

2012 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS

Name of Project: DOLLAR GENERAL STORE # 20312
Address: SPRING HILL CHURCH ROAD, LILLINGTON, NORTH CAROLINA Zip: _____
Proposed Use: MERCANTILE (DOLLAR GENERAL RETAIL STORE)
Owner/Authorized Agent: JOHN C. HOOD Phone: 252-344-2100 E-mail: o1ajay@aol.com
Owned By: City/County Private State
Code Enforcement Jurisdiction: City LILLINGTON County HARNETT

LEAD DESIGN PROFESSIONAL: JOHN C. HOOD
DESIGNER FIRM NAME LICENSE# TELEPHONE# E-MAIL
Architectural Hood Herring Archit. John C. Hood 31684 252-344-2100 o1ajay@aol.com
Civil Norris & Tunstall Phil Norris 910-343-4659
Electrical Killian Engineering, Inc. Michael Killian 17304 252-436-8716 mikillan@killianengineering.com
Fire Alarm Killian Engineering, Inc. Michael Killian 17304 252-436-8716 mikillan@killianengineering.com
Plumbing Killian Engineering, Inc. Michael Killian 17304 252-436-8716 mikillan@killianengineering.com
Mechanical Killian Engineering, Inc. Michael Killian 17304 252-436-8716 mikillan@killianengineering.com
Sprinkler-Standpipe
Structural William A. Person, PE William Person 13253 919-446-5228 personand@pearlperson.com
Retaining Walls >6' High
Other

2012 EDITION OF NC CODE FOR: New Construction Addition Upfit
EXISTING: Reconstruction Alteration Repair Renovation
CONSTRUCTED: _____ ORIGINAL USE(S): _____
RENOVATED: _____ CURRENT USE(S): _____
PROPOSED USE(S): _____

BUILDING DATA
Construction Type: I-A I-B II-A II-B III-A III-B IV V-A V-B
Mixed construction No Yes
Sprinklers: No Partial Yes NFPA 13 NFPA 13R NFPA 13D
Standpipes: No Yes Class I II III Wet Dry
Fire District: No Yes Flood Hazard Area: No Yes
Building Height: 16 Feet
GROSS BUILDING AREA:
FLOOR EXISTING (SQ FT) NEW (SQ FT) SUB-TOTAL
6th Floor
5th Floor
4th Floor
3rd Floor
2nd Floor
Mezzanine
1st Floor 9208
Basement
TOTAL 9208

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

Incidental Uses: Furnace Rm Boiler Rm Refrigerant Machine Rm Hydrogen Cutoff Incinerator
 Paint Shop Laboratory & Vocational Laundry Rm Group 1-3 Cells Group 1-2 Waste/Linen Collection
 Waste/Linen Collection >100 s.f. Stationary Storage Battery Systems Fire Pump
 Group 1-2 Storage Group 1-2 Comm. Kitchens Group 1-2 Laundry Group 1-2 Fuel-fired Heat

Special Uses: 402 403 404 405 406 407 408 409 410 411 412 413
 414 415 416 417 418 419 420 421 422 423 424 425 426 427
Special Provisions: 509.2 509.3 509.4 509.5 509.6 509.7 509.8 509.9
Mixed Occupancy: No Yes Separation: 0 Hr. Exception: 508.3.3
 Incidental Use Separation (508.2.5)
This separation is not exempt as a Non-Separated Use (see exceptions)
 Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
 Separated Use (508.4) - See below for area calculations
For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.
Actual Area of Occupancy A + Actual Area of Occupancy B
Allowable Area of Occupancy A + Allowable Area of Occupancy B
64 + 106 + = 170 < 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 503 AREA	(C) AREA FOR OPEN SPACE INCREASE	(D) AREA FOR SPRINKLER INCREASE	(E) ALLOWABLE AREA OR UNLIMITED	(F) MAXIMUM BUILDING AREA
1	M	8228	12500	NA	NA	12500	
1	S-1	920	17500	NA	NA	17500	

1 Open space area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase $I_s = 100 [(F/P) - 0.25] W / 30 = ______ (\%)$
2 The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building $I_s = 200$ percent
b. Single story building $I_s = 300$ percent
3 Unlimited area applicable under conditions of Section 507.
4 Maximum Building Area = total number of stories in the building x E (506.4).
5 The maximum area of parking garages must comply with 406.3.5. The Maximum area of air traffic control towers must comply with 412.1.2.

ALLOWABLE HEIGHT

ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction Type II B		Type II B	
Building Height in Feet 55	Feet = H + 20' =	18	
Building Height in Stories 2	Stories + 1 =	1	

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED (% REDUCTION)	DETAIL # AND SHIRT #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR PENETRATION	DESIGN # FOR RATED JOINTS
Structural frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North	>30'	0					
East	>30'	0					
West	10' x 30'	0					
South	>30'	0					
Interior							
Nonbearing walls and partitions							
Exterior	NA						
North							
East							
West							
South							
Interior							
Floor construction including supporting beams and joists	NA						
Roof construction including supporting beams and joists	NA						
Shafts-Exit	NA						
Shafts-Other	NA						
Corridor Separation	NA						
Occupancy Separation	NA						
Party/Fire Wall Separation	NA						
Smoke Barrier Separation	NA						
Tenant Separation	NA						
Incidental Use Separation	NA						

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: No Yes
Exit Signs: No Yes
Fire Alarm: No Yes
Smoke Detection Systems: No Yes Partial
Panic Hardware: No Yes

LIFE SAFETY PLAN REQUIREMENTS
Life Safety Plan Sheet # COVER

Fire and/or smoke rated wall locations (Chapter 7)
 Assumed and real property line locations SEE SITE PLAN
 Exterior wall opening area with respect to distance to assumed property lines (705.8) < 30'
 Existing structures within 30' of the proposed building
 Occupancy types for each area as it relates to occupancy load calculations (Table 1004.1.1)
 Occupancy loads for each area
 Exit access travel distances (1018) < 200'
 Common path of travel distances (1014.3 & 1028.8) < 75'
 Dead end lengths (1018.4) < 20'
 Clear exit widths for each door
 Max calculated occupant load capacity each exit door can accommodate based on exit width (1005.1)
 Actual occupant load for each door
 A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
 Location of doors with panic hardware (1008.1.10)
 Location of doors with delayed egress locks and the amount of delay (1008.1.9.7)
 Location of doors with electromagnetic egress locks (1008.1.9.8)
 Location of doors equipped with hold open devices
 Location of emergency escape windows (1029)
 The square footage of each fire area (902) 9014 SQ. FT.
 The square footage of each smoke compartment (407.4)
 Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
NA							

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 6' ACCESS AISLE	
TOTAL	23	52			2	2

PLUMBING FIXTURE REQUIREMENTS
(SECTION 2906.1)

OCCUPANCY	WATERCLOSETS		URINALS		LAVATORIES		SHOWERS/TUBS		DRINKING FOUNTAINS	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	REGULAR	ACCESSIBLE
MERCANTILE										

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

DESIGN LOADS

Importance Factors: Wind (I_w) _____
Snow (I_s) _____
Seismic (I_s) _____

Live Loads: Roof _____ psf
 Mezzanine _____ psf
 Floor _____ psf

Ground Snow Loads: _____ psf

Wind Loads: Basic Wind Speed _____ mph (ASCE-7)
Exposure Category _____
Wind Base Shears (for MWFRS) V_x = _____ V_y = _____

SEISMIC DESIGN CATEGORY
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) I II III IV
Spectral Response Acceleration S_w _____ S_u _____
Site Classification (Table 1613.5.2) A B C D E F
Data Sources: Field Test Presumptive Historical Data
Basic structural system (check one)
 Bearing Wall Dual w/Special Moment Steel
 Building Frame Dual w/Intermediate R/C or Special Steel
 Moment Frame Inverted Pendulum
Seismic base shear V_s = _____
Analysis Procedure Simplified Equivalent Lateral Force Dynamic
Architectural, Mechanical, Components anchored? Yes No
 Earthquake Wind

LATERAL DESIGN CONTROL:
SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____

ENERGY REQUIREMENTS: **ENERGY SUMMARY**
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.
Climate Zone: 3 4 5
Method of Compliance: Energy Code Prescriptive Performance
ASHRAE 90.1 Prescriptive Performance

THERMAL ENVELOPE
Roof/Ceiling Assembly (each assembly)
Description of assembly SS MTL DECK, R5 THERMAL SPACERS, INSUL R19 + R11 LS
U-Value of total assembly 0.35
R-Value of insulation 19
Skylights in each assembly NA
U-Value of skylight _____
total sq. ft. of skylights in each assembly NA

Exterior Walls (each assembly)
Description of assembly METAL PANELS, R19 INSUL., MTL STUDS, GYP BD
U-Value of total assembly 0.10
R-Value of insulation 19
Openings (windows or doors with glazing)
U-Value of assembly 1.030
Solar heat gain coefficient 0.2
projection factor 2
Door R-Values 1.72

Walls below grade (each assembly)
Description of assembly NA
U-Value of total assembly _____
R-Value of insulation _____

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

Floors slab on grade (each assembly)
Description of assembly 4" CONC. VAPOR BARRIER, COMPACTED EARTH
U-Value of total assembly 0.15
R-Value of insulation R-10
Horizontal/vertical requirement 2 VERTICAL
slab heated NO

MECHANICAL SUMMARY (SEE MECHANICAL SHEET)
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT:
Thermal Zone winter dry bulb _____ summer dry bulb _____
Interior design conditions winter dry bulb _____ summer dry bulb _____ relative humidity _____
Building heating load _____
Building cooling load _____
Mechanical Spacing Conditioning System
Unitary description of unit _____ heating efficiency _____ cooling efficiency _____ size category of unit _____
Boiler size category _____
Chiller size category _____
List equipment efficiencies _____

ELECTRICAL SYSTEM AND EQUIPMENT:
Method of Compliance: ENERGY CODE: Prescriptive Performance
ASHRAE 90.1: Prescriptive Performance
Lighting schedule lamp type required in fixture _____ number of lamps in fixture _____ ballast type used in the fixture _____ number of ballasts in fixture _____ total wattage per fixture _____ total interior wattage specified vs allowed _____ total exterior wattage specified vs allowed _____
Additional Prescriptive Compliance
 506.2.1 More Efficient Mechanical Equipment
 506.2.2 Reduced Lighting Power Density
 506.2.3 Energy Recovery Ventilation Systems
 506.2.4 Higher Efficiency Service Water heating
 506.2.5 On-Site Supply of Renewable Energy
 506.2.6 Automatic Daylighting Control Systems

DOLLAR GENERAL

STORE # 20312
SPRING HILL CHURCH ROAD
LILLINGTON, NORTH CAROLINA
SCHEDULE OF DRAWINGS

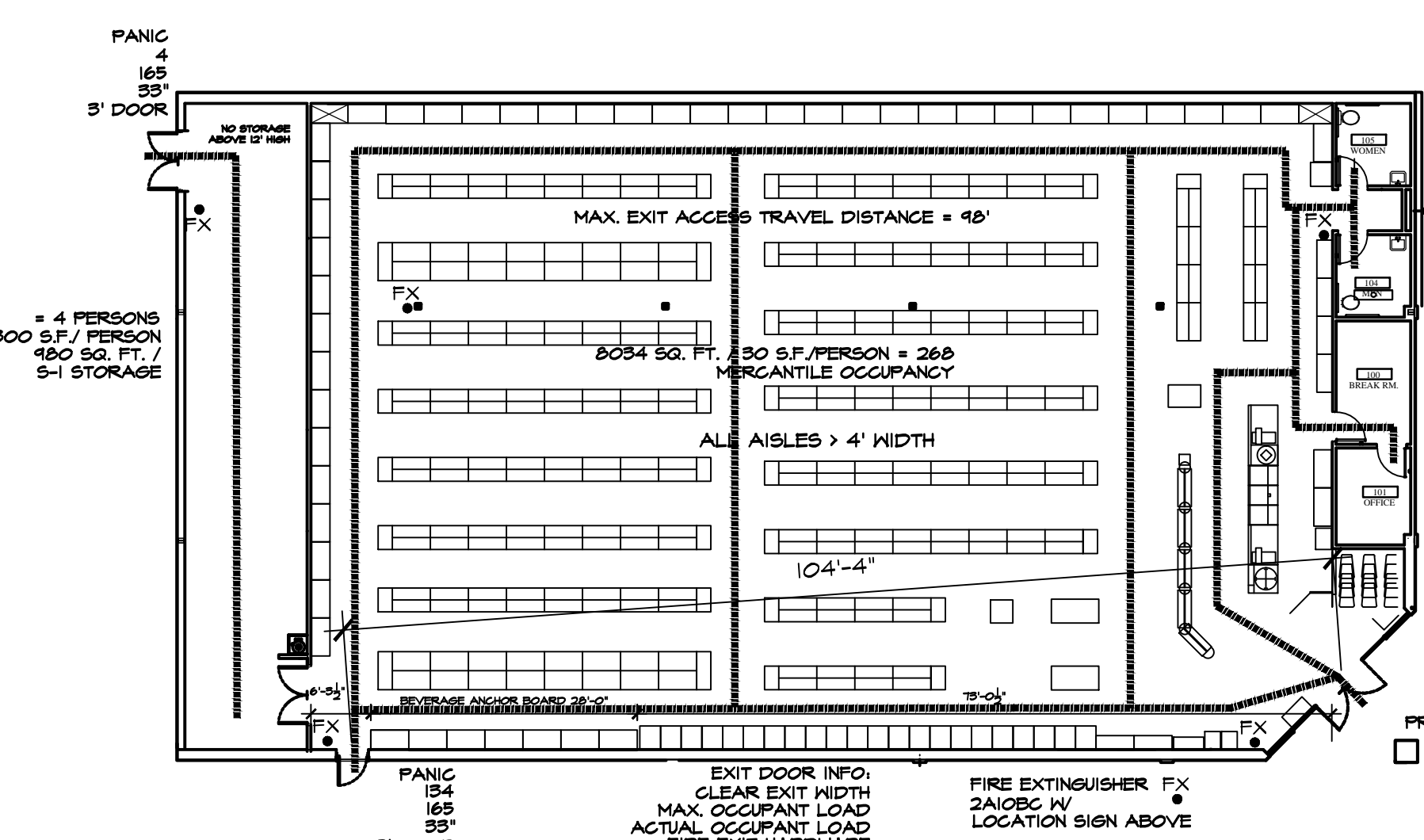
- COVER
C1 SITE COVER SHEET
C2 EXISTING CONDITIONS PLAN
C3 SITE PLAN
C4 GRADING & DRAINAGE PLAN
C5 EROSION CONTROL PLAN
C6 UTILITY PLAN
C7 CONSTRUCTION DETAILS
C8 CONSTRUCTION DETAILS
C9 CONSTRUCTION DETAILS
C10 STORMWATER MANAGEMENT DETAILS
C11 LANDSCAPE PLAN
A-1 FLOOR PLAN & SCHEDULES
A-2 ELEVATIONS & FIXTURE PLAN
A-3 BUILDING SECTIONS
A-4 WALL SECTIONS
A-5 ROOF PLAN, PAINTING DIAGRAM & SCHEDULES
A-6 CONCRETE & FINISH SPECIFICATIONS & NOTES
S-1 FOUNDATION PLAN & DETAILS

- P-1 PLUMBING SCHEDULES & DETAILS
P-2 PLUMBING PLANS & RISERS
M-1 MECHANICAL SCHEDULES & DETAILS
M-2 MECHANICAL PLAN

- E-1 ELECTRICAL POWER PLAN
E-2 ELECTRICAL LIGHTING PLAN
E-3 ELECTRICAL POWER POLES
E-4 DATA ROUTING PLAN
EMS-1 EMS PLAN & SCHEDULE
EMS-2 EMS PANEL & CONTROLS



Reviewed For Code Compliance By:
D. Banks Wallace
Chief Deputy Fire Marshal
01/03/2019 9:34:59 AM



LIFE SAFETY PLAN
SCALE: 1/16" = 1'-0"

REGISTERED ARCHITECT
WILSON, N.C.
3018

ISSUED FROM:
WILMINGTON OFFICE
805 North Fourth Street
Wilmington, NC 910.251.8899
Phone: 910.251.9889
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WILSON OFFICE
1100 South Street
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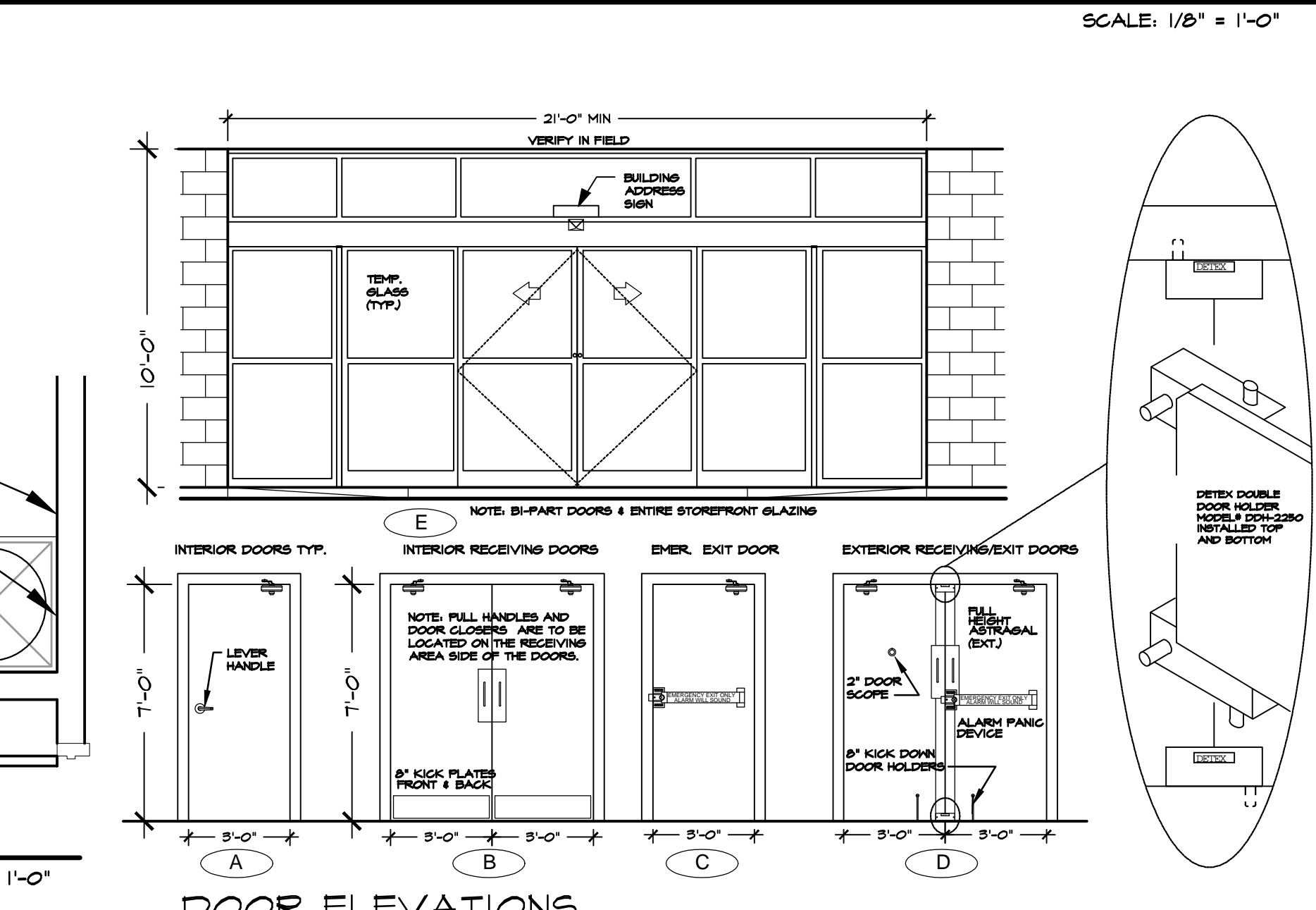
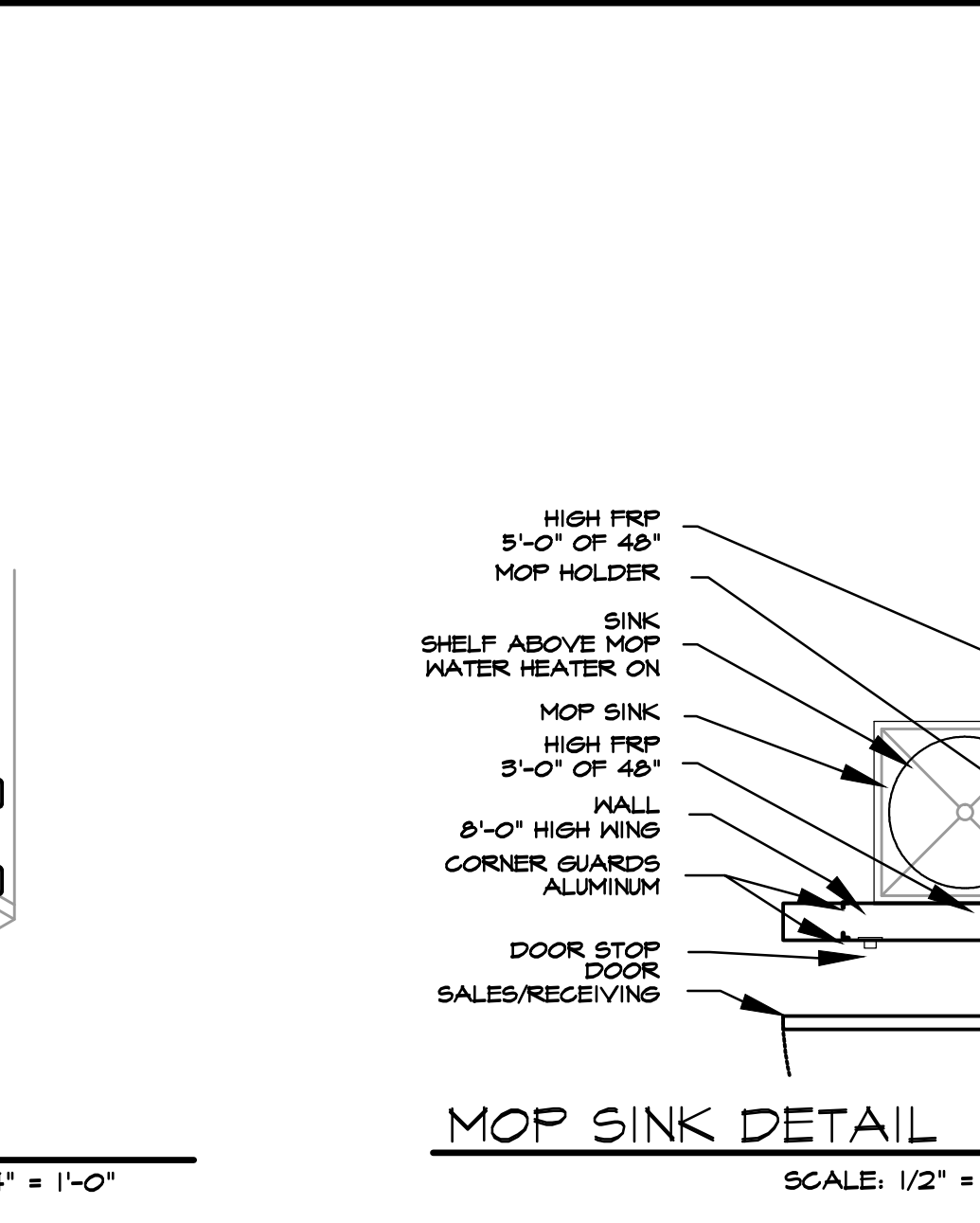
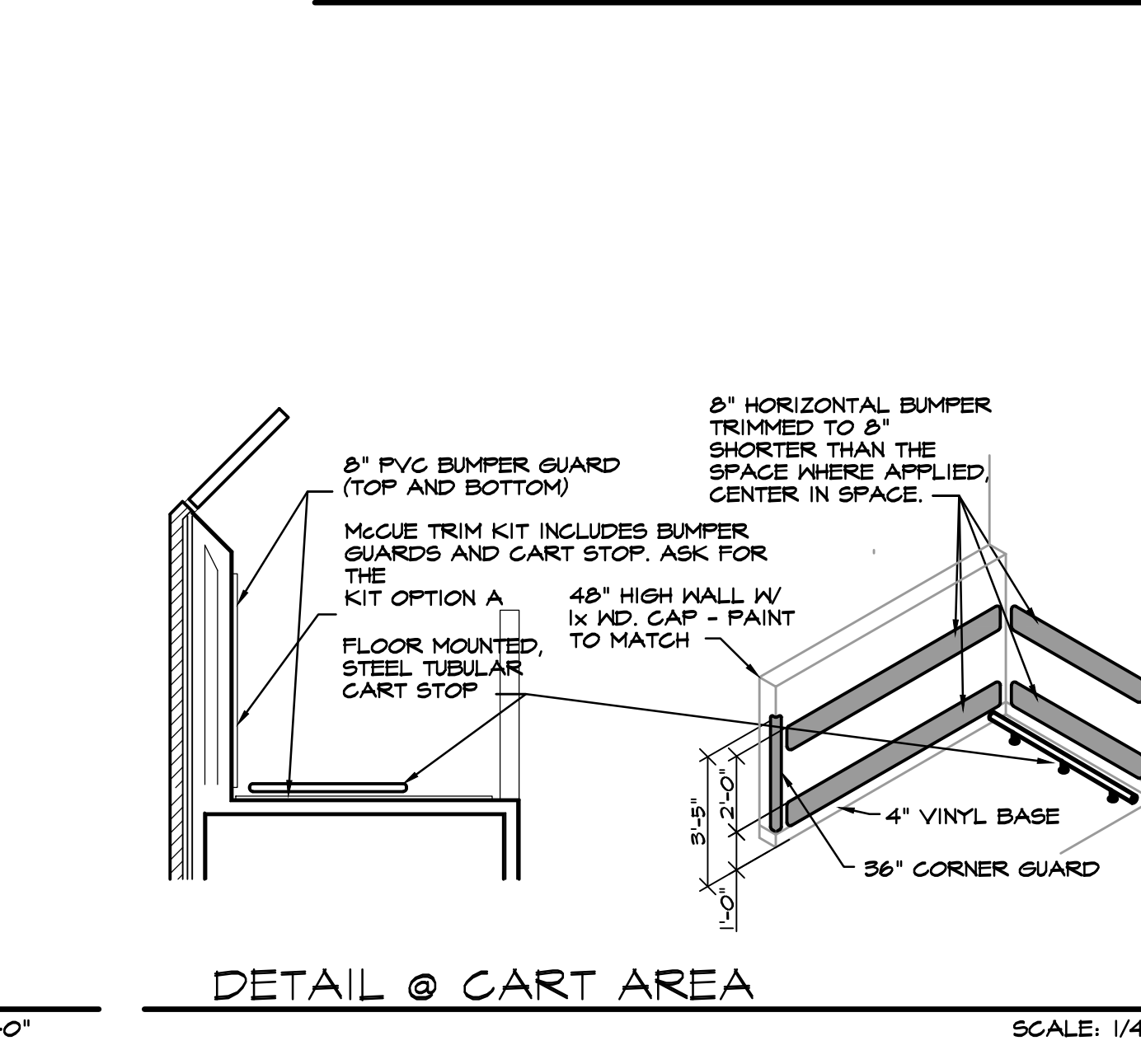
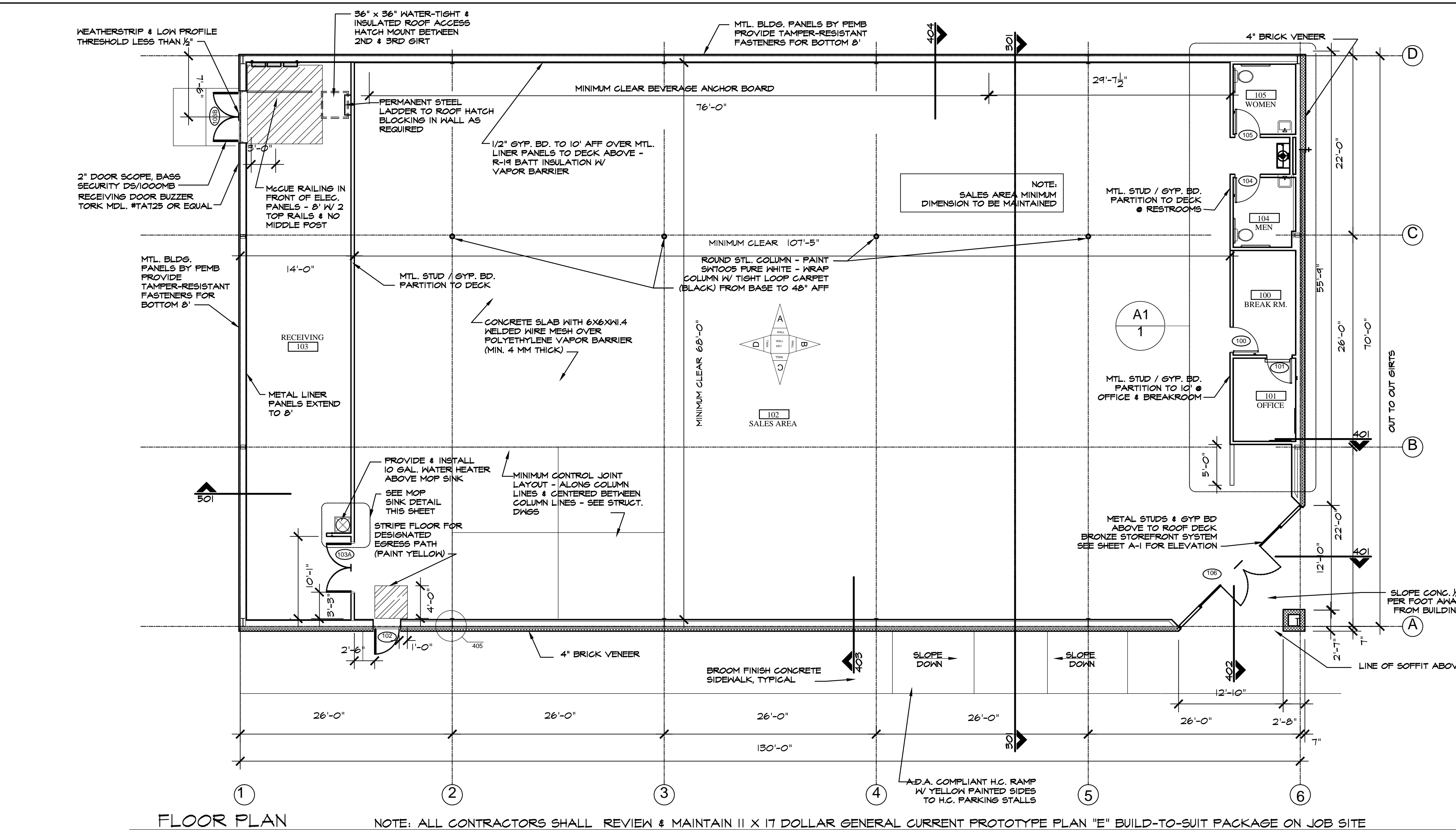
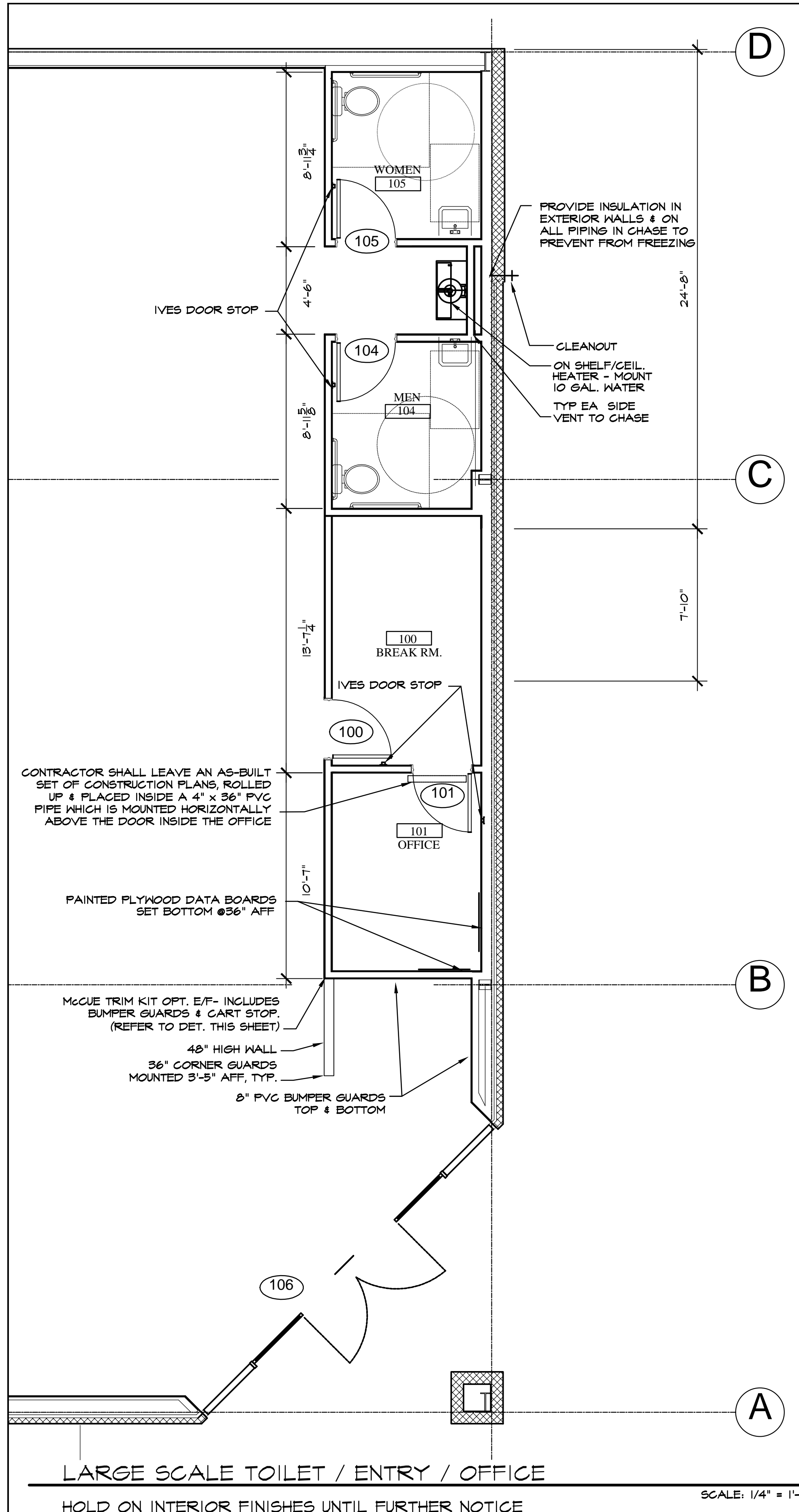
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NOTE: ALL CONTRACTORS SHALL REVIEW & MAINTAIN 11 X 17 DOLLAR GENERAL PROTOTYPE PLAN "E" BUILD-TO-SUIT PACKAGE ON JOB SITE

DOLLAR GENERAL
STORE # 20312
SPRING HILL CHURCH ROAD
LILLINGTON, NORTH CAROLINA

JOB NUMBER
DRAWN BY
MAH
DATE
11/30/18
REVISIONS
SHEET NUMBER

of
Cover



ROOM FINISH SCHEDULE																	
NO	ROOM NAME	FLOOR	MATERIAL	FINISH	A WALL	MATERIAL	FINISH	B WALL	MATERIAL	FINISH	C WALL	MATERIAL	FINISH	D WALL	CEILING MATERIAL	CEILING FINISH	REMARKS
100	BREAK RM.	CONCRETE FLOOR SEALER	CONCRETE SEALER	4" RUBBER / VINYL BASE	BLACK	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	N/A	
101	OFFICE	CONCRETE FLOOR SEALER	CONCRETE SEALER	4" RUBBER / VINYL BASE	BLACK	GYPSUM BOARD TO ROOF DECK & EXT. WALLS & 10'-0" AFF OTHERS	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	GYPSUM BOARD TO 10'-0" AFF.	SHERWIN WILLIAMS SHT005-WHITE PRO-MAR LATEX SEMI-GLOSS	N/A	
102	SALES AREA	CONCRETE FLOOR SEALER	CONCRETE SEALER	4" RUBBER / VINYL BASE	BLACK	GYPSUM BD. ON WHITE METAL LINER PANELS. SEE ELEV. - SHT A-5	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BD. TO 10'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BD. TO 10'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BD. TO 10'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BD. TO 10'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	N/A	
103	RECEIVING AREA	CONCRETE FLOOR SEALER	CONCRETE SEALER	N/A	N/A	METAL LINER PANELS TO 8" AFF.	WHITE	GYPSUM BOARD TO 10'-0" AFF.	WHITE	GYPSUM BOARD TO 10'-0" AFF.	WHITE	GYPSUM BOARD TO 10'-0" AFF.	WHITE	GYPSUM BOARD TO 10'-0" AFF.	WHITE		
104	MEN	CONCRETE FLOOR SEALER	CONCRETE SEALER	4" RUBBER / VINYL BASE	BLACK	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	
105	WOMEN	CONCRETE FLOOR SEALER	CONCRETE SEALER	4" RUBBER / VINYL BASE	BLACK	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	8" HIGH FIBERGLASS-REINFORCED PANEL - WHITE	GYPSUM BOARD TO 8'-0" AFF.	
106	HALL	CONCRETE FLOOR SEALER	CONCRETE SEALER	4" RUBBER / VINYL BASE	BLACK	GYPSUM BOARD TO 8'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BOARD TO 8'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BOARD TO 8'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BOARD TO 8'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BOARD TO 8'-0" AFF.	SHERWIN WILLIAMS PRO-MAR LATEX SATIN - SEE ELEV. SHEET A-5	GYPSUM BOARD TO 8'-0" AFF.	

DOOR SCHEDULE												
NO.	TYPE	HEIGHT	THICK.	HARDWARE	REMARKS							
100 (BREAK ROOM)	A	8'-0"	1-3/4"	(1) STANLEY PASSAGE LOCKSET QCL270-E-626-54 - NO KEY REQD., (1) STANLEY DOOR CLOSER GDC031-684	SOLID CORE HOOD DOOR OR HOLLOW CORE METAL DOOR & FRAME PAINTED SH-BLACK HANSOL, 6841 SEMI-GLOSS							
101 (OFFICE)	C	8'-0"	1-3/4"	(1) STANLEY STOREROOM LOCKSET QCL270-E-626-54-SC-KD - KEY #2, (1) STANLEY DOOR CLOSER GDC031-684, (1) IVES HALL STOP #402-1/2B-280, (1/2) PAIR HINGES	SOLID CORE HOOD DOOR OR HOLLOW CORE METAL DOOR & FRAME PAINTED SH-BLACK HANSOL, 6841 SEMI-GLOSS							
102 (RECEIVING/EXIT)	C	8'-0"	1-3/4"	(1) VON DUPRIN GUARD-X EXIT ALARM LOCK #2010-28, (1) STANLEY DOOR CLOSER GDC031-684, (1) DOOR PULL ON USDB, (1) DOOR SWEEP, HEATHERSTRIPING, (1) TORBSCA-260-RM CYLINDER, (1/2) PAIR HINGES	HOLLOW CORE METAL DOOR & FRAME PAINT EXTERIOR BROWN, VAN DYKE BROWN 204-GLOSS, INTERIOR SH-BLACK HANSOL, 6841 SEMI-GLOSS							
103A (RECEIVING INTERIOR)	B	8'-0"	1-3/4"	(1) STANLEY STOREROOM LOCKSET QCL270-E-626-54-SC-KD - KEY #2, (1) STANLEY DOOR CLOSER GDC031-684, (1) IVES HALL STOP #402-1/2B-280, (1) NATIONAL GUARD HD THRESHOLD #429-10-4-FT., (1/2) PAIR HINGES	FIRE RATED DOORS, SOLID CORE HOOD DOORS OR HOLLOW CORE METAL DOORS PAINTED SH-BLACK HANSOL, 6841 SEMI-GLOSS							
103B (RECEIVING EXTERIOR)	D	8'-0"	1-3/4"	(1) VON DUPRIN GUARD-X EXIT ALARM LOCK #2010-28, (1) VON DUPRIN GUARD-X DOUBLE DOOR STRIKE #2604, (1) DETEX DOUBLE DOOR HOLDER #DDH-2800 TOP & BOTTOM, (2) STANLEY DOOR CLOSERS GDC031-684, (1) STANLEY FULL PLATE #410-32D-280-GRIP, (1) STANLEY DOOR SCOPE #2010-280, (1) NATIONAL GUARD HD THRESHOLD #429-10-4-FT., (1/2) PAIR HINGES	HOLLOW CORE HOOD DOORS & FRAME INTERIOR PAINTED SH-BLACK HANSOL, 6841 SEMI-GLOSS EXTERIOR PAINTED SHT04-VAN DYKE BROWN 204-GLOSS							
104 (MENS RUL)	A	8'-0"	1-3/4"	(1) STANLEY STOREROOM LOCKSET QCL270-E-626-54-SC-KD - KEY #2, (1) STANLEY DOOR CLOSER GDC031-684, (1) IVES HALL STOP #402-1/2B-280, (1) NATIONAL GUARD HD THRESHOLD #429-10-4-FT., (1/2) PAIR HINGES	SOLID CORE HOOD DOORS OR HOLLOW CORE METAL DOORS & FRAME PAINTED SH-BLACK HANSOL, 6841 SEMI-GLOSS							
105 (WOMENS RUL)	A	8'-0"	1-3/4"	(1) STANLEY STOREROOM LOCKSET QCL270-E-626-54-SC-KD - KEY #2, (1) STANLEY DOOR CLOSER GDC031-684, (1) IVES HALL STOP #402-1/2B-280, (1) NATIONAL GUARD HD THRESHOLD #429-10-4-FT., (1/2) PAIR HINGES	SOLID CORE HOOD DOORS OR HOLLOW CORE METAL DOORS & FRAME PAINTED SH-BLACK HANSOL, 6841 SEMI-GLOSS							
106 (STOREFRONT)	E	8'-0"	1-3/4"	BY DOOR MANUFACTURER TO BE RE-KEYED BY DOLLAR GENERAL AREA MANAGER WITH (1) ILCO RM CYLINDER #10986A-280.								

ISSUED FROM:

 WILMINGTON OFFICE

 805 North Fourth Street

 Wilmington, NC 28401

 Phone: 910.251.8899

 Facsimile: 910.251.9989

 WILSON OFFICE

 1100 South Street

 Wilson, NC 27893

 Phone: 252.399.2700

 Facsimile: 252.399.2701

HOOD • HERRING

 ARCHITECTURE

 P.L.L.P.

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DOLLAR GENERAL

 STORE # 20312

 SPRING HILL CHURCH ROAD

 LILLINGTON, NORTH CAROLINA

JOB NUMBER

 DRAWN BY

 MAH

 DATE

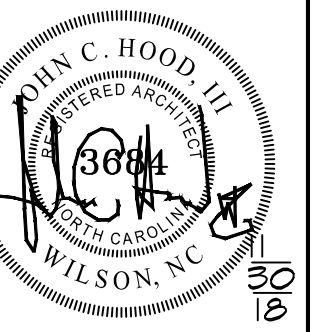
 11/30/18

 REVISIONS

SHEET NUMBER

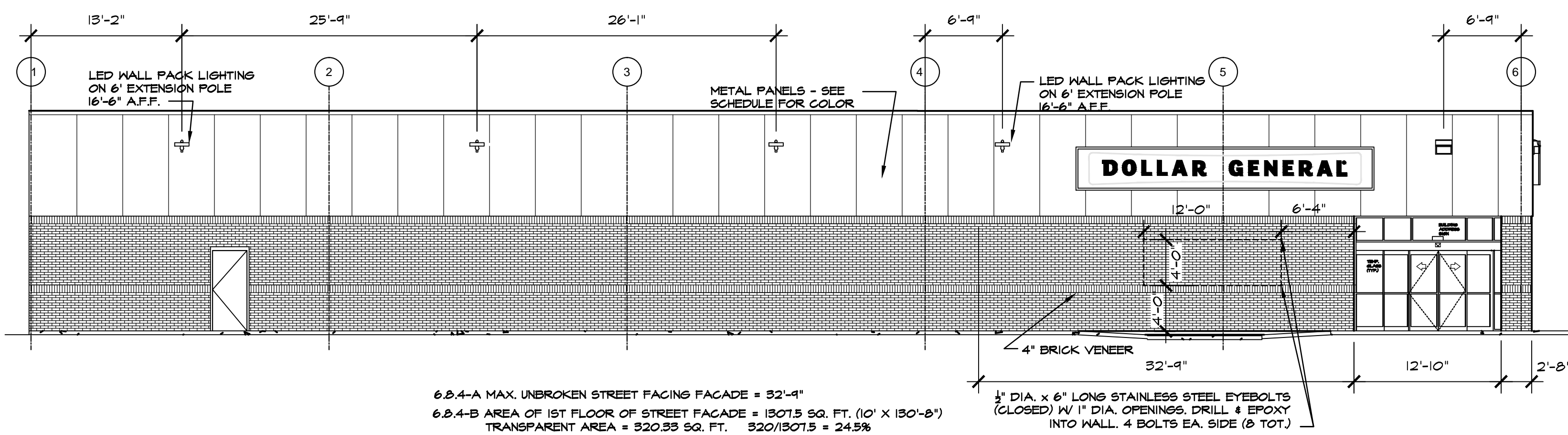
A-1

 OF

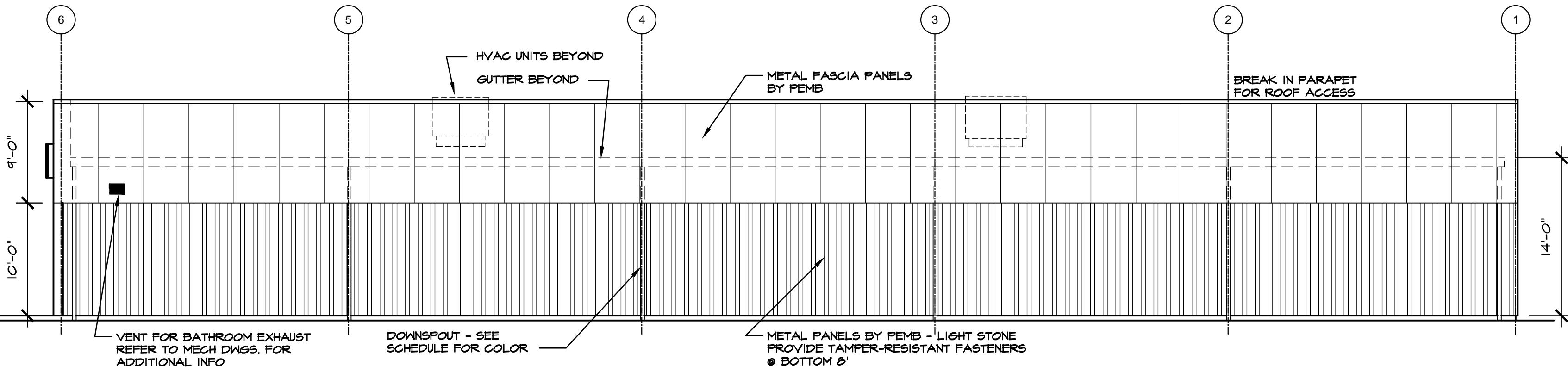


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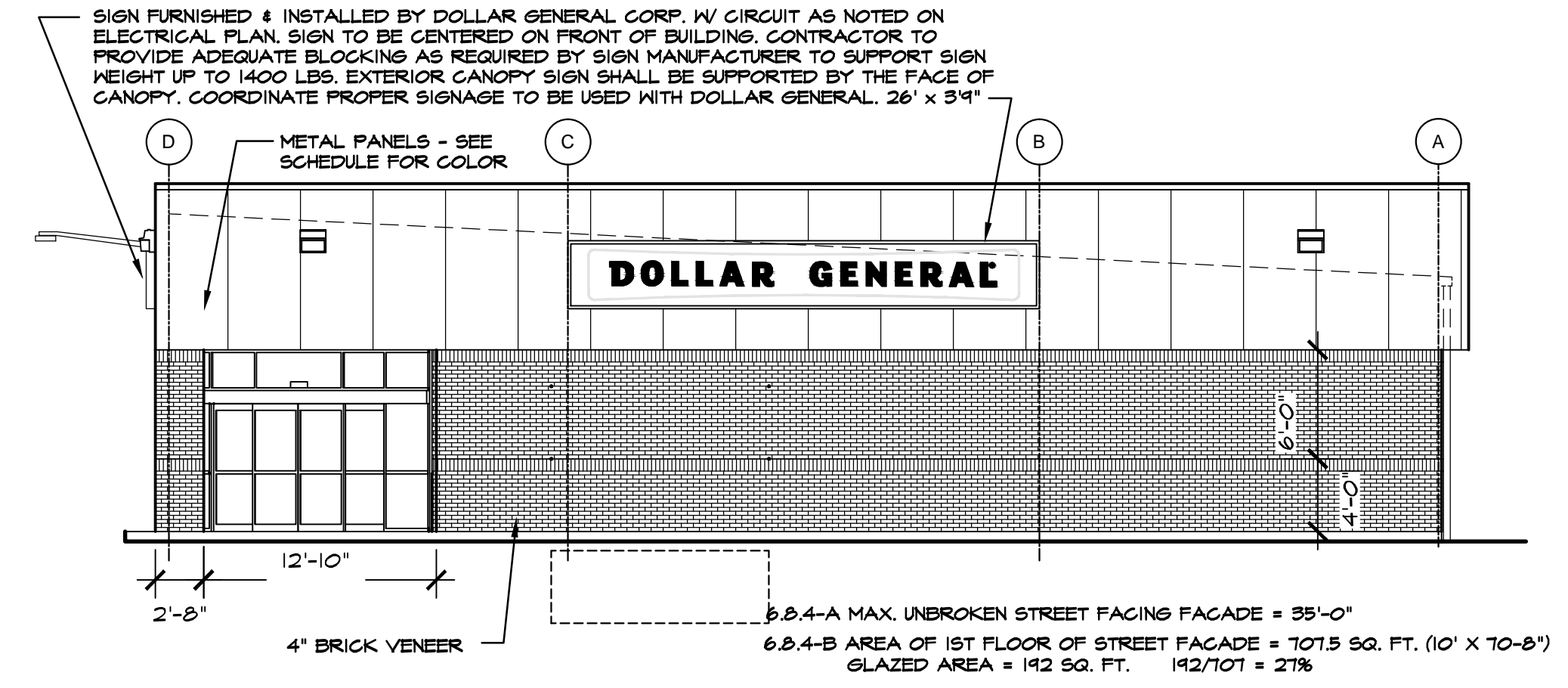
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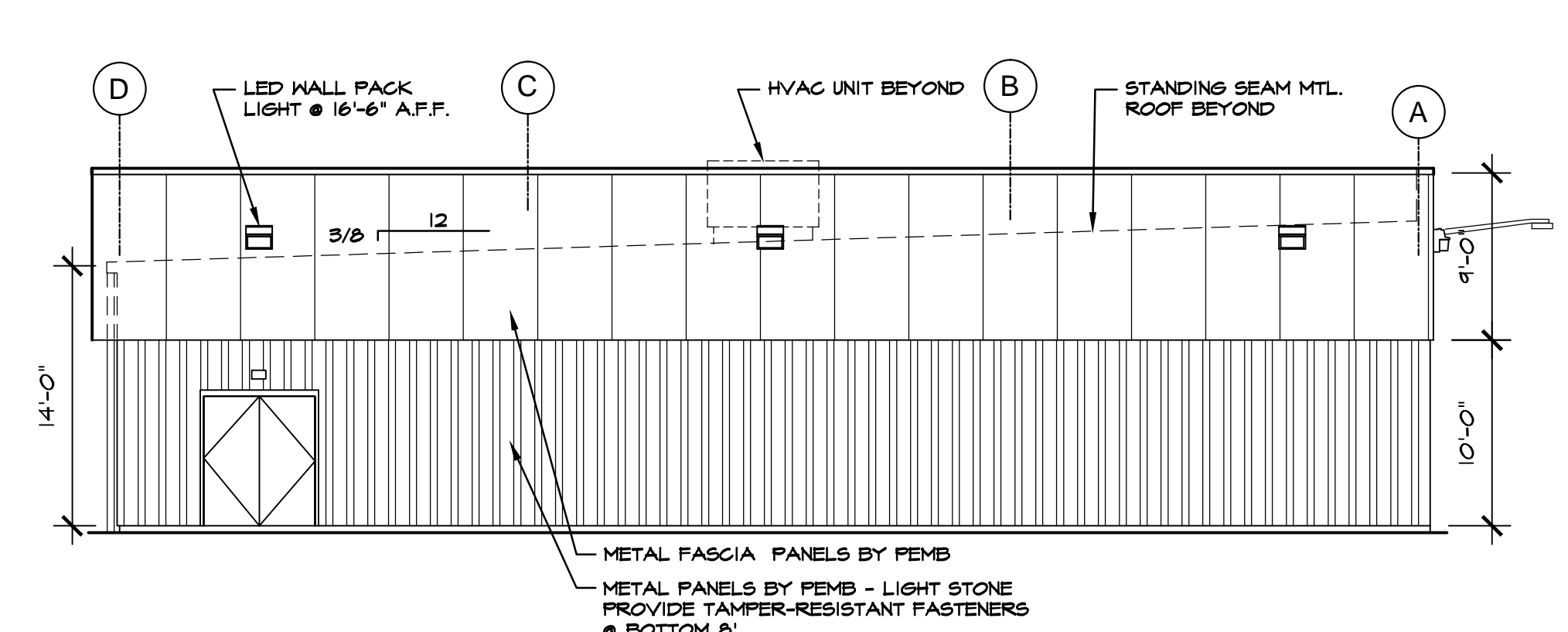
LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

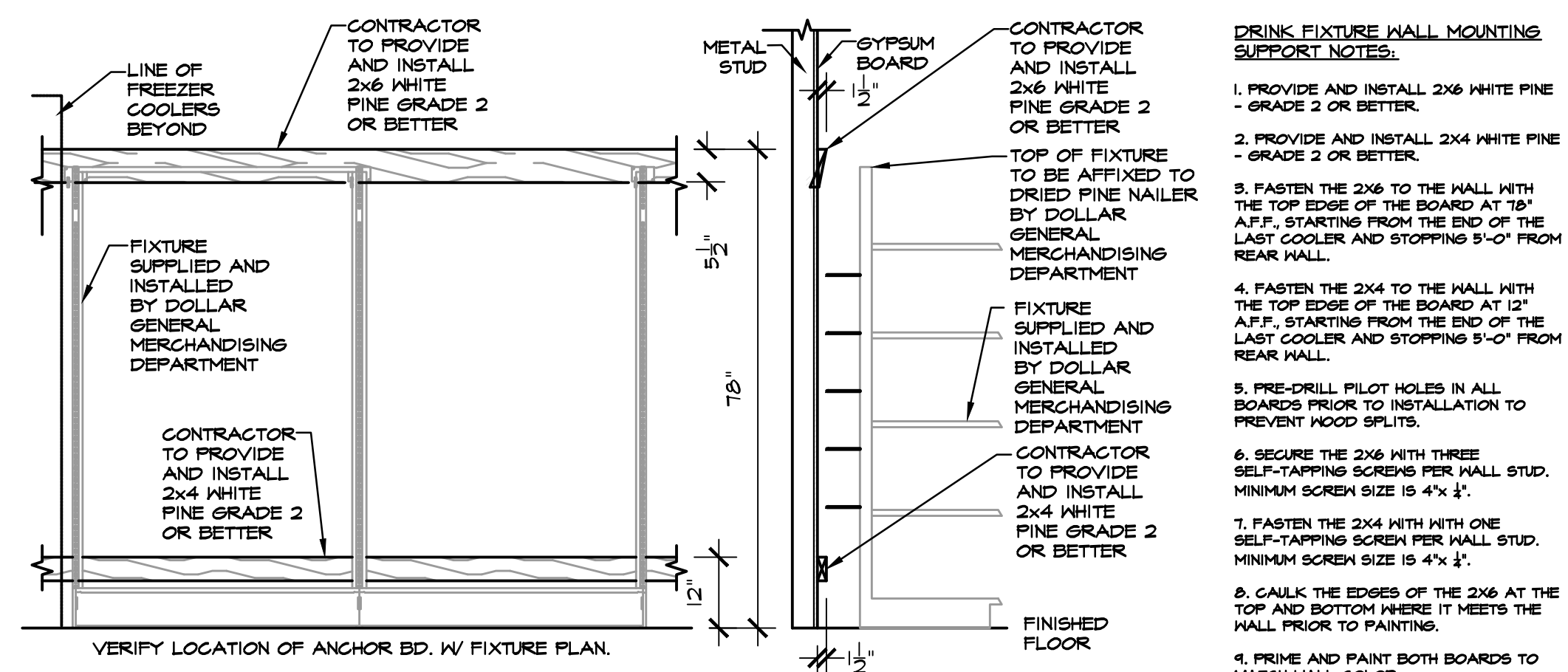


FRONT ELEVATION (STREET FACE)



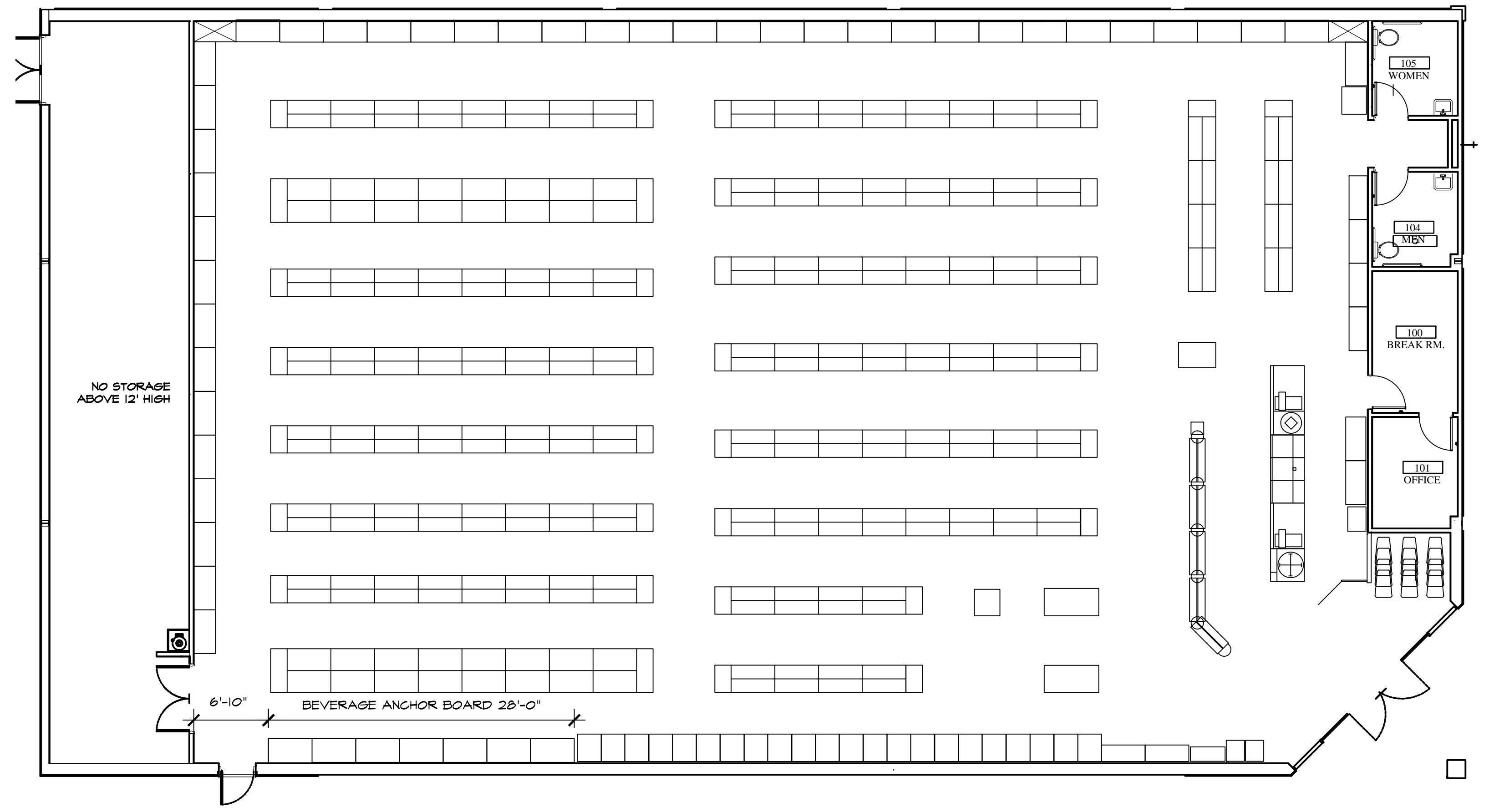
REAR ELEVATION

PRE-ENGINEERED METAL BUILDING VENDOR	VP BUILDINGS ATTN: DAVID ENGLISH (801) 748-6103	STAR BUILDING SYSTEMS ATTN: JEFF HORN (866) 664-8899	NUCOR BUILDING SYSTEMS ATTN: BOB BARRY (313) 622-4440 (262) 837-7891	BIG BEE STEEL BUILDINGS, INC. ATTN: KEVIN BUSLER (800) 653-3378	CHIEF BUILDINGS ATTN: ERIN SULLIVAN (303) 355-4623 (303) 390-8199
EXTERIOR FINISHES EXTERIOR FINISHES ARE TO MATCH OR BE EQUAL TO VP METAL BUILDING SYSTEMS FINISH SELECTION.	COOL EGYPTIAN WHITE PATRIAN BRONZE KYNARK 500	BRONZE COOL COTTON WHITE GALVALUME	LIGHTSTONE MEDIUM BRONZE KYNARK 500 BRONZE POLAR WHITE GALVALUME	LIGHTSTONE MEDIUM BRONZE KYNARK 500 BRONZE POLAR WHITE GALVALUME	SANDSTONE BURNISHED SLATE BRONZE POLAR WHITE GALVALUME
GUTTERS	•	•	•	•	•
DOWN SPOUTS	•	•	•	•	•
SIDE AND REAR METAL WALL PANELS & TRIM, RECEIVING & EMERGENCY EXIT DOORS	•	•	•	•	•
BRICK VENEER					
FLAT METAL SOFFIT AT STOREFRONT VESTIBULE AREA		•	•	•	•
BUILDING PARAPET WALL AND CANOPY	•	•	•	•	•
STOREFRONT SYSTEM	•	•	•	•	•
STANDING SEAM METAL ROOF PANELS	•	•	•	•	•
LINER PANELS (INTERIOR SALES FLOOR)	•	•	•	•	•



DRINK FIXTURE SUPPORT DETAIL

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



FIXTURE LAYOUT (CONFIRM W/ DOLLAR GENERAL PLANS)

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

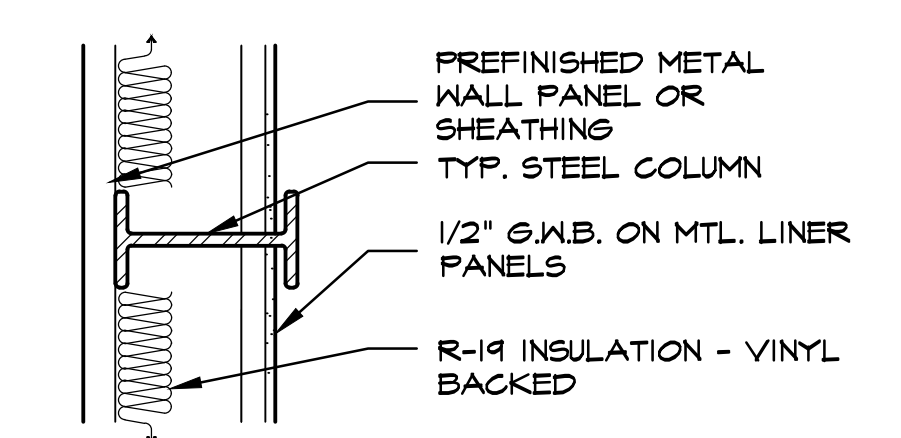
DOLLAR GENERAL
 STORE # 20312
 SPRING HILL, CHURCH ROAD
 LILLINGTON, NORTH CAROLINA

JOB NUMBER
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 MAH
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 11/30/18
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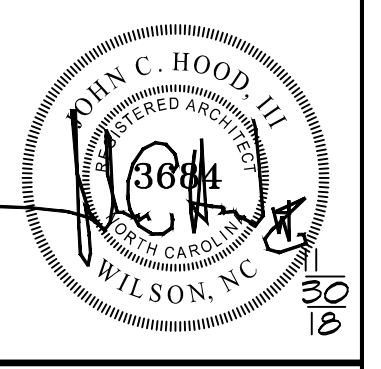
SHEET NUMBER

A-2

OF

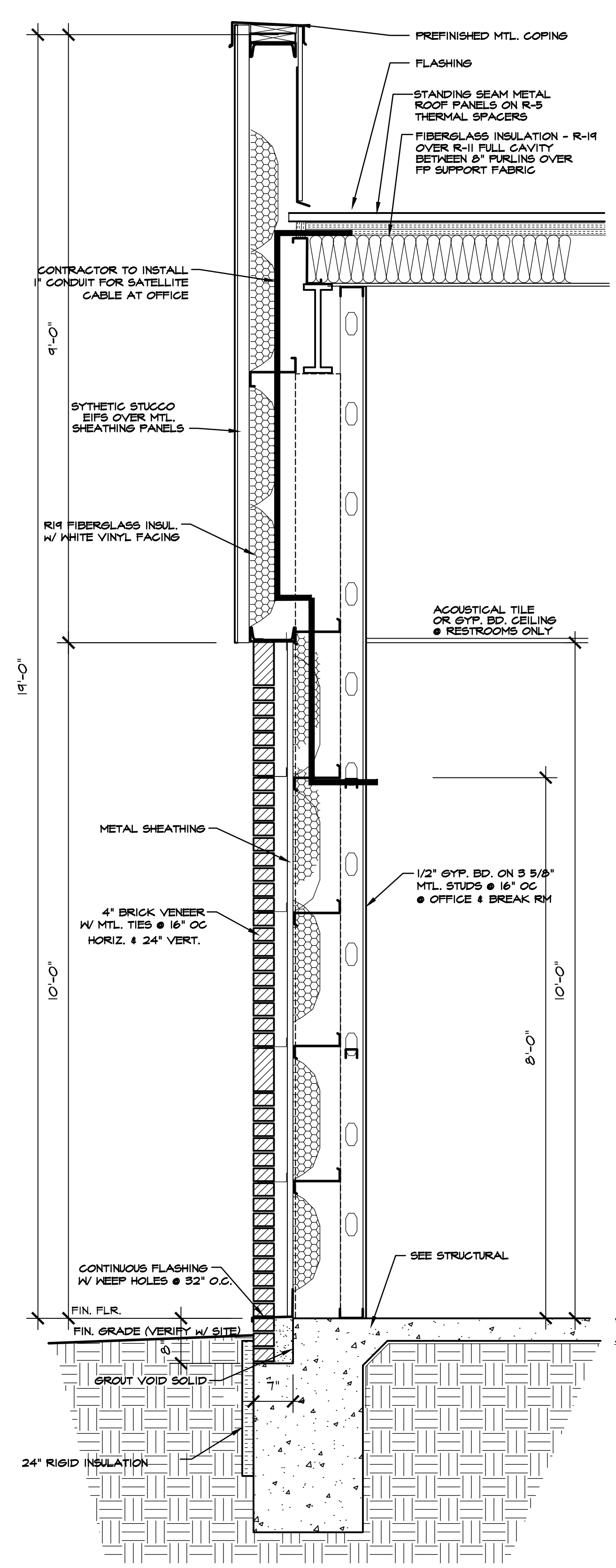


405 DETAIL @ COLUMN
SCALE: 1" = 1'-0"

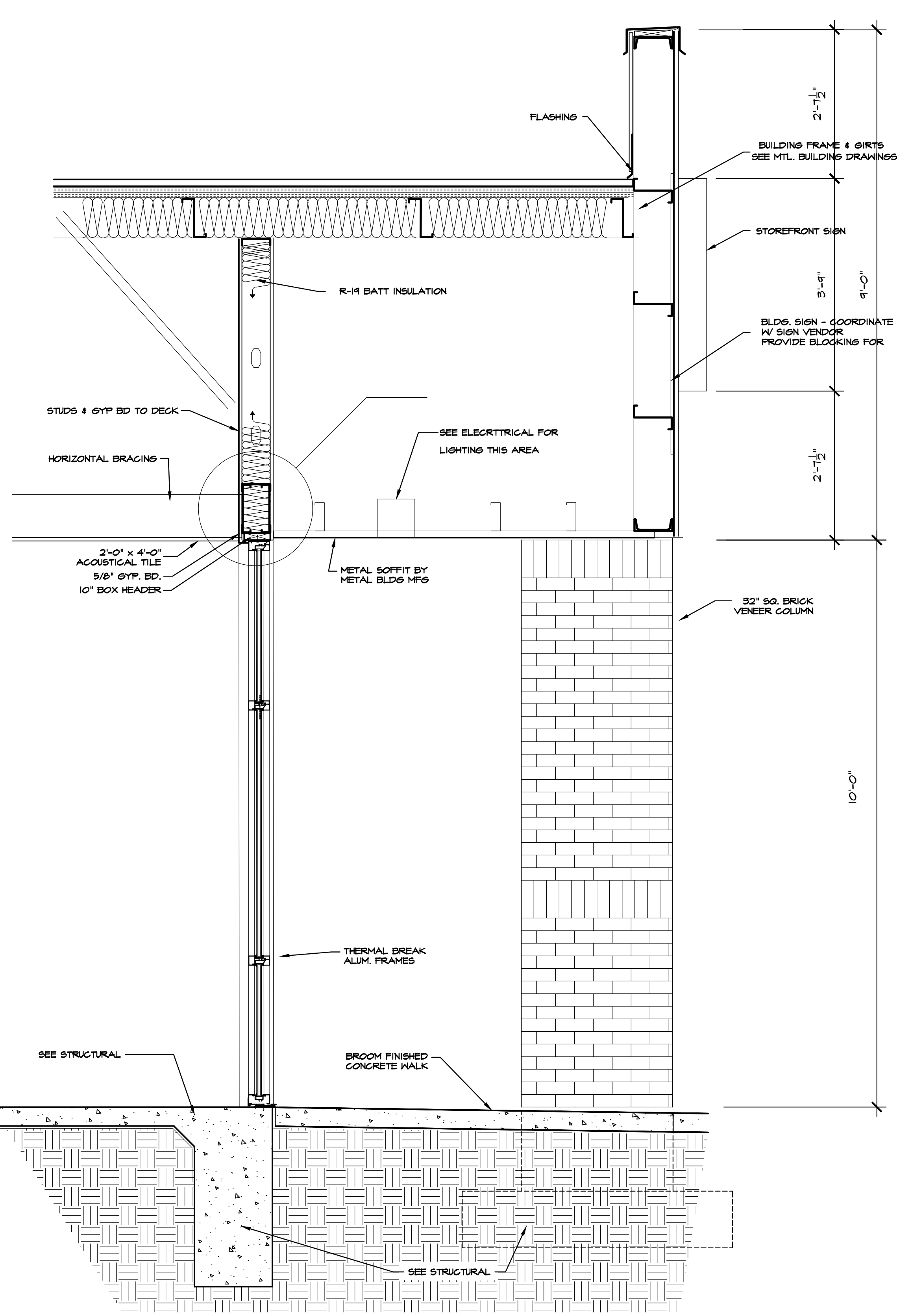


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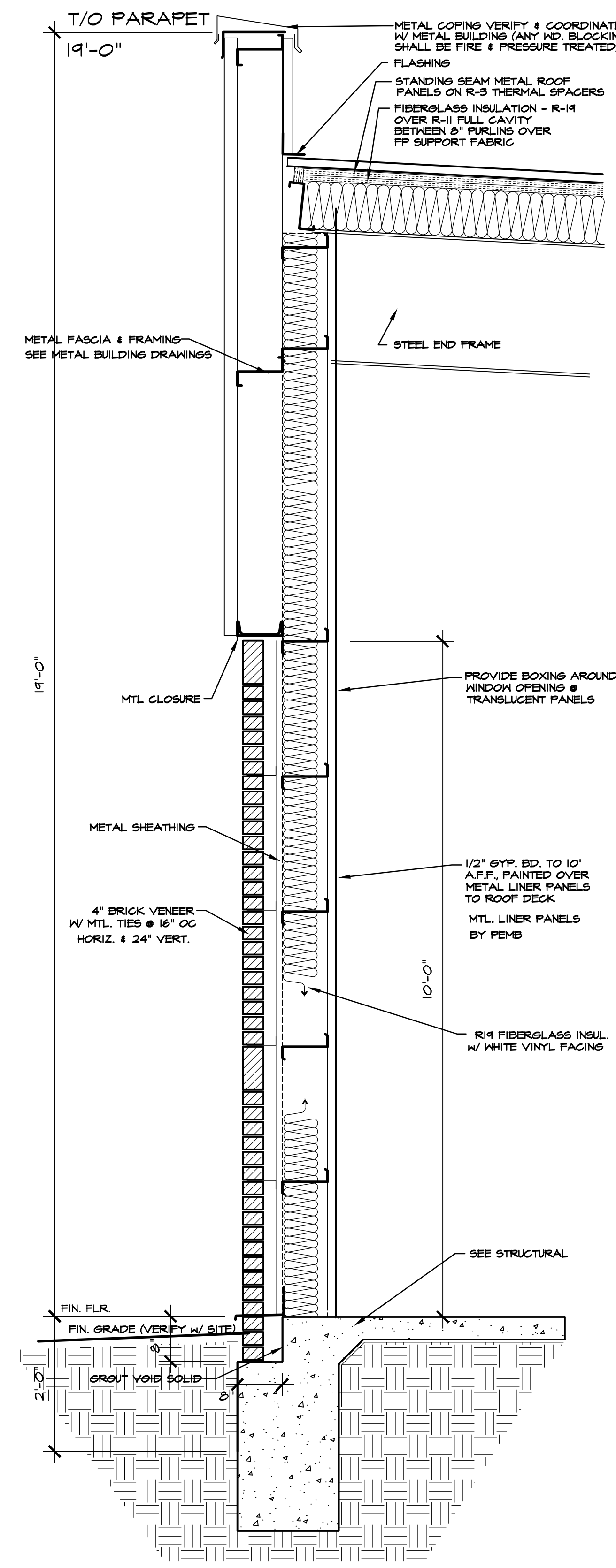
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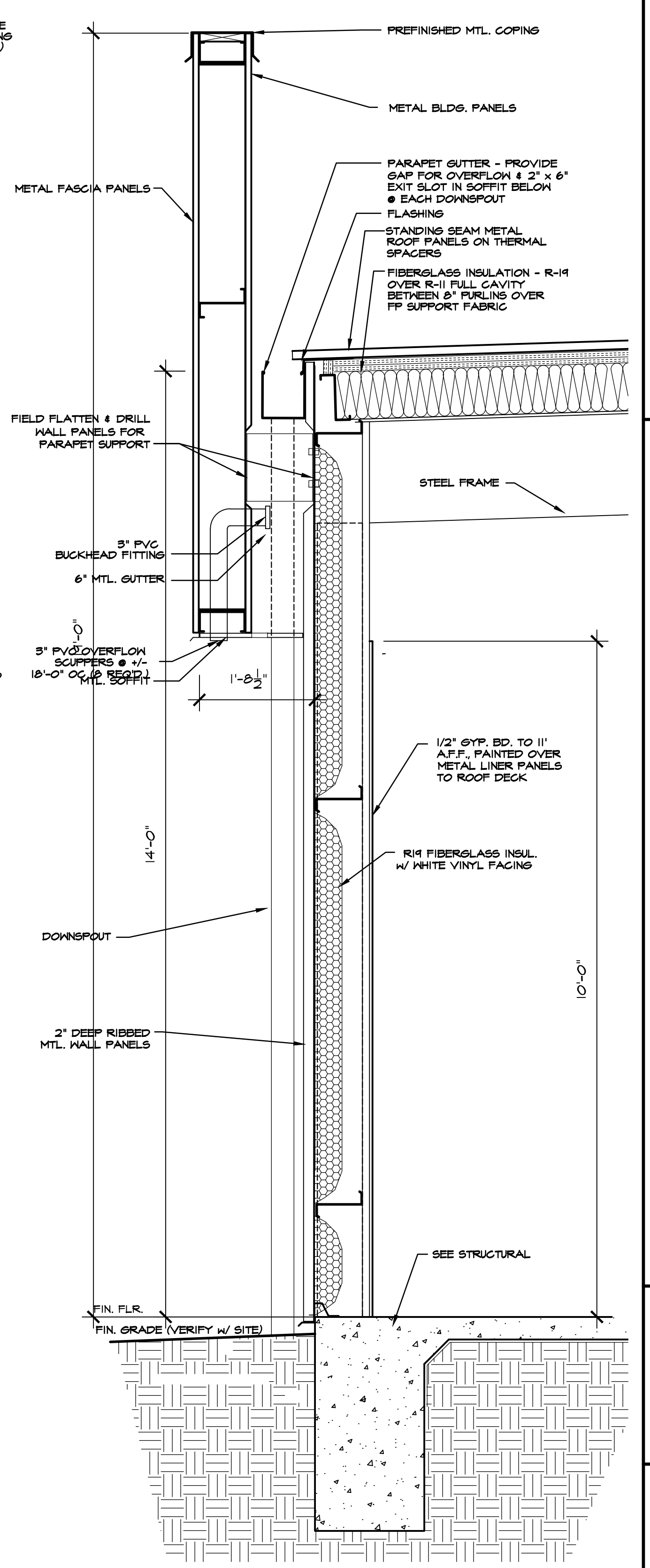
401 WALL SECTION @ FRONT WALL
SCALE: 3/4" = 1'-0"



402 WALL SECTION @ ENTRY
SCALE: 3/4" = 1'-0"



403 WALL SECTION LEFT SIDE WALL
SCALE: 3/4" = 1'-0"

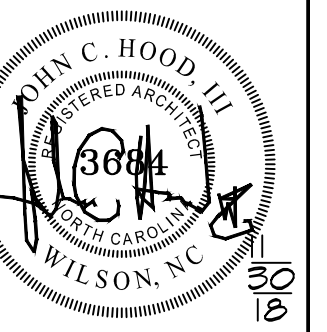


404 WALL SECTION RIGHT SIDE WALL
SCALE: 3/4" = 1'-0"

DOLLAR GENERAL
 STORE # 20312
 SPRING HILL CHURCH ROAD
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A-4
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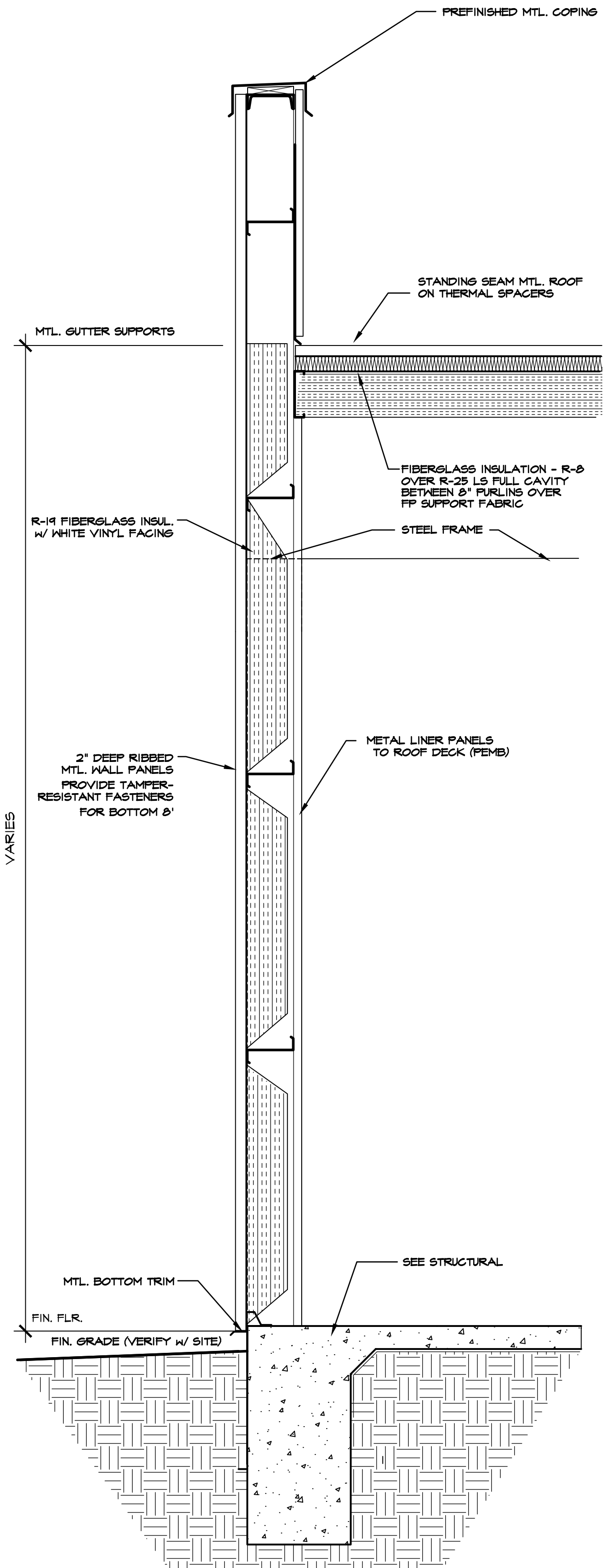
REQUIRED NATIONAL ACCOUNT VENDORS:

COMPANY	CONTACTS	PHONE #	REQUIRED ITEMS
RAINBIRD IRRIGATION	LOCAL RAINBIRD DISTRIBUTOR	www.rainbird.com	IRRIGATION SYSTEMS
EUCRID CHEMICAL COMPANY	PHIL BRANDT	877-458-3826 PBrandt@eucridchemical.com	CONCRETE POLISHING SYSTEMS
RETROPLATE SYSTEMS	SCOTT MAXFIELD	888-641-6746 scott.maxfield@retroplatesystem.com	CONCRETE POLISHING SYSTEMS
ASSA ABLAY ENTRANCE SYSTEMS	ROSS MERKLE	604-528-2580 dollargeneralbesam.us@assaablay.com	AUTOMATIC DOORS AND STORE FRONT GLAZING SYSTEM
COOK & BOARDMAN GROUP	JOE HARRELL	336-857-0675 nationalsales@cookandboardman.com	INTERIOR DOORS & FRAMES & RESTROOM ACCESSORIES
SHERWIN WILLIAMS	LOCAL SHERWIN WILLIAMS STORE		PAINT, PRIMER, CONCRETE SEALER AND BLOCK FILLER
MC CUE CORPORATION	KEVIN ONEAL	678-442-4026 konell@mccuecorp.com	TRIM KIT, BUMPER GUARDS, CART STOP
LENOX	SCOTT MACDONALD	412-447-6781 dollargeneral@lenoxind.com	HVAC UNITS
ROOF CURB SYSTEMS	CLIFTON REASOR	800-683-5848 gmyth@roofcurb.com	RTU CURB
CURBS PLUS INC.	ALLAN THRAILKILL	888-694-2872 alan.thrailkill@curbs-plus.com	RTU CURB
KCC INTERNATIONAL INC.	GREG CONRAD	800-382-2872 gconrad@kccurbs.com	RTU CURB
NESCO	CHRIS TRACY	800-244-6980 dollargeneral@needhomelectric.com	ELECTRICAL SWITCH GEAR
LEDS	MICHAEL STRINGER KYLE KNAPP	420-415-4010 d.gorders@leds-llc.com	ELECTRICAL LIGHTING SUPPLIES
D&P CUSTOM LIGHTING	NATIONAL ACCOUNT SALES	800-251-2200	CUSTOM POWER POLES
ASD	CHRIS RUDNITSKI	828-624-1046 crudnisk@asd-usa.com	LOW VOLTAGE & VOICE/DATA
GRAYBAR	JEROME BANNISTER	615-745-9202 ext. 615-424-2135 call dollargeneral@graybar.com	CABLE TRAY
EMERSON CLIMATE TECHNOLOGIES	http://dollargeneralbid.ecsolutions.net	USER NAME: dollargeneralbid PASSWORD: dollargeneralbid	EMS SUPPLIER NOTE: CUSTOMIZED DOLLAR GENERAL EMS PANEL REQUIRES STORE #, CITY, STATE, ZIP CODE & QTY. OF HVAC UNITS OF THE INSTALL SITE WHEN ORDERING.
STANLEY CONVERGENT SECURITY SOLUTIONS	DAN GOLDSMITH	740-862-2051	INTERIOR FIRE ALARM PANELS

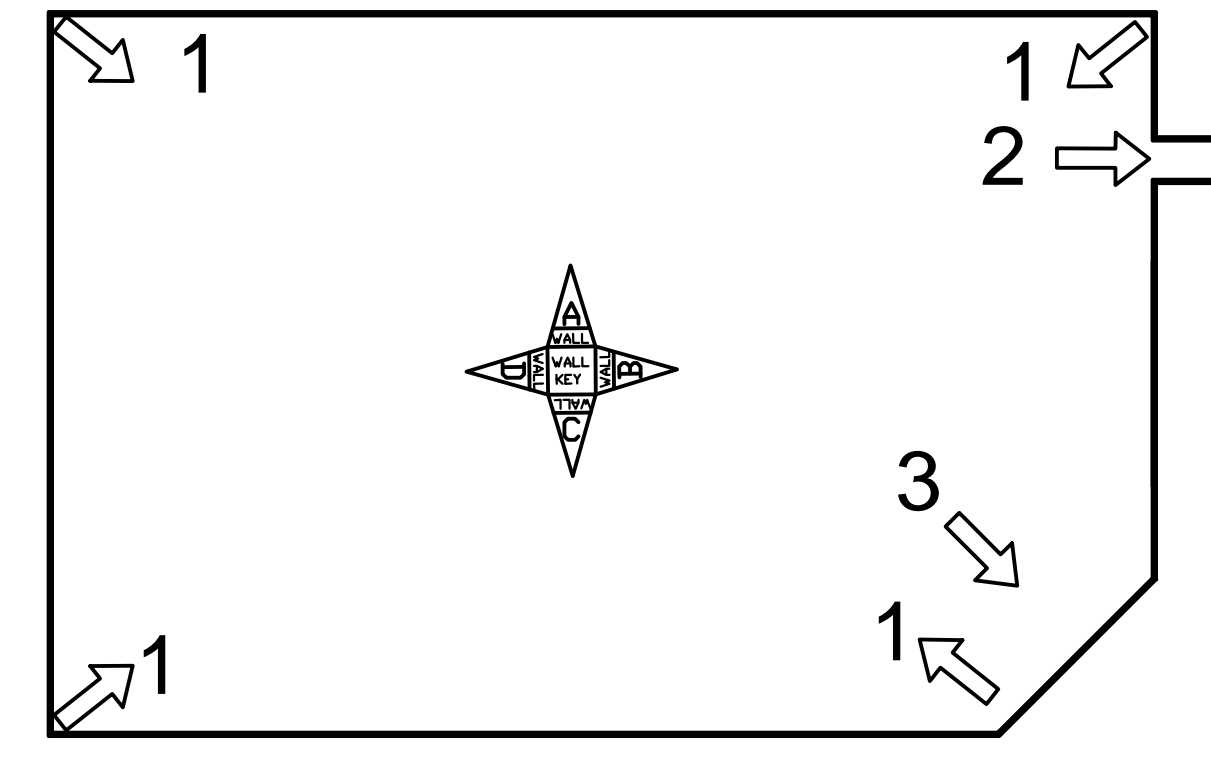
REQUIRED NATIONAL ACCOUNTS FOR ENGINEERING & CONSTRUCTION MATERIAL TESTING

COMPANY	CONTACTS	PHONE #	REQUIRED ITEMS
ATC ASSOCIATES, INC.	LESLIE GREENWOOD	205-733-8775 dollargeneral@atcassociates.com	www.atcassociates.com
BUILDINGS AND EARTH SCIENCES, INC.	MATT ADAMS	205-836-6500 dollargeneral@buildingandearth.com	www.buildingandearth.com
EAS PROFESSIONALS, INC.	JERRY MARRONE	864-234-7368 dollargeneral@eas-pro.com	www.eas-pro.com
PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)	TERESA HEBNER	770-424-6200 #8080 teresa.hebner@psia.com	www.psiusa.com
TERRACON	JOHN MEADOW	770-623-0755 #553 dollargeneral@terracon.com	www.terracon.com

NATIONAL ACCOUNT & CONTACT INFORMATION SUBJECT TO CHANGE



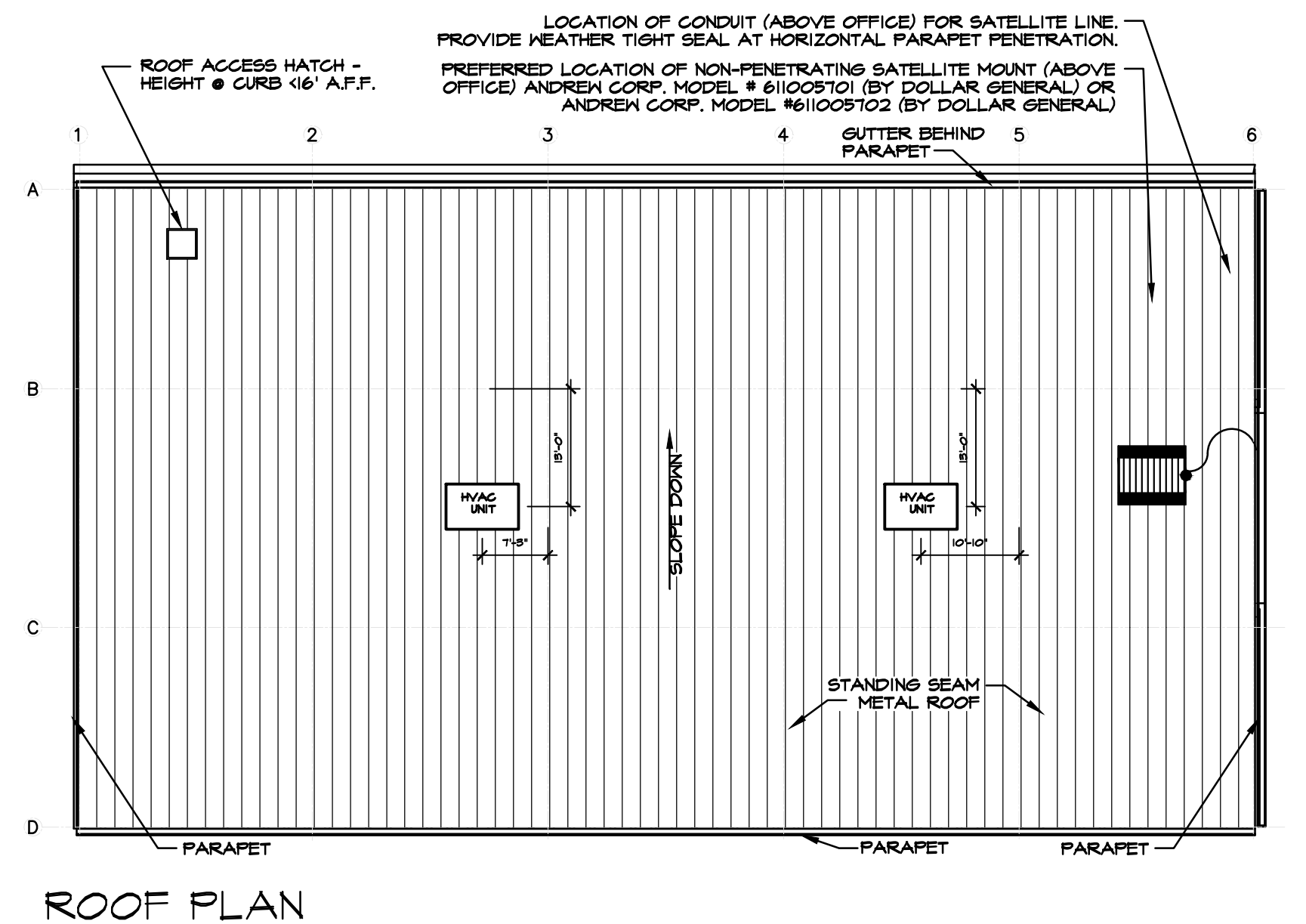
501 WALL SECTION REAR WALL
 SCALE: 3/4" = 1'-0"



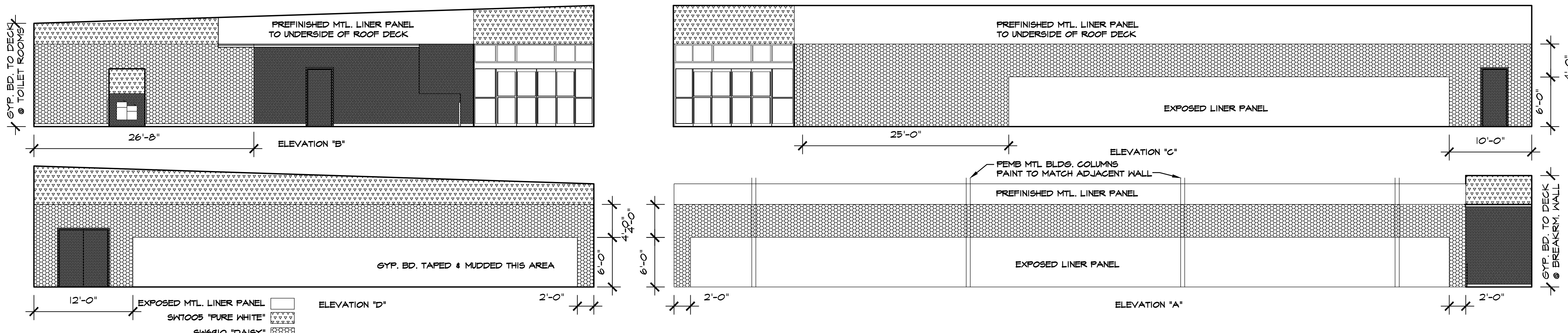
REQUIRED PHOTOS
 The following layout shows the required photos to be taken at completion. (make sure the overhead lights are on for your photos.)

- From each corner of the stockroom, facing the opposite corner.
- Hall (in side entrance stores, one picture from each end of the hall)
- Standing 10' from the entrance facing the entrance.

ELEVATION/PHOTO KEY PLAN



ROOF PLAN
 SCALE: 1/16" = 1'-0"



PAINTING DIAGRAM HOLD ON INTERIOR FINISHES UNTIL FURTHER NOTICE

DOLLAR GENERAL
 STORE # 20312
 SPRING HILL CHURCH ROAD
 LILLINGTON, NORTH CAROLINA

JOB NUMBER
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SHEET NUMBER

A-5
 OF

1) GENERAL

A. The building shall be designed such that there is maintained an absolute minimum of 68"-11" from face-of-column to face-of-column on the sales floor.

2) FOUNDATIONS

A. The concrete foundations shall be designed, detailed and constructed to provide for the safe, serviceable support of the pre-manufactured metal building structure and all prescribed loads applied thereto. The foundations shall conform to the latest editions of all applicable standards of the American Concrete Institute (ACI), the Building Code(s) enforced by the Authority Having Jurisdiction and these requirements.

B. The soils supporting the foundation shall be prepared and compacted in accordance with a geotechnical testing based investigation and site specific recommendations provided by a Professional Engineer registered to practice in the State where the project is located.

C. The slab on grade shall not be utilized to resist horizontal thrust forces at the base of the pre-engineered building frames. Tie beams below and separate from the building slab may be utilized.

D. The bearing materials shall be free of organic, expansive or corrosive material, and shall support the foundation in accordance with the following twenty five year criteria:

1. Maximum differential movement due to either settlement or heave shall not exceed 1/2" over a distance of 50 feet.
2. Maximum total movement due to either settlement or heave shall not exceed 1".

E. The foundations shall be of sufficient depth to bear below local frost depth where exposed, attain minimum design bearing pressure, achieve sufficient protection from settlement or heave, and where adjacent to existing construction, avoid application of lateral earth pressure to adjacent construction.

3) SLAB ON GRADE

A. The subgrade for the slab on grade shall be compacted and prepared in accordance with a geotechnical testing based investigation and site specific recommendations provided by a Professional Engineer registered to practice in the State where the project is located. The subgrade shall provide a minimum of 100 pounds per cubic inch (pci) modulus of sub-grade reaction and shall be proof-rolled to ensure that there are no pumping or soft zones greater than 1/2" (ACI 302, "Guide for Concrete Floor Slab Construction").

B. The slab on grade shall conform to the latest editions of all applicable standards of the American Concrete Institute (ACI), the Building Code(s) enforced by the Authority Having Jurisdiction and these requirements. The slab on grade shall be a minimum of 4" thick and reinforced with a minimum 6" x 6" x W1.4 x W1.4 welded wire fabric located in the center of the slab.

C. Except at doors at the perimeter of the facility, the slab on grade shall be isolated from the building columns and any perimeter grade beams or walls. The slab on grade shall receive a hard steel trowel finish. Saw-cut contraction joints a minimum of 1/4 the depth of the slab shall be provided in both principal directions across the entire floor slab, spaced no further than 13 feet on center and providing panels with an aspect ratio no greater than 1.5:1. Refer to Control Joint Spacing Plan on Sheet S3. The slab shall be protected from the effects of heat or wind as necessary to avoid any curling of the slab segments.

4) CONCRETE SALES FLOOR PRE-INSTALLATION CONFERENCE

A. At least 30 days prior to the start of the concrete slab construction, the general contractor shall conduct a meeting to review the proposed concrete mix designs and to discuss the required methods and procedures to achieve the requirements of this specification. The general contractor shall send a pre-concrete conference agenda to all attendees 20 days prior to the scheduled date of the conference.

B. The general contractor shall require responsible representatives of every party concerned with the concrete work to attend the conference, including, but not limited to, the following:
General contractor's superintendent

1. Laboratory responsible for concrete mixes, field quality control and floor tolerance testing
2. Ready-mix concrete producer
3. Concrete contractor
4. Chemical admixture manufacturer
5. Liquid densifier and sealer manufacturer
6. Liquid densifier and sealer applicator
7. Joint filling manufacturer
8. Joint filling applicator

C. Minutes of the meeting shall be recorded, typed and printed by the general contractor and distributed to all concerned parties, including the owner's representative, the architect and the structural engineer, within five days of the meeting.

D. The minutes shall include a statement by the concrete supplier stating that the proposed concrete mix design will produce the concrete quality required by these specifications.

E. The minutes shall include a statement by the concrete contractor that the proposed concrete mix design will provide appropriate workability and setting times, to ensure that the concrete contractor can achieve the requirements of this specification.

5) CONCRETE CONTRACTOR QUALIFICATION

A. The concrete contractor shall include in their bid package to the general contractor, sufficient data, including a minimum of three similar and successful projects that clearly indicates the concrete contractor's ability to successfully perform the work and to achieve the interior sales floor slab tolerances required in this specification. The concrete contractor's team shall have participated in the majority of these projects, and that team shall remain the same through the duration of this project.

6) CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type 1. Use one brand of cement throughout the project.

B. Coarse and fine aggregates: ASTM C 33. Combined aggregate gradation for slabs on grade and other designated concrete shall be 8% - 18% for large top size aggregates (1 1/2") or 8% - 22% for smaller top size aggregates (1" or 3/4") retained on each sieve below the top size and above the no. 100 sieve. Slabs on grade shall have a maximum aggregate size of 1 1/2" footings and piers 1" and beams 3/4".

C. Water: complying with ASTM C 94.

D. Air-entraining admixtures: Shall conform to ASTM C-260. Admixture manufacturer shall provide written certification that the air-entraining admixture is compatible with other required admixtures. All exterior slabs shall be air-entrained (4% - 6%). Acceptable products: Euclid Chemical AEA-92 or Air 40; BASF Micro Air; W.R. Grace Daravair 1000 or Daresx- 1. Note: Air-entraining admixture shall not be used on interior concrete.

E. Water-reducing admixture: Shall conform to ASTM C494, Type A and contain no more than 0.05% chloride ions. Acceptable products: Euclid Chemical Eucon series; BASF Pozzolith series; W.R. Grace WRDA or Daracem series.

F. Water-reducing, retarding admixture: Shall conform to ASTM C494, Type D, and contain no more than 0.05% chloride ions. Acceptable products: Euclid Chemical Retarder 75; BASF Pozzolith series; W.R. Grace Daratard 17.

G. High range water-reducing admixture (superplasticizer): Shall conform to ASTM C494, Type F or Type G and contain no more than 0.05% chloride ions. Acceptable products: Euclid Chemical Eucon 37; BASF Rheobuild 1000; W.R. Grace daracem-100.

H. Water-reducing, non-corrosive accelerating admixture: Shall conform to ASTM C494, Type C or E, and contain no more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term, non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products: Euclid Chemical Accelguard 80/90 or Accelguard NCA; BASF NC534 or Pozzutec 20; W.R. Grace Polarset.

I. Prohibited admixtures:

1. Calcium chloride or admixtures containing more than 0.05% chloride ions are not permitted.
2. Flyash is not permitted.

7) EVAPORATION RETARDER:

A. Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
1. Acceptable products:
a. "Eucobar" by Euclid Chemical - Phil Brandt 877-438-3826

8) CURING MATERIALS:

A. Exterior curing: All exterior concrete slabs shall be cured using a liquid membrane-forming curing compound. The liquid membrane-forming curing compound shall meet the requirements of ASTM C1315 with a maximum V.O.C. Content of 700 g/l.

1. Acceptable products:
a. "Super Rez Seal" or "Super Aqua Cure" by Euclid Chemical - Phil Brandt 877-438- 3826

B. Interior curing (building not enclosed/sales floor slab is placed first): The interior sales floor slab shall be cured using a reduced odor, dissipating liquid membrane forming curing compound that is formulated from hydrocarbon resins. The dissipating liquid membrane forming curing compound shall meet the requirements of ASTM C309 and V.O.C. contents in accordance to EPA 40 CFR, part 59, table 1, subpart D for concrete curing compounds with a maximum V.O.C. content of 350g/l.

1. Acceptable product:
a. "Kurez DR VOX" by Euclid Chemical - Phil Brandt 877-438-3826

C. Interior curing (building enclosed/sales floor slab is placed last): The interior sales floor slab shall be cured using a removable, low odor, fast drying liquid membrane forming curing compound. The removable liquid membrane forming curing compound shall meet the requirements of ASTM C309, AASHTO M 148, USDA compliance and V.O.C. contents in accordance to EPA 40 CFR, part 59, Table 1, subpart D for concrete curing compounds with a maximum V.O.C. Content of 350g/l.

1. Acceptable product:
a. "Kurez RC" by Euclid Chemical - Phil Brandt 877-438-3826

9) LIQUID DENSIFIER / SEALER FOR INTERIOR SALES FLOOR:

A. Liquid densifier / sealer shall be a sodium silicate / silicate blend. Manufacturer of liquid densifier and sealer must be contacted prior to bidding for pricing and application requirements.

1. Acceptable liquid densifier and sealer manufacturer:
a. "Euco Diamond Hard" by Euclid Chemical - Phil Brandt 877-438-3826
b. "RetroPlate 99" by RetroPlate Systems - Curtis Turnbull 888-942-3144

B. Approval: All general contractors bidding or negotiating a Dollar General project shall contact Euclid Chemical or RetroPlate to obtain a list of approved applicators located within the geographic region of the project. General contractors shall solicit and accept pricing only from those applicators as provided by Euclid Chemical or RetroPlate. The approved applicator selected for the initial application of liquid densifier / sealer shall be the same as for the joint filling and additional application of liquid densifier / sealer and polishing process. Within ten days after completion of work, the approved applicator shall furnish Euclid Chemical or RetroPlate a copy of the invoice, as well as square footage and coverage rate data confirming that the specified application rates were achieved.

C. Project service: at least 10 days prior to application of liquid densifier and sealer, the general contractor shall notify the Euclid Chemical or RetroPlate representative for jobsite service. The representative will be on the project site during the first application of liquid densifier / sealer and will follow the project through to completion.

10) SEMI-RIGID POLYUREA JOINT FILLER:

A. UV Resistant, semi-rigid polyurea joint filler shall be a two (2) component, 100% solids compound, with minimum Shore "A" hardness of 80. Joint filler color shall match the adjacent concrete surface.

1. Acceptable semi-rigid polyurea joint filler manufacturer:
a. "Euco QWIKJoint UVR" by Euclid Chemical - Phil Brandt 877-438-3826

B. Non-UV Resistant, semi-rigid polyurea joint filler shall be a two (2) component, 100% solids compound, with a minimum Shore "A" hardness of 75. Joint filler color shall match the adjacent concrete surface.

1. Acceptable semi-rigid polyurea joint filler:
a. "CreteFill Pro 75" by CureCrete - Curtis Turnbull 888-942-3144

C. Approval: All general contractors bidding or negotiating a Dollar General project shall contact the Euclid Chemical company or Retroplate to obtain a list of approved applicators located within the geographic region of the project. General contractors shall solicit and accept pricing only from those applicators as provided by Euclid Chemical or RetroPlate. The approved applicator selected for the initial application of liquid densifier / sealer shall be the same as for the joint filling and additional application of liquid densifier / sealer and polishing process.

11) CONCRETE MIXES:

A. Comply with ACI 301 requirements for concrete mixtures.

B. Concrete mix design(s) shall be proportioned according to ACI 301, for normal-weight concrete determined by either laboratory trial mix or field test data as follows:

1. Compressive strength (28 days): 4000psi (27.6mpa), with a maximum water/cement ratio of .53, unless otherwise indicated on the drawings. Concrete materials included in the mix design shall be the same materials provided to the project, and shall be prepared by an independent testing laboratory approved by the owner. If sufficient backup data is not available, the laboratory mix design shall exceed the desired job strength of concrete by 1,200psi. Four copies of the mix design shall be submitted to the owner before concrete work begins.

2. Slump: Concrete containing mid or high range water reducer shall have a maximum slump of 5 1/2" for the interior sales floor slab and 8" (200 mm) for other areas. All other concrete shall not exceed 4 inches (100 mm) unless otherwise indicated on the drawings.

3. Adjustment to concrete mixes: Mix design adjustments may be requested by General Contractor when characteristics of materials, job conditions, weather, test results or other circumstances warrant; at no additional cost to owner and as accepted by owner. Laboratory test data for revised mix design and strength results must be submitted to and accepted by owner before using in work. Both the concrete testing and inspection agency and the concrete contractor shall satisfy themselves that the concrete mix design will produce a concrete which will meet the specifications for this project. In addition, the General Contractor and Concrete Contractor shall verify that the workability, finishability and setting times are appropriate for slab installations. Placement shall be made directly from concrete trucks by chute. If pumping of the concrete is contemplated for any special locations, the proportions established above shall not be altered to suit the capabilities of the pumping equipment. For concrete containing macro-synthetic fibers, adjustments required to provide required placement conditions may warrant use of additional water reducer. No additional water is permitted into concrete mixture after addition of macro-synthetic fibers.

4 Interior concrete sales floor: Concrete shall be designed to meet 4000 psi compressive strength @ 28 days and exhibit <=0.04% shrinkage @ 28 days. The mix shall contain approximately 12 cubic feet of #467 aggregate (1-1/2" top size), the specified water reducing admixture and achieve a w/cm ratio of 0.53 (max.). Concrete shall be non air-entrained and in no case shall the concrete be designed for less than 4000 psi (27.6mpa) @ 28 days. Proposed mix design shall be similar to the following

Prototype mix:	Prototype mix
Materials	517-564lbs.
Cement	Prohibited
Fly ash/slag	12 cubic feet +/- .50 (#467 stone)
Coarse aggregate	7 cubic feet +/- (adjust as necessary)
Fine aggregate	250 - 300lbs.
Water content	Air content (Entrapped Air Only) 3.0% (max.)
Air content (Entrapped Air Only)	Water Reducer (type a/f) 3oz.-1.0oz./100wt +/- (mid range preferred)
Water Reducer (type a/f)	W/cm 0.53 (max.)
W/cm	Initial slump (water) 3"
Initial slump (water)	Final Slump (with water reducer) 5.5" (max)
Final Slump (with water reducer)	Shrinkage <=0.04% @ 28 days
Shrinkage	

12) FLOOR SLAB FINISH AND TOLERANCES:

A. General: Unless otherwise noted by owner, concrete sales floor slab shall be cast in one continuous pour. Concrete shall be placed, screeded, re-straightened, and finished as necessary to meet the FF and FL tolerance requirements. Do not wet concrete surfaces during finishing operations.

B. Trowel finish (sales floor): Apply a hard trowel finish to surfaces as follows:

1. Laser screeds, vibratory screeds, highway straightedges and wood bull floats shall be used to initiate screeding and floating process to form a uniform and open-textured surface plane before excess moisture or bleed water appears on the surface. A back-up laser screed is required during concrete placement of the interior sales floor slab. Remove excess water before starting floating operations. Do not further disturb surfaces before starting finishing operations
2. Highway straightedge operations shall continue before, during and after troweling operation, until specified floor tolerances are achieved.

3. Trowel finish with gas operated troweling machine with adjustable blades on all finishing equipment. Use steel-reinforced blades on ride-on power trowels. Trowel the surface sufficiently to produce a smooth, light, abrasion resistant surface. Care shall be taken not to overwork or burn the surface. Use 6" wide finish steel-reinforced blades on final passes. Finishing blades shall be in new condition and completely clean of any deleterious materials. Interior machine trowel finish shall be achieved within a 3' tolerance of all walls, columns and partitions.

4. Protection: Care shall be taken to protect the interior sales floor. Entrances shall include clean floor mats to prevent mud stains and all equipment on the floor shall be diapered to prevent spills. Cutting oils, etc, are not allowed on the sales floor slab at any time during the construction process.

C. Comply with ACI 117, "Specifications For Tolerances For Concrete Construction and Materials." Interior sales floor slab shall meet the requirements of a type 5, single course, hard steel-troweled finish as described in ACI 302.

1. All perimeter areas and edges of the concrete floor shall exhibit the same finish as the sales floor, including but not limited to, hallways, offices, restrooms, etc.
2. The general contractor is responsible for contracting with the testing laboratory for all costs associated with floor tolerance testing. A copy of the final floor tolerance report shall be provided by the general contractor to the owner within 24 hours of receiving the report from the testing laboratory. The sales floor slab shall conform to the following flatness and levelness criteria:
Overall Floor Flatness rating of at least 35
Overall Floor Levelness rating of at least 30
Tolerance Band for Entire Floor +/- 0.375 inch
- D. Failure to achieve the above criteria shall be cause for replacement of the offending segments or grinding/polishing at no cost to the Owner or Tenant.
- E. Trowel finish (other than sales floor): Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.
- F. Heavy broom finish: As noted on drawings.

13) CONCRETE PROTECTION AND CURING:

A. General: Normalize concrete set time and protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 305 for hot-weather protection and ACI 306 for cold-weather protection during curing. During concrete placement operations, ventilate and exhaust all fumes from construction equipment and heaters to avoid potential early concrete carbonation. Apply the specified curing compound as quickly as possible for maximum protection. For concrete placement during hot, dry and windy conditions, concrete contractor shall use evaporation retarder as per manufacturer's instructions to maintain a moist condition and to minimize plastic drying shrinkage cracking at the surface of the freshly placed concrete.

1. Curing - Exterior Slabs:
All exterior concrete slabs shall be cured using the specified liquid membrane-forming curing compound. Per manufacturer's instructions, application shall be applied evenly and uniformly as soon as possible after final finishing. Surface shall be clean and damp, but not wet and can no longer be marred by walking workmen. All applications shall be made by an approved applicator of the manufacturer, and when surface and air temperature is above 50° f. Apply "Super Rez Seal" or "Super Aqua Cure" at an application rate of 400sf/gallon. Begin curing immediately after finishing concrete, but not before free water has disappeared from concrete surface.

2. Curing - Interior slabs:
The interior sales floor slab shall be cured using the specified dissipating or removable liquid membrane-forming curing compound. Per manufacturer's instructions, application shall be applied evenly and uniformly as soon as possible after final finishing. Surface shall be damp, but not wet and can no longer be marred by walking workmen. All applications shall be made by an approved applicator of the manufacturer, and when surface and air temperature is above 50° f. Apply "Kurez DR VOX" (slab first) or "Kurez RC" (slab last) at an application rate of 350sf/gallon. Begin curing immediately after finishing concrete, but not before free water has disappeared from concrete surface.

14) CONTRACTION JOINTS IN SLABS-ON-GRADE:

A. Form weakened-plane contraction joints, sectioning concrete into areas as indicated on drawings. Contraction joints shall be sawn to a depth equal to at least one-fourth of the concrete thickness, as follows:

B. Sawed joints: All saw cutting shall be accomplished with a "Soft-Cut" saw and vacuum system equipped with a new blade and plate, as soon as the slab will support the weight of the saw and operator. Note: Concrete dust shall be removed completely and immediately. If chalk lines are used for sawcuts, all chalk remaining on the slab shall be removed completely and immediately after sawing.

15) INTERIOR SALES FLOOR SLAB PROTECTION:

- A. Take the following measures to protect the interior sales floor slab:
1. Wrap or "diaper" all motorized and hydraulic equipment to prevent fluid leaks
2. Provide non-marking tires on rubber tired vehicles or equip rubber tires with tire boots made of nylon fabric
3. Provide mats at all entrances to prevent mud stains

16) TIMING OF JOINT FILLER, LIQUID DENSIFIER AND POLISHING PROCESS:

A. Do not commence installation of semi-rigid polyurea joint filler, liquid densifier and sealer or polishing processes until the building is completely enclosed, permanent power and lighting is operating and the building is thermostatically controlled. Installation of these materials shall commence approximately two weeks prior to "fixture date."

17) INSTALLATION OF SEMI-RIGID POLYUREA JOINT FILLER:

A. All General Contractors bidding or negotiating a Dollar General project shall contact Euclid Chemical or RetroPlate to obtain a list of approved applicators located within the geographic region of the project. General contractors shall solicit and accept pricing only from those applicators as provided by Euclid Chemical or RetroPlate. The approved applicator selected for the initial application of liquid densifier / sealer shall be the same as for the joint filling and additional application of liquid densifier / sealer.

B. Joint filler installation: Comply with recommendations in ACI 302 for use of joint filler as applicable to materials, applications, and conditions indicated.

C. Surface cleaning of joints: Clean out joints immediately before installing joint filler. Remove foreign material from joint substrates that could interfere with adhesion of joint filler by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint filler. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Also remove all laitance and form-release agents from concrete surface. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues could interfere with adhesion of joint sealants. All surfaces to be filled shall be clean and dry.

D. For proper load transfer, joints must be filled full depth, but in no case should the joint filler be any less than 1" deep in the joint.

E. Mixing: Joint filler is a two part product requiring machine mixing and placing. Premix part b separately before using. Follow pump manufacturer's equipment instructions.

F. Placement: Joint filler shall be filled full depth. No backer rod is allowed. Joints should be overfilled and shaved even with the surrounding joint edge giving the floor joints a flat, smooth appearance. Shaving of excess joint filler can be approximately 30 minutes after placement, and up to 24 hours later, depending on jobsite conditions such as concrete and ambient temperatures.

G. Joint filler separation: The approved joint filling applicator shall include in their bid a cost per linear foot to make one return trip to refill joints if joint filler sidewall separation or splitting exceeds 1/16," or if surface profile is concave, chattered or if voids occur. This shall take place one week prior to grand opening.

18) INITIAL CLEANING FOR LIQUID DENSIFIER AND SEALER APPLICATION:

A. Interior sales floor slab: Thoroughly clean the interior sales floor slab prior to initial application of liquid densifier and sealer by completely removing the specified dissipating or removable curing compound from the floor surface. The following floor stripper or removal solution shall be applied to the floor to thoroughly strip, clean and remove all curing compound residue:

1. If Kurez DR VOX (slab first) was used to cure the slab, use "Euco Clean & Strip" by Euclid Chemical, applied at the proper water to floor stripper ratio and coverage rate that will completely remove the Kurez DR VOX. Contact: Phil Brandt (877) 438-3826
2. If Kurez RC (slab last) was used to cure the slab, use "Kurez OFF" by Euclid Chemical, applied at the proper water to floor cleaner ratio and coverage rate that will completely remove the Kurez RC. Contact: Phil Brandt (877) 438-3826

19) POLISHING PROCESS AND APPLICATION OF LIQUID DENSIFIER / SEALER:

- A. All Applicators must be certified by Euclid Chemical or Retro-Plate.
- B. The revised process can be used in both "Wet" and "Dry" applications.
- C. This process assumes a quality concrete finish (meets and/or exceeds the specified floor tolerances) by the floor finisher. Failure to achieve the above criteria shall be cause for replacement of the offending segments or grinding/polishing at no cost to the Owner or Tenant.
- D. Only the Sales Floor will receive the full 8 step process outlined below under item K.
- E. All other areas will only receive steps 1 through 3, no additional work is necessary. The yellow safety striping will remain.

F. The Black painted border will not be required in areas behind fixtures, etc....it will only be installed at the main entry door, office doors, egress doors and doorways into the receiving area and transitions that can be seen by the customers.

G. Steps 2 & 4 are combo steps using different grits of resin bond diamonds on each pass.

H. This is a "Resin" only grind that does not tear away as much of the surface area. The Resin grind will remove a minimal top layer of the concrete surface and should greatly reduce the amount of Waste Product created when compared to the old Metal grind process.

I. If a Cure-n-Seal product is required at the time of slab placement only Water Based Dissipating Sealers are allowed. NO Acrylic Cure-n-Seals are allowed.

J. Prior to application, inspect interior sales floor slab to ensure that slab is clean and free of dust, grease, oils, or other contaminants that might prohibit the proper application and penetration of the liquid densifier and sealer.

- K. Process Steps
1. Cut, clean out, prep and fill the concrete floor joints with the Euclid QWIKjoint UVR polyurea joint filler or "CreteFill Pro 75 by CureCrete.
2. Grind concrete floor with a combo set of 40/50 grit resin bond diamonds.

3. Depending on the final finish of the floor, this step may or may not be required. Grind concrete floor with a combo set of SASE metal bond gold series 80 and 150 grit segments or HTC EZ BB brown 4 series (60 grit diamonds) and HTC EZ BB Black 5 series (100 Grit Diamonds).

4. Thoroughly clean the concrete floor and apply Euclid Diamond Hard liquid densifier and sealer at 225 square feet per gallon or ("RetroPlate 99 liquid densifier at 200 square feet per gallon").

5. Polish concrete floor with a combo set of SASE Triton 100 grit black resin diamonds, SASE Triton 200 grit blue resin diamonds or HTC EZ MR black series (100 Grit Diamonds) and HTC EZ MR blue series (200 Grit Diamonds).

6. Polish concrete floor with SASE Triton 400 grit red resin diamonds or HTC EZ SR red series (400 grit diamonds).

7. Thoroughly clean concrete floor and then apply Euclid Diamond Hard liquid densifier and sealer at 700 square feet per gallon (spiff coat). Or ("RetroPlate 99 liquid densifier at 700 square feet per gallon as a spiff coat").

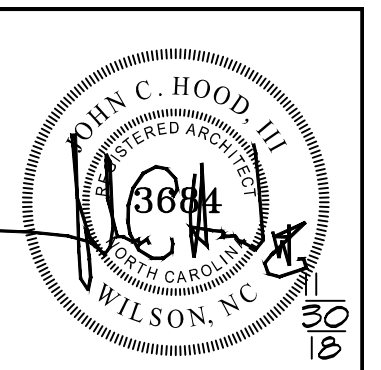
8. Burnish / Polish concrete floor with SASE Sure Shine white 800 grit diamond impregnated pads or HTC White Twister pads (800 grit diamond impregnated pads).

9. Burnish / Polish concrete floor with 1500 Grit Diamond Impregnated twister pads (H.T.C. Yellow TWISTERS or equivalent)

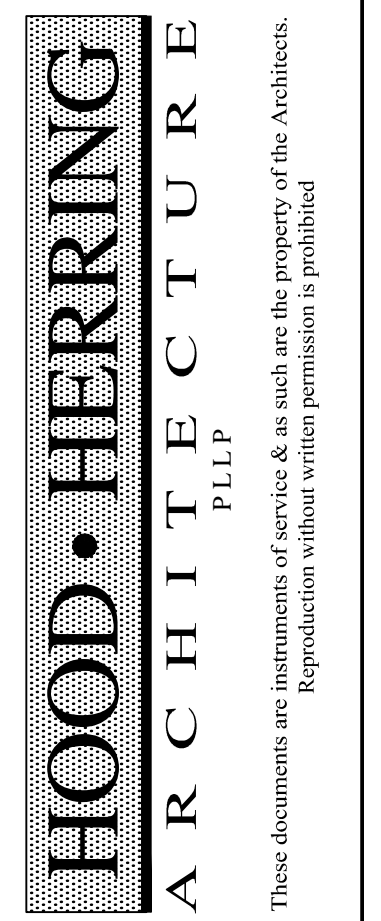
L. All edges must be polished to match concrete floor with coinciding SASE 5" resin Polishing pads or HTC EZ Grind polishing 5" diamond tools.

M. Polish results: Perform polishing process to attain an overall gloss reading of >=35 specified overall gloss value (SOGV) as measured using a Horiba (G-320, and a specified minimum gloss reading of >=30 minimum local gloss value (MGLV). A minimum of 75 readings shall be taken throughout the interior sales floor. The approved applicator shall take four gloss measurement readings at 90° from each other, and then averaged for one reading at each location. The overall measurement shall be reported to Dollar General within 24 hours of the polishing process. Gloss shall be considered as a quantitative value that expresses the degree of reflection when light hits the concrete floor surface. Gloss measurements will be taken independent of ambient lighting and will be taken within a sealed measurement window located beneath the test unit.

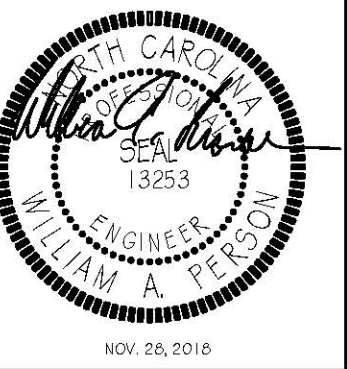
- GENERAL NOTES**
1. BUILDING MUST COMPLY WITH ALL BUILDING (FEDERAL, STATE, AND LOCAL), FIRE, ADA, AND HEALTH DEPARTMENT CODES.
 2. HALLS: FINISHED GYPSUM BOARD WITH ALL JOINTS TAPED, MUDD, SANDED, AND PAINTED.
 3. PROVIDE DOUBLE STUDS AND BLOCKING TO SUPPORT EQUIPMENT AND/OR MISCELLANEOUS ITEMS WHERE INSTALLED, i.e.-TYPICAL CASEWORK, TOILET PAPER HOLDERS, GRAB BARS, ETC.
 4. CALK AND SEAL EXTERIOR JOINT BETWEEN METAL PANELS AND CONCRETE SLAB, AND ALL UNLIKE MATERIALS.
 5. TRIM - DOORS, DOOR FRAMES, WINDOW FRAMES, COLUMNS: PAINTED TO MATCH ADJACENT WALLS.
 6. ALL PENETRATIONS THROUGH ROOF MUST COMPLY WITH ROOF HARRANTY REQUIREMENTS.
 7. DOORS: ALL EXTERIOR DOORS HAVE HEATHER STRIPPING AND A SNUG SEAL AROUND DOOR. ALL EXTERIOR DOORS WILL HAVE CYLINDER REPLACED BY DOLLAR GENERAL AREA MANAGER WITH INSTAKEY SYSTEM.
 8. THE SALES FLOOR SHALL CONTAIN NO INTERIOR COLUMNS. 12" MAXIMUM THICKNESS ON ALL EXTERIOR COLUMNS. THE USE OF INTERIOR COLUMNS, LARGER EXTERIOR COLUMNS, OR TAPERED COLUMNS REQUIRE WRITTEN APPROVAL FROM DOLLAR GENERAL CONSTRUCTION DEPARTMENT.
 9. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATE ALL TRADES.
 10. CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOCATIONS AND DIMENSIONS OF EQUIPMENT. ANY EQUIPMENT FURNISHED BY THE OWNER OR TENANT SHALL BE RECEIVED, STORED, AND INSTALLED BY THE CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH OWNER FOR INSTALLATION.
 11. IF DIMENSIONS ARE IN QUESTION - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE DOLLAR GENERAL CONSTRUCTION DEPARTMENT BEFORE CONTINUING WITH CONSTRUCTION.
 12. MAINTAIN CLEAN WORK SITE ON A DAILY BASIS.



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DOLLAR GENERAL
 STORE # 20312
 SPRING HILL CHURCH ROAD
 LILLINGTON, NORTH CAROLINA

JOB NUMBER
 DG.LILLINGTON.11.18
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 WTG
 DATE
 NOV. 28, 2018
 REVISIONS

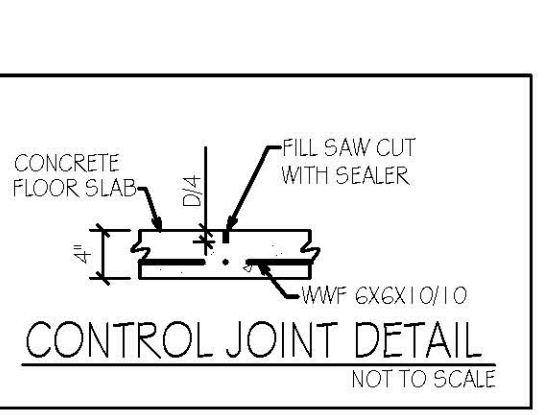
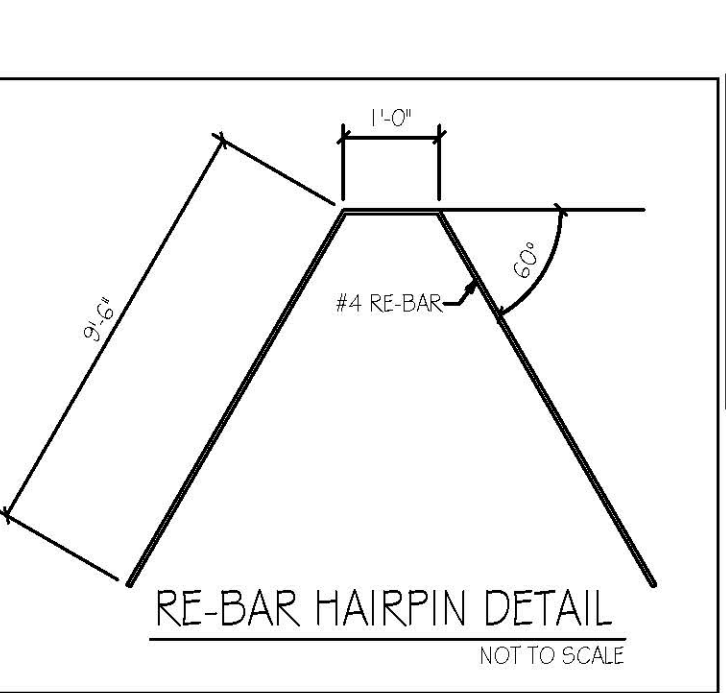
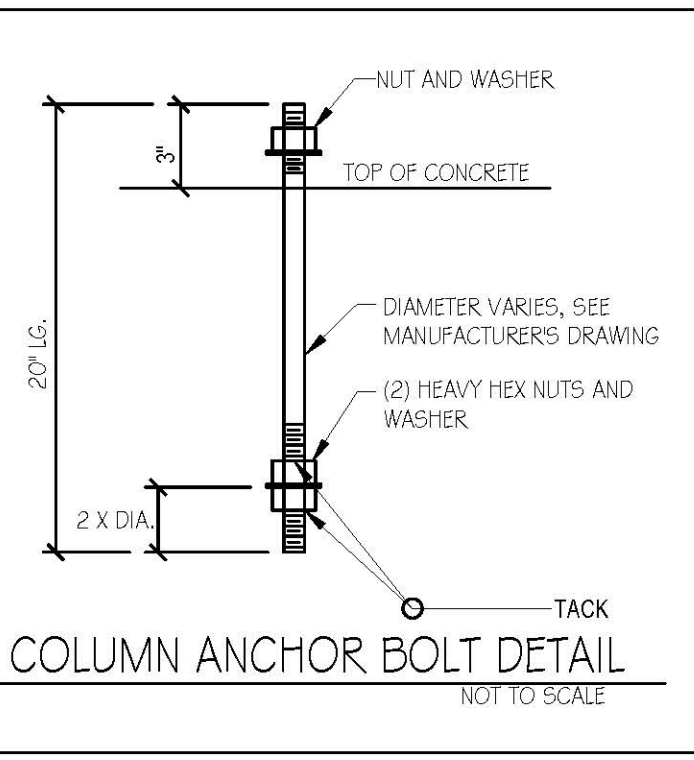
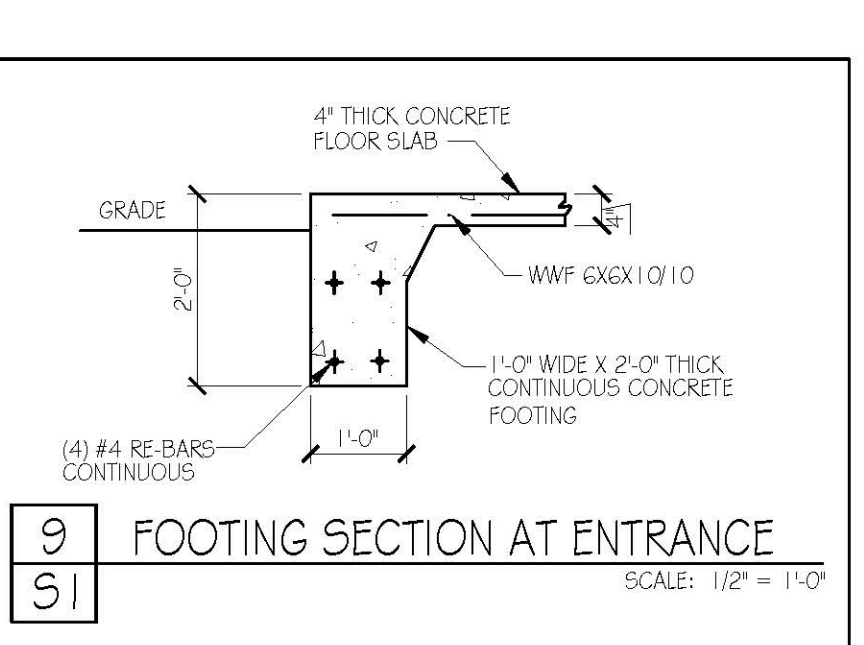
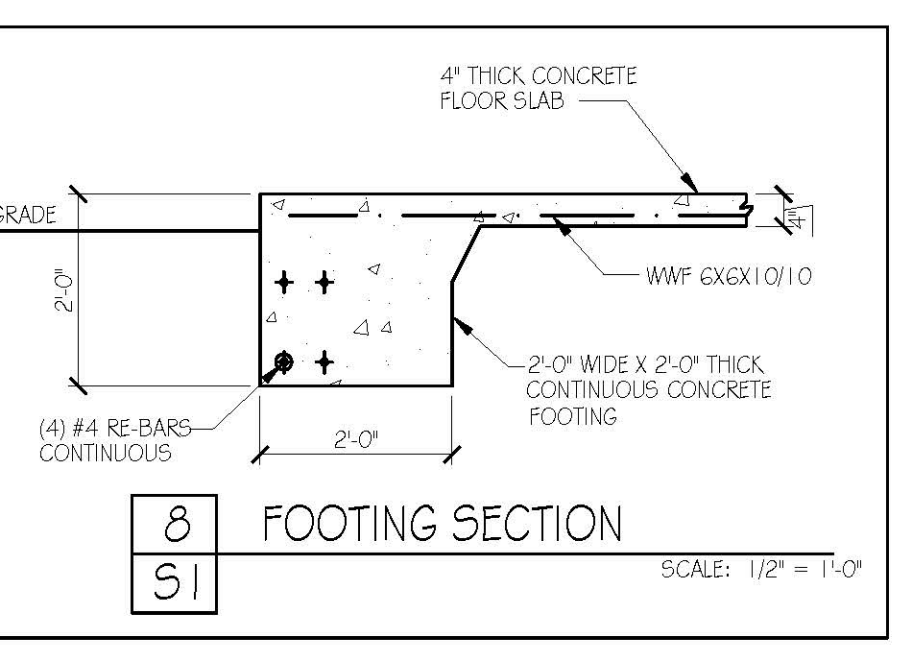
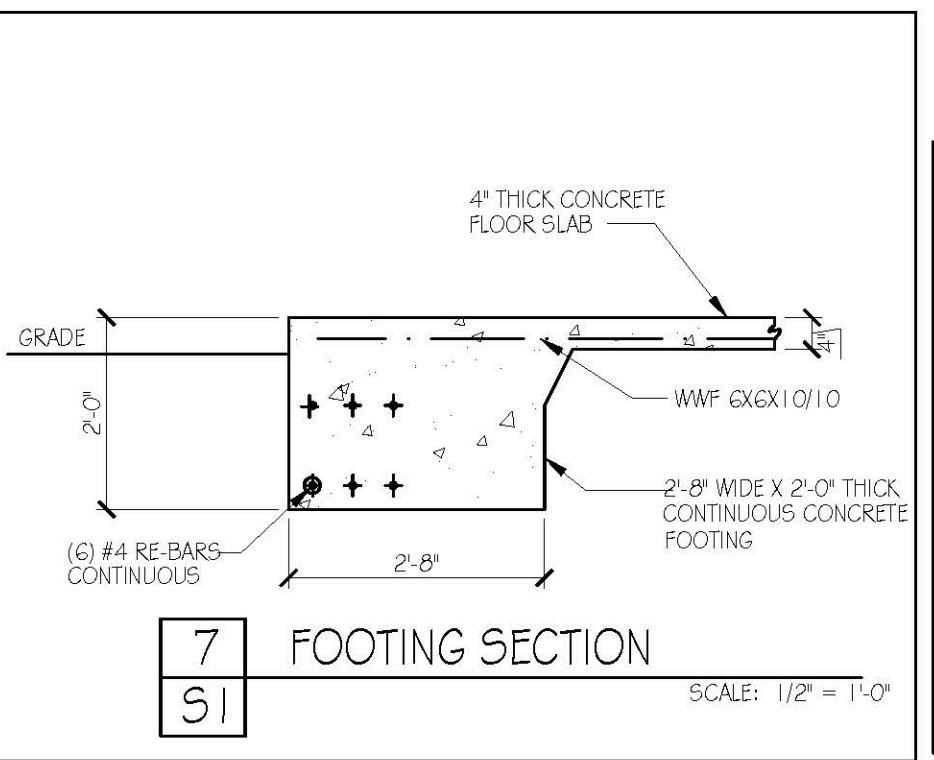
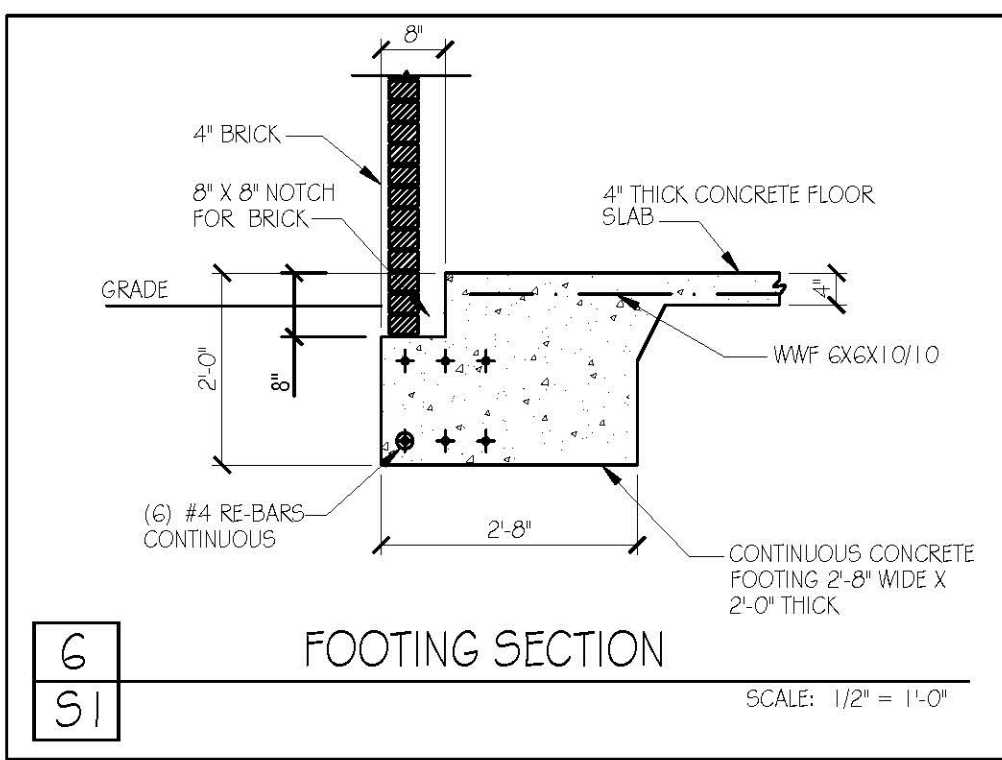
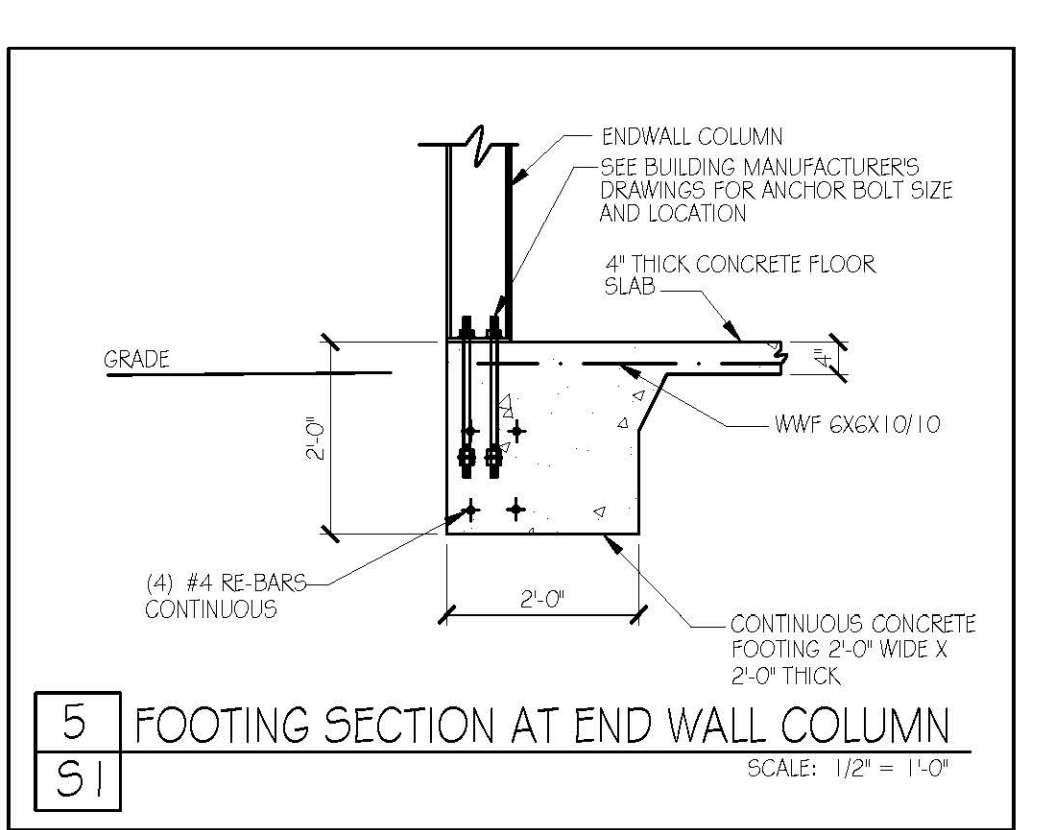
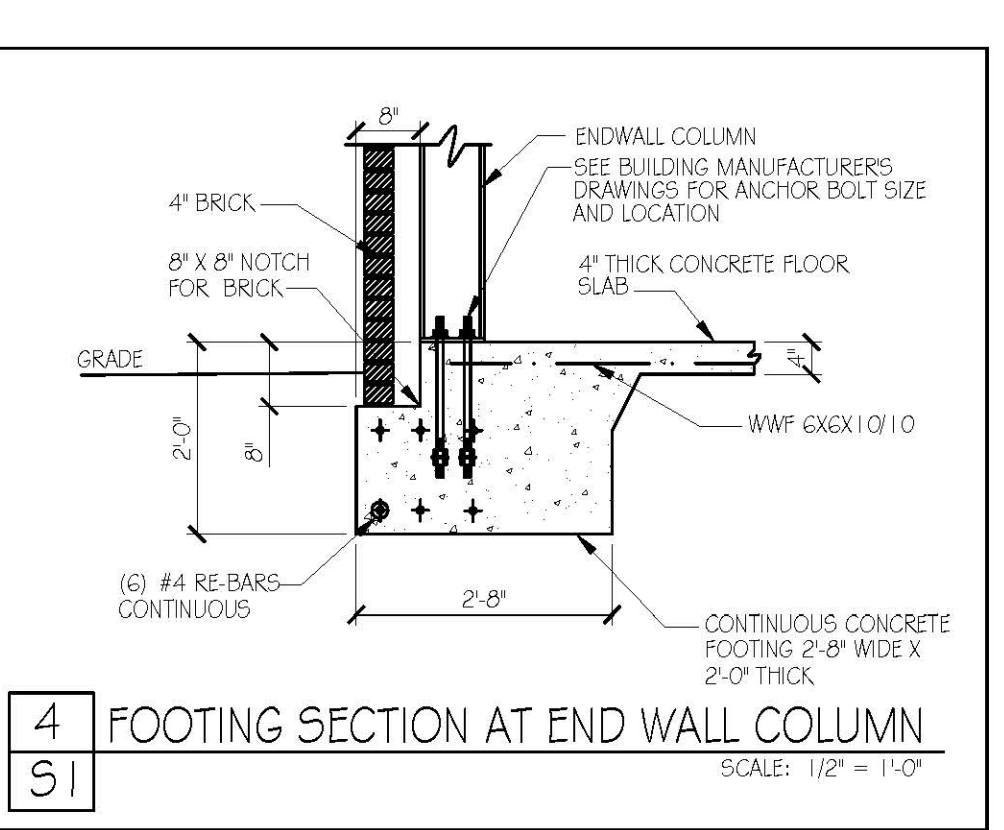
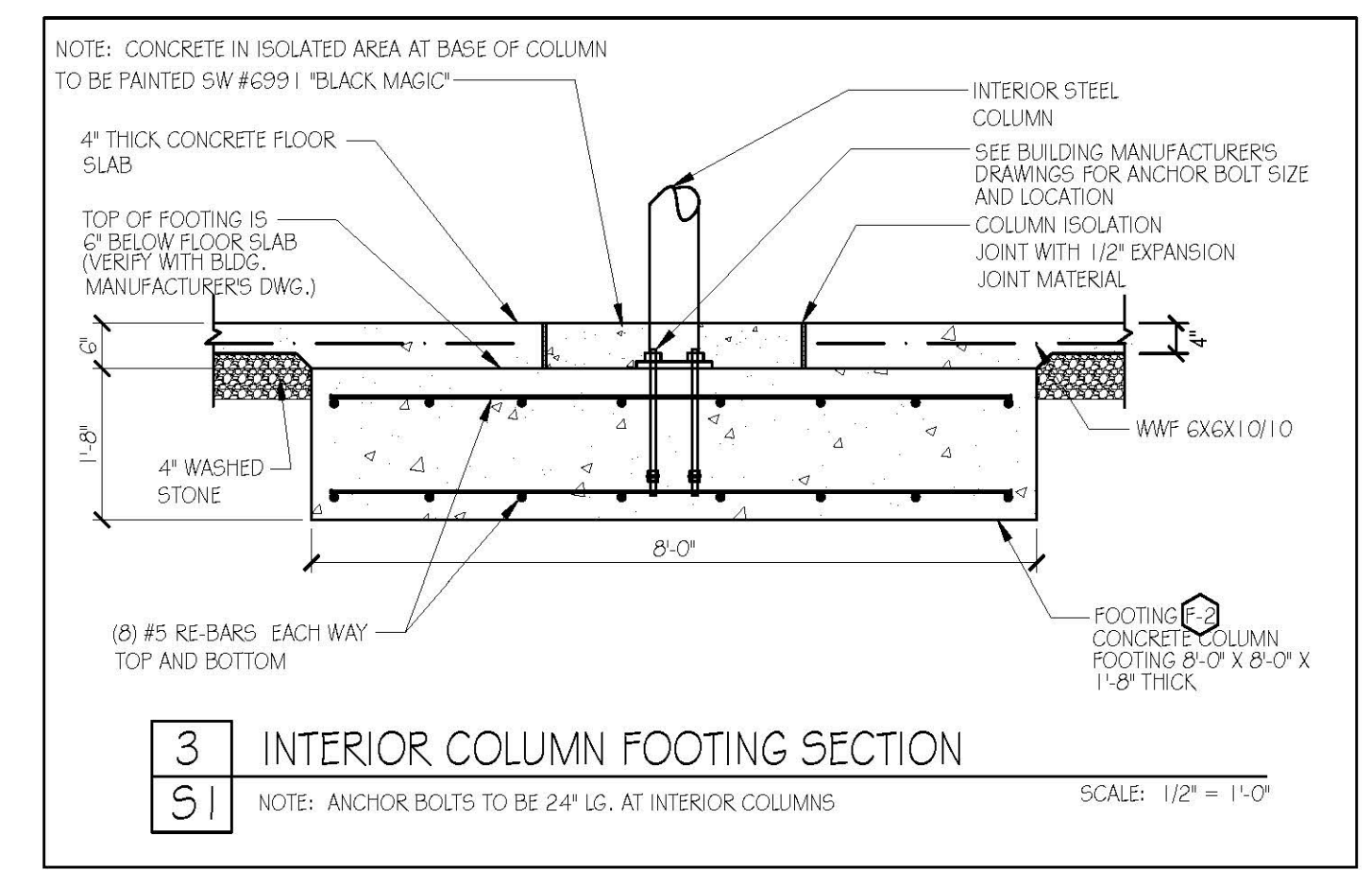
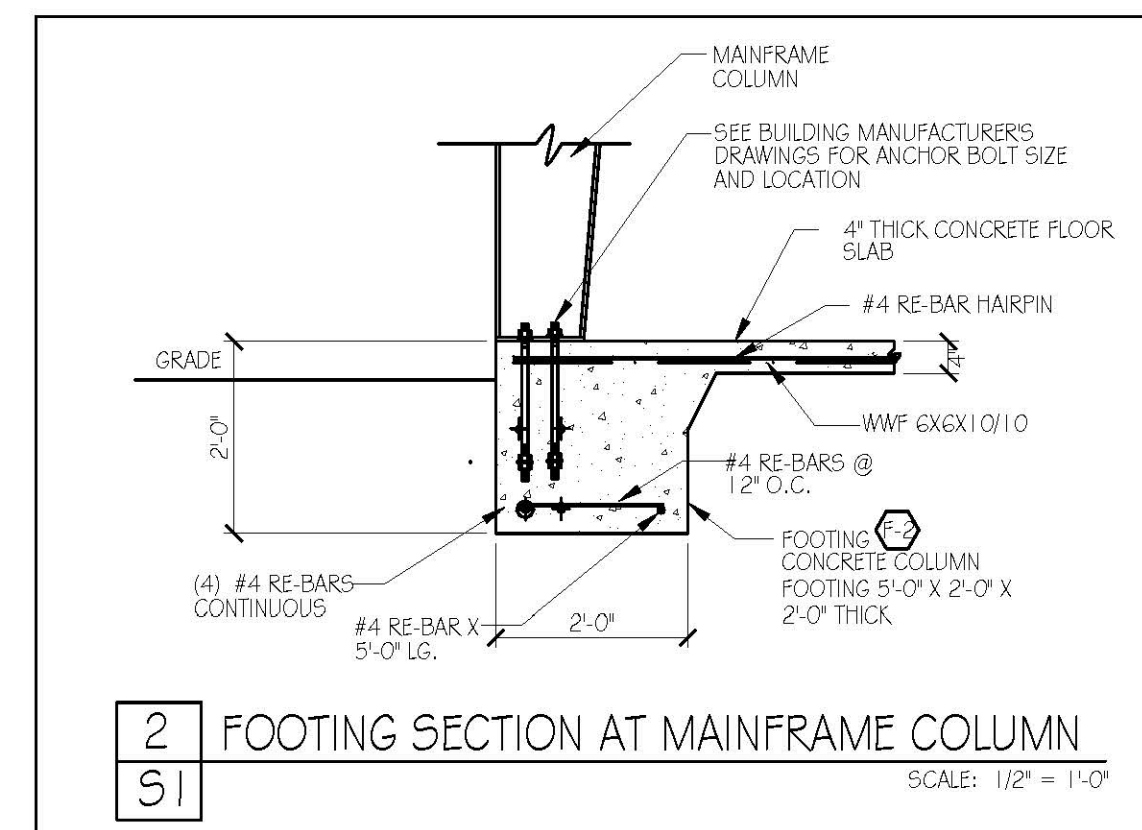
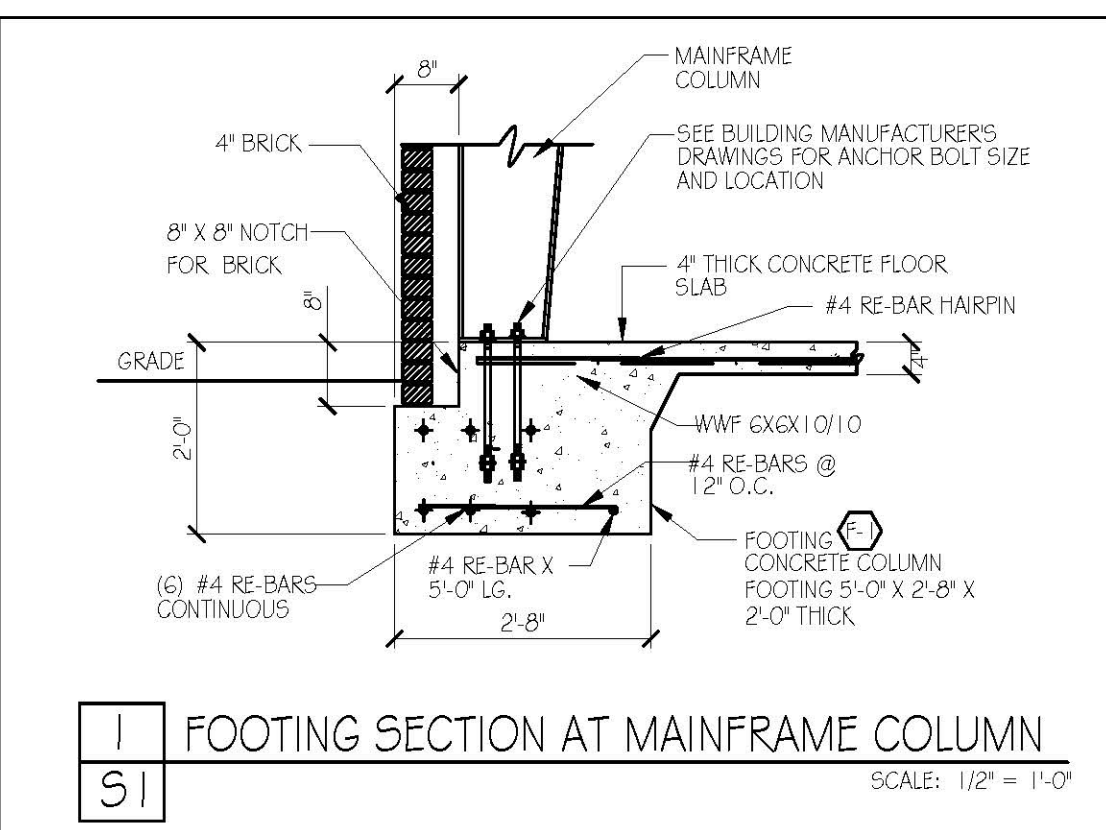
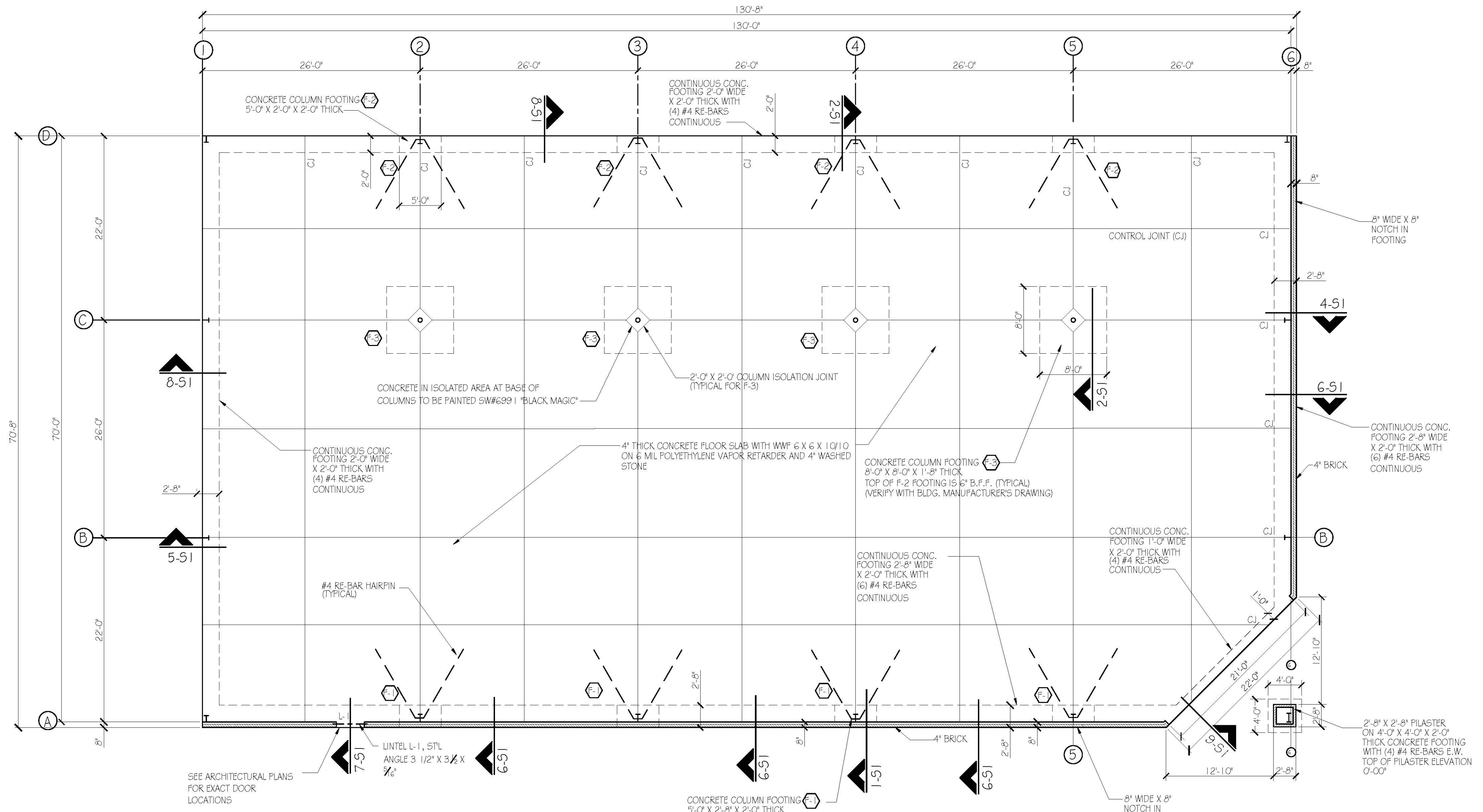
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OF ONE

FOUNDATION NOTES

- FOUNDATION DESIGN BASED ON ASSUMED SOIL BEARING PRESSURE OF 1000 PSF.
- MINIMUM COMPRESSIVE STRENGTH F'_c OF CONCRETE TO BE 4000 PSI.
- STEEL REINFORCEMENT BARS TO BE A615, GRADE 60.
- ANCHOR BOLTS SHALL BE HEAVY HEX NUTS AND WASHERS, 20" LONG. SEE MANUFACTURER'S DRAWING FOR ANCHOR BOLT SIZE AND LOCATION.
- PERIMETER INSULATION, WHEN REQUIRED SHALL BE INSTALLED IN ACCORDANCE WITH STATE AND LOCAL CODES.
- A 6 MIL POLYETHYLENE VAPOR RETARDER SHALL BE INSTALLED BELOW SLAB.
- BOTTOM OF FOOTING SHALL BE 12" BELOW FINISHED GRADE MINIMUM.
- ALL WORK SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE NORTH CAROLINA BUILDING CODE, 2012 EDITION.
- CONTRACTOR SHALL PROVIDE ANCHOR BOLT REACTIONS FOR REVIEW PRIOR TO CONSTRUCTION OF BUILDING FOUNDATION.
- SOIL BEARING CAPACITIES USED FOR DESIGN DO NOT EXCEED ALLOWABLE GEOTECHNICAL REPORT BY TERRACON, PROJECT NO. 7215078.



GENERAL PLUMBING NOTES:

- "PROVIDE" MEANS TO FURNISH AND INSTALL THE PLUMBING CONTRACTOR (PC) SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND/OR THE GENERAL CONTRACTOR.
- THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED IN THESE PLANS AND SPECIFICATIONS FOR ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKEAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
- ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED AT NO EXPENSE TO THE OWNER. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FROM UL OR AN APPROVED THIRD PARTY AGENCY, WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN. IT IS TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DETERMINED TO BE EQUAL BY A PARTICULAR ENGINEER WILL BE ACCEPTED.
- THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST VIRGINIA (VA) PLUMBING CODE, VA BUILDING CODE, AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MORE STRINGENT SHALL BE USED. THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
- THE PC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
- DO NOT SCALE THESE DRAWINGS—REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
- THESE PLANS ARE INFORMATIONAL; THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FITTINGS, PIPING, ETC. TO ACCOMMODATE PLANNED AND UNEXPECTED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BONDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE PC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER. THE PC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. TO AVOID POTENTIAL CONFLICTS, COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION. ALL UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO ANY DIGGING.
- EXTEND DOMESTIC WATER PIPE FROM FIVE (5) FEET OUTSIDE THE BUILDING INTO THE BUILDING AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE PROVIDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH VA PLUMBING CODE. PROTECT ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE. PIPING TO BE INSTALLED AS FLUSH AS POSSIBLE TO WALLS AND CEILINGS. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING. 1-1/2 INCH AND LARGER, PC MAY SUBSTITUTE CPVC WITH APPROVED FITTINGS, WITH OWNER'S APPROVAL. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD PARTY CERTIFIED AS CONFORMING TO NSF 14. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF 8-PERCENT AND SHALL CONFORM TO NSF 61. ALL WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. DO NOT INSTALL PEX IN RETURN AIR PLenums.
- ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER—PARALLEL TO WALLS AND PERPENDICULAR TO WALLS WHEN POSSIBLE—AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
- BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI RCP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLDER-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY INBCO, WATTS, OR STOCKHOLM.
- IT SHALL BE THE RESPONSIBILITY OF THE PC TO ADEQUATELY SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FITTINGS, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL ADEQUATELY SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH VA PLUMBING CODE. HANGERS AND ACCESSORIES SHALL BE GALVANNEAL, WASON, OR B-LINE.
- SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL.

- PIPE, MACHINE OUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILING. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR—EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATE FLOORS—AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1/8" LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION—BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNUAL SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER.
- THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R-5 DETERMINED IN ACCORDANCE WITH ASTM C-177.
- COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK CLOSED CELL RUBBER INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL HAVE 1-1/2 INCH THICK INSULATION. FIBROUS GLASS INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR CLOSED-CELL RUBBER IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR BARRIER. ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUILT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR BARRIER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESEALING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS, CONFORMING TO ASTM C-1133 TYPE 1; VAPOR BARRIER WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY, AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.
- ALL INSULATION PRODUCTS SHALL CONTAIN RECOVERED MATERIALS AS REQUIRED BY EPA'S CPQ AND RELATED RECYCLED CONTENT RECOMMENDATIONS. NO INSULATION INSTALLED ON THE PROJECT SHALL BE MATERIAL MANUFACTURED USING CHLOROFLUOROCARBONS, NOR SHALL CFCs BE USED IN THE INSTALLATION OF THE PRODUCTS. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES OR GOVERNMENTS ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
- FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61. SECTION 8 FIXTURE FITTINGS, FAUCETS, AND OPERATORS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT HAND SIDE OF THE FIXTURE FITTING.
- INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HAND-VA GUARD INSULATION KIT BY TRELLEBORG OR EQUAL.
- BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH THE VA PLUMBING CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1015 OR ANNA C511. THE RELIEF OPENING SHALL DISCHARGE TO AIR CAP. AIR CAP SHALL COMPLY WITH ASME A112.1.1 AND AIR CAP FITTINGS WITH ASME A112.1.3. DOUBLE CHECK VALVE ASSEMBLIES SHALL CONFORM TO ASSE 1015 OR ANNA C510. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED MANUFACTURER.
- POTABLE WATER OUTLETS SHALL BE PROTECTED FROM BACKFLOW IN ACCORDANCE WITH CODE. PRESSURE TYPE VACUUM BREAKERS SHALL CONFORM TO ASSE 1020 AND SPILLPROOF VACUUM BREAKERS SHALL COMPLY WITH ASSE 1056. HOSE-CONNECTION VACUUM BREAKERS SHALL CONFORM TO ASSE 1011, ASSE 1019, ASSE 1035, OR ASSE 1052. CONNECTIONS TO BEVERAGE DISPENSERS, COFFEE MACHINES, AND NON-CARBONATED BEVERAGE DISPENSERS SHALL BE PROTECTED BY A BACKFLOW PREVENTER IN ACCORDANCE WITH ASSE 1022.
- THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
- BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONCRETE INVERTS, AND ENSURE THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED, EXTEND SANITARY SEWER PIPING TO 5 FEET OUTSIDE THE BUILDING AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION.
- TRENCHING, CONNECTION, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH THE VA PLUMBING CODE. UNDERGROUND LINES SHALL BE LOCATED SUCH THAT THEY DO NOT ENDANGER FOOTINGS OR FOUNDATION WALLS.
- ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND WASTE PIPING SHALL BE INSTALLED TO PROVIDE ADEQUATE PROTECTION AGAINST FREEZING. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES.
- FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2 INCH SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2685) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTE WATER TEMPERATURE EQUALS OR EXCEEDS 140°F.
- FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE

DO NOT TAP WATER LINE AHEAD OF RPZ.

SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE	PLUMBING LINES SIZING TABLE						
							DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
							EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
P-1H	TANK TYPE WATER CLOSET	AMERICAN STANDARD CHAMPION 4" RIGHT HEIGHT #8002 014 DR. EQUAL	FLOOR MOUNTED ADA VITREOUS CHINA ELONGATED FLUSH TANK, 1.6 GPF CLOSED COUPLED TWO PIECE SIPHON JET WATER CLOSET, FLUSH TANK WITH 12" ROUGH IN. PROVIDE AMERICAN STANDARD #5901.100 DR. EQUAL, WITH OPEN FRONT, NO L.I.D. ADA REQUIREMENT MOUNT SO SEAT IS 17"-19" AFF. PROVIDE WITH STOP AND SUPPLY. ORDER WITH FLUSH LEVER ON OPEN SIDE OF TOILET.	-	3/4"	3"							
P-2	WALL MOUNT LAVATORY	AMERICAN STANDARD 0355.012 DR. EQUAL BY TOTO	FAUCET HOLES ON 4" CENTERS - FAUCET SHALL CHROME PLATED CAST BRASS BODY WITH 4" SPOUT, 4" BRASS WREST BLADE, 0.5 GPM SPRAY AND GRID STRAINER DRAIN. USE AMERICAN STANDARD MONTEREY #552.175 WITH WATTS MODEL 100-9-W TEMPERING VALVE DR. EQUAL. ADA REQUIREMENT, MOUNT RIM 34" AFF - INSULATE EXPOSED DRAIN AND WATER PIPES WITH TRELLEBORG LAV GUARD KIT #102 C-Z. PROVIDE SUPPLY LINES, STOP VALVES & P-TRAP.		3/4"	2"							
P-3	BRINKING FOUNTAIN	ELKAY #E2LRDRC DR. EQUAL	TWO-STATION, WALL MOUNTED ELECTRIC DRINKING FOUNTAIN, ADA, FRONT ONLY EAST TROUGH CONTROL, HIGH UNIT ON RIGHT. PROVIDE SUPPLY, STOP VALVE & TRAP. PROVIDE CANE APPROX AS REQUIRED.	-	3/4"	2"							
P-4	FLOOR CLEANOUT	ZURN, WATTS, JR SMITH	EPDXY COATED CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB INLET.	-	-	4"							
P-5	2-WAY YARD CLEAN OUT	TYLER PIPE #005519 DR. EQUAL	TRAFFIC RATED	-	-	4"							
P-6	WATER HAMMER ARRESTOR	ZURN Z1700 SHECKTRD 100	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS	-	-	VARIES							
P-7	FREEZEPROOF WALL HYDRANT	ZURN #Z13200 ECCLDTRD WALL HYDRANT	FREEZE PROOF WALL HYDRANT WITH BRONZE BODY, ANTI-SIPHON VACUUM BREAKER, HOSE CONNECTION, BOX AND LOCKING COVER MOUNT AT 24" ABOVE FINISHED GRADE. FLUSH MOUNT AND TAMPER RESISTANT. CONTRACTOR TO SUBMIT SPEC. FOR OWNER APPROVAL FOR ALL STORES.	-	3/4"	-							
P-8	ELECTRIC WATER HEATER	AO SMITH DEL-10	10 GALLON, 1.65KW, 120V	3/4"	3/4"	-							
P-9	EXPANSION TANK	AMTROL ST-5	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-							
P-10	MOP SINK	FIAT #S2824	USE 8300A SERVICE FAUCET, PROVIDE WITH HOSE BRACKET AND HANGER	3/4"	3/4"	3"							

PLUMBING FIXTURE SCHEDULE 2

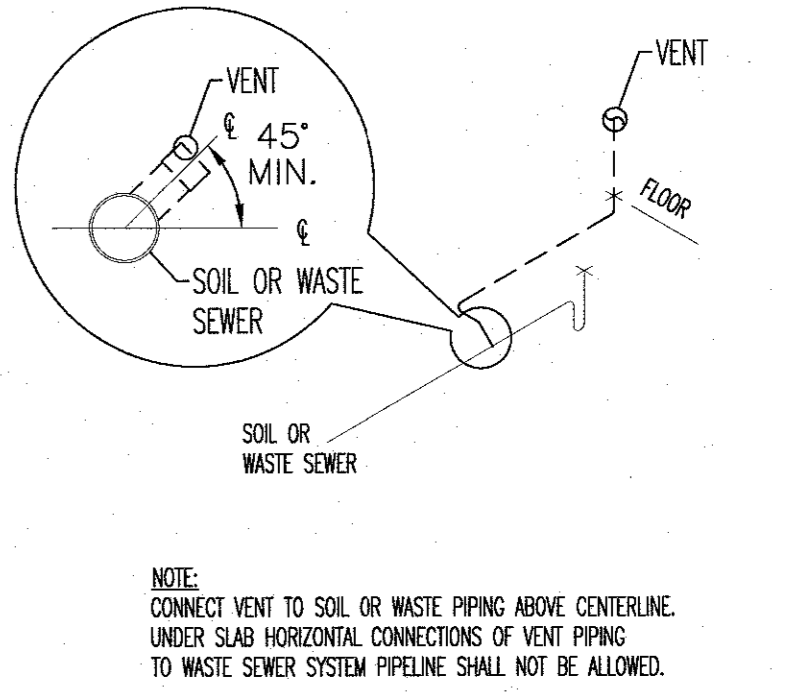
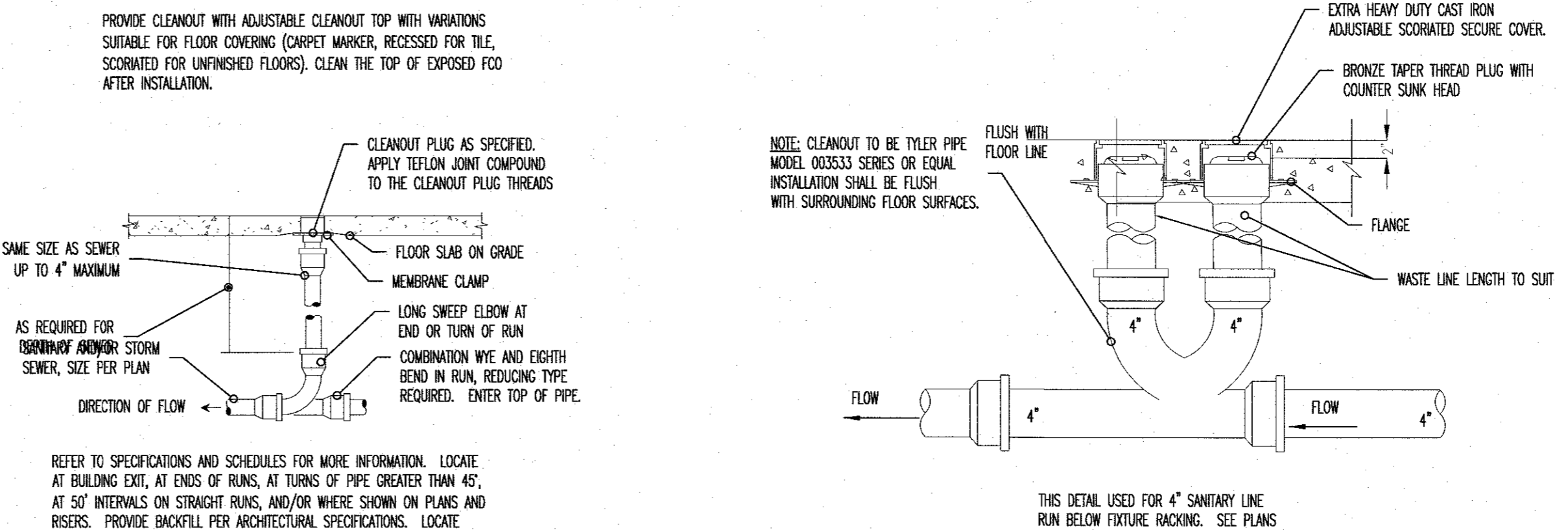
WATER LINE SIZING TABLE 3

FIXTURE TYPE	OCCUPANCY	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
			EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	
WATER CLOSET (FLUSH TANK)	PUBLIC	2	4	8	5	0	5	0	10
LAVATORY	PUBLIC	2	1	2	1.5	1.5	2	3.0	4
BRINKING FOUNTAIN	PUBLIC	1	0.5	0.5	0.25	0	0.25	0	0.3
MOP SINK	PUBLIC	1	2	2	2.25	2.25	3	2.25	3

DEMAND FIXTURE	GPM	QTY	TOTAL GPM	TOTAL DFU
HOSE BIBBS *	5	2	10	12.5
				TOTAL WFSUs 5.3
				TOTAL DFUs 17.3
				TOTAL GPM 9.8
				OTHER FIXTURES' GPM 0
				TOTAL GPM 9.8

MINIMUM BUILDING DRAIN SIZE 4"
MINIMUM WATER LINE SIZE 1"

* ASSUMES ONLY 1 HOSE BIBB RUNNING.



REFER TO SPECIFICATIONS AND SCHEDULES FOR MORE INFORMATION. LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45°, AT 50' INTERVALS ON STRAIGHT RUNS, AND/OR WHERE SHOWN ON PLANS AND RISERS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS. LOCATE CLEANOUT WHERE THERE IS 18" CLEAR AROUND, FOR ACCESSIBILITY. CONSULT LOCAL CODES AND OFFICIALS FOR OTHER REQUIREMENTS.

THIS DETAIL USED FOR 4" SANITARY LINE RUN BELOW FIXTURE RACKING. SEE PLANS

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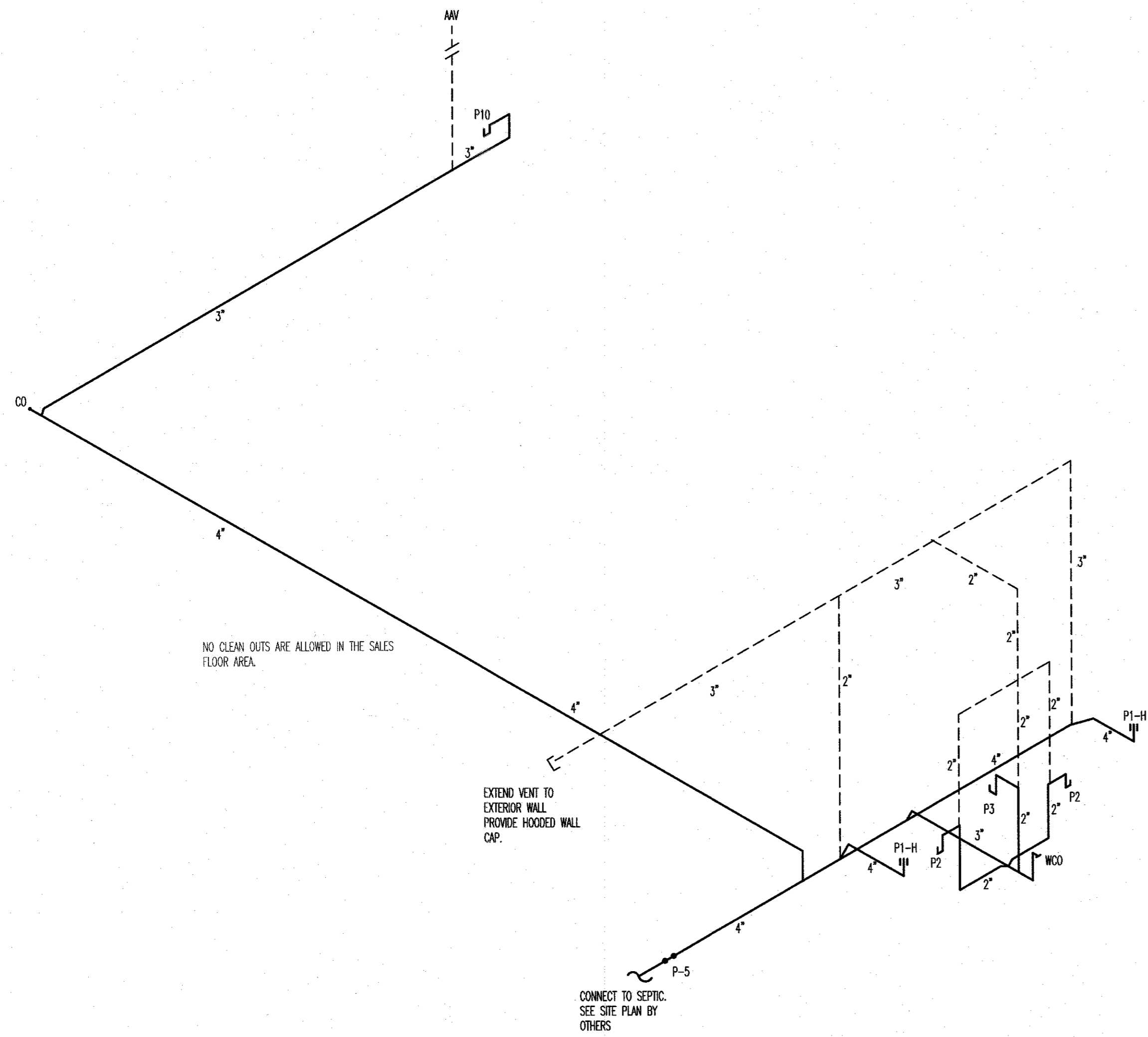
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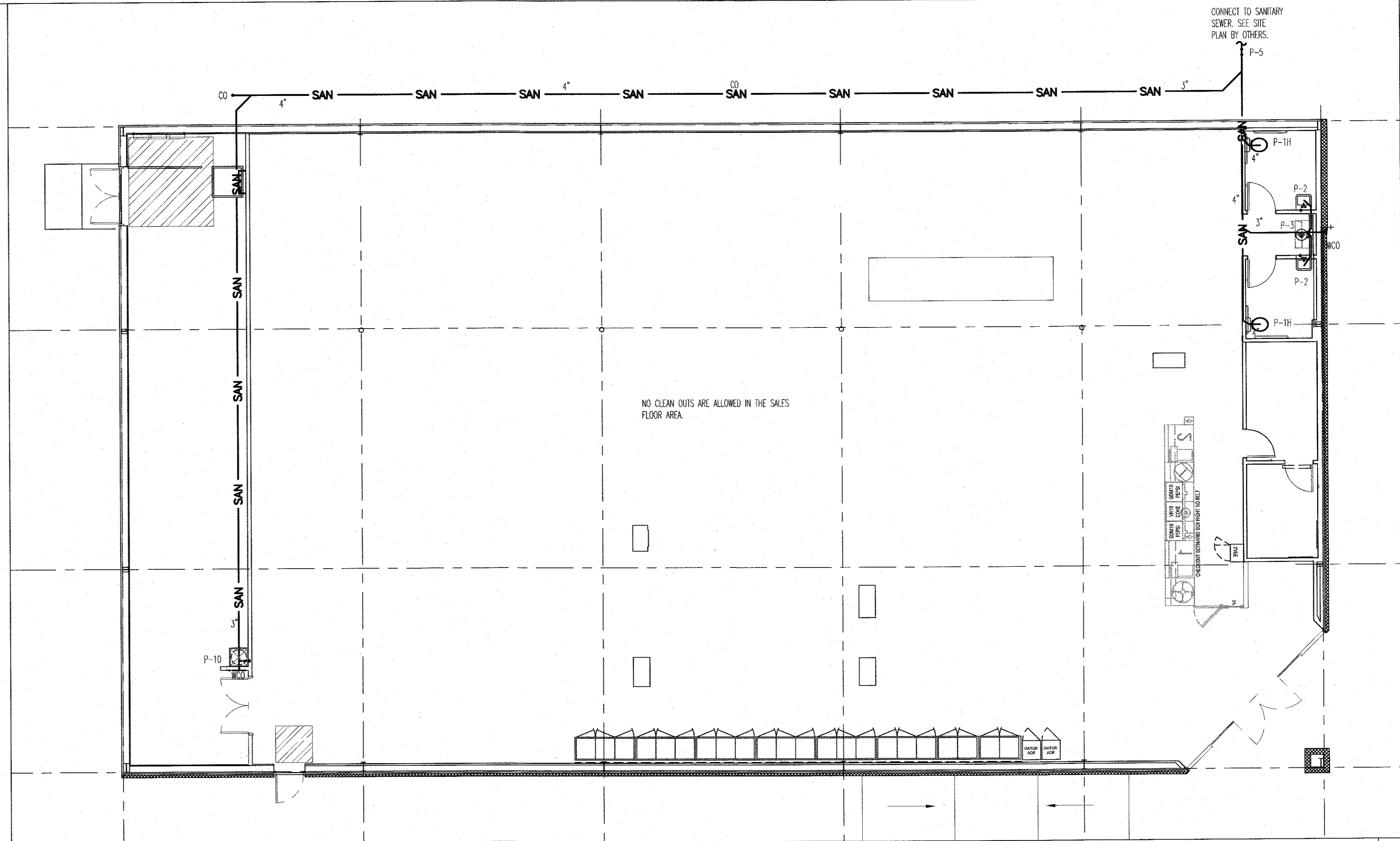
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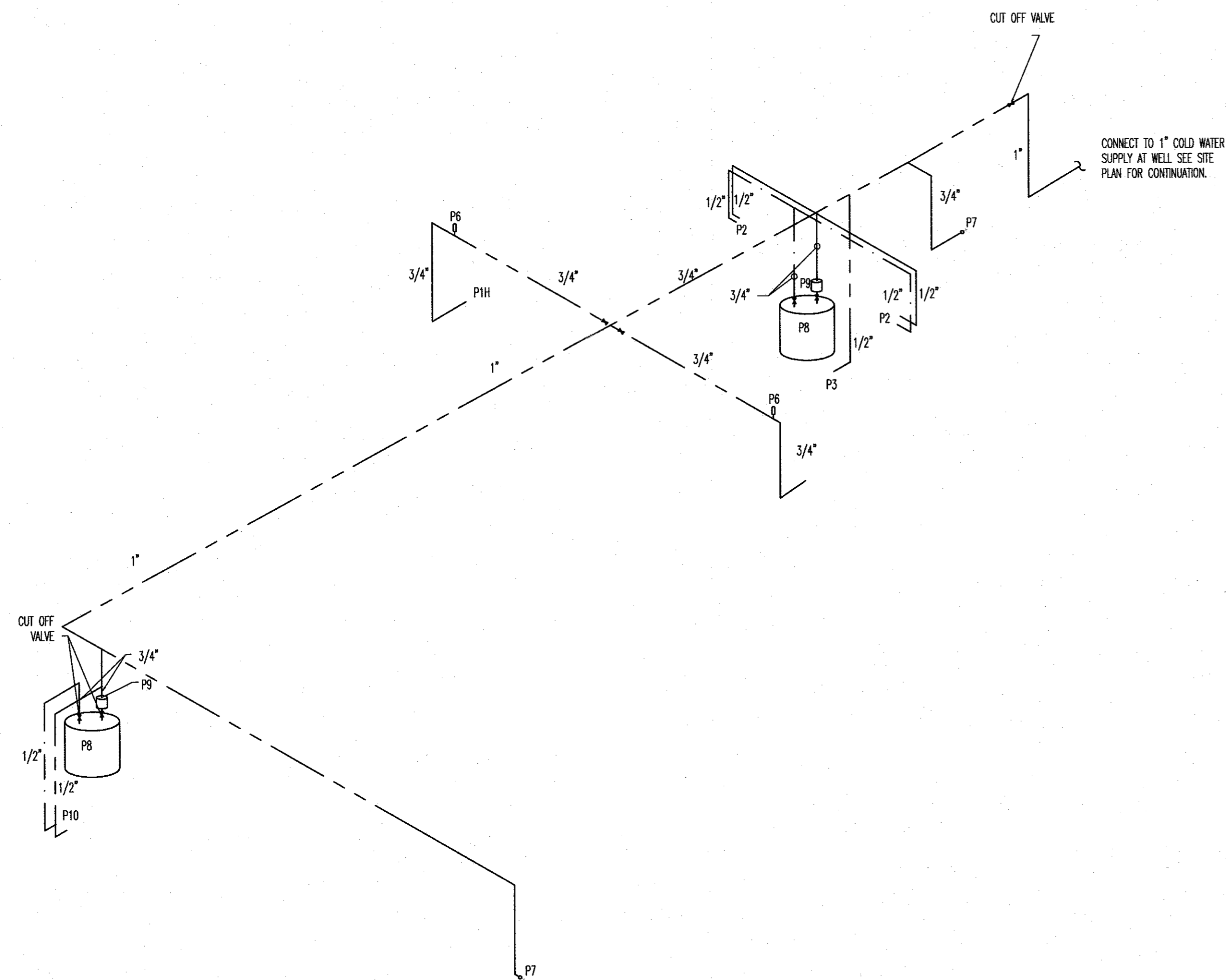
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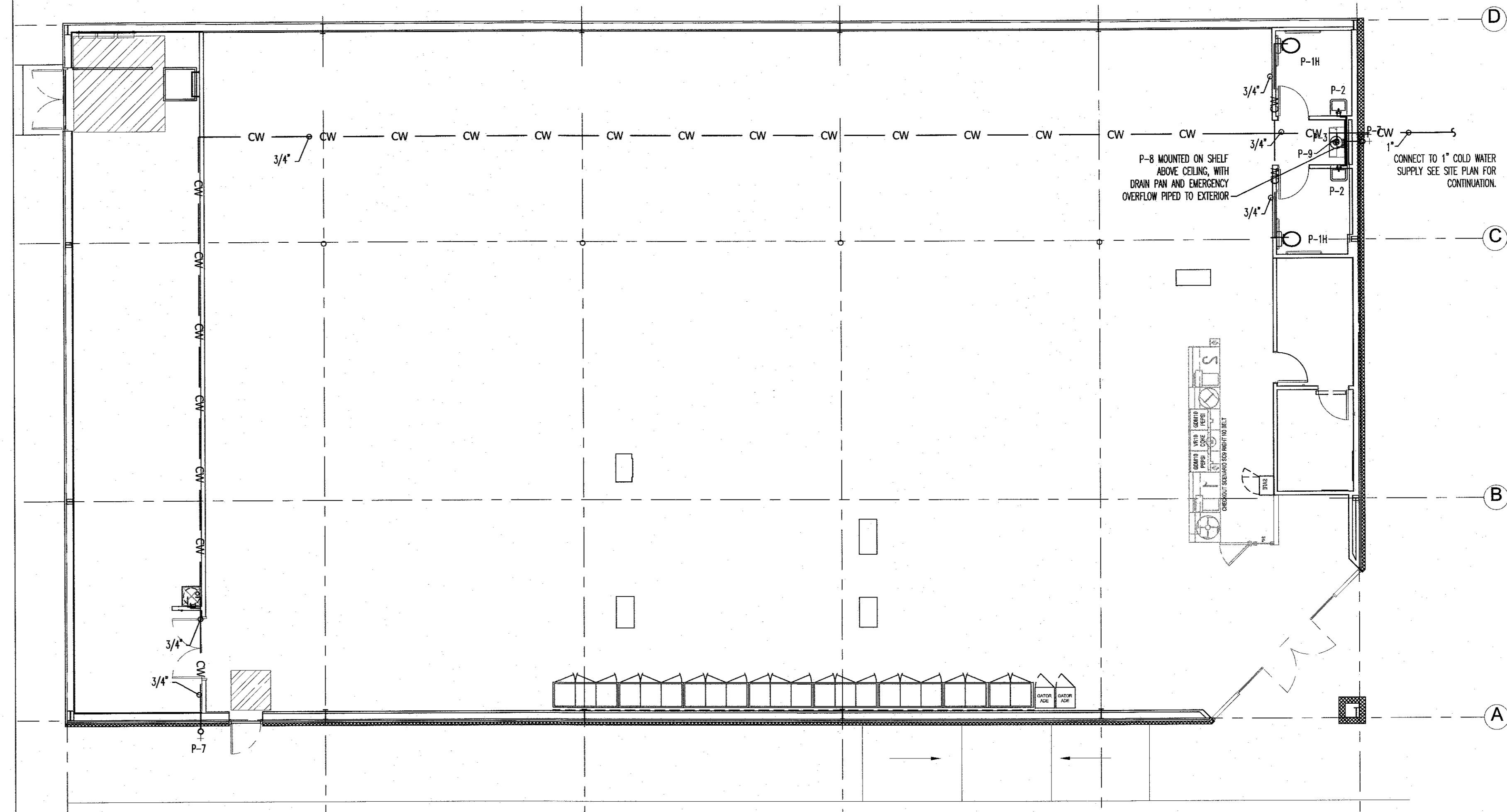
PLUMBING WASTE RISER-NO SCALE 1



PLUMBING WASTE PLAN-SCALE 1/8"=1' 3



PLUMBING SUPPLY RISER-NO SCALE 2



PLUMBING SUPPLY PLAN-SCALE 1/8"=1' 4

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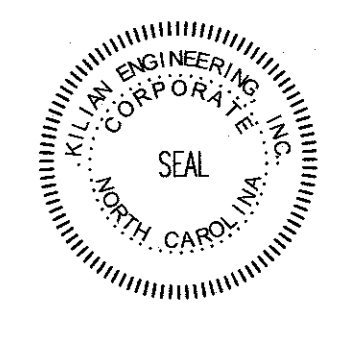
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SHEET NUMBER
P-2

EXHAUST FAN SCHEDULE							
MARK	MFG / MODEL #	TYPE	ESP (in WD)	CFM	VOLT/PH	FLA	NOTES
EF-1-2	GREENHECK SP-A125	CEILING	0.25	105	120/1	1	1-3

1. PROVIDE WITH PITCHED ROOF CAP OR HODDED WALL CAP AS APPLICABLE.
2. PROVIDE WITH SQUARE TO ROUND DUCT ADAPTER AS NECESSARY.
3. OR EQUAL BY LORIN COOK OR PENNABARY.

REGISTER & GRILLE SCHEDULE						
MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTION	NOTES
A	HART & COOLEY	HVS	24X24	LAY-IN	4-WAY DIFFUSER, BRIGHT WHITE	1
B	HART & COOLEY	SEVQH	10X6	SIDEWALL	STEEL, 4 WAY DIFFUSER, BRIGHT WHITE	1
R	HART & COOLEY	RHS	24"X8"	SIDEWALL	STEEL RETURN TRANSFER GRILLE	2

1. OR EQUAL BY PRICE, METAL-AIRE, CARNES, TITUS OR NAULOR.
2. PROVIDE ONE ON EACH SIDE OF WALL.

ROOFTOP PACKAGE AC WITH ELECTRIC STRIP SCHEDULE																					
MARK	MFG / MODEL #	NOMINAL CAPACITY	AIR FLOW		COMPRESSORS	FAN MOTORS			COOLING CAPACITY			FILTER		ELECTRICAL		WEIGHT	REMARKS				
			SUPPLY	MIN. OA		SUPPLY	ESP	CONDENSER	AUX ELEC. HEAT	EAT WB/DB	TOTAL	SENSIBLE	INCHES	MERV	EER			V/PH	MCA	MOP	LBS
RTU-1-2	LENNDX # ZDA120S4R3JP	10.0	4000	484	2	2-2	.25	2-1/3	30	2	67/80	130.6	94.03	2"	8	11.2	208/3	92	100	1251	1-12

1. PROVIDE WITH ROOF CURB.
2. THRU THE BASE CONNECTIONS.
3. BELT DRIVE WITH STANDARD STATIC OPTION.
4. ELECTRIC HEAT WITH SINGLE POINT CONNECTION KIT, AS SPECIFIED IN SCHEDULE.
5. PROVIDE WITH SINGLE INPUT ELECTRONIC ENTHALPY ECONOMIZERS WITH BAROMETRIC RELIEF DAMPERS.
6. ENTHALPY ACCESSORY CONTROL KIT TO CONVERT SINGLE ENTHALPY ECONOMIZER TO DUAL ENTHALPY FOR ECONOMIZERS.
7. TWO (2) ADDITIONAL SETS OF FILTERS (FIRST CONSTRUCTION/TEST AND BALANCE, AND ONE SET TO OWNER FOR FUTURE USE).
8. ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI).
9. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES.
10. PROVIDE DUCT DETECTOR IN RETURN DUCT. PROVIDE RELAY FOR KILLING POWER TO UNIT'S FAN.
11. PROVIDE HALL GUARDS.
12. 4 WAY DIFFUSER SEE NOTES #2.

MECHANICAL, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE ZONE
THERMAL ZONE	4A

EXTERIOR DESIGN CONDITIONS

WINTER DRY BULB	27.7°F
SUMMER DRY BULB	90.2°F
SUMMER WET BULB	76.3°F

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB	70°F
SUMMER DRY BULB	75°F
RELATIVE HUMIDITY	60%

HEATING LOAD

147,210 BTU/H

SENSIBLE COOLING LOAD

133,360 BTU/H

LATENT COOLING LOAD

60,610 BTU/H

MECHANICAL SPACING/CONDITIONING SYSTEM

AIR COOLED BY	2-10 TON PACKAGED AC/ELECTRIC HEAT
DESCRIPTION OF UNIT(S)	N/A
BOILER	N/A
TOTAL BOILER OUTPUT	N/A
CHILLER	N/A
TOTAL CHILLER CAPACITY	N/A

EQUIPMENT EFFICIENCIES

SEE EQUIPMENT SCHEDULES

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

SEE ADJACENT

ZONE AREA (F²)

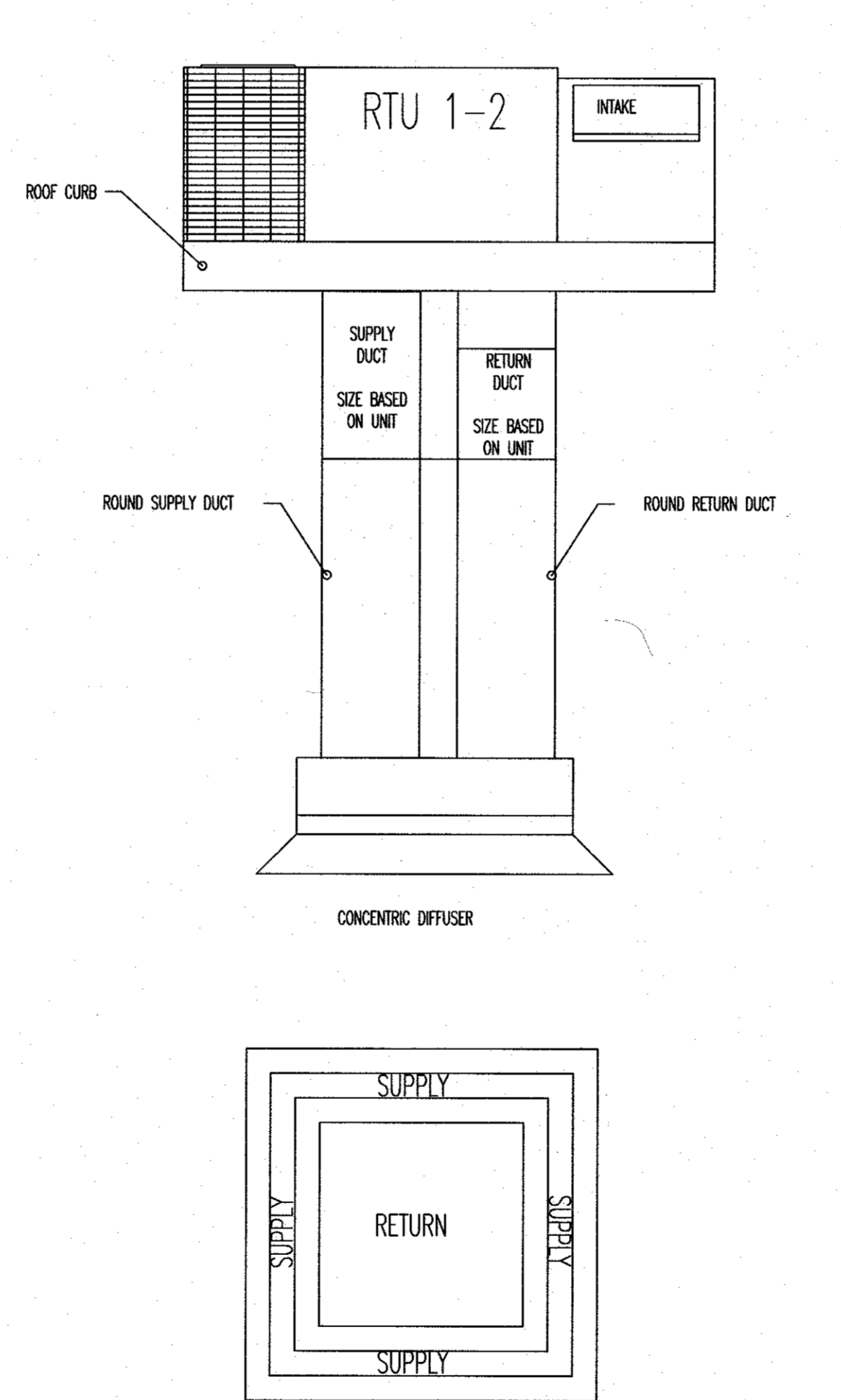
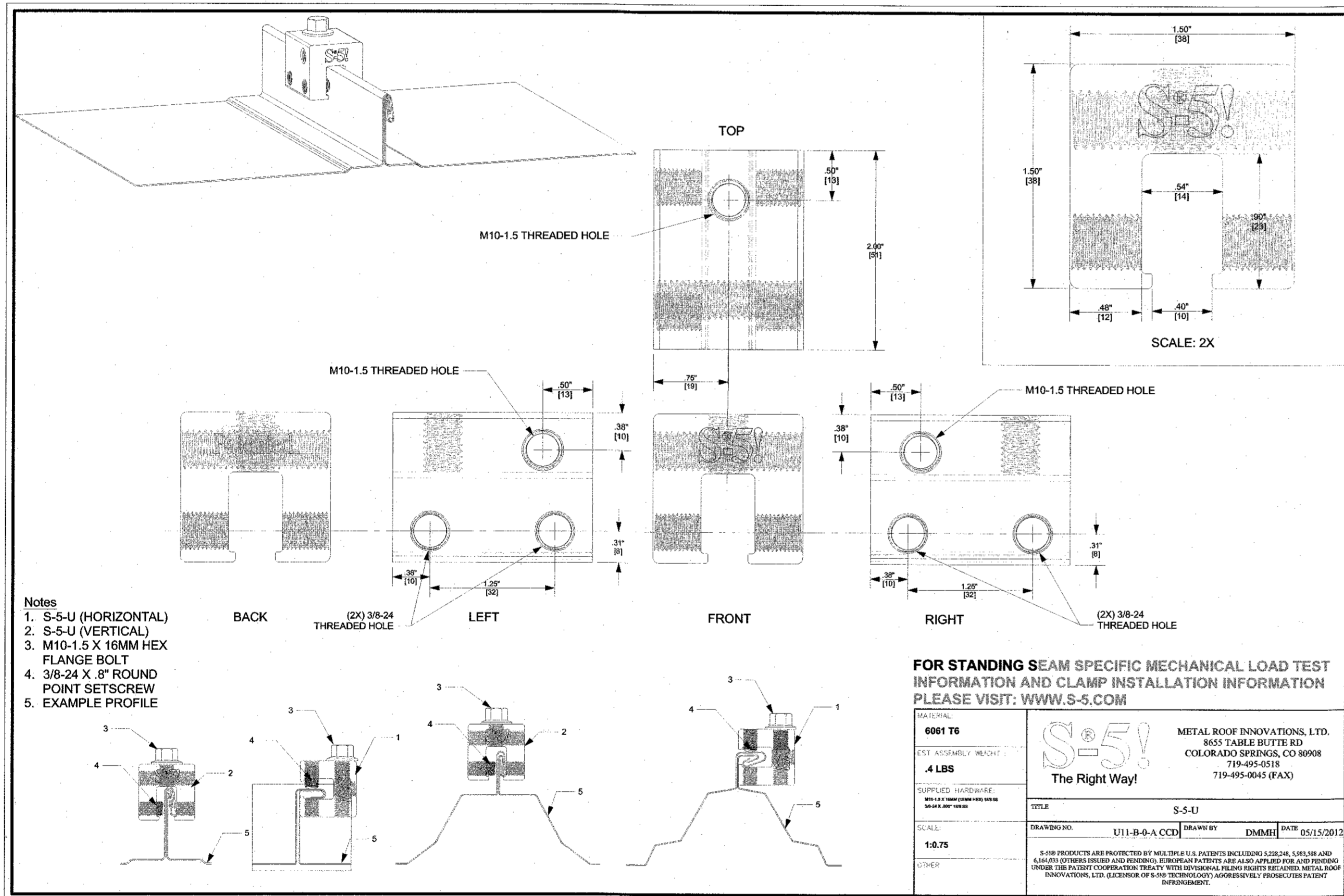
RETAIL 9100	APPLIED COOLING (TONS)	APPLIED HEAT @ 17°F
	20 TONS	60 KW

DESIGNER STATEMENT

TO THE BEST OF MY KNOWLEDGE, THE MECHANICAL DESIGN FOR THIS BUILDING COMPLIES WITH MECHANICAL AND EQUIPMENT REQUIREMENTS OF THE LATEST EDITION OF THE NORTH CAROLINA STATE BUILDING CODE.

MECHANICAL SCHEDULES | 1

MECHANICAL DESIGNER'S STATEMENT | 3



GENERAL MECHANICAL NOTES:

1. "PROVIDE" MEANS TO FURNISH AND INSTALL. MECHANICAL CONTRACTOR (MC) SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS SHOWN ON THE PLANS OR NECESSARY FOR A COMPLETE INSTALLATION.
2. THE MC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
3. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE CONTRACTOR AT AN APPROVED LOCATION. THE MC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE MC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
4. THE MC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE LATEST NORTH CAROLINA MECHANICAL AND BUILDING CODES AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MORE STRINGENT SHALL BE USED. THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
5. THE MC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
6. DO NOT SCALE THESE DRAWINGS—REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
7. THE MC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS WITH THE ENGINEER. THE MC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
8. ALL MECHANICAL MATERIALS SHALL BE NEW AND FREE OF DEFECT AND LISTED AND LABELED BY UL OR AN APPROVED THIRD PARTY AGENCY. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED BY THE MC WITHOUT ADDITIONAL COST TO THE OWNER.
9. THE MC SHALL PROVIDE ALL DX UNITARY HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. AIR-COOLED ROOFTOP PACKAGE HEAT PUMPS, GAS-ELECTRIC UNITS, AND AIR-CONDITIONERS SHALL BE BY YORK. THE MC SHALL PROVIDE FACTORY AND FIELD INSTALLED OPTIONS AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.
10. THE MC SHALL PROVIDE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED. FANS SHALL BE BY GREENHECK, LORIN COOK, OR PENNABARY.
11. THESE PLANS ARE DIAGRAMMATIC. THE MC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, DUCTS, REGISTER, GRILLES, ETC. TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE MC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
12. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
13. DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH STATIC PRESSURE CLASS.
14. IT IS THE MC'S RESPONSIBILITY TO VERIFY THAT ITEMS FURNISHED FOR THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE MC SHALL MAKE FIELD MEASUREMENTS AS NECESSARY TO DETERMINE SPACE REQUIREMENTS. IF THE MC MUST ALTER EQUIPMENT DUE TO SPACE CONSIDERATIONS, THE MC SHALL PROVIDE SIZES AND SHAPES THAT FIT THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS.
15. EXTERNAL DUCT INSULATION AND FACTORY-INSULATED FLEXIBLE DUCT SHALL BE LEGIBLY PRINTED OR IDENTIFIED AT INTERVALS NOT GREATER THAN 36 INCHES WITH THE NAME OF THE MANUFACTURER, THE THERMAL RESISTANCE R-VALUE AT THE SPECIFIED INSTALLED THICKNESS AND THE FLAME SPREAD AND SMOKE-DEVELOPED INDICES OF THE COMPOSITE MATERIALS. ALL DUCT INSULATION PRODUCT R-VALUES SHALL BE BASED ON INSULATION ONLY, EXCLUDING AIR FILMS, VAPOR RETARDERS OR OTHER DUCT COMPONENTS, AND SHALL BE BASED ON TESTED C-VALUES AT 75°F MEAN TEMPERATURE AT THE INSTALLED THICKNESS. IN ACCORDANCE WITH RECOGNIZED INDUSTRY PROCEDURES, THE INSTALLED THICKNESS OF DUCT INSULATION USED TO DETERMINE ITS R-VALUES SHALL BE DETERMINED AS FOLLOWS:
 - 15.1. FOR DUCT WRAP, THE INSTALLED THICKNESS SHALL BE ASSUMED TO BE 75 PERCENT (25-PERCENT COMPRESSION) OF NOMINAL THICKNESS.
 - 15.2. FOR FACTORY-MADE FLEXIBLE AIR DUCTS, THE INSTALLED THICKNESS SHALL BE DETERMINED BY DIVIDING THE DIFFERENCE BETWEEN THE ACTUAL OUTSIDE DIAMETER AND NOMINAL INSIDE DIAMETER BY TWO.
16. INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP. INSTALLED R-VALUE SHALL BE A MINIMUM NECESSARY TO COMPLY WITH NC ENERGY CONSERVATION CODE. JOINTS AND LINES, INCLUDING ADHESIVES WHEN USED, SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84-04. ALL NEW DUCTWORK SHALL RECEIVE INSULATION ON THE OUTSIDE. INSTALLED DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS UNINSULATED AND FACING OF ADJACENT PIECE OF DUCT WRAP. INSULATION SHALL BE TIGHTLY BUTTED. FOR RECTANGULAR DUCTS, INSTALL 50 INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. STAPLE SEAMS APPROXIMATELY 6 INCHES ON CENTER WITH OUTWARD CLINCHING STAPLES. SEAL SEAMS WITH PRESSURE SENSITIVE TAPE MATCHING THE FACING. FOR RECTANGULAR DUCTS 24 INCHES IN WIDTH OR GREATER, SECURE DUCT WRAP TO THE BOTTOM OF THE DUCT WITH MECHANICAL FASTENERS SPACED 18 INCHES ON CENTER TO PREVENT SAGGING OF INSULATION. ADJACENT SECTIONS OF DUCT WRAP SHALL BE TIGHTLY BUTTED WITH THE 2 INCH TAPE FLAP OVERLAPPING. ALL TEARS, PUNCTURES, ETC. OF THE DUCT WRAP INSULATION SHALL BE SEALED WITH TAPE OR MASTIC TO PROVIDE A VAPOR TIGHT SYSTEM. INSULATION SHALL BE BY KNAUF INSULATION, OWENS CORNING CORP. OR CERTAINTED CORPORATION. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS. VERIFY THAT DUCT SURFACES ARE CLEAN, DRY AND FREE OF FOREIGN MATERIAL PRIOR TO INSULATING. DUCT COVERINGS SHALL NOT PENETRATE A WALL OR FLOOR REQUIRED TO HAVE A FIRE-RESISTANCE RATING OR REQUIRED TO BE FIRE BLOCKED.
17. WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOWERS AND DUCT OUTLET IS SMALLER THAN LOWER FRAME, PROVIDE SLAM-OUT PANELS SEALING LOWER AREA AROUND DUCT. USE SAME MATERIAL AS DUCT, PAINTED BLACK ON EXTERIOR SIDE; SEAL TO LOWER FRAME AND DUCT.
18. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS, AND ELSEWHERE AS INDICATED.
19. CONTRACTOR'S BENDS AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT ON CENTERLINE. WHERE NOT POSSIBLE, WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE TURNING VANES.
20. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE WHEREVER POSSIBLE; MAXIMUM OF 30 DEGREES CONVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
21. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A-95 OR UL 181B-98. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAN THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.
22. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN-IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR BENDS, ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT ON CENTERLINE. WHERE NOT POSSIBLE, WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE TURNING VANES.
23. DUCT INSULATION R-VALUES SHALL COMPLY WITH THE LATEST EDITION OF THE NC ENERGY CODE.
24. IT SHALL BE THE RESPONSIBILITY OF THE MC TO ADEQUATELY SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USMC STANDARD.
25. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLenum AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
26. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO DISURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.
27. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
28. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED PROCEEDURE. PROVIDE DOCUMENTATION.
29. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT.
30. THE MC SHALL PROVIDE ALL DIFFUSERS, GRILLES, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOWERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR LAY-IN CEILING. INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL BE BY HART & COOLEY, PRICE, METAL-AIRE, OR CARNES.
31. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH THE NC MECHANICAL CODE.
32. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT MOTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE REQUIRED OR DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
33. MC SHALL INSTALL ONE (1) PROGRAMMABLE THERMOSTAT PER HVAC UNIT AS SHOWN ON THE PLANS. THERMOSTATS SHALL BE MOUNTED AT 48" AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS OF THE NORTH CAROLINA ENERGY CODE.
34. MC SHALL INSTALL A SMOKE DETECTOR-UL LISTED FOR DUCT INSTALLATION (UL 288A-98) IN EACH UNIT'S RETURN UPSTREAM OF ANY FILTERS, OUTSIDE AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72. DUCT SMOKE DETECTOR SUPERSEDES ALL COMPATIBLE WITH 608.4.1 OF THE NC MECHANICAL CODE. IF THE BUILDING IS (TO BE) EQUIPPED WITH A FIRE ALARM SYSTEM, THE FIRE ALARM SYSTEM CONTRACTOR SHALL FURNISH AND WIRE ALL DUCT SMOKE DETECTORS. IF THE BUILDING IS NOT PROVIDED WITH A FIRE ALARM SYSTEM, THE MC SHALL FURNISH AND WIRE THE DUCT SMOKE DETECTORS AND A/V DEVICE. IT SHALL BE THE RESPONSIBILITY OF THE MC TO INSTALL ALL SMOKE DETECTOR DETECTORS PER NFPA AND MFG'S INSTALLATION INSTRUCTIONS REGARDLESS OF WHO FURNISHES THE DEVICES.
35. MC SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BE PROVIDED.
36. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL VENT THRU ROOFS.
37. MAINTAIN CLEARANCES FOR ALL UNITS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A MINIMUM 6 FEET FROM ROOF EDGE.
38. MC SHALL INSTALL ONE (1) CEILING MOUNTED EXHAUST FAN FOR EACH RESTROOM AND VENT TO THE BUILDING'S EXTERIOR. EC SHALL SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN.
39. P-TRAPS MUST BE INSTALLED ON ALL UNITS. P-TRAPS AND CONDENSATE LINES SHALL BE 1 INCH. P-TRAPS AND CONDENSATE LINES MAY BE PVC WHERE NOT LOCATED IN PLenums; OTHERWISE, THEY SHALL BE TYPE M COPPER.
40. MC SHALL FURNISH A PLENUM SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROVIDE FULL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES.
41. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT.
42. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
43. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED PROCEEDURE. PROVIDE DOCUMENTATION.
44. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLenum AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
45. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO DISURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.
46. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
47. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED PROCEEDURE. PROVIDE DOCUMENTATION.
48. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLenum AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
49. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO DISURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

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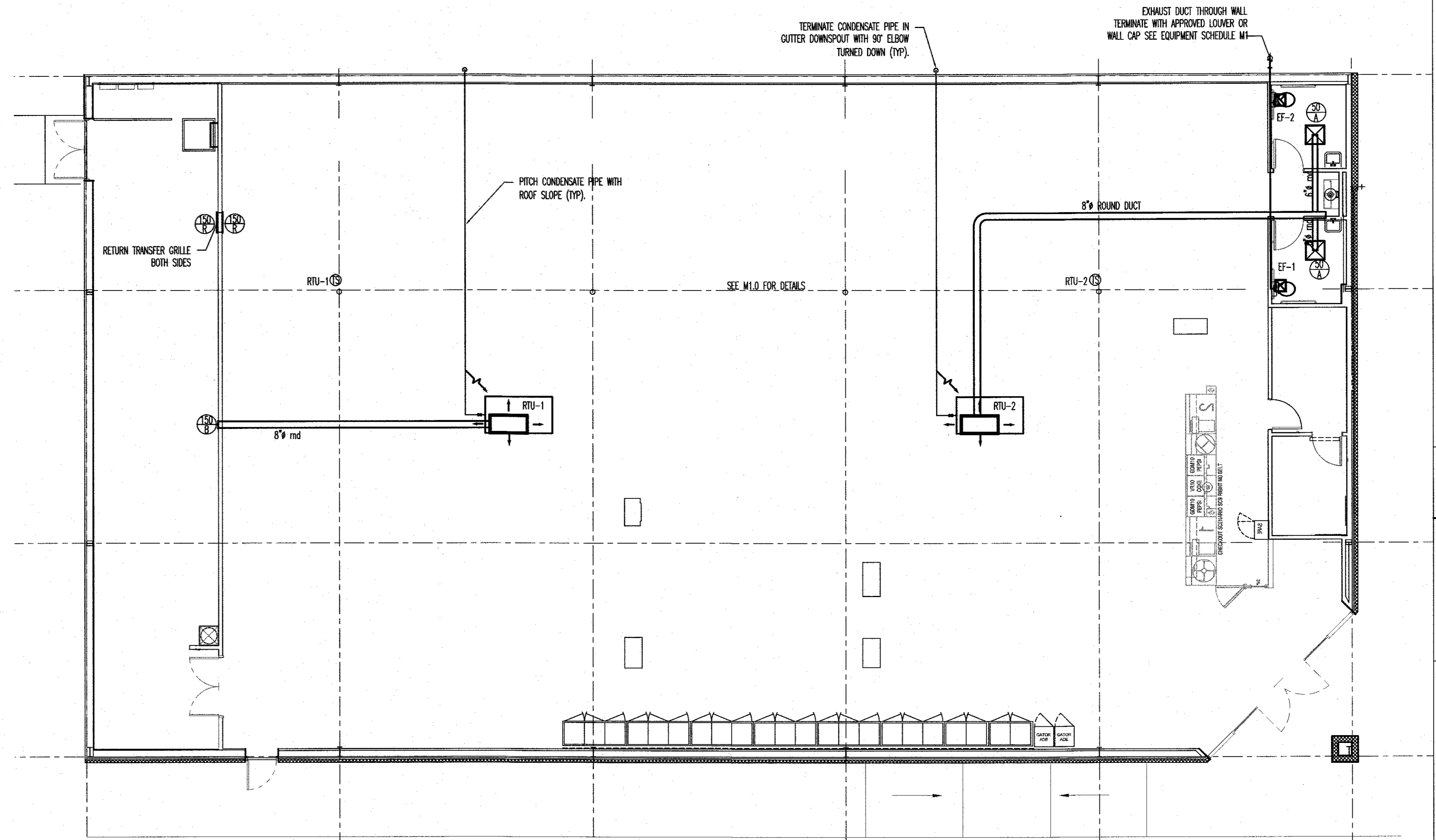
JOB NUMBER
18426
DRAWN BY
REW
DATE
11/28/18
REVISIONS

SHEET NUMBER
M-1

Ventilation Calculation (For Unit MS)									
Room Name(s)	Zone Type	Area (sq.ft.)	Rp	Ra	Default Occupancy	Pz	Ez	Airflow to Zone (cfm)	
Retail Receiving	Retail Sales	6867	7.5	0.12	15	103.01	0.8	6000	
	Shipping/Receiving	1085	0	0.12	0	0.00	0.8	2000	
	N/A		0	0	0	0.00	0.8		
	N/A		0	0	0	0.00	0.8		
	N/A		0	0	0	0.00	0.8		
K-12 School?	No		Maximum Zp:	0.33262					
			Ev:	0.8					
			Actual System Population:	60					
Uncorrected Intake	1404 cfm								
Outdoor Air Intake	1755 cfm								
Percent of Unit Air	22%								

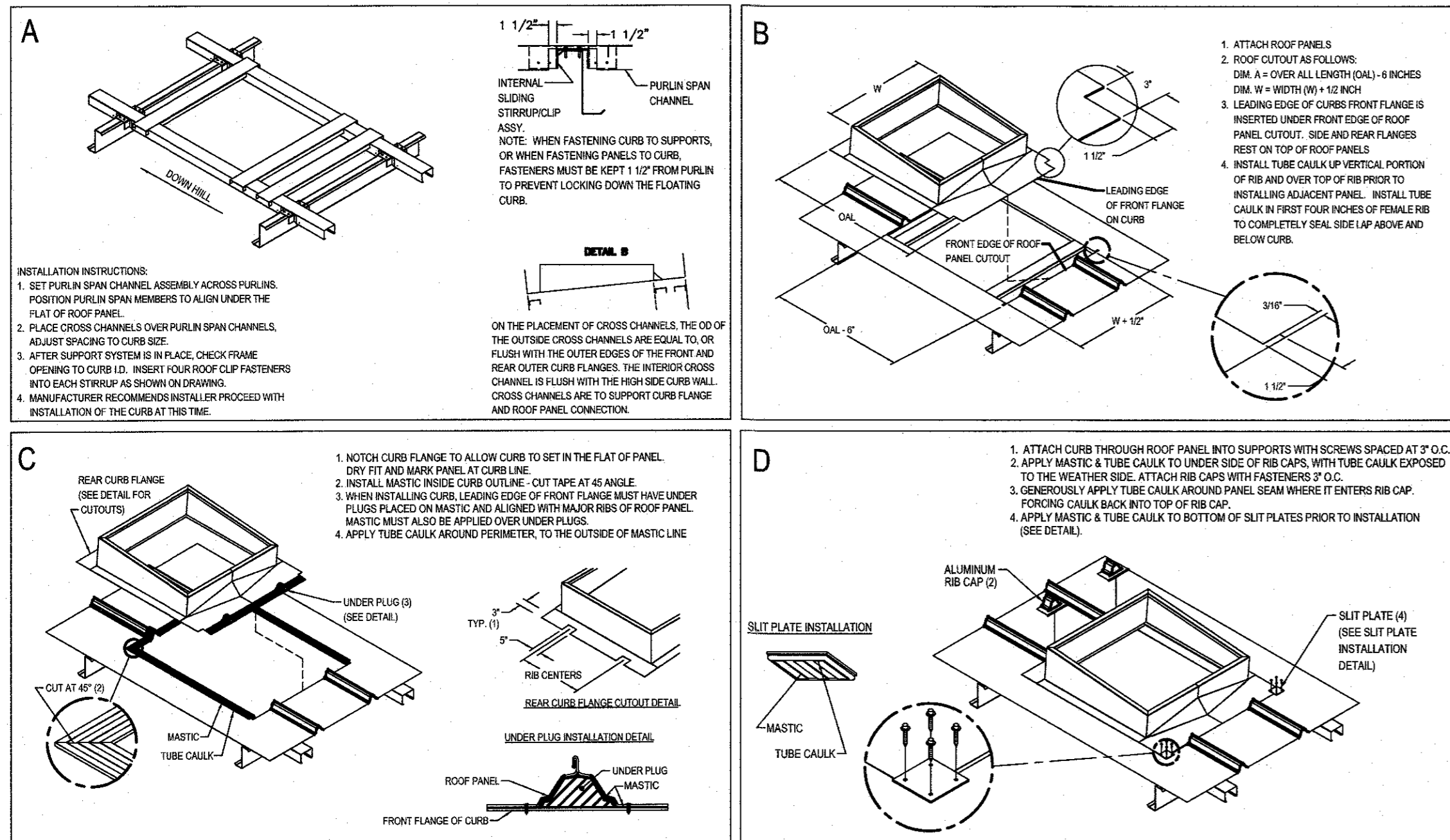
DOLLAR GENERAL MECHANICAL NOTES:

1. PROVIDE CONCENTRIC DIFFUSER KIT AS SPECIFIED BY DOLLAR GENERAL (AVAILABLE THRU YORK, AH) BE USED ON ALL VENDOR'S EQUIPMENT. CONTACT YORK NATIONAL PRICING. LOCATE BOTTOM OF DIFFUSER AT 12" A.F.F. CONCENTRIC DIFFUSER KIT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONCENTRIC DIFFUSER SHALL BE HARD DUCTED FROM HVAC UNIT. THE USE OF FLEXIBLE DUCT DROPS ARE NOT ALLOWED, NO EXCEPTIONS.
2. ALL HVAC UNITS REQUIRE AN ECONOMIZER AND BAROMETRIC RELIEF.
3. ALL SUPPLY AND EXHAUST AIR DUCTWORK SHALL BE CONSTRUCTED OF ROUND GALVANIZED SHEET METAL AND BE FABRICATED ACCORDING TO THE LATEST EDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS FOR METAL AND FLEXIBLE DUCTWORK. SUPPLY, RETURN AND POSITIVE PRESSURE EXHAUST DUCTWORK SHALL BE SEALED IN ACCORDANCE WITH SMACNA SEAL CLASS C.
4. TESTING OF HVAC UNITS THRU EMS PANEL IS ACCOMPLISHED BY WARMING UP OR COOLING DOWN A SPACE. TEMPERATURE SENSOR AND WATCH THE FAN HEAT AND COOL STAGES CYCLE ON AND OFF. THIS REQUIRES TWO PEOPLE AT ALL TIMES. ONE TO WATCH THE SCREEN AND THE OTHER TO WATCH OPERATION OF THE HVAC UNIT. WHEN COMPLETE, PRESS THE HOME BUTTON TO RETURN TO THE MAIN SCREEN.
5. PROVIDE CEILING MOUNTED EXHAUST FANS FOR RESTROOMS, INTERLOCK WITH RESTROOM LIGHTS. EXHAUST FAN SHALL BE VENTED THRU SIDE WALL, NOT THRU THE ROOF.
6. ROOF CURB INFORMATION SEE DETAILS M2-2



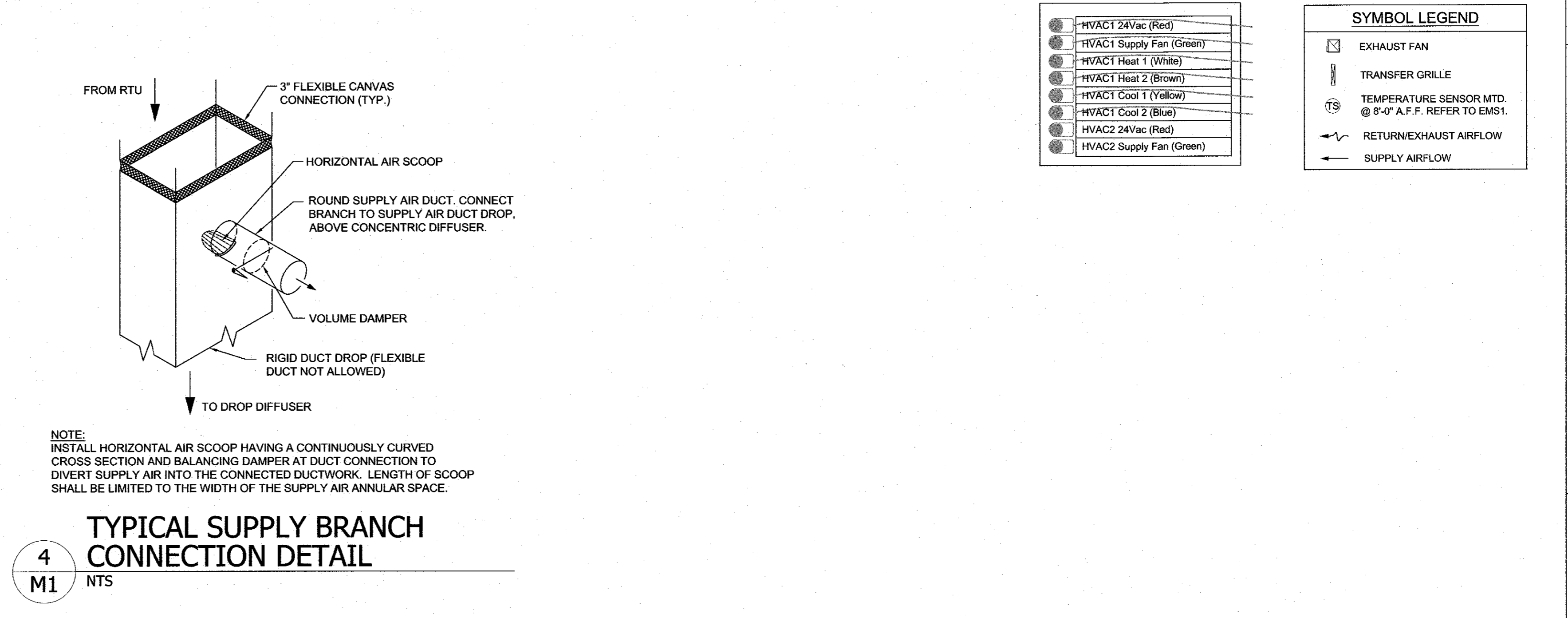
VENTILATION CALCULATION TABLES | 1

MECHANICAL PLAN-SCALE 1/8"=1' | 2



CURB INSTALLATION INSTRUCTIONS
TRAPEZOIDAL STANDING SEAM PANEL - UNDER / OVER
FOLLOW MANUFACTURER'S SPECIFICATIONS

REQUIRED NATIONAL ACCOUNT ROOF CURB DG VENDORS:			
ROOF CURB SYSTEMS	GREG SMYTH	800-683-5848	GSMYTH@ROOFCURBS.COM
CURBS PLUS INC.	ALAN THRAILKILL	888-639-2872	ALAN.THRAILKILL@CURBS-PLUS.COM
KCC INTERNATIONAL INC.	GREG CONRAD	800-382-2872	GCONRAD@KCCURBS.COM



TYPICAL SUPPLY BRANCH CONNECTION DETAIL

4	NTS
M1	

ROOF CURB DETAIL - NO SCALE | 3

HVAC WIRING DETAIL AND SYMBOL LEGEND | 4

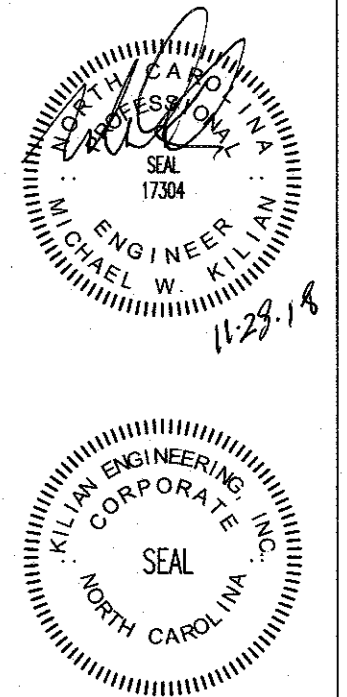
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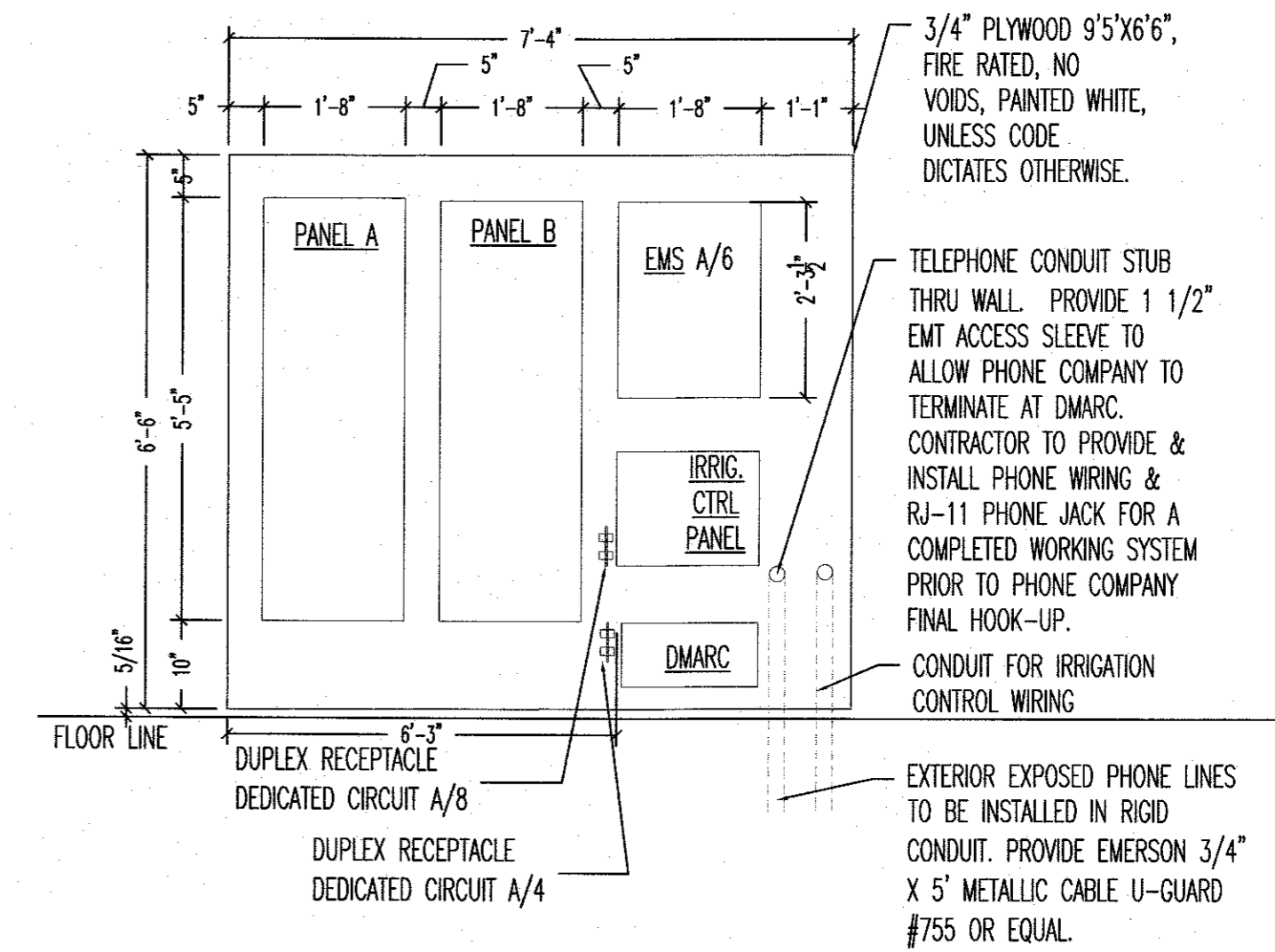
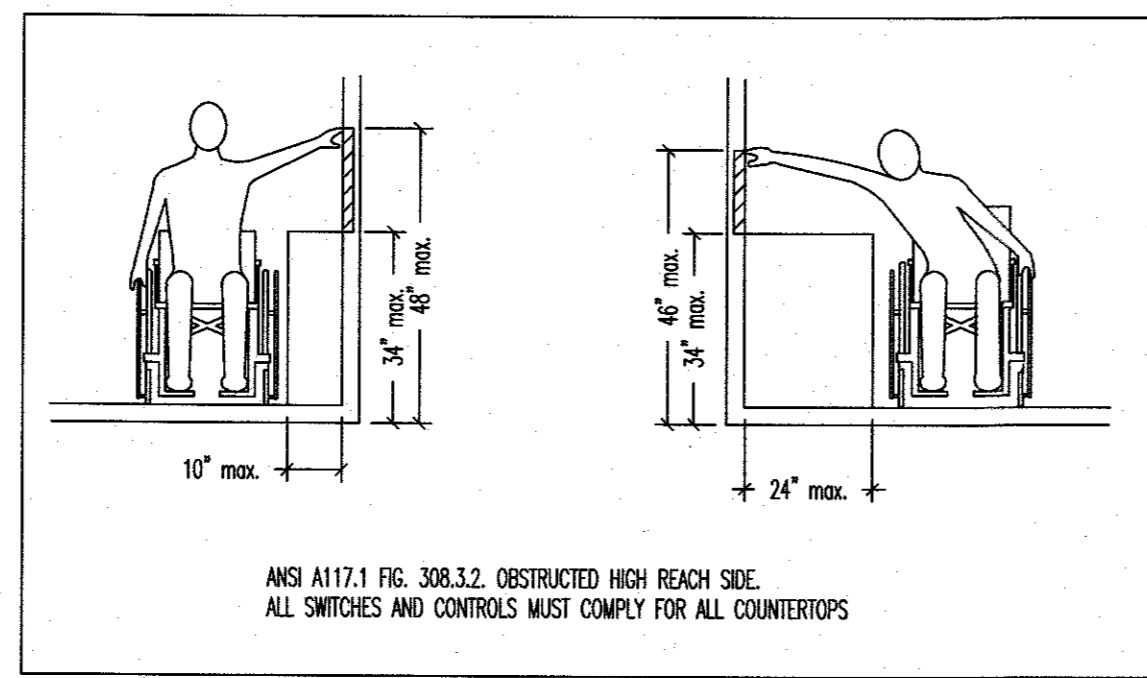


DOLLAR GENERAL
 STORE # 20312
 SPRING HILL CHURCH ROAD
 LILLINGTON, NORTH CAROLINA

JOB NUMBER: 18426
 DRAWN BY: REW
 DATE: 11/28/18
 REVISIONS:

SHEET NUMBER
M-2

ELECTRICAL DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
⊕	WALL MOUNTED OCCUPANCY SENSOR	LEVITON ODS10-10W LINE VOLTAGE CONTROL SWITCH
⊖	JUNCTION BOX	
EF-1	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.
▶	DATA AND TELEPHONE JACK	TELEPHONE OUTLET - 1 RJ11, 1 RJ45 OUTLET FOR VOICE AND DATA. EC TO INSTALL 1" C. FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. PROVIDE CAT 5 CABLING AS NOTED ON PLANS.
▶	TELEPHONE JACK	TELEPHONE OUTLET - 1 RJ45 OUTLET FOR VOICE AND DATA. EC TO INSTALL 1" C. FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. COMMUNICATION WIRING BY OTHERS.
⊕GFCI	DUPLEX GFCI RECEPTACLE	COMMERCIAL GRADE, 120V, 20A
⊕	DUPLEX RECEPTACLE	COMMERCIAL GRADE, 120V, 20A
⊕	QUAD RECEPTACLE	COMMERCIAL GRADE, 120V, 20A
⊕CH	DUPLEX RECEPTACLE	COMMERCIAL GRADE, 120V, 20A, MOUNT AT COUNTER HEIGHT
⊕WP-GFCI	DUPLEX GFCI RECEPTACLE	COMMERCIAL GRADE, 120V, 20A, WITH WEATHER PROOF COVER
⊕	4 PRONG TWIST LOCK RECEPT	COMMERCIAL GRADE, 125/250V NEMA L14-20R
⊖	DISCONNECT SWITCH	NEMA1 IN INTERIOR APPLICATIONS, NEMA 3R IN EXTERIOR APPLICATIONS, FUSIBLE AS NOTED
⊕	BUZZER	TORK MDL # TA725 W/ TRANSFORMER MDL # TA592
●	POWER POLE	SEE DETAIL



ELECTRICAL DEVICE LEGEND | 1

ANSI A117.1 ADA REACH DETAIL - NO SCALE | 3

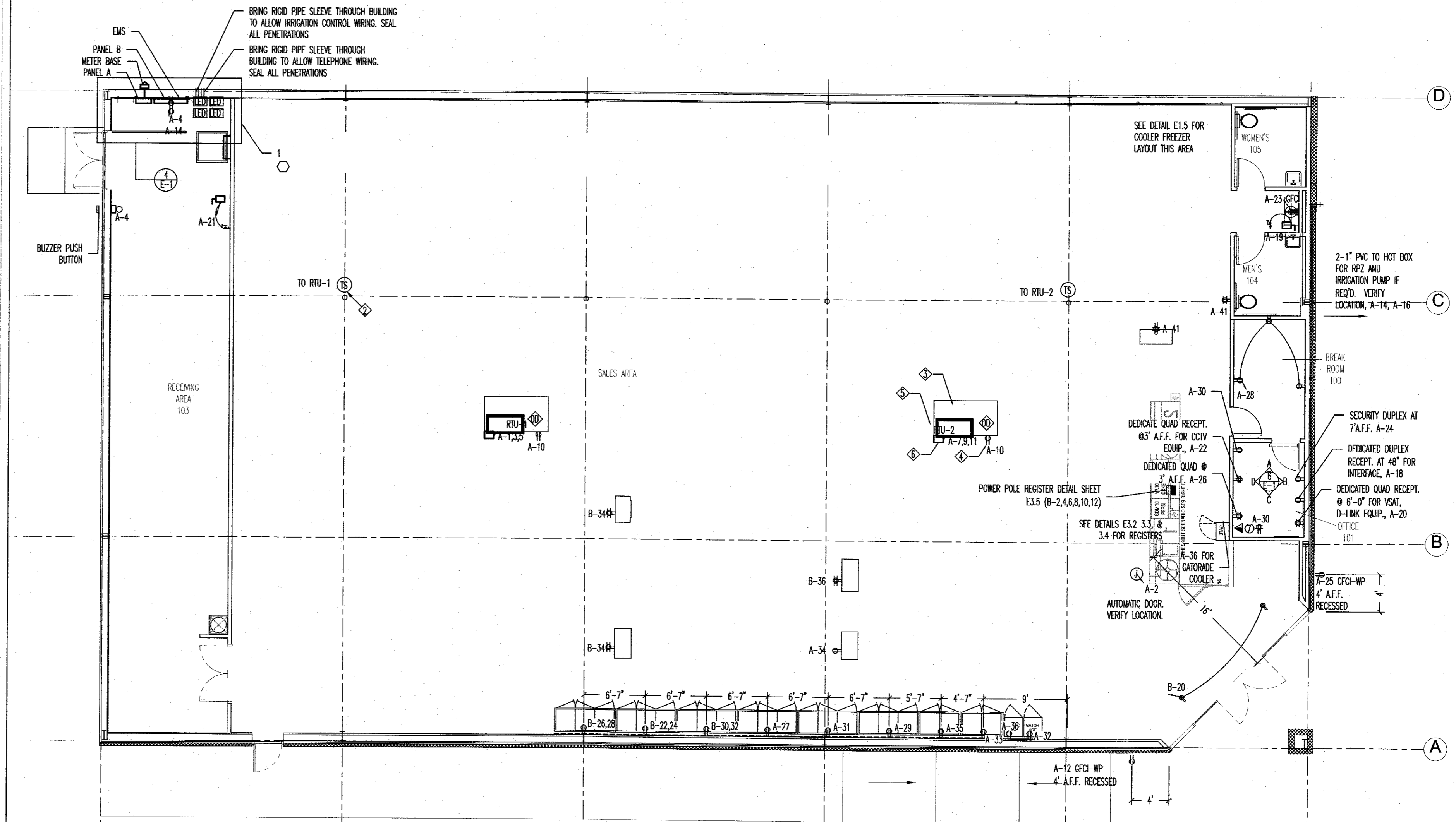
ELECTRICAL PANEL ELEVATION-NO SCALE | 4

ELECTRICAL KEYED NOTES

- TEST/RESET STATION FOR STAND ALONE DUCT DETECTOR. ONE FOR EACH DEVICE, SEE KEY NOTE 5 ON THIS SHEET. SIMPLEX #4098-9842 IS SPECIFIED. WITH PIEZO AND LED INDICATOR
- MECHANICAL THERMOSTAT AT 8'-0" A.F.F.
- LOCATIONS SHOWN FOR MECHANICAL UNITS ARE ONLY APPROXIMATE, CONTRACTOR MUST CONSULT MECHANICAL OR STRUCTURAL DRAWINGS TO DETERMINE ACTUAL UNIT LOCATIONS. PROVIDE 1/2" C. PENETRATION THRU ROOF WITHIN FOOTPRINT OF UNIT FOR USE WITH CONTROL WIRING TO UNIT BY OTHERS. PROVIDE PROPER WATERSEAL. (TYPICAL)
- FACTORY MOUNTED CONVENIENCE OUTLET (ELECTRICAL CONTRACTOR TO PROVIDE IF NOT FACTORY INSTALLED). PROVIDE CIRCUIT AS SHOWN, WIRE ALL WITH THIS NOTE TO A SPARE BREAKER IN PANEL "A" IF THEY ARE NOT POWERED.
- PHOTOELECTRIC DUCT DETECTOR WITH HOUSING. TIE TO LED READOUT RECESSED IN DUCT. STAND ALONE DEVICE, 120V. SIMPLEX #4098-9687 IS SPECIFIED WITH 4098-9842 CONTROL STATION. PROVIDE ONE DEVICE PER UNIT. MOUNT DEVICE IN SUPPLY AIR DUCTWORK. DEVICE SHALL BE PROVIDED AND WIRED TO THE CONTROL STATION BY THE ELECTRICAL CONTRACTOR. HIRE THE MECHANICAL CONTRACTOR FOR INSTALLATION IN DUCTWORK & CONNECTION TO SHUTDOWN CONTROLS. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED RELAYS AND 120V POWER. DO NOT POWER DUCT DETECTORS FROM HVAC UNIT LOW VOLTAGE. SUBMIT SHOP DRAWINGS FOR APPROVAL. PLACE ANY REQUIRED LABELING ON CEILING TILE DIRECTLY BELOW UNIT. RUN CONDUIT & WIRE UNDERGROUND FROM UNIT TO INSIDE OF SPACE.
- MOUNT DISCONNECT SWITCH AT UNIT. ALL DISCONNECTS TO BE HEAVY DUTY. FUSES TO BE RK-5 TYPE, BUSSMANN FRN-R-(AMP) IS SPECIFIED. SEE EQUIPMENT SCHEDULE ON E3.1.
- SO WHITE ELECTRICAL CORD IS NEEDED. SEE SHEET A1, NOTE 26.
- CONFIRM THE FINAL NUMBER AND LOCATION OF OUTLETS IN SALES AREA WITH THE FINAL DG FIXTURE PLAN.

ELECTRICAL SPECIFICATIONS

- ALL WIRING SHALL BE CONTAINED IN CONDUIT OF PROPER SIZE.
- ALL WIRING SHALL CONFORM TO LOCAL, STATE AND FEDERAL CODES.
- SERVICE IS TO BE A MINIMUM 400 AMP, 3 PHASE (PREFERRED), 600 AMP, 1 PHASE OR LARGER IF REQUIRED BY CODE OR ELECTRICAL LOAD.
- REQUIRED CUSTOM BUILT POWER POLE ASSEMBLIES AVAILABLE FROM D&P CUSTOM LIGHTS & PRODUCTS INC., PHONE: (800) 251-2200 OR (615) 350-7800, 7111 COCKRILL BEND INDUSTRIAL ROAD, NASHVILLE, TN 37209. SEE E3.1.
- EXTERIOR EXPOSED PHONE LINES TO BE INSTALLED IN RIGID CONDUIT. PROVIDE EMERSON 3/4" X 5-FT. METALLIC CABLE U-GUARD #755, OR EQUAL..
- ELECTRICAL PANEL TO BE LABELED CORRECTLY WITH LEGIBLE PRINT.
- LOW VOLTAGE VENDOR TO PROVIDE AND INSTALL ONE (1) 24 GA., 4 TWISTED-PAIR, CATEGORY-FIVE (CAT5) DATA CABLE WITH MODULAR COMBO RJ-11/RJ-45 JACK AT MANAGER'S OFFICE. CABLE TO BE RUN FROM JACK TO DATA HUB LOCATION WITH 6'-0" LEFT COILED FOR INSTALLATION TO DATA HUB. A RJ-45 MALE FITTING SHOULD BE CRIMPED ON THIS END. DOLLAR GENERAL STORE OPENING TEAM WILL MAKE FINAL CONNECTION INTO THE DATA HUB.
- PROVIDE 1 1/2" EMT CONDUIT TO ACT AS ACCESS SLEEVE TO ALLOW PHONE COMPANY TO TERMINATE AT DMARC. CONTRACTOR TO PROVIDE AND INSTALL PHONE WIRING & RJ-11 PHONE JACK FOR COMPLETED WORKING SYSTEM PRIOR TO PHONE COMPANY FINAL HOOK UP.
- ALL 120 VOLT OUTDOOR RECEPTACLES TO HAVE "WET LOCATION - IN USE" COVERS.
- ALL CONDUCTORS TO BE COPPER, #12 AWG MINIMUM SIZE, OR AS REQUIRED BY LOAD AND OVER CURRENT PROTECTION.
- SEE EMS SHEETS EMS1 AND EMS2 FOR ENERGY MANAGEMENT SYMBOLS AND INFORMATION.
- ELECTRICIAN TO PROVIDE 1 1/2" CONDUIT WITH PULL STRINGS FOR SATELLITE LOCATION.
- ALL POWER AND DATA TO BE ROUTED OVERHEAD. UNDER SLAB NOT ALLOWED.
- WIRE SIZE TO BE #8 OR #10 FOR ALL COOLERS/FREEZERS.
- MOUNT ALL REFRIGERATOR OUTLETS AT 12" AFF.



ELECTRICAL NOTES | 2

ELECTRICAL POWER PLAN - SCALE: 1/8"=1' | 7

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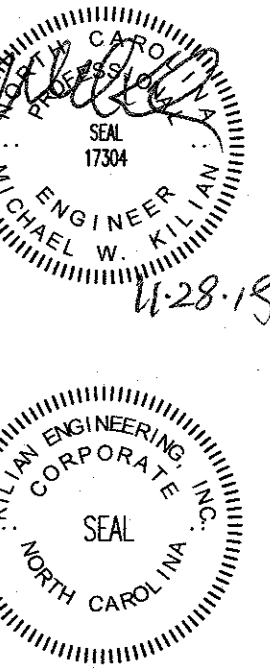
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Planning • Mechanical
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DOLLAR GENERAL
STORE # 20312
SPRING HILL CHURCH ROAD
LILLINGTON, NORTH CAROLINA

JOB NUMBER
18426
DRAWN BY
REW
DATE
11/28/18
REVISIONS

SHEET NUMBER

E-1

GENERAL ELECTRICAL NOTES:

- "PROVIDE" MEANS TO FURNISH AND INSTALL THE ELECTRICAL CONTRACTOR (EC) SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE ELECTRICAL CONTRACTOR IS REQUIRED.
- EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERRABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE EC.
- WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA I "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
- ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE CONTRACTOR AT AN APPROVED LOCATION. THE EC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREACHAGE, THEFT, AND DAMAGE. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE EC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
- THE EC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
- DO NOT SCALE THESE DRAWINGS—REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
- TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF EQUIPMENT.
- THE EC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND EXISTING PLANS. THE EC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC. UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS TO AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
- EC SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. EC SHALL COORDINATE WITH UTILITY REGULATORY SERVICE AND METERS DETAILS PRIOR TO ORDERING EQUIPMENT. THE EC SHALL OBTAIN THE AVAILABLE FAULT CURRENT OR TRANSFORMER SIZE AND IMPEDANCE FROM THE UTILITY AND CONTACT THE ENGINEER IF THE VALUE EXCEEDS THE EQUIPMENT SPECIFIED. PANEL BOARDS AND SWITCH BOARDS SHALL BE SQUARE D, CUTLER-HAMMER, SIEMENS, OR GE. BUSSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. METAL BUSSES SHALL COMPLY WITH THE UTILITY'S SPECIFICATIONS AND SHALL BE MOUNTED AT A HEIGHT APPROVED BY THE UTILITY. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. EC SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH PROPER CLEARANCES PER NEC 110.26.
- ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE, BY SQUARE D, EXCON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCK TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH MANUFACTURER DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMANN, LITTELFUSE, OR MARLON.
- OCCUPANCY SENSORS SHALL BE BY HAISSCORP, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL.
- CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE WITH QUICK-MAKE, QUICK-BREAK MECHANISM, COMMON TRIP ON MULTI-POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER. FULLY RATED FOR THE SYSTEM OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
- WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION RATING.
- EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN HIS CONTRACT. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HVAC BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4" IN CONDUIT. EACH MULTIWIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTIWIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON-ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
- ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE EC. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE USED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
- THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THIN/THIN OR THIN/ALL WIRING INSTALLED BELOW GRADE OR IN MOST OR WET LOCATIONS SHALL HAVE TYPE THIN OR XHHW INSULATION. INSULATION VOLTAGE RATINGS SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #6 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC., INDUSTRIAL WIRE & CABLE, INC. OR SOUTHWEST COMPANY. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR TAB "PIGGY" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS

- SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGH, OR OUTLETS, WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED. A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH 215.12. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE SYSTEMS AND WHITE FOR THE NEUTRAL. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETRAILWAYS.
- METAL CONDUIT SHALL BE BY ALLOYED TUBING & CONDUIT, BECK MANUFACTURING, INC. OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AT-CABLE SYSTEMS, INC., ELECTRA-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.
- THE EC SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. WAPORITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THESE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE EC. OUTLET BOXES IN RETRAILWAYS SHALL BE INSTALLED IN ACCORDANCE WITH NC BUILDING CODE 712.3.2 (MINIMUM BOX SIZE IS 16 SQUARE IN. AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES UNDER THE OUTLET BOX AND THE CYPRESS BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK-TO-BACK. SURFACE MOUNTED FITTURES SHALL BE FED THROUGH FLUSH MOUNTED 4X4 OCTAGONAL OR SQUARE BOXES.
- ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS—OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPES, OR THEIR SUPPORTS. HANGERS SHALL BE METAL OR COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROD DECK INSTALLATIONS, 1 IN. EMT CONDUIT MAXIMUM AND 4 IN. JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL, RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE NORTH CAROLINA GENERAL CONSTRUCTION BUILDING CODE.
- WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.4.
- ISOLATED-GROUND TYPE RECEPTACLES SHALL BE INSTALLED IN ACCORDANCE WITH 250.146(2). ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.
- ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-IN ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 IN. SQUARE BY 1-1/2 IN. DEEP BOX WITH 3/4 IN. KNOCK-OUTS AND A 3/4 IN. CONDUIT SUBSTRUD FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STOPPED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
- ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL OR BEAN UL RE-EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
- CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE EC SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE. EC SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 407.21. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.32 AND 430 PART IX, WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC., IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO PROPERLY SUPPORT THE DEVICE.
- EC SHALL FIELD VERIFY ALL SWITCH BOARD, PANEL BOARD, CONTROL PANELS, WATER SOCKETS, ETC. TO BEBY QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARCH FASH HAZARDS PER 110.16 OF NEC.
- EC SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 IN. MINIMUM) ETCHED INTO THE WHITE CORE. EC SHALL PROVIDE A TYPE WRITER'S DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS AND/OR EACH PANEL. PLACE TYPED, SELF-ADHESIVE LABEL ON EACH RECEPTACLE. FACEPLATE, HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
- ELECTRICAL CONTRACTOR SHALL VERIFY THE MAXIMUM AVAILABLE FAULT CURRENT WITH THE POWER COMPANY AT TIME OF UTILITY TRANSFORMER INSTALLATION AND CONTACT ENGINEER FOR CALCULATION OF VALUE AT SERVICE EQUIPMENT. ELECTROWALL SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION, WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
- ALL WORK SHALL CONFORM TO 2017 NATIONAL ELECTRICAL CODE, 2012 STATE BUILDING CODE, AND ALL APPLICABLE LOCAL CODES.

- LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1-1/2 IN. MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL-CORRUGATED SHEET DECKING-TYPE ROOF. SEE NEC 300.4(E).
- CONDUCTORS SHALL BE MANUFACTURED WITH AMERICAN NATIONAL STANDARDS INSTITUTE-AMERICAN NATIONAL STANDARD FOR STEEL ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR ELECTRICAL RIGID STEEL CONDUIT (ERSSC), ANSI C80.1 AND UL 6.
- INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.5 AND UL 1242.
- METAL CONDUIT SHALL BE BY ALLOYED TUBING & CONDUIT, BECK MANUFACTURING, INC. OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AT-CABLE SYSTEMS, INC., ELECTRA-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.
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GENERAL ELECTRICAL NOTES 3

ELECTRICAL DESIGNER'S STATEMENT

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE
 PRESCRIPTIVE X PERFORMANCE ENERGY COST BUDGET

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE:	SEE LIGHTING LEGEND
NUMBER OF LAMPS PER FIXTURE:	SEE LIGHTING LEGEND
BALLAST TYPE USED IN FIXTURE:	SEE LIGHTING LEGEND
NUMBER OF BALLASTS IN FIXTURE:	SEE LIGHTING LEGEND
TOTAL WATTAGE PER FIXTURE:	SEE LIGHTING LEGEND

TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED	WATTS SPECIFIED	WATTS ALLOWED
	2250	13650

ALL EXTERIOR LUMINAIRES 100W MUST HAVE A MINIMUM EFFICACY OF 60 LUMENS/WATT

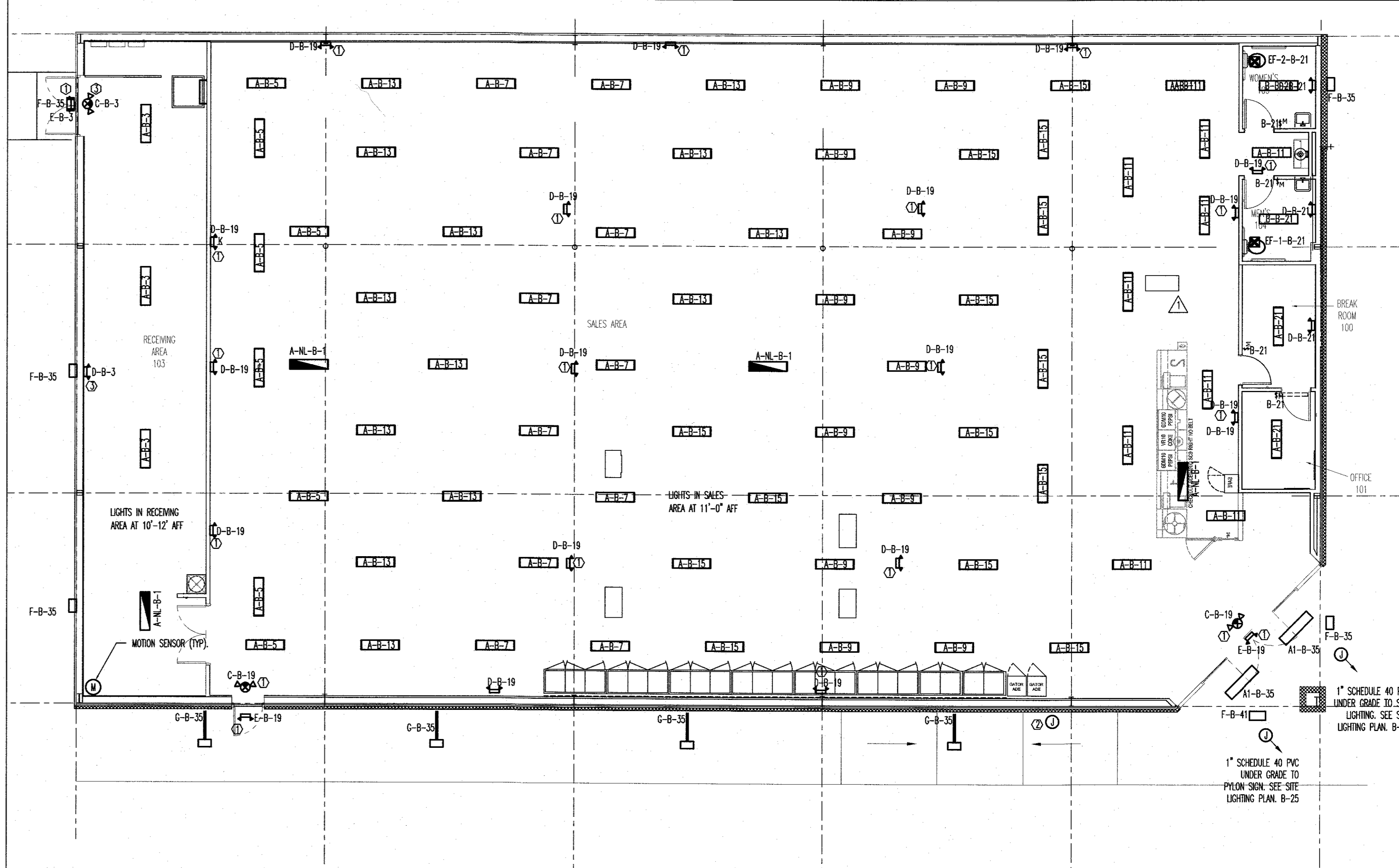
RETAIL	AREA (FT ²)	ALLOWANCE (W/FT ²)	MAX WATTAGE ALLOWED
	9100	1.50	13650
TOTAL	9100		13650

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)

MOTOR HORSEPOWER: N/A
 NUMBER OF PHASES: BUILDING IS 208Y/120V, 3Ø, 4W
 MINIMUM EFFICIENCY: N/A
 MOTOR TYPE: N/A
 NUMBER OF POLES: N/A

DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE STATE ENERGY CODE, 2012 EDITION.

ELECTRICAL DESIGNER'S STATEMENT 4



HEX PLAN NOTES

- EMERGENCY/EXIT SIGNS AND LIGHTS: INSTALL EMERGENCY LIGHTS AND EXIT SIGNS (CENTERED AT 10'-6" A.F.F. TO BE ABOVE FIXTURES AND MERCHANDISE) THROUGHOUT THE BUILDING.
- COORDINATE BUILDING SIGN SIZE WITH DOLLAR GENERAL SIGN DEPARTMENT BY EMAILING TO SIGNAGE@dollargeneral.com. LOCATE JBOX ON INTERIOR OF PARAPET 13'-0" TO THE LEFT OF CENTER OF BUILDING.
- EMERGENCY/EXIT SIGNS AND LIGHTS: INSTALL EMERGENCY LIGHTS AND EXIT SIGNS (CENTERED AT 8'-0" A.F.F. TO BE ABOVE FIXTURES AND MERCHANDISE) IN RECEIVING AREA.

LIGHTING PLAN-SCALE 1/8"-1"

MARK	DESCRIPTION	LAMP - SYLVANIA				VOLTAGE	INPUT WATTAGE	MOUNTING	QTY.	REMARKS	MFG	MODEL
		TYPE	WATTAGE	QTY.	CCT							
A	4" LED STRIP (1MC (2) - 10 FEET CABLES)	LED	30	1	5000K	120	30	SUSPENDED	70		ETI	54573161
											LIGHTING SCIENCE	LSPRO LBAR 48 CW 80 30W FR MWILT
A1	4" LED STRIP SURFACE MOUNT	LED	30	1	5000K	120	30	SURFACE	3		ETI	54573161
											LIGHTING SCIENCE	LSPRO LBAR 48 CW 80 30W FR MWILT
B	2" LED STRIP	LED	15	1	5000K	120	15	SURFACE	4		ETI	54573161
											LIGHTING SCIENCE	LSPRO LBAR 48 CW 80 30W FR MWILT
C	EMERGENCY LIGHT/EXIT COMBO 2 HEADS	LED	20	1	-	120	20	SUSPENDED	3		EXTRINIX	VLED-U-WH-EL90-R
D	EMERGENCY LIGHT 2 HEADS	LED	20	1	-	120	20	SUSPENDED	10		EXTRINIX	LED-90
E	EMERGENCY EGRESS LIGHT 2 HEADS	LED	20	1	-	120	20	SUSPENDED	3		EXTRINIX	CLED-WP
F	WALL PACK	LED	46	1	5000K	120	46	WALL	4	1	TEDLIGHT	LHWP
G	HILLWIZ FLOOD WITH TECHLIGHT ARM	LED	150	1	5000K	120	150	SUSPENDED	4		TEDLIGHT	WMPS42
											LIGHTING SCIENCE	HMS150-50K-D9N-0

- FIXTURES LABELED FOR EMERGENCY USE SHALL HAVE BATTERY FOR 90 MINUTE ILLUMINATION OF TWO (2) LAMPS
- WET LOCATION LISTED
- PHOTOCELL CONTROLLED
- FULL CUT OFF
- WITH EXTEND ARM AND ROOF MOUNTING KIT

SYMBOL	DESCRIPTION	REMARKS
Ⓜ	WALL MOUNTED OCCUPANCY SENSOR	LEVITON 0DS10-10W LINE VOLTAGE CONTROL SWITCH
Ⓝ	JUNCTION BOX	
Ⓜ	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

REQUIRED NATIONAL ACCOUNT VENDORS			
HARRIS LIGHTING	SHENNEL JOHNSON s.johnson@harrislights.com	904-284-1220 EXT. 262	ELECTRICAL LIGHTING SUPPLIES
CEC-CONSOLIDATED ELECTRICAL DISTRIBUTORS	ROBERT BECKER robert@cedbj.com	270-781-2229	ELECTRICAL SWITCH GEAR

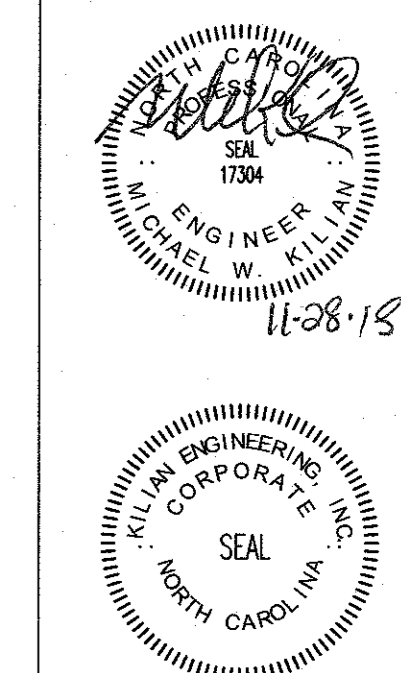
FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY SECTION 506 OF NC ENERGY CODE, WE ARE CHOOSING 506.2.2 - REDUCED LIGHTING POWER DENSITY.

(13650 W ALLOWED - 2250 W SPECIFIED) / 13650 W ALLOWED = 83.5% DIFFERENCE

ISSUED FROM: WASHINGTON OFFICE
 1000 North Salisbury Street
 Wilmington, NC 28401
 Phone: 910.251.8899
 Fax: 910.251.8990
 213 East Nash Street
 WILSON OFFICE
 Wilmington, NC 27903
 Phone: 252.399.2790
 Facsimile: 252.399.2791

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 P.L.L.P.

Kilian
 Engineering Inc.
 Michael W. Kilian, P.E.
 2703 West 13th Street
 Manteo, NC 28550
 Phone: 252.453.2738
 Fax: 252.453.2739
 E-mail: mkilian@kilianpe.com
 Kilian Engineering Inc. is a
 member of the Kilian Group

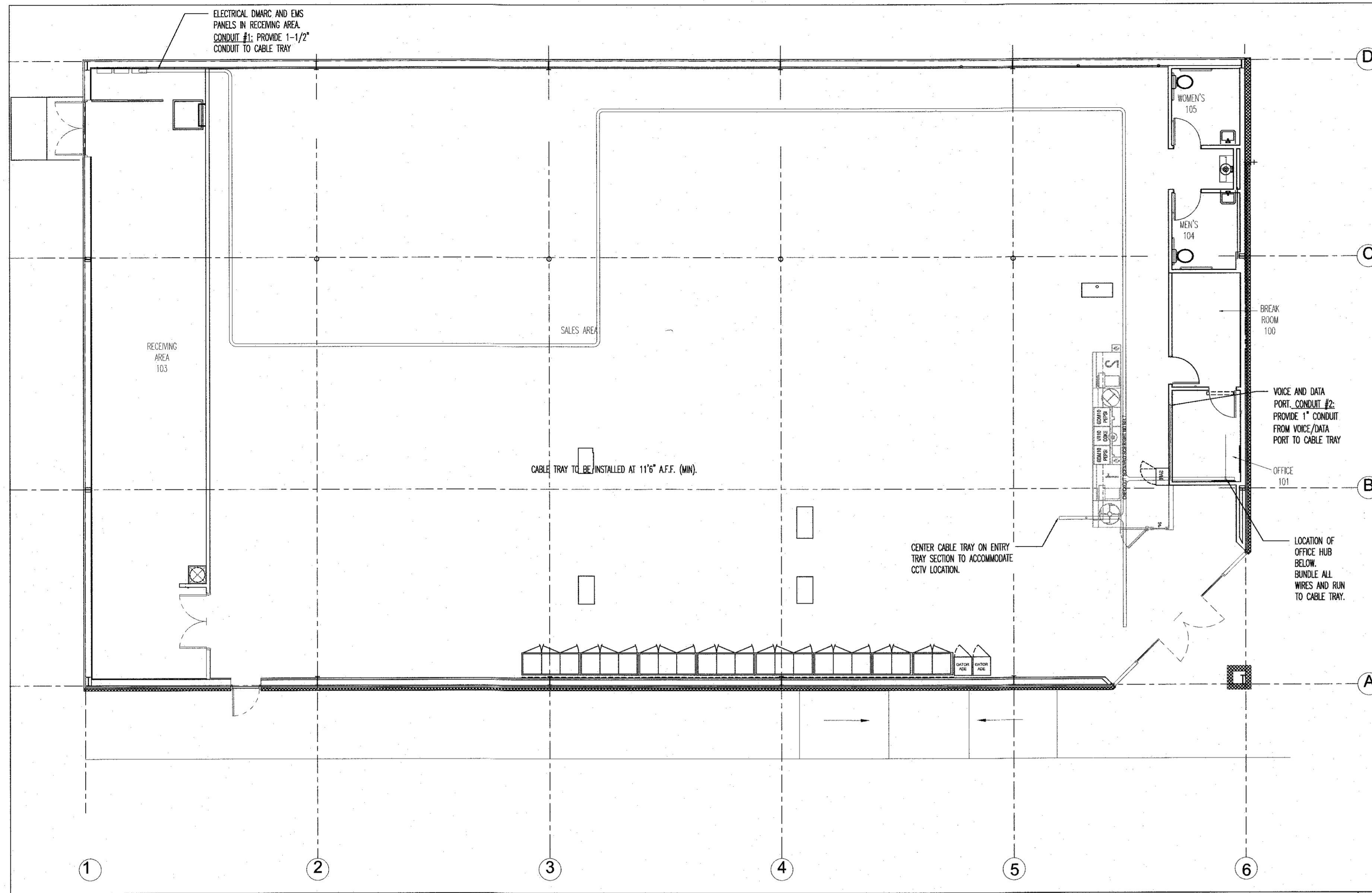


DOLLAR GENERAL
 STORE # 20312
 SPRING HILL CHURCH ROAD
 LILLINGTON, NORTH CAROLINA

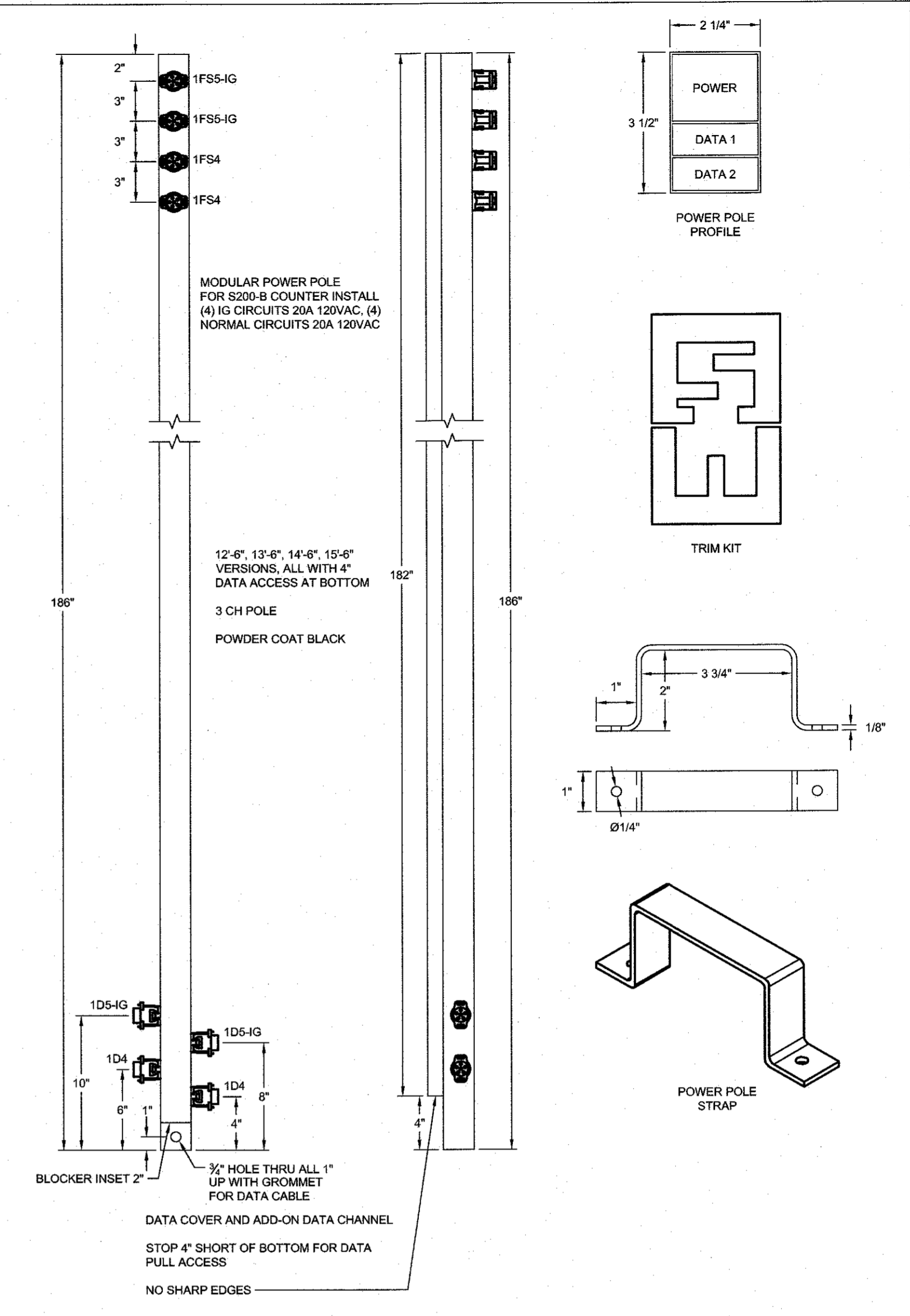
JOB NUMBER: 18426
 DRAWN BY: REW
 DATE: 11/28/18
 REVISIONS:

SHEET NUMBER
E-2

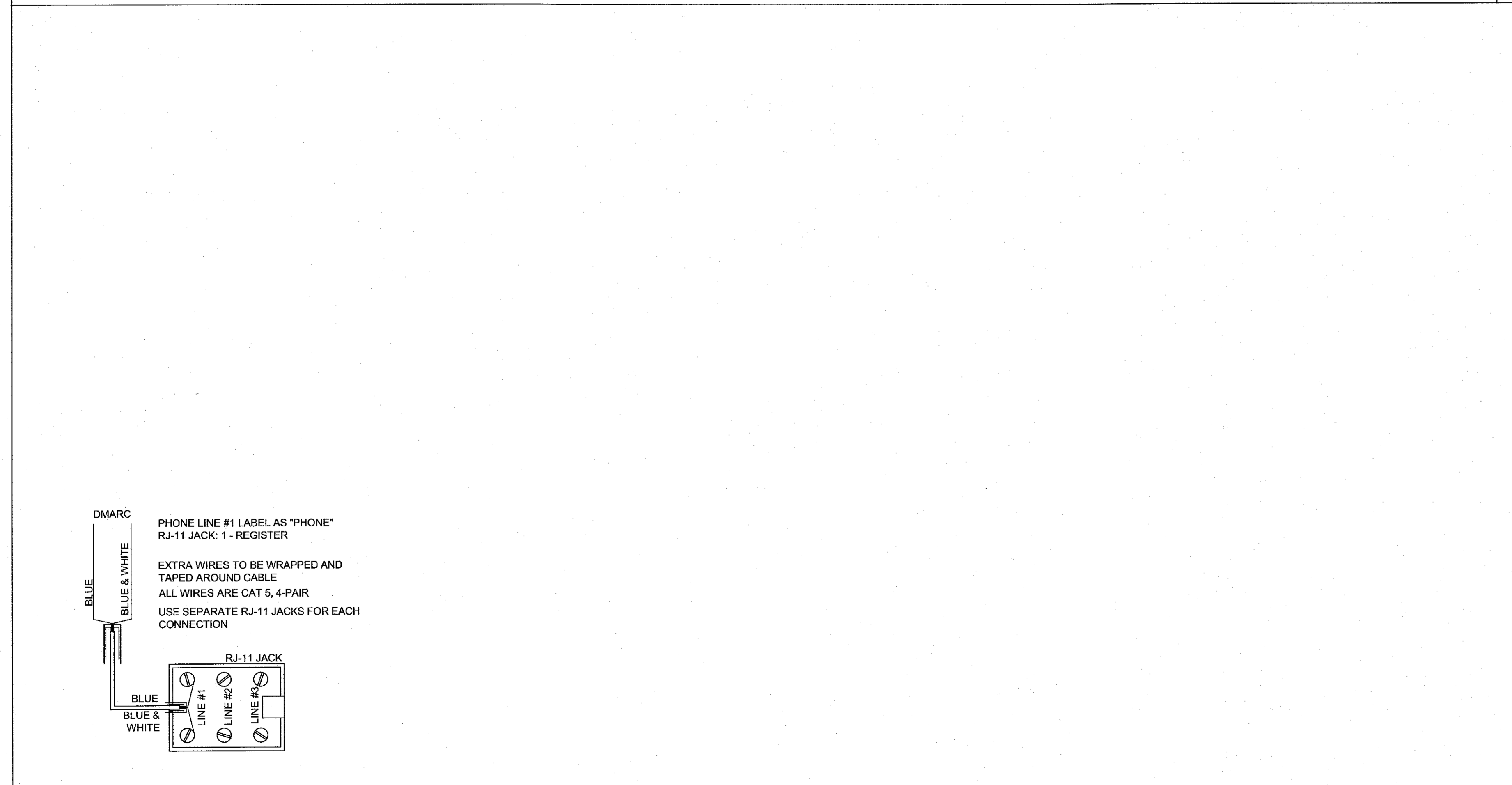
LIGHTING FIXTURE SCHEDULE AND LEGEND 2



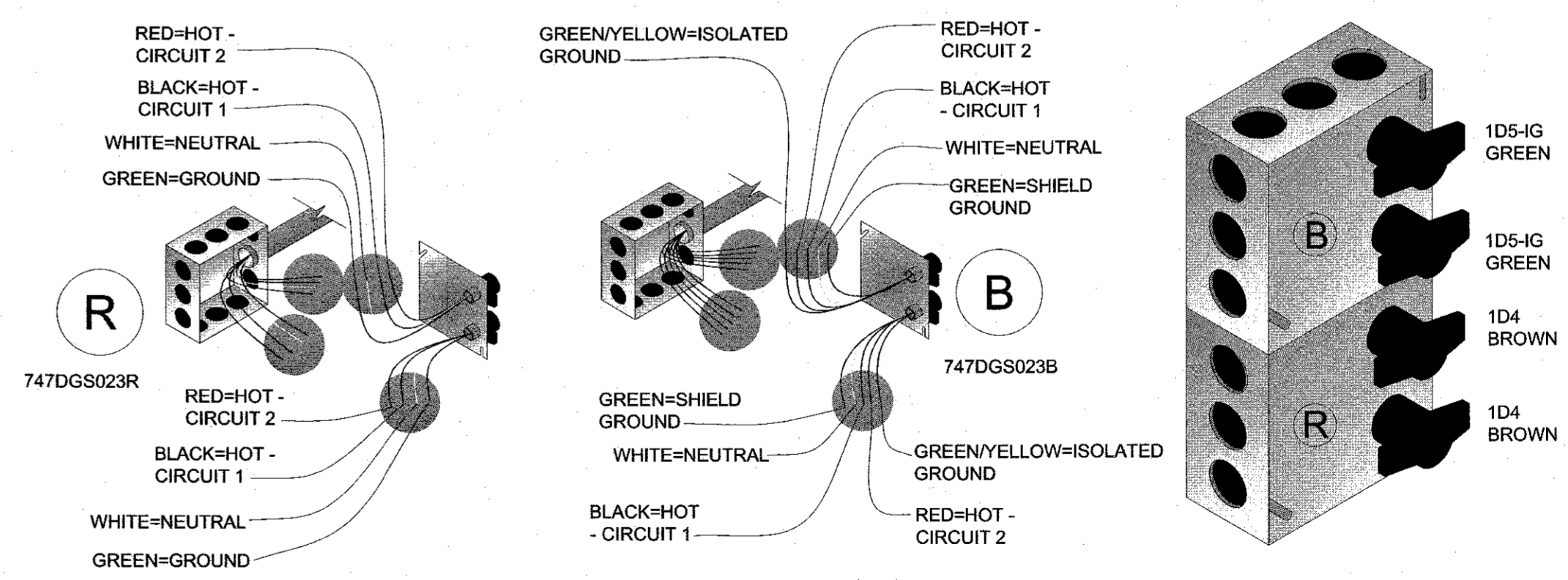
CABLE TRAY - SCALE: 1/8"=1' 1



POWER POLE FOR REGISTER DETAIL - NO SCALE 3



PHONE WIRING FOR REGISTER DETAIL - NO SCALE 2



REGISTER ELECTRICAL COMPONENTS

QTY	PART NUMBER	DESCRIPTION	VENDOR
1	747DGS023B	DUAL CIRCUIT POWER KIT WITH ISOLATED GROUND	D & P
1	747DGS023R	DUAL CIRCUIT POWER KIT	D & P
1	747DGS044-12BK	12' 2CH REGULAR POLE W2-C & 1-D CONNECTOR DRW #2004-12	
1	747DGS032A	10' CABLE KIT (SET OF 4 WHIPS)	

*NOTE: BEFORE ORDERING AND INSTALLATION OF ELECTRICAL COMPONENTS FOR REGISTERS, CONSULT FINAL FIXTURE PLAN FOR NUMBER AND LOCATION.

MAXIMUM CIRCUITS FOR REGISTERS:
 • CIRCUITS AT MAIN REGISTER - (9) 110V
 • CIRCUITS AT ISLAND REGISTER - (3) 110V

FREEZER/COOLER POWER POLE - NO SCALE 4

INSURE FROM: WILSON OFFICE
 803 North Fourth Street
 Wilmington, NC 28401
 Telephone: 910.251.9899
 Facsimile: 910.251.9899

WILSON OFFICE
 213 East Nash Street
 Wilson, NC 27893
 Telephone: 252.399.2700
 Facsimile: 252.399.2701

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Kilian
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Michael W. Kilian, PE
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 Raleigh, North Carolina 27606
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 Fax: 919.877.1111
 Corporate License C-2277

Plumbing • Mechanical
 Electrical • Fire Alarm

Professional Engineer
 State of North Carolina
 License No. 17394
 Date: 08-18

Professional Engineer
 State of North Carolina
 License No. 17394
 Date: 08-18

DOLLAR GENERAL
 STORE # 20312
 SPRING HILL CHURCH ROAD
 LILLINGTON, NORTH CAROLINA

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SHEET NUMBER
E-3

PANEL A							
CXT	LOAD	BKR	LOAD		BKR	LOAD	CXT
			KVA	PH			
1			11.03	A	0.10	20/1	AUTOMATIC DOOR
3	RTU-1	100/3	11.03	B	0.36	20/1	TELEPHONE BOARD/BUZZER
5			11.03	C	0.18	20/1	ENERGY MANAGEMENT
7			11.03	A	0.18	20/1	RECEPT FOR IRRIGATION PANEL
9	RTU-2	100/3	11.03	B	0.72	20/1	OD HVAC RECEPT (ON ROOF)
11			11.03	C	0.18	20/1	OD DRINK VEND
13	SPARE	20/1	0.00	A	0.72	20/1	HOT RIX
15	SPARE	20/1	0.00	B	1.00	20/1	IRRIGATION PUMP
17	SPARE	20/1	0.00	C	0.50	20/1	INTERFACE EQUIPMENT
19	WATER HEATER	20/1	1.70	A	0.50	20/1	VSAT SATELITE EQUIPMENT
21	WATER HEATER	20/1	1.70	B	0.50	20/1	CCTV EQUIP
23	DRINKING FOUNTAIN	20/1	0.18	C	0.18	20/1	SECURITY RECEPT.
25	OUTDOOR ICE RECEPT.	20/1	0.18	A	0.36	20/1	OFFICE RECEPT.
27	COOLER #1	20/1	1.20	B	0.54	20/1	BREAK ROOM RECEPT.
29	COOLER #2	20/1	1.20	C	0.54	20/1	OFFICE RECEPT.
31	COOLER #3	20/1	1.20	A	0.80	20/1	GATORADE
33	COOLER #4	20/1	1.20	B	0.18	20/1	ICE CREAM FREEZER
35	COOLER #5	20/1	1.60	C	0.80	20/1	GATORADE
37	SPARE	20/1	0.00	A	11.70		
39	SPARE	20/1	0.00	B	12.80	200/3	PANEL B
41	BEAUTY/COSMETICS	20/1	0.72	C	10.80		
			KVA	PH	AMPS		
			39.5	A	329		
			42.3	B	352		
			38.9	C	325		
VOLTAGE/PHASE			208Y/120V, 3P, 4W				
BUS RATING			600A				
NEUTRAL BUS RATING			600A				
MAIN CIRCUIT BREAKER RATING			600A				
AIC RATING			22K				
SERVICE ENTRANCE RATED			YES				
ENCLOSURE			NEMA 1				
MOUNTING			SURFACE				
ISOLATED GROUND BUS			N/A				

NOTE: CIRCLED CIRCUITS REPRESENT BREAKER LOCKS

PANEL B							
CXT	LOAD	BKR	LOAD		BKR	LOAD	CXT
			KVA	PH			
1	NIGHT LTS	20/1	0.30	A	1.20	20/1	POWER TERMINAL BRN
3	RECEIVING LTS	20/1	0.24	B	1.20	20/1	POWER TERMINAL BRN
5	SALES LIGHTS	20/1	0.50	C	1.20	20/1	POWER TERMINAL GRN
7	SALES LIGHTS	20/1	0.78	A	1.20	20/1	POWER TERMINAL GRN
9	SALES LIGHTS	20/1	0.56	B	1.20	20/1	POWER TERMINAL GRN
11	SALES LIGHTS	20/1	0.45	C	1.20	20/1	POWER TERMINAL BRN
13	SALES LIGHTS	20/1	0.90	A	2.88		
15	SALES LIGHTS	20/1	0.90	B	2.88		
17	SPARE	20/1	0.00	C	0.00	20/1	WELL PUMP
19	EMERGENCY/EXIT LIGHTS	20/1	0.40	A	0.00	20/A	SPARE
21	BREAK RM/OFFICE/RR LTS & RR ET'S	20/1	0.50	B	1.50		
23	BUILDING SIGN	20/1	1.20	C	1.50	20/2	FREEZER #1
25	PYLON SIGN	20/1	0.90	A	1.50		
27	SPARE	20/1	0.00	B	1.50		
29	SITE LIGHTING	20/1	1.20	C	1.50		
31	SPARE	20/1	0.00	A	1.50	20/2	FREEZER #3
33	EXTERIOR LTS	20/1	0.56	B	1.60	20/1	SODA COOLERS
35	FRONT EXTERIOR/CANOPY LTS	20/1	0.28	C	1.60	20/1	DRINK COOLERS
37	EXTERIOR LTS	20/1	0.15	A	0.00	20/1	SPARE
39	EXTERIOR LTS	20/1	0.15	B	0.00	20/1	SPARE
41	EXTERIOR BUS/DOWN	20/1	0.13	C	0.00	20/1	SPARE
			KVA	PH	AMPS		
			11.7	A	98		
			12.8	B	107		
			10.8	C	90		
VOLTAGE/PHASE			208Y/120V, 3P, 4W				
BUS RATING			200A				
NEUTRAL BUS RATING			200A				
MAIN CIRCUIT BREAKER RATING			MLO				
AIC RATING			22K				
SERVICE ENTRANCE RATED			YES				
ENCLOSURE			NEMA 1				
MOUNTING			SURFACE				
ISOLATED GROUND BUS			N/A				

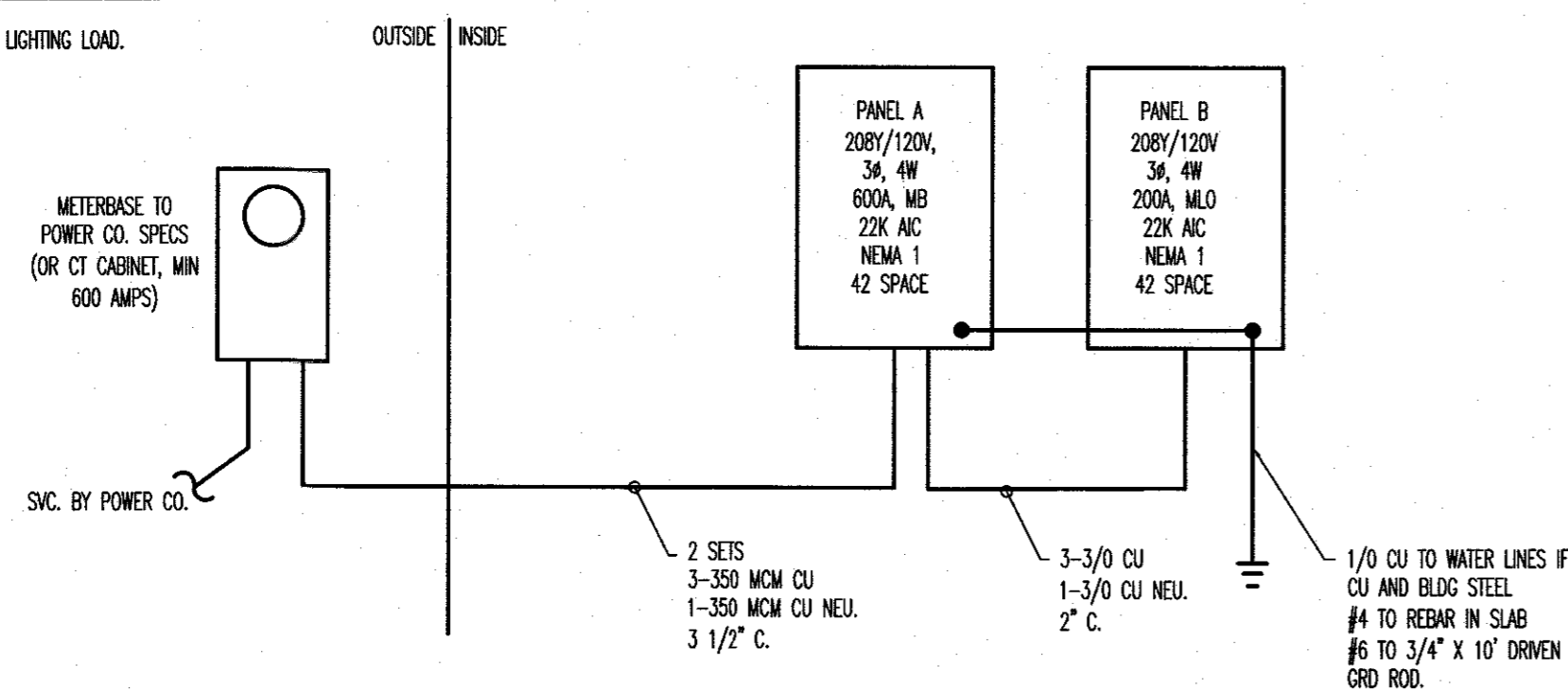
NOTE: CIRCLED CIRCUITS REPRESENT BREAKER LOCKS

NOTE: SHADED CIRCUITS RUN THROUGH EMS PANEL

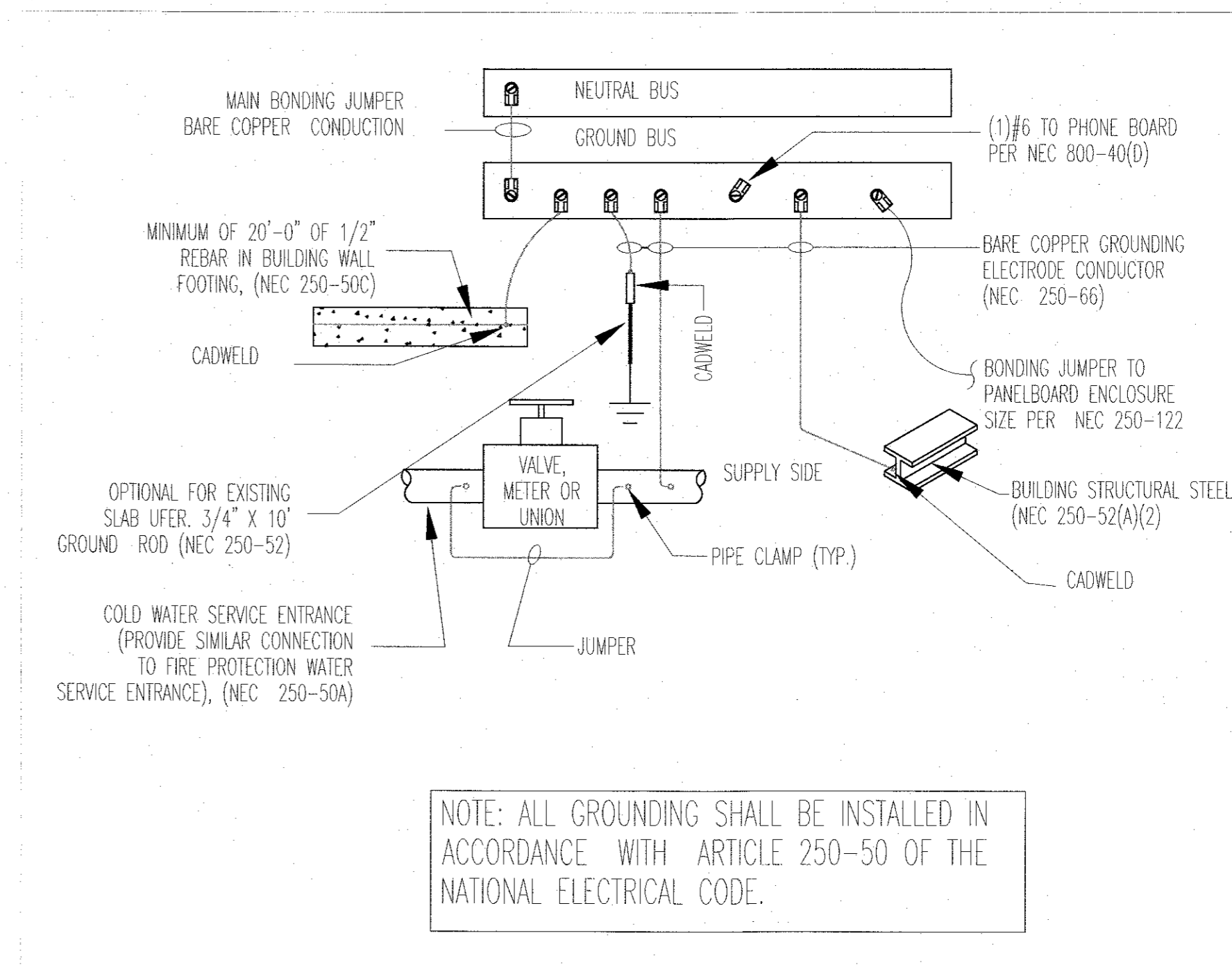
PANEL B HAS BOTH ISOLATED GROUND BUS AND A STANDARD BONDED GROUND BUS.

NEC ELECTRIC DEMAND SUMMARY 208Y/120V, 3P, 4W					
EQUIPMENT	DEMAND FACTOR	KVA			LOAD KVA
		A	B	C	
LIGHTING 1	125%	10.88	10.88	10.88	32.64
RECEPTACLES < 10 KVA s	100%	1.80	1.80	1.80	5.40
RECEPTACLES > 10 KVA s	50%	0.00	0.00	0.00	0.00
HVAC 2	100%	22.06	22.06	22.06	66.18
WATER HEATER	100%	1.70	1.70	0.00	3.40
SHOW WINDOW 3	125%	1.53	1.53	1.53	4.59
SIGN 4	125%	1.20	0.90	0.00	2.10
FREEZERS/COOLERS	100%	4.40	7.38	8.40	20.18
IRRIGATION PUMP AND WELL	100%	2.88	1.00	2.88	6.76
DEMAND KVA PER PHASE		46.45	47.25	47.55	
DEMAND AMPS PER PHASE		387	394	396	

- 8709 SF X 3VA/SF X 1.25 PER NEC 220.12. THIS EXCEEDS THE CONNECTED LIGHTING LOAD.
- ALL HVAC EQUIPMENT IS BASED ON MCA.
- NOT USED
- 23 FT X 150 VA/2FT PER NEC 220.43(B)
- NOT USED
- PER NEC 220.14(F)
- NOT USED



EQUIPMENT CONNECTION SCHEDULE												
SYMBOL	DESCRIPTION	FURN. BY	KVA	HP	VEL./PH	MCA	MDCP	DISC	AWG	EGC	COND	NOTES
RTU-1,2	RTU'S	M.C.	-	-	208/3	92.0	100	100	#3	#8	1 1/2"	
P-11	WATER HEATERS	P.C.	1.65	-	120/1	13	20	30	#12	#12	3/4"	

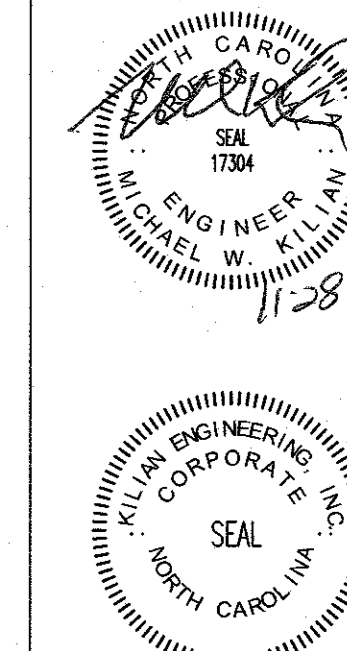


NOTE: ALL GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 250-50 OF THE NATIONAL ELECTRICAL CODE.

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 WILMINGTON OFFICE
 805 North Fourth Street
 Wilmington, NC 28401
 Telephone: 910.251.8899
 Facsimile: 910.251.9989
 WILSON OFFICE
 215 East Nash Street
 Wilmington, NC 28401
 Telephone: 252.390.2700
 Facsimile: 252.390.2700

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Kilian
 Engineering
 Inc.
 Michael W. Kilian, PE
 michael@kilianengineering.com
 P.O. Box 300, 4055 Spring Street
 Raleigh, NC 27604
 P: 919.487.7171 F: 919.487.5744
 Company License C0227
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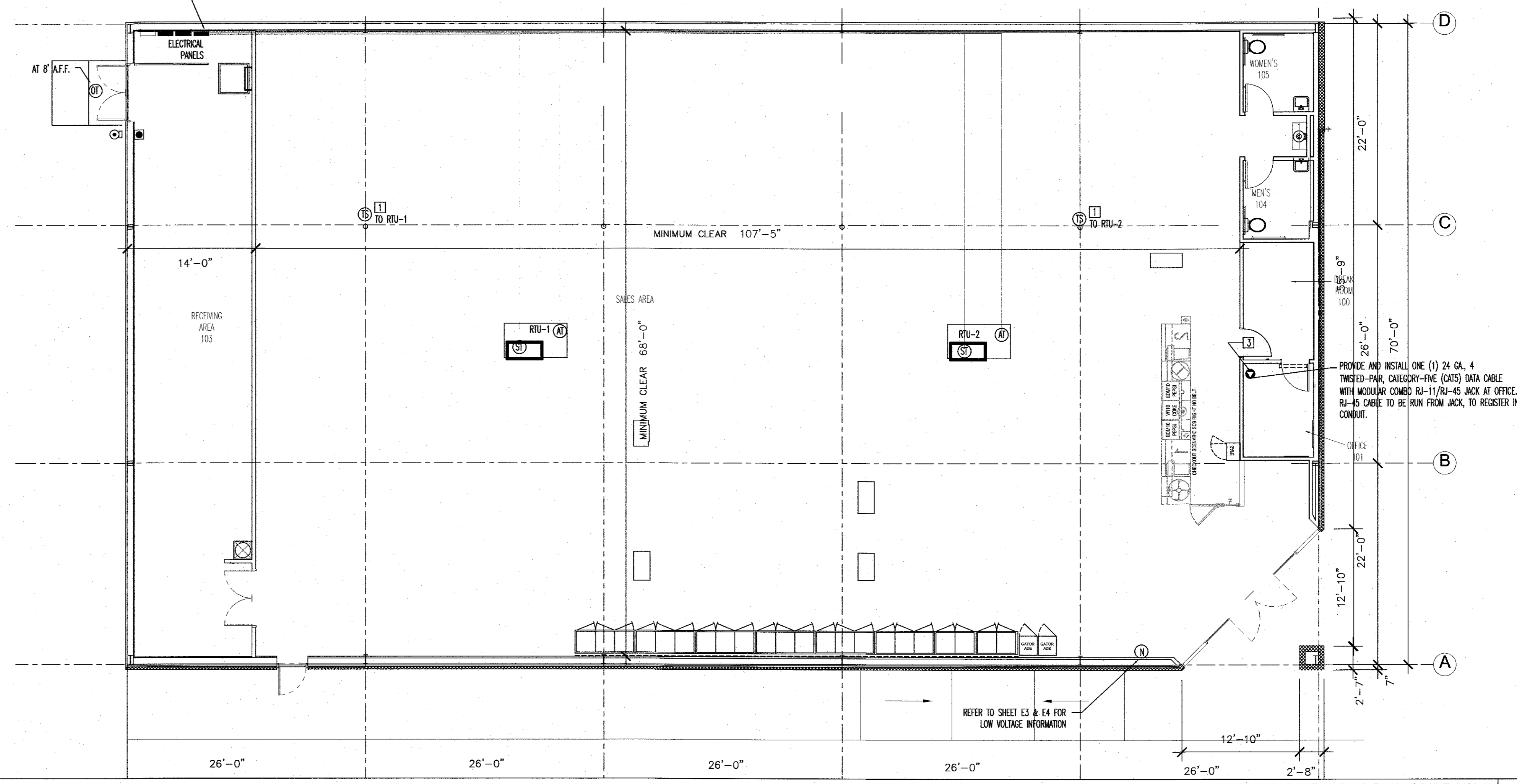


DOLLAR GENERAL
 STORE # 20312
 SPRING HILL CHURCH ROAD
 LILLINGTON, NORTH CAROLINA

JOB NUMBER
 18426
 DRAWN BY
 REW
 DATE
 11/28/18
 REVISIONS

SHEET NUMBER
E-4

EMERSON PRE-PROGRAMMED E2 C2-100 CONTROLLER "EMS PANEL", MTD. NEXT TO ELECTRICAL PANELS, AS CLOSE AS POSSIBLE.



LOW VOLTAGE WIRING PLAN-SCALE 1/8"=1' 1

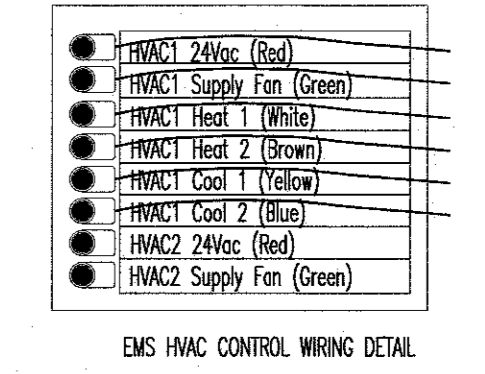
QTY.	SYMBOL	DESCRIPTION	CABLE TYPE	SUPPLIED BY:	INSTALLED BY:	NOTES
VERIFY	(A)	WALL TERMINAL STRIP	8C T-504 CABLE	EMS SUPPLIER	GENERAL CONTRACTOR	QTY. ONE (1) PER HVAC LINE.
1	(B)	NETWORK CABLE W/UT. AT RECEIVING AREA	CAT5/RJ-45 CONNECTION ON BOTH ENDS. LEAVE 50' COILED AT REGISTER. CONNECT AT EMS PANEL.	GENERAL CONTRACTOR	GENERAL CONTRACTOR	QTY. ONE (1) PER REGISTER.
1	(C)	SENSOR IN SUPPLY DUCT	RELATOR E201 OR EQUIVALENT (CONSP. JC, SHOWN, SHIELDED)	EMS SUPPLIER	GENERAL CONTRACTOR	QTY. ONE (1) PER RECEIVING EXTERIOR.
VERIFY	(D)	TEMPERATURE SENSITIVE SENSOR (200-1000) W/UT. IN SUPPLY DUCT	RELATOR E201 OR EQUIVALENT (CONSP. JC, SHOWN, SHIELDED)	EMS SUPPLIER	GENERAL CONTRACTOR	QTY. ONE (1) PER HVAC LINE DUCT.
4	(E)	NATION SENSOR SWITCH	LEVITON E2-PRO 005-10-000	GENERAL CONTRACTOR	GENERAL CONTRACTOR	QTY. ONE (1) PER BREAK ROOM. QTY. ONE (1) PER OFFICE. QTY. ONE (1) PER MEN'S RESTROOM. QTY. ONE (1) PER WOMEN'S RESTROOM.
1	(F)	RJ-11/RJ-45 DATA JACK, PHONE CABLE	24 GA. 4-PAIR SHIELD. CATEGORY-FIVE (QTY 5) DATA CABLE.	GENERAL CONTRACTOR	GENERAL CONTRACTOR	QTY. ONE (1) AT OFFICE COMPUTER CABLE.

- SENSOR PLAN KEYED NOTES**
- 1 ALWAYS INSTALL THESE SENSORS AT 8'-0" A.F.F. THE EXACT MOUNTING LOCATION OF THE SENSORS "IS" MAY VARY DEPENDING ON THE DUCT LAYOUT & DUCT CONFIGURATION. REFER TO SITE SPECIFIC MECHANICAL DRAWINGS FOR HVAC ZONES SENSOR MOUNTING LOCATIONS. IF SENSORS ARE MOUNTED ON EXTERIOR WALLS DUE TO DUCT CONFIGURATION, THEY ARE TO BE INSULATED TO PREVENT AIR INTRUSION. IF ADDITIONAL HVAC LINES ARE USED, ADD ADDITIONAL TEMPERATURE SENSORS "IS".
 - 2 ADD ADDITIONAL HVAC UNIT WHEN REQUIRED.
 - 3 PHONE LINE #1 - TWO RJ-11 PHONE. ONE (1) LOCATED IN OFFICE. TWO RJ-11 PHONE JACKS COMING AND ONE (1) AT RECEIVING. 24 GA. 4-PAIR SHIELD. PHONE CABLE. SEE ALL AND BLUE & WHITE WIRE PAIR TO LINE #1 TERMINAL IN RJ-11 JACK. EACH PHONE JACK TO HAVE SEPARATE, SEPARATE WIRE PAIR TO PHONE JACK. SEE "PHONE" AT THE BOTTOM OF THE DRAWING FOR MORE INFORMATION. PHONE CABLE SHOULD BE RUN UP TO DUCTING ONLY. PHONE LINE #2 - RJ-11 PHONE JACK SUPPLIED AND WIRED BY CONTRACTOR.

COMPANY	CONTACTS	PHONE #	REQUIRED ITEMS
EMERSON CLIMATE TECHNOLOGIES	WEBSITE: http://dollargeneral.atsul.com	USER NAME: dskay@emhcl.com PASSWORD: dskay@emhcl	EMS SUPPLIER NOTE: CUSTOMER ORDER GENERAL EMS PANEL REQUIRES SOME #, QTY, SIZE, ZIP CODE & QTY FOR HVAC LINES OF THE SERIAL ONE WEEK BEFORE. ONE SYSTEM INSTALLATION CODE WITH PHOTOS IS AVAILABLE ON NATIONAL ACCOUNT WEBSITE. ALL QUESTIONS PERTAINING TO THE EMS PANEL, SYSTEM INSTALLATION & SETUP SHOULD BE DIRECTED TO EMERSON'S DOLLAR GENERAL SUPPORT TEAM AT 770-425-0724.

NATIONAL ACCOUNT & CONTACT INFORMATION SUBJECT TO CHANGE

LOW VOLTAGE WIRING SCHEDULES AND NOTES 2

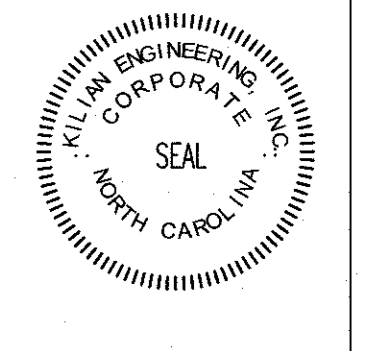
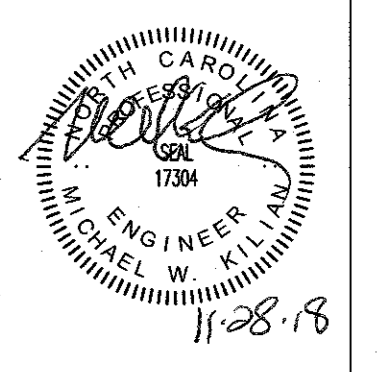


LOW VOLTAGE DETAILS-NO SCALE 3

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 211 East Ninth Street
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 WILSON OFFICE
 211 East Ninth Street
 Wilson, NC 27893
 Phone: 252.399.2700
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Kilian Engineering Inc.
 210 East 9th Street
 Raleigh, NC 27601
 Phone: 919.833.8888
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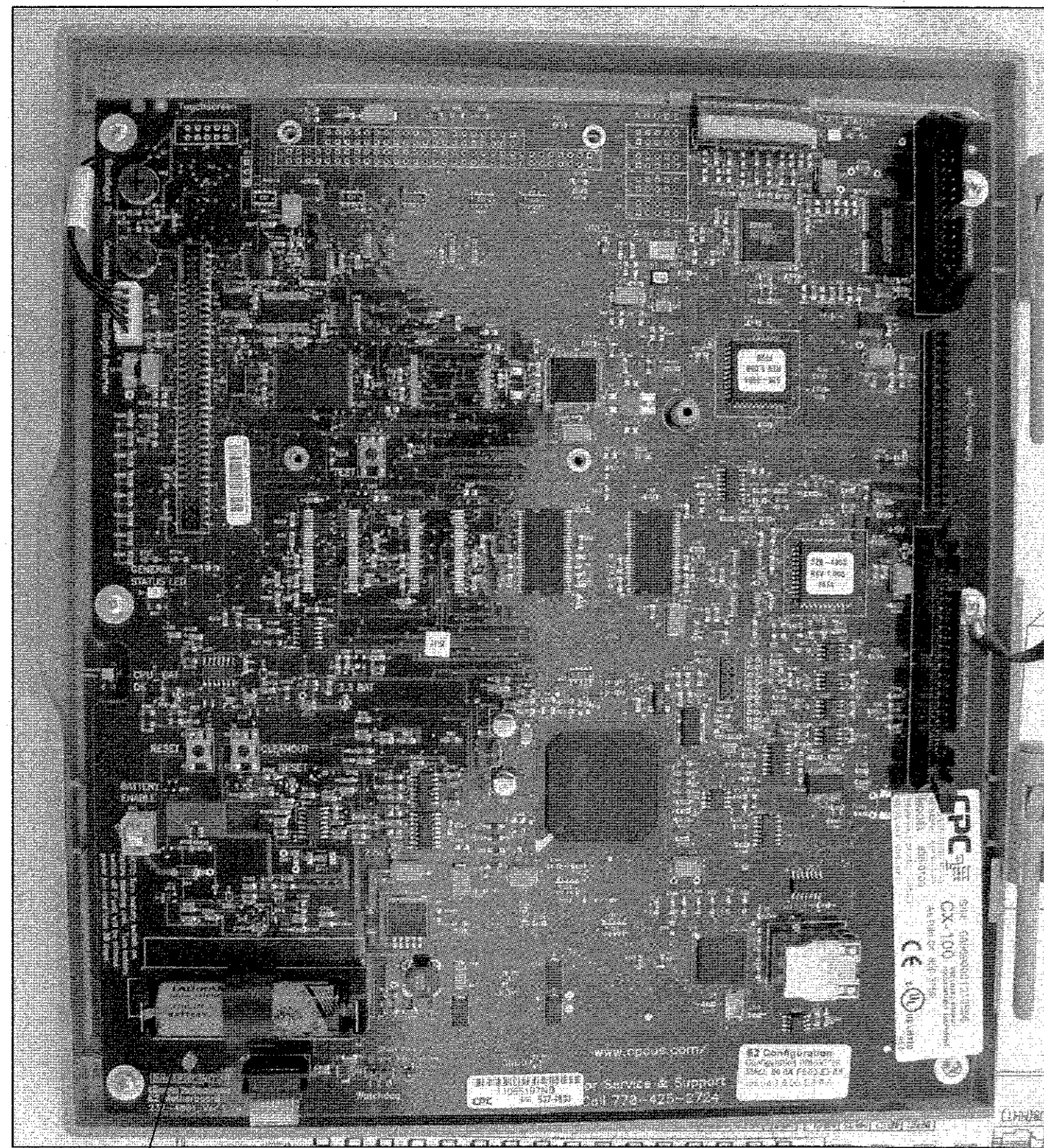


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SHEET NUMBER

EMS-1



GENERAL CONTRACTOR TO ENSURE THAT THE BATTERY ENABLE IS SWITCHED TO THE "ON" POSITION

NOTE:
EMS SYSTEM SHOULD BE TESTED FOR HVAC OPERATION, INTERIOR LIGHTING, EXTERIOR LIGHTING AND SIGN LIGHTING PRIOR TO CONTRACTOR'S ELECTRICAL POSSESSION DATE. USE OUTSIDE LIGHT AND SIGN LIGHT OVERRIDE FOR EXTERIOR TESTING.

