NFPA 54: ANSI Z223.1-2024 National fuel gas code 2020 edition					
LEGEND					
SYMBOL	DESCRIPTION				
	EXTERIOR WALL				
	INTERIOR WALL				
	I I/2" x 3 5/8" x 20G. INTERIOR METAL STUD PARTITION				
6" CHASE	I I/2" x 5 5/8" x 20G. INTERIOR METAL STUD PARTITION				
	2"X6"x18 G. INTERIOR METAL STUD PARTITION I HR. FIRE RATED PER DESIGN NO. U465				
	STOREFRONT OR WINDOW				
	DOOR				

BUILDING DATA				
BUILDING TYPE	II B UNSPRIN	KLED		
NO. OF STORIES	1			
BUILDING HEIGHT	22'-6"			
BUILDING AREA	UNIT #1	1,220 S.F.		
	UNIT #2	1,220 S.F.		
	UNIT #3	1,220 S.F.		
	UNIT #4	932.75 S.F.		
	UNIT #5	932.75 S.F.		
	UNIT #6	932.75 S.F.		
	UNIT #7	932.75 S.F.		
	BUILDING GROS	SS AREA = 7,391 S.F.		
OCCUPANCY CLASSIFICATION	BUSINESS GF	ROUP 'B'		
OCCUPANT LOAD	UNIT #1	1,220 S.F. / 150 = 9 PEOPLE		
	UNIT #2	1,220 S.F. / 150 = 9 PEOPLE		
	UNIT #3	1,220 S.F. $/ 150 = 9 PEOPLE$		
	UNIT #4	932.75 S.F. / 150 = 7 PEOPLE		
	UNIT #5	932.75 S.F. / 150 = 7 PEOPLE		
	UNIT #6	932.75 S.F. / 150 = 7 PEOPLE		
	UNIT #7	932.75 S.F. / 150 = 7 PEOPLE		
OCCUPANCY CLASSIFICATION	MERCANTILE	MERCANTILE GROUP 'M'		
OCCUPANT LOAD	UNIT #1	1,220 S.F. / 60 = 21 PEOPLE		
2 2 2 2	UNIT #2	1,220 S.F. / 60 = 21 PEOPLE		
	UNIT #3	1,220 S.F. / 60 = 21 PEOPLE		
	UNIT #4	932.75 S.F. / 60 = 16 PEOPLE		
	UNIT #5	932.75 S.F. / 60 = 16 PEOPLE		
	UNIT #6	932.75 S.F. / 60 = 16 PEOPLE		

DRAWING IN	DRAWING INDEX				
SHEET NO.	SHEET TITLE				
A-1.0	INDEX				
A-2.0	FLOOR PLAN				
A-2.1	REFLECTED CEILING PLAN & DETAILS				
A-3.0	ELEVATIONS				
A-4.0	BUILDING SECTIONS				
A-5.0	RESTROOM PLANS & DETAILS				
A-6.0	INTERIOR DETAILS				
A-7.0	FIRE RATED DETAILS				
A-7.1	FIRE RATED DETAILS				
S-1.0	STRUCTURAL NOTES & SPECIFICATIONS				
S-2.0	FOUNDATION PLAN & DETAILS				

DRAWING IN	IDEX			
SHEET NO.	SHEET TITLE			
M-100	MECHANICAL LEGENDS, ABBREVIATIONS AND INDEX			
M-101	MECHANICAL SPECIFICATIONS			
M-200	MECHANICAL PLAN			
M-300	MECHANICAL SCHEDULES			
M-400	MECHANICAL DETAILS			
E-100	ELECTRICAL LEGENDS, ABBREVIATIONS AND INDEX			
E-101	ELECTRICAL SPECIFICATIONS			
E-200	ELECTRICAL PLAN - POWER			
E-201	ELECTRICAL PLAN - LIGHTING			
E-300	ELECTRICAL DETAILS			
P-100	PLUMBING LEGENDS, ABBREVIATIONS AND INDEX			
P-101	PLUMBING SPECIFICATIONS			
P-200	PLUMBING PLAN - SANITARY			
P-201	PLUMBING PLAN - WATER			
P-300	PLUMBING DETAIL			

		FAMILY PLAZA	
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SCALE : AS SHOWN DRAWN BY :  $q^{|\zeta|}$ 

DATE : 02-10-2025
PROJECT NO:

KAD 3757

A-1.0

ROOM	ROOM FINISH SCHEDULE						
ROOM NO.	FLOOR	BASE	WALLS	CLG.			
701	COMMERCIAL VINYL PLANK	6" WD.	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			
702	COMMERCIAL VINYL PLANK	6" WD.	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			
703	COMMERCIAL VINYL PLANK	6" WD.	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			
704	COMMERCIAL VINYL PLANK	6" WD.	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			
704	COMMERCIAL VINYL PLANK	6" WD.	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			
706	COMMERCIAL VINYL PLANK	6" VINYL	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			
707	COMMERCIAL VINYL PLANK	6" WD.	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			
708	COMMERCIAL VINYL PLANK	6" WD.	DRYWALL FINISH PAINTED	2'X2' ACOUSTIC CLG. TILE			

ALL FINISHED TO BE BUILDING STANDARD AND APPROVED BY OWNER FLAMESPRED SHALL NOT EXCEED 50 AND SMOKE-DEVELOPMENT SHALL NOT EXCEED 450 (CLASS B) FOR INTERIOR FINISHES.

DOOR SCHEDULE				NOTE: REFER TO DOOR MANUF. SPECS. & DETAILS			
TYPE	SIZE	JAMB	THRESHOLD	MATERIAL	LOCK	SELF CLOSER	REMARKS
1 A	(2) 3'-0"X7'-0"	ALUM.	ALUM.	ALUM. & TEMP. GLASS	KEY LOCKSET		ENTRANCE DOOR
2 B	3'-0"X7'-0"	MTL	ALUM.	HOLLOW MTL.	KEY LOCKSET		EXTERIOR DOOR
3 C	3'-0"X6'-8"	WD.		HOLLOW CORE WD.	LOCKSET		INTERIOR DOOR

## **GENERAL DOOR NOTES:**

3) VERIFY KEY SCHEDULE WITH OWNER

- 1) INSTALL WALL OR FLOOR MOUNTED DOOR STOPS
- AS APPLICABLE
- All DOOR HARDWARE shall be in accordance with Current Adopted Codes (Door Manuf. to verify)
- ( NO KEY OPERATION TO BE INSTALLED IN DIRECTION OF EXIT)
- THRESHOLD TO COMPLY WITH: a) Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical.
- b) Changes in level between 1/4 inch (6.4 mm) high minimum and 1/2 inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.

BUSINESS OCCUPANCY UNIT #1 - UNIT #3 TRAVEL DISTANCE, DEAD-END LENGTH, EXIT AND MEANS OF EGRESS WIDTH MAX. TRAVEL DISTANCE ALLOWED = 200'-0" MAX. TRAVEL DISTANCE PROVIDED = APPROX. 73'-0" MAX. COMMON PATH OF EGRESS = 75'-0" MAX. COMMON PATH OF EGRESS PROVIDED = N/A MAX. DEAD END CORRIDOR ALLOWED = 20'-0"
MAX. DEAD END CORRIDOR PROVIDED = N/A MIN. CORRIDOR WIDTH ALLOWED = 36" CORRIDOR WIDTH PROVIDED =N/A MIN. CLEAR OP'G OF EXIT DOORS ALLOWED = 32" MIN. CLEAR OP'G OF EXIT DOORS PROVIDED = 34" EGRESS WIDTH PER PERSON SERVED = 0.2 (IN) 9 PEOPLE X 0.2" = 1.8" REQUIRED PROVIDED- 68" NUMBER OF EXISTS REQUIRED = I NUMBER OF EXISTS PROVIDED = 2

BUSINESS OCCUPANCY UNIT #4 - UNIT #6 TRAVEL DISTANCE, DEAD-END LENGTH, EXIT AND MEANS OF EGRESS WIDTH MAX. TRAVEL DISTANCE ALLOWED = 200'-0" MAX. TRAVEL DISTANCE PROVIDED = APPROX. 32'-0" MAX. COMMON PATH OF EGRESS = 75'-0" MAX. COMMON PATH OF EGRESS PROVIDED = N/A MAX. DEAD END CORRIDOR ALLOWED = 20'-0" MAX. DEAD END CORRIDOR PROVIDED = N/A

MIN. CORRIDOR WIDTH ALLOWED = 36" CORRIDOR WIDTH PROVIDED =N/A MIN. CLEAR OP'G OF EXIT DOORS ALLOWED = 32" MIN. CLEAR OP'G OF EXIT DOORS PROVIDED = 34" EGRESS WIDTH PER PERSON SERVED = 0.2 (IN) 7 PEOPLE X 0.2" = 1.4" REQUIRED PROVIDED- 68" NUMBER OF EXISTS REQUIRED = I NUMBER OF EXISTS PROVIDED = 2

BUSINESS OCCUPANCY UNIT #4 - UNIT #7

MAX. COMMON PATH OF EGRESS = 75'-0" MAX. COMMON PATH OF EGRESS PROVIDED = N/A

MIN. CORRIDOR WIDTH ALLOWED = 36" CORRIDOR WIDTH PROVIDED =42"

7 PEOPLE X 0.2" = 1.4" REQUIRED

NUMBER OF EXISTS REQUIRED = I

PROVIDED- 68"

MAX. DEAD END CORRIDOR ALLOWED = 20'-0" MAX. DEAD END CORRIDOR PROVIDED = N/A

MIN. CLEAR OP'G OF EXIT DOORS ALLOWED = 32" MIN. CLEAR OP'G OF EXIT DOORS PROVIDED = 34"

EGRESS WIDTH PER PERSON SERVED = 0.2 (IN)

TRAVEL DISTANCE, DEAD-END LENGTH, EXIT AND MEANS OF EGRESS WIDTH MAX. TRAVEL DISTANCE ALLOWED = 200'-0"

MAX. TRAVEL DISTANCE PROVIDED = APPROX. 29'-0"

21 PEOPLE X 0.2" = 4.2 REQUIRED PROVIDED- 68" NUMBER OF EXISTS REQUIRED = I NUMBER OF EXISTS PROVIDED = 2 MERCANTILE OCCUPANCY UNIT #4 - UNIT #6 TRAVEL DISTANCE, DEAD-END LENGTH, EXIT AND MEANS OF EGRESS WIDTH MAX. TRAVEL DISTANCE ALLOWED = 200'-0" MAX. TRAVEL DISTANCE PROVIDED = APPROX. 32'-0" MAX. COMMON PATH OF EGRESS = 75'-0" MAX. COMMON PATH OF EGRESS PROVIDED = N/A MAX. DEAD END CORRIDOR ALLOWED = 20'-0" MAX. DEAD END CORRIDOR PROVIDED = N/A MIN. CORRIDOR WIDTH ALLOWED = 36" CORRIDOR WIDTH PROVIDED =N/A MIN. CLEAR OP'G OF EXIT DOORS ALLOWED = 32"
MIN. CLEAR OP'G OF EXIT DOORS PROVIDED = 34" EGRESS WIDTH PER PERSON SERVED = 0.2 (IN) 16 PEOPLE X 3.2" = 1.4" REQUIRED PROVIDED- 68" NUMBER OF EXISTS REQUIRED = I NUMBER OF EXISTS PROVIDED = 2

MERCANTILE OCCUPANCY UNIT #I - UNIT #3

MAX. COMMON PATH OF EGRESS = 75'-0"

MIN. CORRIDOR WIDTH ALLOWED = 36"

CORRIDOR WIDTH PROVIDED =N/A

MAX. DEAD END CORRIDOR ALLOWED = 20'-0"
MAX. DEAD END CORRIDOR PROVIDED = N/A

MEANS OF EGRESS WIDTH

TRAVEL DISTANCE, DEAD-END LENGTH, EXIT AND

MAX. TRAVEL DISTANCE ALLOWED = 200'-0"
MAX. TRAVEL DISTANCE PROVIDED = APPROX. 73'-0"

MAX. COMMON PATH OF EGRESS PROVIDED = N/A

MIN. CLEAR OP'G OF EXIT DOORS ALLOWED = 32" MIN. CLEAR OP'G OF EXIT DOORS PROVIDED = 34"

EGRESS WIDTH PER PERSON SERVED = 0.2 (IN)

FIN. FL.

 READILY VISIBLE SIGNS MUST MARK ACCESS TO EXITS.
 SIGN PLACEMENT WILL BE SUCH THAT NO POINT IN THE EXIT ACCESS IS MORE THAN 100 FEET FROM A VISIBLE EXIT. (LSC, 7.10.1.4)

3. ILLUMINATION EQUAL TO 5-FOOT CANDLES AT THE SURFACE OF THE SIGN. 4. FLOOR PROXIMITY EXIT SIGNS SHALL BE PROVIDED IN ACCORDANCE WITH LSC 7.10.1.6, AS FOLLOW: (LSC 12.4.7.7)

A. SUCH SIGNS SHALL BE LOCATED NEAR THE FLOOR LEVEL IN

ADDITION TO THOSE SIGNS REQUIRED FOR DOORS OR CORRIDORS.

B. SIGNS SHALL BE ILLUMINATED IN ACCORDANCE WITH LSC 7.10.5 OR C. BOTTOM OF SIGN SHALL NOT BE LESS THAN 6 INCHES BUT NOT MORE THAN 18 INCHES ABOVE THE FLOOR.
D. FOR EXIT DOORS, THE SIGN SHALL BE MOUNTED ON THE DOOR OR ADJACENT TO THE DOOR, WITH THE NEAREST EDGE OF THE SIGN WITHIN 4 INCHES OF THE DOOR FRAME.

ILLUMINATION OF MEANS OF EGRESS:

1. MEANS OF EGRESS: ONE FOOT CANDLE AT FLOOR LEVEL 2. ILLUMINATION OR MEANS OF EGRESS SHALL BE FROM A SOURCE CONSIDERED RELIABLE BY THE AUTHORITY HAVING JURISDICTION (NFPA 101,

FIRE EXTINGUISHERS

1. PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED AND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 10, STANDARD FOR PORTABLE FIRE EXTINGUISHERS. (NFPA 1 TABLE 13.6.1.2)

2. FIRE EXTINGUISHERS SHALL NOT BE OBSTRUCTED OR OBSCURED FROM VIEW. IN LARGE ROOMS, AND IN CERTAIN LOCATIONS WHERE VISUAL OBSTRUCTIONS CANNOT BE COMPLETELY AVOIDED, MEANS SHALL BE PROVIDED TO INDICATE THE EXTINGUISHER LOCATION. (NFPA 10 1.5.6)
3. FIRE EXTINGUISHERS HAVING A GROSS WEIGHT NOT EXCEEDING 40 LB. SHALL BE INSTALLED SO THAT THE TOP OF THE FIRE EXTINGUISHER IS NOT MORE THAN 5 FT. ABOVE THE FLOOR. FIRE EXTINGUISHERS HAVING A GROSS WEIGHT GREATER THAN 40 LB. SHALL BE SO INSTALLED THAT THE TOP OF THE FIRE EXTINGUISHER IS NOT MORE THAN 3 1/2 FT

BOTTOM OF THE FIRE EXTINGUISHER AND THE FLOOR BE LESS THAN 4 INCHES. (NFPA 10 1.5.10)
4. FIRE EXTINGUISHERS LOCATED IN CABINETS OR WALL RECESSES MUST BE PLACED WITH THE EXTINGUISHER OPERATING INSTRUCTIONS FACING OUTWARD. (NFPA 10 1.5.12)
5. MAXIMUM TRAVEL DISTANCE TO ANY EXTINGUISHER SHALL BE 75 FEET, FOR CLASS A HAZARD AREAS. (NFPA 10 TABLE 5.2.1) 6.

ABOVE THE FLOOR. IN NO CASE SHALL THE CLEARANCE BETWEEN THE

EXIT DOOR- EXIT DOOR TACTILE SIGNAGE TO BE INSTALLED PER NFPA EXIT

XXXX **ADDRESS** NUMBER

F.E. FIRE EXTINGUISHER MIN. RATING OF 2AI0BC

> READILY ACCESSIBLE THE TOP OF THE EXTINGUISHER SHALL NOT BE MORE THAN 5 FT. ABOVE THE FLOOR AND THE BOTTOM OF THE EXTINGUISHER SHALL NOT BE LESS THAN 4 INCHES ABOVE THE FLOOR. PORTABLE FIRE EXTINGUISHERS TO BE INSTALLED IN ACCORDANCE WITH CLASSIFICATION, RATING, AND DISTRIBUTION REQUIREMENTS OF NFPA IO. [NFPA I: I3.6.I.I]



NUMBER OF EXISTS PROVIDED = 2 c) Beveled. A change in level of 1/2 inch (13 mm) is permitted to be 1/4 inch (6.4 mm) vertical plus 1/4 inch (6.4 mm) beveled. However, in no case may the combined change in level exceed 1/2 inch (13 mm). OVERHEAD - SURFACE CLOSER OVERHEAD SURFACE CLOSER 20 GA. GALV. HOLLOW METAL \_\_ DOOR 1-3/4" THICK, PAINT 22'-9" 22'-9" 22'-9" 22'-9" 20'-0" — ALUM. STILE PUSH BAR 18 GA. GALV. METAL FRAME 6'-4" C.U. C.U. - ALUMINUM PULL DEADLOCK/LATCH COMBINATION WITH 1 1/2 PAIR BUTT HINGES ATCH PADDLE DEVICE 1/4" CLEAR TEMPERED LEVER HANDLE (A.D.A.) — VINYL WEATHERSTRIP AROUND \_ ALUMINUM THRESHOLD SET IN ALUMINUM THRESHOLD SET IN FULL MASTIC BED. DOOR (B) FULL MASTIC BED. A-6.9 UNISEX R.R.₩ UNISEX R.I OVERHEAD - SURFACE CLOSER C.U. C.U. — HOLLOW CORE WD  $_{-}$  18 Ga. Galv. Metal frame 1 1/2 PAIR BUTT HINGES — LEVER HANDLE (A.D.A.) UNISEX R.R. UNISEX R.F DOOR (C) OPEN OFFICE AREA STOREFRONT NOTE: STOREFRONT MANUFACTURE TO VERIFY ALL ROUGH OPENINGS ON SITE BEFORE MANAFUCTURING STOREFRONTS. 1 A-6.0 UNIT #5 UNIT #3 UNIT #1 UNIT #4 932.75 S.F. 932.75 S.F. 932.75 S.F. 1,220 S.F. INTERIOR BUILD-OUT TO BE DESIGNED & CONSTRUCTED UNDER SEPARATED PERMIT PRIOR RECEPTION 702 TO OCCUPANCY TO OCCUPANCY TO OCCUPANCY TO OCCUPANCY TO OCCUPANCY TO OCCUPANCY SF-1

BUILDING GROSS AREA = 7,391 S.F.

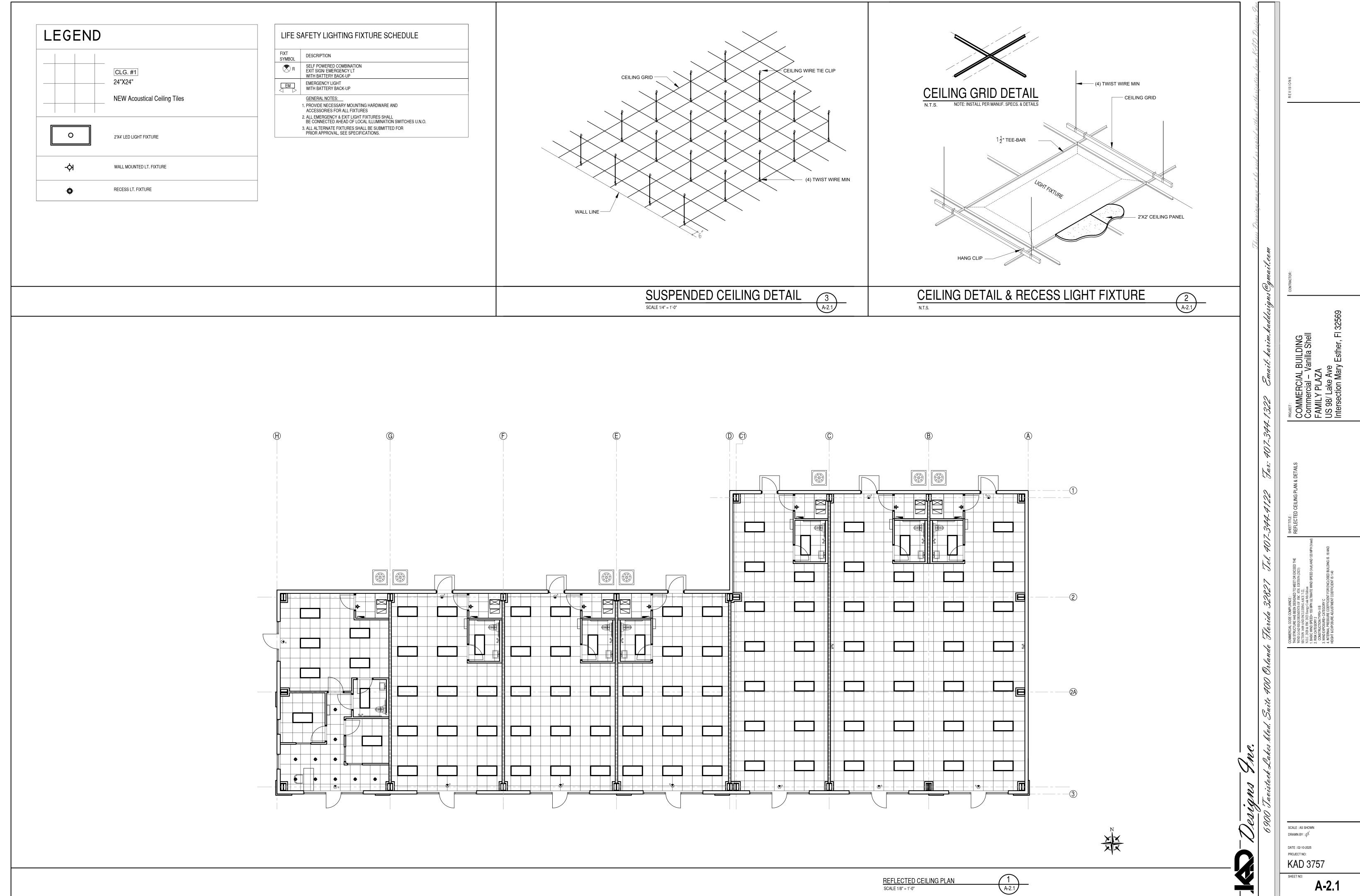
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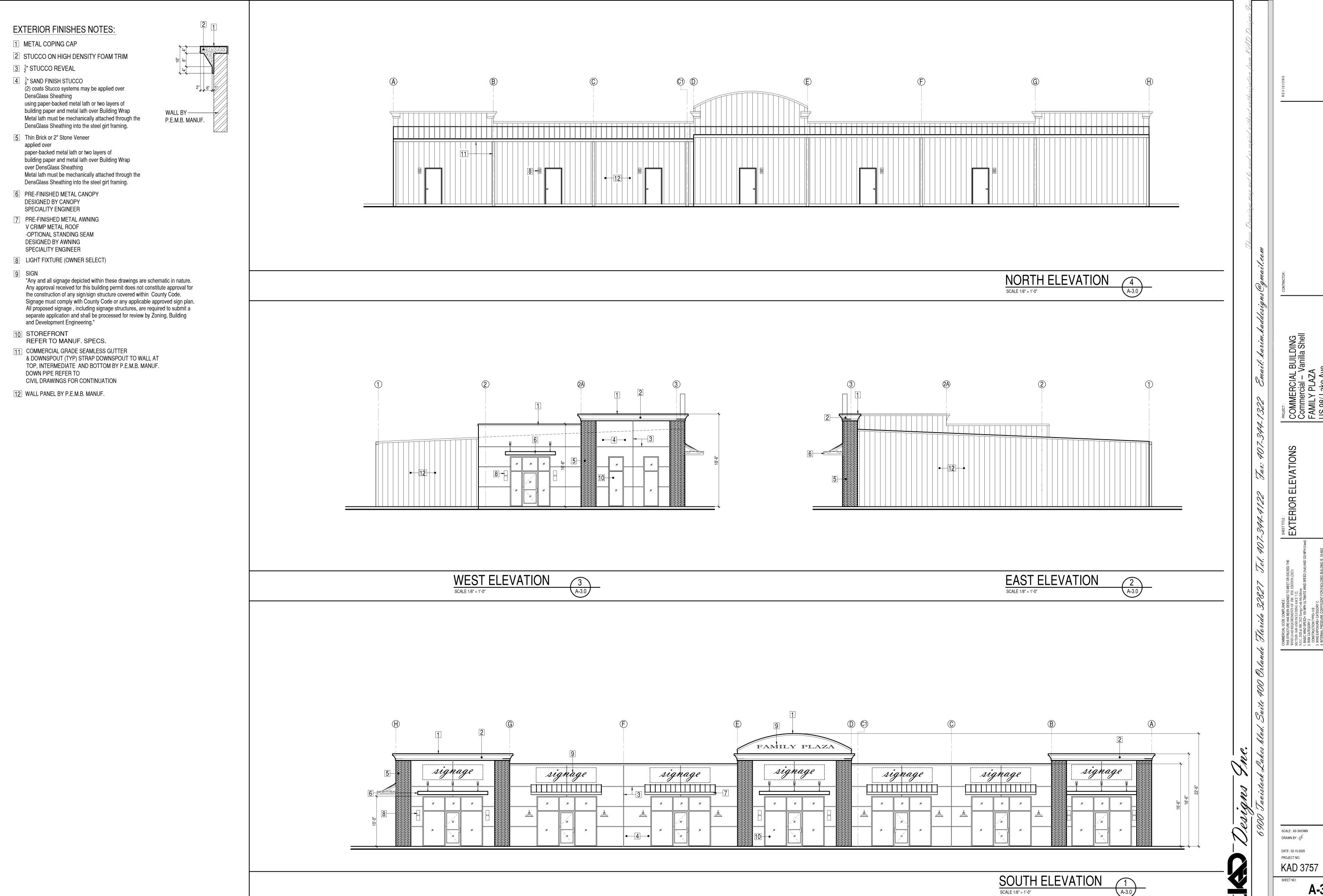
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A-2.0

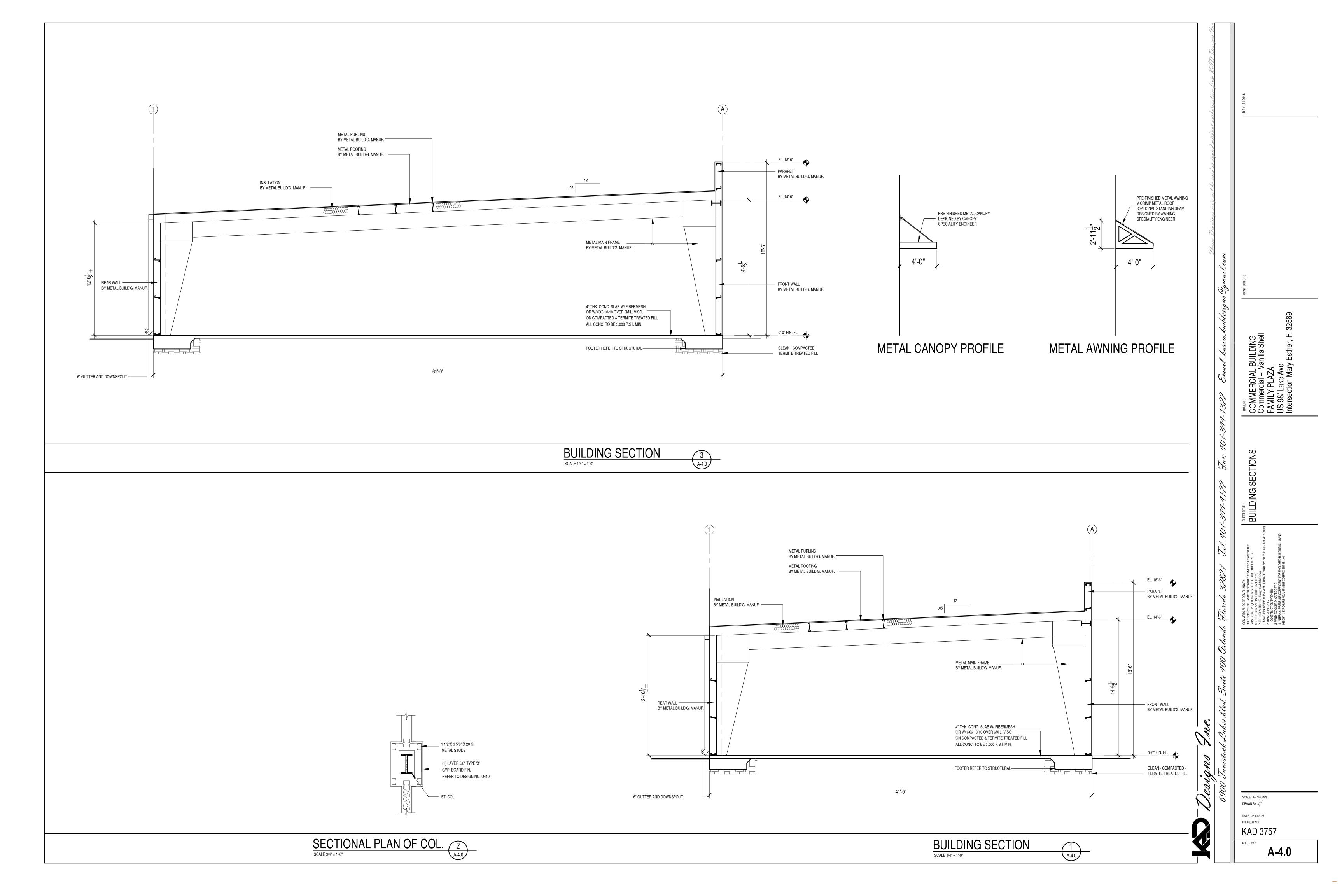
3'-0"

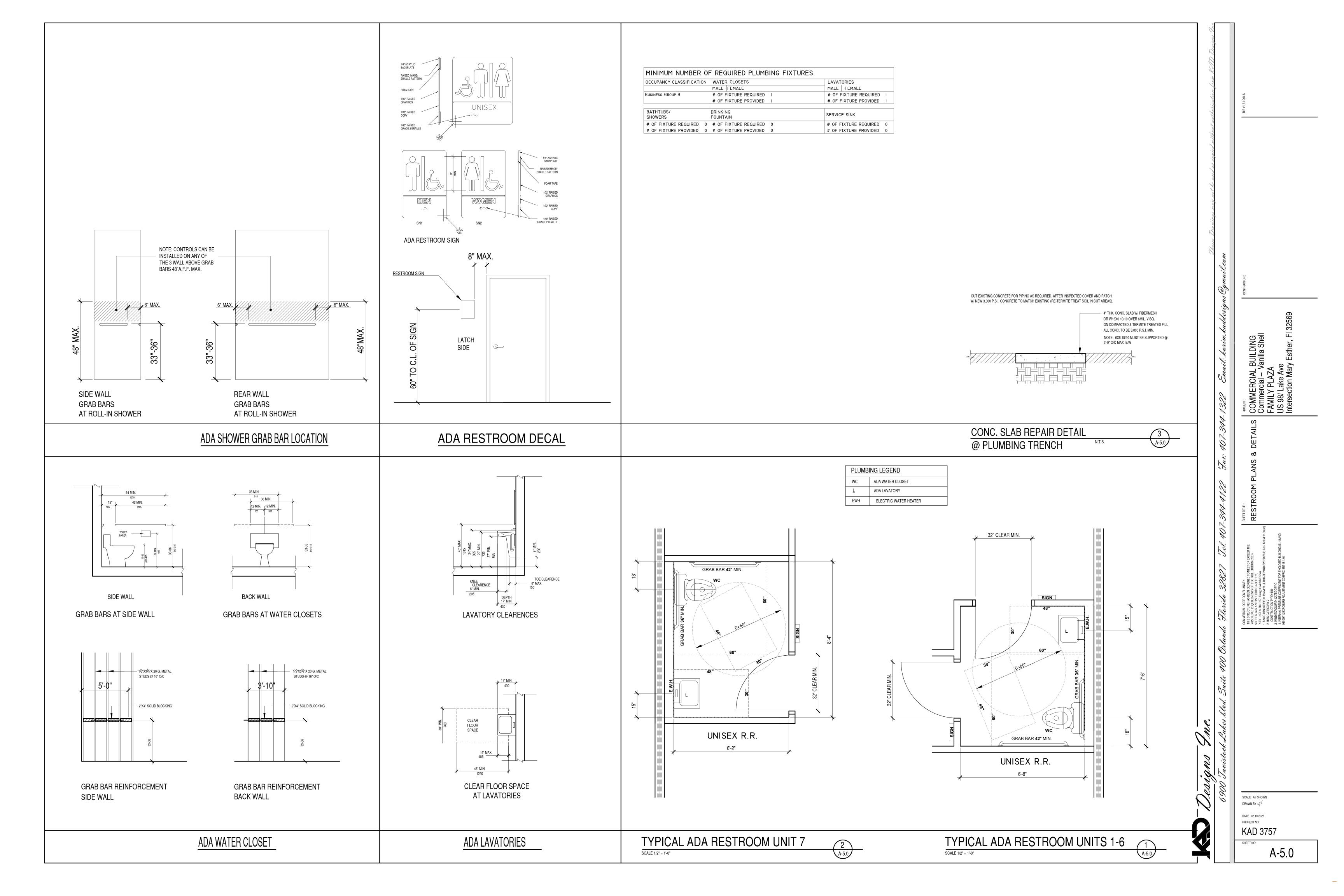
FLOOR PLAN





A-3.0





#### System No. W-L-1001 XHEZ.W-L-1001 Through-penetration Firestop Systems

#### Page Bottom

## Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with
- Prierissistance assemblies and products are developed by the design solutificer and have been investigated by Ot for compliance with applicable requirements. The published information cannot always <u>address</u> every construction nuance encountered in the field.
   When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the <u>product</u> manufacturer noted for the design. Users of fire resistance assemblies are advised to consult <u>the general</u> Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate
- Only products which bear UL's Mark are considered Certified.

## Through-penetration Firestop Systems

#### See General Information for Through-penetration Firestop Systems

#### System No. W-L-1001

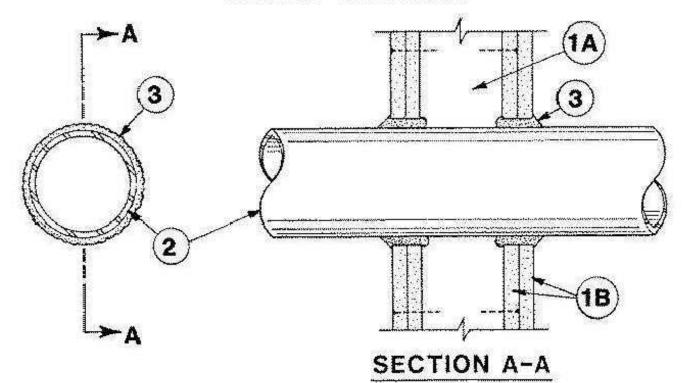
June 15, 2005

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

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

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

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



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

> A. Studs — Wall framing may consist of either wood studs (max 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16

in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in.

B. Gypsum Board\* — Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

2. **Through-Penetrant** — One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in / (0 mm). (point contact) to max 2 in. (51 mm) Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe — Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 24 in. (610 mm) diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in (305 mm) diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe. C. Conduit — Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in (102 mm) diam

(or smaller) steel electrical metallic tubing D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing

E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

F. Through Penetrating Product\* — Flexible Metal Piping The following types of steel flexible

metal gas piping may be used: 1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

2. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly

GASTITE, DIV OF TITEFLEX 3. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly

3. Fill, Void or Cavity Material\* — Caulk or Sealant — Min 5/8., 1-1/4,1-7/8 and 2-1/2 in. (16, 32, 48 and 64 mm)

thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated

Max Pipe or Conduit Diam In (mm)	F Rating Hr	T Rating Hr
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

+When copper pipe is used, T Rating is 0 h. 3M COMPANY — CP 25WB+ or FB-3000 WT.

## ONLINE CERTIFICATIONS DIRECTORY

## System No. W-L-3001 XHEZ.W-L-3001 Through-penetration Firestop Systems

#### Page Bottom

## Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and <u>products</u> are developed by the design submitter and have been investigated by UL for compliance with applicable <u>requirements</u>. The published information cannot always address every construction nuance encountered in the field. . When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate
- . Only products which bear UL's Mark are considered Certified.

methods of construction.

## XHEZ - Through-penetration Firestop Systems

#### See General Information for Through-penetration Firestop Systems

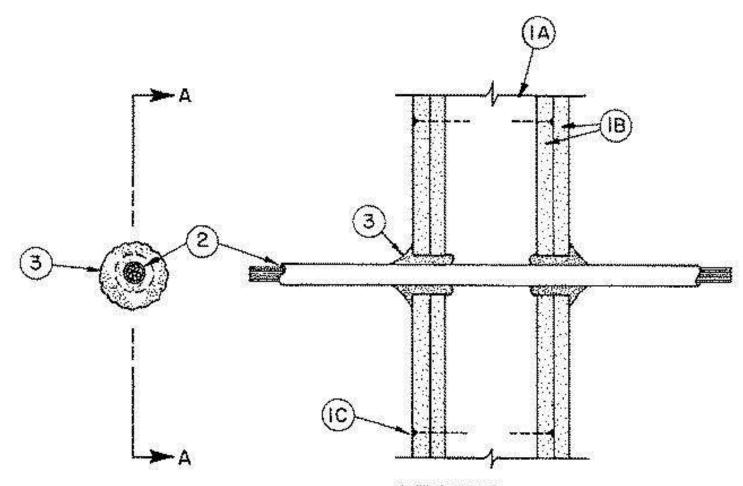
#### System No. W-L-3001

September 07, 2004

F Ratings - 1 and 2 Hr (See Item 1)

T Ratings - 3/4, 1, 1-1/2 and 2 Hr (See Item 2)

L Rating At Ambient - 15 CFM/sq ft (See Item 3) L Rating At 400 F - less than 1 CFM/sq ft (See Item 3)



## SECTION A-A

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

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

> B. Gypsum Board\* — Nom 1/2 or 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers and sheet orientation shall be as specified in the individual Wall or Partition Design. Diam of circular through opening to be 3/8 in. to 5/8 in. larger than outside diam of cable or cable bundle.

C. **Fasteners** — When wood stud framing is employed gypsum wallboard layers attached to studs with cement coated nails as specified in the individual Wall or Partition Design. When steel channel stud framing is employed, gypsum wallboard attached to studs with Type S self-drilling, selftapping bugle-head steel screws as specified in the individual Wall or Partition Design.

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Cables — Individual cable or max 1 in, diam cable bundle installed in through opening with an annular space of min 0 in. (point contact) to max 3/4 in. Cable to be rigidly supported on both sides of wall assembly. The following types and <u>sizes</u> of cables may be used:

> A. Max 150 pair No. 24 AWG copper conductor telephone cable with polyvinyl chloride (PVC) insulation and jacket materials. When max 25 pair telephone cable is used, T Rating is 2 hr. When 50 to 150 pair telephone cable is used in 1 hr fire rated wall, T Rating is 3/4 hr. When 50 to 150 pair telephone cable is used in 2 hr fire rated wall, T Rating is 1 hr.

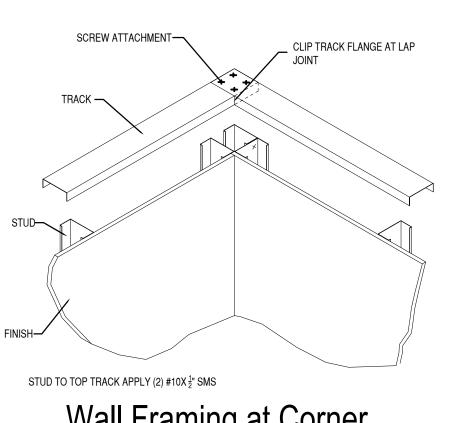
B. Max No. 10 AWG multiple copper conductor Type NM ("Romex" ) nonmetallic sheathed cable with PVC insulation and jacket materials. When Type NM cable is used, max T Rating is

C. Multiple fiber optical communication cable jacketed with PVC and having a max outside diam of 5/8 in. When fiber optic cable is used, max T Rating is 2 hr.

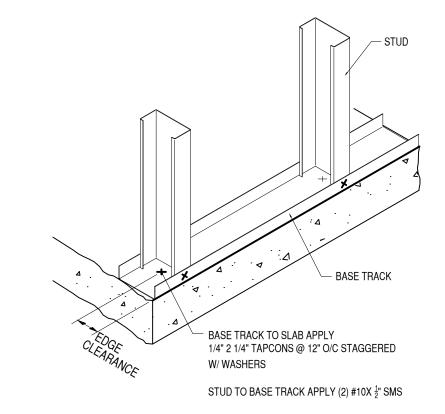
D. Max 12 AWG multiconductor (max seven conductors) power/control cable with cross-linked polyethylene (XLPE) insulation and XLPE or PVC jacket materials. When multiconductor power/control cable is used, max T Rating is 2 hr.

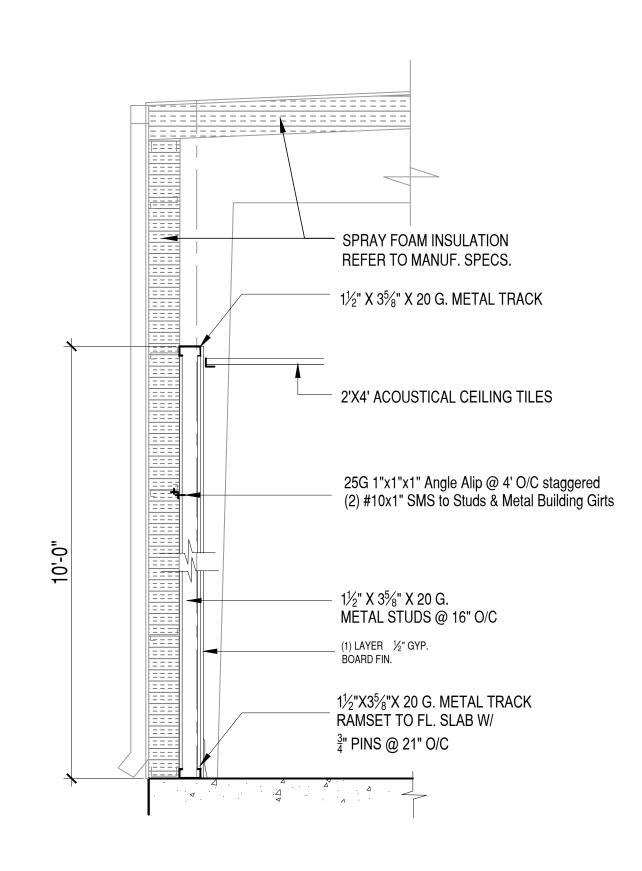
E. Max four conductor with ground No. 2 AWG (or smaller) aluminum SER cables with polyvinyl chloride insulation amd jacket materials.

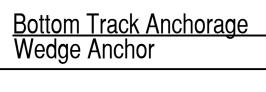
3. Fill, Void or Cavity Materials\* — Caulk, Sealant or Putty — Caulk or putty fill material installed to completely fill annular space between cable and gypsum wallboard on both sides of wall and with a min 1/4 in. diam bead of caulk or putty applied to perimeter of cable(s) at its egress from each side of the wall.

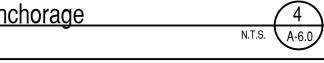


## Wall Framing at Corner Track Lap Connection

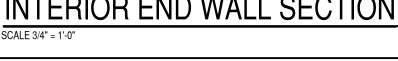


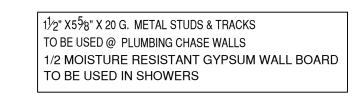


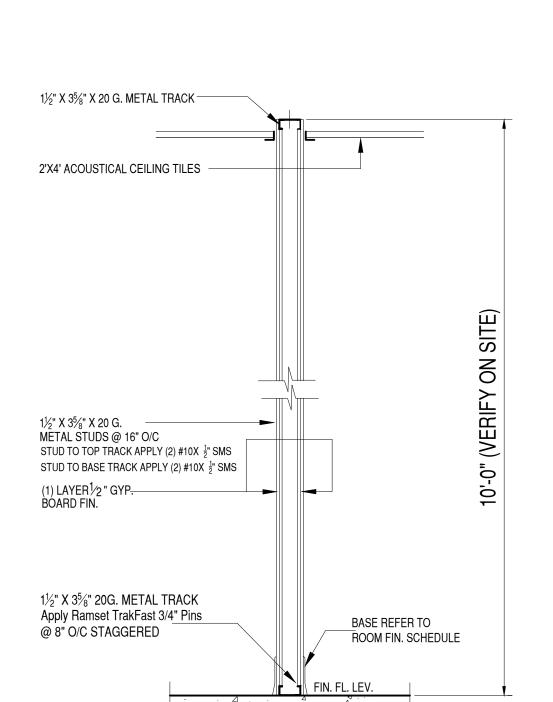




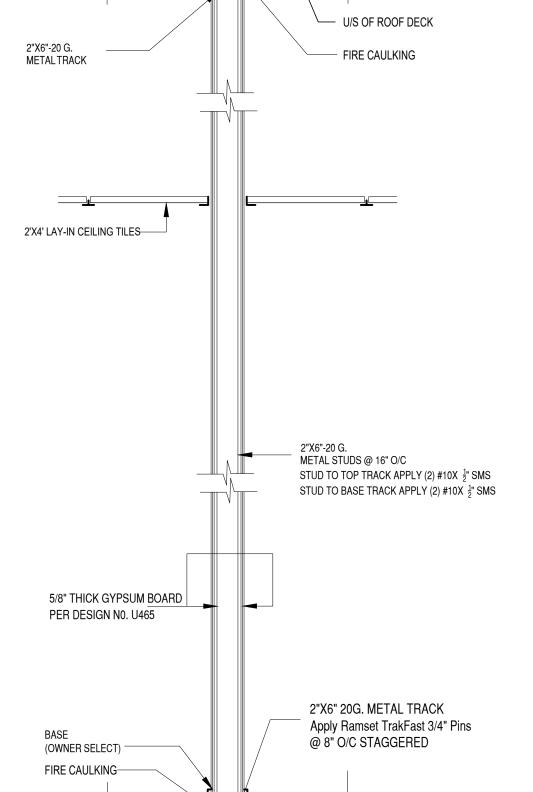
# INTERIOR END WALL SECTION

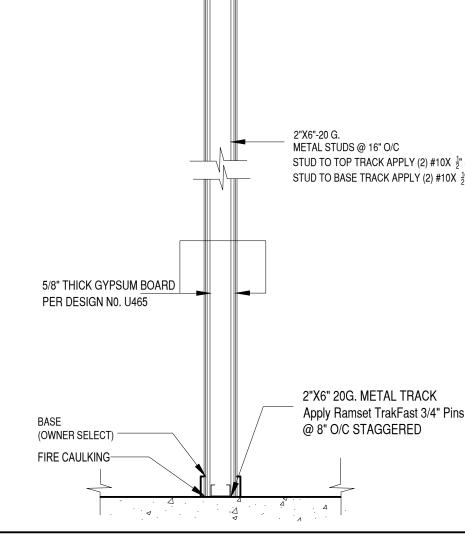






INTERIOR WALL SECTION





1 HR. FIRE RATED WALL

SCALE : AS SHOWN DRAWN BY : 9K DATE: 02-10-2025 PROJECT NO:

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products,
- equipment, system, devices, and materials. • Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide
- Information includes specifics concerning alternate materials and alternate methods of construction. Only products which bear UL's Mark are considered Certified.

#### BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States

Design Criteria and Allowable Variances See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. **U465** 

March 15, 2024

Design Criteria and Allowable Variances

Nonbearing Wall Rating — 1 HR.

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

1. Floor and Ceiling Runners — (Not Shown) — Channel shaped runners, 3-5/8 in. deep (min), 1-1/4 in. legs, formed from min No. 25 MSG galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1A. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 — Channel shaped, min 3-5/8 in. deep, attached to floor and ceiling with ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30FOD and Type SUPREME D20

**CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV** — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20

**STEEL CONSTRUCTION SYSTEMS INC** — Type SUPREME D24/30EQD and Type SUPREME D20

TELLING INDUSTRIES L L C — Type SUPREME D24/30EOD and Type SUPREME D20 **UNITED METAL PRODUCTS INC** — Type SUPREME D24/30EQD and Type SUPREME D20

1B. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. CEMCO, LLC — Viper20™ Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track

1C. Floor and Ceiling Runners — (Not Shown) — For use with Item 2C — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to

1D. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 through 1C — For use with Item 2D and 4G only, proprietary channel shaped

accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

**CLARKDIETRICH BUILDING SYSTEMS** — CD ProTRAK

DMFCWBS L L C — ProTRAK

 $\mathbf{MBA}\ \mathbf{METAL}\ \mathbf{FRAMING} - \mathsf{ProTRAK}$ 

RAM SALES L L C — Ram ProTRAK STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

1E. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 through 1D — For use with Item 2E and 4I only, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. TELLING INDUSTRIES L L C — TRUE-TRACK™

1F. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 through 1E — For use with Item 2, channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 25 MSG steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. KIRII (HONG KONG) LTD — Type KIRII

1G. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 through 1F — For use with Item 2, channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide, attached to floor and ceiling with fasteners spaced 24 in. OC max. STUDCO BUILDING SYSTEMS — CROCSTUD Track

1H. Floor and Ceiling Runners — (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.02 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC. MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track VT100 IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track VT100

11. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Item 1 — For use with Item 2H, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

1J. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 — For use with Item 2 L, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. **RESCUE METAL FRAMING, L L C** — AlphaTRAK

1K. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Item 1 — For use with Item 2M, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep, fabricated from min 25 MSG (0.018 in. min. bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max. CEMCO, LLC — Viper X Track

1L. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Item 1 — For use with Item 2N, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. CRACO MFG INC — SmartTrack20™

1M. Framing Members\* - Floor and Ceiling Runners - Not shown - In lieu of Items 1 through 1L - For use with Item 2O, proprietary channel shaped runners, min 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 20 MSG galv steel (0.0329 in. min bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max. PANEL REY S A - SUPRA Track 20/33 mil

1N. Framing Members\* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 – For use with Item 2P, proprietary channel shaped runners, 1-1/4 in. wide by min. 3-5/8 in. deep fabricated from min 0.019 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. PANEL REY S A - SUPRA Track 20EQ/19 mil

10. Framing Members\* — Floor and Ceiling Runner — (Not Shown — Alternate to Item 1) — For use with Item 2Q, channel shaped runners pre-equipped with proprietary attachment clips. Min. 3-5/8 in. wide. Legs of top runners minimum 3-1/4 in. wide. Legs of bottom runners minimum 1-1/2 in. wide. Runners attached to floor and ceiling with fasteners 24 in. OC max. **HYPERFRAME INC** - Hypertrack

1P. Framing Members\* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 – For use with Item 2R, proprietary channel shaped runners, 1-1/4 in. wide by min. 3-5/8 in. deep fabricated from min. 20 EQ/22 mils. (min. 0.0221 in. thick) galvanized steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. JJC INTERNATIONAL DISTRIBUTORS — Non-structural Tracks 3-5/8" and 6".

1Q. Framing Members\* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 — \_For use with Item 2R, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. IRONLINE METALS LLC — Bantam Track.

2. Steel Studs — Channel shaped, 3-5/8 in. deep (min), formed from min No. 25 MSG galv steel spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height.

2A. Framing Members\* — Steel Studs — As an alternate to Item 2 — Channel shaped studs, min 3-5/8 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than **ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME D24/30EQD and Type SUPREME D20

**CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV** — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20 **TELLING INDUSTRIES L L C** — Type SUPREME D24/30EQD and Type SUPREME D20

**UNITED METAL PRODUCTS INC** — Type SUPREME D24/30EQD and Type SUPREME D20

2B. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1B, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height. CEMCO, LLC — Viper20™

CRACO MFG INC — SmartStud20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

IMPERIAL MANUFACTURING GROUP INC — Viper20™

2C. Steel Studs — (As an alternate to Item 2, For use with Item 1C) — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height. See materials in Item(s) 4 that require Item

2D. Framing Members\* — Steel Studs — As an alternate to Items 2 through 2C — For use with Item 1D and 4G only, channel shaped studs, min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height. **CLARKDIETRICH BUILDING SYSTEMS** — CD ProSTUD

DMFCWBS L L C — ProSTUD

MBA METAL FRAMING — ProSTUD

RAM SALES L L C — Ram ProSTUD

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

2E. Framing Members\* — Steel Studs — As an alternate to Items 2 through 2D — For use with Item 1E and 4I only, channel shaped studs, min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

TELLING INDUSTRIES L L C — TRUE-STUD™

2F. Framing Members\* — Steel Studs — As an alternate to Items 2 through 2E — For use with Item 1F, channel shaped studs, min 3-5/8 in. wide fabricated from min 25 MSG steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height. KIRII (HONG KONG) LTD — Type KIRII

2G. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 through 2F — For use with Item 1G. Proprietary channel shaped studs, minimum 3-5/8 in. wide, Studs to be cut 1/2 in. less than the assembly height. STUDCO BUILDING SYSTEMS — CROCSTUD

2H. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1I, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height. MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

21. Framing Members\* — Steel Studs — In lieu of Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height. EB METAL INC — NITROSTUD

2J. Framing Members\* — Steel Studs — In lieu of Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height. OLMAR SUPPLY INC — PRIMESTUD

2K. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1B (3-5/8 in. wide track), channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 1-1/4 in. wide by 3-5/8 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. MARINO/WARE, DIV OF WARE INDUSTRIES INC — StudRite™

2L. Framing Members\* — Steel Studs — As an alternate to Items 2 — For use with Item 1J, channel shaped studs, min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. RESCUE METAL FRAMING, L L C — AlphaSTUD

2M. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1K, proprietary channel shaped steel studs, min 1-1/4 in. wide by min 3-5/8 in. deep, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/4 in. less in length than assembly height. **CEMCO, LLC** — Viper X

2N. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1L, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height. CRACO MFG INC — SmartStud20™

20. Framing Members\* - Steel Studs - Not Shown - In lieu of Items 2 through 2N - For use with Item 1M, proprietary channel shaped steel studs, min 1-5/8 in. wide by min 3-5/8 in. deep fabricated from min 20 MSG galv steel (0.0329 in. min bare metal thickness) spaced 24 in. OC max. Studs cut 3/4 in. less in length than assembly height. PANEL REY S A - SUPRA Stud 20/33 mil

2P. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 – For use with Item 1N, proprietary channel shaped steel studs, min 1-1/4 in. wide by min 3-5/8 in. deep with 1/4 in. return lips fabricated from min 0.019 in. thick galv steel, spaced 24 in. OC max. Studs cut 3/4 in. less in length than assembly height. PANEL REY S A - SUPRA Stud 20EQ/19 mil

2Q. Framing Members\* — Steel Studs — (Not Shown — Alternate to Item 2, For use with Item 10) — Channel shaped steel studs with attachment clips at top and bottom, min 3-5/8 in. depth, spaced a max of 24 in. OC. Studs clipped into floor and ceiling runners (Item 10). Max 2-3/8 in. extension reveal from top of stud to inside of ceiling runner. **HYPERFRAME INC**— Hyperstud

2R. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 – For use with Item 1P, proprietary channel shaped steel studs, min 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min. 20 EQ/22 mils. (min. 0.0221 in. thick) galvanized steel, spaced 24 in. OC max. Studs cut 3/4 in. less in length than assembly height.

2R. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 – For use with Item 1Q, proprietary channel shaped steel studs, min 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min. min. 0.018 in. thick galvanized steel, spaced 24 in. OC max. Studs cut 3/4 in. less in length than assembly height. IRONLINE METALS LLC — Bantam Stud

3. Batts and Blankets\* — (Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. See Batts and Blankets (BZJZ) category for names of Classified companies.

**ROCKWOOL MALAYSIA SDN BHD** — Type Acoustical Fire Batts

**ROCKWOOL** — Type AFB, min. density 1.69 pcf / 27.0 kg/m<sup>3</sup>

JJC INTERNATIONAL DISTRIBUTORS — Non-structural Studs 3-5/8" and 6".

3A. Fiber, Sprayed\* — As an alternate to Batts and Blankets (Item 3) — (100% Borate Formulation) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft<sup>3</sup>. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft<sup>3</sup>, in accordance with the application instructions supplied with the product. Applegate Greenfiber Acquisition LLC — Insulmax and SANCTUARY for use with wet or dry application.

3B. Fiber, Sprayed\* — As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft. NU-WOOL CO INC — Cellulose Insulation

3C. Fiber, Sprayed\* — As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft<sup>3</sup>. INTERNATIONAL CELLULOSE CORP — Celbar-RL

3D. Batts and Blankets\* — For use with Item 8. Nom 3 in. thick, minimum 3.4 pcf mineral wool batts, friction fit between the studs and floor and ceiling runners. See **Batts and Blankets** (BZJZ) category for names of manufacturers.

3E. Batts and Blankets\* — For use with Item 4R and 4S. Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

3F. Fiber, Sprayed\* — As an alternate to Batts and Blankets (Item 3) — Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft 3 Applegate Greenfiber Acquisition LLC— Applegate Advanced Stabilized Cellulose Insulation

3G. Foamed Plastic\* — As an alternate to Batts and Blankets (Items 3-3F), for use with Item 4U — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. with min. 20 MSG thickness. CARLISLE SPRAY FOAM INSULATION — Types SealTite ONE, SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero,

3H. Foamed Plastic\* — As an alternate to Batts and Blankets (Items 3-3F), for use with Item 4U — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. with min. 20 MSG thickness.

BASF CORP - Enertite® NM, Enertite® G, FE178®, Spraytite® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, Walltite® HP+, FE137®, FE158®, Spraytite® 158, Spraytite® SP, Spraytite® 81205, Spraytite® Comfort XL, Walltite® XL, and Walltite® MAX

4. Gypsum Board\* — 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When Steel Framing Members\* (Item 6 or any alternate clips) are used, gypsum board is screw attached to furring channels with 1 in. long, Type S steel screws spaced 12 in. OC.

AMERICAN GYPSUM CO — Types AG-C, AGX-1, M-Glass, LightRoc

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

**CABOT MANUFACTURING ULC** — Type X, 5/8 Type X, Type Blueglass Exterior Sheathing

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX) CERTAINTEED GYPSUM INC — Types EGRG, GlasRoc, Type X-1, Type C, 5/8" Easi-Lite Type X, Easi-Lite Type X-2, Type LWTX

CERTAINTEED GYPSUM INC — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD, LGLLX

GEORGIA-PACIFIC GYPSUM L L C — Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6, LS, Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, TG-C, GreenGlass Type X, Type X ComfortGuard Sound Deadening Gypsum Board, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated - Type LW2X, Sheathing - Type LW2X, Soffit -Type LW2X, Type DGL2W, Water Rated - Type DGL2W, Sheathing - Type DGL2W

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSMR-C, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSL, RSX.

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-C, PG-9, PG-11, PGS-WRS, PGI

PANEL REY S A — Types GREX, GRIX, PRC, PRC2, PRX, RHX, MDX, ETX, PRX2

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop, MR, Gyproc FireStop, M2TECH, Gyproc FireStop, ACTIV'Air, Gyproc FireStop, MR, Gyproc FireStop, M2TECH, Gyproc FireStop, ACTIV'Air, Gyproc FireStop, MR, Gyproc FireStop, M2TECH, Gyproc FireStop, FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'AIr, Gyproc Dura

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type X and Type C, M2Tech Type C

UNITED STATES GYPSUM CO — Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX, (Joint tape and compound, Item 5, optional for use with Type USGX) USG BORAL DRYWALL SFZ LLC — Types C, SCX, USGX (Joint tape and compound, Item 5, optional for use with Type USGX)

USG MEXICO S A DE C V — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

SCALE : AS SHOWN DRAWN BY : alk

DATE: 02-10-2025 PROJECT NO:

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

CERTAINTEED GYPSUM INC — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD

GEORGIA-PACIFIC GYPSUM L L C — Types DAP, DAPC, DGG, DS

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV' FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine M2TECH

THAI GYPSUM PRODUCTS PCL — Type X and Type C, M2Tech Type C

**GEORGIA-PACIFIC GYPSUM L L C** — Type DGG, GreenGlass Type X

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

USG BORAL DRYWALL SFZ LLC — Types C, SCX, USGX (Joint tape and compound, Item 5, optional for use with Type USGX)

USG MEXICO S A DE C V — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5, optional for use with Type USGX)

steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs on interior walls need not be staggered or backed by steel framing.

4B. Gypsum Board\* — (As an alternate to Items 4 or 4A) — Nom 3/4 in. thick, 4 ft wide, installed as described in Item 4A with screw length increased to 1-1/4 in. CGC INC — Types AR, IP-AR

UNITED STATES GYPSUM CO — Types AR, IP-AR **USG MEXICO S A DE C V** — Types AR, IP-AR

4C. **Gypsum Board\*** — As an alternate to Items 4, 4A, and 4B — Nom. 5/8 in. thick gypsum panels, with square edges, applied horizontally. Gypsum panels fastened to framing with 1 in. long bugle head steel screws spaced a max 8 in. OC, with last 2 screws 3/4 in. and 4 in. from each edge of board. Horizontal joints need not be backed by

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSW-G, FSW-G, FSW-3, FSW-5, FSW-6, FSMR-C

4D. **Gypsum Board\*** — As an alternate to Items 4, 4A, 4B, 4C, 4G — Nom. 5/8 in. thick gypsum panels applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Gypsum panels fastened to framing with 1 in. long Type S steel screws 12 in. OC along vertical edges and in the field, and 12 in. along the top and bottom of the wall. When used in widths other than 48 in., gypsum panels to be installed horizontally. When studs (Item 2) spaced a max 16 in. OC, 5/8 in. thick gypsum panels applied vertically or horizontally, 1 in. long spaced 16 in. OC along vertical edges and in the field, and 16 in. OC along top and bottom of wall.

4E. Gypsum Board\* — (As an Alternate to Items 4 through 4D) – Installed as described in item 4. 5/8 in. thick, 4 ft wide, applied vertically only and fastened to the studs and plates with 1 in. long Type S steel screws spaced 12 in. OC. When studs (Item 2) spaced a max 16 in. OC, 5/8" in. thick gypsum panels applied vertically or horizontally with 1 in. long Type S steel screws spaced 16 in. OC along vertical edges and in the field, and 16 in. OC along top and bottom of wall. NATIONAL GYPSUM CO — Type SBWB

4F. Gypsum Board\* — (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C) - Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. RAY-BAR ENGINEERING CORP — Type RB-LBG

4G. Gypsum Board\* — (As an alternate to Items 4 through 4F) — For use with Items 1D and 2D only, 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When using Types eXP-C, FSK, FSK-C, FSK-G, FSW-G, FSW-G, FSW-3, FSW-5, FSW-6, FSMR-C and ULIX, panels need not be staggered in horizontal applications and screw spacing can be increased to 12 in. OC in field and perimeter. CGC INC — Type SCX, ULIX

CERTAINTEED GYPSUM INC — Type LGFC6A, LGFC-C/A

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6, and FSMR-C

UNITED STATES GYPSUM CO — Type SCX, ULIX

USG BORAL DRYWALL SFZ LLC — Type SCX

4H. **Gypsum Board\*** — (As an alternate to Items 4 through 4G) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 4. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES

41. **Gypsum Board\*** — (As an alternate to Items 4 through 4F) — 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When using ULIX, panels need not be staggered in horizontal applications and screw spacing can be increased to 12 in. OC in field and perimeter. When using ULIX, panels need not be staggered in horizontal applications and screw spacing can be increased to 12 in. OC in field and perimeter. CGC INC — Types SCX, ULIX

UNITED STATES GYPSUM CO — Types SCX, ULIX USG BORAL DRYWALL SFZ LLC — Type SCX

4J. Gypsum Board\* — (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 9A) or Lead Discs (see Item 10A). MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4K. Gypsum Board\* — (As an alternate to Item 4 and 4A, not for use with Items 1D, 1E, 2D and 2E) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 4 and 4A.

UNITED STATES GYPSUM CO — Type ULX

**USG MEXICO S A DE C V** — Type ULX

CGC INC — Type ULX

4L. **Gypsum Board\*** — (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

4M. Gypsum Board\* — (For use with Item 8) — 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 8) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 8). Secured to outermost studs and floor and ceiling runners with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound. AMERICAN GYPSUM CO — Type AG-C

**CERTAINTEED GYPSUM INC** — Type C

CGC INC — Types C, IP-X2, IPC-AR

CERTAINTEED GYPSUM INC — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C NATIONAL GYPSUM CO — Types eXP-C, FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Types PRC, PRC2

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine MR ACTIV'AIR

THAI GYPSUM PRODUCTS PCL — Type C, M2Tech Type C UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX

USG BORAL DRYWALL SFZ LLC — Type C

**USG MEXICO S A DE C V** — Types C, IP-X2, IPC-AR

4N. Wall and Partition Facings and Accessories\* — (As an alternate to Item 4) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527

4O. Gypsum Board\* — As an alternate to Items 4, 4A, 4B, and 4C — Two layers Nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Horizontal joints on the same side need not be staggered. When applied horizontally, both layers of gypsum board fastened to each side of framing with 1 in. long Type S steel screws spaced 8 in. OC and staggered 4 in. OC between layers. When applied vertically, both layers of gypsum board fastened to each side of framing with 1 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field, staggered 4 in. OC between layers. Screws spaced a max 12 in. along the top and bottom edges of the wall. **NATIONAL GYPSUM CO** — Type FSW

4P. Gypsum Board\* — As an alternate to Item 4. Nom 5/8 in. thick, 4 ft wide, Nom 5/8 in. thick gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Panels attached to steel studs and runners with 1 in. long Type S steel screws spaced 12 in. OC when applied horizontally or vertically. When used in widths other than 48 in., gypsum panels to be installed horizontally. CGC INC — Type ULIX

UNITED STATES GYPSUM CO — Types ULIX

4Q. Gypsum Board\* — 3/4 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track as described in Item 4 with screw length increased to min. 1-1/8 in. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-13

4R. Gypsum Board\* — As an alternate to Item 4D. For use with Item 3E, Batts and Blankets\* — 5/8 in. thick, 4 ft wide, installed as described in Item 4. When studs (Item 2) spaced a max 16 in. OC, 5/8 in. thick gypsum panels applied vertically or horizontally, 1 in. long spaced 16 in. OC along vertical edges and in the field, and 16 in. OC along top and bottom of wall. NATIONAL GYPSUM CO — Type FSLX.

4S. Gypsum Board\* — As an alternate to Item 4. For use with Item 3E, Batts and Blankets\* — 5/8 in. thick, 4 ft wide, installed as described in Item 4A. **CERTAINTEED GYPSUM INC** — Type CLLX.

4T. Wall and Partition Facings and Accessories\* — (As an alternate to 5/8 in. thick board as outlined in Item 4) — Nominal 1-3/8 in. thick, 4 ft wide panels, applied vertically or horizontally. Fastened with #6 x 2 in. long drywall screws spaced 8 in. OC along the perimeter and 12 in. OC in the field. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 545

4U. Gypsum Board\*— (As an alternate to Item 4 when Foam Plastic insulation Items 3G or 3H is used) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 4 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1-1/4 in. long Type S steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be attached to study over inner layer with the 1-7/8 in, long steel screws spaced 8 in, OC.

4V. **Gypsum Board\*** — (As an alternate to Item 4, for 1 hr. rating) — Nom. 5/8 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Gypsum panels fastened to framing with 1 in. long Type S steel screws 12 in. OC along vertical edges and in the field. Screws spaced a max 12 in. along the top and bottom edges of the wall for both vertical and horizontal applications.

**CERTAINTEED GYPSUM INC** — Type X-1, SilentFX, GlasRoc, Type C

5. Joint Tape and Compound — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads; paper tape, 2 in. wide, embedded in first layer of compound over all joints. As an alternate, nominal 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges.

6. Resilient Channel — (Optional — Not Shown) — 25 MSG galv steel resilient channels spaced vertically max 24 in. OC, flange portion attached to each intersecting stud with 1/2 in. long type S-12 pan head steel screws. May not be used with Item 4F, 4J or 4L.

6A. Steel Framing Members\* — (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Not for use with Items 4F, 4J, or 4L.

b. Framing Members\* — Used to attach furring channels (Item a) to studs (Item 2). Clips spaced 48 in. OC., and secured to studs with 1-5/8 in. wafer or hex head Type S steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in, wide furring channels PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75)

6B. Framing Members\* — (Optional on one or both sides, Not Shown, As an alternate to Item 6) — Furring channel and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 4. Not for use with Items 4F, 4J, or 4L.

b. Steel Framing Members\* — Used to attach furring channels (Item 6Ba) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. PLITEQ INC — Type Genie Clip

6C. Steel Framing Members\* — (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4. Not

b. Steel Framing Members\* — Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips. STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

6D. Steel Framing Members\* — (Optional, Not Shown As an alternate to Item 6) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6Db. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4. Not for use with Items 4F, 4J, or 4L.

b. Steel Framing Members\* — UUsed to attach furring channels (Item 6Da) to studs. Clips spaced 48 in. OC, and secured to studs with No.8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. **REGUPOL AMERICA** — Type SonusClip

6E. Steel Framing Members\* — (Optional, Not Shown As an alternate to Item 6) — Resilient channels and Steel Framing Members as described below: a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4. Not for use with Items 4F, 4J, or 4L.

b. Steel Framing Members\* — Used to attach resilient channels (Item 6Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw. **KEENE BUILDING PRODUCTS CO INC** — Type RC+ Assurance Clip

6F Steel Framing Members\* — (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below: a Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 4.

b Steel Framing Members\* — Used to attach furring channels (Item 6Fa) to studs. Clips spaced maximum 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

**CLARKDIETRICH BUILDING SYSTEMS** — Type ClarkDietrich Sound Clip

6F. Steel Framing Members\* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4. Not for use with Items 4F, 4J, or 4L.

b. Steel Framing Members\* — Used to attach furring channels (Item 6Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. 10 x 2 in. screw through the center hole. Furring channels are friction fit into clips. **MASON INDUSTRIES INC** — Type CWC-50

7. Wall and Partition Facings and Accessories\* — (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the steel framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

8. Mineral and Fiber Board\* — (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to studs and floor and ceiling runners with 1-5/8 in. long Type S steel screws, spaced 12 in. OC and 24 in. OC along all intermediate framing. The required UL Classified gypsum board layer (Item 4M) is to be installed over the Mineral and Fiber Boards. Batts and Blankets, Item 3D, and Adhesive, Item 11, **HOMASOTE CO** — Homasote Type 440-32

8A. Mineral and Fiber Board — (Optional, Not Shown) — For optional use as an additional layer on one side of wall - Nom 1/2 in. thick, 4 ft wide, square edge fiber boards applied vertically to studs on one side of the wall in between the wood studs and the UL Classified Gypsum Board (Item 4). Fiber boards installed with 1-1/4 in. long, Type S steel screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 4) installed as indicated as to fastener type and

spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board. Not evaluated for use with Item 4M. BLUE RIDGE FIBERBOARD INC - SoundStor

8B. Mineral and Fiber Board\* — (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to studs and floor and ceiling runners with 1-5/8 in. long Type S steel screws, spaced 12 in. OC and 24 in. OC along all intermediate framing. The required UL Classified gypsum board layer is to be installed over the Mineral and Fiber Boards and secured to studs with length of fasteners increased by 1/2 in. over the length specified for installation of the gypsum boards. Batts and Blankets, Item 3, are optional unless otherwise required. Not for use with Items

**HOMASOTE CO** — Homasote Type 440-32

9. Lead Batten Strips — (Not Shown, For Use With Item 4E) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum board (Item 4E) and optional at remaining stud locations. Required behind vertical joints.

9A. Lead Batten Strips — (Not Shown, for use with Item 4J) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in, long min, Type S-8 pan head steel screw at the top of the strip, Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4J) and optional at remaining stud locations.

10. Lead Discs or Tabs — (Not Shown, For Use With Item 4E) — Used in lieu of or in addition to the lead batten strips (Item 8) or optional at other locations - Max 3/4 in. boards (Item 4E) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f,

10A. Lead Discs — (Not Shown, for use with Item 4J) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

11. Adhesive — Not Shown — (For use with Item 8) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 8).

12. Wall and Partition Facings and Accessories\* — (CLBV) (Optional, Not Shown) — For use with Items 1 to 1I, Items 2 to 2J, Item 3, Items 4 to 4I, Item 5 and Item 6. For maximum fire rating of 1 hour. On one side of the wall, over the first layer of Gypsum Board (Item 4 to Item 4I), install RefleXor membrane with the gold side facing outwards. Membrane installed with T50 staples spaced 12 inches on center in both directions as per manufacturer's instructions, seams in membrane to be overlapped by 2 inches. When RefleXor membrane is used an additional layer of Gypsum Board that is identical to the one used in the first layer and as specified in Item 4 to Item 41 shall be installed over the membrane. The additional layer of Gypsum Board to be installed through the membrane to the stud as specified in Item 4 to Item 4l except the fastener length shall be increased by a minimum of 5/8 inch. Install Batts and Blankets in the stud cavity as per Item 3.

On the other side of the wall, prior to the installation of the Gypsum Board, install Resilient Channels as per Item 6. Over the Resilient Channels install 3/4 inch thick SONOpan panel secured to the Resilient Channels with min. 1-1/4 in. long drywall screws and washers spaced at 16 in. OC on the perimeter of the panel and 8 in. OC in the field of the panel. Over the SONOpan panel install the same Gypsum Board as specified in Item 4 to Item 4I with the fastener length increased by minimum 3/4 inch. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

Alternately, on the other side of the wall prior to the installation of the Gypsum Board, install 3/4 in. thick SONOpan panels, secured to one side of studs either horizontally or vertically. Panels secured to each stud with min. 1-1/4 in. long drywall screws spaced 12 in. OC. Over the SONOpan, install 25 MSG galv steel, Resilient Channels, spaced vertically 24 in. OC. Resilient Channels fastened through panels to each stud with min. 2 in. long drywall screws or self-tapping screws. Over the Resilient Channels install Gypsum Board as specified in Item 4 to Item 4I with the specified drywall screws. Panels not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

**MSL** — RefleXor membrane, SONOpan panel

13. Barrier Mesh — (Optional, Not Shown) - Attached to steel studs on one or both sides of the wall using Barrier Mesh Clips spaced at maximum 12 inches on center vertically, using a flat head type screw penetrating through the steel at least 3/8 of an inch. For Steel Studs less than 0.033 inches in thickness, use self-piercing screws. For Steel Studs equal to or greater than 0.033 inches in thickness, use steel drill screws (self-tapping). Gypsum Board (Item 4) to be installed directly over the Barrier Mesh using prescribed screw patterns with lengths increased by a minimum 1/8 in. Barrier Mesh may be installed with the long dimension of the diamond pattern positioned vertically or horizontally. Barrier Mesh joints may occur as butt joints at the framing members and secured using the Barrier Mesh Clips or occur in between framing members as overlapping joints secured using 18 SWG wire ties spaced a maximum 12 in. on center. **CLARKDIETRICH BUILDING SYSTEMS** — Barrier Mesh, Barrier Mesh Clips

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

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SCALE: AS SHOWN DRAWN BY : alk

DATE: 02-10-2025 PROJECT NO:

**A-7**.

SHOP DRAWINGS IN THE FORM OF REPRODUCIBLE SEPIAS OF ARCHITECTURAL OR STRUCTURAL DRAWINGS (CONTRACT DOCUMENTS) ARE PROHIBITED WITHOUT EXPRESS WRITTEN PERMISSION FROM ARCHITECT/ENGINEER.

MANUFACTURERS OF ANY PRE-ENGINEERED, PRE-FABRICATED SYSTEM OR COMPONENT SHALL SUBMIT SHOP DRAWINGS FOR THE ENGINEER/ARCHITECT'S APPROVAL PRIOR TO FABRICATION OR ERECTION OF SYSTEM/COMPONENT. THESE SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER.

THE BUILDING IS DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE BUILDING CODE. FOLLOW ALL APPLICABLE PROVISIONS FOR ALL PHASES OF CONSTRUCTION.

THE STRUCTURAL INTEGRITY OF THE COMPLETED STRUCTURE DEPENDS UPON THE INTERACTION OF VARIOUS CONNECTED COMPONENTS. PROVIDE ADEQUATE BRACING, SHORING, AND OTHER TEMPORARY SUPPORTS AS REQUIRED TO SAFELY COMPLETE THE

ALL DIMENSIONS TO BE VERIFIED ON SITE BY GENERAL CONTRACTOR. IF ANY DIMENSIONS OR SITE CONDITIONS SHOULD DIFFER FROM WHAT IS INDICATED ON THESE DRAWINGS, CONTRACTOR TO NOTIFY KAD DESIGNS INC & ENGINEER OF RECORDS BEFORE FABRICATION AND CONSTRUCTION.

CONTRACTOR / OWNER TO VERIFY THAT ALL CONSTRUCTION DONE IS AS INDICATED ON THESE DRAWINGS OR EQUAL. KAD DESIGNS INC. & ENGINEER OF RECORDS WILL BEAR NO RESPONSIBILITY FOR CONSTRUCTION OF THIS EXISTING BUILDING & EXISTING FOOTERS.

IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO , THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS MAY BE NECESSARY, SURE & BRACE EXISTING STRUCTURE BEFORE REMOVING ANY BEARING POST, COLS & BEAMS.

## FOUNDATIONS

MAXIMUM ALLOWABLE SOIL PRESSURE IS ASSUMED TO BE 2500 POUNDS PER SQUARE FOOT.

SPREAD FOOTINGS SHALL BEAR ON SOIL COMPACTED TO A DENSITY OF AT LEAST 95% OF MODIFIED PROCTOR MAXIMUM DENSITY (A.S.T.M. D1557). THE SOIL SHALL BE COMPACTED TO THIS DENSITY TO A DEPTH OF AT LEAST TWO FEET BELOW THE BOTTOM OF THE FOOTINGS.

FILL UNDER FLOOR SLABS SHALL BE COMPACTED TO A DENSITY OF AT LEAST 95% OF MODIFIED PROCTOR MAXIMUM DENSITY (A.S.T.M. D1557).TO A DEPTH OF AT LEAST ONE FOOT BELOW BOTTOM OF THE SLAB

## CONCRETE:

DESIGN OF REINFORCED CONCRETE CONFORMS WITH BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE - ACI 318, LATEST EDITION.

CONCRETE SHALL HAVE AN UNCONFINED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

GENERAL CONTRACTOR SHALL CHECK ARCHITECTURAL MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, SLAB DEPRESSIONS AND ANY OTHER ITEMS RELATED TO CONCRETE WORK, AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR PROPER LOCATION, BEFORE POURING CONCRETE.

AT OPENINGS IN SLABS OR WALLS, PROVIDE 2 - #6 BARS EACH 6'-0" LONGER THAN WIDTH OF OPENING ON EACH OF 4 SIDES OF OPENINGS, UNLESS SHOWN OTHERWISE.

PITCH CONCRETE SLABS, WHERE REQUIRED, TO FLOOR DRAINS SHOWN ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

CONCRETE PROTECTION FOR REINFORCING BARS SHALL BE AS FOLLOWS:

TOP FOOTINGS 3" CLEAR, BOTTOM AND SIDES, 2" CLEAR,

INSIDE FACE

WALLS 2" CLEAR, OUTSIDE FACE, 1-1/2" CLEAR,

SLABS 3/4" CLEAR

BEAMS 1-1/2" CLEAR TO STIRRUPS COLUMNS 1-1/2" CLEAR TO TIES

## **DESIGN MIXES:**

PROVIDE NORMAL WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES:

3000 PSI 28-DAY COMPRESSIVE STRENGTH, 480 LBS. TYPE I PORTLAND CEMENT PER CU. YD. MINIMUM, W/C RATIO, 0.50 MAXIMUM (NON-AIR ENTRAINED), 0.46 MAXIMUM AIR ENTRAINED. NO FLY ASH OR OTHER POZZOLAN IS PERMITTED. SLUMP LIMIT 3" TO 5".

CONTRACTOR SHALL FURNISH ALTERNATE, CONCRETE MIX DESIGN FOR ENGINEER'S/OWNER'S APPROVAL. THIS CONCRETE MIX SHALL BE FOR PUMP MIX 3.000 PSI CONCRETE USING SUPER PLASTICIZER. USE THIS CONCRETE ONLY AFTER WRITTEN APPROVAL BY ENGINEER.

#### **CONCRETE ANCHORS AND FASTENERS:**

EMBEDMENT ANCHORS SHALL BE NELSON HEADED ANCHORS WITH FLUSH ENDS (OR APPROVED EQUAL), SIZE AND SPACING AS INDICATED ON THE DRAWINGS. STUDS SHALL BE END WELDED IN ACCORDANCE WITH RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY.

EXPANSION ANCHORS SHALL BE WS SERIES WEDGE ANCHORS AS MANUFACTURED BY PHILLIPS RED HEAD, OR HILTI KWIK BOLTS AS MANUFACTURED BY HILTI, INC. OR APPROVED EQUAL.

IN LIEU OF EXPANSION ANCHORS, CAST-IN-PLACE INSERTS WILL BE PERMITTED AS MANUFACTURED BY HOMAN & BERNARD, OR APPROVED EQUAL.

ALL FASTENERS TO PRESTRESSED ELEMENTS SHALL BE DRILL-IN TYPE WITH MAXIMUM PENETRATION OF 3/4" TO SLABS OR 1-1/2" TO BEAMS, OR SHALL BE CAST-IN-PLACE INSERTS.

## REINFORCING STEEL

REINFORCING STEEL SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. A615-GRADE 60. PROVIDE MILL CERTIFICATES WITH ALL REBAR DELEVERIES. ALL DETAILING AND ACCESSORIES SHALL CONFORM TO TYPICAL DETAILS SHOWN IN THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES ACI 315, LATEST EDITION".

ALL CONTINUOUS VERTICAL OR HORIZONTAL BARS IN FOOTING, FOUNDATIONS WALLS, SLABS AND OTHER CONCRETE SHALL BE LAP-SPLICED, WHERE NECESSARY OR DESIRABLE, BY WIRING TOGETHER IN CONTACT. LENGTH OF ALL LAPS SHALL BE 48-BAR DIAMETERS OR 2'-0" MINIMUM, WHICHEVER IS GREATER (EXCEPT AS NOTED BY DRAWINGS). ALL BARS AT END OF CONTINUOUS FOOTINGS OR BEAMS SHALL BE CONT. TO FAR SIDES OF INTERSECTING ELEMENTS.

ALL SLABS ON GRADE SHALL BE OF THICKNESS AS SHOWN ON DRAWINGS AND REINFORCED WITH 6 X 6 - W1.4 X W1.4 W.W.F. UNLESS OTHERWISE NOTED. LAP MESH 8" AT EDGES AND ENDS AND PROVIDE ADDITIONAL REINFORCING WHERE SHOWN ON DRAWINGS. PLACE MESH IN CENTER OF SLAB. MOISTURE BARRIER BENEATH FLOOR SLABS SHALL BE 10 MIL POLYETHYLENE.

## UNDERLAYMENT APPLICATION:

FOR ROOF SLOPES FROM TWO UNITS VERTICAL IN 12 UNITS HORIZONTAL (17-PERCENT SLOPE), UP TO 4 UNITS VERTICAL IN 12 UNITS HORIZONTAL (33-PERCENT SLOPE), UNDERLAYMENT SHALL BE 2 LAYERS APPLIED IN THE FOLLOWING MANNER. APPLY A 19" FELT (483MM) STRIP OF UNDERLAYMENT FELT PARALLEL WITH AND STARTING AT THE EAVES, FASTENED SUFFICIENTLY TO HOLD IN PLACE. STARTING AT THE EAVE, APPLY 36" WIDE (914MM) SHEETS OF UNDERLAYMENT, OVERLAPPING SUCCESSIVE SHEETS 19"(483MM), AND FASTENED SUFFICIENTLY TO HOLD IN PLACE.DISTORTIONS IN THE UNDERLAYMENT SHALL NOT INTERFERE WITH THE ABILITY OF THE SHINGLES TO SEAL. FOR ROOF SLOPES OF FOUR UNITS VERTICAL IN 12 UNITS HORIZONTAL (33-PERCENT) OR GREATER, UNDERLAYMENT SHALL BE ONE LAYER APPLIED IN THE FOLLOWING MANNER. UNDERLAYMENT SHALL BE APPLIED SHINGLE FASHION, PARALLEL TO AND STARTING FROM THE EAVE AND LAPPED 2 INCHES (51 MM), FASTENED SUFFICIENTLY TO HOLD IN PLACE. DISTORTIONS IN THE UNDERLAYMENT SHALL NOT INTERFERE WITH THE ABILITY OF THE SHINGLES TO SEAL. END LAPS SHALL BE OFFSET BY 6 FEET (1829MM).

ALL LATH AND LATH ATTACHMENTS SHALL BE OF CORROSION- RESISTANT MATERIALS. EXPANDED METAL OR WOVEN. WIRE LATH SHALL BE ATTACHED WITH 1 ½" (38 MM) LONG, 11 GAGE NAILS HAVING  $\frac{7}{16}$ " (11.1MM) HEAD, OR  $\frac{7}{8}$ " (22.2MM) LONG, 16 GAGE STAPLES, SPACED AT 6" (152MM)

## 1403.2 Weather protection.

Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing, as described in Section 1405.4. The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior veneer, as described in Section 1404.2, and a means for draining water that enters the assembly to the exterior. Protection against condensation in the exterior wall assembly shall be provided in accordance with section 1405.3.

1404.2 Water-resistive barrier A minimum of one layer of No.15 asphalt felt, complying with ASTM D 226 for Type 1 felt or other approved materials, shall be attached to the studs or sheathing, with flashing as described in Section 1405.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer.

#### STRUCTURAL STEEL

FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDING", LATEST EDITION.

ALL STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF A.S.T.M. A-36, EXCEPT STRUCTURAL STEEL TUBE SHAPES SHALL MEET THE REQUIREMENTS OF A.S.T.M. A500, GRADE B. ALL STEEL PIPE SHALL MEET THE REQUIREMENTS OF A.S.T.M. A53 E OR S, GRADE B.

ALL BOLTS SHALL MEET THE REQUIREMENTS OF A.S.T.M. A325. BOLTS SHALL BE 3/4" DIAMETER EXCEPT WHERE SHOWN OTHERWISE, PROVIDE MILL CERTIFICATES FOR ALL HIGH STRENGTH **BOLTS AND ANCHOR BOLTS.** 

WHERE REACTIONS ARE INDICATED, CONNECTIONS SHALL BE DESIGNED FOR THOSE REACTIONS, OTHERWISE, CONNECTIONS FOR BEAMS SHALL BE DESIGNED TO SUPPORT A REACTION EQUAL TO ONE HALF THE TOTAL UNIFORM LOAD CAPACITY FOR THE SHAPE, SPAN AND STEEL SPECIFICATION OF THE PARTICULAR BEAM AS TABULATED IN TABLES OF UNIFORM LOAD CONSTANTS IN THE A.I.S.C. MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.

ALL WELDED CONNECTIONS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS FOR THE SAME SIZE BEAM. ALL WELDS FOR COLUMN CAP AND BASE PLATES SHALL BE CONTINUOUS 1/4" FILLET WELDS. UNLESS SHOWN OTHERWISE.

ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1 WELDING CODE FOR BUILDING CONSTRUCTION, LATEST EDITION. USE E70-XX ELECTRODES FOR ALL WELDING.

PROVIDE 5/8" THICK CAP PLATES FOR ALL STEEL COLUMNS, EXCEPT WHERE SHOWN OTHERWISE.

PROVIDE ALL STRUCTURAL STEEL LINTELS, SHELF ANGLES. AND ALL OTHER ROLLED SHAPES SHOWN ON ARCHITECTURAL DRAWINGS.

#### PRE-ENGINEERED METAL BUILDING FRAME:

SINGLE SPAN RIGID FRAME METAL BUILDING IS TO BE DESIGNED AND MANUFACTURED BY METAL BUILDING SUPPLIER. SEE ARCHITECTURAL DRAWINGS FOR COLUMN BAY SPACES, EAVE HEIGHT, WALL PANELS, ROOF PANELS, GIRTS AND RELATED ACCESSORIES. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS SIGNED AND SEALED BY FLORIDA REGISTERED ENGINEER FOR ARCHITECT/ENGINEERS REVIEW PRIOR TO FABRICATION. SHOW ALL FOUNDATION REACTIONS ON PLANS AND FURNISH THIS INFORMATION IN A TIMELY MANNER SO THAT FOOTING SIZES AND DESIGN CAN BE VERIFIED PRIOR TO START OF CONSTRUCTION.

ALL BOLTS SHALL BE ASTM A-325 BOLTS. BOLTING METHOD SHALL UTILIZE CALIBRATED TORQUE WRENCH OR LOAD INDICATOR WASHERS. PROVIDE MILL CERTIFICATE FOR ALL HIGH STRENGTH BOLTS.

FOLLOW BUILDING CODE FOR LOAD REQUIREMENTS AND FOLLOW M.B.M.A.'S "RECOMMENDED DESIGN PRACTICE MANUAL". IN ADDITION TO STRENGTH REQUIREMENTS SERVICEABILITY CONDITIONS (DEFLECTION REQUIREMENTS) AS SPECIFIED BY EPCOT BUILDING CODE SHALL ALSO BE COMPLIED WITH. ROOF ATTACHMENTS TO BE PER FACTORY MUTUAL'S I-90 STANDARDS AND MUST HAVE BEEN TESTED SUCCESFULLY.

## CONCRETE MASONRY:

ALL CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD BEARING CONCRETE MASONRY: OF THE NATIONAL CONCRETE MASONRY ASSOCIATION".

CONCRETE MASONRY UNITS SHALL CONFORM TO A.S.T.M. C-90. ALL CONCRETE BLOCKS SHALL HAVE AN ULTIMATE NET COMPRESSIVE STRENGTH OF 2000 PSI MINIMUM TO GIVE A MINIMUM COMPRESSIVE STRENGTH OF MASONRY ASSEMBLAGE (f'm) OF 1500 PSI, UNLESS NOTED OTHERWISE.

MORTAR SHALL BE A.S.T.M. C-270, TYPE "S" FRESHLY PREPARED AND UNIFORMLY MIXED WITH MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI @ 28 DAYS.

GROUT USED IN CONCRETE BLOCKS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS.

MAXIMUM HEIGHT OF GROUT POUR SHALL BE 4'-0" UNLESS CLEAN OUT OPENINGS ARE PROVIDED AT THE BOTTOM OF CELLS TO BE FILLED. ALL GROUT SHALL BE PUDDLED WITH GROUT STICK IMMEDIATELY AFTER POURING.

FILL ALL CELLS WITH CONCRETE GROUT CONTAINING REINFORCING STEEL.

CONTINUOUS INSPECTION IS REQUIRED FOR ALL MASONRY WALL CONSTRUCTION.

## LIGHT GAGE STRUCTURAL STEEL FRAMING:

PROVIDE FRAMING MEMBERS AND CONNECTIONS IN ACCORDANCE WITH THE AISI SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, LATEST EDITION. USE UNIMAST CORPORATION FRAMES, BRACINGS AND CONNECTIONS, OR AN APPROVED EQUAL.

DESIGN LOADS: 20 psf Live Load 20 psf Dead Load 25 psf Collateral Load

## FOUNDATIONS

SLAB ON GRADE WITH MONOLITHIC FOOTINGS DESIGNED PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS 2.500 P.S.F.

## **GENERAL DOOR NOTES:**

11.0 ALL EXTERIOR DOORS & DOORS TO GARAGE MUST BE FLORIDA APPROVED TO WITHSTAND DESIGN PRESSURE SHOWN ON FLOOR PLAN. CONTRACTOR TO PROVIDE FLORIDA PRODUCT APPROVAL NOTES., SPECIFICATIONS & INSTALLATION DETAILS FROM MANUFACTURE.

11.1 DOOR ATTACHMENT INSTALLATION IS THE RESPONSIBILITY OF THE BUILDER/CONTRACTOR AS PER THE PARTICULAR MANUFACTURER'S INSTALLATION REQUIREMENTS TO MEET DESIGN PRESSURE AND MUST BE SIGNED AND SEALED BY A LICENSED ENGINEER FROM THE STATE OF FLORIDA.

11.2 THE DESIGN PRESSURE SHOWN ON THE FLOOR PLAN SHEET IS TO BE USED AS A GUIDELINE FOR PROPER DOOR DESIGN CRITERIA.

11.3 THE BUILDER MUST PROVIDE ENGINEERED MATERIAL AND INSTALLATION DETAILS FROM THE MANUFACTURER OF THE DOORS (INCLUDING ROLL-UP DOORS) THIS MUST BE AVAILABLE ON SITE IN THE INSPECTION BOX BEFORE FRAMING INSPECTION TAKES PLACE.

11.4 WINDOWS OR FIXED GLASS IN DOORS: ALL GLASS LESS THAN 18" A.F.F. TO BE TEMPERED GLASS.

11.5 DOORS TO MEET U-FACTOR (0.4) AND SHGC (0.25).

GENERAL, FIXED GLASS & TRANSOM NOTES:

12.0 ALL EXTERIOR STOREFRONT, FIXED GLASS & TRANSOM MUST BE FLORIDA APPROVED TO WITHSTAND DESIGN PRESSURE SHOWN ON FLOOR PLAN. CONTRACTOR TO PROVIDE FLORIDA PRODUCT APPROVAL NOTES., SPECIFICATIONS & INSTALLATION DETAILS FROM MANUFACTURE.

12.1 STOREFRONT, FIXED GLASS & TRANSOM ATTACHMENT INSTALLATION IS THE RESPONSIBILITY OF THE BUILDER/CONTRACTOR AS PER THE PARTICULAR MANUFACTURER'S INSTALLATION REQUIREMENTS TO MEET DESIGN PRESSURE AND MUST BE SIGNED AND SEALED BY A LICENSED ENGINEER FROM THE STATE OF FLORIDA.

12.2 THE DESIGN PRESSURE SHOWN ON THE FLOOR PLAN SHEET IS TO BE USED AS A GUIDELINE FOR PROPER STOREFRONT, FIXED GLASS & TRANSOM DESIGN CRITERIA.

12.3 THE BUILDER MUST PROVIDE ENGINEERED MATERIAL AND INSTALLATION DETAILS FROM THE MANUFACTURER OF THE STOREFRONT, FIXED GLASS & TRANSOM THIS MUST BE AVAILABLE ON SITE IN THE INSPECTION BOX BEFORE FRAMING INSPECTION TAKES PLACE.

12.4 STOREFRONT, FIXED GLASS & TRANSOM: ALL GLASS LESS THAN 18" A.F.F. TO BE TEMPERED GLASS.

12.5 WINDOW, FIXED GLASS & TRANSOM TO MEET U-FACTOR (0.4) AND SHGC (0.25).

12.6 STOREFRONT, FIXED GLASS & TRANSOM MANUFACTURE TO VERIFY ALL DIMENSIONS ON SITE BEFORE FABRICATION.

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SCALE : AS SHOWN DRAWN BY : 4K

DATE: 02-10-2025 PROJECT NO: KAD 3757

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