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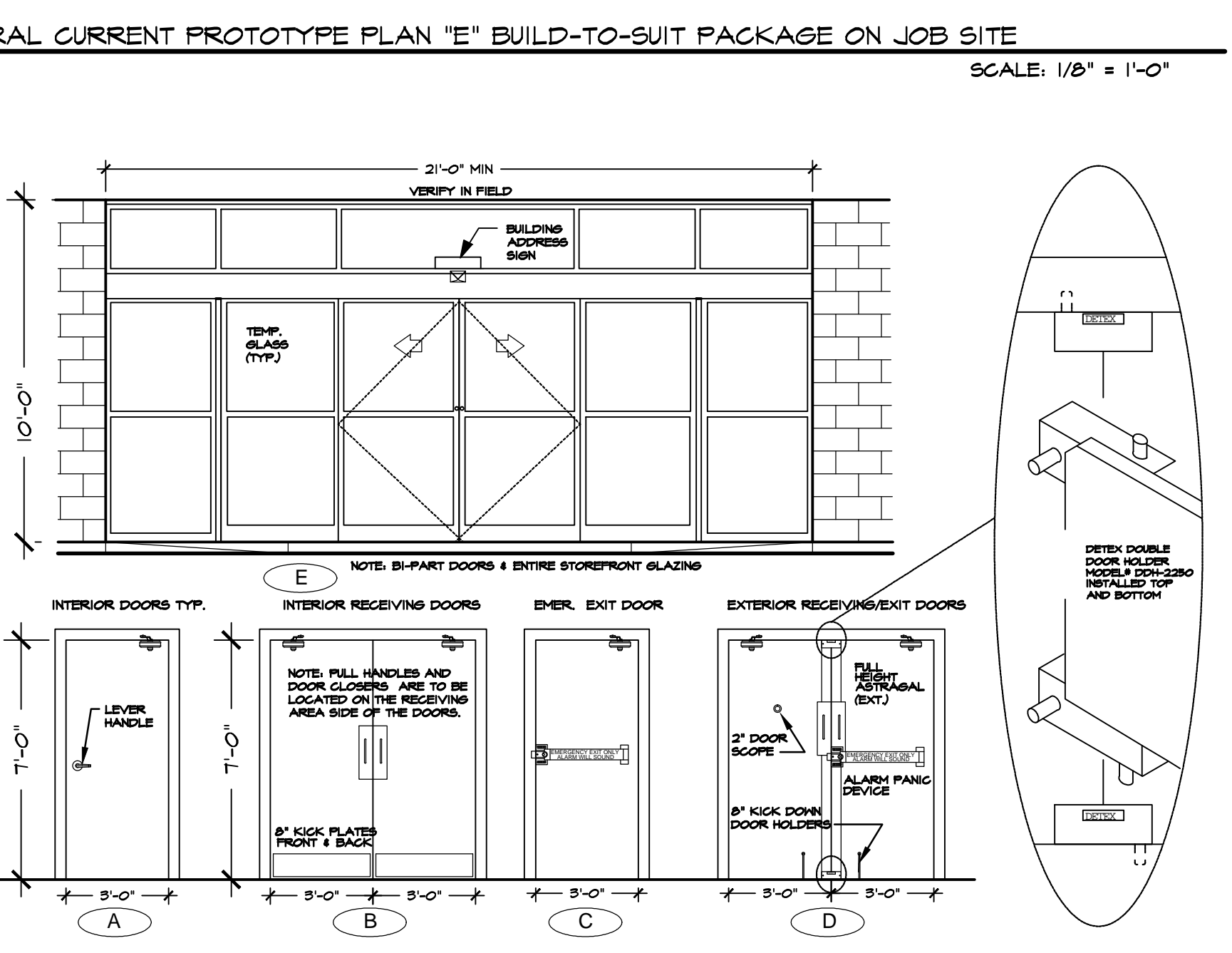
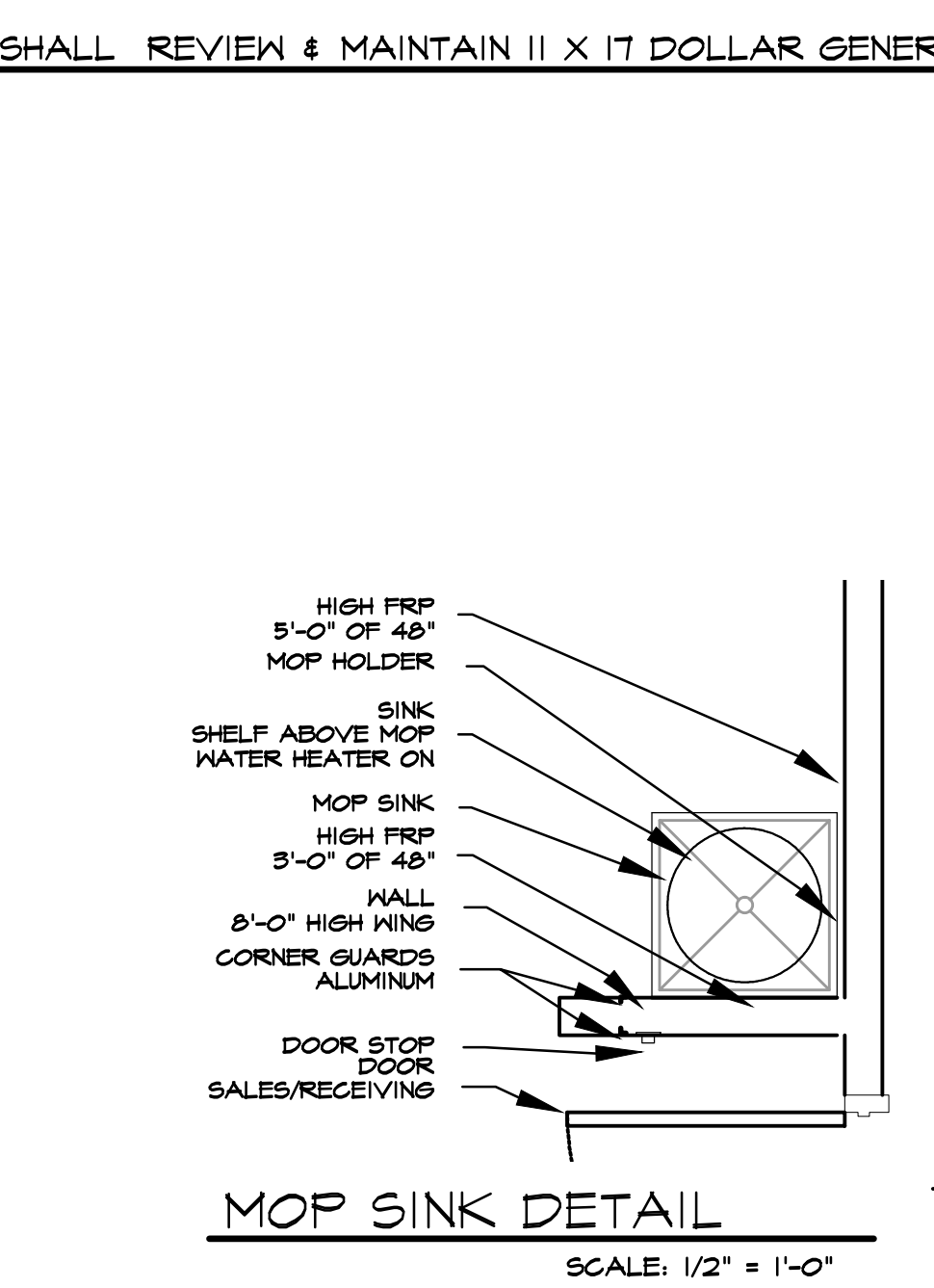
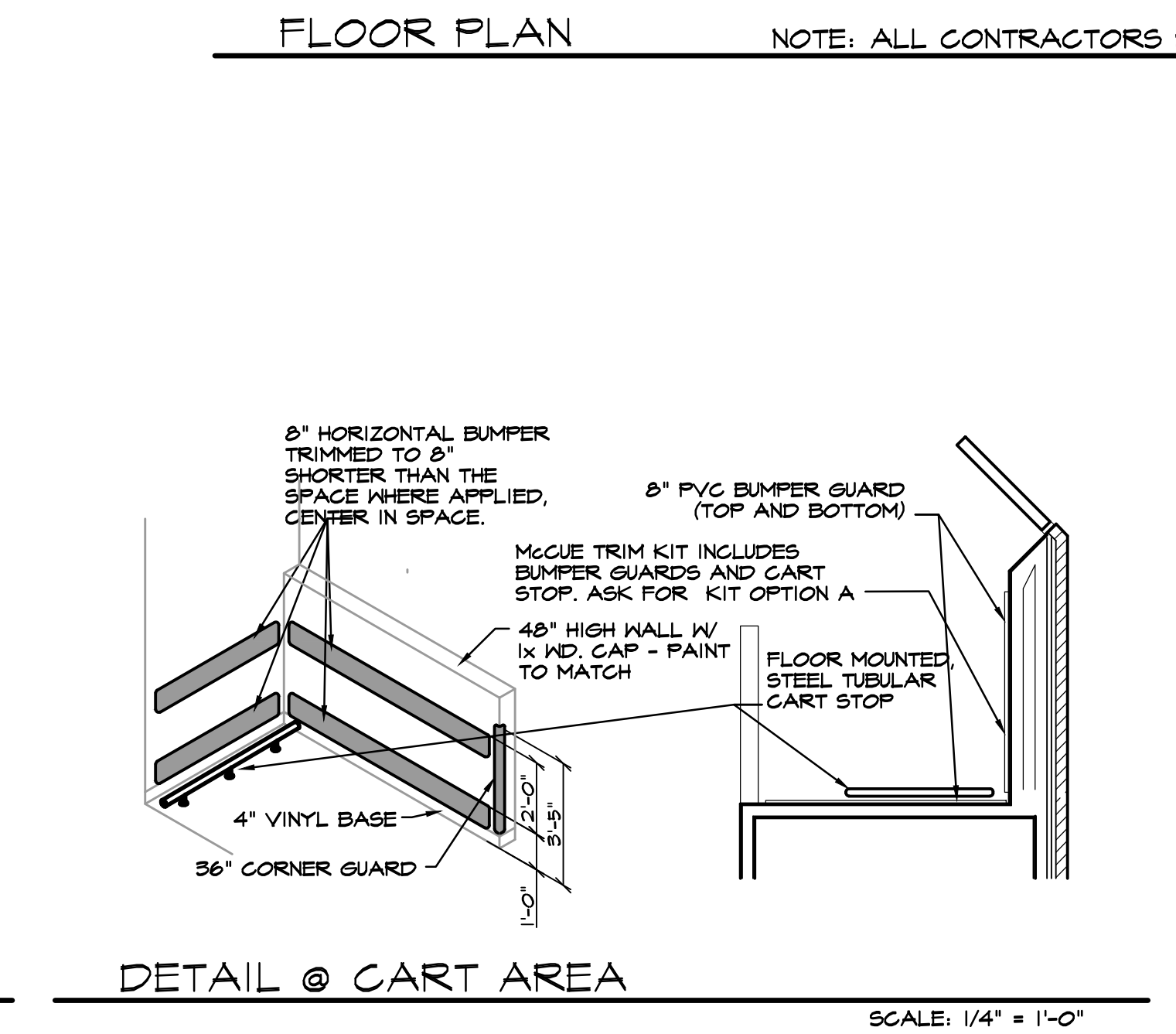
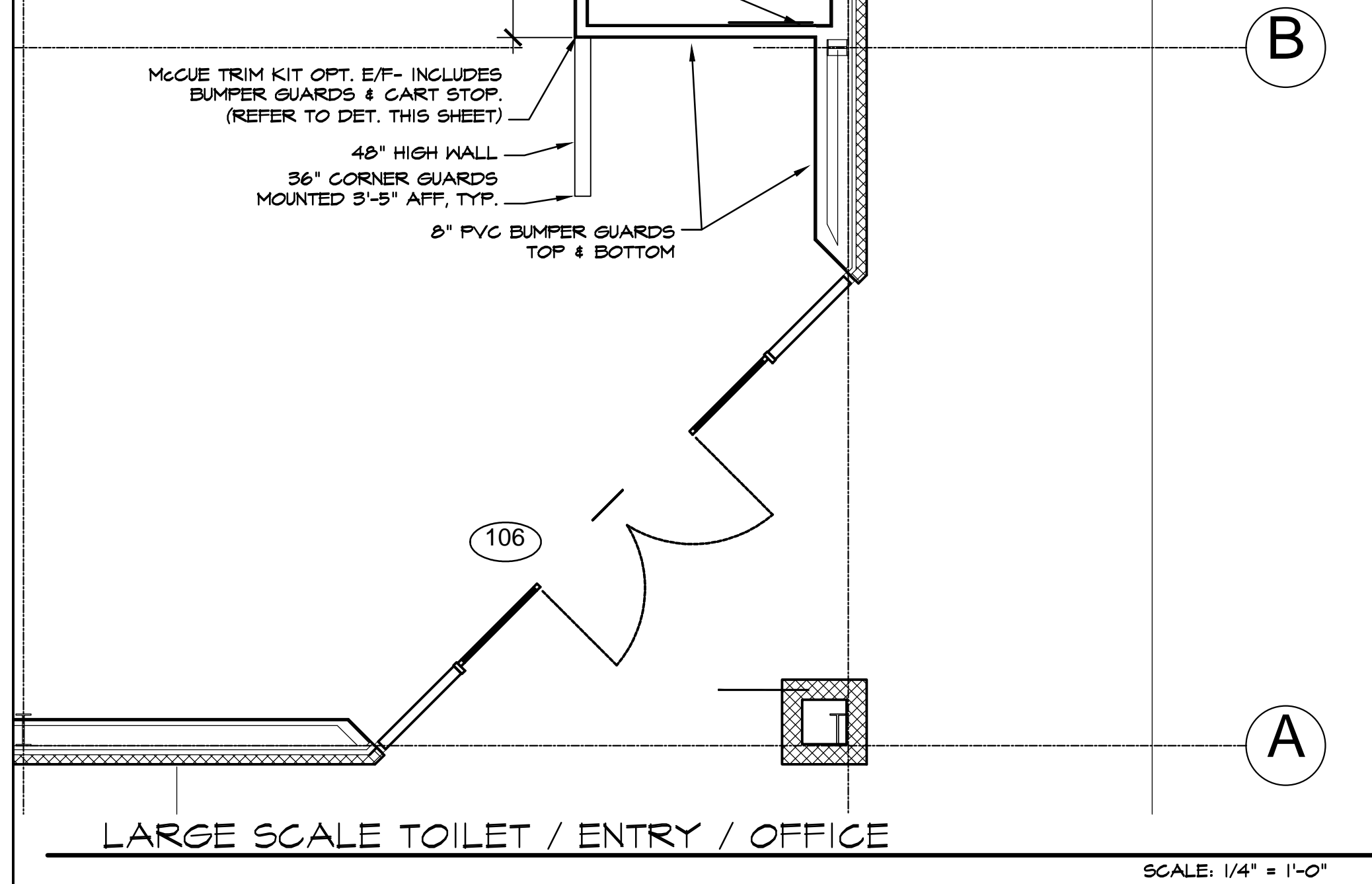
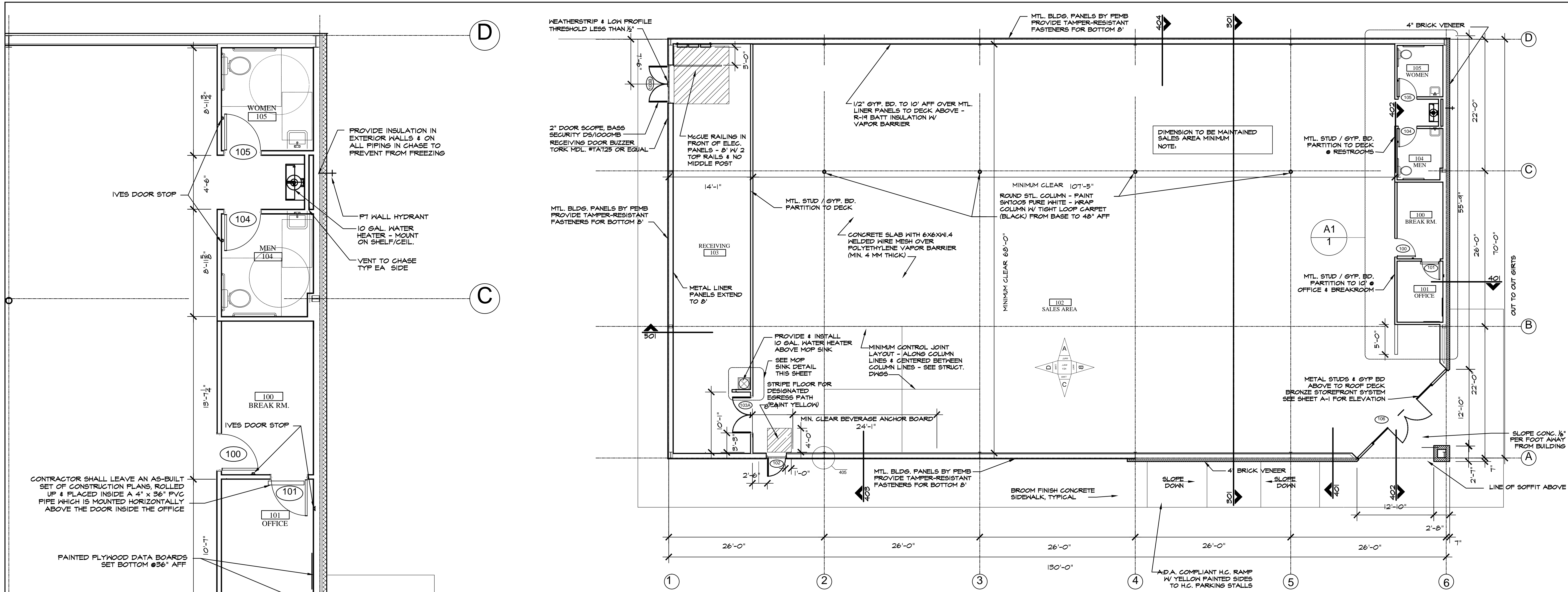
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DOLLAR GENERAL
 STORE # 22524
 RAY ROAD
 SPRING LAKE, NORTH CAROLINA

JOB NUMBER
 DRAWN BY
 MAH
 DATE
 03/01/21
 REVISIONS

SHEET NUMBER
A-1
 OF



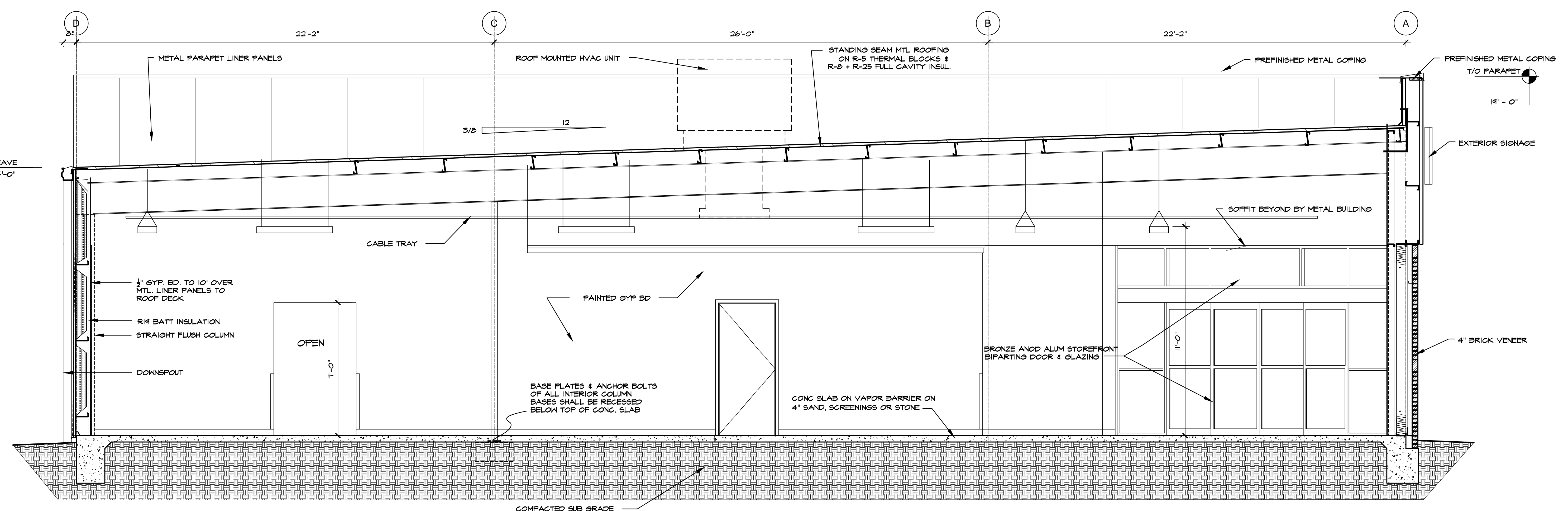
ROOM FINISH SCHEDULE											
NO	ROOM NAME	FLOOR	BASE	A WALL	B WALL	C WALL	D WALL	CEILING MATERIAL	CEILING FINISH	REMARKS	
100	BREAK RM.	CONCRETE FLOOR SEALED	CONCRETE SEALER	4" RUBBER / VINYL BASE	BLACK	GYP. BOARD TO ROOF DECK & EXT. WALLS TO 10'-0" AFF OTHERS	SHERWIN WILLIAMS SHTOOS-WHITE PRO-MAR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

DOOR SCHEDULE				HARDWARE		REMARKS
NO.	TYPE	HEIGHT	THICK.	TYPE	HEIGHT	
100 (BREAK ROOM)	A	8'-0"	1-3/4"	(1) STANLEY PASSAGE LOCKSET QCL250-E-626-S4 - NO KEY REQ'D, (1) STANLEY DOOR CLOSER GDC011-684		SOLID CORE HOOD DOOR OR HOLLOW CORE METAL DOOR & FRAME PAINTED SH-BLACK HANG'G, 6841 SEMI-GLOSS
101 (OFFICE)	C	8'-0"	1-3/4"	(1) IVES HALLSTOP 4402-228-260, (1-1/2) PAIR HINGES		SOLID CORE HOOD DOOR OR HOLLOW CORE METAL DOOR & FRAME PAINTED SH-BLACK HANG'G, 6841 SEMI-GLOSS
102 (RECEIVING EXIT)	C	8'-0"	1-3/4"	(1) VON DUPRIN GUARD-X EXIT ALARM LOCK 82610-28, (1) STANLEY DOOR CLOSER GDC011-684, (1) DOOR PULL ON USDB, (1) DOOR SWEEP, WEATHERSTRIPPING, (1) TORBSC-260-RM CYLINDER, (1-1/2) PAIR HINGES		HOLLOW CORE METAL DOOR & FRAME PAINT EXTERIOR SHTOOS, "VAN DYKE BROWN" SEMI-GLOSS, INTERIOR SH-BLACK HANG'G, 6841 SEMI-GLOSS
103A (RECEIVING INTERIOR)	B	8'-0"	1-3/4"	(1) STANLEY DOOR CLOSERS GDC011-684, (2) IVES 4" DOOR HOLDERS 44828-260-4 IF NOT FIRE RATED HALL, (3) PAIR HINGES		FIRE RATED DOORS, SOLID CORE HOOD DOORS OR HOLLOW CORE METAL DOORS PAINTED SH-BLACK HANG'G, 6841 SEMI-GLOSS
103B (RECEIVING EXTERIOR)	D	8'-0"	1-3/4"	(1) VON DUPRIN GUARD-X EXIT ALARM LOCK 82610-28, (1) VON DUPRIN GUARD-X DOUBLE DOOR STRIKE 82604, (1) DETEX DOUBLE DOOR HOLDER 8264-2280 TOP & BOTTOM, (2) STANLEY DOOR CLOSERS GDC011-684, (1) DOOR PULL PLATE #840-322-260-GRIP, (1) IVES HALL STOP 4402-228-260, (1) RESTROOM DOOR SIGNAGE (PER DETAIL ON SHEET AS) (1-1/2) PAIR HINGES		HOLLOW CORE METAL DOORS & FRAME INTERIOR PAINTED SH-BLACK HANG'G, 6841 SEMI-GLOSS EXTERIOR PAINTED SHTOOS- "VAN DYKE BROWN" SEMI-GLOSS
104 (MEN'S RRM)	A	8'-0"	1-3/4"	(1) STANLEY DOOR CLOSERS GDC011-684, (1) DOOR PULL ON USDB, (1) DOOR SWEEP, WEATHERSTRIPPING, (1) TORBSC-260-RM CYLINDER, (1-1/2) PAIR HINGES		SOLID CORE HOOD DOORS OR HOLLOW CORE METAL DOORS & FRAME PAINTED SH-BLACK HANG'G, 6841 SEMI-GLOSS
105 (WOMEN'S RRM)	A	8'-0"	1-3/4"	(1) STANLEY DOOR CLOSERS GDC011-684, (1) DOOR PULL ON USDB, (1) DOOR SWEEP, WEATHERSTRIPPING, (1) TORBSC-260-RM CYLINDER, (1-1/2) PAIR HINGES		SOLID CORE HOOD DOORS OR HOLLOW CORE METAL DOORS & FRAME PAINTED SH-BLACK HANG'G, 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 RHM CYLINDER #10866-260.		21-07 SH-PAINT WITH TRANSOM AND HINDOCS, BRONZE FINISH



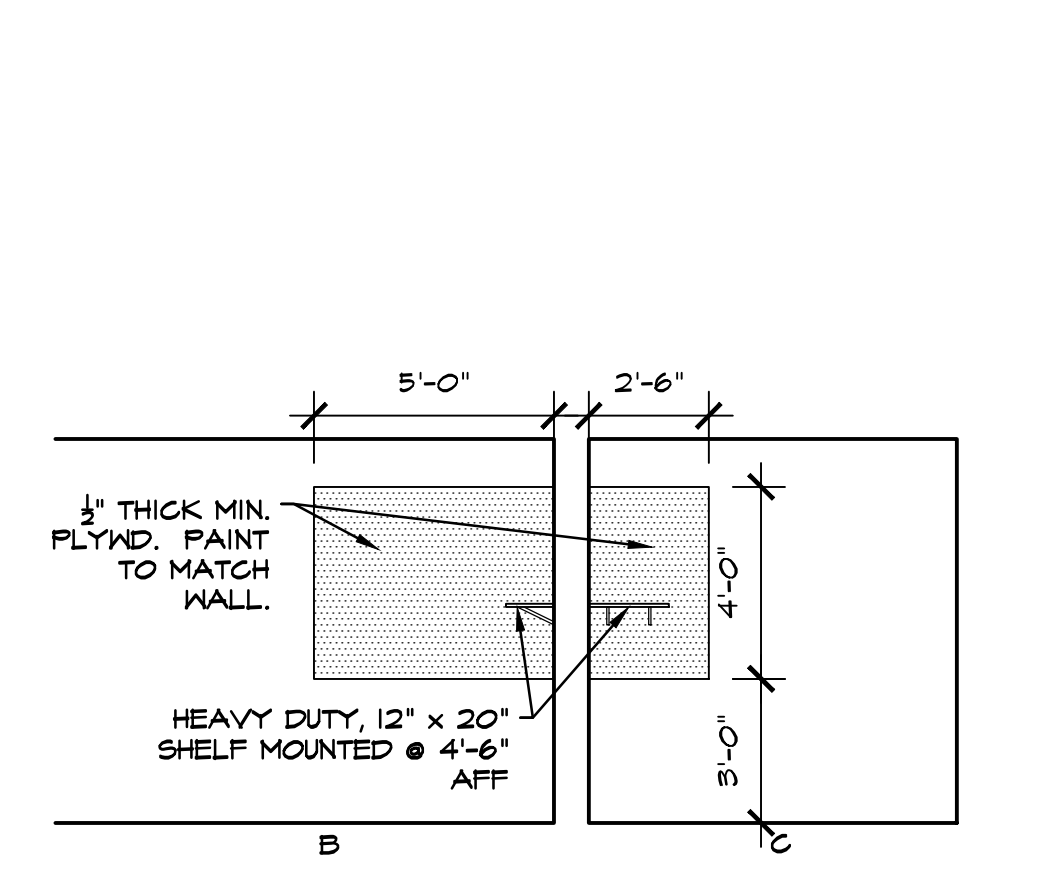
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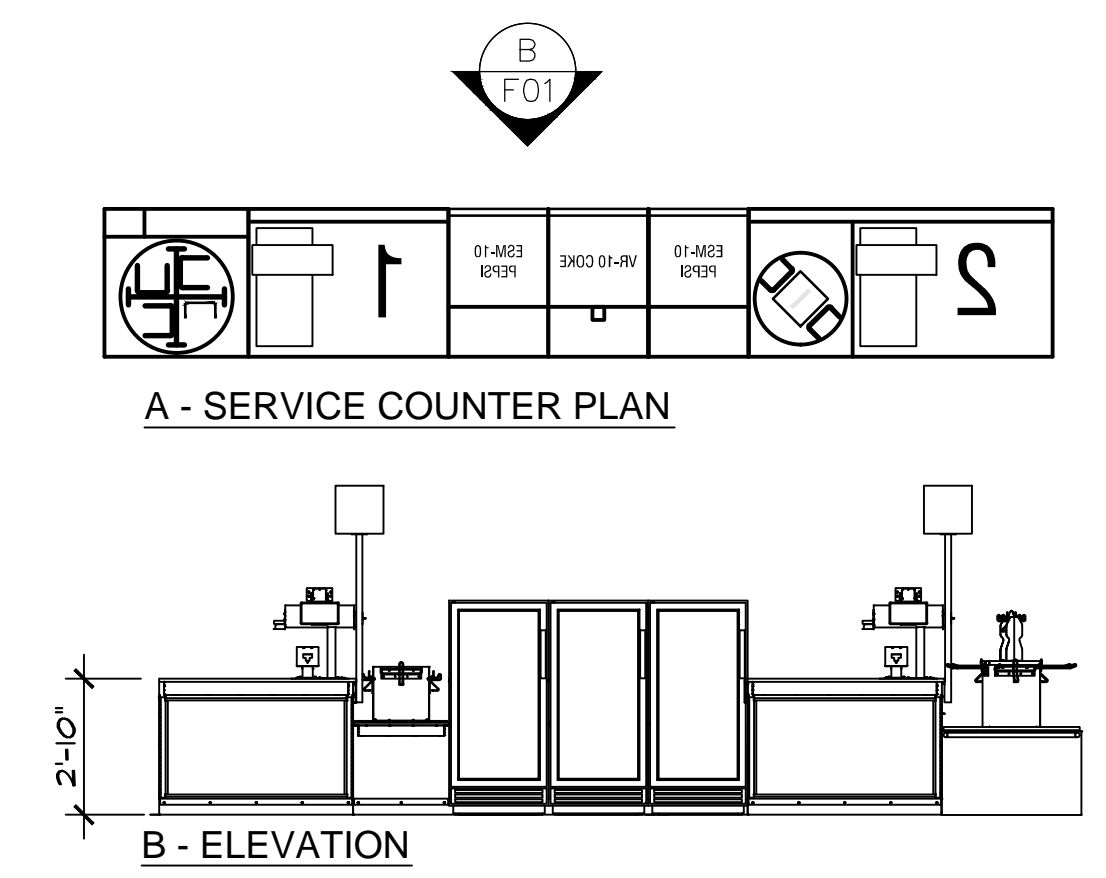
301 BUILDING SECTION

SCALE: 3/8" = 1'-0"



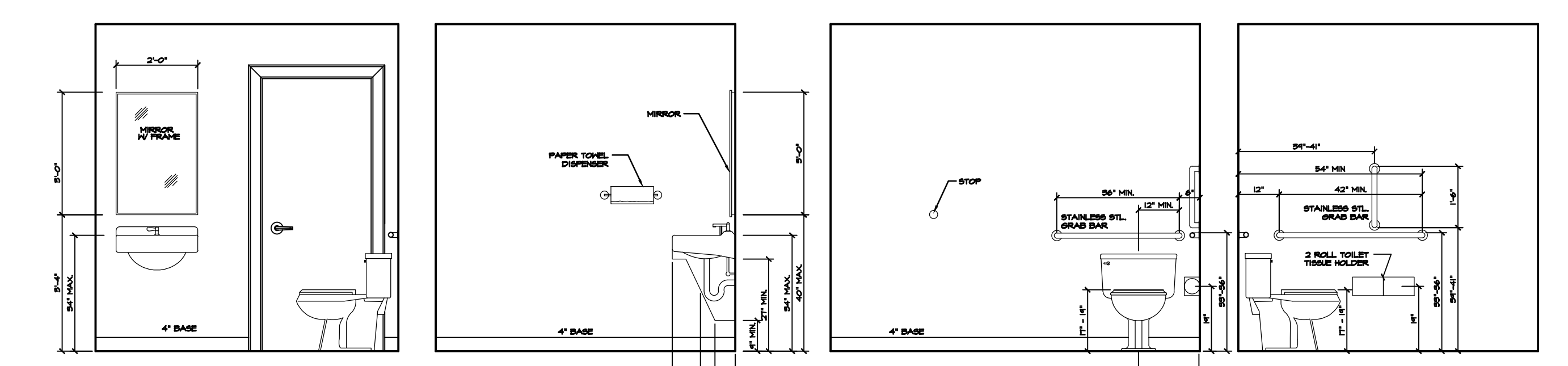
OFFICE WALL EQUIPMENT PANELS

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



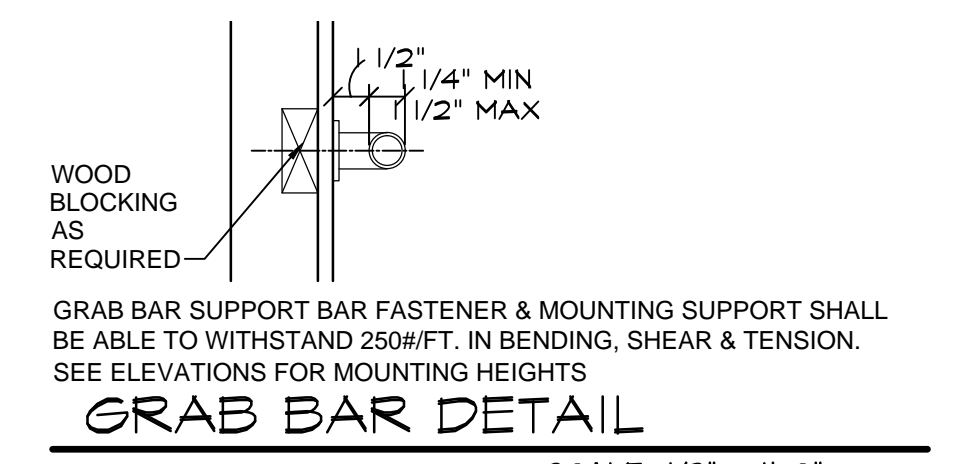
SERVICE COUNTER DETAILS

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



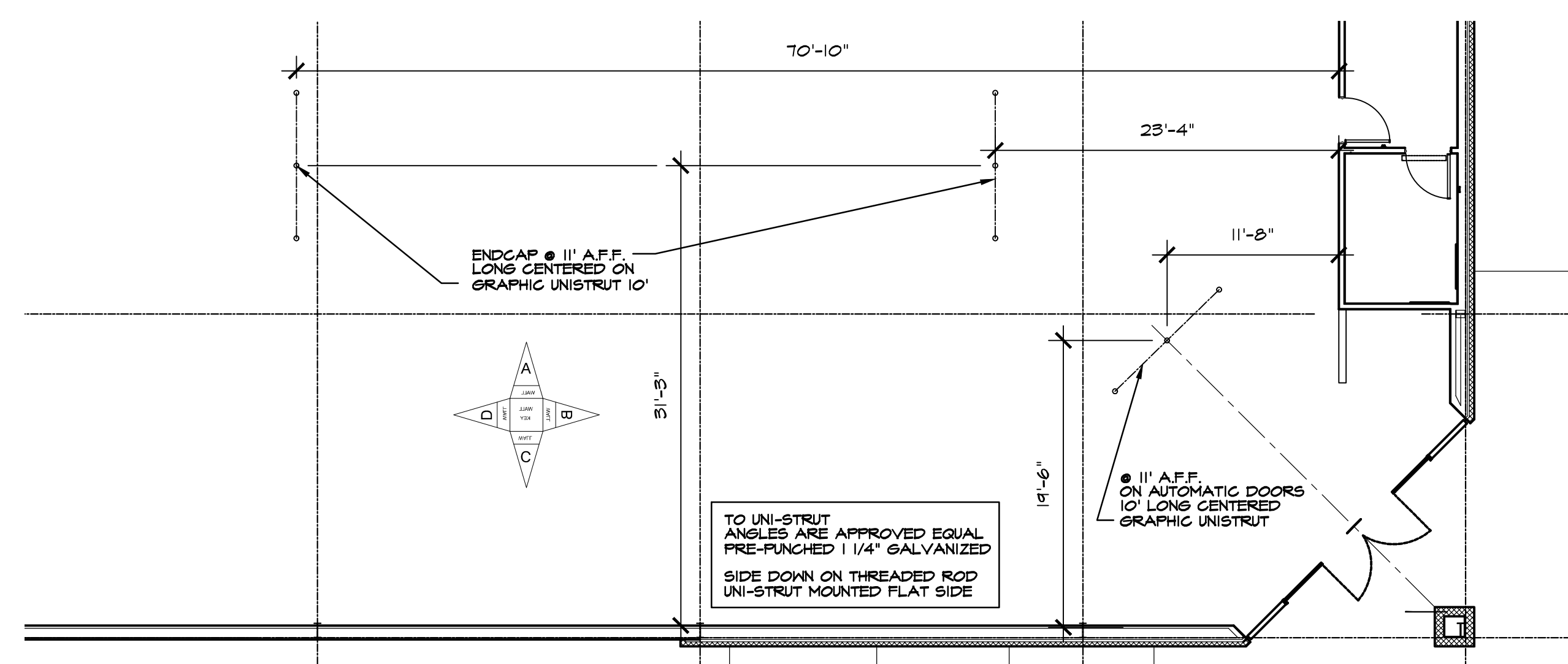
RESTROOM ELEVATIONS

SCALE: 3/8" = 1'-0"



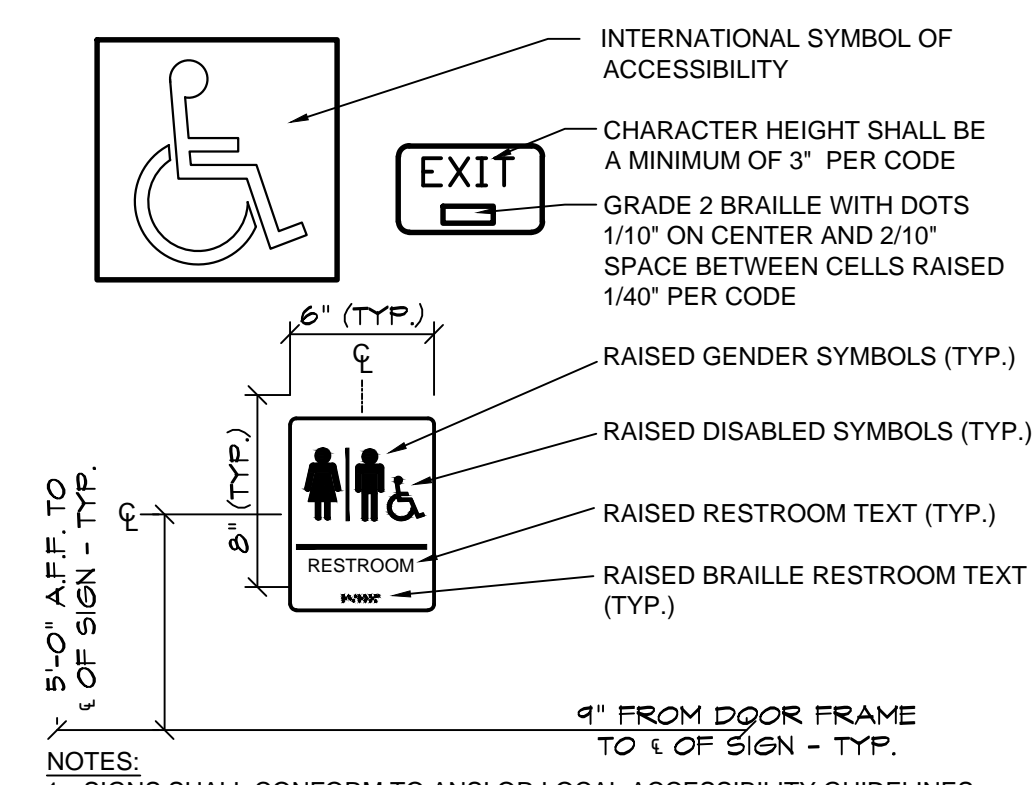
GRAB BAR DETAIL

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



UNI-STRUT LAYOUT FOR SIGNAGE

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



ACCESSIBLE SIGNAGE

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

TOILET ROOM ACCESSORIES		DOOR HARDWARE	
B2740	BOBRICK DOUBLE TOILET TISSUE DISPENSER	54-US32D	BURNS PUSH PLATE
B253	BOBRICK PAPER TOWEL DISPENSER	5410-32D-26D-GRIP	BURNS PULL PLATE
A-24x36	GAMCO 24" x 36" ANGLE FRAME MIRROR	B2DDH-2250 **	DETEX DOUBLE DOOR
150Sx36	GAMCO 1 1/2" X 36" GRAB BAR	DS1000/MB	DOOR SCOPE (FORE RECEIVING EXIT DOOR)
150Sx42	GAMCO 1 1/2" X 42" GRAB BAR	608Z	8" DOOR HOLDER
150Sx18	GAMCO 1 1/2" X 18" GRAB BAR	770SAV-3FT	3 FT DOOR SWEEP
MS-1	GAMCO MOP HOLDER	770SAV-4FT	4 FT DOOR SWEEP
		W101S-DANE-626	FALCON PASSAGE LOCK SET
		W581PD-DANE-626	FALCON STOREROOM LOCKSET
		5400	HAGER DOOR CLOSER
		7015SC8-26D*	ILCO RIM CYLINDER
		402-1/2B-26D	3IVES WALL STOP
		425B26D-4	IVES 4" DOOR HOLDER
		8400-S32D-8X34	FALCON PASSAGE LOCK SET
		425 HD - 6FT	NATIONAL GUARD HD THRESHOLD (FOR RECEIVING EXIT DOOR)
		TA3310PC	TACO DOOR VIEWER
		2670-28	VON DUPRIN GUARD-X EXIT ALARM LOCK
		2609 **	VON DUPRIN GUARD-XDOUBLE DOOR STRIKE
		892SAV-84INCH	WEATHERSTRIPPING

TOILET ROOM NOTES:

- ALL TOILET ROOM ACCESSORIES PROVIDED BY BASS SECURITY. REFER TO T01 FOR VENDOR CONTACT.
- ALL STORES MUST INCLUDE 2 REST ROOMS, EVEN WHEN NOT REQUIRED BY CODE. ANY VARIATION MUST BE APPROVED, IN WRITING, BY THE DOLLAR GENERAL CONSTRUCTION DEPARTMENT.
- RESTROOMS MUST COMPLY WITH ALL BUILDING (FEDERAL, STATE, AND LOCAL) FIRE, AND HEALTH DEPARTMENT CODES. ADA REQUIREMENTS MUST ALSO BE MET IN BOTH RESTROOMS. SOME CODES MAY REQUIRE ADDITIONAL TOILETS OR LAVATORIES. PLEASE CONTACT DOLLAR GENERAL CONSTRUCTION DEPARTMENT FOR ALTERNATE PLANS FOR THESE SITUATIONS.
- PROVIDE AND INSTALL 2'x3' MIRROR (OR LARGER IF REQUIRED BY CODE).
- CONTRACTOR TO INSTALL SOAP DISPENSERS, TOILET PAPER HOLDERS, DOOR CLOSER, EXHAUST FANS, AND ALL BASS SECURITY PARTS IN BOTH RESTROOMS. PROVIDE SOLID BLOCKING IN WALL FOR SUPPORT.

DOOR HARDWARE NOTES:

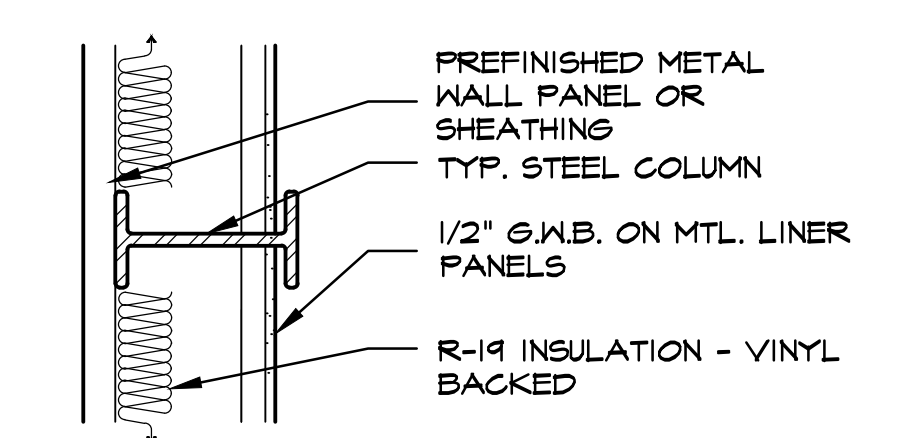
- ALL DOOR HARDWARE PROVIDED BY BASS SECURITY. REFER TO T01 FOR VENDOR CONTACT.

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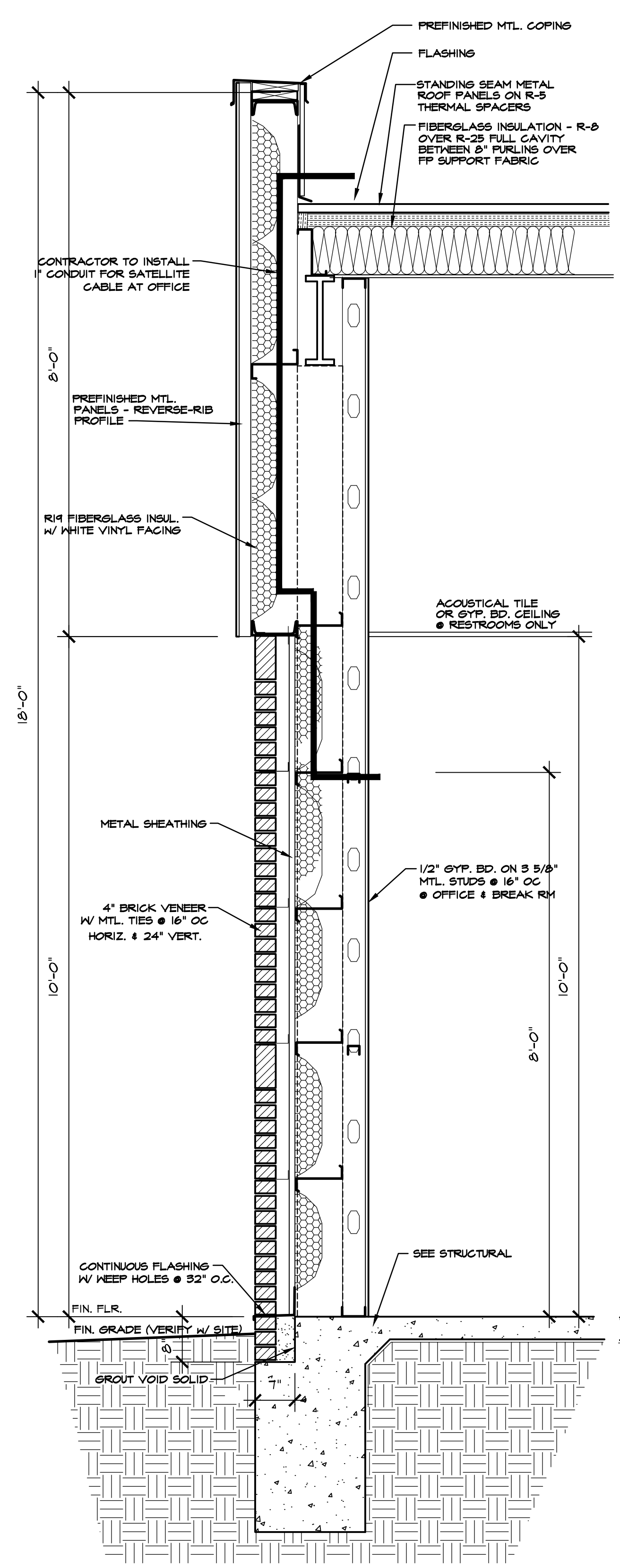
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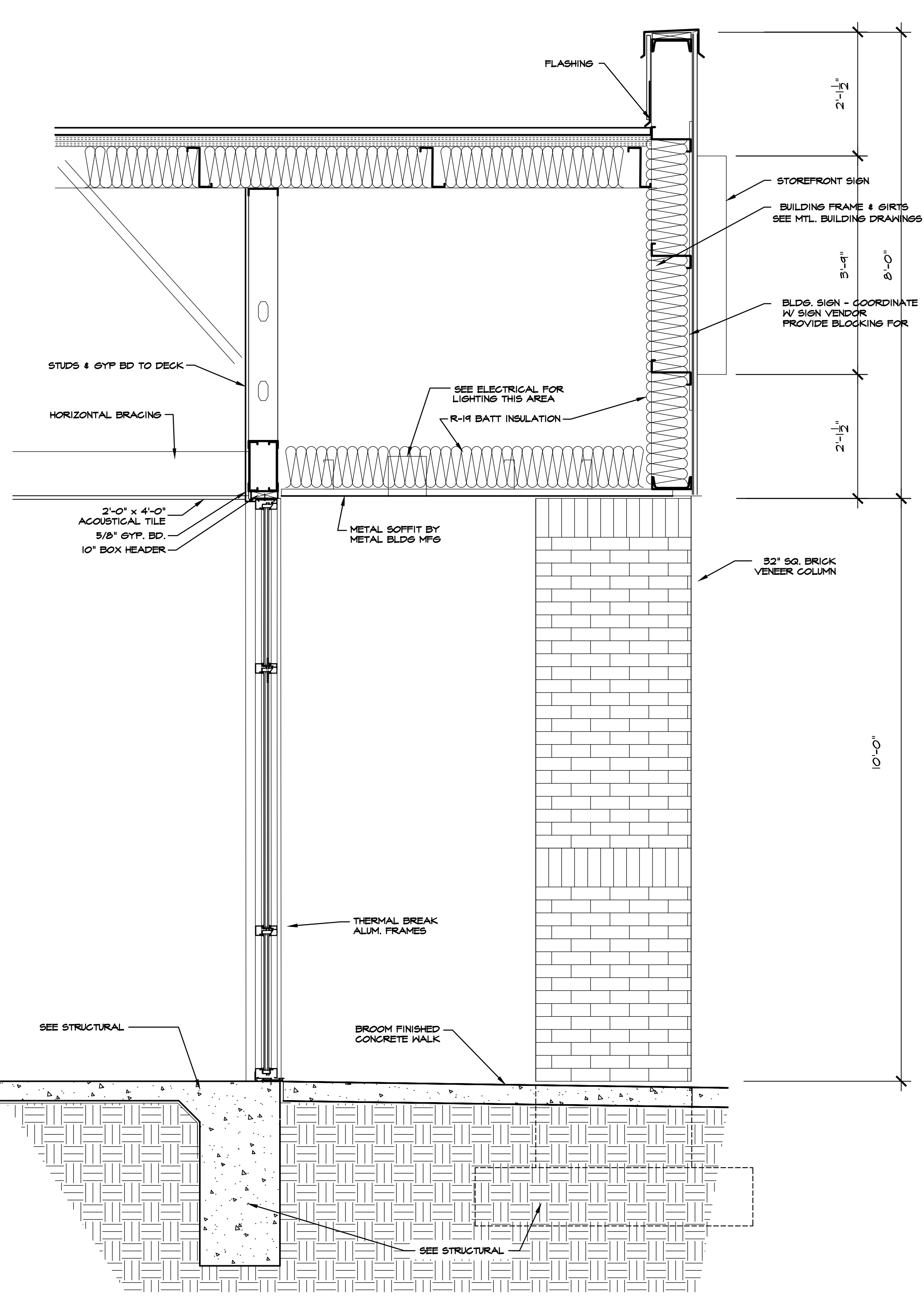
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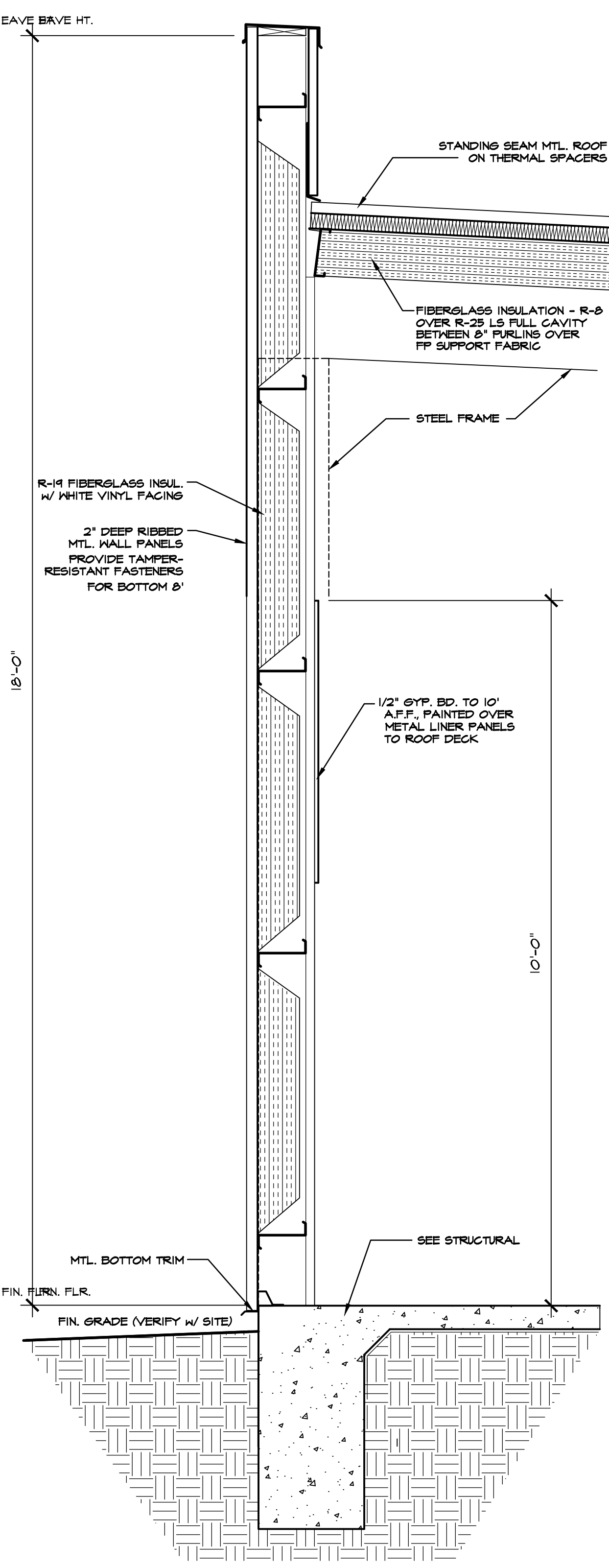
405 DETAIL @ COLUMN
SCALE: 1" = 1'-0"



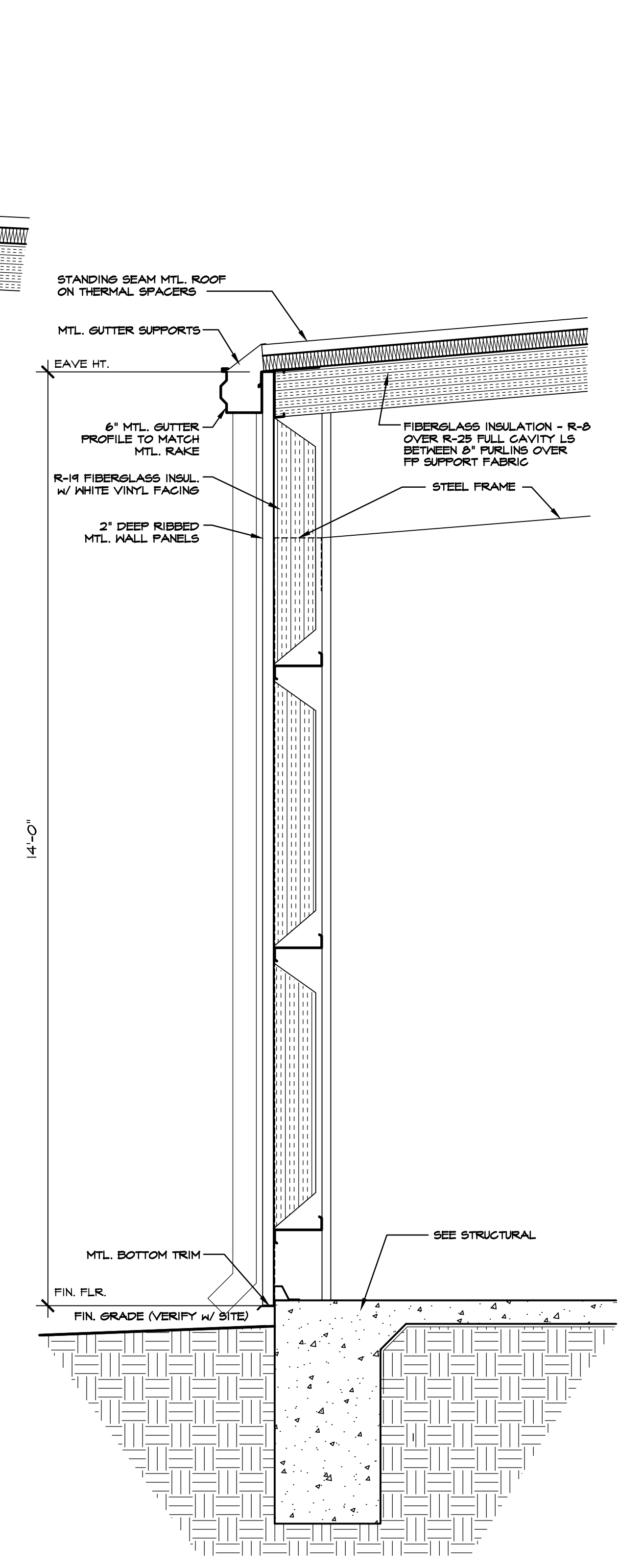
401 WALL SECTION @ FRONT WALL
SCALE: 3/4" = 1'-0"



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



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



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



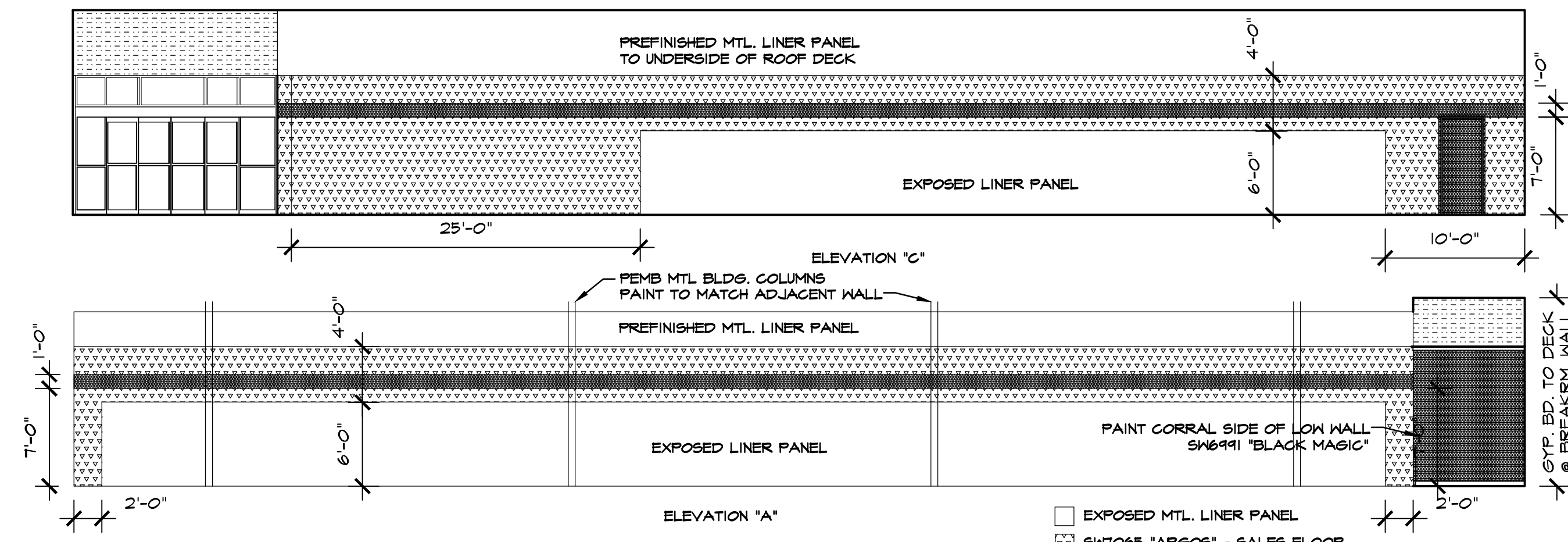
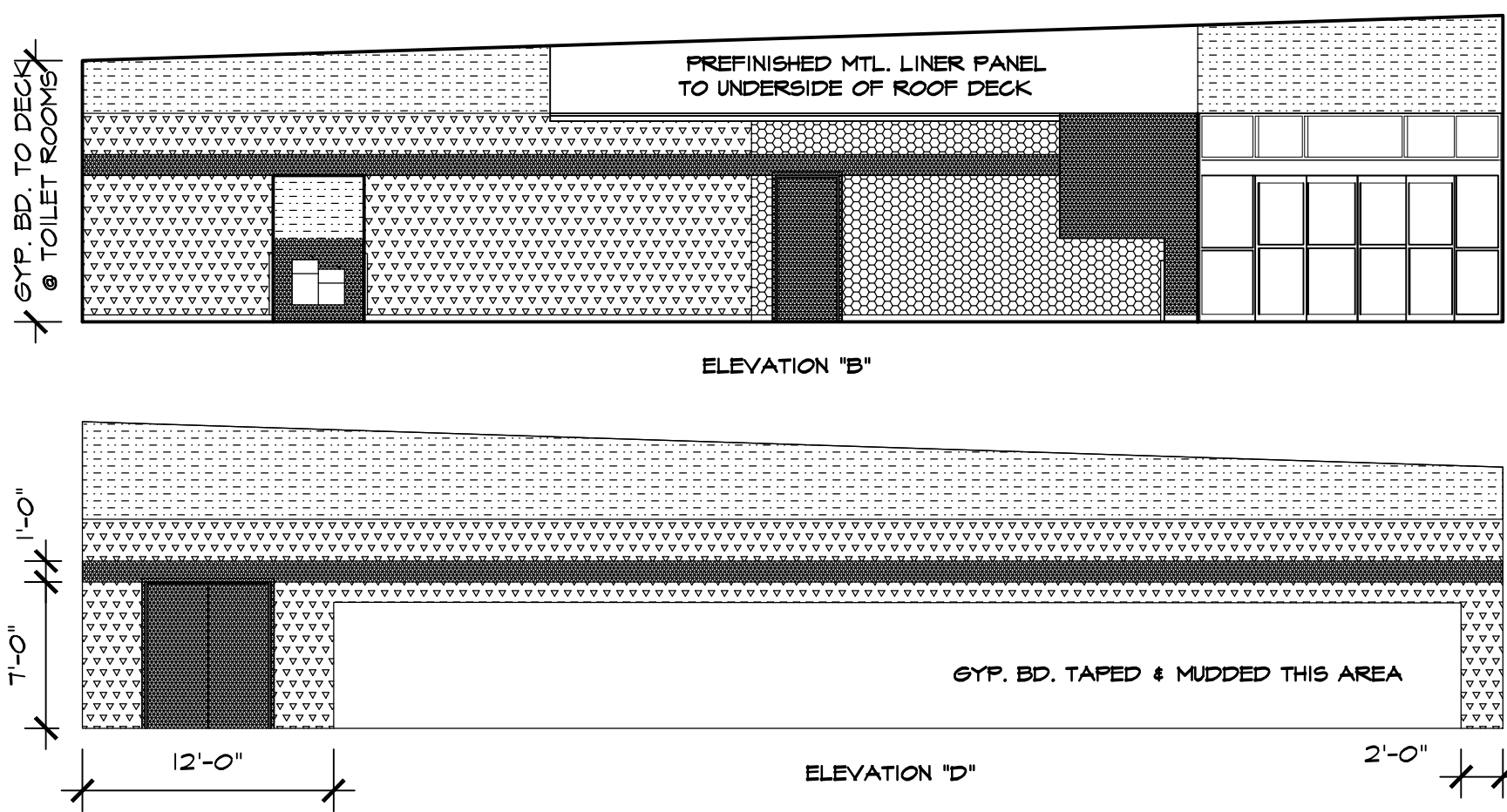
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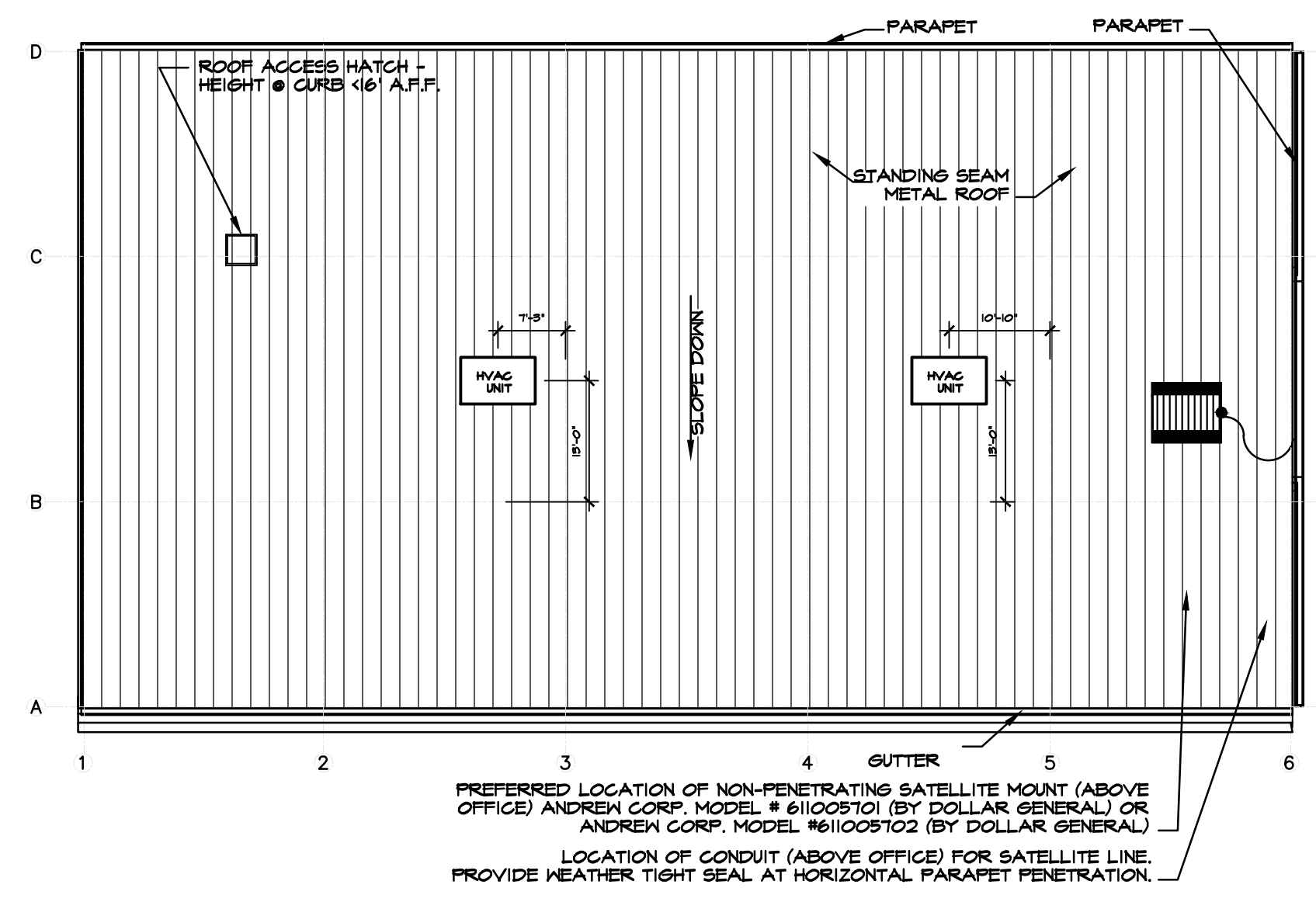
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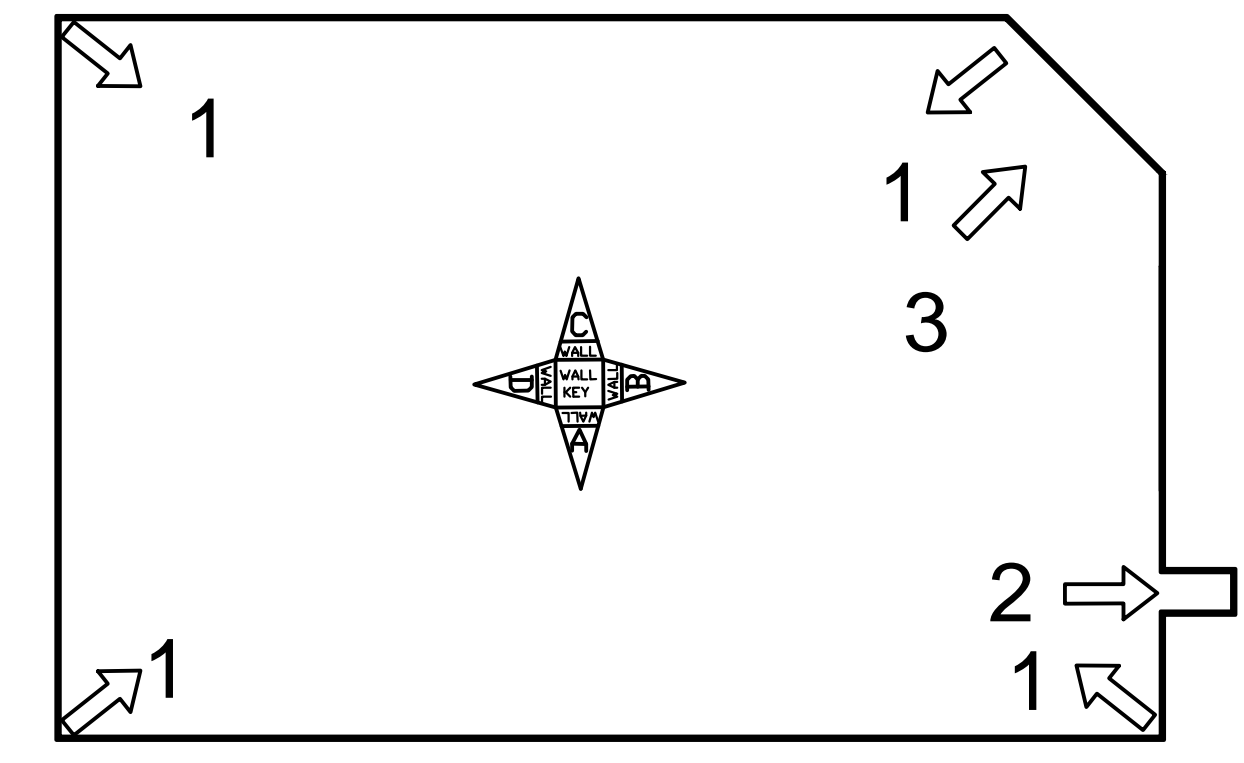
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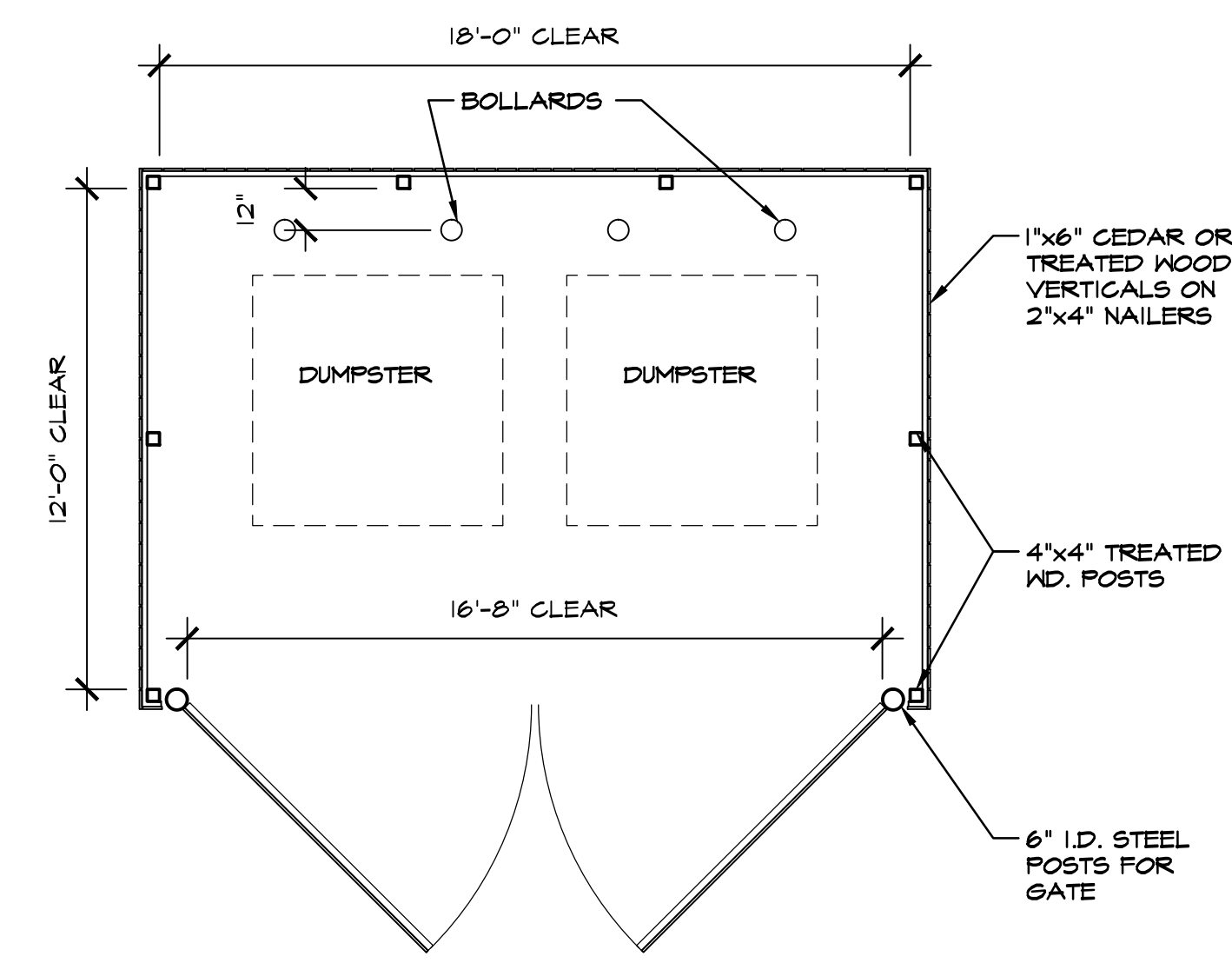
- EXPOSED MTL. LINER PANEL
- ▨ SNT005 "ARGOS" - SALES FLOOR
- ▩ SW6910 "DAISY" YELLOW
- SW6991 "BLACK MAGIC" - OPEN CART CORRAL
- SNT005 "PURE WHITE"



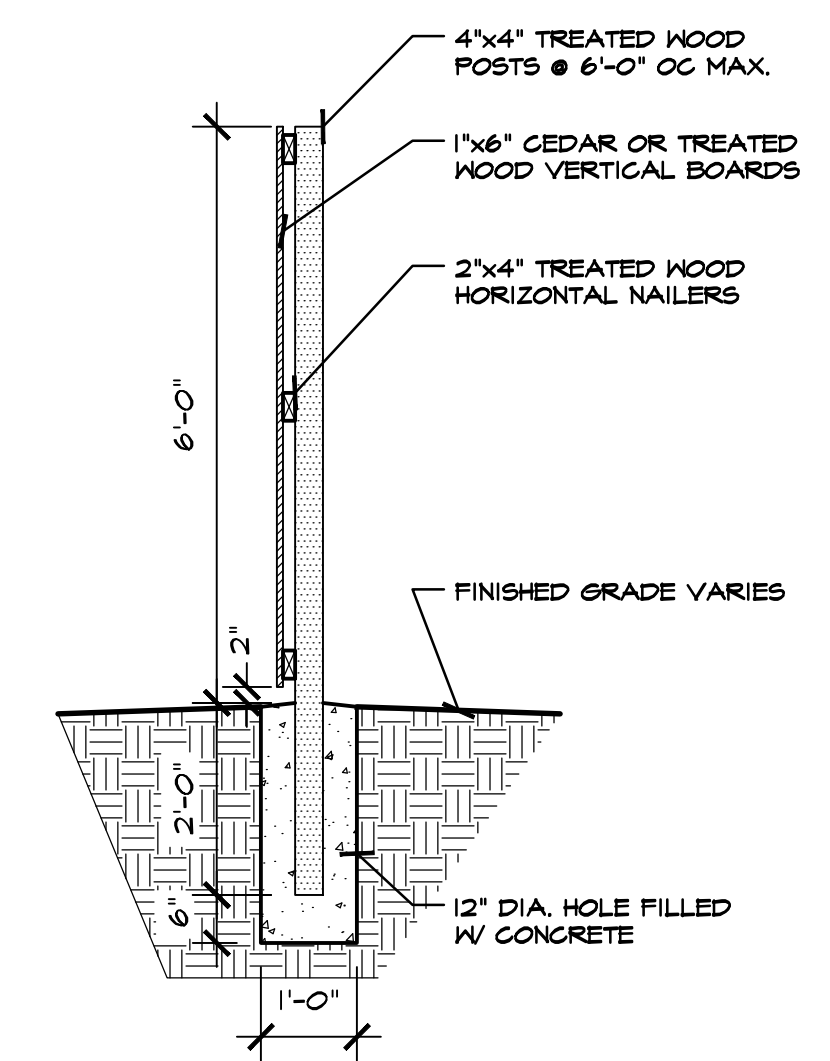
PAINTING DIAGRAM HOLD ON INTERIOR FINISHES UNTIL FURTHER NOTICE



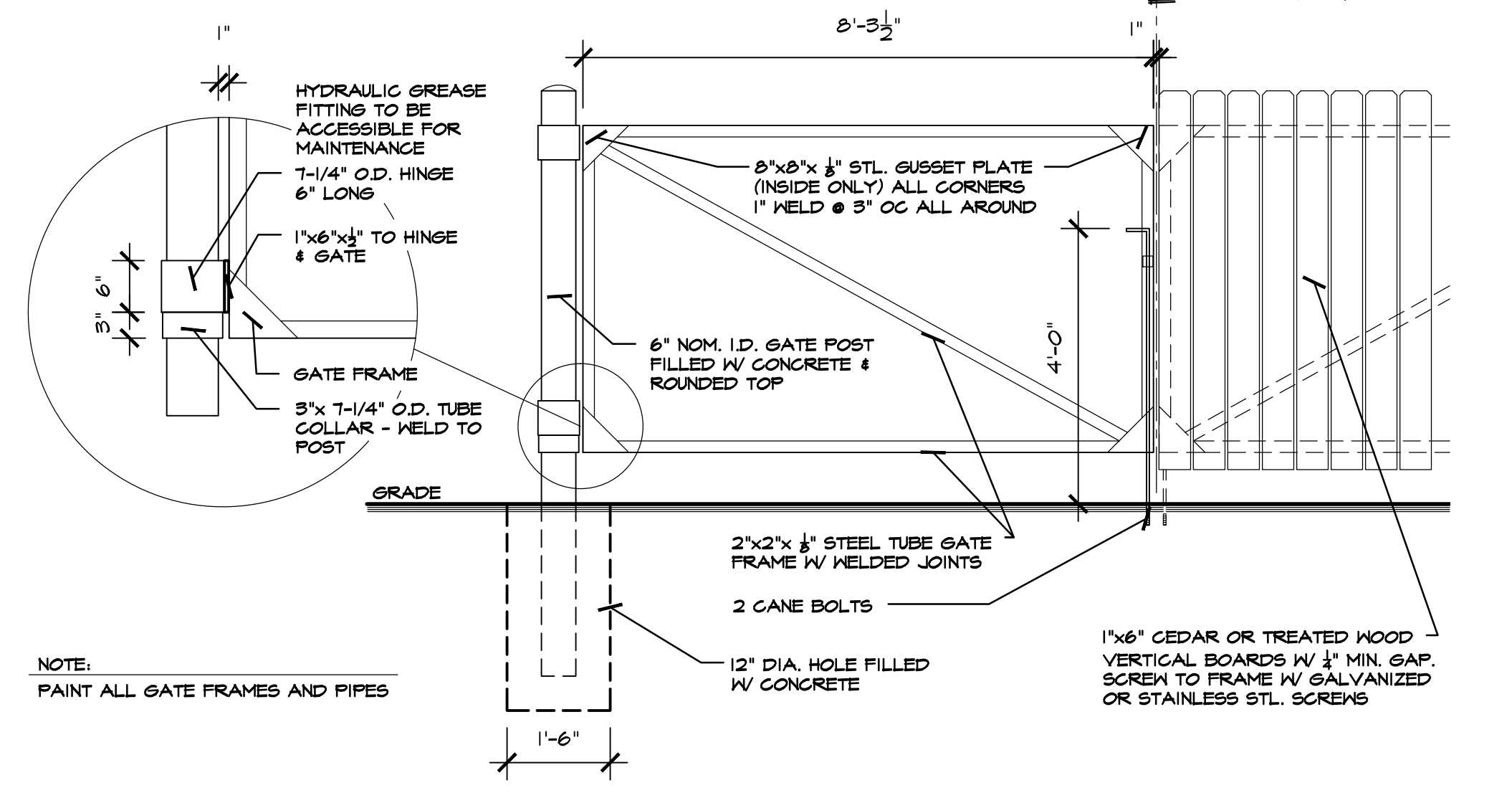
- REQUIRED PHOTOS**
- The following layout shows the required photos to be taken at completion. (make sure the overhead lights are on for your photos)
- From each corner of the stockroom, facing the opposite corner.
 - Hall (in side entrance stores, one picture from each end of the hall)
 - Standing 10' from the entrance facing the entrance.



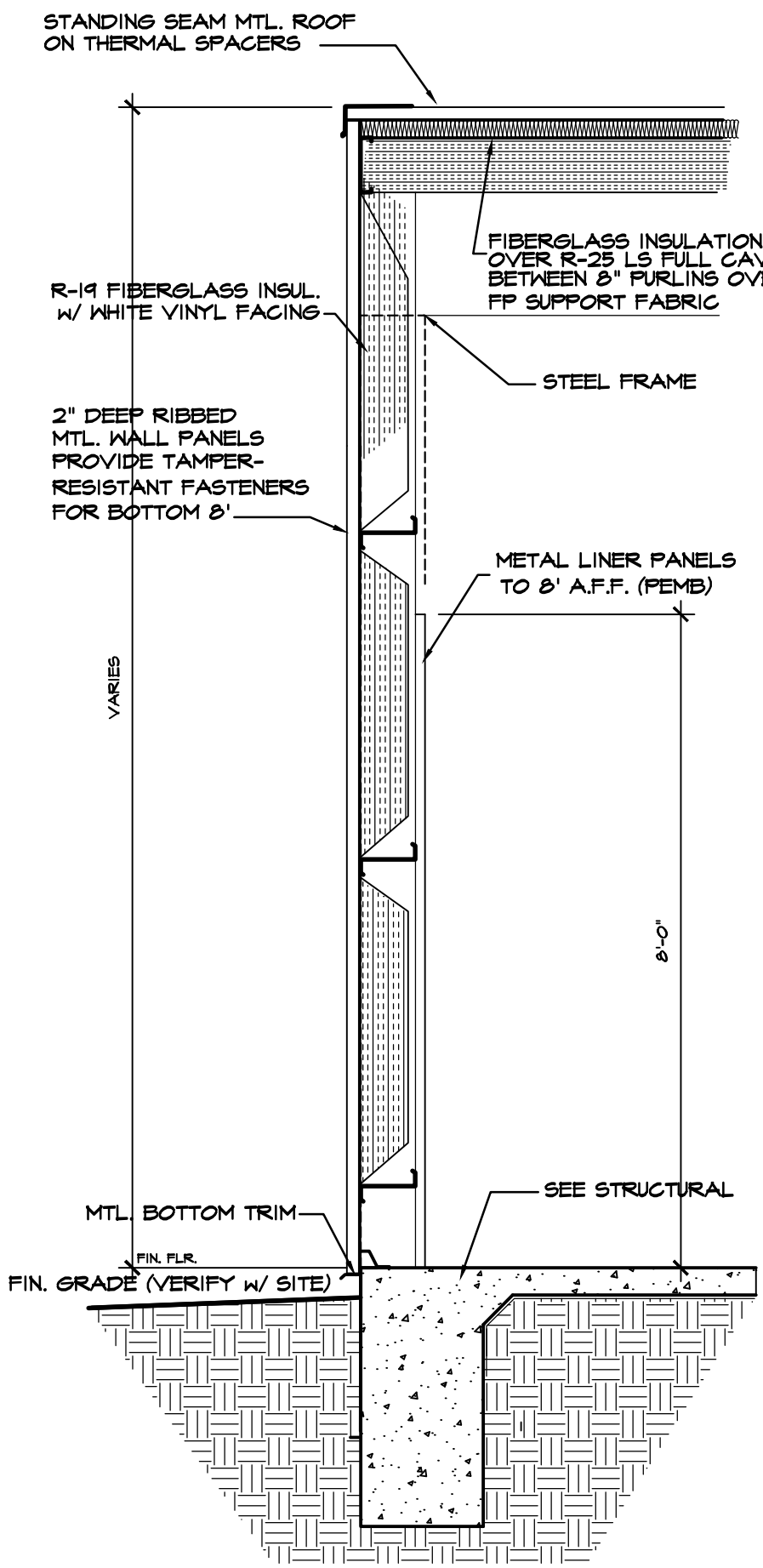
DUMPSTER ENCLOSURE SCALE: 1/4" = 1'-0"



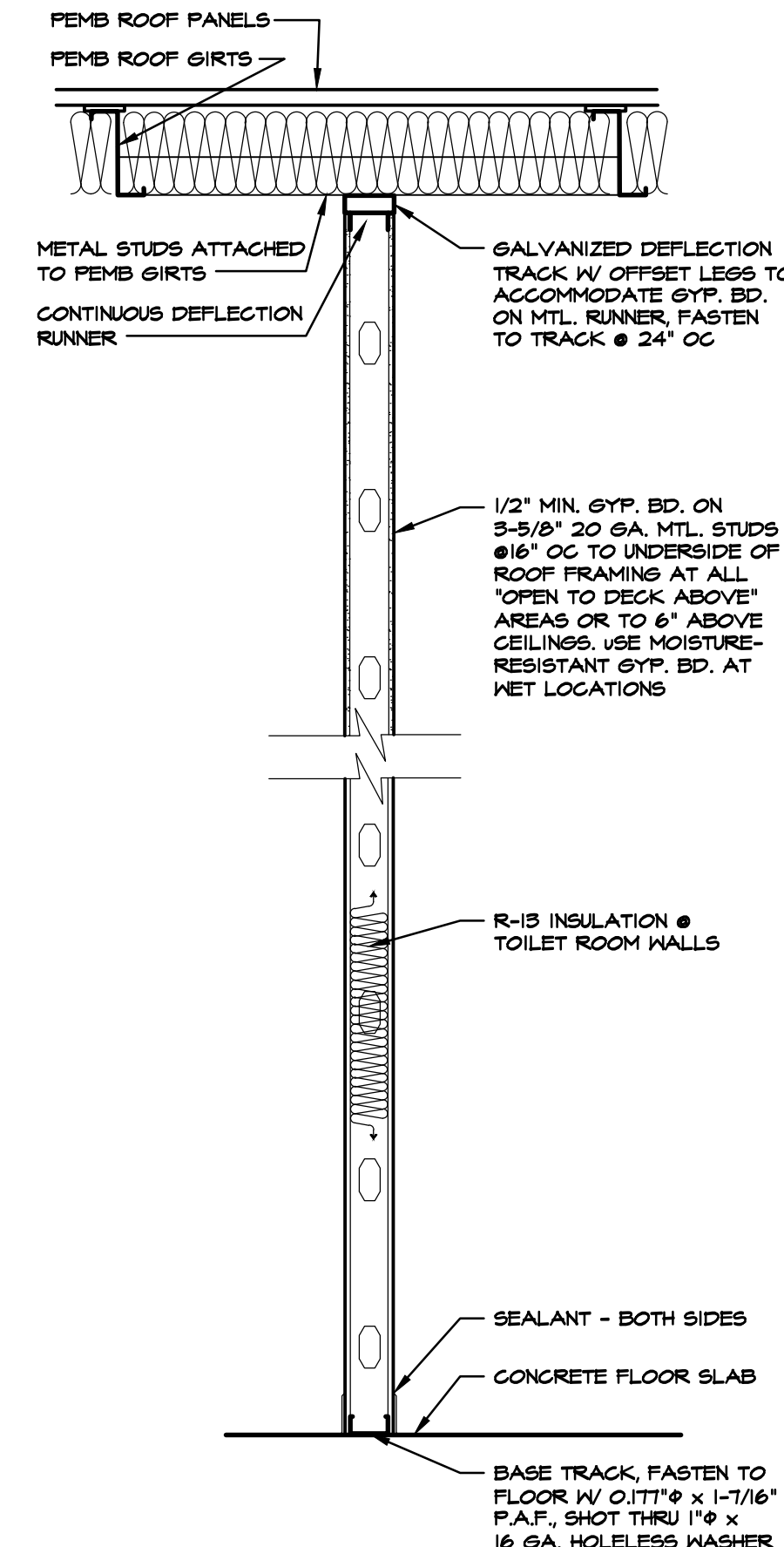
DUMPSTER ENCLOSURE DETAILS SCALE: 1/2" = 1'-0"



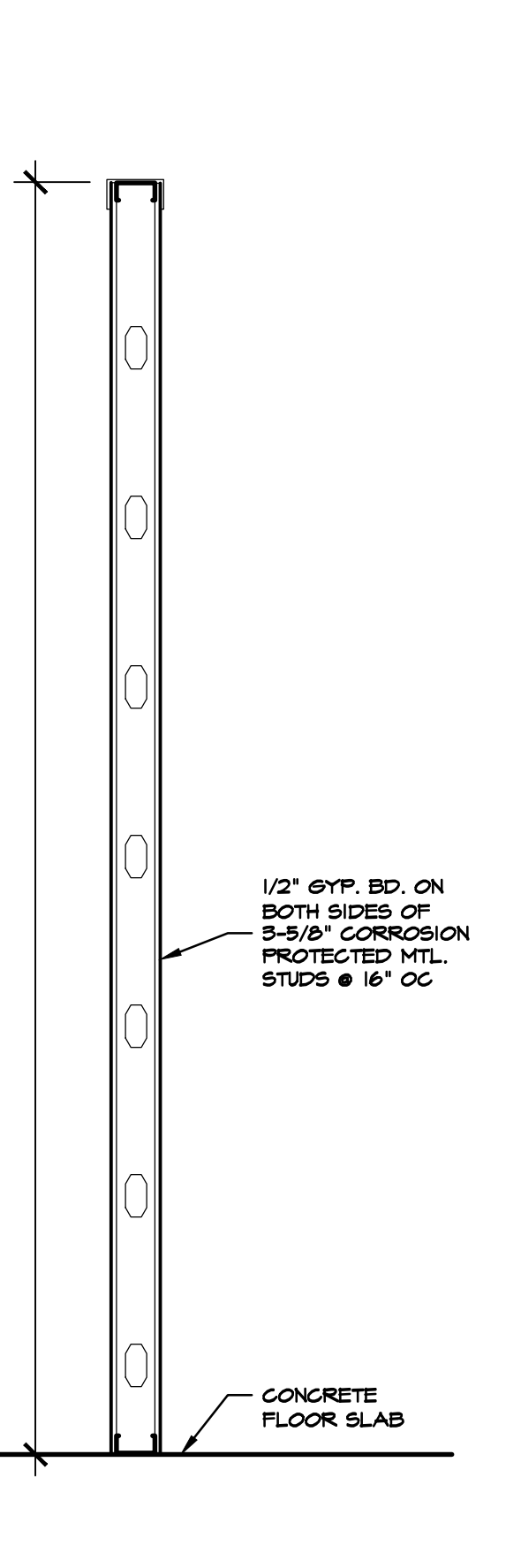
NOTE: PAINT ALL GATE FRAMES AND PIPES



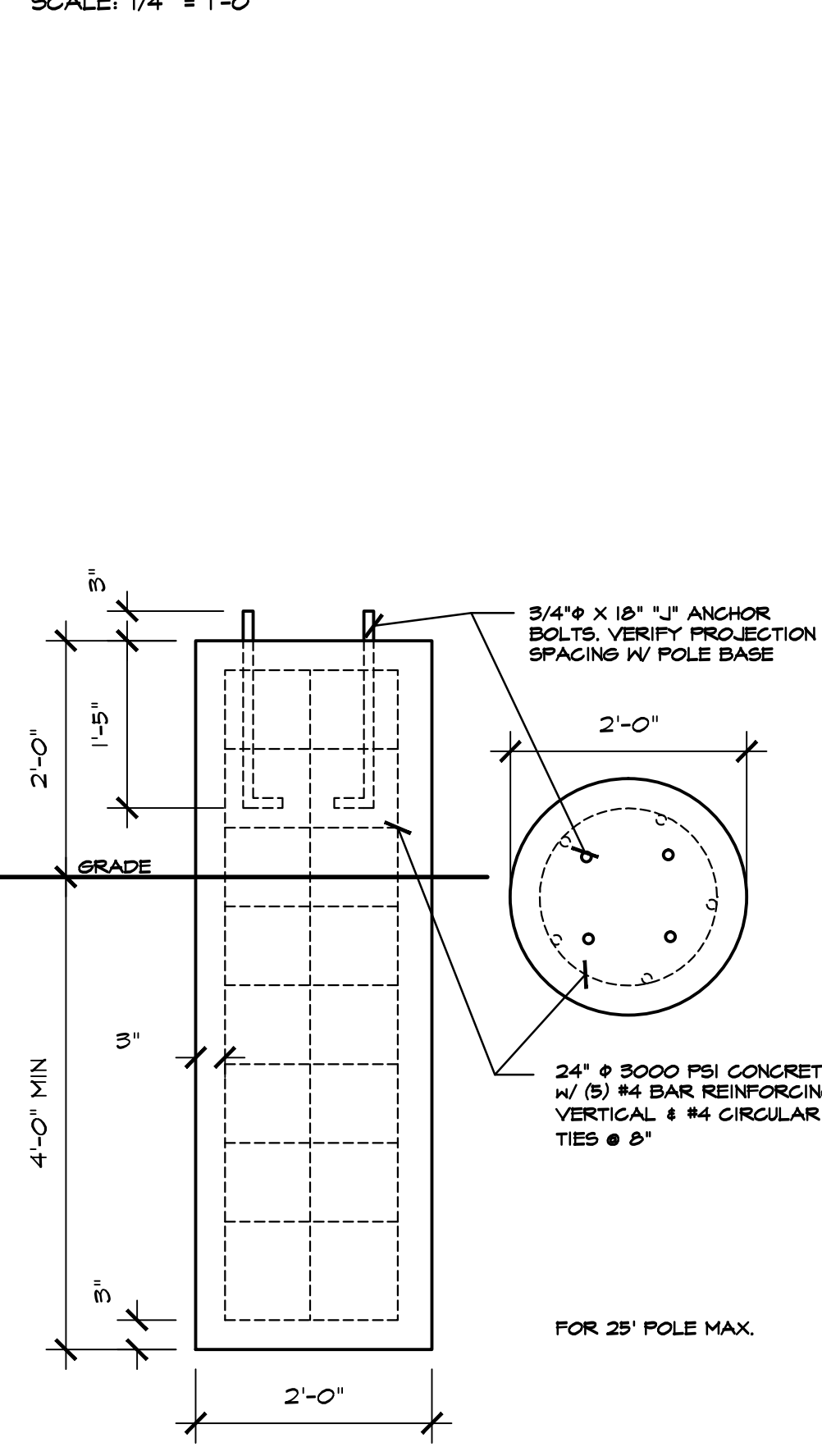
501 WALL SECTION REAR WALL SCALE: 3/4" = 1'-0"



502 TYPICAL PARTITION SCALE: 3/4" = 1'-0"



503 OFFICE WALL SCALE: 3/4" = 1'-0"



504 LIGHT POLE FOOTING SCALE: 3/4" = 1'-0"

REQUIRED NATIONAL ACCOUNT VENDORS:

COMPANY	CONTACTS	PHONE #	REQUIRED ITEMS
RAINBIRD IRRIGATION	LOCAL RAINBIRD DISTRIBUTOR	www.rainbird.com	IRRIGATION SYSTEMS
EUGLID CHEMICAL COMPANY	PHIL BRANDT	811-458-3826 PBrandt@euglidchemical.com	CONCRETE POLISHING SYSTEMS
RETROPLATE SYSTEMS	SCOTT MAXFIELD	888-641-6746 smaxfield@retroplate.com	CONCRETE POLISHING SYSTEMS
ASSA ABLBY ENTRANCE SYSTEMS	ROSS MERKELL	604-526-2880 ross@assabloy.com	AUTOMATIC DOORS AND STORE FRONT GLAZING SYSTEM
COOK & BOARDMAN GROUP	JOE HARRELL	336-831-0673 joharrell@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	678-492-4026 konell@mc cuecorp.com	TRIM KIT, BUMPER GUARDS, CART STOP
CARRIER	HASAN KHALIL BOB ECKHART	413-222-6742 hasankhalil@carrier.com bob.eckhart@carrier.com	HVAC UNITS
ROOF CURB SYSTEMS	CLIFTON REASOR	800-683-5848 gsmith@roofcurb.com	RTU CURB
CURBS PLUS INC.	ALLAN THRAILKILL	888-634-2872 allan.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@nehomeelectric.com	ELECTRICAL SWITCH GEAR
LEDS	MICHAEL STRINGER KYLE KNAPP	420-415-4010 dgoners@leds-llc.com	ELECTRICAL LIGHTING SUPPLIES
D&P CUSTOM LIGHTING	NATIONAL ACCOUNT SALES	800-251-2200	CUSTOM POWER POLES
ASP	CHRIS RUDNITSKI	828-624-1046 crudniski@asp-usa.com	LOW VOLTAGE & VOICEDATA
GRAYBAR	JEROME BAINISTER	615-745-5202 ext. 615-424-2189 cell dollargeneral@graybar.com	CABLE TRAY
EMERSON CLIMATE TECHNOLOGIES	http://dollargeneralbid.ecsolutions.net		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	205-753-8773 dollargeneral@atcassociates.com	www.atcassociates.com
BUILDING AND EARTH SCIENCES, INC.	MATT ADAMS	205-836-6300 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 HEINER	710-424-6200 #3030 teresa.heiner@psusa.com	www.pslusa.com
TERRACON	JOHN MEADOW	710-625-0715 #353 dollargeneral@terracon.com	www.terracon.com

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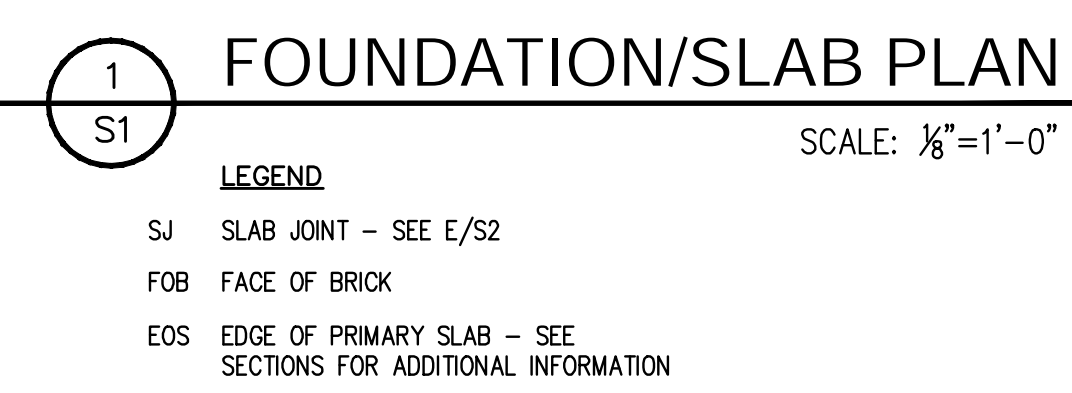
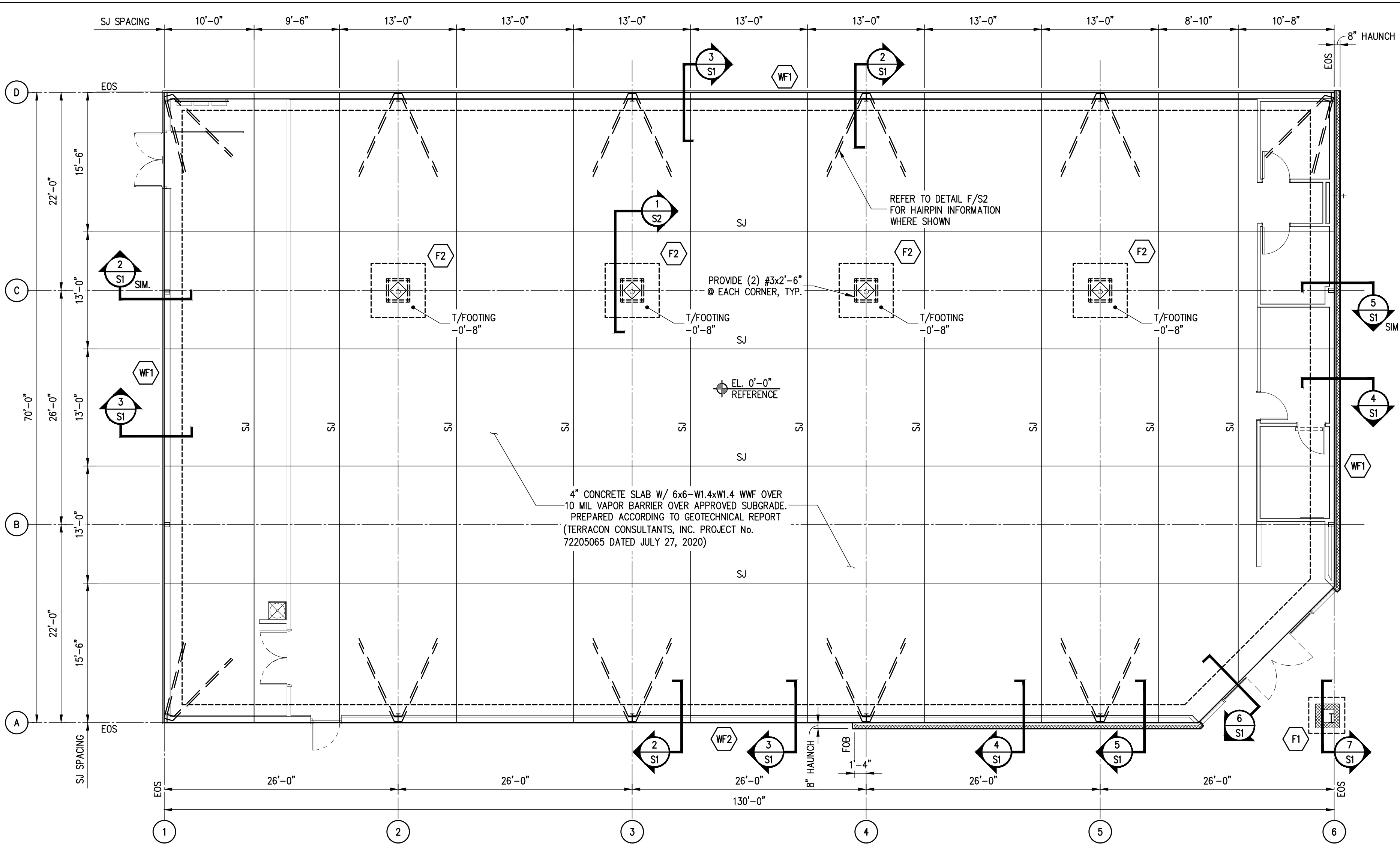
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NOTES:

- CONFIRM ALL DIMENSIONS W/ ARCHITECTURAL DRAWINGS. REPORT DISCREPANCIES PRIOR TO CONSTRUCTION.
- PROVIDE (2) #3x3'-0" LONG IN TOP OF SLAB @ ALL RE-ENTRANT CORNERS NOT INTERSECTING A SLAB JOINT.
- FOOTING SIZES AND REINFORCING ARE PRELIMINARY AND SHALL NOT BE USED FOR CONSTRUCTION. CONTRACTOR SHALL FURNISH METAL BUILDING REACTIONS FOR FINAL DESIGN.

FOOTING SCHEDULE

TYPE	VOLUME OF CONCRETE	REINFORCING
F1	0.5 CY	21 lbs.
F2	3.7 CY	163 lbs.
WF1	4.0SF x CONT.	6.3 lbs./ft.
WF2	5.0SF x CONT.	8.4 lbs./ft.

FOOTING SIZES & REINFORCING ARE PRELIMINARY & SHALL NOT BE USED FOR CONSTRUCTION. CONTRACTOR SHALL FURNISH METAL BUILDING REACTIONS FOR FINAL DESIGN.

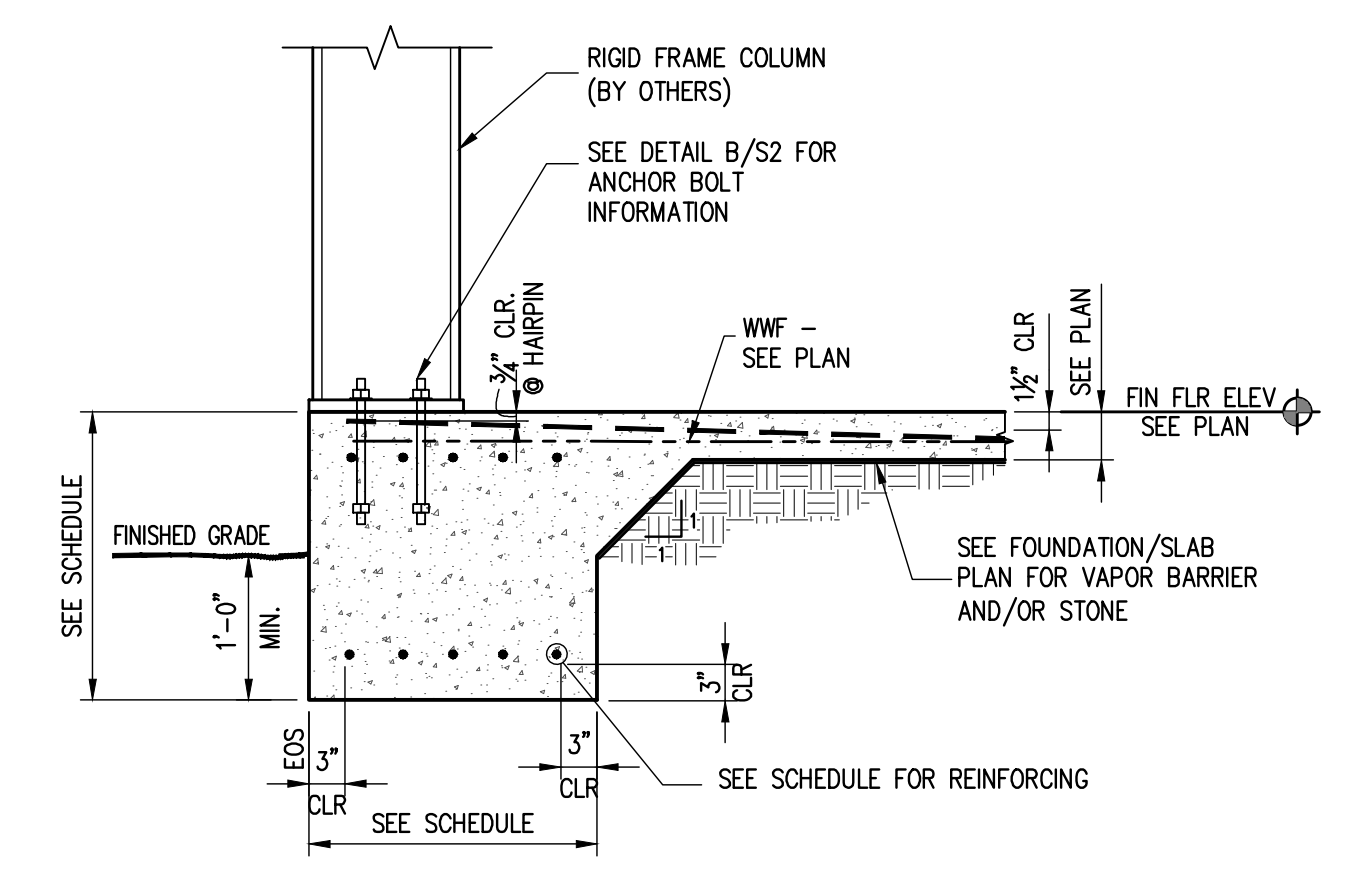
CONTRACTOR SHALL PROVIDE OWNER W/ UNIT COSTS @ TIME OF BIDDING AS FOLLOWS:

FOR LARGER FOOTINGS ADD:

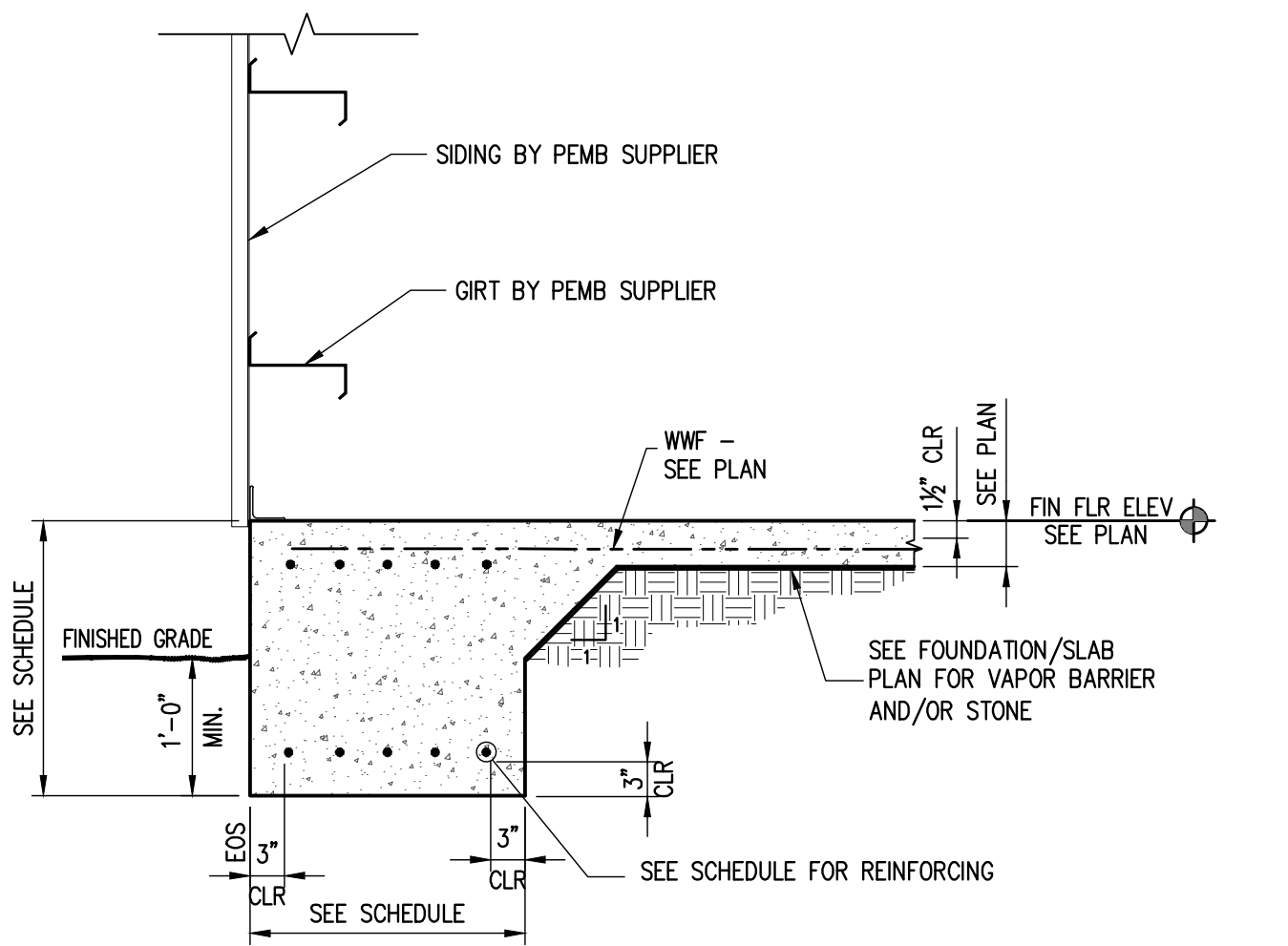
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- \$/CY CONCRETE
- \$/TON REINFORCING

FOR SMALLER FOOTINGS DEDUCT:

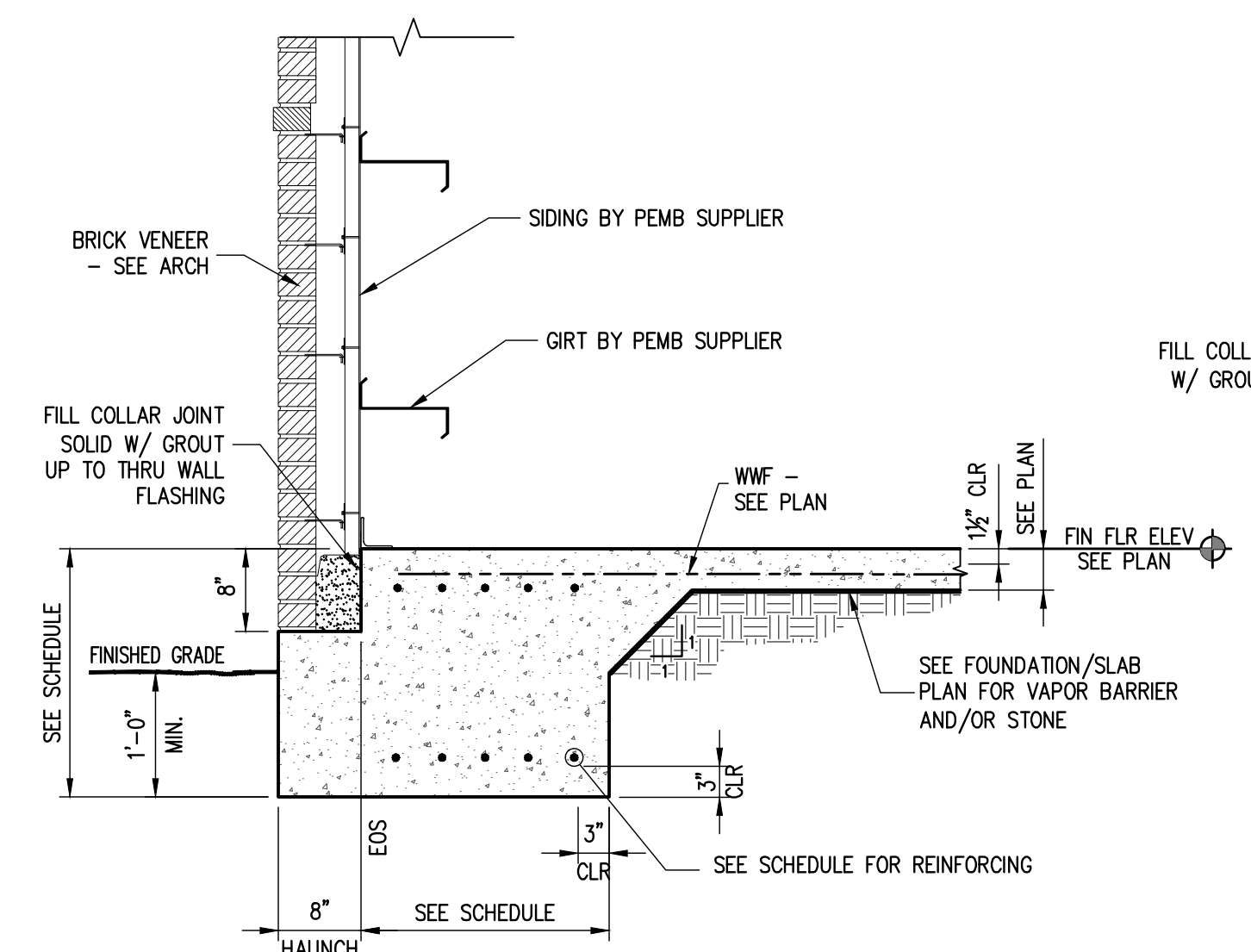
- \$/CY EXCAVATION
- \$/CY CONCRETE
- \$/TON REINFORCING



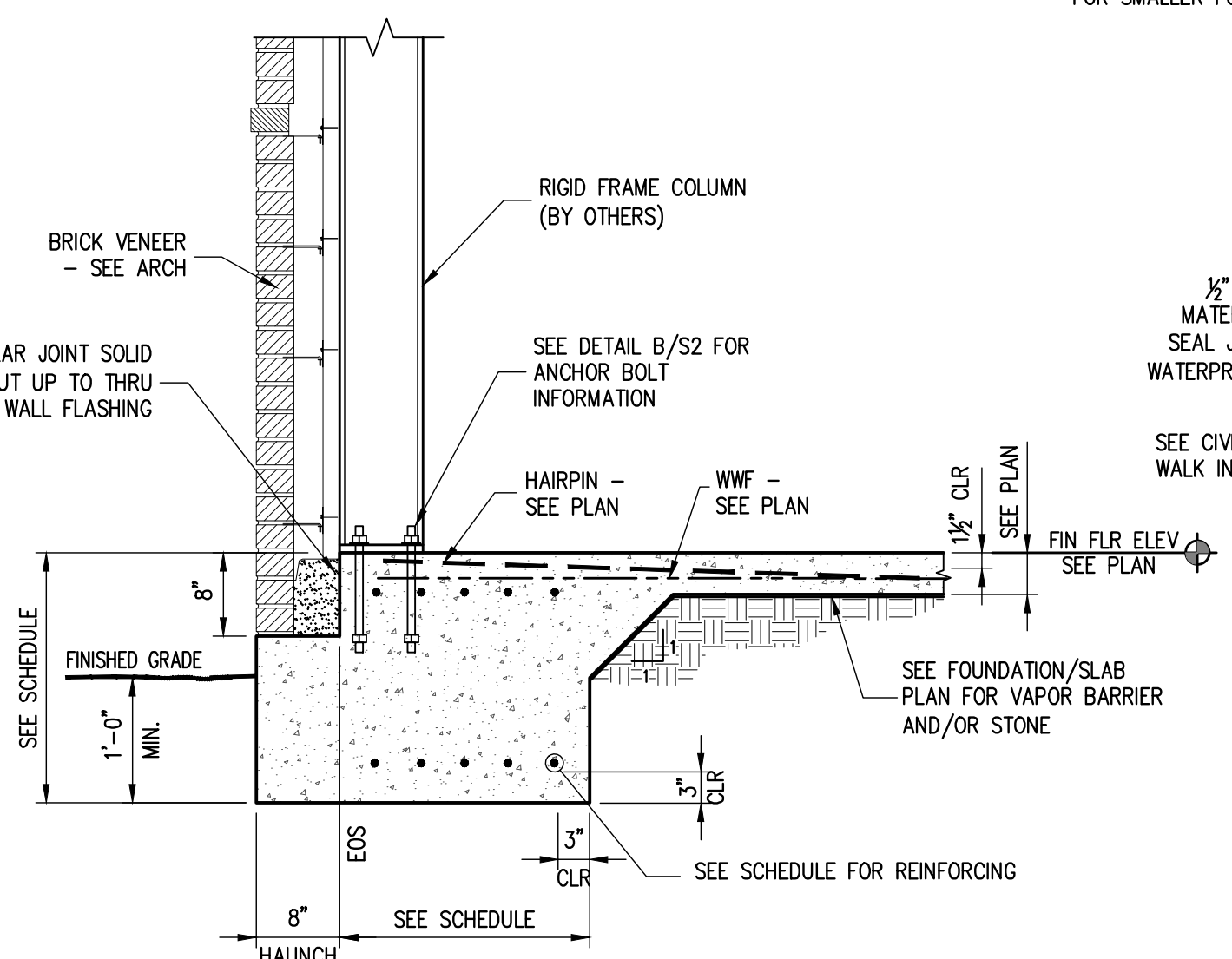
2 SECTION
SCALE: 3/4"=1'-0"



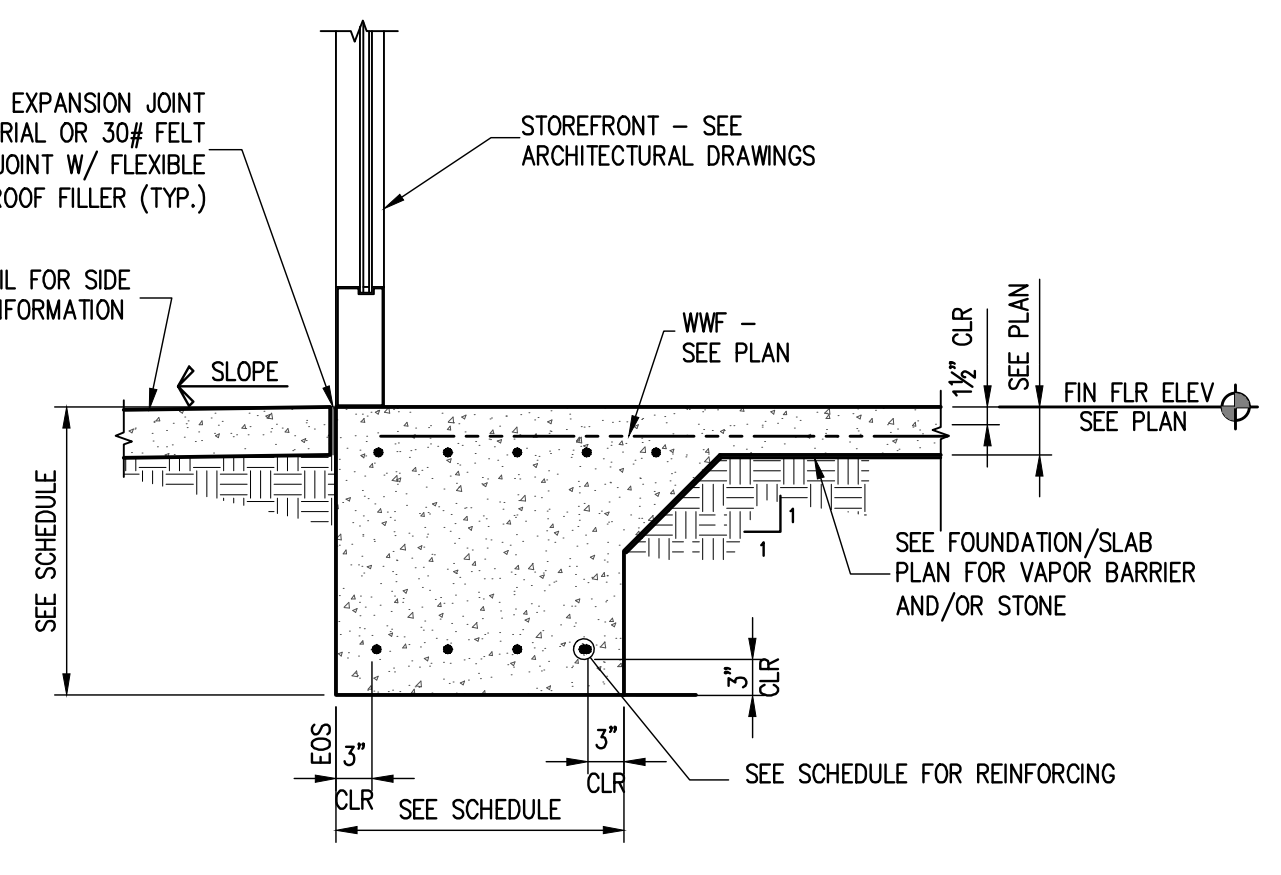
3 SECTION
SCALE: 3/4"=1'-0"



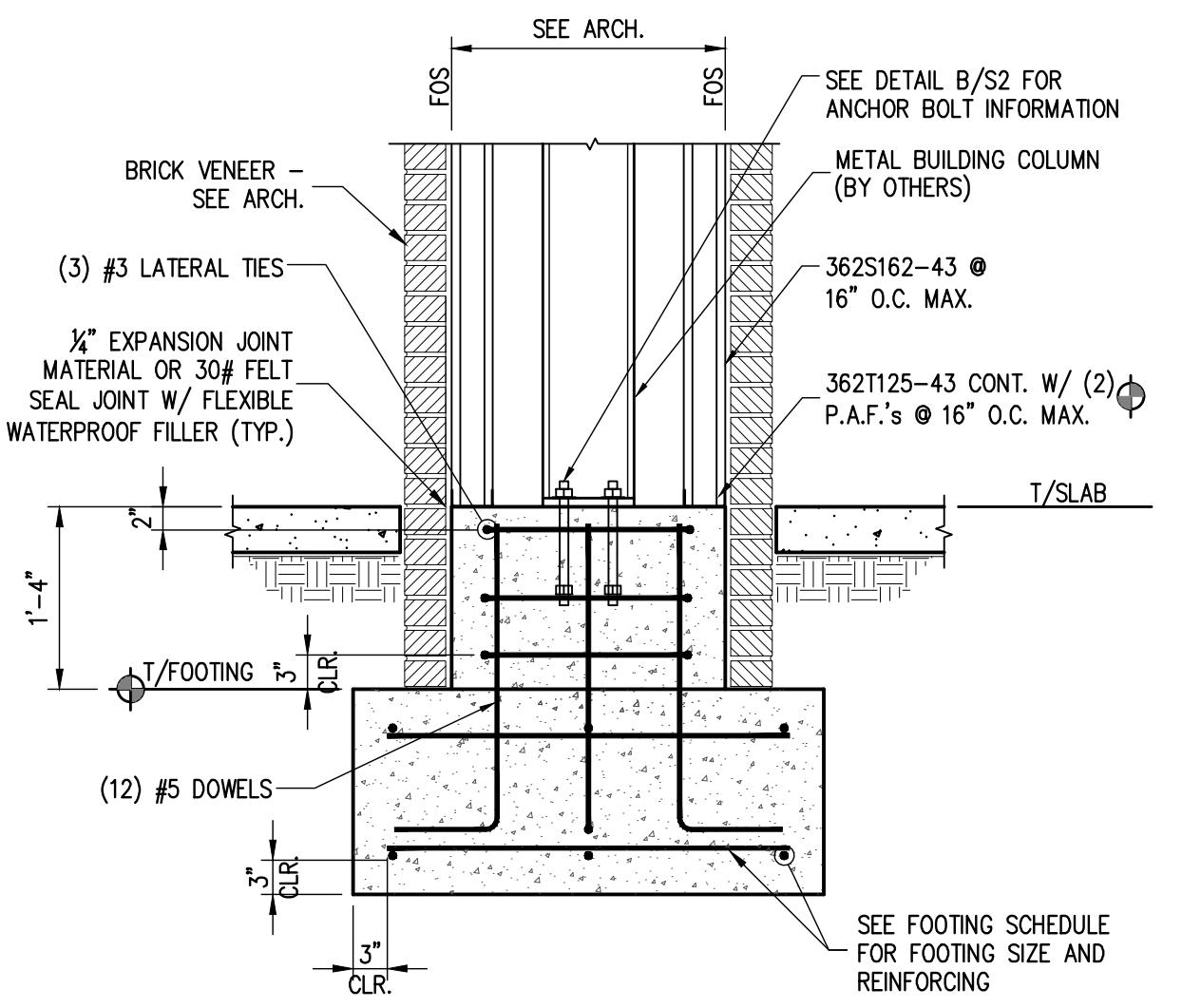
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SCALE: 3/4"=1'-0"



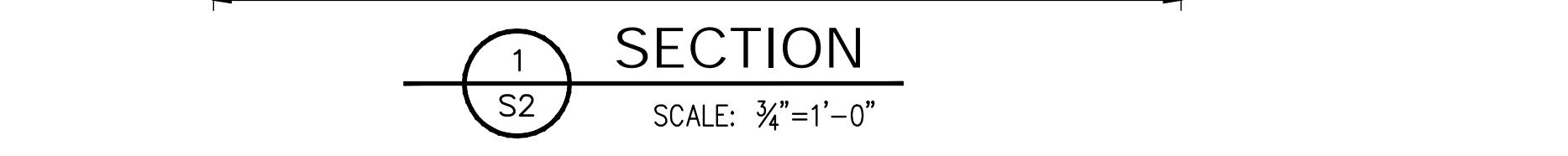
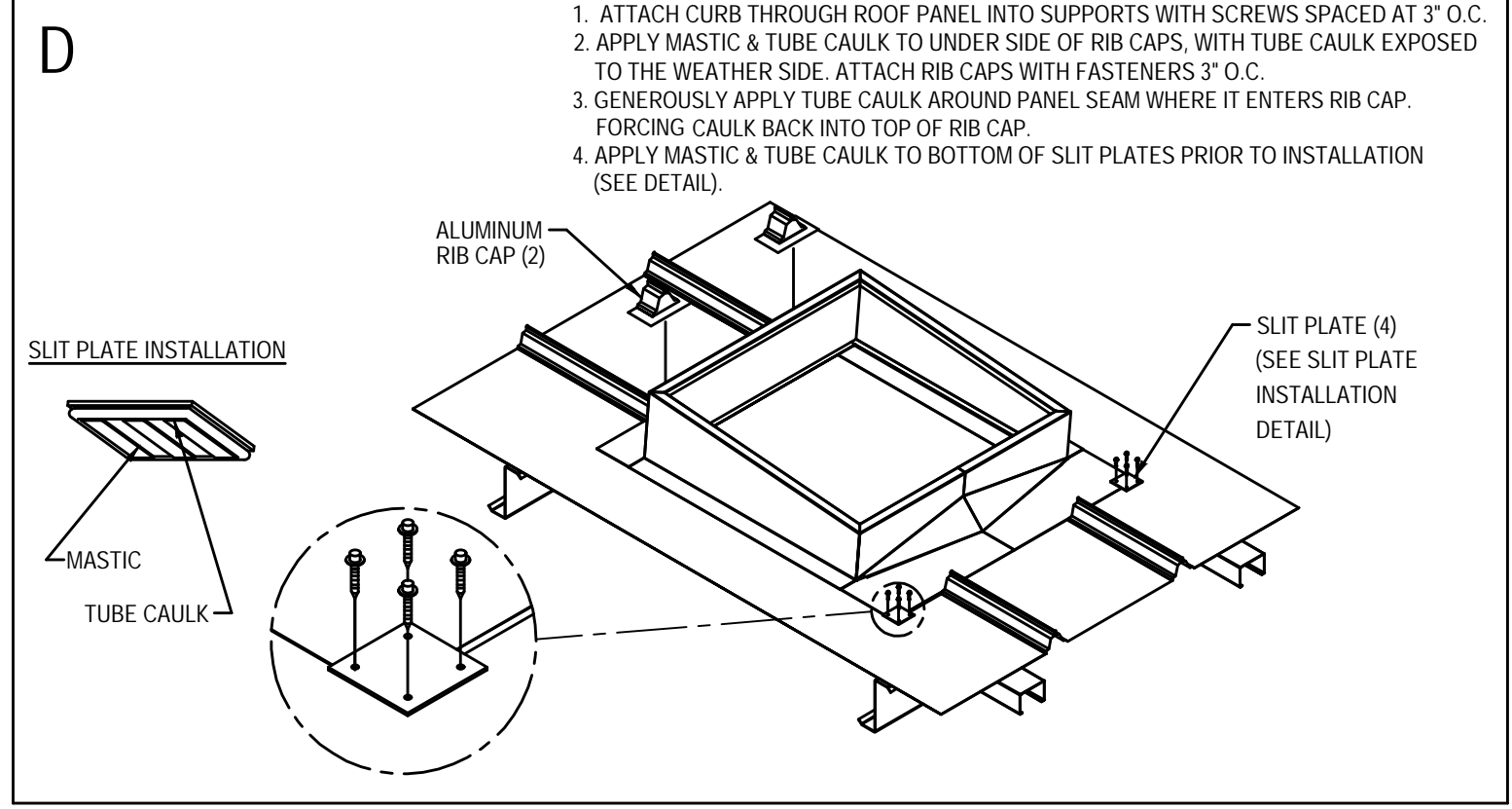
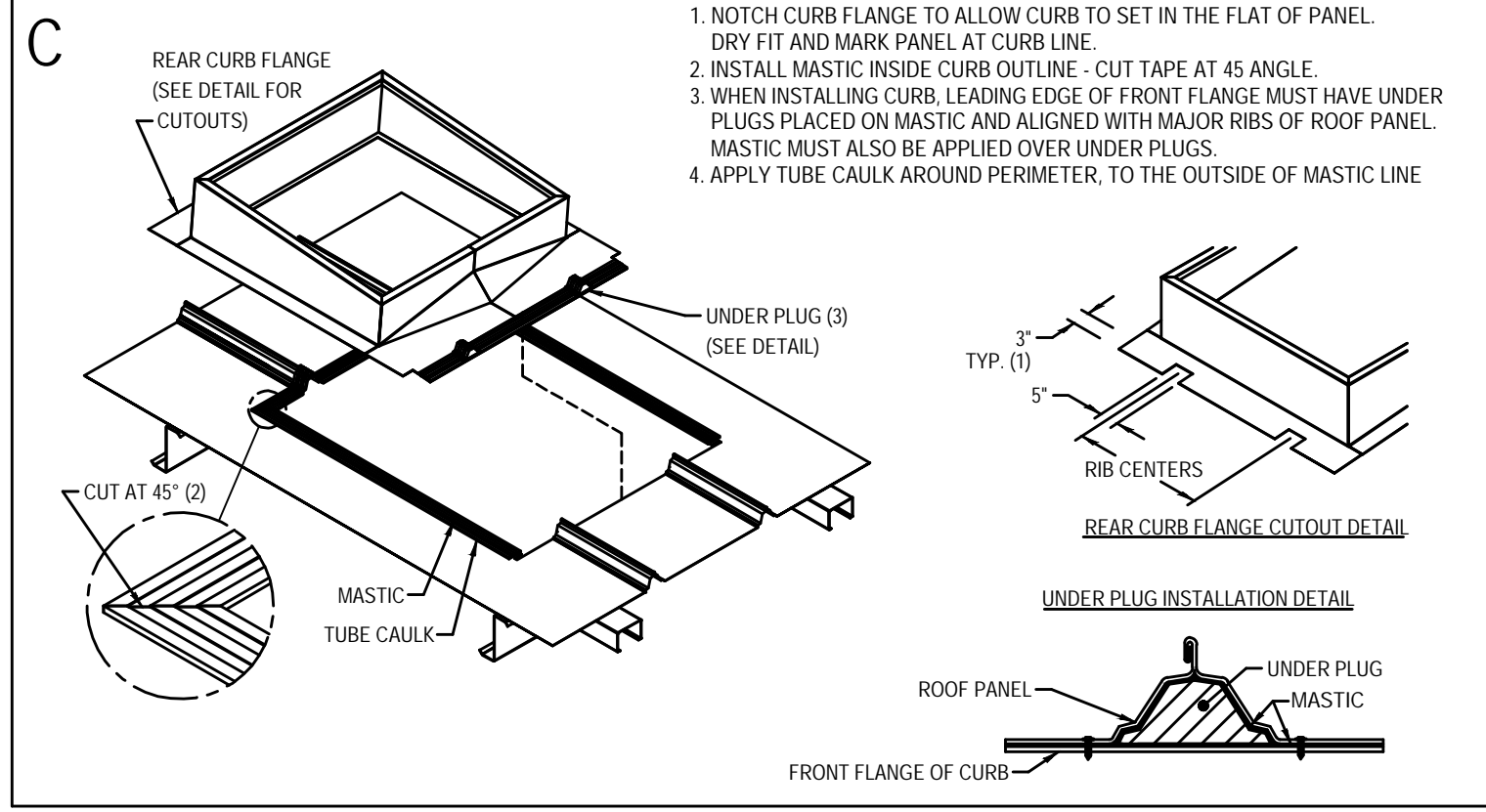
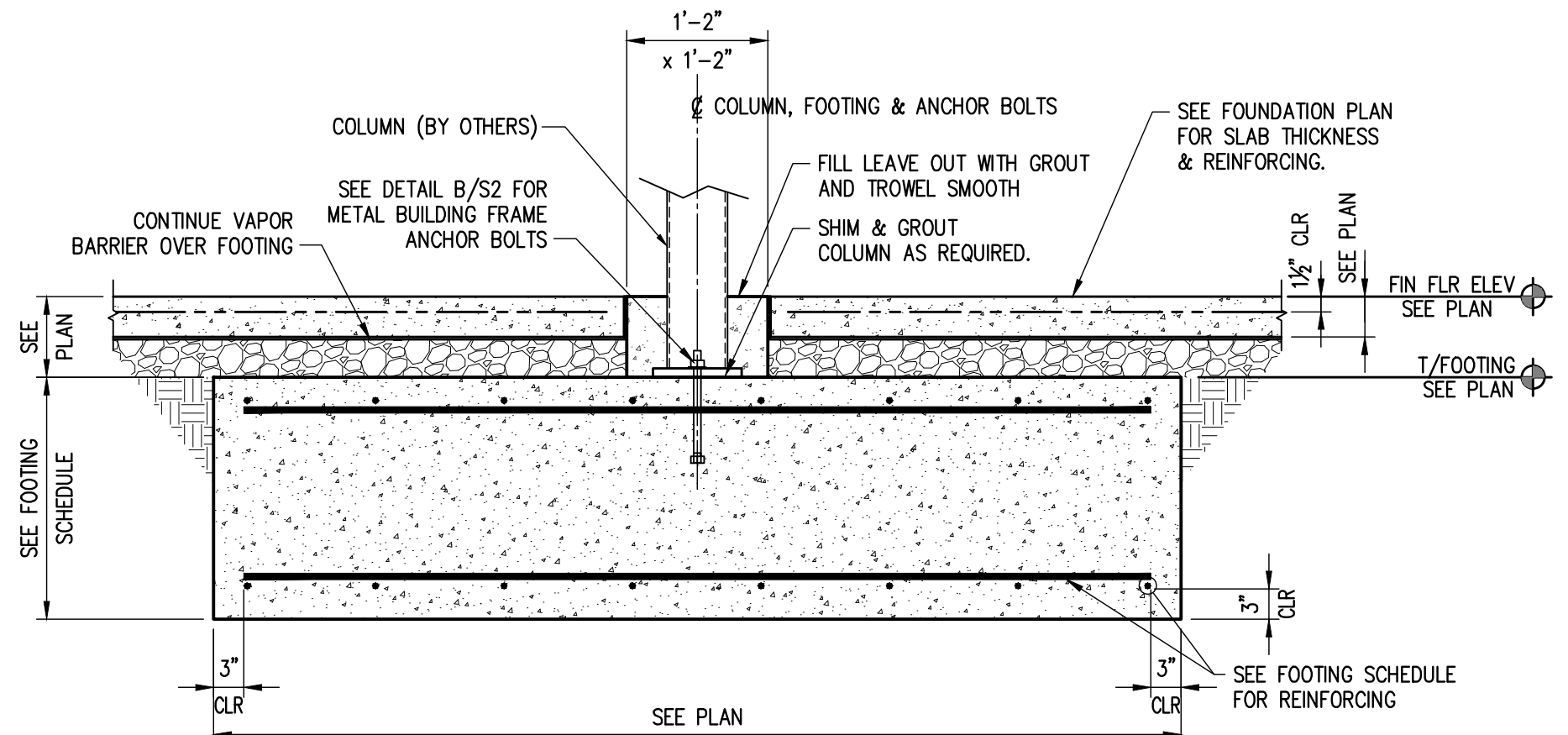
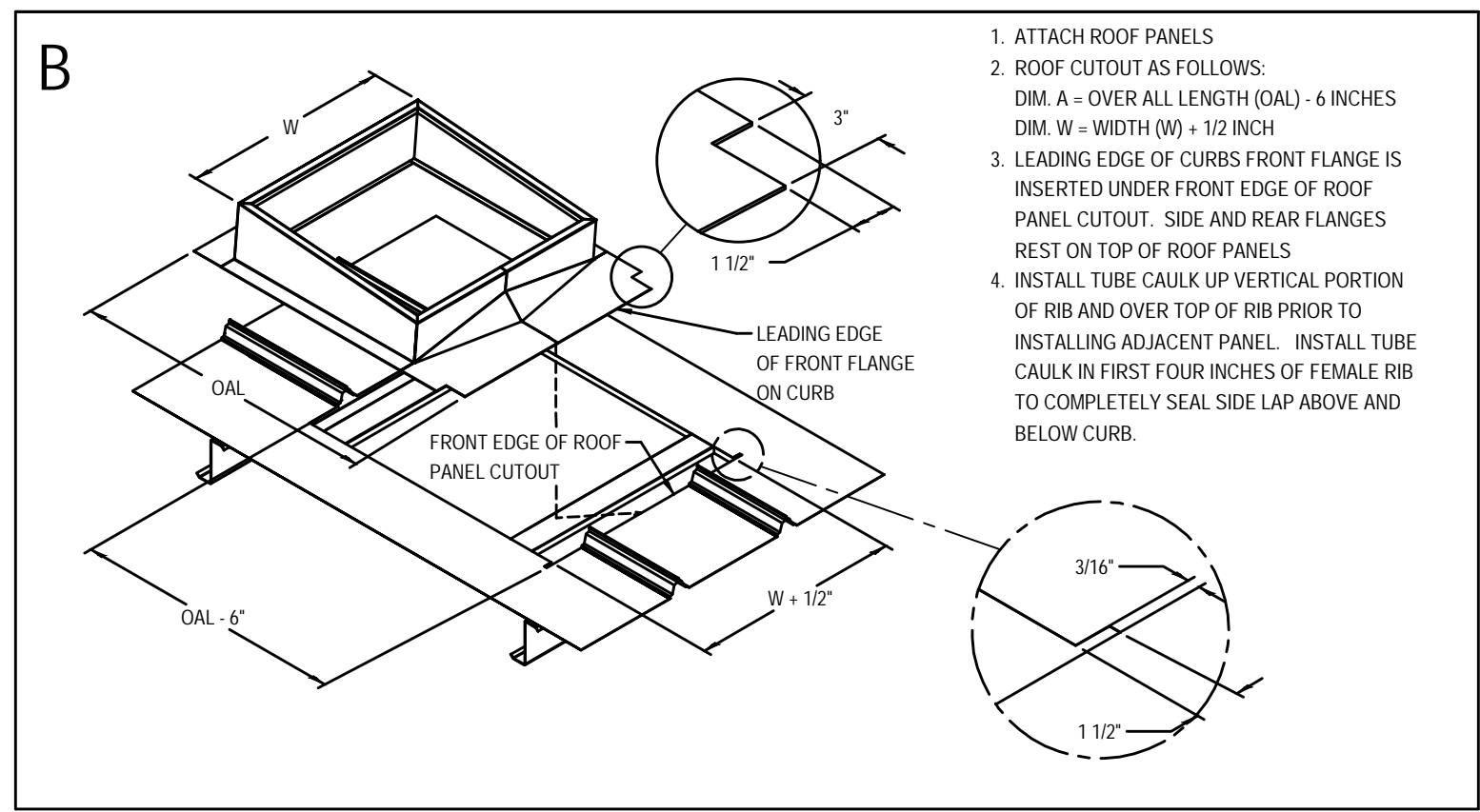
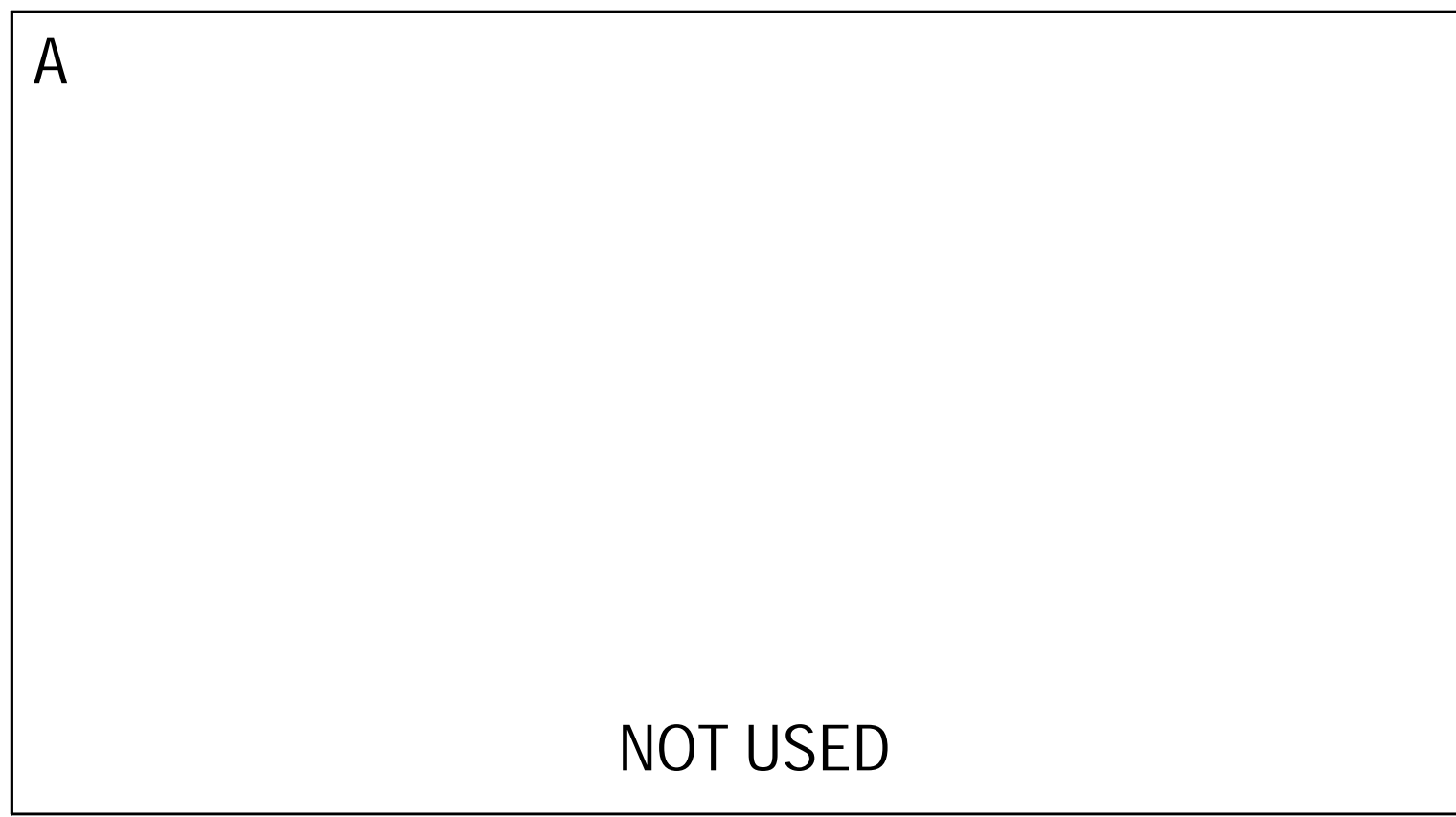
5 SECTION
SCALE: 3/4"=1'-0"



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



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

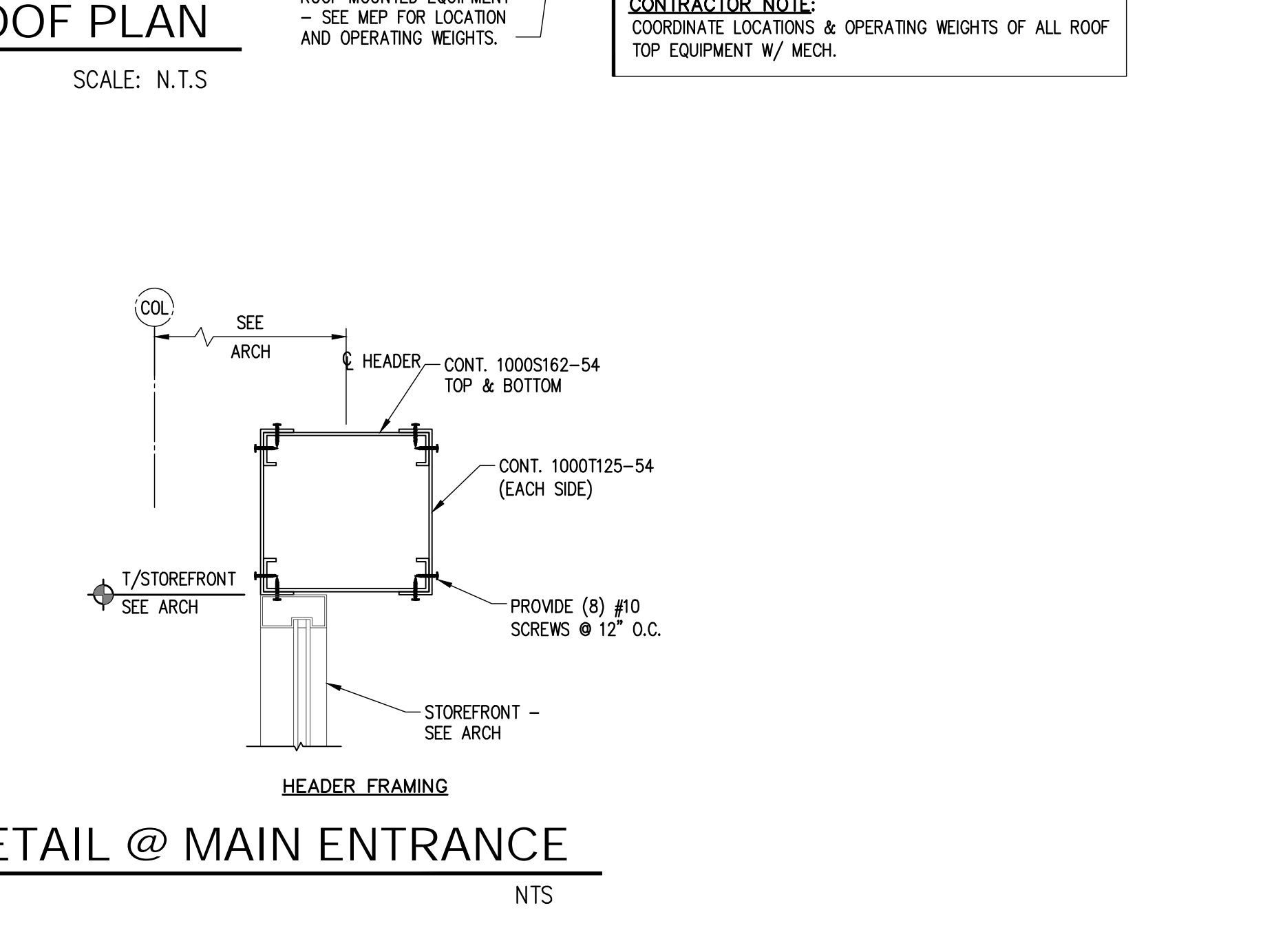
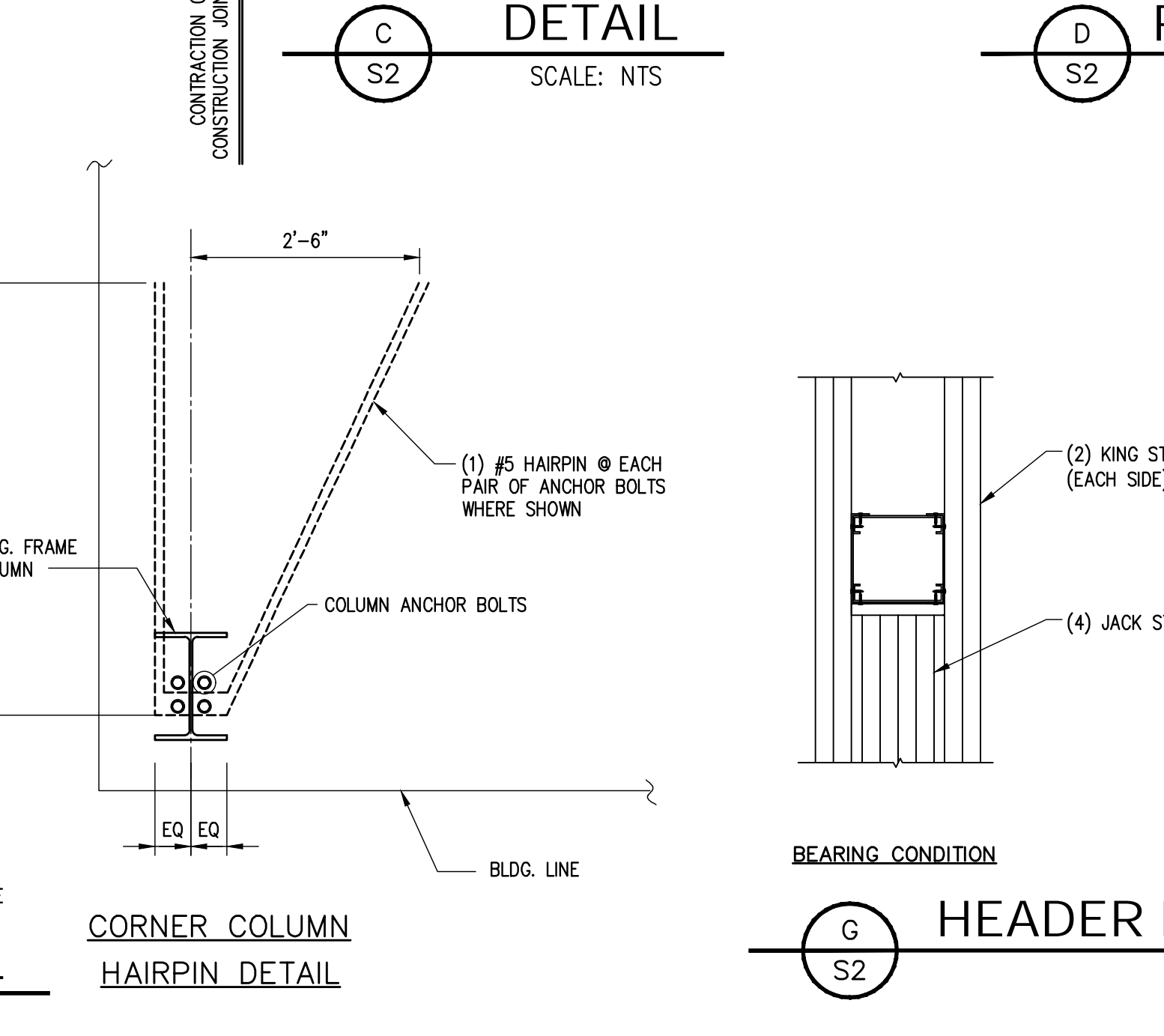
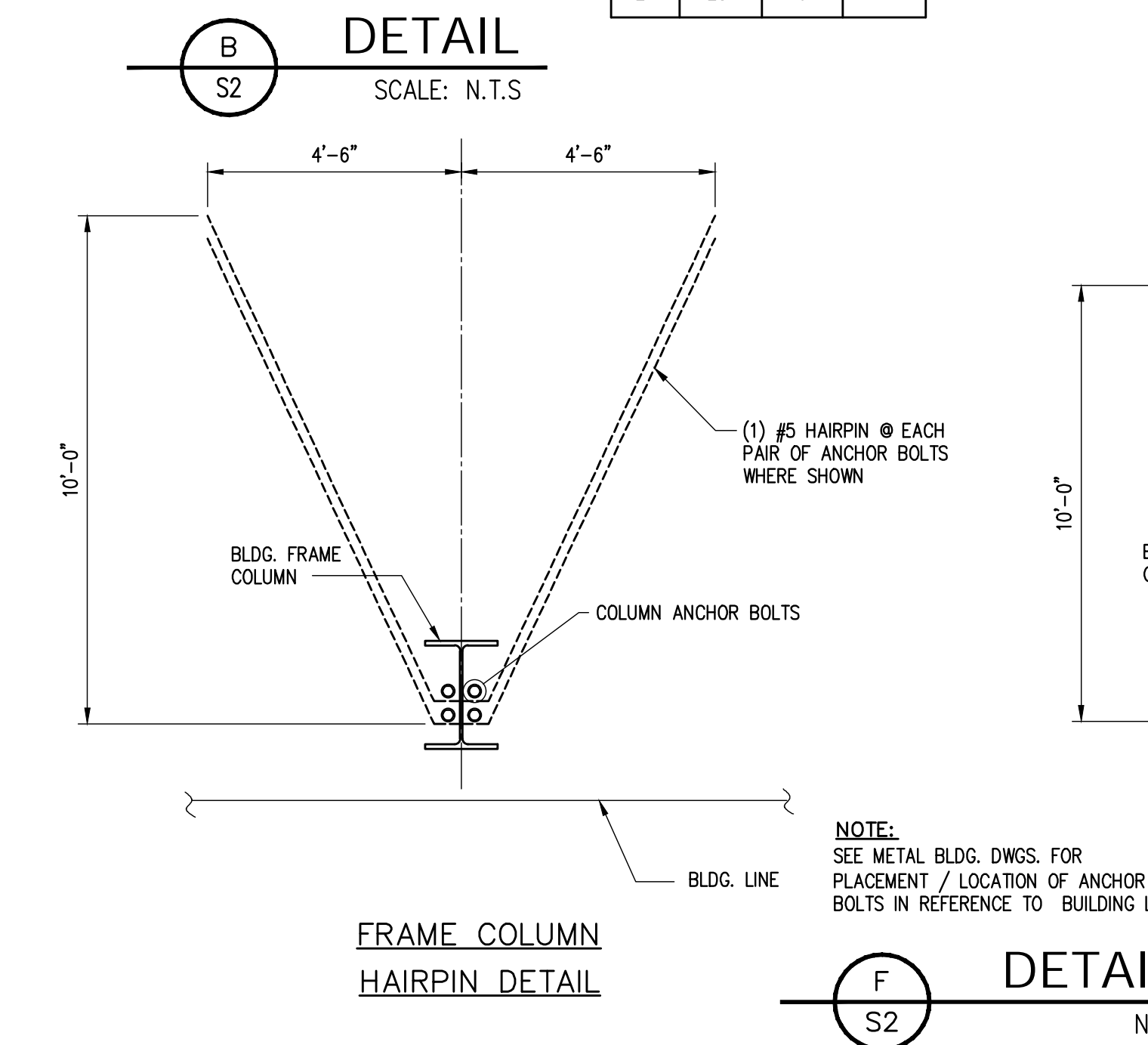
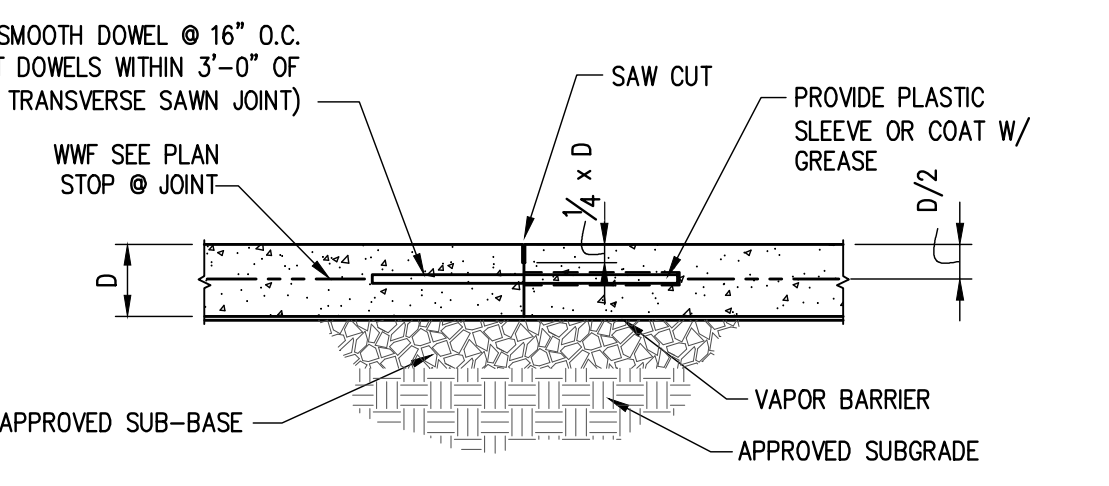
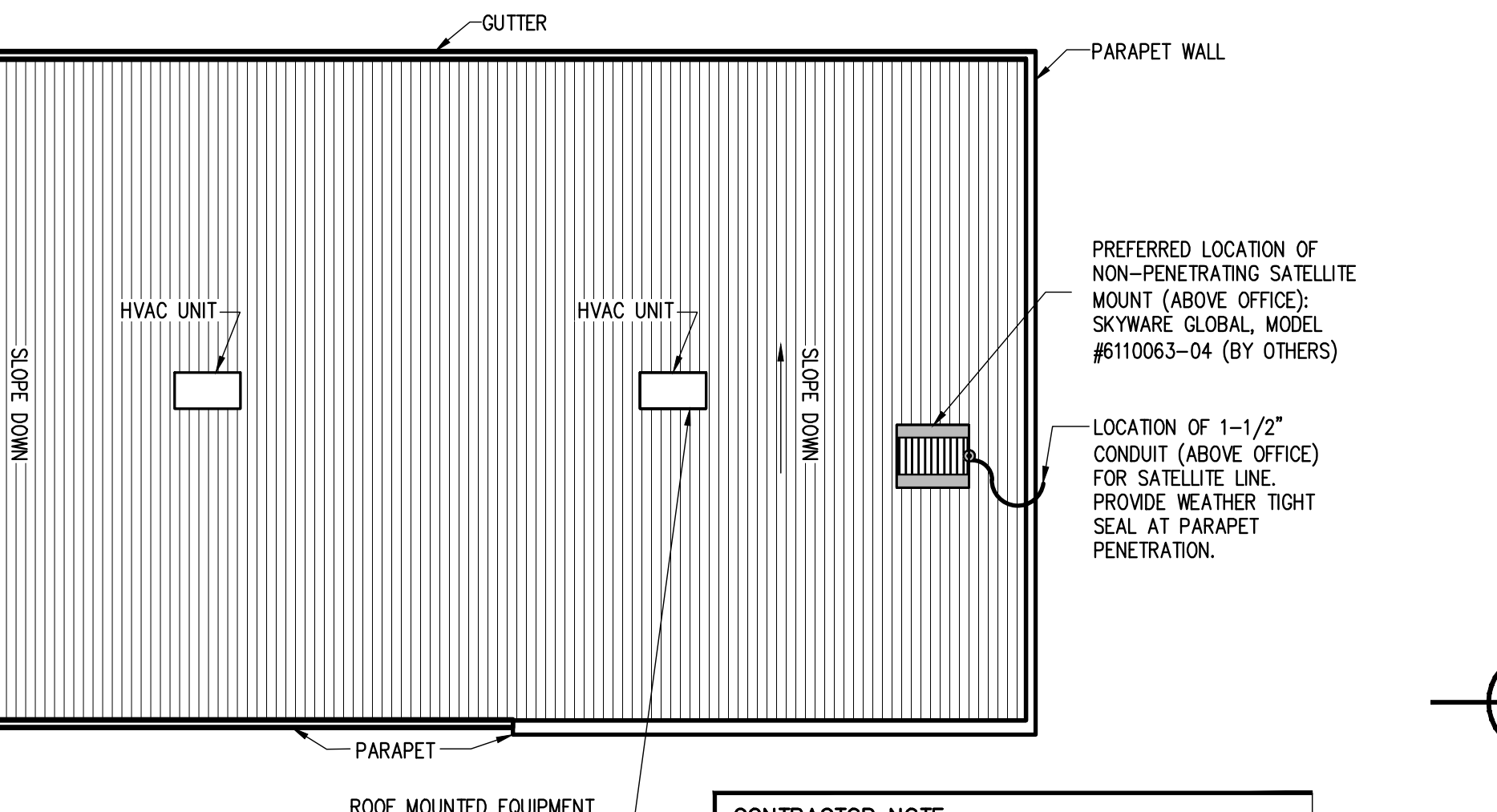
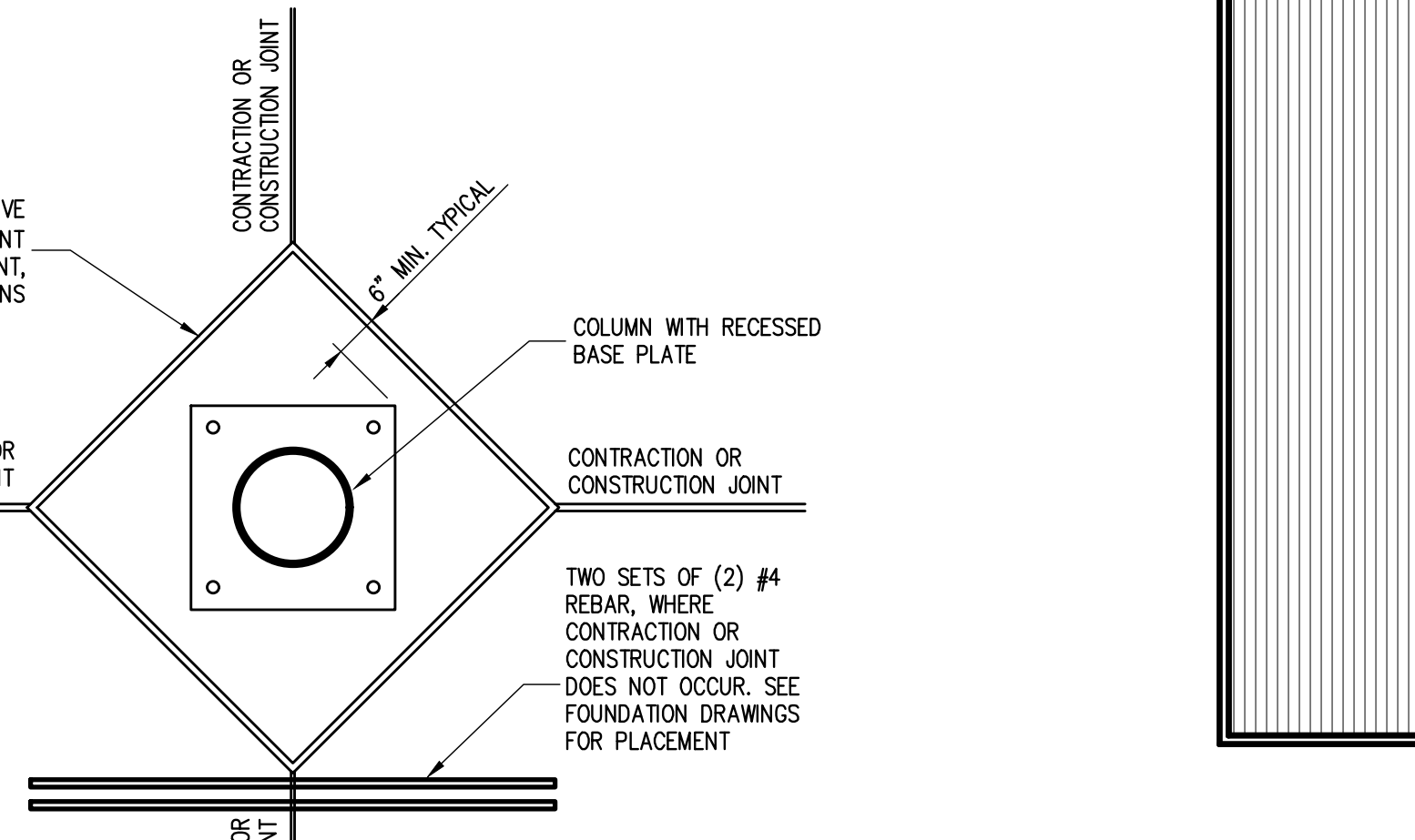
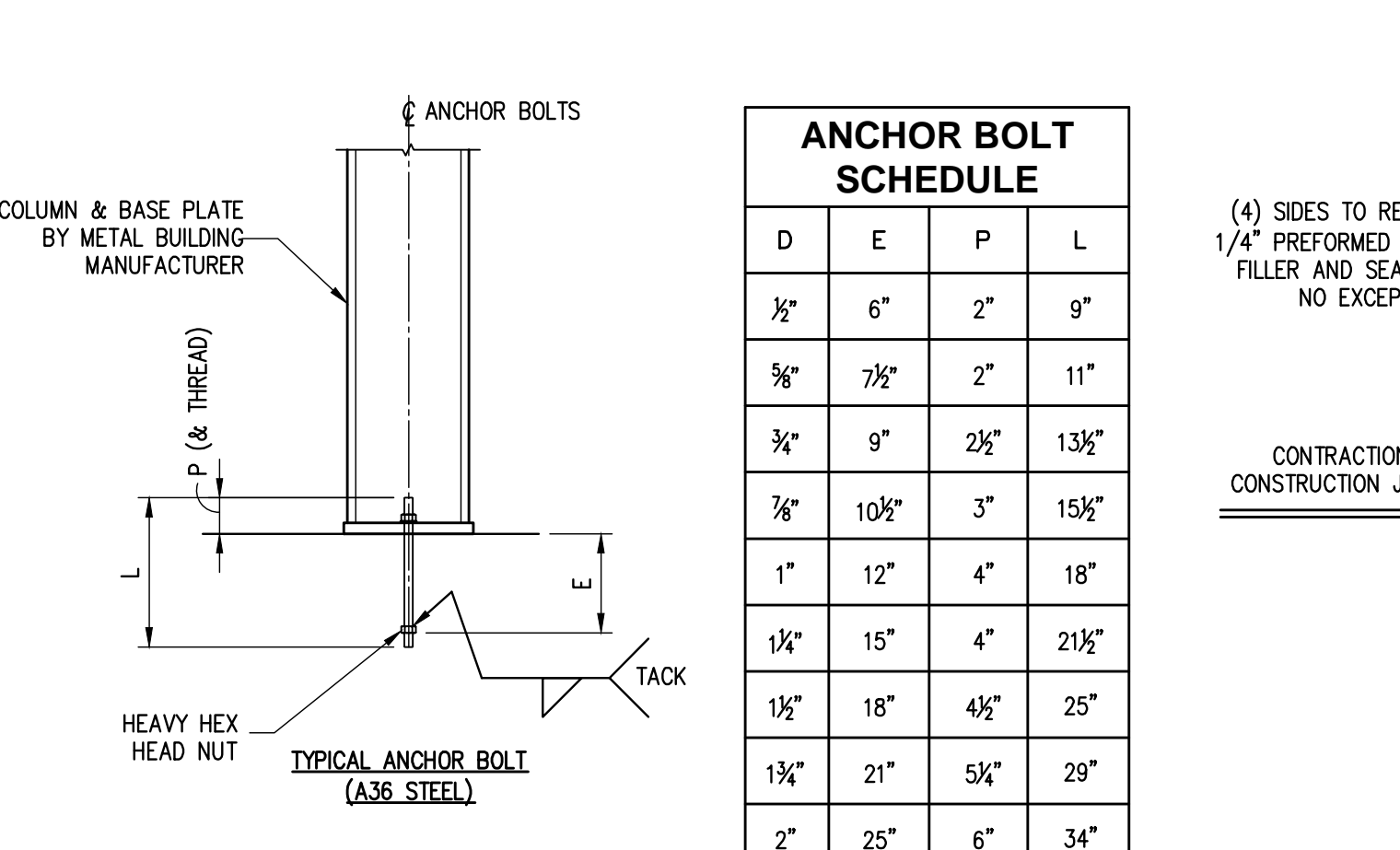


CURB INSTALLATION INSTRUCTIONS
TRAPEZOIDAL STANDING SEAM PANEL - UNDER / OVER
FOLLOW MANUFACTURER'S SPECIFICATIONS

REQUIRED NATIONAL ACCOUNT ROOF CURB DG VENDORS:

ROOF CURB SYSTEMS	GREG SMYTH	800-683-5848	GSMYTH@ROOFCURB.COM
CURBS PLUS INC.	ALAN THRAILKILL	888-639-2872	ALAN.THRAILKILL@CURBS-PLUS.COM
KCC INTERNATIONAL INC.	GREG CONRAD	800-382-2872	GCONRAD@KCCCURBS.COM

A
TYPICAL ROOF CURB UNIT
NTS



DESIGN LOAD CRITERIA

This analysis is made utilizing the 2018 North Carolina Building Code (International Building Code 2015).

DESIGN LOADS	
Roof Live Load	20 psf
Roof Dead Load	Weight of Materials
Roof Collateral Load	3.0 psf
SNOW LOADS	
Pg	10 psf
Frost Depth	12"
WIND LOADS	
Basic Wind Speed, Vult.	120 mph
Risk Category	II
Wind Exposure	B
Internal Pressure Coefficient (GCpi)	0.18/-0.18
SEISMIC LOADS	
Risk Category	II
Seismic Importance Factor	1.0
Design Category	C
Site Class	D
Ss	0.200g
Sds	0.214g
S1	0.091g
Sd1	0.146g
Analysis Procedure	Equivalent Lateral Force Procedure
Resisting System	Steel System not Specifically detailed for Seismic Resistance
Response Modification Factor, R	3.0
Seismic Response Coefficient, Cs	0.072
Design Base Shear	Cs x W

1) GENERAL

A. The building shall be designed such that there is maintained an absolute minimum of 68'-0" from face-of-column to face-of-column on the sales floor.

2) FOUNDATIONS

A. 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.

B. 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:

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

C. The foundations shall be of sufficient depth to bear below local frost depth where exposed, attain minimum design bearing pressure (1500 psf, U.N.O.), 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 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 construction joints a minimum of 1/4 the depth of the slab shall be provided in both principal directions across the entire floor slab, spaced as shown on sheet S1. The slab shall be protected from the effects of heat or wind as necessary to avoid any curing of the slab segments.

4) 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.

5) 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 (5% - 7%). Acceptable products: Euclid Chemical AEA-92 or Air 40; BASF Micro Air; W.R. Grace Darvaair 1000 or Dares. 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 Duranard 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 Aceelguard 80/90 or Aceelguard NCA; BASF NC534 or Pozzuate 20; W.R. Grace Polaset.

- I. Prohibited admixtures:
- Calcium chloride or admixtures containing more than 0.05% chloride ions are not permitted.
 - Flyash is not permitted.

6) EVAPORATION RETARDER

A. Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

- Acceptable products:
 - "Eucobar" by Euclid Chemical - Phil Brandt 877-438-3826

7) 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.

- Acceptable products:
 - "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.

- Acceptable product:
 - "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.

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

8) LIQUID DENSIFIER / SEALER FOR INTERIOR SALES FLOOR

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

- Acceptable liquid densifier and sealer manufacturer:
 - "Euco Diamond Hard" by Euclid Chemical - Phil Brandt 877-438-3826
 - "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.

9) 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.

- Acceptable semi-rigid polyurea joint filler manufacturer:
 - "Euco QWIKJoint UVR" by Euclid Chemical - See Sheet T01 for contact info.

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.

- Acceptable semi-rigid polyurea joint filler:
 - "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.**

10) 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:

- 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 51/2" for the interior sales floor slab and 4" (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	Prohibited
Coarse aggregate	12 cubic feet +/- .50 (#467 stone)
Fine aggregate	7 cubic feet +/- (adjust as necessary)
Water content	250 - 300lbs.
Air content (Entrapped Air Only)	3.0% (max.)
Water Reducer (Type a1)	3oz.-10oz./100wt +/- (mid range preferred)
W/cm	0.53 (max.)
Initial slump (water)	3"
Final Slump (with water reducer)	5.5" (max)
Shrinkage	<-0.04% @ 28 days

11) METAL BUILDING NOTES

A. The pre-manufactured metal building structure, shall be designed, detailed, fabricated, and constructed in accordance with all applicable codes, standards and regulations. The most stringent requirements apply where inconsistencies occur between the applicable standards.

B. The scope of the pre-manufactured metal building structure shall include the design, engineering, fabrication, delivery, and erection of the complete structural steel framing and exterior skin package. The metal building manufacturer shall be certified by American Institute of Steel Construction (AISC) metal building certification program.

C. The Front Fascia shall have (3) 12" Purlins (mounted vertically so that the 12" face is against the building metal siding. These purlins shall be centered over the entrance and spaced 96" apart to provide adequate support for signage which may weigh up to 1,400 lbs.

12) ROOF NOTES

A. Metal roof must be a structural standing seam metal roof with mechanically rolled seams. Seams to be minimum 1-1/2" high. All fasteners to be concealed.

B. Roof Panels to be minimum 24 gauge.

C. Metal roof system to be equal to VP buildings SLR II roof.

D. Condensate from HVAC units is to be piped to gutters.

13) UNIT MASONRY ASSEMBLIES

A. An independent testing agency shall be retained by the owner to perform field inspection and testing of masonry construction. Testing agency shall inspect placement of all reinforcement as shown or described in the contract documents.

B. All concrete masonry work shall conform to ACI 530, "Building Code Requirements for Masonry Structures", and ACI 530.1, "Specification for Masonry Structures".

C. Concrete masonry unit: ASTM C 90, lightweight. Provide special shapes for lintels, corners, jumbs, sash, control joints, and other special conditions.

D. Mortar: ASTM C 270, proportion specification, for job-mixed mortar; and ASSM C 1142 for ready-mixed mortar. All mortar for CMU work shall be type S. Do not use calcium chloride in mortar.

E. Groat: Comply with ASTM C476, proportion specification. Place vertical reinforcing in masonry cells and secure in place prior to placement of groat. Groat pour height shall not exceed 60 inches. All cells containing reinforcing bars shall be filled with groat. Webs of hollow units containing vertical reinforcing shall be fully mortared to confine groat during placement.

F. Vertical Reinforcement: Provide a minimum of (1) #5 @ 32" in 8" cmu walls, U.N.O. Secure reinforcement with vertical bar positioners, "Wire-Bond Corelock" single and/or double rebar positioners, or equal. Lap bars as follows: #4 - 25", #5 - 32", #6 - 57".

G. Horizontal reinforcement: Provide 9 gage, ladder type joint reinforcement formed from galvanized carbon-steel wire, ASTM 153, class B-2, for both interior and exterior walls. Space reinforcement at 8" o.c. below grade and 16" o.l.c. above grade (lap 6" minimum). Cut or interrupt reinforcing at control joints.

H. Additional reinforcement: Provide a minimum of (1) #5 at corners, within 16" of each side of openings, within 8" of each side of control joints and within 8" of the ends of walls. Bond beams shall have (2) #4's continuous and reinforcement shall be turned and lapped at all corners and intersections.

I. Place block in running bond with 1/2" joints. Tool exposed joints concave.

J. Provide vertical control joints per NCMa recommendations: 1.5 to 1 panel size ratio, or 24'-8" maximum.

14) FLOOR-SLAB FINISH AND TOLERANCES:

A. General: Unless otherwise noted by owner, concrete sales floor slab shall be cast in one continuous placement. 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, tight, abrasion resistant surface. Care shall be taken not to overwork or burn the surface. Use 6" wide finish style 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 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:

Flatness	Overall Floor Flatness rating of at least 35
Levelness	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.

15) 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 workers. 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 150sf/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 workers. 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 150sf/gallon. Begin curing immediately after finishing concrete, but not before free water has disappeared from concrete surface.

16) 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. Sawn 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.**

17) INTERIOR SALES FLOOR SLAB PROTECTION:

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

18) 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 thermally controlled. Installation of these materials shall commence approximately two weeks prior to "fiture date."

19) 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 lint 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 opening.

20) 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

21) 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 9 step process outlined below under item K.

E. All other areas will only receive steps 1 through 4, 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 only will 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.

GENERAL PLUMBING NOTES:

- THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
 PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR,
 MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR,
 FASC - FIRE ALARM SYSTEM CONTRACTOR.
- "PROVIDE" MEANS TO FURNISH AND INSTALL. THE PLUMBING CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR.
- THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
- ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, 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, WHOSE 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 THE ENGINEER WILL BE ACCEPTED.
- THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 NORTH CAROLINA PLUMBING CODE AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR 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 DIAGNOSTIC. THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC., TO ACCOMMODATE PLANNED AND UNPLANNED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, 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 BEING 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 THE (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 BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 803.2. PROVIDE 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.
- 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. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FITTINGS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MINIMUM LEAD CONTENT OF 25-PERCENT AND SHALL CONFORM TO NSF 61. HOT WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLUMBING.
- 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 OR PERPENDICULAR TO WALLS WHEN POSSIBLE-AND MAINTAIN GRADELINE. 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 WALL HANGING EXTENSIONS AS NECESSARY FOR INSULATION.
- BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLOON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-50. TYPE 2 STANDARD VALVE BODY SHALL BE ASTM B 82, BRONZE WITH INTEGRAL SEAT AND LINED RING BONNET. ENDS SHALL BE THREADED OR SOLID WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDE 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 NIBCO, WATTS, OR STOCKHAM.
- IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, 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 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 IN 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 TABLE 308.5 OF THE NC PLUMBING CODE. HANGERS AND ACCESSORIES SHALL BE GRINDEL, MASON, 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 CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. THICK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS

- THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. THICK 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 RATED FLOORS-AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH LAYERED PIPE TO ALLOW CONTINUOUS INSULATION-BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED ANNULAR 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. WHEREVER IS GREATER WATER PIPING SHALL BE INSTALLED IN A VENT 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 R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177.
- COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS 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 RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE 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 BUTT 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 PRESTOP OR PRESAFING 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 1139 TYPE 1, VAPOR BARRIER, WITH A SELF-SEALING ADDRESSIVE. 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 CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE BATED 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-DENSITY WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD RATING SHALL BE 25. A INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES 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 SHALL BE BATED FOR THAT EXPOSURE TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS 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.
- HOT WATER PROVIDED TO PUBLIC HAND-WASHING FACILITIES/WATERLESS SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B126.3.
- INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HAND-LOW GUARD INSULATION KIT BY TROBROOR OR EQUAL.
- BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 808.13 OF THE NC PLUMBING CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013 OR ANNA C511. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP. AIR GAPS SHALL COMPLY WITH ASME A112.1.1 AND AIR GAP 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 808.15. PRESSURE-TYPE BACKFLOW PREVENTERS 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, CONFIRM INVERTS, AND VERIFY 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.
- TRIMMING, COMPACTING, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH SECTION 306 OF THE NC 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 PROTECTION AGAINST FREEZING PER 305.6.1. 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 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE 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 OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
- FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CPSI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN

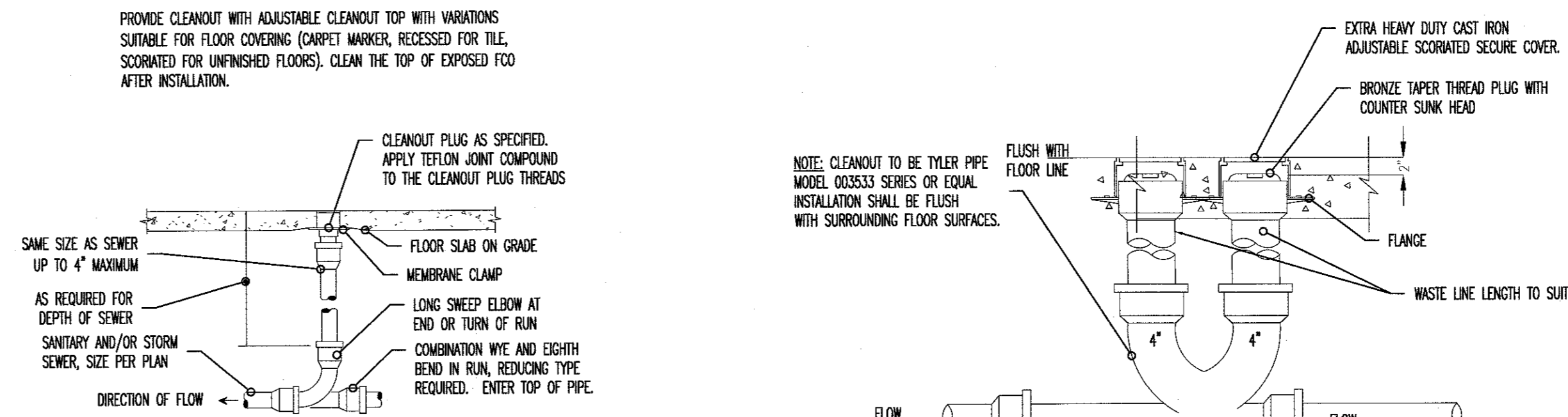
DO NOT TAP WATER LINE AHEAD OF RPZ.

PLUMBING FIXTURE SCHEDULE						
SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P-1H	TANK TYPE WATER CLOSET	AMERICAN STANDARD CHAMPION 4 "RIGHT HEIGHT" #2002.014 OR EQUAL.	FLOOR MOUNTED ADA VITREOUS CHINA ELONGATED FLUSH TANK, 1.6 GPF CLOSED COUPLED TWO PIECE SIPHON .JET WATER CLOSET, FLUSH TANK WITH 12" REGRIN IN. PROVIDE AMERICAN STANDARD #5001.100 OR EQUAL. WITH OPEN FRONT, NO LID. ADA REQUIREMENT MOUNT SO SEAT IS 17"-19" AFF. PROVIDE WITH STOP AND SUPPLY. ORDER WITH FLUSH LEVER ON OPEN SIDE OF TOILET.	-	1/2"	3"
P-2	WALL MOUNT LAVATORY	AMERICAN STANDARD 0555.012 OR EQUAL BY TOTO	FAUCET HOLES ON 4" CENTERS - FAUCET SHALL CHROME PLATED CAST BRASS BODY WITH 4" SPOUT, 4" BRASS BRIST BLADE, 0.5 GPM SPRAY AND GRID STRAINER BRAIN. USE AMERICAN STANDARD MONTERREY #5002.175 WITH WATTS VITREOUS CHINA TEMPERING VALVE OR EQUAL. ADA REQUIREMENT, MOUNT RIM 34" AFF - INSULATE EXPOSED BRAIN AND WATER PIPES WITH TROBROOR LAV GUARD KIT #102. E-Z. PROVIDE SUPPLY LINES, STOP VALVES & P-TRAP.	1/2"	1/2"	2"
P-3	DRINKING FOUNTAIN	ELKAY #ZTLR03C OR EQUAL	TWO-STATION, WALL MOUNTED ELECTRIC DRINKING FOUNTAIN, ADA, FRONT ONLY TOUCH CONTROL, HIGH UNIT ON RIGHT. PROVIDE SUPPLY, STOP VALVE & TRAP. PROVIDE CAME APRON AS REQUIRED.	-	3/8"	2"
P-4	FLOOR CLEANOUT	ZURN, WATTS, JR SMITH	FRONT COATED CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE GASKETED NICKEL BRONZE TIEP. REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB INLET.	-	-	4"
P-5	2-WAY YARD CLEAN OUT	TYLER PIPE #003519 OR EQUAL	TRAFFIC RATED	-	-	4"
P-6	WATER HAMMER ARRESTOR	ZURN Z1700 SHOCKLOK 100	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS	-	VARIES	-
P-7	FREEZEPROOF WALL HYDRANT	ZURN #Z1200C ECOLOTROL WALL HYDRANT	FREEZE PROOF WALL HYDRANT WITH BRONZE BODY, ANTI-SIPHON VACUUM BREAKER, HOSE CONNECTION, BOX AND LEXING COVER MOUNT AT 24" ABOVE FINISHED GRADE. FLUSH MOUNT AND TAMPER RESISTANT. CONTRACTOR TO SUBMIT SPEC. FOR OWNER APPROVAL FOR ALL STORES.	3/4"	3/4"	-
P-8	ELECTRIC WATER HEATER	AO SMITH #EL-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 #NSR2424	USE 630MA SERVICE FAUCET, PROVIDE WITH HOSE BRACKET AND HANGER	1/2"	1/2"	3"

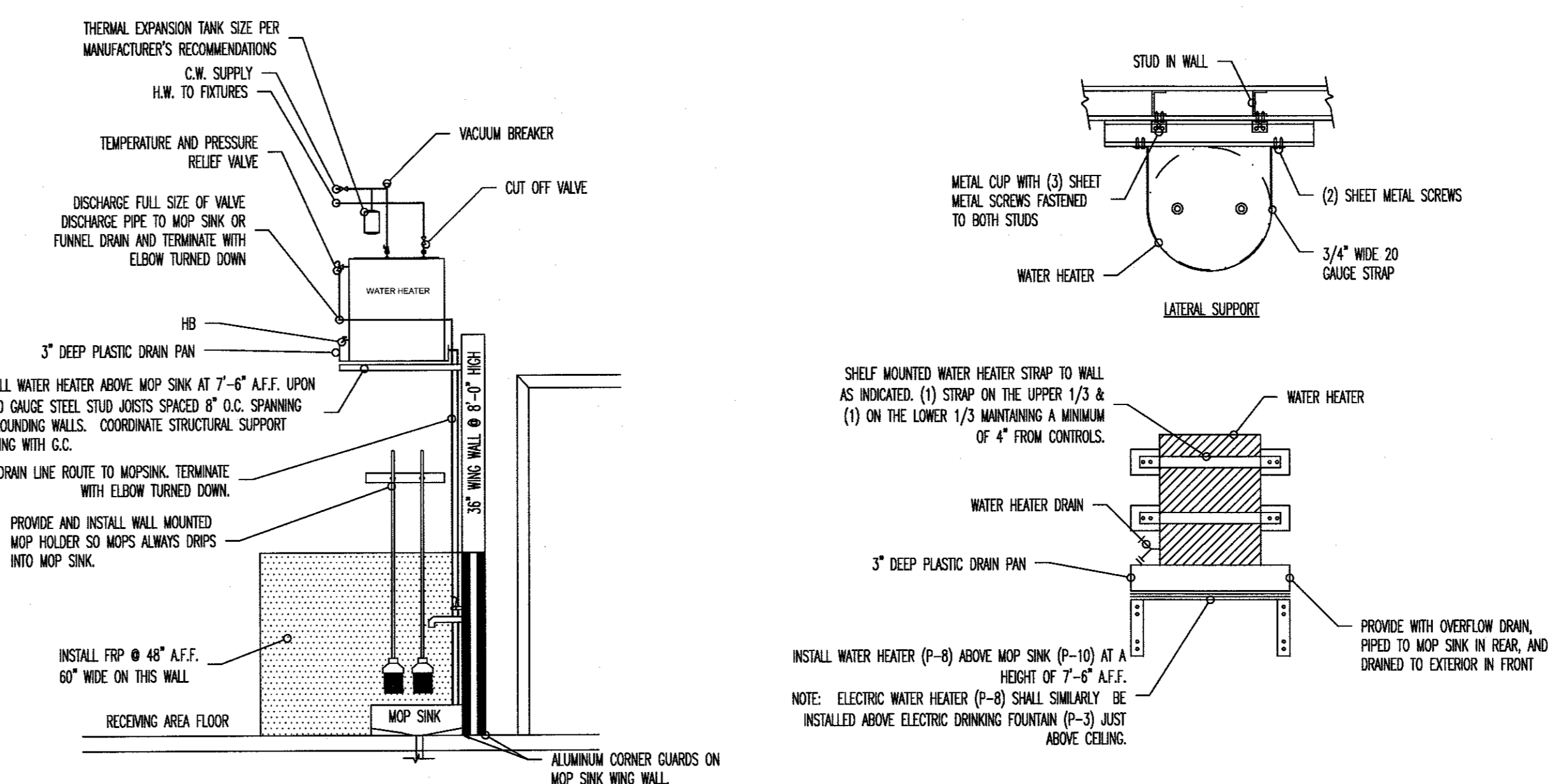
PLUMBING LINES SIZING TABLE									
FIXTURE TYPE	OCCUPANCY	QTY	DRAINAGE FIXTURE UNITS			WATER SUPPLY FIXTURE UNITS			
			EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
WATER CLOSET (FLUSH TANK)	PUBLIC	2	4	8	5	0	5	0	10
LAVATORY	PUBLIC	2	1	2	1.5	1.5	2	3.0	4
DRINKING FOUNTAIN	PUBLIC	1	0.5	0.5	0.25	0	0.25	0	0.3
MOP SINK	PUBLIC	1	2	2	2.25	2.25	3	2.25	3
DEMAND FIXTURE									12.5
HOSE BIBBS #		5	2	10					TOTAL DFU: 5.3 TOTAL WFSUs: 17.3
									GPM: 9.8 18.5
									OTHER FIXTURES' GPM: 0 5
									TOTAL GPM: 9.8 23.5
MINIMUM BUILDING DRAIN SIZE	4"	* ASSUMES ONLY 1 HOSE BIBB RUNNING.							
MINIMUM WATER LINE SIZE	1"								

PLUMBING FIXTURE SCHEDULE 2

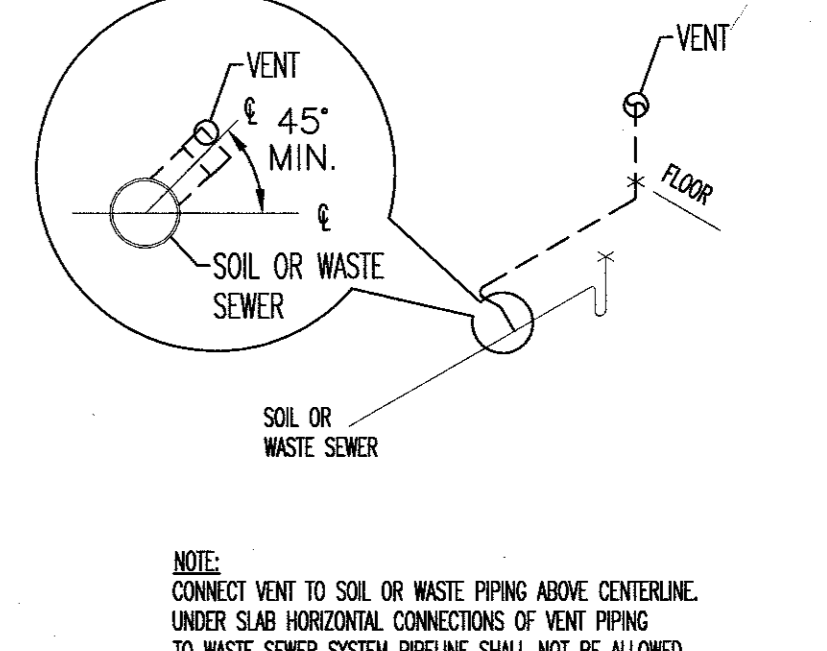
WATER LINE SIZING TABLE 3



CLEAN OUT DETAILS-NO SCALE 4



TYPICAL WATER HEATER STRAPPING DETAIL - NO SCALE 5

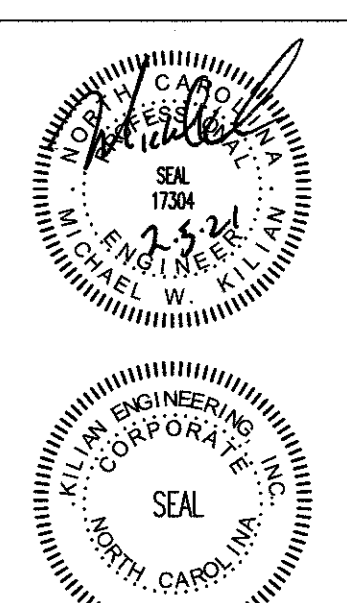


VENT PIPE INSTALLATION DETAIL-NO SCALE 5

ISSUED FROM: WILLIAMINGTON OFFICE
 910.251.8899
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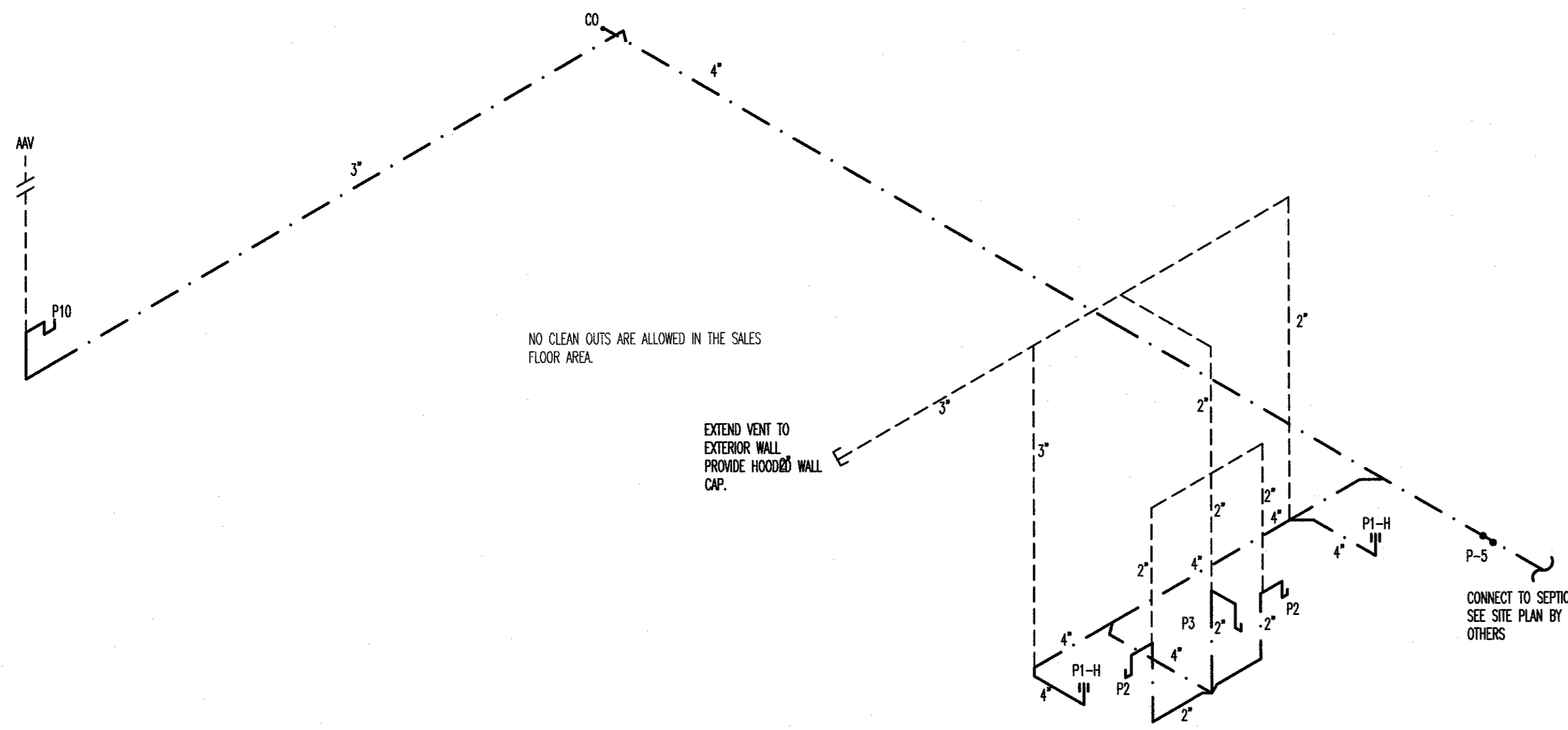
HOOD • HERRING
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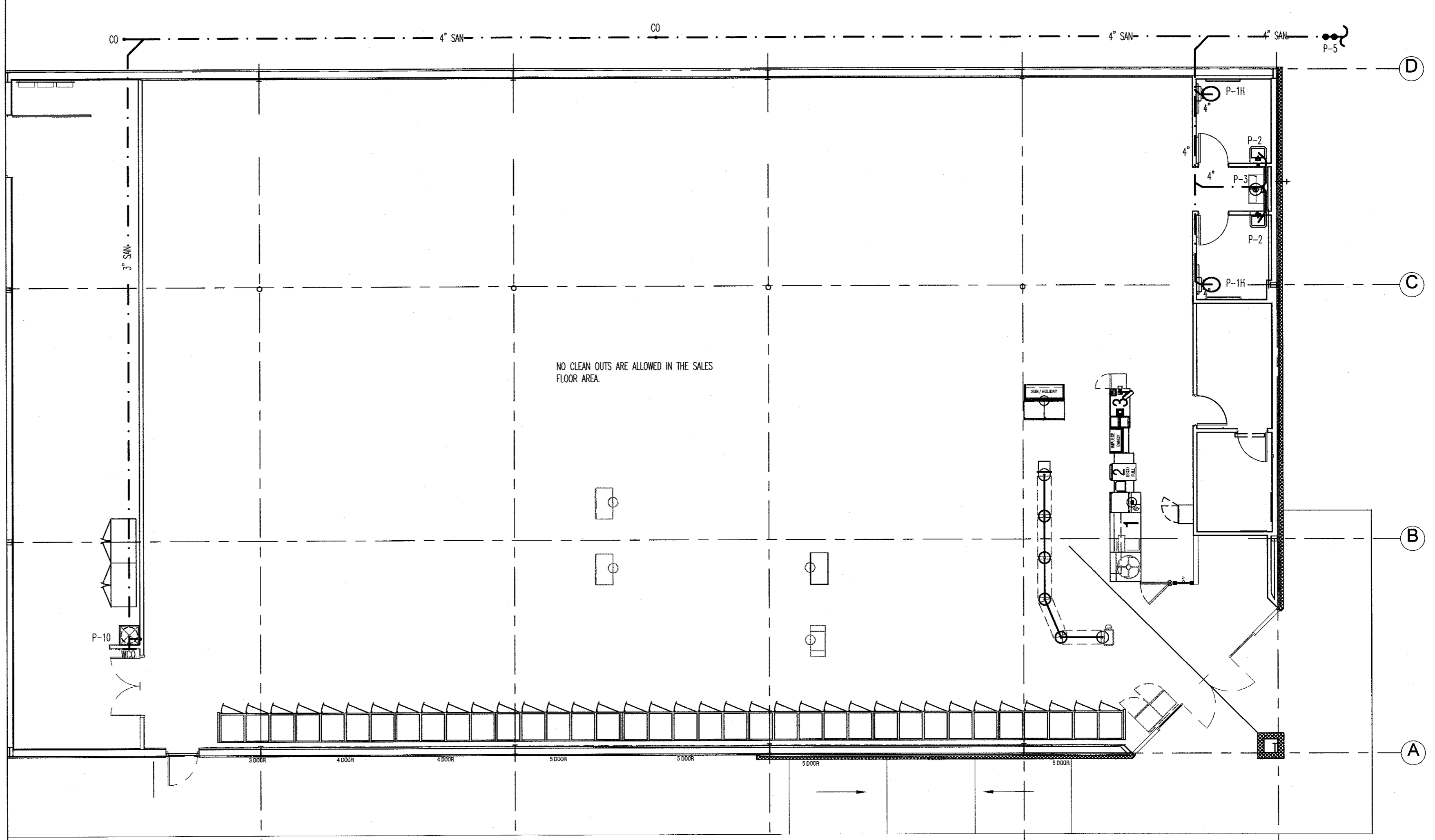


DOLLAR GENERAL
 STORE # 22524
 RAY ROAD
 SPRING LAKE, NC 28390

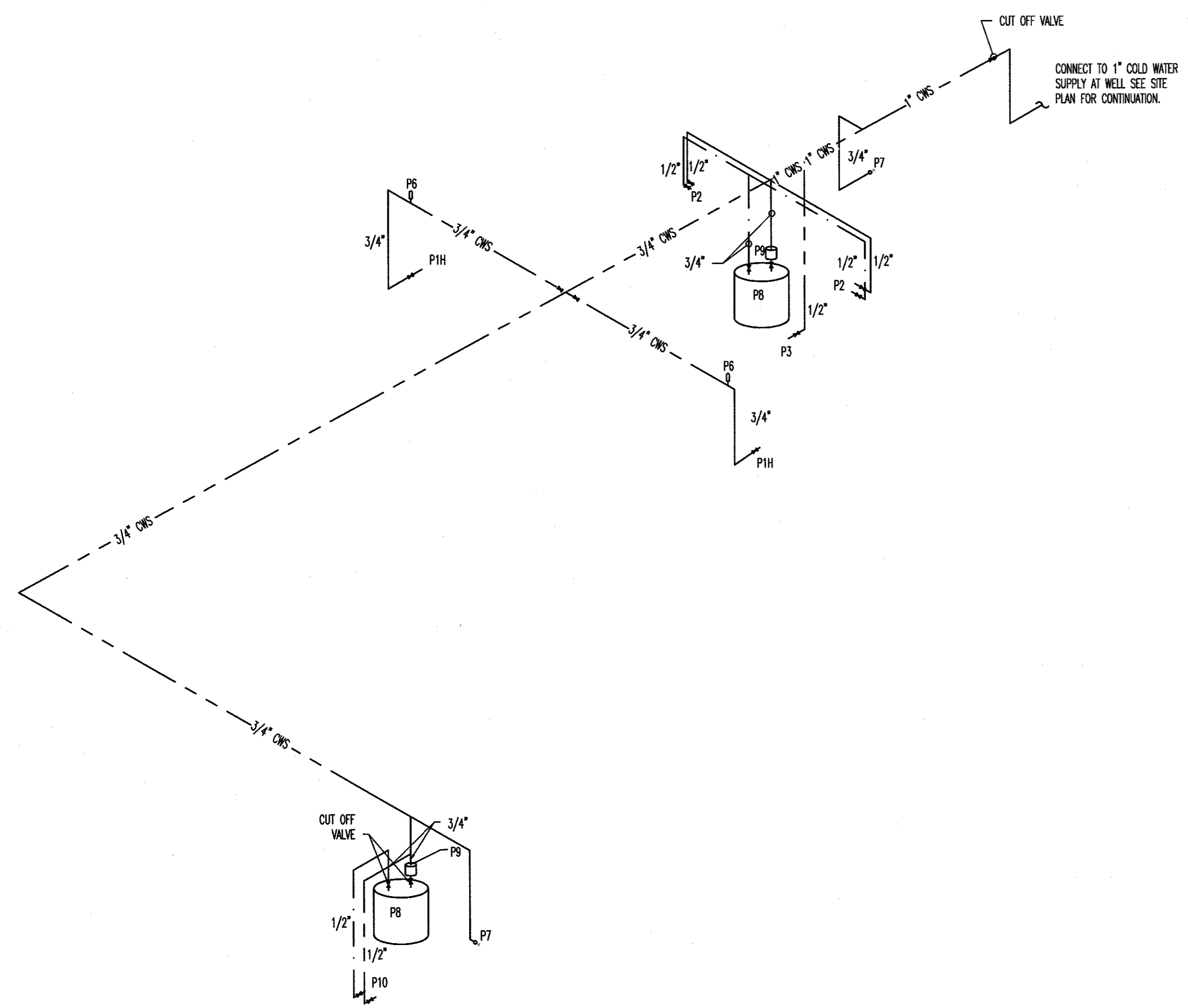
JOB NUMBER 21059
 DRAWN BY REW
 DATE 02/05/2021
 REVISIONS



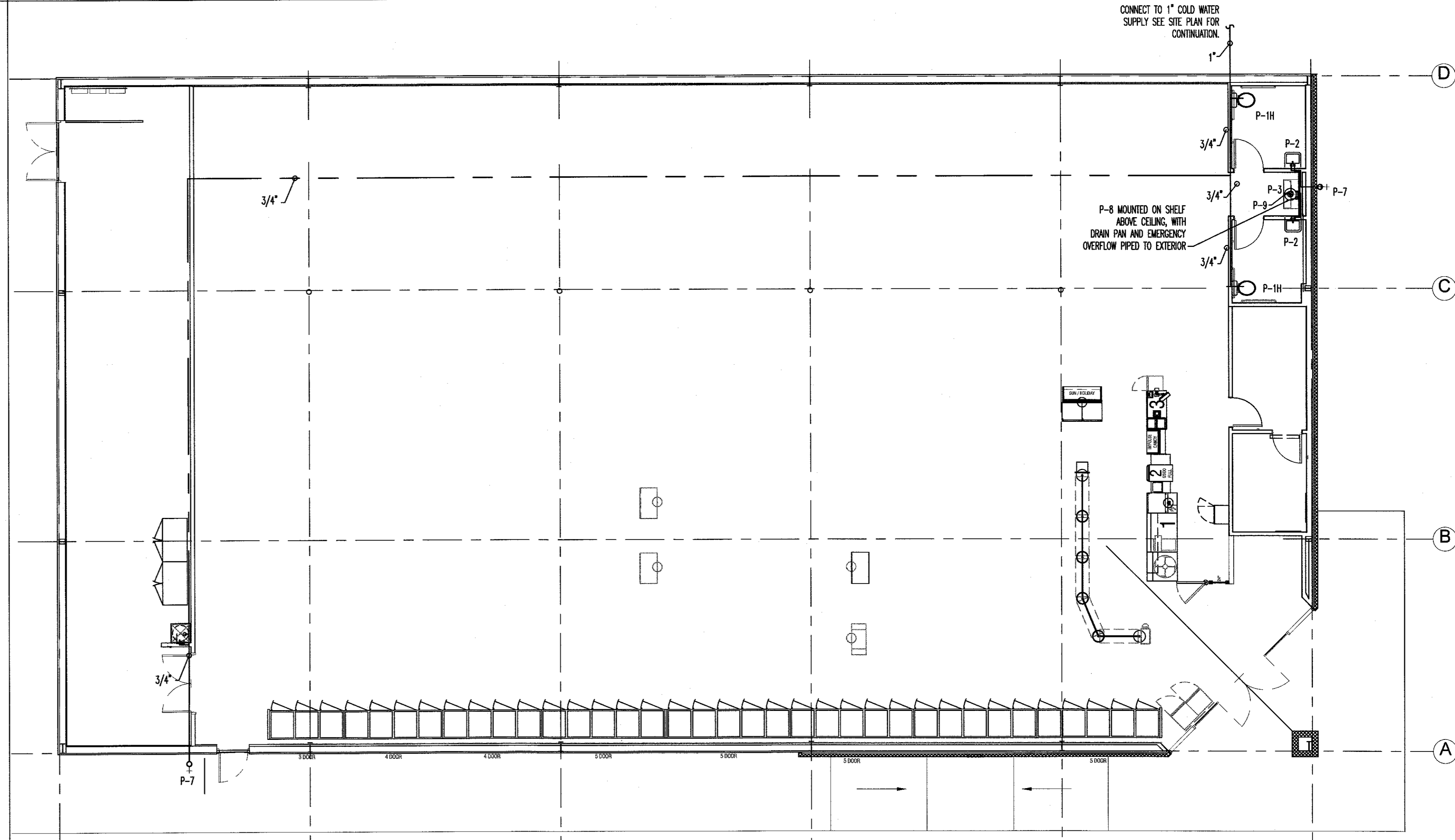
PLUMBING WASTE RISER-NO SCALE | 1



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



PLUMBING SUPPLY RISER-NO SCALE | 2



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

ISSUED FROM:
 WILMINGTON OFFICE
 Wilmington, NC 28401
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DOLLAR GENERAL
 STORE # 22524
 RAY ROAD
 SPRING LAKE, NC 28390

JOB NUMBER
 21059
 DRAWN BY
 REW
 DATE
 02/05/2021
 REVISIONS

SHEET NUMBER
P-2

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 92VH	10X6	SIDEWALL	STEEL, 4 WAY DIFFUSER, BRIGHT WHITE	1	
R	HART & COOLEY RH45	24"X36"	SIDEWALL	STEEL RETURN TRANSFER GRILL	2	

- OR EQUAL BY PRICE, METAL-AIRE, CARNES, TITUS OR MAILOR
- PROVIDE ONE IN EACH SIDE OF WALL.

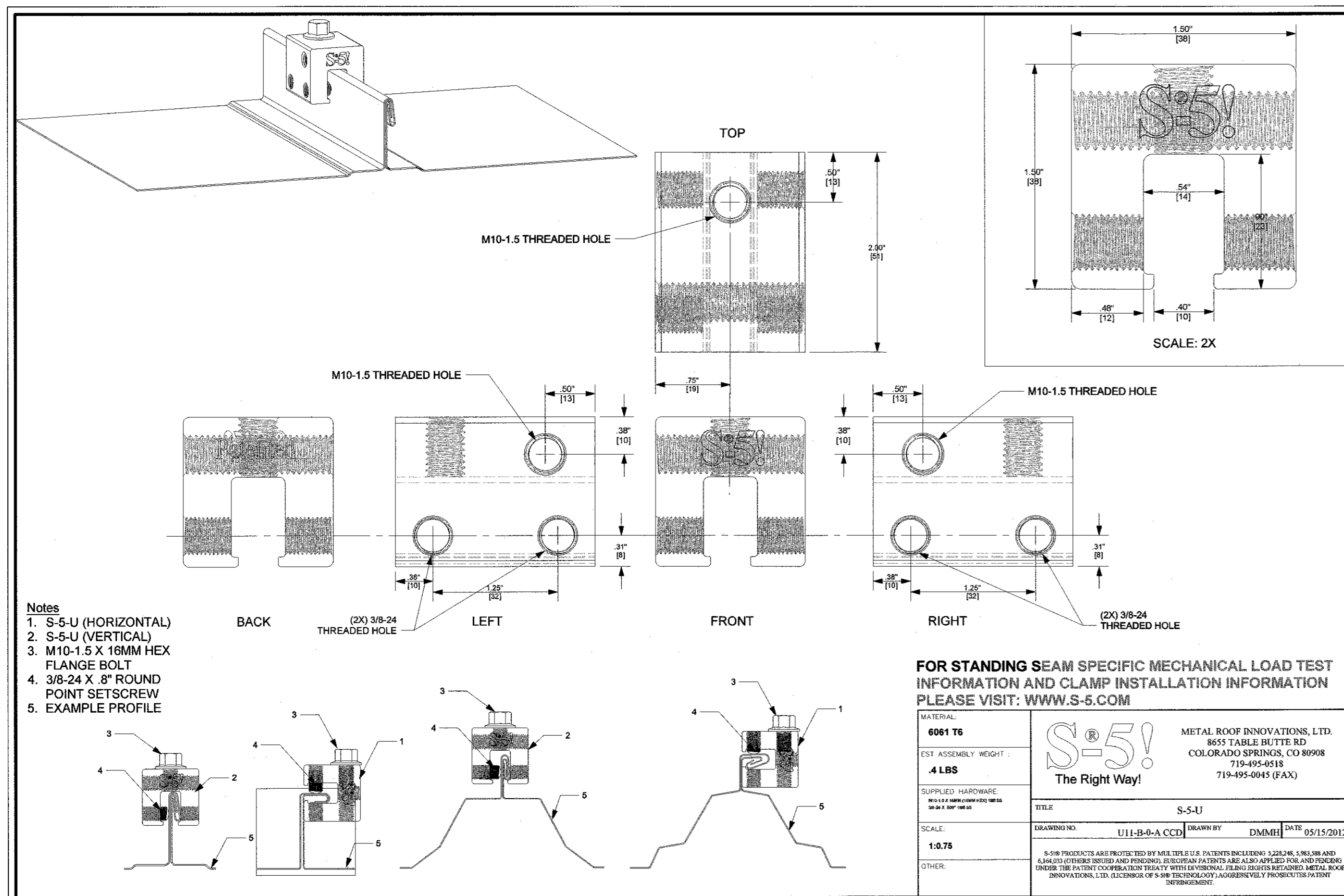
EXHAUST FAN SCHEDULE							
MARK	MFG / MODEL #	TYPE	ESP (in WD)	CFM	VOLT/PH	FLA	NOTES
EF-1-2	GREENHECK SP-A125	CEILING	0.25	105	120/1	1	L 8

- PROVIDE WITH PITCHED ROOF CAP OR HOODED WALL CAP AS APPLICABLE.
- PROVIDE WITH SQUARE TO ROUND DUCT ADAPTER AS NECESSARY OR EQUAL BY LOREN COOK OR PENNBARRY
-

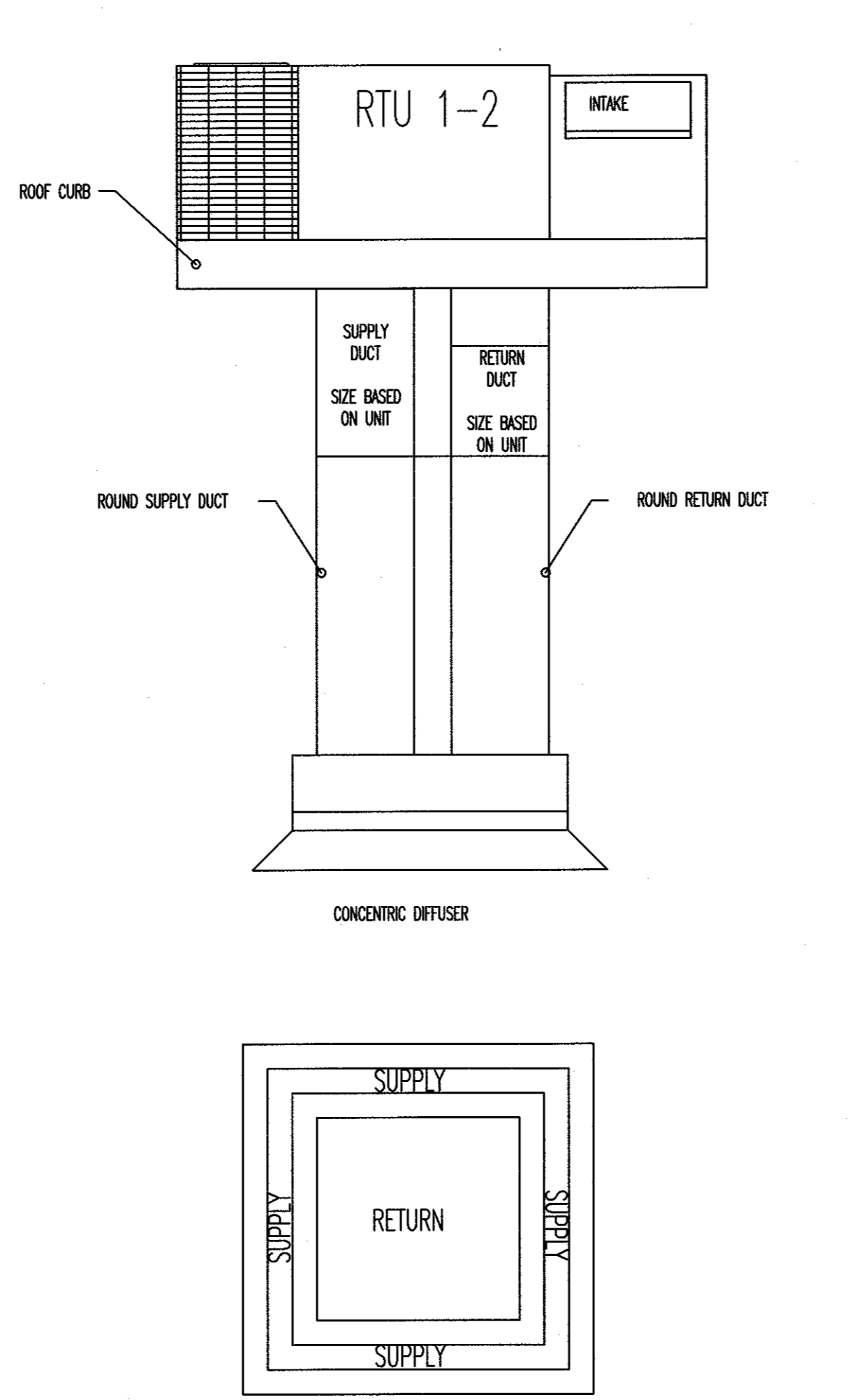
ROOFTOP PACKAGE AC WITH ELECTRIC STRIP SCHEDULE																				
MARK	MFG / MODEL #	NOMINAL CAPACITY	AIR FLOW		COMPRESSORS	FAN MOTORS		COOLING CAPACITY			FILTER		ELECTRICAL			WEIGHT	REMARKS			
			SUPPLY	MIN. OA		SUPPLY	ESP	AUX ELEC HEAT	EAT WB/OB	TOTAL	SENSIBLE	INCHES	MERV	EER	V/PH			MCA	MCCP	LBS
RTU-1&2	CARRIER 50TC-D1242AS-AD60	10.0	4000	884	2	1-3	.25	30	2	67/80	124.1	96.20	2"	8	11.2	208/3	124	125	1005	1-12

- PROVIDE WITH ROOF CURB
- THRU THE BASE CONNECTIONS
- PROVIDE WITH VARIABLE FREQUENCY DRIVE.
- ELECTRIC HEAT WITH SINGLE POINT CONNECTION KIT, AS SPECIFIED IN SCHEDULE
- PROVIDE WITH SINGLE INPUT ELECTRONIC ENTHALPY ECONOMIZERS WITH BAROMETRIC RELIEF DAMPERS
- ENTHALPY ACCESSORY CONTROL KIT TO CONVERT SINGLE ENTHALPY ECONOMIZER TO DUAL ENTHALPY FOR ECONOMIZERS
- TWO (2) ADDITIONAL SETS OF FILTERS (POST CONSTRUCTION/PRE TEST AND BALANCE, AND ONE SET TO OWNER FOR FUTURE USE)
- ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER AIR)
- MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES
- PROVIDE DUCT DETECTOR IN RETURN DUCT. PROVIDE RELAY FOR KILLING POWER TO UNIT'S FAN
- PROVIDE HALL GUARDS
- 4 WAY DIFFUSER

MECHANICAL SCHEDULES | 1



PIPE SUPPORT DETAIL NO SCALE | 3



RTU CONCENTRIC DIFFUSER DETAIL NO SCALE | 4

MECHANICAL SCHEDULES | 1

- GENERAL MECHANICAL NOTES:**
- THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR, MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR, FASO - FIRE ALARM SYSTEM CONTRACTOR.
 - "PROVIDE" MEANS TO FURNISH AND INSTALL. MC SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND GENERAL CONTRACTOR AS SHOWN ON THE PLANS OR NECESSARY FOR A COMPLETE INSTALLATION.
 - THE MC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
 - 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.
 - THE MC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE 2018 NORTH CAROLINA MECHANICAL AND BUILDING CODES AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MC SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
 - THE MC 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.
 - THE MC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE MC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE MC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
 - 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. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, THE CITED PRODUCT IS INTENDED TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. SUCH EXAMPLES ARE USED TO CONVEY A GENERAL STYLE, TYPE, CHARACTER, AND QUALITY OF THE PRODUCT DESIRED; PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
 - THE MC SHALL PROMOTE ALL OX UNITARY HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. AIR-COOLED ROOFTOP PACKAGE GAS-ELECTRIC UNITS AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. THE MC SHALL PROMOTE FACTORY AND FIELD INSTALLED ACCESSORIES AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.
 - THE MC SHALL PROMOTE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED. FANS SHALL BE BY GREENHECK, LOREN COOK, TWIN CITY, OR PENNBARRY.
 - THESE PLANS ARE DIAGNOSTIC. THE MC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, DUCTS, REGISTERS, GRILLES, 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 MC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
 - ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
 - DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.P.
 - 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.
 - EXTERNAL DUCT INSULATION AND FACTORY-INSULATED FLEXIBLE DUCT SHALL BE LEGALLY PRINTED OR OTHERWISE 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 INDEXES 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:
16.1. FOR DUCT BOARD, DUCT LINER AND FACTORY-MADE RIGID DUCTS NOT NORMALLY SUBJECTED TO COMPRESSION, THE NOMINAL INSULATION THICKNESS SHALL BE USED.
16.2. FOR DUCT WRAP, THE INSTALLED THICKNESS SHALL BE ASSUMED TO BE 75 PERCENT (25-PERCENT COMPRESSION) OF NOMINAL THICKNESS.
16.3. 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.
 - INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP. INSTALLED R-VALUE SHALL BE BY HART & COOLEY, PRICE, METAL-AIRE, MAILOR, OR CARNES. 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. ALL NEW DUCTWORK SHALL RECEIVE INSULATION ON THE OUTSIDE. INSTALL DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS INSULATION AND FACING OF ADJACENT PIECES OF DUCT WRAP. INSULATION SHALL BE TIGHTLY BUTTED. FOR RECTANGULAR DUCTS, INSTALL SO INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. STAPLE STAPLES APPROXIMATELY 6 INCHES ON CENTER WITH OUTWARD CLUNCHING SPACING. 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. ADVANCE 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 OWNERS CORNING CORP. OR CERTAINTED CORPORATION.
 - 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. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
 - VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION. MATERIALS AND FITTINGS THAT DUCT SURFACES ARE CLEAN 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.
 - WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOUVERS AND DUCT OUTLET IS SMALLER THAN LOUVER FRAME, PROVIDE BLIND-OUT PANELS SEALING LOUVER 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 CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.
 - IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALY ACCEPTED HANGERS AND SUSPENSION EQUIPMENT. ALL HVAC EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE 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 OR PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUPTED STEEL BECKING.
 - DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA AT INTERVALS NOT EXCEEDING 10 FEET. DUCTS 36 INCHES OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH BUSHED ROD. SUPPORT DUCTS FROM BAR JOISTS, GIRDERS, OR BEAMS.
 - CHECK LOCATIONS OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY AND LIGHTING ARRANGEMENT. COORDINATE WITH SPRINKLER CONTRACTOR IF APPLICABLE.
 - THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, 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, MAILOR, OR CARNES.
 - AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE 2018 NC MECHANICAL CODE.
 - PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT MOTORS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ATILITY.
 - MC SHALL INSTALL A SMOKE DETECTOR-UL LISTED FOR DUCT INSTALLATION (UL 258A) 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 SUPERVISION SHALL COMPLY WITH 606.4.1 OF THE 2018 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.
 - MC SHALL INSTALL PROGRAMMABLE THERMOSTATS AS SHOWN ON THE PLANS. THERMOSTAT SHALL BE MOUNTED AT 48 INCHES AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS OF SECTION 403.2.1.4 OF THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.
 - MC SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BE PROVIDED.
 - FRESH AIR INTAKES SHALL BE INSTALLED ON ALL UNITS AS SHOWN ON DRAWINGS. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL EXHAUST TERMINATIONS AND PLUMBING VENT THRU ROOFS.
 - UNITS PROMISED WITH ECONOMIZERS SHALL ALSO BE PROVIDED WITH POWERED EXHAUST AND COMPARTMENT ENTHALPY CONTROLS.
 - MAINTAIN CLEARANCES FOR ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A MINIMUM OF 10 FEET FROM ROOF EDGE.
 - MC SHALL INSTALL ALL EXHAUST FANS AND VENT TO THE BUILDING'S EXTERIOR. EXHAUST SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN.
 - THE MC SHALL PROMOTE ALL REFRIGERATION PIPING, ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEARLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHELDERS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE REFRIGERATION PIPING PER 2018 NORTH CAROLINA ENERGY CONSERVATION CODE 403.2.1.10 WITH 1-1/2 INCH CLOSED CELL URANIFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIR TIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL SLAGGINGS AT THE COMPRESSOR AND INSURE PROPER LUBRICATION. MC SHALL BE RESPONSIBLE FOR SEALING LINE SET PENETRATIONS OF ANY RATED ASSEMBLY IN ACCORDANCE WITH THE SYSTEM LISTINGS IN THE UL DIRECTORY FOR THE SPECIFIC ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR A LIST OF ALL UL FIRE RATED ASSEMBLIES.
 - P-TRAPS MUST BE INSTALLED ON ALL UNITS. MC SHALL INSTALL AUXILIARY DRAIN PANS UNDER OVERHEAD AIR HANDLERS AND AN AUTOMATIC CUT-OFF FLOAT SWITCH FOR EACH. 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.
 - MC SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROMOTE ALL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES.
 - 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.
 - ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
 - IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION.
 - 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.
 - MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

GENERAL MECHANICAL NOTES | 5

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 NORTH CAROLINA
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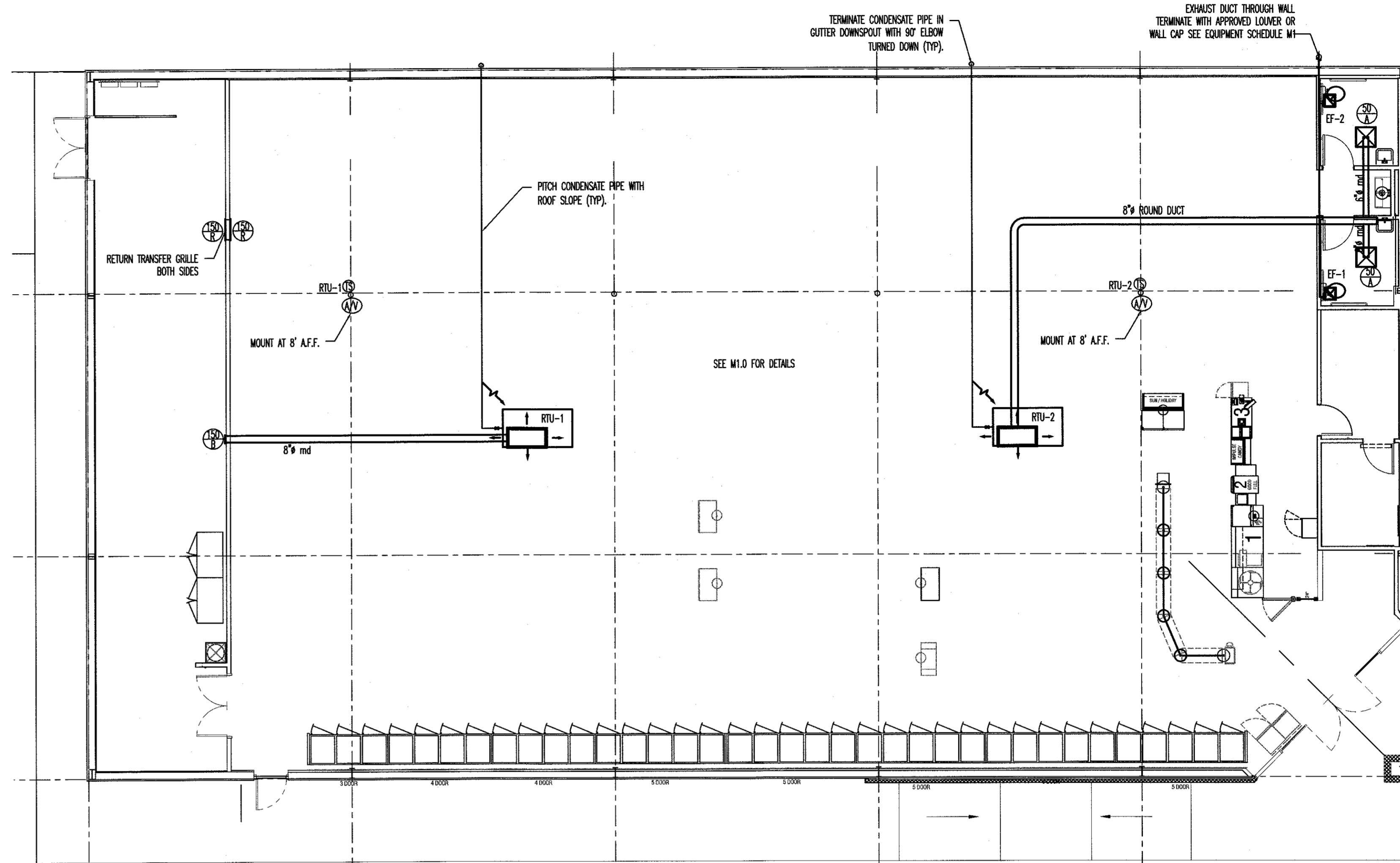
JOB NUMBER: 21059
 DRAWN BY: REW
 DATE: 02/05/2021
 REVISIONS:

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%						

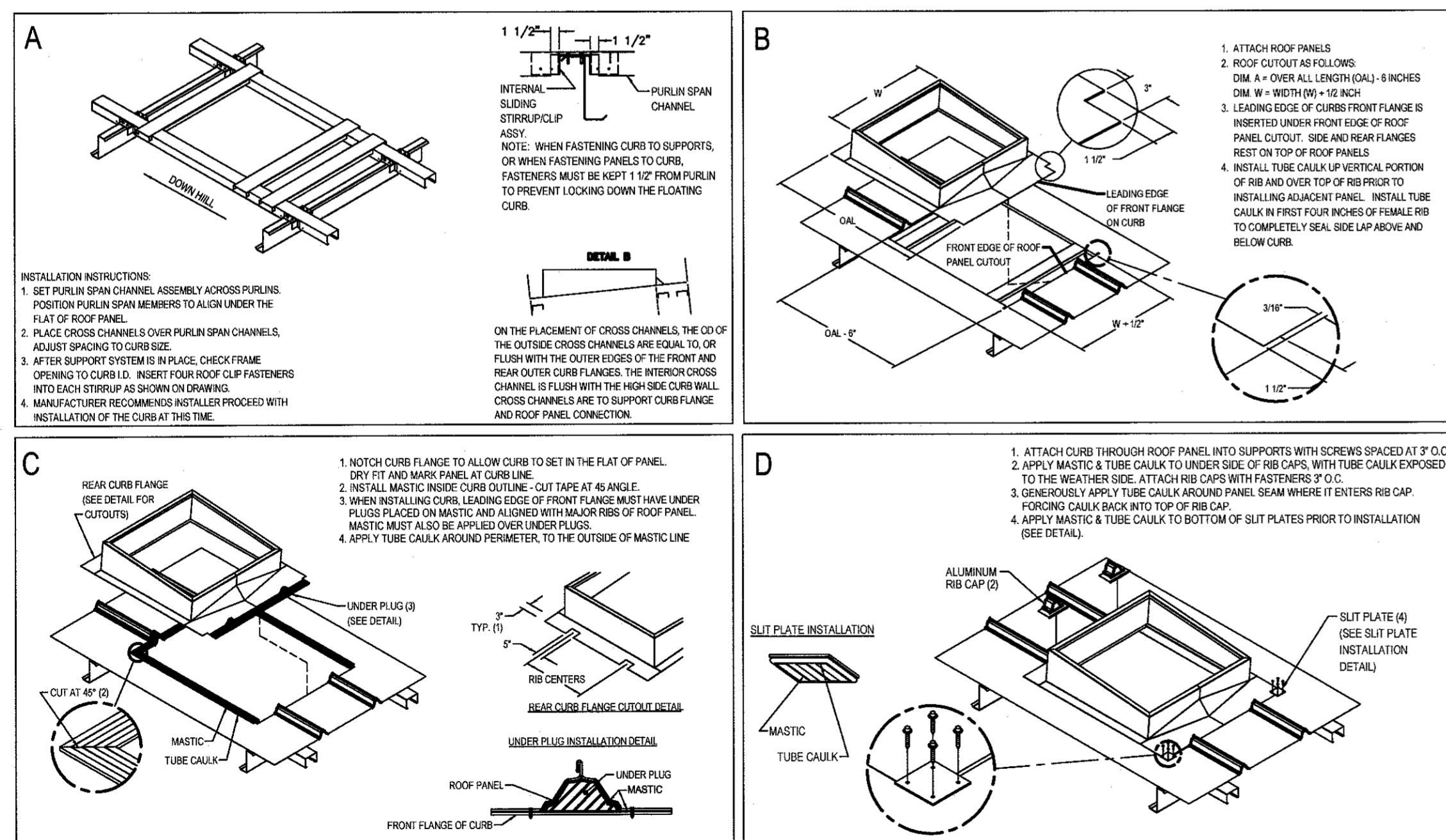
DOLLAR GENERAL MECHANICAL NOTES:

- PROVIDE CONCENTRIC DIFFUSER KIT AS SPECIFIED BY DOLLAR GENERAL (AVAILABLE THRU YORK, NY) 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 MANUFACTURERS INSTALLATION INSTRUCTIONS. CONCENTRIC DIFFUSER SHALL BE HARD DUCTED FROM HVAC UNIT. THE USE OF FLEXIBLE DUCT DROPS ARE NOT ALLOWED, NO EXCEPTIONS.
- ALL HVAC UNITS REQUIRE AN ECONOMIZER AND BAROMETRIC RELIEF.
- 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.
- 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.
- PROVIDE CEILING MOUNTED EXHAUST FANS FOR RESTROOMS, INTERLOCK WITH RESTROOM LIGHTS. EXHAUST FAN SHALL BE VENTED THRU SIDE WALL, NOT THRU THE ROOF.
- ROOF CURB INFORMATION SEE DETAILS M2-2



VENTILATION CALCULATION TABLES | 1

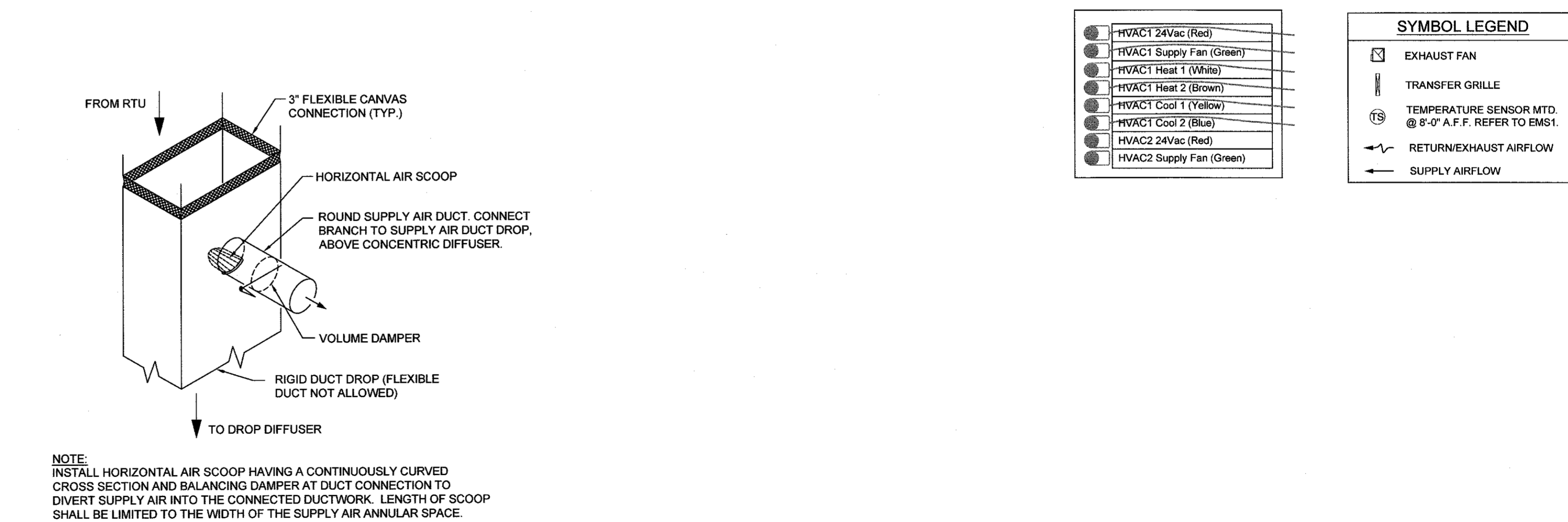
MECHANICAL PLAN-SCALE 1/8"=1' | 2



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@ROOFCURB.COM
 CURBS PLUS INC. ALAN THRAILKILL 888-639-2872 ALAN.THRAILKILL@CURBS-PLUS.COM
 KCC INTERNATIONAL INC. GREG CONRAD 800-382-2872 GCONRAD@KCCCURBS.COM



4 M1 NTS
TYPICAL SUPPLY BRANCH CONNECTION DETAIL

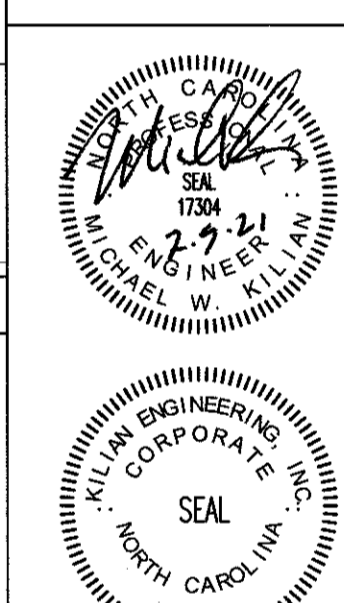
ROOF CURB DETAIL - NO SCALE | 3

HVAC WIRING DETAIL AND SYMBOL LEGEND | 4

ISSUED FROM:
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 801 WILKINSON DRIVE
 WILKINSON, NC 28390
 Phone: 252.231.8989
 Fax: 252.231.8990
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 Wilson, NC 27893
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 Facsimile: 252.239.2700

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 RAY ROAD
 SPRING LAKE, NC 28390

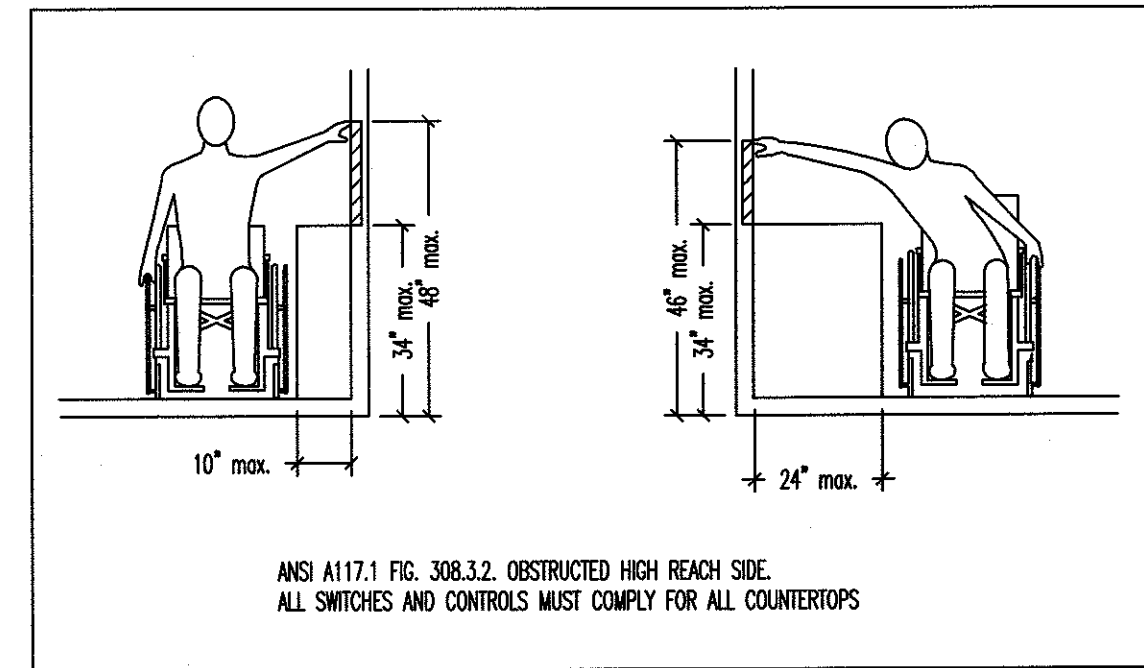
FOR NUMBER 21059
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 DATE 02/05/2021
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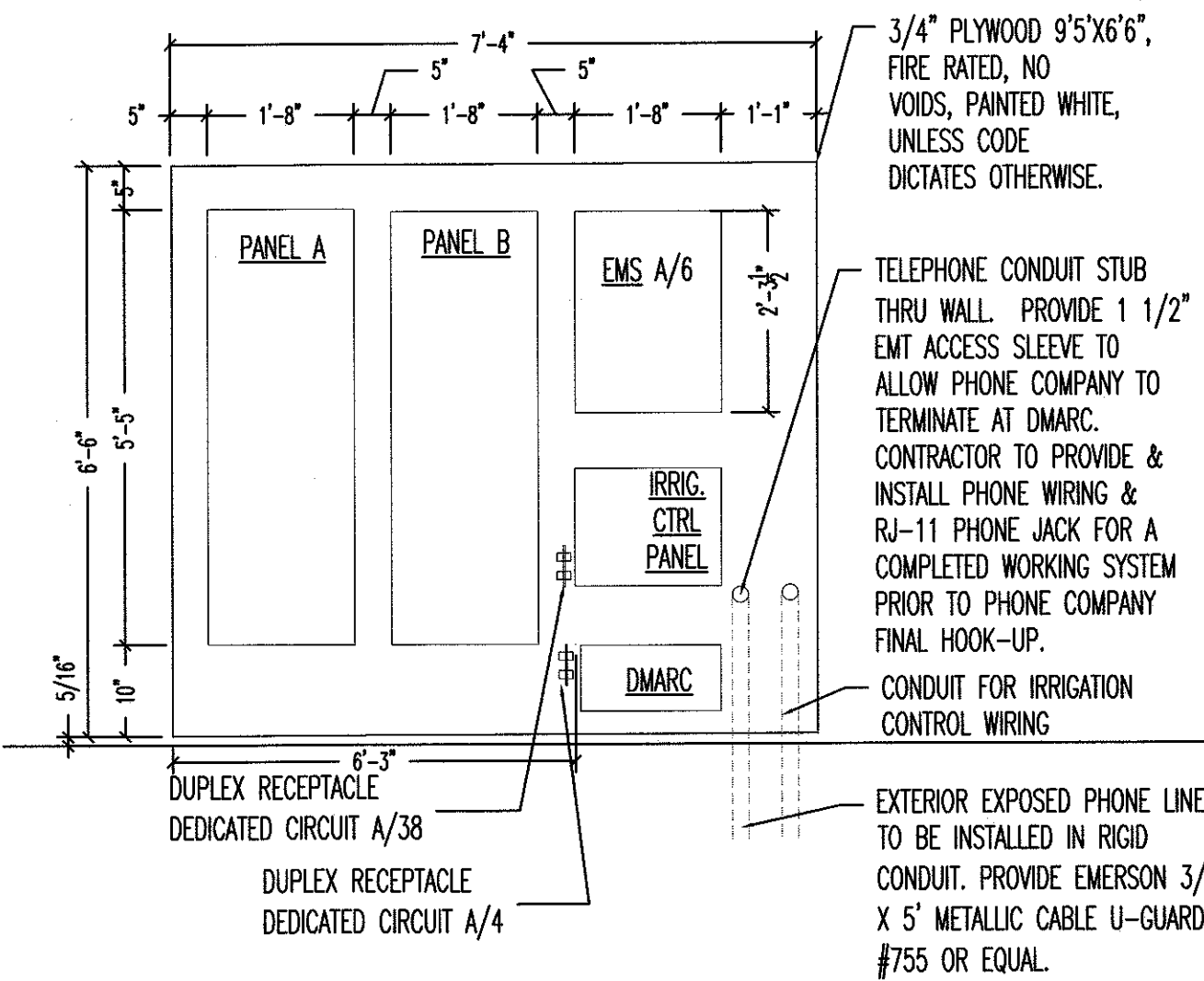
M-2

ELECTRICAL DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
Ⓜ	WALL MOUNTED OCCUPANCY SENSOR	LEVITON ODS10-IDW 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 RJ-11, 1 RJ-45 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 DUAL RJ-45 OUTLET FOR VOICE AND DATA EC TO INSTALL 1" C. FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. COMMUNICATION WIRING BY OTHERS.
Ⓜ	DUPLEX GFCI RECEPTACLE	COMMERCIAL GRADE, 120V, 20A
Ⓜ	DUPLEX RECEPTACLE	COMMERCIAL GRADE, 120V, 20A
Ⓜ	QUAD RECEPTACLE	COMMERCIAL GRADE, 120V, 20A
Ⓜ	DUPLEX RECEPTACLE	COMMERCIAL GRADE, 120V, 20A, MOUNT AT COUNTER HEIGHT
Ⓜ	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	NEMA 1N 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 HIGH SIDE REACH DETAIL-NO SCALE | 4



ELECTRICAL PANEL ELEVATION-NO SCALE | 5

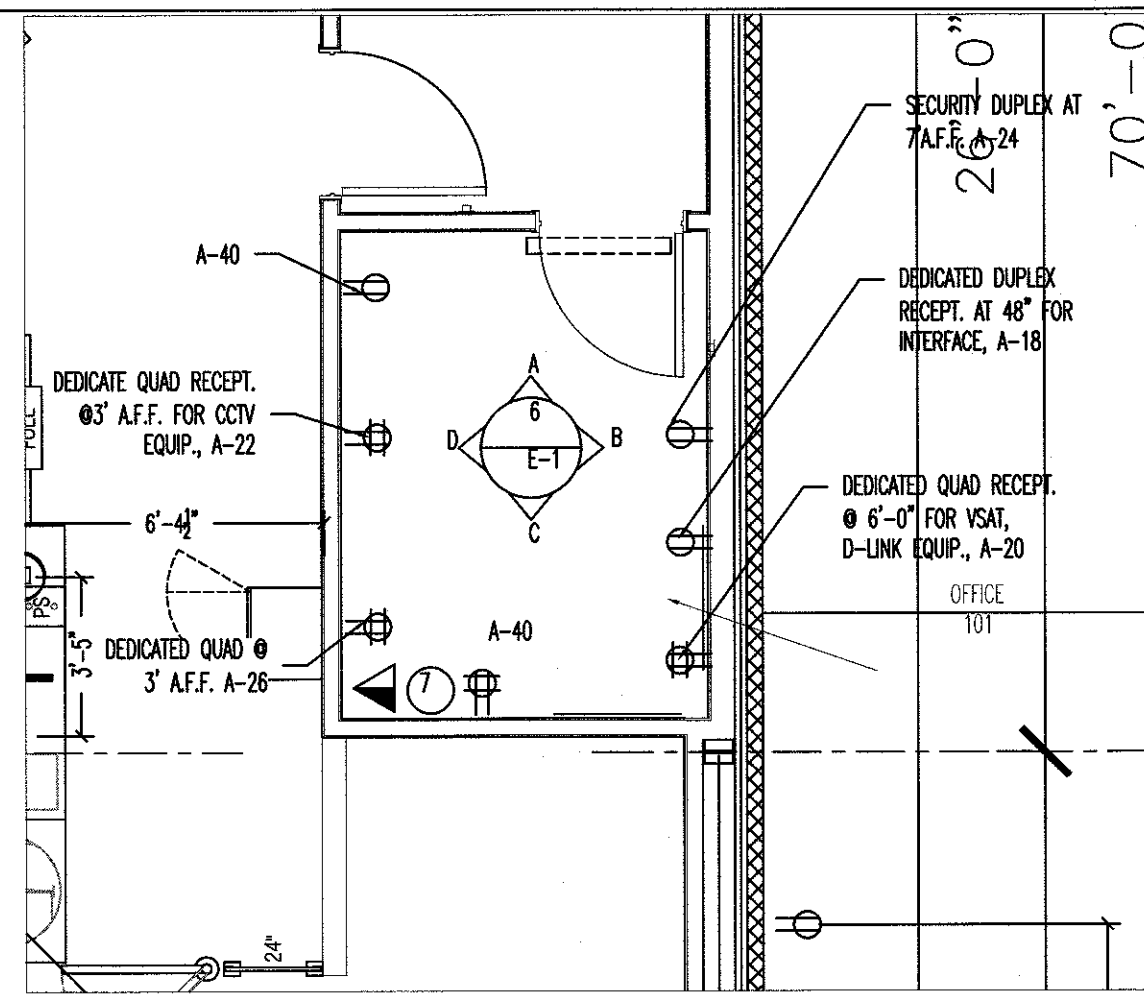
ELECTRICAL KEYED NOTES

- CONTROL 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 6'-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. PROVIDE CIRCUIT AS SHOWN. WIRE ALL WITH THIS NOTE TO A SPARE BREAKER IN PANEL "A" IF THEY ARE NOT POWERED.
- 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.
- PROVIDE 208V, 1 PHASE CONNECTION TO A J-BOX AT 100" AFF WITH (3)#12 CU. & #12 GROUND IN 3/4" C. REFRIGERATION CONTRACTOR TO PROVIDE AND INSTALL 30A/2NF DISCONNECT SWITCH AND WIRE FROM DISCONNECT SWITCH TO EQUIPMENT CONNECTIONS.
- PROVIDE 208V, 1 PHASE CONNECTION TO A J-BOX AT 100" AFF WITH (3)#10 CU. & #10 GROUND IN 1" C. REFRIGERATION CONTRACTOR TO PROVIDE AND INSTALL 60A/2NF DISCONNECT SWITCH AND WIRE FROM DISCONNECT SWITCH TO EQUIPMENT CONNECTIONS.
- PROVIDE 208V, 1 PHASE CONNECTION TO A J-BOX AT 100" AFF WITH (3)#10 CU. & #10 GROUND IN 3/4" C. REFRIGERATION CONTRACTOR TO PROVIDE AND INSTALL 30A/2NF DISCONNECT SWITCH AND WIRE FROM DISCONNECT SWITCH TO EQUIPMENT CONNECTIONS.
- MOUNT J-BOX 11" FROM THE RIGHT SIDE OF EACH UNIT. CONFIRM EXACT LOCATION WITH REFRIGERATION VENDOR PRIOR TO WORK (TYPICAL).

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 (815) 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 & 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.

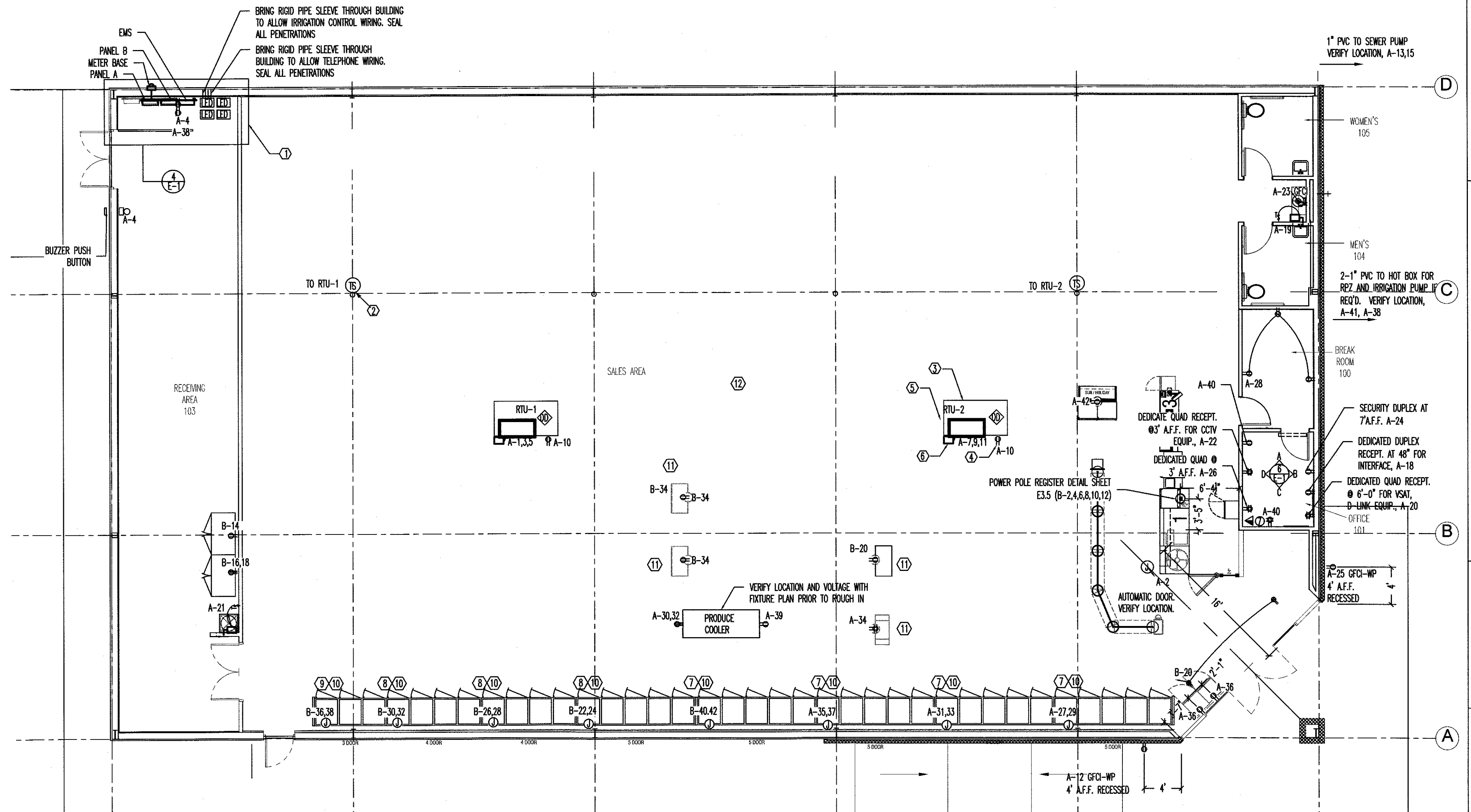
ELECTRICAL PANEL ELEVATION-NO SCALE | 6



ENLARGED OFFICE LAYOUT - NTS | 2

LEGEND	
SYMB	DESCRIPTION
Ⓜ	BUZZER (TORK TA725) WITH TRANSFORMER (TORK TA592)
●	COMMERCIAL GRADE PUSH BUTTON
Ⓜ	125V NEMA 5-15R DUPLEX
Ⓜ	125V NEMA 5-15R QUAD
Ⓜ	125/250V NEMA L14-15-R 4-PRONG TWIST-LOCK
Ⓜ	DISCONNECT
■	BLACK MAGIC POWER POLE
▶	PHONE JACK AT REGISTER
○	RJ-11, RJ-45 DATA JACK, PHONE COMBO AT OFFICE
A/23	PANEL/CIRCUIT NUMBER
\$	20 AMP TOGGLE SWITCH
\$m	PROVIDE OCCUPANCY LIGHT SENSOR (LEVITON ODS10-IDW)
NL	NIGHT LIGHT CIRCUIT

ELECTRICAL KEYED NOTES AND LEGEND | 3



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

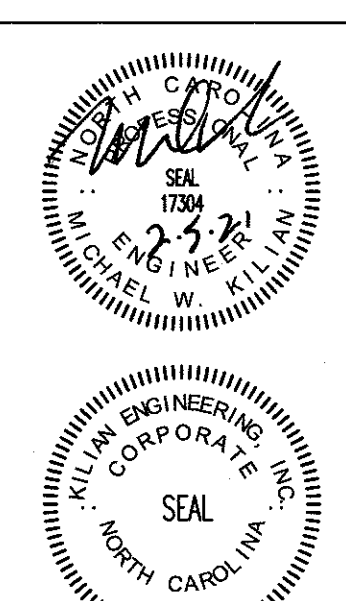
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DOLLAR GENERAL
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 SPRING LAKE, NC 28390

JOB NUMBER: 21059
 DRAWN BY: REW
 DATE: 02/05/2021
 REVISIONS:

SHEET NUMBER
E-1

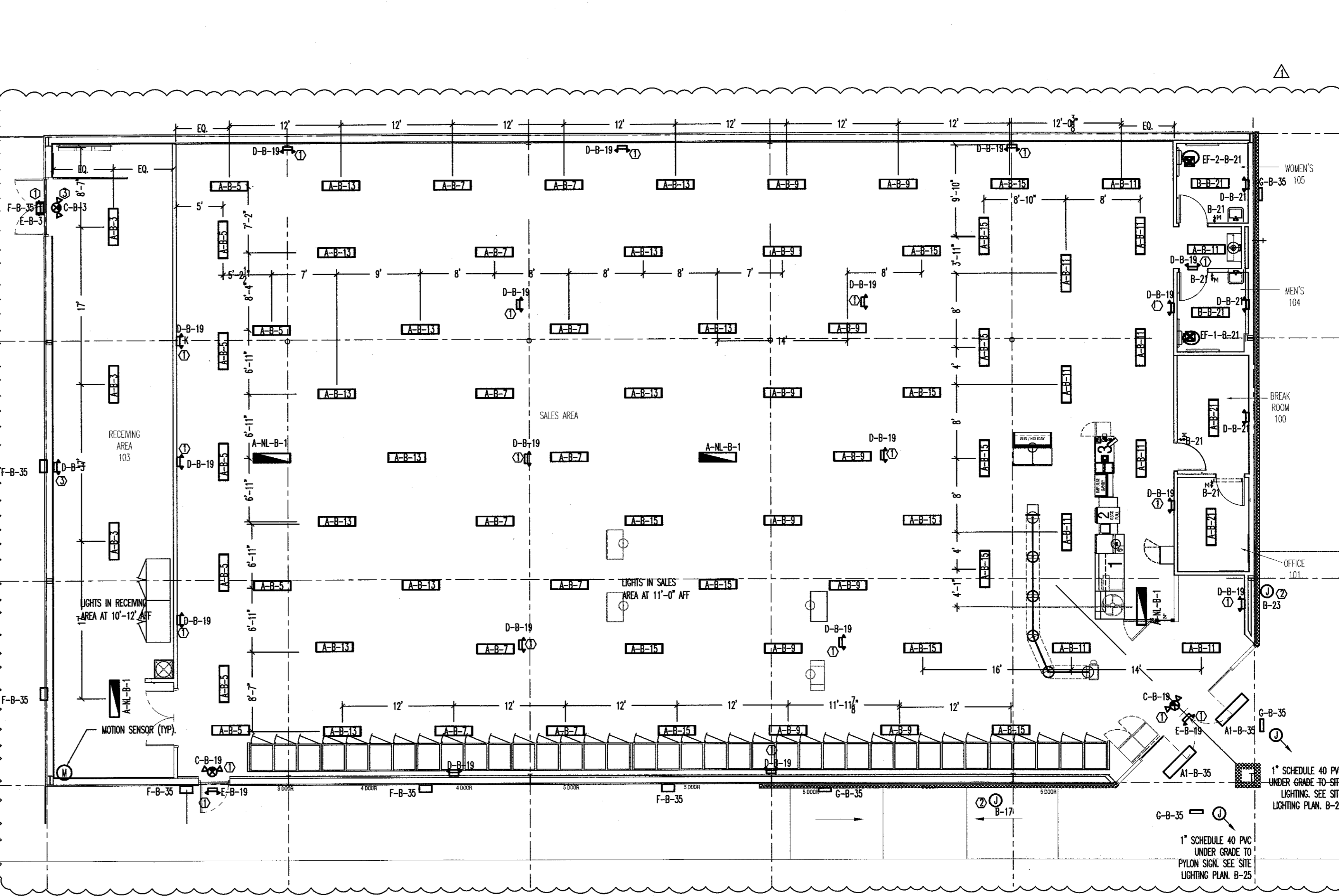
GENERAL ELECTRICAL NOTES:

- THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR, MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR, FASC - FIRE ALARM SYSTEM CONTRACTOR.
- "PROMOTE" MEANS TO FURNISH AND INSTALL. THE ELECTRICAL CONTRACTOR SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS 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 NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
- ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLADDED BY THE ELECTRICAL CONTRACTOR AT AN APPROVED LOCATION. THE ELECTRICAL CONTRACTOR SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE ELECTRICAL CONTRACTOR UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
- THE ELECTRICAL CONTRACTOR 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 ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE ELECTRICAL CONTRACTOR 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 BOARD AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING DETAILS. 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. METER BUSES 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. ELECTRICAL CONTRACTOR SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. ELECTRICAL SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
- ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE BY SQUARE D, Eaton, or GE. ENCLOSED SWITCHES 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 BUSSMAN, LITTELFUSE, OR Mersen.
- OCCUPANCY SENSORS SHALL BE BY WATSTOPPER, LITRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL.
- CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE WITH QUICK-BREAK MECHANISM, COMMON TRIP ON MULTIPOLAR 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.
- EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4" IN CONDUIT. EACH MULTI-WIRE 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 MULTI-WIRE BRANCH CIRCUIT PER 210.4(C) 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 ELECTRICAL CONTRACTOR. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH WIRE 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/DHNN OR XHHW. ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THHN OR XHHW INSULATION. INSULATION VOLTAGE RATING 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 #8 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 SOUTHWIRE COMPANY.
- JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", "SOOTY 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 SPICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPS IN ALL CASES. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITH OUTLET OR JUNCTION BOXES, TROUSERS, OR GUTTERS. 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 NEC 215.12. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES. THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #8 AWG AND SMALLER. ALL OUTLET 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 RETURN PLenums.
- ALL LUMINAIRES SHALL BE LISTED. LUMINAIRES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS SHOWN. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLOURESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANSI C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
- ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLOURESCENT FIXTURES UTILIZING DOUBLE-ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.134(G).
- MOUNT LIGHT SWITCHES AT 48" IN AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH OFF POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, MOVY PLASTIC WITH TOGGLE HANDLE, RATED 120-277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SENOUR, OR HUBBELL. PROMOTE BOX DEVICE PARTITION/OWNERS FOR MULTI-GANG BOXES FOR COMPLIANCE WITH NEC 404.4(E).
- ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE-STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE-RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTED SYSTEM. ALL ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI BREAKER. ALL OUTDOOR WIRING SHALL BE SERVICED PER NEC 400.5. ALL RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. SHOW WINDOW RECEPTACLES SHALL BE PROVIDED IN ACCORDANCE WITH 210.62 OF THE NEC. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SENOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
- LOCATIONS AND HEIGHTS OF ALL WALL-MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
- GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250. THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR GROUNDING CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL POWER RACEWAYS. FOR NON-ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING POINTS AND SYSTEM BONDING UNITS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH 250.32. SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS. ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.56 AS NECESSARY.
- THE ELECTRICAL CONTRACTOR SHALL ALSO COORDINATE WITH THE GENERAL CONTRACTOR REGARDING THE BONDING OF THE FOOTING REBAR, SO THAT IT WILL BE IN PLACE AND READY AT TIME OF FOOTING INSPECTION.
- ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLICON, RACO, OR D-2/GEENEY. COUPLINGS SHALL BE THREADED, SET-SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROUS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PERMITTED.
- CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED

- GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY-IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE. UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6-8" BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC. SHALL RISE AT LEAST 2" IN ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH 300.5(G), 300.5(A), AND 300.50(F) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILING PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SLAG ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #8 AWG AND LARGER.
- SMALLER, ALL CONDUCTORS SHALL BE GREENED 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).
- EMT SHALL BE MANUFACTURED IN ACCORDANCE 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 (ERSC), ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.6 AND UL 1242.
- METAL CONDUIT SHALL BE BY ALLED TUBING & CONDUIT, BECK MANUFACTURING, INC. OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY MCP CABLE SYSTEMS, INC., ELECTRA-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLICON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. W/POURTE RINGS SHALL BE TYPE FS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE 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.
- OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE ELECTRICAL CONTRACTOR. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE 712.3.2 (MAXIMUM 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 AT ONE SIDE. ONLY WITHIN ANY OPEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM 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 FIXTURES 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, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1" EMT CONDUIT MAXIMUM AND 4" 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.
- PROVIDE AN UNDERGROUND PVC CONDUIT SYSTEM FOR TELEPHONE SERVICE WITH PULL WIRES. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TELEPHONE UTILITY REGARDING ADDITIONAL FACILITIES REQUIRED FOR THE SERVICE INSTALLATION.
- INSTALL ONE (1) 3/4" FIRE RETARDANT TREATED PLYWOOD BACKBOARD WHERE INDICATED ON THE DRAWINGS FOR THE USE BY THE TELEPHONE SYSTEM. PROVIDE A 120 VOLT RECEPTACLE ADJACENT TO THE TELEPHONE BOARD. GROUND ALL TELEPHONE AND COMMUNICATIONS CIRCUITS PER NEC 800.
- ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-IN ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4" IN SQUARE BY 2-1/8" IN DEEP BOX WITH 3/4" IN KNOCK-OUTS AND A 3/4" IN CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
- ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERMINE'S LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR 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 ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE.
- ELECTRICAL CONTRACTOR SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL UNPOWERED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART II. 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 SUPPORT THE DEVICE.
- ELECTRICAL CONTRACTOR SHALL FIELD IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
- ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4" IN MINIMUM) ETCHED INTO THE WHITE CORE. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTOR CARD THAT ACCURATELY IDENTIFIES DEVICES INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
- 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, FLOURESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION. WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLOURESCENT 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 ELECTRIC CODE, 2018 STATE BUILDING CODE, AND ALL APPLICABLE LOCAL CODES.



- HEX PLAN NOTES
- EMERGENCY/EXIT SIGNS AND LIGHTS: INSTALL EMERGENCY LIGHTS AND EXIT SIGNS (CENTERED AT 10'-6" AFF. 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 AS NOTED ON ARCHITECTURAL PLANS.
 - EMERGENCY/EXIT SIGNS AND LIGHTS: INSTALL EMERGENCY LIGHTS AND EXIT SIGNS (CENTERED AT 8'-0" AFF. TO BE ABOVE FIXTURES AND MERCHANDISE) IN RECEIVING AREA.

LIGHTING PLAN-SCALE 1/8"=1' | 1

MARK	DESCRIPTION	LAMPS - PENNSYLVANIA				VOLTAGE	INPUT WATTAGE	MOUNTING	QTY.	REMARKS	MFG	MODEL
		TYPE	WATTAGE	QTY.	CCT							
A	4' LED STRIP (1" IN C2) - 10 FEET CABLES)	LED	33	1	5000K	120	33	SUSPENDED	70		LEDS	ST5000
A-NL	4' BRU LED STRIP (1" IN C2) - 10 FEET CABLES)	LED	33	1	5000K	120	33	SURFACE	3		ETI	54583361
B	2' LED STRIP	LED	20	1	5000K	120	20	SURFACE	4		LEDS	ST2000
C	EMERGENCY LIGHT/EXIT COMBO 2 HEADS	LED	2	1	-	120	2	SUSPENDED	3	1	LEDS	EM2505
D	EMERGENCY LIGHT 2 HEADS	LED	2	1	-	120	2	SUSPENDED	10	1	LEDS	EL2500
E	EMERGENCY EGRESS LIGHT 2 HEADS	LED	2	1	-	120	2	SUSPENDED	3	1,2	LEDS	EL2501
G	WALL PACK	LED	42	1	5000K	120	42	WALL	8	1-4	LEDS	WP4250
H	HILLWAZ FLOOD	LED	150	1	5000K	120	150	WALL	4	1-4	LEDS	AL1210

- FIXTURES LABELED FOR EMERGENCY USE SHALL HAVE BATTERY FOR 90 MINUTE ILLUMINATION OF TWO (2) LAMPS
- NET LOCATION LISTED
- PHOTOCELL CONTROLLED
- FULL CUT OFF

SYMBOL	DESCRIPTION	REMARKS
⊕	WALL MOUNTED OCCUPANCY SENSOR	LEVITON 0510-10W LINE VOLTAGE CONTROL SWITCH
⊙	JUNCTION BOX	
⊖	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

GENERAL ELECTRICAL NOTES 3

ELECTRICAL DESIGNER'S STATEMENT

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

LIGHTING SCHEDULE:	SEE LIGHTING LEGEND		
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: 2400 WATTS ALLOWED: 11466		
ALL EXTERIOR LUMINAIRES > 100W MUST HAVE A MINIMUM EFFICACY OF 60 LUMENS/WATT			
OCCUPANCY	AREA (FT ²)	ALLOWANCE (W/FT ²)	MAX WATTAGE ALLOWED
RETAIL	9100	1.26	11466
TOTAL	9100		11466

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)

MOTOR HERSPEYER: N/A
 NUMBER OF PHASES: BUILDING IS 208Y/120V, 3ø, 4ø
 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 NORTH CAROLINA STATE ENERGY CODE, 2018 EDITION.

REQUIRE NATIONAL ACCOUNT VENDORS

HARRIS LIGHTING	SHEENEL JOHNSON sjohnson@harrislights.com	904-294-1220 EXT. 262	ELECTRICAL LIGHTING SUPPLIES
CEC-CONSULTED ELECTRICAL DISTRIBUTORS	ROBERT BECKER robertb@cecgby.com	270-781-2229	ELECTRICAL SWITCH GEAR

FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY C406 OF 2018 NORTH CAROLINA ENERGY CONSERVATION CODE, WE ARE CHOOSING C406.3 - REDUCED LIGHTING POWER DENSITY.

2400 W SPECIFIED <= 10319 W (11466 W ALLOWED X 90%)

ELECTRICAL DESIGNER'S STATEMENT 4

LIGHTING FIXTURE SCHEDULE AND LEGEND 2

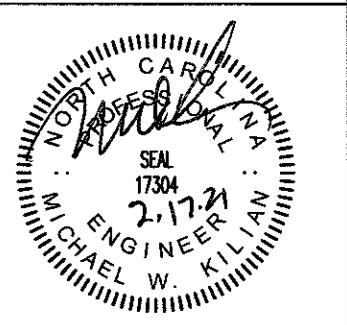
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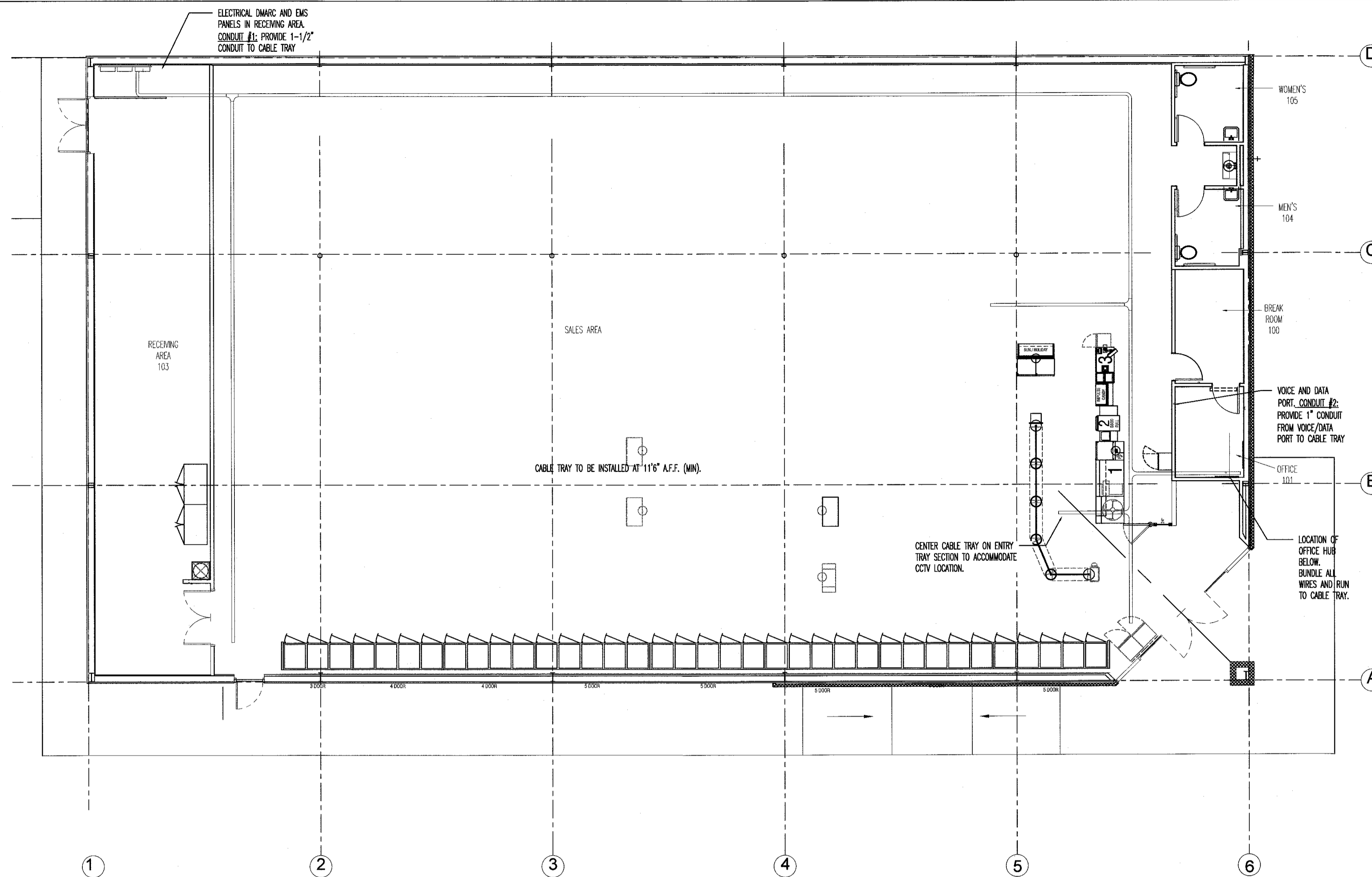
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 RAY ROAD
 SPRING LAKE, NC 28390

TDS NUMBER: 21059
 DRAWN BY: REW
 DATE: 02/05/2021
 REVISIONS:

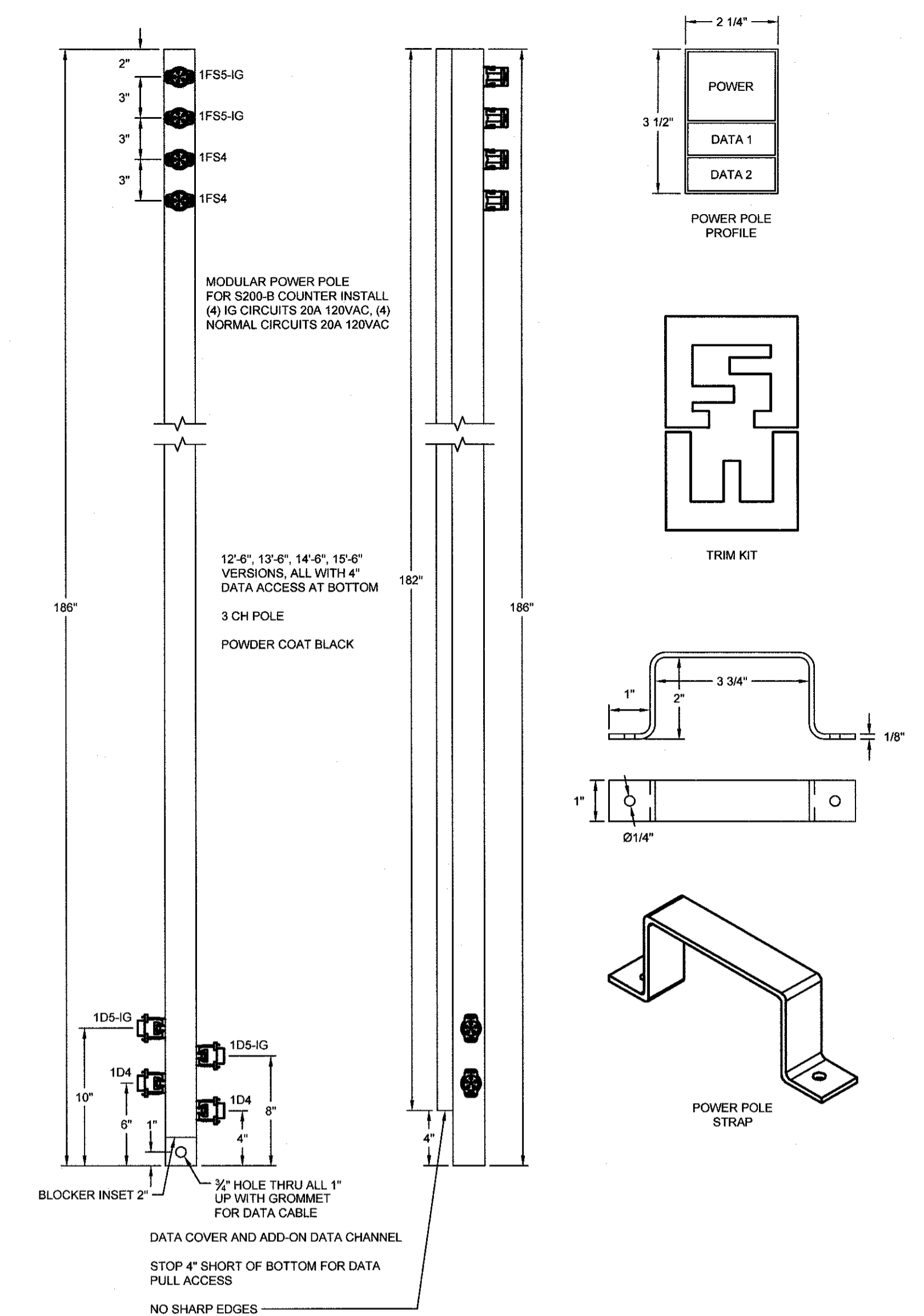
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SHEET NUMBER

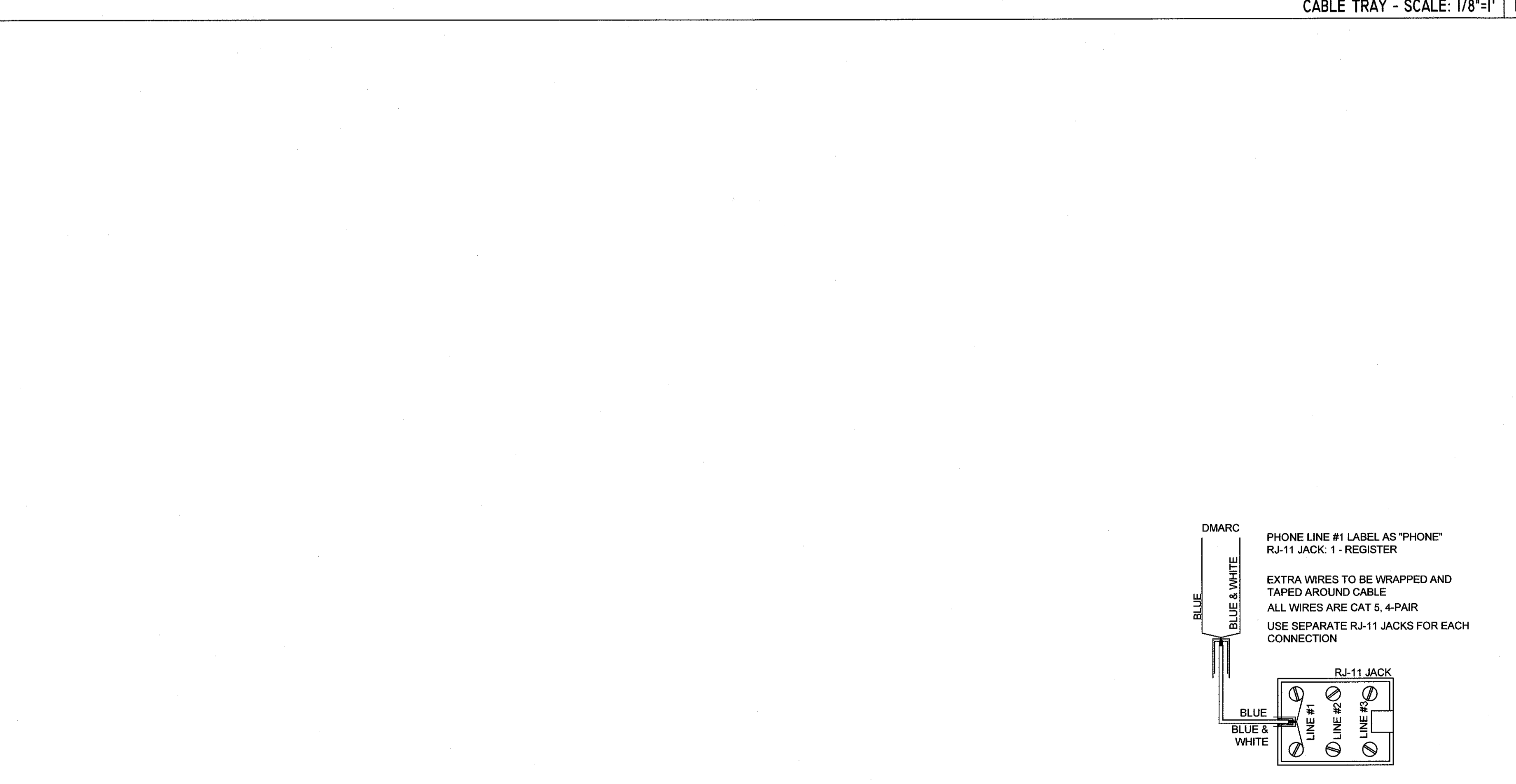
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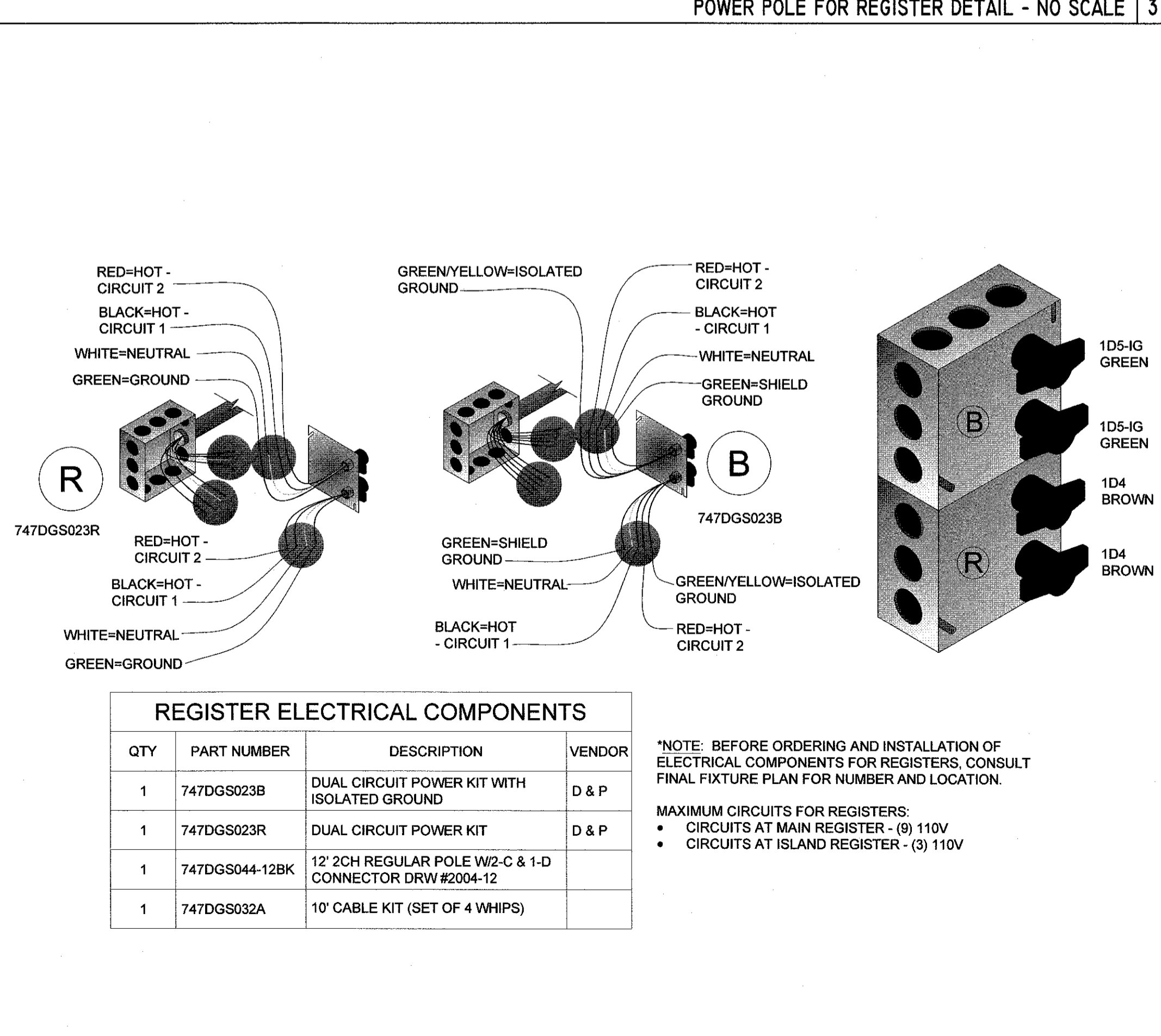
CABLE TRAY - SCALE: 1/8"=1' |



POWER POLE FOR REGISTER DETAIL - NO SCALE | 3



PHONE WIRING FOR REGISTER DETAIL - NO SCALE | 2

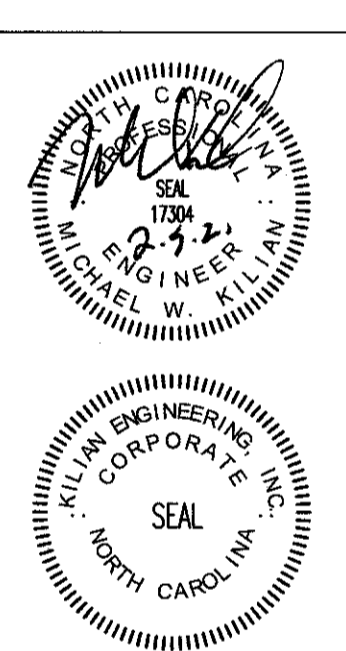


FREEZER/COOLER POWER POLE - NO SCALE | 4

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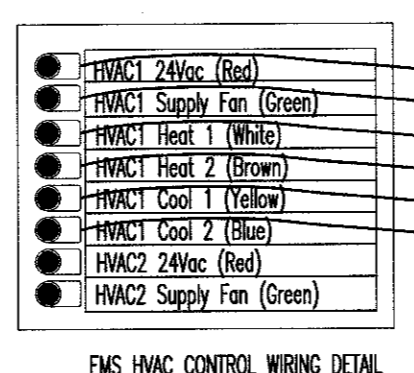
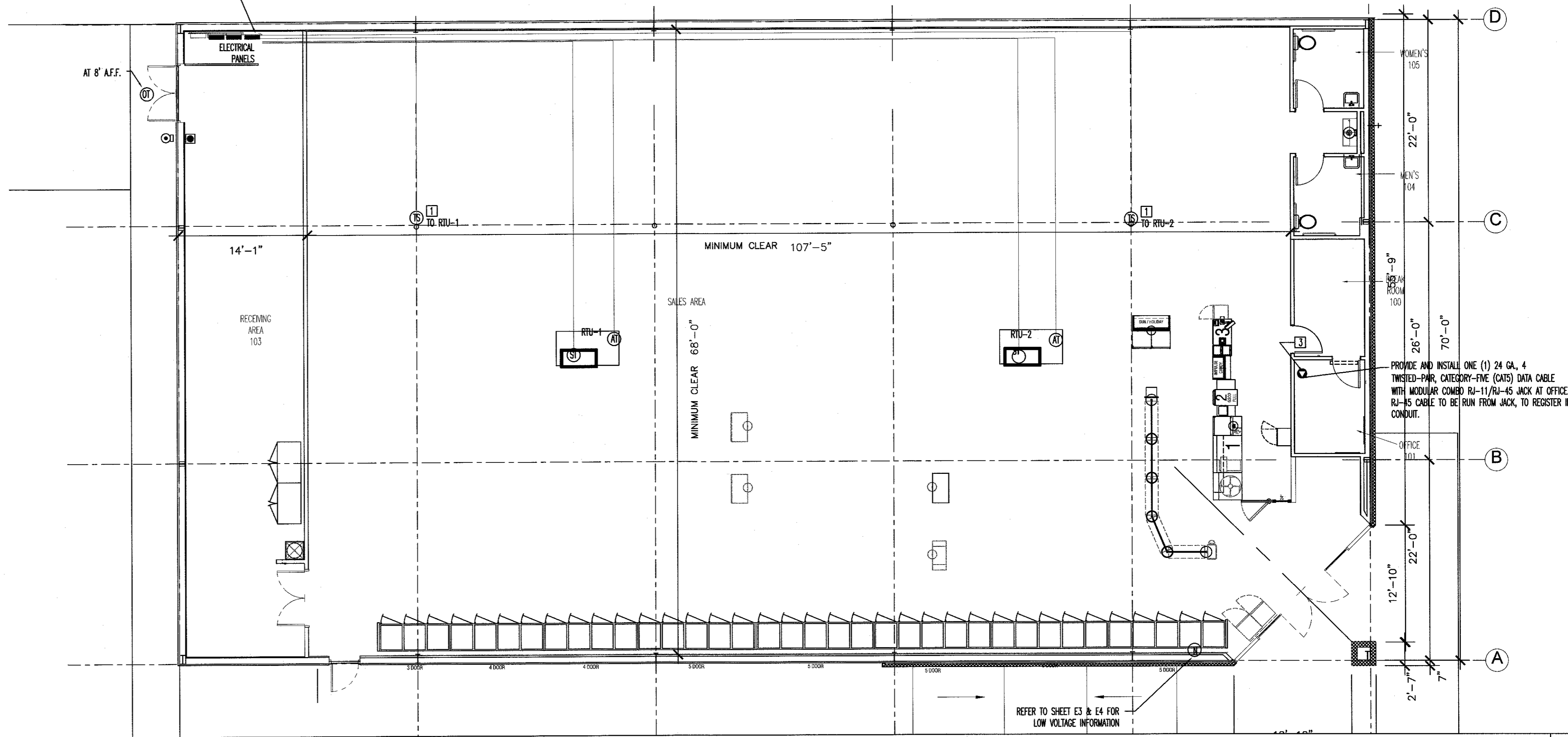


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SHEET NUMBER
E-3

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



DEVICE SCHEDULE					
SYMB	DESCRIPTION	CABLE TYPE	SUPPLIER	INSTALLER	NOTES
OT	OUTDOOR AIR TEMP (501-1122) MOUNTED 8'-0" A.F.F.	BELDEN 8761 OR EQUIVALENT (22AWG, 2C, STRANDED, SHIELDED)	EMS SUPPLIER	GENERAL CONTRACTOR	(1) PER RECEIVING ENTRY
ST	SUPPLY TEMP (201-0041) IN SUPPLY DUCT	BELDEN 8761 OR EQUIVALENT (22AWG, 2C, STRANDED, SHIELDED)	EMS SUPPLIER	GENERAL CONTRACTOR	(1) PER HVAC UNIT
TS	TOUCHSCREEN THERMOSTAT (810-1600) 8'-0" A.F.F.	8C T-STAT CABLE	EMS SUPPLIER	GENERAL CONTRACTOR	(1) PER HVAC UNIT ZONE
●	RJ-11/RJ-45 DATA JACK PHONE COMBO	CAT-5 DATA CABLE (24AWG, 4 TWISTED PAIR)	GENERAL CONTRACTOR	GENERAL CONTRACTOR	(1) AT OFFICE COMPUTER CART
§m	MOTION SENSOR SWITCH	LEVITON EZ-FIND ODS-10-IDW	GENERAL CONTRACTOR	GENERAL CONTRACTOR	(1) PER RESTROOM (1) PER BREAK ROOM (1) PER OFFICE

GENERAL NOTES

A. REFER TO E1 FOR GENERAL CONTRACTOR RESPONSIBILITIES. E.C. MAY USE CABLE TRAY FOR LOW VOLTAGE CABLES, SEE 2/E2.

B. RUN CONDUIT FROM SENSORS TO BOTTOM OF STRUCTURE.

C. REFRIGERATION UNITS TO BE CONNECTED TO EMS PANEL BY DOLLAR GENERAL REFRIGERATION CONTRACTOR.

SENSOR PLAN KEYED NOTES

1. ALWAYS INSTALL THERMOSTATS 8'-0" A.F.F. THE EXACT MOUNTING LOCATION OF THE THERMOSTAT "TS" MAY VARY DEPENDING ON THE STORE LAYOUT AND DUCT CONFIGURATION. REFER TO SITE SPECIFIC MECHANICAL DRAWINGS FOR HVAC ZONED THERMOSTAT MOUNTING LOCATIONS. IF THERMOSTATS ARE MOUNTED ON EXTERIOR WALLS DUE TO DUCT CONFIGURATION, THEY ARE THEN TO BE INSULATED TO PREVENT AIR INFILTRATION. IF ADDITIONAL HVAC UNITS ARE USED, ADD ADDITIONAL THERMOSTATS "TS".

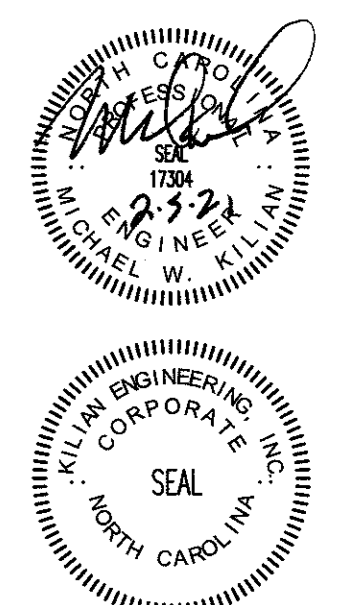
2. ADD ADDITIONAL HVAC UNIT WHEN REQUIRED.

3. PHONE LINE #1 - TWO RJ-11 PORTS. ONE (1) LOCATED IN OFFICE WRJ-45 DATA JACK COMBO AND ONE (1) AT REGISTER. 24 GA. CAT 5, 4-PAIR TWISTED WIRE ONLY. USE BLUE AND BLUE & WHITE WIRES. HOOK TO LINE #1 TERMINAL IN RJ-11 JACK EACH PHONE JACK TO HAVE DEDICATED, SEPARATE HOME RUN TO DMARC. LABEL AS "PHONE" AT THE DESTINATION AND AT DMARC. PHONE COMPANY PROVIDES FINAL HOOK UP TO DMARC ONLY. PHONE LINE #2 - RJ-11 PHONE JACK SUPPLIED AND WIRED BY CONTRACTOR.

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 910.251.8699
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 Fax: 910.251.8699
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 211 East 2nd Street
 Wilson, NC 27893
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 Fax: 252.399.2701

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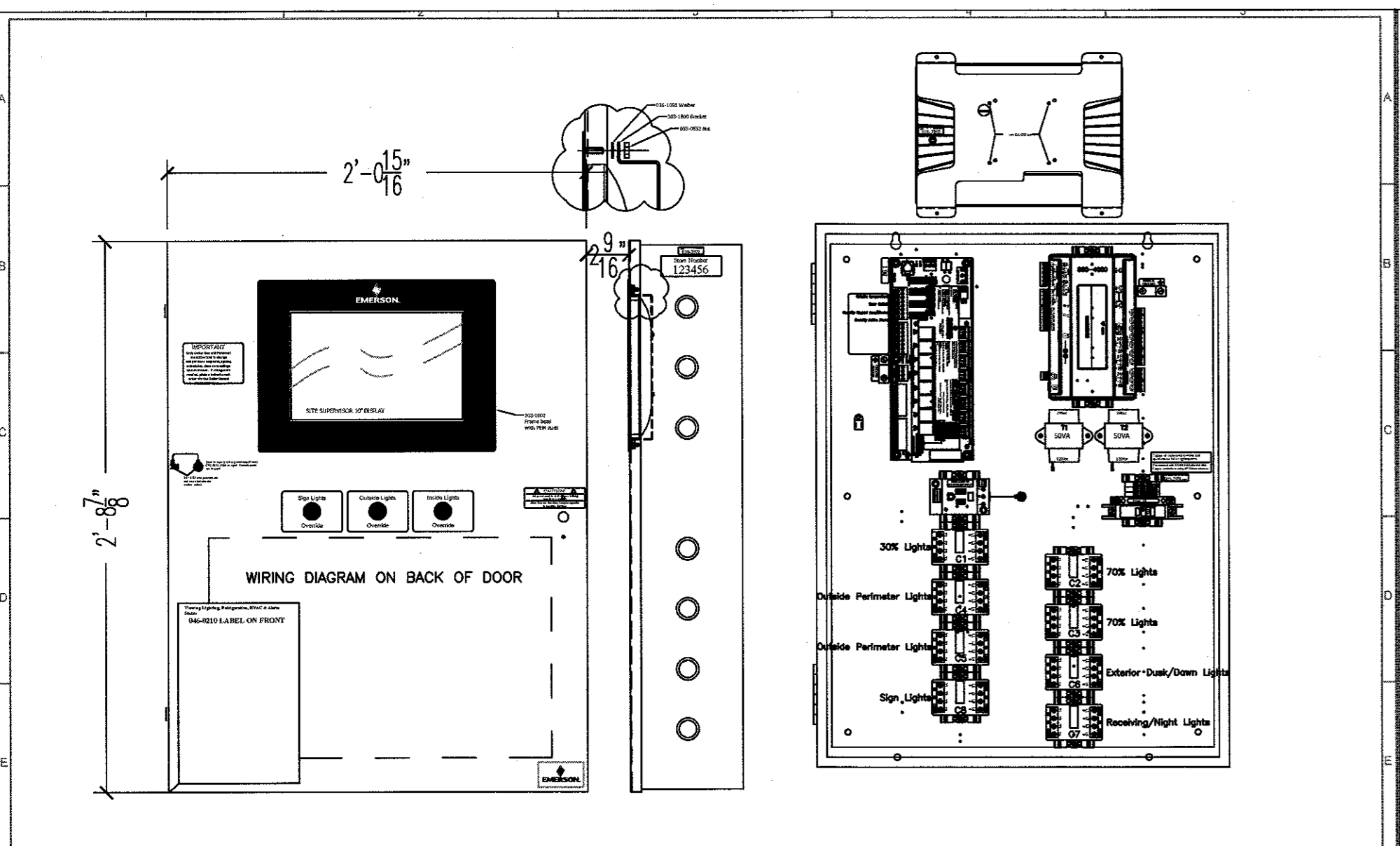
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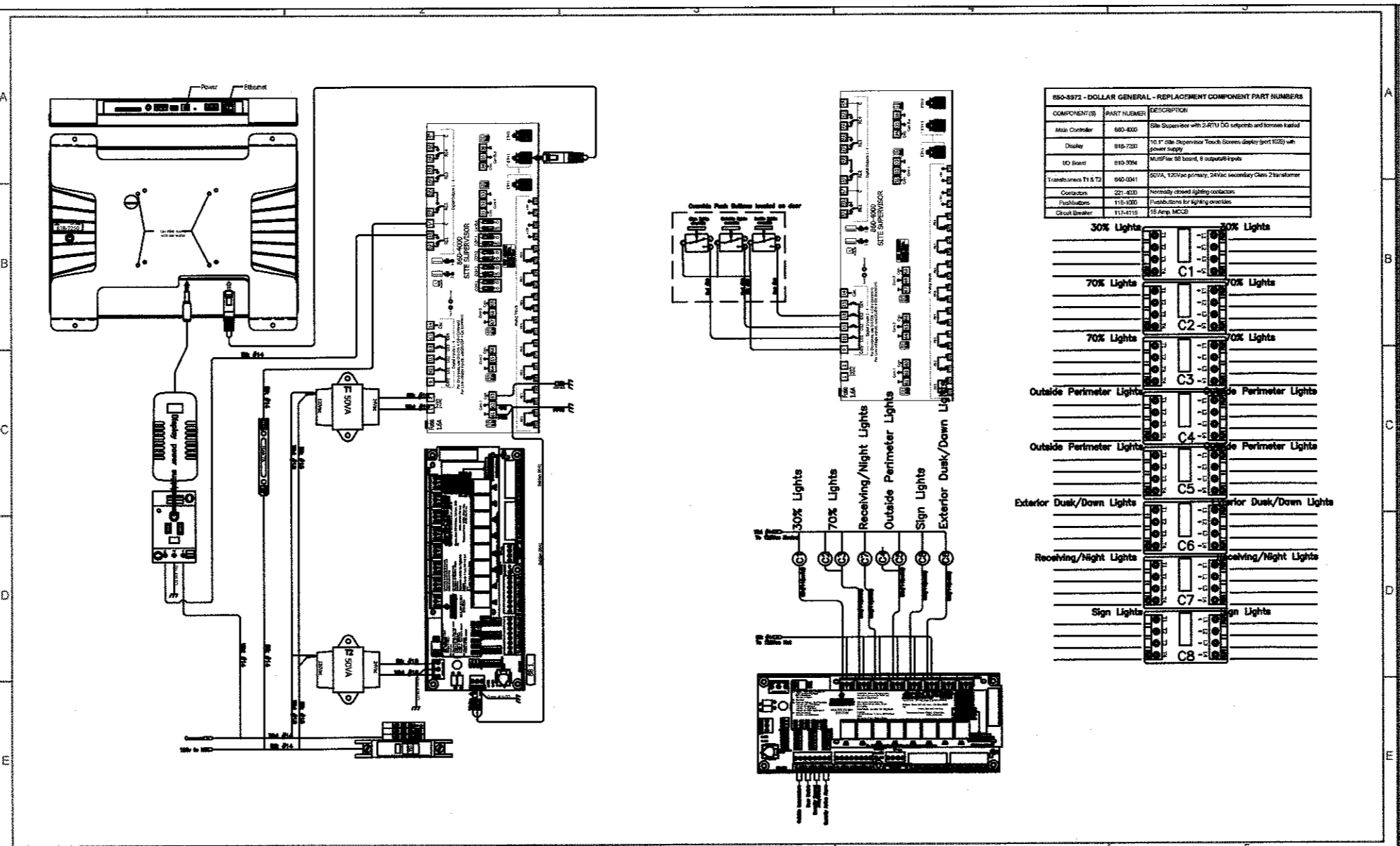
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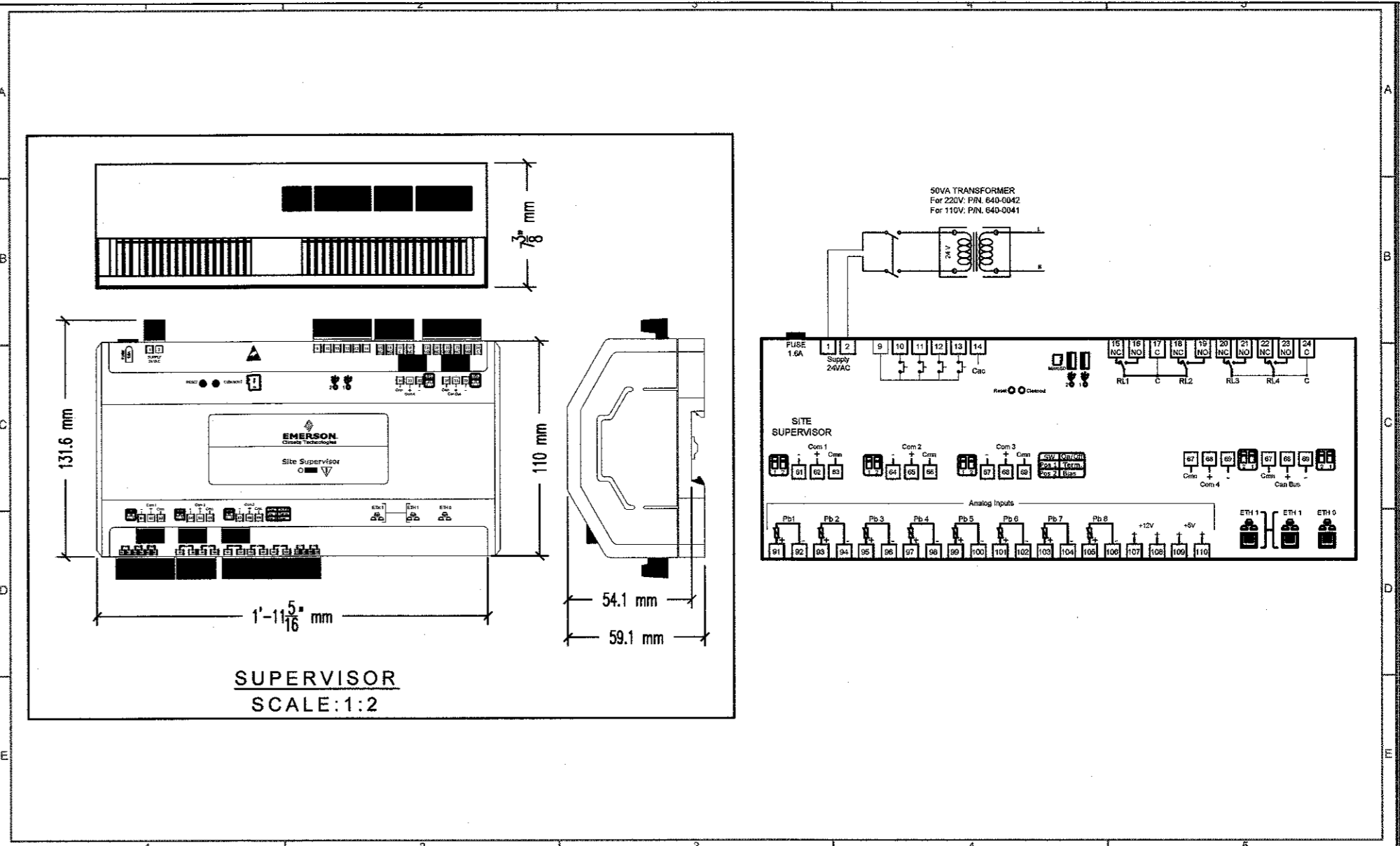
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EMS-1



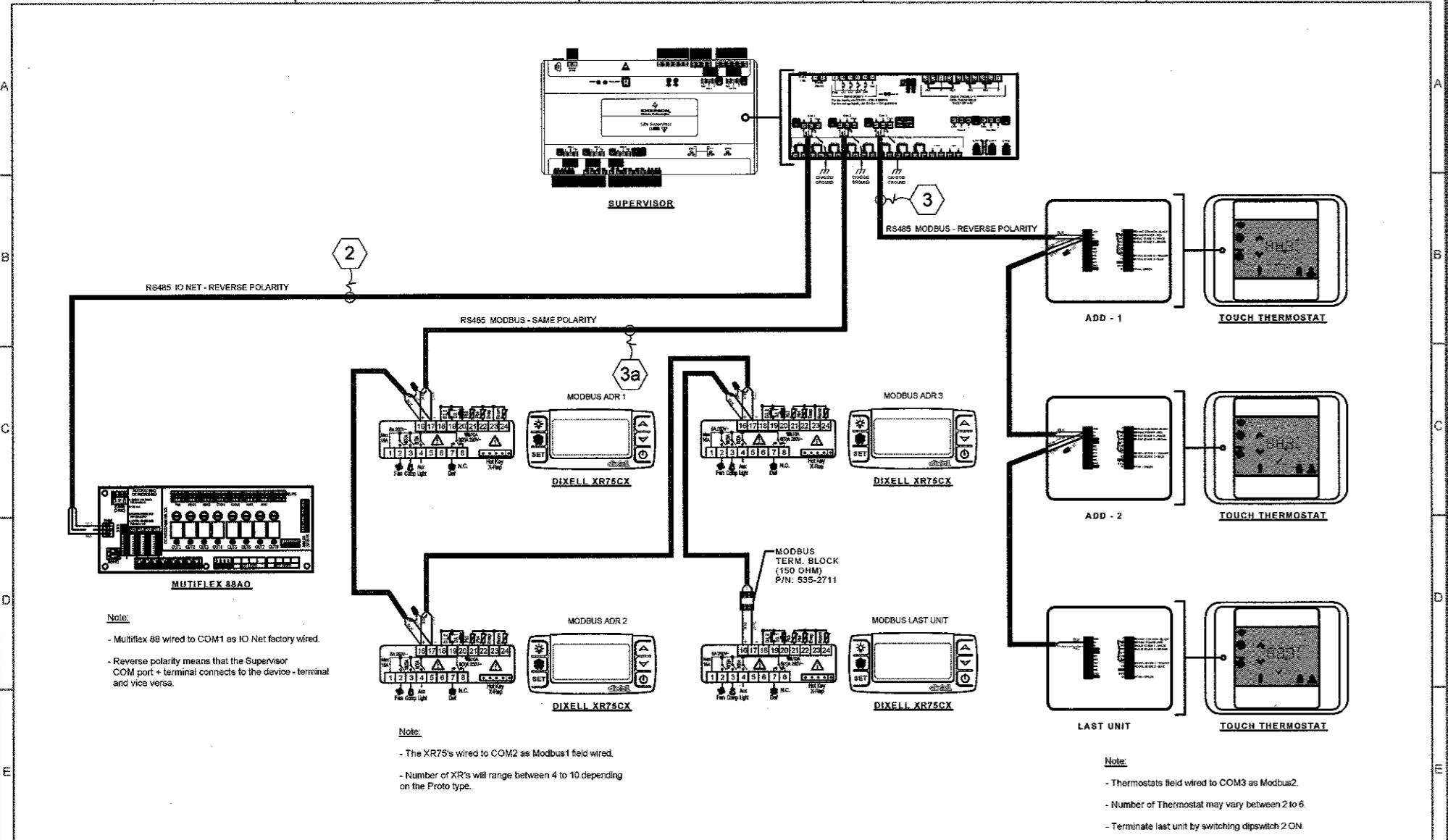
EMERSON	EMERSON COMMERCIAL AND RESIDENTIAL SOLUTIONS	TITLE: PANEL, SUPERVISOR, 88A0, 8-NC 30A LIGHTING	NOTES / REVISIONS	SHEET NO.
DESIGNED BY: DOLLAR GENERAL	DRAWN BY: LUTHER	DATE: 12/18/19	REVISED DATE: 12/18/19	01



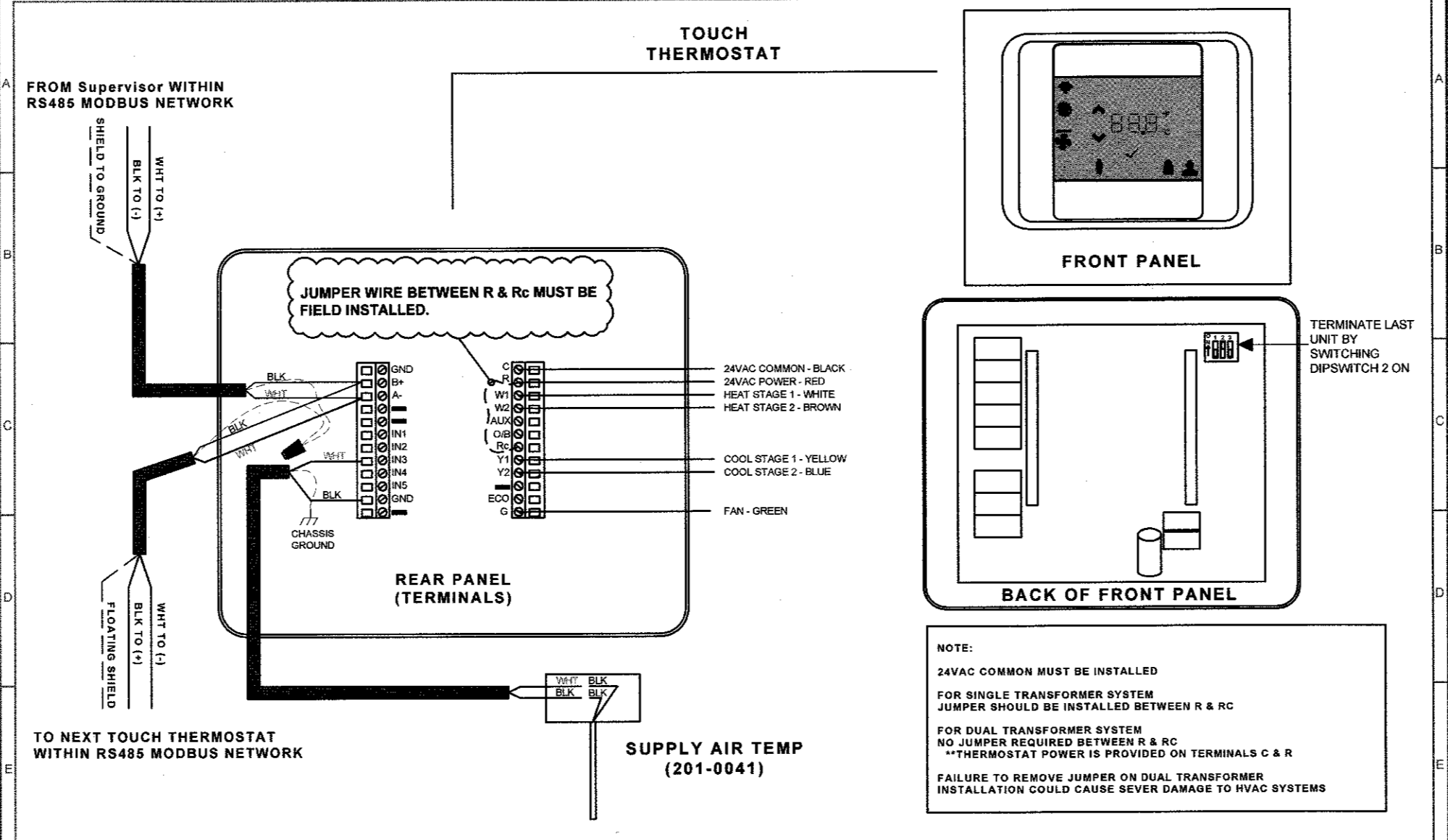
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DESIGNED BY: DOLLAR GENERAL	DRAWN BY: LUTHER	DATE: 12/18/19	REVISED DATE: 12/18/19	02



EMERSON	EMERSON COMMERCIAL AND RESIDENTIAL SOLUTIONS	TITLE: SUPERVISOR WITH POWER SUPPLY	NOTES / REVISIONS	SHEET NO.
DESIGNED BY: DOLLAR GENERAL	DRAWN BY: LUTHER	DATE: 12/18/19	REVISED DATE: 12/18/19	03

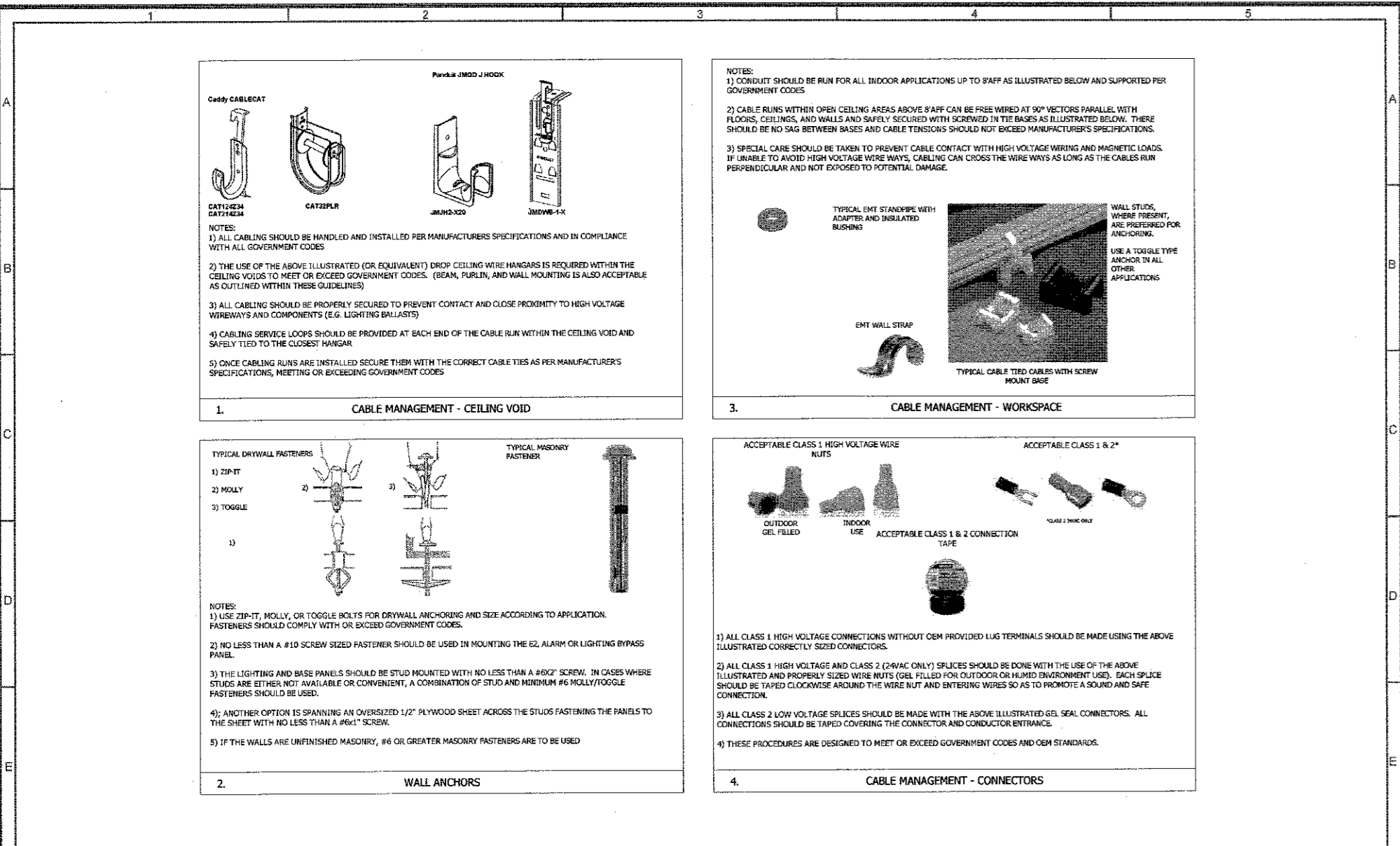


EMERSON	EMERSON COMMERCIAL AND RESIDENTIAL SOLUTIONS	TITLE: SUPERVISOR - IO NET AND MODBUS NETWORK OVERVIEW	NOTES / REVISIONS	SHEET NO.
DESIGNED BY: DOLLAR GENERAL	DRAWN BY: LUTHER	DATE: 12/18/19	REVISED DATE: 12/18/19	04

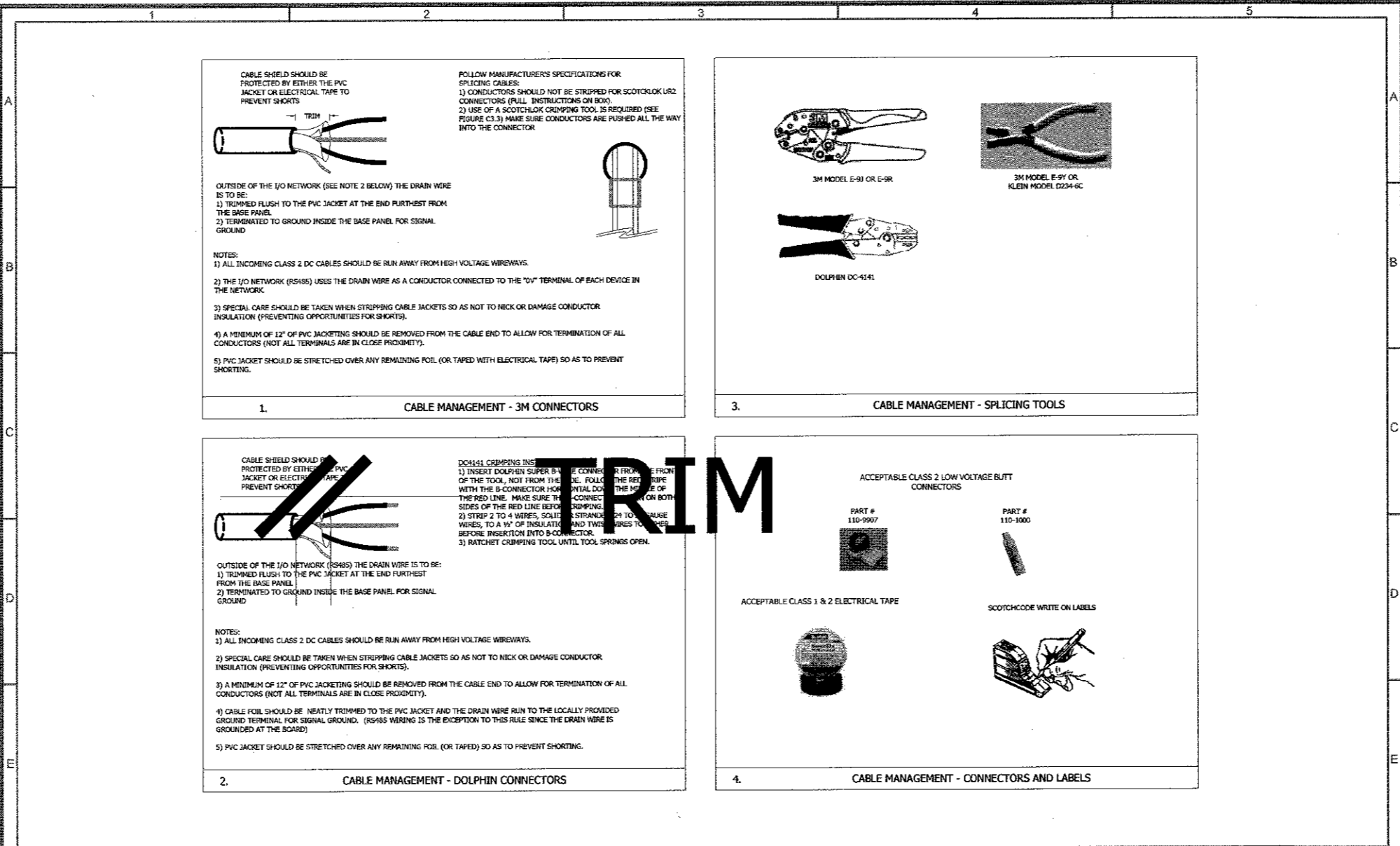


EMERSON	EMERSON COMMERCIAL AND RESIDENTIAL SOLUTIONS	TITLE: THERMOSTAT WIRING DETAIL	NOTES / REVISIONS	SHEET NO.
DESIGNED BY: DOLLAR GENERAL	DRAWN BY: LUTHER	DATE: 12/18/19	REVISED DATE: 12/18/19	05

CABLES / WIRING SPECIFICATIONS	
<p>1 POWER WIRING (24VAC)</p> <ul style="list-style-type: none"> 14AWG - BELDEN 9485 16AWG - BELDEN 9484 18AWG - BELDEN 9483 <p>MAXIMUM ALLOWABLE WIRE LENGTH FOR EACH GAUGE: For 14AWG: Lmax = 1200' / VA (in feet) For 16AWG: Lmax = 750' / VA (in feet) For 18AWG: Lmax = 462' / VA (in feet)</p>	<p>4 ECHOLON NETWORK</p> <p>EuroTech (APAC) P/N: ET3801-107 Flow PCN: 108-5005</p> <p>MAXIMUM WIRE LENGTH PER SEGMENT: 200 METERS MAXIMUM OF 20 NODES PER SEGMENT</p>
<p>2 RS485 IO NETWORK - (REVERSE POLARITY)</p> <p>9600 BAUD</p> <p>RS485 CABLE FOR CPC AND DIXELL TEMP. SENSORS IF LONGER THAN THE PROBE LENGTH SUPPLIED</p> <p>BELDEN 8761 (22AWG, 600V) CPC P/N: 135-0600</p> <p>MAXIMUM DAISY CHAIN CABLE DISTANCE: 4000 FT OR 1219 METERS (FOR 22 AWG)</p>	<p>5 ETHERNET CROSS-OVER CABLE</p> <p>6 ETHERNET STRAIGHT CABLE</p> <p>4 PAIR 56T/ CAT5E, 24AWG SOLID BARE COPPER, WITH FOL SHIELD BONDED TO JACKET AND 24AWG DRAIN WIRE. TDSBPCS PLUS5</p> <p>BELDEN BEL-1533R-XX (PVC) 200MHz BELDEN BEL-1533P-XX (PLENUM) 350MHz</p> <p>MAXIMUM CABLE LENGTH: 328 FT OR 100 METERS</p>
<p>2a RS485 CABLE FOR CPC AND DIXELL TEMP. SENSORS</p> <p>9600 BAUD - FOR ECT MODBUS 19200 BAUD - FOR DEXELL MODBUS</p> <p>BELDEN 8761 (22AWG, 600V) CPC P/N: 135-0600</p> <p>MAXIMUM DAISY CHAIN CABLE DISTANCE: 4000 FT OR 1219 METERS (FOR 22 AWG)</p>	<p>7 BELDEN 8771</p> <p>SHIELDED 3-CONDUCTOR CABLE, 22 GA WIRE</p> <p>FOR PRESSURE TRANSDUCERS AND HUMIDITY SENSORS.</p>
<p>3 RS485 MODBUS NETWORK - (SAME POLARITY)</p> <p>9600 BAUD - FOR DIXELL MODBUS 19200 BAUD - FOR DEXELL MODBUS</p> <p>BELDEN 8761 (22AWG, 600V) CPC P/N: 135-0600</p> <p>MAXIMUM DAISY CHAIN CABLE DISTANCE: 4000 FT OR 1219 METERS (FOR 22 AWG)</p>	<p>8 BELDEN 8729</p> <p>SHIELDED 4-CONDUCTOR CABLE, 22 GA WIRE.</p> <p>FOR LIGHT LEVEL SENSORS, AND DEWPOINT SENSORS</p>
<p>3a RS485 MODBUS NETWORK - (SAME POLARITY)</p> <p>9600 BAUD - MAXIMUM OF 32 DEVICES PER LEG / SEGMENT 19200 BAUD - MAXIMUM OF 25 DEVICES PER LEG / SEGMENT</p>	<p>9 BELDEN 8418</p> <p>4-CONDUCTOR CABLE, 18AWG WIRE.</p> <p>FOR ESR VALVES (MAXIMUM OF 150 FT)</p>



EMERSON	EMERSON COMMERCIAL AND RESIDENTIAL SOLUTIONS	TITLE: EMS CABLE MANAGEMENT DETAILS - 1	NOTES / REVISIONS	SHEET NO.
DESIGNED BY: DOLLAR GENERAL	DRAWN BY: LUTHER	DATE: 12/18/19	REVISED DATE: 12/18/19	07



EMERSON	EMERSON COMMERCIAL AND RESIDENTIAL SOLUTIONS	TITLE: EMS CABLE MANAGEMENT DETAILS SHEET - 2	NOTES / REVISIONS	SHEET NO.
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