# **SHEET INDEX:**

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# PROJECT:

# LEVEL II ALTERATION For: UPS BUILDING SHELL SPACE

181 MITTIE HADDOCK DR. CAMERON, NC 28326

# CODE REVIEW:

APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE 2018

NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE 2018

NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE 2018

2020 NATIONAL ELECTRIC CODE

2009 STANDARD & COMMENTARY ICC/ANSI A117.1-2009 on ACCESSIBILITY

NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE 2018

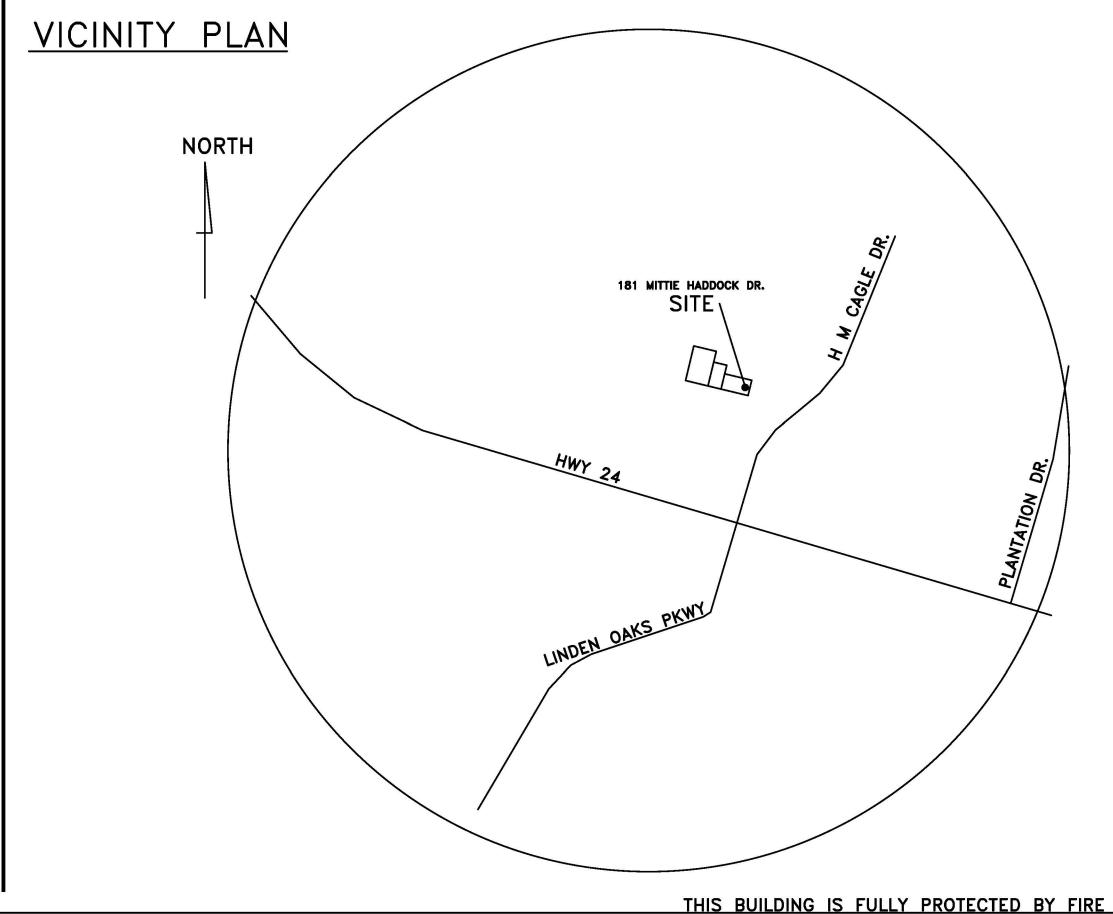
NORTH CAROLINA STATE BUILDING CODE: FIRE PREVENTION CODE 2018

THE 2018 EDITION OF THE LIFE SAFETY CODE NFPA 101

NORTH CAROLINA STATE BUILDING CODE: EXISTING BUILDING CODE 2018

**BUILDING DATA:** 

THE PROJECT IS TO RENOVATE EXISTING TENANT SPACES FOR SHELL SPACE USE.

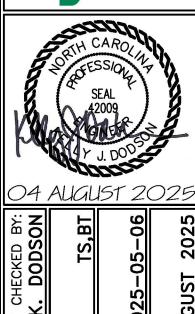


**BUILDING DEPARTMENT:** 

COUNTY of HARNETT CENTRAL PERMITTING P.O. Box 65 108 E. Front Street Lillington, NC 27546 Phone - 910-893-2793

# PROJECT DESIGNER:

JENKINS CONSULTING ENGINEERS, PA OFFICE in EUREKA SPRINGS, NC BUDDY JENKINS, PE KELLY DODSON, PE 1606 MCARTHUR ROAD FAYETTEVILLE, NC 28311-1002 910-822-1724



THIS BUILDING IS FULLY PROTECTED BY FIRE SPRINKLERS

#### CONTACT: KELLY DODSON, P.E. BUDDY JENKINS, P.E.

DESIGNER FIRM		NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	N/A	N/A	N/A		
Civil	N/A	N/A	N/A		
Electrical	JCE	DOUGLAS L. JENKINS	NC P.E. 28803	(910) 822-1724	buddyj@jenkinsce.pro
Fire Alarm	N/A	N/A	N/A		
Plumbing	N/A	N/A	N/A		
Mechanical	JCE	DOUGLAS L. JENKINS	NC P.E. 28803	(910) 822-1724	buddyj@jenkinsce.pro
Sprinkler-Standpipe	N/A	N/A	N/A		
Structural :	N/A	N/A	N/A		
INTERIOR WALLS	N/A	N/A	N/A		
Retaining Walls >5' High	N/A	N/A	N/A		
Building	JCE	KELLY J. DODSON	NC PE 42009	(910) 822-1724	kellyd@jenkinsce.pro

☐ Shell / Core ☐ First Time Interior Completions 2018 NC BUILDING CODE: □ Phased Construction - Shell Core Addition

2018 NC EXISTING BUILDING CODE: ☐ Historic Property □ Prescriptive □ Alteration Level I □ Change of Use (check all that apply) □ Repair ✓ Alteration Level II ☐ Chapter 14 Alteration Level III

CURRENT USE (S) (Ch. 3): VACANT CONSTRUCTED: (date) \_\_\_\_ PROPOSED USE (S) (Ch. 3): MERCANTILE (UPS SHIP STORE) RENOVATED: (date) \_\_\_\_ OCCUPANCY RISK CATEGORY (Table 1604.5): Current:

BASIC BUILDING DATA Construction Type:

□ II–A □ III–A ☑ II–B □ I–B □ III−B □ V-B (check all that apply) ✓ NFPA 13 □ NFPA 13R □ NFPA 13D Partial Sprinklers: Standpipes: 🗹 No Class 🗆 I □ II □ III □ Wet □ Dry Primary Fire District: ✓ No ☐ Yes (APPENDIX D) Flood Hazard Area: Some No Some Yes Special Inspections Required: 

✓ No □ Yes

#### GROSS BUILDING AREA TABLE

FLOOR	EXISTING (sq ft)	NEW (sq ft)	SUBTOTAL
TENANT SPACE (CREATED)		1,750	1,750
TOTAL		1,750	1,750

		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 HP
Institutional	□ I-1	□ I-2	□ I-3	□ I-4	
I-1 Condition	□ 1 <b>□</b> 2				
I-2 Condition	□ 1 <b>□</b> 2				
I-3 Condition	□ 1 <b>□</b> 2	□ 3 □ 4	<b>□</b> 5		
Mercantile					
Residential	□ R-1	□ R-2	□ R <b>-</b> 3	□ R-4	
Storage	□ S−1 Moderate	□ S-2	Low	☐ High-piled	
	Parking Garage	☐ Open ☐ Enclo	sed	☐ Repair Garage	
Utility and Miscellaneous					

# Accessory Occupancy Classification(s):

This separation is not exempt as a Non-separated Use (see exceptions). Special Uses (Chapter 4): 402 403 404 405 405 406 407 408 409 410 411 412 413 □ 414 □ 415 □ 416 □ 417 □ 418 □ 419 □ 420 □ 421 □ 422 □ 423 □ 424 □ 425 □ 426 □ 427 □ 428 □ 429 □ 430

**Special Provisions (Chapter 5):** □ 510.2 □ 510.3 □ 510.4 □ 510.5 □ 510.6 □ 510.7 □ 510.8 □ 510.9 Mixed Occupancy: ✓ No ☐ Yes Separation: \_ — Hr. Exception:

✓ 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 of each use shall not exceed 1.

Separated Use Formula 508.4.2: Actual Area of Occupancy A Allowable Area of Occupancy A

Actual Area of Occupancy B Allowable Area of Occupancy B 

≤ 1

STORY NUMBER	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 4 AREA	(C) Area for Frontage Increase <sup>1, 5</sup>	(D) ALLOWABLE AREA PER STORY OR UNLIMITED <sup>2, 3</sup>	
1	BUSINESS (B)	1,750	50,000	N/A	50,000	
			00,000	.,,,,,	301000	
		.,	00,000		00,000	
	(-)		30,000		35,555	

1 Frontage area increases from Section 506.3 are computed thus: a. Perimeter which fronts a public way or open space having 20 feet minimum width = \_\_\_\_\_

b. Total Building Perimeter = \_\_\_\_\_ (P)

c. Ratio (F/P) = \_\_\_\_ (F/P)

d. W = Minimum width (weighted average) of public way = \_\_\_ (W) where W=(L 1 X w 1+ L 2X w ½/F (Equation 5-4)

e. Percent of frontage increase = | | 100 [ F/P - 0.25] x W/30 = \_\_\_\_ (%) (Equation 5-5)

FRONTAGE INCREASE WORKSHEET for CALCULATIONS:

	THORPICE WORKERE TO WESSENTIONS.										
EXTERIOR	WALL	(F) OPEN LENGTH (feet)	(P) TOTAL LENGTH (feet)	(W) (weighted average) WIDTH OF PUBLIC WAY OR OPEN SPACE (feet)	(%) FROM CALC. ABOVE	(B) FROM TABLE ABOVE	AREA INCREASE FOR COLUMN (C) ABOVE (% * TABLE AREA)				
North											
South											
East											
West											
TOTAL											

42 23,500 (.42\*23,500 = 9,870)

2 Unlimited area applicable under conditions of Sections 507

3 Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (Section 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. BUILDING CODE SUMMARY (continued)

### ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	75	20'	-
Building Height in Stories (Table 504.4)	3	1	•

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

#### FIRE PROTECTION REQUIREMENTS

	FIRE	RATING ** (TABLE 601)		DETAIL #	DESIGN #	SHEET #	SHEET #
BUILDING ELEMENT	SEPARATION DISTANCE (feet)	REQ'D	PROVIDED (w/ * REDUCTION	AND SHEET #	FOR RATED ASSEMBLY	FOR RATED PENETRATION	FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0					
Bearing Walls							
Exterior		0	EXISTING	WALLS			
North							
East							
West							
South							
Interior		0					
Nonbearing walls and partitions  Exterior walls							
North							
East							
West							
South							
Interior Non-Bearing Walls		0					
Floor construction including supporting beams and j	joists	0					
Floor Ceiling Assembly							
Columns Supporting Floors							
Roof construction including supporting beams and j	joists	0					
Roof Ceiling Assembly		0					
Columns Supporting Roof							
Shaft Enclosures — Exit							
Shaft Enclosures — Other							
Corridor Separation		Ì					
Occupancy / Fire Barrier Separation	1						
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation		1 HR		U419/G2-G8			
Incidental Use Separation							

\* Indicate section number permitting reduction

## PERCENTAGE OF WALL OPENING CALCULATIONS

EXTERIOR WALL	FIRE SEPARATION DISTANCE (feet) FROM PROPERTY LINE	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
North	-	-	=	=
South	-	-	=	_
East	-	-	=	-
West	_	=	_	_

# LIEE CAFETY CYCTEM DECLIDEMENTS

	LIFE SAFEIT	STSTEM REQUIREME	ENIS	
Emergency Lighting:	¥Yes	□ No		
Exit Signs:	¥ Yes	□ No		
Fire Alarm:	Yes	□ No		
Smoke Detection Systems	: □ Yes	Mo	Partial	☐ Duct Detectors
Carbon Monoxide Detectio	n: 🖵 Yes	⊠No		
Life Safety Systems Gene	rator: 🖵 Yes	✓ No		

# LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: LS1

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 [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 (903) ☐ The square footage of each smoke compartment for Occupancy Classification I—II (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	ACCESSIBLE	TYPE A	TYPE A	TYPE B	TYPE B	TOTAL
	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	ACCESSIBLE UNITS
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	PROVIDED
NONE REQUIRED							

ACCESSIBLE PARKING (SECTION 1106)									
107.00	TOTAL # OF PARKING S	PACES	# OF ACCESSIBL	# OF ACCESSIBLE SPACES PROVIDED					
LOT OR PARKING AREA	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES 132" ACCESS AISLE	96" ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED			
EXISTING	N/R								
NEW									
TOTAL									

BUILDING CODE SUMMARY (continued)

## PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		ATER CLO	SETS	URINALS		LAVATORI	ES	SHOWERS/	DRINKING	FOUNTAINS	SERVICE
USL	MALE	FEMALE	UNISEX	UNINALS	MALE	FEMALE	UNISEX	TUBS	REGULAR	ACCESSIBLE	SINK
BUSINESS			1				1				
EXISTING FIXTURES TO REMAIN			1				1				
***DRINKING FOUNDATION AND	) SFR\	/ICE SINK	ARE NOT	REQUIRE	D IN F	RUSINESS	USF				

\*DRINKING FOUNDATION AND SERVICE SINK ARE NOT REQUIRED IN BUSINESS USE WITH OCCUPANT LOAD LESS THAN 25. NCPC 2018, TABLE 403.1 FOOTNOTE "O"

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

NONE REQUIRED

#### **ENERGY SUMMARY**

#### ENERGY REQUIREMENTS:

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

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

Exempt Building: Provide code or statutory reference: Climate Zone: 

3A 

4A 

5A HARNETT COUNTY

Method of Compliance: Energy Code: 

Performance Prescriptive

Value of total assembly: ASHRAE 90.1: ☐ Performance ☐ Prescriptive

THERMAL ENVELOPE: (Prescriptive method only) Roof/ceiling Assembly (each assembly) Description of assembly:

U-Value of total assembly: R-Value of insulation: Skylights in each assembly:

*U*-Value of skylight: Total square footage of skylights in each assembly:

Exterior Walls (each assembly) Description of assembly: U-Value of total assembly:

R-Value of insulation: Openings (windows or doors with glazing) U-Value of assembly: Solar heat gain coefficient:

Projection factor: Door R-Values: Walls below grade (each assembly Description of assembly: U-Value of total assembly:

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

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

MECHANICAL SUMMARY (SEE DRAWING SHEET \_\_\_\_\_\_) ELECTRICAL SUMMARY (SEE DRAWING SHEET \_\_\_\_)

R-Value of insulation:

County of Harnett BUILDING CODE SUMMARY LEVEL II ALTERATION FOR:

# UPS BUILDING SHELL **SPACE**

181 MITTIE HADDOCK DR. CAMERON, NC 28326

BCS

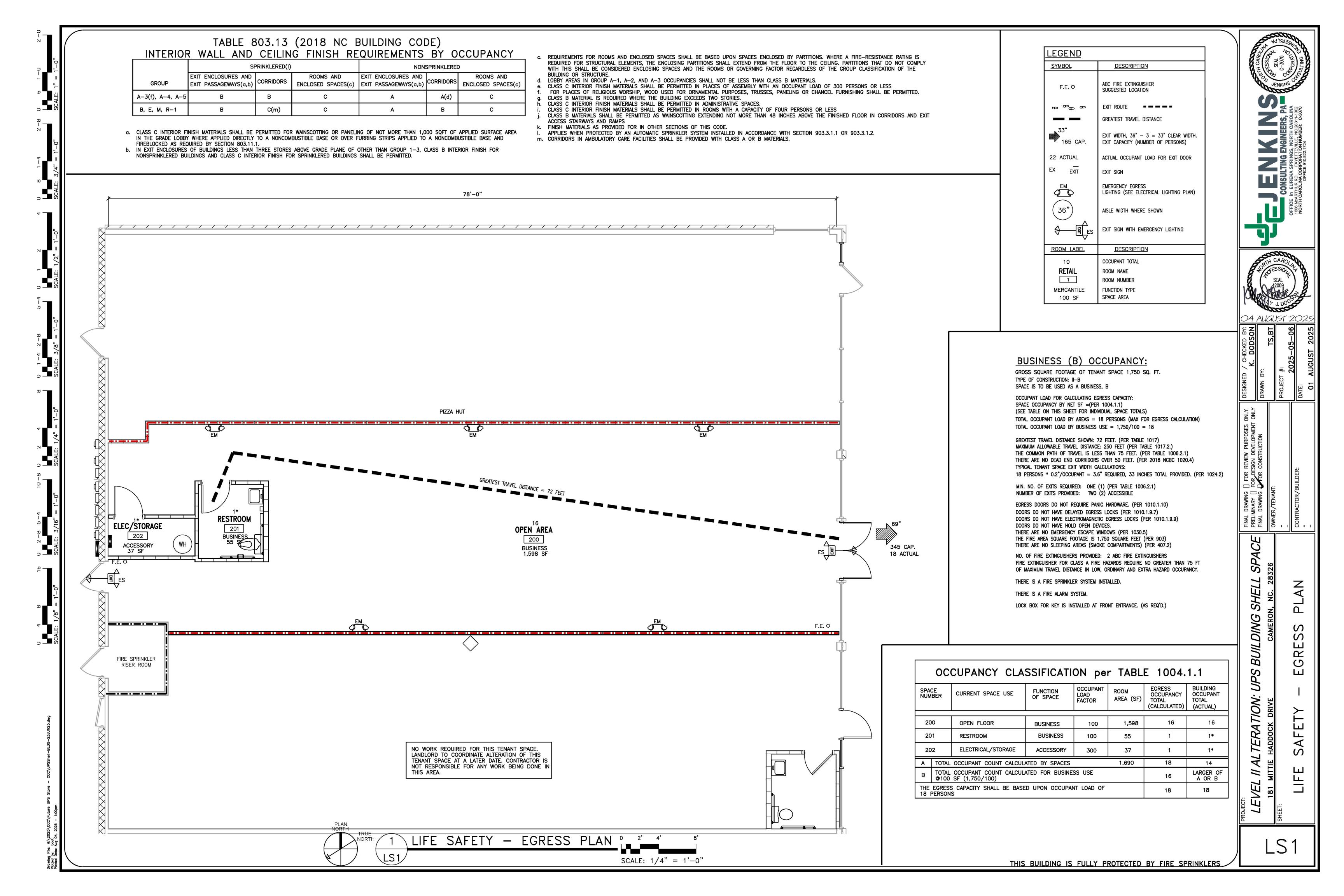
THIS BUILDING IS FULLY PROTECTED BY FIRE SPRINKLERS

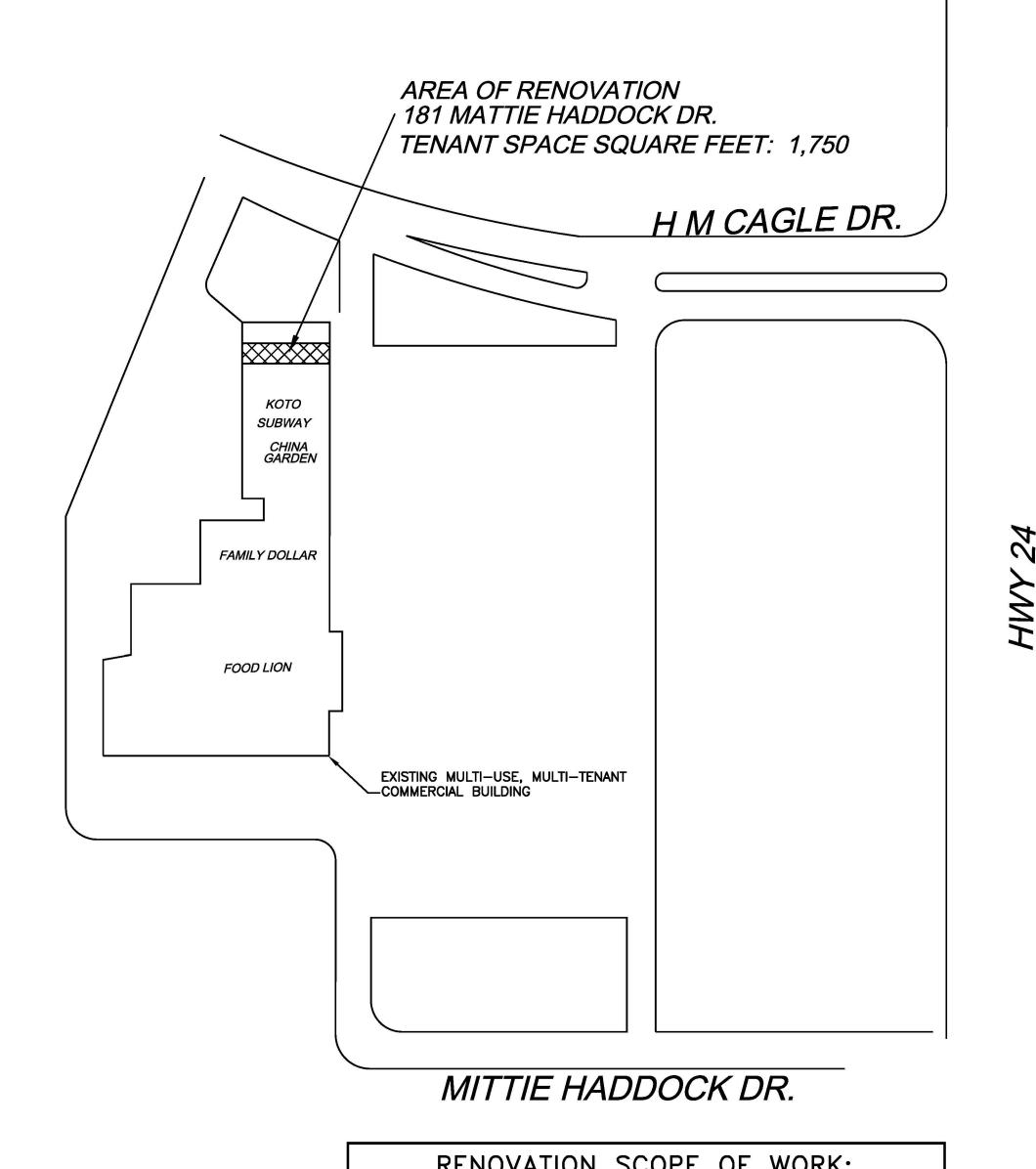




BUILDING SHELL SPACE CAMERON, NC. 28326

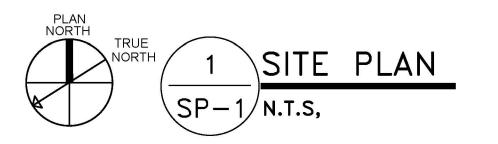
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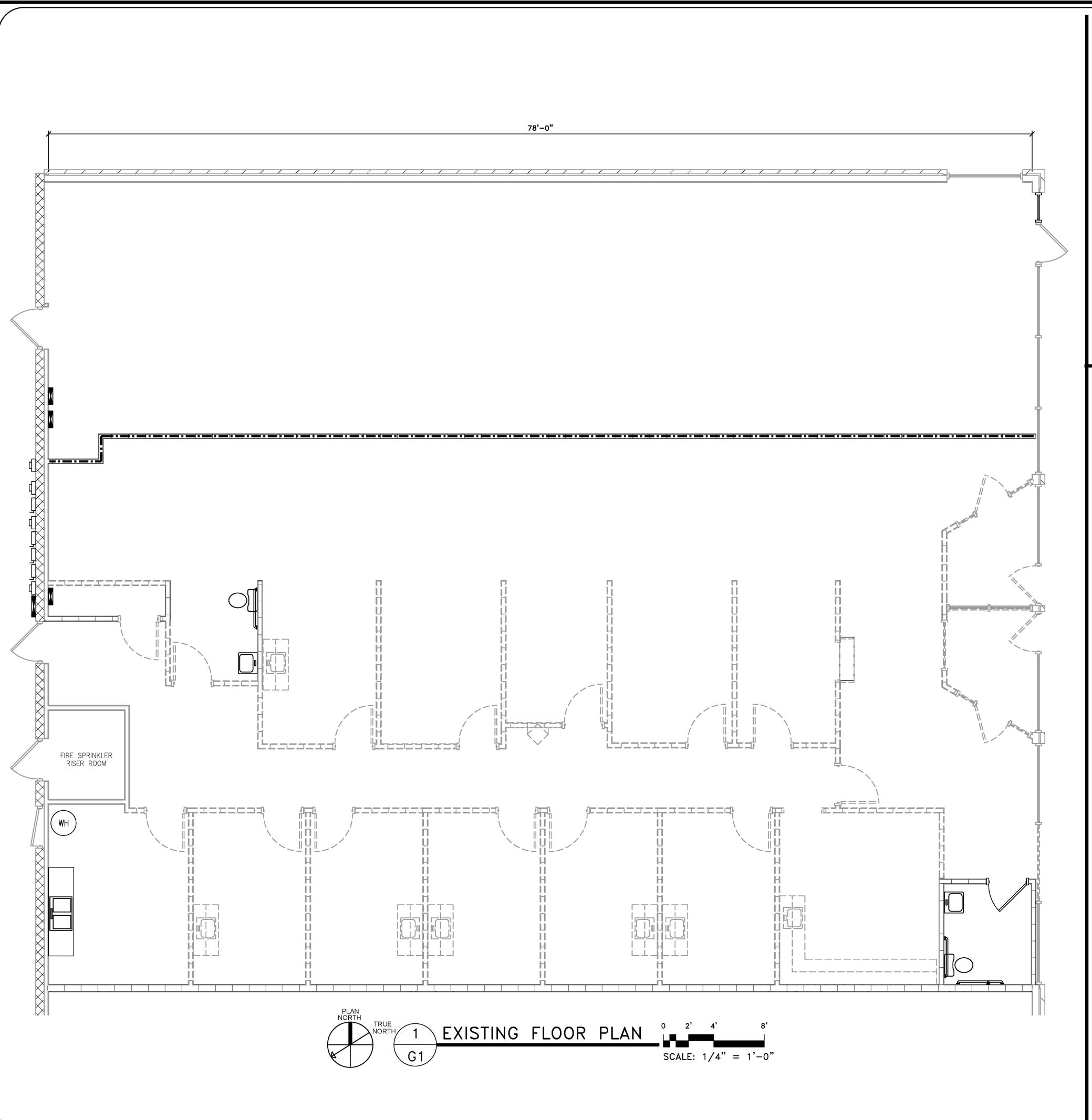
# **RENOVATION SCOPE OF WORK:**

THIS TENANT SPACE (CURRENTLY "BUSINESS USE") WILL BE RENOVATED PER LANDLORD WORK FOR TWO SHELL SPACES. THE SCOPE OF WORK FOR THIS PROJECT AT THIS TIME WILL BE RENOVATING THE EXISTING SPACE BACK TO A SPACE FOR THE UPCOMING NEW TENANT RENOVATION BY OTHERS. SCOPE OF WORK FOR THE SHELL SPACE WILL BE REMOVAL OF SOME WALLS, ADDING A 1—HR DEMISING WALL. SOME ELECTRICAL WORK WITH MINIMAL HVAC WORK WILL BE REQUIRED. SOME PLUMBING WORK.





PARTIAL



# TENANT SPACE ALTERATION GENERAL NOTES

- 1. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND MAY NOT SHOW ALL OF THE DETAILS, MATERIALS AND METHODS REQUIRED TO COMPLETE THE ADDITION. THE DRAWING PACKAGE AS A WHOLE SHOULD BE USED TO CONSTRUCT THE NEW BUILDING AS DESCRIBED. THERE ARE NO TECHNICAL SPECIFICATIONS INCLUDED IN THESE CONSTRUCTION DOCUMENTS. THE PLANS DO INCLUDE FINISH MATERIALS SELECTIONS BUT SHALL BE COORDINATED WITH THE OWNER.
- 2. ALL CONSTRUCTION MATERIALS SHALL BE COORDINATED WITH THE DRAWINGS AND INTERIOR FINISH REQUIREMENTS.
- 3. DIMENSIONS ARE TO FINISHED FACE OF CMU AND WOOD/METAL STUD WALLS UNLESS OTHERWISE NOTED.
- 4. THE CONTRACTOR SHALL COORDINATE ALL WORK AND ADJUST TO THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- 5. THE CONTRACTOR SHALL COORDINATE WORK, TRADES, AND SHALL VERIFY DIMENSIONS, MEANS AND METHODS OF CONSTRUCTION, EXISTING CONDITIONS AND PROPOSED NEW CONSTRUCTION PRIOR TO COMMENCING ANY WORK, MATERIAL ORDERING, OR FABRICATION.
- 6. WORK SHALL BE FIRST CLASS TO THE ENTIRE SATISFACTION OF THE OWNER.
- 7. COORDINATE ALL ELECTRICAL/PLUMBING ROUGH-INS FOR OWNER SUPPLIED EQUIPMENT WITH THE OWNER AND MANUFACTURER.
- 8. ALL NEW INTERIOR WALLS ARE DETAILED PER PLAN SPECIFICATION. SEE SPECIFIC SHEETS REGARDING THIS PROJECT.
- 9. PATCH & REPAIR: THE CONTRACTOR SHALL PATCH AND/OR REPAIR WITH NEW, ANY WORK DAMAGED OR DISTURBED CAUSED BY THE SUB-CONTRACTORS AS A RESULT OF PROVIDING FOR OR INSTALLING NEW WORK SHOWN ON THE CONTRACT DOCUMENTS
- 10. CAULK ALL PENETRATIONS, OUTLETS, ETC. ON ALL PARTITIONS. LEAVE ALL WORK COMPLETE AND READY FOR THE INTENDED USE.
- 11. ALL CONSTRUCTION MATERIALS AND DEBRIS WILL BE REMOVED FROM THE SITE UPON COMPLETION. THE CONTRACTOR SHALL PROVIDE CLEANING SERVICES FOR THE RENOVATED SPACES AND DELIVER THE PROJECT COMPLETED.
- 12. CONSTRUCTION TO COMPLY WITH ALL STATE AND LOCAL CODES.
- 13. CONSTRUCTION IS AT AN OPERATING MULTI-SPACE RETAIL SHOPPING CENTER. CONSTRUCTION TRAFFIC WILL NOT INTERFERE WITH GENERAL PUBLIC TRAFFIC. CONTRACTOR WILL COORDINATE A MATERIAL DROP OFF/PICK UP AND CONSTRUCTION WORKER AREA ON SITE WITH LANDLORD/PROPERTY MANAGER.

# SCOPE OF WORK OUTLINE:

#### DEMOLITION

WALLS IN TENANT SPACE FOR FUTURE TENANT SOME CEILING DEMOLITION REQUIRED FOR NEW DEMISING WALL CONSTRUCTION EXTERIOR STOREFRONT WINDOW FOR NEW STOREFRONT DOOR

**FRAMING** 

FRAMING FOR INTERIOR WALLS

APPLICATION OF GYPSUM BOARD, VINYL BASE, PAINT TO INTERIOR OF SPACE

**MECHANICAL** SEE MECHANICAL PLAN.

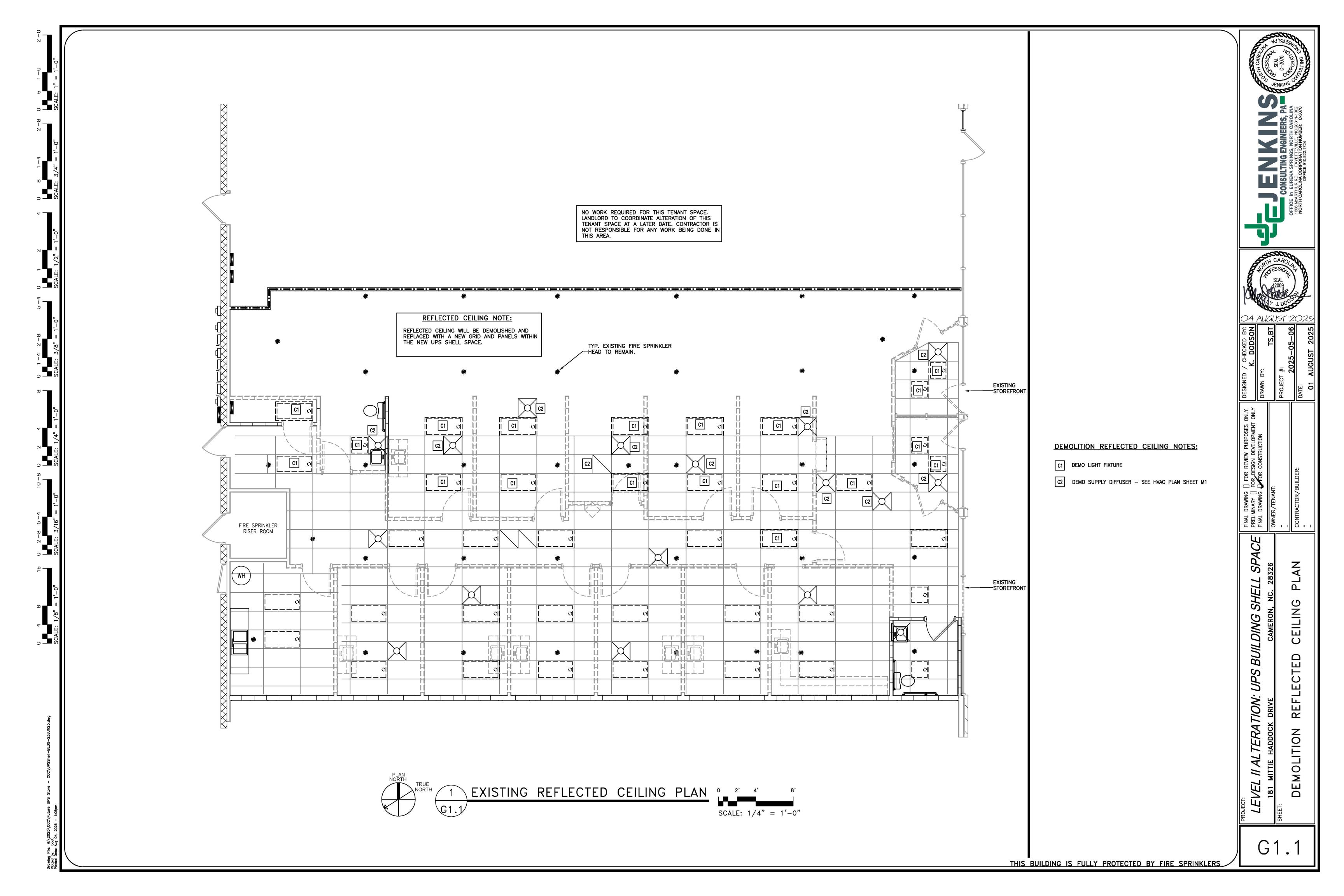
**ELECTRICAL** 

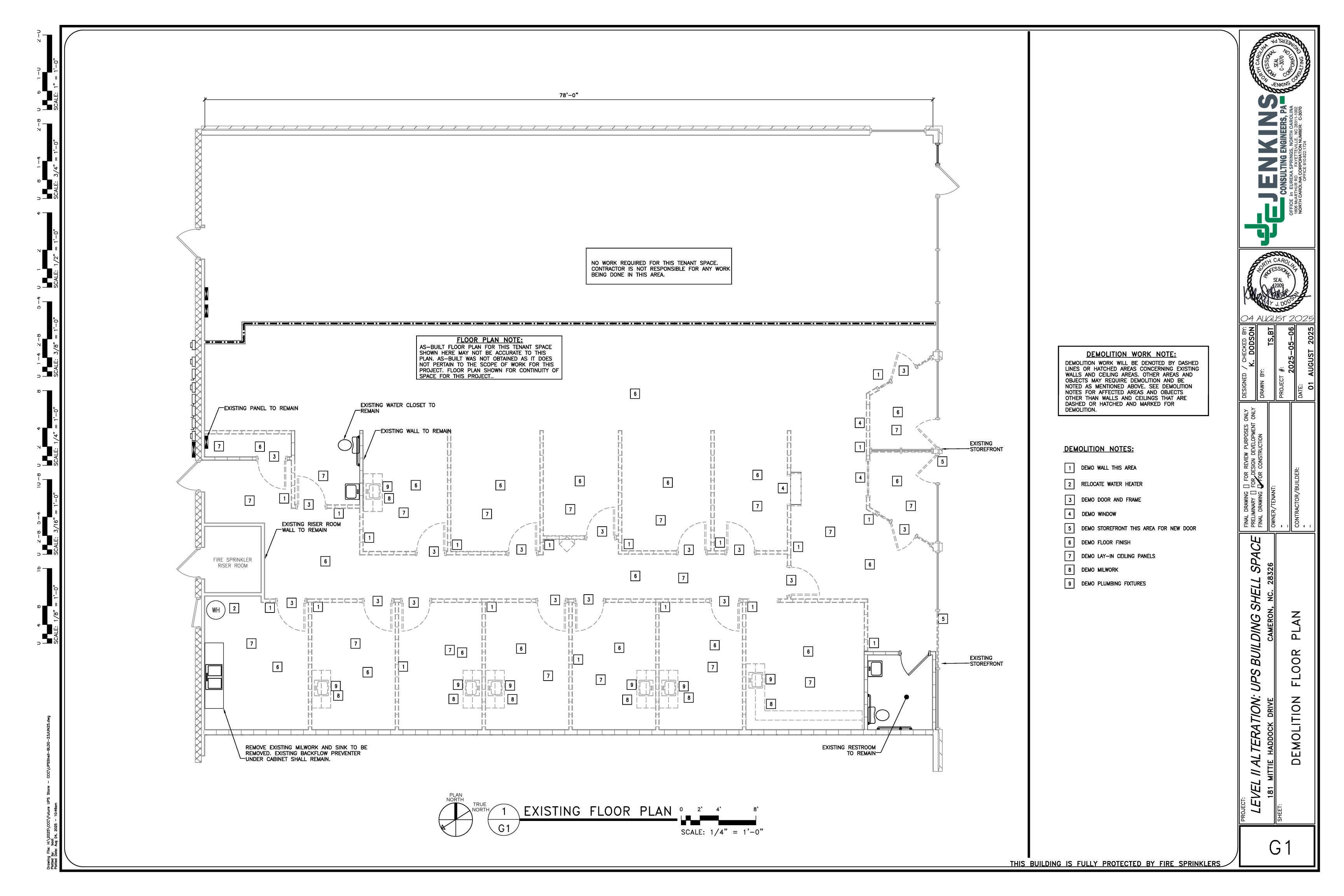
SEE ELECTRICAL PLAN.

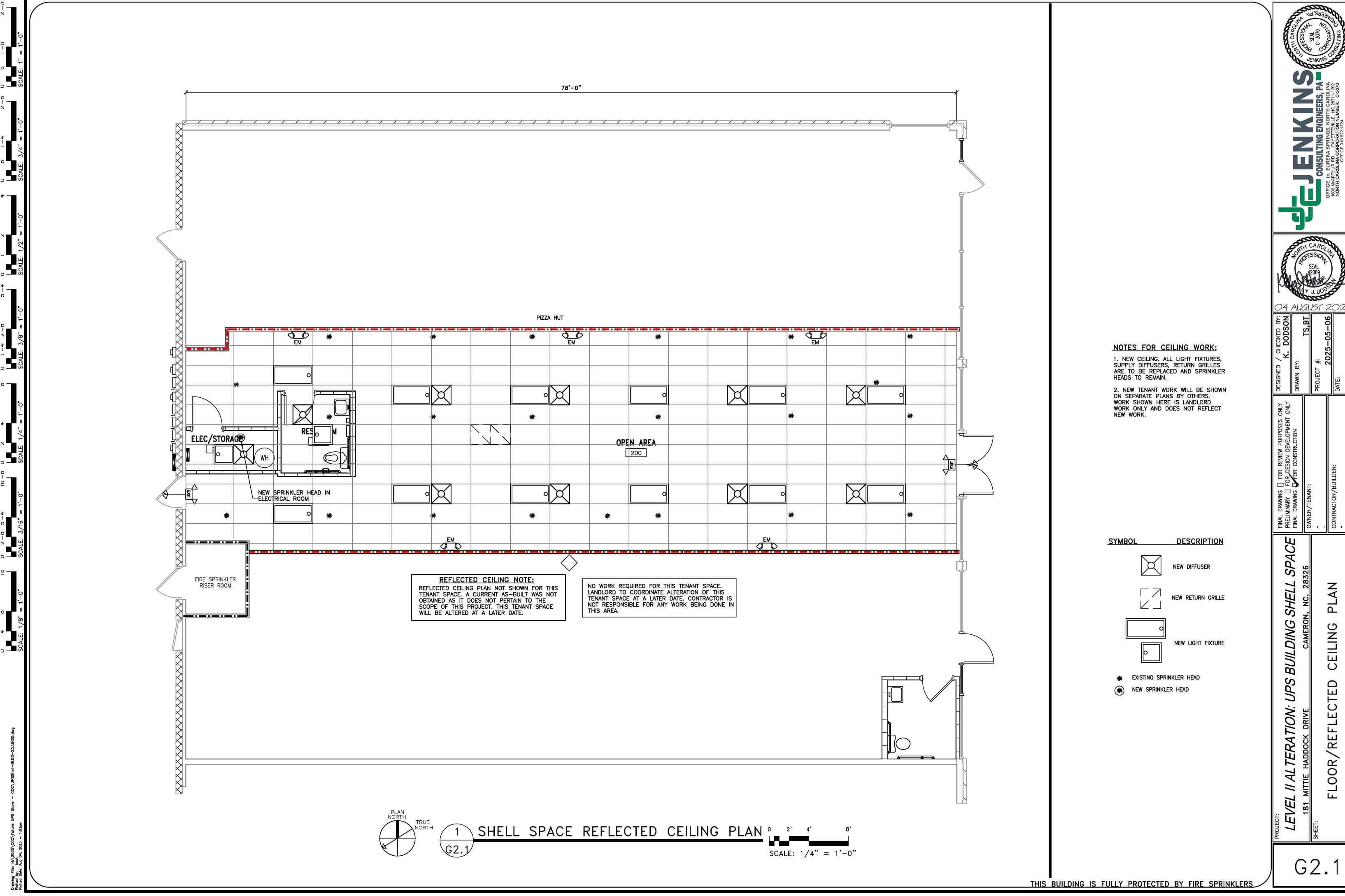
SEE PLUMBING PLAN.

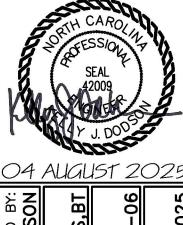


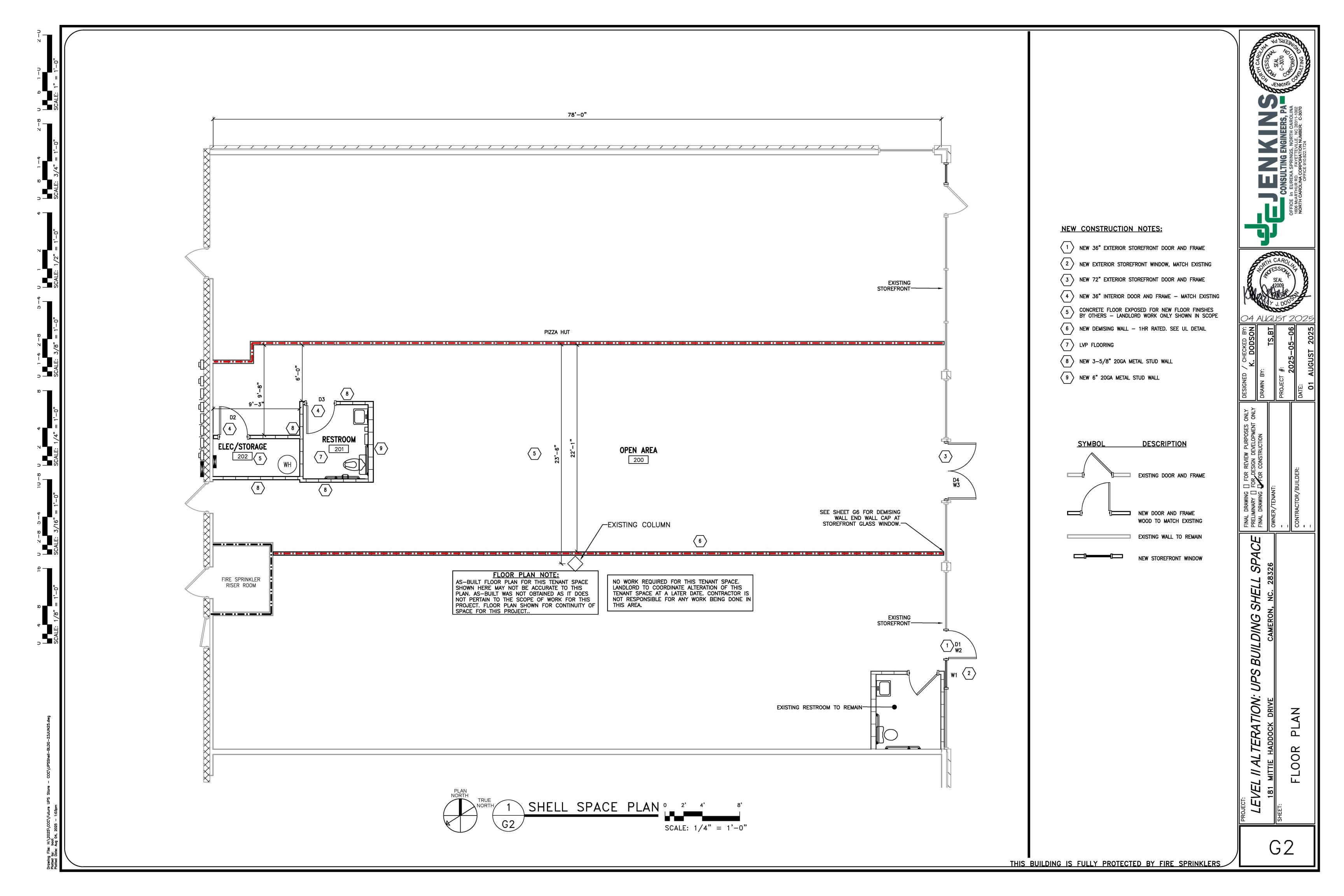
BUILDING

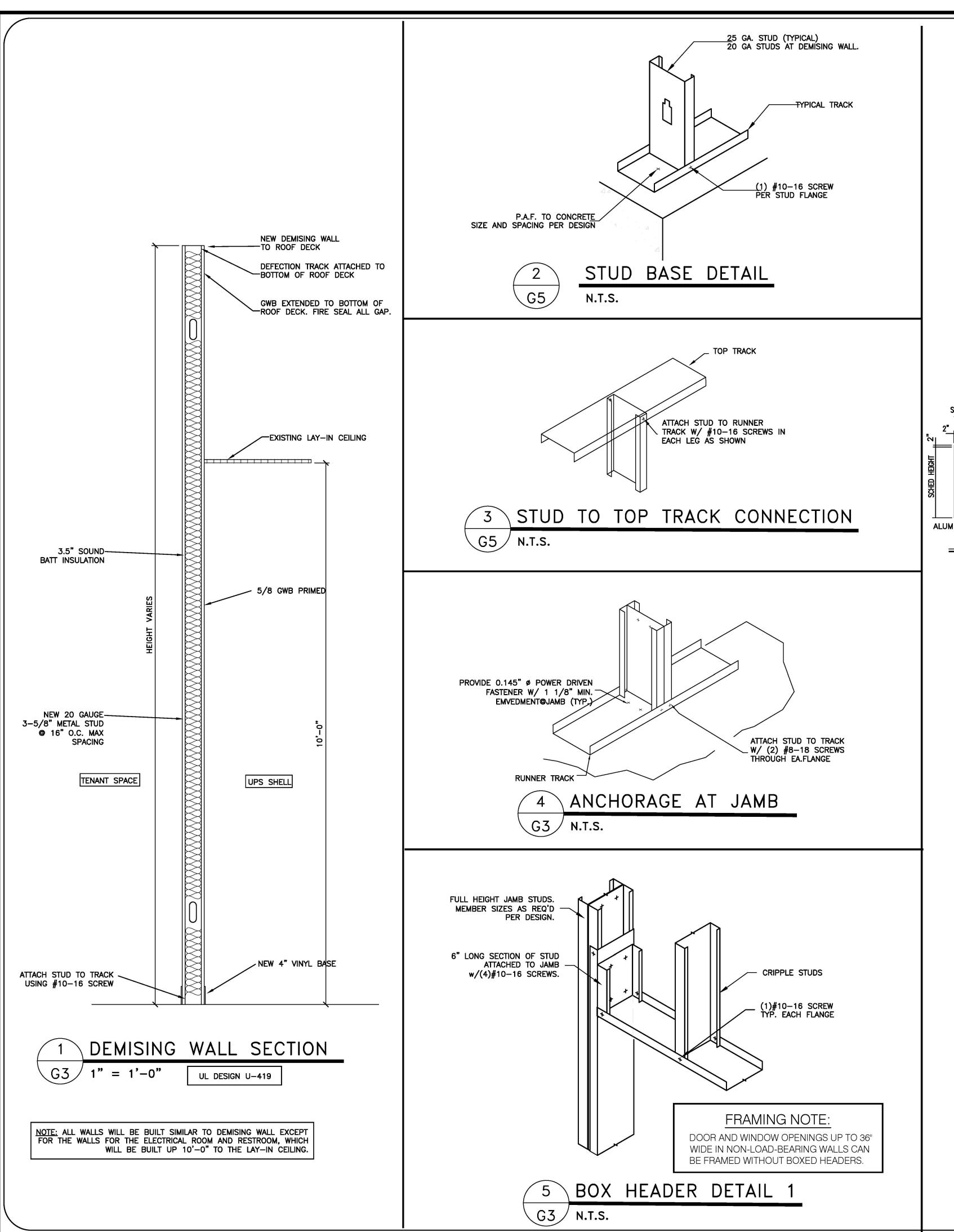


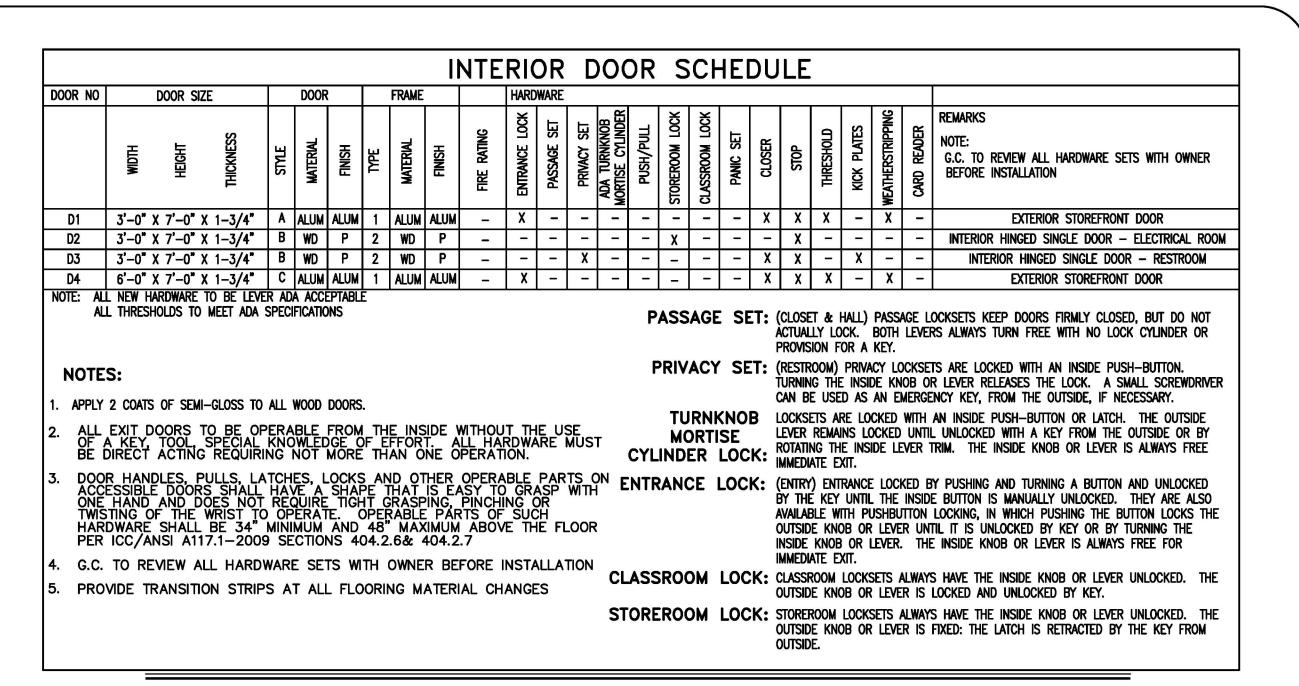


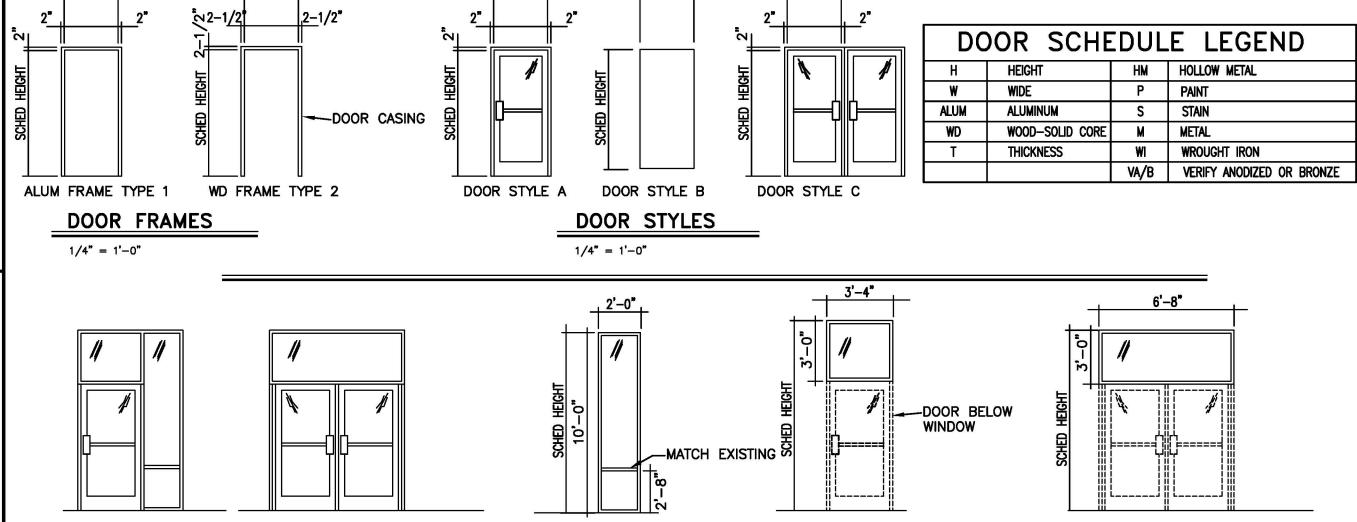












WINDOW-W1

**STOREFRONT** 

	WINDOW	SCHEDUL	_E
WINDOW NO	WINDOW SIZE	FRAME Material	REMARKS
W1	2'-4" x 10'-0"	ALUM	
W2	3'-0" x 3'-0"	ALUM	WINDOW ABOVE DO
<b>W</b> 3	6'-8" x 3'-0"	ALUM	WINDOW ABOVE DOO
NOTES	•	L	1

WINDOW-W3

1/4" = 1'-0"

1. FINISH SELECTION PER SPECIFICATION THIS PAGE
2. MATCH EXISTING STOREFRONT WINDOW AND DOOR, PROVIDE TEMPERED SAFETY GLAZING WHERE REQUIRED

	ROOM FINISH SCHEDULE												
ROOM NAME	RM NO.	NET SQ. FT.	FLOOR	BASE	WALLS	WALL RATING	CEILING MAT.	CEILING HEIGHT	REM	ARKS			
OPEN FLOOR 200		1710	CONC	VINYL	GYP.BD/PR	_	ACOUSTIC	10'-0"					
RESTROOM	201	55	LVT	VINYL	GYP.BD/PR	-	ACOUSTIC	10'-0"	MIN. 48"	F.R.P. ABO	/E FINISH FLOOR		
ELECTRICAL ROOM	202	155	CONC	VINYL	GYP.BD/PR	-	ACOUSTIC	10'-0"					
WOT WING COMPOSITION	FINISH SCHEDULE CODES  FRP FIRE RESISTANT PLANK												
V.C.T. VINYL COMPOSITION CONC. CONCRETE	N IILE		RIMED ONCRETE MASON	IRY LINIT	VW SC	VINYL WALLCOV SEALED CONCR		Mosaic tili . Paneling	3	V.P. Pavers	VINYL PLANK BRICK PAVERS		
COMP. COMPOSITION GYP. BD. GYPSUM BOARD		ACOUSTIC AC		OIIII	RU CER TILE	RUBBER CERAMIC TILE	WD ST	WOOD STEEL		CPT 1-HOUR	CARPET U-305		
AA ANODIZED ALUMINU	JM	SS ST	TAINLESS STEEL		WC	WAINSCOT	FRE	FIRE RESIST	TANT PANEL	LVT	LUXURY VINYL TILE		

WINDOW-W2

1/4" = 1'-0"





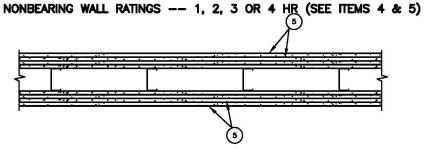
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SECTION

RAMING/

WALL



1. FLOOR AND CEILING RUNNERS -- (NOT SHOWN) --FOR USE WITH ITEM 2 - CHANNEL SHAPED,
FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, MIN WIDTH TO ACCOMMODATE STUD SIZE, WITH MIN 1 IN. LONG LEGS, ATTACHED TO FLOOR AND CEILING WITH FASTENERS 24 IN. OC MAX.

1a. Floor and ceiling runners\* -- not shown - in lieu of item 1 -- for use with item 2a, PROPRIETARY CHANNEL SHAPED, MIN. 3-5/8 IN. WIDE WITH 1 IN. LONG LEGS, FABRICATED FROM MIN. 0.0150 IN. (0.0146 IN., MIN BARE METAL THICKNESS) GALVANIZED STEEL, ATTACHED TO FLOOR AND CEILING WITH FASTENERS 24 IN. OC MAX.

DIETRICH INDUSTRIES INC -- ULTRASTEEL?.

1B. FLOOR AND CEILING RUNNERS -- (NOT SHOWN - IN LIEU OF ITEM 17)R-USE WITH ITEM 2A, PROPRIETARY CHANNEL SHAPED, MIN. 2-9/16 IN. WIDE WITH 1-3/16 IN. WIDE FLANGES, FABRICATED FROM MIN. 0.0150 IN. GALVANIZED STEEL, ATTACHED TO FLOOR AND CEILING FASTENERS 24

DIETRICH INDUSTRIES INC -- ULTRASTEEL?.

CHANNEL SHAPED, FABRICATED FROM MIN 25 MSG CORROSION-PROTECTED STEEL, MIN WIDTH AS INDICATED UNDER ITEM 5, MIN 1-1/4 IN. FLANGES AND 1/4 IN. RETURN, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 3/8 TO 3/4 IN. LESS THAN ASSEMBLY HEIGHT.

IN LIEU OF ITEM 2 - PROPRIETARY CHANNEL SHAPED STUDS, MIN. WIDTH AS 2A. STEEL STUDS\* --INDICATED UNDER ITEM 5, MIN. 1-1/4 IN. LONG LEGS AND 1/4 IN. LONG FOLDED BACK RETURN FLANGE LEGS. FABRICATED FROM MIN. 0.0155 IN. (0.0149 IN., MIN BARE METAL THICKNESS) GALVANIZED STEEL, SPACED A MAX OF 24 IN. OC. STUDS TO BE CUT 3/8 TO 3/4 IN. LESS THAN ASSEMBLY HEIGHT. ALLOWABLE USE OF STUDS IS SHOWN IN THE TABLE BELOW. FOR DIRECT ATTACHMENT OF GYPSUM BOARD

DIETRICH INDUSTRIES INC -- ULTRASTEEL?.

(AS AN ALTERNATE TO ITEM 2, FOR USE WITH ITEM 5B) CHANNEL SHAPEI FABRICATED FROM MIN 20 MSG (0.0327 IN. THICK) CORROSION-PROTECTED OR GALV STEEL, 3-1/2 IN. MIN WIDTH, MIN 1-1/2 IN. FLANGES AND 1/4 IN. RETURN, SPACED A MAX OF 16 IN. OC. STUDS FRICTION-FIT INTO FLOOR AND CEILING RUNNERS. STUDS TO BE CUT 5/8 TO 3/4 IN. LESS THAN ASSEMBLY

3. WOOD STRUCTURAL PANEL SHEATHING -- (OPTIONAL, FOR USE WITH ITEM 5 ONLY.)- (NOT SHOWN) -4 FT WIDE. 7/16 IN. THICK ORIENTED STRAND BOARD (OSB) OR 15/32 IN. THICK STRUCTURAL 1 SHEATHING (PLYWOOD) COMPLYING WITH DOC PS1 OR PS2, OR APA STANDARD PRP-108, MANUFACTURED WITH EXTERIOR GLUE, APPLIED HORIZONTALLY OR VERTICALLY TO THE STEEL STUDS. VERTICAL JOINTS CENTERED ON STUDS, AND STAGGERED ONE STUD SPACE FROM WALLBOARD JOINTS. ATTACHED TO STUDS WITH FLAT-HEAD SELF-DRILLING TAPPING SCREWS WITH A MIN. HEAD DIAM. OF 0.292 IN. AT MAXIMUM 6 IN. OC. IN THE PERIMETER AND 12 IN. OC. IN THE FIELD.

(REQUIRED AS INDICATED UNDER ITEM 5) -- MINERAL WOOL BATTS, FRICTION FITTED BETWEEN STUDS AND RUNNERS. MIN NOM THICKNESS AS INDICATED UNDER ITEM 5. SEE BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.

(OPTIONAL) -- PLACED IN STUD CAVITIES, ANY GLASS FIBER OR MINERAL WOOL INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE. SEE BATTS AND BLANKETS (BKNV OR BZJZ) CATEGORIES FOR NAMES OF

GYPSUM PANELS WITH BEVELED, SQUARE OR TAPERED EDGES, APPLIED VERTICALLY OR HORIZONTALLY. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF STUDS. VERTICAL JOINTS IN ADJACENT LAYERS (MULTILAYER SYSTEMS) STAGGERED ONE STUD CAVITY. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS ON OPPOSITE SIDES OF STUDS NEED NOT BE STAGGERED. HORIZONTAL EDGE JOINTS AND HORIZONTAL BUTT JOINTS IN ADJACENT LAYERS (MULTILAYER SYSTEMS) STAGGERED A MIN OF 12 IN. THE THICKNESS AND NUMBER OF LAYERS FOR THE 1 HR, 2 HR, 3 HR AND 4 HR RATINGS ARE AS

WALLBOARD PROTECTION ON EACH SIDE OF WALL

TYPES IP-X3 OR ULTRACODE

RATING	MIN	MIN	NO. OF	MIN
	STUD	STUD	LAYERS	THKNS OF
	DEPTH,	DEPTH,	& THKNS	INSULATION
	ITEM 2	ITEM 2A	OF PANEL	(ITEM 4)
111 222 333 444	3-1/2 2-1/2 1-5/8 1-5/8 1-5/8 3-1/2 1-5/8 1-5/8 1-5/8 1-5/8 2-1/2	3-5/8 3-5/8 3-5/8 2-1/2 2-1/2 3-5/8 2-1/2 2-1/2 2-1/2 2-1/2 2-1/2 2-1/2	1 LAYER, 5/8 IN. THICK 1 LAYER, 1/2 IN. THICK 1 LAYER, 3/4 IN. THICK 2 LAYERS, 1/2 IN. THICK 2 LAYERS, 5/8 IN. THICK 1 LAYER, 3/4 IN. THICK 3 LAYERS, 1/2 IN. THICK 2 LAYERS, 3/4 IN. THICK 3 LAYERS, 5/8 IN. THICK 4 LAYERS, 5/8 IN. THICK 4 LAYERS, 1/2 IN. THICK 5 LAYERS, 1/2 IN. THICK 6 LAYERS, 3/4 IN. THICK 7 LAYERS, 3/4 IN. THICK 8 LAYERS, 3/4 IN. THICK	OPTIONAL 1-1/2 IN. OPTIONAL OPTIONAL 3 IN. OPTIONAL OPTIONAL OPTIONAL OPTIONAL OPTIONAL OPTIONAL OPTIONAL 2 IN.

1/2 IN. THICK TYPE C, IP-X2 OR IPC-AR; WRC, 5/8 IN. THICK TYPE AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX OR WRC; 3/4 IN. THICK TYPES IP-X3 OR ULTRACODE

1/2 IN. THICK TYPE C. IP-X2, IPC-AR OR WRC: 5/8 IN. THICK UNITED STATES GYPSUM CO --TYPE SCX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR; 3/4 IN. THICK

USG MEXICO S A DE C V -- 1/2 IN. THICK TYPE C, IP-X2, IPC-AR OR WRC; 5/8 IN. THICK TYPE AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC OR; 3/4 IN. THICK TYPES IP-X3 OR ULTRACODE

> WHEN ITEM 7B, STEEL FRAMING MEMBERS\*, IS USED, NONBEARING WALL RATING IS LIMITED TO 1 HR. MIN. STUD DEPTH IS 3-1/2 IN., MIN. THICKNESS OF INSULATION (ITEM 4) IS 3 IN., AND TWO LAYERS OF GYPSUM BOARD PANELS (1/2 IN. OR 5/8 IN. THICK) SHALL BE ATTACHED TO FURRING CHANNELS AS DESCRIBED IN ITEM 6. ONE LAYER OF GYPSUM BOARD PANELS (1/2 IN. OR 5/8 IN. THICK) ATTACHED TO OPPOSITE SIDE OF STUD WITHOUT FURRING CHANNELS AS DESCRIBED IN ITEM 6.

5A. GYPSUM BOARD\* -- (AS AN ALTERNATE TO ITEM 5) -- 5/8 IN. THICK, 24 TO 54 IN. WIDE,

APPLIED HORIZONTALLY AS THE OUTER LAYER TO ONE SIDE OF THE ASSEMBLY. SECURED AS DESCRIBED IN

CANADIAN GYPSUM COMPANY --TYPE SHX.

UNITED STATES GYPSUM CO --TYPE FRX-G, SHX

TYPE SHX. USG MEXICO S A DE C V --

5B. GYPSUM BOARD\* --(AS AN ALTERNATE TO ITEM 5 WHEN USED AS THE BASE LAYER ON ONE OR BOTH SIDES OF WALL, FOR DIRECT ATTACHMENT ONLY, NOT TO BE USED WITH ITEM 3) - NOM 5/8 IN ihick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED MIN 1 STUD CAVITY ON OPPOSITE SIDES OF STUDS. WALLBOARD SECURED TO STUDS WITH 1-1/4 IN. LONG TYPE S-12 STEEL SCREWS SPACED 8 IN. OC AT PERIMETER AND 12 IN. OC IN THE FIELD. RAY-BAR ENGINEERING CORP --

(NOT SHOWN) -- FOR USE WITH ITEM 2 - TYPE S OR S-12 STEEL SCREWS USED TO ATTACH PANELS TO STUDS (ITEM 2) OR FURRING CHANNELS (ITEM 7)N. SINGLE LAYER SYSTEMS: LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS. SPACED 8 IN. OC WHEN PANELS ARE APPLIED HORIZONTALLY, OR 8 IN. OC ALONG VERTICAL AND BOTTOM EDGES AND 12 IN. OC IN THE FIELD WHEN PANELS ARE APPLIED VERTICALLIFIRST LAYER- TWO LAYER SYSTEMS: IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS OR 2-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC WITH SCREWS OFFSET 8 IN. FROM FIRST LAYER. THREE-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BROWN-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER-1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 24 IN. OC. FOURTH LAYER- 2-5/8 IN. LONG FOR 1/2 IN. THICK PANELS OR 3 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BELOW.

6A. FASTENERS -- (NOT SHOWN) --FOR USE WITH ITEM 2A - TYPE S OR S-12 STEEL SCREWS USED TO ATTACH PANELS TO STUDS (ITEM 25)NGLE LAYER SYSTEMS: 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 8-1/2 IN. OC WITH ADDITIONAL SCREWS 1 IN. AND 2-1/2 IN. FROM EDGES OF THE BOARD WHEN PANELS ARE HORIZONTALLY. OR 8 IN. OC ALONG VERTICAL AND BOTTOM EDGES AND 12 IN. OC IN THE FIELD WHEN PANELS ARE APPLIED VERTICALLYNO LAYER SYSTEMS APPLIED VERTICALLYRST LAYER- 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC. SECOND LAYER-1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THÍCK PANELS OR 2-1/4 IN. LONG FOR 3/4 IN. THÍCK PANELS, SPÁCED 16 IN. OC WITH SCREWS OFFSET 8 IN. FROM FIRST LAYERWO LAYER SYSTEMS APPLIED HORIZONTALLYFIRST LAYER- 1 IN. LONG FOR 1/2 AND 5/8 IN. THICK PANELS OR 1-1/4 IN. LONG FOR 3/4 IN. THICK PANELS, SPACED 16 IN. OC STARTING 8 IN. FROM EACH EDGE OF THE BOARD WITH AN ADDITIONAL SCREW PLACED 1-1/4 IN. FROM EACH EDGE OF THE BOARD. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN, THICK PANELS OR 2-1/4 IN, LONG FOR 3/4 IN, THICK PANELS, SPACED 16 IN. OC STARTING 8 IN. FROM EACH EDGE OF THE BOARD WITH AN ADDITIONAL SCREW PLACED 1-1/4 IN. FROM EACH EDGE OF THE BOARD WITH SCREWS OFFSET 8 IN. FROM FIRSTTHREER-LAYER SYSTEMS: FIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER-1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER- 2-1/4 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 1 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BELOW. FOR ALL LAYERS, AN ADDITIONAL SCREW SHALL BE PLACED 1-1/4 IN. FROM EACH EDGE OF THE BOARDUR-LAYER SYSTEMSFIRST LAYER- 1 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. SECOND LAYER- 1-5/8 IN. LONG FOR 1/2 IN., 5/8 IN. THICK PANELS, SPACED 24 IN. OC. THIRD LAYER— 2—1/4 IN. LONG FOR 1/2 IN. THICK PANELS OR 2-5/8 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 24 IN. OC. FOURTH LAYER- 2-5/8 IN. LONG FOR 1/2 IN. THICK PANELS OR 3 IN. LONG FOR 5/8 IN. THICK PANELS, SPACED 12 IN. OC. SCREWS OFFSET MIN 6 IN. FROM LAYER BELOW. FOR ALL LAYERS, AN ADDITIONAL SCREW SHALL BE PLACED 1-1/4 IN. FROM EACH EDGE OF THE BOARD.

7. FURRING CHANNELS —— (OPTIONAL, NOT SHOWN, FOR SINGLE OR DOUBLE LAYER SYSTEMS) —— RESILIENT FURRING CHANNELS FABRICATED FROM MIN 25 MSG CORROSION—PROTECTED STEEL, SPACED VERTICALLY A MAX OF 24 IN. OC. FLANGE PORTION ATTACHED TO EACH INTERSECTING STUD WITH 1/2 IN.

LONG TYPE S-12 STEEL SCREWS. NOT FOR USE WITH ITEM 5A. 7A. STEEL FRAMING MEMBERS (NOT SHOWN)\* -- (OPTIONAL ON ONE OR BOTH SIDES, NOT SHOWN, FOR SINGLE OR DOUBLE LAYER SYSTEMS) -- AS AN ALTERNATE TO ITEM 7, FURRING CHANNELS AND STEEL FRAMING MEMBERS AS DESCRIBED BELOW:

A. FURRING CHANNELS -- FORMED OF NO. 25 MSG GALV STEEL. 2-3/8 IN. WIDE BY 7/8 IN. DEEP, SPACED MAX. 24 IN. OC PERPENDICULAR TO STUDS. CHANNELS SECURED TO STUDS AS DESCRIBED IN ITEM B. GYPSUM BOARD ATTACHED TO FURRING CHANNELS AS DESCRIBED IN ITEM 6. NOT FOR USE WITH

B. STEEL FRAMING MEMBERS\* -- USED TO ATTACH FURRING CHANNELS (ITEM 7AA) TO STUDS (ITEM 2). CLIPS SPACED MAX. 48 IN. OC. RSIC-1 CLIPS SECURED TO STUDS WITH NO. 8 X 1-1/2 IN. MINIMUM SELF-DRILLING, S-12 STEEL SCREW THROUGH THE CENTER GROMMET. RSIC-V CLIPS SECURED TO STUDS WITH NO. 8 X 9/16 IN. MINIMUM SELF-DRILLING, S-12 STEEL SCREW THROUGH THE CENTER

HOLE. FURRING CHANNELS ARE FRICTION FITTED INTO CLIPS. PAC INTERNATIONAL INC -- TYPES RSIC-1, RSIC-V.

7B. STEEL FRAMING MEMBERS (OPTIONAL, NOT SHOWN)\* --

CHANNELS AND STEEL FRAMING MEMBERS ON ONLY ONE SIDE OF STUDS AS DESCRIBED BELOW: A. FURRING CHANNELS -- FORMED OF NO. 25 MSG GALV STEEL, SPACED 24 IN. OC PERPENDICULAR TO STUDS. CHANNELS SECURED TO STUDS AS DESCRIBED IN ITEM B. BATTS AND BLANKETS PLACED IN STUD CAVITY AS DESCRIBED IN ITEM 5. TWO LAYERS OF GYPSUM BOARD ATTACHED TO FURRING CHANNELS AS DESCRIBED IN ITEM 5. NOT FOR USE WITH ITEM 5A.

B. STEEL FRAMING MEMBERS\* -- USED TO ATTACH FURRING CHANNELS (ITEM 7BA) TO ONE SIDE OF STUDS (ITEM 2) ONLY. CLIPS SPACED 48 IN. OC., AND SECURED TO STUDS WITH TWO NO. 8 X 2-1/2 IN. COARSE DRYWALL SCREWS, ONE THROUGH THE HOLE AT EACH END OF THE CLIP. FURRING CHANNELS ARE FRICTION FITTED INTO CLIPS.

KINETICS NOISE CONTROL INC --

8. JOINT TAPE AND COMPOUND -- VINYL OR CASEIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS OF OUTER LAYERS. PAPER TAPE, NOM 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS OF OUTER LAYER PANELS. PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM PANELS ARE SUPPLIED WITH A SQUARE EDGE.

9. SIDING, BRICK OR STUCCO -- (OPTIONAL, NOT SHOWN) -- ALUMINUM, VINYL OR STEEL SIDING, BRICK VENEER OR STUCCO, MEETING THE REQUIREMENTS OF LOCAL CODE AGENCIES, INSTALLED OVER GYPSUM PANELS. BRICK VENEER ATTACHED TO STUDS WITH CORRUGATED METAL WALL TIES ATTACHED TO EACH STUD WITH STEEL SCREWS, NOT MORE THAN EACH SIXTH COURSE OF BRICK.

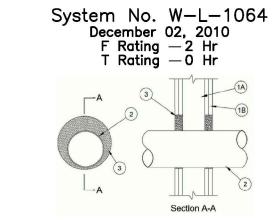
10. CAULKING AND SEALANTS\* -- (OPTIONAL, NOT SHOWN) -- A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL.

UNITED STATES GYPSUM CO -- TYPE AS

11. LEAD BATTEN STRIPS -- (NOT SHOWN, FOR USE WITH ITEM 5B) - LEAD BATTEN STRIPS. MIN 1-1/2 IN. WIDE, MAX 10 FT LONG WITH A MAX THICKNESS OF 0.125 IN. STRIPS PLACED ON THE INTERIOR FACE OF STUDS AND ATTACHED FROM THE EXTERIOR FACE OF THE STUD WITH TWO 1 IN. LONG TYPE S-12 PAN HEAD STEEL SCREWS, ONE AT THE TOP OF THE STRIP AND ONE AT THE BOTTOM OF THE STRIP. LEAD BATTEN STRIPS TO HAVE A PURITY OF 99.9 QQ-L-201F, GRADE "C". LEAD BATTEN STRIPS REQUIRED BEHIND VERTICAL JOINTS OF LEAD BACKED GYPSUM WALLBOARD (ITEM 5B) AND OPTIONAL AT REMAINING STUD LOCATIONS. REQUIRED BEHIND VERTICAL

12. LEAD DISCS OR TABS -- (NOT SHOWN, FOR USE WITH ITEM 5B) - USED IN LIEU OF OR IN ADDITION TO THE LEAD BATTEN STRIPS (ITEM 11) OR OPTIONAL AT OTHER LOCATIONS - MAX 3/4 IN. DIAM BY MAX 0.125 IN. THICK LEAD DISCS COMPRESSION FITTED OR ADHERED OVER STEEL SCREW HEADS OR MAX 1/2 IN. BY 1-1/4 IN. BY MAX 0.125 IN. THICK LEAD TABS PLACED ON GYPSUM BOARDS (ITEM 5B) UNDERNEATH SCREW LOCATIONS PRIOR TO THE INSTALLATION OF THE SCREWS. LEAD DISCS OR TABS TO HAVE A PURITY OF 9929 MEETING THE FEDERAL SPECIFICATION QQ-L-201F, GRADE "C".

\*BEARING THE UL CLASSIFICATION MARK



1. Wall Assembly — The fire rated gypsum wallboard/stud wall assemblall be constructed of the materials and in the manner specified in individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

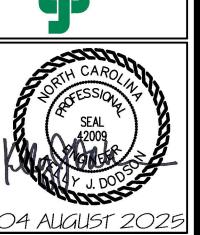
A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced

B. Gypsum Board\* — Two layers of nom 1/2 in. thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 6 in. 2. Pipe or Conduit — One nom 4 in. diam Schedule 10 (or heavier) steel pipe, steel conduit or electrical metallic tube (EMT) to be centered within opening. The annular space shall be min 1/4 in. to max 1-1/4 in. Pipe or conduit to be rigidly supported on both sides of wall assembly. 3. Forming Material\* — Min 2-1/2 in. thickness of min 4.0 pcf mineral wool forming material firmly packed into annular space and stud cavity in area of wall opening as a permanent form. Forming material to be recessed min 1 in. from both surfaces of wall to accommodate the caulk

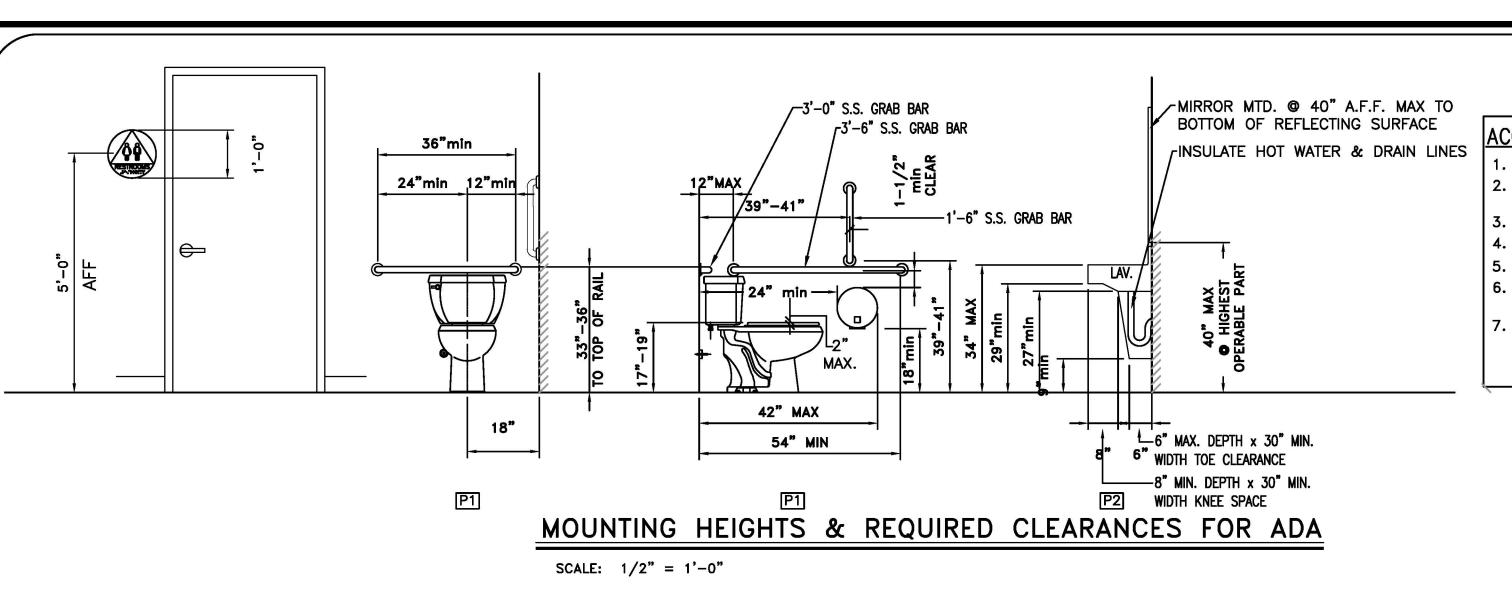
fill material.
THERMAFIBER INC — Type SAF

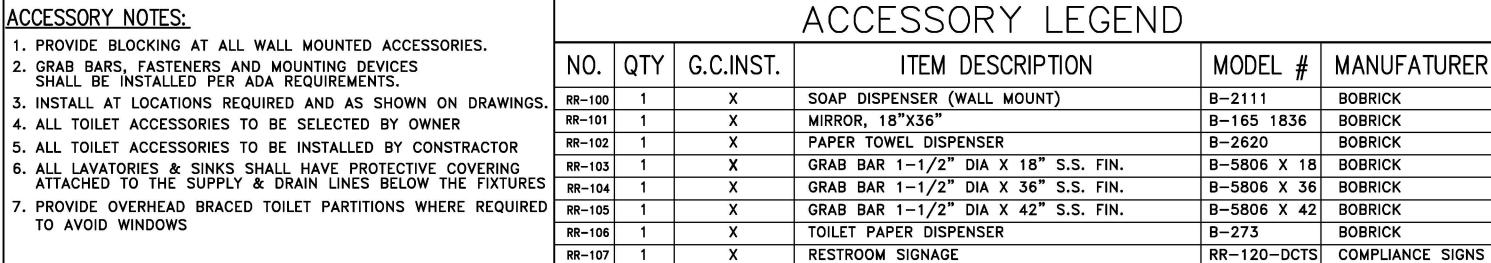
4. Fill, Void or Cavity Material\* — Caulk — Min 1 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. UNITED STATES GYPSUM CO — Type AS

\*Bearing the UL Classification Marking Last Updated on 2010-12-02



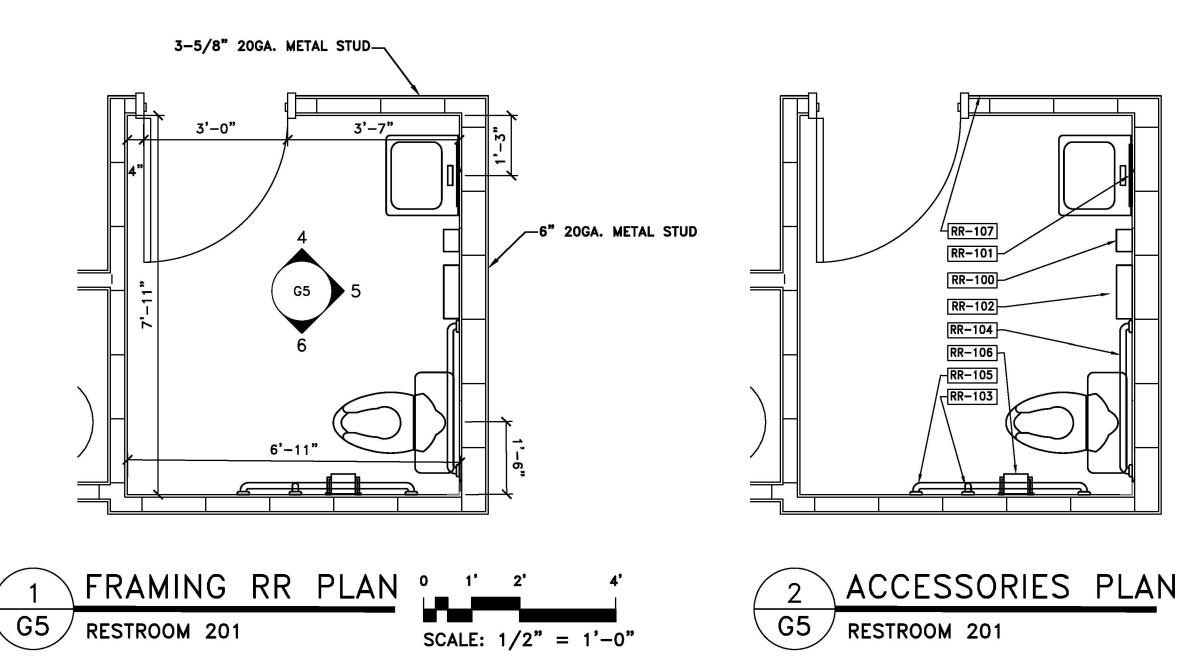
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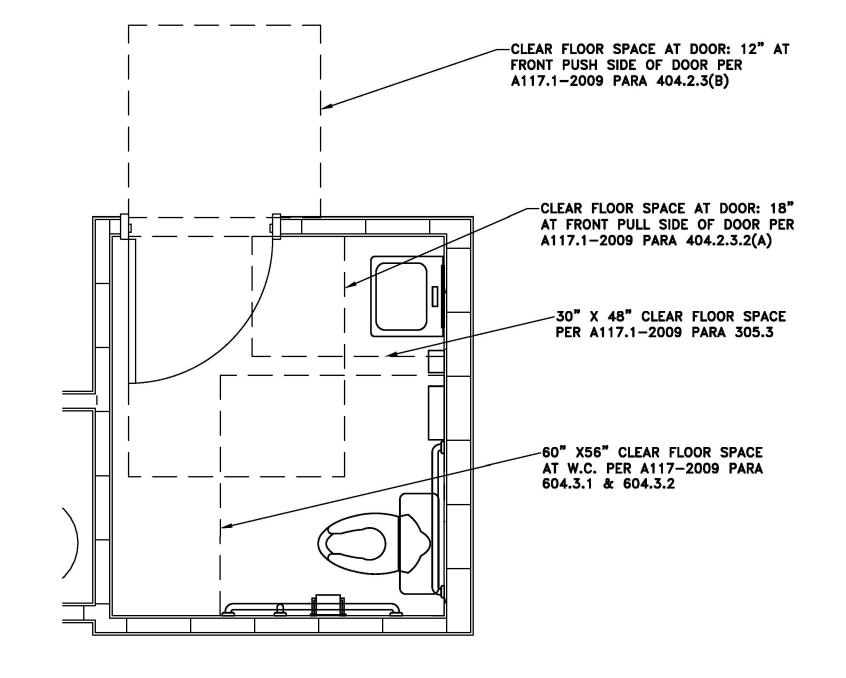




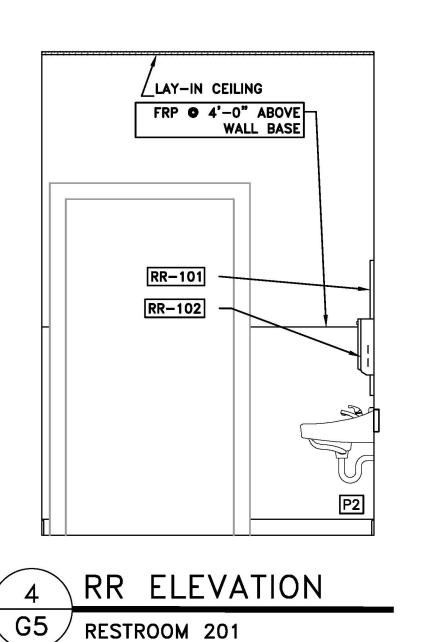
SEE SHEET P1 FOR PLUMBING FIXTURE SCHEDULE.

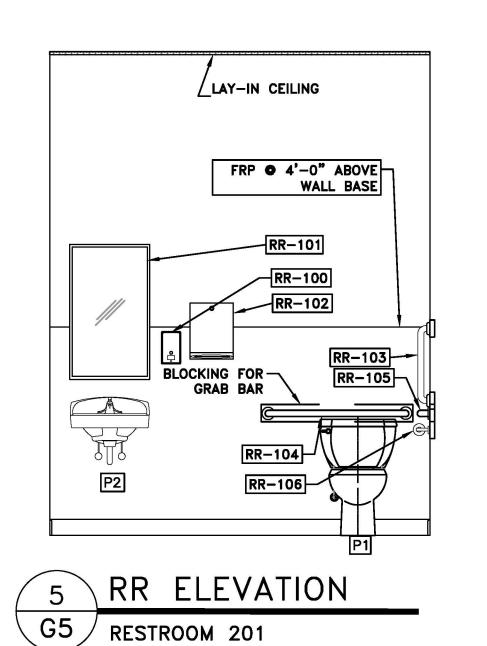
GYPSUM WALL BOARD SHALL BE MOISTURE RESISTANT IN RESTROOM

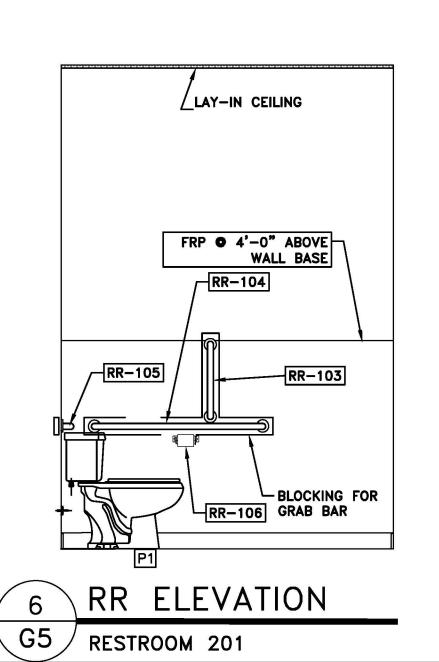












THIS BUILDING IS

HE NEERS, PARINGE NORTH CAROLINA 1606 MCARTHUR RD. FAYETTEVILLE, NC 28311-1002 NORTH CAROLINA CORPORATION NUMBER: C-3070 OFFICE 910,822.1724

LEVEL II ALTERATION: UPS BUILDING SHELL SPAC

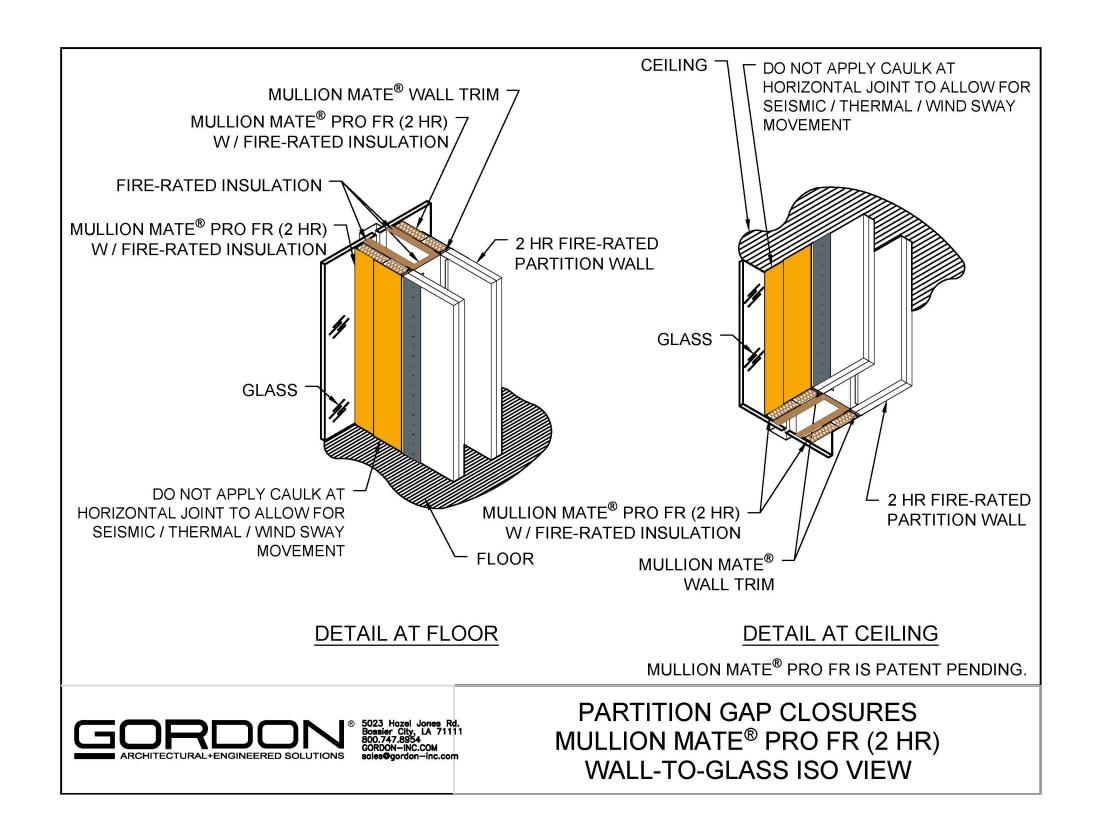
181 MITTIE HADDOCK DRIVE

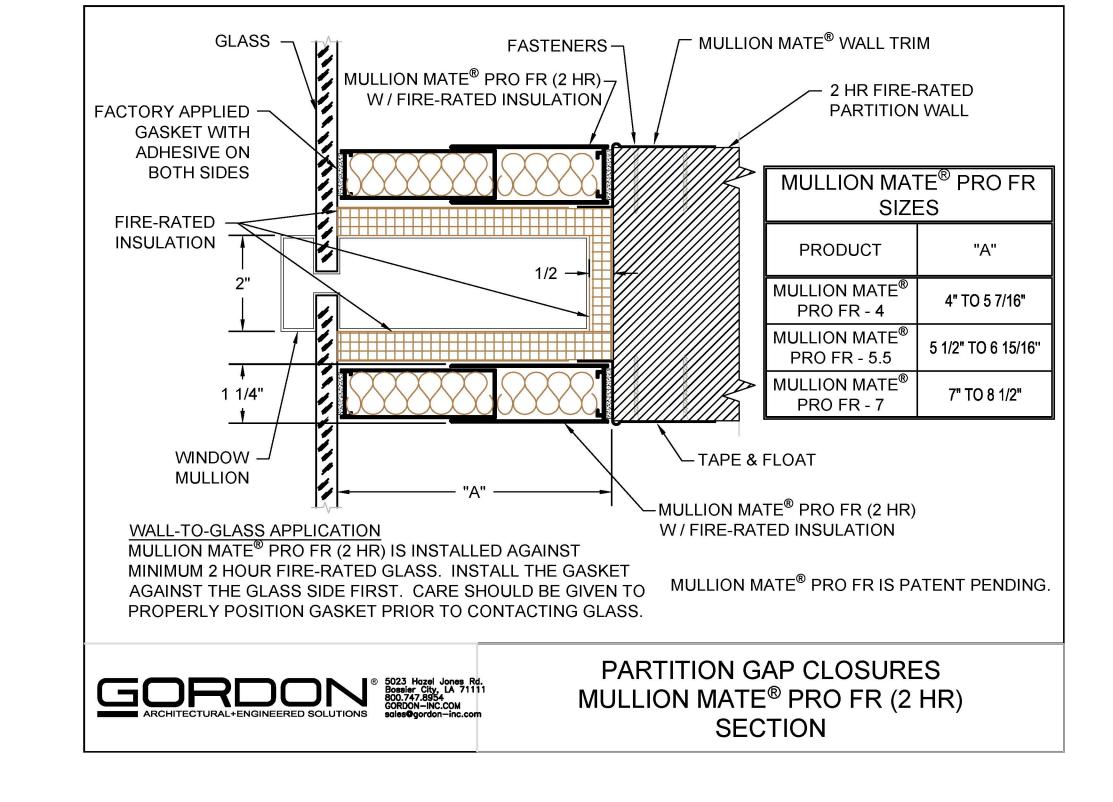
CAMERON, NC. 28326

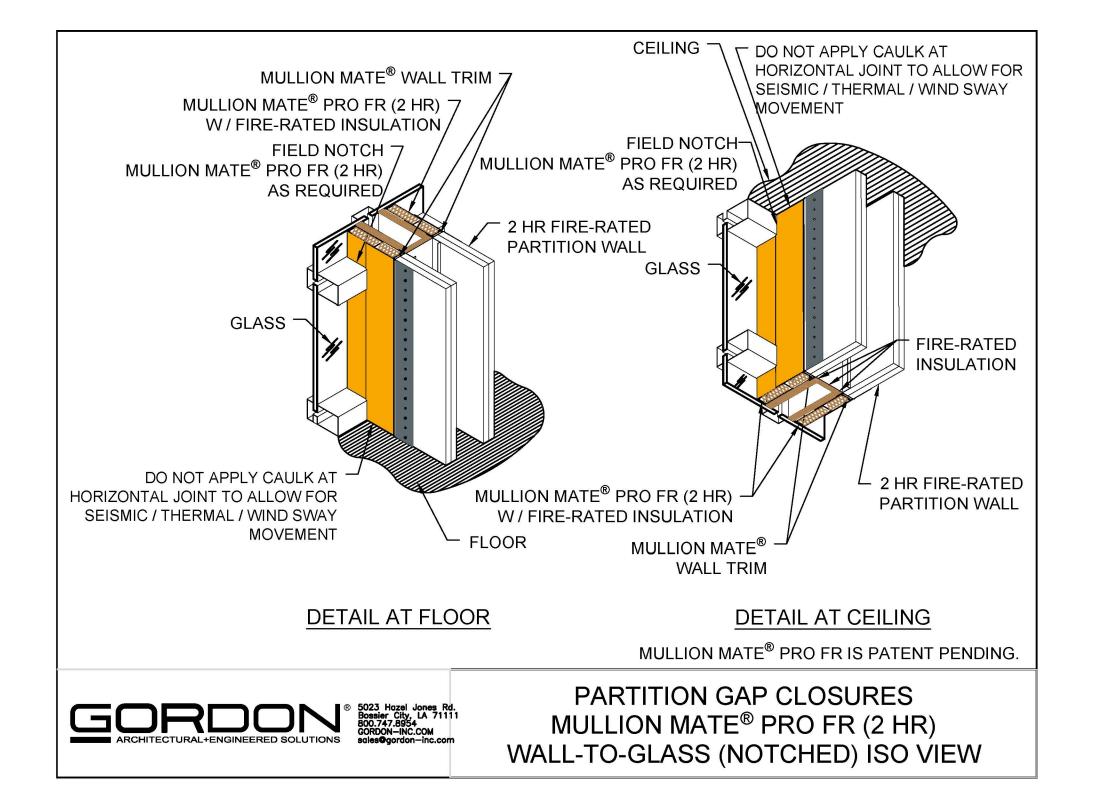
BETAILS

ADA RESTROOM DETAILS

G5

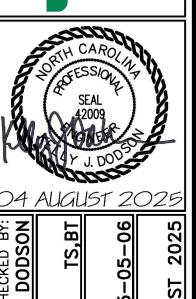






**DEMISING WALL DETAIL NOTE:** NEW DEMISING WALL BE BUILT AND BUTT AGAINST EXISTING STOREFRONT GLASS WINDOWS. THIS SHEET SHOWS DETAILS ON CLOSING THE GAP BETWEEN THE DEMISING WALL AND GLASS. CONTRACTOR WILL USE THIS PRODUCT OR SIMILAR TO ENSURE PROPER CLOSURE OF THE DEMISING WALL BETWEEN SPACES.





TAIL

BUILDING SHELL CAMERON, NC. 283  $\frac{1}{2}$ *UPS* 'ALL **EMISING** 

G5

II AL

# **GENERAL NOTES:**

ALL WORK SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE 2018 EDITION, ASHRAE, SMACNA, AND NFPA.

STRUCTURAL MEMBERS OF THE BUILDING SHALL NOT BE CUT IN ANY MANNER FOR THE INSTALLATION OF ANY EQUIPMENT UNLESS PRIOR APPROVAL IS

THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS AND ROUTING OF ALL DUCTWORK, PIPING, AND EQUIPMENT WITH OTHER TRADES TO AVOID CONFLICT.

THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS WITH THE GENERAL CONTRACTOR.

THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE. THINK OF OTHER CONTRACTORS AND THEIR REQUIREMENTS IN VERTICAL CHASES AND WALL MOUNT SPACE.

ALL CONTRACTORS TO FOLLOW THIS ORDER OF PRIORITY:

- STORM AND SANITARY SEWER LINES
- DUCTWORK AND HVAC SYSTEMS
- HOT AND COLD WATER LINES RIGID CONDUIT

THE MECHANICAL CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL PENETRATIONS (PERTAINING TO HIS WORK) THROUGH THE ROOF, WALLS, FLOORS WITH THE GENERAL CONTRACTOR. ANY WATERPROOFING AROUND THE OPENINGS TO BE COMPLETED BY THE GENERAL CONTRACTOR.

THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL HIS OWN SUPPORT DEVICES. ALL LOCATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS PRIOR TO INSTALLATION. ALL PLATFORMS AND WALKWAYS IN ATTIC SPACES ARE PROVIDED BY THE GENERAL CONTRACTOR. THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATION AND DIMENSIONS OF ALL PLATFORMS IN THE ATTIC WITH THE GENERAL

ALL EQUIPMENT HAVING ROTATING OR MOVING PARTS SHALL HAVE VIBRATION ISOLATORS TO ELIMINATE TRANSMISSION OF OBJECTIONABLE NOISE TO OTHER MATERIAL OR EQUIPMENT.

WHERE OUTSIDE AIR INTAKE DUCTWORK CONNECTS TO OUTSIDE AIR LOUVER, THE INSIDE FACE OF THE DUCTWORK SHALL BE PRIMED AND PAINTED WITH (2) TWO COATS OF FLAT BLACK TO PREVENT DUCTWORK FROM BEING VISIBLE

THE MECHANICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 INCH MINIMUM) ETCHED INTO THE WHITE CORE. NAME TAGS TO BE MOUNTED WITH SELF-TAPPING SHEET METAL SCREWS.

ALL EQUIPMENT MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK OR IN ACCORDANCE WITH THE PARTICULAR MANUFACTURER'S STANDARD GUARANTEE IF LONGER. ANY FAULTY MATERIAL OR WORKMANSHIP OR FAILURE OF ANY PART OF THE SYSTEM DURING NORMAL OPERATIONS UNDER THIS GUARANTEE SHALL BE CORRECTED WITHOUT COST TO THE OWNER.

THE MECHANICAL CONTRACTOR SHALL CLEAN ALL OF HIS EQUIPMENT PRIOR TO FINAL CLOSE OUT OF THIS PROJECT TO BE FREE OF ANY DIRT OR DEBRIS IN DRAIN PANS, CONDENSATE DRAINS, CONDENSING UNIT COILS, AND ETC.

ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.

PROVIDE EQUIPMENT SUPPORT PAD FOR ALL BASE MOUNTED EQUIPMENT. PAD SHALL BE 4" HIGH OR PREFABRICATED CONCRETE PAD FOR ALL CONDENSING UNITS, AND PACKAGE UNITS, 4" MINIMUM FROM EQUIPMENT EDGE TO END OF PAD ON ALL SIDES.

THE MECHANICAL CONTRACTOR SHALL CONFIRM ALL BREAKER AND DISCONNECT SIZES OF HIS EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING ANY EQUIPMENT FOR THIS PROJECT.

CONDENSATE DRAINS SHALL BE A MINIMUM OF 3/4" Ø PVC PIPE. A P-TRAP SHALL BE INSTALLED IN PIPE AT THE UNIT. ALL CONDENSATE LINES SHALL BE ROUTED AS INDICATED ON PLANS.

INSTALL FLEXIBLE DUCT CONNECTION AT SUPPLY AND RETURN DUCTWORK CONNECTIONS TO ALL AIR HANDLING UNITS, FAN BOXES, ETC.

# **DESIGN CRITERIA NOTES:**

ALL SUPPLY, RETURN, EXHAUST AND OUTDOOR AIR DUCTWORK (WITH THE EXCEPTION OF COMMERCIAL KITCHEN DUCTWORK) SHALL BE SIZED AT 0.08" PER 100'-0" OF DUCT FOR EXTERNAL STATIC PRESSURE, ALL DUCTWORK SHALL BE 1"WG PRESSURE CLASS.

ECONOMIZERS ARE REQUIRED FOR ANY HVAC SYSTEM WITH A COOLING CAPACITY OF 65,000 BTU/HR OR GREATER (NCECC C403.1)

CORRIDORS SHALL NOT SERVE AS SUPPLY, RETURN, EXHAUST, RELIEF OR VENTILATION AIR DUCTS; CORRIDORS MAY BE USED FOR MAKEUP AIR PROVIDED TO TOILET AREAS FOR EXHAUST MAKEUP PROVIDING THE CORRIDOR IS PROVIDED WITH AN OUTSIDE AIR RATE GREATER THAN THE MAKEUP REQUIRED FOR EXHAUST. WHERE LOCATED IN TENANT SPACES OF LESS THAN 1000 SQ/FT THE USE OF CORRIDORS FOR RETURN AIR IS PERMITTED. (NCMC 601.2.1 & 601.2.3)

HVAC SYSTEM SHALL HAVE PROGRAMMABLE THERMOSTAT CAPABLE OF OFF HOUR CONTROLS (NIGHT SETBACK) TO MAINTAIN NO MORE THAN 85°F OR NO LESS THAN 55°F (NCECC C403.2.4.2.1, C403.2.4.2.3 & C403.2.4.2.3)

THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL A DUCT MOUNTED SMOKE DETECTOR IN THE RETURN AIR DUCT AT EACH UNIT IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE EDITION 2018. THE MECHANICAL CONTRACTOR TO WIRE FROM THE DETECTOR TO EACH UNIT.

# **DUCTWORK NOTES:**

ALL DUCTWORK, PIPING, EQUIPMENT, ETC. SHALL BE SUPPORTED FROM THE BUILDING SUPPORT STRUCTURE AND NOT THE ROOF.

ALL DUCT LAYOUT AND LOCATIONS ARE SHOWN DIAGRAMMATIC. THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE BUILDING CONDITIONS AND COORDINATE THE DUCT LAYOUT WITH ALL CONTRACTORS PRIOR TO INSTALLATION.

ALL DUCTWORK SHALL BE CONSTRUCTED OF SHEET METAL IN ACCORDANCE WITH ASHRAE & SMACNA. DUCT SIZES SHOWN ARE NET FREE AREA REQUIRED.

VOLUME OR SPLITTER DAMPERS SHALL BE INSTALLED WHERE NECESSARY TO GUIDE AND CONTROL THE AIR FLOW. TURNING VANES ARE REQUIRED IN ALL ELBOWS AND AIR DEFLECTION DEVICES WILL BE INSTALLED WHERE REQUIRED FOR A BALANCED SYSTEM. PROVIDE SHEET METAL SLEEVES AND COLLARS WHERE

ALL DUCTS SHALL BE AIR TIGHT, RIGID AND FREE FROM VIBRATION AND NOISE. ALL LAP JOINTS SHALL BE IN THE DIRECTION OF FLOW AND SEALED WITH DUCT SEALER. ALL TAPES AND MASTICS USED SHALL LISTED WITH UL181A AND SHALL BE MARKED. (NCMC (603.9) & NCECC (C403.2.9)

FLEXIBLE DUCT SHALL BE SUPPORTED EVERY 5'-0". MAXIMUM SAG IS A 1/2 INCH PER FOOT OF SPACING BETWEEN SUPPORTS. SADDLE MATERIAL IN CONTACT WITH THE FLEXIBLE DUCT SHALL BE WIDE ENOUGH SO THAT IT DOES NOT REDUCE THE INTERNAL DIAMETER OF THE DUCT. THE SADDLE MUST COVER ONE-HALF THE CIRCUMFERENCE OF THE OUTSIDE DIAMETER OF THE FLEXIBLE DUCT AND FIT NEATLY AROUND. THE LOWER HALF OF THE DUCT'S OUTER

PROVIDE PERMANENT MANUAL DAMPERS IN ALL SUPPLY AND RETURN AIR DUCTS AT THE MAIN TRUNK LINE FOR SYSTEM BALANCING. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR BALANCING THE AIR DISTRIBUTION SYSTEM AFTER THE SYSTEM HAS BEEN INSTALLED AND EQUIPMENT IS OPERATING. MANUAL DAMPERS ARE REQUIRED TO BE INSTALLED IN THE RETURN AIR DUCT IF THE DUCT IS RETURNING AIR FROM INDIVIDUAL ROOMS. MANUAL DAMPERS ARE NOT REQUIRED IF THE DUCT IS RETURNING AIR FROM CENTRALLY LOCATED FILTER/RETURN GRILLES.

THE OUTSIDE AIR INTAKE DUCTWORK SHALL BE HARD ROUND DUCT, FLEXIBLE DUCT WILL NOT BE ACCEPTED. SEE PLAN FOR DUCT SIZE.

ALL OUTSIDE AIR INTAKE DUCTS SHALL HAVE A FILTER BOX TO HOUSE A MINIMUM OF 16 IN. X 20 IN. X 2 IN. THICK FILTER, U.N.O. AT EACH AIR HANDLING UNIT EITHER IN THE ATTIC OR CRAWL SPACE. THE FILTER BOX SHALL HAVE A HINGED DOOR THAT IS GASKETED TO MAINTAIN A AIRTIGHT SEAL WITH A THUMBSCREW TO ACCESS THE FILTER.

THE OUTSIDE AIR FILTER SHALL BE THE HI-E 40 AS MANUFACTURED BY PUROLATOR PRODUCTS AIR FILTRATION COMPANY, OR APPROVED EQUAL. AIR FILTER SHALL BE (2) TWO INCHES DEEP, MEDIUM EFFICIENCY, PLEATED MEDIA, DISPOSABLE PANEL TYPE. THE FILTER MEDIA SHALL BE SELF-EXTINGUISHING NON-WOVEN COTTON AND SYNTHETIC FIBERS. THE FILTER MEDIA SHALL BE BONDED TO A 28-GAUGE CORROSION RESISTANT, EXPANDED METAL SUPPORT GRID WITH A 95% OPEN FACE AREA.

# **DUCT/PIPING INSULATION NOTES:**

ALL SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED WITH MIN. R-6.0 INSULATION UNLESS NOTED OTHERWISE IN THE DRAWING. IECC (C403.2.9) ACCEPTABLE MANUFACTURERS ARE JOHNSON MANVILLE.

LIQUID AND SUCTION PIPING TO AND FROM AIR HANDLING UNITS SHALL BE INSULATED WITH 1-1/2" THICK PIPE INSULATION IN ACCORDANCE WITH NCECC TABLE (C403.2.10).

ALL FLEXIBLE DUCT REQUIRING INSULATION SHALL HAVE A VALUE OF AT LEAST R-5.0. THE FLEXIBLE DUCT SHALL BE ATCO RUBBER PRODUCTS. INC. UPC NO. 036 OR APPROVED EQUAL WITH A REINFORCED METALLIZED POLYESTER JACKET. THE INNER CORE IS AIRTIGHT AND IS DESIGNED FOR LOW TO MEDIUM OPERATING PRESSURES IN HVAC SYSTEMS. AIR DUCT CONNECTIONS AND JOINTS SHALL BE MADE PER INSTALLATION INSTRUCTIONS OUTLINED BY ATCO.

OUTSIDE AIR INTAKE DUCTWORK AND EXHAUST DUCTWORK IS TO BE UNINSULATED.

# OUTSIDE AIR CALCULATION OCCUPANCY TYPE: **BUSINESS** 18 PEOPLE ACTUAL NUMBER OF OCCUPANTS (Pz) 1598 SQ/FT NET SQUARE FOOTAGE OF HEATED BUILDING: (Az) BUILDING EXHAUST REQUIREMENTS 75 CFM TOILET EXHAUST REQUIRED (1 FLUSHING FIXTURES \* 75 CFM EACH)) **75 CFM** TOTAL BUILDING EXHAUST AIR REQUIRED BUILDING & PEOPLE VENTILATION REQUIREMENTS 96 CFM BUILDING VENTILATION (Az\*Ra) (1598 \* 0.06) PEOPLE \* 5 CFM TABLE 403.3.1.1: 2018 NC MECH CODE PEOPLE (Pz\*Rp) 18 PEOPLE \* 5 CFM/PERSON 90 CFM 186 CFM OUTSIDE AIR SUB-TOTAL OUTSIDE AIR REQUIRED = 181 / 0.80 (EFFECTIVENESS) 233 CFM BUILDING EXHAUST PROVIDED EF-1 75 CFM 75 CFM OUTSIDE AIR PROVIDED

# DESCRIPTION AND SEQUENCE OF OPERATION OF HVAC SYSTEM

THE HVAC SYSTEM AT THIS BUILDING CONSISTS OF:

(1) EXISTING 5 TON PACKAGE HEAT PUMP UNIT WHICH PROVIDE COOLING/HEATING/VENTILATION TO RENOVATION AREA FOR BUSINESS USE.

#### OCCUPIED OPERATION

THE SUPPLY FANS SHALL RUN CONTINUOUS TO PROVIDE THE REQUIRED VENTILATION RATE. IN THE COOLING MODE, A RISE IN TEMPERATURE BEYOND SET POINT OF PROGRAMMABLE T-STAT WILL RESULT IN ACTIVATION OF DX COOLING CYCLE UNTIL DESIRED TEMPERATURE IS REACHED. IN HEATING MODE, A SIGNAL FROM T-STAT WILL ACTIVATE THE HEAT PUMP TO DELIVER HEATING TO SPACES. IF OUTSIDE TEMPERATURE FALLS BELOW SET POINT, HEAT STRIPS WILL ACTIVATE TO BRING TEMPERATURE TO DESIRED SET POINT AT WHICH TIME THE HEAT STRIPS WILL TURN OFF AND HEAT PUMP SHALL BE USED TO MAINTAIN DESIRED SPACE TEMPERATURE.

PROVIDE HEAT STRIP LOCKOUT CONTROLS TO PREVENT HEAT STRIP OPERATION BETWEEN 35°F AND 40°F PER ENERGY CODE PARAGRAPH 503.2.4.1.1.

#### **UNOCCUPIED OPERATION**

THE SUPPLY FAN SHALL BE INDEXED OFF AND MOTORIZED OUTSIDE AIR DAMPER SHALL BE CLOSED. PROGRAMMABLE THERMOSTATS SHALL PROVIDE CONTROL OF UNIT.

#### EXHAUST FAN OPERATION

THE RESTROOM EXHAUST FAN IN RESTROOM SHALL BE SWITCHED WITH LIGHTING FOR TOILET.

	EXHAUST FAN SCHEDULE														
EQUIPMENT INFO FAN INFORMATION										ELECT	RICAL IN	FORMATI	ON		
TAG	TAG QTY. TYPE LOCATION EXHAUST AREA ESP FAN SONE							SONES	RPM	FAN WATT	UNIT VOLTS	UNIT PHASE	HP	WIRE SIZE (DU. 75 C)	MFG & MODEL
EF-1	1	EXHAUST	LAY-IN	75	RESTROOM	N/A	DIRECT	N/A	N/A	54	120	1	N/A	#12	GREENHECK / SP-B80-QD PROVIDE WALL CAP WITH BACKDRAFT DAMPER

**TOTAL** 

233 CFM

\*\*\* RESTROOM EXHAUST FAN SHALL CONTROLLED WITH RESTROOM LIGHT SWITCH.

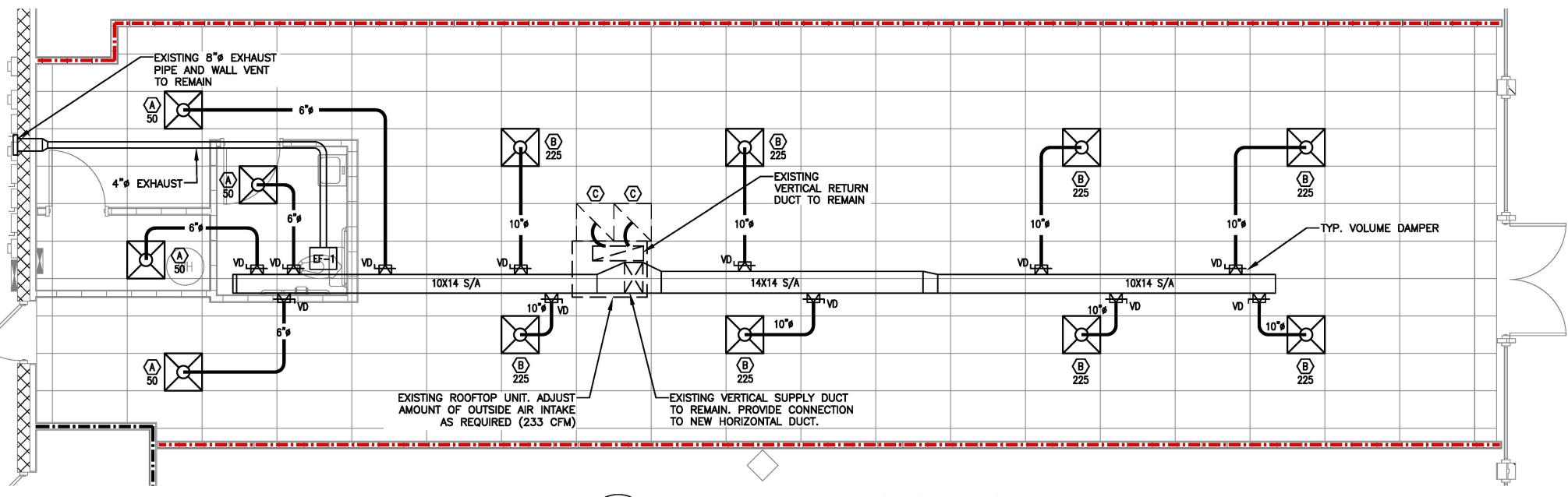
EXIST. RTU 5-TON UNIT

233 CFM

	GRILLE/RETURN SCHEDULE													
TAG	CFM	AIR PATTERN	FACE SIZE	NECK SIZE	SERVICE	MFG & MODEL	REMARKS							
A	50-100	4-WAY	24X24	6 <b>"</b> ø	SUPPLY	TRUAIRE / 2003CD OR EQUAL	LAY-IN; OFF WHITE; ALUM; INSULATED BACK							
B	225-350	4-WAY	24X24	10"ø	SUPPLY	TRUAIRE / 2003CD OR EQUAL	LAY-IN; OFF WHITE; ALUM; INSULATED BACK							
<b>©</b>	500-750	LOUVERED	24X24	14 <b>"</b> ø	RETURN	TRUAIRE / 4010FG OR EQUAL	SURFACE; OFF WHITE; ALUM.; FILTER							

IT IS THE PURPOSE OF THESE DRAWINGS TO SHOW THE INTENT OF THIS SYSTEM DESIGN. EVERY EFFORT HAS BEEN MADE TO ACCURATELY SHOW EXISTING CONDITIONS— ANY DEVIATION TO THESE DRAWINGS UNCOVERED DURING NEW CONSTRUCTION SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF GENERAL CONTRACTOR OR ENGINEER BEFORE ALTERING THIS DESIGN.

**MECHANICAL SCOPE OF WORK:** THE TENANT SPACE HAS ONE (1) EXISTING 5 TON RTU INSTALLED. PROVIDE NEW HORIZONTAL DUCTWORK, REGISTER, DIFFUSER FOR THE TENANT SPACE.



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

THIS BUILDING IS FULLY PROTECTED BY FIRE SPRINKLERS

ANIC,

ECH,

EL	ECTRICAL LEGEND									
Ф	DUPLEX RECEPTACLE; MOUNT AT 18" A.F.F.									
$\Phi_{TR}$	DUPLEX RECEPTACLE; MOUNT AT 18" A.F.F.; TAMPER RESISTANT									
∯ <sub>GFCI</sub>	DUPLEX RECEPTACLE; GROUND FAULT CIRCUIT INTERRUPTER									
⊕WP/ GFCI	DUPLEX RECEPTACLE; WEATHERPROOF GROUND FAULT CIRCUIT INTERRUPTER									
#	QUAD RECEPTACLE; MOUNT AT 18" A.F.F.									
•	2 POLE 208/240V RECEPTACLE									
(4)	CEILING MOUNTED DUPLEX RECEPTACLE									
В	FLOOR MOUNTED RECEPTACLE									
$\sim$	SINGLE POLE POWER/LIGHTING HOMERUN									
<b>→</b>	2-POLE POWER HOMERUN									
>	3-POLE POWER HOMERUN (3 PHASE)									
◀	WALL MOUNTED DATA OUTLET									
4	WALL MOUNTED VOICE (TELEPHONE) OUTLET									
4	WALL MOUNTED VOICE/DATA OUTLET									
τς	TIMECLOCK									
ⅳ	TELEVISION OUTLET									
	DISCONNECT									
<sub>(j)</sub>	JUNCTION BOX									
	POWER PANEL									
\$	SWITCH									
\$ <sub>3</sub>	3-WAY SWITCH									
\$ <sub>D</sub>	SWITCH WITH DIMMER									
os	OCCUPANCY SENSOR WITH MANUAL OVERRIDE									
	LAY-IN/SURFACE MOUNTED LED LIGHT FIXTURE									
·	LAY-IN/SURFACE MOUNTED LED; NIGHT LIGHT									
0	PENDANT LIGHT									
Φ	CAN LIGHT									
	EMERGENCY LIGHT									
EXIT	EXIT/EMERGENCY COMBO									
EXIT	EXIT LIGHT									
4	REMOTE HEAD FOR EXIT LIGHTING									
	EXTERIOR MOUNTED WALL PACK									

ELECTRICAL NOTES: ALL WORK SHALL BE IN ACCORDANCE WITH 2020 NEC.

WIRE AND CABLE SHALL BE INSULATED, TYPE THHN, 600 VOLTS, WITH COPPER CONDUCTORS, CONDUCTOR SIZES NO. 8 AWG AND LARGER MAY BE STRANDED, CONDUCTOR SIZES NO. 10 AWG AND SMALLER MAY BE SOLID OR STRANDED.

ROMEX CAN NOT BE USED IN THIS PROJECT. MC CAN BE USED.

EMT SHALL BE GALVANIZED STEEL TUBING 1/2-INCH MINIMUM SIZE, EQUAL TO ELECTRUNITE BRAND OR APPROVED AND USED ONLY WITH HEXAGONAL ALL STEEL COMPRESSION FITTINGS.

MC CABLE MAY BE SUBSTITUTED FOR CONDUIT RACEWAYS WHERE PERMITTED BY THE CODE.

AND APPROVED BY OWNER

PLASTIC CONDUIT SHALL BE RIGID. 3/4—INCH MINIMUM. NONMETALLIC. HEAVY DUTY.

POLYVINYLCHORIDE (PVC). TYPE I WILL BE USED FOR CONCRETE ENCASEMENT. FITTINGS

SHALL BE THE SAME MATERIALS AND MANUFACTURER AS THE PLASTIC CONDUIT.

FLEXIBLE METAL CONDUIT SHALL BE 1/2—INCH MINIMUM SINGLE STRIP. STEEL. HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, MAXIMUM LENGTH OF 72 INCHES FOR LIGHTING. AND 36 INCHES FOR MOTORS. FLEXIBLE METAL CONDUIT SHALL BE LIQUID TIGHT OR WATER TIGHT WITH PVC JACKET WHERE USED IN DAMP. WET. OR OUTSIDE AREAS. AND LIQUID TIGHT OR WATER TIGHT CONNECTORS SHALL BE USED.

NO RECEPTACLES OR TELEPHONE OUTLETS ARE TO BE MOUNTED BACK TO BACK, KEEP AT LEAST 1 1/2 INCHES BETWEEN RECEPTACLES AND TELEPHONE OUTLETS.

ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE

ALARM. THESE CONDUCTORS SHOULD COMPLY WITH NFPA REQUIREMENTS.

THE ELECTRICAL CONTRACTOR SHALL ALIGN ALL FIXTURES. SMOKE DETECTORS. CEILING DIFFUSERS. ETC. AS REQUIRED TO PROVIDE A UNIFORM PRESENTATION. FOLLOW THE REFLECTED CEILING PLAN IF PROVIDED

CIRCUIT BREAKERS AND WIRE ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE. BREAKERS, FIXTURES, CONDUIT, AND ETC. FOR THIS PROJECT: THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND VERIFY THE ELECTRICAL DATA FOR THE EQUIPMENT THAT WILL BE ACTUALLY INSTALLED, RECOMPUTE WIRE AND BREAKER SIZES IF REQUIRED BY THE NEC.

THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE GENERAL CONTRACTOR AND OWNER PRIOR TO INSTALLATION FOR USE WITH ACTUAL EQUIPMENT.

ALL LIGHT SWITCHES. RECEPTACLES. WALL PLATES. TELEPHONE/COMPUTER OUTLET BOXES.

AND. CABLE OUTLET BOXES SHALL BE WHITE.

EACH CONTRACTOR WILL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED IN HIS CONTRACT AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT

THE ELECTRICAL CONTRACTOR SHALL REFER TO THE DRAWINGS FOR FLOOR PLAN AND BUILDING ELEVATION DIMENSIONS.

THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE. THINK OF OTHER CONTRACTORS AND THEIR REQUIREMENTS IN VERTICAL CHASES AND WALL MOUNT SPACE, ALL CONTRACTORS TO FOLLOW THIS ORDER OF PRIORITY:

1. STORM AND SANITARY SEWER LINES
2. DUCTWORK AND HVAC SYSTEMS

3. HOT AND COLD WATER LINES
4. RIGID CONDUIT

5. CABLE
THE ELECTRICAL CONTRACTOR TO ORGANIZE HIS CONDUIT, WIRE, AND CABLE RUNS IN ATTIC
SPACES AND ABOVE CEILINGS, MAKE RUNS PARALLEL, PERPENDICULAR, AND GROUPED
TOGETHER WHERE POSSIBLE, LOCATE MAJOR GROUPINGS OVER HALLWAYS AND AREAS OF
PUBLIC ACCESS, FREE RUNS OF PHONE, TELEVISION, SECURITY, ALARM, AND OTHER CABLES
IS NOT ACCEPTABLE.

ALL DISCONNECT SWITCHES AND BREAKER SIZES SHOWN FOR MECHANICAL EQUIPMENT. KITCHEN EQUIPMENT. AND ETC. SHALL BE VERIFIED BEFORE PURCHASE AND INSTALLATION OF SAID EQUIPMENT WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR. WHERE EQUIPMENT PENETRATES EXTERIOR WALLS OR ROOF, THEY SHALL BE PROPERLY

EXHAUST FANS ARE TO BE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

AND ELECTRICAL WIRING BY THE ELECTRICAL CONTRACTOR.

THE ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT. SWITCHES. PANELS. ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC. BLACK FRONT AND BACK WITH WHITE CORE. WHITE ENGRAVED LETTERS (1/4 INCH MINIMUM) ETCHED INTO THE WHITE CORE. NAME TAGS TO BE MOUNTED WITH SELF—TAPPING SHEET METAL SCREWS

THE ELECTRICAL CONTRACTOR IS NOT TO SCALE THE DRAWINGS FOR RECEPTACLES AND LIGHT FIXTURES TO BE INSTALLED. THE DRAWINGS ARE FOR DIAGRAMMATIC PURPOSES ONLY TO SHOW GENERAL LOCATION. THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION OF RECEPTACLES AND LIGHT FIXTURES WITH THE GENERAL CONTRACTOR AND/OR CASEWORK DRAWINGS.

ALL LIGHT SWITCHES AND RECEPTACLES SHALL BE RATED FOR 20 AMP UNLESS NOTED OTHERWISE.

ING C	DESCRIPTION  WATER HEATER  AC UNIT  BREAKROOM	SHOR	GROUN	DIT RATE	TING RMIN	EX AL E	ISTII BAR		RMS CKT. BKR. TRIP 20/1 20/1	SYM.	NEUTRAL TERMINAL BAR  DESCRIPTION  GFI EXAM ROOM A-33	PHAS	E LOAI B	DING
С	WATER HEATER  AC UNIT	X	GROUN CKT. BKR. TRIP 30/2	CKT. NO.	RMIN	AL E	BAR	CKT. NO.	CKT. BKR. TRIP 20/1	X WIRE	DESCRIPTION	Α		_
С	WATER HEATER  AC UNIT	WIRE	CKT. BKR. TRIP	CKT. NO. 1 3				NO. 2	BKR. TRIP 20/1	WIRE	DESCRIPTION	Α		
С	WATER HEATER  AC UNIT	WIRE SIZE	BKR. TRIP 30/2	NO. 1 3 5	A	В		NO. 2	BKR. TRIP 20/1			Α		_
	WATER HEATER  AC UNIT	SIZE	30/2	NO. 1 3 5	A	D		2	TRIP 20/1	SIZE		8. 8	В	(
	AC UNIT			3 5					V#0		GFI EXAM ROOM A-33			1
	AC UNIT			5				4	20/1					
			50/3						20/ 1		GFI EXAM ROOM A-19			
			50/3	7				6						
	BREAKROOM							8	50/3		AC UNIT			
	BREAKROOM			9				10					1	
			20/1	11				12	20/1		PATIENT TOILET + STAFF TOILET			
	EXIT LIGHTS		20/1	13				14	20/1		GFI EXAM ROOM			
	GFI EXAM ROOM		20/1	15				16	20/1		RECEPTION A-16			
	EXAM ROOM A-15		20/1	17				18	20/1		LAB A-9			-
	EXAM ROOM A-11		20/1	19				20	20/1		GFI EXAM ROOM A-37	I		
	PATIENT TOILET A-7		20/1	21				22	20/1		GFI EXAM ROOM A-335			
	HALL A-2 LIGHTS + RECEPT		20/1	23				24	20/1		REC. A/C ROOF			_
	A-4 MECHANICAL ROOM		20/1	25				26	20/1		BREAK ROOM GFI #A-25			
	EXAM ROOM A-21		20/1	27				28	20/1		NURSES STAION			
	EXAM ROOM A-19, A-17		20/1	29				30	20/1		REC. A/C ROOF			-
		– SUB-	-TOTAL	(kVA)				SUB-	-TOTAL	(kVA)				_
						TC	TAL	CON	NECTED	LOAD =	= EXISTING KVA			
-		PATIENT TOILET A-7  HALL A-2 LIGHTS + RECEPT  A-4 MECHANICAL ROOM  EXAM ROOM A-21  EXAM ROOM A-19, A-17	PATIENT TOILET A-7  HALL A-2 LIGHTS + RECEPT  A-4 MECHANICAL ROOM  EXAM ROOM A-21  EXAM ROOM A-19, A-17	PATIENT TOILET A-7 20/1 HALL A-2 LIGHTS + RECEPT 20/1 A-4 MECHANICAL ROOM 20/1 EXAM ROOM A-21 20/1 EXAM ROOM A-19, A-17 20/1	PATIENT TOILET A-7 20/1 21 HALL A-2 LIGHTS + RECEPT 20/1 23 A-4 MECHANICAL ROOM 20/1 25 EXAM ROOM A-21 20/1 27	PATIENT TOILET A-7  HALL A-2 LIGHTS + RECEPT  A-4 MECHANICAL ROOM  EXAM ROOM A-21  EXAM ROOM A-19, A-17  20/1 21  20/1 23  20/1 25  20/1 27	PATIENT TOILET A-7 20/1 21 HALL A-2 LIGHTS + RECEPT 20/1 23  A-4 MECHANICAL ROOM 20/1 25  EXAM ROOM A-21 20/1 27 EXAM ROOM A-19, A-17 20/1 29 SUB-TOTAL (kVA)	PATIENT TOILET A-7  HALL A-2 LIGHTS + RECEPT  A-4 MECHANICAL ROOM  EXAM ROOM A-21  EXAM ROOM A-19, A-17  SUB-TOTAL (kVA)	PATIENT TOILET A-7  HALL A-2 LIGHTS + RECEPT  A-4 MECHANICAL ROOM  EXAM ROOM A-21  EXAM ROOM A-19, A-17  SUB-TOTAL CONSTITE  22  24  24  24  26  27  28  30  TOTAL CONSTITE  TOTAL CONSTIT	PATIENT TOILET A-7  HALL A-2 LIGHTS + RECEPT  A-4 MECHANICAL ROOM  EXAM ROOM A-21  EXAM ROOM A-19, A-17  SUB-TOTAL  TOTAL CONNECTED	PATIENT TOILET A-7  HALL A-2 LIGHTS + RECEPT  A-4 MECHANICAL ROOM  EXAM ROOM A-21  EXAM ROOM A-19, A-17  SUB-TOTAL CONNECTED LOAD = 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PATIENT TOILET A-7  20/1 21  22 20/1 GFI EXAM ROOM A-335  HALL A-2 LIGHTS + RECEPT  20/1 23  24 20/1 REC. A/C ROOF  A-4 MECHANICAL ROOM  20/1 25  EXAM ROOM A-21  20/1 27  28 20/1 NURSES STAION  EXAM ROOM A-19, A-17  20/1 29  30 20/1 REC. A/C ROOF  SUB-TOTAL (kVA)  TOTAL CONNECTED LOAD = EXISTING KVA	PATIENT TOILET A-7  20/1 21  22 20/1 GFI EXAM ROOM A-335  HALL A-2 LIGHTS + RECEPT  20/1 23  24 20/1 REC. A/C ROOF  A-4 MECHANICAL ROOM  20/1 25  26 20/1 BREAK ROOM GFI #A-25  EXAM ROOM A-21  20/1 27  28 20/1 NURSES STAION  EXAM ROOM A-19, A-17  20/1 29  30 20/1 REC. A/C ROOF  SUB-TOTAL (kVA)  SUB-TOTAL (kVA)  SUB-TOTAL (kVA)	PATIENT TOILET A-7  20/1 21  22 20/1 GFI EXAM ROOM A-335  HALL A-2 LIGHTS + RECEPT  20/1 23  24 20/1 REC. A/C ROOF  A-4 MECHANICAL ROOM  20/1 25  EXAM ROOM A-21  20/1 27  28 20/1 NURSES STAION  EXAM ROOM A-19, A-17  20/1 29  30 20/1 REC. A/C ROOF  SUB-TOTAL (kVA)  TOTAL CONNECTED LOAD = EXISTING KVA

	UP	DA	TED	PANEL "C"	PHASE	: 3			WIF	RE:	4	VOLTS:	208Y	7/120 MAIN LOAD: 200A MLO				
l				: LIGHT FRONT	TYPE:	EXISTIN	1G		МО	UNT	ING: E	XISTING		ENCLOSURE: EXISTING				
l				LOAD: BOLD FRONT	SHOR	T CIRCL	JIT RA	TING	: EX	(ISTI	NG kA	RMS	S SYM.					
l					Χ	GROUN	ND TE	RMIN	AL I	BAR			X	NEUTRAL TERMINAL BAR				-
Ĺ	PHAS	E LOA		DESCRIPTION	WIRE SIZE	CKT. BKR.	CKT. NO.	Α	В		CKT. NO.	CKT. BKR.	WIRE SIZE	DESCRIPTION	PHAS	SE LOA	_	
F	A	В	С		SIZE	TRIP					26 100235 50	TRIP	A.A., A A	DEAFOT BIOLIT WALL BUILDIEVED	A 40	В	C	_
⊦	1.69	4.00		WATER HEATER	#10	30/2	1				2	20/1	#12	RECEPT-RIGHT WALL DUPLEXES	1.10	1.40	<u> </u>	_
-		1.69			1900		3				4	20/1	#12	RECEPT-LEFT WALL DUPLEXES		1.10	- 10	_
L				AC UNIT TO BE DISCONNECT		50/7	5				6	50./7		AC UNIT	- 10		5.40	_
<b>`</b>  -				(FIELD VERIFY AND LABEL)		50/3	-				8	50/3	ETR	(FIELD VERIFY AND LABEL)	5.40	F 40	-	_
					#40	20./4	9	-			10	00 /4	#40			5.40		-
-			0.37	RECEPT — OPEN SIGN	#12	20/1	11				12	20/1		RECEPT- RIGHT WALL QUADS			1.47	
H	0.18			RECEPT - RESTROOM GFCI	#12	20/1	13				14	20/1	#12	RECEPT- LEFT WALL QUADS	1.47		—	_
L		0.48		LIGHTING — STORE	#12	20/1	15				16	20/1	#12	RECEPT— BACK AREA		0.74	-	-
╏			0.25	LIGHTING - RESTROOM & ELEC.		20/1	17				18	20/1	#12	RECEPTACLE - 20A			1.92	
•	0.20			EXIT & EMERGENCY LIGHT	#12	20/1	19				20	20/1	#12	RECEPTACLE - 20A	1.92		-	-
L				SPARE		20/1	21				22	20/1	#12	RECEPTACLE - 20A		1.92	<u> </u>	-
L				SPARE		20/1	23				24	20/1		REC. A/C ROOF			0.18	
				SPARE		20/1	25				26	20/1		SPARE			↓	_
L				SPARE		20/1	27				28	20/1		SPARE			↓	_
L				SPARE		20/1	29				30	20/1		REC. A/C ROOF			0.18	-
	2.07	2.17	0.62		- SUB-	-TOTAL	(kVA)				SUB	-TOTAL	(kVA)		9.89	9.16	9.15	)
									To	JATC	CON	NECTED	LOAD	= 33.06 KVA				
												TOTAL	AMPS	= 91.76 A				•
														ATOT	L OF:	30 SF	ACES	-

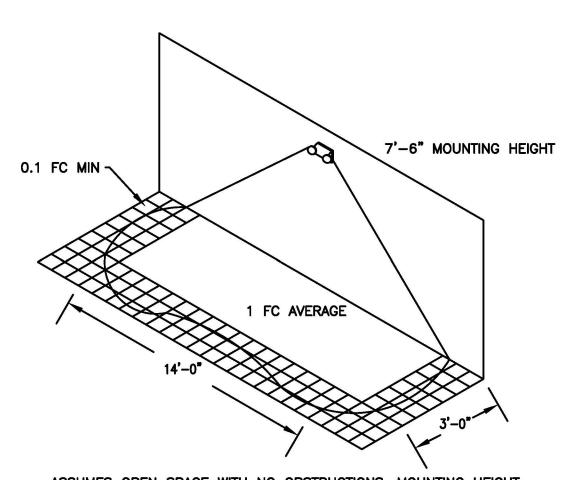
то <sup>-</sup>	TAL CONNE	CTED LO	AD SU	JMMARY	,	
ITEM	CONNECTED L	OAD (KVA)		ESTIMA	TED LOAD	(KVA)
HVAC	16.2	` Ø	100%	=	16.2	` '
LIGHTING	0.93	0	125%	=	1.16	
RECEPTACLES	12.55	(T-10.00*	.60+10.	00) =	11.53	
MISC. EQUIPMENT	3.38		60%	_	2.03	
STANFORD SAFE AND SAFE OF SAFE STANFORD SAFE SAFE						
TOTAL CONNECTED	33.06	KVA	91.76	AMPS		
ESTIMATED DEMAND	30.92		85.83			
ESTIMATED DEMAND	30.92	NVA	00.00	AMP3		

INSIDE BUILDING

OUTSIDE BUILDING

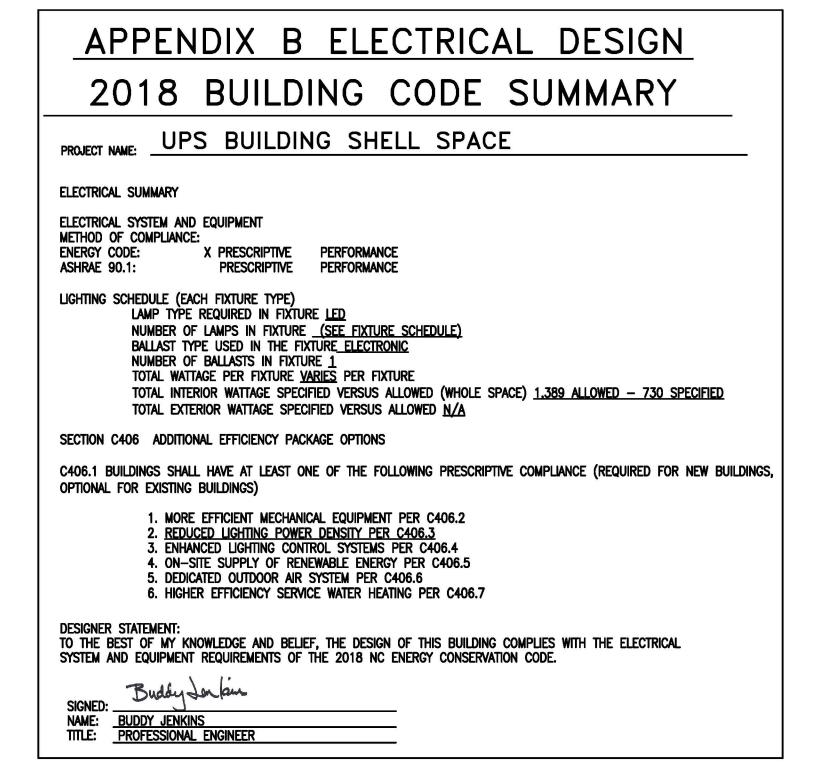
							LIGHT	FIXTUR	LIGHT FIXTURE SCHEDULE													
TAG	DESCRIPTION	SIZE	MOUNTING	LENS	COLOR	LUMENS	BULB	BALLAST TYPE	HOUSING	VOLTAGE	WATTAGE	MANU/MODEL NUMBER	REMARKS									
A	LED FLAT PANEL	24"X48"	LAY-IN	N/A	4000 K	4800	LED	LED DRIVER	STEEL	120	40	LITELINE NO. LEDP-24-WH 40K 40W	UPS SPECIFICATION									
B	LED FLAT PANEL	24"X24"	LAY-IN	N/A	4000 K	4720	LED	LED DRIVER	STEEL	120	40	LITELINE NO. LEDP-22-WH 40K 40W	UPS SPECIFICATION									
EM	EMERGENCY	N/A	WALL	N/A	N/A	N/A	(2) LAMPS	ELECTRONIC	POLYCARBONATE	120/240		LITHONIA NO. EU2L M12 OR EQUAL	6 VOLT NICAD BATTERY TEST SWITCH, POWER INDICATOR									
EX	EXIT SIGN/EMERGENCY LIGHT COMBO	N/A	WALL	SINGLE	N/A	N/A	LED LIGHT	LED DRIVER	POLYCARBONATE	120/240		LITHONIA NO. LHQM LED R HO M6 OR EQUAL	6 VOLT NICAD BATTERY, (2) REMOTE HEADS									

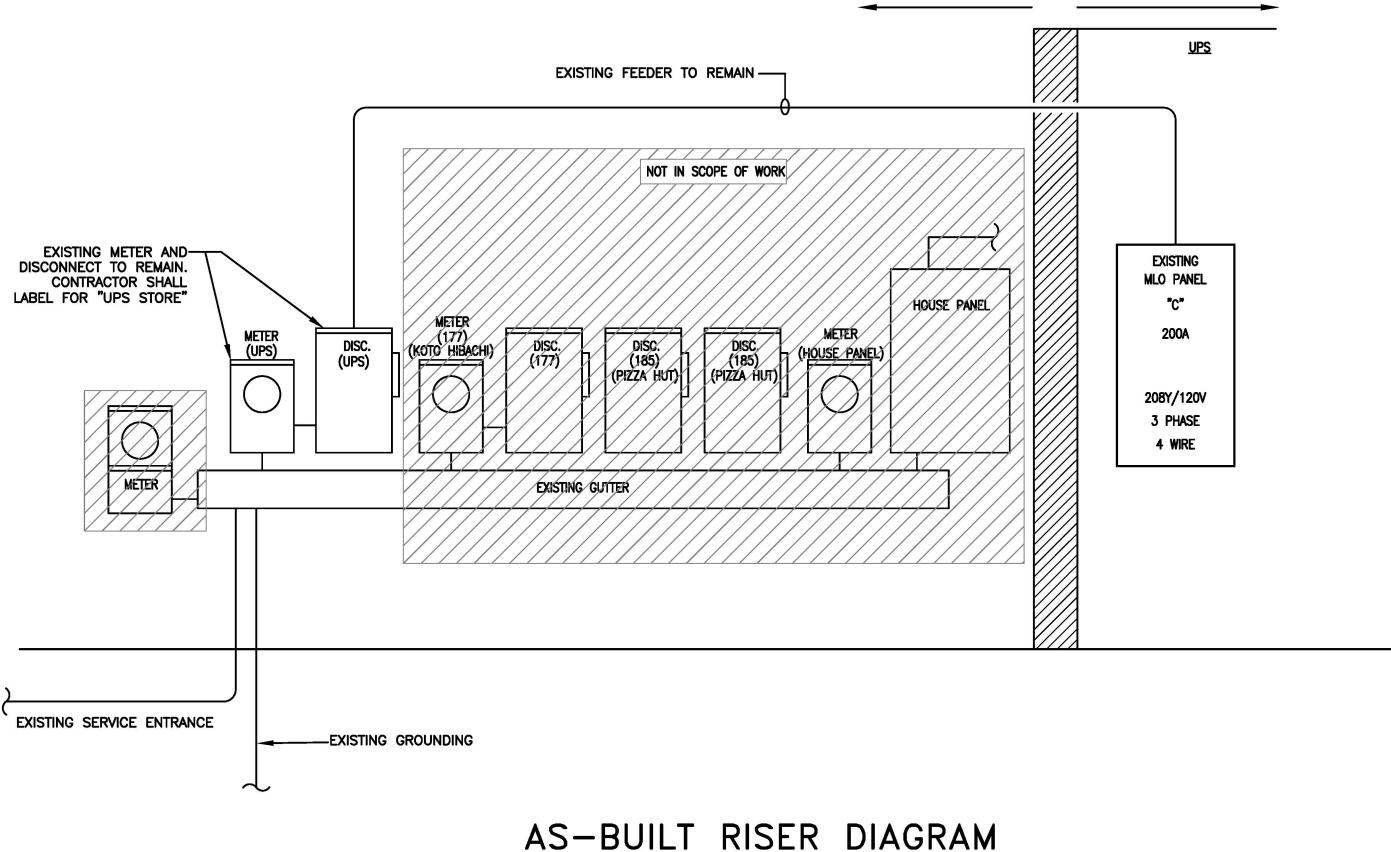
TOTAL OF: 30 SPACES



ASSUMES OPEN SPACE WITH NO OBSTRUCTIONS, MOUNTING HEIGHT; 7'-6"; CEILING HEIGHT, AND REFLECTANCES 80/50/20

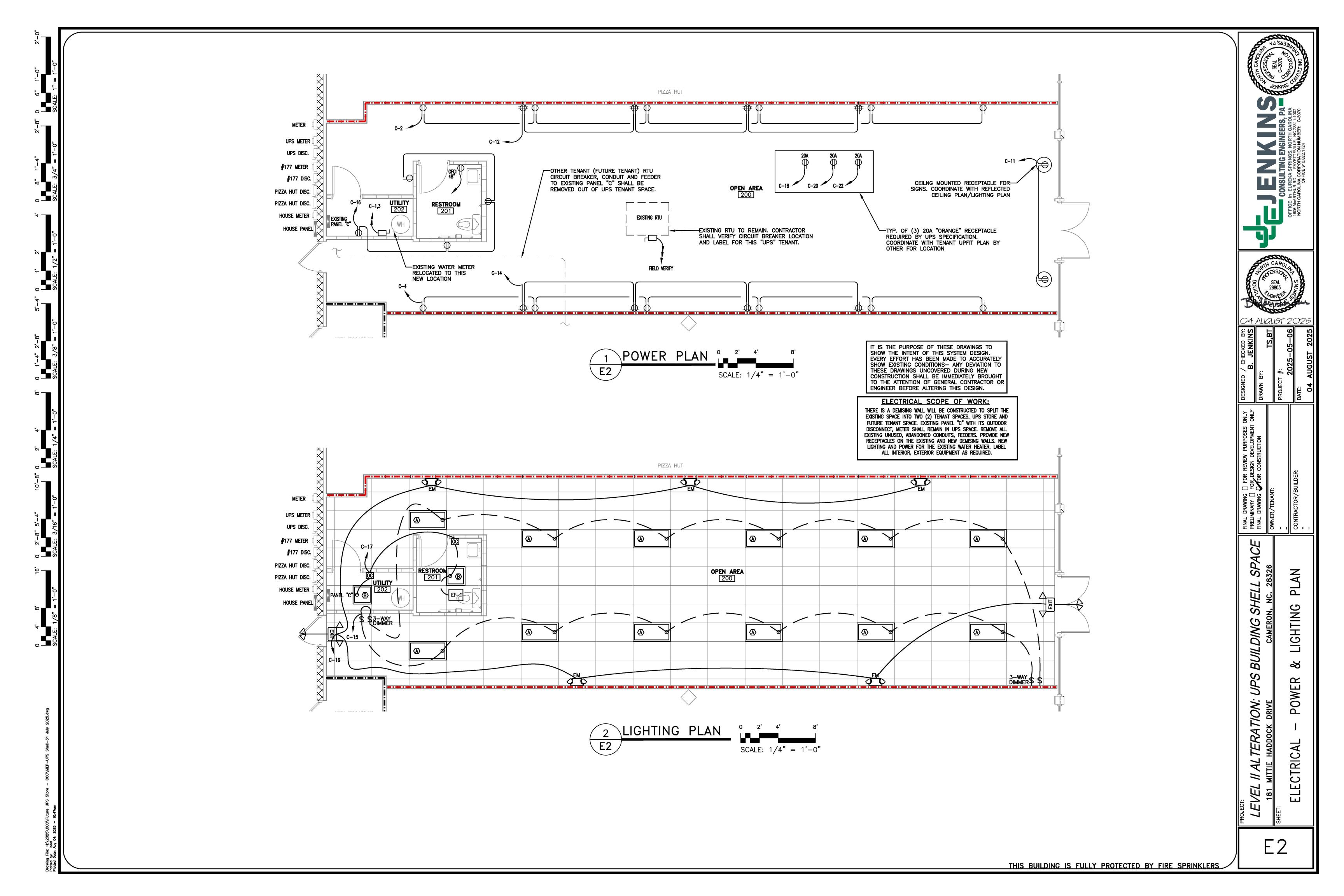
	EMERGENCY LIGHT FIXTURE PERFORMANCE MODEL: LITHONIA EU2L					
MOUNTING	ILLUMINATION LEVEL	SINGLE LU COVE		MULTIPLE LUMINAIRE SPACING		
HEIGHT		3' PATH OF EGRESS	6' PATH OF EGRESS	3' PATH OF EGRESS	6' PATH OF EGRESS	
7'-6"	1FC AVG.	14'	10'	18'	14'	





NOT BUIL

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# PLUMBING GENERAL NOTES:

PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA PLUMBING CODE 2018 EDITION AND LOCAL CODES.

ALL WORK SHALL BE COORDINATED AND PERFORMED WITH PRIOR APPROVAL FROM THE GENERAL CONTRACTOR AND OWNER TO SUIT THE OWNER'S OPERATING CONDITIONS.

PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE GENERAL CONTRACTOR OF ANY DEVIANCIES FROM THE CONTRACT DRAWINGS PRIOR TO STARTING ANY WORK.

THE PLUMBING CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE. THINK OF OTHER CONTRACTORS AND THEIR REQUIREMENTS IN VERTICAL CHASES AND WALL MOUNT SPACE. ALL CONTRACTORS TO FOLLOW THIS ORDER OF PRIORITY:

1. STORM AND SANITARY SEWER LINES

2. DUCTWORK AND HVAC SYSTEMS

3. HOT AND COLD WATER LINES

4. RIGID CONDUIT

THE PLUMBING CONTRACTOR TO ORGANIZE HIS PIPING IN ATTIC SPACES, CRAWL SPACES, AND ABOVE CEILINGS. MAKE RUNS PARALLEL, PERPENDICULAR, AND GROUPED TOGETHER WHERE POSSIBLE. LOCATE MAJOR GROUPINGS OVER HALLWAYS AND AREAS OF PUBLIC ACCESS IF POSSIBLE. FREE RUNS OF PIPING IS NOT ACCEPTABLE.

THE PLUMBING CONTRACTOR SHALL LAY OUT AND INSTALL HIS WORK IN ADVANCE OF POURING CONCRETE FLOORS OR WALLS. HE SHALL FURNISH ALL SLEEVES TO THE GENERAL CONTRACTOR FOR OPENINGS THROUGH POURED MASONRY FLOORS, OR WALLS, ABOVE GRADE REQUIRED FOR PASSAGE OF ALL PIPES TO SUPPORT HIS EQUIPMENT.

HORIZONTAL DRAINAGE AND WASTE PIPE SHALL HAVE A MINIMUM SLOPE OR FALL OF 1/8 INCH PER FOOT. ALL CHANGE OF HORIZONTAL DIRECTIONS IN SOIL WASTE PIPE SHALL BE MADE WITH LONG RADIUS FITTINGS WITH "Y" BRANCHES AND 1/8 OR 1/16 BENDS.

COLD AND HOT WATER PIPING ABOVE GRADE SHALL CAN BE CAN BE PEX PIPING (WITH OWNERS APPROVAL).

ALL HOT WATER PIPING SHALL BE INSULATED WITH 1 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE.

ALL COLD WATER PIPING SHALL BE INSULATED WITH 1/2 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE.

SANITARY HORIZONTAL WASTE, VENT PIPING, AND FITTINGS ABOVE GRADE SHALL BE SCHEDULE 40 PVC-DWV PIPE-CELLULAR CORE FROM CHARLOTTE PIPE AND FOUNDRY COMPANY OR APPROVED EQUAL, AND MUST MEET OR EXCEED THE REQUIREMENTS OF ASTM F-891, NSF STANDARD NO. 14, AND IAPMO UPC.

ALL WASTE STACK PIPING SHALL BE CAST IRON AND INSULATED FOR SOUND IN WALLS.

ALL WASTE AND STORM PIPING ABOVE CEILING, VERTICAL CHASES, WALLS SHALL BE INSULATED WITH 1/2 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE. NO INSULATION REQUIRED IN CRAWL SPACE OR BELOW FLOOR SLAB OF ANY WASTE AND STORM

IN LIEU OF FIBERGLASS INSULATION, THE PLUMBING CONTRACTOR IS ALLOWED TO USE CLOSED CELL INSULATION, 1/2 INCH THICK ARMSTRONG/ARMAFLEX II ON ALL COLD WATER PIPES. RIGID URETHANE FOAM INSULATION, 1 INCH THICK ARMSTRONG/ARMALOK II ON ALL HOT WATER PIPING.

ALL PLUMBING EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

ALL FIXTURES, DRAINS, TRAPS, ETC. SHALL BE SET PLUMB AND LEVEL.

ALL HANDICAPPED FIXTURES AND TRIM SHALL BE INSTALLED IN ACCORDANCE WITH THE NORTH CAROLINA PLUMBING CODE 2018 EDITION. CHROME PLATED ESCUTCHEONS SHALL BE PROVIDED AT EACH WALL PENETRATION.

ESCUTCHEONS SHALL BE CHROME PLATED, SPRING TYPE, ON ALL PIPES PASSING THROUGH WALLS AND CEILINGS IN FINISHED AREAS. FLOOR ESCUTCHEONS SHALL BE CAST BRASS, CHROME PLATED, WITH SET SCREW.

ESCUTCHEONS SHALL BE OF SUFFICIENT SIZE TO COVER OUTSIDE DIAMETER OF THE PIPE OR THE INSULATION OF THE PIPE.

FLASHING FOR VENTS THROUGH THE ROOF SHALL BE TWO-PIECE TYPE, 16 OUNCE COPPER COUNTER FLASHING AND BASE FLASHING, OR A TWO-PIECE TYPE, 4 POUND LEAD COUNTER FLASHING AND BASE FLASHING. THE BASE FLASHING SHALL BE INSTALLED BY THE GENERAL CONTRACTOR WITH THE ROOF SYSTEM.

VENT FLASHING SHALL EXTEND DOWN AT LEAST 4 INCHES FROM THE TOP OF THE PIPE. FLASHING SHALL EXTEND AT LEAST 12 INCHES IN ALL DIRECTIONS FROM THE PIPE AND SHALL BE PARALLEL TO THE ROOF LINE.

ALL EQUIPMENT AND INSTALLED MATERIALS SHALL BE THOROUGHLY CLEAN AND FREE OF ALL DIRT, OIL, GRIT, GREASE, AND ETC.

ALL PLUMBING SYSTEMS AND EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE BUILDING FROM THE OWNER.

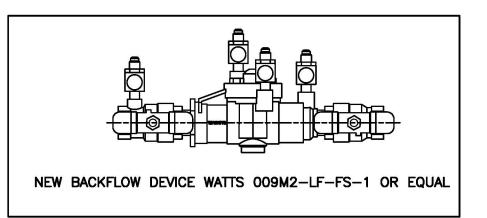
# PLUMBING FIXTURE SCHEDULE

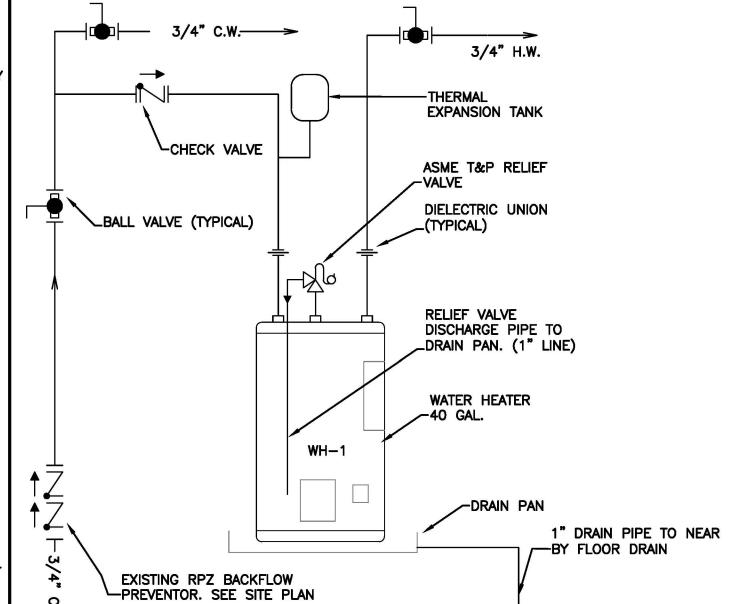
SYMBOL	MANUFACTURER	MODEL #	FIXTURE DESCRIPTION	FIXTURE MOUNTING	ACCESSORIES	SUPPLY	WASTE	VENT	ELECTRICAL	REMARKS
P1	EXISTING	EXISTING	ELONGATED BOWL; FLUSH TANK TOILET	FLOOR MOUNTED	EXISTING	3/4" C.W.	ETR	2"		SELECTED MODEL OR EQUAL
P2	EXISTING	EXISTING	LAVATORY	WALL MOUNTED	IMIXING VALVE / APULLO 346	1/2" C.W. & H.W.		1-1/2"		SELECTED MODEL OR EQUAL
WH	EXISTING	EXISTING	40 US GAL. WATER HEATER, 4.5kW	FLOOR MOUNTED	EXISTING 3/4" T & P RELIEF VALVE; THERMAL EXPANSION TANK	3/4" C.W. & H.W.	_	_	208V 4.5KW	EXISTING TO BE RELOCATED PROVIDE NEW DRAIN PAN
FD	JOSAM		FLOOR DRAIN W/ WATERLESS TRAP SEAL	FLOOR MOUNTED	WATERLESS TRAP SEAL	3/4" C.W.	3"	1-1/2"	_	

WATER CALCULATIONS					
QTY.	ITEM	C.W. FIXTURE UNITS	WATER SUPPLY FIXTURE UNITS EACH	WATER SUPPLY FIXTURE UNITS TOTAL	
1	WATER CLOSET	5.0	5.0	10.0	
1	LAVATORY	1.5	2.0	4.0	
	TOTAL WATER SUPPLY FIXTURE UNITS 24.80				

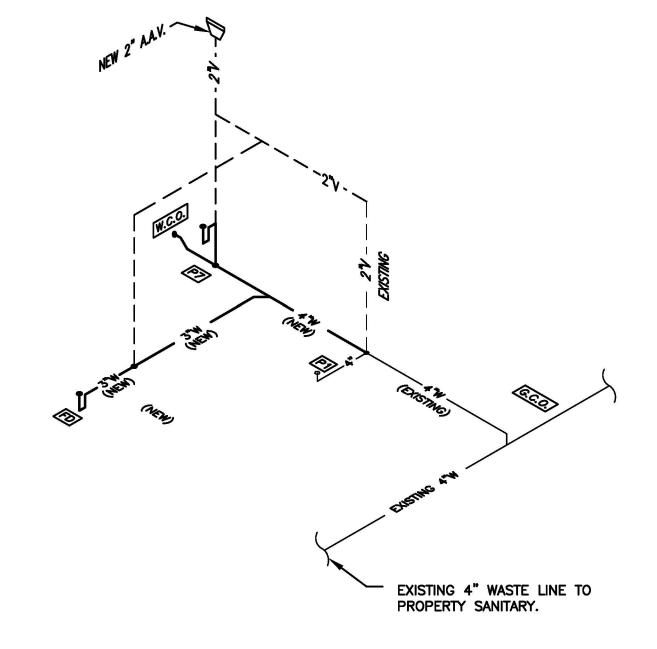
	DRAINAGE CA	LCULA	TIONS
QTY.	ITEM	DRAINAGE FIXTURE UNITS	DRAINAGE FIXTURE UNITS TOTAL
1	WATER CLOSET	4.0	4.0
1	LAVATORY	1.0	1.0
1	FLOOR DRAIN	2.0	2.0
TOTAL DRAINAGE FIXTURE UNITS			7.0

PLUMBING	SYMBOL LEGEND
	HOT WATER LINE
	COLD WATER LINE
ō	PIPE TURNS UP
U	PIPE TURNS DOWN
M	SHUT OFF VALVE
	SANITARY WASTE
	VENT LINE





WATER HEATER DIAGRAM



WASTE/VENT - RISER DIAGRAM

NOT TO SCALE

IT IS THE PURPOSE OF THESE DRAWINGS TO SHOW THE INTENT OF THIS SYSTEM DESIGN. EVERY EFFORT HAS BEEN MADE TO ACCURATELY SHOW EXISTING CONDITIONS— ANY DEVIATION TO THESE DRAWINGS UNCOVERED DURING NEW CONSTRUCTION SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF GENERAL CONTRACTOR OR ENGINEER BEFORE ALTERING THIS DESIGN.

### PLUMBING SCOPE OF WORK:

THERE IS A DEMISING WALL WILL BE CONSTRUCTED TO SPLIT THE EXISTING SPACE INTO TWO (2) TENANT SPACES, UPS STORE AND FUTURE TENANT SPACE. THE EXISTING 1" CW LINE NAD BACKFLOW PREVENTER TO REMAIN IN FUTURE TENANT SPACE. TAP NEW 1" CW LINE TO SERVE UPS SPACE, PROVIDE NEW BACKFLOW PREVENTER FOR UPS. RELOCATE EXISTING WATER HEATER AND LAVATORY TO SUIT NEW LAYOUT. EXISTING WATER CLOSET TO REMAIN AND BE REUSED. PROVIDE CW AND HW PIPING TO ALL FIXTURES, ROUTED ABOVE CEILING. SAW CUT SLAB AS NEEDED AND INSTALL A NEW FLOOR DRAIN NEAR RELOCATED WATER HEATER. COORDINATE WITH GENERAL SHEETS FOR PENETRATIONS AND SUPPORTS.

10 SCHEDULES AND RISERS LUMBING

