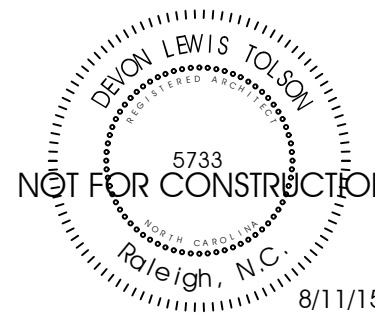


Carolina Commercial Systems

DeVon Tolson
Architecture
4008 Scarlett Drive, Suite 203
Raleigh, NC 27609
Phone 919-788-0003
Fax 919-788-1119
deman@rmanapping.com



Carolina Commercial Systems

524 New Hope Road
Raleigh, NC

OWNER: CCS

3420 Tarheel Drive
Raleigh, NC

PROJECT NUMBER: 150008

DRAWN BY: DTA

ISSUED / REVIEW:

ISSUED / CONSTRUCTION:

REVISIONS

COVER SHEET

CS

1 OF 10 SHEETS

Index of Drawings

Cover Sheet

CS Cover Sheet

Building Data

BD1 Building Data - Appendix B
BD1.1 Building Data - Life Safety Plan

Landscape

L1 Existing Site Plan
L2 Existing Grading
L3 Sight Lines From RoW

Architectural

A0 Demo Plan
A1 Floor Plan
A2 Reflected Ceiling

Plumbing

P1 Plumbing Legend & Schedules
P2 Plumbing Floor Plan Demolition
P3 Enlarged Plumbing Floor Plan
P4 Plumbing Floor Plan New Work
P5 Enlarged Plumbing Floor Plan

Mechanical

M1 Mechanical Legend & Schedules
M2 Mechanical Schedules & Details
M3 Mechanical Floor Plan - Demolition
M4 Mechanical Floor Plan - New Work
M5 Mechanical Roof Plan - New Work

Electrical

E1 Electrical Legend & Schedules
E2 Electrical Floor Plan - Lighting Demolition
E3 Electrical Floor Plan - Power Demolition
E4 Electrical Floor Plan - Lighting New Work
E5 Electrical Floor Plan - Power New Work
E6 Electrical Roof Plan - New Work
E7 Electrical Schedules

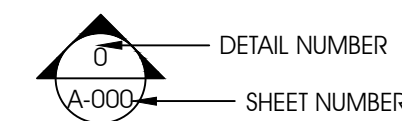
Drawing Information

abbreviations

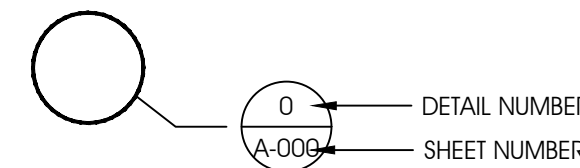
@	AT	EA.	EACH	LAM	LAMINATED	R/W	RIGHT OF WAY	WD	WOOD
Ø	DIAMETER	EJ	EXPANSION JOINT	LAV	LAVATORY	SECT	SECTION	WWF	WELDED WIRE FABRIC
4' R	4'-0" RADIUS	ELEV.	ELEVATION	MBL	MARBLE	SD	SOAP DISPENSER		
A/C	AIR CONDITIONING	EW	EACH WAY	MO	MASONRY OPENING	SND	SANITARY NAPKIN DISPENSER		
AFF	ABOVE FINISH FLOOR	EWC	ELECTRIC WATER COOLER	MTD	MOUNTED	SNR	SANITARY NAPKIN RECEPTOR		
C.I.	CAST IRON	EW	ELECTRIC WATER HEATER	MTL	METAL	SQ	SQUARE		
CJ	CONTROL JOINT	EXT.	EXTERIOR	NIC	NOT IN CONTRACT	TC	TERRA COITTA PIPE		
CMU	CONCRETE MASONRY UNIT	FD	FLOOR DRAIN	NTS	NOT TO SCALE	TOJ	TOP OF JOIST		
C.O.	CLEAN OUT	FF	FINISHED FLOOR	OC	ON CENTER	TOM	TOP OF MASONRY		
CONC.	CONCRETE	FIN.	FINISHED	PSF	POUNDS PER SQUARE FOOT	TOS	TOP OF STEEL		
DF	DRINKING FOUNTAIN	GL.	GLASS	PSI	POUNDS PER SQUARE INCH	TID	TOILET TISSUE DISPENSER		
DISP.	DISPOSAL	HC	HANDICAPPED	PVC	POLYVINYL CHLORIDE PLASTIC	VCT	VINYL COMPOSITION TILE		
DN	DOWN	HTD	HAND TOWEL DISPENSER	RCP	REINFORCED CONCRETE PIPE	VTR	VENT THROUGH ROOF		
DS	DOWNSPOUT	INS.	INSULATION	RD	ROOF DRAIN	W/	WITH		
DW	DISHWASHER	INT.	INTERIOR	REINF	REINFORCED	WC	WATER CLOSET		

drawing notations

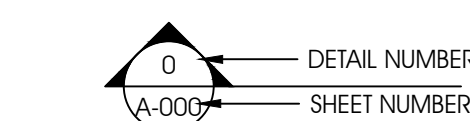
elevation indicator



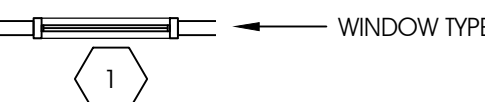
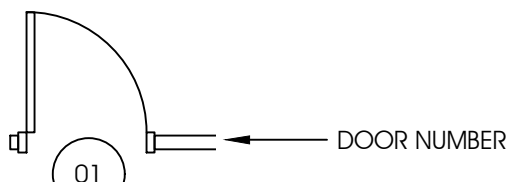
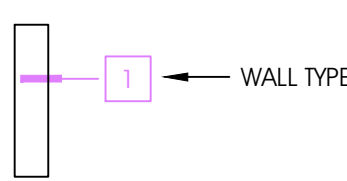
detail indicator



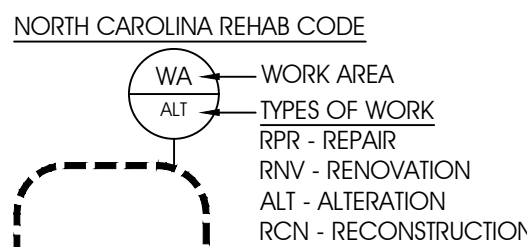
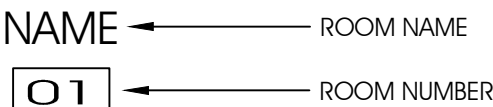
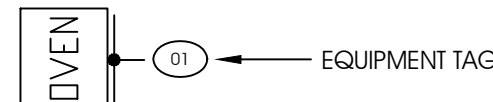
section indicator



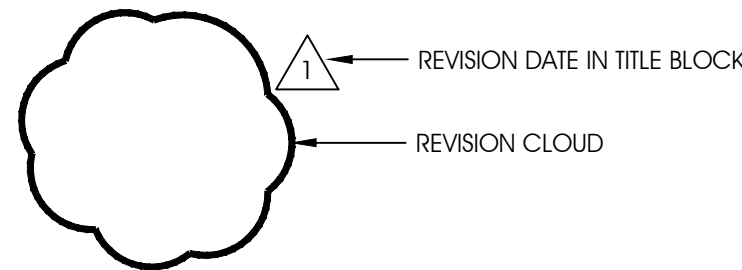
DATUM



COLUMN LINE INDICATOR



wall ratings



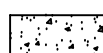
symbols



EARTH



GRAVEL



CONCRETE



CONCRETE MASONRY UNIT



STEEL



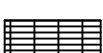
STONE



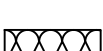
FINISHED WOOD



WOOD BLOCKING



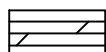
RIGID INSULATION



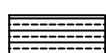
BATT INSULATION



BRICK



PLYWOOD



BRASS

Project Team

owner

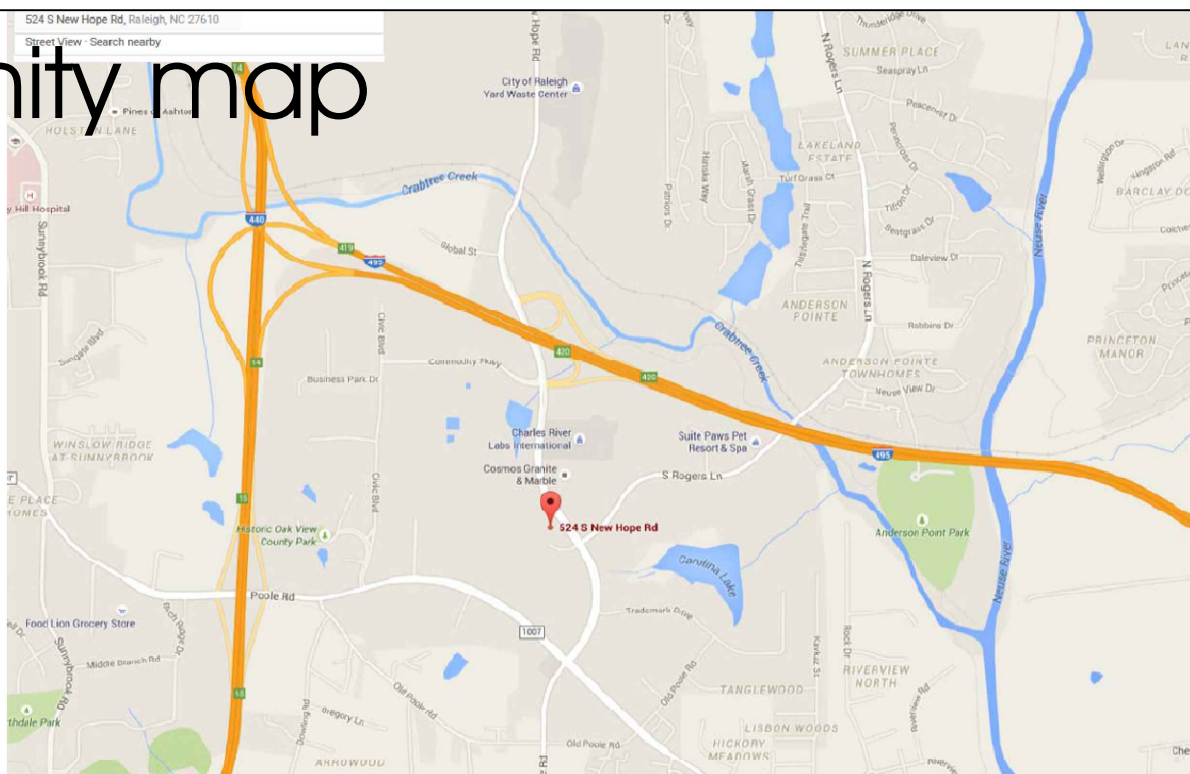
Carolina Commercial Systems
3420 Tarheel Drive
Suite 300
Raleigh, NC 27609

consultants

Plumbing, Mechanical & Electrical

HDM Associates, Inc.
135 Hanbury Road West, Suite D
Chesapeake, Virginia, 23322
Phone: 757-410-0682
Fax: 757-410-1537
email: hdm@hdm.hrcxmail.com

vicinity map



City of Raleigh Building Code Summary For all Commercial Projects <small>NC 2012 Building Code</small> <small>Excerpt 1 & 2 Family dwelling and townhouses</small>				
Name of Project: Carolina Commercial Systems Address: 524 New Hope Road Owner of Authorized Agent: DeVon Tolson, AIA Email: deman@mindspring.com Suite # - - Telephone: 919-788-0003 Fax: 919-788-1119 Owned By: CCS <input checked="" type="checkbox"/> Private <input type="checkbox"/> City/County <input type="checkbox"/> State Code Enforcement Jurisdiction: <input checked="" type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> City / County Name of Jurisdiction: City of Raleigh				
PROJECT SUMMARY:				
Building Description: Existing building, type IIB construction , business occupancy.				
Scope of Work: Tenant alteration: office, factory F-2.				
Code Compliance Summary: Life Safety Plan BD1.2				
Alternative Means of Compliance Request:				
Lead Design Professional / Project Coordinator: DeVon Tolson, AIA				
	Firm	License #	Telephone #	
Architectural	DeVon Tolson Architecture, Inc.	DeVon Tolson, AIA	NC # 5733	919-788-0003
Civil	-	-	-	-
Electrical	HDM Associates, Inc.	Richard Thome, PE	NC # 10843	757-410-0682
Fire Alarm	HDM Associates, Inc.	Richard Thome, PE	NC # 10843	757-410-0682
Plumbing	HDM Associates, Inc.	Richard Thome, PE	NC # 10843	757-410-0682
Mechanical	HDM Associates, Inc.	Richard Thome, PE	NC # 10843	757-410-0682
Sprinkler - Standpipe:	-	-	-	-
Precast	-	-	-	-
Trusses	-	-	-	-
Structural	-	-	-	-
Retaining Walls > 5' High	-	-	-	-
Other	-	-	-	-
Note: Special Inspections & Inspectors to be listed at the end of Appendix B				
Building Code: <input checked="" type="checkbox"/> 2012 North Carolina State Building Code (NCSBC) <input type="checkbox"/> 2009 North Carolina State Building Code (NCSBC) <input type="checkbox"/> 2006 North Carolina State Building Code (NCSBC) <input type="checkbox"/> 2009 NC Rehab <input type="checkbox"/> 2009 NC Rehab <input type="checkbox"/> 2006 Chapter 34 (Attach Summary) <input type="checkbox"/> 2009 Chapter 34 (Attach Summary) <input type="checkbox"/> 1995 Existing Building Code Vol 9 <input type="checkbox"/> 2015 Existing Building Code				
New Building: <input type="checkbox"/> New Building <input type="checkbox"/> Shell Building <input type="checkbox"/> First Time Interior Completion <input type="checkbox"/> Addition <input type="checkbox"/> Alteration to Shell				
Existing Building: <input type="checkbox"/> Renovation <input type="checkbox"/> Interior Completion <input checked="" type="checkbox"/> Tenant Alteration <input type="checkbox"/> Reconstruction <input type="checkbox"/> Repair <input type="checkbox"/> Alteration to Shell <input checked="" type="checkbox"/> Change of Use Tenant Space <input type="checkbox"/> Change of Occupancy Note: Zoning review may be required for Change of Use or Occupancy				
Original Occupancy: B Business Proposed Occupancy: B Business, F-2 Factory				
OCCUPANCY INFORMATION				
Primary Occupancy: Assembly <input type="checkbox"/> A-1 <input type="checkbox"/> A-2 <input type="checkbox"/> A-3 <input type="checkbox"/> A-4 <input type="checkbox"/> A-5 <input checked="" type="checkbox"/> Business <input type="checkbox"/> Education <input type="checkbox"/> Factory-Industrial <input type="checkbox"/> F-1 <input checked="" type="checkbox"/> F-2 Hazardous <input type="checkbox"/> H-1 <input type="checkbox"/> H-2 <input type="checkbox"/> H-3 <input type="checkbox"/> H-4 <input type="checkbox"/> H-5 Institutional <input type="checkbox"/> I-1 <input type="checkbox"/> I-2 <input type="checkbox"/> I-3 <input type="checkbox"/> I-4 I-3 Use Condition <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5				
<input type="checkbox"/> Mercantile Residential <input type="checkbox"/> R-1 <input type="checkbox"/> R-2 <input type="checkbox"/> R-3 <input type="checkbox"/> R-4 Storage <input checked="" type="checkbox"/> S-1 <input type="checkbox"/> S-2 <input type="checkbox"/> High pile S-1 Special Condition <input type="checkbox"/> Repair Garage(406.6) S-2 Special Condition - Parking Garage: <input type="checkbox"/> Open (406.3) <input type="checkbox"/> Enclosed (406.4) <input type="checkbox"/> Utility & Miscellaneous				
Other Uses: Accessory Use (Indicate Percentage): - Incidental Use:				
Special Occupancies: <input type="checkbox"/> 402 <input type="checkbox"/> 403 <input type="checkbox"/> 404 <input type="checkbox"/> 405 <input type="checkbox"/> 406 <input type="checkbox"/> 407 <input type="checkbox"/> 408 <input type="checkbox"/> 409 <input type="checkbox"/> 410 <input type="checkbox"/> 411 <input type="checkbox"/> 412 <input type="checkbox"/> 413 <input type="checkbox"/> 414 <input type="checkbox"/> 415 <input type="checkbox"/> 416 <input type="checkbox"/> 417 <input type="checkbox"/> 418 <input type="checkbox"/> 419 <input type="checkbox"/> 420 <input type="checkbox"/> 421				
Mixed Occupancy <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Separation: Exception: -				
<input checked="" type="checkbox"/> Non-Separated Use (508.3.2) Non-Separated uses are B, F-2. The most restrictive applicable provision of Section 403 & Chapter 9 shall apply to the entire building. <input type="checkbox"/> Separated Use (508.3.3) - See below for area calculations				
$\frac{\text{Actual}}{\text{Allowable}} + \frac{\text{Actual}}{\text{Allowable}} + \frac{\text{Actual}}{\text{Allowable}} + \frac{\text{Actual}}{\text{Allowable}} \leq 1$				
Allowable Area & Height Calculations This section for New, Addition, Change of Use, and Interior Completions				
Exterior Wall	Actual Length	Open Length	Width of Public Way or Open Space	
North	92'-6"	-	92'-6"	30
South	92'-6"	-	92'-6"	30
East	129'-0"	-	129'-0"	30
West	129'-0"	-	129'-0"	30
Total	443	P 443	F 30	W
Increase Frontage : 75% Sprinklers: None Frontage Increase Formula Allowable Area Formula $I_f = 100 \left(\frac{(F - 0.25)}{P} \right)^{\frac{W}{30}}$ $I_f = 100 \left(\frac{443 - 0.25}{443} \right)^{\frac{30}{30}} = 75\%$				

Both Building & Tenant Must Be Indicated on Chart Below

Story No.	Occupancy	(A) Bldg Area Per Story (Actual)	(B) Table 503 Area	(C) % Open Space Increase	(D) % Sprinkler Increase	(E) Allowable Area or Unlimited	Ratio of Actual Allowable	(F) Maximum Building Area	Separation Rating Required
Occupancy									
1	B	5,529	23,000	17,250	-	40,250	0.137	-	-
1	F-2	5,879	23,000	17,250	-	40,250	0.146	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
Building									
1	F-2	11,408	23,000	17,250	-	40,250	0.283	-	-
-	-	-	-	-	-	-	-	-	-

1. Open space are increases from Section 506.2 are computed thus:
 - a. Open perimeter (min. 20') = - (F)
 - b. Total Bldg Perimeter = - (P)
 - c. Ratio (F/P) = (F/P)
 - d. W = Min. width of public way = - W
 - e. % of frontage Increase If = $100(F/P - 0.25) \times W/30$ = -
2. Sprinkler increase per Section 506.3.
 - a. Multi-story bldg I = 200%
 - b. Single Story building I = 300%
3. Unlimited area Group B,F,M,S,A-4, Section (507.1, 507.2, 507.3, 507.4, 507.7)
Group A motion picture (507.10); Walls (507.11); and H-2 air craft paint hangers (507.8)
4. Max. Bldg Area = total number of stories in building x E not > 3 x E
5. Max. area parking garages see 406.3.5 Max area of air traffic control see 412.1.2

Type of Construction	Allowable (Table 503)	Increase for Sprinklers	Shown on Plans	Code Reference
Type of Construction	Type II-B		Type II-B	Table 601
Bldg Height in Feet	Feet 55'-0"	Feet=H+20' = -	H= 18'-6"	Table 503
Building Height in Stories	Stories 3	Stories+1 = -	S = 1	Table 503

Building Data
This Section Required For All Projects

Construction Type: ☐ I-A ☐ I-B ☐ II-A ☒ II-B ☐ III-A ☐ III-B
 ☐ IV-HT ☐ V-A ☐ V-B

Mixed Construction: ☒ No ☐ Yes Type: -

Sprinklers: ☒ No ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 230, ESFR
 ☐ Partially SPK ☐ Special Suppression

Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

Fire District: ☒ No ☐ Yes (Appendix D) ☐ Flood Hazard

Building Height: 18'-6" 1 Stories

Basement: ☒ No ☐ Yes

Mezzanine: ☒ No ☐ Yes

High Rise: ☒ No ☐ Yes Life Safety Plan Sheet#: BD1.1

Gross Building Area:

Floor	Existing (Sq. Ft)	New (Sq Ft)	Fit up	Sub-Total
Basement	-	-	-	-
Ground Floor	11,408	-	-	-
Mezzanine	-	-	-	-
2nd Floor	-	-	-	-
3th Floor	-	-	-	-
4th Floor	-	-	-	-
5th Floor	-	-	-	-
Total	11,408	-	-	-

Area of Project Tenant / Alteration / Renovation: 11,408
 Area of Construction: 11,408

FIRE PROTECTION REQUIREMENTS
This Section Required For All Projects

Life Safety Plan Sheet#, if Provided: -

Building Element	Fire Separation Distance (Feet)	Rating Req'd*	Provided w/ - Reduction	Detail # And Sheet #	Design # For Rated Assembly	Design # For Rated Penetration	Design # For Rated Joints
Bearing Walls Exterior							
North	30'	-	-	-	-	-	-
South	30'	-	-	-	-	-	-
East	30'	-	-	-	-	-	-
West	30'	-	-	-	-	-	-
Interior Bearing Walls							
Nonbearing Wall Exterior							
North	30'	-	-	-	-	-	-
South	30'	-	-	-	-	-	-
East	30'	-	-	-	-	-	-
West	30'	-	-	-	-	-	-
Interior Non Bearing Walls							
Structural frame including columns columns, girders, trusses							
Floor Construction, including supporting beams and joist. List Construction type.							
Floor Ceiling Assembly							
Columns Supporting Floors							
Roof Construction, including supporting beams and joist**							
Roof Ceiling Assembly							
Columns supporting Roof							
Shafts - Exit							
Shafts - Other -							
Shafts - Other -							
Corridor Separation							
Occupancy Separation							
Party / Fire Wall Separation							
Incidental Use Separation							
Dwelling / sleeping unit Separation							
Smoke Barrier Separation							
Tenant Separation							

* Indicate section number permitting reduction
 ** Indicated if using Table 601 Note C exception

PERCENTAGE OF WALL OPENING CALCULATION
 This Section For Additions, New and Change of Use

Allowable openings per Table 704.8

-

-

-

WALL LEGENDS
 This section required for all projects

Check if the following are present and indicated by a wall legend on all plans.

☐ Fire Partition 708 ☐ Fire Wall 705 ☐ Fire Barriers 706 ☐ Smoke Partition 710

☐ Smoke Barriers 709 ☐ Shaft Enclosure 707

LIFE SAFETY SYSTEM REQUIREMENTS This Section For All Project									
Emergency Lighting: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Exit Signs: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Fire Alarm: <input type="checkbox"/> No <input type="checkbox"/> Yes SPRINKLER MONITOR ONLY Smoke Detection System: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Panic Hardware: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes									
EXIST REQUIREMENTS Number & Arrangement of Exits This Section For All Project									
Floor , Room or Space	Minimum Number of Exits ₂			Travel Distance		Arrangements of (Section 1015.2)		Means of Egress _{1,3,4,5}	
	Required	Shown on Plans		Allowable Travel Distance Table 1016.1	Actual Travel Distance	Required Distance Between Exits Doors		Actual Distance Shown on Plans	
BUSINESS	2	2		200'-0"	126'-9"	61'-2"		99'-6"	
FACTORY	2	2		300'-0"	112'-7"	54'-5"		93'-6"	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
-	-	-		-	-	-		-	
1. Corridor dead ends (Section 1017.3) 2. Single exist (Section 1015.1; Section 1019.2) 3. Common Path of Travel (Section 1014.3)									
OCCUPANT LOAD & EXIT WIDTH This Section For All Project									
Use Group or Space	(A) Area ¹	(B) Area per 1 Occupant TBL 1004.1.1	Number of Occupants	(C) Egress Width Per Occupant		Exit Width (A & C) ^{2,3,4,5}			
				Stair	Level	Stair	Level	Stair	Level
OFFICE	5,529	100	56	-	0.2	-	11"	-	96"
FACTORY	5,879	100	59	-	0.2	-	11.8"	-	64"
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
1. See Table 1004.1.1 to determine whether net or gross area is applicable. 2. Minimum stairway width (Section 1009.1); min. corridor width (Section 1017.2); min. door width (Section 1008.1.1) 3. Minimum width of exit passageway (Section 1021.2) 4. The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.1) 5. Assembly occupancies (Section 1025)									
ASSEMBLY OCCUPANCY INFORMATION This Section For Assembly Use Area(s)									
Space Description	Area - SF	Occupant Load Factor	Occupant Load	Exit Width	Exit Quantity				
-	-	-	-	-	-				
-	-	-	-	-	-				
-	-	-	-	-	-				
-	-	-	-	-	-				
Total: -									
PLUMBING FIXTURE REQUIREMENTS This Section For All Projects									
Occupancy Use	Water Closet M	F	Urinals	Toilets M	F	Showers & Tubs	Drinking Fountains		
							Regular	Accessible	
BUSINESS - 56 PEOPLE	1	1	-	1	1	-	-	-	
FACTORY - 59 PEOPLE	1	1	-	1	1	-	1	1	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
Total Required	3	3	-	2	2	-	1	1	
Total Provided	2	4	2	2	2	1	1	1	
Total people in old & new Printing / Shipping space is = 8 / 2 = 4M & 4W (See BD1-2/3) OSHA 29-1910.141 - 1 TO 10 EMPLOYEES = 1 WC									
Building Drain Size	Number of Building Drains	Total Fixture Unit Load	Water Service Size	Number of Water Services	Total Fixture Unit Load	Notes			
-	-	-	-	-	-	-			
-	-	-	-	-	-	-			
STRUCTURAL DESIGN LOADS									
Structure Conforms to " conventional Light Frame Provision of 2308 1. Yes, continue ____ NO, Go to Line 9									
2. Roof Live Load = ____ PSF									
3. Floor Live Load = ____ PSF									
4. Ground Snow Load (Pg) = ____ PSF									
5. Basic Wind Speed, 3 sec. Gust = ____ PSF									
6. Seismic Site Class = ____									
7. Seismic Design Category = ____									
8. Go to Line 44									
9. Live Load									
10. Floor Live Load (indicate area) = ____ PSF									
11. Floor Live Load (indicate area) = ____ PSF									
12. Floor Live Load (indicate area) = ____ PSF									
13. Live Load Reduction used in Design Yes No									
14. Roof Live Load = ____									
15. Roof Snow Load Data									
16. Flat-roof Snow Load (Pg) ____ PSF									
17. Snow Exposure Factor (Ce) = ____									
18. Snow Importance Factor (Is) = ____									
19. Thermal Factor (Ci) = ____									
20. Wind Design Data									
21. Basic Wind Speed, 3 sec. gust = ____ MPH									
22. Wind Importance Factor (Iw) = ____ (If multiple exposures are used indicated direction)									
23. Wind Exposure = ____									
24. Internal Pressure Coefficient = ____									
25. Components and Cladding Loads = ____ (If elements are not designed by the registered design professional)									
26. Wind Base Shear Wx = ____ KIPS									
27. Wind Base Shear Wy = ____ KIPS									
28. Earthquake Design Data									
29. Seismic Important Factor (Ie) = ____									
30. Seismic Use Group = ____									
31. Mapped Spectral Response Accel. Ss = ____									
32. Mapped Spectral Response Accel. S1 = ____									
33. Site Class = ____ (Provide soils report if Site Class is not "D")									
34. Spectral Response coefficient, sds = ____									
35. Spectral Response Coefficient, Sd1 = ____									
36. Seismic Design Category = ____									
37. Building (Structural) System									
38. Basic Seismic Force Resisting System									
39. Seismic Response Coefficient (Cs) = ____									
40. Response Modification Factor, R = ____									
41. Analysis procedure Used = ____									
42. Seismic Base Shear, Sx = ____ KIPS									
43. Seismic Base Shear, Sy = ____									

Parking Area	Total # of Parking Spaces		# of Accessible Spaces Provided		Total # Accessible Provided
	Required	Provided	Regular with 5' Access Aisle	Van Spaces with 8' Access Aisle	
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
Total	-	-	-	-	-

Special Approvals

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

ENERGY SUMMARY

This Section For New, Addition, Change of Use, and Interior Completion

ENERGY REQUIREMENTS: (Completed during shell building construction permitted in 2006)

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Design shall furnish the required portion of the project information for the project data sheet. If energy cost budget method, state the annual energy cost budget vs. allowable annual energy cost budget.

Thermal Envelope

Climata Zone 7 - Window / Wall Ratio < 10%

Actual - Window / Wall Ratio < 9.36%

Method of Compliance: ☒ Prescriptive ☐ Performance ☐ Energy Cost Budget

Roof / Ceiling Assembly

Required Value R-15

Description of assembly

Meal Roofing, 6" Batt Insulation, Z perlins

U-Value of total assembly

.042

R-Value of insulation

R-22

Skylights in each assembly

None

U-Value of skylight

-

Total square footage of skylights

-

Exterior Walls

No Framing = R-0

Description of assembly

8" CMU

U-Value of total assembly

.510

R-Value of insulation

R-0

Openings (windows of doors with glazing)

-

U-Value of Assembly

Any

Shading Coefficient

-

Projection factor

-

Low e required if applicable

-

Door R-Value

Any

Exterior Walls

Metal Framing Continuous = R-0

Description of assembly

Metal Siding, 4" insulation 8" Z girts

U-Value of total assembly

.080

R-Value of insulation

R-11

Openings (windows of doors with glazing)

-

U-Value of Assembly

Any

Shading Coefficient

-

Projection factor

-

Low e required if applicable

-

Door R-Value

Any

Walls Adjacent to Unconditioned Space

Description of assembly

U-Value of total assembly

R-Value of insulation

Openings (windows of doors with glazing)

U-Value of Assembly

Low e required, if applicable

Door R-Value

Walls Below Grade

Description of assembly

U-Value of total assembly

R-Value of insulation

Floors Over Unconditioned Space

-

Description of assembly

U-Value of total assembly

R-Value of insulation

Floors Slab on Grade

Required value - R-0

Description of assembly

6" Concrete, Vapor barrier, 1.5" perimeter insulation, 4" Gravel Base

U-Value of total assembly

-

R-Value of insulation

-

Horizontal / Vertical Requirement

-

Slab heated

-

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: ☐ Prescriptive ☐ Performance ☐ Energy Cost Budget

Lighting Schedule

Lamp type required in fixture:

Number of Lamps in fixture:

Ballast type used in the fixture:

SEE ELECTRICAL DRAWINGS

Number of ballast in fixture:

Total wattage per fixture:

Total interior wattage specified vs. allowed:

Total exterior wattage specified vs. allowed:

☐ Energy Cost Budget

Equipment schedule with motors (not used for mechanical)

Motor Horsepower:

Number of phases:

Minimum efficiency:

Motor type:

No. of poles:

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEM AND EQUIPMENT

Method of Compliance: ☐ Prescriptive ☐ Performance

Thermal Zone

Winter dry bulb:

Summer dry bulb:

Interior Design Conditions

Winter dry bulb:

Summer dry bulb:

SEE MECHANICAL DRAWINGS

Relative Humidity:

Building Heating Load:

Building Cooling Load:

Mechanical Spacing Conditioning System

Unitary:

Description of Unit:

Heating efficiency:

Cooling efficiency:

Boiler:

Total boiler output. If oversized, state reason:

Chiller:

Total Chiller capacity. If oversized, state reason:

List equipment efficiencies

Equipment schedules with motors (mechanical systems)

Motor horsepower:

Number of phases:

Minimum efficiency:

Motor type:

of poles:

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> DeVon Tolson Architecture <small>4008 Barrett Drive, Suite 203 Raleigh, NC 27609 Phone 919-788-0003 Fax 919-788-1119 deman@mindsping.com</small> </div> <div style="text-align: right;"> <small>Inc.</small> </div> </div>	
<p style="text-align: center; font-size: 1.2em;">Carolina Commercial Systems</p> <p style="text-align: center; font-size: 1.2em;">524 New Hope Road Raleigh, NC</p>	
OWNER: CCS	
3420 Tarheel Drive	
Raleigh, NC	
PROJECT NUMBER: 150008	
DRAWN BY: DTA	
ISSUED / REVIEW:	
ISSUED / CONSTRUCTION:	
REVISIONS	
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<h2 style="margin: 0;">BUILDING DATA</h2> <h1 style="margin: 0;">BD-1</h1>	
1 OF 10 SHEETS	

SHELL VARIABLE FORM
Required for all Shell, Alteration to Shell & Interior Completion Permits

Check each applicable line to match scope of work. Edit as necessary to provide clear details of installation.

MECHANICAL

- No Work
- Equipment set _ with _ without power
- Trunk line installed _ with _ without outlets
- Gas line
- X Install complete operational system
- Other -

PLUMBING

- No Work
- Install water service and sewer
- Install building drain _ and _ or water distribution main _ with _ with out branches
- X Install complete plumbing system
- Other -

SPRINKLER

- Install complete sprinkler system - Modify existing

BUILDING

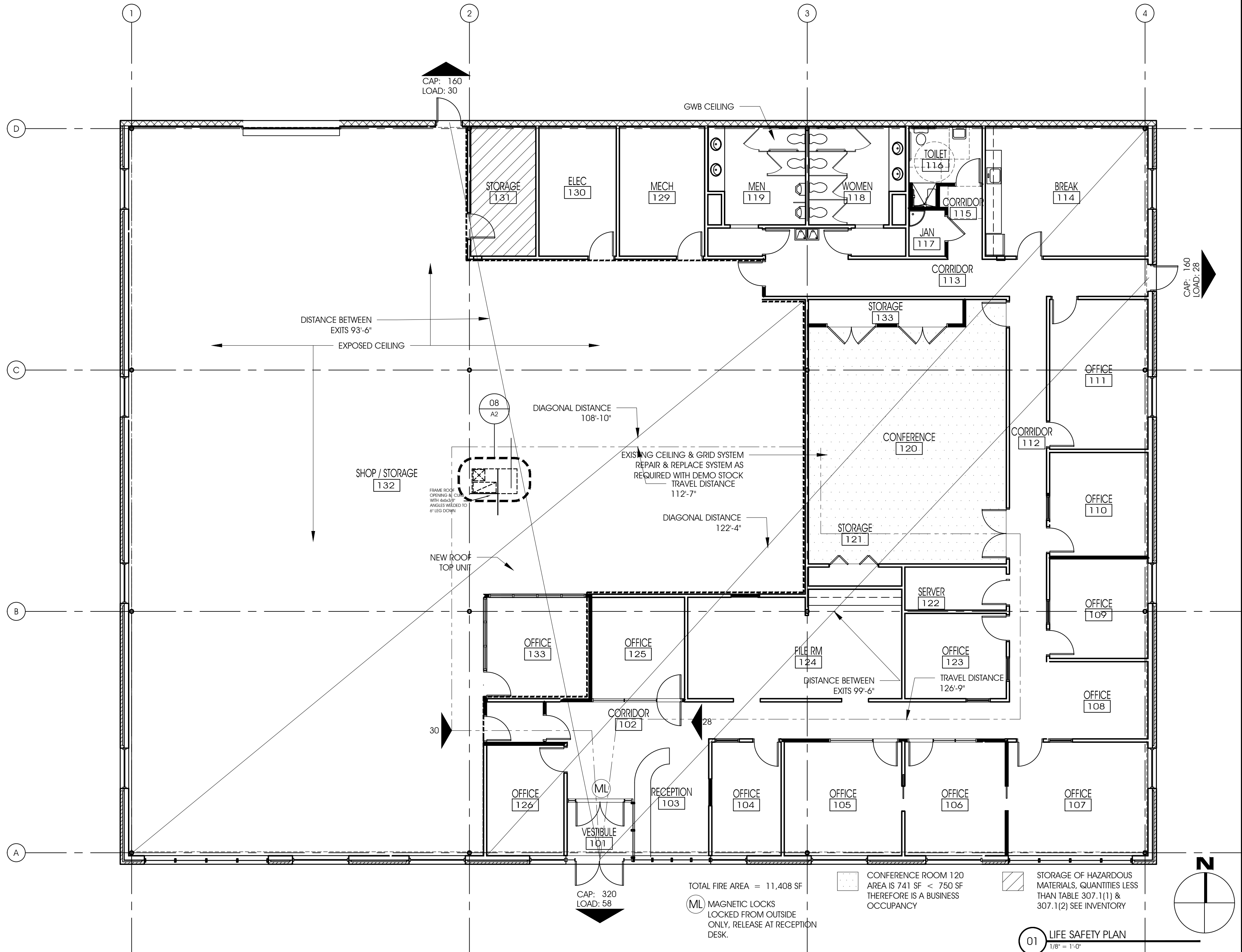
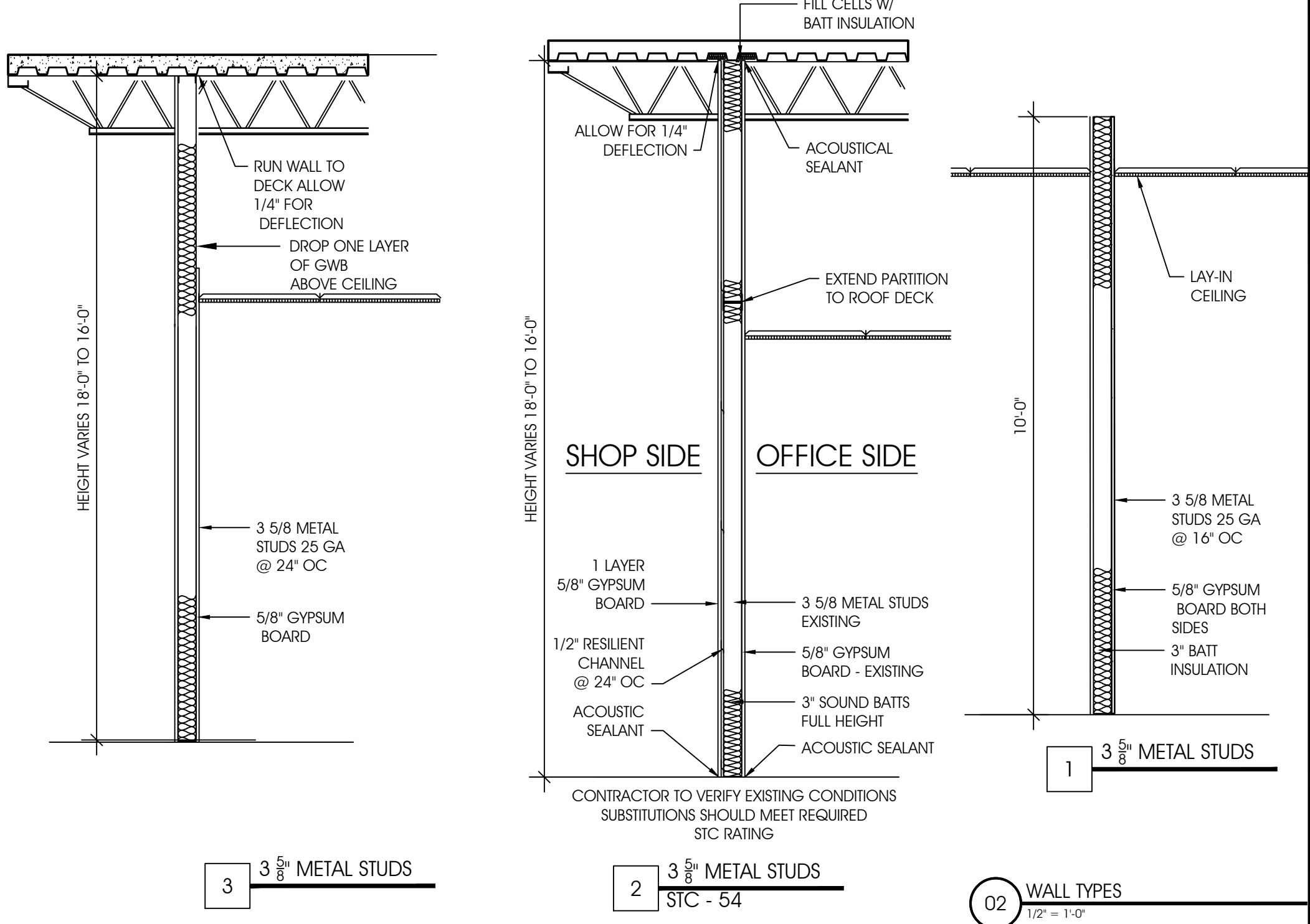
- x Install slab _ partial _ complete
- Install demising walls -
- x Install interior partitioning _ partial _ complete
- x Install Ceilings
- White box (additional interior completion permits are required for Certificate of Occupancy and power)
- Other -

ELECTRICAL

- House panel
- Service laterals to meter centers/panels located on buildings
- Demise wall and ceilings only
- Conduit, duct, raceway in slab
- Power and lighting circuits to "J" Box
- Install light fixtures
- Install _ Heat / AC _ Elevator _ Generator _ Parking lot Lighting
- x Install complete system
- Other -

Please provide full information on any Alternate Methods and Means incorporated into the design of this Project. Provide specific details and incorporate into plan submittal any supporting documents or agreement letters.

HAZARDOUS MATERIAL INVENTORY STATEMENT												
BUSINESS NAME:			ADDRESS:			524 New Hope Road						
LOCATION AT FACILITY:			DATE:			7/26/2012						
HAZARDOUS MATERIAL SUMMARY			OUTDOORS:			No						
Chemical Name	Conc. %	CAS Number	Hazard Classification	Type Hazard	Physical State	Quantity	Units	Open / Closed	NFPA 704 (MDS)	Fire	Health	Reactivity
#	Product Name											Special Hazard
1	Amallex S20 Adhesive	100%	*	Flammable Liq	Class 3B	Liquid	1.25 Gal	C	2	3	0	
2	Freon 22	100%	75-4-6	Health Haz	Toxic	Liquidified Gas	5 30 lb Cyl	C	1	0	1	
3	Veratop 102	100%	*	Health Haz	Toxic	Solid	160 lbs	C	1	1	0	
4	Rectic Seal Cotton Oil	100%	64742-53-6	Health Haz	Toxic	Liquid	1 Gal	C	1	1	0	
5	Children CP-09-1	100%	*	Combustible Liq	Class IIA	Liquid	4 Gal	C	2	2	0	
6	Rectic Seal Tri-Btu	100%	*	Combustible Liq	Class IIB	Liquid	1.25 Gal	C	1	2	0	
7	WD-40	100%	*	Aerosol	Level 3	Aerosol	11.25 lbs	C	1	2	0	
						Allowable Table 307.1(1)	Totals					
						Storage						
						320	1.25 gal					
						330	4 gal					
						13,200	1.25 gal					
						150	150 lb					
						500	160 lb					
						500	1 lb					
						500	11.25 lb					



ACCESSIBILITY COMPLIANCE FORM FOR ALTERATION OR ADDITION TO EXISTING BUILDINGS

Project Name: Carolina Commercial Systems. Transaction # -

Project Address: 524 New Hope Road

2012 NC Bldg Code Ch. 11 - 2009 ICC/ANSI A117.1

2009 NC Bldg Code Ch. 11 - 2003 ICC/ANSI A117.1

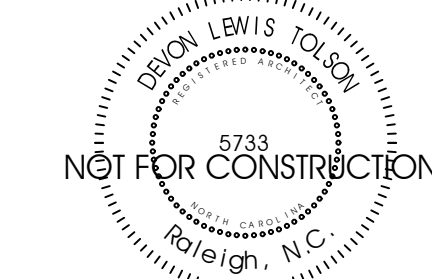
THIS IS TO IDENTIFY THAT... (check all that apply)

- ☒ This building is fully accessible.
- ☐ The "path of travel", which includes bathrooms and drinking fountains serving the alter area, is to conform to the Code.
- ☐ The cost of providing an accessible "path of travel" (including accessible bathrooms and drinking fountains serving the altered area) exceeds 20% of the alteration cost of the Area of Primary Function, and the Path of Travel will be made accessible to the extent that it can be made accessible without incurring Disproportionate Cost.
- ☐ The tenant only is making the alteration. The "path of travel" is outside the tenant area is under the landlord's authority and is not being altered.
- ☐ Accessible "path of travel" is determined to be disproportionate, and priority given to those elements that provide the greatest access in the following order (elements are listed in descending order of priority):
 - 1) An accessible entrance. (existing)
 - 2) An accessible route leading to the altered area of primary function.
 - 3) A minimum of one toilet room for each sex or an accessible unisex toilet.
 - 4) Accessible telephones.
 - 5) Accessible drinking fountains/water coolers.
 - 6) Providing additional accessible elements (e.g. storage, alarm indicating appliances, controls and operation mechanisms, signage, etc.).

Priority given to elements indicated above acknowledge hereby:

Owner*: Carolina Commercial Systems Date: 07-24-15
Tenant*: Same Date: 07-24-15
Designer*: DeVon Tolson, AIA, LEED AP Date: 07-24-15
*No warranty or guarantee implied or intended.

Devon Tolson
Architecture
4008 Barrett Drive, Suite 203
Raleigh, NC 27609
Phone 919-788-0003
Fax 919-788-1119
deman@mindspring.com



Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER: CCS
3420 Tarheel Drive
Raleigh, NC
PROJECT NUMBER: 150008
DRAWN BY: DTA
ISSUED / REVIEW:

ISSUED / CONSTRUCTION:

REVISIONS

COVER SHEET

BD-1.1

1 OF 10 SHEETS

Not for Construction

Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER: CCS
3420 Tarheel Drive
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PROJECT NUMBER: 150008
DRAWN BY: DTA
ISSUED / REVIEW:

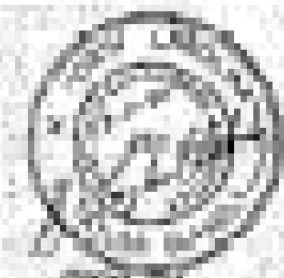
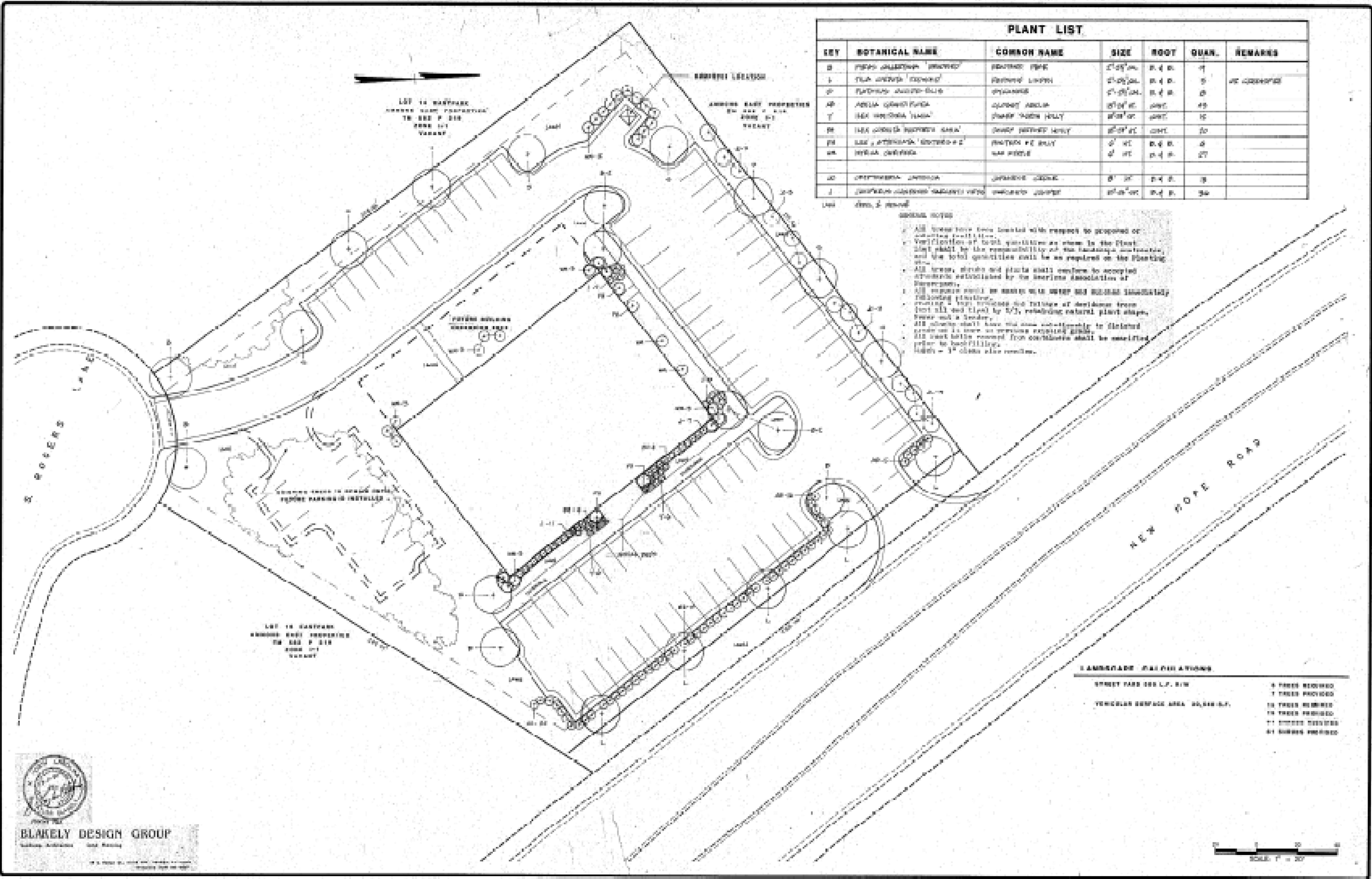
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SITE PLAN

L1



BLAKELY DESIGN GROUP
Landscape Architecture and Planning

Withers & Ravenel, P.A.
1140 EXECUTIVE CIRCLE, CARY, N.C. 27513 (919) 489-3340

Revisions	Description	Date	By
1	ISSUED FOR PERMIT	10/1/00	DTA
2	REVISIONS		

CAROLINA POWER & LIGHT
NORTHEAST AREA OFFICES

PLANTING PLAN

Drawn By	DTA
Check By	DTA
Date	10/1/00
Scale	1" = 20'

3

NOT FOR CONSTRUCTION

Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER: CCS
3420 Tarheel Drive
Raleigh, NC
PROJECT NUMBER: 150008
DRAWN BY: DTA
ISSUED / REVIEW:

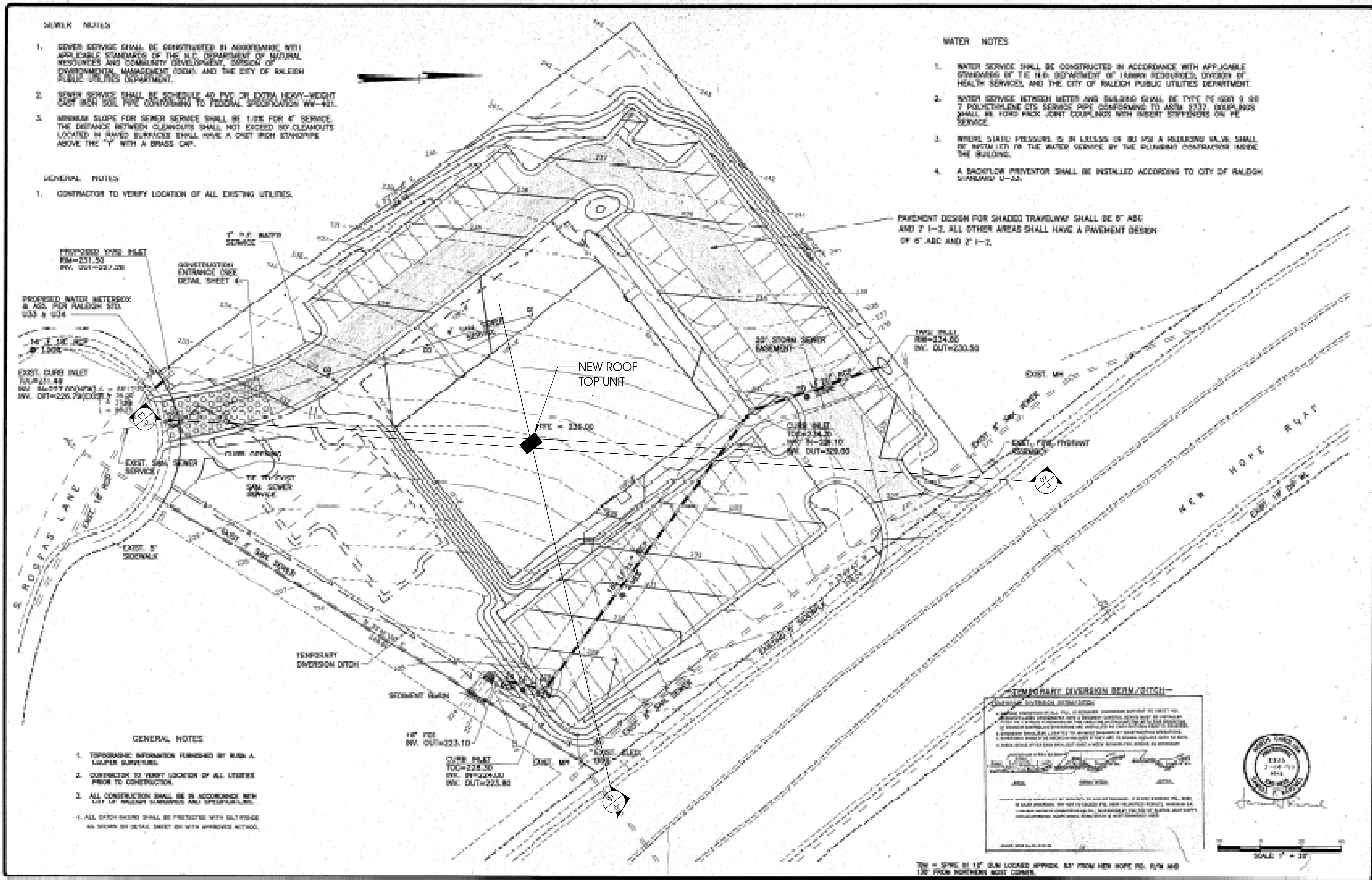
ISSUED / CONSTRUCTION:

REVISIONS

GRADING

L2

1 OF 10 SHEETS



Withers & Ravenel, P.A.
1000 PINECONE DRIVE, CARY, N.C. 27513 (919) 466-1000

Revision	Description	Date	By
1	APPROVED FOR CONSTRUCTION	10/1/08	DTA

CAROLINA POWER & LIGHT
NORTHEAST AREA OFFICES

WATER, SEWER, STORM DRAINAGE,
GRADING, & EROSION CONTROL PLAN

Drawn By	DTA
Checked By	DTA
Scale	1" = 20'
Date	10/1/08

2

NOT FOR CONSTRUCTION

Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER: CCS
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Raleigh, NC

PROJECT NUMBER: 150008

DRAWN BY: DTA

ISSUED / REVIEW:

ISSUED / CONSTRUCTION:

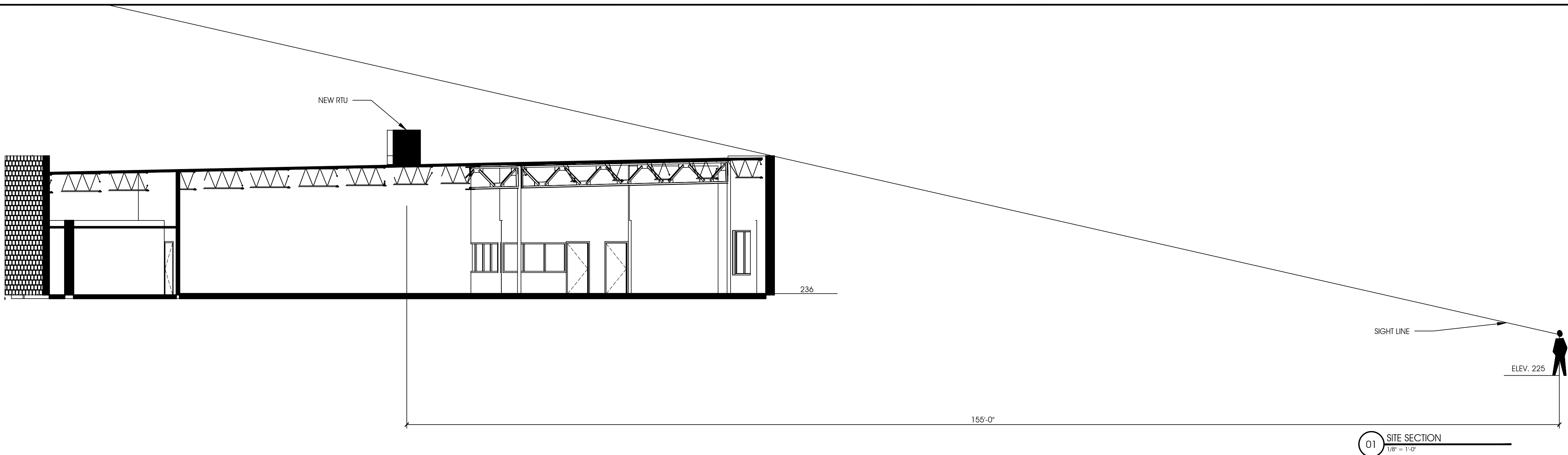
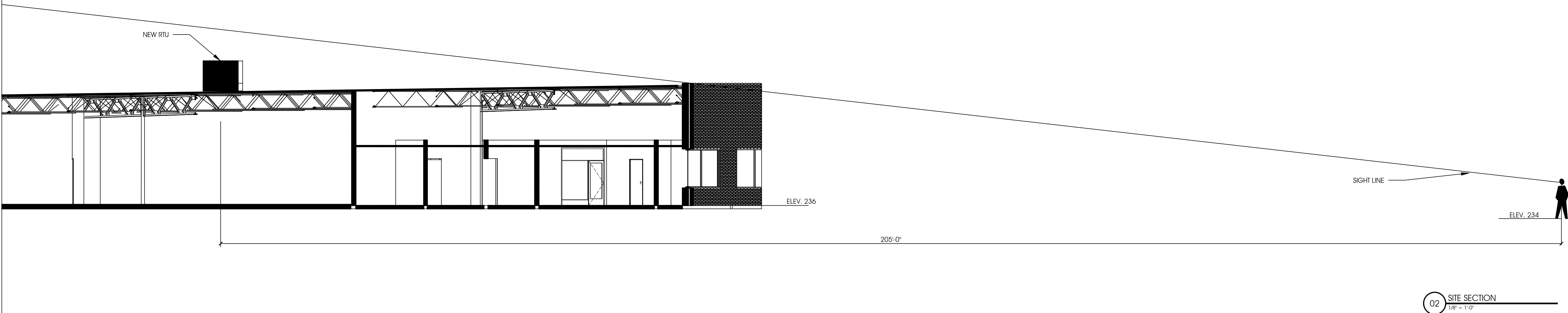
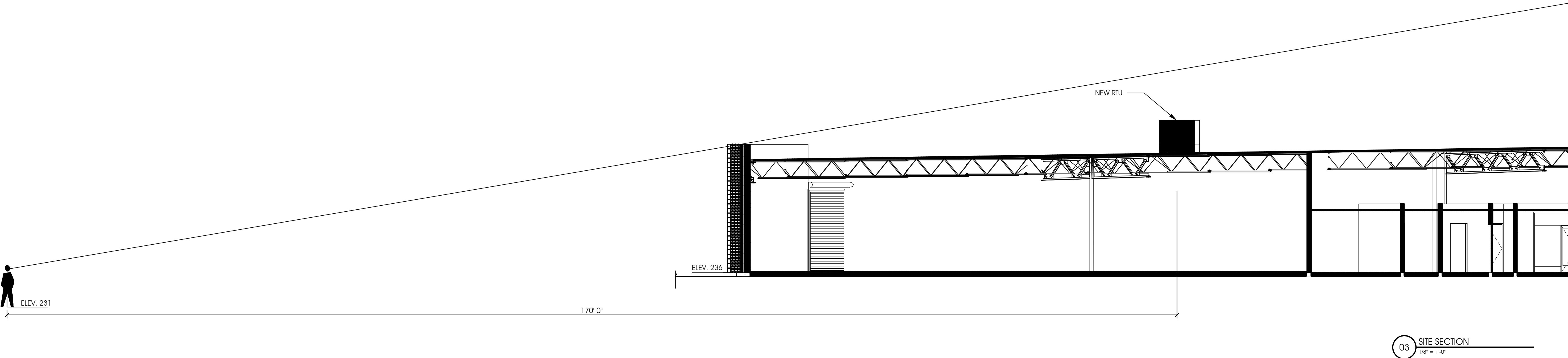
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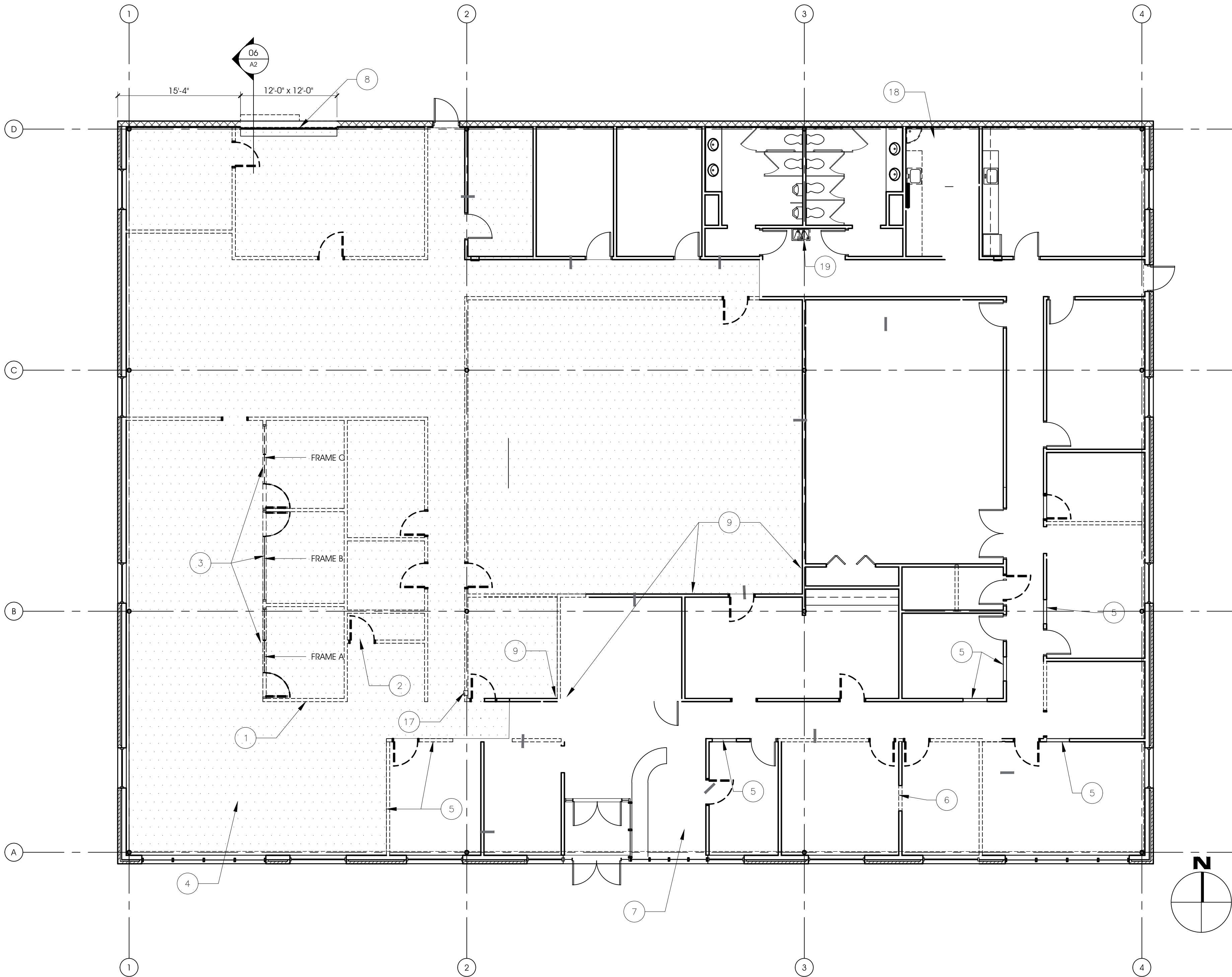
Sight Lines

L3

1 OF 10 SHEETS



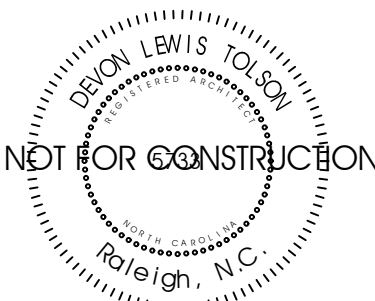
- 1
→
- DEMO NOTES
1. REMOVE WALL, TYPICAL.
2. REMOVE DOOR / FRAME SAVE TO REUSE.
3. REMOVE GLASS WALL & FRAME, SAVE TO REUSE.
4. DEMO LAY-IN CEILING TILES, GRID & HANGERS.
5. CUT OPENING FOR NEW GLAZING.
6. CUT OPENING FOR NEW DOOR
7. REMOVE ALL CARPET / PREP FOR NEW FLOOR FINISH
WHOLE BUILDING
8. CUT OPENING FOR ROLL UP DOOR - SHORE AS REQ.
9. REMOVE LAYER OF GWB TO INSTALL INSULATION.
10.
11. DEMO GYP. BD BULKHEAD
12. DEMO LAY-IN CEILING BELOW GYP. BD. CEILING
13. DEMO LAY-IN CEILING
14. LAY-IN CEILING BELOW LAY-IN GRID, RETAIN TO RE-USE IN LOBBY
15. DEMO WIRE LAY-IN CEILING
16. DEMO LIGHT FIXTURE, REMOVE OR REUSE FEEDER SEE ELECTRIC.
17. RELOCATE FEK.
18. CUT SLAB FOR NEW PLUMBING SEE A1-04
19. DEMO EXISTING WATER FOUNTAIN SEE PLUMBING



- GENERAL DEMO NOTES
1. REVIEW ALL DRAWING BEFORE DEMOLITION, SOME ITEMS ARE REUSED DURING THE CONSTRUCTION.
2. SEE PLUMBING, MECHANICAL, ELECTRICAL AND CIVIL DRAWINGS FOR EXTEND OF DEMOLITION FOR EACH TRADE.
3. THE CONTRACTOR SHALL EMPLOY ACCEPTABLE METHOD OF DEMOLITION AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY TO PERSONS AND ADJACENT PROPERTY.
4. EXERCISE CAUTION TO PREVENT DAMAGE TO THE EXISTING BUILDING. SHORE AND BRACE WORK TO PROVIDE ADEQUATE STRUCTURAL SUPPORT AS REQUIRED BY THE DEMOLITION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO VISIT THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF THE WORK AND THE CONDITIONS UNDER WHICH SUCH WORK WILL BE PERFORMED.
6. ALL ITEMS DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A PROPER MANNER.

01 DEMO PLAN
1/8" = 1'-0"

DeVon Tolson
Architecture Inc
4008 Barnett Drive, Suite 203
Raleigh, NC 27609
Phone 919-788-0003
Fax 919-788-1119
devon@mindspring.com



Carolina Commercial
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DEMO

A0

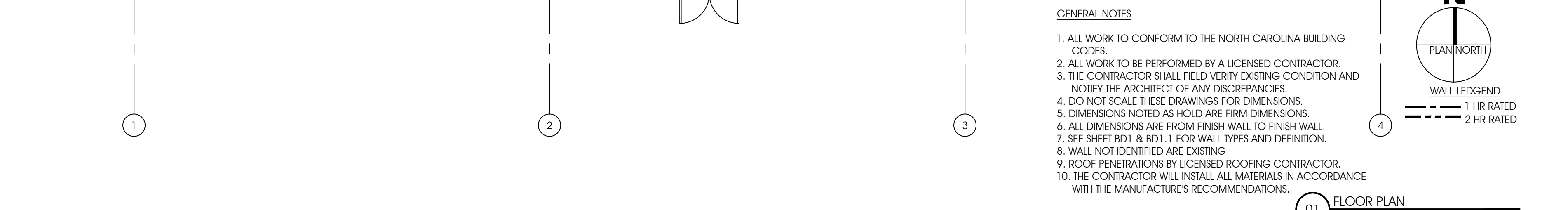
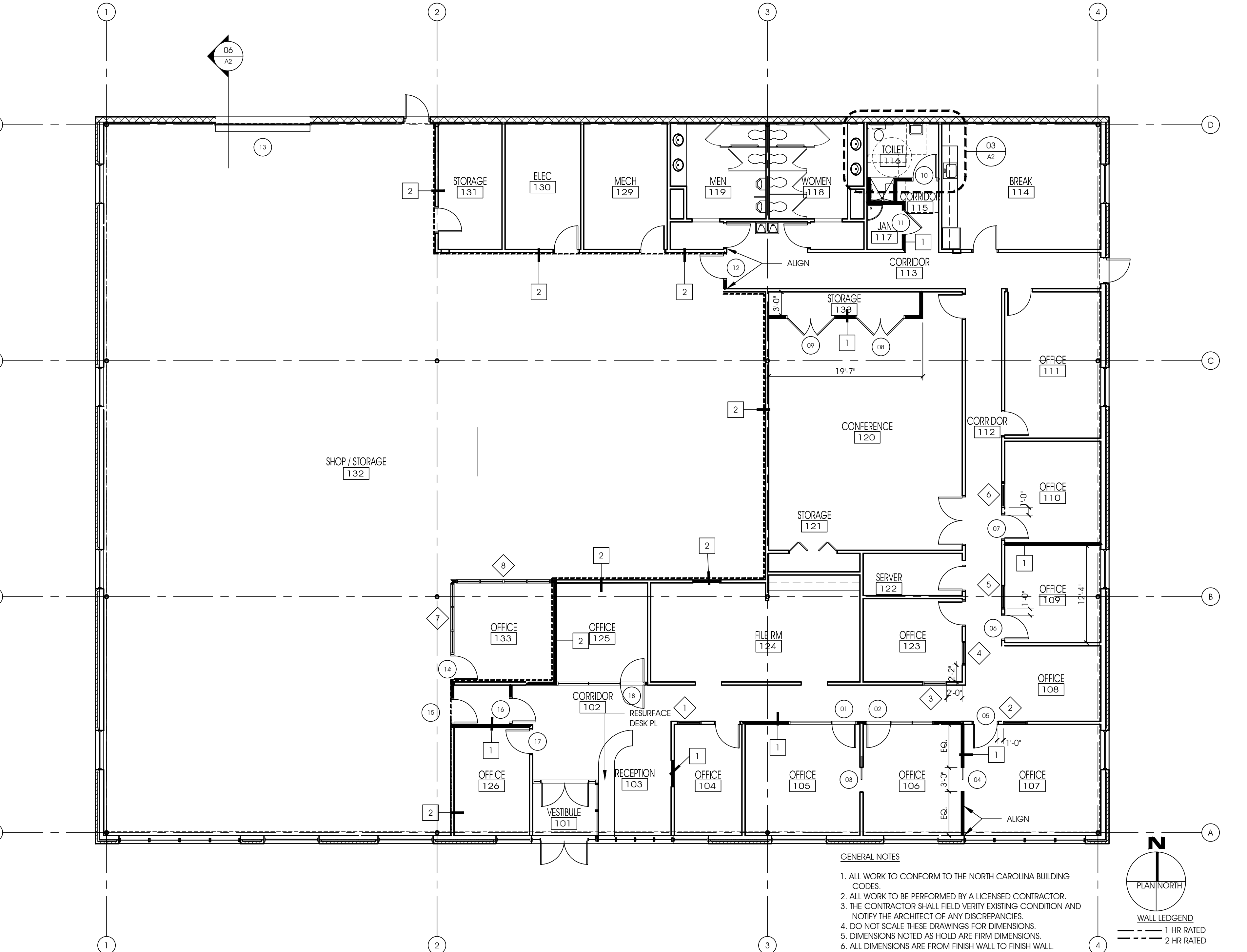
WINDOW SCHEDULE

ROOM FINISH SCHEDULE

MARK	SIZE		TYPE	MATERIAL	JAMB	NOTES
	Width	HEIGHT				
1	3'-0"	4'-0"	W-1	HM	J-5	TEMPERED GLASS
2	3'-0"	4'-0"	W-1	HM	J-5	TEMPERED GLASS
3	3'-0"	4'-0"	W-1	HM	J-5	TEMPERED GLASS
4	3'-0"	4'-0"	W-1	HM	J-5	TEMPERED GLASS
5	3'-0"	4'-0"	W-1	HM	J-5	TEMPERED GLASS
7	9'-0"	4'-0"	W-2	HM	J-5	TEMPERED GLASS
8	12'-0"	4'-0"	W-3	HM	J-5	TEMPERED GLASS

The elevation drawings show three window units. The first unit is 3'-0" wide and 4'-0" high. The second unit is 9'-0" wide (labeled '3 EQ.' for three equal panes) and 4'-0" high. The third unit is 12'-0" wide and 4'-0" high. All units have a height of 4'-0".

W-1	W-2	W-3
-----	-----	-----



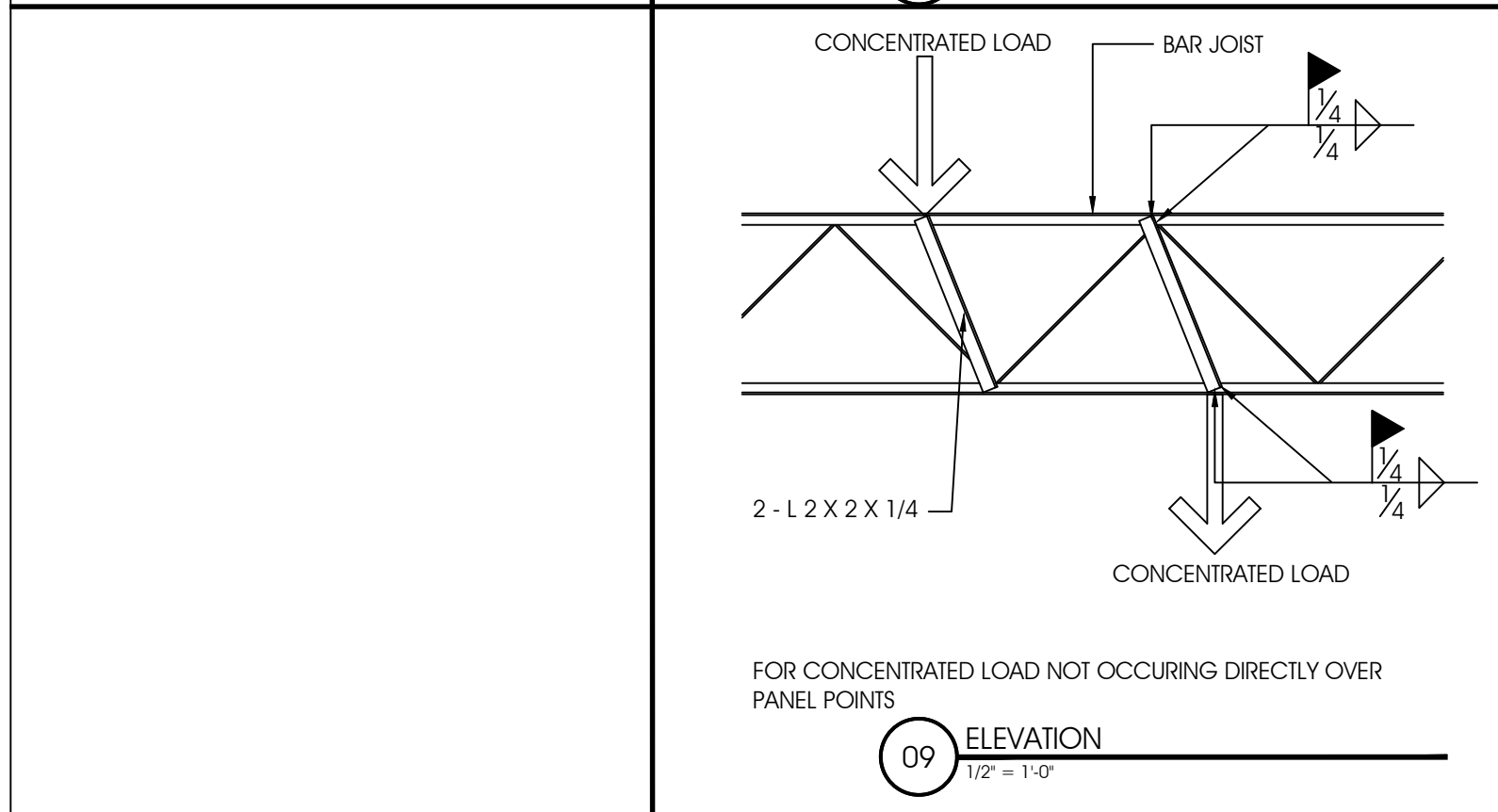
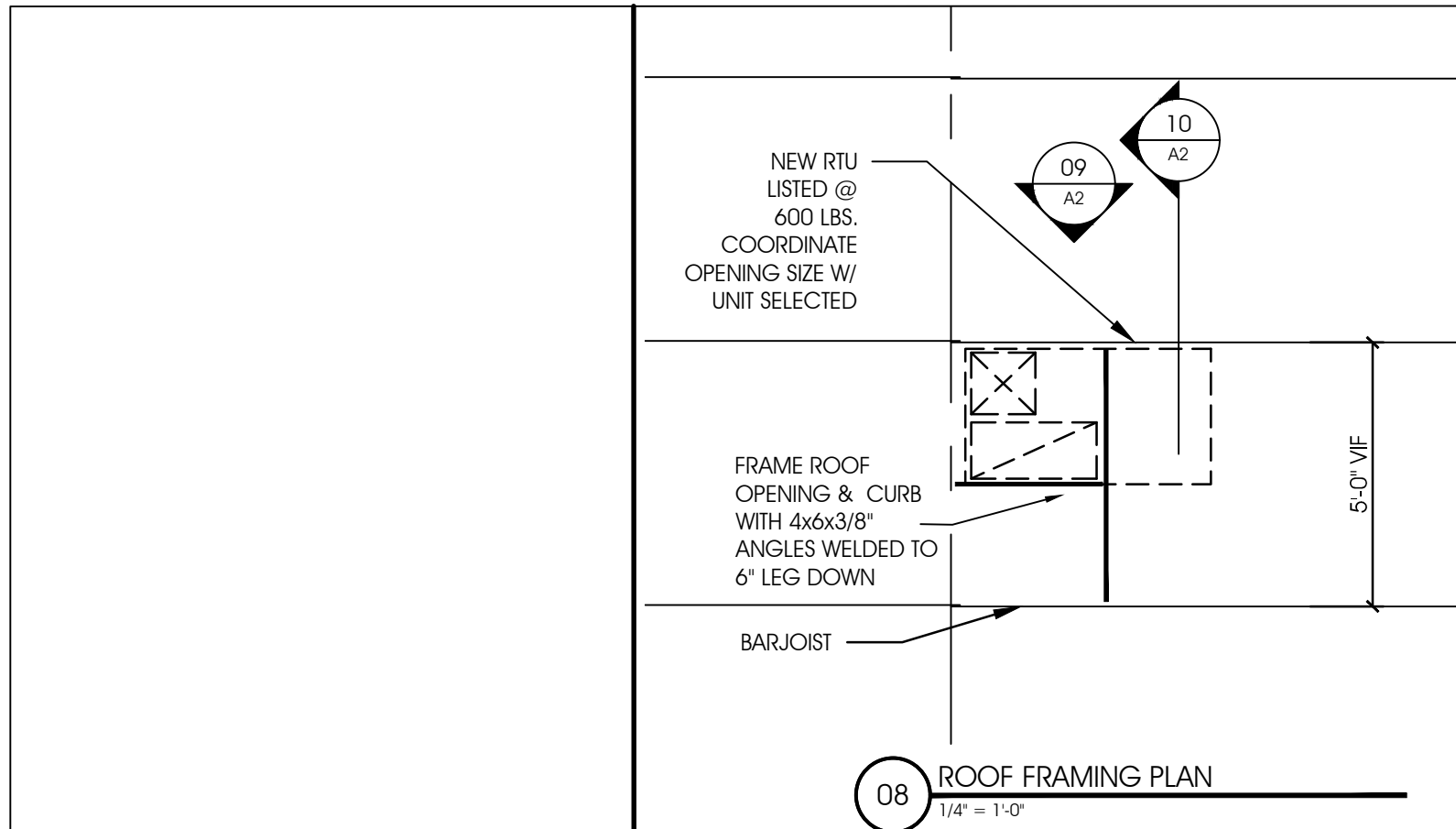
Not for Construction

524 New Hope Road
Raleigh, NC

ISSUED / CONSTRUCTION
REVISIONS

FLOOR PLAN

1 OF 10 SHEETS



HARDWARE SCHEDULE

SET #1 ITEM	DESCRIPTION	MANUFACTURER
3 HINGES	4 1/2 x 4 1/2	McKINNEY
1 CYLINDER LOCK	OFFICE FUNCTION	SCHLAGE
1 WALL STOP	WS406	IVES

SET #2 ITEM	DESCRIPTION	MANUFACTURER
6 HINGES	4 1/2 x 4 1/2	McKINNEY
1 CYLINDER LOCK	STORAGE FUNCTION	SCHLAGE
2 OVERHEAD STOPS	450	GLYNN-JOHNSON
1 MAN FLUSH BOLTS	FB41P	IVES
2 DUST PROOF STRIKE	DP1 & DP2	IVES

SET #4 ITEM	DESCRIPTION	MANUFACTURER
3 HINGES	4 1/2 x 4 1/2	McKINNEY
1 CYLINDER LOCK	PRIVACY FUNC	SCHLAGE
1 OVERHEAD STOP	450	IVES
1 KICK PLATE 10"	8400 -W-2"	IVES

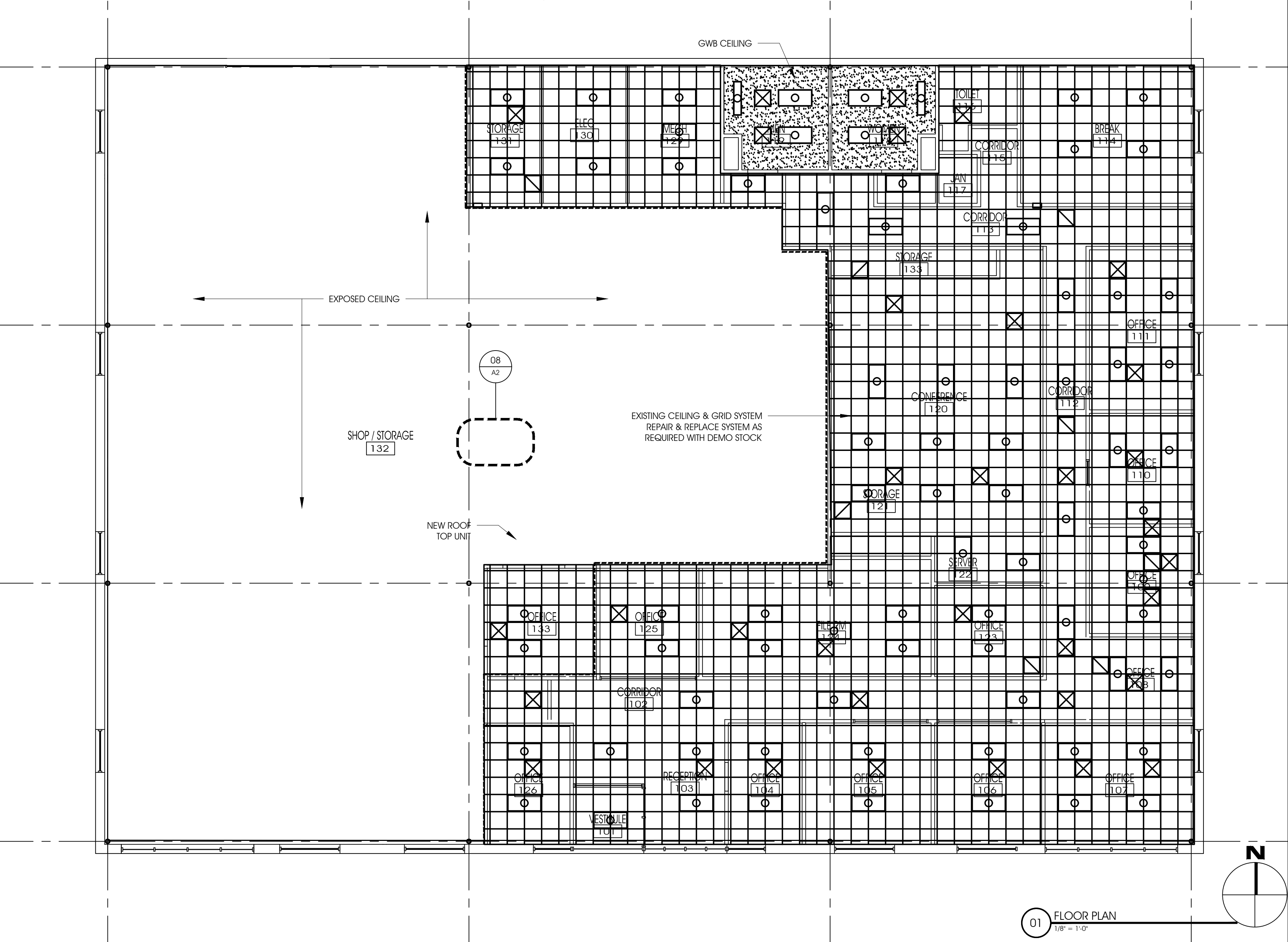
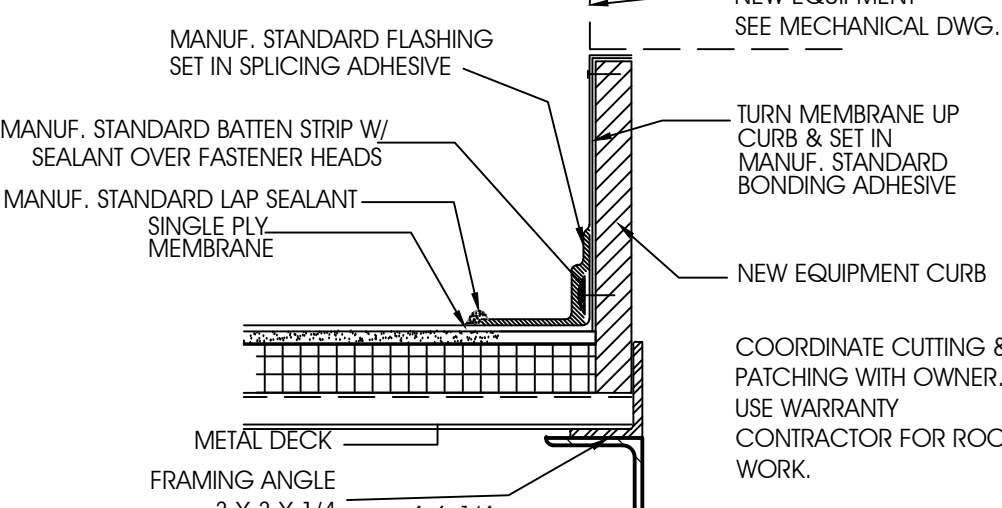
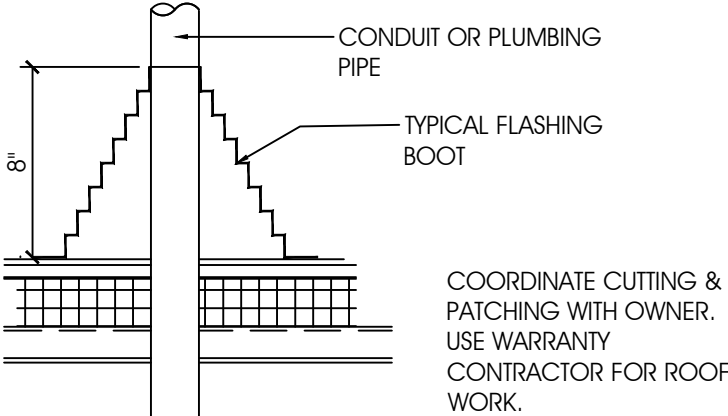
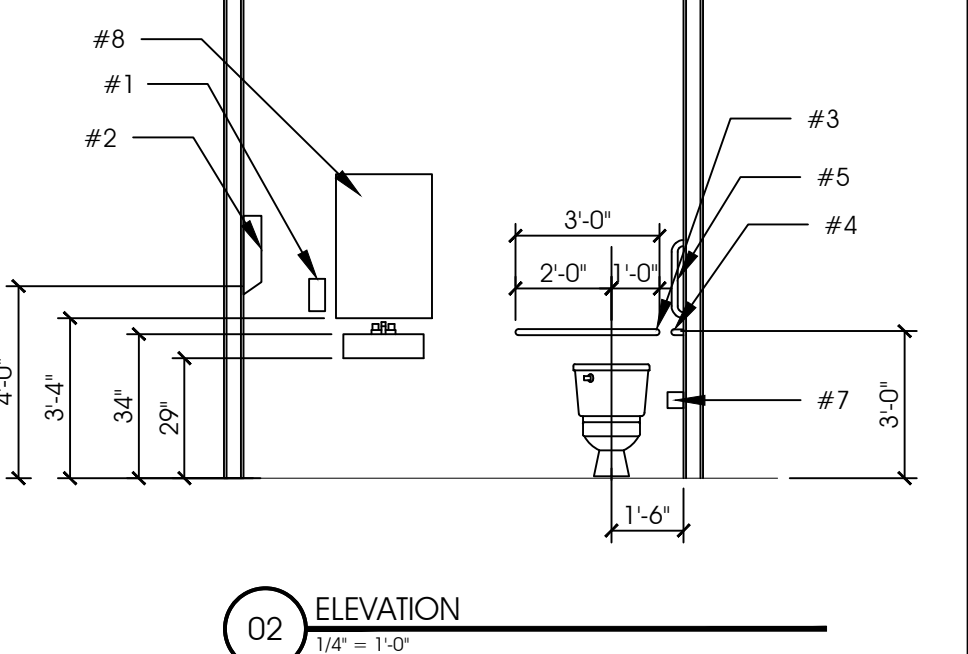
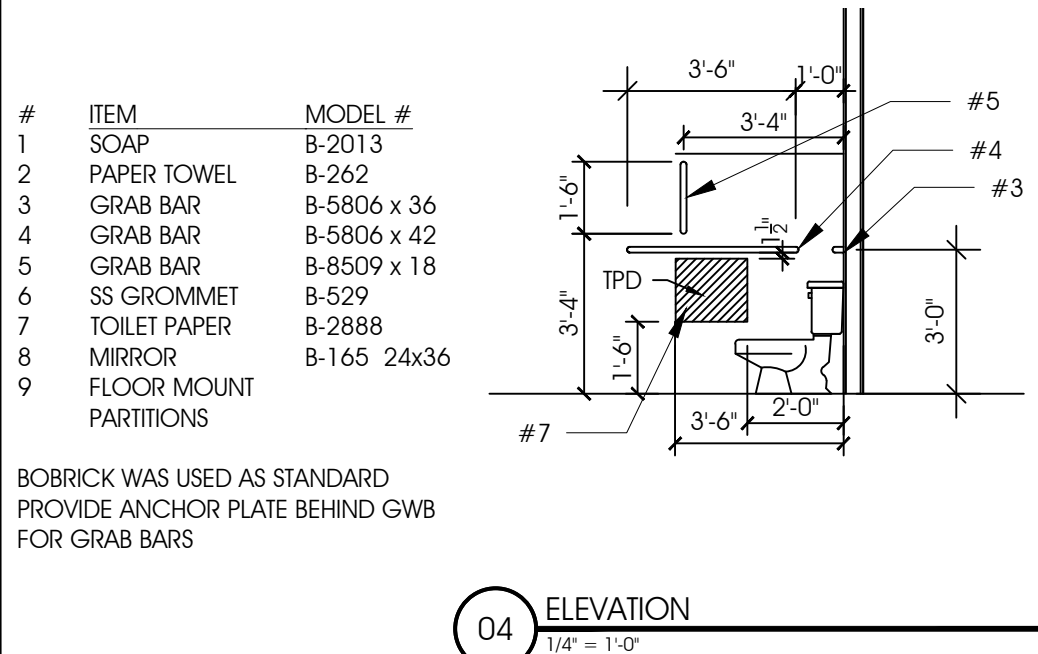
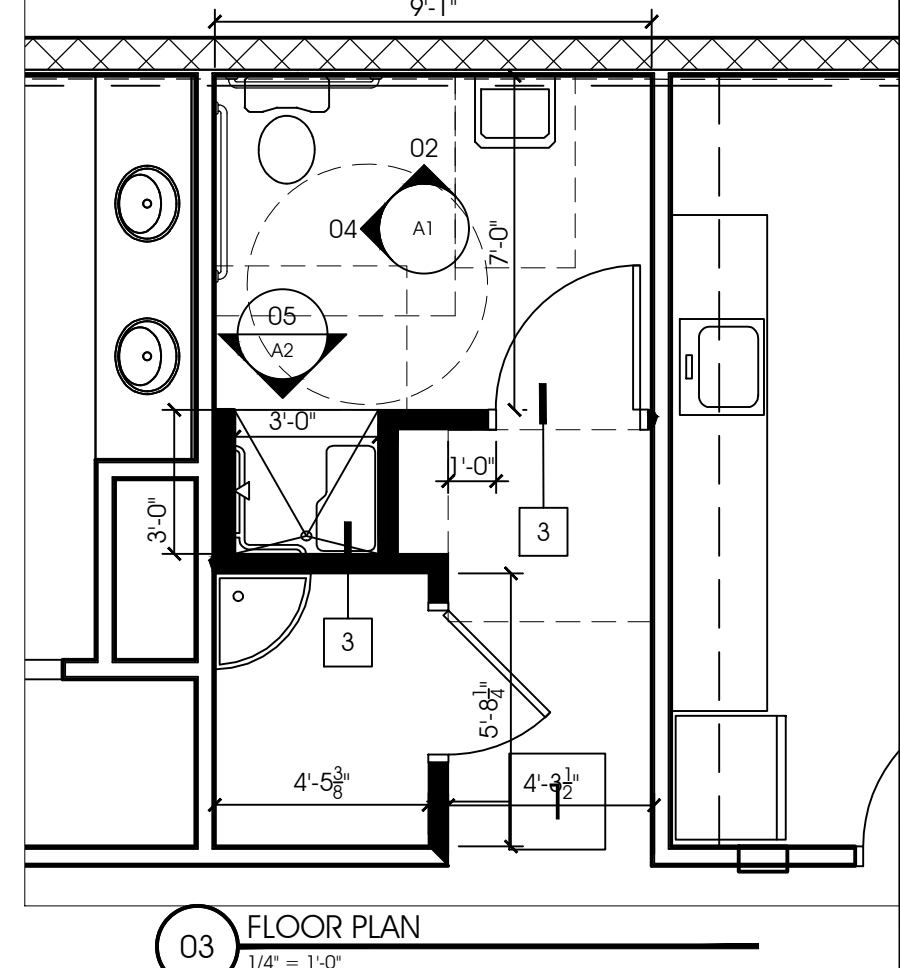
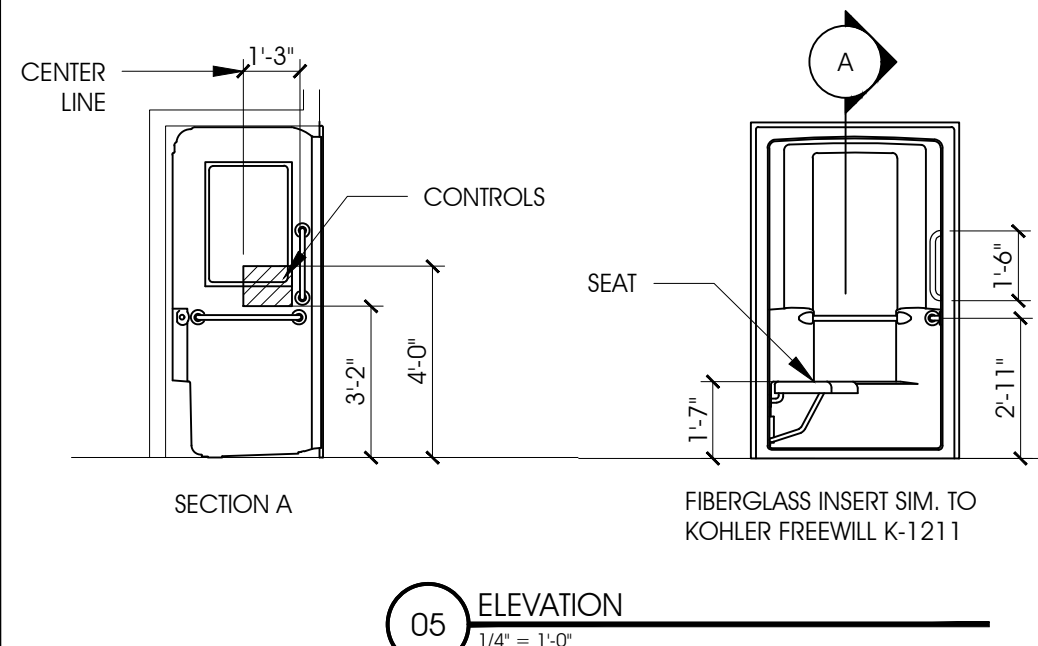
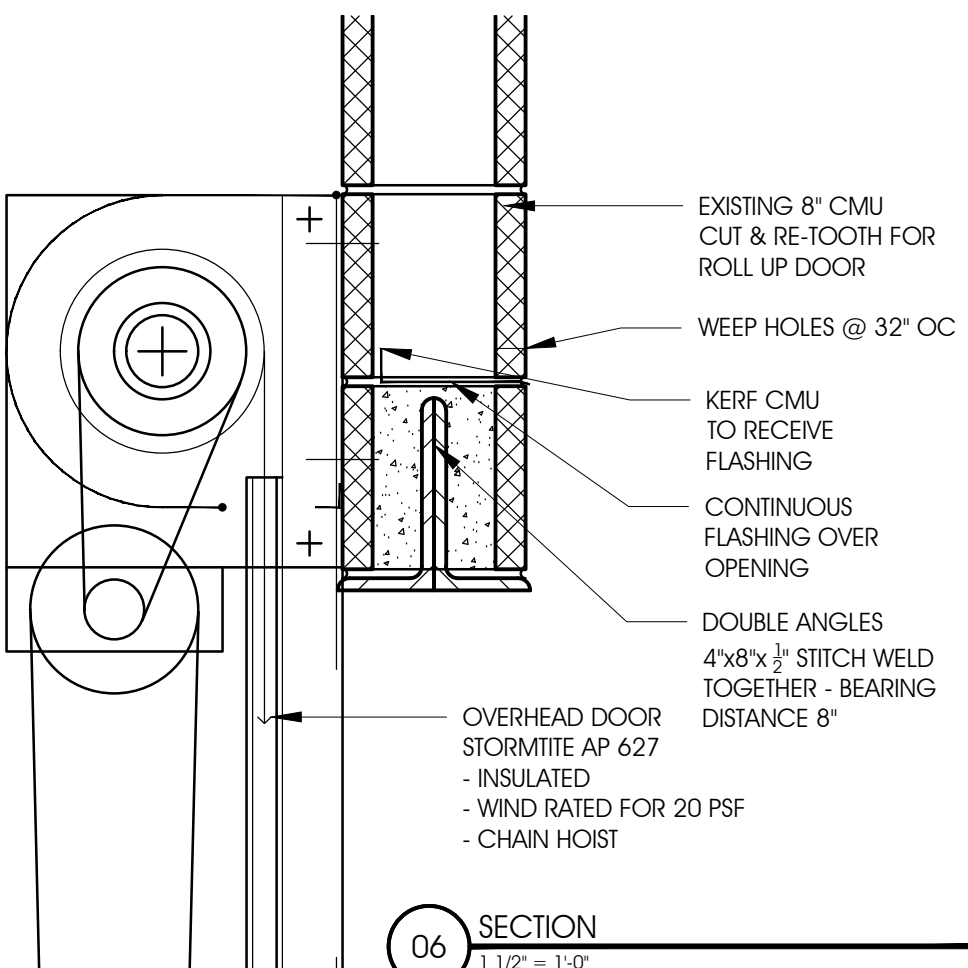
SET #5 ITEM	DESCRIPTION	MANUFACTURER
3 HINGES	4 1/2 x 4 1/2	McKINNEY
1 CLOSURE	1460	LCN
1 PULL	9103	IVES
1 PUSH	9103	IVES
1 KICK PLATE 10"	8400 -W-2"	IVES
1 WALL STOP	WS406	IVES

SET #6 ITEM	DESCRIPTION	MANUFACTURER
2 FLUSH PULLS	227B	IVES

SET #7 ITEM	DESCRIPTION	MANUFACTURER
RE USE EXISTING HARDWARE	OFFICE FUNCTION, LEVER HANDLES	

1. REPLACE ALL EXITING DOOR KNOBS WITH HANDLES.
2. PROVIDE KNURLED HANDLES FOR SET #4 & DOOR TO ROOMS MECH129 & ELECTRICAL 130
3. ALL HARDWARE TO BE LEVER HANDEL. SCHLAGE S51PD - SATURN
3. ALL HARDWARE FINISHES TO MATCH.
4. ALL LOCKS TO COME WITH CYLINDERS AND CORES.
5. COORDINATE WITH BUILDING OWNER AND TENANT FOR KEY REQUIREMENTS.

07 DOOR HARDWARE
N/S



- RECESSED CAN LIGHT FLOURESCENT
- 2x4 LAY-IN DEMO - REUSE
- 2x4 LAY-IN FLUORESCENT
- 1x8 PENDENT FLUORESCENT
- SUPPLY AIR - DEMO
- RETURN AIR - DEMO
- EXHAUST FAN

DeVon Tolson
Architecture
4008 Barrett Drive, Suite 203
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deman@mindspring.com



Carolina Commercial
Systems

524 New Hope Road
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3420 Tarheel Drive
Raleigh, NC
PROJECT NUMBER: 150008
DRAWN BY: DTA
ISSUED / REVIEW:

ISSUED / CONSTRUCTION:

REVISIONS

REFLECTED CEILING

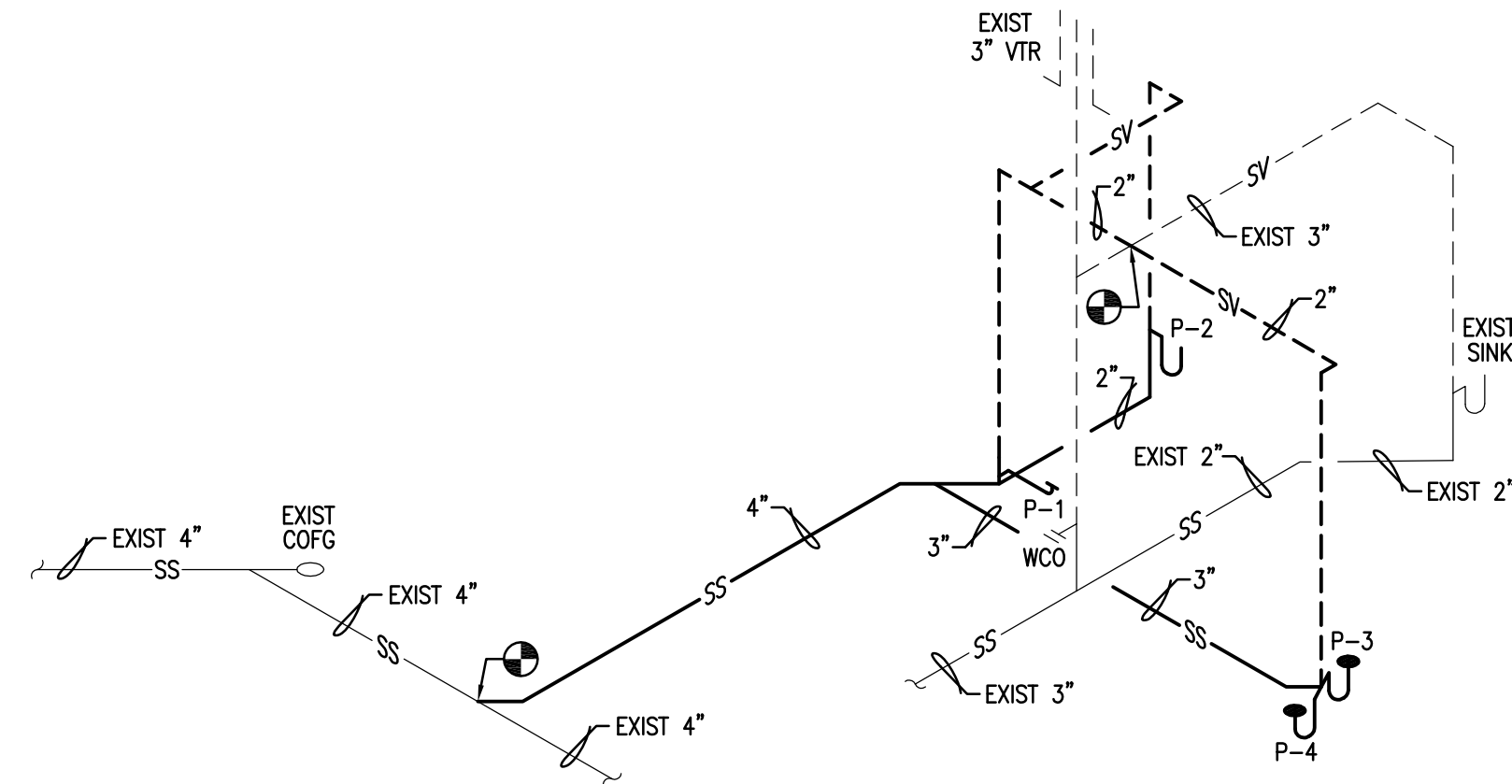
A2

PLUMBING SPECIFICATIONS

1. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO DESCRIBE THE INSTALLATION OF A COMPLETE, FULLY ADJUSTED AND OPERATIONAL SYSTEM.
2. THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, MATERIAL, EQUIPMENT, MACHINERY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE SYSTEMS.
3. ALL WORK UNDER THEIR SECTION SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH STATE BUILDING CODES. IN THE EVENT THE LOCAL AUTHORITY HAVING JURISDICTION DETERMINES THERE IS A CODE VIOLATION ASSOCIATED WITH THE CONSTRUCTION DOCUMENTS AND REQUIRES ADDITIONAL WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE VIOLATION. IF THE CONTRACTOR DOES NOT CONTACT THE ENGINEER, ALL EXPENSES ASSOCIATED WITH THE VIOLATION WILL BE THE CONTRACTOR'S RESPONSIBILITY.
4. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING THEIR BID SO AS TO BE THOROUGHLY FAMILIAR WITH THE JOB CONDITIONS AND/OR PECULIARITIES. NO EXTRA PAYMENT WILL BE ALLOWED FOR ANYTHING WHICH COULD HAVE BEEN ANTICIPATED FROM A VISIT TO THE SITE.
5. THE CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING BID AND COMMENCING WORK. ALL DISCREPANCIES AND INTERFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
6. THE CONTRACTOR SHALL CONTACT LOCAL UTILITIES TO OBTAIN ALL REQUIREMENTS, APPROVAL AND PERMITS. THE CONTRACTOR SHALL PAY ALL FEES REQUIRED FOR THE INSTALLATION OF THEIR WORK.
7. THE DRAWINGS ARE DIAGRAMMATIC ONLY. THE CONTRACTOR MAY NEED TO MAKE FIELD ADJUSTMENTS TO ACCOMMODATE ACTUAL FIELD CONDITIONS. CONTACT ARCHITECT FOR THEIR APPROVAL FOR ANY ADJUSTMENTS THAT WILL CHANGE THE "EXPOSED TO VIEW" APPEARANCE OF ANY GIVEN AREA OR IF THE CHANGE IMPACTS PERFORMANCE.
8. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR THE GENERAL CONSTRUCTION OF THE BUILDING, FOR FLOORS AND CEILING HEIGHTS, FOR LOCATIONS OF WALLS, PARTITIONS, BEAMS, ETC.
9. THE CONTRACTOR SHALL REVIEW THE EQUIPMENT REQUIREMENTS PRIOR TO BEGINNING WORK TO VERIFY ALL REQUIRED CONNECTIONS AND CONTACT THE ENGINEER TO CLARIFY ANY DISCREPANCIES.
10. CONTRACTOR SHALL VERIFY ALL LISTED MODEL NUMBERS WITH MANUFACTURERS TO INSURE PROPER APPLICATION OF EQUIPMENT.
11. EQUIPMENT AND MATERIALS SHALL BE HANDLED, STORED AND PROTECTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
12. THE CONTRACTOR SHALL PERFORM ANY AND ALL TRENCHING, EXCAVATION AND BACKFILLING REQUIRED FOR THE INSTALLATION OF THEIR WORK.
13. THE PLUMBING CONTRACTOR SHALL FURNISH ALL NECESSARY SCAFFOLDING, STAGING, RIGGING AND HOISTING REQUIRED FOR THE COMPLETION OF THEIR WORK.
14. ALL WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER TRADES INVOLVED IN THE CONSTRUCTION PROJECT. ALL WORK SHALL BE CAREFULLY LAID OUT IN ADVANCE TO COORDINATE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FEATURES OF CONSTRUCTION.
15. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.
16. ALL FIXTURES AND EQUIPMENT SHALL HAVE CHROME PLATED ANGLE STOP VALVE WITH ESCUTCHEONS. FIXTURES WITH FAST CLOSING VALVES SHALL HAVE ACCESSIBLE WATER HAMMER ARRESTORS.
17. PIPE HANGERS: CARBON STEEL, ADJUSTABLE, CLEVIS.
18. SHIELD FOR PIPE INSULATION SHALL BE 18 GAUGE GALVANIZED STEEL IN LOWER 180 DEGREE SEGMENT OF THE PIPE, MINIMUM 12 INCH LONG AT PIPE SUPPORT LOCATIONS.
19. STEEL HANGER RODS: THREADED BOTH ENDS OR CONTINUOUS THREADED.
20. INSTALL HANGERS, SUPPORTS, CLAMPS AND ATTACHMENTS AS REQUIRED TO PROPERLY SUPPORT PIPING FROM BUILDING STRUCTURE.
21. IDENTIFY PIPING, CONCEALED OR EXPOSED, IN ACCORDANCE WITH ANSI/ASME A13.1, WITH PLASTIC TAPE PIPE MARKERS. TAGS MAY BE USED ON SMALL DIAMETER PIPING. IDENTIFY SERVICE, FLOW DIRECTION AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND "T", AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE AND AT EACH OBSTRUCTION.
22. HOT AND COLD WATER PIPES SHALL BE INSULATED WITH 1 INCH GLASS FIBER INSULATION; ANSI/ASME C547; "K" VALUE OF 0.24 AT 75 DEGREES F; NONCOMBUSTIBLE; KRAFT REINFORCED FOIL VAPOR BARRIER WITH SELF-SEALING ADHESIVE JOINTS.
23. SANITARY SEWER AND VENT PIPING SHALL BE PVC, ASTM D2665. FITTINGS: PVC JOINTS: ASTM D2564, SOLVENT WELD.
24. WATER PIPING SHALL BE COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN. FITTINGS: ANSI/ASME B16.23, CAST BRASS, OR ANSI/ASME B16.29, WROUGHT COPPER. JOINTS: ANSI/ASTM B32, SOLDER, GRADE 95TA.
25. GATE VALVES SHALL BE 150 PSI RATED, BRONZE BODY, RISING STEM AND HAND WHEEL, INSIDE SCREW, DOUBLE WEDGE, OR DISC, SOLDERED ENDS.
26. BALL VALVES SHALL BE 150 PSI RATED, BRONZE OR STAINLESS STEEL BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE AND BALANCING STOPS, THREADED ENDS.
27. PIPING SHALL BE INSTALLED IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS PIPE. REMOVE SCALE AND DIRT, ON INSIDE AND OUTSIDE, BEFORE ASSEMBLY.
28. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.
29. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT.
30. UPON COMPLETION OF INSTALLATION, DISINFECT THE WATER SYSTEM IN ACCORDANCE WITH THE PLUMBING CODE.
31. CLEAN ALL PLUMBING FIXTURES AND EQUIPMENT THOROUGHLY BEFORE FINAL INSPECTION, LEAVING ALL READY FOR USE.

PLUMBING FIXTURE CONNECTION SCHEDULE AND SPECIFICATIONS						
MARK	DESCRIPTION	DRAIN	VENT	CW	HW	FIXTURE SPECIFICATIONS
P-1	WATER CLOSET – FLUSH TANK – HC	4"	2"	1/2"	–	BOWL SHALL BE ANSI A112.19.2; FLOOR MOUNTED, SIPHON JET, VITREOUS CHINA, CLOSE-COUPLED CLOSET COMBINATION WITH ELONGATED RIM 17 INCHES HIGH, INSULATED VITREOUS CHINA CLOSET TANK WITH FITTINGS AND LEVER FLUSHING VALVE ON WIDE SIDE OF WATER CLOSET, BOLT CAPS, SEAT SHALL BE SOLID WHITE PLASTIC, OPEN FRONT, EXTENDED BACK, LESS COVER, COMPLETE WITH SELF-SUSTAINING HINGE.
P-2	LAVATORY – WALL HUNG – VC – HC – 6" LEVER	1 1/4"	1 1/4"	1/2"	1/2"	LAVATORY SHALL BE ANSI A112.19.2; VITREOUS CHINA, WALL HUNG LAVATORY, 19 X 17 INCH MINIMUM, WITH 4 INCH HIGH BACK, DRILLINGS ON 4 INCH CENTERS, RECTANGULAR BASIN WITH SPLASH LIP, FRONT OVERFLOW, AND SOAP DEPRESSION. TRIM SHALL BE ANSI A112.18.1; ONE HANDLE CAST BRASS CENTERSET FAUCET WITH POLISHED CHROMED PLATED FINISH, OFFSET DRAIN, OPEN GRID WASTE, WATER ECONOMY AERATOR, 6 INCH COLOR INDEXED VANDAL RESISTANT LEVER HANDLE, CAST BRASS P-TRAP AND ARM WITH ESCUTCHEON. P-TRAP AND RISERS SHALL BE INSULATED WITH TRUEBRO LAV GUARD PIPE COVER.
P-3	SHOWER – H/C	2"	1 1/2"	1/2"	1/2"	SHOWER SHALL BE ANSI Z124.2; SINGLE PIECE, MOLDED REINFORCED GLASS FIBER, 36 X 36 X 75 INCH HIGH, WITH NON-SLIP FLOOR AND TOP, SOAP DISH, ALUMINUM FRAME WITH SHOWER CURTAIN, REMOVABLE CHROME PLATED STRAINER, TAILPIECES, AND BUILT-IN SEAT. SEAT SHALL BE A MAXIMUM OF 19" AND NOT LESS THAN 17" ABOVE FINISHED BATHROOM FLOOR. TRIM SHALL BE ANSI A112.18.1; CONCEALED IN-WALL, SINGLE LEVER PRESSURE BALANCED MIXING VALVES, POLISHED CHROME PLATED FINISH, INTEGRAL STOPS AND CHECKS, 2.24 INCH VANDAL RESISTANT METAL LEVER HANDLE, HAND-HELD SPRAY SHOWER HEAD WITH MINIMUM OF 60 INCH STAINLESS STEEL HOSE WHICH SHALL SERVE AS BOTH FIXED SHOWERHEAD AND HAND HELD SHOWER, BENT SHOWERARM, AND ESCUTCHEONS. WATER CONTROLS SHALL NOT REQUIRE A FORCE GREATER THAN FIVE POUNDS FOR OPERATION.
P-4	MOP SINK – TERRAZZO – NEO CORNER	3"	1 1/2"	1/2"	1/2"	MOP SINK SHALL BE ANSI A112.18.1; 24 X 24 X 12 ONE PIECE NEO CORNER PRECAST TERRAZZO WITH EXPOSED WALL SPIGOT WITH LEVER HANDLES. SPOUT WALL BRACE, VACUUM BREAKER, HOSE END SPOUT, STRAINERS, ECCENTRIC ADJUSTABLE INLETS, INTEGRAL SCREWDRIVER STOPS WITH COVERING CAPS AND ADJUSTABLE THREADED WALL FLANGES; 5 FEET OF 1/2 INCH DIAMETER PLAIN END REINFORCED RUBBER HOSE, HOSE CLAMP. DRAIN SHALL BE ANSI A112.21.1; LACQUERED CAST IRON TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEEP HOLES, AND ROUND ADJUSTABLE NICKEL-BRONZE STRAINER.
EWC	ELECTRIC WATER COOLER – INTERIOR	1 1/4"	1 1/4"	1/2"	–	ELECTRIC WATER COOLER SHALL BE DUAL-LEVEL, BARRIER-FREE ELECTRIC WATER COOLER WITH STAINLESS STEEL TOP, VINYL ON STEEL BODY, ELEVATED MOUNT WITH STREAM GUARD, AUTOMATIC STREAM REGULATOR, ADA APRON, MOUNTING BRACKET, REFRIGERATED WITH INTEGRAL AIR COOLED CONDENSER; CAPACITY OF 5 GAL/MIN OF 50 DEGREE F WATER WITH INLET AT 80 DEGREE F AND ROOM TEMPERATURE OF 90 DEGREE F.

ELECTRIC WATER HEATER SCHEDULE							
MARK	TANK VOLUME (GAL)	ELEMENT INPUT (WATTS)	RECOVERY (GPH @ 60° RISE)	H2O TEMP (°F)	POWER		REMARKS
					VOLTS	PHASE	
EXIST WH-1	30	4,500	30	110	208	1	



PLUMBING RISER DIAGRAM – WASTE

NO SCALE

WASTE PIPE SIZE CALCULATIONS				
MARK	DESCRIPTION	FU'S	# FIXT	SUBTOTAL
P-1	WATER CLOSET-HC	4.0	1	4.0
P-2	LAVATORY	1.0	1	1.0
P-3	SHOWER	2.0	1	2.0
P-4	MOP SINK	2.0	1	2.0
EWC	ELECTRIC WATER COOLER	0.5	1	0.5
-	EXISTING FIXTURES	40.5	1	40.0
TOTAL WASTE FIXTURE UNITS				49.5
REQUIRED PIPE SIZE		4"		
PROVIDED PIPE SIZE		EXISTING 4"		

WATER PIPE SIZE CALCULATIONS				
MARK	DESCRIPTION	FU'S	# FIXT	SUBTOTAL
P-1	WATER CLOSET-HC	2.2	1	2.2
P-2	LAVATORY	0.7	1	0.7
P-3	SHOWER	1.4	1	1.4
P-4	MOP SINK	3.0	1	3.0
EWC	ELECTRIC WATER COOLER	0.25	1	0.25
-	EXISTING FIXTURES	79.20	1	79.20
TOTAL WATER FIXTURE UNITS				86.75
REQUIRED PIPE SIZE		2"		
PROVIDED PIPE SIZE		EXISTING 2"		

LEGEND

LEGEND NOTES:

1. ALL DARK AND DASHED SYMBOLS INDICATE DEVICES AND EQUIPMENT TO BE REMOVED OR LOCATED UNDERGROUND AS NOTED.
2. ALL DARK AND SOLID SYMBOLS INDICATE DEVICES AND EQUIPMENT AS NEW WORK.
3. ALL LIGHT AND SOLID SYMBOLS INDICATE DEVICES AND EQUIPMENT THAT ARE EXISTING TO REMAIN.

- X—

—SS—

—X—

DEMOLITION SANITARY WASTE
- SS—

EXISTING SANITARY WASTE
- SS—

SANITARY SEWER OR WASTE PIPE
- X—

—SV—

—X—

DEMOLITION SANITARY VENT
- SV—

EXISTING SANITARY VENT
- SV—

SANITARY VENT PIPING
- X

—

X

DEMOLITION HOT WATER
- —

—

EXISTING HOT WATER
- —

—

DOMESTIC HOT WATER PIPING (HW)
- X

—

X

DEMOLITION COLD WATER
- —

—

EXISTING COLD WATER
- —

—

DOMESTIC COLD WATER PIPING (CW)
- D

—

WATER HEATER PAN DRAIN PIPING
- ⊖

FLOOR DRAIN (FD)
- ⊙

CLEAN OUT (FLOOR TYPE) (COFF)
- CLEAN OUT (GRADE TYPE) (COFG)
- —

—

—H

CLEAN OUT (WALL TYPE) (WCO)
- ○

—

PIPING TURN UP
- →

PIPING TURN DOWN
- ⋈

—

GATE VALVE (GV)
- ~

CONTINUATION
- ⦿

POINT OF DEMOLITION
- ⦿

POINT OF NEW CONNECTION
- ⦿

NEW WORK NOTE
- ⦿

GENERAL NOTE
- ⦿

DEMOLITION WORK NOTE
- P-#

PLUMBING FIXTURE NUMBER – PLUMBING CONTRACTOR TO PROVIDE AND INSTALL.
- AFF

ABOVE FINISH FLOOR
- AFG

ABOVE FINISH GRADE
- DIA

DIAMETER
- EXIST

EXISTING TO REMAIN
- FIXT

FIXTURE
- FU

FIXTURE UNIT
- GAL

GALLON(S)
- GPH

GALLON PER HOUR
- GPM

GALLON PER MINUTE
- IN

INCH(ES)
- IND

INDIRECT WASTE
- LAV

LAVATORY
- MAX

MAXIMUM
- MIN

MINIMUM
- OC

ON CENTER
- PSI

POUND PER SQUARE INCH
- TEMP

TEMPERATURE
- TYP

TYPICAL
- VTR

VENT THROUGH ROOF
- WC

WATER CLOSET
- WH

WATER HEATER

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HDMA#15045

08/11/15

Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER:

PROJECT NUMBER: 15045

DRAWN BY: MDD

ISSUED / REVIEW: RTT

ISSUED / CONSTRUCTION:

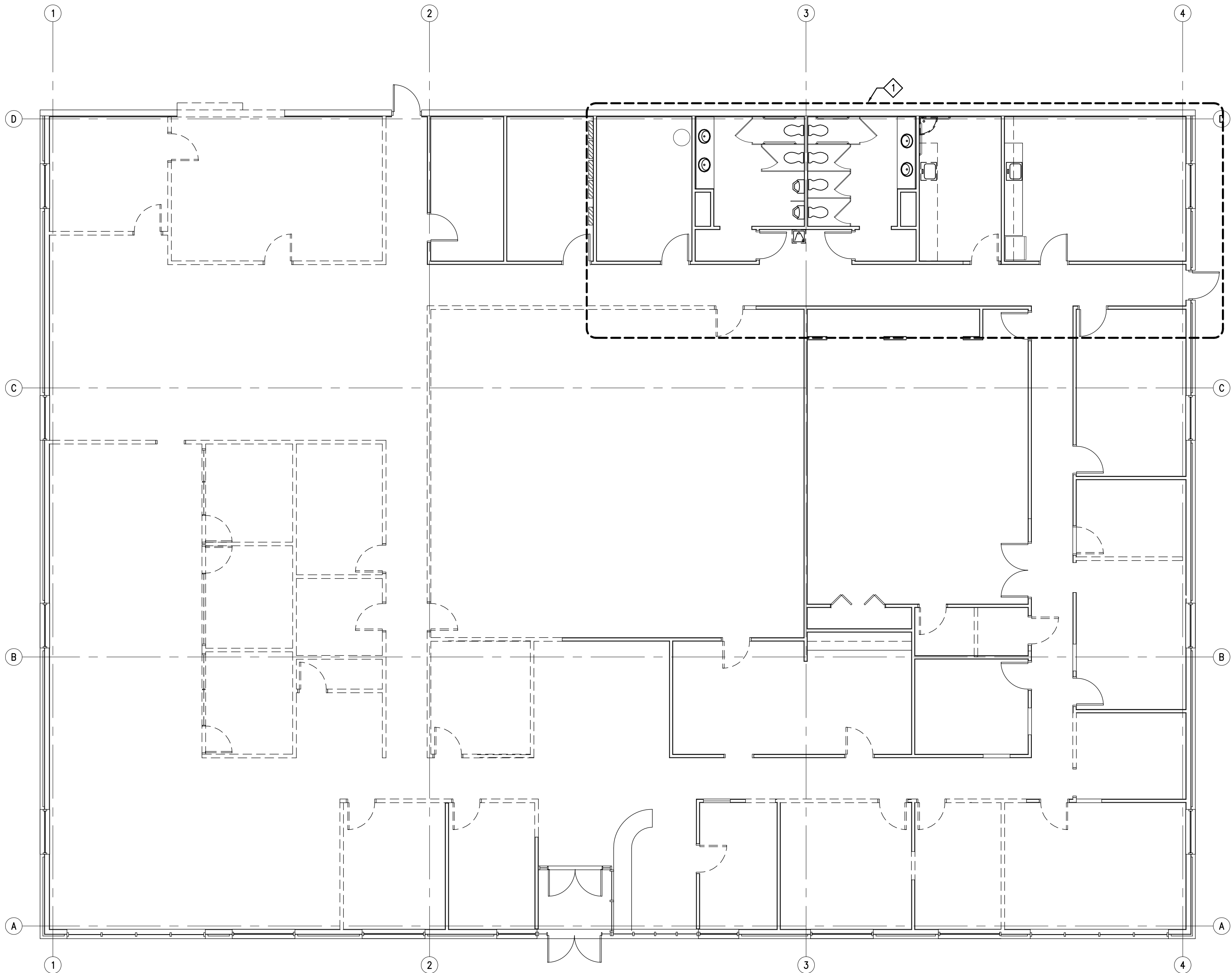
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PLUMBING SPECS,
SCHEDULE & LEGEND

P1

OF SHEETS

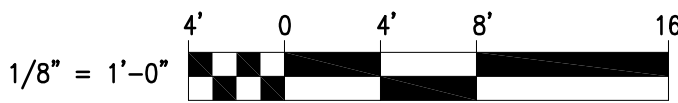


 **PLUMBING FLOOR PLAN – DEMOLITION**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

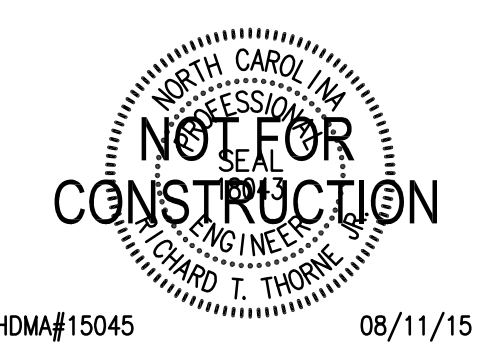
◆ SEE PLUMBING ENLARGED FLOOR PLAN – DEMOLITION FOR WORK IN THIS AREA.

GRAPHIC SCALE



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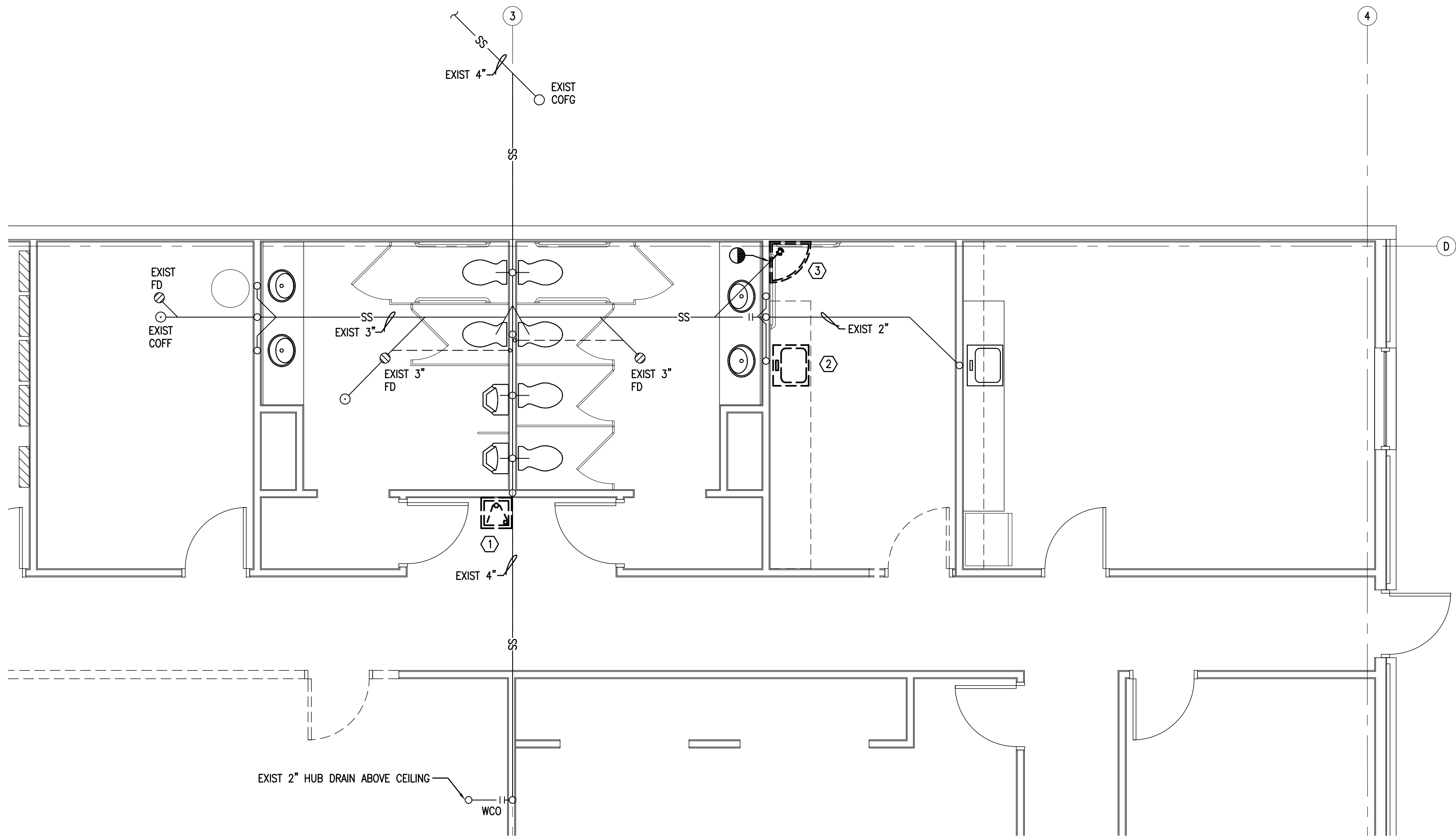
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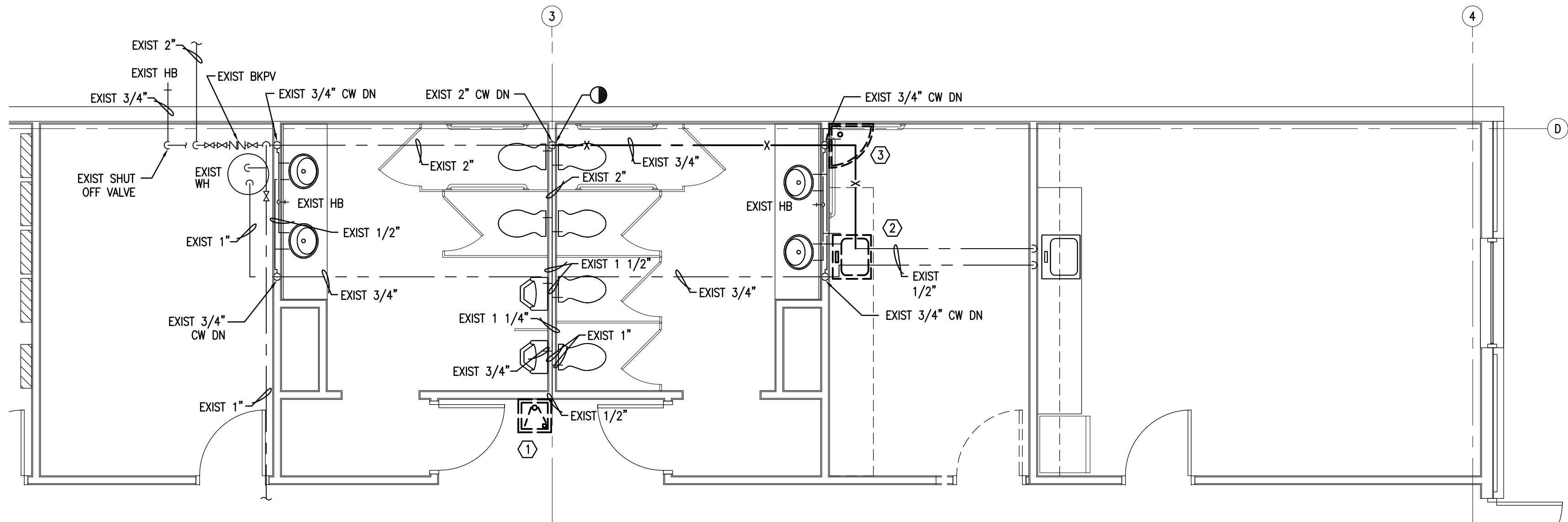
**PLUMBING FLOOR
PLAN - DEMOLITION**

P2

OF SHEETS



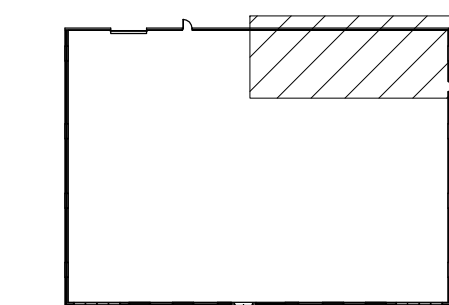
PLUMBING ENLARGED FLOOR PLAN - WASTE - DEMOLITION
SCALE: 1/4" = 1'-0"



PLUMBING ENLARGED FLOOR PLAN - WATER - DEMOLITION
SCALE: 1/4" = 1'-0"

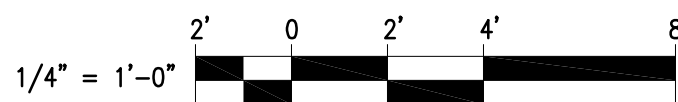
DEMOLITION NOTES

- 1 REMOVE WATER COOLER. MODIFY WASTE AND WATER PIPING TO ACCOMMODATE NEW WATER COOLER. SEE PLUMBING ENLARGED FLOOR PLAN - WATER - NEW WORK.
- 2 REMOVE SINK. REMOVE SANITARY SEWER PIPING TO INSIDE WALL AND CAP. REMOVE WATER PIPING TO INSIDE WALL AND CAP. PATCH WALL TO MATCH ADJACENT. FIELD COORDINATE EXACT LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 3 REMOVE MOP SINK. REMOVE SANITARY SEWER PIPING TO POINT INDICATED AND CAP. REMOVE WATER PIPING BACK TO MAIN BRANCH AND CAP. PATCH FLOOR AND WALL TO MATCH ADJACENT. FIELD COORDINATE EXACT LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.



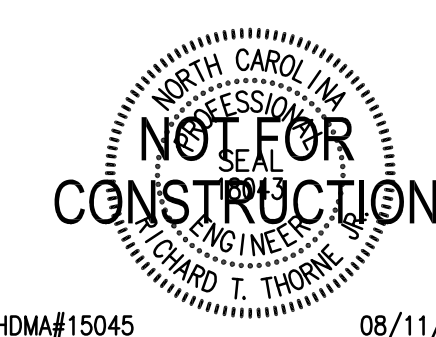
KEY PLAN
NO SCALE

GRAPHIC SCALE



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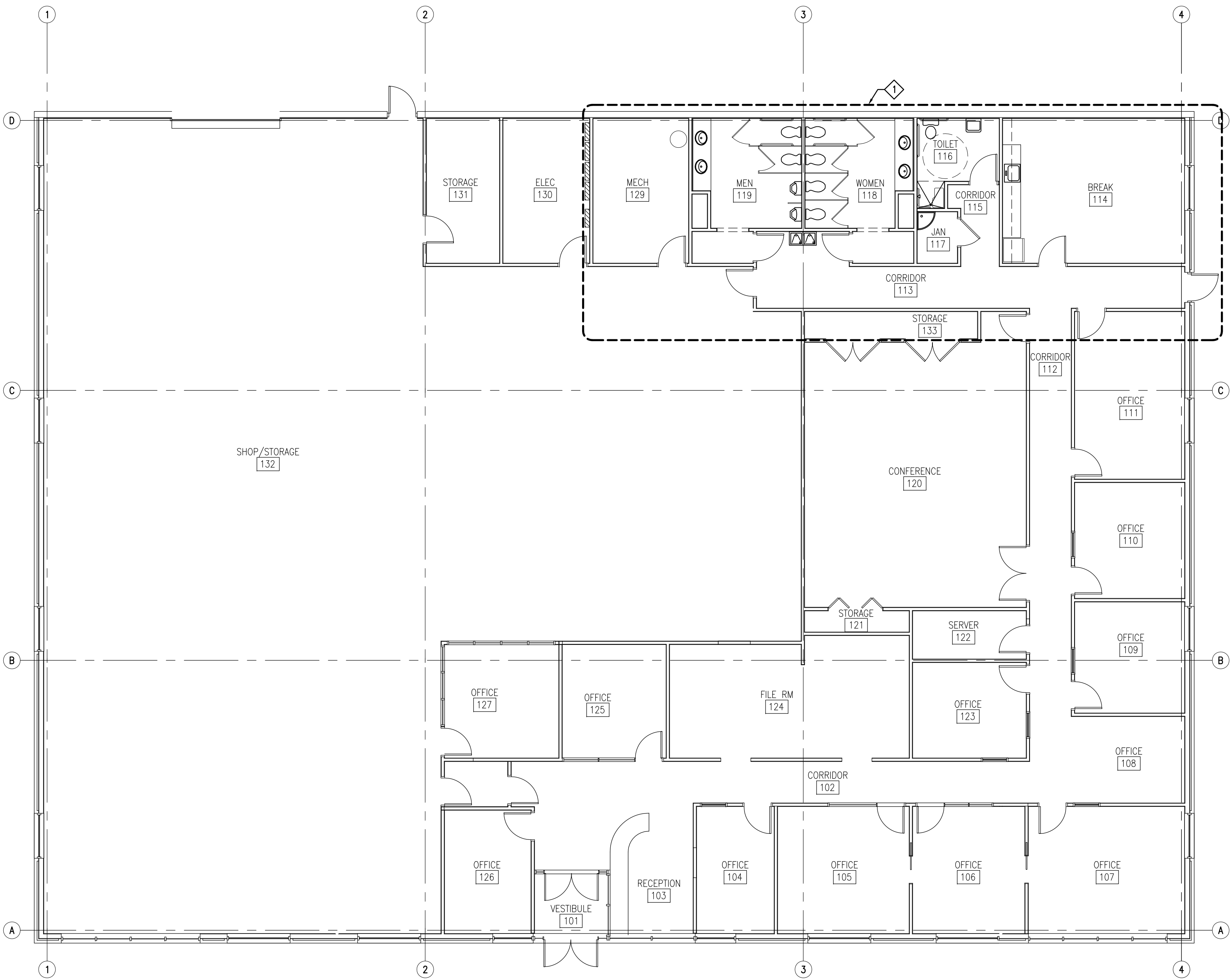
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**PLUMBING
ENLARGED FLOOR
PLANS - DEMOLITION**

P3

OF SHEETS



PLUMBING FLOOR PLAN – NEW WORK

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

GENERAL NOTES

◆ SEE PLUMBING ENLARGED FLOOR PLAN – NEW WORK FOR WORK IN THIS AREA.

GRAPHIC SCALE

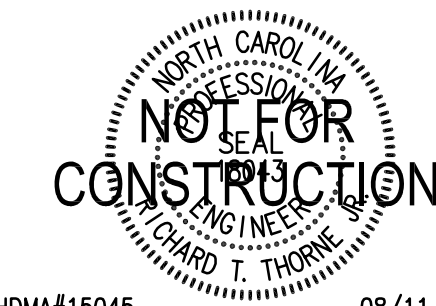


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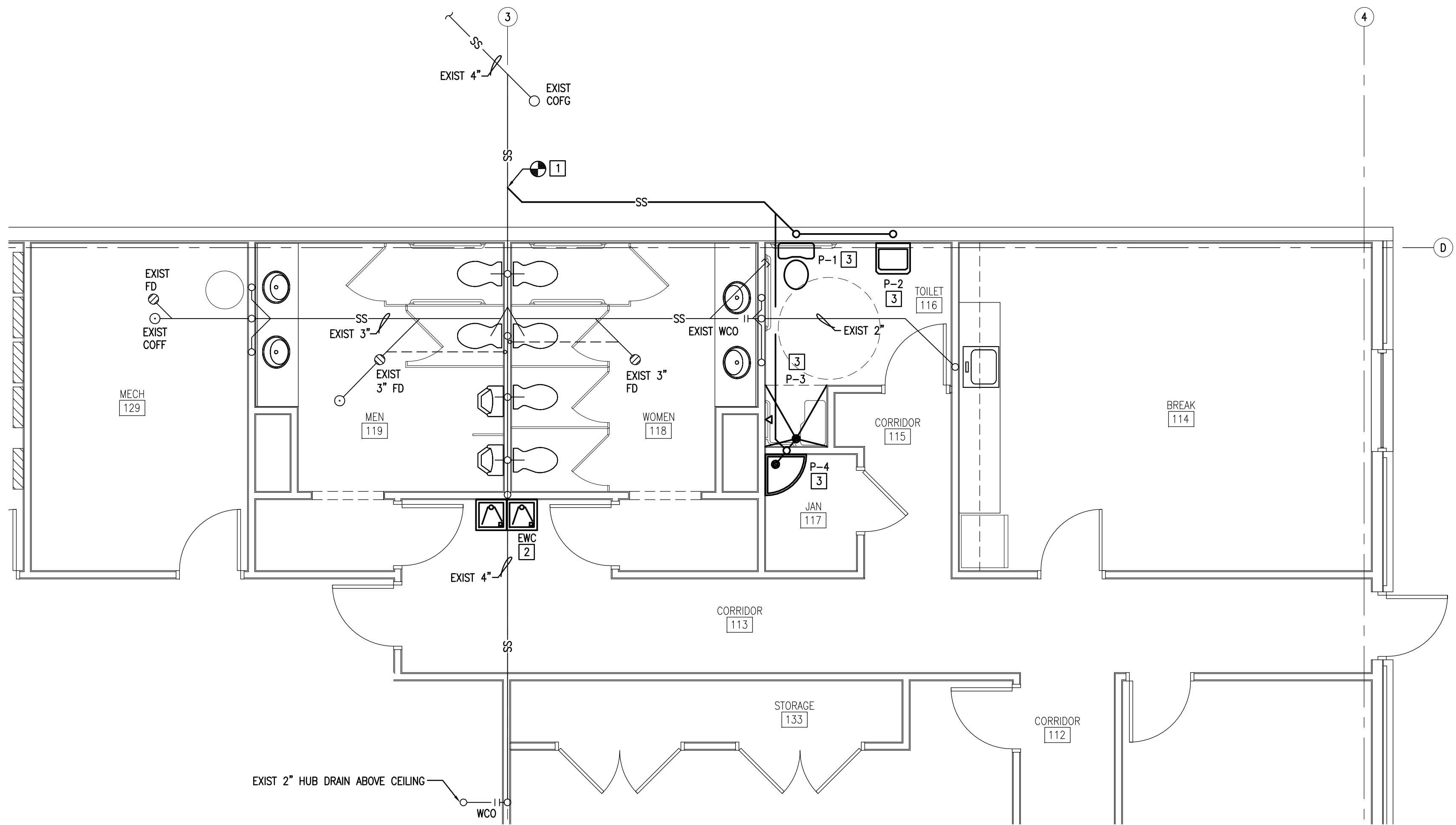
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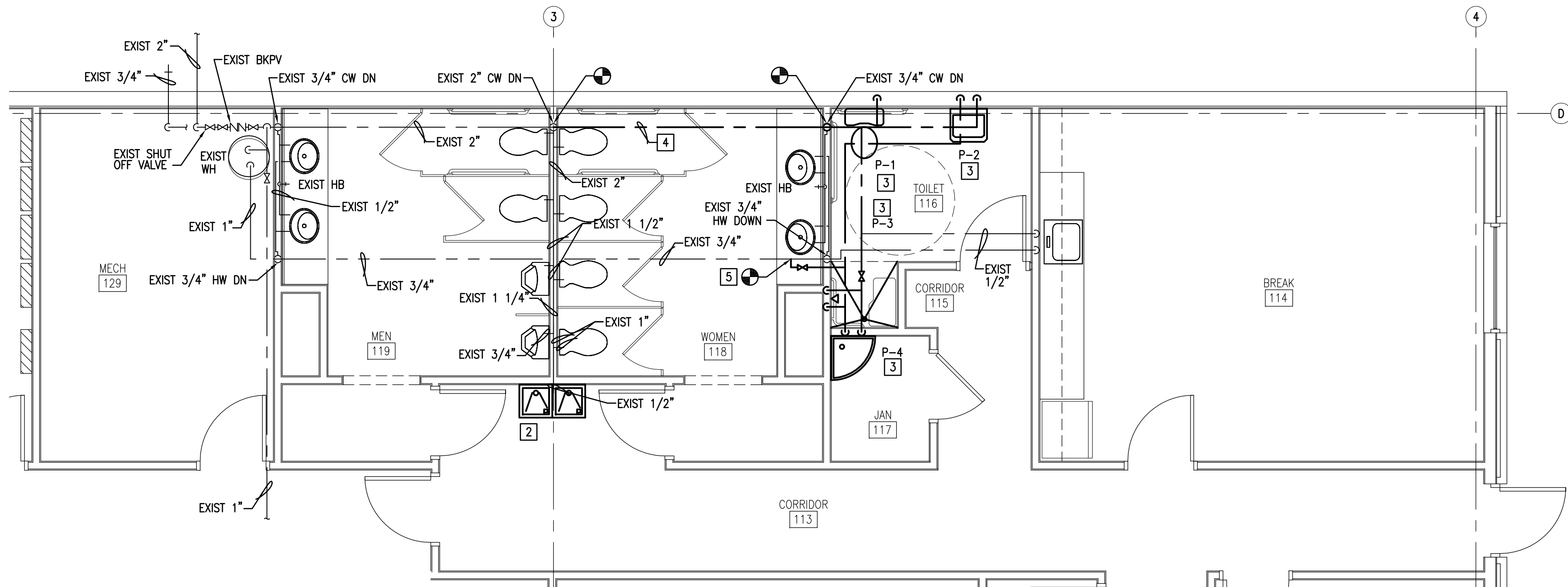
**PLUMBING FLOOR
PLAN - NEW WORK**

P4

OF SHEETS



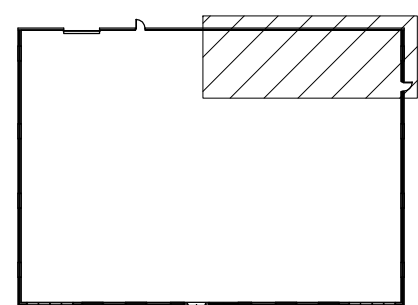
 **PLUMBING ENLARGED FLOOR PLAN – WASTE – NEW WORK**
SCALE: 1/4" = 1'-0"



 **PLUMBING ENLARGED FLOOR PLAN – WATER – NEW WORK**
SCALE: 1/4" = 1'-0"

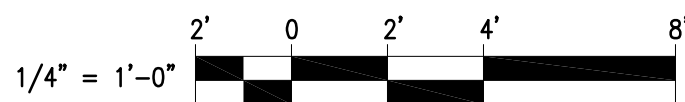
NEW WORK NOTES

- 1 PROVIDE SANITARY SEWER PIPING. CONNECT TO EXISTING SANITARY SEWER PIPING AT POINT INDICATED. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 2 PROVIDE ELECTRIC WATER COOLER (EWC). MODIFY EXISTING ROUGH-IN FOR DUAL LEVEL ELECTRIC WATER COOLER (EWC). FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 3 PROVIDE FIXTURE AND INSTALL AS INDICATED. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 4 PROVIDE WATER PIPING AT EXISTING 2" COLD WATER PIPING AS INDICATED. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 5 PROVIDE COLD WATER PIPING AS INDICATED. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.



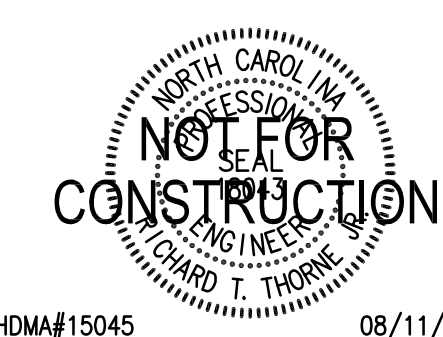
KEY PLAN
NO SCALE

GRAPHIC SCALE



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ISSUED / CONSTRUCTION:

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**PLUMBING
ENLARGED FLOOR
PLANS - NEW WORK**

P5

OF SHEETS

1. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO DESCRIBE THE INSTALLATION OF A COMPLETE, FULLY ADJUSTED AND OPERATIONAL SYSTEM.
2. THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, MATERIAL EQUIPMENT, MACHINERY AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE SYSTEMS.
3. ALL WORK UNDER THIS SECTION SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH STATE BUILDING CODES. IN THE EVENT THE LOCAL AUTHORITY HAVING JURISDICTION DETERMINES THERE IS A CODE VIOLATION ASSOCIATED WITH THE CONSTRUCTION DOCUMENTS AND REQUIRES ADDITIONAL WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE VIOLATION. IF THE CONTRACTOR DOES NOT CONTACT THE ENGINEER, ALL EXPENSES ASSOCIATED WITH THE VIOLATION WILL BE THE CONTRACTOR'S RESPONSIBILITY.
4. ALL CONTRACTORS SHALL OBTAIN ALL NECESSARY APPROVAL, OBTAIN ALL PERMITS AND PAY FEES REQUIRED FOR THE INSTALLATION OF THEIR WORK.
5. THE DRAWINGS ARE DIAGRAMATIC ONLY. THE CONTRACTOR MAY NEED TO MAKE FIELD ADJUSTMENTS TO ACCOMMODATE ACTUAL FIELD CONDITIONS.
6. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR THE GENERAL CONSTRUCTION OF THE BUILDING, FOR FLOORS AND CEILING HEIGHTS, FOR LOCATIONS OF WALLS, PARTITIONS, BEAMS, ETC.
7. MANUFACTURER'S LISTS ARE TO ESTABLISH A STANDARD OF QUALITY AND NOT INTENDED TO LIMIT THE SELECTION TO THESE MANUFACTURERS.
8. CONTRACTOR SHALL VERIFY ALL LISTED MODEL NUMBERS WITH MANUFACTURERS TO ENSURE PROPER APPLICATION OF EQUIPMENT.
9. EQUIPMENT AND MATERIALS SHALL BE HANDLED, STORED AND PROTECTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
10. THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING HIS BID SO AS TO BE THOROUGHLY FAMILIAR WITH THE SITE CONDITIONS, AND/OR REGULARITIES. NO EXTRA PAYMENT WILL BE ALLOWED FOR ANYTHING WHICH COULD HAVE BEEN ANTICIPATED FROM A VISIT TO THE SITE.
11. THE CONTRACTOR SHALL PERFORM ANY AND ALL TRENCHING, EXCAVATION AND BACKFILLING REQUIRED FOR THE INSTALLATION OF HIS WORK.
12. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL NECESSARY SCAFFOLDING, STAGING, RIGGING AND HOISTING REQUIRED FOR THE COMPLETION OF HIS WORK.
13. ALL WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER TRADES INVOLVED IN THE CONSTRUCTION PROJECT. ALL WORK SHALL BE CAREFULLY LAID OUT IN ADVANCE TO COORDINATE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FEATURES OF CONSTRUCTION.
14. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.
15. FURNISH AND INSTALL ALL POWER WIRING FROM HVAC EQUIPMENT TO SERVICE DISCONNECT SWITCHES AND/OR STARTERS. SERVICE DISCONNECT SWITCHES AND STARTER SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 16: ELECTRICAL.
16. VERIFY THE CORRECT POWER SUPPLY HAS BEEN PROVIDED AT LOAD SIDE OF SERVICE DISCONNECT SWITCH BEFORE OPERATING EQUIPMENT.
17. MECHANICAL CONTRACTOR SHALL PROVIDE THE FOLLOWING SUBMITTALS TO THE ENGINEER ON ALL MAJOR EQUIPMENT: PRODUCT SELECTION, SHOP DRAWINGS, WARRANTY AND OPERATION & MAINTENANCE MANUALS.
18. DUCTWORK SHALL BE ASTM A525 OR ASTM A527 GALVANIZED STEEL SHEETLOCK-FORMING QUALITY, HAVING A COATING OF G-60. DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED IN ACCORDANCE WITH THE ASHRAE GUIDE AND SMACNA. ALL DUCTWORK SHALL BE SEALED WITH NON-HARDENING, WATER RESISTANT, FIRE RESISTIVE HEAVY MASTIC.
19. INSULATED FLEXIBLE DUCTS: SHALL BE UL 181, CLASS 1, 2-PLY VINYL FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; FIBROUS-GLASS INSULATION MINIMUM R-6 VALUE; ALUMINIZED VAPOR BARRIER FILM. PRESSURE RATING: 10 INCH WG (2500 PA) POSITIVE AND 1.0 INCH WG (250 PA) NEGATIVE. MAXIMUM AIR VELOCITY: 4000 FPM (203 M/S). TEMPERATURE RANGE: MINUS 10 TO PLUS 160 DEGREES F (MINUS 23 TO PLUS 71 DEGREES C). MAXIMUM LENGTH SHALL BE 14 FEET. FLEXIBLE DUCT CLAMPS: STAINLESS-STEEL BANDS WITH CADMIUM PLATED BRASS SCREW TO THE BAND WITH A WORM-GEAR ACTION, IN SIZES 3 THROUGH 18 INCHES (75 TO 450 MM) TO SUIT DUCT SIZE.
20. DUCT INSULATION SHALL BE A MINIMUM OF R-5 WHEN LOCATED INSIDE THE BUILDING ENVELOPE AND R-8 WHEN LOCATED OUTSIDE THE BUILDING ENVELOPE. FIBERGLASS BLANKET TYPE WITH ALL-PURPOSE FACING APPLIED, LAMINATED GLASS FIBER REINFORCED, FLAME RETARDANT KRAFT PAPER AND ALUMINUM FOIL JACKET. ALL JOINTS SHALL BE SEALED WITH WATER-BASED, FIRE RESISTIVE VAPOR BARRIER COMPOUND. DUCT DIMENSIONS INDICATED ARE NET INSIDE DIMENSIONS.
21. EQUIPMENT DRAINS SHALL BE PVC, ASTM D1785, SCHEDULE 40, OR ASTM D2241, SDR 21 OR 26. FITTINGS SHALL BE ASTM D2466 OR D2467, PVC. JOINTS SHALL BE ASTM D, SOLVENT WELD. INSTALL WITH A 2% SLOPE MINIMUM.
22. INSTALL HANGERS, SUPPORTS, CLAMPS AND ATTACHMENTS AS REQUIRED TO PROPERLY SUPPORT PIPING FROM BUILDING STRUCTURE. PIPE HANGERS SHALL BE CARBON STEEL, ADJUSTABLE, CLEVIS. STEEL HANGER RODS SHALL BE THREADED BOTH ENDS OR CONTINUOUS THREADED.
23. GAS PIPING SHALL BE ASTM A53, SCHEDULE 40 BLACK. FITTINGS SHALL BE ANSI/ASME B16.3, MALLEABLE IRON. JOINTS SHALL BE WELDED. GAS COME-UP SHALL BE ASME B16.33, 150 PSI PIPE, BRONZE BODY, BRONZE TAPERED PLUG, SQUARE HEAD WITH THREADED ENDS. INSPECT, TEST AND PURGE ACCORDING TO NFPA 54 AND NORTH CAROLINA STATE GAS CODE.
24. REFRIGERANT PIPING AND CONDENSATE DRAINS SHALL BE INSULATED WITH 1 INCH FLEXIBLE ELASTOMERIC CELLULAR TYPE INSULATION WITH EXPANDED CELLULOSE-CELL STRUCTURE WITH SMOOTH SKIN ON BOTH SIDES. MATERIALS SHALL CONFORM TO ASTM C 534, TYPE I. THERMAL CONDUCTIVITY SHALL BE 0.30 AVERAGE MAXIMUM AT 75 DEGREES F. FLEXIBLE ELASTOMERIC CELLULAR INSULATION ADHESIVE SHALL BE SOLVENT-BASED, CONTACT ADHESIVE RECOMMENDED BY INSULATION MANUFACTURER.
25. IDENTIFY PIPING, CONCEALED OR EXPOSED, WITH PLASTIC TAPE PIPE MARKERS. TAGS MAY BE USED ON SMALL DIAMETER PIPING. IDENTIFY SERVICE, FLOW DIRECTION AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AID OF PIPING. IDENTIFY PENETRATION NOT TO EXCEED 20 FEET ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND "T", AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE AND AT EACH OBSTRUCTION.
26. BALL VALVES SHALL BE 150 PSI RATED, BRONZE OR STAINLESS STEEL BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE AND BALANCING STOPS, THREADED ENDS.
27. PIPING SHALL BE INSTALLED IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. REAM PIPE AND TUBE ENDS. REMOVE BURRS, BEVEL PLUMB AND FERROUS PIPE. REMOVE SCALE AND DIRT, ON INSIDE AND OUTSIDE, BEFORE ASSEMBLY.
28. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.
29. CEILING SUPPLY DIFFUSERS SHALL BE SQUARE LOUVERED FACE, EXTRUDED ALUMINUM, MULTI-CORE TYPE DIFFUSER TO DISCHARGE AIR IN FOUR WAY PATTERN WITH BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INVERTED T-BAR TYPE FRAME. IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME. PROVIDE OPPOSED BLADE DAMPER WITH DAMPER ADJUSTABLE FROM DIFFUSER FACE.
30. SIDEWALL SUPPLY GRILLES SHALL BE STREAMLINED AND INDIVIDUALLY ADJUSTABLE BLADES, DEPTH OF WHICH EXCEEDS 3/4 INCH MAXIMUM SPACING WITH SPRING OR OTHER DEVICE TO SET BLADES, HORIZONTAL FACE, DOUBLE DEFLECTION. FABRICATE 1 1/4 INCH MARGIN FRAME WITH COUNTERSUNK SCREW MOUNTING AND GASKET. GRILLES SHALL BE CONSTRUCTED OF ALUMINUM EXTRUSIONS WITH 20 GAUGE MINIMUM FRAMES AND 22 GAUGE MINIMUM BLADES, WITH BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE.
31. CEILING RETURN GRILLE SHALL BE 1 X 1 X 1/2 INCH EGG CRATE. GRILLE SHALL BE FABRICATED FROM ALUMINUM WITH BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
32. SIDEWALL RETURN GRILLES SHALL BE STREAMLINED AND FIXED CURVED BLADES. FABRICATE 1 1/4 INCH MARGIN FRAME WITH COUNTERSUNK SCREW CONCEALED MOUNTING AND GASKET. GRILLES SHALL BE CONSTRUCTED OF ALUMINUM EXTRUSIONS WITH 20 GAUGE MINIMUM FRAMES AND 22 GAUGE MINIMUM BLADES, WITH BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE.
33. EXHAUST GRILLE SHALL BE 1 X 1 X 1 INCH EGG CRATE. GRILLE SHALL BE FABRICATED FROM ALUMINUM WITH BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
34. THE CHANGEOVER/BYPASS VALVE SYSTEM SHALL PROVIDE TEMPERATURE CONTROL OF MULTIPLE COMFORT ZONES AND ALUMINUM W/ BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
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41. THE CHANGEOVER/BYPASS VALVE SYSTEM SHALL PROVIDE TEMPERATURE CONTROL OF MULTIPLE COMFORT ZONES AND ALUMINUM W/ BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
42. THE CHANGEOVER/BYPASS VALVE SYSTEM SHALL PROVIDE TEMPERATURE CONTROL OF MULTIPLE COMFORT ZONES AND ALUMINUM W/ BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
43. THE CHANGEOVER/BYPASS VALVE SYSTEM SHALL PROVIDE TEMPERATURE CONTROL OF MULTIPLE COMFORT ZONES AND ALUMINUM W/ BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
44. THE CHANGEOVER/BYPASS VALVE SYSTEM SHALL PROVIDE TEMPERATURE CONTROL OF MULTIPLE COMFORT ZONES AND ALUMINUM W/ BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
45. THE CHANGEOVER/BYPASS VALVE SYSTEM SHALL PROVIDE TEMPERATURE CONTROL OF MULTIPLE COMFORT ZONES AND ALUMINUM W/ BAKED ENAMEL OFF-WHITE FINISH. PROVIDE INTEGRAL, GANG-OPERATED OPPOSED BLADE DAMPERS WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE. PROVIDE INVERTED T-BAR TYPE FRAME, IN PLASTER OR GYPBOARD CEILINGS, PROVIDE SURFACE MOUNTED FRAME.
46. THE CHANGEOVER/BYPASS VALVE SYSTEM SHALL PROVIDE TEMPERATURE CONTROL OF MULTIPLE COMFORT ZONES AND

35. ROOF HOODS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS. HOODS SHALL BE FABRICATED OF ALUMINUM, MINIMUM 16 GAUGE AND 18 GAUGE HOOD; SUITABLY REINFORCED, WITH REMOVABLE HOOD, BIRDSCREEN WITH 1/2 INCH SQUARE MESH AND FACTORY PRIME COAT BAKED ENAMEL FINISH. MOUNT UNIT ON MINIMUM 12 INCH HIGH CURB BASE WITH INSULATION BETWEEN DUCT AND CURB. INDOOR HOOD SHALL BE SELF CONTAINED, PACKAGED, FACTORY ASSEMBLED AND PREWIRED, CONSISTING OF CABINET, SUPPLY AIR FRAME, SUPPLY AIR HEAT EXCHANGER, AND BURNER, CONTROLS, AIR FILTERS, REFRIGERANT COOLING COIL AND COMPRESSOR, CONDENSER COIL, CONDENSER FAN AND ECONOMIZER. THE CABINET SHALL BE GALVANIZED STEEL WITH BAKED ENAMEL FINISH, ACCESS DOORS OR REMOVABLE ACCESS PANELS WITH QUICK FASTENERS. THE INSULATION SHALL BE ONE INCH THICK NEOPRENE COATED GLASS FIBER ON SURFACES WHERE CONDITIONED AIR IS HANDLED, PROTECT EDGES FROM EROSION. THE HEAT EXCHANGER SHALL BE ALUMINIZED STEEL, OF WELDED CONSTRUCTION. THE SUPPLY FAN SHALL BE FORWARD CURVED CENTRIFUGAL TYPE, RESILIENTLY MOUNTED. THE V-BELT DRIVE SHALL BE FACTORY WELDED AND LOCATED IN A SEPARATE ENCLOSURE. THE EXHAUST FAN MOUNTED MOTOR, THE AIR FILTERS SHALL BE 2 INCH THICK GLASS FIBER DISPOSABLE MEDIA IN METAL FRAMES. THE ROOF CURB SHALL BE 24 INCHES HIGH GALVANIZED STEEL, CHANNEL FRAME WITH GASKETS, NALER STRIPS. THE GAS BURNER SHALL BE FORCED DRAFT TYPE BURNER WITH ADJUSTABLE COMBUSTION AIR SUPPLY, PRESSURE REGULATOR, GAS VALVES, MANUAL SHUTOFF, INTERMITTENT SPARK OR LOW COIL IGNITION, FLAME SENSING DEVICE AND AUTOMATIC 100 PERCENT SHUTOFF PILOT. THE GAS BURNER SAFETY CONTROLS SHALL BE ENERGIZE IGNITION, LOW FLAME V-BELT, LOW FLAME THERMIST, LOW FLAME THERMIST, LOW FLAME THERMIST, LOW FLAME THERMIST, STOP GAS FLOW ON IGNITION FAILURE, ENERGIZE BLOWER MOTOR AND AFTER AIR FLOW PROVEN AND SLIGHT DELAY, ALLOW GAS VALVE TO OPEN. THE HIGH LIMIT CURB SHALL BE TEMPERATURE SENSOR WITH FIXED STOP AT MAXIMUM PERMISSIBLE SETTING, DE ENERGIZE BURNER ON EXCESSIVE BONNET TEMPERATURES AND ENERGIZE BURNER WHEN TEMPERATURE DROPS TO LOWER SAFE VALUE. THE SUPPLY FAN CONTROL SHALL BE TEMPERATURE SENSING BONNET TEMPERATURES AND INDEPENDENT OF BURNER CONTROLS, OR ADJUSTABLE TIME DELAY RELAYS TO PREVENT SHORT CYCLING OF THE COMPRESSOR. THE OUTDOOR DAMPERS SHALL BE AUTOMATICALLY ADJUST OUTSIDE AND RETURN AIR DAMPERS TO MAINTAIN A 60 DEGREES F LEAVING AIR TEMPERATURE WHEN OUTDOOR AIR IS BELOW 60 DEGREES F. THE UNIT SHALL BE CONTROLLED BY PRODUCT INTEGRATED CONTROL SYSTEM. UNIT SHALL HAVE A UL APPROVED SMOKE DETECTOR WIRED INTO THE PRODUCT CIRCUIT. UNIT SHALL SHUT DOWN ON DETECTION OF SMOKE F.
37. FURNACES SHALL BE LOW PRESSURE SINGLE ZONE BLOW THROUGH HORIZONTAL OR VERTICAL TYPE AS INDICATED. UNIT SHALL BE SELF CONTAINED, PACKAGED, FACTORY ASSEMBLED, PREWIRED UNIT CONSISTING OF CABINET SUPPLY AIR FAN, PRIMARY HEAT EXCHANGER, SECONDARY HEAT EXCHANGER, INDUCED COMBUSTION SYSTEM, CONTROLS, AIR FILTER, REFRIGERANT COOLING COIL AND OUTDOOR PACKAGED CONTAINING COMPRESSOR, CONDENSER COIL AND CONDENSER FAN. EACH FURNACE SHALL HAVE PHYSICAL DIMENSIONS SUITABLE TO FIT SPACE AVAILABLE. THE UNIT SHALL BE CERTIFIED PER AIAA 240.270. THE UNIT SHALL BE MECHANICALLY BALANCED BASED ON THE TEST PERFORMED IN ACCORDANCE WITH AIAA 240.270 AND 210 AND PROVIDE EXTENDED WARRANTY ON HEAT EXCHANGER. THE ENERGY EFFICIENCY RATIO (EER) SHALL BE A MINIMUM EER OF 12 WHEN RATED IN ACCORDANCE WITH ARI 210. THE AFUE SHALL BE A MINIMUM AFUE OF 90%. BOTH INDOOR AND OUTDOOR UNIT SHALL BE BY THE SAME MANUFACTURER. INDOOR AIR HANDLER CABINET SHALL BE BAKED ENAMEL FINISH AND INTERNALLY INSULATED. FAN SHALL BE MULTISPEED FORWARD CURVED AND DYNAMICALLY AND STATIONARILY BALANCED AT THE FACTORY. FAN AND MOTOR BEARINGS SHALL BE PERMANENTLY LUBRICATED TYPE. THE UNIT SHALL BE PREWIRED AND FACTORY WELDED AND LOCATED IN A SEPARATE ENCLOSURE. THE CONDENSING UNIT SHALL BE FACTORY ASSEMBLED AND TESTED. UNIT SHALL PROVIDE LIQUID LIFT AS REQUIRED TO SUE INSTALLATION. UNITS SHALL BE CERTIFIED PER ARI 240 AND 270. COIL SHALL BE ALUMINUM PLATE FINS, MECHANICALLY BONDED TO 1/2 INCH ALUMINUM TUBES. COIL SHALL BE CIRCUITED FOR SUBCOOLING. UNIT SHALL BE FURNISHED WITH DIRECT DRIVE, PROPELLER TYPE FANS ARRANGED FOR VERTICAL DISCHARGE. CONDENSER FAN MOTORS SHALL BE INVERTER DUTY, CLASS B MOTOR INSULATION, BUILT IN CURRENT AND THERMAL OVERLOAD PROTECTION AND SHALL BE OF THE PERMANENTLY LUBRICATED TYPE, RESILIENTLY MOUNTED. FAN SHALL HAVE A SAFETY KILL SWITCH CONTROL. QUALITY SHALL BE FACTORY WELDED AND LOCATED IN A SEPARATE ENCLOSURE. THE UNIT SHALL CONSIST OF HIGH AND LOW PRESSURE STATS AND COMPRESSOR OVERLOAD DEVICES. UNIT WRING SHALL INCORPORATE A TIME DELAY RELAY TO PREVENT SHORT CYCLING OF THE COMPRESSOR. CASING SHALL BE MADE UNIT FULLY WEATHERPROOF FOR OUTDOOR INSTALLATION. CASING SHALL BE OF GALVANIZED STEEL, ZINC PHOSPHATIZED AND FINISHED WITH BAKED ENAMEL. OPENINGS SHALL BE PROVIDED FOR POWER AND R-410A REFRIGERANT CONNECTIONS. PANEL SHALL BE REMOVABLE TO PROVIDE ACCESS FOR SERVICING. REFRIGERANT PIPING SHALL BE FACTORY WELDED. THE UNIT SHALL BE CONTROLLED BY PRODUCT INTEGRATED CONTROL SYSTEM. UNIT SHALL HAVE 7 DAY PROGRAMMABLE THERMOSTAT. INDOOR UNIT SHALL HAVE A UL APPROVED SMOKE DETECTOR WIRED INTO THE PRODUCT CIRCUIT. UNIT SHALL SHUT DOWN ON DETECTION OF SMOKE.
38. CEILING EXHAUST FAN (QUIET TYPE) SHALL BE A CENTRIFUGAL-TYPE BLOWER, V-BELT OR DIRECT DRIVE AND PERMANENTLY LUBRICATED MOTOR WITH A GALVANIZED STEEL HOUSING, FACTORY WIRE, NON-FUSIBLE DISCONNECT SWITCH, GRAVITY BACKDRIFT DAMPER AND MOLDED WHITE PLASTIC OR ALUMINUM GRILLE. AIR DELIVERY SHALL BE NO LESS THAN 75 [100] [150] CFM AND SOUND LEVEL NO GREATER THAN $0.3 (0.7) [1.4]$ SONES. AIR AND SOUND RATINGS SHALL BE CERTIFIED BY HVI.
39. PROVIDE FLEXIBLE CONNECTIONS IMMEDIATELY ADJACENT TO EQUIPMENT IN DUCTS ASSOCIATED WITH FANS AND MOTORIZED EQUIPMENT.
40. DUCT MOUNTED SMOKE DETECTOR SHALL BE PHOTOELECTRIC TYPE (EQUAL TO SIMPLEX 4988-9687 STAND-ALONE DUCT DETECTOR) WITH REMOTE CONTROL STATION (EQUAL TO SIMPLEX 4988-9842 CONTROL STATION). THE REMOTE CONTROL STATION SHALL HAVE AN ALARM LED, TONE-ALERT SIGNAL, LOCAL TONE-ALERT SIGNAL AND KEYS TEST/RESET SWITCH.
41. TEST, ADJUST AND BALANCE THE AIR SYSTEM TO PROVIDE THE DESIGN QUANTITIES. PERFORM TESTING AND BALANCING BASED UPON THE SYSTEM IDENTIFIED. IN ACCORDANCE WITH THE SCHEDULED PROCEDURE OUTLINED BY ASHRAE, SMACNA, ABB OR NEBB. PROVIDE A WRITTEN REPORT TO THE OWNER. THE REPORT SHALL INCLUDE ALL AIR FLOWS AND SUPPLY AIR TEMPERATURE, RETURN AIR TEMPERATURE AND OUTSIDE AIR TEMPERATURE.

OUTDOOR AIR CALCULATION SCHEDULE							
ROOM TYPE	NET SQUARE FOOTAGE (SQ. FT.)	EST. MAX OCCUPANCY (PEOPLE/1,000 SQ. FT.)	NUMBER OF PEOPLE	OUTSIDE AIR PER	MECH. CODE	MIN. OA REQUIRED (CFM)	TOTAL OA REQUIRED (CFM)
				(CFM/PERSON)	(CFM/SQ. FT.)		
OFFICE	2,212	5	11	5.0	0.06	133	188
CONFERENCE	750	50	38	5.0	0.06	45	235
STORAGE	5,608				0.12	673	673
CORRIDOR	1,264				0.06	76	76
MIN. OUTDOOR AIR REQUIRED							927
TOTAL OUTSIDE AIR REQUIRED							1,172
TOTAL OUTSIDE AIR PROVIDED							1,200
OUTDOOR AIR SUMMARY							
EQUIPMENT	SA (CFM)	RA (CFM)	MAX. OA (CFM)	MIN. OA (CFM)		EA (CFM)	
EF-1						100	
EF-2						75	
EXIST. EXHAUST FAN						600	
RTU-1	3,000	2,650	3,000	150			
FU-6	1,200	1,000	200	200			
EXIST. AHU-3	2,000	1,600	400	400			
EXIST. AHU-4	2,000	1,750	250	250			
TOTALS:	8,200	7,000	3,850	1,000		775	

[illegible]

AIR DISTRIBUTION SCHEDULE					
MARK	SERVICE	MAX AIR FLOW (CFM)	GRILLE SIZE (IN)	RUN OUT (IN)	REMARKS/NOTES
A	SUPPLY AIR	100	6 x 6	6 Ø	CEILING DIFFUSER
B	SUPPLY AIR	200	9 x 9	8 Ø	CEILING DIFFUSER
C	SUPPLY AIR	300	12 x 12	10 Ø	CEILING DIFFUSER
D	SUPPLY AIR	500	15 x 15	14 Ø	CEILING DIFFUSER
E	SUPPLY AIR	400	24 x 6	—	SIDEWALL DIFFUSER
RA	RETURN AIR	100	6 x 6	6 Ø	CEILING RETURN
RB	RETURN AIR	200	8 x 8	8 Ø	CEILING RETURN
RC	RETURN AIR	300	10 x 10	10 Ø	CEILING RETURN
RD	RETURN AIR	400	12 x 12	10 Ø	CEILING RETURN
RE	RETURN AIR	600	14 x 14	12 Ø	CEILING RETURN
RF	RETURN AIR	2,000	22 x 22	18 Ø	CEILING RETURN
RG	RETURN AIR	1,000	12 x 24	—	SIDEWALL RETURN
EA	EXHAUST AIR	400	12 x 12	10 Ø	EXHAUST GRILLE

DESIGN CONDITIONS						
SPACE	INDOOR DESIGN		OUTDOOR DESIGN		INDOOR DESIGN	OUTDOOR DESIGN
	SUMMER		SUMMER		WINTER	WINTER
	DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	DB (°F)
OFFICE AREA	75	62.5	97	78	70	17
SHOP/STORAGE AREA	75	62.5	97	78	70	17

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08/11/15

524 New Hope Road
Raleigh, NC

OF SHEETS

ZONE DAMPER SCHEDULE				
PRIMARY AIR SECTION				REMARKS
MARK	SA MAX (CFM)	SA MIN (CFM)	INLET DIA (IN)	
ZD-1	500	0	12	
ZD-2	1,800	0	18	
ZD-3	350	0	10	
ZD-4	350	0	10	
ZD-5	2,650	0	22	BY-PASS DAMPER

NOTE: PROVIDE WITH 24V TRANSFORMER FOR DAMPER CONTROLS. COORDINATE WITH ELECTRICAL CONTRACTOR.

ROOF HOOD SCHEDULE							
MARK	SERVICE	MAX AIR FLOW (CFM)	PD (IN H2O)	THROAT SIZE (IN)	THROAT AREA (SQ FT)	HOOD SIZE (IN)	REMARKS
RH-1	INTAKE	900	0.10	12 x 12	1.00	24 x 24	10 LBS

GAS CONNECTION SCHEDULE				
MARK	DESCRIPTION	QUANTITY	APPLIANCE INPUT (BTUH)	TOTAL INPUT (BTUH)
RTU-1	GAS ROOFTOP UNIT	1	125,000	125,000
FU-6	FURNACE UNIT	1	50,000	50,000
TOTAL INPUT (BTUH)				175,000

GAS PIPE SIZE IS BASED ON SECTION 402.4(2) OF THE FUEL GAS CODE WITH MAXIMUM DEVELOPED PIPE LENGTH OF 145'-0" NATURAL GAS PRESSURE OF .5 PSIG. DELIVERY PRESSURE SHALL BE .5 PSIG.

SPLIT SYSTEM GAS FURNACE EQUIPMENT SCHEDULE																				
FURNACE										CONDENSING										
MARK	SA (CFM)	OA (CFM)	MAX FAN (HP)	ESP (IN H2O)	POWER		GAS HEATING		COOLING		POWER					MIN ENERGY			WEIGHT (LBS)	REMARKS
					VOLTS	PHASE	TC INPUT (MBH)	OUTPUT (MBH)	TC (MBH)	SHC (MBH)	VOLTS	PHASE	FLA	MCA	MOCP	RATING				
																SEER	EER	HEAT		
FU-6/CU-6	1,200	200	1/3	0.3	120	1	50.0	45.0	35.0	25.5	208	1	19	23	40	13		90%	200	

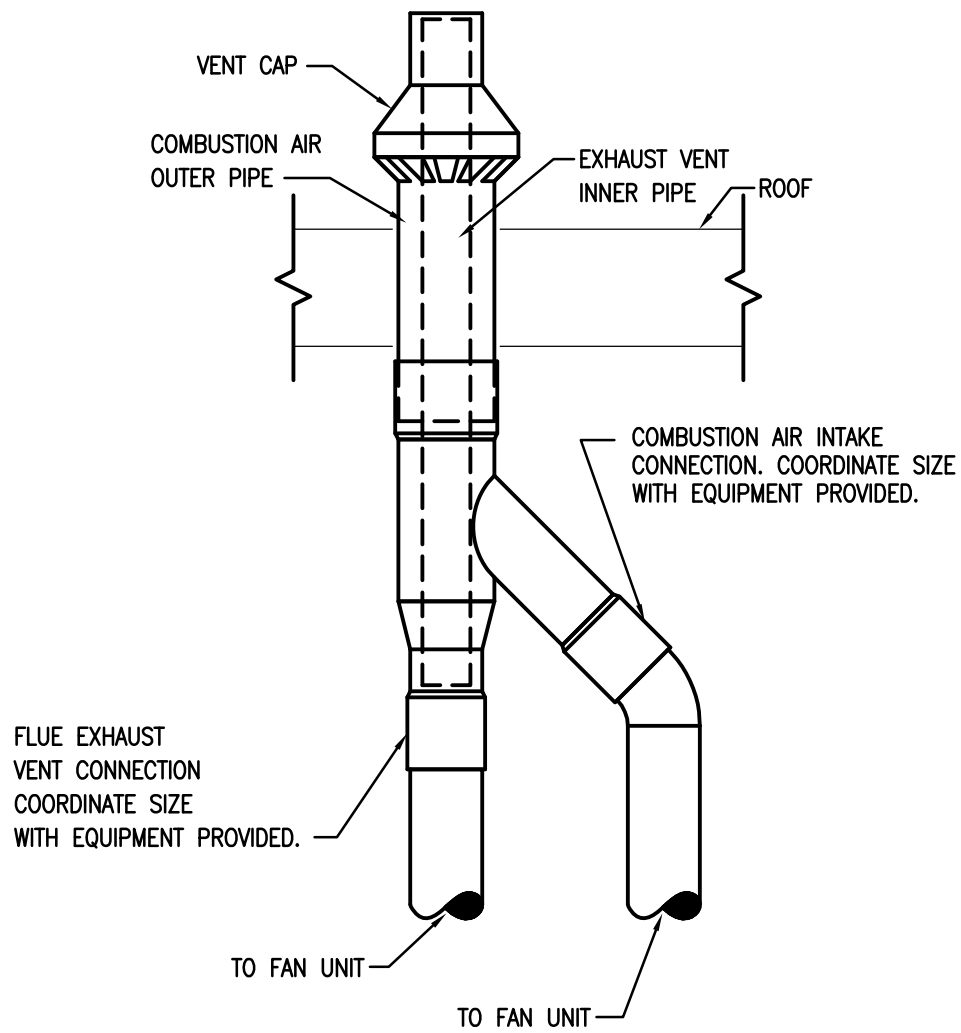
COOLING: INDOOR COIL ENTERING AIR: 80° DB/ 67° WB
OUTDOOR AIR: 95° DB * ESP IS FOR DUCTWORK ONLY

HEATING: INDOOR COIL ENTERING AIR: 70°
OUTDOOR AIR: 17°F DB

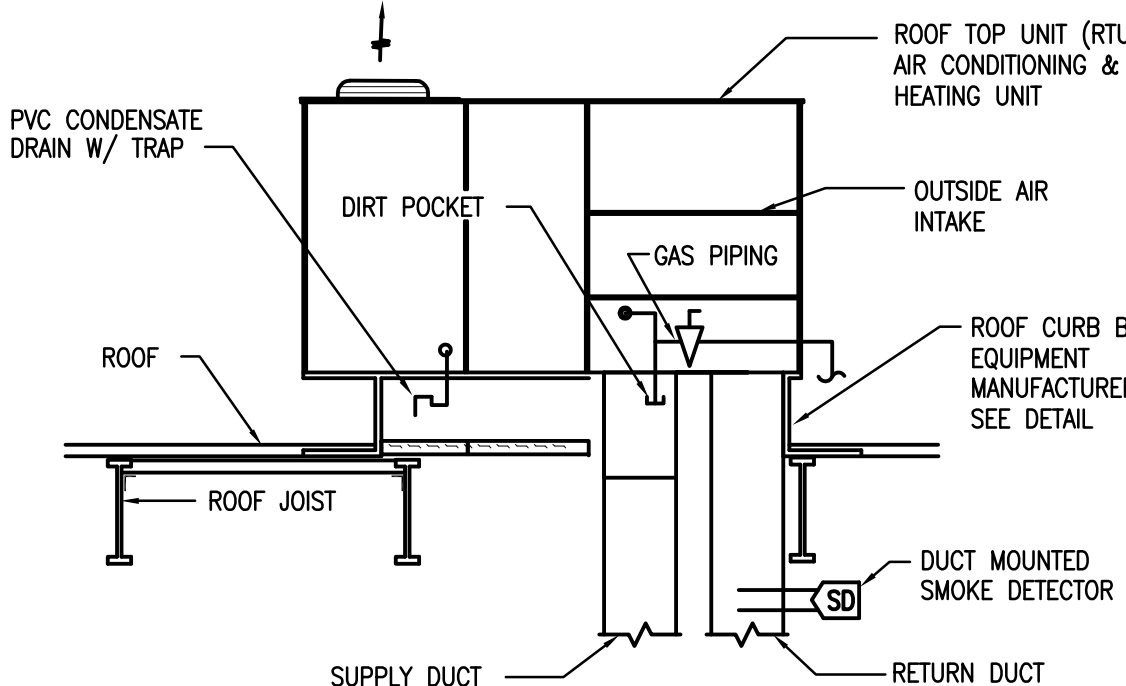
GAS ROOFTOP AIR CONDITIONING UNIT SCHEDULE																			
MARK	FAN				COOLING			HEATING			POWER					MIN ENERGY			REMARKS
	SA (CFM)	OA (CFM)	ESP (IN H2O)	MAX FAN (BHP)	TC (MBH)	SHC (MBH)	MIN STAGES	TC INPUT (MBH)	TC OUTPUT (MBH)	MIN STAGES	VOLTS	PHASE	FLA	MCA	MOCP	RATING			
																SEER	EER	HEAT	
RTU-1	3,000	350	0.5	1.7	85.2	67.1	2	125.0	103.0	2	208	3	35.2	45	50		11.2	80%	1,200 LBS

- NOTES:
- COOLING CAPACITY BASED ON EAT= 80°F/67°F (DB/WB) AND 105°F AMBIENT AIR TEMPERATURE.
 - HEATING CAPACITIES BASED ON LOW INPUT HEAT
 - EVAPORATOR FAN & MOTOR SELECTED FOR STANDARD STATIC.
 - SUPPLY FAN SHALL RUN CONTINUOUSLY WHEN BUILDING IS OCCUPIED.
 - POWER SHALL BE SINGLE POINT CONNECTION.
 - PROVIDE OPTIONAL CONVENIENCE RECEPTACLE. COORDINATE POWER CONNECTION WITH ELECTRICAL CONTRACTOR.

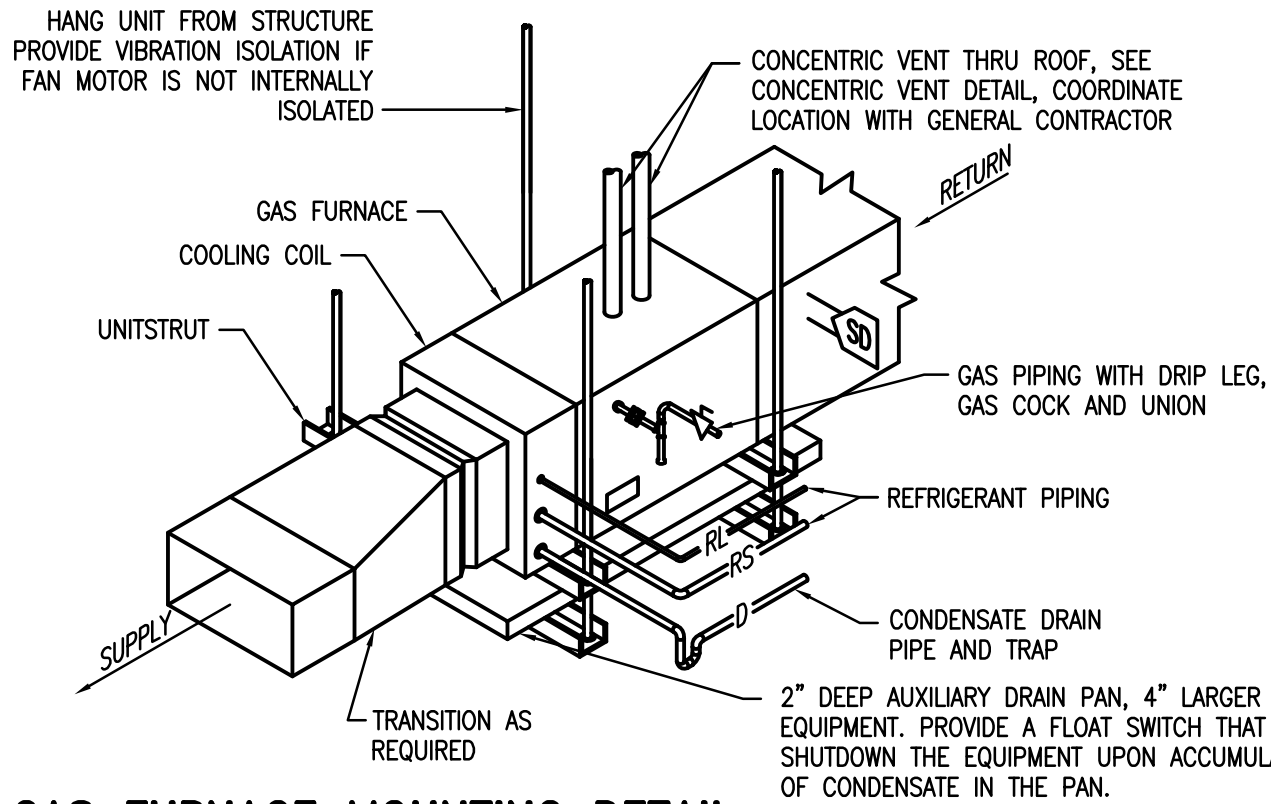
CONDENSATE PUMP SCHEDULE									
MARK	LOCATION	FLOW (GPH)	TANK CAPACITY (GAL)	PERFORMANCE (FT OF H2O)	SHUT OFF (FT OF H2O)	POWER			REMARKS
						MAX HP	VOLTS	PHASE	
CP-1	FU-6	25	1/2	10	15	1/50	115	1	LITTLE GIANT PUMP COMPANY VDMA 15 OR ENGINEER APPROVED EQUAL.
CP-2	DSS-1	25	1/2	10	15	1/50	115	1	LITTLE GIANT PUMP COMPANY VDMA 15 OR ENGINEER APPROVED EQUAL.



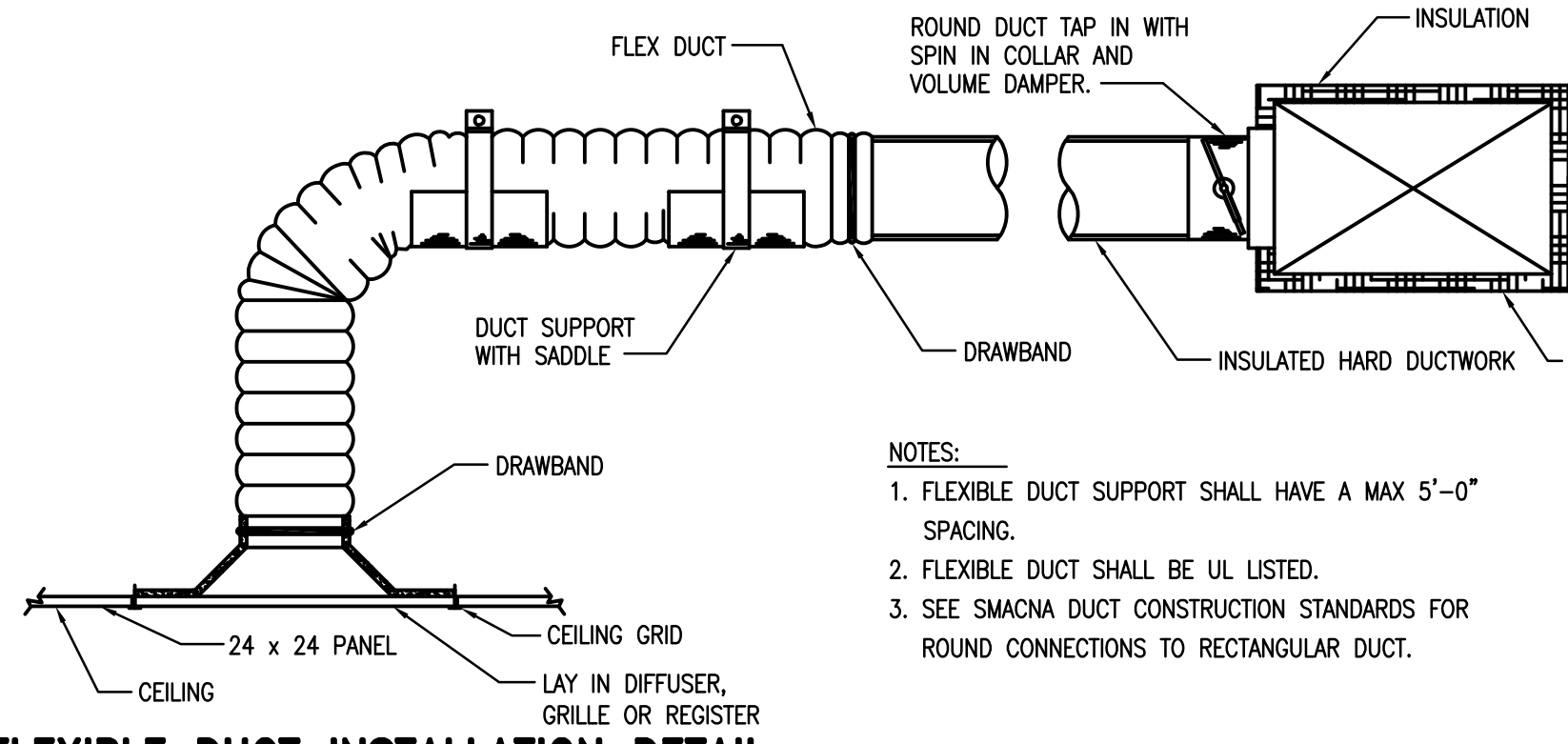
CONCENTRIC VENT DETAIL
SCALE: NONE



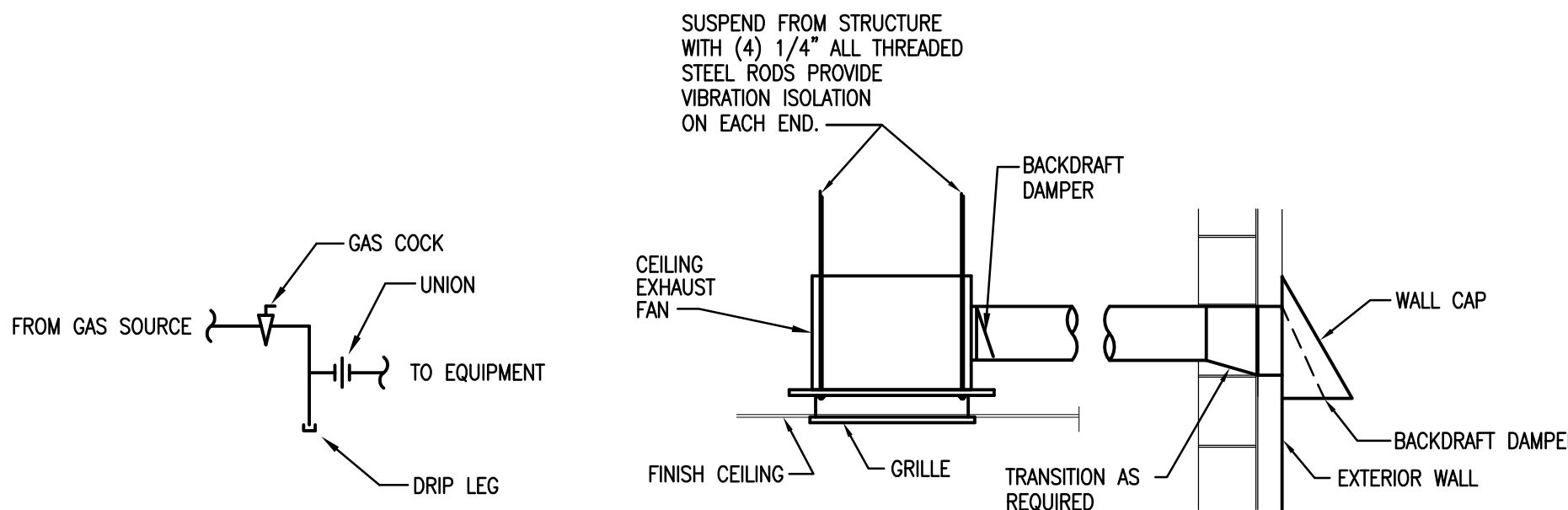
GAS ROOFTOP UNIT MOUNTING DETAIL
NO SCALE



GAS FURNACE MOUNTING DETAIL
NO SCALE

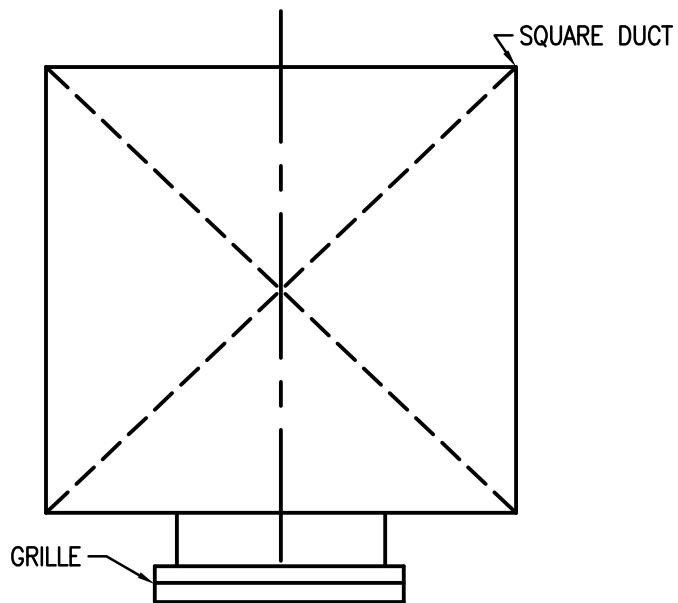


FLEXIBLE DUCT INSTALLATION DETAIL
NO SCALE

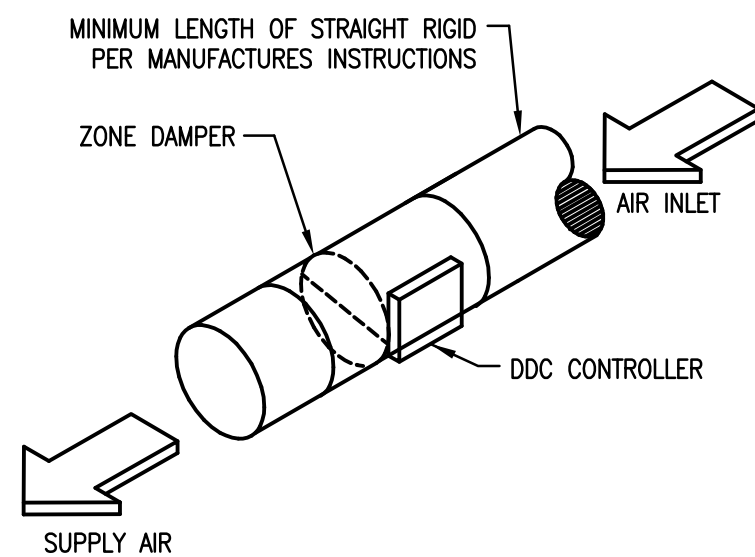


GAS CONNECTION DETAIL
NO SCALE

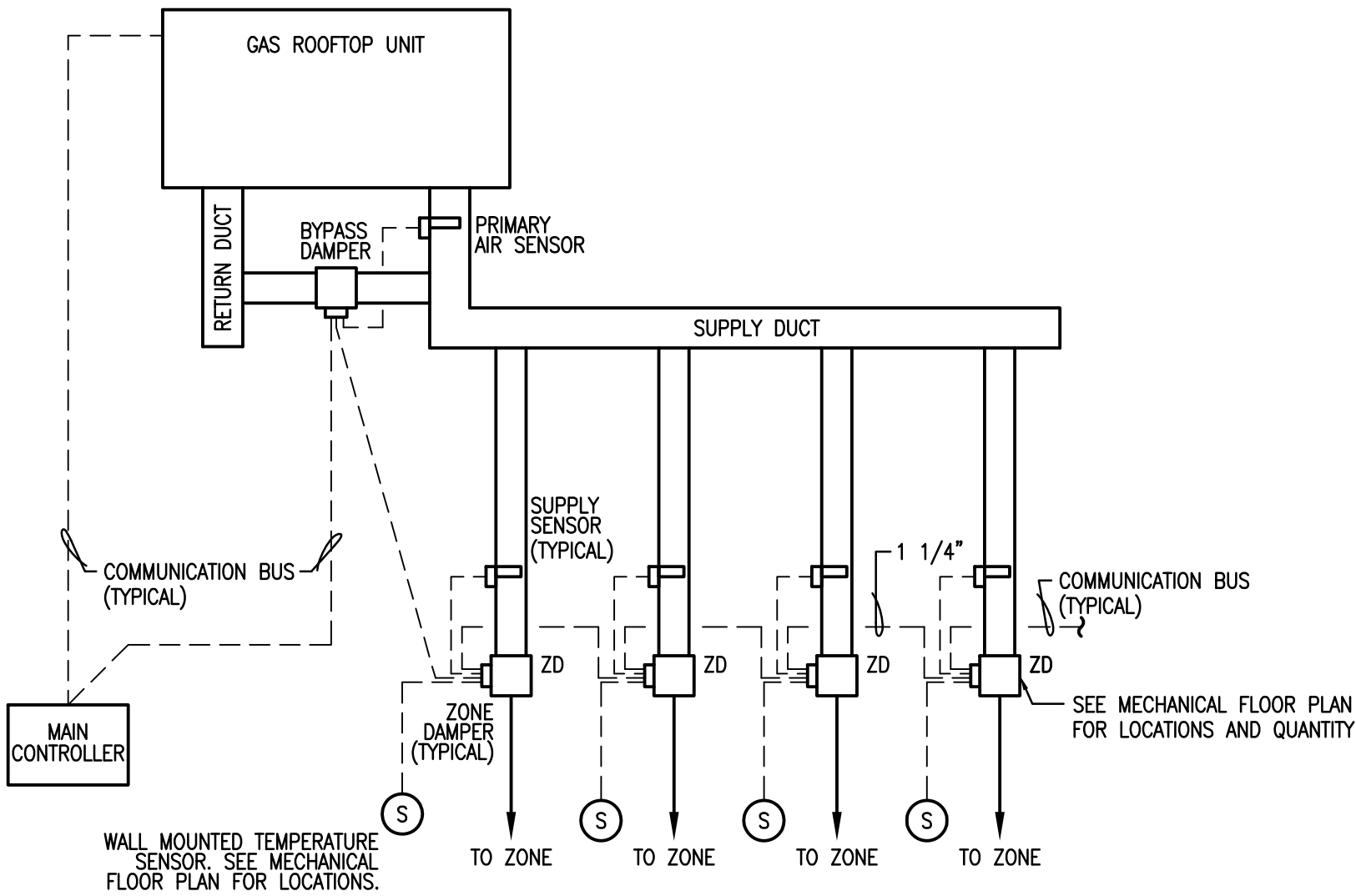
CEILING FAN DETAIL
NO SCALE



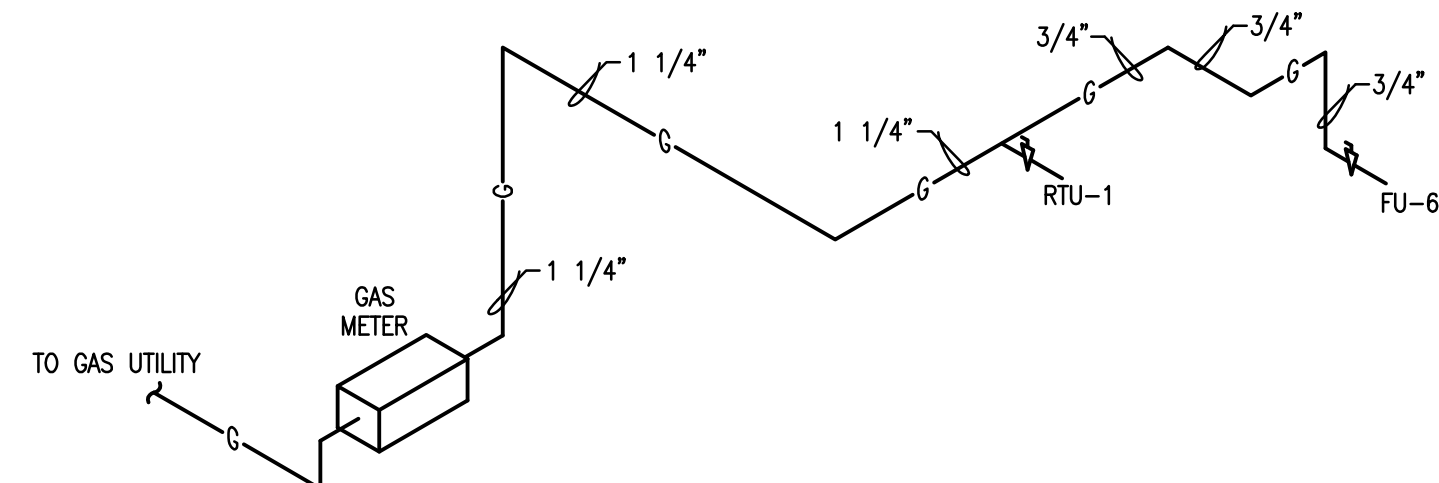
DUCT MOUNTED SUPPLY GRILLE DETAIL
NO SCALE



ZONE DAMPER DETAIL
NO SCALE



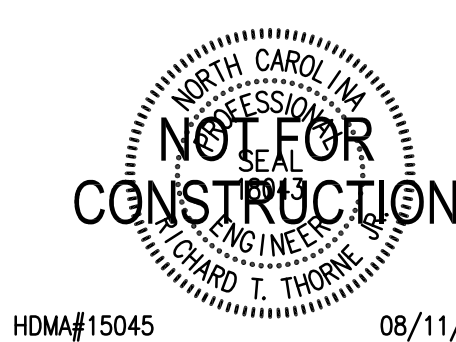
CHANGE OVER / BYPASS VAV CONTROL SCHEMATIC
NO SCALE



GAS RISER DIAGRAM
NO SCALE

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HDM#15045

08/11/15

Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER:

PROJECT NUMBER: 15045

DRAWN BY: BTF

ISSUED / REVIEW: RTT

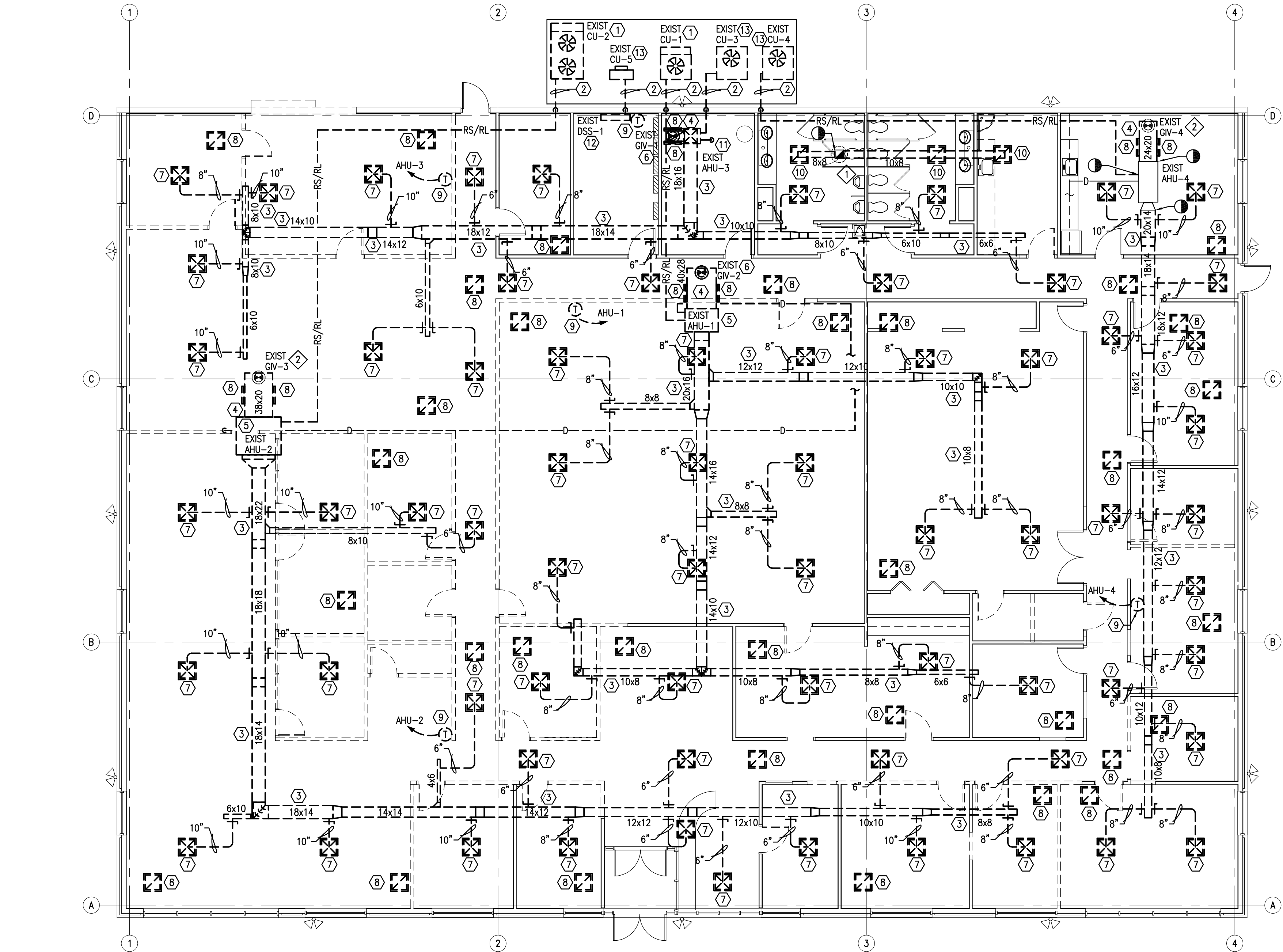
ISSUED / CONSTRUCTION:

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MECHANICAL
SCHEDULES & DETAILS

M2

OF SHEETS



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

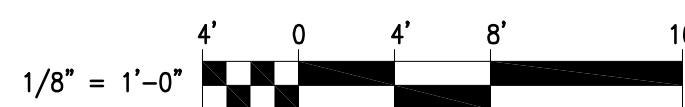
DEMOLITION NOTES

- 1 REMOVE EXISTING CONDENSING UNIT COMPLETE. REFRIGERANT SHALL BE RECLAIMED IN ACCORDANCE WITH EPA REGULATIONS. PROVIDE OWNER WITH REFRIGERANT RECOVERY FORM. COORDINATE WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 2 REMOVE REFRIGERANT PIPING FROM CONDENSING UNIT TO AIR HANDLING UNIT WITH ASSOCIATED HANGERS AND SUPPORTS COMPLETE. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 3 REMOVE SUPPLY AIR DUCTWORK WITH ASSOCIATED HANGERS AND SUPPORTS COMPLETE. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 4 REMOVE RETURN AIR DUCTWORK WITH ASSOCIATED HANGERS AND SUPPORTS COMPLETE. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 5 REMOVE AIR HANDLING UNIT WITH ASSOCIATED CONDENSATE DRAIN AND SUPPORTS COMPLETE. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 6 REMOVE OUTDOOR AIR HOOD WITH ASSOCIATED DUCTWORK, CURB, HANGERS AND SUPPORTS COMPLETE. PATCH ROOF IN ACCORDANCE WITH ROOF MANUFACTURER'S WARRANTY. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 7 REMOVE SUPPLY DIFFUSER WITH ASSOCIATED RUNOUT, HANGERS AND SUPPORTS COMPLETE. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 8 REMOVE RETURN GRILLE. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 9 REMOVE THERMOSTAT WITH ASSOCIATED CONTROL WIRING COMPLETE. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 10 REMOVE EXHAUST GRILLE WITH ASSOCIATED DUCTWORK, HANGERS AND SUPPORTS BACK TO ROOFTOP EXHAUST FAN. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 11 REMOVE AIR HANDLING UNIT AND STORE FOR REUSE. SEE MECHANICAL FLOOR PLAN - NEW WORK FOR NEW LOCATION. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 12 REMOVE DUCTLESS SPLIT SYSTEM AND STORE FOR REUSE. SEE MECHANICAL FLOOR PLAN - NEW WORK FOR NEW LOCATION. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- 13 REMOVE CONDENSING UNIT AND STORE FOR REUSE. SEE MECHANICAL FLOOR PLAN - NEW WORK FOR NEW LOCATION. COORDINATE WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.

GENERAL NOTES

- 1 ROOFTOP EXHAUST FAN TO REMAIN.
- 2 ROOF HOOD TO REMAIN.

GRAPHIC SCALE



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HDM#15045 08/11/15

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Systems

524 New Hope Road
Raleigh, NC

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ISSUED / REVIEW: DSA

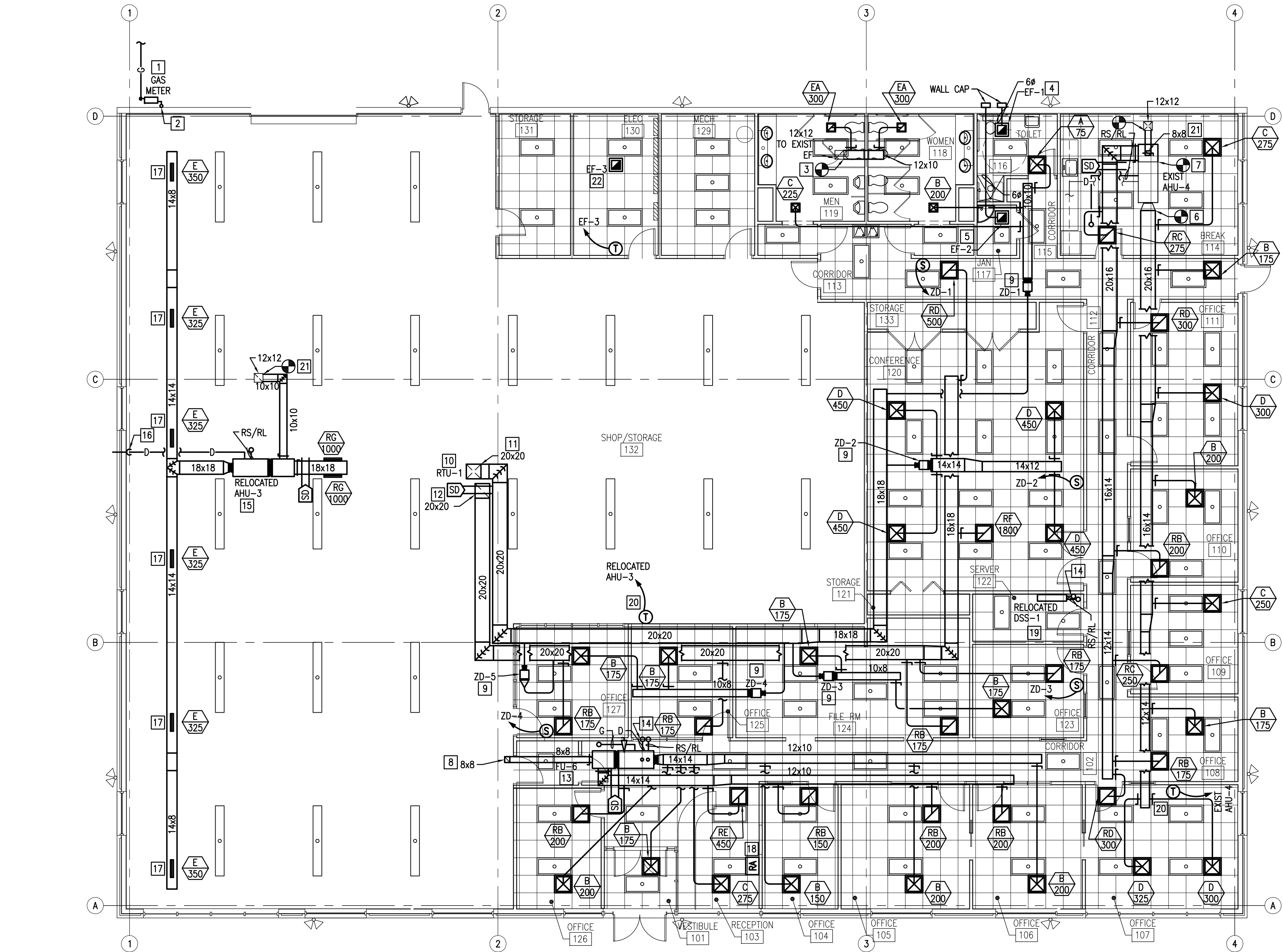
ISSUED / CONSTRUCTION:

REVISIONS

**MECHANICAL FLOOR
PLAN - DEMOLITION**

M3

OF SHEETS

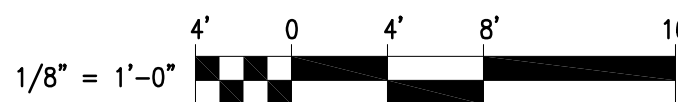


MECHANICAL FLOOR PLAN - NEW WORK
SCALE: 1/8" = 1'-0"

NEW WORK NOTES

- 1 PROVIDE GAS METER AS INDICATED. FIELD COORDINATE EXACT SIZING AND LOCATION WITH GAS UTILITY.
- 2 PROVIDE GAS PIPING FROM METER UP FACE OF WALL TO ROOF. SEE MECHANICAL ROOF PLAN FOR CONTINUATION. FIELD COORDINATE EXACT LOCATION AND ROUTING PRIOR TO BEGINNING ANY WORK.
- 3 PROVIDE EXHAUST DUCTWORK ABOVE CEILING AS INDICATED. CONNECT TO EXISTING EXHAUST DUCTWORK AS INDICATED. FIELD COORDINATE EXACT LOCATION AND ROUTING PRIOR TO BEGINNING ANY WORK.
- 4 PROVIDE CEILING EXHAUST FAN AS SCHEDULED. PROVIDE EXHAUST DUCTWORK TO WALL CAP ABOVE CEILING AS INDICATED. EXHAUST FAN SHALL BE SWITCHED WITH LIGHTS. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 5 PROVIDE CEILING EXHAUST FAN AS SCHEDULED. PROVIDE EXHAUST DUCTWORK TO WALL CAP ABOVE CEILING AS INDICATED. EXHAUST FAN SHALL RUN CONTINUOUS. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 6 PROVIDE SUPPLY DUCTWORK ABOVE CEILING AS INDICATED. CONNECT SUPPLY DUCTWORK TO EXISTING AIR HANDLING UNIT AS INDICATED. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 7 PROVIDE PLENUM FULL SIZE OF UNIT BY 24" DEEP ON EXISTING AIR HANDLING UNIT. PROVIDE RETURN DUCTWORK ABOVE CEILING AS INDICATED. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 8 PROVIDE OUTDOOR AIR DUCTWORK DOWN FROM ROOF HOOD TO PLENUM AS INDICATED. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 9 PROVIDE ZONE DAMPER ABOVE CEILING AS SCHEDULED. COORDINATE SPACE REQUIREMENTS WITH OTHER TRADES. SEE ZONE DAMPER DETAIL. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 10 PROVIDE A FOUR (4) ZONE VARIABLE VOLUME AND TEMPERATURE (VVT) PACKAGE COMPATIBLE WITH SPLIT SYSTEM GAS FURNACE. VVT PACKAGE SHALL CONTAIN ALL THE REQUIRED COMPONENTS TO CONTROL AND OPERATE THE ENTIRE SYSTEM BY MEANS OF CAPACITY TIME SHARING CONCEPT. ALL PROGRAMMING NECESSARY FOR THE OPERATION SHALL BE INCLUDED IN THE PACKAGE. BASIS OF DESIGN IS CARRIER COMFORT SYSTEM VVT. COORDINATE EXACT LOCATION IN FIELD.
- 11 PROVIDE SUPPLY DUCTWORK DOWN FROM ROOFTOP UNIT TO ABOVE CEILING AS INDICATED. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 12 PROVIDE RETURN DUCTWORK DOWN FROM ROOFTOP UNIT TO ABOVE CEILING AS INDICATED. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 13 PROVIDE FURNACE UNIT ABOVE CEILING WITH FULL SIZE BY 24" DEEP PLENUM AS SCHEDULED. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. PROVIDE CONCENTRIC FLUE UP THROUGH ROOF. PENETRATE ROOF IN ACCORDANCE WITH ROOF MANUFACTURER'S WARRANTY. SEAL ROOF PENETRATION WEATHER TIGHT. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 14 PROVIDE CONDENSATE PUMP EQUAL TO LITTLE GIANT VOMA 15 OR ENGINEER APPROVED EQUAL. PROVIDE CONDENSATE DRAIN PIPING FROM UNIT TO ROOF AS INDICATED. SEE MECHANICAL ROOF PLAN FOR CONTINUATION. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 15 LOCATION OF RELOCATED AIR HANDLING UNIT. PROVIDE REQUIRED EQUIPMENT TO HANG UNIT TO OVERHEAD STRUCTURE. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 16 PROVIDE 1" CONDENSATE DRAIN PIPE FORM UNIT THEN DOWN FACE OF WALL, STUB OUT 6" ABOVE FINISHED GRADE AND TURN DOWN. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 17 PROVIDE DIFFUSER ON DUCTWORK AS SCHEDULED. MOUNT DIFFUSER ON BOTTOM SIDE OF DUCTWORK. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 18 PROVIDE ONE REMOTE ANNUNCIATOR FOR EACH AIR HANDLING UNIT. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 19 LOCATION OF RELOCATED DUCTLESS SPLIT SYSTEM. PROVIDE REQUIRED EQUIPMENT TO MOUNT ON WALL. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 20 PROVIDE THERMOSTAT COMPATIBLE WITH EXISTING AIR HANDLING UNIT. PROVIDE CONTROL WIRING AS REQUIRED. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 21 PROVIDE OUTDOOR AIR DUCTWORK FROM PLENUM TO EXISTING OUTDOOR AIR DUCTWORK FROM EXISTING ROOF HOOD ON ROOF AND CONNECT AS INDICATED. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 22 PROVIDE THERMOSTATICALLY CONTROLLED CEILING EXHAUST FAN AND EXHAUST AIR TO ABOVE CEILING. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.

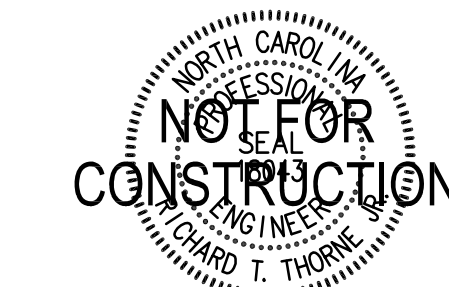
GRAPHIC SCALE



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HDM#15045

08/11/15

Carolina Commercial
Systems

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OWNER:

PROJECT NUMBER: 15045

DRAWN BY: BTF

ISSUED / REVIEW: RTT

ISSUED / CONSTRUCTION:

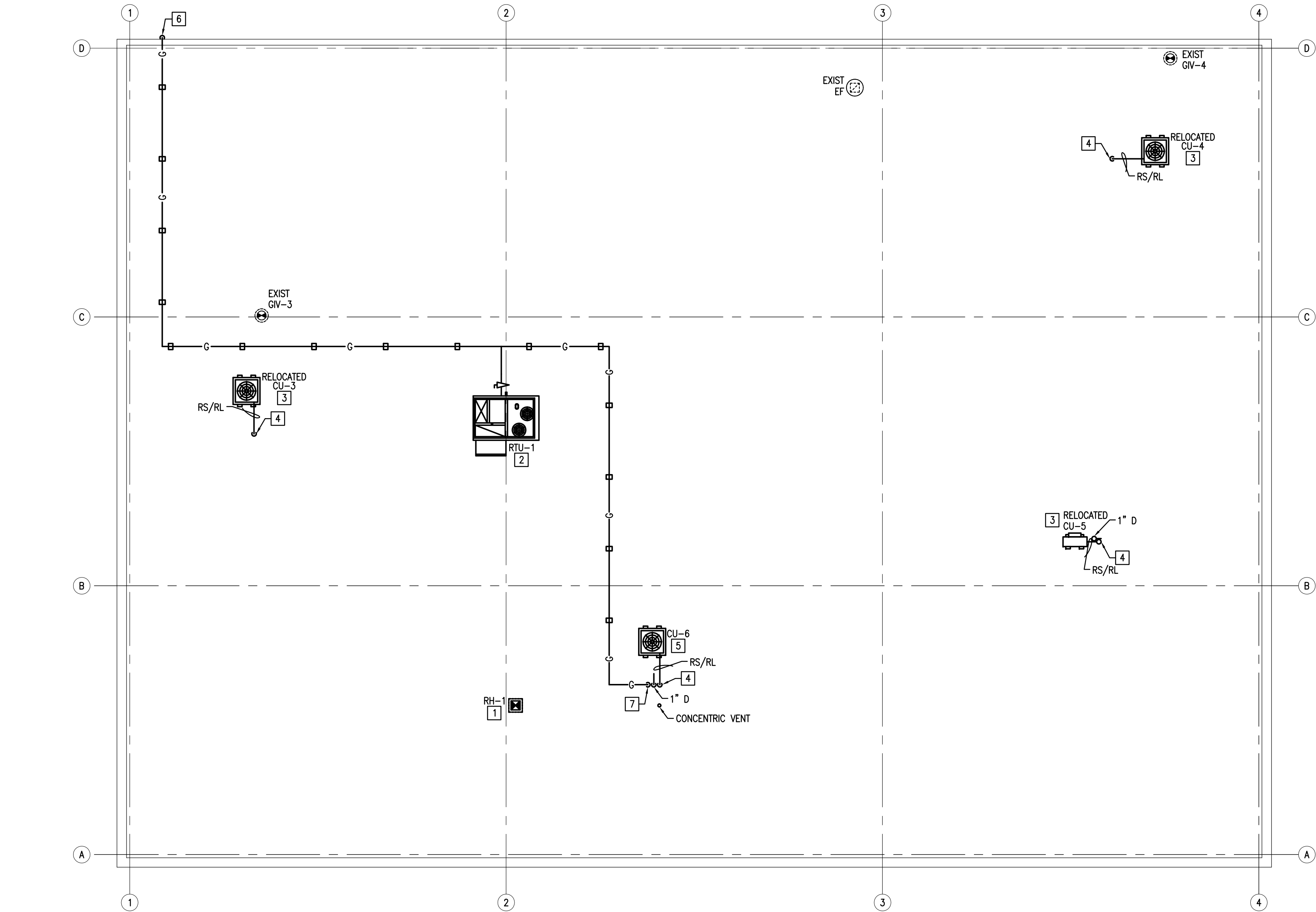
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**MECHANICAL FLOOR
PLAN - NEW WORK**

M4

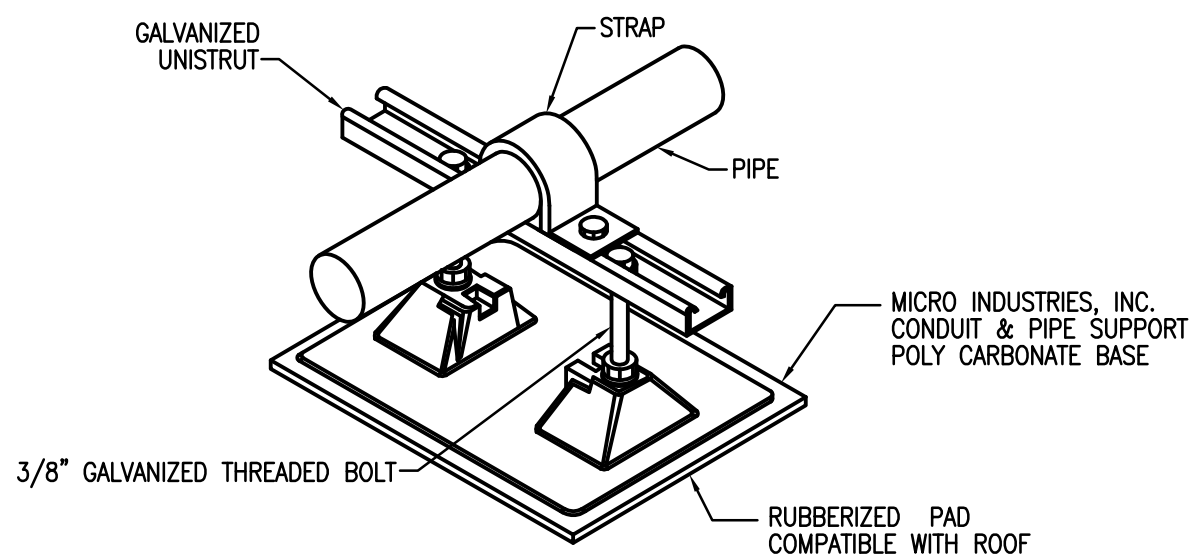
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MECHANICAL ROOF PLAN – NEW WORK
SCALE: 1/8" = 1'-0"

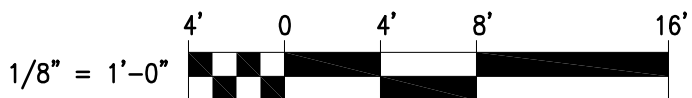
NEW WORK NOTES

- 1 PROVIDE ROOF HOOD AS SCHEDULED. MAINTAIN 10'-0" AWAY FROM ALL EXHAUST AND VENTS. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 2 PROVIDE GAS ROOFTOP UNIT AS SCHEDULED. CONNECT TO GAS PIPING ON ROOF AS INDICATED. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. PENETRATE ROOF IN ACCORDANCE WITH ROOF MANUFACTURER'S WARRANTY. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 3 LOCATION OF RELOCATED CONDENSING UNIT. PROVIDE 6x6 TREATED WOOD SUPPORT. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 4 PROVIDE REFRIGERANT PIPING FROM CONDENSING UNIT DOWN THROUGH ROOF TO EXISTING AIR HANDLING UNIT. PENETRATE ROOF IN ACCORDANCE WITH ROOF MANUFACTURER'S WARRANTY. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 5 PROVIDE CONDENSING UNIT AS SCHEDULED. PROVIDE 6x6 TREATED WOOD SUPPORT. COORDINATE ELECTRICAL CONNECTION WITH ELECTRICAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 6 PROVIDE GAS PIPING ON ROOF AS INDICATED. PROVIDE 6x8 SUPPORT EVERY 8'-0" ON CENTER. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 7 PROVIDE GAS PIPING DOWN THROUGH ROOF TO FURNACE UNIT ABOVE CEILING. PENETRATE ROOF IN ACCORDANCE WITH ROOF MANUFACTURER'S WARRANTY. SEE MECHANICAL FLOOR PLAN – NEW WORK FOR CONTINUATION. FIELD COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.



PIPE SUPPORT ON ROOF DETAIL
NO SCALE

GRAPHIC SCALE



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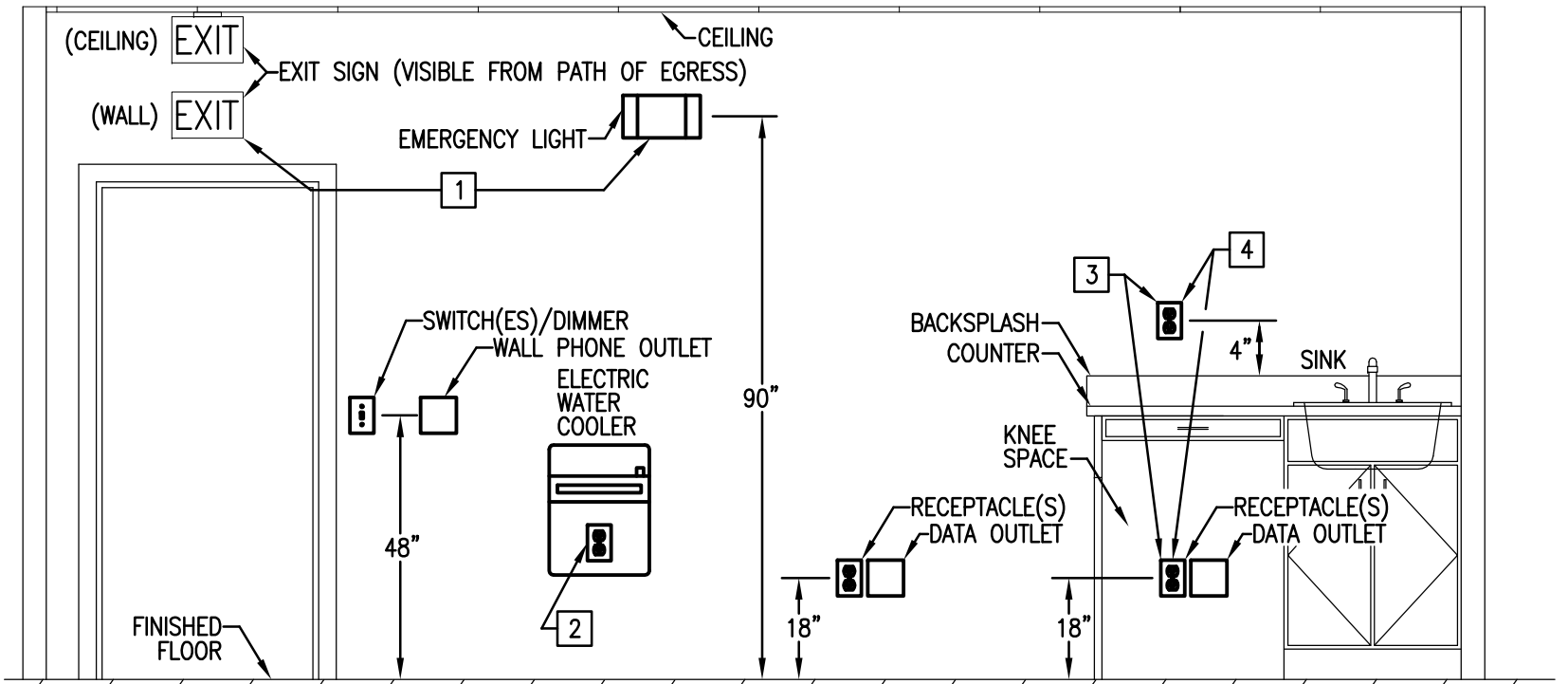
**MECHANICAL ROOF
PLAN - NEW WORK**

M5

OF SHEETS

ELECTRICAL SPECIFICATIONS

1. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO DESCRIBE THE INSTALLATION OF A COMPLETE, FULLY ADJUSTED AND OPERATIONAL SYSTEM.
2. THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, MATERIAL, EQUIPMENT, MACHINERY AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE SYSTEM.
3. ALL WORK UNDER THIS SECTION SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH STATE BUILDING CODES AND THE NATIONAL ELECTRICAL CODE. ALL DEVICES SHALL BE LOCATED IN ACCORDANCE WITH ANSI A117.1 FOR ADA REQUIREMENTS WHERE APPLICABLE. IN THE EVENT THE LOCAL AUTHORITY HAVING JURISDICTION DETERMINES THERE IS A CODE VIOLATION ASSOCIATED WITH THE CONSTRUCTION DOCUMENTS AND REQUIRES ADDITIONAL WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE VIOLATION. IF THE CONTRACTOR DOES NOT CONTACT THE ENGINEER, ALL EXPENSES ASSOCIATED WITH THE VIOLATION WILL BE THE CONTRACTOR'S RESPONSIBILITY.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL, OBTAIN ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE INSTALLATION OF THEIR WORK.
5. THE DRAWINGS ARE DIAGRAMMATIC ONLY. THE CONTRACTOR MAY NEED TO MAKE FIELD ADJUSTMENTS TO ACCOMMODATE ACTUAL FIELD CONDITIONS.
6. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR THE GENERAL CONSTRUCTION OF THE BUILDING, FOR FLOORS AND CEILING HEIGHTS, FOR LOCATIONS OF WALLS, PARTITIONS, BEAMS, ETC.
7. MANUFACTURER'S LIST ARE TO ESTABLISH A STANDARD OF QUALITY AND NOT INTENDED TO LIMIT THE SELECTION TO THESE MANUFACTURERS.
8. CONTRACTOR SHALL VERIFY ALL LISTED MODEL NUMBERS WITH MANUFACTURERS TO INSURE PROPER APPLICATION OF EQUIPMENT.
9. EQUIPMENT AND MATERIALS SHALL BE HANDLED, STORED AND PROTECTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
10. THE CONTRACTOR SHALL PERFORM ANY AND ALL TRENCHING, EXCAVATION AND BACKFILLING REQUIRED FOR THE INSTALLATION OF HIS WORK.
11. THE CONTRACTOR SHALL FURNISH ALL NECESSARY SCAFFOLDING, STAGING, RIGGING AND HOISTING REQUIRED FOR THE COMPLETION OF HIS WORK.
12. ALL WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER TRADES INVOLVED IN THE CONSTRUCTION PROJECT. ALL WORK SHALL BE CAREFULLY LAID OUT IN ADVANCE TO COORDINATE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FEATURES OF CONSTRUCTION.
13. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING HIS BID SO AS TO BE THOROUGHLY FAMILIAR WITH THE JOB CONDITIONS AND/OR PECULIARITIES. NO EXTRA PAYMENT WILL BE ALLOWED FOR ANYTHING WHICH COULD HAVE BEEN ANTICIPATED FROM A VISIT TO THE SITE.
14. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
15. PROVIDE GROUNDING FOR SERVICE, ALL CONDUITS, MOTOR FRAMES, METAL CASINGS, RECEPTACLES, SYSTEM NEUTRAL, ETC. AND AS REQUIRED BY NEC AS MINIMUM. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS. CONTRACTOR SHALL SUBMIT GROUNDING TEST REPORT.
16. A GREEN INSULATED COPPER GROUND WIRE, SIZED PER NEC, SHALL BE INSTALLED IN ALL CONDUIT.
17. ALL FIXTURES SHOWN ON THE FIXTURE SCHEDULE SHALL BE FURNISHED AND INSTALLED, COMPLETE WITH ALL MOUNTING ACCESSORIES, LAMPS AND TUBES. FIXTURES SHALL BE INDEPENDENTLY SUPPORTED FROM STRUCTURE AT A MINIMUM OF TWO OPPOSITE POINTS. ACRYLIC LENSES SHALL BE A MINIMUM THICKNESS OF 1/8 INCHES.
18. ALL WIRING SHALL BE RUN IN CONDUIT. FOR UNDER FLOOR INSTALLATIONS, CONDUIT SHALL BE RUN BELOW, NOT IN, THE SLAB. THE MINIMUM INDOOR CONDUIT SIZE SHALL BE 3/4 INCH. INDOOR CONDUIT SHALL BE ELECTRICAL METALLIC TUBING OR TYPE AC, MC CABLE MAY BE USED FOR BRANCH CIRCUITS WHERE ALLOWED BY NEC AND NOT SUBJECT TO PHYSICAL DAMAGE, MOISTURE OR DAMPNESS. CONNECTION TO EQUIPMENT SHALL BE FLEXIBLE METAL CONDUIT EXCEPT IN WET OR DAMP LOCATIONS USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT. INDOOR BOXES AND ENCLOSURES SHALL BE NEMA TYPE 1, EXCEPT IN DAMP OR WET LOCATIONS USE NEMA TYPE 3R. WHERE NONMETALLIC CONDUIT IS USED BELOW THE SLAB PROVIDE RIGID CONDUIT TO TURN UP INTO THE BUILDING SPACE OR AT ALL EXTERIOR WALLS, POLES OR EQUIPMENT. USE RACEWAY FITTINGS COMPATIBLE WITH RACEWAY AND SUITABLE FOR USE AND LOCATION. RUN CONCEALED RACEWAYS WITH A MINIMUM OF BENDS IN THE SHORTEST PRACTICAL DISTANCE CONSIDERING THE TYPE OF BUILDING CONSTRUCTION AND OBSTRUCTIONS. RACEWAYS SHALL RUN PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS AND FOLLOW THE SURFACE CONTOURS AS MUCH AS PRACTICAL. PROVIDE GROUNDING CONNECTIONS FOR RACEWAY, BOXES AND COMPONENTS AS INDICATED BY MANUFACTURER. TIGHTEN CONNECTIONS AND TERMINALS, INCLUDING SCREWS AND BOLTS, ACCORDING TO EQUIPMENT MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES FOR EQUIPMENT CONNECTORS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTORS AND TERMINALS ACCORDING TO TIGHTENING TORQUES SPECIFIED IN UL STANDARD 486A.
19. COLOR FOR DEVICES SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.
20. RECEPTACLES SHALL COMPLY WITH UL STANDARD 498, "ELECTRICAL ATTACHMENT PLUGS AND RECEPTACLES," HEAVY-DUTY GRADE 20 AMP RATED EXCEPT AS OTHERWISE INDICATED.
21. GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLES SHALL COMPLY WITH UL STANDARD 943. "GROUND FAULT CIRCUIT INTERRUPTERS," WITH INTEGRAL NEMA 5-20R DUPLEX RECEPTACLE.
22. SINGLE POLE AND THREE/FOUR-WAY TOGGLE TYPE SNAP SWITCHES SHALL BE 20 AMP 120/277 VAC, RATED, QUIET-TYPE AC SWITCHES. NRTL LISTED AND LABELED AS COMPLYING WITH UL STANDARD 20 "GENERAL USE SNAP SWITCHES," AND WITH FEDERAL SPECIFICATION W-S-896.
23. WALL PLATES: SINGLE AND COMBINATION TYPES SHALL BE 302 STAINLESS STEEL THAT MATE AND MATCH WITH CORRESPONDING WIRING DEVICES.
24. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC AS FOLLOWS:
- | | |
|---------|---------------|
| PHASE | 208/120 VOLTS |
| A | BLACK |
| B | RED |
| C | BLUE |
| NEUTRAL | WHITE |
| GROUND | GREEN |
25. ELECTRICAL EQUIPMENT SHALL BE IDENTIFIED WITH LABELS OF ENGRAVED PLASTIC-LAMINATE ON EACH MAJOR UNIT OF ELECTRICAL EQUIPMENT IN THE BUILDING, INCLUDING CENTRAL OR MASTER UNIT OF EACH ELECTRICAL SYSTEM.
26. ENCLOSED NONFUSIBLE DISCONNECT SWITCH SHALL BE NEMA KS 1, TYPE HD, HANDLE LOCKABLE WITH 2 PADLOCKS. ENCLOSED FUSIBLE DISCONNECT SWITCH, NEMA KS 3, TYPE HD, CLIPS TO ACCOMMODATE SPECIFIED FUSES, ENCLOSURE CONSISTENT WITH ENVIRONMENT WHERE LOCATED, HANDLE LOCKABLE WITH 2 PADLOCKS AND INTERLOCKED WITH COVER IN CLOSED POSITION. ALL SWITCHES SHALL BE "HEAVY DUTY" RATED FOR THE VOLTAGE REQUIRED.
27. MAKE ALL NECESSARY TESTS TO INSURE THAT THE ENTIRE INSTALLATION IS FREE FROM IMPROPER GROUNDS AND FROM SHORTED AND/OR OPEN CIRCUITS. VOLTAGE, CURRENT AND ROTATION TESTS SHALL BE MADE BEFORE ANY MOTORS ARE PLACED IN OPERATION. ALL LOADS MUST BE BALANCED ACROSS PHASES. CHECK TO SEE THAT ALL LIGHTS WORK AND ARE CONTROLLED BY SWITCHES INDICATED ON DRAWINGS OR BREAKERS SO INDICATED ON PANEL SCHEDULE.
28. MARK ALL DEVICES AS TO WHICH PANEL AND CIRCUIT THEY ARE CONNECTED.
29. ELECTRICAL SERVICE IS 208Y/120V THREE PHASE, 4 WIRE.
30. ALL CONDUCTORS SHALL BE COPPER. ALL WIRING FOR EQUIPMENT SHALL BE ONE OF THE FOLLOWING TYPES THW, THHW, THWN WITH A RATING OF AT LEAST 75 DEGREES C.
31. BACK TO BACK DEVICES LOCATED IN RATED WALLS SHALL BE SEPARATED BY A DISTANCE OF AT LEAST 24 INCH HORIZONTALLY.
32. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION.
33. BRANCH CIRCUITS SHALL NOT EXCEED 80% OF OVERCURRENT PROTECTION. DEVICES SHALL BE RELOCATED TO ANOTHER CIRCUIT IF FOUND TO BE IN EXCESS OF 80%.
34. ALL COMMUNICATION, SIGNALING SYSTEM, DATA SYSTEM CIRCUITS, FIRE ALARM SYSTEMS AND SYSTEMS LESS THAN 120 VOLTS, NOMINAL SHALL BE PROVIDED WITH EQUIVALENT INSULATION AS THAT PROVIDED FOR THE ELECTRICAL DISTRIBUTION SYSTEM. AS REQUIRED BY NEC ARTICLE 517.80.
35. INSTALL UNSHARED NEUTRAL CONDUCTORS ON LINE AND LOAD SIDE OF DIMMERS.
36. ALL RECEPTACLES LOCATED WITHIN SIX FEET FROM THE EDGE OF A SINK SHALL BE GFCI TYPE.
37. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH INTERNAL DISCONNECTING MEANS: THOMAS BETTS STA-KON SERIES OR ENGINEER APPROVED EQUAL.
38. 24 HOUR PROGRAMMABLE TIMECLOCKS SHALL BE CAPABLE OF SEVEN-DAY AND SEASONAL SCHEDULE ADJUSTMENT AND HAVE POWER BACKUP FOR AT LEAST 4 HOURS.



ELECTRICAL DEVICE INSTALLATION DETAIL 5 | 6

NO SCALE

ED-012

ELECTRICAL DEVICE INSTALLATION DETAIL NOTES

- 1 ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION.
- 2 RECEPTACLE SHALL BE GFCI TYPE. COORDINATE LOCATION WITH PLUMBING CONTRACTOR.
- 3 COORDINATE ALL RECEPTACLE LOCATIONS NEAR MILLWORK WITH MILLWORK BEFORE ROUGH IN.
- 4 ALL RECEPTACLES WITHIN 6 FEET OF A SINK SHALL BE GFCI TYPE.
- 5 RECEPTACLE LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
- 6 ALL MOUNTING HEIGHTS GIVEN ARE TO CENTER OF DEVICE. UNLESS NOTED OTHERWISE.

LEGEND

LEGEND NOTES:

1. ALL DARK AND DASHED SYMBOLS INDICATE DEVICES AND EQUIPMENT TO BE REMOVED OR LOCATED UNDERGROUND AS NOTED.
2. ALL DARK AND SOLID SYMBOLS INDICATE DEVICES AND EQUIPMENT AS NEW WORK.
3. ALL LIGHT AND SOLID SYMBOLS INDICATE DEVICES AND EQUIPMENT THAT ARE EXISTING TO REMAIN.
4. CAPITAL LETTER BESIDE FIXTURE SYMBOL DENOTES FIXTURE TYPE WITH REFERENCE TO FIXTURE SCHEDULE.
5. MOUNTING HEIGHTS GIVEN BELOW SHALL BE FOLLOWED UNLESS NOTED ON THE FLOOR PLANS, SCHEDULES OR SHOWN DIFFERENT IN THE ARCHITECTURAL ELEVATIONS. ALL HEIGHTS ARE TO CENTER OF THE DEVICE.
6. SUBSCRIPT LOWERCASE LETTER BESIDE SYMBOL IS SWITCH-FIXTURE RELATIONSHIP.

CEILING MOUNTED LIGHTING FIXTURE. SEE LIGHT FIXTURE SCHEDULE.

WALL MOUNTED LIGHTING FIXTURE. SEE LIGHT FIXTURE SCHEDULE.

WALL MOUNTED LIGHTING FIXTURE WITH EMERGENCY BATTERY PACK. THE EMERGENCY BATTERY PACK SHALL BE CONNECTED AHEAD OF SWITCH/TIMECLOCK.

SPOT OR FLOODLIGHT. SEE LIGHT FIXTURE SCHEDULE.

EXIT LIGHT, ARROW INDICATES DIRECTION, TWO ARROWS INDICATE DOUBLE FACE. CONNECT AHEAD OF SWITCH.

LIGHTING FIXTURE WITH EMERGENCY BATTERY PACK POWERING TWO LAMPS. THE EMERGENCY BATTERY PACK SHALL BE CONNECTED AHEAD OF SWITCH.

S SINGLE POLE SWITCH, 20A, 48" AFF.

S_o SINGLE POLE OCCUPANCY SENSING SWITCH, 20A, 48" AFF.

S_a SINGLE POLE SWITCH, 20A, 48" AFF, SUBSCRIPT INDICATES SPECIFIC SWITCHING.

S₃ THREE WAY SWITCH, 20A, 48" AFF.

S₄ FOUR WAY SWITCH, 20A, 48" AFF.

S_w MOTOR RATED SWITCH WITH OVERLOADS.

S_{3o} THREE WAY OCCUPANCY SENSING SWITCH, 20A, 48" AFF.

⌚ DUPLEX CONVENIENCE RECEPTACLE, 20A, 125 VOLTS, 3 WIRE GROUNDING TYPE, 18" AFF EXCEPT AS NOTED.

⚡ WP GROUND FAULT INTERRUPTING DUPLEX CONVENIENCE RECEPTACLE, 20A, 125 VOLT, 3 WIRE GROUNDING TYPE, 18" AFF EXCEPT AS NOTED. "WP" INDICATES WEATHERPROOF WHILE IN USE.

⚡ TWO GROUND FAULT INTERRUPTING DUPLEX CONVENIENCE RECEPTACLES MOUNTED IN A TWO - GANG OUTLET BOX WITH SINGLE COVER PLATE, 20A, 125 VOLT, 18" AFF EXCEPT AS NOTED.

⚡ TWO DUPLEX CONVENIENCE RECEPTACLES MOUNTED IN A TWO - GANG OUTLET BOX. EACH RATED 20A, 125 VOLT WITH SINGLE COVER PLATE, 18" AFF EXCEPT AS NOTED.

⌚ FLUSH FLOOR BOX WITH DUPLEX CONVENIENCE RECEPTACLE, 20A, 125 VOLTS, 2 POLE, 3 WIRE, GROUNDING TYPE.

⊕ EQUIPMENT CONNECTION

⊙ CEILING MOUNTED OCCUPANCY SENSOR, EQUAL TO LEVITON MODEL #OSC10-MOW WITH 001-OSP-000 120/230/277 VOLT POWER PACK, EXCEPT AS NOTED.

⌚ LINE VOLTAGE THERMOSTAT CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.

⦿ POINT OF DEMOLITION LIMIT

⦿ POINT OF CONNECTION

⚠ REVISION DESIGNATION

⚡ DEMOLITION NOTE DESIGNATION

⚡ NEW WORK NOTE DESIGNATION

⚡ GENERAL NOTE

— BRANCH CIRCUIT CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING. WIRE SIZE #12 UNLESS NOTED OTHERWISE.

↶ L-1 INDICATES CIRCUIT HOMERUN TO PANEL. LETTER & NUMBERS INDICATE PANEL DESIGNATION & CIRCUIT BREAKER NUMBER.

☎ TELEPHONE TERMINAL BACKBOARD

▽ WALL DATA/TELEPHONE OUTLET, 4" SQUARE BOX WITH SINGLE GANG RING AND COVER UNLESS NOTED OTHERWISE, 18" AFF EXCEPT AS NOTED. PROVIDE 3/4" CONDUIT WITH PULLWIRE TO ABOVE CEILING.

☑ FLUSH FLOOR DATA/TELEPHONE OUTLET. PROVIDE 3/4" CONDUIT WITH PULLWIRE TO ABOVE CEILING.

☐ 30A 20AF DISCONNECT SWITCH FUSIBLE OR NON-FUSIBLE, 600V, 3 POLE SWITCH & FUSE (IF ANY) AS NOTED.

▨ PANELBOARD, 120/208 VOLTS, SEE SCHEDULE

⌚ TIMECLOCK

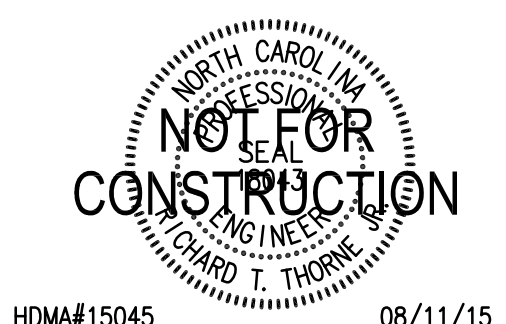
⌚ LIGHTING CONTACTOR

⦿ FURNITURE CONNECTION

A OR AMP AMPERE(S)
AFF ABOVE FINISHED FLOOR
AIC AMPERE INTERRUPTING CAPACITY
ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
BKR BREAKER
C CONDUIT
Ckt CIRCUIT
DIA DIAMETER
EST ESTIMATE
° DEGREES FAHRENHEIT
FLA FULL LOAD AMPS
FT FOOT OR FEET
G GROUND
GFCI GROUND-FAULT CIRCUIT INTERRUPTER
HP HORSE POWER
IN INCH(-ES)
KAIC THOUSAND AMPERE INTERRUPTING CAPACITY
KCMIL THOUSAND CIRCULAR MILS
KVA THOUSAND VOLT AMPERES
kW KILOWATT
LED LIGHT EMITTING DIODE
LTS LIGHTS
MAX MAXIMUM
MCA MINIMUM CIRCUIT AMPACITY
MCB MAIN CIRCUIT BREAKER
MIN MINIMUM
MLO MAIN LUGS ONLY
MOCP MAXIMUM OVERCURRENT PROTECTION
NEC NATIONAL ELECTRICAL CODE (NFPA 70)
NEMA NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NO NUMBER
NRTL NATIONALLY RECOGNIZED TESTING LABORATORIES
⚡ ELECTRICAL PHASE
P POLE
PNL PANEL
REC RECEPTACLE
SQ SQUARE
V VOLT(S)
W WATT(S)
Y WYE

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HDMA#15045

08/11/15

Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER:

PROJECT NUMBER: 15045

DRAWN BY: RCM

ISSUED / REVIEW: RTT

ISSUED / CONSTRUCTION:

REVISIONS

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ELECTRICAL SPECS,
SCHEDULE & LEGEND

E1

OF SHEETS

ELECTRICAL SYSTEM AND EQUIPMENT
METHOD OF COMPLIANCE:

Prescriptive X Performance ___ Energy Cost Budget ___

Provide a standard riser diagram which indicates designated points for check metering. NA
Provide a standard panel schedule description which identifies different end use loads. NA

Lighting schedule: SEE DRAWINGS
lamp type required in fixture SEE DRAWINGS
number of lamps in fixture SEE DRAWINGS
ballast type used in the fixture SEE DRAWINGS
number of ballast in fixture SEE DRAWINGS
total wattage per fixture SEE DRAWINGS
total interior wattage specified vs allowed: Specified: 8,830 watts, Allowed: 11,812 watts
All exterior light fixtures shall be provided with a minimum source efficacy of 45 lumens/watt.

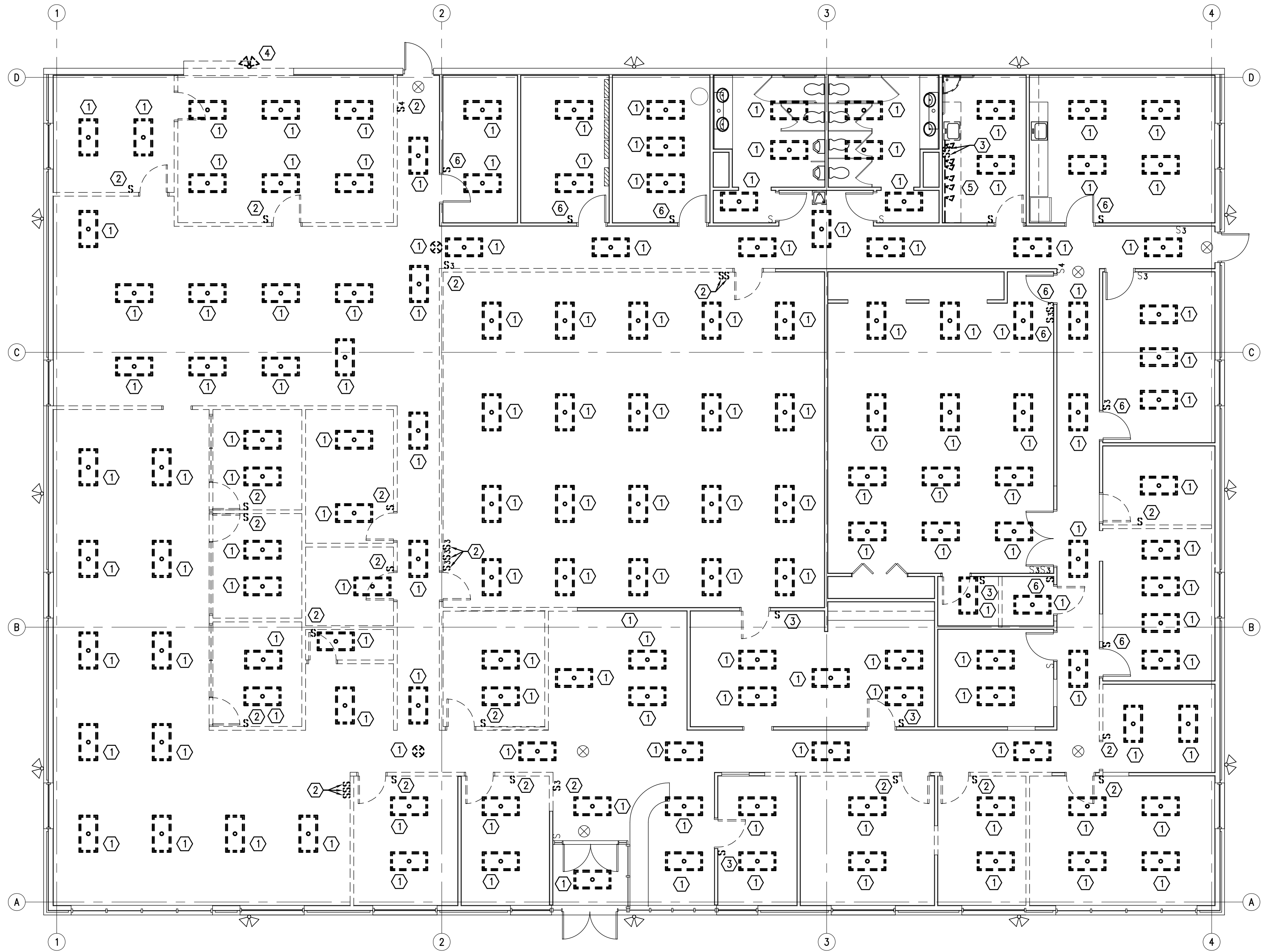
Equipment schedules with motors (not used for mechanical systems)
motor horsepower: NA
number of phases NA
minimum efficiency NA
motor type NA
of poles NA

DESIGNER STATEMENT: 1
To the best of my knowledge and belief, the design of this building complies with the electrical system and equipment requirements of the North Carolina State Building Code, Volume X Energy.

SIGNED: _____

NAME: Richard T. Thorne, Jr., P.E.

TITLE: President



ELECTRICAL FLOOR PLAN - LIGHTING - DEMOLITION
SCALE: 1/8" = 1'-0"

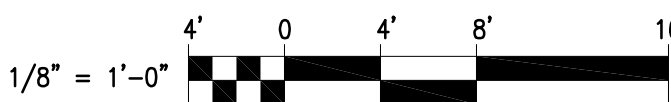
DEMOLITION NOTES

- ① REMOVE LIGHT FIXTURE WITH ASSOCIATED CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX. MAINTAIN EXISTING CIRCUIT FOR REUSE IN NEW WORK. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- ② REMOVE SWITCH WITH ASSOCIATED DEVICE BOX, CONDUIT AND WIRING BACK TO SOURCE. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- ③ REMOVE SWITCH WITH ASSOCIATED DEVICE BOX, CONDUIT AND WIRING BACK TO SOURCE. PATCH WALL TO MATCH ADJACENT SURFACE AND FINISH. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- ④ REMOVE EXTERIOR LIGHT FIXTURE WITH ASSOCIATED CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX. MAINTAIN EXISTING CIRCUIT FOR REUSE IN NEW WORK. STORE LIGHT FIXTURE FOR RELOCATION. SEE ELECTRICAL FLOOR PLAN - LIGHTING - NEW WORK FOR NEW LOCATION. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- ⑤ REMOVE TRACK LIGHT SYSTEM WITH ASSOCIATED LIGHT FIXTURES, TRACK HARDWARE, CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX. MAINTAIN EXISTING CIRCUIT FOR REUSE IN NEW WORK. LIGHT FIXTURE AND TRACK HARDWARE SHALL BE TURNED OVER TO OWNER. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- ⑥ REMOVE SWITCH. MAINTAIN EXISTING DEVICE BOX, CONDUIT AND WIRING FOR REPLACEMENT IN NEW WORK. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.

GENERAL DEMOLITION NOTES

1. PROVIDE ALL ELECTRICAL DEMOLITION WORK NECESSARY TO INSTALL NEW WORK. CONTRACTOR SHALL REROUTE AND RECONNECT ANY CIRCUITS THAT WILL REMAIN IN USE BUT INTERFERE WITH NEW CONSTRUCTION.
2. ALL EXISTING CONDUITS THAT WILL NOT BE REUSED SHALL BE REMOVED WHERE THEY WILL BE EXPOSED AFTER COMPLETION OF THE CONSTRUCTION. ALL OTHERS MAY BE ABANDONED IN WALLS ONLY. CONTRACTOR SHALL REMOVE ALL WIRING FROM ABANDONED CONDUITS, DISCONNECT FROM ALL POWER SOURCES AND PROVIDE BLANK PLATES ON ALL ABANDONED OUTLETS. CUT-OFF ABANDONED CONDUIT 2" BELOW FINISHED FLOOR AND PATCH TO MATCH EXISTING FINISH.
3. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY NEW WORK.
4. ALL MATERIALS REMOVED UNDER DEMOLITION (AND NOT TO BE RELOCATED OR TURNED OVER TO OWNER) SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED COMPLETELY FROM THE SITE.
5. CONTRACTOR SHALL EXERCISE CARE IN REMOVING DEMOLITION ITEMS AND SHALL REPAIR OR REPLACE AT HIS COST ANY DAMAGE CAUSED TO EXISTING CONSTRUCTION AND EQUIPMENT TO REMAIN.
6. DRAWINGS ARE BASED ON EXISTING PLANS AND FIELD INVESTIGATION WITHOUT DEMOLITION. CONTRACTOR SHALL VISIT THE EXISTING BUILDING AND FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS AND SHALL EXAMINE ALL RELATED DRAWINGS TO AVOID CONFLICTS.
7. CONTRACTOR SHALL REMOVE ALL STARTERS, DISCONNECT SWITCHES AND ASSOCIATED CONDUIT AND WIRING FOR ALL EQUIPMENT TO BE REMOVED BY OTHERS.
8. PRIOR TO BEGINNING WORK, CONTRACTOR SHALL TRACE ALL CIRCUITS BOTH TO BE DEMOLISHED AND EXISTING TO REMAIN AND IDENTIFY ALL DEVICES WITH CIRCUIT NUMBERS.
9. ALL PANELBOARD DIRECTORIES SHALL BE UPDATED AND TYPE WRITTEN DIRECTORY CARD PROVIDED AT END OF PROJECT.

GRAPHIC SCALE



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NOT FOR CONSTRUCTION
HDM#15045 08/11/15

Carolina Commercial
Systems

524 New Hope Road
Raleigh, NC

OWNER:

PROJECT NUMBER: 15045
DRAWN BY: RCM
ISSUED / REVIEW: RTT

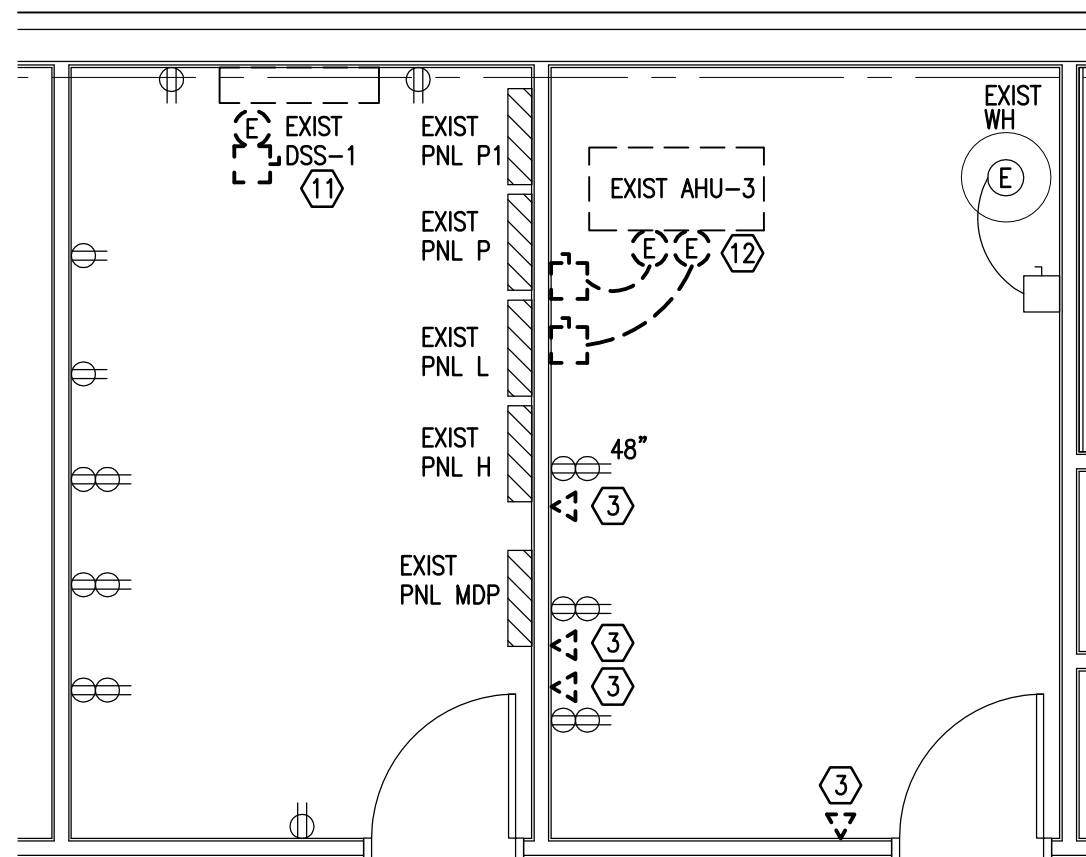
ISSUED / CONSTRUCTION:

REVISIONS

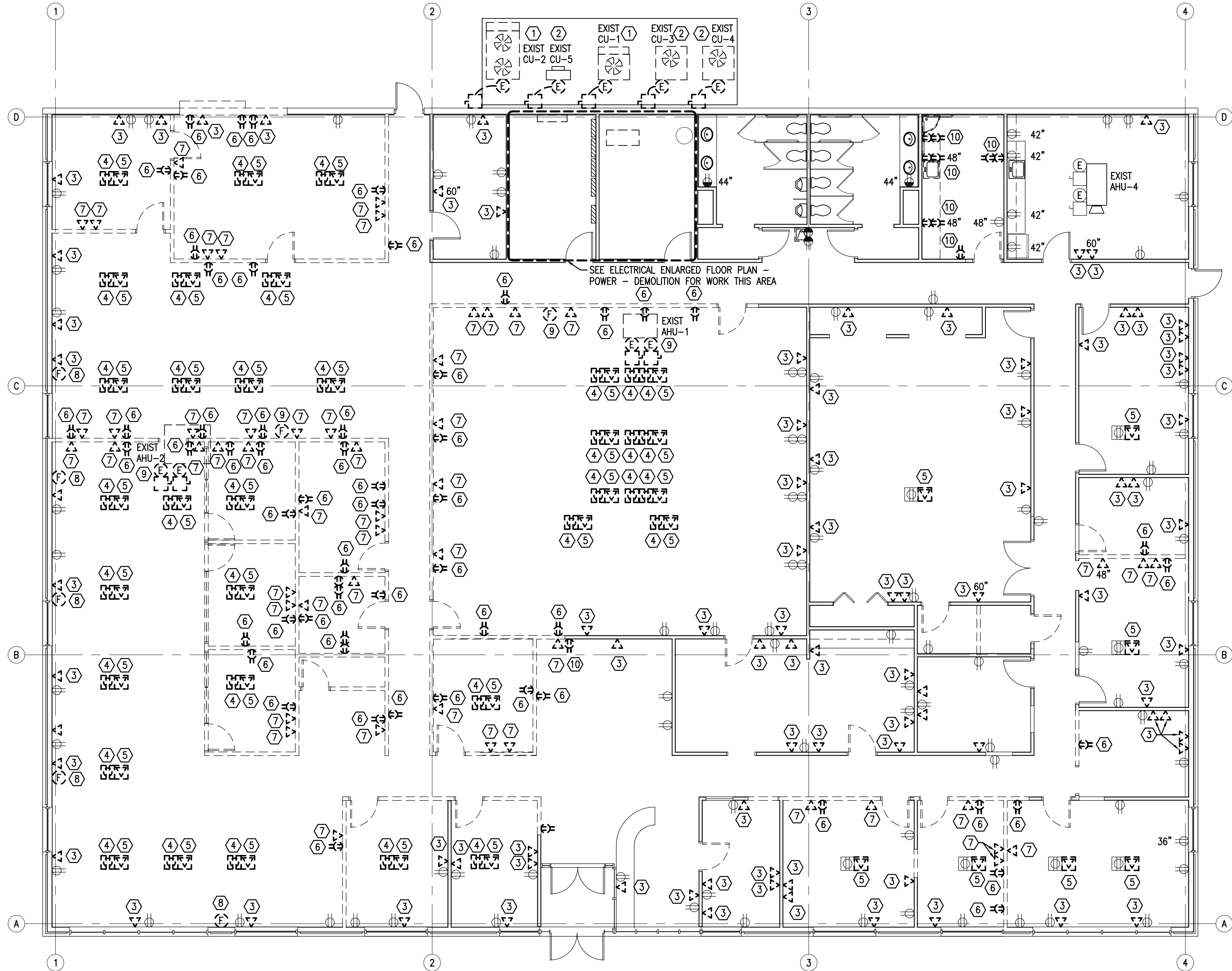
**ELECTRICAL FLOOR
PLAN - LIGHTING -
DEMOLITION**

E2

OF SHEETS



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

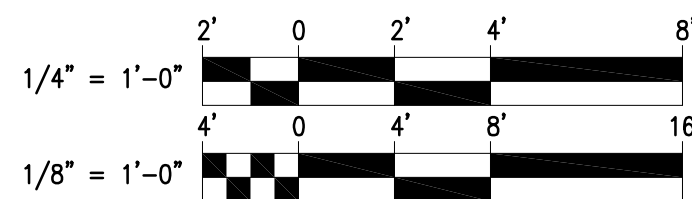


ELECTRICAL FLOOR PLAN - POWER - DEMOLITION
SCALE: 1/8" = 1'-0"

DEMOLITION NOTES

- REMOVE ELECTRICAL CONNECTION TO CONDENSING UNIT WITH ASSOCIATED DISCONNECTING MEANS, CONDUIT AND WIRING BACK TO SOURCE. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- REMOVE ELECTRICAL CONNECTION TO CONDENSING UNIT WITH ASSOCIATED DISCONNECTING MEANS, CONDUIT AND WIRING BACK TO PANEL AS REQUIRED FOR RELOCATION OF UNIT. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- REMOVE TELE/DATA OUTLET WITH ASSOCIATED DEVICE BOX, CONDUIT AND WIRING BACK TO SOURCE. PATCH WALL TO MATCH ADJACENT SURFACE AND FINISH. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE FLOOR RECEPTACLE WITH ASSOCIATED WIRING BACK TO SOURCE. COORDINATE FLOOR PATCHING, DEVICE BOX AND CONDUIT WITH GENERAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE FLOOR TELE/DATA OUTLET WITH ASSOCIATED WIRING BACK TO SOURCE. COORDINATE FLOOR PATCHING, DEVICE BOX AND CONDUIT WITH GENERAL CONTRACTOR. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE RECEPTACLE WITH ASSOCIATED DEVICE BOX, CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX. MAINTAIN EXISTING CIRCUIT FOR ADJACENT DEVICES TO REMAIN. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE TELE/DATA OUTLET WITH ASSOCIATED DEVICE BOX, CONDUIT AND WIRING BACK TO SOURCE. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE FURNITURE CONNECTION WITH ASSOCIATED WIRING BACK TO DEVICE BOX AT WALL. PROVIDE BLANK FACE PLATE FOR DEVICE BOX. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE FURNITURE CONNECTION WITH ASSOCIATED WIRING BACK TO DEVICE BOX AT WALL. PROVIDE BLANK FACE PLATE FOR DEVICE BOX. MAINTAIN EXISTING CIRCUIT FOR ADJACENT DEVICES TO REMAIN. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE ELECTRICAL CONNECTION TO AIR HANDLING UNIT WITH ASSOCIATED DISCONNECTING MEANS, CONDUIT AND WIRING BACK TO SOURCE. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- REMOVE RECEPTACLE WITH ASSOCIATED DEVICE BOX, CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX. MAINTAIN EXISTING CIRCUIT FOR ADJACENT DEVICES TO REMAIN. PATCH WALL TO MATCH ADJACENT SURFACE AND FINISH. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION PRIOR TO BEGINNING ANY WORK.
- REMOVE ELECTRICAL CONNECTION TO DUCTLESS SPLIT SYSTEM WITH ASSOCIATED DISCONNECTING MEANS, CONDUIT AND WIRING BACK TO PANEL AS REQUIRED FOR RELOCATION OF UNIT. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- REMOVE ELECTRICAL CONNECTION TO AIR HANDLING UNIT WITH ASSOCIATED DISCONNECTING MEANS, CONDUIT AND WIRING BACK TO PANEL AS REQUIRED FOR RELOCATION OF UNIT. FIELD COORDINATE EXACT LOCATION, REQUIREMENTS AND LIMITS OF DEMOLITION WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.

GRAPHIC SCALE



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NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL
RICHARD T. THOMAS
HDM#15045 08/11/15

Carolina Commercial
Systems

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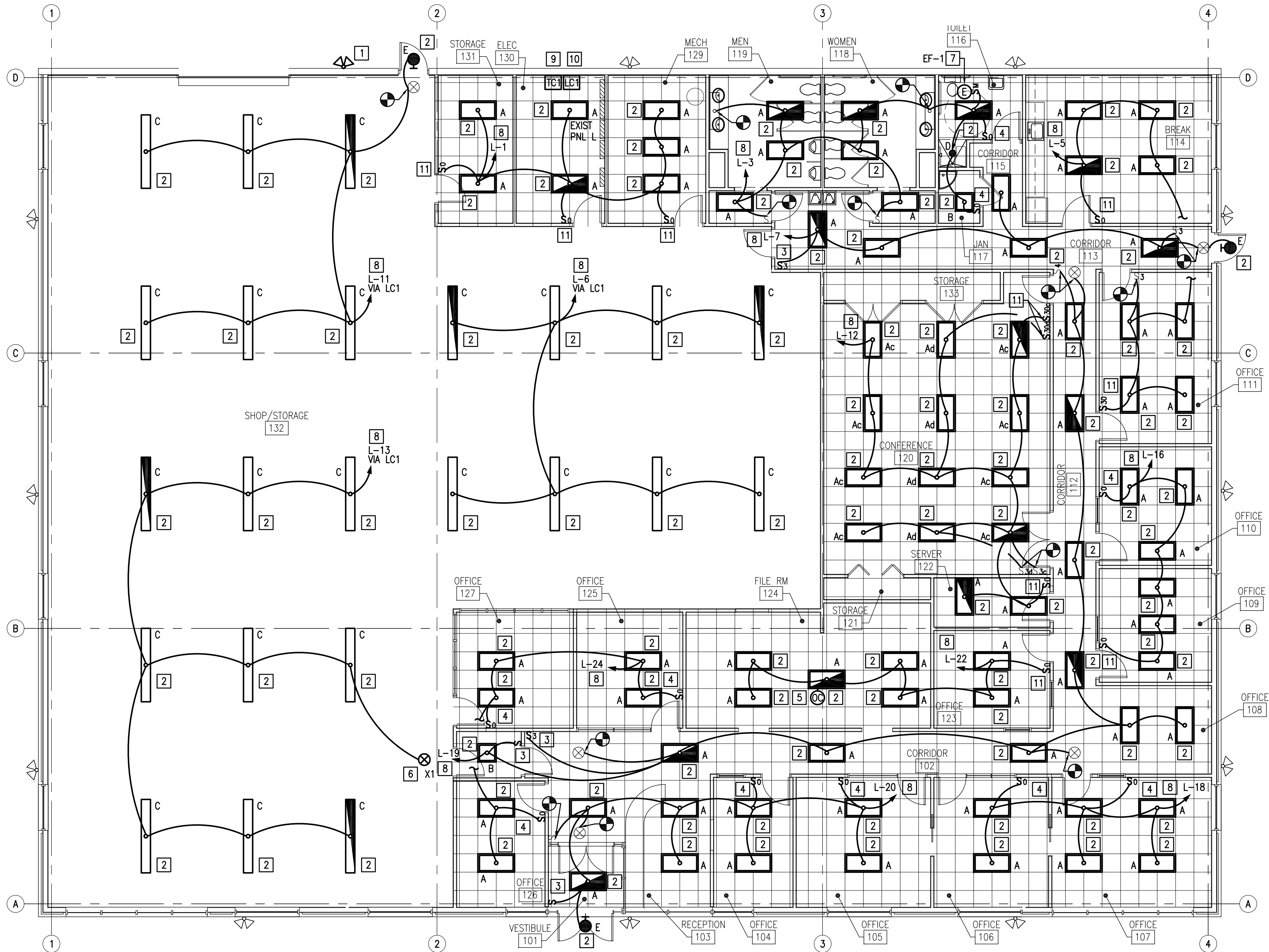
REVISIONS

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ELECTRICAL FLOOR PLAN - POWER - DEMOLITION

E3

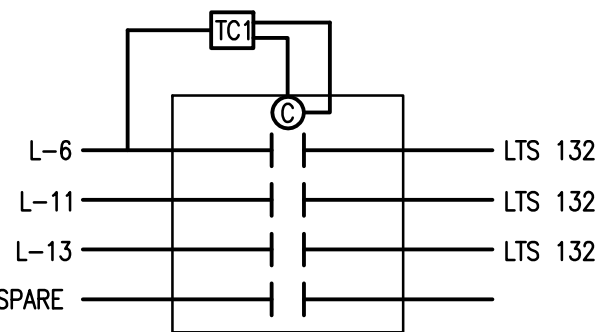
OF SHEETS



ELECTRICAL FLOOR PLAN - LIGHTING - NEW WORK
SCALE: 1/8" = 1'-0"

NEW WORK NOTES

- 1 NEW LOCATION OF STORED EXTERIOR LIGHT FIXTURE. CONNECT TO MAINTAINED EXISTING CIRCUIT. FIXTURE MOUNTING HEIGHT SHALL MATCH EXISTING EXTERIOR LIGHT FIXTURES. PROVIDE ALL REQUIRED MATERIALS FOR RELOCATION. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 2 PROVIDE LIGHT FIXTURE WITH CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED.
- 3 PROVIDE SWITCH WITH DEVICE BOX, CONDUIT AND WIRING AS SHOWN. CONNECT TO FIXTURES INDICATED.
- 4 PROVIDE WALL MOUNTED OCCUPANCY SENSOR WITH DEVICE BOX, CONDUIT AND WIRING AS SHOWN. CONNECT TO FIXTURES INDICATED.
- 5 PROVIDE CEILING MOUNTED OCCUPANCY SENSOR WITH DEVICE BOX, CONDUIT AND WIRING AS SHOWN. CONNECT TO FIXTURES INDICATED.
- 6 PROVIDE ILLUMINATED EXIT SIGN. CONNECT TO CIRCUIT INDICATED AHEAD OF LOCAL SWITCH.
- 7 PROVIDE ELECTRICAL CONNECTION TO EXHAUST FAN WITH DISCONNECTING MEANS AS SHOWN. CONNECT TO CIRCUIT INDICATED. EXHAUST FAN SHALL BE SWITCHED WITH LIGHT. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 8 CONNECT LIGHT FIXTURES TO EXISTING LIGHTING CIRCUIT SERVING THIS AREA. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
- 9 PROVIDE PROGRAMMABLE TIMECLOCK AS SHOWN. SEE SPECIFICATIONS. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS WITH OWNER PRIOR TO BEGINNING ANY WORK.
- 10 PROVIDE (4) POLE ENCLOSED LIGHTING CONTACTOR AS SHOWN, EATON MODEL ECC04C1A OR ENGINEER APPROVED EQUAL. SEE LIGHTING CONTACTOR DIAGRAM. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS WITH OWNER PRIOR TO BEGINNING ANY WORK.
- 11 PROVIDE WALL MOUNTED OCCUPANCY SENSOR IN EXISTING DEVICE BOX AS SHOWN. PROVIDE CONDUIT AND WIRING AS REQUIRED FOR INSTALLATION. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.



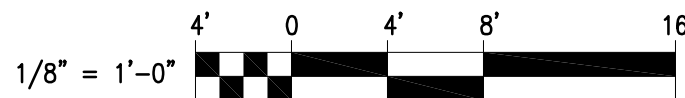
LIGHTING CONTACTOR DETAIL (LC1)

NO SCALE

ALL LIGHTING CONTACTORS SHALL BE MECHANICALLY HELD, ELECTRONICALLY OPERATED.

LIGHT FIXTURE SCHEDULE											
TYPE	MANUFACTURER	CATALOG NO	LAMPS		VOLTAGE	WATTS FIXTURE	BALLAST		MOUNTING	DESCRIPTION	NOTES
			NO	TYPE			NO	TYPE			
A	LITHONIA	2PM3GB33218LDMVOLTGE10IS	3	F32T8	120	75	1	ELECTRONIC	LAY-IN	2'x4' 18 CELL PARABOLIC	①
B	LITHONIA	2PM3GB3179LDMVOLTGE10IS	3	F17T8	120	40	1	ELECTRONIC	LAY-IN	2'x2' 9 CELL PARABOLIC	①
C	LITHONIA	T2EJ23278MVOLT14GEB10IS	4	F32T8	120	96	1	ELECTRONIC	SUSPENDED	8" INDUSTRIAL	① ②
D	PRESCOLITE	LF6LEDG46LFLED6G435WT		LED	120	19			RECESSED	6" LED DOWNLIGHT	①
E	LITHONIA	AFNDBXT	2	6W	120	20	1	ELECTRONIC	SURFACE	EMERGENCY WALL PAK	③
X1	LITHONIA	LQMSW3R120/277ELN		LED	120	3			UNIVERSAL	LED EXIST SIGN	
NOTES:											
① PROVIDE EMERGENCY BATTERY PACK WHERE INDICATED ON PLANS. PROVIDE HOT LEG AS REQUIRED.											
② MOUNT FIXTURE 9'-0" AFF FROM BOTTOM OF FIXTURE. PROVIDE ALL REQUIRED MOUNTING HARDWARE. COORDINATE EXACT FIXTURE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO BEGINNING ANY WORK.											
③ PROVIDE ALL REQUIRED MOUNTING HARDWARE. COORDINATE EXACT FIXTURE MOUNTING LOCATION WITH ARCHITECT PRIOR TO BEGINNING ANY WORK.											

GRAPHIC SCALE



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PROJECT NUMBER: 15045

DRAWN BY:

ISSUED / REVIEW:

ISSUED / CONSTRUCTION:

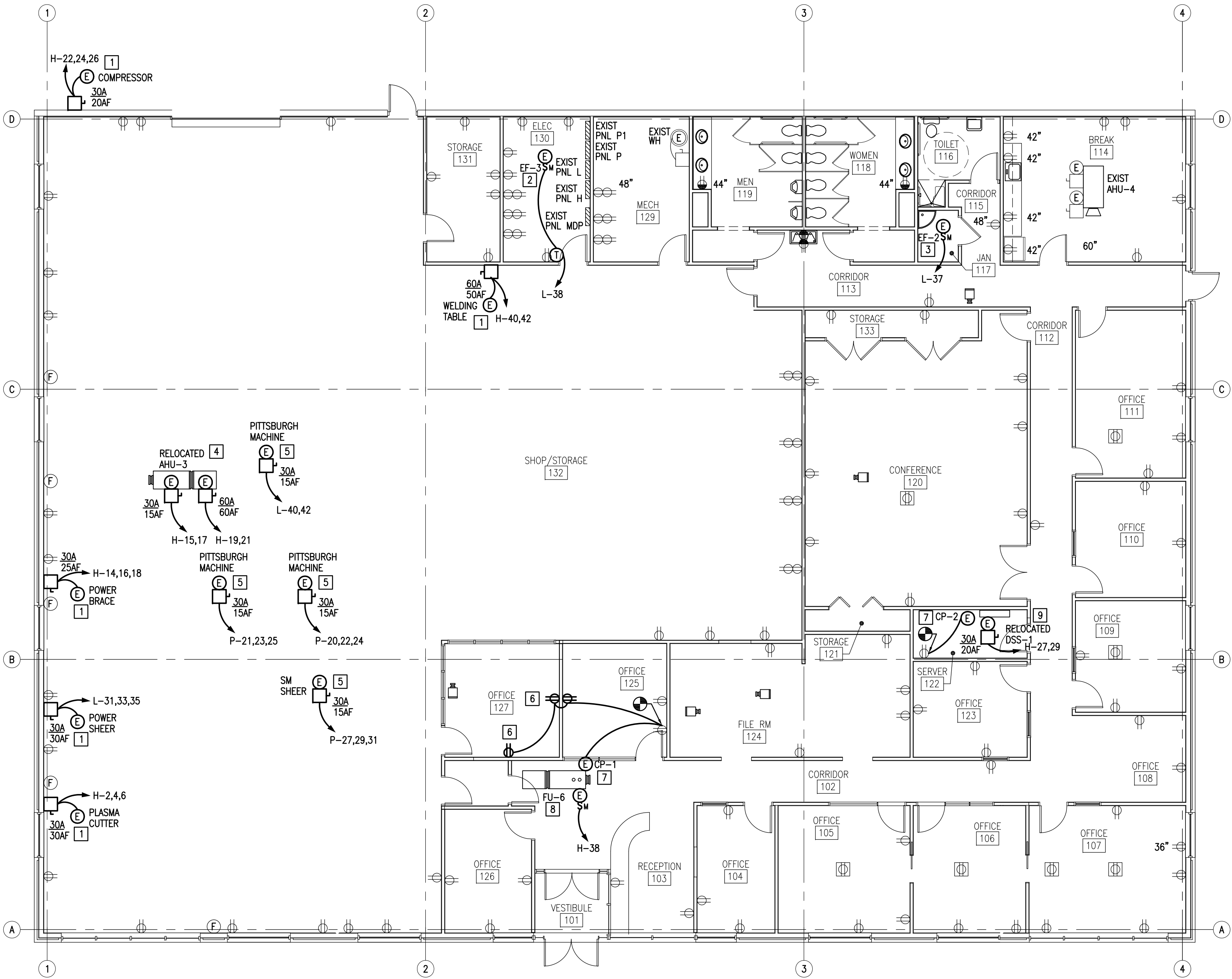
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**ELECTRICAL FLOOR
PLAN - LIGHTING -
NEW WORK**

E4

OF SHEETS

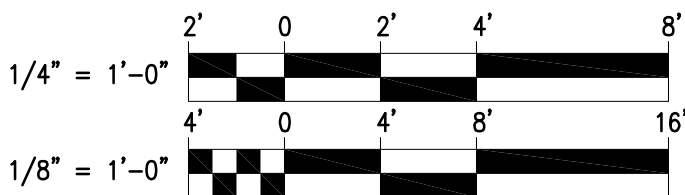


ELECTRICAL FLOOR PLAN - POWER - NEW WORK
SCALE: 1/8" = 1'-0"

NEW WORK NOTES

- 1 PROVIDE ELECTRICAL CONNECTION TO SHOP EQUIPMENT WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH OWNER AND EQUIPMENT SUPPLIER PRIOR TO BEGINNING ANY WORK.
- 2 PROVIDE ELECTRICAL CONNECTION TO EXHAUST FAN WITH LINE VOLTAGE THERMOSTAT, DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO EXISTING CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 3 PROVIDE ELECTRICAL CONNECTION TO EXHAUST FAN WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO EXISTING CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 4 PROVIDE ELECTRICAL CONNECTION TO RELOCATED AIR HANDLING UNIT WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO EXISTING CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 5 PROVIDE ELECTRICAL CONNECTION TO SHOP EQUIPMENT WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED. PROVIDE ALL REQUIRED MATERIALS TO MOUNT DISCONNECTING MEANS ON UNISTRUT AS CLOSE TO SHOP EQUIPMENT AS POSSIBLE. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH OWNER AND EQUIPMENT SUPPLIER PRIOR TO BEGINNING ANY WORK.
- 6 PROVIDE RECEPTACLE WITH DEVICE BOX, CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED.
- 7 PROVIDE ELECTRICAL CONNECTION TO CONDENSATE PUMP WITH CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 8 PROVIDE ELECTRICAL CONNECTION TO FURNACE UNIT WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 9 PROVIDE ELECTRICAL CONNECTION TO RELOCATED DUCTLESS SPLIT SYSTEM WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO EXISTING CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.

GRAPHIC SCALE



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HDM#15045 08/11/15

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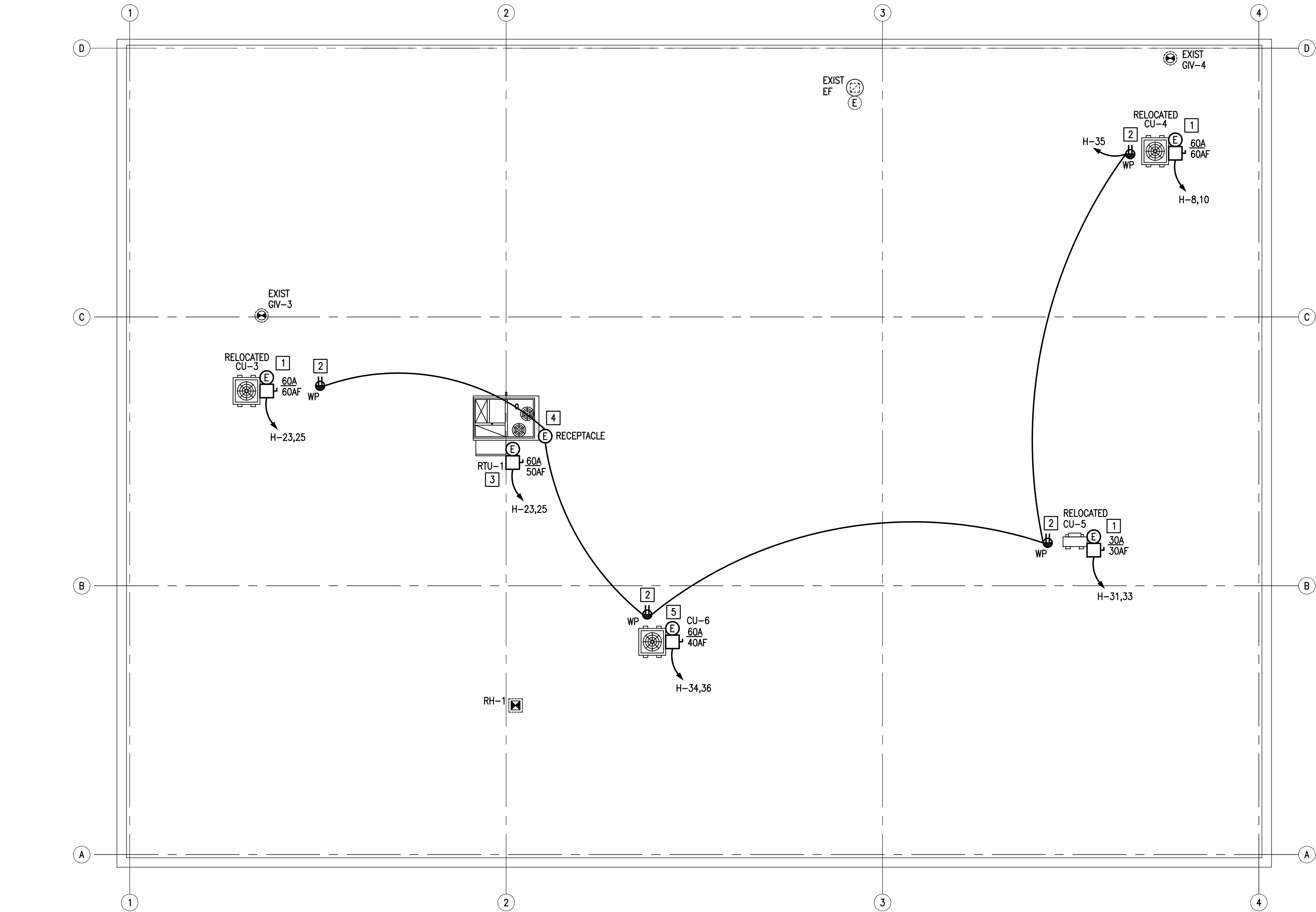
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**ELECTRICAL FLOOR
PLAN - POWER -
NEW WORK**

E5

OF SHEETS

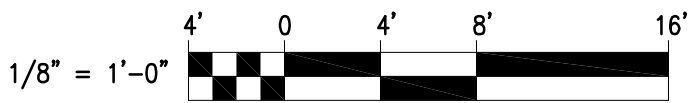


ELECTRICAL ROOF PLAN – NEW WORK
SCALE: 1/8" = 1'-0"

NEW WORK NOTES

- 1 PROVIDE ELECTRICAL CONNECTION TO RELOCATED CONDENSING UNIT WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO EXISTING CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 2 PROVIDE ROOFTOP RECEPTACLE WITH DEVICE BOX, CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED. SUPPORT INDEPENDENT OF UNIT.
- 3 PROVIDE ELECTRICAL CONNECTION TO GAS ROOFTOP UNIT WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO EXISTING CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 4 PROVIDE ELECTRICAL CONNECTION TO UNIT MOUNTED SERVICE RECEPTACLE WITH CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- 5 PROVIDE ELECTRICAL CONNECTION TO CONDENSING UNIT WITH DISCONNECTING MEANS, CONDUIT AND WIRING AS SHOWN. CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.

GRAPHIC SCALE



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PROJECT NUMBER: 15045

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ISSUED / REVIEW: RTT

ISSUED / CONSTRUCTION:

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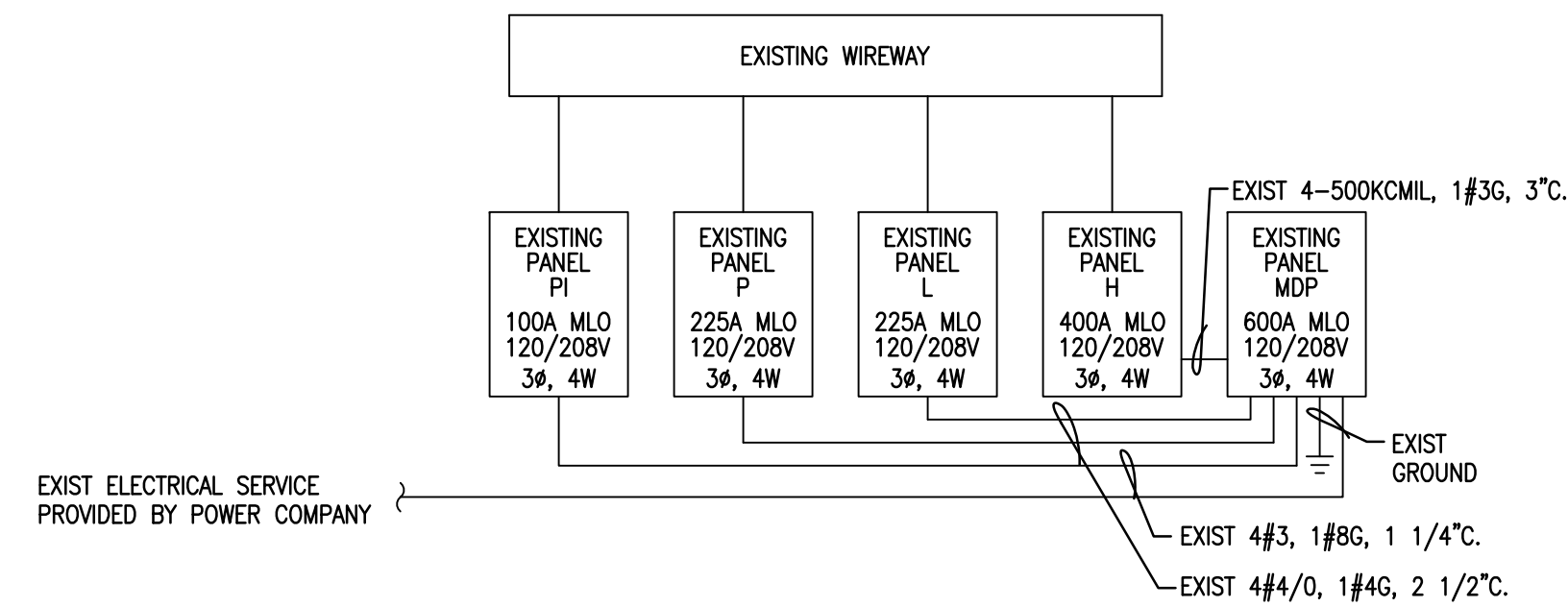
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**ELECTRICAL ROOF
PLAN - NEW WORK**

E6

OF SHEETS

EXISTING PANELBOARD MDP SCHEDULE														
600A MLO , 120/208 V, 3 PHASE, 4 WIRE 22 KAIC MINIMUM SURFACE MOUNT														
LOAD SERVED	LOAD(AMPS)			BKR TRIP	CKT NO	PHASE			CKT NO	BKR TRIP	LOAD(AMPS)			LOAD SERVED
	A	B	C			A	B	C			A	B	C	
EXIST PNL P1	80			100 3P	1				2	225 3P	48			EXIST PNL L
		72			3				4			57		
			72		5				6				90	
EXIST PNL P	93			225 3P	7				8					SPACE
		85			9				10					SPACE
			101		11				12					SPACE
EXIST PNL H	164			400 3P	13				14					SPACE
		298			15				16					SPACE
			210		17				18					SPACE
TOTAL	337	455	383								48	57	90	TOTAL
TOTAL CONNECTED AMPS A:385 B:512 C:473														



POWER RISER DIAGRAM

NO SCALE

◇ RISER SHOWN FOR INFORMATION ONLY.

EXISTING PANELBOARD H SCHEDULE														
400A MLO , 120/208 V, 3 PHASE, 4 WIRE 22 KAIC MINIMUM SURFACE MOUNT														
LOAD SERVED	LOAD(AMPS)			BKR TRIP	CKT NO	PHASE			CKT NO	BKR TRIP	LOAD(AMPS)			LOAD SERVED
	A	B	C			A	B	C			A	B	C	
EXIST WH	22			2P	3				2	30 3P	18			PLASMA CUTTER 3#10, 1#10G, 3/4°C
SPARE					5				6			18		
RTU-1 3#8, 1#86, 3/4°C				2P	7				8	60 2P	28			EXIST CU-4
		35			9				10		28			
			35		11				12					SPACE
EXIST AHU-3	35			30 15 2P	13				14	25 3P	15			POWER BRACE 3#10, 1#10, 3/4°C
		16			15				16		15			
EXIST AHU-3 HEATER	28			2P	17				18			15		
		28		60 2P	19				20	20 3P	11			COMPRESSOR 3#12, 1#12, 3/4°C
EXIST CU-3			28	60 2P	23				24			11		
EXIST DSS-1		10		2P	25				26	60 2P	28			EXIST AHU-4
			10	2P	27				28		28			
EXIST CU-5		16		2P	29				30	60 2P		28		EXIST AHU-4 HEATER
			16	2P	31				32	2P				CU-6
REC ROOF			6	2P	33				34	40 2P		19		2#8, 1#8, 3/4°C
SPARE				3P	37				38	15 2P		7		FU-6
					39				40	50 2P		24		WELDING TABLE 2#8, 1#10, 3/4°C
					41				42	2P		24		
TOTAL	129	127	105								135	171	115	TOTAL
TOTAL CONNECTED AMPS A:164 B:298 C:210														

* PROVIDE MATCHING BREAKER AS INDICATED. REMOVE EXISTING BREAKERS WITH ASSOCIATED CONDUIT AND WIRING THROUGHOUT ENTIRE CIRCUIT AS REQUIRED TO INSTALL NEW BREAKER. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.

EXISTING PANELBOARD P SCHEDULE														
225A MLO , 120/208 V, 3 PHASE, 4 WIRE 22 KAIC MINIMUM SURFACE MOUNT														
LOAD SERVED	LOAD(AMPS)			BKR TRIP	CKT NO	PHASE			CKT NO	BKR TRIP	LOAD(AMPS)			LOAD SERVED
	A	B	C			A	B	C			A	B	C	
EXIST REC	8			20	1				2	20	8			EXIST REC
SPARE					3				4	20		8		EXIST REC
SPARE					5				6	20			8	EXIST REC
EXIST REC	8			20	7				8	20	8			EXIST REC
SPARE					9				10	20		8		EXIST REC
EXIST REC, REC 125, 127			8	20	11				12	20			8	EXIST REC
EXIST REC	8			20	13				14	20	8			EXIST REC
EXIST REC			8	20	15				16	20		8		EXIST REC
EXIST REC			8	20	17				18	20			8	EXIST REC
SPARE					19				20	15	7			PITTSBURGH MACHINE 3#12, 1#12G, 3/4°C
PITTSBURGH MACHINE 3#12, 1#12G, 3/4°C		7		15 21 3P	21				22	3P		7		
			7		23				24				7	SPARE
SM SHEER 3#12, 1#12G, 3/4°C		7		15 27 3P	25				26	20				SPARE
			7		29				28	20				EXIST REC FLOOR
			7		31				30	20		8		EXIST REC FLOOR
EXIST REC		8		20	33				34	20		8		EXIST EF
EXIST REC			8	20	35				36	20			8	EXIST REC
EXIST REC		8		20	37				38	20		8		EXIST REC
EXIST REC			8	20	39				40	20				EXIST REC
SPARE			8	20	41				42	20		8		EXIST REC
TOTAL	46	38	46								47	47	55	TOTAL
TOTAL CONNECTED AMPS A:93 B:85 C:101														

* PROVIDE MATCHING BREAKER AS INDICATED. REMOVE EXISTING BREAKERS WITH ASSOCIATED CONDUIT AND WIRING THROUGHOUT ENTIRE CIRCUIT AS REQUIRED TO INSTALL NEW BREAKER. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.

EXISTING PANELBOARD L SCHEDULE														
225A MLO , 120/208 V, 3 PHASE, 4 WIRE 22 KAIC MINIMUM SURFACE MOUNT														
LOAD SERVED	LOAD(AMPS)			BKR TRIP	CKT NO	PHASE			CKT NO	BKR TRIP	LOAD(AMPS)			LOAD SERVED
	A	B	C			A	B	C			A	B	C	
LTS 129, 130, 131	4			20	1				2	20				SPARE
LTS 116, 117, 118, 119		9		20	3				4	20				SPARE
LTS 111, 114				5	20	5			6	20			7	LTS 132
LTS 113, 115	4			20	7				8	20				SPARE
SPARE				20	9				10	20				SPARE
LTS 132				5	20	11			12	20			9	LTS 120, 122
LTS 132	7			20	13				14	20				SPARE
SPARE				20	15				16	20		4		LTS 109, 110
SPARE				20	17				18	20			4	LTS 106, 107
LTS 102, 108, 112	6			20	19				20	20	5			LTS 101, 103, 104, 105
EXIST LTS SITE		7		20	21				22	20		4		LTS 124, 123
EXIST LTS SITE			7	20	23				24	20			4	LTS 125, 126, 127
EXIST LTS SITE	7			20	25				26	20				SPARE
EXIST REC		8		20	27				28	20				SPARE
EXIST REC			8	20	29				30	20			8	EXIST REC
POWER SHEER 3#12, 1#12G, 3/4°C	9			15 31 3P	31				32	20				SPARE
		9			33				34	20				SPARE
			9		35				36	20			8	EXIST REC
EF-2	3			20	37				38	20	3			EF-3
SPARE		8		20	39				40	15		8		PITTSBURGH MACHINE 2#12, 1#12G, 3/4°C
SPARE			8	20	41				42	2P			8	
TOTAL	40	41	42								8	16	48	TOTAL
TOTAL CONNECTED AMPS A:48 B:57 C:90														

* PROVIDE MATCHING BREAKER AS INDICATED. REMOVE EXISTING BREAKERS WITH ASSOCIATED CONDUIT AND WIRING THROUGHOUT ENTIRE CIRCUIT AS REQUIRED TO INSTALL NEW BREAKER. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS PRIOR TO BEGINNING ANY WORK.

EXISTING PANELBOARD P1 SCHEDULE														
100 A M.L.O. , 120/208 V, 3 PHASE, 4 WIRE 22 KVAIC MINIMUM SURFACE MOUNT														
LOAD SERVED	LOAD(AMPS)			BKR TRIP	CKT NO	PHASE			CKT NO	BKR TRIP	LOAD(AMPS)			LOAD SERVED
	A	B	C			A	B	C			A	B	C	
EXIST REC	8			20	1				2	20	8			EXIST REC
EXIST REC		8		20	3				4	20		8		EXIST REC
EXIST REC			8	20	5				6	20			8	EXIST REC
EXIST REC	8			20	7				8	20	8			EXIST REC
EXIST REC		8		20	9				10	20		8		EXIST REC
EXIST REC			8	20	11				12	20			8	EXIST REC
EXIST REC	8			20	13				14	20	8			EXIST REC
EXIST REC			8	20	15				16	20		8		EXIST REC
SPARE				20	17				18	20			8	EXIST REC
EXIST REC	8			20	19				20	20	8			EXIST REC
EXIST REC		8		20	21				22	20		8		EXIST REC
EXIST REC			8	20	23				24	20			8	EXIST REC
EXIST REC	8			20	25				26	20	8			EXIST REC
SPARE				20	27				28	20		8		EXIST REC
SPARE				20	29				30	20			8	EXIST REC
TOTAL	40	32	32								40	40	40	TOTAL
TOTAL CONNECTED				AMPS		A: 80		B: 72		C: 72				