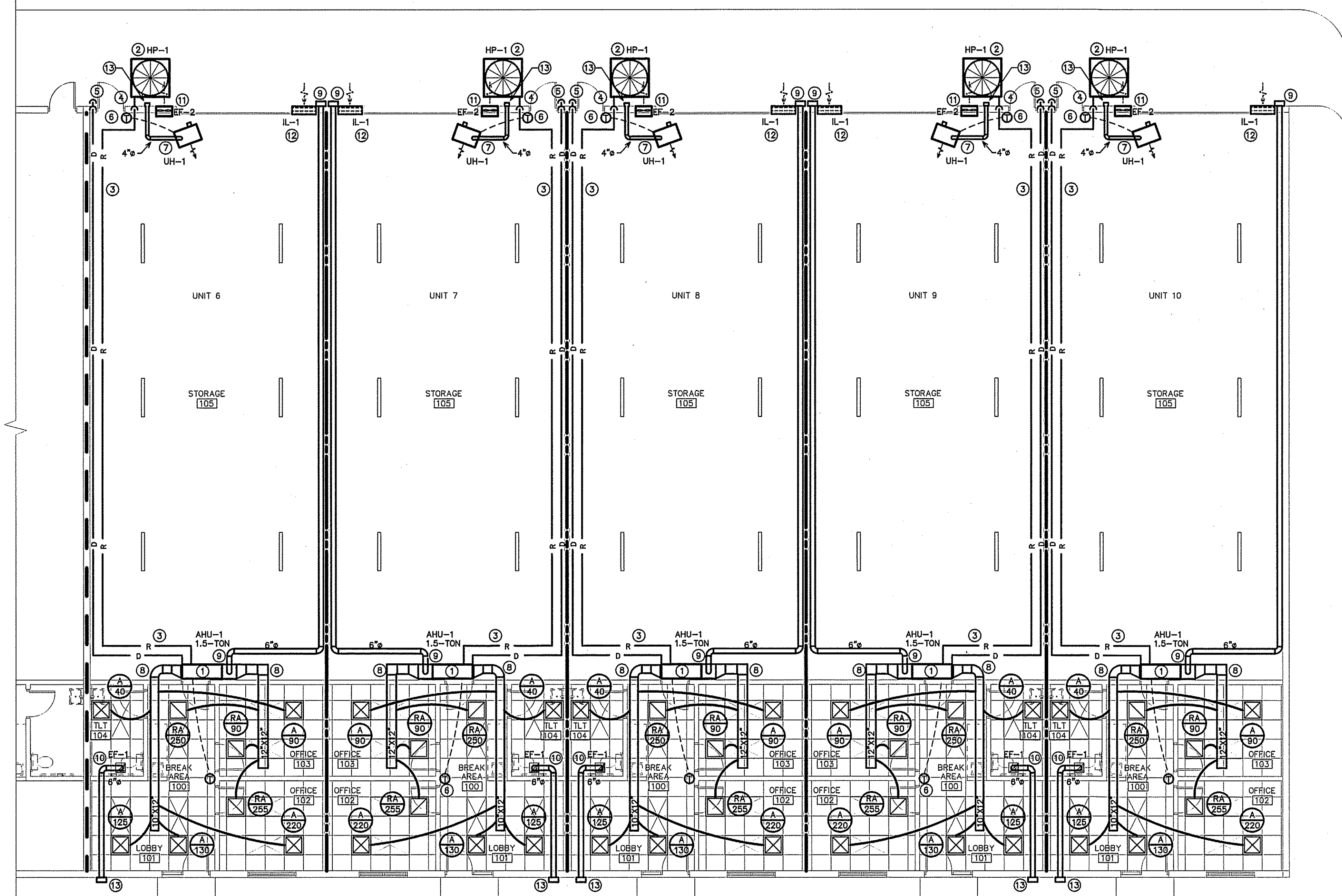


HVAC PLAN - SIDE A
SCALE: 1/8"=1'-0"

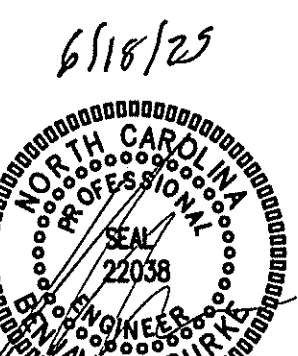


KEY PLAN
SCALE: NTS

- KEY NOTES FOR M3.0
- AIR HANDLING UNIT MOUNTED OVERHEAD SUSPENDED FROM ROOF STRUCTURE. SEE DETAIL 1/M3.0.
 - HEAT PUMP MOUNTED ON CONCRETE PAD. PROVIDE ALL MANUFACTURER'S REQUIRED CLEARANCES AROUND UNIT.
 - RUN REFRIGERANT AND CONDENSATE PIPING OVERHEAD AS HIGH AS POSSIBLE AND TIGHT TO STRUCTURE. (TYPICAL).
 - RUN REFRIGERANT PIPING DOWN CONCEALED IN EXTERIOR WALL.
 - RUN CONDENSATE PIPING DOWN CONCEALED IN EXTERIOR WALL TO 6" ABOVE FINISH GRADE, IN PLANTING AREA. TERMINATE IN ELBOW TURNED DOWN WITH BUG SCREEN.
 - THERMOSTAT, MOUNT AT 48" AFF.
 - NEW GAS FIRED UNIT HEATER, MOUNTED TO ROOF STRUCTURE. MOUNT BOTTOM OF UNIT 10'-0" A.F.F. SEE DETAIL 1/M1. RUN 4" DIA. RIGID EXHAUST DUCT TO WALL MOUNTED EXHAUST CAP. DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
 - RUN DUCTWORK CONCEALED ABOVE CEILING.
 - 6" DIA. RIGID OUTSIDE AIR DUCT SIDE WALL MOUNTED INTAKE HOOD. AIR INTAKE SHALL BE 10'-0" MIN. FROM ANY EXHAUST DISCHARGE OR PLUMBING VENT.
 - RUN 6" DIA. RIGID EXHAUST DUCT TO WALL MOUNTED EXHAUST CAP. DISCHARGE SHALL BE 10'-0" MIN. FROM ANY OUTSIDE AIR INTAKE.
 - SIDE WALL MOUNT PROPELLER EXHAUST FAN. MOUNT WITH BOTTOM AT 12'-0" AFF.
 - 24" X 30" WALL INTAKE LOUVER EQUAL TO CARNES MODEL FKDC. PROVIDE MOTORIZED DAMPER ON BACK OF LOUVER. INTERLOCK MOTORIZED HOOD CONTROLS WITH CONTROLS FOR CORRESPONDING SIDE WALL EXHAUST FAN SO THAT WHEN FAN IS RUNNING THE DAMPER OPENS AND WHEN FAN IS NOT RUNNING THE DAMPER IS CLOSED. MOUNT BOTTOM OF LOUVER AT 3'-0" AFF.
 - EXHAUST WALL CAP. DISCHARGE SHALL BE 10'-0" MIN. FROM ANY AIR INTAKE. COORDINATE CAP STYLE AND COLOR WITH OWNER.



HVAC PLAN - SIDE B
SCALE: 1/8" = 1'-0"



HVAC PLAN -
PLAN B

25014

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CKD BY: BEB

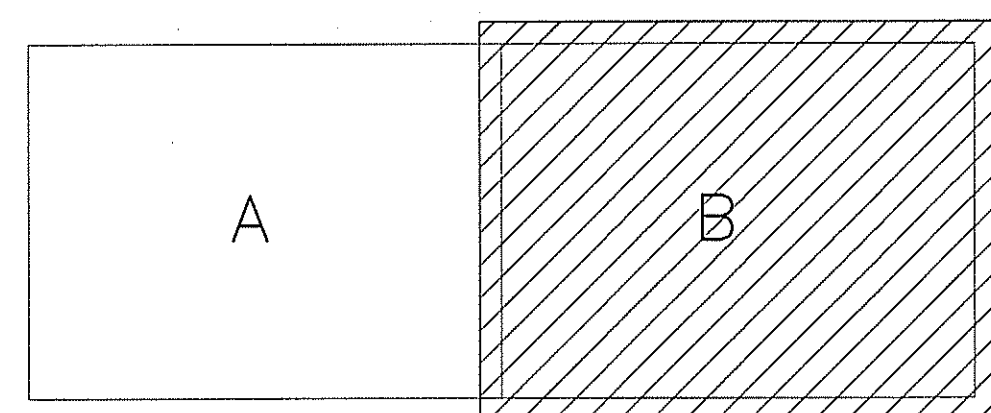
REVISIONS

SHEET NO.

M2.1

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KEY PLAN
SCALE: NTS



DIVISION 15 B - HEATING, VENTILATING AND AIR CONDITIONING

1.1 DESCRIPTION OF THE WORK

- A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:
1. Heating, ventilation, and air conditioning equipment.
 2. Ductwork.
 3. Grilles and diffusers.
 4. Controls and control wiring.
 5. Condensate piping.

- B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply:
1. ASHRAE Guide
 2. National Electric Code.
 3. 2018 NC State Building Code: Mech. Code.
 4. The Electrical Specifications for this project.
 5. SMACNA HVAC Duct Construction Standards.
 6. All local codes and ordinances.
 7. ARI ratings.
 8. 2018 NC State Building Code: Energy Conservation Code.

- C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.

- D. The HVAC Contractor shall be licensed in North Carolina and have all local licenses required for the work.

1.2 INTENT

- A. The intent of these specification and the accompanying drawing is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The HVAC Contractor shall take this into consideration and include in his bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

- A. Coordinate work with other contractors. Notify Owner of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Owner for a decision before resuming operations.
- B. Locations shown are approximate. The HVAC Contractor shall verify with owner, the placement of equipment, fixtures, outlets, etc. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required.
- C. Changes in duct or piping design caused by obstructions shall be submitted to Engineer in sketch form for study and comment prior to execution. Additional cost will not be allowed for this type of work.

1.4 SHOP DRAWINGS

- A. Shop drawings shall be submitted for all major items of equipment. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified. Shop drawings shall include but are not limited to the following:
1. All equipment and accessories.
 2. Grilles and diffusers.
 3. Unit sizes and requirements.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. All air handling devices must have the manufacturer's recommended filter rack, for 1" thick filters.

2.2 PIPING

- A. Condensate drain piping shall be PVC pipe. Provide tee and plug at changes in direction. Route pipe to proper termination point. All condensate piping shall be insulated with flexible elastomeric insulation. Provide copper piping in plenum areas.

2.3 DUCTWORK

- A. Ductwork shall be built in accordance with SMACNA HVAC Duct construction standards. Furnish and install all supply, return, and ventilation ductwork shown, together with splitters, deflectors, dampers, etc. This work shall be constructed of new galvanized prime grade steel sheets. The gauges of metal to be used and the construction and bracing of joints shall be in accordance with the SMACNA recommendations.
- B. Seal all sheet metal joints with fiber impregnated mastic.
- C. Support from building structure on strap hangers not over 8 feet apart.
- D. Use manufactured turning vanes in each elbow where required or where indicated on drawings.
- E. Flexible connectors shall be 3 inches wide, of fireproof material and used to isolate noise between equipment and ductwork on supply and return side of all units.
- F. Round runouts, where used, shall be built in accordance with the above standards, and each runout shall also have a manufactured side take off, adjustable quadrant damper at accessible locations and shall be of Owens Corning INL-25 flexible duct with UL label. Flex duct lengths allowed up to 14 feet. Duct must be supported with sufficient hangers in order to prevent sags. Serpentine routing will not be permitted. Quadrant damper to be 22 gauge easily adjustable manually with exterior handle (similar to H&C Kwik-set) and is not to be mounted in side take-off.

2.4 DUCT INSULATION (LOW PRESSURE)

- A. All insulation, linings, coverings and adhesives shall have a flame spread classification of 25 or less and a smoke developed rating of not more than 50, exposed exterior piping.
- B. All duct insulation shall comply with Section 604, of the N. C. Building Code: Mechanical Code
- C. All supply and return ductwork shall be completely insulated, either internally or externally.
- D. Rectangular ductwork shall be lined with two-inch thick, 1.5 lb. per cubic foot density, duct liner, Armstrong, CSG Ultraliner, Johns Manville or approved equal.
- E. As an alternative to duct liner rectangular duct may be wrapped with Class I - 2", 3/4 lb. density (R-5.5) thick reinforced foil back fiberglass insulation, Owens-Corning Series ED or equal. Tape shall be Kraft reinforced foil tape or equal.
- F. Exhaust air duct does not require insulation, unless otherwise noted on the plans.
- G. Insulation shall be held in place with adhesive and welding plus 1/8" on center.
- H. Duct dimensions shown on the drawings are Net Inside Dimensions

2.5 THERMOSTATS

- A. Provide programmable electronic thermostats.
- B. Submit proposed thermostats for approval.

2.6 ROOF PENETRATIONS

- A. Provide pre-manufactured roof flashings compatible with equipment served.
- B. Coordinate roof work with roof system used. Provide proper flashing as required.
- C. Provide 1 year warranty on all roof work performed.

2.7 DUCT SMOKE DETECTORS

- A. Duct detectors are not required since units air flows are 2000 cfm or less per NCSCC: Mechanical Code, Section 606.2.

PART 3 - EXECUTION

3.1 PIPING

- A. The HVAC Contractor shall coordinate such routing with others, to line his work true to adjacent spaces and in a workmanlike manner and to use only short radius 90 degree elbows where required, piping to be sturdily supported and separated in a manner satisfactory to the Engineer.
- B. The HVAC Contractor shall paint all exterior refrigerant piping, with UV resistant paint as recommended by the closed cell insulation manufacturer.
- C. Insulate all condensate lines for their entire length with 1/2" closed cell insulation. Install insulation per the manufacturers recommendations.

3.2 ELECTRICAL WORK

- A. The electrical contractor shall provide all switches, starters, wire conduit for the air conditioning, heating and ventilation equipment. Control wiring shall be by the heating and air conditioning contractor.
- B. HVAC Contractor is responsible for verifying that power terminals have been properly grounded prior to operating equipment and must find connections to all equipment including control wiring.
- C. All materials and workmanship shall be in accordance with the electrical specifications for the project. All wiring shall be color coded, and as-built wiring diagram prepared showing all connections and colors of wiring and delivered to the Owner.
- D. Furnish certification for acceptance of control wiring from local electrical inspector prior to acceptance.

3.3 CLEAN UP

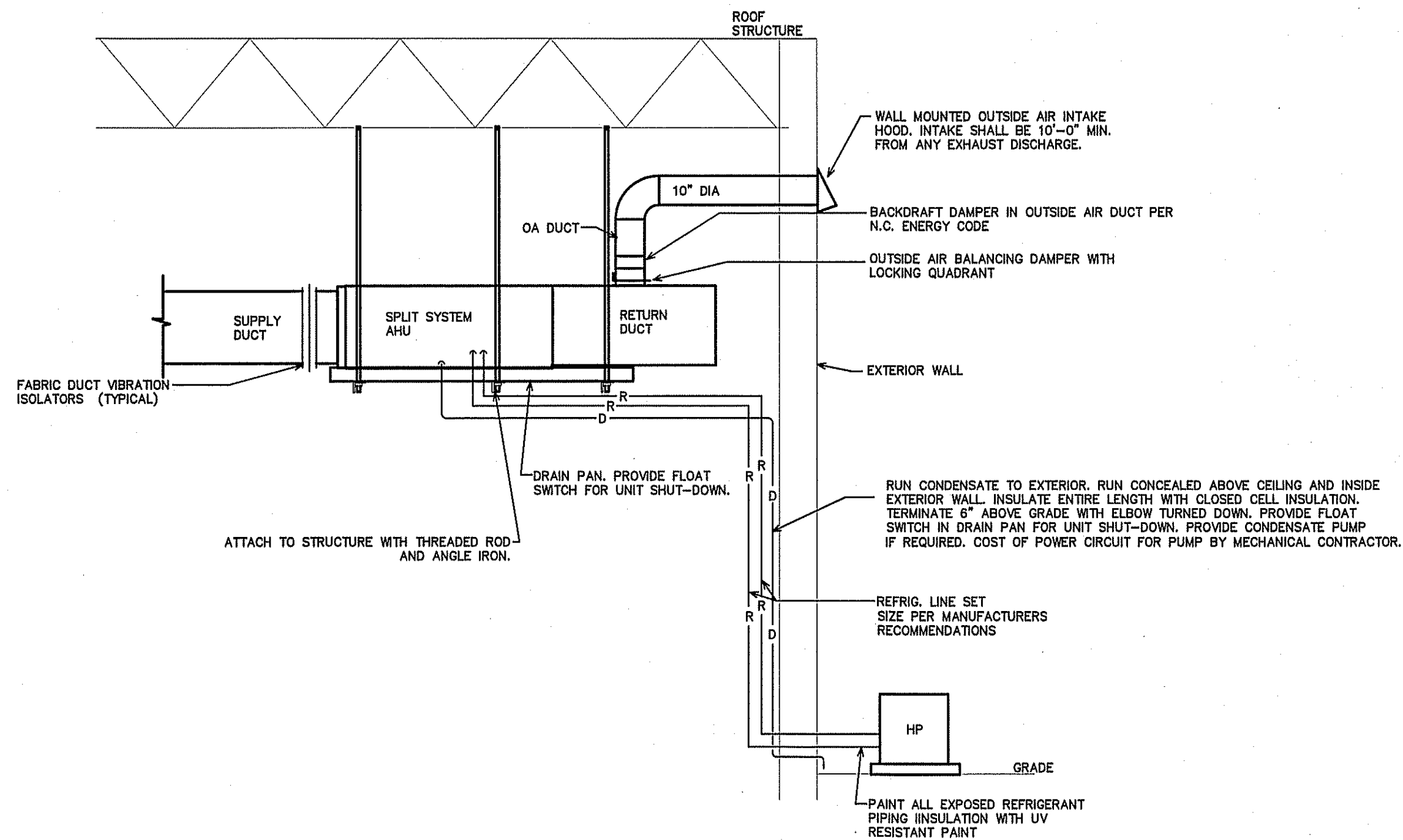
- A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.
- B. Furnish one box of clean filters, for each size required, at the time of final inspection to the owner.

3.4 OPERATOR'S MANUAL AND DIAGRAM

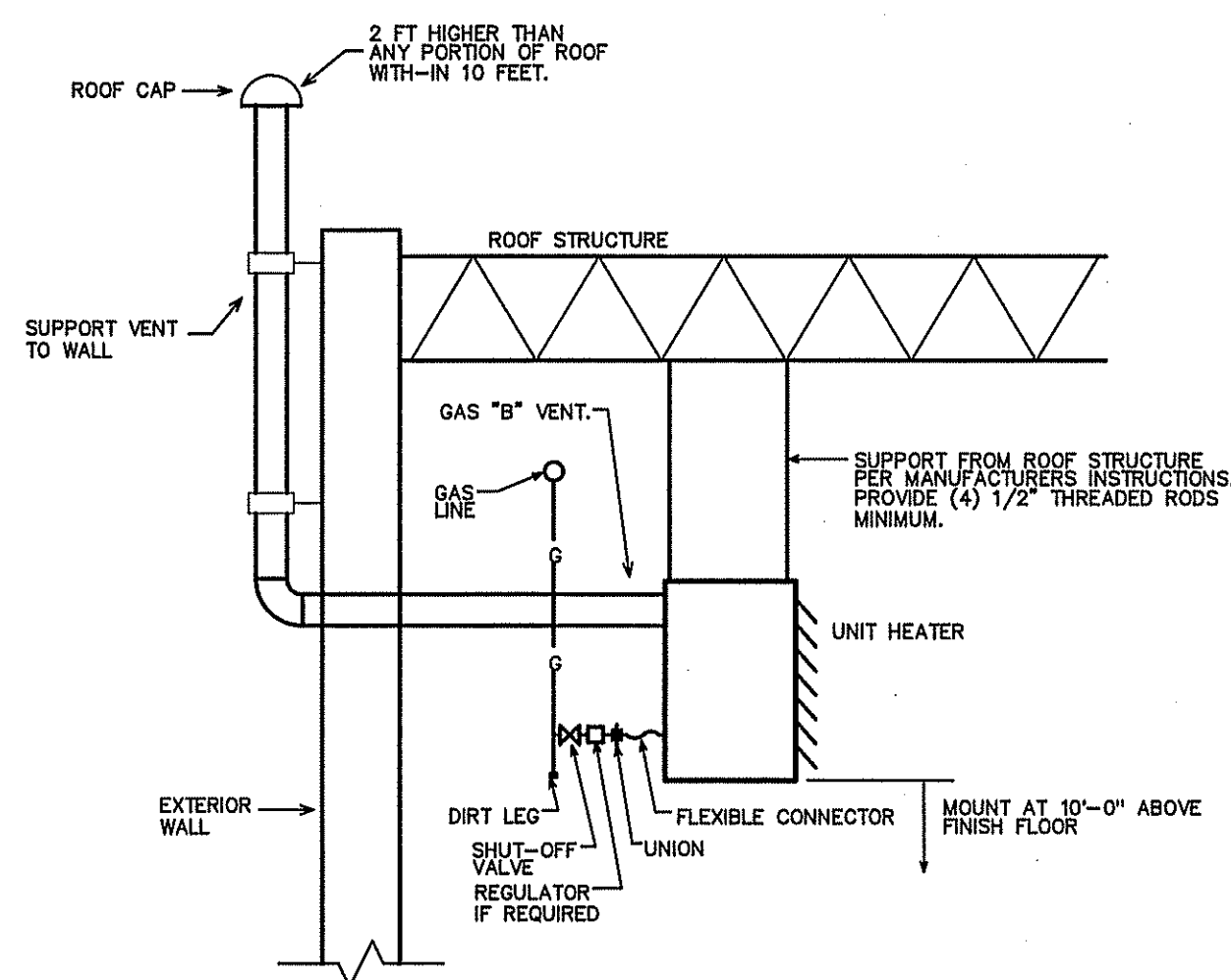
- A. The HVAC Contractor shall prepare in one copy a manual describing the proper maintenance and operation of the systems. This manual shall not consist of standard factory instructions (although these may be included) but shall be prepared to describe this particular job.
- B. The manual shall be bound, indexed, dated and signed by the HVAC Contractor.
- C. Qualified representative of the HVAC contractor shall meet with the designated representatives of the Owner and the Owner's representative shall be instructed in the proper operation and maintenance of the control system and other systems.

3.5 GUARANTEE

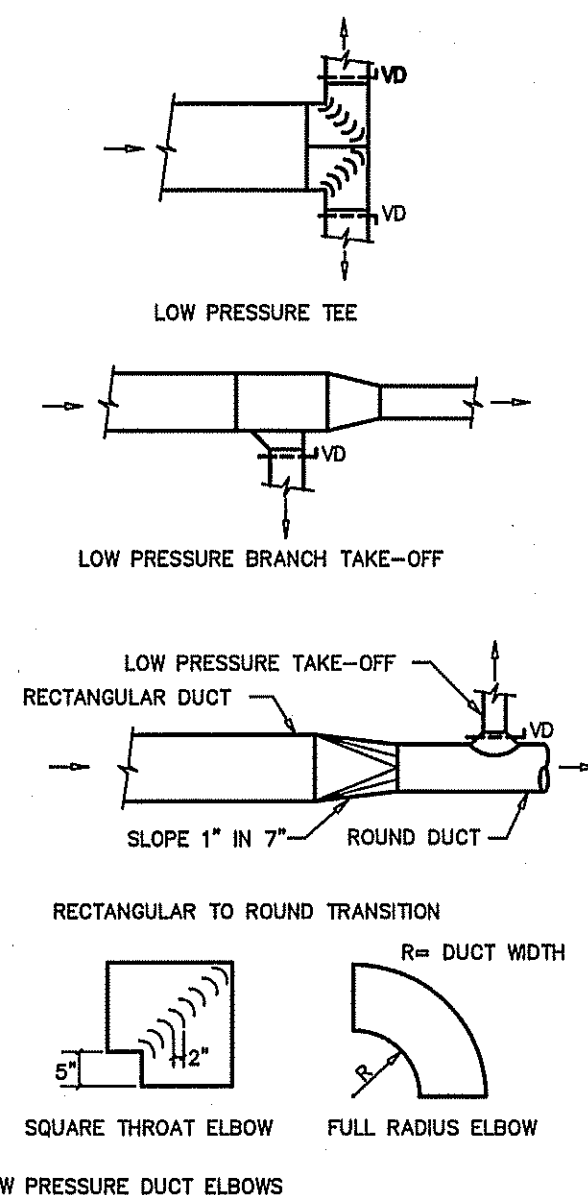
- A. Guarantee all materials and labor included in the HVAC work for a period of one year from date of final acceptance by the owner. In addition, motor compressors shall be a nonprorated five year warranty. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the owner or tenant.
- B. All air flows must be measured and balanced to within 10% of design airflow. All equipment used must have a current certification. Provide two copies of the balance report to the owner at closeout. The HVAC contractor shall return and re-balance to occupant comfort after 90 days from close-out. Provide all balance dampers needed for satisfactory operation regardless if shown on the drawings or not, and shift location of thermostats if required for occupancy comfort.



1 AIR HANDLING UNIT DETAIL
SCALE: NOT TO SCALE



3 UNIT HEATER DETAIL
SCALE: 1/8"=1'-0"



2 DUCT CONSTRUCTION DETAIL
SCALE: 1/8"=1'-0"

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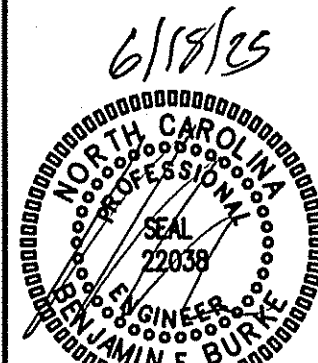


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HVAC SPECS
AND DETAILS

25014

ISSUED: 06/18/2025

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CKD BY: BEB

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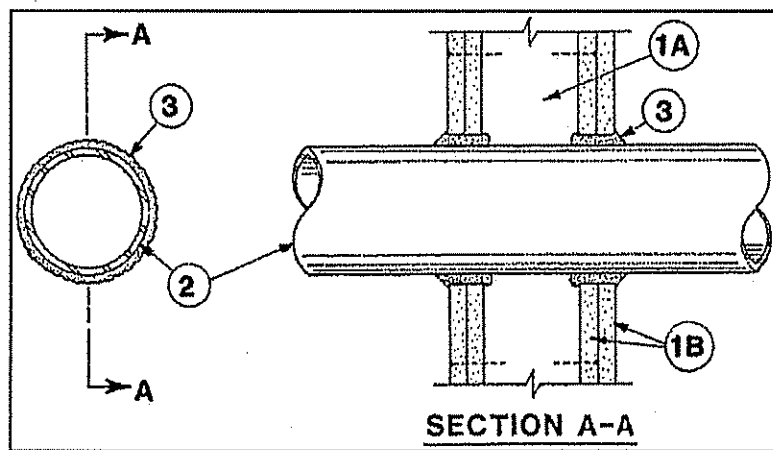
M3.0

F Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)

T Ratings — 0, 1, 2, 3, and 4 Hr (See Item 3)

L Rating At Ambient — less than 1 CFM/sq ft

L Rating At 400 F — less than 1 CFM/sq ft



1. **Wall Assembly** — The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing may consist of either wood studs (max 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.

B. **Gypsum Board** — Nom 1/2 or 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in.

2. **Through-Penetrant** — One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit, or tubing and periphery of opening shall be min of 0 in. (point contact) to max 2 in. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 24 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 24 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

C. **Conduit** — Nom 6 in. diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel electrical metallic tubing.

D. **Copper Tubing** — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.

F. **Through Penetrating Products** — **Flexible Metal Piping** — The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

CASTITE, DIV OF TITEXLEX

3. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

WARD MFG LLC

Fill, Void or Cavity Materials — **Caulk or Sealant** — Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam in	F RATING Hr	T RATING Hr
1	1 or 2	0+, 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
8	3 or 4	0
12	1 or 2	0

+When copper pipe is used, T Rating is 0 hr.

3M COMPANY — CP 25WB+ or FB—3000 WT.

+Bearing the UL Classification Mark

DIVISION 16 — ELECTRICAL

PART 1 — GENERAL

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

1. Electrical service and service equipment.
2. Lighting and power distribution system.
3. Provide lighting fixtures selected by owner with lamps to match.
4. Wiring devices, boxes, cover plates, etc.
5. Source of power for all items of equipment.
6. Grounding.
7. Other requirements and/or systems where shown.

B. All work shall be complete and items, equipment, etc., shall be electrically connected for proper and correct operation.

C. All work under this contract shall be installed in accordance with the latest edition of the following codes and standards insofar as they apply:

1. The 2020 National Electrical Code.
2. The National Electrical Safety Code.
3. Underwriter's Laboratories, Inc., Standards and approved listings.
4. Electrical Testing Laboratories standards.
5. North Carolina Building Code, Latest Edition and Revisions.
6. All local codes and ordinances.

D. The Electrical Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.

E. Obtain all permits, licenses, inspections, etc., required for the work and pay for the same. Furnish final certificate of inspection and approval from the electrical inspector having jurisdiction prior to acceptance of the work.

F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

1.2 INTENT

A. The intent of these specifications and the accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Electrical Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite resolution. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with architect before any rough-in.

1.4 SHOP DRAWINGS

A. Shop drawings shall be submitted for panels and service equipment, lighting, wiring devices, and cover plates. These may consist of the manufacturer's standard catalog or tear sheets and shall have the exact items being offered clearly identified.

PART 2 — PRODUCTS AND MATERIALS

2.1 GENERAL

A. All material shall be new and shall bear the manufacturer's name, trade name, and UL label where such standard has been established for the particular material. Materials shall be the standard products of manufacturer's regularly engaged in the manufacturer of the required type of equipment and the manufacturer's latest approved design.

1. Boxes installed in concealed locations shall be set flush with the finished surfaces.
2. Provide rated boxes in all fire barriers & walls installed per code.

2.2 NOT USED

2.3 CONDUCTORS

A. Conductors shall be color coded, sizes #8 and larger may be color taped on the job. Color coding shall be: Standard Practice.

B. Conductors shall be manufactured by Dodge, Southwire or approved equal. Conductors shall meet the latest requirements of NEMA and IPCEA and shall be UL approved.

C. Metallic sheathed "MC" cable may be used where allowed by N.E.C.

D. Conductors shall be spliced and taped as follows:

1. Size #10 and #12, use Ideal "Wing Nuts" or TAB "Piggy" connectors. Connectors shall be rated for 150 degrees C for use in recessed lighting fixtures.

2. Size #8 and larger shall be solderless screw and screw-clamping type, smoothly covered and shaped with rubber gum type with final cover vinyl plastic electrical type. In lieu of rubber gum and vinyl plastic type, factory fabricated approved preformed insulating covers may be used. All connectors shall be UL approved.

3. No split-bolt type connectors may be used.

E. All branch wire and connections shall be copper and sized per National Electric Code.

F. All conductors shall be continuous without splices between junction, outlet, device boxes, etc. No splicing will be permitted in panelboard cabinets, safety switches, etc.

G. All wiring in mechanical spaces shall be plenum rated.

H. Provide GFI protection within 6'-0" of any sink.

I. All multi-wire branch circuits shall comply with 2020 NEC, 210.4(B).

J. All wiring at medical facilities shall comply with 2020 NEC, 517.1.

2.4 PANELBOARDS, SAFETY SWITCHES

A. Panelboards shall comply with NEMA Standard PB 1 — Latest Edition and as manufactured by Square D or ITE-Siemens.

B. The contractor shall be responsible for correctly phasing the circuits in the panelboards.

C. Safety switches shall be general duty type, size and rating as required for load service. Safety switches shall be fused or unfused as shown and/or as required. Safety switches serving motor loads shall be horsepower rated for load served.

2.5 NOT USED

2.6 WIRING DEVICES

A. Wiring devices shall be commercial grade by Bryant, Leviton, or approved equal. With matching cover. Color by Architect.

B. Wiring devices installed under a Kitchen Hood shall have stainless steel covers.

C. Wiring devices installed over counters shall comply with ANSI A117.1.

2.7 NOT USED

2.8 CONDUIT

- PVC conduit will be allowed where N.E.C. approved.
- All service conduit shall be rigid where exposed below 6'-0" AFF or exposed to the elements or hazardous conditions.

PART 3 — EXECUTION

3.1 CIRCUIT GROUNDING

A. All circuits shall contain an insulated, green, copper grounding conductor, sized in accordance with Table 250-95 of the NEC. Grounding conductors shall be connected to equipment grounding bus in panelboard and securely attached and grounded to the device or enclosure at the other end.

3.2 GROUNDING TYPE CONVENIENCE OUTLETS AND SWITCHES

A. Outlets and switches shall be solidly grounded to equipment grounding system with a green colored insulated conductor. Electrical connections shall be continuous from equipment ground bus in panelboard to the hex nut on the convenience outlet or switch.

3.3 MOTORS

A. All motors shall be connected to conduit system with short length (minimum length 24" and maximum length 36") of flexible liquidtight conduit.

3.4 NOT USED

3.5 EQUIPMENT LABELING

A. Provide permanent name plates for all panelboards, safety switches, wiring troughs, etc., for identification of equipment controlled, services, etc. Nameplates shall be securely and permanently attached to equipment with stainless steel screws. Nameplates shall include the name of the equipment and where it is fed from.

B. All switch plates, receptacle plates and outlet covers shall be labeled with machine printed vinyl labels identifying the circuit(s) within.

C. All empty conduit runs shall be identified and indicated where they terminate.

D. Provide typewritten directory in each panelboard to clearly identify each circuit, service, etc.

3.6 NOT USED

3.7 NOT USED

3.8 JUNCTION AND/OR PULL BOXES

A. Boxes shall be installed where necessary to avoid excessive runs and/or too many bends between outlets.

3.9 PULL WIRE

A. Leave pull wire in each empty conduit run.

3.10 NOT USED

3.11 GROUNDING

A. All grounding shall be in accordance with Article 250 of the NEC. In addition, the following requirements shall be met:

1. Grounding conductors shall be installed as to permit the shortest and most direct path from equipment to ground. All connections to grounding conductors shall be accessible.
2. Equipment ground continuity shall be maintained through flexible metal conduit.
3. All wiring devices equipped with grounding connection shall be solidly grounded to ground system with grounding conductors.
4. The frame of all lighting fixtures shall be securely grounded to the equipment ground system with grounding conductors.
5. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.
6. All equipment enclosures, and non-current-carrying metallic parts of electrical equipment, raceway systems, etc., shall be effectively and adequately bonded to ground.

3.12 ELECTRICAL WORK IN CONNECTION WITH OTHER WORK

A. **PLUMBING WORK:** The Electrical Contractor shall furnish and install switches and devices as shown and electrically connect electric water heaters, etc. All other electrical work required will be performed by the PLUMBING CONTRACTOR.

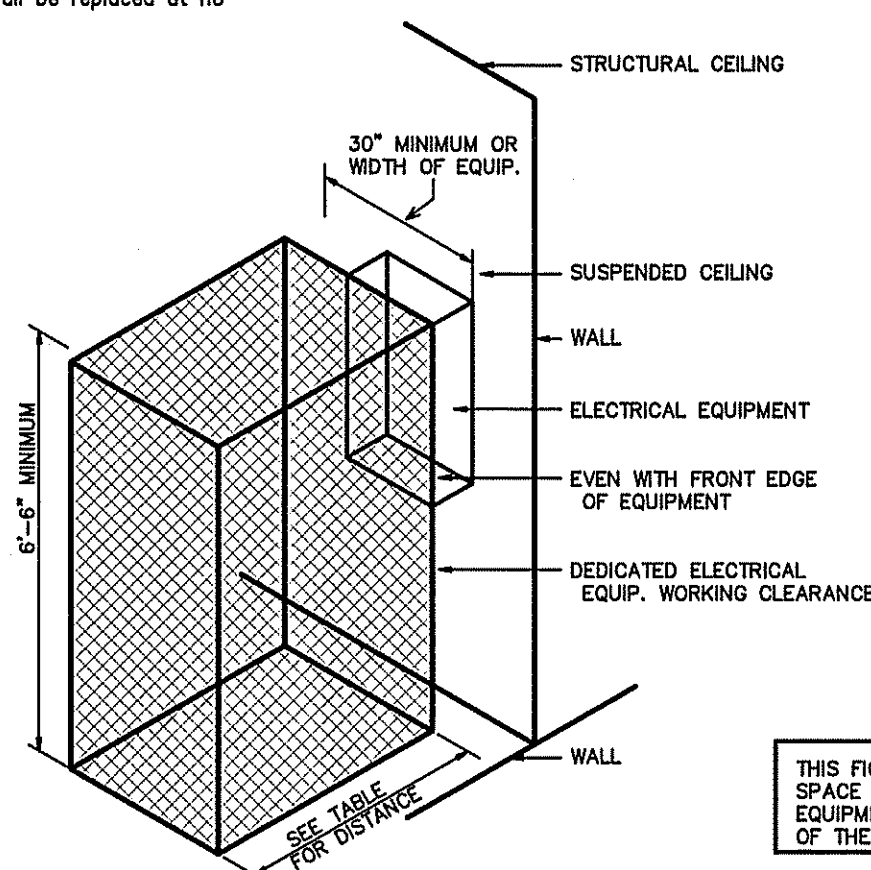
B. **HEATING AND AIR CONDITIONING WORK:** The Electrical Contractor shall provide all disconnect switches, starters, and associated hardware for the equipment furnished including all line and load side wiring and conduit. Final connections to the equipment will be by the HVAC contractor. All control wiring will be accomplished by the HVAC contractor. Coordinate all work associated with the HVAC contractor.

3.13 CLEAN UP

A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

3.14 GUARANTEE

A. Guarantee all materials and labor included in the electrical work for a period of one year from date of final acceptance by the Owner. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the Owner.



ELECTRICAL EQUIPMENT WORKING CLEARANCE
PER ARTICLE 110-26 OF N.E.C.

WORKING CLEARANCES			
VOLTAGE TO GROUND NOMINAL	MIN. CLEAR DISTANCE IN FEET		
CONDITION:	1	2	3
0-150	1	2	3
151-600	3	3-1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110-16 OF THE N.E.C.

ELECTRICAL CLEARANCES

1 ELECTRICAL CLEARANCES

SCALE: NTS

GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES HAVING JURISDICTION.
2. ALL BRANCH CIRCUIT CONDUCTORS TO BE COPPER (SERVICE CONDUCTORS MAY BE ALUMINUM WITH SAME AMPACITY AS COPPER CONDUCTORS. RE-SIZE CONDUCTORS AND CONDUIT PER NEC.)
3. ALL CIRCUITS TO BE 2 #12, 1 #12 GND IN 1/2" EMT CONDUIT AS A MINIMUM. PROVIDE WIRING FOR LARGER CIRCUITS AS REQUIRED BY NEC. RIGID CONDUIT IS REQUIRED WHERE EXPOSED BELOW 6'-0" A.F.F.
4. ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FEET SHALL BE PROVIDED WITH A PULL WIRE OR FISH TAPE/CORD.
5. CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE INSTALLING LIGHT SWITCH OUTLETS.
6. ALL BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL BE INCREASED TO THE NEXT LARGER SIZE WHERE THE LENGTH OF THE HOME RUN EXCEEDS 120 FEET ON 120V AND 208V CIRCUITS.
7. THE CORRECT NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS. ONLY THOSE WHERE CLARIFICATION IS NECESSARY. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON DRAWINGS OR NOT.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANELBOARDS.
9. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TYPE OF CEILING SYSTEM WITH THE GENERAL CONTRACTOR TO INSURE THAT ALL LIGHTING FIXTURES ARE COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED. LIGHTING FIXTURES SHOULD NOT BE ORDERED UNTIL TYPE OF CEILING HAS BEEN VERIFIED.
10. ELECTRICAL REQUIREMENTS INDICATED ON DRAWINGS MAY DIFFER FROM ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS ON DRAWINGS CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR APPROPRIATE ACTION TO BE TAKEN.
11. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT BREAKER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING PANEL. ADJUST BREAKER AND WIRE SIZES AS REQUIRED.
12. PROVIDE BOXES, JACKS, WIRING AND CONDUIT FROM LOCATIONS SHOWN TO MTP LOCATION. VERIFY EXACT REQUIREMENTS WITH OWNER.
13. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS FOR MECHANICAL & PLUMBING EQUIPMENT. DISCONNECTS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS AND FUSED PER NAME PLATE. PROVIDE NEMA 3R ENCLOSURES ON EXTERIOR. COORDINATE FUSE SIZES.
14. THE EC SHALL MEET WITH THE ARCHITECT AND TENANT PRIOR TO INSTALLING OUTLET BOXES TO VERIFY LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND TELEPHONE OUTLETS.

APPENDIX B

2018 BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)
ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance

Energy Code: Prescriptive ☒ Energy Cost Budget ☐

ASHRAE 90.1: Prescriptive ☒ Energy Cost Budget ☐

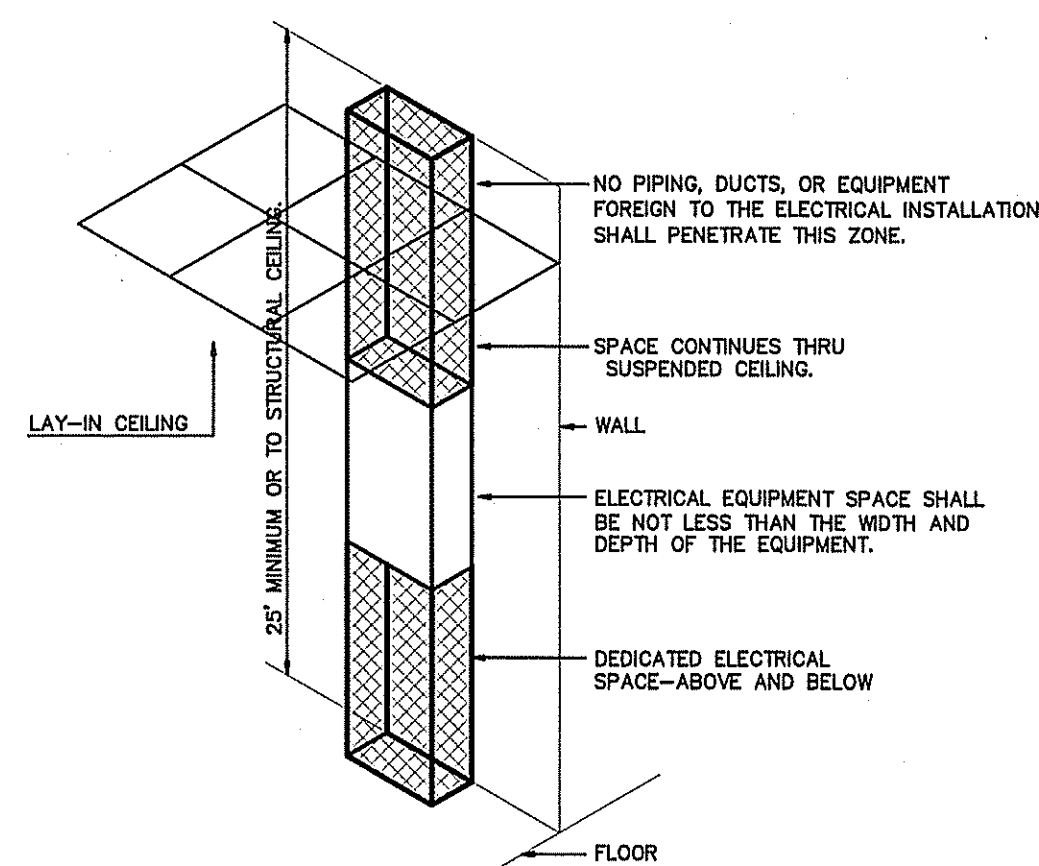
Lighting Schedule

lamp type required in fixture
number of lamps in fixture
ballast type used in fixture
number of ballasts in fixture
total wattage in fixture
total interior wattage specified vs. allowed
total exterior wattage specified vs. allowed

See Light
Fixture Schedule

Additional Prescriptive Compliance

- 508.2.1 More Efficient Mechanical Equipment
- 508.2.2 Reduced Lighting Power Density
- 508.2.3 Energy Recovery Ventilation Systems
- 508.2.4 Higher Efficiency Service Water Heater
- 508.2.5 On-Site Supply of Renewable Energy
- 508.2.6 automatic Daylighting Control System



ELECTRICAL EQUIPMENT DEDICATED SPACE
PER ARTICLE 110.26.F.1 OF N.E.C.

2 DEDICATED SPACE

SCALE: NTS

ELECTRICAL LEGEND

✉ X

○ X

— X

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WP/GFI

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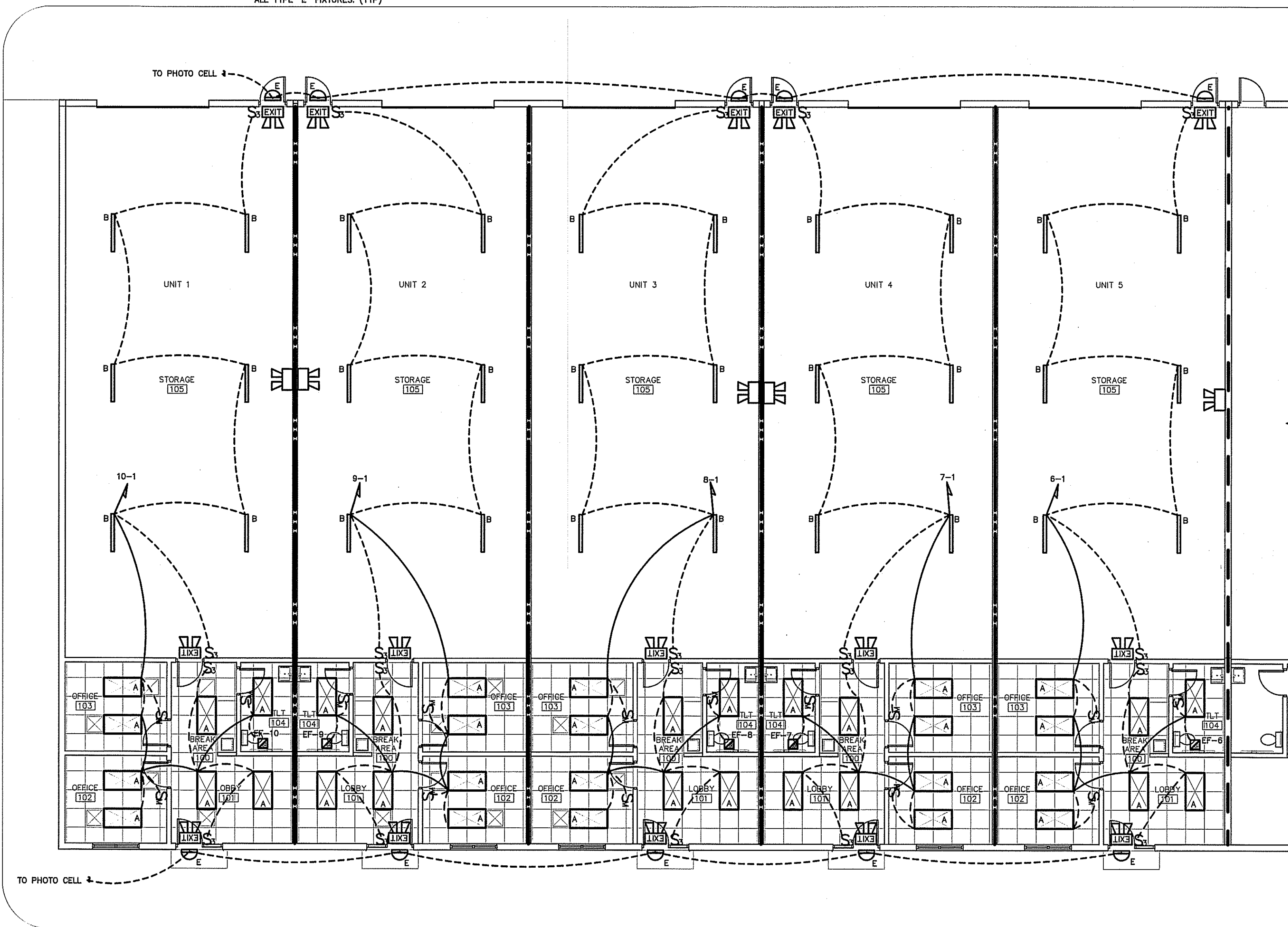
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LIGHTING SCHEDULE *									
MARK	MANUFACTURER	CATALOG NO.	VOLT.	LAMPS NO. TYPE W	BALLAST TYPE	W/ FIXTURE	REMARKS		
A	COLUMBIA	LCAT24-35LWG-EDU	120	LED	-	40	2X4 LAY-IN LED FIXTURE		
B	COLUMBIA	LCAT22-35MWG-EDU	120	LED	-	47	4' ENCLOSED LED GASKETED STRIP		
E	COMPASS	CUS0	120	LED	-	17	EXTERIOR NORMAL/EMERGENCY LIGHT FIXTURE- COLOR BY ARCH		
EXIT	COMPASS	CCR	120	LED	-	2	LED EXIT SIGN, COLOR BY ARCH		
EXIT	COMPASS	CCR	120	LED	-	4	COMBINATION EMERGENCY (TUNGSTEN)/ EXIT (LED) LIGHT		
EXIT	COMPASS	CU2HL	120	LED	-	10	EMERGENCY LIGHT, BATTERY BACKUP, BATTERY DIAGNOSTICS, COLOR BY ARCH		

* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES.
CATALOG NUMBERS ARE FOR REFERENCE ONLY. ACTUAL NUMBERS MAY VARY.
THE EMERGENCY LIGHTS AND EXIT SIGNS MUST HAVE INTEGRAL BATTERIES, CHARGERS AND TEST SWITCHES.

PROVIDE SWITCHED & UN-SWITCHED
POWER FROM SAME CIRCUIT FOR
ALL TYPE "E" FIXTURES. (TYP)



NOTE:
PROVIDE LABELING ON EACH
SWITCH NOTING CIRCUIT SERVED.

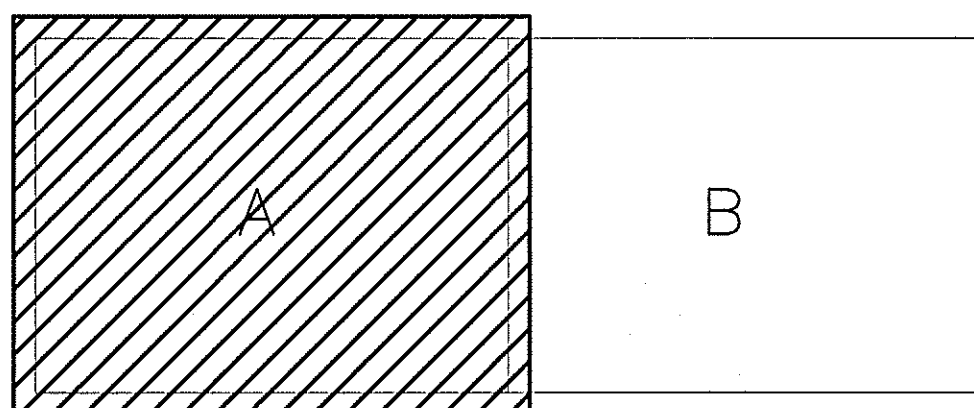
AUTOMATIC LIGHTING SHUTOFF IS NOT SHOWN IN THE
EGRESS PATH LIGHTING AS ALLOWED PER 405.2.1-3
EXCEPTION #3, WHERE AUTOMATIC SHUTOFF WOULD
ENDANGER OCCUPANT SAFETY.

TIE ALL EXIT AND EMERGENCY LIGHTS
TO NEAREST AVAILABLE UNSWITCHED
LIGHTING CIRCUIT IN THE AREA SERVED.

VERIFY HEIGHT/LOCATION OF ALL SWITCHES
AND DEVICES PRIOR TO INSTALLATION.

EXHAUST FAN(S) PROVIDED BY HVAC
CONTRACTOR. WIRED BY ELECTRICAL
CONTRACTOR. VERIFY UNITS HAVE
DISCONNECTING MEANS PER NEC.
PROVIDE DISCONNECTS IF NEEDED.

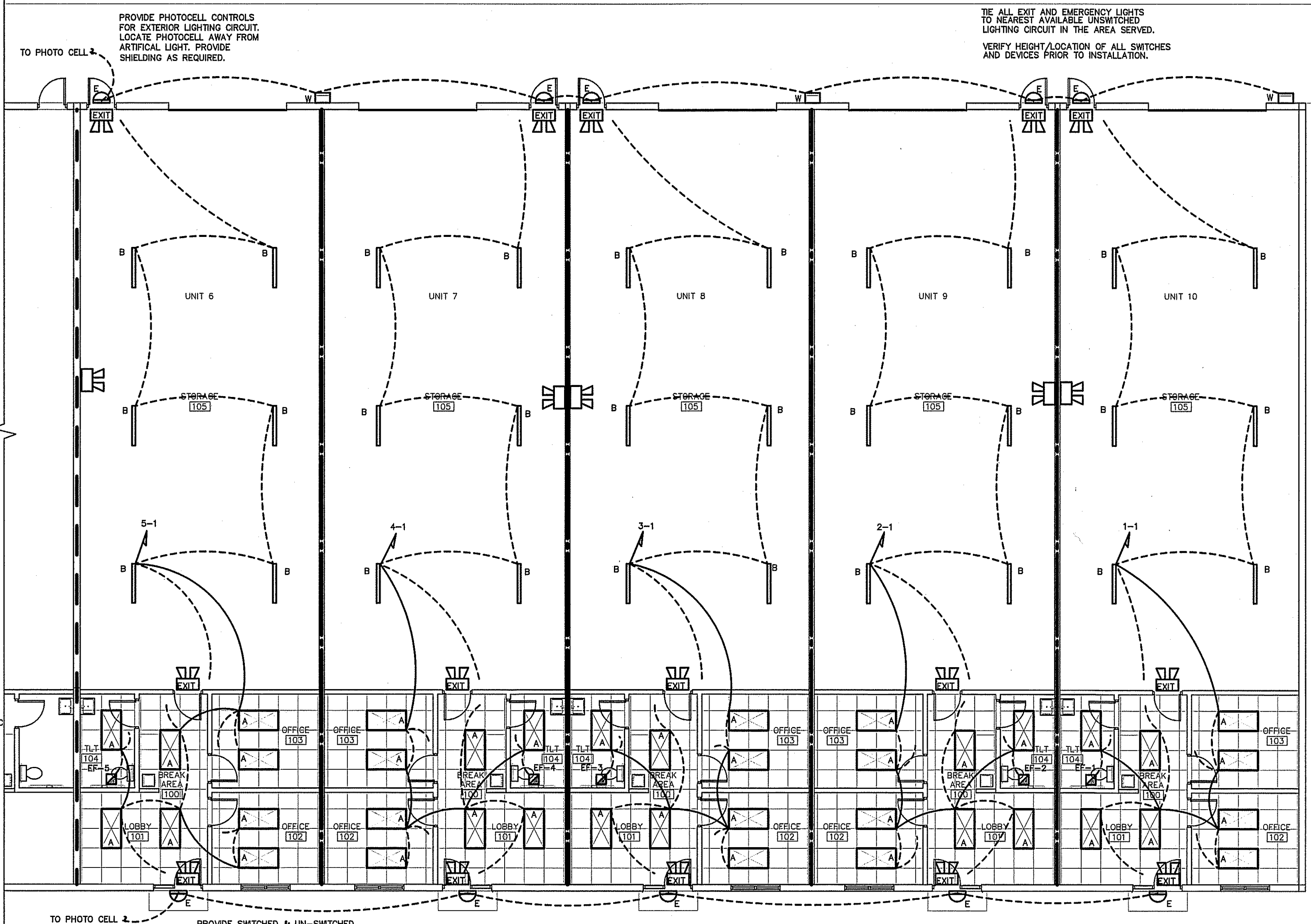
1 LIGHTING PLAN SIDE A
E2.0 SCALE: 1/8"=1'-0"



2 KEY PLAN
E2.0 SCALE: NTS

NOTE:
PROVIDE LABELING ON EACH
SWITCH NOTING CIRCUIT SERVED.
AUTOMATIC LIGHTING SHUTOFF IS NOT SHOWN IN THE
EGRESS PATH LIGHTING AS ALLOWED PER 405.2.1-3
EXCEPTION #3, WHERE AUTOMATIC SHUTOFF WOULD
ENDANGER OCCUPANT SAFETY.

TIE ALL EXIT AND EMERGENCY LIGHTS
TO NEAREST AVAILABLE UNSWITCHED
LIGHTING CIRCUIT IN THE AREA SERVED.
VERIFY HEIGHT/LOCATION OF ALL SWITCHES
AND DEVICES PRIOR TO INSTALLATION.



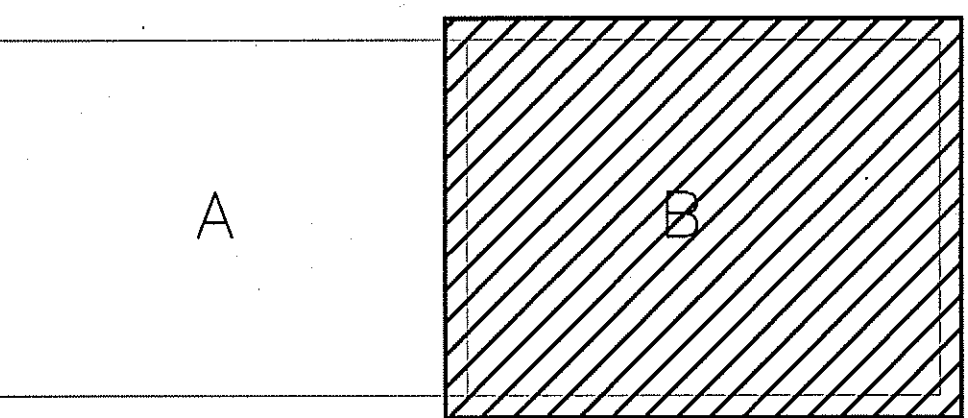
EXHAUST FAN(S) PROVIDED BY HVAC
CONTRACTOR. WIRED BY ELECTRICAL
CONTRACTOR. VERIFY UNITS HAVE
DISCONNECTING MEANS PER NEC.
PROVIDE DISCONNECTS IF NEEDED.

PROVIDE SWITCHED & UN-SWITCHED
POWER FROM SAME CIRCUIT FOR
ALL TYPE "E" FIXTURES. (TYP)

1 LIGHTING PLAN SIDE B
E2.1 SCALE: 1/8"=1'-0"

LIGHTING SCHEDULE *									
MARK	MANUFACTURER	CATALOG NO.	VOLT	LAMPS	BALLAST	W/	REMARKS		
				NO. TYPE	TYPE	FIXTURE			
A	COLUMBIA	LCAT24-35LWG-EDU	120	LED	-	40	2X4 LAY-IN LED FIXTURE	*	
B	COLUMBIA	LCAT22-35MWG-EDU	120	LED	-	47	4' ENCLOSED LED GASKETED STRIP	*	
E	COMPASS	CUSO	120	LED	-	17	EXTERIOR NORMAL/EMERGENCY LIGHT FIXTURE- COLOR BY ARCH	*	
W	ULINE	H-9996	120	LED	-	76	LED EXTERIOR WWALL PACK	*	
EXIT	COMPASS	CER	120	LED	-	2	LED EXIT SIGN, COLOR BY ARCH	*	
EXIT	COMPASS	CCR	120	LED	-	4	COMBINATION EMERGENCY (TUNGSTEN)/ EXIT (LED) LIGHT	*	
EXIT	COMPASS	CU2HL	120	LED	-	10	EMERGENCY LIGHT, BATTERY BACKUP, BATTERY DIAGNOSTICS, COLOR BY ARCH	*	

* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES.
CATALOG NUMBERS ARE FOR REFERENCE ONLY. ACTUAL NUMBERS MAY VARY.
THE EMERGENCY LIGHTS AND EXIT SIGNS MUST HAVE INTEGRAL BATTERIES, CHARGERS AND TEST SWITCHES.



2 KEY PLAN
E2.1 SCALE: NTS

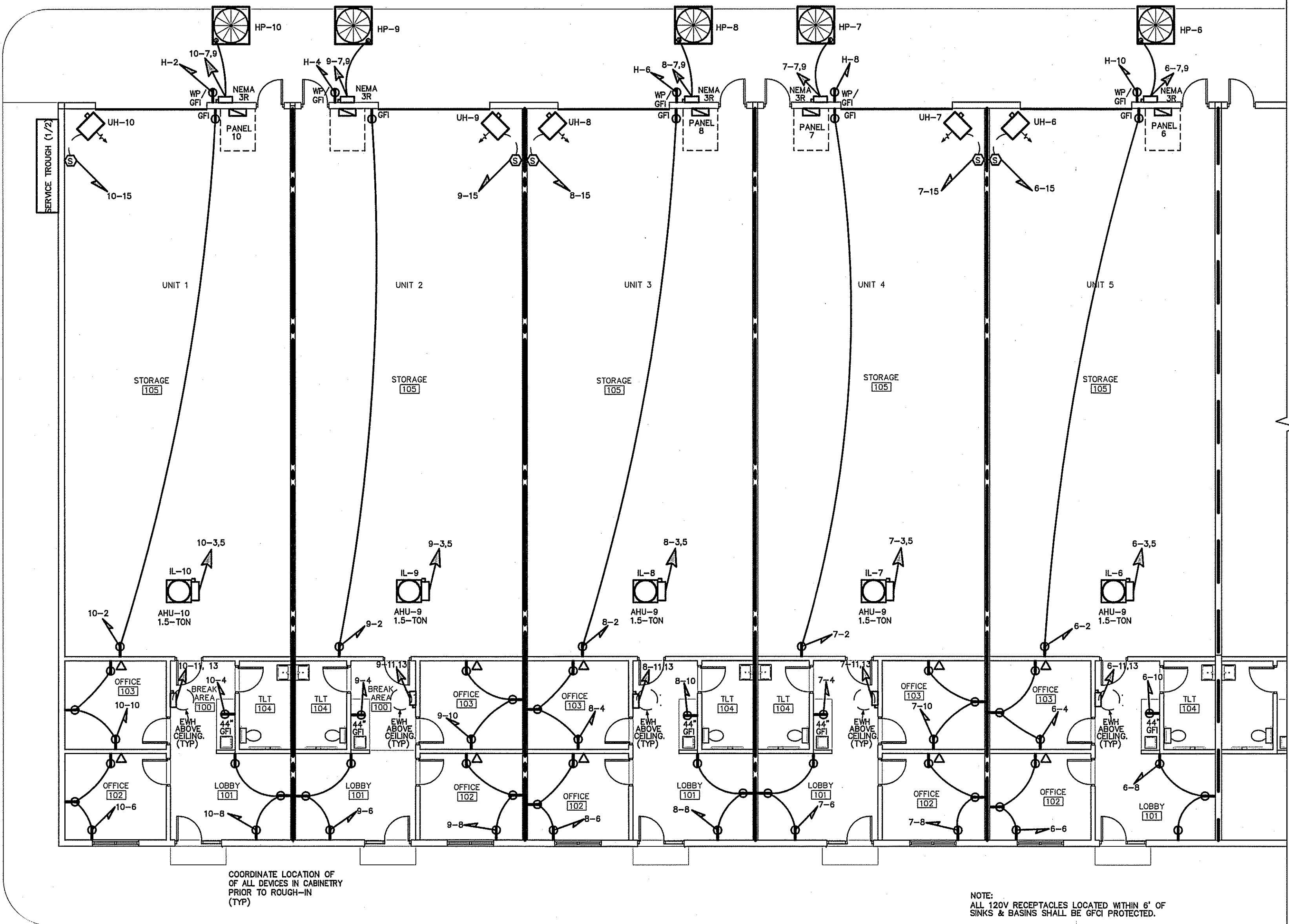
NOTE:
VERIFY ALL EQUIPMENT LOCATIONS AND REQUIREMENTS WITH OWNER/ARCH.

THERE SHALL BE A WP/GFI
RECEPTACLE WITHIN 25'-0"
OF ALL ROOFTOP EQUIP.
PROVIDE AS REQUIRED.

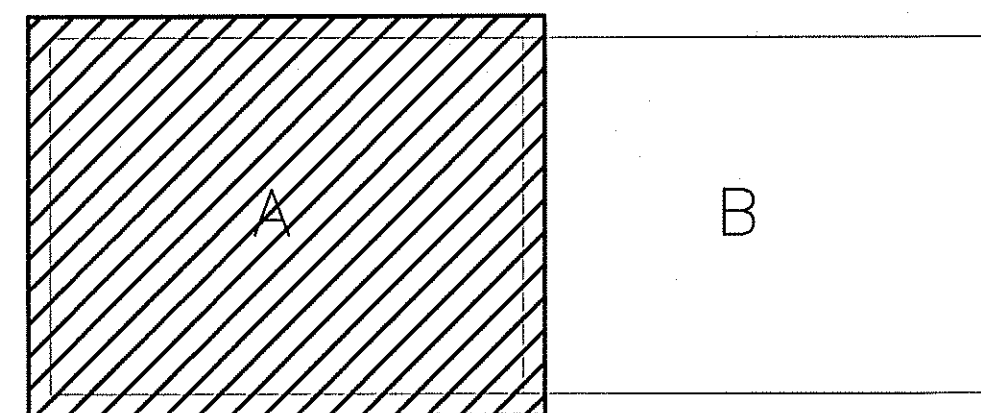
VERIFY A WP/GFI RECEPTACLE
IS WITHIN 25'-0" OF ALL
HVAC EQUIPMENT ON ROOF.
IF NOT, PROVIDE.

NOTE:
PROVIDE LABELING ON EACH
RECEPTACLE NOTING CIRCUIT SERVED.

VERIFY HEIGHT/LOCATION OF ALL
DEVICES PRIOR TO INSTALLATION.

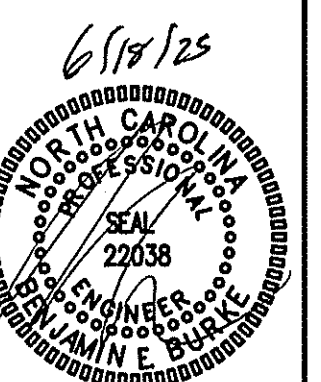


POWER PLAN SIDE A
SCALE: 1/8"=1'-0"



KEY PLAN
SCALE: NTS

ENGINEER
BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: bds@bds-ng.com
Corp. License # C-2652



POWER PLAN -
SIDE A

25014

ISSUED: 06/18/2025
DWG BY: RM
CKD BY: BEB
REVISIONS

SHEET NO.

E3.0

**BELL FORK
SHOPS**
JACKSONVILLE, NC 28540

6/18/25
NORTH CAROLINA
REGISTERED PROFESSIONAL
ENGINEER
EX. 22038
BENJAMIN E. BURKE

POWER PLAN -
SIDE B

25014

ISSUED: 06/18/2025

DWG BY: RM

CKD BY: BEB

REVISIONS

SHEET NO.

E3.1

NOTE:
VERIFY ALL EQUIPMENT LOCATIONS AND REQUIREMENTS WITH OWNER/ARCH.

THERE SHALL BE A WP/GFI
RECEPTACLE WITHIN 25'-0"
OF ALL ROOFTOP EQUIP.
PROVIDE AS REQUIRED.

VERIFY A WP/GFI RECEPTACLE
IS WITHIN 25'-0" OF ALL
HVAC EQUIPMENT ON ROOF.
IF NOT, PROVIDE.

NOTE:
PROVIDE LABELING ON EACH
RECEPTACLE NOTING CIRCUIT SERVED.
VERIFY HEIGHT/LOCATION OF ALL
DEVICES PRIOR TO INSTALLATION.

ALL 120 VOLT RECEPTACLES IN KITCHEN/LOUNGE
AND OTHER FOOD/DRINK PREPARATION AREAS
SHALL BE GFI PROTECTED. COORDINATE LOCATION
WITH EQUIPMENT SERVED.

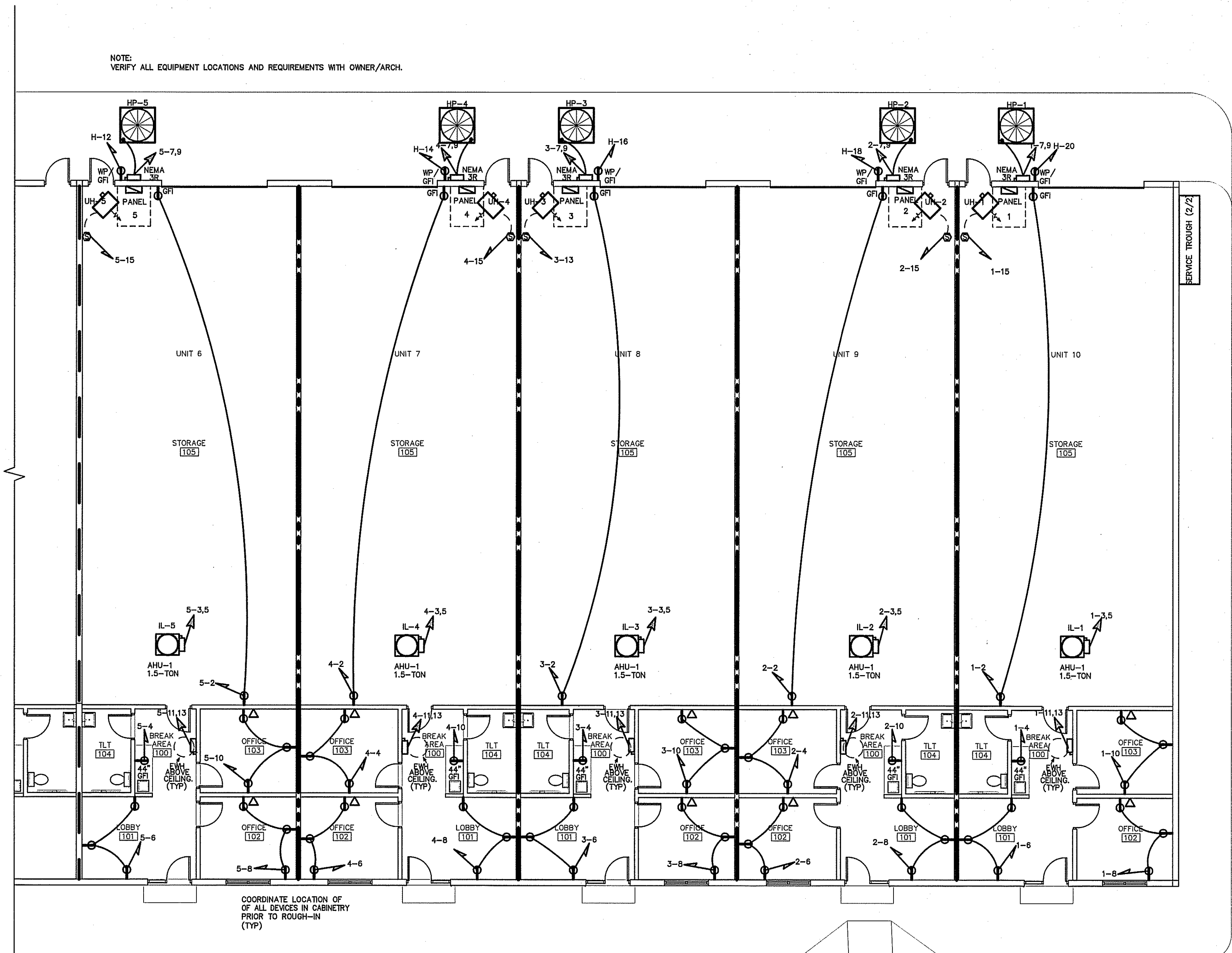
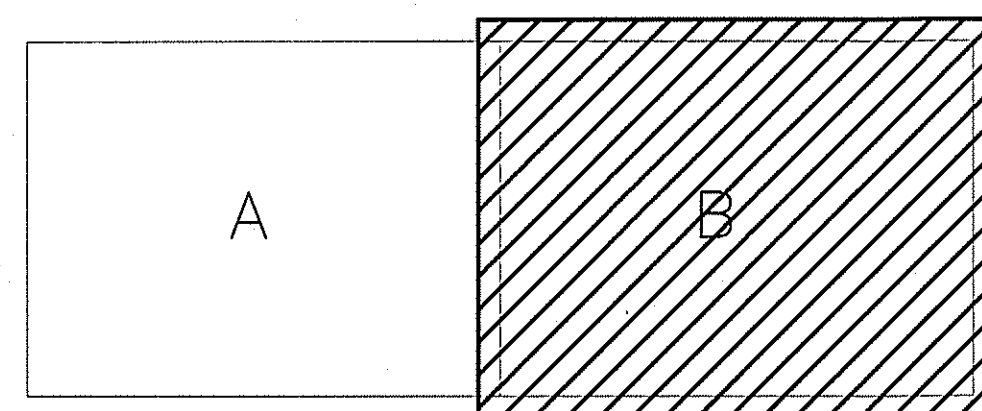
COORDINATE LOCATION OF
OF ALL DEVICES IN CABINETRY
PRIOR TO ROUGH-IN
(TYP)

POWER PLAN SIDE B
SCALE: 1/8"=1'-0"

ENGINEER

BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2652

KEY PLAN
SCALE: NTS



Bell Fork Shops E4.0

EQUIPMENT WIRING SCHEDULE

EQUIPMENT	MCA	MOCP	VOLTS	PH	WIRE SIZE
AHU-1	31.2A	35A	208V	1	3-#8, 1-#10 GND IN 3/4" CONDUIT
HP-1	13.4A	20A	208V	1	3-#8, 1-#10 GND IN 3/4" CONDUIT
EWI	(1.7KW)	35A	120V	3	3-#8, 1-#10 GND IN 3/4" CONDUIT

NOTE:
THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS
PRIOR TO ROUGH-IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.

Bell Fork Shops E4.0

MAKE: EATON
TYPE: PRL1A
OR APPROVED EQUAL

RATING: 120/240 1 PHASE 3 WIRE
MOUNTING: SURFACE
MINIMUM AIC: VERIFY

MLO MAIN CIRCUIT BREAKER
EQUIPMENT GROUND BUS ☒ YES ☐ NO
SERVICE ENTRY RATED ☐ YES ☒ NO

LOAD SERVICE	CKT BRKR	WATTS PER PHASE	CKT NO	NEUTRAL	CKT NO	WATTS PER PHASE	CKT BRKR	LOAD SERVICE
LTS	20A	734	1		2	360	20A	REC- TENANT SPACE
AHU-1	35A	2508	3		4	540	20A	REC- OFFICE
HP-1	25A	1350	5		6	540	20A	REC- OFFICE
EWI	35A	825	7		8	180	20A	REC- LOBBY
UH-1	20A	444	9		10		20A	REC- COUNTER
SPACE			11		12			SPACE
SPACE			13		14			SPACE
SPACE			15		16			SPACE
SPACE			17		18			SPACE
SPACE			19		20			SPACE
SPACE			21		22			SPACE
SPACE			23		24			SPACE
SPACE			25		26			SPACE
SPACE			27		28			SPACE
SPACE			29		30			SPACE
SPACE			31		32			SPACE
SPACE			33		34			SPACE
SPACE			35		36			SPACE
SPACE			37		38			SPACE
SPACE			39		40			SPACE
SPACE			41		42			SPACE

NOTES

SUB-TOTALS 'B' 5417 5127

200A BUS 1080 1080 SUB-TOTALS 'A'

200A LUGS 5417 5127 SUB-TOTALS 'B'

200A FEED 6497 6207 GRAND TOTAL

VERIFY SIZE 32A 31A AMPS/PHASE

TOTAL CONNECTED LOAD

NEC ALLOWABLE DEMAND FACTORS

DIVERSIFIED LOAD SUMMARY

LOAD TYPE	DEMAND FACTOR	A	B	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING	125%	916		916
TRACK LIGHTING	125%			
GENERAL USE	100%	540	540	1080
RECEPTACLES	125%	3135	3135	6270
MOTORS AND EQUIPMENT	100%	1360	1704	3064
WATER HEATERS	125%	1031	1031	2062
KITCHEN EQUIPMENT	100%			
FIX. ELEC. SPACE HEAT.	100%			
SHOW WINDOW LIGHTS	125%			
SIGN	100%			
MISC	100%			
PHASE (TOTAL VA)		6056	6500	13472
TOTAL AMPS		30A	33A	VOLTS = 67A TOTAL AMPS

Bell Fork Shops E4.0

MAKE: EATON
TYPE: PRL1A
OR APPROVED EQUAL

RATING: 120/240 1 PHASE 3 WIRE
MOUNTING: SURFACE
MINIMUM AIC: VERIFY

100A MAIN CIRCUIT BREAKER
EQUIPMENT GROUND BUS ☒ YES ☐ NO
SERVICE ENTRY RATED ☐ YES ☒ NO

LOAD SERVICE	CKT BRKR	WATTS PER PHASE	CKT NO	NEUTRAL	CKT NO	WATTS PER PHASE	CKT BRKR	LOAD SERVICE
PHOTO CELL	20A	798	1		2	180	20A	REC- OUTDOOR
SPACE			3		4	180	20A	REC- OUTDOOR
SPACE			5		6	180	20A	REC- OUTDOOR
SPACE			7		8	180	20A	REC- OUTDOOR
SPACE			9		10	180	20A	REC- OUTDOOR
SPACE			11		12	180	20A	REC- OUTDOOR
SPACE			13		14	180	20A	REC- OUTDOOR
SPACE			15		16	180	20A	REC- OUTDOOR
SPACE			17		18	180	20A	REC- OUTDOOR
SPACE			19		20	180	20A	REC- OUTDOOR
SPACE			21		22			SPACE
SPACE			23		24			SPACE
SPACE			25		26			SPACE
SPACE			27		28			SPACE
SPACE			29		30			SPACE
SPACE			31		32			SPACE
SPACE			33		34			SPACE
SPACE			35		36			SPACE
SPACE			37		38			SPACE
SPACE			39		40			SPACE
SPACE			41		42			SPACE

NOTES

SUB-TOTALS 'B' 798

100A BUS 900 900 SUB-TOTALS 'A'

100A LUGS 798 798 SUB-TOTALS 'B'

100A FEED 1698 900 GRAND TOTAL

VERIFY SIZE 17A 9A AMPS/PHASE

TOTAL CONNECTED LOAD

NEC ALLOWABLE DEMAND FACTORS

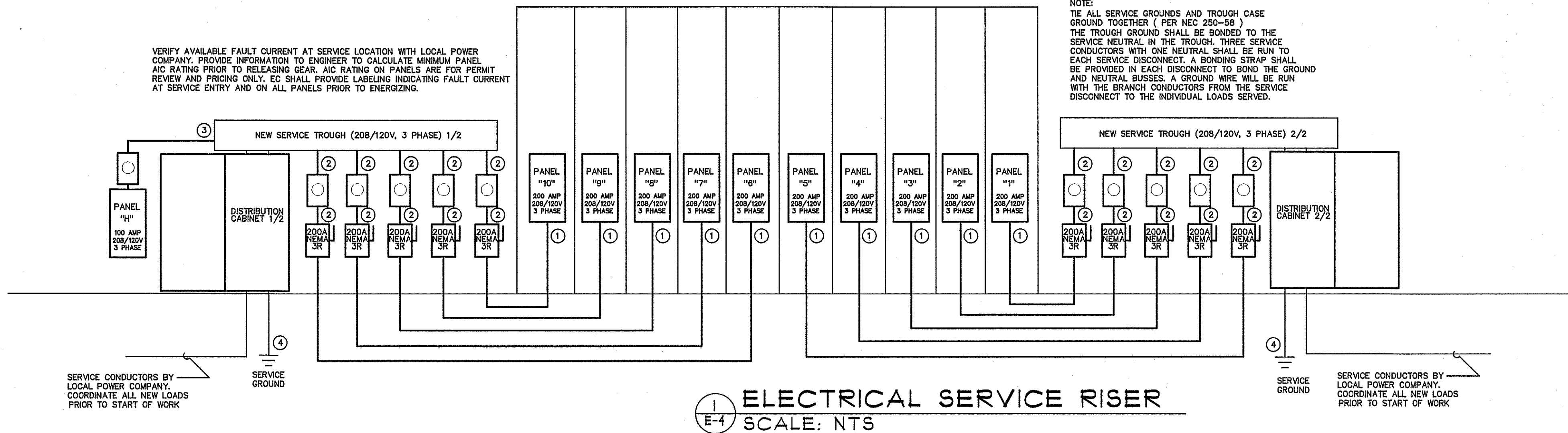
DIVERSIFIED LOAD SUMMARY

LOAD TYPE	DEMAND FACTOR	A	B	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING	125%	995		995
TRACK LIGHTING	125%			
GENERAL USE	100%	450	450	900
RECEPTACLES	125%			
MOTORS AND EQUIPMENT	100%			
WATER HEATERS	125%			
KITCHEN EQUIPMENT	100%			
FIX. ELEC. SPACE HEAT.	100%			
SHOW WINDOW LIGHTS	125%			
SIGN	125%			
MISC	100%			
PHASE (TOTAL VA)		1445	450	1895
TOTAL AMPS		14A	4A	VOLTS = 61A TOTAL AMPS

WIRING SIZE SCHEDULE

- 200A: 4-#3/0, 1-#6 CU GND, IN 2 1/2" CONDUIT
- 200A: 4-#3/0 IN 2" CONDUIT
- 100A: 4-#3 IN 1 1/4" CONDUIT
- #3/0 CU GND TO BUILDING STEEL, FOUNDATION STEEL AND METALLIC WATER MAIN AND #6 CU GND TO 10' X 5/8" DRIVEN GROUND ROD

NOTE:
UNLESS OTHERWISE NOTED ALL OTHER CIRCUITS ARE 20A, 120V.
PROVIDE 2-#12, 1-#12 CU GND IN 1/2" CONDUIT.
SEE EQUIPMENT SCHEDULES FOR ADDITIONAL WIRE SIZES.



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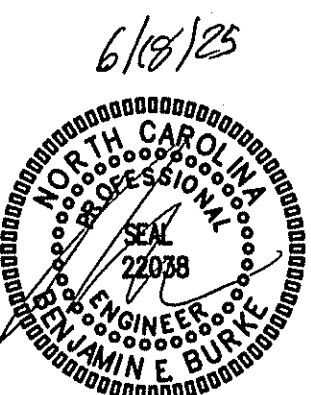


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PANELS AND RISER

25014

ISSUED: 06/18/2025
DWG BY: RM
CKD BY: BEB
REVISIONS

SHEET NO.

E4