# MAIN STREET BUILDING IMPROVEMENTS

# 230 SW MAIN ST. LEE'S SUMMIT, MO 64063

# PERMIT DOCUMENTS 21 APRIL, 2022 COLLINS WEBB #: 21121

SHEET	
SHEET NUMBER	SHEET NAME
GENERAL INFORM	ATION
CS	COVER SHEET
G001	GENERAL INFORMATION
G002	ACCESSIBILITY GUIDELINES
G003	CODE INFORMATION AND LIFE SAFETY PLANS
G004	UL LISTINGS - #U415
G005	UL LISTINGS - #U419
G006	UL LISTINGS - #L511
G500	GENERAL PROJECT SPECIFICATIONS
G501	GENERAL PROJECT SPECIFICATIONS
G502	GENERAL PROJECT SPECIFICATIONS
DEMOLITION	
D101	DEMO PLANS
CIVIL	
C.010	DEMOLITION PLAN
C.100	SITE PLAN
C.200	GRADING PLAN
C.300	UTILITY PLAN
STRUCTURAL	
S101	STRUCTURAL PLANS AND SECTIONS
S102	STRUCTURAL PLANS AND SECTIONS
ARCHITECTURAL	
A101	FLOOR PLANS, ENLARGED PLANS, AND DETAILS
A201	EXTERIOR ELEVATIONS AND DOOR SCHEDULE
MEP	
MEP001	COVER SHEET
MEP002	THROUGH PENETRATION DETAILS
MEP101	ROOF PLAN
MECHANICAL	
M011	DEMOLITION - FLOOR PLANS
M111	MECHANICAL - FLOOR PLANS
M201	MECHANICAL - SCHED./DETAILS
PLUMBING	
P011	DEMOLITION - FLOOR PLANS
P111	PLUMBING - FLOOR PLANS
P201	PLUMBING - SCHED./DETAILS
ELECTRICAL	
E011	ELECTRICAL DEMOLITION - FLOOR PLANS
E111	ELECTRICAL - FLOOR PLANS
E201	ELECTRICAL - RISER DIAGRAMS
E202	ELECTRICAL - PANELBOARD SCHEDULES



# OWNER



.collinsandwebb.com 816.249.2270 | www MO, 64063 P: Summit, ee's Street SW Market 307B







# ARCHITECT

COLLINS WEBB ARCHITECTURE 307B SW MARKET ST. LEE'S SUMMIT, MISSOURI 64063 P: 816.249.2270 www.collinsandwebb.com

# **CIVIL ENGINEER**

ENGINEERING SOLUTIONS 50 SE 30TH ST, LEE'S SUMMIT, MO 64082 P: 816.623.9888 www.es-kc.com

# STRUCTURAL ENGINEER

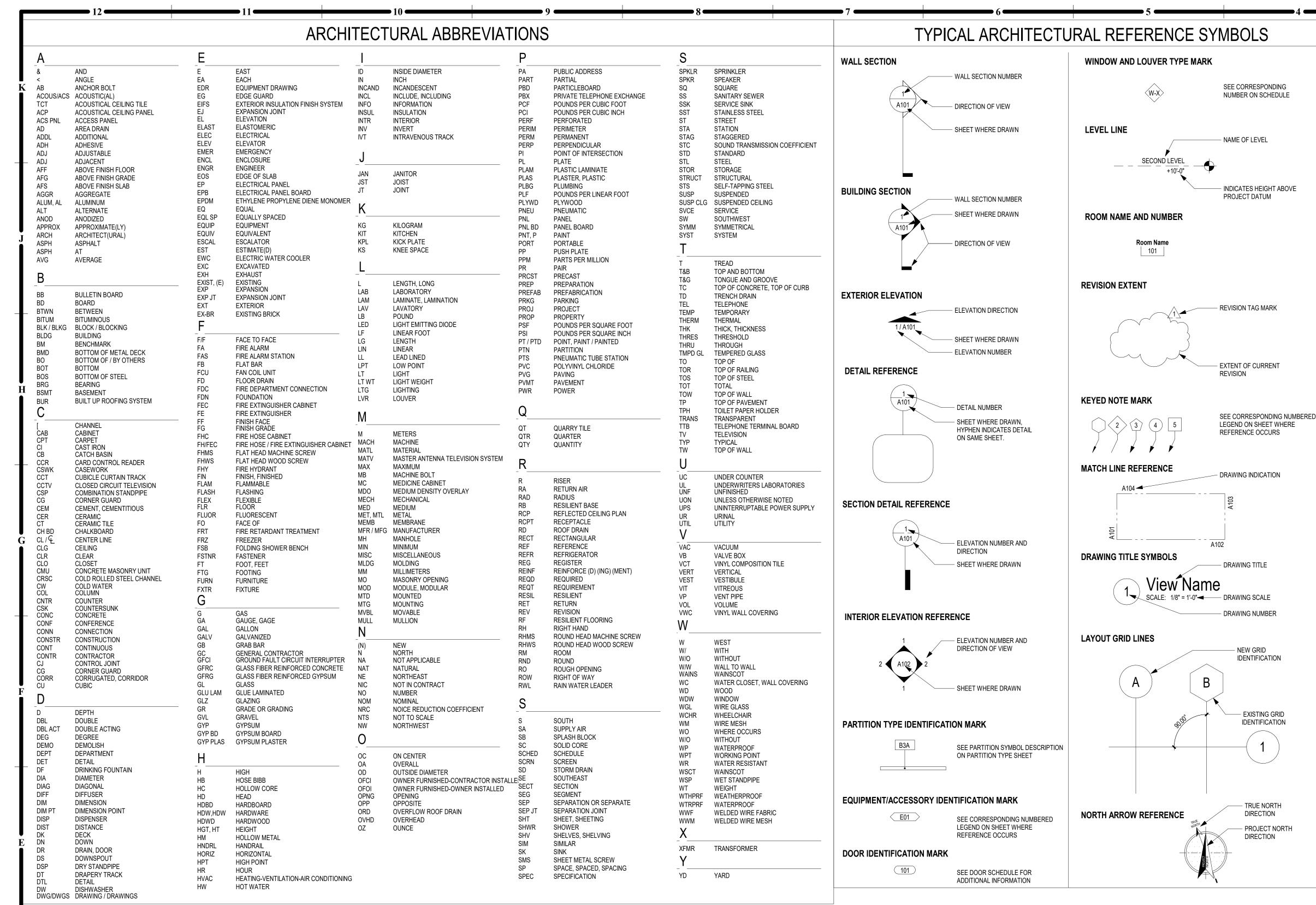
LEIGH & O'KANE 250 NE MULBERRY SUITE 201 LEE'S SUMMIT, MO 64086 P: 816.444.3144 www.leok.com



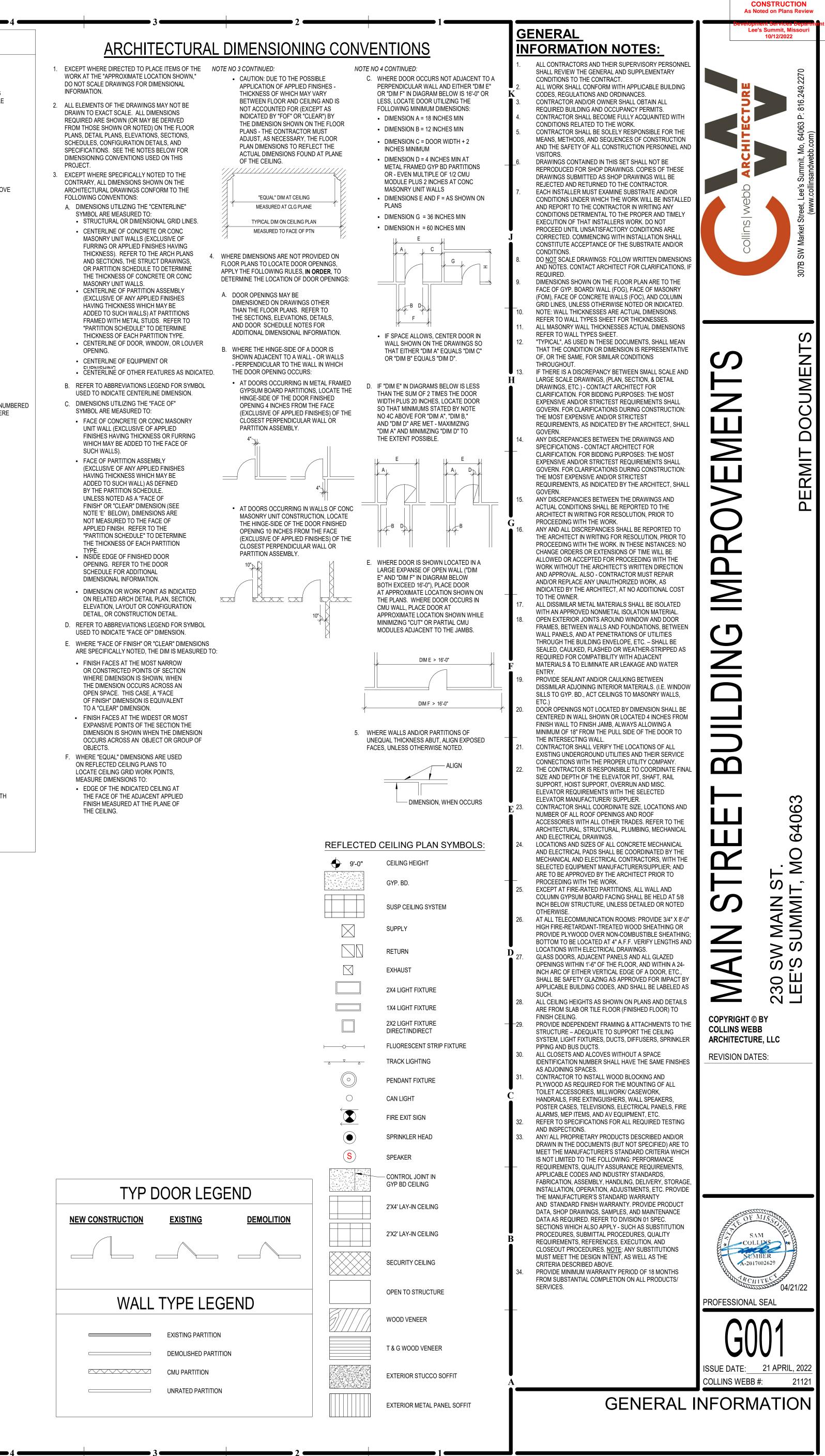
# MEP ENGINEER

PKMR ENGINEERS 13300 W 98TH ST LENEXA, KS 66215 P: 913.492.2400 www.pkmreng.com

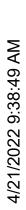


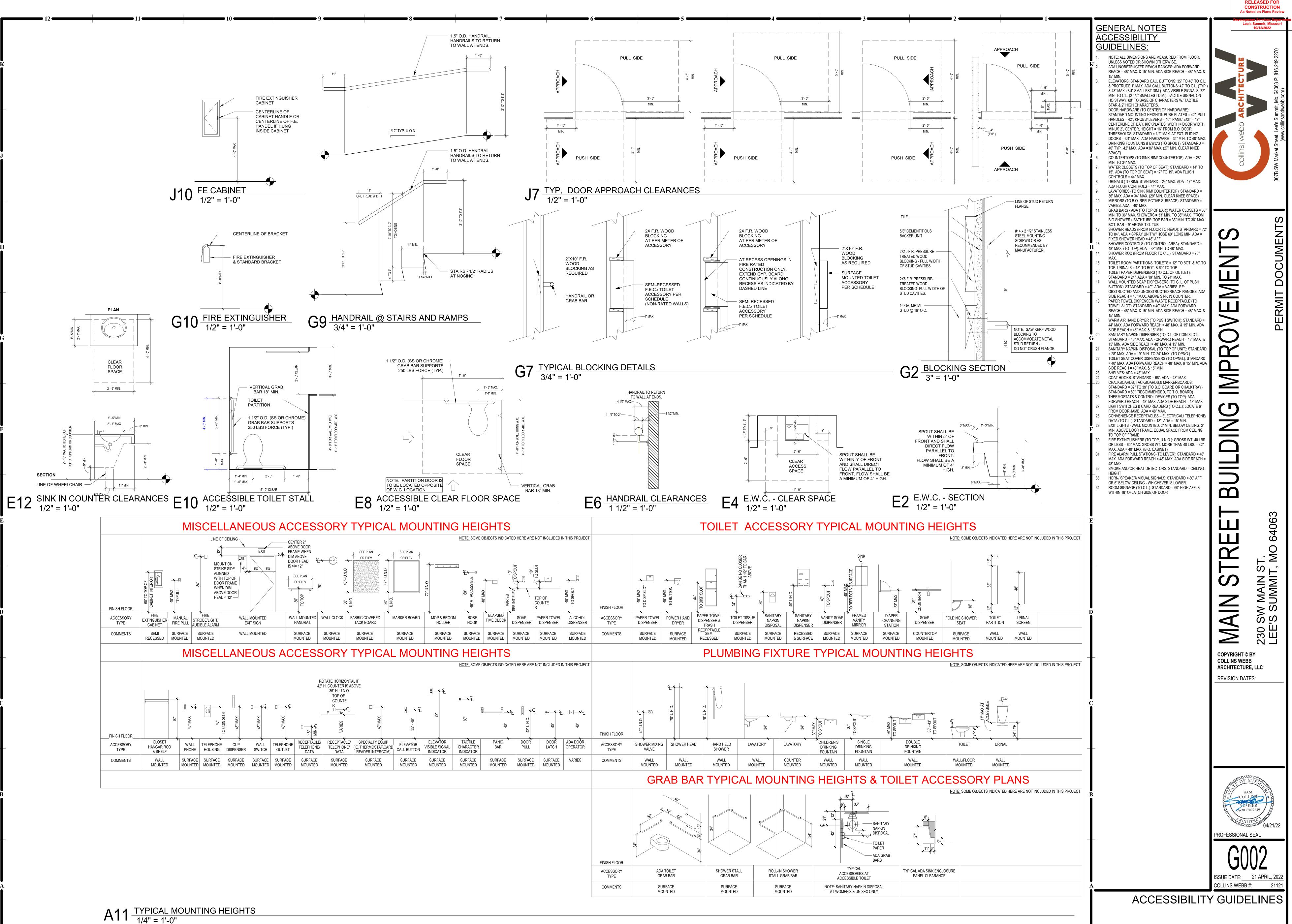


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**RELEASED FOR** 





12	<b></b> 11 <b></b>			9	
WALL PR	ORITY LEGEND GRAPHIC REPRESENTATION ONLY.		KE RESISTIVE LEGEND		TIONS RTITIONS
FOUR HOUR FIRE WALL ( <b>4FW</b> ) THREE HOUR FIRE WALL ( <b>3FW</b> ) TWO HOUR FIRE WALL ( <b>2FW</b> )		DEFINITION A FIRE RATED WALL THAT IS C TO SEPARATE CONSTRUCTION	CONTINUOUS VERTICALLY FROM FOUNDATION TO ROOF N INTO SEPARATE BUILDINGS.	SHALL BE CONTI	ARTITION THAT IS U NUOUS FROM TOP OR ROOF/CEILING A
FOUR HOUR FIRE BARRIER ( <b>4FB</b> ) FIREE HOUR FIRE BARRIER ( <b>3FB</b> )		USE FIRE WALLS SERVE TO CREAT REASONS.	TE SEPARATE BUILDINGS FOR THE FOLLOWING	EXCEPTION, A FI	RE PARTITION SHAI
WO HOUR FIRE BARRIER ( <b>2FB</b> ) (INCLU TWO HOUR SHAFT ENCLOSUR NE HOUR FIRE BARRIER ( <b>1FB</b> ) (INCLU	E ( <b>2SE</b> ) JDES THE FOLLOWING)	COMPLIANCE WITH MA     TO SEPARATE BUILDIN	VARIES FROM ONE BUILDING TO ANOTHER. AXIMUM ALLOWABLE AREA REQUIREMENTS. IGS WITH DIFFERENT LEVELS OF FIRE PROTECTION. ERTY LINE DEFINING DIFFERENT OWNERSHIP.	SEPARAT     SEPARAT	S ARE USED IN CER TE DWELLING UNITS TE SLEEPING SPACI TE CORRIDORS FRO
ONE HOUR SHAFT ENCLOSURE MOKE TIGHT PARTITION ( <b>X</b> ) <i>(INCLUDE</i> SMOKE TIGHT PARTITION TO S	ES THE FOLLOWING)		RES SUFFICIENT STRUCTURAL STABILITY UNDER FIRE W THE COLLAPSE OF CONSTRUCTION ON EITHER SIDE	SEPARAT	E ELEVATOR LOBB
SMOKE TIGHT PARTITION WITH	ARATION OF INTERSTITIAL SPACES (XI)	<ul> <li>WITHOUT COLLAPSE C</li> <li>OPENINGS ARE REQUI</li> <li>OPENINGS ARE LIMITE</li> </ul>	OF THE WALL. IRED TO BE PROTECTED. ID BASED ON A PERCENTAGE OF WALL LENGTH.		D <u>ERATIONS</u> SS ARE REQUIRED 1 RE FOR SWING DO
ETAIL ABUTMENT OF DISSI	MILAR WALL	REQUIRED FOR SOME     THE REQUIRED FIRE R	WALL THROUGH THE ROOF WITH A PARAPET IS CONSTRUCTION CLASSIFICATIONS. ATING OF A FIRE WALL IS BASED ON OCCUPANCY		<u>G WALLS (</u>
LOWER PRIO	DRITY WALLS THROUGH A	GROUPS AND CLASS C HARDWARE FOR SWIN	IG DOORS SHALL INCLUDE A LATCH AND CLOSER.	A BEARING WALL FIRE RATED STR	EXTERIOR WALL D IS FIRE-RATED ON UCTURAL ELEMEN OM ONE SIDE TO TH
		CONTINUITY SHALL BE MAINTA	JCTED TO RESTRICT THE SPREAD OF FIRE. AINED FROM TOP OF FLOOR TO UNDERSIDE OF THE	<u>USE</u>	D BEARING STRUC
TAPE & JOIN	T COMPOUND (TYP)	FLOOR OR ROOF DECK ABOVE			ND WINDOWS ARE
WALL BEHINI	. HIGHER PRIORITY D INTERSECTING ORITY WALL (TYP)	TO CREATE HORIZONT     TO SEPARATE EXIT PA     OCCUPANCY SEPARAT     TO SEPARATE INCIDEN	TAL EXITS. ISSAGEWAYS. TIONS.	PLUMBIN     ARE REQ	CT PENETRATIONS G, ELECTRICAL, SP UIRED TO BE FIRE- LS CONSTRUCTED
A TAPE & JOINT	T COMPOUND (TYP) B		WITH DIFFERENT LEVELS OF FIRE PROTECTION. D SHAFT ENCLOSURES ARE FIRE BARRIERS. SEE	ACTIVE I	FIRE PRO
		TY SPECIAL CONSIDERATIONS • WITHIN SOME CONSTR	RUCTION CLASSIFICATIONS, CONSTRUCTION THAT AL SUPPORT OF A FIRE BARRIER IS REQUIRED TO BE	• STANDPI 1. A	TIC SPRINKLER SYS PE SYSTEM - PROV DDITIONAL CONNE OR OPING PROTEC
TAPE & JOIN COMPOUND	(TYP)	APE HER • OPENINGS ARE REQUI	(FIRE RATING AS THE FIRE BARRIER, OR BETTER. IRED TO BE PROTECTED. IG DOORS SHALL INCLUDE A LATCH AND CLOSER.	CURTAIN	AND CLOSELY SPA
	ORITY WALL (TYP)	SHAFT ENCLOS	<b>SURES (SE)</b> E BARRIER FORMING THE BOUNDARY OF A VERTICAL		
		USE	E BARKIER FORMING THE BOUNDARY OF A VERTICAL	GENERA	L NOTES
TAPE & JOIN	T COMPOUND (TYP)	PROTECT OPENINGS IN FIRE F	RATED FLOOR/CEILING ASSEMBLIES.	1. THE FOLI	LOWING INFORMAT
	JRITT WALL	NECESSARY FOR THE OPENINGS ARE REQU	AFT ENCLOSURES ARE PROHIBITED UNLESS FUNCTION OF THE SHAFT. WHERE ALLOWED, IRED TO BE PROTECTED.	INFORMA CODES.	TION IS NOT MEAN
GYPSUM BOARD LAYERS, TYPE THE HIGHER PRIORITY WALL S TAPING AND SEALING OF HIGH ALTERNATE LAYERS OF GYPSU	EET G121-TI FOR WALL COMPONENTS, NUMBER ( E OF GYPSUM BOARD, AND OTHER SIMILAR INFO. HALL PASS THROUGH THE LOWER PRIORITY WAI ER PRIORITY WALLS SHALL BE CONTINUOUS. JM BOARD SHALL OVERLAP AT CORNER (ERED RATED GYPSUM BOARD PARTITIONS.	OF EXCEPT FOR EXISTING • HARDWARE FOR SWIN	REQUIRE COMBINATION SMOKE AND FIRE DAMPERS G CONDITIONS THAT ARE GRANDFATHERED. IG DOORS SHALL INCLUDE A LATCH, CLOSER, AND EALS.	3. FOR NEW	MENTS FOR EACH / CONSTRUCTION, I ED DOORS IN CER
	CDIDTION				CENE
	EET LANDLORD IMPROVEMENTS				GENER EXIT TRAVE
COUNTY: JACKSON	, ,				DEAD END C COMMON PA MIN. CORRIE
307B SW MARKET STREET LEES SUMMIT, MISSOURI 64 APPLICABLE CODES:	063				POSTI
INTERNATIONAL BUILDING INTERNATIONAL PLUMBING INTERNATIONAL MECHANIC	CODE - 2018 ED.				EVERY ROOM OCCUPANT L NEAR THE MA POSTED SIGN
INTERNATIONAL FUEL GAS NATIONAL ELECTRICAL COI INTERNATIONAL FIRE CODE	DE - 2017 ED. - 2018 ED.				SHALL BE MA
ADA STANDARDS FOR ACCE ICC/ANSI A117.1: ACCESSIBI	ESSIBLE DESIGN - 2010 ED. LE AND USABLE BUILDINGS AND FACIL	ITIES - 2009 ED.			A. REQUIRED
	ATION		TABLE/SECTION/REFERENCE		1. STAIRS - 0. 2. OTHER CO
BUILDING/PROJECT USE CONSTRUCTION TYPE OCCUPANCY CLASSIFIC/	TYPE VB (NON-SPRIN	IKLED)	SECTION 309 TABLE 601 SECTION 309		B. MINIMUM N
SEPARATED MIXED-USE	APPROACH	A-2	TABLE 506.2		2. OCCUPANT 3. OCCUPANT
	<u>A-2:</u> 6,000 SQ. FT.				SIGNA
FIRST LEVEL	<u>B:</u> 2,440 SQ. FT. <u>A-2:</u> 4,000 SQ. FT.				1. PROVIDE S ACCORDAN
SECOND LEVEL	<u>B:</u> 5,720 SQ. FT.	C	TABLE 504.4		OCCU
ALLOWABLE STORIES ACTUAL NUMBER OF ST	2 STORIES - EXISTIN ORIES 2 STORIES	6	TARI E 504 2		OCCUPANT
ALLOWABLE HEIGHT ACTUAL HEIGHT IN FEET	40'-0" - EXISTING 29'-10"		TABLE 504.3		B: OFFICE S A-2: FUTURE
	E REQUIREMENTS		TABLE/SECTION/REFERENCE		EXITS REQU EXITS REQU
PRIMARY FRAME NON-BEARING WALLS BEARING WALLS INT./ EXT.		0 HRS 0 HRS 0 INT. / 2 EXT. HRS	TABLE 601 TABLE 601 TABLE 601		EXITS REQU EXITS PROV EXITS PROV
FLOOR CONSTRUCTION (SEP CEILING/ROOF CORRIDORS	PARATING OCCUPANCIES)	0 HRS 0 HRS 0 HRS 0 HRS	TABLE 601 TABLE 601 TABLE 1018.1		OCCUPANT
SEPARATION BETWEEN 1ST		2 HRS			B: OFFICE S
	XTINGUISHERS IN OCCUPANCIES AND	-	E WISCONSIN FIRE PREVENTION CODE. SEE F	PLANS FOR	
	OTIFY ARCHITECT OF ANY PROPOSED F SHERS SHALL BE INSTALLED, INSPECTE		S ENCOUNTERED. DANCE WITH NFPA 10, STANDARD FOR PORTA	BLE FIRE	TOTAL OCC
	IT NOTES: (IBC 1208	1			PLUM
A.F.F. 2. OCCUPIED SPACES, HABITA	ABLE SPACES AND CORRIDORS SHALL	HAVE A CEILING HEIGHT OF NOT	( PROJECTION FROM THE CEILING BE LESS T LESS THAN 7'-6" A.F.F. A CEILING HEIGHT OF NOT LESS THAN 7'-0" A.		B OCC WATE B OCC LAVA B OCC DRINI
					B OCC SERV
XIT ENCLOSURES CL	AX. FLAME SPREAD LASS A (0-25)	803.13			<u>REQUIRED:</u> LEVEL
ALL OTHER SPACES CL	_ASS B (26-75) _ASS C (76-200)	803.13 803.13			1ST FLOOR
MOKE DEVELOPED 0-4	LASS A (0-25) 450	805 TABLE/SECTION/REFERI	ENCE		2ND FLOOR
	ncluding plastics) must comply with IBC	Section 806.			1
					PROVIDED:
					PRC LEV 1ST

# NS IONS (FP) N THAT IS USED FOR THE APPLICATIONS LISTED BELOW. IT

FROM TOP OF FLOOR TO UNDERSIDE OF A FIRE-RATED CEILING ASSEMBLY. WHERE ALLOWED BY CODE TITION SHALL BE ALLOWED TO TERMINATE AT THE UPPER ATED CEILING

SED IN CERTAIN OCCUPANCIES TO DO THE FOLLOWING. LING UNITS PING SPACES RIDORS FROM ADJACENT SPACES

ATOR LOBBIES NT SPACES IN COVERED MALL BUILDINGS

EQUIRED TO BE PROTECTED. SWING DOORS SHALL INCLUDE A LATCH AND CLOSER. ALLS (BW)

OR WALL DESIGNED TO SUPPORT FLOOR OR ROOF LOADS. -RATED ONLY TO MAINTAIN THE INTEGRITY OF ITSELF AS A AL ELEMENT. THE WALL DOES NOT SERVE AS A FIRE SIDE TO THE OTHER SIDE.

ING STRUCTURAL ELEMENT.

DOWS ARE NOT REQUIRED TO BE RATED. ETRATIONS ARE NOT REQUIRED TO BE FIRE-DAMPERED. TRICAL, SPRINKLER SYSTEM, AND CABLE PENETRATIONS TO BE FIRE-STOPPED WITH FIRE SEALANT AT BOTH SIDES, STRUCTED OF HOLLOW CMU OR STUD FRAMING.

# **PROTECTION SYSTEMS:**

INKLER SYSTEM - PROVIDED THROUGHOUT (903.2.1) TEM - PROVIDED IN STAIRS THROUGHOUT (905) IAL CONNECTIONS PROVIDED AS SHOWN (905) IG PROTECTED IN ACCORDANCE WITH IBC 712.1.3.1. DRAFT OSELY SPACED SPRINKLERS.

# <u>DTES</u>

INFORMATION SERVES TO PROVIDE BUILDING OWNERS WITH TIONS OF WALL TYPES RELATED TO LIFE SAFETY ISSUES. THIS NOT MEANT TO BE A SUBSTITUTE FOR APPLICABLE BUILDING AS MORE THAN ONE CLASSIFICATION, THE MOST RESTRICTIVE FOR EACH CLASSIFICATION SHALL APPLY.

TRUCTION, PERIMETER SMOKE-SEALS MAY BE REQUIRED AT ORS IN CERTAIN OCCUPANCIES.

# WALL TYPE NOTES:

1. RE: LIFE SAFETY PLAN(S) FOR RATED WALL LOCATIONS. 2. WHERE "FIRE-RATED SEALANT" IS INDICATED ON WALL TYPES: PROVIDE FIRE-RATED SEALANT ABOVE TOP TRACK, UNDER BOTTOM TRACK, AT ALL PENETRATIONS (BOTH SIDES), AND AS REQUIRED BY FIRE RATING UL NUMBER. 3. EXTEND FIRE-RATED WALL CONSTRUCTION BEHIND

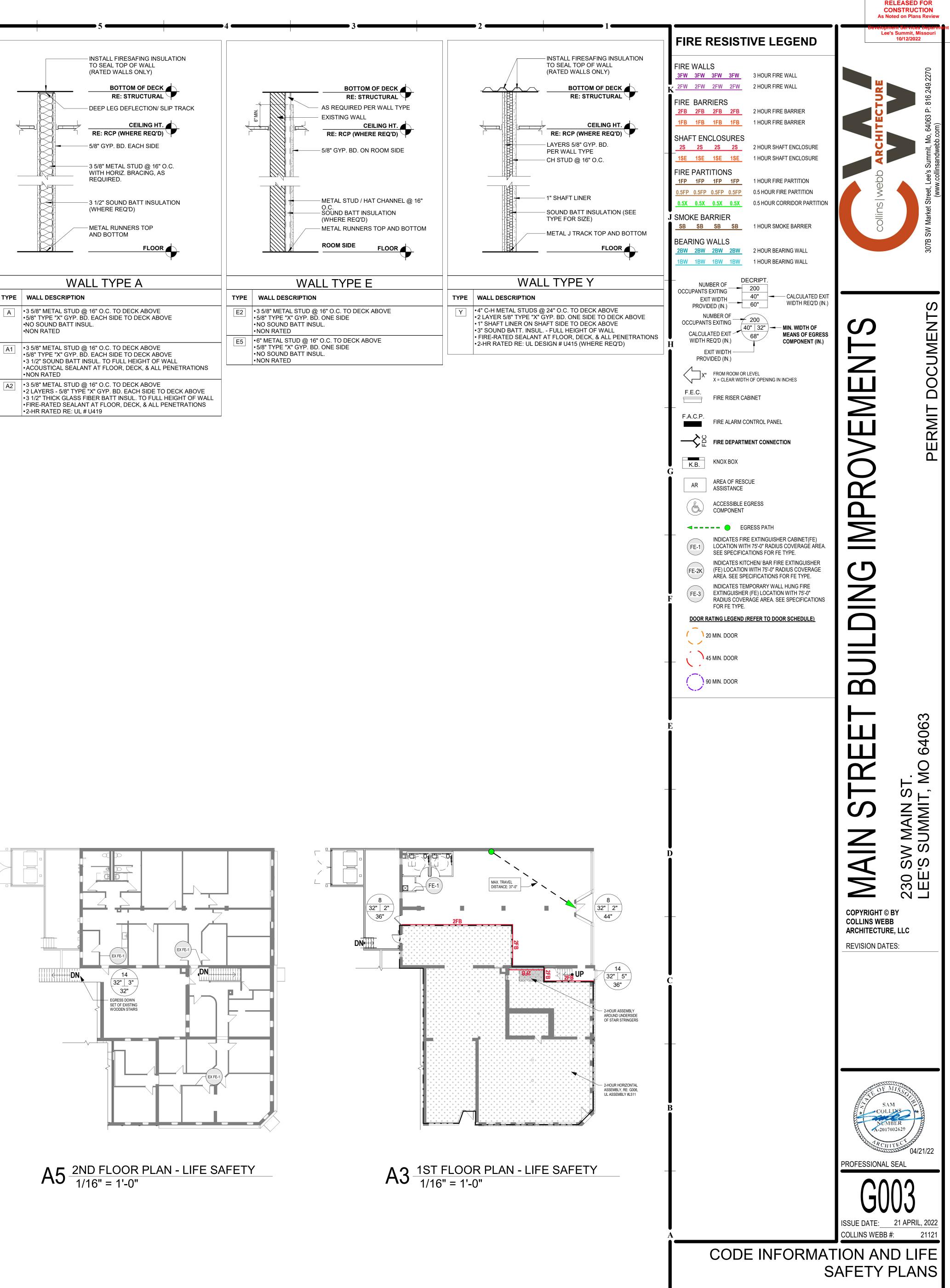
- RECESSED OR BUILT-IN EQUIPMENT; SUCH AS FIRE EXTINGUISHER CABINETS (FEC), ELECTRICAL WATER COOLERS (EWC), ELECTRICAL PANELS, ETC., UNLESS NOTED OTHERWISE. 4. PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-
- UP PLATES AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK AND OF ALL FLOOR MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL OR LABORATORY EQUIPMENT.
- 5. WHERE HVAC OR OTHER MECHANICAL, ELECTRICAL AND PLUMBING ITEMS PENETRATE PARTITIONS: STUDS SHALL BE BRACED AND FRAMED TO STRUCTURE AS REQUIRED TO PROVIDE ADEQUATE SUPPORT. ALL PENETRATIONS
- THROUGH ACOUSTICAL AND FIRE RATED WALLS SHALL BE SEALED TO PROVIDE FIRE, SMOKE, AND/OR ACOUSTICAL ISOLATION OF SPACES WITH APPROPRIATE ACOUSTICAL/ FIRESTOP MATERIAL.
- 6. THERE SHALL BE NO BACK-TO-BACK ELECTRICAL, TELEPHONE, OR OTHER OUTLETS, EXCEPT WHERE SPECIFICALLY SHOWN. 7. WALL BASE IS NOT SHOWN ON ALL WALL TYPES FOR
- CLARITY. REFER TO FINISH SCHEDULE. 8. PROVIDE GLASS-MAT, WATER RESISTANT BACKING BOARD AT ALL WET LOCATIONS. 9. EXCEPT AT FIRE-RATED PARTITIONS, ALL WALL AND
- COLUMN GYPSUM BOARD FACING SHALL BE HELD AT 5/8 INCH BELOW STRUCTURE, UNLESS NOTED OR SHOWN OTHERWISE. 10. PROVIDE AND INSTALL BLOCKING REQUIRED FOR ALL
- A.V. EQUIPMENT. G.C. TO COORDINATE WITH TI CONSULTANT FOR FINAL LOCATIONS AND SIZE REQUIREMENTS. 11. COMPRESSIBLE FILLER - ACCEPTABLE MATERIALS
- WOULD BE FIBERGLASS INSULATION OR FIRESTOPPING. VOIDS TO BE COMPLETELY FILLED AND A FIRESTOP SEALANT OVER ANY ENDS. THIS IS TYPICAL FOR ALL ACOUSTICAL WALL ASSEMBLIES WHERE "COMPRESSIBLE FILLER" IS CALLED FOR. THERE CAN BE NO VOIDS IN THE INSTALLATION. 12. PROVIDE A MIN. MSG-12 STUD FOR ALL VERTICAL LONG

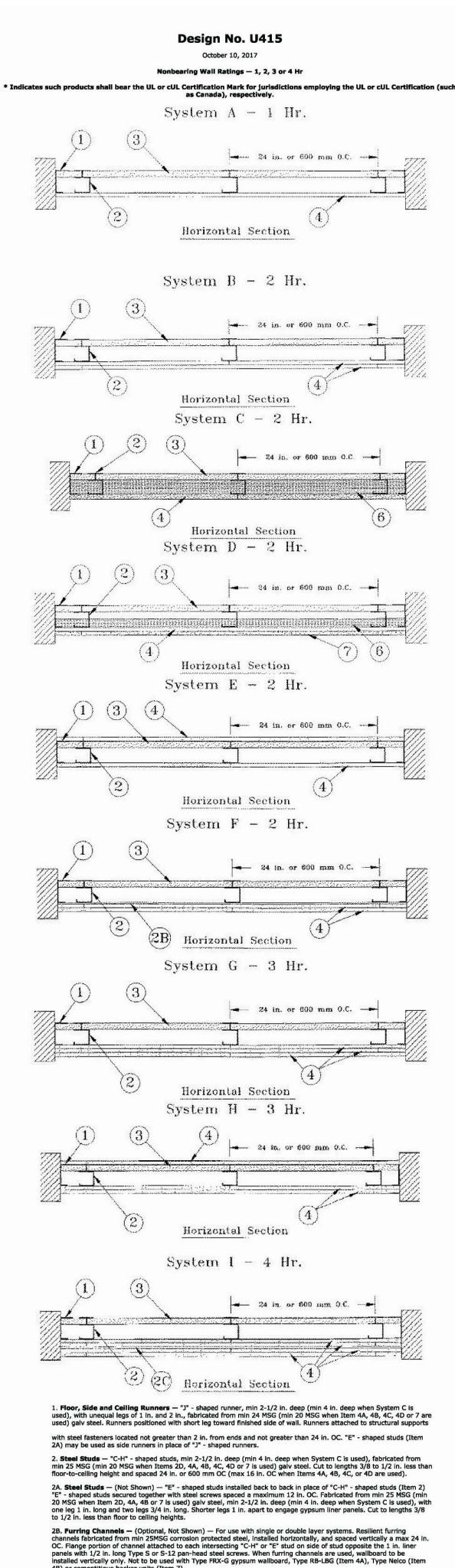
SPAN WALL TYPES.

	TOS	TALL FIRESAFING INSULATION SEAL TOP OF WALL TED WALLS ONLY) BOTTOM OF DECK
	DEE	P LEG DEFLECTION/ SLIP TRACK
		: RCP (WHERE REQ'D)
	5/8"	GYP. BD. EACH SIDE
_	WIT	8" METAL STUD @ 16" O.C. H HORIZ. BRACING, AS QUIRED.
		2" SOUND BATT INSULATION ERE REQ'D)
		AL RUNNERS TOP BOTTOM
_		FLOOR
		$\mathbf{\nabla}$
	WALL	TYPE A
TYPE	WALL DESCRIPTION	
A	•3 5/8" METAL STUD @ 16" ( •5/8" TYPE "X" GYP. BD. EA( •NO SOUND BATT INSUL. •NON RATED	D.C. TO DECK ABOVE CH SIDE TO DECK ABOVE

A1	•3 5/8" METAL STUD @ 16" O.C. TO DECK ABOVE •5/8" TYPE "X" GYP. BD. EACH SIDE TO DECK ABOVE •3 1/2" SOUND BATT INSUL. TO FULL HEIGHT OF WALL •ACOUSTICAL SEALANT AT FLOOR, DECK, & ALL PENETRATIO •NON RATED
A2	•3 5/8" METAL STUD @ 16" O.C. TO DECK ABOVE •2 LAYERS - 5/8" TYPE "X" GYP. BD. EACH SIDE TO DECK ABOV •3 1/2" THICK GLASS FIBER BATT INSUL. TO FULL HEIGHT OF V •FIRE-RATED SEALANT AT FLOOR, DECK, & ALL PENETRATION •2-HB BATED BE: 111 #1/419

SENERAL EXITING REQUIREMENTSTABLE/SECTION/REFEKIT TRAVEL DISTANCE EAD END CORRIDOR200 FEET 20 FEET 20 FEETTABLE 1017.2 SECTION 1020.4 SECTION 1020.4 SECTION 1006.2.1 SECTION 1020.2	RENCE
EAD END CORRIDOR20 FEETSECTION 1020.4DMMON PATH OF TRAVEL75' FEET, OR 100' IF OCC. < 50	
OSTING OF OCCUPANT LOAD	
ERY ROOM OR SPACE THAT IS AN ASSEMBLY OCCUPANCY SHALL HAVE THE CUPANT LOAD OF THE ROOM OR SPACE POSTED IN A CONSPICUOUS PLACE, AR THE MAIN EXIT OR EXIT ACCESS DOORWAY FROM THE ROOM OR SPACE. STED SIGNS SHALL BE OF AN APPROVED LEGIBLE PERMANENT DESIGN AND ALL BE MAINTAINED BY THE OWNER OR AUTHORIZED AGENT.	
XIT REQUIREMENTS TABLE/SECTION/REFE	RENCE
REQUIRED CAPACITY	
STAIRS - 0.3" / PERSON       1005.1         DTHER COMPONENTS - 0.2" / PERSON       1005.1         MINIMUM NUMBER       1005.1	
OCCUPANT LOAD OF 1-500 PERSONS - 2 EXITS PER STORY OCCUPANT LOAD OF 501-1000 PERSONS - 3 EXITS PER STORY OCCUPANT LOAD OF MORE THAN 1000 PERSONS - 4 EXITS PER STORY	
IGNAGE	
PROVIDE SIGNAGE "IN FIRE EMERGENCY DO NOT USE ELEVATOR, USE EXIT STAIRS" IN ACCORDANCE WITH IBC (3002.3)	
DCCUPANT LOAD PER LEVEL TABLE/SECTION/REFE	RENCE
CCUPANT LOAD : FIRST LEVEL	
OFFICE SQUARE FOOTAGE (2205 SF) 15 OCC 150 SF/OCC 2: FUTURE RESTAURANT <u>FUTURE T.I.</u> 15 OCCUPANTS	
KITS REQUIRED THIS LEVEL: B2 EXITS1006.3.1KITS REQUIRED THIS LEVEL: A-2FUTURE T.I.KITS PROVIDED THIS LEVEL: B2 EXITSKITS PROVIDED THIS LEVEL: A-21 EXIT - EXISTING	
CCUPANT LOAD : SECOND LEVEL	
OFFICE SQUARE FOOTAGE (4032 SF) <u>27 OCCUPANTS</u> 150 SF/OCC	
KITS PROVIDED THIS LEVEL:2 EXIT - EXISTING1006.3.1	
OTAL OCCUPANT LOAD	
OTAL OCCUPANT LOAD FOR BUILDING (BUSINESS ONLY): 42 OCCUPANTS	
PLUMBING FIXTURE REQUIREMENTS	
B OCC WATER CLOSETS= 1/25 PER FIRST 50, 1/50 FOR 50+ BOTH MALE/ FEMALEB OCC LAVATORIES= 1/40 FOR FIRST 80, 1/80 FOR 80+ BOTH MALE/FEMALEB OCC DRINKING FOUNTAIN= 1/100B OCC SERVICE SINK= 1	
REQUIRED: LEVEL OCCUPANCY WATER CLOSETS LAVATORIES DRINKING FOUNTAINS SERVIC	E SINKS
1ST FLOOR BUSINESS M 8/25 = .32 M 8/40 = .2 15/100 = .15 1 REQ	
F 8/25 = .32         F 8/40 = .2           ASSEMBLY (A-2)         FUTURE         FUTURE         FUTURE           TOTAL:         1         1         1	<u>:</u>
2ND FLOOR BUSINESS M 14/25 = .56 M 14/40 = .35 27/100 = .27 1 REQ F 14/25 = .56 F 14/40 = .35	
TOTAL: 2 1 1 1	
<u>PROVIDED:</u> LEVEL WATER CLOSETS LAVATORIES DRINKING FOUNTAINS SERVICE :	SINKS
1ST FLOOR22BOTTLED WATER PROVIDED12ND FLOOR42BOTTLED WATER PROVIDED	





4B) or cementitious backer units (Item 7). 2C. Furring Channels - For use with System I - "Hat" - shaped, 25 MSG galv steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type 5 pan head steel screws. Screws alternate from top lange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC. 2D. Steel Framing Members\* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7): 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 max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described b. Steel Framing Members\* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum selfdrilling, S-12 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-

2E. Steel Framing Members\* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described 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. b. Steel Framing Members\* — Used to attach furring channels (Item 2Ea) to study. Clips spaced 24 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer

PAC INTERNATIONAL L L C - Types RSIC-1, RSIC-1 (2.75)

through the center hole. Furring channels are friction fitted into clips.

23/32 in. wide furring channels.

PLITEQ INC — Type GENIECLIP

STUDCO BUILDING SYSTEMS - RESILMOUNT Sound Isolation Clips - Type A237R 2F. Steel Framing Members\* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7) 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 installed vertically only and attached to furring channels as described in Item 3. b. Steel Framing Members\* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 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

 Gypsum Board\* 
— Gypsum liner panels, nom 1 in, thick, 24 in, or 600 mm (for metric spacino) wide, Panels cut 1 in less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C-H" studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long rpe S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips. CGC INC - Type SLX UNITED STATES GYPSUM CO — Type SLX

USG BORAL DRYWALL SFZ LLC - Type SLX

USG MEXICO S A DE C V - Type SLX

4. Gypsum Board\* -

System A - 1 Hr Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing. CGC INC - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRC, WRX, USGX. When ULIX is used insulation, Item 6, **Batts and Blankets\*** is required and minimum stud depth is 4 in.

USG BORAL DRYWALL SFZ LLC - Types C, SCX, SGX, USGX

USG MEXICO S A DE C V - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System B – 2 Hr Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-

outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. CCC INC - 1/2 In. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX,

UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR, or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

USG MEXICO S A DE C V - 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WR

System C - 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per Items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per Item 6. CGC INC - Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO - Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - Type ULTRACODE USG MEXICO S A DE C V - Types IP-X3 or ULTRACODE

System D - 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 1 n. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6 CGC INC - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System E – 2 Hr

UNITED STATES GYPSUM CO - Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC - Types C, SCX, SGX, USGX

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO - 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

USG MEXICO S A DE C V - 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F – 2 Hr Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied

screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered CGC INC - 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX,

UNITED STATES GYPSUM CO - 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C; 5/8 in. Types C, SCX

USG MEXICO S A DE C V - 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR,

SCX, SHX, ULX, USGX, WRC, WR

System G — 3 Hr Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer

CGC INC - Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC - Type C

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

System H - 3 Hr Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in, when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in, from laver below. Parizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC - Types C, IP-X2, IPC-AR, WRC UNITED STATES GYPSUM CO - Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC - Type C

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

System I – 4 Hr Sypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) board with square or tapered edges. Total of four layers to be used. First and second (inner) layers applied vertica or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joint centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Third layer applied with 2-1/4 in. long Type S self-drilling. vertically over the furring channels (Item 2C) with a 1-1/4 in. long Type S self-drilling, self-tapping buy screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S self-drilling, self apping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third aver, otherwise all joints staggered min 12 in.

UNITED STATES GYPSUM CO - Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - Type ULTRACODE

CGC INC — Types IP-X3 or ULTRACODE

USG MEXICO S A DE C V - Types IP-X3 or ULTRACODE

4A. Gypsum Board\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten

Strips (see Item 9) or Lead Discs or Tabs (see Item 10).

5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and

USG MEXICO S A DE C V - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

vertically in two layers. Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel

attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when Installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on

RAY-BAR ENGINEERING CORP — Type RB-LBG

4B. Gypsum Board\* - (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges spiled 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 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Type Nelco

4C. Gypsum Board\* - (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For firect attachment only) — Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges plied vertically. Vertical joints centered over 20 MSG steel study and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 . OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see tem 9A) or Lead Discs (see Item 10A). 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 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. MAYCO INDUSTRIES INC - Type X-Ray Shielded Gypsum

4D. Gypsum Board\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — 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 study with 1-1/4 in, long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 2 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional emaining 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. ompression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the ederal specification QQ-L-201f, Grade "C".

Joint Tape and Compound — (Not Shown)

ADIATION PROTECTION PRODUCTS INC - Type RPP - Lead Lined Drywall

Systems A, B, C, E, F, G, H, I Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with joint compound 6. Batts and Blankets\* -

Systems A, B, E, F, G, H, I (Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance. System A With Type ULIX Gypsum Boards

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. Systems C & D

Min 3 in. (System C) and min 1-1/2 in. (System D) thick mineral wool batts, friction fitted between the studs and floor and ceiling runners. ROCKWOOL — Type AFB

THERMAFIBER INC - Type SAFB, SAFB FF

Required behind vertical joints.

7. Cementitious Backer Units\* — (System D) — Nom 1/2 or 5/8 in. thick panels, square edge, attached to studs over gypsum wallboard with 1-5/8 in. long, Type S-12, corrosion resistant steel screws spaced 8 in. OC and staggered 8 in. from gypsum wall board screws. Joints covered with glass fiber mesh tape. Vertical joints staggered one stud cavity from gypsum wallboard joints. Horizontal joints staggered a min of 12 in. from the gypsum wallboard joints. UNITED STATES GYPSUM CO - Type DCB

8. Laminating Adhesive\* — (Optional, Not Shown) — Used to bond outer layer of Cementitious Backer Units (Item 7) to inner layers of Gypsum Board (Item 4) in System D. ANSI A136.1 Type 1 organic adhesive applied with 1/4 in. square notched trowel. See Adhesives (BYWR) in the Fire Resistance Directory or Adhesives (BJLZ) in the Building Materials irectory for names of Classified companies 9. Lead Batten Strips - (Not Shown, For Use With Item 4A) - Lead batten strips, min 1-1/2 in. wide, max 10 ft long ith a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of th 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 ead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips equired behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations.

9A. Lead Batten Strips - (Not Shown, for use with Item 4C) - 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 Federa pecification QQ-L-201f, Grades "B, C or D".. Lead batten strips required behind vertical joints of lead backed gypsum vallboard (Item 6) and optional at remaining stud locations. 10 Lead Discs or Tabs - (Not Shown, For Use With Item 4A) - Used in lieu of or in addition to the lead batten string Item 9) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in, by 1-1/4 in, by max 0.125 in, thick lead tabs placed on gypsum boards tem 4A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9%

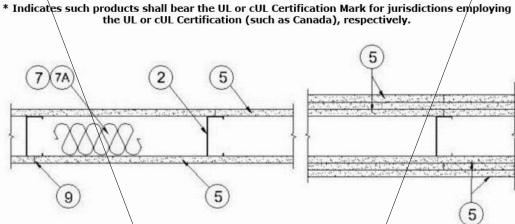
neeting the Federal specification QQ-L-201f, Grade "C". 0A. Lead Discs — (Not Shown, for use with Item 4C) — Max 5/16 in, diam by max 0.140 in, thick lead dis ompression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal ecification QQ-L-201f, Grades "B, C or D 11. Lead Batten Strips — (Not Shown, For Use With Item 4B) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 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 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard Item 4B) and optional at remaining stud locations. 12. Lead Tabs — (Not Shown, For Use With Item 4B) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 4B) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard

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

## Design No. U423 October 10, 2017

Bearing Wall Ratings – 3/4 Hr, 1, 1-1/2 or 2 Hr (See Items 5 & 7) This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide <u>BXUV</u> or <u>BXUV7</u>



L. Floor and Ceiling Runners — (Not Shown) — Channel shaped, fabricated from min 0.0329 in., bare metal thickness (No. 20 MSG) corrosion-protected steel, that provide a sound structural connection between steel studs and adjacent assemblies such as floors, ceilings and/or other walls. Attached to floor and ceiling assemblies with steel fasteners spaced not greater than 24 in. OC. 1A. Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1, For Use With tem 5A and 5C)  $\rightarrow$  Channel shaped runners min 3-1/2 in/. deep with 1-1/4 in. flanges fabricated from min\No. 20 MSG corrosion-protected steel. Attached to floor and ceiling assemblies with steel fasteners spaced not greater than 24 in. OC. 2. Steel Studs — Min\0.0329 in., bare metal thickness (No. 20 MSG) corrosion-protected steel studs, min 3-1/2 in. wide, cold formed, designed in accordance with the current

edition of the Specification for the Design of Cold-Formed Steel Structural Members by the American Iron and Steel Institute (AISI). All design/details enhancing the structural integrity of the wall assembly, including the axial design load of the studs, shall be as specified by the steel stud designer and/or producer, and shall meet the requirements of all applicable local code agencies. The max stud spacing shall not exceed 24 in. OC. Studs ttached to floor and ceiling runners with 1/2 in/. long Type S-12 steel screws on both sides of the studs or by welded or bolted connections designed in accordance with the AISI specifications. 2A. Steel Studs – (As an alternate to Item/2, For use with Item 5A, 5C, 5D, and 5E) – Channel shaped, fabricated from\min 20 M\$G corrosion-protected or galv steel, 3-1/2 in. min width, min 1-1/2 in. flanges and 1/4 in. return, spaced a max of 16 in. OC. Studs

friction-fit into floor and ceiling runners. / 2B. **Steel Studs** – (As an alternin, (No. 20 MSG) corrosion-prof in., (No. 20 MSG) corrosion-prof in. wide with 1/2 in. returns. Brance and the steel studs, min 3-1/2 in. deep by 1-5/8 height and designed in accordance with the current edition of the Specifica ign of Cold-Formed Steel Structural Members by the American Iron and Stee USED). All design details enhancing the structural integrity of the wall assembly, specified by the steel stud designer and or producer, and shall meet the requirements of all applicable local code agencies. The max stud spacing shall not exceed 24 in. OC. Studs attached to floor and ceiling runners with 1 $\chi2$  in. long Type S-12 steel screws on both sides of the studs or by welded or bolted connections designed in accordance with the AISI specifications. 2C. Framing Members - Steel Studs - (As an alternate to Item 2, For use with Item 5C) - Channel shaped, fabricated from min 20 MSG (0.0327 in. thick) corrosion-protected or galv steel, 3-1/2 in. min width, min 1-1/2 in. flanges and 1/4 in. return, spaced a max of 16 in. OC. Studs friction-fit/into floor and ceiling unners. Studs to be cut 5/8 to 3/4 in. less

than assembly height. 3. Lateral Support Members - (Not shown) - Where required for lateral support of studs, support shall be provided by means of steel straps, channels or other similar means as specified in the design of a particular steel stud wall system. 4. Wood Structural Panel Sheathing — (Optional, For use with Item 5 only) — (Not Shown) — 4 ft wide,/7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with/exterior glue, applied horizontally or vertically to the steel studs. /ertical joints centered on studs, and staggered one stud space from wallboard joints.

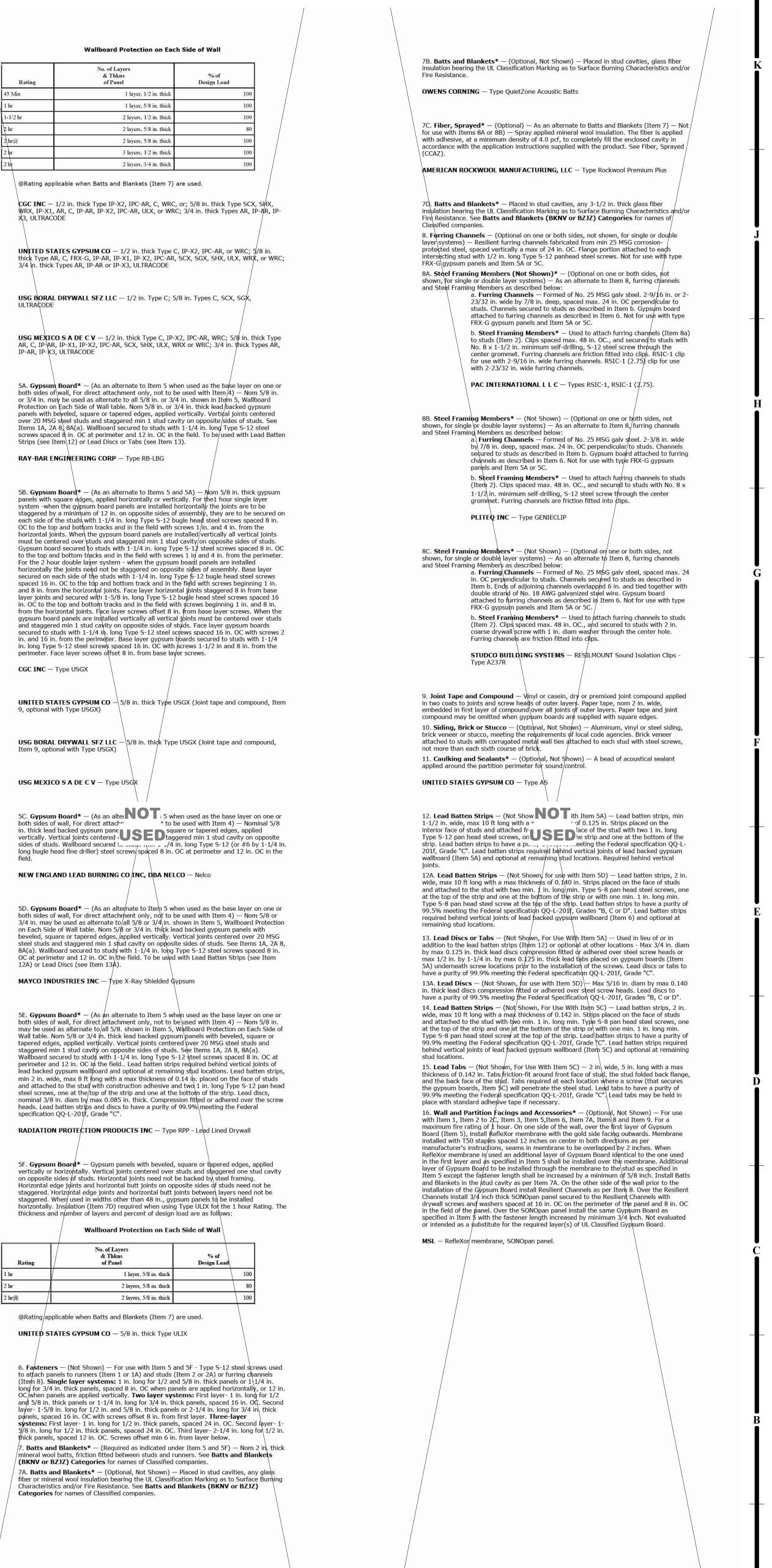
Attached to stud\$ with flat-head self-drilling tapping screws with a min. head diam. of

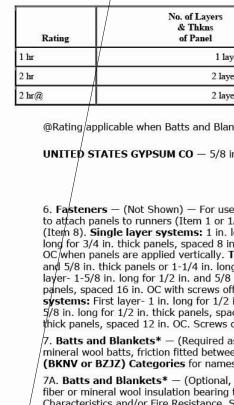
0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, gypsum panels/attached over OSB or plywood panels and fastener lengths for gypsum panels increased by min. 1/2 in. The maximum loading on the steel studs was evaluated with the steel studs braced at midheight and not braced by the plywood sheathing. 5. Gypsum Board\* - Gypsum panels with beveled, square or tapered edges, applied

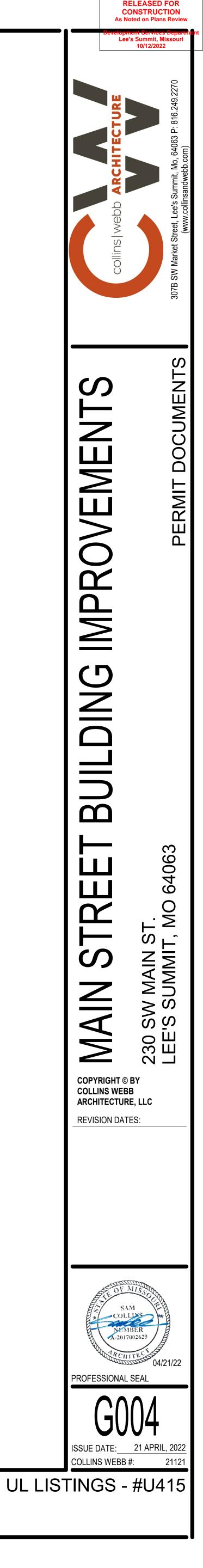
vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered when load is reduced to 90 percent of max stud capacity. When load is at 100 percent, horizontal edge oints and horizontal butt joints on opposite sides of studs staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. When used in widths other than 48 in., gypsum banels to be installed horizontally. The thickness and number of layers and percent of design load for the

45 min, 1 hr, 1-1/2 hr, and 2 hr ratings are as follows:

No. of Lavers & Thkns Rating of Panel 45 Min X3, ULTRACODE IP-AR, IP-X3, ULTRACODE CGC INC — Type USGX optional with Type USGX) Item 9, optional with Type USGX both sides of wall, For direct attach







## **BXUV.U419**

- 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 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.

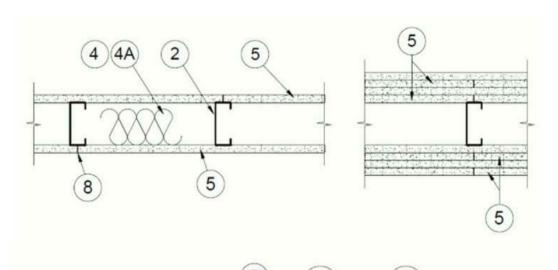
BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States

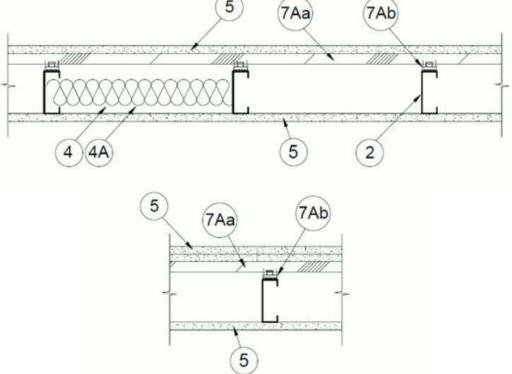
Design Criteria and Allowable Variances See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

## Design No. U419

## July 31, 2021

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 4 & 5 through 5J) \* 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) — For use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosionprotected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

1A. Framing Members\* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

CRACO MFG INC — SmartTrack25<sup>™</sup>

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25<sup>TM</sup> Track

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper25<sup>™</sup> Track

FUSION BUILDING PRODUCTS — Viper25<sup>™</sup> Track

IMPERIAL MANUFACTURING GROUP INC — Viper25<sup>™</sup> Track

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

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20<sup>™</sup> Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20<sup>™</sup> Track

FUSION BUILDING PRODUCTS — Viper20<sup>™</sup> Track

IMPERIAL MANUFACTURING GROUP INC — Viper20<sup>™</sup> Track

1C. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.

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

1D. Floor and Ceiling Runners - (Not Shown) - For use with Item 2A - Channel shaped, fabricated from min 20 MSG corrosionprotected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. Framing Members\* - Floor and Ceiling Runners - (Not Shown, As an alternate to Item 1) - For use with Items 2E, 5F or 5G or 51 only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max. **CLARKDIETRICH BUILDING SYSTEMS** - CD ProTRAK

DMFCWBS L L C - ProTRAK

**MBA METAL FRAMING** — ProTRAK

RAM SALES L L C — Ram ProTRAK

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

1F. Framing Members\* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2F, proprietary channel shaped runners, minimum width to accommodate stud size, with 1- 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. SUPER STUD BUILDING PRODUCTS - The Edge

1G. Framing Members\* — Floor and Ceiling Runner — For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 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 0.018 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

FUSION BUILDING PRODUCTS — Viper20<sup>™</sup> Track VT100

IMPERIAL MANUFACTURING GROUP INC — Viper20<sup>™</sup> Track VT100 11. Framing Members\* — Floor and Ceiling Runners — (Not Shown, As an alternate to Item 1) — For use with Items 2H, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max. TELLING INDUSTRIES L L C - TRUE-TRACK™

1J. Framing Members\* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2I, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

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

1L. Framing Members\* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2N, proprietary channel shaped runners, 1-1/4 in. wide by min. 3-1/2 in. deep 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

1M. Framing Members\* — Floor and Ceiling Runners — Not Shown — As an alternate to Item 1 — For use with Item 20, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

RONDO BUILDING SERVICES PTY LTD - Rondo Wall Track

1N. Framing Members\* — Floor and Ceiling Runners — Not Shown — As an alternate to Item 1 — For use with Item 2P, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. **OEG BUILDING MATERIALS** — OEG Track

10. Framing Members\* — Floor and Ceiling Runner — Not Shown — In lieu of Item 1 — For use with Item 2Q, proprietary channel shaped runners, min width to accommodate stud size, fabricated from min. 25 MSG (0.018 in. min. bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max CALIFORNIA EXPANDED METAL PRODUCTS CO - Viper X Track

2. Steel Studs — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. Steel Studs — (As an alternate to Item 2, For use with Items 5B, 5E, 5H, 5J or Type ULIX) — 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. 2B. Framing Members\* - Steel Studs — (As an alternate to Item 2, For use with Items 5C, 5I or Type ULIX) — Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™

CRACO MFG INC - SmartStud25\*

MARINO/WARE, DIV OF WARE INDUSTRIES INC - Viper25<sup>TM</sup>

IMPERIAL MANUFACTURING GROUP INC --- Viper25™

2C. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™

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

FUSION BUILDING PRODUCTS - Viper20"

IMPERIAL MANUFACTURING GROUP INC --- Viper20™

max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. 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

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

2E. Framing Members\* — Steel Studs — (Not Shown, As an alternate to Item 2) — For use with Items 5F or 5G or 5I or Type ULIX only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 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

2F. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights. SUPER STUD BUILDING PRODUCTS — The Edge

2G. Framing Members\* — Steel Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the assembly height. **STUDCO BUILDING SYSTEMS** — CROCSTUD

2H. Framing Members\* — Steel Studs — (Not Shown, As an alternate to Item 2) — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. TELLING INDUSTRIES L L C - TRUE-STUD™

21. Framing Members\* — Steel Studs —

indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights

25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. EB METAL INC - NITROSTUD

2L. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. **OLMAR SUPPLY INC** — PRIMESTUD

2M. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, 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™

2N. Framing Members\*— Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min depth 3-1/2 in. and as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in length than assembly height. RESCUE METAL FRAMING, L L C — AlphaSTUD

20. Framing Members\* — Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max. RONDO BUILDING SERVICES PTY LTD — Rondo Lipped Wall Stud

2P. Framing Members\* — Steel Studs — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, min 25 MSG galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max. OEG BUILDING MATERIALS — OEG Stud

2Q. Framing Members\* - Steel Studs - Not Shown - In lieu of Item 2 - For use with Item 10, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal

2D. Framing Members\* — Steel Studs — In lieu of Item 2 — Channel shaped studs, min depth as indicated under Item 5, spaced a

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

2J. Framing Members\* — Metal Studs — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as

2K. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min

### thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights. CALIFORNIA EXPANDED METAL PRODUCTS CO - Viper X

3. Wood Structural Panel Sheathing — (Optional, For use with Item 5 Only) — (Not Shown) — 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, gypsum panels attached over OSB or plywood panels and fastener lengths for gypsum panels increased by min. 1/2 in.

4. Batts and Blankets\* — (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5

See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

21, SealTite Pro One Zero, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, and Foamsulate HFO.

not be staggered. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

4A. Batts and Blankets\* — (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

48. Fiber, Sprayed\* — (Optional, for use with Type ULIX) Where insulation is required - Spray applied granulated mineral fiber material. The fiber is applied with adhesive at a minimum density of 4.0 pcf to completely fill the wall cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed (CCAZ). AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

4C. Foamed Plastic\* — (Where Batts and Blankets\*, Item 4, are optional, for use with Item 5K) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity, for 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. CARLISLE SPRAY FOAM INSULATION - Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim

5. Gypsum Board\* — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) with Type ULIX need

Gypsum Board Protection on Each Side of Wall				
Rating, Hr	Min Stud Depth, in. Items 2, 2C, 2D, 2F, 2G, 2O	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 4)	
1	3-1/2	1 layer, 5/8 in. thick	Optional	
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.	
1	1-5/8	1 layer, 3/4 in. thick	Optional	
2	1-5/8	2 layers, 1/2 in. thick	Optional	
2	1-5/8	2 layers, 5/8 in. thick	Optional	
2	3-1/2	1 layer, 3/4 in. thick	3 in.	
3	1-5/8	3 layers, 1/2 in. thick	Optional	

3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR; WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, WRX or WRC; 3/4 in. thick Types IP-X3 or ULTRACODE

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Type C and 5/8 in. thick Type SCX UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type SCX, SGX, SHX, ULIX, WRX, IP-X1, AR, C, WRC, FRX-

G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC or; 3/4 in. thick Types IP-X3 or ULTRACODE

When Item 7B, Steel Framing Members\*, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item

5A. Gypsum Board\* — (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6. CGC INC — Type SHX.

UNITED STATES GYPSUM CO — Type FRX-G, SHX.

USG MEXICO S A DE C V — Type SHX.

5B. Gypsum Board\* — (Not Shown) — As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 in or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 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 20 MSG steel studs Item 2A 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 11) or Lead Discs or Tabs (see Item 12). RAY-BAR ENGINEERING CORP — Type RB-LBG

5C. Gypsum Board\* — (For Use With Item 2B) — Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section VI of Volume 1 in the Fire Resistive Directory. CGC INC — Type SCX, ULIX.

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX

UNITED STATES GYPSUM CO — Type SCX, SGX, ULIX.

USG BORAL DRYWALL SFZ LLC — Type SCX

USG MEXICO S A DE C V — Type SCX

CGC INC — Type USGX

follows:

5D. Gypsum Board\* — (As an alternate to Item 5) — 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.

UNITED STATES GYPSUM CO — Type USGX

USG BORAL DRYWALL SFZ LLC — Type USGX

USG MEXICO S A DE C V — Type USGX

5E. Gypsum Board\* — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nominal 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 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. NEW ENGLAND LEAD BURNING CO INC, DBA NELCO - Nelco

5F. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in. THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX

UNITED STATES GYPSUM CO - 5/8 in. thick Type SCX, SGX, ULIX

USG BORAL DRYWALL SFZ LLC — 5/8 in. thick Type SCX. SGX

5G. Gypsum Board\* — (As an alternate to Item 5) — For use with Items 1E and 2E only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as

## Min Stud Depth, in. Item 2

2	1-5/8
2	1-5/8
3	1-5/8
3	1-5/8
4	1-5/8
4	1-5/8

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR;, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE

5H. Gypsum Board\* — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A). MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5. CGC INC — Type ULIX, ULX

UNITED STATES GYPSUM CO — Type ULIX, ULX USG MEXICO S A DE C V — Type ULX

5J. Gypsum Board\* — (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). 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".

attached to studs over inner layer with the 1-5/8 in. long steel screws spaced 8 in. OC.

layer below.

long Type S-12 steel screws. Not for use with Item 5A.

furring channels and Steel Framing Members as described below: Item 6. Not for use with Item 5A.

b. Steel Framing Members\* — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

7B. Framing Members\* — (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below: a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A.

are friction fitted into clips. KINETICS NOISE CONTROL INC — Type Isomax alternate to Item 7, furring channels and Steel Framing Members as described below:

Item 5A.

friction fitted into clips. PLITEQ INC — Type GENIECLIP

and Steel Framing Members as described below: wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

and Steel Framing Members as described below: steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.

REGUPOL AMERICA — Type SonusClip

and Steel Framing Members as described below: use with Item 5A and 5E.

pan-head self-drilling screw KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

7, furring channels and Steel Framing Members as described below: Item 6. Not for use with Item 5A.

fitted into clips. CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

compound may be omitted when gypsum panels are supplied with a square edge.

attached to each stud with steel screws, not more than each sixth course of brick.

ł	No. of Layers	Min Thkns of
1.	& Thickness	Insulation
	of Panel	(Item 4)

2 layers, 1/2 in. thick	Optional	
2 layers, 5/8 in. thick	Optional	
3 layers, 1/2 in. thick	Optional	
3 layers, 5/8 in. thick	Optional	
4 layers, 5/8 in. thick	Optional	
4 layers, 1/2 in. thick	Optional	

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO - 1/2 in. thick Types C and 5/8 in. thick SCX

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type SCX, SGX, SHX, IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-AR, ULIX; 3/4 in. thick Types IP-X3 or ULTRACODI

5I. Gypsum Board\* — (As an alternate to Item 5) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5K. Gypsum Board\* — (As an alternate to Item 5 when Foam Plastic insulation (Item 4C) is used) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 5 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 in. long Type S steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be

6. Fasteners - (Not Shown) - For use with Items 2 and 2F - Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). Single layer systems: 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. Single layer system with Type ULIX: 1 in. long, spaced 12 in. OC in the field and perimeter, when panels are applied horizontally or vertically. Two layer systems: First layer-1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. Three-layer systems: First layer-1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. Four-layer systems: First layer-1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer-1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in, long for 1/2 in, thick panels or 2-5/8 in, long for 5/8 in, thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from

7. Furring Channels — (Optional, Not Shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in.

7A. Framing Members\* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, 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 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

b. Steel Framing Members\* — Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels

7C. Framing Members\* — (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with

b. Steel Framing Members\* — Used to attach furring channels (Item 7Ca) 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

7D. Steel Framing Members\* — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels 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

b. Steel Framing Members\* — Used to attach furring channels (Item 7Da) 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

7E. Steel Framing Members\* — (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels 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 7Eb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized

b. Steel Framing Members\* — Used to attach furring channels (Item 7Ea) 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.

7F. Steel Framing Members\* — (Optional on one or both sides, not shown, for single or double layer systems) — Resilient channels 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 5. Not for

b. Steel Framing Members\* — Used to attach resilient channels (Item 7Fa) 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.

7G. Framing Members\* — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. or 1-1/2 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

b. Steel Framing Members\* — Used to attach furring channels (Item 7Ga) to studs (Item 2). Clips spaced max. 48 in. OC. Clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction

8. Joint Tape and Compound — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint

9. Siding, Brick or Stucco — (Optional, Not Shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties 10. Caulking and Sealants\* — (Optional, Not Shown) — A bead of acoustical sealant applied around the partition perimeter for sound control. UNITED STATES GYPSUM CO - Type AS

11. Lead Batten Strips — (Not Shown, For Use With Item 5B) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification OO-L-201f. Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints.

11A. Lead Batten Strips — (Not Shown, For Use With Item 5H) — 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 and optional at remaining stud locations.

12. Lead Discs or Tabs — (Not Shown, For Use With Item 5B) — Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

12A. Lead Discs — (Not Shown, for use with Item 5H) — 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". 13. Lead Batten Strips — (Not Shown, For Use With Item 5E) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of

0.142 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 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations. 14. Lead Tabs — (Not Shown, For Use With Item 5E) — 2 in. wide, 5 in, long with a max thickness of 0.142 in. Tabs friction-fit around

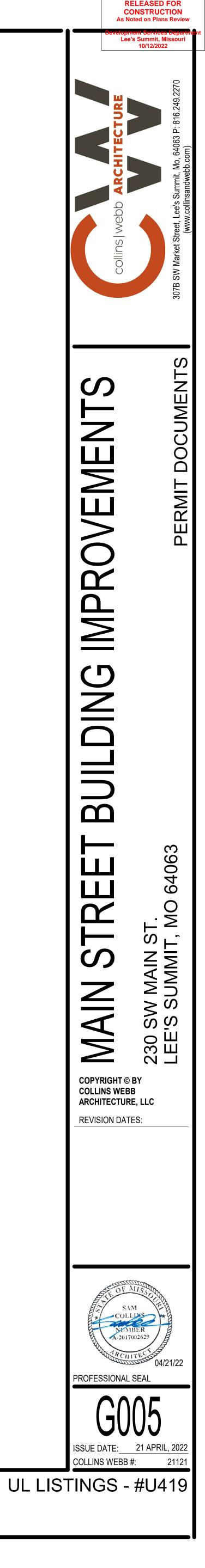
front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

15. 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 5) 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 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 Last Updated on 2021-07-31

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## UL Product iQ

Certified products, equipment, system, devices, and materials.

Only products which bear UL's Mark are considered Certified.

Design Criteria and Allowable Variances

**Design Criteria and Allowable Variances** 

to the joists with joints staggered.

Resilient

Channel Detail

Flooring Systems — The flooring system shall consist of one of the following:

Finish Flooring — Min 1 by 3 in. T & G and end matched, laid perpendicular to joists.

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial asphalt saturated felt.

manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

USG MEXICO S A DE C V - Types LRK, HSLRK, CSD

floor topping over each floor mat material.

Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists.

Vapor Barrier — Nom 0.010 in. thick commercial rosin-sized building paper.

February 14, 2022

Authorities Having Jurisdiction should be consulted before construction

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

## BXUV.L511 - Fire-resistance Ratings - ANSI/UL 263

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

• Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with

• When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer

each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.

Fire-resistance Ratings - ANSI/UL 263

Design No. L511

Unrestrained Assembly Rating — 2 Hr.

Finish Rating — 71 Min.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method).

For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as

1/2"

FirstLayer

End Joint Detail

System No. 1

System No. 2

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

Finish Flooring - Floor Topping Mixture\* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to

Floor Mat Materials\* — (Optional) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK ® Brand Sound Reduction Board, LEVELROCK ® Brand Floor Underlayment SRM-25

Second Layer

End Joint Detail

Canada), respectively.

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and

applicable requirements. The published information cannot always address every construction nuance encountered in the field.

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered. Finish Flooring — Floor Topping Mixture\* — Min 3/4 thickness of floor topping mixture having a minimum compressive strength of 1500 psi. Refer to

MAXXON CORP — Type Maxxon Standard and Maxxon High Strength

Floor Mat Materials\* - (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material. MAXXON CORP — Type Encapsulated Sound Mat.

the joists with joints staggered. Vapor Barrier - (Optional) Nom 0.010 in. thick commercial rosin-sized building paper. accompanying the material for specific mix design.

Alternate Floor Mat Material\* — (Optional) Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in. or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively. FORMULATED MATERIALS LLC - Types M1, M2, M3, Elite, Duo, R1, and R2

to the joists with joints staggered. Finish Floor - Mineral and Fiber Board\* — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered Vapor Barrier - (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt. AERIX INDUSTRIES - Floor Topping Mixture

to the joists with joints staggered. Finish Flooring - Floor Topping Mixture\* — Min 3/4 floor topping mixture , having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

perpendicular to joists with joints staggered

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered Vapor Barrier ---- (Optional) - Commercial asphalt saturated felt, 0.030 in. thick. Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring\* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies, Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s). Floor Mat Materials\* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

System No. 13

KEENE BUILDING PRODUCTS CO INC - Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials\* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

Alternate Floor Mat Materials\* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in. KEENE BUILDING PRODUCTS CO INC - Quiet Qur 55/025 MT and Quiet Qur 55/025 N MT

System No. 15 Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists. Vapor Barrier - Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring - Floor Topping Mixture\* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to

ARCOSA SPECIALTY MATERIALS — AccuCrete® Types NexGen, Green, Prime and PrePour, AccuRadiant®, AccuLevel® Types G40, G50 and SD30 Floor Mat Material\* — (Optional) - Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of of 1 in.

ARCOSA SPECIALTY MATERIALS — AccuQuiet® Types D13, D-18, D25, DX38, EM.125, EM.1255, EM.250, EM.2505, EM.3755, EM.3755, EM.750, and EM.7505 System No. 16 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

to the joists with joints staggered Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper. accompanying the material for specific mix design.

Floor Mat Materials\* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in. KEENE BUILDING PRODUCTS CO INC - Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials\* - (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of KEENE BUILDING PRODUCTS CO INC - Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials\* --- (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

Alternate Floor Mat Materials\* --- (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

KEENE BUILDING PRODUCTS CO INC - Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

Alternate Floor Mat Materials\* - (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in. RODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N

to the joists with joints staggered. Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick. Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper. Mixtures (CCOX) category for names of Classified Companies. Floor Mat Materials\* - (Optional) - Nom 3/32 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

PLITEQ INC — Type GenieMat RST02 Floor Mat Materials\* — (Optional) - Nom 3/16 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in. PLITEQ INC — Type GenieMat FF03NP

Floor Mat Materials\* — (Optional) - Nom 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in. PLITEQ INC — Type GenieMat FF06

Alternate Floor Mat Materials - (Optional) - Floor mat material nom 1/8 in. (3mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25mm) HACKER INDUSTRIES INC - FIRM-FILL SCM 125 Alternate Floor Mat Materials - (Optional) - Floor mat material nom 1/4 in. (6mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of HACKER INDUSTRIES INC - Type FIRM-FILL SCM 250, Quiet Qurl 55/025 1-1/4 in. (32mm) ACKER INDUSTRIES INC - FIRM-FILL SCM 400, Quiet Qurl 60/040 Alternate Floor Mat Materials - (Optional) - Floor mat material nom 3/4 in. (19mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38mm) HACKER INDUSTRIES INC — Type FIRM-FILL SCM 750, Quiet Qurl 65/075 Metal Lath (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat. Finish Flooring — Floor Topping Mixture\* — Min 3/4 or 1 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand. HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 4010, Firm-Fill High Strength, Gyp-Span Radiant, Firm-Fill 3310.

System No. 6

Deleter

System No. 7

to the joists with joints staggered.

Alternate Floor Mat Materials\* (Optional) — Nom 3/8 in. thick floor mat material loose laid over the subfloor. Floor topping thickness shall be as specified under Floor Topping Mixture\*. GRASSWORX L L C — Type SC50 System No. 3 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered. Vapor Barrier - (Optional) -Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring — Min 19/32 in. wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panels to be perpendicular to joists with joints staggered. System No. 4 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered. Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper. Finish Flooring — Floor Topping Mixture\* — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.4 cu feet of preformed foam concentrate to 94 lbs Type | Portland cement, 300 lbs of sand with 5-1/2 gal of water. ELASTIZELL CORP OF AMERICA - Type FF System No. 5 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered. Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper. Floor Mat Materials\* - (Optional) - Floor mat material nom 5/64 in. (2mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. of floor-topping mixture. HACKER INDUSTRIES INC - Type Hacker Sound-Mat. Alternate Floor Mat Materials - (Optional) - Floor mat material nom 1/4 in. (6mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32mm) of floor-topping mixture. HACKER INDUSTRIES INC — Type Hacker Sound-Mat II.

Alternate Floor Mat Materials - (Optional) — Floor mat material nom 3/8 in. (10mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

Vapor Retarder — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring — Floor Topping Mixture\* — Min 3/4 or 1 in. thickness of floor topping mixture for min 19/32 or min 15/32 in. thick wood structural panels respectively, having a min compressive strength of 1000 psi. Mixture shall consist of 5 to 8 gal of water to 80 lbs of floor topping mixture to 2.1 cu ft of sand. ULTRA QUIET FLOORS — Types UQF-A, UQF-Super Blend, UQF-Plus 200

## System No. 8

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

manufacturer's instructions accompanying the material for specific mix design.

Floor Mat Reinforcement — (Optional) - Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat

Metal Lath — (Optional) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Fiber Glass Reinforcement - (Optional, Not Shown) - 0.015 in. thick PVC coated non-woven fiberglass mesh, 0.368 lbs/sq yd loose laid over the floor mat

## System No. 9

Subflooring — Min 15/32 in. thick wood structural panels, min grade C-D or Sheathing. Face grain of plywood or strength axis of panels to be perpendicular to

Finish Flooring — Floor Topping Mixture\* — Min 3/4 floor topping mixture, having a min compressive strength of 1000 psi. Refer to manufacturer's instructions FORMULATED MATERIALS LLC - Types FR-25, FR-30, and SiteMix

System No. 10 Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

## HOMASOTE CO — Type 440-32 Mineral and Fiber Board

System No. 11

Finish Flooring - Floor Topping Mixture\* - Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 105 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.2 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, and 300 lbs of sand with 5.5 gal of water.

## System No. 12

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular Vapor Barrier - (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

ARCOSA SPECIALTY MATERIALS — AccuCrete® Types NexGen, Green, Prime and PrePour, AccuRadiant®, AccuLevel® Types G40, G50 and SD30

Alternate Floor Mat Material\* - (Optional) - Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in. or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively.

ARCOSA SPECIALTY MATERIALS — AccuQuiet® Types D13, D-18, D25, DX38, EM.125, EM.1255, EM.250, EM.2505, EM.375, EM.3755, EM.750, and EM.7505.

## Subflooring — 15/32 or 19/32 in. thick wood structural panels, min. grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

### Finish Flooring — Floor Topping Mixture\* — Min 3/4 or 1 in. thickness of floor topping mixture for 19/32 or 15/32 in. thick wood structural panels respectively, having a min compressive strength of 2100 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

System No. 14

KEENE BUILDING PRODUCTS CO INC - Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials\* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

Alternate Floor Mat Materials\* --- (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of

KEENE BUILDING PRODUCTS CO INC - Type Quiet Qur 65/075, Quiet Qur 65/075 N

KEENE BUILDING PRODUCTS CO INC - Type Quiet Qur 52/013 and Quiet Qur 52/013 N

manufacturer's instructions accompanying the material for specific mix design.

Finish Flooring - Floor Topping Mixture\* — Min 3/4 floor topping mixture , having a min compressive strength of 1000 psi. Refer to manufacturer's instructions

## DEPENDABLE LLC - GSL M3.4, GSL K2.6, GSL-CSD and GSL RH.

## KEENE BUILDING PRODUCTS CO INC - Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

## System No. 17

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular

Finish Flooring\* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping

Floor Mat Materials\* — (Optional) - Nom 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

PLITEQ INC — Type GenieMat FF10

### Floor Mat Materials\* — (Optional) - Nom 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of PLITEQ INC - Type GenieMat FF17

Floor Mat Materials\* --- (Optional) - Nom 1 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 PLITEQ INC — Type GenieMat FF25

Subflooring— Structural Cement-Fiber Units\* — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joists with #10 self-drilling, selfscrews 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each spaced 1/2 in. from end joints and 1 in. from side joints. ECTEK INTERNATIONAL INC — Armoroc Panel

System No. 18

Subflooring (Alternate) - Building Units\* - Nom 3/4 in. thick, tongue and grooved boards. Long dimension of boa joists with end joints staggered a min of 4 ft. and centered over the joists. Boards secured to joists with 1-1/4 in. long se screws or 2 in. x 0.113 in. Ring Shank nails spaced a max of 12 in. OC in the field with screws/nails located 1 in. from Ion along the end joints with screws/nails located 1/2 in. from end joint. ECTEK INTERNATIONAL INC — Type MegaBoard

Vapor Barrier - Nom 0.010 in. thick commercial rosin-sized building paper

Finish Flooring — Min 1 by 3 in. T & G and end matched.

System No. 19 Structural Cement-Fiber Units\* - For use with UNITED STATES GYPSUM CO gypsum boards only. Nom 3/4 in. thick grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and cer Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located of the panel. UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

System No. 20 Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists.

Finish Flooring - Floor Topping Mixture\* — Min 1 in. thickness of floor topping mixture having a min compressive str manufacturer's instructions accompanying the material for specific mix design. SIKA DEUTSCHLAND GMBH — Type SCHONOX AP Rapid Plus

System No. 2 Subflooring - Building Units\* - Nom. 1-1/2 in. thick T & G laminated composite plywood sub-floor panels to be perpendicular to the trusses with end joints staggered 4 ft. End joints centered over top chord of trusses. Subfloor panels secured to trusses with construction adhesive and #8 by 3 in. wood screws spaced 12 in. OC in the field and 6 in. OC at the end joints. RSP INDUSTRIES INC - SAP board

### System No. 22 Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier --- (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring - Floor Topping Mixture\* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies.

Floor Mat Materials\* — (Optional, Not Shown) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material. LOW & BONAR INC --- EnkaSonic® by Colbond a member of the Low & Bonar group Types 125, 250, 250 Plus, 400, 400 Plus, 750, and 750 Plus.

Floor Mat Reinforcement — (Optional) - Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat reinforcement.

Metal Lath — (Optional) — Expanded steel diamond mesh, 2.5 lb / sq yd loose laid over floor mat material.

Fiberglass Mesh Reinforcement - (Optional) - Coated non-woven glass fiber mesh grid loose laid over floor mat material.

## System No. 23

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered. Fastened with 8d ringed shank nails spaced 12 in. OC along each joist. Finish Floor - Building Units\* - Min 1/2 in. thick, supplied in 4 by 8 ft panels, fastened to joists through subfloor with 2 in. long 8d ringed shank

idjacent sub-floor joints ECTEK INTERNATIONAL INC — Type MegaBoard, 1/2 in. thick.

2. Wood Joists — Min 2 by 10, spaced 16 in. OC and effectively fireblocked in accordance with local codes.

3. Cross Bridging — Min 1 by 3 in. or min 2 by 10 solid blocking.

each end of overlap

PLITEQ INC — Type Genie Clip

to joists as described in Item b.

to joists as described in Item b.

REGUPOL AMERICA — Type SonusClip

PAC INTERNATIONAL L L C — Types RC-1 Boost

wire near each end of overlap.

below.

hold the Gypsum Butt joints as described in Item 5.

required to hold the Gypsum Butt joints as described in Item 5.

channel that supports the gypsum board butt joints, as described in Item 5. CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

STUDCO BUILDING SYSTEMS — RESILM UNT Sound Isolation Clips - Type A237R

4. Resilient Channels — Formed of 25 MSG galv steel, spaced 24 in. OC perpendicular to joists and located 12 in. from each side edge of base layer gypsum board. Channels placed with 1/4 in. clearance at the ends and fastened to each joist with 1-7/8 in. long Type S bugle head screws. Min end clearance of channels to walls: 3/8 in. Additional channels 60 in. long, placed adjacent to continuous channels at end joints of second layers of gypsum board (Item 5) and similarly secured. Channel ends to extend 6 in. beyond each side of joint.

4A. Steel Framing Members (Not Shown)\* — As an alternate to Item 4, 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 joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. Steel Framing Members\* — Used to attach furring channels (Item a) to joists. Clips spaced 48 in. OC., and secured to alternating joists with No. 8 x 2-1/2 in. coarse drywall 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) dip for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. 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. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 5. PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

required to hold furring channel that supports the gypsum board butt joints, as described in Item 5.

of 1-1/2 in.	channels) to support the floating end of the gypsum board. Each of these shorter sections of furring channel shall extend one joist beyond the width of the gypsum panel and be attached to the adjacent joists with one SonusClip at every joist involved with the butt joint. AMERICAN GYPSUM CO — Type AG-C
	CERTAINTEED GYPSUM INC — Type C
1-1/2 in.	CGC INC — Types C, IP-X2, IPC-AR
	CERTAINTEED GYPSUM INC — Type LGFC-C/A
nt-fiber units. Long dimension If-tapping cement board ach sheet. Screws sha <b>ll</b> be	GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C
	NATIONAL GYPSUM CO — Types FSK-C, FSW-C, FSW-G
ards to be perpendicular to	PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C
self-drilling, self- tapping ng edge, and max 8 in. OC	PANEL REY S A — Type PRC
	THAI GYPSUM PRODUCTS PCL — Type C
	UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR
	USG BORAL DRYWALL SFZ LLC — Type C
k, with long edges tongue and entered over the trusses.	USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR
n the field with a screw d 1/2 in. from the end edges	6. Finishing System - (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom. 3/32 in. thick veneer plaster may be applied to the entire surface of the gypsum board.
	* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.
	Last Updated on 2022-02-14
trength of 4500 psi. Refer to	The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow- Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.
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4B. Alternate Steel Framing Members\* — (Not Shown) — As an alternate to items 4, furring channels and Steel Framing Members as described a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in deep, spaced 24 in OC, perpendicular to joists. Channels secured

to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near b. Steel Framing Members\* — Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced 48 in. OC., and secured to

alternating joists with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. 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. Additional clips

4C. Alternate Steel Framing Members\* — (Not Shown) - As an alternate to Item 4, furring channels and Steel Framing Members as described

a. Furring Channels — Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 24 in OC, perpendicular to joists. Channels secured

b. Steel Framing Members\* — Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced at in. C and secured to the bottom of the joists with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 1 AWG galvanized steel wire. Additional clips are required to

D. Alternate Steel Framing Members\* — (Not Shown) - As an alternate to Item , furring channels and Steel Framing Members as described

b. Steel Framing Members\* — Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced at in. C and secured to the bottom of the joists with one 2-1/2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 1 AWG galvanized steel wire. Additional clips are

E. Steel Framing Members\* — (Not Shown)\* — As an alternate to Item , 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/ in. deep, spaced 2 in. C perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 1 SWG galv steel

b. Steel Framing Members\* — Used to attach furring channels (Item a) to joists. Clips spaced in. C., and secured to alternating joists with No. x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.. Adjoining channels are overlapped as described in Item a. 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. Additional clips required to hold furring

F. Steel Framing Members\* — ( ptional, Not Shown) — Used as an alternate method to attach resilient channels to structural members. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 16 in. .C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions.

5. Gypsum Board\* — Two layers of nom 5/ in. thick, ft wide gypsum board. When resilient channels (Item ) are used, first layer installed

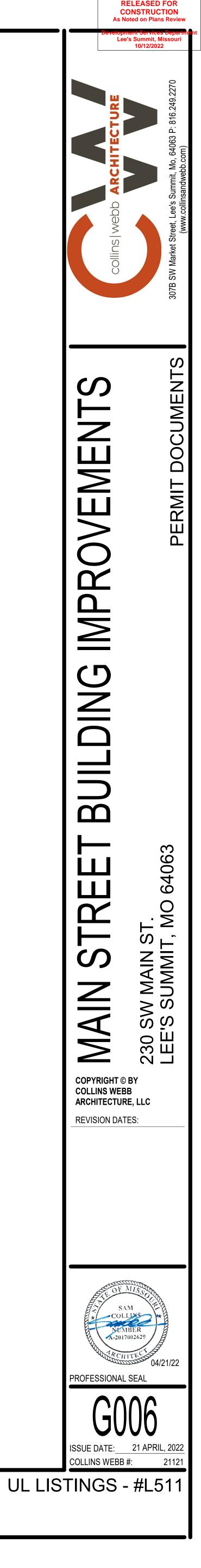
perpendicular to joists with end joints located over bottom of joists. Gypsum board attached to joists with 6d cement coated cooler nails spaced 1 in., 6 in. and 21 in. from each side edge in the field of the board. Butt edges shall occur under joists, fastened with nails spaced 1 in., 6 in., 15 in. and 21 in. from side edges of board, and 1/2 in. back from butt edge. Second layer of gypsum board secured to resilient channels with 1 in. long Type S bugle head screws spaced 12 in. C with additional screws placed 3 in. from each side edge. End joints of second layer offset from end joints in first

layer, and secured to both resilient channels as shown in end joint detail. Screws located 3/ in. and 1-1/ in. from side and end joints of boards. When Steel Framing Members (Item A, B, E) are used, sheets installed with long dimensions parallel with joists. Base layer attached to the furring channels using 1 in. long Type S bugle head steel screws spaced in. C along butted end joints and 12 in. C in the field of the board. Butted end joints shall be staggered min 2 ft. within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two furring channels shall be spaced approximately 3-1/2 in. C, and be attached to underside of the joist with one RSIC-1 or Genie clip at each end of

the channel. Butted base layer end joints to be offset a min of 2 in. in adjacent courses. uter layer attached to the furring channels using 1-5/ in. long Type S bugle head steel screws spaced in. C at butted joints and 12 in. C in the field. Butted end joints to be offset a min of in. from base ayer end joints. Butted side joints of outer ayer to be offset min 1 in. from butted side joints of base ayer. When Steel Framing Members (Item C) are used, base layer of gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring

channels with nom 1 in. long Type S bugle-head steel screws spaced in. C in the field of the board. Gypsum board butted end joints shall be staggered minimum in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from joint. Screw spacing along the gypsum board butt joint and along both additional channels shall be in. C. Butt joint furring channels shall be attached with one RESILM UNT Sound Isolation Clip at each end of the channel. Face layer installed per Item

5. When Steel Framing Members (Item D) are used, base layer of gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced in. C in the field of the board. Gypsum board butted end joints shall be staggered minimum in. and centered over main furring channels. At the gypsum board butt joints, an additional single length of furring channel shall be installed and be spaced approximately 3 in. from the butt joint (6 in. from the continuous furring



## SPECIFICATIONS - PRODUCT & INSTALLATION GENERAL REQUIREMENTS

## GENERAL REQUIREMENTS APPLICABLE TO ALL MATERIALS FOR THE PROJECT:

- 1.NO SUBSTITUTIONS OF MATERIALS WITHOUT COMPLETION OF A SUBSTITUTION REQUEST FORM & APPROVAL OF SUBSTITUTION BY BOTH ARCHITECT & OWNER PROJECT MANAGER. FORM CAN BE REQUESTED FROM ARCHITECT. 2. A CONDENSED SET OF SPECIFICATIONS ARE PROVIDED FOR THE PROJECT. STRICT ADHEARANCE TO MANUFACTURER REQUIREMENTS AND INSTALLATION ARE REQUIRED TO BE FOLLOWED WITH SECTIONS PROVIDED WITHIN. IF REQUIRED THE ARCHITECT WILL ISSUE ADDITIONAL SECTIONS TO PROVIDE CLARITY TO PRODUCTS OR INSTALLATION REQUIREMENTS.
- **DIVISION 1 GENERAL REQUIREMENTS** 1. 1 SEE ADMINISTRATIVE SPECIFICATION FOR GENERAL REQUIREMENTS RELATED TO ADMINISTATION OF THIS CONTRACT
- . CONTRACTOR LICENSE THE CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN THE PROJECT SHALL BE REQUIRED TO OBTAIN AND PAY FOR ALL NECESSARY LICENSES AS REQUIRED BY ANY LAW OR AGENCIES HAVING JURISDICTION (AHJ) OVER THE PROJECT
- BUILDING PERMITS IE GENERAL CONTRACTOR WILL PAY FOR ALL PERMITS REQUIRED BY ANY AGENCY HAVING JURISDICTION (AHJ) OVER THE PROJECT FOR ALL WORK TO BE PREFORMED BY THE GENERAL CONTRACTOR.
- THE CONTRACTOR SHALL PAY THE NECESSARY FEES TO CONNECT TO EXISTING UTILITIES AT THE PROPERTY LINE OR IN ADJACENT STREETS AND RIGHT OF WAY AS SPECIFIED, NECESSARY, AND/OR INCLUDED IN THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL PAY ALL UTILITY COSTS (BILLS) DURING CONSTRUCTION UNTIL OWNER TAKES POSSESSION OF THE FACILITY OR THE FACILITY IS CERTIFIED AS SUBSTANTIALLY COMPLETE.
- D. PROTECTION OF FINISHED WORK IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FINISHED SURFACES. PROTECTION FOR FINISHES SUCH AS DOORS, WALLS AND FLOORS SHOULD BE PROVIDED AS REQUIRED. ANY DAMAGES TO THESE AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR OR REPLACE.
- E. <u>GENERAL CONDITIONS</u> ANY DISCREPANCY OR CONFLICT WITHIN OR BETWEEN DRAWINGS AND ANY DISCREPANCY OR CONFLICT BETWEEN ANY DRAWING AND ANY SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. NOTWITHSTANDING, DISCREPANCIES OR CONFLICTS NOT BROUGHT TO THE ARCHITECT'S AND/ OWNERS ATTENTION AND CLARIFIED DURING THE BIDDING OF THE PROJECT WILL BE DEEMED TO HAVE BEEN BID OR PROPOSED IN THE MORE COSTLY OR DIFFICULT MANNER, AND THE BETTER QUALITY OR GREATER QUANTITY OF THE WORK SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH ARCHITECT'S INTERPRETATION. 2. THE GENERAL CONTRACTOR SHALL KEEP A COMPLETE PROTOTYPE SET OF DOCUMENTS ON THE PROJECT SITE AT ALL
- TIMES FOR REFERENCE DURING CONSTRUCTION. 3. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING THE CONTRACTOR'S BEST SKILLS AND ATTENTION. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS AND METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- . THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER ALL JOB SITE SAFETY PROCEDURES AND POLICIES. THE GENERAL CONTRACTOR SHALL HAVE A SAFETY COORDINATOR AND BE RESPONSIBLE TO HOLD REGULARLY SCHEDULED SAFETY TRAINING WITH ALL JOB SITE PERSONNEL, INCLUDING ALL SUB CONTRACTOR PERSONNEL 5. NEITHER THE ARCHITECT'S OR THE OWNERS INSPECTION NOR FAILURE TO INSPECT SHALL RELIEVE THE CONTRACTOR
- OF ANY OBLIGATION HEREUNDER. IF ANY WORK FAILS TO CONFORM TO THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY REMEDY AND/OR REPLACE THE SAME AT THE CONTRACTOR'S EXPENSE. NO ACCEPTANCE OR PAYMENT BY THE OWNER OR ARCHITECT SHALL CONSTITUTE A WAIVER OF THE FOREGOING AND NOTHING HEREIN SHALL EXCLUDE OR LIMIT ANY WARRANTIES IMPLIED BY LAW. 6. THE GENERAL CONTRACTOR SHALL SO CONDUCT ITS OPERATIONS AS NOT TO UNREASONABLY INTERFERE WITH TRAFFIC ON PUBLIC THOROUGHFARES ADJACENT OR NEAR TO THE PROJECT SITE. 7. DO NOT SCALE DRAWINGS.

## E PROJECT REQUIREMENT

- THE GENERAL CONTRACTOR REPRESENTS THAT IT POSSESSES THE SKILLS REQUIRED FOR THE WORK, ASSUMES THE RESPONSIBILITIES OF AN EMPLOYER FOR PERFORMANCE OF THE WORK, AND ACTS AS AN EMPLOYER OF ONE OR MORE EMPLOYEES BY PAYING WAGES. DIRECTING ACTIVITIES AND PERFORMING OTHER SIMILAR FUNCTIONS. THE GENERAL CONTRACTOR IS AN INDEPENDENT CONTRACTOR, FREE TO DETERMINE THE MANNER IN WHICH THE WORK IS PERFORMED
- THE GENERAL CONTRACTOR SHALL PROVIDE, AND MAINTAIN IN GOOD WORKING ORDER, THE FOLLOWING ITEMS FOR USE BY THE PROJECT SUPERINTENDENT DAILY DURING THE ENTIRE DURATION OF THE PROJECT: A. LAPTOP WITH INTERNET ACCESS. B. DIGITAL CAMERA WITH 'DATE STAMP' CAPABILITY AND WITH PROPER CABLES TO ATTACH TO LAPTOP. C. EMAIL ACCESS THROUGH THE LAPTOP.
- A PRINTER/SCANNER/FAX MACHINE WITH PROPER CABLES TO ATTACH TO LAPTOP. E. CELL PHONE.
- 3. THE GENERAL CONTRACTOR SHALL HAVE A CONSTRUCTION SUPERINTENDENT ASSIGNED TO THIS PROJECT, AND THIS SUPERINTENDENT SHALL BE ON SITE EVERY DAY THERE IS ANY CONSTRUCTION ON THIS PROJECT. THE SUPERINTENDENT SHALL BE REACHABLE BY PHONE DURING NORMAL BUSINESS HOURS. ONCE ASSIGNED, THE SUPERINTENDENT SHALL NOT BE REMOVED OR REPLACED WITHOUT WRITTEN APPROVAL FROM OWNER & ARCHITECT. UNLESS SPECIFICALLY REQUESTED TO BE REPLACED BY OWNER. 4. THE SUPERINTENDENT WILL BE REQUIRED TO PROVIDE PHOTOGRAPHS (VIA EMAIL USING A DIGITAL CAMERA) TO THE OWNER & ARCHITECT EACH FRIDAY BY NOON CST, SHOWING THE PROGRESS OF CONSTRUCTION. THE GENERAL CONTRACTOR IS ENCOURAGED TO TAKE PHOTOS SEVERAL TIMES EACH WEEK TO HELP MAINTAIN PROOF OF CONSTRUCTION PROGRESS, RECORD UNCOVERED CONDITIONS, RECORD CONDITION AND AMOUNTS OF VENDOR

GOODS UPON RECEIPT, AND RECORD CONSTRUCTION THAT VARIES FROM THE CD'S (AS PART OF THE AS-BUILTS). ALL

- PHOTOS WILL HAVE A 'DATE STAMP'. 3. INSPECTIONS/OBSERVATIONS
- . IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OVERSEE CONSTRUCTION OF THE PROJECT, CONTINUALLY INSPECTING THE WORK, MATERIALS, AND WORKMANSHIP PROVIDED BY ALL OF HIS TRADESMEN, SUBCONTRACTORS,
- AND SUPPLIERS. EXCELLENCE IN QUALITY OF CONSTRUCTION CAN ONLY BE ACHIEVED IF THE CONTRACTOR ENFORCES HIGH STANDARDS OF ACCEPTABILITY. THE GENERAL CONTRACTOR CANNOT DELEGATE HIS RESPONSIBILITY TO THE SUBCONTRACTORS, BUT MUST CONTINUALLY MONITOR THE WORK OF EACH TRADE ON THE PROJECT. T IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE AND SCHEDULE ALL AGENCIES HAVING JURISDICTION (AHJ) INSPECTIONS NECESSARY TO OBTAIN THE CERTIFICATE OF OCCUPANCY (CERTIFICATE OF COMPLIANCE). PRIOR TO THE DATE OF THE AGENCY INSPECTION. THE GENERAL CONTRACTOR SHOULD INSPECT THE PROJECT TO INSURE THAT CONSTRUCTION COMPLIES WITH THE AGENCY REQUIREMENTS. SCHEDULING FINAL INSPECTIONS WITH AGENCY
- REPRESENTATIVES WHEN THE PROJECT IS NOT COMPLETE MUST BE AVOIDED. COPIES OF FINAL INSPECTIONS MUST BE PROVIDED TO OWNER & ARCHITECT AS THEY ARE AVAILABLE. . PRIOR TO REQUESTING THE SUBSTANTIAL COMPLETION INSPECTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT HIS OWN PRE-SUBSTANTIAL COMPLETION INSPECTION OF THE CONSTRUCTION FOR QUALITY OF CONSTRUCTION AND COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. 4. THE FOLLOWING PEOPLE SHOULD BE IN ATTENDANCE FOR THE SUBSTANTIAL COMPLETION INSPECTION:
- A. GENERAL CONTRACTOR **B. GENERAL CONTRACTOR SUPERINTENDENT** C. MECHANICAL CONTRACTOR D. ELECTRICAL CONTRACTOR
- E. PLUMBING CONTRACTOR F. PAINTING CONTRACTOR H. FLOORING CONTRACTOR
- . ITEMS TO BE SUBMITTED AS A PREREQUISITE TO THE REQUEST FOR THE CERTIFICATE OF SUBSTANTIAL COMPLETION AND OWNER / ARCHITECT OBSERVATION OF ITEMS TO BE COMPLETED AND CORRECTED. A. GENERAL CONTRACTOR'S PUNCH LISTS B. HVAC TEST AND BALANCE REPORT
- C. SPRINKLER SYSTEM ACCEPTANCE INSPECTION REPORT D. COPY OF VIDEO OF COMPLETED SEWER SYSTEM . THE REVIEW TEAM SHOULD PROCEED IN AN ORGANIZED MANNER THROUGHOUT THE BUILDING INSPECTING EACH SPACE
- OR ROOM. THE PUNCH LIST GENERATED BY THE SUBSTANTIAL COMPLETION INSPECTION TOUR IS TO BE PREPARED BY THE CONTRACTOR. ALONG WITH THE PUNCH LIST, THE ARCHITECT SHALL PREPARE THE "CERTIFICATE OF SUBSTANTIAL COMPLETION." . IMMEDIATELY AFTER RECEIPT OF THE PUNCH LIST, THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE EXPECTED
- TO BEGIN CORRECTION OF THE OUTSTANDING ITEMS. AFTER COMPLETION OF PUNCHLIST, THE CONTRACTOR SHALL NOTIFY OWNER & ARCHITECT IN WRITTING THAT FULL LIST OF ITENMS TO BE COMPLETED AND OR CORRECT IS FINALIZED.
- . <u>RECORD (CLOSE-OUT) DOCUMENTS</u> THE OWNER REQUIRES THE GENERAL CONTRACTOR AND SUBCONTRACTORS TO MAINTAIN AN ACCURATE. CURRENT
- SET OF RECORD DOCUMENTS (AS-BUILTS) AS CONSTRUCTION PROGRESSES. ALL PERTINENT INFORMATION RELATING TO THE PROJECT MUST BE TIMELY MAINTAINED ON THE AS-BUILTS. THE AS-BUILTS MUST BE MAINTAINED ON-SITE IN THE GENERAL CONTRACTOR'S OFFICE AND WILL NOT BE USED FOR ANY OTHER PURPOSE. SINCE THE OWNER WILL OWN AND OPERATE THE FACILITY, IT IS IMPERATIVE THAT ALL PARTIES MAINTAIN ACCURATE INFORMATION REGARDING THE ACTUAL CONSTRUCTION OF THE PROJECT. ALL DEVIATIONS FROM THE CONTRACT SET OF DRAWINGS MUST BE NOTED ON THE AS-BUILTS IN RED WITH CLOUDS FOR CLEAR IDENTIFICATION. THE OWNER WILL REVIEW THE AS-BUILTS FOR ACCURACY AND COMPLETENESS MONTHLY, DURING THE PAYMENT APPLICATION REVIEW PROCESS. FAILURE TO POST CHANGES TO THE PROJECT ON THE AS-BUILTS AS IDENTIFIED DURING THE ON-SITE MONTHLY REVIEW WILL BE CAUSE TO SUSPEND PAYMENT UNTIL RECTIFIED. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENFORCE THE TIMELY POSTING OF AS-BUILT CHANGES WITH THE SUBCONTRACTORS.
- . FINAL CLOSE-OUT OF THE PROJECT WITHIN THIRTY (30) CALENDAR DAYS AFTER THE FINAL PROJECT SUBSTANTIAL COMPLETION. THE GENERAL CONTRACTOR SHALL COMPILE ALL CLOSE-OUT DOCUMENTS AND SUBMIT THEM TO THE OWNER FOR REVIEW. IF THE CONTRACTOR FAILS TO COMPLETE ITS REQUIREMENTS WITHIN THIS TIMELINE NOTED ABOVE THE CONTRACTOR MAY BE SUBJECT TO ADDITONAL ADMINISTATION FEES.
- **CLOSE-OUT DOCUMENTS** 1. THE CATEGORIES LISTED BELOW SHOULD BE SUBMITTED AT THE SAME TIME. A. A DISK WITH ALL PHOTOS TAKEN DURING CONSTRUCTION.
- B. CHANGE ORDERS AND ALL ADDENDA ATTACHED AND POSTED TO THE AS-BUILT DRAWINGS. C. AS-BUILT DRAWINGS: ONE HARD COPY TO REMAIN ON SITE AND IN PLAN TUBE; ONE ELECTRONIC COPY TO BE SENT WITH CLOSE-OUT PAPERWORK
- D. MATERIALS SELECTION DATA PROVIDE ALL APPROVED SUBMITTALS. E. OPERATION AND MAINTENANCE MANUALS (O&M) - PROVIDE O&M MANUALS BOXED AND BOUND. THIS ITEM IS OF
- SIGNIFICANT IMPORTANCE TO MSI FUTURE MAINTENANCE ACTIVITIES. F. ALL HVAC TEST AND BALANCE REPORTS. H. RELEASE OF LIEN (AIA FORM 706A), PAYMENT OF DEBT (AIA FORM 706)
- I. WARRANTIES, CERTIFICATES, AFFIDAVITS: 2. ALL INFORMATION INCLUDED IN THIS CATEGORY WILL BE FURNISHED IN ONE (1) COPY AND BOUND IN A STURDY THREE-RING BINDER WITH A LABEL ON THE OUTSIDE READING "GENERAL CLOSE-OUT DOCUMENTS" TO INCLUDE AN INDEX OF THE CONTENTS. ALL AIA DOCUMENTS WILL BE ORIGINAL (WITH RED LETTERING ON THE BOTTOM OF THE FORM) AND NOTARIZED. IF THE ELECTRONIC VERSION IS USED A COPY WITH ORIGINAL SIGNATURES WILL BE SUBMITTED. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR WILL HAVE SEPARATE TABS IDENTIFYING EACH BY NAME. THE GENERAL CONTRACTOR WILL LIST EACH SUBCONTRACTOR ALPHABETICALLY AND WILL CHECK TO INSURE THAT A "RELEASE OF LIEN" - AIA FORM G706A AND A "PAYMENT OF DEBT-AIA FORM G706 IS INCLUDED FOR HIMSELE AND EACH SUBCONTRACTOR. THE GENERAL CONTRACTOR WILLINCLUDE A "CONSENT OF SURETY" - AIA FORM G707. IN ADDITION, THE GENERAL CONTRACTOR WILL INCLUDE BEHIND HIS TAB THE FOLLOWING INFORMATION: A. A LIST OF NAMES. BUISNESS ADDRESSES. PHONE NUMBERS AND EMAIL ADRESSES FOR THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR.
- B. AN ANNOTATED COPY OF THE SUBSTANTIAL COMPLETION PUNCH LIST INDICATING ACTION TAKEN ON EACH ITEM. C. WARRANTIES, CERTIFICATES AND AFFIDAVITS SHALL BE INCLUDED FOR ANY EQUIPMENT, MATERIALS OR SYSTEMS, COMBINED WITH ALL OF THE ABOVE INFORMATION AND PLACED BEHIND THE TAB OF THE CONTRACTOR THAT ISSUED IT

# **DIVISION 4 - MASONRY**

- 04 0500 MASONRY RESTORATION & TUCKPOINTING
- A. REFERENCES 1. AMERICAN CONCRETE INSTITUTE (ACI):
- A. ACI 530.1-02 SPECIFICATION FOR MASONRY STRUCTURES. 2. ASTM INTERNATIONAL (ASTM): A. ASTM C 144 - STANDARD SPECIFICATION FOR AGGREGATE FOR MASONRY MORTAR. B. ASTM C 150 - STANDARD SPECIFICATION FOR PORTLAND CEMENT.
- C. ASTM C 207 STANDARD SPECIFICATION FOR HYDRATED LIME FOR MASONRY PURPOSES. D. ASTM C 260 - STANDARD SPECIFICATION FOR AIR-ENTRAINING ADMIXTURES FOR CONCRETE. E. ASTM C 270 - STANDARD SPECIFICATION FOR MORTAR FOR UNIT MASONRY.
- F. ASTM C 595 STANDARD SPECIFICATION FOR BLENDED HYDRAULIC CEMENTS. G. ASTM C 780 - STANDARD TEST METHOD FOR PRECONSTRUCTION AND CONSTRUCTION EVALUATION OF MORTARS FOR PLAIN AND REINFORCED MASONRY. H. ASTM C 979 - STANDARD SPECIFICATION FOR PIGMENTS FOR INTEGRALLY COLORED CONCRETE.
- I. ASTM C 1093 STANDARD PRACTICE FOR ACCREDITATION OF TESTING AGENCIES FOR UNIT MASONRY. J. ASTM C 1157 - STANDARD PERFORMANCE SPECIFICATION FOR HYDRAULIC CEMENT.
- K. ASTM C 1314 STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF MASONRY PRISMS. L. ASTM C 1586 - STANDARD GUIDE FOR QUALITY ASSURANCE OF MORTARS.
- N. ASTM E 329 SPECIFICATION FOR MINIMUM REQUIREMENTS FOR AGENCIES ENGAGED IN THE TESTING AND/OR INSPECTION OF MATERIALS USED IN CONSTRUCTION.
- O. ASTM E 514 STANDARD TEST METHOD FOR WATER PENETRATION AND LEAKAGE THROUGH MASONRY. 3. INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC):
- SPECIFICATIONS FOR COLD WEATHER MASONRY CONSTRUCTION. 2. IMIAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC): RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR HOT WEATHER MASONRY CONSTRUCTION. 4. THE BRICK INDUSTRY ASSOCIATION (BIA): 1. BIA TECHNICAL NOTE 20 – CLEANING BRICK.
- 1. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA. 2. QUALITY ASSURANCE/CONTROL SUBMITTALS: A. SUBMIT MANUFACTURER'S CERTIFICATES THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS.
- B. SUBMIT TEST RESULTS PREPARED BY A QUALIFIED INDEPENDENT TESTING LABORATORY. C. QUALITY ASSURANCE 1. MANUFACTURER QUALIFICATIONS: FIRM SPECIALIZING IN MANUFACTURE OF MASONRY INSTALLATION MATERIALS,
- INCLUDING MORTARS, WITH MINIMUM 10 YEARS EXPERIENCE. 2. QUALITY ASSURANCE/CONTROL TESTING: TEST REPORTS PREPARED BY A QUALIFIED INDEPENDENT LABORATORY INDICATING COMPLIANCE WITH THE FOLLOWING PERFORMANCE REQUIREMENTS: 3. C.PRE-INSTALLATION MEETING: AT LEAST ONE WEEKS PRIOR TO COMMENCING MASONRY WORK CONDUCT A MEETING
- AT THE PROJECT SITE TO DISCUSS CONTRACT REQUIREMENTS AND JOB CONDITIONS; REQUIRE THE ATTENDANCE OF MASONRY CONTRACTOR, AND INSTALLERS OF RELATED MATERIALS; NOTIFY ARCHITECT IN ADVANCE OF MEETING.REVIEW DETAILING AND SEQUENCE OF WORK TO BE PERFORMED.
- 4. STORAGE AND PROTECTION: CEMENTITIOUS MATERIALS SHALL BE MANUFACTURED AND STORED OFF THE GROUND, UNDER COVER AND SHALL BE KEPT DRY IN ACCORDANCE WITH ASTM C1714. D. PROJECT CONDITIONS
- 1. MAINTAIN ENVIRONMENTAL CONDITIONS AND PROTECT WORK DURING AND AFTER INSTALLATION TO COMPLY WITH REFERENCED STANDARDS AND MANUFACTURER'S PRINTED RECOMMENDATIONS. 2. DO NOT BUILD OR APPLY MORTAR PRODUCTS ON FROZEN SUBSTRATES.
- 1. REMOVE AND REPLACE MORTAR DAMAGED BY FROST OR BY FREEZING CONDITIONS. 3. VENT TEMPORARY HEATERS TO EXTERIOR TO PREVENT DAMAGE TO MASONRY WORK FROM CARBON DIOXIDE BUILD-
- 1. BASIS OF DESIGN: SPEC MIX®, INC. WEB: WWW.SPECMIX.COM" WWW.SPECMIX.COM 2. REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED IN ACCORDANCE WITH PROVISIONS OF SUBSTITUTION PROCEDURES.
- 3. OBTAIN PRODUCTS FROM A SINGLE MANUFACTURER. 4. DESIGN AND PERFORMANCE REQUIREMENTS: PROVIDE MORTAR MIXES THAT HAVE BEEN SELECTED, MANUFACTURED, MIXED AND INSTALLED TO COMPLY WITH THE FOLLOWING: A. ASTM C 270. B. ASTM C 1714.
- 5. MORTAR A. TUCKPOINT MORTAR: SPEC MIX TUCKPOINT MORTAR . APPLICABLE STANDARDS: ASTM C 144, ASTM C 150, ASTM C 207, ASTM C 270 FOR TUCKPOINT MORTAR, ASTM C 595, ASTM C 780, ASTM C 1093, ASTM C 1157, ASTM C 1314, ASTM C 1586, ASTM C 1714, ACI 530.1, IMIAC.

## EXAMINE SURFACES TO RECEIVE MASONRY WORK AND CONDITIONS UNDER WHICH MASONRY WILL BE INSTALLED. DO NOT PROCEED WITH MASONRY WORK LINTIL SURFACES AND CONDITIONS COMPLY WITH REQUIREMENTS INDICATED IN REFERENCED MASONRY INSTALLATION STANDARD AND MANUFACTURER'S PRINTED INSTRUCTIONS.

- 1. REMOVAL OF EXISTING MORTAR A. REMOVAL OF EXISTING MORTAR: CUT OUT EXISTING MORTAR JOINTS (BOTH BED AND HEAD JOINTS) AND REMOVE BY MEANS OF A TOOTHING CHISEL OR A SPECIAL POINTER'S GRINDER, TO A UNIFORM DEPTH OF TO 3/4-INCH (19 MM), OR UNTIL SOUND MORTAR IS REACHED. 1. TAKE CARE TO NOT DAMAGE EDGES OF EXISTING MASONRY UNITS TO REMAIN. B. REMOVE DUST AND DEBRIS FROM THE JOINTS BY BRUSHING, BLOWING WITH AIR OR RINSING WITH WATER. DO NOT RINSE WHEN TEMPERATURE IS BELOW FREEZING.
- 2. REPLACEMENT OF MASONRY UNITS A. REMOVE DAMAGED, SPALLED, LOOSE OR DETERIORATED MASONRY UNITS. CAREFULLY REMOVE ENTIRE UNITS FROM JOINT TO JOINT, WITHOUT DAMAGING SURROUNDING MASONRY, IN A MANNER THAT PERMITS REPLACEMENT WITH FULL SIZE UNITS. B. SUPPORT AND PROTECT REMAINING MASONRY THAT SURROUNDS REMOVAL AREA. MAINTAIN FLASHING,
- REINFORCEMENT, LINTELS, AND ADJOINING CONSTRUCTION IN AN UNDAMAGED CONDITION. C. CLEAN MASONRY UNITS SURROUNDING REMOVAL AREAS BY REMOVING MORTAR, DUST, AND LOOSE PARTICLES IN PREPARATION FOR REPLACEMENT.
- D. REPLACE REMOVED UNITS WITH SALVAGED OR NEW UNITS THAT MATCH EXISTING SIZE AND TEXTURE. DO NOT USE BROKEN UNITS UNLESS THEY CAN BE CUT TO USABLE SIZE. E. INSTALL REPLACEMENT UNITS INTO BONDING AND COURSING PATTERN OF EXISTING UNITS. IF CUTTING IS REQUIRED, USE A MOTOR-DRIVEN SAW DESIGNED TO CUT MASONRY WITH CLEAN, SHARP, UNCHIPPED EDGES.
- UNITS MUST BE TOOTHED IN OR COURSING SHALL MATCH SURROUNDING IN PLACE WORK. F. MAINTAIN JOINT WIDTH FOR REPLACEMENT UNITS TO MATCH EXISTING JOINTS. G. LAY REPLACEMENT UNITS WITH COMPLETELY FILLED BED, HEAD, AND COLLAR JOINTS. BUTTER ENDS WITH
- SUFFICIENT MORTAR TO FILL HEAD JOINTS AND SHOVE INTO PLACE. C. MIXING 1. AS RECOMMENDED BY MANUFACTURER.
- 2. RETEMPERING: RETEMPER MORTAR AS RECOMMENDED BY MANUFACTURER
- <u>G. INSTALLATION OF TUCK POINTING MORTA</u> 1. INSTALL MORTAR IN ACCORDANCE WITH ACI/ASCE-530.1:
- OF POINTING MORTAR, ALLOW MASONRY UNITS TO ABSORB SURFACE WATER. 3. TIGHTLY PACK MORTAR INTO JOINTS IN THIN LAYERS, APPROXIMATELY 1/4-INCH (6 MM) THICK MAXIMUM.
- 4. ALLOW LAYER TO BECOME "THUMBPRINT HARD" BEFORE APPLYING NEXT LAYER. 5. PACK FINAL LAYER FLUSH WITH SURFACES OF MASONRY UNITS. WHEN MORTAR BECOMES "THUMBPRINT HARD", TOOL JOINTS
- 6. HAIRLINE CRACKING WITHIN THE MORTAR OR MORTAR SEPARATION AT EDGE OF A JOINT IS UNACCEPTABLE. COMPLETELY REMOVE SUCH MORTAR AND REPOINT.
- 7. TOOL JOINTS IN PATCH WORK WITH A JOINTING TOOL TO MATCH THE EXISTING SURROUNDING JOINTS. 8. CLEANING A. COMPLY WITH CLEANING PROCEDURES AND RECOMMENDATIONS OF THE MANUFACTURERS OF BOTH THE
- CLEANING SOLUTION AND THE UNIT MASONRY. B. REMOVE EFFLORESCENCE FROM MASONRY WALL EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION, NCMA TEK BULLETIN #8-3A AND/OR BIA TECHNICAL NOTE 20 – CLEANING C. REMOVE DIRT OR STAINS FROM MASONRY WALLS EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH THE
- MANUFACTURER'S RECOMMENDATIONS, NCMA TEK BULLETIN #8-2A AND/OR BIA TECHNICAL NOTE 20 CLEANING D. COMPLY WITH APPLICABLE ENVIRONMENTAL LAWS AND RESTRICTIONS. AFTER MORTAR HAS FULLY HARDENED. THOROUGHLY CLEAN EXPOSED MASONRY SURFACES OF EXCESS MORTAR AND FOREIGN MATTER; USE WOOD SCRAPERS, STIFF-NYLON OR -FIBER BRUSHES, AND CLEAN WATER, SPRAY APPLIED AT LOW PRESSURE. 1. DO NOT USE METAL SCRAPERS OR BRUSHES
- 1. PROTECTION: PROTECT NEWLY POINTED JOINTS FROM WEATHER AND ELEMENTS AS RECOMMENDED BY MANUFACTURER AND INDUSTRY STANDARDS, UNTIL POINTED JOINTS ARE SUFFICIENTLY HARD ENOUGH TO

2. DO NOT USE ACIDIC OR ALKALINE CLEANERS.

PREVENT DAMAGE. 2. PROTECT INSTALLED WORK FROM DAMAGE DUE TO SUBSEQUENT CONSTRUCTION ACTIVITY ON THE SITE.

M. ASTM C 1714 - STANDARD SPECIFICATION FOR PRE-BLENDED DRY MORTAR MIX FOR UNIT MASONRY.

1. IMIAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC): RECOMMENDED PRACTICES AND GUIDE

# 2. IMMEDIATELY PRIOR TO APPLICATION OF MORTAR, DAMPEN JOINTS TO BE TUCK POINTED. PRIOR TO APPLICATION

### A. <u>SUBMITTALS</u>: PRODUCT DATA AND SHOP DRAWINGS WITH PLANS ELEVATIONS AND SEECTIONS INDICATING MEMBER SIZES AND LAYOUT, VERTICAL AND HORIZONTAL DIMENSIONS, EDGE CONDITIONS, AND CONNECTION DETAILS. INCLUDE DETAILS OF EQUIPMENT ASSEMBLIES. INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF EXPOSED FINISH. 1. DELEGATED-DESIGN SUBMITTAL: FOR HANDRAIL AND GUARDRAIL SYSTEMS, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

**DIVISION 5 - METALS** 

05 5213 - PIPE AND TUBE RAILINGS

B. DESIGN: METAL TUBE RAILINGS SHALL BE DESIGNED BY FABRICATOR TO SUPPORT CODE-REQUIRED LOADING AND TO MATCH THE CONFIGURATIONS INDICATED IN THE CONSTRUCTION DOCUMENTS. SEE DRAWINGS FOR REQUIRED RAILING ELEVATIONS.

FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH METAL FABRICATIONS BY FIELD MEASUREMENTS BEFORE FABRICATION.

- D. <u>PERFORMANCE REQUIREMENTS</u> 1. A. DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION. B. STRUCTURAL PERFORMANCE: RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION, SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
- 2. HANDRAILS AND TOP RAILS OF GUARDS: A. UNIFORM LOAD OF 50 LBF/ FT. (0.73 KN/M) APPLIED IN ANY DIRECTION. B. CONCENTRATED LOAD OF 200 LBF (0.89 KN) APPLIED IN ANY DIRECTION. C. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
- FASTENERS FOR ANCHORING RAILINGS TO OTHER CONSTRUCTION: SELECT FASTENERS OF TYPE, GRADE, AND CLASS REQUIRED TO PRODUCE CONNECTIONS SUITABLE FOR ANCHORING RAILINGS TO OTHER TYPES OF CONSTRUCTION INDICATED AND CAPABLE OF WITHSTANDING DESIGN LOADS.
- MISCELLANEOUS MATERIAL 1. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH SURFACES, WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, STAINS, DISCOLORATIONS, OR BLEMISHES. 2. BRACKETS, FLANGES, AND ANCHORS: CAST OR FORMED METAL OF SAME TYPE OF MATERIAL AND FINISH AS SUPPORTED RAILS UNLESS OTHERWISE INDICATED. 3. PIPE: ASTM A 53/A 53M, TYPE F OR TYPE S, GRADE A, STANDARD WEIGHT (SCHEDULE 40), UNLESS ANOTHER GRADE AND WEIGHT ARE REQUIRED BY STRUCTURAL LOADS.
- 1. GENERAL: FABRICATE RAILINGS TO COMPLY WITH REQUIREMENTS INDICATED FOR DESIGN, DIMENSIONS, MEMBER SIZES AND SPACING, DETAILS, FINISH, AND ANCHORAGE , BUT NOT LESS THAN THAT REQUIRED TO SUPPORT
- STRUCTURAL LOADS. 2. CUT, DRILL, AND PUNCH ALUMINUM CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH (1 MM) UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON
- EXPOSED SURFACES 3. FABRICATE CONNECTIONS THAT ARE EXPOSED TO WEATHER IN A MANNER THAT EXCLUDES WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE. 4. WELDED CONNECTIONS: USE FULLY WELDED JOINTS FOR PERMANENTLY CONNECTING RAILING COMPONENTS. COMPLY WITH REQUIREMENTS FOR WELDED CONNECTIONS IN "FABRICATION" ARTICLE WHETHER WELDING IS PERFORMED IN THE SHOP OR IN THE FIELD.
- I. FOR NONGALVANIZED-STEEL RAILINGS, PROVIDE NONGALVANIZED FERROUS-METAL FITTINGS, BRACKETS, FASTENERS, AND SLEEVES; HOWEVER, GALVANIZE ANCHORS TO BE EMBEDDED IN EXTERIOR CONCRETE OR
- MASONRY 2. PREPARATION FOR SHOP PRIMING: PREPARE UNCOATED FERROUS-METAL SURFACES TO COMPLY WITH SSPC-SP 3, "POWER TOOL CLEANING."
- 3. PRIMER APPLICATION: APPLY SHOP PRIMER TO PREPARED SURFACES OF RAILINGS UNLESS OTHERWISE INDICATED. COMPLY WITH REQUIREMENTS IN SSPC-PA 1, "SHOP, FIELD, AND MAINTENANCE PAINTING OF STEEL," FOR SHOP PAINTING. PRIMER NEED NOT BE APPLIED TO SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY.

## . SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE FABRICATED FROM SAME MATERIAL AND FINISH AS FABRICATION UNLESS NOTED OTHERWISE. SHIM AND LEVEL FABRICATIONS AS NECESSARY. COAT CONCEALED SURFACES OF FABRICATIONS IN CONTACT WITH CONCRETE, GROUT, MASONRY, WOOD, OR DISSIMILAR METALS WITH

- BITUMINOUS PAINT. 2. FIT EXPOSED CONNECTIONS TOGETHER TO FORM TIGHT, HAIRLINE JOINTS. 3. PERFORM CUTTING. DRILLING. AND FITTING REQUIRED FOR INSTALLING RAILINGS. SET RAILINGS ACCURATELY IN LOCATION. ALIGNMENT, AND ELEVATION: MEASURED FROM ESTABLISHED LINES AND LEVELS AND FREE OF RACK. 1.DO NOT WELD, CUT, OR ABRADE SURFACES OF RAILING COMPONENTS THAT ARE COATED OR FINISHED AFTER FABRICATION AND THAT ARE INTENDED FOR FIELD CONNECTION BY MECHANICAL OR OTHER MEANS WITHOUT
- FURTHER CUTTING OR FITTING. 2. SET POSTS PLUMB WITHIN A TOLERANCE OF 1/16 INCH IN 3 FEET. 4. CONTROL OF CORROSION: PREVENT GALVANIC ACTION AND OTHER FORMS OF CORROSION BY INSULATING METALS AND OTHER MATERIALS FROM DIRECT CONTACT WITH INCOMPATIBLE MATERIALS. 5. ADJUST RAILINGS BEFORE ANCHORING TO ENSURE MATCHING ALIGNMENT AT ABUTTING JOINTS.
- 6. FASTENING TO IN-PLACE CONSTRUCTION: USE ANCHORAGE DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING RAILINGS AND FOR PROPERLY TRANSFERRING LOADS TO IN-PLACE CONSTRUCTION. 7.PROTECT FINISHES OF RAILINGS FROM DAMAGE DURING CONSTRUCTION PERIOD WITH TEMPORARY PROTECTIVE COVERINGS APPROVED BY RAILING MANUFACTURER. REMOVE PROTECTIVE COVERINGS AT TIME OF SUBSTANTIAL COMPLETION.

# 05 6000- STRUCTURAL METAL STUDS AND TRACK

## THIS SECTION IS A DELEGATED DESIGN SUBMITTAL. CONTRACTOR SHALL ENGAGE A STRUCUTRAL ENGINEER ICENSED IN THE JURISDICTION WHRE THIS PROJECT IS LOCATED. ALL FEES SUBJECT OF THIS SERVICE WILL BE PART OF BASE CONTRACT.

- A. SUBMITTALS: PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING: 1. SHOWING PLANS, SECTIONS, ELEVATIONS, LAYOUTS, PROFILES AND PRODUCT COMPONENT LOCATIONS,
- INCLUDING ANCHORAGE, BRACING, FASTENERS, ACCESSORIES AND FINISHES. 2. INDICATE COMPONENT DETAILS, FRAMED OPENINGS, BEARING, ANCHORAGE, LOADING, WELDS, TYPE AND LOCATION OF FASTENERS, AND ACCESSORIES.
- 3. INDICATE METHOD FOR SECURING STUDS AND OTHER COMPONENTS TO TRACKS AND FOR FRAMING CONNECTIONS. 4. SUBMIT CALCULATIONS FOR LOADINGS AND STRESSES UNDER PROFESSIONAL ENGINEER'S SEAL REGISTERED IN THE STATE OF THE PROJECT.
- 3. QUALITY STANDARI 1. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM FIVE YEARS DOCUMENTED EXPERIENCE. 2. INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM 3 YEARS DOCUMENTED EXPERIENCE. 3. DESIGN STRUCTURAL ELEMENTS UNDER DIRECT SUPERVISION OF PROFESSIONAL ENGINEER EXPERIENCED IN
- DESIGN OF THIS WORK AND REGISTERED IN THE STATE OF THE PROJECT. . INSTALLATION: 1. FOLLOW MANUFACTURER INSTALLATION GUIDLINES. INSTALLATION SHALL BE COMPLIANT WITH APPLICABLE BUILDING CODES.

## **DIVISION 6 - WOOD AND PLASTICS** 06 1000- ROUGH CARPENTRY

- 1. PROVIDE SUFFICIENT FIRE RETARDANT TREATED WOOD BLOCKING AT ALL STUDS FOR SECURING OF WALL & CEILING ITEMS. WHETHER FURNISHED BY OWNER OR CONTRACTOR. 2. CONCEALED WOOD IS TO BE FIRE RETARDANT TREATED UNLESS NOTED OTHERWISE 3. PRESERVATIVE TREATED LUMBER IS REQUIRED FOR ALL ITEMS TO REMAIN IN CONTACT WITH CONCRETE OR
- MASONRY TO CONFORM TO AWPA STANDARD 5. 4. PLYWOOD SHALL BE CD GRADE APA FIR OR YELLOW PINE. ALL PLY-WOOD TO BE FIRE RATED WHERE WALLS ARE INDICATED AS RATED CONSTRUCTION.
- 5. BLOCKING SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LINES & LEVELS, SECURELY CONNECTED & RIGIDLY FIXED IN PLACE, USING NAILS, SCREWS, &/OR BOLTS AS INDICATED OR REQUIRED BY GOOD PRACTICE AND MANUFACTURER'S RECOMMENDATIONS.
- 06 2000 FINISH CARPENTRY A. SUBMITTALS: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE, AND SHOP DRAWINGS INCLUDING DIMENSIONED PLANS, ELEVATIONS, AND SECTIONS. B. <u>QUALITY STANDARD</u>: ARCHITECTURAL WOODWORK INSTITUTE'S "ARCHITECTURAL WOODWORK QUALITY
- 1. SOFTWOOD LUMBER: MAXIMUM MOISTURE CONTENT OF 6 PERCENT; WITH VERTICAL GRAIN, OF QUALITY SUITABLE FOR SCHEDULED FINISH. 2. HARDWOOD LUMBER: MAXIMUM MOISTURE CONTENT OF 6 PERCENT; WITH VERTICAL GRAIN, OF QUALITY
- SUITABLE FOR SCHEDULED FINISH 3. SHEET MATERIALS: SOFTWOOD PLYWOOD, EXPOSED TO VIEW: FACE SPECIES AS INDICATED, PLAIN SAWN, MEDIUM DENSITY FIBERBOARD CORE; PS 1 GRADE A-B, GLUE TYPE AS RECOMMENDED FOR APPLICATION.
- 1. COMPLETE FABRICATION BEFORE SHIPPING TO PROJECT SITE TO MAXIMUM EXTENT FEASIBLE. DISASSEMBLE ONLY AS NEEDED FOR SHIPPING AND INSTALLING. WHERE NECESSARY FOR FITTING AT PROJECT SITE, PROVIDE FOR SCRIBING AND TRIMMING 2. BACKOUT AND GROOVE BACKS OF FLAT MEMBERS, KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT WHERE ENDS WILL BE EXPOSED IN FINISHED WORK.
- . INSTALLATION: 1. DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETED, HVAC IS OPERATING, AND WOODWORK IS CONDITIONED TO PREVAILING CONDITIONS OF SPACE WHERE INSTALLED. MAINTAIN TEMPERATURE BETWEEN 55 F. AND 75 F. FOR 72 HOURS BEFORE BEGINNING INSTALLATION AND FOR DURATION OF PROJECT.
- 2. INSTALL WOODWORK LEVEL AND PLUMB AND SHIM AS REQUIRED WITH CONCEALED SHIMS TO 8 TOLERANCE OF 1 "/96" AND TO COMPLY WITH REFERENCED QUALITY STANDARD FOR GRADE SPECIFIED. 3. SCRIBE AND CUT WOODWORK TO FIT ADJOINING WORK. SEAL CUT SURFACES, AND REPAIR DAMAGED FINISH
- AT CUTS 4. INSTALL TRIM WITH MINIMUM NUMBER OF JOINTS POSSIBLE USING FULL-LENGTH PIECES TO GREATEST EXTENT POSSIBLE STAGGER JOINTS IN ADJACENT AND RELATED MEMBERS
- 5. LUMBER FOR TRANSPARENT FINISH (STAINED OR CLEAR): USE PIECES MADE OF SOLID LUMBER STOCK 6. LUMBER FOR PAINTED FINISH: AT CONTRACTOR'S OPTION, USE PIECES WHICH ARE EITHER GLUED-UP
- OR MADE OF SOLID LUMBER STOCK. 7. DISCARD UNITS OF MATERIAL WHICH ARE UNSOUND, WARPED, BOWED, TWISTED, IMPROPERLY TREATED, NOT ADEQUATELY SEASONED OR TOO SMALL TO FABRICATE WORK WITH MINIMUM OF
- JOINTS OR OPTIMUM JOINTING ARRANGEMENTS, OR WHICH ARE DEFECTIVELY MANUFACTURED WITH RESPECT TO SURFACES, SIZES OR PATTERNS. 8. INSTALL THE WORK PLUMB, LEVEL, TRUE AND STRAIGHT WITH NO DISTORTIONS. SHIM AS REQUIRED
- USING CONCEALED SHIMS. 9. SCRIBE AND CUT WORK TO FIT ADJOINING WORK, AND REFINISH CUT SURFACES OR REPAIR DAMAGED FINISH AT CUTS.
- 10. SAND WORK SMOOTH AND SET EXPOSED NAILS AND SCREWS. 11. APPLY WOOD FILLER IN EXPOSED NAIL AND SCREW INDENTATIONS. 12. FINISH WORK SHALL BE SMOOTH. FREE FROM ABRASION. TOOL MARKS, RAISED GRAIN MARKINGS, OR

SIMILAR DEFECTS ON EXPOSED SURFACES.

## 06 4100 - ARCHITECTURAL WOOD CASEWORK JOINTING DETAILS, AND ACCESSORIES. 1. SCALE OF DRAWINGS: 1-1/2 INCH TO 1 FOOT, MINIMUM. 2. PROVIDE THE INFORMATION REQUIRED BY AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS). C. QUALITY ASSURANCE SECTION WITH MINIMUM FIVE YEARS OF DOCUMENTED EXPERIENCE. UNLESS NOTED OTHERWISE. 2. WOOD VENEER FACED CABINET: CONCEALED SURFACES: MANUFACTURER'S OPTION. 3. PLASTIC LAMINATE FACED CABINETS: CUSTOM GRADE. E. MATERIALS / ACCESSORIES / HARDWARE LAMINATES AS INDICATED IN SCHEDULES. COMPLY WITH M<sup>1</sup> 2. ADHESIVE: TYPE RECOMMENDED BY FABRICATOR TO S 3. FASTENERS: SIZE AND TYPE TO SUIT APPLICATION 4. BOLTS, NUTS, WASHERS, LAGS, PINS, AND SCRF' COSUIT APPLICATION; GALVANIZED OR CHROME-PLATED FINISH IN CONCEALED LOC' STEEL OR CHROME-PLATED FINISH IN EXPOSED LOCATIONS. 5. CONCEALED JOINT FASTENERS: THP" 6. GROMMETS: STANDARD PLASTIC MATCH ADJACENT SURFACE. 7. HARDWARE: BHMA A156.9 8. ADJUSTABLE SHELF S' STANDARDS OR M<sup>1</sup> FINISH. FOR NOM 9. DRAWER SLIDES N TYPES AS INDICATED. 10. HINGES: EUROPEA 11. SOFT CLOSE ADAPTER: POLISHED FINISH. 12. FINISH WORK IN ACCORDANCE WITH AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS). F. INSTALLATION: CAPABLE OF BEING HEATED. MAINTAIN TEMPERATURE BETWEEN 55 F. AND 75 F. FOR 72 HOURS BEFORE BEGINNING INSTALLATION AND FOR DURATION OF PROJECT. 2.VERIFY ADEQUACY OF BACKING AND SUPPORT FRAMING. 3. VERIFY LOCATION AND SIZES OF UTILITY ROUGH-IN ASSOCIATED WITH WORK OF THIS SECTION. 5.USE FIXTURE ATTACHMENTS IN CONCEALED LOCATIONS FOR WALL MOUNTED COMPONENTS. 6.USE CONCEALED JOINT FASTENERS TO ALIGN AND SECURE ADJOINING CABINET UNITS. USE ADDITIONAL OVERLAY TRIM FOR THIS PURPOSE. 8. SECURE CABINETS TO FLOOR USING APPROPRIATE ANGLES AND ANCHORAGES. 9. CLEAN CASEWORK, COUNTERS, SHELVES, HARDWARE, FITTINGS, AND FIXTURES.

## **DIVISION 7 - THERMAL AND MOISTURE PROTECTION**

- 07 1300 SHEET WATERPROOFING A. <u>SUBMITTALS</u>: 1. PRODUCT DATA: PROVIDE DATA FOR MEMBRANE. INTERFACE WITH OTHER MATERIALS.
- B. SURFACE BURNING CHARACTERISTICS: 1. FLAME SPREAD INDEX: 25 OR LESS
- C. <u>FIELD CONDITIONS</u>: 1. MAINTAIN AMBIENT TEMPERATURES ABOVE 40 DEGREES F FOR 24 HOURS BEFORE AND DURING APPLICATION AND UNTIL LIQUID OR MASTIC ACCESSORIES HAVE CURED.
- COMPLETION; REMOVE AND REPLACE MATERIALS CONCEALING WATERPROOFING AT NO EXTRA COST TO
- <u>BASIS OF DESIGN</u>:
   1. W.R. MEADOWS, INC; MEL-ROL: WWW.WRMEADOWS.COM
- DRAWINGS 36 INCH, MINIMUM.
- 4. MEMBRANE SEALANT: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 5. TERMINATION BARS: ALUMINUM: COMPATIBLE WITH MEMBRANE AND ADHESIVES. 6. SURFACE CONDITIONER: COMPATIBLE WITH MEMBRANE 7. ADHESIVES: AS RECOMMENDED BY MEMBRANE MANUFACTURER. MEMBRANE.
- **G. ACCESSORIES** WITH SUBSTRATES AND WATERPROOFING MATERIALS. BACKFILLING AND CONSTRUCTION TRAFFIC.
- MEMBRANE MANUFACTURER.
- INSTRUCTIONS: VACUUM SUBSTRATE CLEAN. AND WATERPROOFING MANUFACTURERS
- (WM) APPLICABLE REQUIREMENTS. 5. SELF-ADHERING MEMBRANE: REMOVE RELEASE PAPER LAYER, AND ROLL OUT ONTO SUBSTRATE WITH A
- MECHANICAL ROLLER TO PROVIDE FULL CONTACT BOND.
- ARE STATIC OR DYNAMIC
- WITH FLEXIBLE FLASHINGS INSTALL COUNTERFLASHING OVER EXPOSED EDGES.
- INSTALLATION PROCEDURES

## 07 2100 - THERMAL INSULATION A. <u>SUBMITTALS</u>: PRODUCT DATA FOR EACH TYPE OF INSULATION SPECIFIED. B. SURFACE BURNING CHARACTERISTICS: 1 FLAME SPREAD INDEX: 25 OR LESS

- . INSULATION PRODUCT A. FLAME SPREAD INDEX: 25 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84.
- C. COMBUSTIBILITY: NON-COMBUSTIBLE, WHEN TESTED IN ACCORDANCE WITH ASTM E136, EXCEPT FOR FACING. IF ANY. A. EXPANDED POLYSTYRENE (EPS) BOARD INSULATION: COMPLIES WITH ASTM C578.
- 3. BOARD SIZE: 48 INCH BY 96 INCH. 4. BOARD THICKNESS: 1-1/2 INCH. 5. TYPE AND COMPRESSIVE RESISTANCE: TYPE XI, 5 PSI (35 KPA), MINIMUM. ACCESSORIES
- INDICATED IN DRAWINGS. SEALING OF INTERIOR CIRCULAR PENETRATIONS, SUCH AS PIPES OR CABLES.
- TO SUCCESSFUL INSTALLATION.
- 4. TRIM INSULATION NEATLY TO FIT SPACES. INSULATE MISCELLANEOUS GAPS AND VOIDS.
- 6. DO NOT PERMIT INSTALLED INSULATION TO BE DAMAGED PRIOR TO ITS CONCEALMENT.

# A. SUBMITTALS: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE. AND SHOP DRAWINGS INCLUDING DIMENSIONED PLANS, ELEVATIONS, AND SECTIONS. INDICATE COMPONENT PROFILES, FASTENING METHODS.

3. SAMPLES: SUBMIT ACTUAL SAMPLES OF ARCHITECTURAL CABINET CONSTRUCTION, MINIMUM 12 INCHES SQUARE, ILLUSTRATING PROPOSED CABINET, COUNTERTOP, AND SHELF UNIT SUBSTRATE AND FINISH. B. QUALITY STANDARD: ARCHITECTURAL WOODWORK INSTITUTE'S "ARCHITECTURAL WOODWORK QUALITY

. FABRICATOR QUALIFICATIONS: COMPANY SPECIALIZING IN FABRICATING THE PRODUCTS SPECIFIED IN THIS

. QUALITY STANDARD: CUSTOM GRADE. IN ACCORDANCE WITH AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS).

RUCTIONS.

JBBER GROMMETS FOR CUT-OUTS, IN COLOR TO DED BY FABRICATOR FOR QUALITY GRADE SPECIFIED. DE-MOUNTED SYSTEM USING RECESSED METAL SHELF

. SUPPORTS AND COORDINATED SELF RESTS, POLISHED CHROME DUSTMENTS ACEALED SELF-CLOSING TYPE, [<>] STEEL WITH POLISHED FINISH. ACEALED, FRAME-MOUNTED, SCREW-ADJUSTABLE DAMPER ; STEEL WITH

1. INSTALL NO INTERIOR FINISH CARPENTRY OR MILLWORK UNTIL SPACES ARE ENCLOSED. DRY, AND

4. SET AND SECURE CUSTOM CABINETS IN PLACE, ASSURING THAT THEY ARE RIGID, PLUMB, AND LEVEL. 7.CAREFULLY SCRIBE CASEWORK ABUTTING OTHER COMPONENTS, WITH MAXIMUM GAPS OF 1/32 INCH. DO NOT

2.PROVIDE SHOP DRAWINGS: INDICATE SPECIAL JOINT OR TERMINATION CONDITIONS AND CONDITIONS OF 3. CERTIFICATE: CERTIFY THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS

2. SMOKE DEVELOPED INDEX: 50 OR LESS IN EXPOSED AREAS AND PLENUMS; 450 OR LESS WHERE CONCEALED.

1. CONTRACTOR SHALL CORRECT DEFECTIVE WORK WITHIN A FIVE YEAR PERIOD AFTER DATE OF SUBSTANTIAL

1. SELF-ADHERED MODIFIED BITUMINOUS SHEET MEMBRANE: LOCATION: LOCATIONS AS IDENTIFIED IN 2. ROLLED, SELF-ADHERED MODIFIED BITUMINOUS SHEET MEMBRANE: THICKNESS: 60 MIL, 0.060 INCH, MINIMUM. THICKNESS: 60 MIL, 0.060 INCH, MINIMUM, CARRIER FILM: 4 MILS, POLYMERIC MEMBRANE:56 MILS, SHEET WIDTH:

3. SEAMING MATERIALS: AS RECOMMENDED BY MEMBRANE MANUFACTURER.

8. THINNER AND CLEANER: AS RECOMMENDED BY ADHESIVE MANUFACTURER, COMPATIBLE WITH SHEET

1. SEALANT FOR CRACKS AND JOINTS IN SUBSTRATES: RESILIENT ELASTOMERIC JOINT SEALANT COMPATIBLE 2. PROTECTION BOARD: PROVIDE TYPE CAPABLE OF PREVENTING DAMAGE TO WATERPROOFING DUE TO

1. DO NOT INSTALL INSULATION ADHESIVES WHEN TEMPERATURE OR WEATHER CONDITIONS ARE DETRIMENTAL TO SUCCESSFUL INSTALLATION. DO NOT APPLY WATERPROOFING TO SURFACES UNACCEPTABLE TO

2. CLEAN AND PREPARE SURFACES TO RECEIVE WATERPROOFING IN ACCORDANCE WITH MANUFACTURER'S 3. FILL NON-MOVING JOINTS AND CRACKS WITH A FILLER COMPATIBLE WITH WATERPROOFING MATERIALS.SEAL MOVING CRACKS WITH SEALANT AND NON-RIGID FILLER, USING PROCEDURES RECOMMENDED BY SEALANT 4. INSTALL MEMBRANE WATERPROOFING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NRCA

6. OVERLAP EDGES AND ENDS, MINIMUM 3 INCHES, SEAL PERMANENTLY WATERPROOF BY METHOD RECOMMENDED BY MANUFACTURER, AND APPLY UNIFORM BEAD OF SEALANT TO JOINT EDGE. 7. REINFORCE MEMBRANE WITH MULTIPLE THICKNESS OF MEMBRANE MATERIAL OVER JOINTS, WHETHER JOINTS

8. WEATHER LAP JOINTS ON SLOPED SUBSTRATE IN DIRECTION OF DRAINAGE, AND SEAL JOINTS AND SEAMS. 9. FLEXIBLE FLASHINGS: SEAL ITEMS WATERTIGHT THAT PENETRATE THROUGH WATERPROOFING MEMBRANE

10. SEAL MEMBRANE AND FLASHINGS TO ADJOINING SURFACES. INSTALL TERMINATION BAR ALONG EDGES. 11. INSTALLATION OF DRAINAGE PANEL AND PROTECTION BOARD. INSTALLER TO FOLLOW MANUFACTURERS

12. UPON COMPLETION OF HORIZONTAL MEMBRANE INSTALLATION, DAM INSTALLATION AREA IN PREPARATION FOR FLOOD TESTING. FLOOD TO MINIMUM DEPTH OF 1 INCH WITH CLEAN WATER, AND AFTER 48 HOURS INSPECT FOR LEAKS. IF LEAKING IS FOUND, REMOVE WATER, REPAIR LEAKING AREAS WITH NEW WATERPROOFING MATERIALS AS DIRECTED BY ARCHITECT; REPEAT FLOOD TEST, AND REPAIR DAMAGE TO BUILDING. WHEN AREA IS PROVEN WATERTIGHT, DRAIN WATER AND REMOVE DAM.

2. SMOKE DEVELOPED INDEX: 50 OR LESS IN EXPOSED AREAS AND PLENUMS; 450 OR LESS WHERE CONCEALED.

. MINERAL FIBER OR GLASS FIBER BLANKET INSULATION: TYPE I, UNFACED WHERE SPECIFIED WITH SEPARATE VAPOR BARRIER.FIBERS MANUFACTURED FROM GLASS, SLAG WOOL, OR ROCK WOOL. FLEXIBLE PREFORMED BATT OR BLANKET, COMPLYING WITH ASTM C665; FRICTION FIT.SEE DRAWINGS FOR SPECIFIC TYPES. B. SMOKE DEVELOPED INDEX: 450 OR LESS. WHEN TESTED IN ACCORDANCE WITH ASTM E84.

2. BOARD INSULATION: BOARD INSULATION AT CAVITY WALL CONSTRUCTION, EXTERIOR WALL BEHIND IRATED AND ACOUSTIC CONDITIONS] WALL FINISH, AND INTERIOR WALL WITH FACER PROVIDING EXPOSED FINISH. 1. FLAME SPREAD INDEX (FSI): CLASS A - 0 TO 25, WHEN TESTED IN ACCORDANCE WITH ASTM E84. 2. SMOKE DEVELOPED INDEX (SDI): 450 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84.

6. TYPE AND WATER ABSORPTION: TYPE XI. 4.0 PERCENT BY VOLUME, MAXIMUM, BY TOTAL IMMERSION.

. VAPOR RETARDER: 6 MIL POLYETHYLENE AT CONCEALED AREAS (FLAME SPREAD/SMOKE DEVELOPED: 25/450), FOIL/SCRIM AT PLENUMS AND EXPOSED AREAS (FLAME SPREAD/SMOKE DEVELOPED: 25/50). PROVIDE WHERE 2. TAPE: REINFORCED POLYETHYLENE FILM WITH ACRYLIC PRESSURE SENSITIVE ADHESIVE. APPLICATION:

E. <u>INSTALLATION:</u> 1. DO NOT INSTALL INSULATION ADHESIVES WHEN TEMPERATURE OR WEATHER CONDITIONS ARE DETRIMENTAL 2. INSTALL INSULATION IN AREAS AND IN THICKNESSES INDICATED OR REQUIRED TO PRODUCE R-VALUES WHERE INDICATED. CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION. 3. INSTALL IN EXTERIOR WALL AND CEILING SPACES WITHOUT GAPS OR VOIDS. DO NOT COMPRESS INSULATION. 5. EXTEND VAPOR RETARDER TO EXTREMITIES OF AREAS TO BE PROTECTED FROM VAPOR TRANSMISSION. SECURE IN PLACE WITH ADHESIVES OR OTHER ANCHORAGE AS RECOMMENDED BY MANUFACTURER. LOCATE SEAMS AT FRAMING MEMBERS, OVERLAP AND SEAL WITH SUITABLE TAPE (DUCT TAPE IS NOT SUITABLE).

## 07 2500 - WEATHER BARRIERS

A. SUBMITTALS: PRODUCT DATA: PROVIDE DATA ON MATERIAL CHARACTERISTICS. SHOP DRAWINGS: PROVIDE DRAWINGS OF SPECIAL JOINT CONDITIONS.

B. MOCK-UP: INSTALL AIR BARRIER, VAPOR RETARDER, AND WATER-RESISTIVE BARRIER MATERIALS IN MOCK-UP.

C. <u>PRODUCTS</u>: AIR BARRIER, FLUID APPLIED: VAPOR PERMEABLE, ELASTOMERIC WATERPROOFING.

- D. BASIS OF DESIGN: BASF CORPORATION; MASTERSEAL AWB 665:
- 1. SEALANTS, TAPES, AND ACCESSORIES FOR SEALING WEATHER BARRIER AND SEALING WEATHER BARRIER TO ADJACENT SUBSTRATES: AS SPECIFIED OR AS RECOMMENDED BY WEATHER BARRIER MANUFACTURER. 2. FLEXIBLE FLASHING: SHEATHING FABRIC SATURATED WITH AIR BARRIER COATING AND COMPLYING WITH THE APPLICABLE REQUIREMENTS OF ICC-ES AC148. 3. LIQUID FLASHING: ONE PART, FAST CURING, NON-SAG, ELASTOMERIC, GUN GRADE, TROWELABLE LIQUID FI ASHING
- 1. VERIFY THAT SURFACES AND CONDITIONS ARE READY TO ACCEPT THE WORK OF THIS SECTION. 2. REMOVE PROJECTIONS, PROTRUDING FASTENERS, AND LOOSE OR FOREIGN MATTER THAT MIGHT INTERFERE WITH PROPER INSTALLATION.
- 3. CLEAN AND PRIME SUBSTRATE SURFACES TO RECEIVE ADHESIVES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. G. INSTALLATION
- 1. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 2. AIR BARRIERS: INSTALL CONTINUOUS AIR TIGHT BARRIER OVER SURFACES INDICATED, WITH SEALED SEAMS AND WITH SEALED JOINTS TO ADJACENT SURFACES. 3. PREPARE SUBSTRATE IN MANNER RECOMMENDED BY COATING MANUFACTURER; TREAT JOINTS IN SUBSTRATE AND BETWEEN DISSIMILAR MATERIALS AS RECOMMENDED BY MANUFACTURER. 4. MASTIC COATING: INSTALL BY TROWEL OR ROLLER TO MINIMUM THICKNESS OF 1/4 INCH; USE SHEET SEAL TO JOIN TO ADJACENT CONSTRUCTION, SEAL AIR TIGHT WITH SEALANT.
- 5. USE FLASHING TO SEAL TO ADJACENT CONSTRUCTION AND TO BRIDGE JOINTS. 6. INSTALL FLASHING OVER SILLS. COVERING ENTIRE SILL FRAME MEMBER. EXTENDING AT LEAST 5 INCHES ONTO WEATHER BARRIER AND AT LEAST 6 INCHES UP JAMBS; MECHANICALLY FASTEN STRETCHED EDGES. 7. AT OPENINGS TO BE FILLED WITH FRAMES HAVING NAILING FLANGES, SEAL HEAD AND JAMB FLANGES USING A
- CONTINUOUS BEAD OF SEALANT COMPRESSED BY FLANGE AND COVER FLANGES WITH SEALING TAPE AT LEAST 4 INCHES WIDE; DO NOT SEAL SILL FLANGE. 8. AT OPENINGS TO BE FILLED WITH NON-FLANGED FRAMES, SEAL WEATHER BARRIER TO EACH SIDE OF OPENING FRAMING, USING FLASHING AT LEAST 9 INCHES WIDE, COVERING ENTIRE DEPTH OF FRAMING.
- 9. AT HEAD OF OPENINGS. INSTALL FLASHING UNDER WEATHER BARRIER EXTENDING AT LEAST 2 INCHES BEYOND FACE OF JAMBS; SEAL WEATHER BARRIER TO FLASHING. 10. AT INTERIOR FACE OF OPENINGS, SEAL GAP BETWEEN WINDOW/DOOR FRAME AND ROUGH FRAMING, USING JOINT SEALANT OVER BACKER ROD.

07 4643 - ENGINEERED SIDING

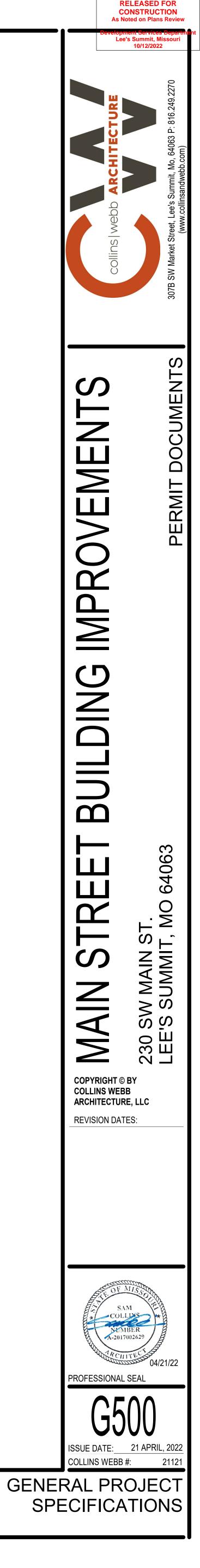
A. SUBMITTALS: PRODUCT DATA, AND SAMPLES OF LOCATIONS FOR EACH TYPE OF SIDING

- . VERTICAL SIDING, LP SMARTSIDE PANEL SIDING. CEDAR TEXTURE PANEL 2. HORIZONTAL SIDING, LP SMARTSIDE LAP SIDING, CEDAR TEXTURE LAP.
- 3. SOFFIT, VENTED / NONVENTED, LP SMARTSIDE SOFFIT. CEDAR TEXTURE. 1. EXTERIOR TRIM SHALL BE LOUISIANA-PACIFIC SMARTSIDE TRIM-FASCIA TREATED ENGINEERED WOOD TRIM OR APPROVED EQUAL, UNLESS OTHERWISE INDICATED, IN SIZES INDICATED ON THE
- DRAWINGS 2. CELLULAR PVC TRIM SHALL BE AS MANUFACTURED BY AZEK BUILDING PRODUCTS OR APPROVED EQUAL. GLUED-UP MEMBERS SHALL BE GLUED WITH MANUFACTURER'S STANDARD ADHESIVE TO CREATE A CHEMICAL BOND AND CUT TO SHAPES INDICATED.
- D. INSTALLATION 1. GENERAL: INSTALL PRODUCTS IN ACCORDANCE WITH THE LATEST IM TION GUIDELINES OF THE MANUFACTURER AND ALL APPLICABLE BUILDING CODES AND OTP' ' ES REGULATIONS AND ORDINANCES. REVIEW ALL MANUFACTURER INSTALLATION, M <sup>`</sup>ICTIONS, AND OTHER APPLICABLE DOCUMENTS BEFORE INSTALLATION.
- 07 3113 ASPHALT SHINGLES & ACCESSOP" A. SUBMITTALS: PRODUCT DATA, AND
- B. WARRANTY: STANDARD FC JURER AGREES TO REPAIR OR REPLACE ASPHALT SHINGLES THAT FAIL IN M 1NSHIP WITHIN SPECIFIED WARRANTY PERIOD. 1. MATERIAL WARRANT) ROM DATE OF SUBSTANTIAL COMPLETION, PRORATED, WITH FIRST FIVE YE FROM DATE OF SUBSTANTIA, JOMPLETION.

JUUCT AND COLOR OPTIONS.

C. BASIS OF DESIGN: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE TIMBERLINE 30 SHINGLES AS MANUFACTURED BY GAF ROOFING PRODUCTS OR APPROVED EQUAL WITH GRANULES TREATED TO RESIST ALGAE DISCOLORATION. COLOR SHALL BE SELECTED BY THE ARCHITECT.

- D. MATERIALS: I. LAMINATED-STRIP ASPHALT SHINGLES: ASTM D 3462, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION. GLASS-FIBER REINFORCED, MINERAL-GRANULE SURFACED, AND SELF-SEALING.
- 2. FELT: ASTM D 226, TYPE I, ASPHALT-SATURATED ORGANIC FELTS, NONPERFORATED. 3. SELF-ADHERING SHEET UNDERLAYMENT, POLYETHYLENE FACED: ASTM D 1970/D 1970M, MINIMUM OF 40-MIL- (1.0-MM-) THICK, SLIP-RESISTING, POLYETHYLENE-FILM-REINFORCED TOP SURFACE LAMINATED TO SBS-MODIFIED ASPHALT ADHESIVE, WITH RELEASE BACKING; COLD APPLIED. PREFERED PRODUCT
- GRACE CONSTRUCTION PRODUCTS, ICE AND WATER SHIELD E. ACCESSORIES: 1. ASPHALT ROOFING CEMENT: ASTM D 4586, TYPE II, ASBESTOS FREE. 2. ROOFING NAILS: ASTM F 1667; ALUMINUM OR HOT-DIP GALVANIZED-STEEL WIRE SHINGLE NAILS, MINIMUM 0.120-INCH DIAMETER, BARBED SHANK, SHARP-POINTED, WITH A MINIMUM 3/8-INCH
- DIAMETER FLAT HEAD AND OF SUFFICIENT LENGTH TO PENETRATE AT LEAST 1/8 INCH THROUGH THE ROOF SHEATHING. WHERE NAILS ARE IN CONTACT WITH METAL FLASHING, USE NAILS MADE FROM SAME METAL AS FLASHING 3. FELT UNDERLAYMENT NAILS: ALUMINUM, STAINLESS-STEEL, OR HOT-DIP GALVANIZED-STEEL WIRE WITH
- LOW-PROFILE CAPPED HEADS OR DISC CAPS, 1-INCH MINIMUM DIAMETER. 4. FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, METAL, AND OTHER CHARACTERISTICS OF THE ITEM. PREFERED MATERIALS:SHEET METAL: PREFINISHED ALUMINUM.
- F. INSTALLATION: 1.INSTALL ASPHALT SHINGLES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, RECOMMENDATIONS IN ARMA'S "RESIDENTIAL ASPHALT ROOFING MANUAL," AND ASPHALT SHINGLE RECOMMENDATIONS IN NRCA'S "THE NRCA ROOFING AND WATERPROOFING MANUAL."
- 2. INSTALL STARTER STRIP ALONG LOWEST ROOF EDGE, CONSISTING OF AN ASPHALT SHINGLE STRIP AT LEAST 7 INCHES WIDE WITH SELF-SEALING STRIP FACE UP AT ROOF EDGE. INSTALL STARTER STRIP ALONG RAKE EDGE. 3. EXTEND ASPHALT SHINGLES 3/8 INCH OVER FASCIA AT EAVES AND RAKES. 4. INSTALL FIRST AND REMAINING COURSES OF ASPHALT SHINGLES STAIR-STEPPING DIAGONALLY ACROSS ROOF
- DECK WITH MANUFACTURER'S RECOMMENDED OFFSET PATTERN AT SUCCEEDING COURSES, MAINTAINING UNIFORM EXPOSURE 5. FASTEN ASPHALT SHINGLE STRIPS WITH ROOFING NAILS LOCATED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. WHEN AMBIENT TEMPERATURE DURING INSTALLATION IS BELOW 50 DEG F, SEAL ASPHALT
- SHINGLES PER APPROVED MANUFACTURER INSTALLATION RECOMMENDATIONS. 6. HIP AND RIDGE CAP SHINGLES: MAINTAIN SAME EXPOSURE OF HIP AND RIDGE CAP SHINGLES AS ROOFING SHINGLE EXPOSURE. LAP RIDGE CAP SHINGLES TO SHED WATER AWAY FROM DIRECTION OF PREVAILING WINDS. FASTEN WITH ROOFING NAILS OF SUFFICIENT LENGTH TO PENETRATE SHEATHING.



- 07 5423 EPDM MEMBRANE ROOFING & ACCESSORIES SUBMITTALS: PRODUCT DATA, AND SHOP DRAWINGS: INDICATE JOINT OR TERMINATION DETAIL CONDITIONS, CONDITIONS OF INTERFACE WITH OTHER MATERIALS, AND PAVER OR WALKWAY PAD LAYOUT. 1. MANUFACTURER'S FIELD REPORTS: INDICATE PROCEDURES FOLLOWED, AMBIENT TEMPERATURES, HUMIDITY, WIND VELOCITY DURING APPLICATION, AND SUPPLEMENTARY INSTRUCTIONS GIVEN. SUBMIT FINAL MANUFACTURER'S PUNCH -LIST FIELD REPORT WHEN COMPLETE SYSTEM IS INSTALLED. 2. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE MEMBRANE SEAMING PRECAUTIONS AND
- PERIMETER CONDITIONS REQUIRING SPECIAL ATTENTION. 1. MATERIAL WARRANTY: PROVIDE MEMBRANE MANUFACTURER'S WARRANTY AGREEING TO REPLACE MATERIAL
- THAT SHOWS MANUFACTURING DEFECTS WITHIN 10 YEARS AFTER INSTALLATION. 2. SYSTEM WARRANTY: PROVIDE MANUFACTURER'S SYSTEM WARRANTY AGREEING TO REPAIR OR REPLACE ROOFING THAT LEAKS OR IS DAMAGED DUE TO WIND OR OTHER NATURAL CAUSES. WARRANTY TERM: 20 YEARS. A. FOR REPAIR AND REPLACEMENT INCLUDE COSTS OF BOTH MATERIAL AND LABOR IN WARRANTY. B. INCLUDE ACCIDENTAL PUNCTURES ACCORDING TO THE MANUFACTURER'S STANDARD WARRANTY TERMS. C. INCLUDE HAIL DAMAGE ACCORDING TO THE MANUFACTURER'S STANDARD WARRANTY TERMS. D. EXCEPTIONS NOT PERMITTED: DAMAGE DUE TO ROOF TRAFFIC. DAMAGE DUE TO WIND OF SPEED GREATER THAN 56 MPH BUT LESS THAN 90 MPH.
- . <u>BASIS OF DESIGN</u>: FIRESTONE RUBBERGARD™ EPDM MEMBRANE ,WWW.FIRESTONEBPCO.COM . WIND UPLIFT: DESIGNED TO WITHSTAND WIND UPLIFT FORCES CALCULATED WITH ASCE 7. 2. INSULATION THERMAL RESISTANCE (R-VALUE): 3 PER INCH, MINIMUM; PROVIDE INSULATION OF THICKNESS REQUIRED. MINIMUM R-20
- ). <u>ROOFING MEMBRANE MATERIALS</u> 1. MATERIAL: RUBBERGARD EPDN
- A. B. THICKNESS: 60 MILS (0.060 INCH), MINIMUM. C. SHEET WIDTH: FACTORY FABRICATED INTO LARGEST SHEETS POSSIBLE.
- D. PRODUCT: FULLY ADHERED 2. SEAMING MATERIALS: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 3. VAPOR RETARDER: MATERIAL APPROVED BY ROOF MANUFACTURER COMPLYING WITH REQUIREMENTS OF FIRE
- RATING CLASSIFICATION; COMPATIBLE WITH ROOFING AND INSULATION MATERIALS. INSTALL WITH FIRE-RETARDANT ADHESIVE. 4. FLEXIBLE FLASHING MATERIAL: SAME MATERIAL AS MEMBRANE.
- 5. BASE FLASHING: PROVIDE WATERPROOF, FULLY ADHERED BASE FLASHING SYSTEM AT ALL PENETRATIONS, PLANE TRANSITIONS, AND TERMINATIONS.
- .. <u>DECK SHEATHING AND COVER BOARDS:</u> IF SHEATHING OR COVER BOARD IS REFERENCED IN THE DRAWINGS, PROVIDE PRODUCTS COMPLYING WITH 1. DECK SHEATHING: GYPSUM SHEATHING, ASTM C1396/C1396M, TYPE X SPECIAL FIRE RESISTANT TYPE 2. COVERBOARD: CEMENT ROOF BOARD, COMPLYING WITH ASTM C1325.
- 1. INSULATION COMPLYING WITH MANUFACTURERES RECOMMENDATIONS.
- 2. CELLULOSE FIBER BOARD INSULATION: ASTM C208, TYPE II; NATURAL FINISH. 3. EXPANDED POLYSTYRENE (EPS) BOARD INSULATION: COMPLIES WITH ASTM C578 WITH DRAINAGE CHANNELS ON
- ONF FACE 4. TAPERED BOARD: SLOPE AS INDICATED; MINIMUM THICKNESS 1/2 INCH; FABRICATE OF FEWEST LAYERS 5. EXTRUDED POLYSTYRENE (XPS) BOARD INSULATION: COMPLIES WITH ASTM C578 WITH NATURAL SKIN SURFACE,
- DRAINAGE CHANNELS ON ONE FACE. 1. PROVIDE AND INSTALL ONLY ACCESSORIES WHICH COMPLY WITH MANUFACTURERS RECOMMENDATIONS.
- 2. PROVIDE FIRESTONE PREFINISHED FLASHINGS AND COPINGS FOR ITEMS NOTES IN DRAWING DETAILS.
- 1. VERIFY THAT SURFACES AND SITE CONDITIONS ARE READY TO RECEIVE WORK. 2. VERIFY DECK IS SUPPORTED AND SECURE.
- INCHES WIDE WITH SELF-SEALING STRIP FACE UP AT ROOF EDGE. INSTALL STARTER STRIP ALONG RAKE EDGE. 3. VERIFY DECK IS CLEAN AND SMOOTH, FLAT, FREE OF DEPRESSIONS, WAVES, OR PROJECTIONS, PROPERLY SLOPED AND SUITABLE FOR INSTALLATION OF ROOF SYSTEM.
- 4. VERIFY DECK SURFACES ARE DRY AND FREE OF RAIN, SNOW OR ICE. 5. VERIFY THAT ROOF OPENINGS, CURBS, AND PENETRATIONS THROUGH ROOF ARE SOLIDLY SET, AND CANT STRIPS ARE IN PLACE.
- 6. CLEAN SUBSTRATE THOROUGHLY PRIOR TO ROOF APPLICATION. 7. DO NOT BEGIN WORK UNTIL OTHER WORK THAT REQUIRES FOOT OR EQUIPMENT TRAFFIC ON ROOF IS
- COMPLETE 8. APPLY MANUFACTURER'S RECOMMENDED VAPOR RETARDER OR TEMPORARY ROOF BEFORE ROOF
- INSTALLATION. 9. PERFORM WORK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NRCA (RM) APPLICABLE
- REQUIREMENTS 10. REMOVE WRAPPINGS, EMPTY CONTAINERS, PAPER, AND OTHER DEBRIS FROM THE ROOF DAILY. DISPOSE OF DEBRIS IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. 11. REMOVE BITUMINOUS MARKINGS FROM FINISHED SURFACES.
- 12. IN AREAS WHERE FINISHED SURFACES ARE SOILED BY WORK OF THIS SECTION, CONSULT MANUFACTURER OF SURFACES FOR CLEANING ADVICE AND CONFORM TO THEIR DOCUMENTED INSTRUCTIONS. 13. REPAIR OR REPLACE DEFACED OR DAMAGED FINISHES CAUSED BY WORK OF THIS SECTION.
- PROTECTION:
   1. PROTECT INSTALLED ROOFING AND FLASHINGS FROM CONSTRUCTION OPERATIONS. 2. WHERE TRAFFIC MUST CONTINUE OVER FINISHED ROOF MEMBRANE, PROTECT SURFACES USING DURABLE MATERIALS.

## 07 6200 - SHEET METAL FLASHING AND TRIM

- FABRICATED SHEET METAL ITEMS, INCLUDING FLASHINGS, COUNTERFLASHINGS, AND OTHER ITEMS INDICATED IN SCHEDULE.
- AAMA 611 VOLUNTARY SPECIFICATION FOR ANODIZED ARCHITECTURAL ALUMINUM 2014 (2015 ERRATA). ASTM C920 - STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS 2018. CDA A4050 - COPPER IN ARCHITECTURE - HANDBOOK CURRENT EDITION.
- SMACNA (ASMM) ARCHITECTURAL SHEET METAL MANUAL 2012.
- 1. SHOP DRAWINGS: INDICATE MATERIAL PROFILE, JOINTING PATTERN, JOINTING DETAILS, FASTENING METHODS, FLASHINGS, TERMINATIONS, AND INSTALLATION DETAILS.
- C. QUALITY ASSURANCE PERFORM WORK IN ACCORDANCE WITH SMACNA (ASMM) AND CDA A4050 REQUIREMENTS AND STANDARD DETAILS, EXCEPT AS OTHERWISE INDICATED.
- <u>D. DELIVERY, STORAGE, AND HANDLING</u> 1. STACK MATERIAL TO PREVENT TWISTING, BENDING, AND ABRASION, AND TO PROVIDE VENTILATION. SLOPE METAL SHEETS TO ENSURE DRAINAGE. 2. PREVENT CONTACT WITH MATERIALS THAT COULD CAUSE DISCOLORATION OR STAINING.
- <u>E. PRODUCTS</u> PRE-FINISHED ALUMINUM: ASTM B209 (ASTM B209M); 20 GAGE, (0.032 INCH) THICK; PLAIN FINISH
- SHOP PRE-COATED WITH MODIFIED SILICONE COATING. 1. FLUOROPOLYMER COATING: HIGH PERFORMANCE ORGANIC FINISH, AAMA 2604; MULTIPLE COAT, THERMALLY CURED FLUOROPOLYMER FINISH SYSTEM.
- 2. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.
- 1. FORM SECTIONS TRUE TO SHAPE, ACCURATE IN SIZE, SQUARE, AND FREE FROM DISTORTION OR DEFECTS. 2. FORM PIECES IN LONGEST POSSIBLE LENGTHS. 3. HEM EXPOSED EDGES ON UNDERSIDE 1/2 INCH; MITER AND SEAM CORNERS.
- 4. FORM MATERIAL WITH FLAT LOCK SEAMS, EXCEPT WHERE OTHERWISE INDICATED; AT MOVING JOINTS, USE SEALED LAPPED, BAYONET-TYPE OR INTERLOCKING HOOKED SEAMS. 5. FABRICATE FLASHINGS TO ALLOW TOE TO EXTEND 2 INCHES OVER ROOFING GRAVEL. RETURN AND BRAKE
- ACCESSORIES

EDGES

- FASTENERS: GALVANIZED STEEL, WITH SOFT NEOPRENE WASHERS. 2. PRIMER: ZINC CHROMATE TYPE.
- 3. CONCEALED SEALANTS: NON-CURING BUTYL SEALANT. 4. EXPOSED SEALANTS: ASTM C920: ELASTOMERIC SEALANT, WITH MINIMUM MOVEMENT CAPABILITY AS 5. RECOMMENDED BY MANUFACTURER FOR SUBSTRATES TO BE SEALED; COLOR TO MATCH ADJACENT MATERIAL.
- . SECURE FLASHINGS IN PLACE USING CONCEALED FASTENERS, AND USE EXPOSED FASTENERS ONLY WHERE PERMITTED
- 2. APPLY PLASTIC CEMENT COMPOUND BETWEEN METAL FLASHINGS AND FELT FLASHINGS. 3. FIT FLASHINGS TIGHT IN PLACE; MAKE CORNERS SQUARE, SURFACES TRUE AND STRAIGHT IN PLANES, AND LINES ACCURATE TO PROFILES. 4. SEAL METAL JOINTS WATERTIGHT

- 07 8100 APPLIED FIREPROOFING A. SUBMITTALS: PRODUCT DATA: PROVIDE DATA INDICATING PRODUCT CHARACTERISTICS.
- . TEST REPORTS: REPORTS FROM REPUTABLE INDEPENDENT TESTING AGENCIES FOR PROPOSED PRODUCTS, INDICATING COMPLIANCE WITH SPECIFIED CRITERIA. CONDUCTED UNDER CONDITIONS SIMILAR TO THOSE ON PROJECT, AS FOLLOWS: A BOND STRENGTH
- B. BOND IMPACT. C. COMPRESSIVE STRENGTH
- D. FIRE TESTS USING SUBSTRATE MATERIALS SIMILAR THOSE ON PROJECT. 2. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE SPECIAL PROCEDURES. 3. MANUFACTURER'S QUALIFICATION STATEMENT.
- DO NOT APPLY FIREPROOFING WHEN TEMPERATURE OF SUBSTRATE MATERIAL AND SURROUNDING AIR IS BELOW 40 DEGREES F OR WHEN TEMPERATURE IS PREDICTED TO BE BELOW SAID TEMPERATURE FOR 24 HOURS AFTER APPLICATION. 2. PROVIDE VENTILATION IN AREAS TO RECEIVE FIREPROOFING DURING APPLICATION AND 24 HOURS AFTERWARD,
- TO DRY APPLIED MATERIAL. 3. PROVIDE TEMPORARY ENCLOSURE TO PREVENT SPRAY FROM CONTAMINATING AIR.
- . CORRECT DEFECTIVE WORK WITHIN A TWO YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION. A. INCLUDE COVERAGE FOR FIREPROOFING TO REMAIN FREE FROM CRACKING, CHECKING, DUSTING, FLAKING, SPALLING, SEPARATION, AND BLISTERING. B. REINSTALL OR REPAIR FAILURES THAT OCCUR WITHIN WARRANTY PERIOD.
- 1. GCP APPLIED TECHNOLOGIES : WWW.GCPAT.COM/FIREPROOFING 2. ISOLATEK INTERNATIONAL CORP : WWW.ISOLATEK.COM 3. SOUTHWEST FIREPROOFING PRODUCTS COMPANY : WWW.S
- . PROVIDE ASSEMBLIES AS INDICATED ON DRAWING? 2. PROVIDE FIRE RESISTANCE RATINGS FOR FOL CODE: A. PRIMARY STRUCTURAL FRAME, INCL<sup>11</sup> B BEARING WALLS INTERIOR 11 HO MIS AND JOISTS: [1 HOUR]. C. FLOOR CONSTRUCTION, INCL '
- JEAMS AND JOISTS: [1HOUR]. D. ROOF CONSTRUCTION, INC . MATERIALS: APPLIED FIR STANDARD FACTORY MIXED N INDICATED FIRE RESISTANCE AND 21 YING WITH FOLLOWING REQUIREMENTS 1. COMPOSITION: GYPSUM-BASED: NOT MINERAL-FIBER-BASED.
- 2. BOND STRENGTH: 150 POUNDS PER SQUARE FOOT, MINIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E736/E736M WHEN SET AND DRY. 3. DRY DENSITY: AS REQUIRED BY FIRE RESISTANCE DESIGN.
- 4. COMPRESSIVE STRENGTH: 8.33 POUNDS PER SQUARE INCH, MINIMUM. 5. EFFECT OF IMPACT ON BONDING: NO CRACKING, SPALLING OR DELAMINATION, WHEN TESTED IN ACCORDANCE
- WITH ASTM E760/E760M. 6. CORROSIVITY: NO EVIDENCE OF CORROSION, WHEN TESTED IN ACCORDANCE WITH ASTM E937/E937M. 7. SURFACE BURNING CHARACTERISTICS: MAXIMUM FLAME SPREAD INDEX OF 0 (ZERO) AND MAXIMUM SMOKE DEVELOPED INDEX OF 0 (ZERO), WHEN TESTED IN ACCORDANCE WITH ASTM E84.
- 1. PRIMER ADHESIVE: OF TYPE RECOMMENDED BY APPLIED FIREPROOFING MANUFACTURER. 2. OVERCOAT: AS RECOMMENDED BY MANUFACTURER OF APPLIED FIREPROOFING MATERIAL. 3. METAL LATH: EXPANDED METAL LATH; MINIMUM WEIGHT OF 1.7 PSF, GALVANIZED FINISH. 4. WATER: CLEAN, POTABLE.
- 1. VERIFY THAT SURFACES ARE READY TO RECEIVE FIREPROOFING. 2. VERIFY THAT DUCTS, PIPING, EQUIPMENT, OR OTHER ITEMS THAT WOULD INTERFERE WITH APPLICATION OF
- FIREPROOFING HAVE NOT BEEN INSTALLED. 3. VERIFY THAT VOIDS AND CRACKS IN SUBSTRATE HAVE BEEN FILLED. 4. VERIFY THAT PROJECTIONS HAVE BEEN REMOVED WHERE FIREPROOFING WILL BE EXPOSED TO VIEW AS A
- FINISH MATERIAL 5. PERFORM TESTS AS RECOMMENDED BY FIREPROOFING MANUFACTURER IN APPLICATIONS WHERE ADHESION OF
- FIREPROOFING TO SUBSTRATE IS IN QUESTION. 6. REMOVE INCOMPATIBLE MATERIALS THAT COULD EFFECT BOND BY SCRAPING, BRUSHING, SCRUBBING, OR
- SANDBLASTING. 7. PREPARE SUBSTRATES TO RECEIVE FIREPROOFING IN STRICT ACCORDANCE WITH INSTRUCTIONS OF FIREPROOFING MANUFACTURER.
- 8. APPLY FIREPROOFING MANUFACTURER'S RECOMMENDED BONDING AGENT ON PRIMED STEEL. INSTALL METAL LATH OVER STRUCTURAL MEMBERS AS INDICATED OR AS RE
- NUMBERS 10. APPLY FIREPROOFING IN UNIFORM THICKNESS AND DENSITY AS NECESSARY TO ACHIEVE REQUIRED RATINGS. 11. INSPECT INSTALLED FIREPROOFING AFTER APPLICATION AND CURING FOR INTEGRITY, PRIOR TO ITS
- CONCEALMENT. 2. ENSURE THAT ACTUAL THICKNESSES, DENSITIES, AND BOND STRENGTHS MEET REQUIREMENTS FOR SPECIFIED
- RATINGS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ). 13. REMOVE EXCESS MATERIAL, OVERSPRAY, DROPPINGS, AND DEBRIS. 14. REMOVE FIREPROOFING FROM MATERIALS AND SURFACES NOT REQUIRED TO BE FIREPROOFED.
- 07 8400 FIRESTOPPING A. SUBMITTALS: PRODUCT DATA: PROVIDE DATA ON PRODUCT CHARACTERISTICS, PERFORMANCE RATINGS, AND

## B. MANUFACTURERS 1. 3M FIRE PROTECTION PRODUCTS: WWW.3M.COM/FIRESTOP.COM 2. HILTI, INC : WWW.US.HILTI.COM

- . FIRESTOPPING MATERIALS: ANY MATERIALS MEETING REQUIREMENTS. 2. PRIMERS, SLEEVES, FORMS, INSULATION, PACKING, STUFFING, AND ACCESSORIES: PROVIDE TYPE OF MATERIALS AS REQUIRED FOR TESTED FIRESTOPPING ASSEMBLY. 3. FIRE RATINGS: REFER TO DRAWINGS FOR REQUIRED SYSTEMS AND RATINGS.
- D. <u>ASSEMBLY REQUIREMENTS</u> . HEAD-OF-WALL JOINT SYSTEM FIRESTOPPING AT JOINTS BETWEEN FIRE-RATED WALL ASSEMBLIES AND NON-RATED HORIZONTAL ASSEMBLIES: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E2837 TO HAVE FIRE RESISTANCE F RATING EQUAL TO REQUIRED FIRE RATING OF FLOOR OR WALL, WHICHEVER IS GREATER. 2. FLOOR-TO-FLOOR, WALL-TO-WALL, AND WALL-TO-FLOOR JOINTS, EXCEPT PERIMETER, WHERE BOTH ARE FIRE-
- RATED: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E1966 OR UL 2079 TO HAVE FIRE RESISTANCE F RATING EQUAL TO REQUIRED FIRE RATING OF THE ASSEMBLY IN WHICH THE JOINT OCCURS. 3.THROUGH PENETRATION FIRESTOPPING: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E814 TO HAVE FIRE RESISTANCE F RATING EQUAL TO REQUIRED FIRE RATING OF PENETRATED ASSEMBLY.
- . INSTALLATIONS SHALL CONFORM TO UL REQUIREMENTS OF THE ASSEMBLY WHICH FIRESTOPPING IS TO BECOME PART OF THE BUILT ASSEMBLY.

# 07 9200 - JOINT SEALANTS

- A. <u>SUBMITTALS</u>: PRODUCT DATA, AND SCHEDULE OF LOCATIONS FOR EACH TYPE OF SEALANT SUBMITTED. B. JOINT-SEALANT SCHEDULE: INCLUDE THE FOLLOWING INFORMATION: 1. JOINT-SEALANT APPLICATION, JOINT LOCATION, AND DESIGNATION. 2. JOINT-SEALANT MANUFACTURER AND PRODUCT NAME. 3. JOINT-SEALANT FORMULATION. 4. JOINT-SEALANT COLOR.
- C. ENVIRONMENTAL LIMITATIONS: DO NOT PROCEED WITH INSTALLATION OF JOINT SEALANTS WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY JOINT SEALANT MANUFACTURER OR ARE BELOW 40 deg F (4.4 deg C).
- D. <u>COMPATIBILITY</u>: PROVIDE JOINT SEALANTS, JOINT FILLERS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER SERVICE AND APPLICATION CONDITIONS.

# E. JOINT SEALANTS:

- 1. COLORS OF EXPOSED JOINT SEALANTS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. 2. INTERIOR JOINTS IN CERAMIC TILE AND OTHER HARD SURFACES IN KITCHENS, TOILET ROOMS, AND AROUND PLUMBING FIXTURES: SINGLE COMPONENT, MILDEW-RESISTANT SILICONE SEALANT, ASTM C 920, TYPE S; GRADE NS. CLASS 25: USES NT. G. A. AND O: FORMULATED WITH FUNGICIDE.
- 3. INTERIOR JOINTS AROUND PERIMETERS OF DOORS AND FRAMES: LATEX SEALANT, SINGLE COMPONENT, NONSAG, MILDEW-RESISTANT, PAINTABLE, ACRYLIC EMULSION SEALANT COMPLYING WITH ASTM C 834.
- 4. ACOUSTICAL SEALANT FOR EXPOSED INTERIOR JOINTS: NONSAG, PAINTABLE, NONSTAINING, LATEX SEALANT COMPLYING WITH ASTM C 834. 5. ACOUSTICAL SEALANT FOR CONCEALED JOINTS: NONDRYING, NONHARDENING, NONSKINNING, NONSTAINING,
- GUNNABLE, SYNTHETIC-RUBBER SEALANT RECOMMENDED FOR SEALING INTERIOR CONCEALED JOINTS TO REDUCE TRANSMISSION OF AIRBORNE SOUND. 6. EXTERIOR CONCRETE PANELS, NATURAL STONES, MASONRY, ALUMINUM CURTAINWALLS, METAL PANELS AND
- WINDOW PERIMETERS. BASIS OF DESIGN PRODUCTS A. TREMCO INCORPORATED: SPECTREM 1.
- B. DOW CORNING CORPORATION; 790. C. PECORA CORPORATION; 890NST.
- 7. EXTERIOR JOINTS IN HORIZONTAL TRAFFIC SURFACES. ISOLATION AND CONTRACTION JOINTS IN CAST-IN-PLACE CONCRETE SLABS. URETHANE JOINT SEALANT: MULTICOMPONENT, NONSAG, TRAFFIC GRADE, CLASS 25.
- INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING 2. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, TYPE C (CLOSED-CELL MATERIAL WITH A SURFACE
- OPTIMUM SEALANT PERFORMANCE. 3. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MANUFACTURER FOR PREVENTING SEALANT FROM ADHERING TO RIGID. INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT. PROVIDE SELF-ADHESIVE TAPE WHERE APPLICABLE.
- . MISCELLANEOUS MATERIALS PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-
- SUBSTRATE TESTS AND FIELD TESTS. 2. CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS, FREE OF OILY RESIDUES OR OTHER SUBSTANCES CAPABLE OF STAINING OR HARMING JOINT SUBSTRATES AND ADJACENT NONPOROUS SURFACES IN ANY WAY, AND
- FORMULATED TO PROMOTE OPTIMUM ADHESION OF SEALANTS TO JOINT SUBSTRATES. 3. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MFR. FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT 4. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES
- ADJACENT TO JOINTS. 3. INSTALLATION: COMPLY WITH ASTM C 1193; ASTM C 919 FOR ACOUSTICAL JOINTS; AND AS FOLLOWS: 1. REMOVE ALL LOOSE MATERIAL CLEAN AND PRIME JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND PROTECT ADJACENT SURFACES. 2. INSTALL BOND-BREAKER TAPE WHERE JOINT BACKINGS ARE NOT USED. 3. INSTALL SEALANT TOOLED CONCAVE, FREE OF AIR POCKETS, FOREIGN EMBEDDED MATTER, RIDGES, AND SAGS,
- AND PROTECT UNTIL FULLY CURED. SEALANT WITH DUST AND DEBRIS EMBEDDED IN SURFACE SHALL BE CAUSE FOR REJECTION.



ITS AS REQUIRED BY LOCAL BUILDING S. AND TRUSSES: [1 HOUR].

.\_ FOR INTERIOR APPLICATIONS, CONCEALED: MANUFACTURER'S AHICH WHEN COMBINED WITH WATER IS CAPABLE OF PROVIDING

GENERAL: PROVIDE SEALANT BACKINGS OF MATERIAL THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; AND ARE APPROVED FOR APPLICATIONS SKIN), AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING

DIVISION 8 - OPENINGS

08 0671 - DOOR HARDWARE A. SUBMITTALS: PRODUCT DATA AND HARDWARE SCHEDULE INDICATING HARDWARE ITEM, FINISH, AND QUANTITY LOCATED ON EACH DOOR WITH DOOR AND HARDWARE SET NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS. REFER TO ARCHITECTURAL PLANS AND HARDWARE SCHEDULES PROVIDED. 1. HARDWARE SUPPLIER SHALL SUBMIT FOUR COPIES OF FINAL HARDWARE SCHEDULE AT EARLIEST POSSIBLE DATE PARTICULARLY WHERE ACCEPTANCE OF HARDWARE SCHEDULE MUST PRECEDE FABRICATION OF OTHER WORK WHICH IS CRITICAL IN THE PROJECT CONSTRUCTION SCHEDULE. INCLUDE WITH SCHEDULE SHOP DRAWINGS OF OTHER WORK AFFECTED BY BUILDERS HARDWARE, AND OTHER INFORMATION ESSENTIAL TO THE

COORDINATE REVIEW OF HARDWARE SCHEDULE. 2. KEYING SCHEDULE. SUBMIT SEPARATE DETAILED SCHEDULE INDICATING CLEARLY HOW THE OWNER'S FINAL INSTRUCTIONS ON KEYING OF LOCKS HAS BEEN FULFILLED. ALL KEYING SHALL BE COORDINATED WITH THE

B. PRODUCTS: REFER TO HARDWARE SCHEDULE AND ARCHITECTURAL DRAWINGS. 1. STRIKES. PROVIDE MANUFACTURER'S STANDARD WROUGHT BOX STRIKE FOR EACH LATCH OR LOCK BOLT, WITH CURVED LIP EXTENDED TO PROTECT FRAME. FINISH TO MATCH HARDWARE SET. PROVIDE STANDARD (OPEN) STRIKE PLATES FOR INTERIOR DOORS WHERE WOOD DOOR FRAMES ARE USED. 2. IN GENERAL, HARDWARE FINISH SHALL BE US15 (SATIN NICKEL) UNLESS SPECIFIED DIFFERENTLY ON HARDWARE SCHEDULE

3. SUPPLY CAL ROYAL HDFS3 FLEXIBLE DOOR STOPS IN THE APARTMENT DWELLING UNITS. USE 2 IVHP-23 HINGE STOPS WHERE FLEXIBLE STOPS CANNOT BE USED. 4. SUPPLY OUT SWINGING EXTERIOR DOORS WITH NON REMOVABLE PINS.

C. INSTALLATION: 1. MOUNT HARDWARE UNITS AT HEIGHTS INDICATED IN "RECOMMENDED LOCATIONS FOR BUILDERS HARDWARE FOR STANDARD STEEL DOORS AND FRAMES" BY THE DOOR AND HARDWARE INSTITUTE, EXCEPT AS SPECIFICALLY INDICATED OR REQUIRED TO COMPLY WITH GOVERNING REGULATIONS, AND EXCEPT AS MAY BE OTHERWISE DIRECTED BY ARCHITECT. MOUNT HARDWARE IN UNITS DESIGNATED FOR USE BY THE HANDICAPPED AT HEIGHTS RECOMMENDED FOR USE BY THE HANDICAPPED. 2. INSTALL EACH HARDWARE ITEM IN COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. WHEREVER CUTTING AND FITTING IS REQUIRED TO INSTALL HARDWARE ONTO OR INTO

SURFACES WHICH ARE LATER TO BE PAINTED OR FINISHED IN ANOTHER WAY, COORDINATE REMOVAL, STORAGE REINSTALLATION OR APPLICATION OF SURFACE PROTECTIONS WITH FINISHING WORK SPECIFIED IN THE DIVISION 9 SECTIONS. DO NOT INSTALL SURFACE MOUNTED ITEMS UNTIL FINISHES HAVE BEEN COMPLETED ON THE SUBSTRATE.

3. SET UNITS LEVEL, PLUMB AND TRUE TO LINE AND LOCATION. ADJUST AND REINFORCE THE ATTACHMENT SUBSTRATE AS NECESSARY FOR PROPER INSTALLATION AND OPERATION. 4.DRILL AND COUNTERSINK UNITS WHICH ARE NOT FACTORY PREPARED FOR ANCHORAGE FASTENERS. SPACE FASTENERS AND ANCHORS IN ACCORDANCE WITH INDUSTRY STANDARDS. 5.METAL THRESHOLDS SHALL BE SET IN A SOLID BED OF NON STAINING THIOKOL BASE CAULKING. 6. ADJUST AND CHECK EACH OPERATING ITEM OF HARDWARE AND EACH DOOR, TO ENSURE PROPER OPERATION

OR FUNCTION OF EVERY UNIT. REPLACE UNITS WHICH CANNOT BE ADJUSTED TO OPERATE FREELY AND SMOOTHLY AS INTENDED FOR THE APPLICATION MADE. 7.FINAL ADJUSTMENT: WHEREVER HARDWARE INSTALLATION IS MADE MORE THAN ONE MONTH PRIOR TO ACCEPTANCE OR OCCUPANCY OF A SPACE OR AREA, RETURN TO THE WORK DURING THE WEEK PRIOR TO ACCEPTANCE OR OCCUPANCY, AND MAKE FINAL CHECK AND ADJUSTMENT OF ALL HARDWARE ITEMS IN SUCH

SPACE OR AREA. CLEAN OPERATING ITEMS AS NECESSARY TO RESTORE PROPER FUNCTION AND FINISH OF HARDWARE AND DOORS. ADJUST DOOR CONTROL DEVICES TO COMPENSATE FOR FINAL OPERATION OF HEATING AND VENTILATING EQUIPMENT.

## HARDWARE SET: 1.0 FOR USE ON DOOR #(S):

DOOR CONTACT

10100	L ON DOON #(0).			
N-101, N	I-102			
PROVID	E EACH SGL DOOR(S) WIT	H THE FOLLOWING:		
QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1 4.5 X 4.5	BRUSHED NICKEL	IVE
1 EA	PRIVACY W/DB & IND	L9496P6 06A L583-363	BRUSHED NICKEL	SCH
1 EA	SURFACE CLOSER	4040XP REG	BRUSHED NICKEL	LCN
1 EA	KICK PLATE	8400 10" X 2" LDW B-CS	BRUSHED NICKEL	IVE
1 EA	WALL STOP	WS406/407CVX	BRUSHED NICKEL	IVE
3 EA	SILENCER	SR64	GRY	IVE
	ARE SET: 2.0 E ON DOOR #(S):			
N-103				
PROVID	E EACH SGL DOOR(S) WIT	H THE FOLLOWING:		
QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1 4.5 X 4.5	BRUSHED NICKEL	IVE
1 EA	STOREROOM LOCK	L9080P6 06A	BRUSHED NICKEL	SCH
1 EA	OH STOP	90S	BRUSHED NICKEL	GLY
3 EA	SILENCER	SR64	GRY	IVE
	ARE SET: 3.0			
	E ON DOOR #(S):			
S-100C	L ON DOOR #(3).			
	E EACH SGL DOOR(S) WIT			
	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1HW 4.5 X 4.5 NRP	BRUSHED NICKEL	IVE
1 EA	STOREROOM LOCK	ND80JD RHO	BRUSHED NICKEL	SCH
1 EA	FSIC CORE	PERMANENT CORE	BRUSHED NICKEL	SCH
1 EA	FSIC CORE	KEYED CONST CORE	BRUSHED NICKEL	SCH
1 EA	SURFACE CLOSER	4040XP SHCUSH MC	BRUSHED NICKEL	LCN
1 EA	RAIN DRIP	142	BRUSHED NICKEL	ZER
1 EA	GASKETING	328-S	BRUSHED NICKEL	ZER
1 EA	DOOR SWEEP	39	BRUSHED NICKEL	ZER
1 EA	THRESHOLD	655-223	BRUSHED NICKEL	ZER
			2	005

679-05HM OR WD AS REQ'D

E. <u>HOLLOW METAL DOOR</u> 1. EXTERIOR DOORS: THERMALLY INSULATED. A. ASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100). B. LEVEL 1 - STANDARD-DUTY D. MODEL 1 - FULL FLUSH WITH REQUIREMENTS. G. DOOR THICKNESS: 1-3/4 INCH, NOMINAL. H. TOP CLOSURES FOR OUTSWINGING DOORS: FLUSH WITH TOP OF FACES AND EDGES.

I. WEATHERSTRIPPING: REFER TO SECTION 08 7100. J. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED. 2. INTERIOR DOORS, NON-FIRE RATED: A. BASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100). B. LEVEL 1 - STANDARD-DUTY D. MODEL 1 - FULL FLUSH. E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM. F. DOOR THICKNESS: 1-3/4 INCH, NOMINAL. G. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

08 1113 - HOLLOW METAL DOORS AND FRAMES

C. SOUND-RATED HOLLOW METAL DOORS AND FRAMES: . OVERLY DOOR COMPANY: WWW.OVERLY.COM

DRAWINGS. STYLE: MANUFACTURERS STANDARD.

2. TYPICAL DOOR FACE SHEETS: FLUSH.

3. FIRE-RATED DOORS: A. BASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100). B. LEVEL 1 - STANDARD-DUTY

D. MODEL 1 - FULL FLUSH. E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM. F. FIRE RATING: AS INDICATED ON DOOR SCHEDULE, TESTED IN ACCORDANCE WITH UL 10C AND NFPA 252 ("POSITIVE PRESSURE FIRE TESTS"). G. TEMPERATURE-RISE RATING (TRR) ACROSS DOOR THICKNESS: IN ACCORDANCE WITH LOCAL BUILDING CODE

AND AUTHORITIES HAVING JURISDICTION. RATED UNIT.

RESISTANCE-RATED WALL CONSTRUCTION RATED THE SAME OR GREATER THAN THE FIRE-RATED DOORS, AND THE FOLLOWING:

3. LABEL: INCLUDE THE "S" LABEL ON FIRE-RATING LABEL OF DOOR. J. DOOR CORE MATERIAL: MANUFACTURERS STANDARD CORE MATERIAL/CONSTRUCTION IN COMPLIANCE WITH REQUIREMENTS

K. DOOR THICKNESS: 1-3/4 INCH, NOMINAL. L. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

-. <u>HOLLOW METAL FRAMES:</u> 1.COMPLY WITH STANDARDS AND/OR CUSTOM GUIDELINES AS INDICATED FOR CORRESPONDING DOOR IN ACCORDANCE WITH APPLICABLE DOOR FRAME REQUIREMENTS.

A. FULL LENGTH STOPS B. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM. 3. DOOR FRAMES, FIRE-RATED: FACE WELDED TYPE. FIRE RATING: SAME AS DOOR, LABELED. A. FULL LENGTH STOPS

B. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM. 4. SOUND-RATED DOOR FRAMES: FULL PROFILE/CONTINUOUSLY WELDED TYPE. A. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM,

5. FRAMES FOR WOOD DOORS: COMPLY WITH FRAME REQUIREMENTS IN ACCORDANCE WITH CORRESPONDING 6. BORROWED LITES GLAZING FRAMES: CONSTRUCTION AND FACE DIMENSIONS TO MATCH DOOR FRAMES, AND AS INDICATED ON DRAWINGS. 7. FRAMES IN MASONRY WALLS: SIZE TO SUIT MASONRY COURSING WITH HEAD MEMBER 4 INCH HIGH TO FILL

OPENING WITHOUT CUTTING MASONRY UNITS. WITH TOP

1. GLAZING: AS INDICATED IN DRAWINGS OR AS SPECIFIED. CORNERS; PREPARED FOR COUNTERSINK STYLE TAMPER PROOF SCREWS.

4. TEMPORARY FRAME SPREADERS: PROVIDE FOR FACTORY- OR SHOP-ASSEMBLED FRAMES.

1.INSTALL DOORS AND FRAMES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RELATED REQUIREMENTS OF SPECIFIED DOOR AND FRAME STANDARDS OR CUSTOM GUIDELINES INDICATED. 2. INSTALL PREFINISHED FRAMES AFTER PAINTING AND WALL FINISHES ARE COMPLETE. 3. INSTALL FIRE RATED UNITS IN ACCORDANCE WITH NFPA 80.

4. COORDINATE FRAME ANCHOR PLACEMENT WITH WALL CONSTRUCTION.

# 08 1416 - FLUSH WOOD DOORS

CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

. GRADE: PREMIUM 2. VENEER MATCHING: BOOK AND RUNNING 3. PAIR MATCHING AND SET MATCHING

4. CONSTRUCTION: A.INTERIOR VENEER: FIVE OR SEVEN PLY, STRUCTURAL COMPOSITE LUMBER CORES. 5. SIZES AS INDICATED IN DRAWINGS

D. FAB<u>RICATION AND FINISHINC</u> 80 FOR FIRE-RESISTANCE RATED DOORS.

3. CUT AND TRIM OPENINGS TO COMPLY WITH REFERENCED STANDARDS. 4. LITE KITS: MATCHING WOOD STOPS

e. <u>Installation</u>: FITTED IN FRAMES WITH UNIFORM CLEARANCES. 2. SET IN TWO PIECE W.P. SPLIT JAMB FRAMES WITH 1X4 WOOD CASING.

08 1613 - FIBERGLASS DOORS FRAME SIZES. TYPES, ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

B. DOORS: BASIS OF DESIGN: JELD-WEN- FIBERGLASS DOOR SERIES.LOW- E GLAZING. PROVIDE SIZES, AND DESIGNS AS INDICATED IN ELEVATIONS

08 3100 - ACCESS DOORS AND PANELS A. <u>SUBMITTALS</u>: PRODUCT DATA.

B. PRODUCTS: PRIME-PAINTED FLUSH, UNINSULATED ACCESS DOORS FOR WALLS AND CEILINGS WITH TRIMLESS FRAME AND SCREWDRIVER OPERATED LOCK FLUSH WITH FINISHED SURFACE. FIRE-RATED, SELF-LATCHING. AUTOMATIC CLOSING AT FIRE-RATED WALLS OR CEILINGS.

C. INSTALLATION: INSTALL FLUSH TO FINISHED DRYWALL SURFACE WITH FRAME TAPED AND SANDED FLUSH WITH WALL OR CEILING SURFACE AND FINISH TO MATCH ADJACENT SURFACE.

## A. SUBMITTALS: PRODUCT DATA AND SHOP DRAWINGS WITH DETAILS OF EACH OPENING, SHOWING ELEVATIONS, GLAZING, FRAME PROFILES, AND ANY INDICATED FINISH REQUIREMENTS.

. HOLLOW METAL DOOR AND FRAME MANUFACTURERS: . CECO DOOR, AN ASSA ABLOY GROUP COMPANY: WWW.ASSAABLOYDSS.COM. 2. DE LA FONTAINE INC: WWW.DELAFONTAINE.COM 3. REPUBLIC DOORS, AN ALLEGION BRAND: WWW.REPUBLICDOOR.COM 4. STEELCRAFT, AN ALLEGION BRAND: WWW.ALLEGION.COM

STEEL USED FOR FABRICATION OF DOORS AND FRAMES SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING REQUIREMENTS; GALVANNEALED STEEL CONFORMING TO ASTM A653/A653M, COLD-ROLLED STEEL CONFORMING TO ASTM A1008/A1008M. OR HOT-ROLLED PICKLED AND OILED (HRPO) STEEL CONFORMING TO ASTM A1011/A1011M, COMMERCIAL STEEL (CS) TYPE B FOR EACH.

3. GLAZED LIGHTS: NON-REMOVABLE STOPS ON NON-SECURE SIDE; SIZES AND CONFIGURATIONS AS INDICATED ON 4. HARDWARE PREPARATIONS, SELECTIONS AND LOCATIONS: COMPLY WITH NAAMM HMMA 830 AND NAAMM HMMA 831 OR BHMA A156.115 AND ANSI/SDI A250.8 (SDI-100) IN ACCORDANCE WITH SPECIFIED REQUIREMENTS. 5. ZINC COATING FOR TYPICAL INTERIOR AND/OR EXTERIOR LOCATIONS: PROVIDE METAL COMPONENTS ZINC-

COATED (GALVANIZED) AND/OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS IN ACCORDANCE WITH ASTM A653/A653M, WITH MANUFACTURER'S STANDARD COATING THICKNESS, UNLESS NOTED OTHERWISE FOR SPECIFIC HOLLOW METAL DOORS AND FRAMES. 6. HOLLOW METAL PANELS: SAME CONSTRUCTION, PERFORMANCE, AND FINISH AS DOORS 7. COMBINED REQUIREMENTS: IF A PARTICULAR DOOR AND FRAME UNIT IS INDICATED TO COMPLY WITH MORE

THAN ONE TYPE OF REQUIREMENT, COMPLY WITH THE SPECIFIED REQUIREMENTS FOR EACH TYPE; FOR INSTANCE, AN EXTERIOR DOOR THAT IS ALSO INDICATED AS BEING SOUND-RATED MUST COMPLY WITH THE REQUIREMENTS SPECIFIED FOR EXTERIOR DOORS AND FOR SOUND-RATED DOORS; WHERE TWO REQUIREMENTS CONFLICT, COMPLY WITH THE MOST STRINGENT.

C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4. E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM.

F. DOOR CORE MATERIAL: MANUFACTURERS STANDARD CORE MATERIAL/CONSTRUCTION AND IN COMPLIANCE

C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4.

C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4.

H. PROVIDE UNITS LISTED AND LABELED BY UL (DIR) OR ITS (DIR). ATTACH FIRE RATING LABEL TO EACH FIRE I. SMOKE AND DRAFT CONTROL DOORS (INDICATED WITH LETTER "S" ON DRAWINGS AND/OR DOOR SCHEDULE): SELF-CLOSING OR AUTOMATIC CLOSING DOORS IN ACCORDANCE WITH NFPA 80 AND NFPA 105, WITH FIRE-

1.MAXIMUM AIR LEAKAGE: 3.0 CFM/SQ FT OF DOOR OPENING AT 0.10 INCH W.G. PRESSURE, WHEN TESTED IN ACCORDANCE WITH UL 1784 AT BOTH AMBIENT AND ELEVATED TEMPERATURES 2. GASKETING: PROVIDE GASKETING OR EDGE SEALING AS NECESSARY TO ACHIEVE LEAKAGE LIMIT

2. INTERIOR DOOR FRAMES, NON-FIRE RATED: FACE WELDED TYPE. FRAME FINISH: FACTORY FINISHED.

8. FRAMES WIDER THAN 48 INCHES: REINFORCE WITH STEEL CHANNEL FITTED TIGHTLY INTO FRAME HEAD, FLUSH

1.PRIMER: RUST-INHIBITING, COMPLYING WITH ANSI/SDI A250.10, DOOR MANUFACTURER'S STANDARD.

2. REMOVABLE STOPS: FORMED SHEET STEEL, SHAPE AS INDICATED ON DRAWINGS, MITERED OR BUTTED 3. SILENCERS: RESILIENT RUBBER, FITTED INTO DRILLED HOLE; PROVIDE THREE ON STRIKE SIDE OF SINGLE DOOR, THREE ON CENTER MULLION OF PAIRS, AND TWO ON HEAD OF PAIRS WITHOUT CENTER MULLIONS.

A. <u>SUBMITTALS</u>: PRODUCT DATA, PREFINISHED DOOR SKIN SAMPLES, AND DOOR SCHEDULE INDICATING DOOR AND FRAME SIZES. TYPES, ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING

B. BASIS OF DESIGN: LINCOLN PARK, MASONITE, LE CHATEAU COLLECTION. HOLLOW CORE DOORS OR APPROVED

C. DOORS: 1-3/8" THICK PREHING. SIZES, SPECIES, AND DESIGNS AS INDICATED COMPLYING WITH WDMA I.S.1-A

1. FACTORY FIT DOORS TO SUIT FRAME OPENINGS TO COMPLY WITH REFERENCED STANDARD. COMPLY WITH NFPA 2. FACTORY MACHINE DOORS FOR HARDWARE THAT IS NOT SURFACE APPLIED.

5. FACTORY FINISH DOORS FOR TRANSPARENT FINISH WITH STAIN AND MANUFACTURER'S STANDARD FINISH COMPARABLE TO AWI, SYSTEM TR-4, CONVERSION VARNISH OR AWI SYSTEM TR-6, CATALYZED POLYURETHANE.

1. COMPLY WITH WDMA'S "HOW TO STORE, HANDLE, FINISH, INSTALL, AND MAINTAIN WOOD DOORS" ALIGNED AND

08 3613 - SECTIONAL DOORS A. SUBMITTALS: PRODUCT DATA, AND COLOR SAMPLES. DOOR SCHEDULE INDICATING DOOR AND FRAME SIZES. TYPES. ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

B. <u>BASIS OF DESIGN</u>: 1. C.H.I OVERHEAD DOORS. 5602 SHORELINE, CARRIAGE HOUSE DESI€ TOP. NUMBER #32. COLOR WHITE. 2. WIND LOAD RATING: 115 MPH PER OCAL CODE REQUIREMEN' 3. WINDOW DESIGN, STOCKTON, GLASS- FAUX.

1. DOORS SHALL BE COMPLETE WITH ALL HARP' 265 1/2 HP CHAIN DRIVE GARAGE DOOR OPENER OR APPROVED EQUAL. OPERAT MOUNTED MULTI FUNCTION CONTROL PANEL AND TWO HAND. HELD ROLLING CODF LY AND INSTALL DOOR JAMB KEYPAD. GARAGE DOOR JAMBS SHALL HAVE PHOTO? EACH GARAGE DOOR. PROVIDE TIMERS FOR DOORS TO AUTOMATICALLY CLOSE IF LEF JED PERIOD OF TIME.

D. INSTALLATION 1. INSTALL DOOR AS VITH MANUFACTURER'S INSTRUCTIONS. 2 ANCHOR TO ADJACE ↓ WITHOUT DISTORTION OR STRESS

INSTALLATION SHALL INCLUDE GARAGE DOOR SILENCER ISOLATION PADS.

3. SECURELY BRACE DOOR THE JUSPENDED FROM STRUCTURE. SECURE TRACKS TO STRUCTURAL MEMBERS 4. FIT AND ALIGN DOOR ASSEMBLY INCLUDING HARDWARE. LEVEL AND PLUMB. TO PROVIDE SMOOTH OPERATION.

5. POSITION HEAD AND JAMB WEATHERSTRIPPING TO CONTACT DOOR SECTIONS WHEN CLOSED; SECURE IN POSITION.

6. MAKE WIRING CONNECTIONS BETWEEN POWER SUPPLY AND OPERATOR AND BETWEEN OPERATOR AND CONTROLS. 7. INSTALL ELECTRIC GARAGE DOOR OPENERS IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.

08 4313 - ALUMINUM FRAMED STOREFRONTS A. SUBMITTALS: PRODUCT DATA: PROVIDE COMPONENT DIMENSIONS, DESCRIBE COMPONENTS WITHIN ASSEMBLY, ANCHORAGE AND FASTENERS, GLASS AND INFILL, DOOR HARDWARE, INTERNAL DRAINAGE DETAILS. 1. HARDWARE SCHEDULE: COMPLETE ITEMIZATION OF EACH ITEM OF HARDWARE TO BE PROVIDED FOR EACH DOOR, CROSS-REFERENCED TO DOOR IDENTIFICATION NUMBERS IN CONTRACT DOCUMENTS. 2. SHOP DRAWINGS: INDICATE SYSTEM DIMENSIONS, FRAMED OPENING REQUIREMENTS AND TOLERANCES. AFFECTED RELATED WORK, EXPANSION AND CONTRACTION JOINT LOCATION AND DETAILS, AND FIELD WELDING

B. WARRANTY: WARRANTY: SUBMIT MANUFACTURER WARRANTY AND ENSURE FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER. 1. CORRECT DEFECTIVE WORK WITHIN A FIVE YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION. 2. PROVIDE FIVE YEAR MANUFACTURER WARRANTY AGAINST FAILURE OF GLASS SEAL ON INSULATING GLASS

UNITS, INCLUDING INTERPANE DUSTING OR MISTING. INCLUDE PROVISION FOR REPLACEMENT OF FAILED UNITS. 3. PROVIDE FIVE YEAR MANUFACTURER WARRANTY AGAINST EXCESSIVE DEGRADATION OF EXTERIOR FINISH. INCLUDE PROVISION FOR REPLACEMENT OF UNITS WITH EXCESSIVE FADING, CHALKING, OR FLAKING.

C. <u>BASIS OF DESIGN</u>: KAWNEER\_ ENCORE-MEDIUM STILE , ANODIZED. VERIFY FINISH WITH OWNER. 1. OTHER MANUFACTURERS: PROVIDE EITHER THE PRODUCT IDENTIFIED AS "BASIS OF DESIGN" OR AN EQUIVALENT PRODUCT

1. ALUMINUM-FRAMED STOREFRONT: FACTORY FABRICATED, FACTORY FINISHED ALUMINUM FRAMING MEMBERS WITH INFILL, AND RELATED FLASHINGS, ANCHORAGE AND ATTACHMENT DEVICES. 2. ALUMINUM FRAMING MEMBERS: TUBULAR ALUMINUM SECTIONS[<>], DRAINAGE HOLES AND INTERNAL WEEP DRAINAGE SYSTEM

3. EXTRUDED ALUMINUM: ASTM B221 (ASTM B221M). 4. STRUCTURAL STEEL SECTIONS: ASTM A36/A36M; SHOP PRIMED.

5. FASTENERS: STAINLESS STEEL 6. CONCEALED FLASHINGS: STAINLESS STEEL, 26 GAGE, 0.0187 INCH MINIMUM THICKNESS.

7. SEALANT FOR SETTING THRESHOLDS: NON-CURING BUTYL TYPE. 8. GLAZING GASKETS: TYPE TO SUIT APPLICATION TO ACHIEVE WEATHER, MOISTURE, AND AIR INFILTRATION REQUIREMENTS.

1. CLASS I COLOR ANODIZED FINISH: AAMA 611 AA-M12C22A44 ELECTROLYTICALLY DEPOSITED COLORED ANODIC COATING NOT LESS THAN 0.7 MILS THICK. COLOR AS SELECTED BY OWNER & ARCHITECT. . HARDWARE

1. FOR EACH DOOR, INCLUDE WEATHERSTRIPPING, SILL SWEEP STRIP, AND THRESHOLD. 2. OTHER DOOR HARDWARE: STOREFRONT MANUFACTURER'S STANDARD TYPE TO SUIT APPLICATION. A. FINISH ON HAND-CONTACTED ITEMS: POLISHED CHROME. B. FOR EACH DOOR, INCLUDE BUTT HINGES, PIVOTS, PUSH HANDLE, PULL HANDLE, EXIT DEVICE, NARROW STILE HANDLE LATCH, AND CLOSER. COORDINATE ADA PUSH BUTTON LOCATION.

G. INSTALLATION: VERIFY DIMENSIONS, TOLERANCES, AND METHOD OF ATTACHMENT WITH OTHER WORK.

2. VERIFY THAT WALL OPENINGS AND ADJOINING AIR AND VAPOR SEAL MATERIALS ARE READY TO RECEIVE WORK OF THIS SECTION. 3. INSTALL WALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

- 4. ATTACH TO STRUCTURE TO PERMIT SUFFICIENT ADJUSTMENT TO ACCOMMODATE CONSTRUCTION TOLERANCES AND OTHER IRREGULARITIES.
- 5. ALIGN ASSEMBLY PLUMB AND LEVEL, FREE OF WARP OR TWIST. MAINTAIN ASSEMBLY DIMENSIONAL TOLERANCES, ALIGNING WITH ADJACENT WORK. 6. PROVIDE THERMAL ISOLATION WHERE COMPONENTS PENETRATE OR DISRUPT BUILDING INSULATION.
- 7. INSTALL SILL FLASHINGS. TURN UP ENDS AND EDGES; SEAL TO ADJACENT WORK TO FORM WATER TIGHT DAM. 8. WHERE FASTENERS PENETRATE SILL FLASHINGS, MAKE WATERTIGHT BY SEATING AND SEALING FASTENER HEADS TO SILL FLASHING.
- 9. PACK FIBROUS INSULATION IN SHIM SPACES AT PERIMETER OF ASSEMBLY TO MAINTAIN CONTINUITY OF THERMAL BARRIER. 10. SET THRESHOLDS IN BED OF SEALANT AND SECURE.
- 11. INSTALL HARDWARE USING TEMPLATES PROVIDED. ADJUST OPERATING HARDWARE AND SASH FOR SMOOTH OPERATION
- 12. WASH DOWN SURFACES WITH A SOLUTION OF MILD DETERGENT IN WARM WATER, APPLIED WITH SOFT, CLEAN WIPING CLOTHS, AND TAKE CARE TO REMOVE DIRT FROM CORNERS AND TO WIPE SURFACES CLEAN. 13. PROTECT INSTALLED PRODUCTS FROM DAMAGE UNTIL DATE OF SUBSTANTIAL COMPLETION.

08 5313 - VINYL WINDOWS A. SUBMITTALS: THE CONTRACTOR SHALL PREPARE CT FOR APPROVAL, COMPLETE SHOP DRAWINGS FOR ALL WORK INCLUDED IN T ALL NOT PROCEED WITH FABRICATION AND DELIVERY PRIOR TO RECEIVING SUCH APP ∠SIGN: MI 3500 VINYL SINGLE- HUNG WINDOWS. B. <u>BASIS OF DESIGN</u>: VINYL CASEMEN<sup>™</sup> -LUMB, LEVEL AND IN STRICT ACCORDANCE WITH THE C. INSTALLATION: ALL WINDOV MANUFACTURER'S DIR

08 8000 - GLAZING A. SUBMITTALS: PRODUCT DATA ON INSULATING GLASS UNIT, GLAZING UNIT, AND [SPANDREL ] GLAZING TYPES: PROVIDE STRUCTURAL, PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS, SIZE LIMITATIONS, SPECIAL HANDLING AND INSTALLATION REQUIREMENTS.

1. PRODUCT DATA ON GLAZING COMPOUNDS AND ACCESSORIES: PROVIDE CHEMICAL, FUNCTIONAL, AND ENVIRONMENTAL CHARACTERISTICS, LIMITATIONS, SPECIAL APPLICATION REQUIREMENTS, AND IDENTIFY AVAILABLE COLORS 2. SAMPLES: SUBMIT TWO SAMPLES [12] BY [12] INCH IN SIZE OF GLASS UNITS.

B. WARRANTY: WARRANTY DOCUMENTATION: SUBMIT MANUFACTURER WARRANTY AND ENSURE THAT FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER. 1. INSULATING GLASS UNITS: PROVIDE A FIVE (5) YEAR MANUFACTURER WARRANTY TO INCLUDE COVERAGE FOR SEAL FAILURE, INTERPANE DUSTING OR MISTING, INCLUDING PROVIDING PRODUCTS TO REPLACE FAILED UNITS

C. STOREFRONT GLAZING BASIS OF DESIGN: GUARDIAN -SUNGUARD \_ SNX 62/27 \_COATED GLASS, CLEAR. WITH .24 U-VALUE ARGON FILLED

D. <u>QUALITY STANDARDS:</u> 1. SAFETY GLASS: CATEGORY II MATERIALS COMPLYING WITH TESTING REQUIREMENTS IN 16 CFR

1201 AND ANSI Z97.1. 2. GLAZING PUBLICATIONS: WHERE APPLICABLE. COMPLY WITH WITH THE PUBLISHED **RECOMMENDATIONS OF THE FOLLOWING:** 

A. GANA PUBLICATIONS: "GLAZING MANUAL" AND "LAMINATED GLASS DESIGN GUIDE". B. SIGMA PUBLICATIONS: SIGMA TM-3000, "VERTICAL GLAZING GUIDELINES".

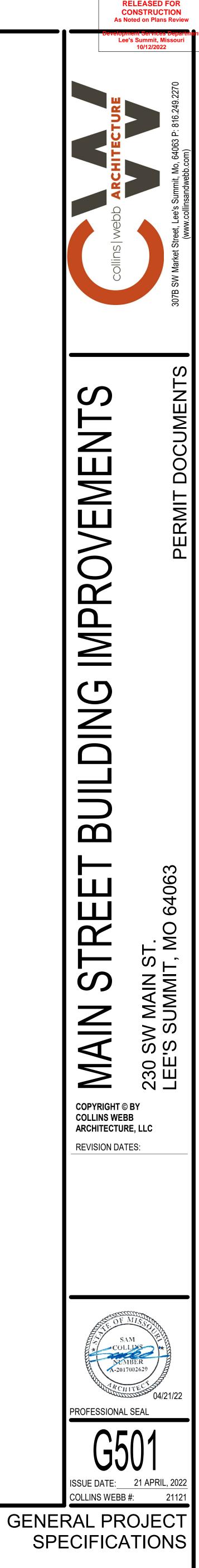
1. FLOAT GLASS: ASTM C 1036, TYPE I, QUALITY q3 2. HEAT-TREATED FLOAT GLASS: ASTM C 1048, TYPE I, QUALITY q3, HEAT STRENGTHENED OR FULLY TEMPERED WHERE INDICATED AND WHERE REQUIRED BY CODE OR INSTALLATION CONDITIONS 3. MIRROR GLASS: ASTM C 1036, TYPE I, CLASS 1, QUALITY q1, SILVER COATED PER FS DDM411C,

6.0mm THICK, WITH EDGES FLAT POLISHED. E EARRICATED OLASS PRODUCTS SEALED INSULATING-GLASS UNITS: PREASSEMBLED UNITS COMPLYING WITH ASTME 774 FOR

CLASS CBA UNITS WITH TWO SHEETS OF GLASS SEPARATED BY A 1/2-INCH DEHYDRATED SPACE FILLED WITH AIR. EXTERIOR GLASS COLOR TO MATCH EXISTING. INTERIOR GLASS SHALL BE CLEAR.

. COMPLY WITH COMBINED RECOMMENDATIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE CONTAINED IN GANA'S "GLAZING MANUAL". 2. SET GLASS LITES IN EACH SERIES WITH UNIFORM PATTERN, DRAW, BOW, AND SIMILAR

CHARACTERISTICS. 3. AFTER GLASS INSTALLATION IS COMPLETE, REMOVE GLAZING MATERIALS AND LABELS FROM FINISHED SURFACES, AND THOROUGHLY CLEAN GLASS AND ADJACENT FRAMING AND SURFACES. REPEAT AS NECESSARY PRIOR TO FINAL WALK-THROUGH.



## SPECIFICATIONS - PRODUCT & INSTALLATION GENERAL REQUIREMENTS

- 08 8100 MIRRORS A. SUBMITTALS: FOR EACH TYPE OF PRODUCT INDICATED. THE CONTRACTOR SHALL PREPARE, AND SUBMIT TO THE ARCHITECT FOR APPROVAL, COMPLETE SHOP DRAWINGS: INCLUDE MIRROR ELEVATIONS, EDGE DETAILS, MIRROR HARDWARE, AND ATTACHMENTS TO OTHER WORK. WARRANTY: SAMPLE OF SPECIAL WARRANTY.
- B. QUALITY ASSURANCE: VINYL CASEMENT WINDOWS- BASIS OF DESIGN: MI 3500 VINYL SINGLE- HUNG WINDOWS. 1. GLAZING PUBLICATIONS: COMPLY WITH GANA'S "GLAZING MANUAL" AND "MIRRORS, HANDLE WITH EXTREME CARE: TIPS FOR THE PROFESSIONAL ON THE CARE AND HANDLING OF MIRRORS." 2.SAFETY GLAZING PRODUCTS: FOR MIRRORS, PROVIDE PRODUCTS COMPLYING WITH TESTING REQUIREMENTS IN
- 16 CFR 1201 FOR CATEGORY II MATERIALS. 3. PRECONSTRUCTION MIRROR MASTIC COMPATIBILITY TEST: SUBMIT MIRROR MASTIC PRODUCTS TO MIRROR MANUFACTURER FOR TESTING TO DETERMINE COMPATIBILITY OF MASTIC WITH MIRROR BACKING AND SUBSTRATES ON WHICH MIRRORS ARE INSTALLED.

C. WARRANTY: SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MIRROR MANUFACTURER GREES TO REPLACE MIRRORS THAT DETERIORATE WITHIN SPECIFIED WARRANTY PERIOD. DETERIORATION OF MIRRORS IS DEFINED AS DEFECTS DEVELOPED FROM NORMAL USE THAT ARE NOT ATTRIBUTED TO MIRROR BREAKAGE OR TO MAINTAINING AND CLEANING MIRRORS CONTRARY TO MANUFACTURER'S WRITTEN INSTRUCTIONS. DEFECTS INCLUDE DISCOLORATION, BLACK SPOTS, AND CLOUDING OF THE SILVER FILM. 1. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

D. BASIS OF DESIGN: SILVERED FLAT GLASS MIRRORS

APPLIED. NOMINAL THICKNESS: 1/4 INCH.

- 1. GLASS MIRRORS, GENERAL: ASTM C 1503; MANUFACTURED USING COPPER FREE, LOW LEAD MIRROR COATING PROCESS. 2. CLEAR GLASS: MIRROR GLAZING QUALITY; ULTRACLEAR (LOW IRON) FLOAT GLASS WITH A MINIMUM 91 PERCENT VISIBLE LIGHT TRANSMISSION. NOMINAL THICKNESS: 1/4 INCH. 3. TEMPERED CLEAR GLASS: MIRROR GLAZING QUALITY, FOR BLEMISH REQUIREMENTS; AND COMPLY WITH ASTM C 1048 FOR KIND FT, CONDITION A, TEMPERED FLOAT GLASS BEFORE SILVER COATING IS
- E. <u>MIRROR HARDWARE:</u> TOP AND BOTTOM ALUMINUM J CHANNELS: ALUMINUM EXTRUSIONS WITH A RETURN DEEP ENOUGH TO PRODUCE A GLAZING CHANNEL TO ACCOMMODATE MIRRORS OF THICKNESS INDICATED AND IN LENGTHS REQUIRED TO COVER BOTTOM AND TOP EDGES OF EACH MIRROR IN A SINGLE PIECE. FINISH: CLEAR BRIGHT ANODIZED.
- 1. TOP AND BOTTOM MIRROR MOUNTING CLIPS: #277 MIRROR CLIPS AS MANUFACTURED BY KNAPE & VOGT OR APPROVED EQUAL 2. FASTENERS: FABRICATED OF SAME BASIC METAL AND ALLOY AS FASTENED METAL AND MATCHING IT IN
- FINISHED COLOR AND TEXTURE WHERE FASTENERS ARE EXPOSED. F. INSTALLATION: GENERAL: EXAMINE SUBSTRATES, OVER WHICH MIRRORS ARE TO BE MOUNTED, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH INSTALLATION TOLERANCES, SUBSTRATE PREPARATION, AND OTHER
- CONDITIONS AFFECTING PERFORMANCE OF THE WORK A. VERIFY COMPATIBILITY WITH AND SUITABILITY OF SUBSTRATES, INCLUDING COMPATIBILITY OF MIRROR MASTIC WITH EXISTING FINISHES OR PRIMERS.
- B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND SURFACES ARE DRY. 1.INSTALL MIRRORS TO COMPLY WITH MIRROR MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH REFERENCED
- GANA PUBLICATIONS. MOUNT MIRRORS ACCURATELY IN PLACE IN A MANNER THAT AVOIDS DISTORTING REFLECTED IMAGES
- 2. INSTALL WALL MOUNTED ANNEALED GLASS MIRRORS IN THE APARTMENT UNITS WITH MIRROR CLIPS. ATTACH MIRROR HARDWARE SECURELY TO MOUNTING SURFACES WITH MECHANICAL FASTENERS INSTALLED WITH
- 3. ANCHORS OR INSERTS AS APPLICABLE. INSTALL FASTENERS SO HEADS DO NOT IMPOSE POINT LOADS ON BACKS OF MIRRORS. 4. PROTECT MIRRORS FROM BREAKAGE AND CONTAMINATING SUBSTANCES RESULTING FROM CONSTRUCTION
- OPERATIONS 5. MAINTAIN ENVIRONMENTAL CONDITIONS THAT WILL PREVENT MIRRORS FROM BEING EXPOSED TO MOISTURE
- FROM CONDENSATION OR OTHER SOURCES FOR CONTINUOUS PERIODS OF TIME. 6. WASH EXPOSED SURFACE OF MIRRORS NOT MORE THAN FOUR DAYS BEFORE DATE SCHEDULED FOR INSPECTIONS THAT ESTABLISH DATE OF SUBSTANTIAL COMPLETION. WASH MIRRORS AS RECOMMENDED IN WRITING BY MIRROR MANUFACTURER.

## **DIVISION 9 - FINISHES**

- 09 2116 GYPSUM BOARD ASSEMBLIES A. <u>STEEL FRAMING MEMBERS:</u> COMPLY WITH ASTM C754 IN DEPTHS AND GAGES AS INDICATED IN THE DNSTRUCTION DRAWINGS AND AS FOLLOWS: 1. STEEL SHEET COMPONENTS: COMPLY WITH ASTM C645 WITH MANUFACTURER'S STANDARD CORROSION-RESISTANT ZINC COATING. 2. TIE WIRE: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER. .0625" DIAMETER OR DOUBLE STRAND OF .0475" DIAMETER WIRE.
- 3. WIRE HANGERS: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER. .0162" DIAMETER. B. PANEL PRODUCTS: PROVIDE IN THICKNESS AND TYPE INDICATED IN THE CONSTRUCTION DRAWINGS IN MAXIMUM LENGTHS AVAILABLE TO MINIMIZE END-TO-END BUTT JOINTS AND AS FOLLOWS: 1. GYPSUM WALLBOARD: ASTM C 36, TYPE 'X' WITH TAPERED EDGES, SAG-RESISTANT TYPE FOR CEILING SURFACES. 2. WATER-RESISTANT GYPSUM BACKING BOARD: ASTM C 630, TYPE 'X' ON ALL TOILET ROOM AND
- SHOWER ROOM WALLS, BEHIND ALL PLUMBING FIXTURES, AND AS INDICATED.
- 1. TRIM: ASTM 1047, FORMED FROM GALVANIZED OR ALUMINUM COATED STEEL SHEET, ROLLED ZINC, OR PLASTIC a. OUTSIDE CORNERS: PROVIDE CORNER BEAD UNLESS NOTED OTHERWISE b. EXPOSED PANEL EDGES: PROVIDE LC-BEAD (J-BEAD) UNLESS NOTED OTHERWISE; USE
- TEAR-AWAY BEAD WHERE GYP. BD. MEETS WINDOW FRAMES OR CEILING GRID. c. CONTROL JOINTS: PROVIDE WHERE INDICATED OR APPROXIMATELY 30'-0" MAX. CONTACT ARCHITECT FOR LOCATIONS IF NOT INDICATED. 2. SOUND-ATTENUATION BLANKETS: ASTM C 665, TYPE I (UNFACED)
- 3. ACOUSTICAL SEALANT: COMPLY WITH ASTM C 834, NONSAG, PAINTABLE, NONSTAINING LATEX.
- . FRAMING: COMPLY WITH ASTM C 754 AND ASTM C 840 AND WITH U.S. GYPSUM'S "GYPSUM CONSTRUCTION HANDBOOK" ISOLATE FRAMING FROM BUILDING STRUCTURE TO PREVENT TRANSFER OF LOADING IMPOSED BY STRUCTURAL MOVEMENT AND PROVIDE BRACING AS
- NECESSARY FOR PROPER SUPPORT WHETHER INDICATED OR NOT. 2. GYPSUM PANELS AND FINISH: COMPLY WITH ASTM C 840 AND GA-216. ISOLATE GYPSUM BOARD ASSEMBLIES FROM ABUTTING STRUCTURAL AND MASONRY WORK AND FINISH AS FOLLOWS: A. LEVEL 1 (EMBED TAPE AT JOINTS): AT CONCEALED AREAS UNLESS A HIGHER LEVEL IS INDICATED OR REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLY. B. LEVEL 2 (EMBED TAPE AND APPLY SEPARATE FIRST COAT OF JOINT COMPOUND TO TAPE. FASTENERS, AND TRIM FLANGES AND SAND SMOOTH AFTER EACH COAT): AT
- SUBSTRATES BEHIND TILE. C. LEVEL 4 (EMBED TAPE AND APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES AND SAND SMOOTH AFTER EACH COAT): AT ALL WALLS RECEIVING FLAT, EGGSHELL, OR SATIN SHEEN PAINT OR WALL COVERING)
- D. LEVEL 5 (EMBED TAPE, APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES, AND APPLY THIN SKIM COAT OF JOINT COMPOUND OVER ENTIRE SURFACE AND SAND SMOOTH AFTER EACH COAT): AT ALL WALLS RECEIVING SEMI-GLOSS OR GLOSS SHEEN PAINT, AND ALL GYPSUM BOARD CEILINGS)
- 09 2216 NON-STRUCTURAL METAL FRAMING
- A. <u>SUBMITTALS</u>: SHOP DRAWINGS: INDICATE PREFABRICATED WORK, COMPONENT DETAILS, STUD LAYOUT, FRAMED OPENINGS, ANCHORAGE TO STRUCTURE, ACOUSTIC DETAILS, TYPE AND LOCATION OF FASTENERS. ACCESSORIES, AND ITEMS OF OTHER RELATED WORK. DESCRIBE METHOD FOR SECURING STUDS TO TRACKS, SPLICING, AND FOR BLOCKING AND REINFORCEMENT OF FRAMING CONNECTIONS. 1. PRODUCT DATA: PROVIDE MANUFACTURER'S DATA ON PARTITION HEAD TO STRUCTURE CONNECTORS,
- SHOWING COMPLIANCE WITH REQUIREMENTS. 2. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE SPECIAL PROCEDURES AND PERIMETER CONDITIONS REQUIRING SPECIAL ATTENTION.
- 1. CLARKDIETRICH BUILDING SYSTEMS: WWW.CLARKDIETRICH.COM. 2. CEMCO: WWW.CEMCOSTEEL.COM. 3. JAIMES INDUSTRIES: WWW.JAIMESIND.COM
- 4. STEEL CONSTRUCTION SYSTEMS: WWW.STEELCONSYSTEMS.COM

### C. <u>FRAMING MATERIALS</u> 1. FIRE RATED ASSEMBLIES: COMPLY WITH APPLICABLE CODE AND AS FOLLOWS:

- A. TOP OF FIRE RATED PARTITIONS: LISTED ASSEMBLY BY UL, NO. [ON DRAWINGS]; [1 AND 2] HOUR RATING. B. FIRE RATED SHAFT WALL REQUIREMENTS: LISTED ASSEMBLY BY UL, NO. [ON DRAWINGS]; [1] HOUR RATING.
- 2. NON-LOADBEARING FRAMING SYSTEM COMPONENTS: ASTM C645; GALVANIZED SHEET STEEL, OF SIZE AND PROPERTIES NECESSARY TO COMPLY WITH ASTM C754 FOR THE SPACING INDICATED, WITH MAXIMUM DEFLECTION OF WALL FRAMING OF L/240 AT 5 PSF.
- A. TRACKS AND RUNNERS: SAME MATERIAL AND THICKNESS AS STUDS, BENT LEG RETAINER NOTCHED TO RECEIVE STUDS WITH PROVISION FOR CRIMP LOCKING TO STUD. STUDS: C SHAPED WITH FLAT OR FORMED WEBS WITH KNURLED FACES. B. CEILING CHANNELS: C SHAPED.
- C. FURRING: HAT-SHAPED SECTIONS, MINIMUM DEPTH OF 7/8 INCH. D. CONTRACTOR TO PROVIDE BRACING AS REQUIRED TO COMPLETE SYSTEM.
- F. WHERE INDICATED IN DRAWINGS, SHAFT WALL STUDS AND ACCESSORIES: ASTM C645; GALVANIZED SHEET STEEL, OF SIZE AND PROPERTIES NECESSARY TO COMPLY WITH ASTM C754 AND SPECIFIED PERFORMANCE REQUIREMENTS G. CEILING HANGERS: TYPE AND SIZE AS SPECIFIED IN ASTM C754 FOR SPACING REQUIRED. H. PARTITION HEAD TO STRUCTURE CONNECTIONS: PROVIDE MECHANICAL ANCHORAGE DEVICES THAT
- ACCOMMODATE DEFLECTION USING SLOTTED HOLES, SCREWS AND ANTI-FRICTION BUSHINGS, PREVENTING ROTATION OF STUDS WHILE MAINTAINING STRUCTURAL PERFORMANCE OF PARTITION. I. FIT, REINFORCE, AND BRACE FRAMING MEMBERS TO SUIT DESIGN REQUIREMENTS.
- INSTALLATION: 1.COMPLY WITH REQUIREMENTS OF ASTM C754. 2. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK.
- 3. VERIFY THAT ROUGH-IN UTILITIES ARE IN PROPER LOCATION. 4.EXTEND PARTITION FRAMING TO STRUCTURE WHERE INDICATED AND TO CEILING IN OTHER LOCATIONS. 5. PARTITIONS TERMINATING AT CEILING: ATTACH CEILING RUNNER SECURELY TO CEILING TRACK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 6.PARTITIONS TERMINATING AT STRUCTURE: ATTACH TOP RUNNER TO STRUCTURE. MAINTAIN CLEARANCE BETWEEN TOP OF STUDS AND STRUCTURE, AND CONNECT STUDS TO TRACK USING SPECIFIED MECHANICAL DEVICES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS; VERIFY FREE MOVEMENT OF TOP OF STUD CONNECTIONS: DO NOT LEAVE STUDS UNATTACHED TO TRACK.
- 7.FIT RUNNERS UNDER AND ABOVE OPENINGS; SECURE INTERMEDIATE STUDS TO SAME SPACING AS WALL STUDS. 8. ALIGN STUD WEB OPENINGS HORIZONTALLY. 9. SECURE STUDS TO TRACKS USING CRIMPING METHOD. DO NOT WELD. 10. STUD SPLICING IS NOT PERMISSIBLE.
- 11. FABRICATE CORNERS USING A MINIMUM OF THREE STUDS. 12. DOUBLE STUD AT WALL OPENINGS, DOOR AND WINDOW JAMBS, NOT MORE THAN 2 INCHES FROM EACH SIDE OF OPENINGS
- 13. BRACE STUD FRAMING SYSTEM RIGID. 14. COORDINATE ERECTION OF STUDS WITH REQUIREMENTS OF DOOR FRAMES; INSTALL SUPPORTS AND
- ATTACHMENTS 15. COORDINATE INSTALLATION OF BUCKS, ANCHORS, AND BLOCKING WITH ELECTRICAL, MECHANICAL, AND OTHER
- WORK TO BE PLACED WITHIN OR BEHIND STUD FRAMING. 16. BLOCKING: USE WOOD BLOCKING SECURED TO STUDS. PROVIDE BLOCKING FOR SUPPORT OF PLUMBING FIXTURES, WALL CABINETS, TOILET ACCESSORIES, HARDWARE, AND OPENING FRAMES.

- 09 6500 RESILIENT FLOORING AND WALL BASE A. SUBMITTALS: PRODUCT DATA AND (1) SAMPLES OF EACH TILE AND BASE SPECIFIED FOR VERIFICATION PURPOSES.
- 1. METROFLOR, KONECTO PLANK, PROJECT 54012 OR APPROVED EQUAL. C. ATTIC STOCK: FURNISH ONE (1) BOX FOR EACH 50 BOXES OR FRACTION THEREOF OF EACH TYPE OF
- LOOR TILE AND 20' OF EACH COLOR AND TYPE OF WALL BASE PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.
- D. <u>RESILIENT TILE PRODUCTS:</u> PROVIDE FLOOR TILE IN TYPE AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS COMPLYING WITH THE FOLLOWING:
- E. RESILIENT WALL BASE: ASTM TYPE TS (RUBBER, VULCANIZED THERMOSET) 1/8" THICK, FURNISHED IN COILS IN STYLES AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS WITH JOB-FORMED INSIDE AND OUTSIDE CORNERS.
- F. INSTALLATION ACCESSORIES 1. LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED. PORTLAND CEMENT, OR BLENDED HYDRAULIC CEMENT-BASED FORMULATION PROVIDED OR APPROVED BY FLOORING MANUFACTURER TO SUIT RESILIENT PRODUCTS AND SUBSTRATE CONDITIONS.
- 2. ADHESIVES: WATER-RESISTANT TYPE RECOMMENDED BY MANUFACTURER TO SUIT RESILIENT PRODUCTS AND SUBSTRATE CONDITIONS. SPREAD ONLY ENOUGH ADHESIVE TO PERMIT INSTALLATION OF MATERIALS BEFORE INITIAL SET. 3. MOLDINGS, TRANSITION AND EDGE STRIPS: SAME MATERIAL AS FLOORING.
- 1. PREPARE CONCRETE SUBSTRATES PER ASTM F 710. VERIFY THAT SUBSTRATES ARE DRY AND FREE OF CURING COMPOUNDS, SEALERS AND HARDENERS.
- 2. LAY OUT TILES SO WIDTHS AT OPPOSITE EDGES OF ROOM ARE EQUAL AND NOT LESS THAN HAI F-WIDTH 3. LAY TILES IN PATTERNS INDICATED WITH GRAIN DIRECTION ALTERNATING IN ADJACENT TILES
- UNLESS NOTED OTHERWISE. 4. CLEAN, SEAL, AND WAX RESILIENT FLOORING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- H. WALL BASE AND ACCESSORY INSTALLATION: 1. CONFIRM THAT SOLID BACKING IS PROVIDED BEHIND ALL WALL BASE. AREAS WHERE GYPSUM BOARD IS HELD MORE THAN 1/2" ABOVE SLAB SHALL BE FILLED IN PRIOR TO BASE INSTALLATION. 2. INSTALL WALL BASE WITH MANUFACTURER'S RECOMMENDED ADHESIVE IN MAXIMUM LENGTHS POSSIBLE. APPLY TO WALLS, COLUMNS, PILASTERS, CASEWORK, AND OTHER PERMANENT FIXTURES
- 3. INSTALL TRANSITION STRIPS WHERE FLOORING MATERIALS MEET OR WHERE EDGE OF TILE IS EXPOSED AS INDICATED IN THE FINISH SCHEDULE
- 09 6813 TILE CARPETING A. <u>SUBMITTALS:</u> PRODUCT DATA AND SAMPLES OF EACH CARPET PRODUCT INDICATED. SUBMIT ACTUAL TILE SAMPLES OF EACH CARPET REQUIRED
- B. WARRANTY: PROVIDE SPECIAL PROJECT WARRANTY, SIGNED BY CONTRACTOR, INSTALLER AND MANUFACTURER (CARPET MILL), AGREEING TO REPAIR OR REPLACE DEFECTIVE MATERIALS AND WORKMANSHIP OF CARPETING WORK DURING 1-YEAR WARRANTY PERIOD FOLLOWING SUBSTANTIAL COMPLETION. ATTACH COPIES OF PRODUCT WARRANTIES.
- C. ATTIC STOCK: FURNISH FULL-WIDTH CARPET EQUAL TO 5% OF EACH TYPE AND COLOR CARPET INSTALLED, PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.
- IN THE CONSTRUCTION DOCUMENTS WITH CRITICAL RADIANT FLUX CLASSIFICATION CLASS I, NOT LESS THAN 0.45 W/SQ. CM PER ASTM E 648. ORDER ALL MATERIALS FROM THE SAME FACTORY DYE LOT. E. INSTALLATION ACCESSORIE
- TROWELABLE LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED. HYDRAULIC-CEMENT-BASED FORMULATION PROVIDED OR RECOMMENDED BY CARPET MANUFACTURER. 2. ADHESIVES: WATER-RESISTANT, MILDEW-RESISTANT, NONSTAINING TYPE TO SUIT PRODUCTS AND SUBFLOOR CONDITIONS INDICATED. THAT COMPLIES WITH FLAMMABILITY REQUIREMENTS FOR INSTALLED CARPET AND IS RECOMMENDED OR PROVIDED BY CARPET MANUFACTURER.
- F. INSTALLATION: FOR CARPET TILE COMPLY CRI 104, SECTION 13 "CARPET MODULES (TILES)". I. GENERAL: COMPLY WITH CRI'S "CRI CARPET INSTALLATION STANDARD" AND WITH CARPET
- MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PREPARING SUBSTRATES. 2. USE TROWELABLE LEVELING AND PATCHING COMPOUNDS, ACCORDING TO MANUFACTURER'S WRITTEN
- CRACKS, HOLES AND DEPRESSIONS 1/8 INCH WIDE OR WIDER, AND PROTRUSIONS MORE THAN 1/32 INCH. UNLESS MORE STRINGENT REQUIREMENTS ARE REQUIRED BY MANUFACTURER'S WRITTEN INSTRUCTIONS. 3. BROOM AND VACUUM CLEAN SUBSTRATES TO BE COVERED IMMEDIATELY BEFORE INSTALLING CARPET.
- 4.LAY CARPET TILE IN PATTERN AS INDICATED ON CONSTRUCTION DOCUMENTS AND SO WIDTHS AT OPPOSITE EDGES OF ROOM ARE EQUAL AND NOT LESS THAN HALF-WIDTH. 5.TRIM CARPET NEATLY AND TIGHT TO WALLS AND AROUND INTERRUPTIONS.
- 6.INSTALL PATTERN PARALLEL TO WALLS AND BORDERS UNLESS OTHERWISE INDICATED. 7.DO NOT BRIDGE BUILDING EXPANSION JOINTS WITH CARPET. 8. CUT AND FIT CARPET TO BUTT TIGHTLY TO VERTICAL SURFACES, PERMANENT FIXTURES, AND BUILT-IN
- FURNITURE INCLUDING CABINETS, PIPES, OUTLETS, EDGINGS, THRESHOLDS, AND NOSINGS. BIND OR SEAL CUT EDGES AS RECOMMENDED BY CARPET MANUFACTURER. 9. EXTEND CARPET INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE
- FLANGES, ALCOVES, AND SIMILAR OPENINGS. 10. MAINTAIN REFERENCE MARKERS, HOLES, AND OPENINGS THAT ARE IN PLACF OR MARKED FOR FUTURE
- MARKING DEVICE. 11. PROTECT CARPET AGAINST DAMAGE FROM CONSTRUCTION OPERA FIXTURES DURING THE REMAINDER OF CONSTRUCTION PERIOP
- IN WRITING BY CARPET MANUFACTURER 12. INSTALL TRANSITION STRIPS AT CARPET TERMINATIONS DOCUMENTS.

## 09 6816 - SHEET CARPETING A. SUBMITTALS: PRODUCT DATA

- OF EACH CARPET REQUIRF ∠XPOSED EDGE STRIPPING. **B. WARRANTY: PROVIDE** RANTY, SIGNED BY CONTRACTOR, INSTALLER AND MANUFACTURER (CARPET MILL), AGREE WORK DURING 1-YEAR WARR, CRIOD FOLLOWING SUBSTANTIAL COMPLETION. ATTACH COPIES OF PRODUCT WARRANTIES.
- C. ATTIC STOCK: FULL-SIZE UNITS EQUAL TO 5 PERCENT OF AMOUNT INSTALLED FOR EACH TYPE INDICATED, BUT NOT LESS THAN 10 SQ. YD.
- A. APARTMENT UNIT CARPET SHALL BE SUPPLIED AND INSTALLED UNDER AN ALLOWANCES OF \$8.00/SQUARE YARD FOR THE PURCHASE AND DELIVERY OF THE CARPET MATERIAL ONLY. 1. COSTS FOR THE PAD ACCESSORIES, TAXES, LABOR, ETC. ARE NOT INCLUDED IN THE ALLOWANCES STATED ABOVE BUT SHALL BE INCLUDED IN THE BID PRICE FOR A COMPLETE INSTALLATION.
- TROWELABLE LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED, HYDRAULIC-CEMENT-BASED FORMULATION PROVIDED OR RECOMMENDED BY CARPET MANUFACTURER. 2. ADHESIVES: WATER-RESISTANT. MILDEW-RESISTANT. NONSTAINING TYPE TO SUIT PRODUCTS AND SUBFLOOR CONDITIONS INDICATED, THAT COMPLIES WITH FLAMMABILITY REQUIREMENTS FOR INSTALLED CARPET AND IS RECOMMENDED OR PROVIDED BY CARPET MANUFACTURER. 3. SEAM ADHESIVE: HOT-MELT ADHESIVE TAPE OR SIMILAR PRODUCT RECOMMENDED BY CARPET MANUFACTURER FOR SEALING AND TAPING SEAMS AND BUTTING CUT EDGES AT BACKING TO FORM SECURE SEAMS AND TO PREVENT PILE LOSS AT SEAMS
- 4. TACKLESS CARPET STRIPPING: WATER RESISTANT PLYWOOD STRIPS, 3/8" THICK WITH ANGULAR PINS PROTRUDING FROM TOP DESIGNED TO GRIP AND HOLD STRETCHED CARPET AT THE BACKING. PROVIDE STRIPPING WITH 2 ROWS OF PINS. 5. CARPET EDGE GUARD: EXTRUDED ALUMINUM BEND DOWN TYPE EDGE GUARD; WITH CONCEALED GRIPPER TEETH AND MINIMUM 1-1/2" WIDE PUNCHED ANCHORAGE FLANGE AND MINIMUM 5/8" WIDE FACE
- F. INSTALLATION 1. GENERAL: COMPLY WITH CRI'S "CRI CARPET INSTALLATION STANDARD" AND WITH CARPET MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PREPARING SUBSTRATES. 2. USE TROWELABLE LEVELING AND PATCHING COMPOUNDS, ACCORDING TO MANUFACTURER'S WRITTEN
- INSTRUCTIONS, TO FILL CRACKS, HOLES, DEPRESSIONS, AND PROTRUSIONS IN SUBSTRATES, FILL OR LEVEL CRACKS, HOLES AND DEPRESSIONS 1/8 INCH WIDE OR WIDER, AND PROTRUSIONS MORE THAN 1/32 INCH. UNLESS MORE STRINGENT REQUIREMENTS ARE REQUIRED BY MANUFACTURER'S WRITTEN INSTRUCTIONS. 3.BROOM AND VACUUM CLEAN SUBSTRATES TO BE COVERED IMMEDIATELY BEFORE INSTALLING CARPET. 4. UNIT INSTALLATION, STRETCH-IN INSTALLATION WITH PAD. 5.COMPLY WITH CARPET MANUFACTURER'S WRITTEN INSTRUCTIONS AND SHOP DRAWINGS FOR SEAM LOCATIONS AND DIRECTION OF CARPET: MAINTAIN UNIFORMITY OF CARPET DIRECTION AND LAY OF PILE. AT
- DOORWAYS, CENTER SEAMS UNDER THE DOOR IN CLOSED POSITION. 6.INSTALL PATTERN PARALLEL TO WALLS AND BORDERS UNLESS OTHERWISE INDICATED. 7.DO NOT BRIDGE BUILDING EXPANSION JOINTS WITH CARPET 8. CUT AND FIT CARPET TO BUTT TIGHTLY TO VERTICAL SURFACES, PERMANENT FIXTURES, AND BUILT-IN FURNITURE INCLUDING CABINETS, PIPES, OUTLETS, EDGINGS, THRESHOLDS, AND NOSINGS. BIND OR SEAL CUT EDGES AS RECOMMENDED BY CARPET MANUFACTURER.
- 9. EXTEND CARPET INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE FLANGES, ALCOVES, AND SIMILAR OPENINGS. 10. MAINTAIN REFERENCE MARKERS, HOLES, AND OPENINGS THAT ARE IN PLACE OR MARKED FOR FUTURE CUTTING BY REPEATING ON CARPET AS MARKED ON SUBFLOOR. USE NONPERMANENT, NONSTAINING MARKING DEVICE.
- FIXTURES DURING THE REMAINDER OF CONSTRUCTION PERIOD, USE PROTECTION METHODS RECOMMENDED IN WRITING BY CARPET MANUFACTURER.

D. PRODUCTS: PROVIDE CARPET IN PATTERNS AND COLORS AND WITH BACKINGS AS INDICATED

CUTTING BY REPEATING ON CARPET AS MARKED ON SUBFLOOR, USE NON" MANENT, NONSTAINING **JENT OF FOUIPMENT AND** 

THODS RECOMMENDED **ONSTRUCTION** 

CARPET PRODUCT INDICATED. SUBMIT 18" X 27" SAMPLES

REPLACE DEFECTIVE MATERIALS AND WORKMANSHIP OF CARPETING

B. CARPET PAD SHALL BE 1/2" - 6# DENSITY REBOND PAD AS REQUIRED FOR A COMPLETE INSTALLATION.

11. PROTECT CARPET AGAINST DAMAGE FROM CONSTRUCTION OPERATIONS AND PLACEMENT OF EQUIPMENT AND

09 9000 - PAINTING AND COATING A. <u>SUBMITTALS:</u> PRODUCT DATA AND THREE (3) DRAW-DOWN SAMPLES OF EACH COLOR AND SHEEN B. ATTIC STOCK: FURNISH ONE (1) GALLON OF EACH PAINT COLOR AND SHEEN, IN CONTAINERS, PROPERLY LABELED AND SEALED.

2. PRODUCTS: PROVIDE MANUFACTURER'S BEST QUALITY PAINTS OF COLOR AND SHEEN AS INDICATED IN THE CONSTRUCTION DOCUMENTS THAT ARE FORMULATED AND RECOMMENDED BY MANUFACTURER FOR APPLICATION INDICATED. PROVIDE MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES.

1. ALL PAINT, STAIN, AND VARNISH SHALL BE PRODUCTS OF DEVOE, KWAL, SHERWIN WILLIAMS, PPG INDUSTRIES, PRATT & LAMBERT OR APPROVED EQUAL. 2. ALL MATERIAL SHALL BE OF THE STANDARD RESIDENTIAL GRADE OF THE TYPES DESIGNATED. 3. ALL MATERIAL SHALL BE DELIVERED TO THE JOB SITE IN THE ORIGINAL, UNOPENED, LABELED CONTAINERS. COLORS NOT SPECIFICALLY CALLED FOR IN THE PAINT SCHEDULE WILL BE SELECTED BY THE ARCHITECT.

E. APPLICATION / INSTALLATION: 1. EQUIPMENT: APPLY COATINGS BY BRUSH, ROLLER, SPRAY, OR OTHER APPLICATORS ACCORDING TO COATING MANUFACTURER'S WRITTEN INSTRUCTIONS. WHEN SPRAYED, EXTERIOR COATINGS SHALL BE BACK-ROLLED FOLLOWING SPRAY APPLICATION. USE ROLLERS FOR FINISH COAT ON INTERIOR WALLS AND CEILINGS. 2. PIGMENTED (OPAQUE) FINISHES: COMPLETELY COVER SURFACES TO PROVIDE A SMOOTH, OPAQUE SURFACE OF UNIFORM APPEARANCE. PROVIDE A FINISH FREE OF CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. 3. APPLY PRODUCTS PER MANUFACTURER RECOMMENDED GUIDELINES. PRODUCT COVERAGE MINIMUM ONE COAT OF PRIMER AND TWO FINAL COATS ON MATERIALS.APPLY PRODUCTS TO MATERIALS APPROVED BY

A. Exterior Work: 1. ALL EXTERIOR GALVANIZED METAL FLASHINGS, CONNECTORS, ETC.

MANUFCTURER PRODUCT DATA SHEETS.

2. ALL EXPOSED STEEL FRAMES, ANGLES, ETC.

INCLUDING RAILS, PLATES, ANGLES, BOLTS, GRATES, CONDUITS, POSTS, PIPING, ETC. 4. ALL UNPRIMED EXTERIOR MILLWORK. TRIM, SMOOTH WOOD MATERIALS, ETC.

5. PRIMED MILLWORK AND TRIM.

SEMI-GLOSS PAINT.

6. ROUGH SAWN TRIM, BEAMS, COLUMNS,

7. PRIMED METAL ENTRY DOORS, FRENCH DOORS AND METAL FRAMES, GARAGE DOORS.

8. ANY OTHER PAINTING REQUIRED BY THE DRAWINGS.

B. INTERIOR WORK: 1. GYPSUM BOARD WALLS EXCEPT IN

KITCHENS, BATHROOMS, LAUNDRIES AND COMMON AREA CORRIDORS, UNLESS SCHEDULED FOR WALLCOVERING

2. GYPSUM BOARD WALLS IN KITCHENS, BATHROOMS AND LAUNDRIES UNLESS SCHEDULED FOR WALLCOVERING OR TILE.

3. GYPSUM BOARD WALLS IN COMMON AREA CORRIDORS

4. GYPSUM BOARD CEILINGS.

5. DOOR CASINGS, BASE, WOOD, MILL-WORK, ETC. (PRE-PRIMED.)

6. PRIMED HARDWOOD DOORS.

7. ALL MISCELLANEOUS FERROUS METAL, INCLUDING GRILLES, REGISTERS, ETC.

8. ANY OTHER PAINTING WORK REQUIRED BY THE DRAWINGS.

ONE COAT COMMERCIAL METAL ETCH ONE COAT EXTERIOR METAL PRIMER. TWO COATS EXTERIOR SEMI-GLOSS METAL PAINT. TWO COATS SEMI-GLOSS METAL PAINT. (PRIME COAT CHANNELS, POSTS, RAILINGS, BEAMS, ETC. SURFACES THAT ARE NOT PRIMED.)

3. ALL EXPOSED MISC. FERROUS METAL ITEMS TWO COATS SEMI-GLOSS METAL PAINT. (PRIME COAT SURFACES THAT ARE NOT PRIMED.)

> PRIME AND BACK LATEX PRIMER. TWO COATS OF EXTERIOR LATEX SATIN OR

TOUCH-UP PRIME. TWO COATS OF EXTERIOR 100% SATIN OR SEMI-GLOSS ACRYLIC LATEX PAINT. ONE COAT PRIMER. TWO COATS EXTERIOR HEAVY BODIED STAIN.

PATCH DENTS, TOUCH UP PRIMER. TWO COATS OF OIL BASE SEMI-GLOSS PAINT INSIDE AND OUTSIDE.

TWO COATS TO MATCH ADJACENT SURFACES.

ONE COAT OF PRIME LATEX PAINT AND ONE FINISH COAT OF LATEX EGGSHELL WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.) ONE WALL IN EACH APARTMENT UNIT LIVING SPACE AND EACH BEDROOM SHALL BE PAINTED ACCENT COLORS.

ONE COAT OF EPOXY COMPATABLE PRIMER PAINT AND ONE FINISH COAT OF EPOXY EGGSHELL WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.)

ONE COAT OF PRIME LATEX PAINT AND ONE FINISH COAT OF SCRUBABLE LATEX FLAT WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.)

TWO COATS OF LATEX FLAT PAINT. TWO COATS OF CLASS II VAPOR RETARDER PAINT AT CEILINGS ADJACENT TO ATTICS. ONE PRIME COAT OF LATEX PAINT, ONE COAT LATEX PAINT AND ONE FINISH COAT

OF LATEX SEMI-GLOSS PAINT. ONE COAT OF LATEX PAINT AND ONE FINISH COAT OF LATEX SEMI-GLOSS PAINT. TWO COATS METAL PAINT TO MATCH

ADJACENT SURFACES UNLESS FACTORY PREFINISHED WHITE FINISH TO MATCH SIMILAR CONDITIONS.

09 3000 - TILING A. SUBMITTALS: PRODUCT DATA FOR SETTING AND GROUTING MATERIALS AND THREE (3) SAMPLES OF EACH TILE SPECIFIED FOR VERIFICATION PURPOSES. B. ATTIC STOCK: FURNISH 2% OF EACH TYPE OF CERAMIC TILE PACKAGED WITH PROTECTIVE COVERING

AND LABELED FOR STORAGE. C. <u>BASIS OF DESIGN</u>: SEE DRAWING SCHEDULES.

D. <u>TILE:</u> COMPLY WITH STANDARD GRADE REQUIREMENTS IN ANSI A137.1 "SPECIFICATIONS FOR CERAMIC TILE" FOR PRODUCTS AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS. E. INSTALLATION MATERIALS

1. THIN-SET MORTAR: A. TYPICAL INTERIOR INSTALLATIONS: LATEX/POLYMER MODIFIED PORTLAND CEMENT COMPLYING WITH ANSI A108.5 AND ANSI 118.4. 2. GROUT:UNSANDED FOR JOINTS 1/16" WIDTH OR LESS, SANDED FOR JOINTS GREATER THAN 1/16" IN COLOR INDICATED IN SCHEDULE OR TO BE SELECTED BY ARCHITECT AND OWNER.

A. TYPICAL INTERIOR INSTALLATIONS: STANDARD CEMENT GROUT WITH INTEGRAL STAIN INHIBITORS (TEC ACCUCOLOR XT, OR EQUAL) 3. SETTING BED ACCESSORIES: ANSI A 108.1A

F. INSTALLATION METHODS: COMPLY WITH TILE INSTALLATION STANDARDS IN ANSI'S "SPECIFICATIONS FOR THE INSTALLATIONS OF CERAMIC TILE" AND TCA'S "HANDBOOK FOR CERAMIC TILE INSTALLATION" THAT APPLY TO THE MATERIALS AND METHODS INDICATED BELOW:

1. WHERE CUT TILE IS SPECIFIED AS THE TOP COURSE ON WALL WAINSCOTING OR WALL BASE WITH AN EXPOSED TOP EDGE, THE FACTORY EDGE SHALL BE USED AS THE EXPOSED EDGE.

H. CONFLICTS: IF NOT ADDRESSED ON DRAWINGS, WHERE ELECTRICAL DEVICES OR TOILET ACCESSORIES STRADDLE THE TRANSITION FROM THE TOP EDGE OF WAINSCOT WALL TILE TO GYPSUM BOARD SUBSTRATE, CONTACT ARCHITECT FOR RESOLUTION.

1. JOINT SIZE: SET TILE WITH THE SMALLEST GROUT JOINT ACHIEVABLE AND AS RECOMMENDED BY THE MFR. BASED ON THE TILE PRODUCT AND SUBSTRATE CONDITIONS, UNLESS NOTED

OTHERWISE. 2. TILE PATTERN: LAY TILE IN PATTERNS AS INDICATED IN THE CONSTRUCTION DOCUMENTS. ALIGN JOINTS WHERE ADJOINING TILES ON FLOOR, BASE, WALLS, AND TRIM ARE THE SAME

SIZE, UNLESS INDICATED OTHERWISE. 3. INSTALLATION: INSTALL GROUT PER MANUFACTURER'S INSTRUCTIONS, EXERCISING CARE TO AVOID REMOVAL OF GROUT COLOR BY USE OF EXCESS WATER DURING INSTALLATION. FADED

OR CHALKY GROUT SHALL BE CAUSE FOR REJECTION. 4. SEALER: AFTER FULLY CURED, GROUT SHALL BE SEALED WITH TWO (2) COATS OF COMMERCIAL QUALITY PENETRATING SILICONE SEALER.

09 5100 - ACOUSTICAL CEILINGS A. SUBMITTALS: PRODUCT DATA ONLY ND LABELED FOR STORAGE.

C. ACOUSTICAL TILE PRODUCTS: PROVIDE CEILING TILE IN TYPE AND SIZES INDICATED IN THE

SHOWERS, KITCHENS, AND OTHER HIGH-HUMIDITY AREAS. TABLE 1, DIRECT HUNG UNLESS OTHERWISE INDICATED.

DIAMETER WIRE SEISMIC FORCES.

AREAS AS INDICATED. F. INSTALLATION: COMPLY WITH ASTM C 636 AND CISCA'S "CEILING SYSTEMS HANDBOOK".

AND OVERHEAD WORK IS COMPLETED, TESTED, AND APPROVED.

USING NOT LESS THAN HALF-SIZE TILE UNLESS INDICATED OTHERWISE ON THE REFLECTED CEILING PLAN. 3. SUPPORT SUSPENSION SYSTEM INDEPENDENTLY OF DUCTS, PIPES, AND CONDUITS. CORNER OR SUPPORT FIXTURES INDEPENDENTLY.

CLOSURES AT ROUND OR CURVED OBSTRUCTIONS. 6. FIELD-CUT EDGES SHALL MATCH PROFILE OF FACTORY EDGES

**DIVISION 10 - SPECIALTIES** 

10 2800 TOILET AND BATH ACCESSORIES AND BATH ACCESSORIES.

2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS. 3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS. 4. INSTALLATION METHODS.

B. INSTALLATION:

ADHESIVE

INSTALLATIONS ARE NOT PERMITTED. DISABILITIES ACT.

ACCORDING TO ASTM F 446.

**10 3000** SOLID PLASTIC TOILET COMPARTMENTS AND BATH ACCESSORIES. 1. STYLE: FLOOR MOUNTED OVERHEAD-BRACED TOILET COMPARTMENTS. BY PENS, PENCILS, MARKERS, AND OTHER WRITING INSTRUMENTS. B. THICKNESS: 1 INCH (25 MM). C. EDGES: SHIPLAP. 3. PANEL COLOR: TRADITIONAL SERIES:1. SHALE - ORANGE PEEL.

INCHES (203 TO 356 MM) ABOVE THE FINISHED FLOOR.

2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS. 3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.

4. INSTALLATION METHODS. HARDWARE REQUIRED.

REPRESENTING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS.

D. POSTS, RAILS AND HARDWARE FINISH, FASTENED TO FOOT WITH STAINLESS STEEL TAMPER RESISTANT SCREW.

AND SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW.

STAINLESS STEEL TAMPER SCREWS. 6. DOOR HARDWARE:

DEGREES. COMES TO A FULL CLOSE ON ITS OWN WEIGHT.

EQUIP WITH SECOND DOOR PULL AND DOOR STOP. D. DOOR PULLS: CHROME PLATED ZAMAK:

E. INSTALLATION: 1. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION. 3. INSTALL PARTITIONS RIGID, STRAIGHT, PLUMB, AND LEVEL.

5. CLEARANCE AT VERTICAL EDGES OF DOORS SHALL BE UNIFORM TOP TO BOTTOM AND SHALL NOT EXCEED 3/8 INCH (9.5 MM).

8. ADJUST DOORS AND LATCHES TO OPERATE CORRECTLY. 9. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT

## B. ATTIC STOCK: FURNISH 2% OF EACH TYPE OF CEILING TILE PACKAGED WITH PROTECTIVE COVERING

## CONSTRUCTION DOCUMENTS COMPLYING WITH ASTM E 1264, CLASS A MATERIALS, TESTED PER ASTM

D. SUSPENSION SYSTEM: PROVIDE HEAVY DUTY, DIRECT-HUNG, SUSPENSION SYSTEMS AS INDICATED IN HE CONSTRUCTION DOCUMENTS COMPLYING WITH ASTM C 635. FURNISH ALUMINUM GRID IN 1. ATTACHMENT DEVICES: SIZE FOR FIVE (5) TIMES THE DESIGN LOAD INDICATED IN ASTM C 635, 2. WIRE HANGERS, BRACES, AND TIES: ZINC-COATED CARBON-STEEL WIRE; ASTM A 641/ (A 641 M), CLASS 1 ZINC COATING. SOFT TEMPER WITH A YIELD STRENGTH AT LEAST THREE (3) TIMES THE HANGER DESIGN LOAD (ASTM C 635, TABLE 1, DIRECT HUNG), BUT NOT LESS THAN 0.135" 3. SEISMIC STRUTS: MANUFACTURER'S STANDARD PRODUCT DESIGNED TO ACCOMMODATE 4. HOLD-DOWN CLIPS: PROVIDE HOLD-DOWN CLIPS ON CEILING TILE IN ENTRANCE VESTIBULES, COMPUTER ROOMS EMPLOYING DRY CHEMICAL FIRE-SUPPRESSION SYSTEMS, AND OTHER

. SEQUENCE WORK TO ENSURE ACOUSTICAL CEILINGS ARE NOT INSTALLED UNTIL BUILDING IS ENCLOSED, SUFFICIENT HEAT IS PROVIDED, DUST GENERATION ACTIVITIES HAVE TERMINATED, 2. INSTALL CEILING GRID AS INDICATED TO BE SYMMETRICAL ABOUT BOTH AXES OF EACH ROOM

4. SUPPORT FIXTURE LOADS USING SUPPLEMENTARY HANGERS LOCATED WITHIN 6" OF EACH 5. PROVIDE MATCHING PERIMETER MOLDING INSTALLED IN BEAD OF ACOUSTICAL SEALANT AT ALL LOCATIONS WHERE CEILING INTERSECTS VERTICAL SURFACES. USE MATCHING PRE-FORMED

A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET

1. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:

1. INSTALLER MUST EXAMINE SUBSTRATES, PREVIOUSLY INSTALLED INSERTS AND ANCHORAGES NECESSARY FOR MOUNTING OF TOILET ACCESSORIES, AND OTHER CONDITIONS UNDER WHICH INSTALLATION IS TO OCCUR, AND MUST NOTIFY CONTRACTOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER AND TIMELY COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER. 2. INSTALL ACCESSORIES ACCORDING TO RESPECTIVE MANUFACTURERS' WRITTEN INSTRUCTIONS, USING FASTENERS APPROPRIATE TO SUBSTRATE INDICATED AND RECOMMENDED BY UNIT MANUFACTURER. I NSTALL UNITS LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS AND AT HEIGHTS INDICATED.

3. MOUNTING HEIGHTS SHALL BE AS RECOMMENDED BY THE ACCESSORY MANUFACTURER AND AT HEIGHTS RECOMMENDED BY USE FOR PHYSICALLY HANDICAPPED TO COMPLY WITH THE AMERICANS WITH 4. GRAB BARS: INSTALL TO WITHSTAND A DOWNWARD LOAD OF AT LEAST 250 LBF, WHEN TESTED

5. ADJUST ACCESSORIES FOR PROPER OPERATION AND VERIFY THAT MECHANISMS FUNCTION SMOOTHLY. 6. CLEAN AND POLISH ALL EXPOSED SURFACES AFTER REMOVING PROTECTIVE COATINGS.

A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET

BASIS OF DESIGN: ECLIPSE TOILET PARTITIONS AS MANUFACTURED BY AND SUPPLIED BY SCRANTON 2. DOORS AND PANELS: HIGH DENSITY POLYETHYLENE (HDPE), FABRICATED FROM SEQ CHAPTER 1 EXTRUDED POLYMER RESINS. FORMING SINGLE THICKNESS PANEL. A. WATERPROOF AND NONABSORBENT, WITH SELF-LUBRICATING SURFACE, RESISTANT TO MARKS

4. DOORS AND PANELS: HIGH PRIVACY: HEIGHT: 62 INCHES (1575 MM) HIGH AND MOUNTED AT 8 TO 14

. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:

5. SHOP DRAWINGS: PROVIDE LAYOUT DRAWINGS AND INSTALLATION DETAILS WITH LOCATION AND TYPE OF 6. SELECTION SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO COMPLETE SETS OF COLOR CHIPS

1. METAL POSTS: 82.75 INCHES (2102 MM) HIGH, HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED 2. HIDDEN SHOE (FOOT): ONE-PIECE MOLDED POLYETHYLENE INVISIBLE SHOE INSERTED INTO METAL POST 3. HEADRAIL CAP AND CORNER CAP: ONE-PIECE MOLDED POLYETHYLENE SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW; ADJUSTABLE TO LEVEL HEADRAIL TO FINISHED FLOOR. 4. WALL BRACKETS: CONTINUOUS HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, INSERTED INTO SLOTTED PANEL AND FASTENED TO PANELS WITH STAINLESS STEEL TAMPER RESISTANT SCREWS. 5. HEADRAIL: HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, SECURED TO WALL WITH

A. HINGES: EDGE-MOUNTED HELIX STYLE STAINLESS STEEL CONTINUOUS HINGE. CLOSING DEGREE: 5 B.OCCUPANCY INDICATOR LATCH AND HOUSING: MATERIAL: SATIN STAINLESS STEEL. OCCUPANCY INDICATORS: GREEN FOR OCCUPIED AND RED NOT OCCUPIED. SLIDE BOLT AND BUTTON. C.COAT HOOK AND DOOR BUMPER COMBINATION: MATERIAL: CHROME PLATED ZAMAK. HANDICAP DOOR:

2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS. 4. LOCATE BOTTOM EDGE OF DOORS AND PANELS INCHES ABOVE FINISHED FLOOR.

6. NO EVIDENCE OF CUTTING, DRILLING, AND/OR PATCHING SHALL BE VISIBLE ON THE FINISHED WORK. 7. FINISHED SURFACES SHALL BE CLEANED AFTER INSTALLATION AND BE LEFT FREE OF IMPERFECTIONS.

10. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

### **10 4400 - FIRE PROTECTION SPECIALTIES** A. REFERENCE CONSTRUCTION DRAWINGS FOR TYPE, SIZE AND LOCATIONS OF FIRE EXTINGUISHERS AND CABINETS.

**DIVISION 11 - EQUIPMENT** 

11 3000 - APPLIANCES A. REFERENCE CONSTRUCTION DRAWINGS FOR QUANTITY, AND LOCATION OF APPLIANCES TO BE FURNISHED BY OWNER.

12 3661 STONE COUNTERTOPS

TEMPLATE OR PATTERN F

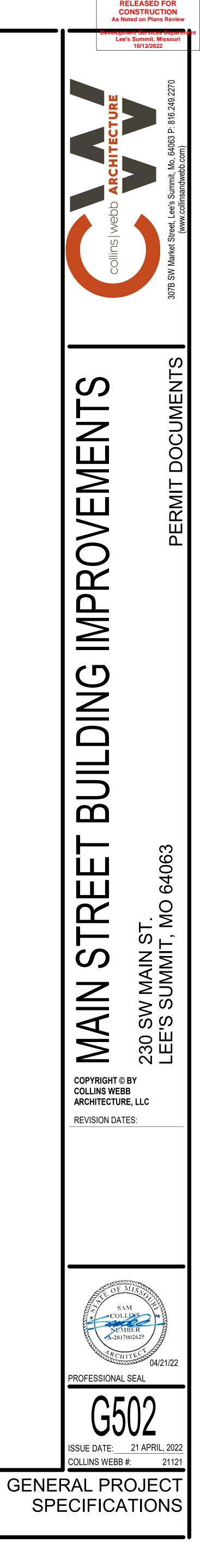
8. COUNTER MOUNT

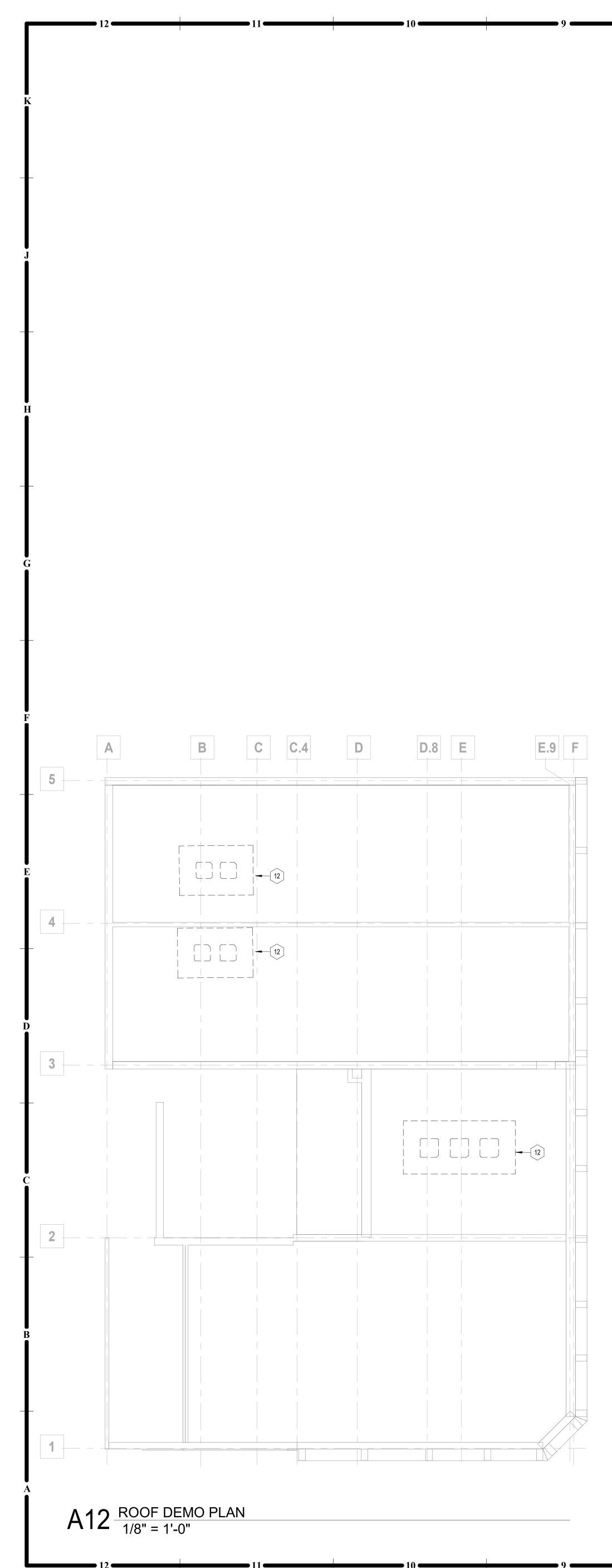
COUNTER MOUN

A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES.

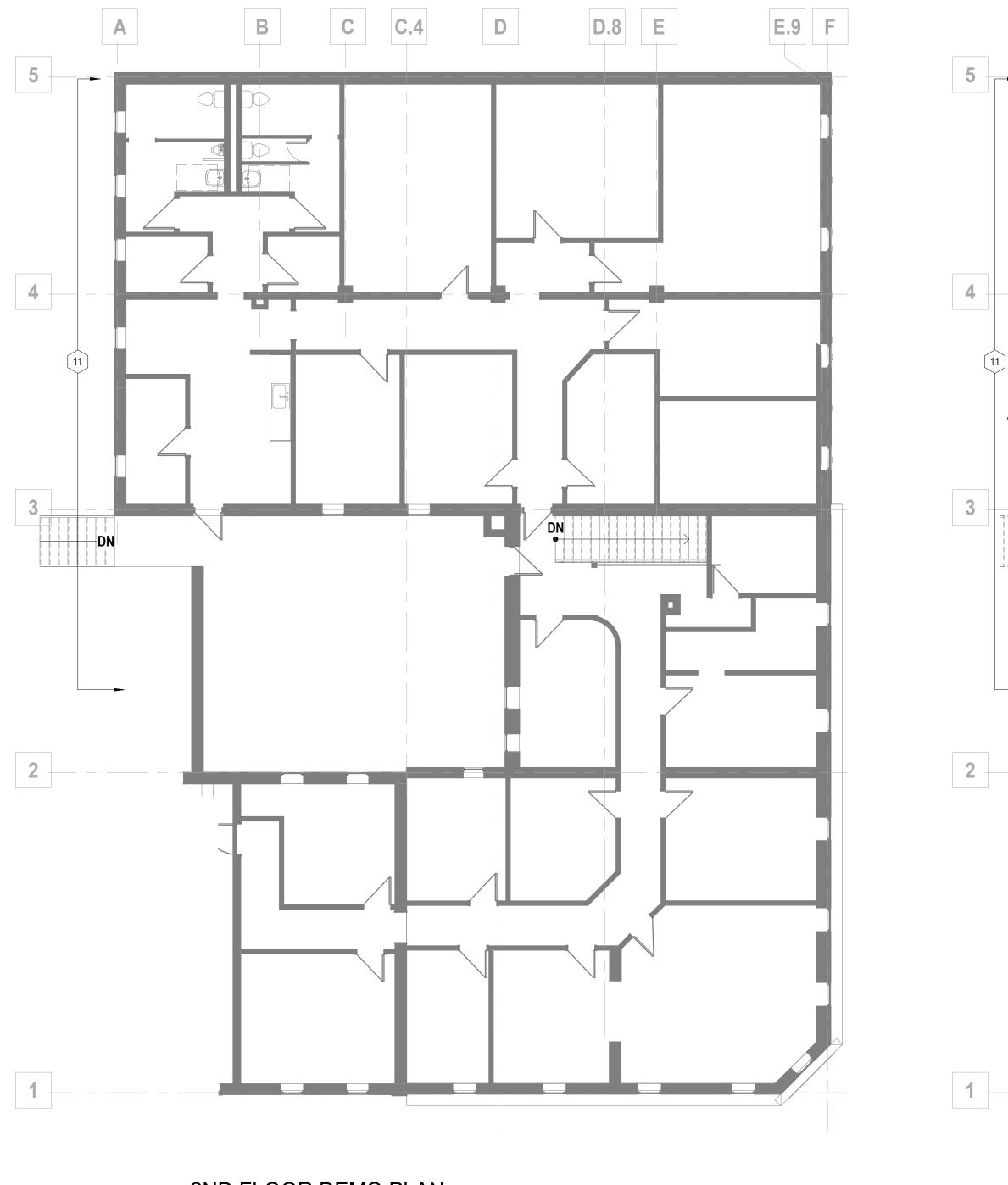
B. SUBMITTALS: INCLUDE PLANS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK: 1. PRODUCT DATA :FOR EACH STONE, STONE ACCESSORY, AND MANUFACTURED PRODUCT. 2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS. 3. SAMPLES: FOR EACH STONE TYPE INDICATED.

- 1. FIELD MEASUREMENTS: VERIFY DIMENSIONS OF CONSTRUCTION TO RECEIVE STONE COUNTERTOPS BY FIELD MEASUREMENTS BEFORE FABRICATION.
- 1. SOURCE LIMITATIONS FOR STONE: OBTAIN STONE FROM A SINGLE QUARRY WITH RESOURCES TO PROVIDE
- MATERIALS OF CONSISTENT QUALITY IN APPEARANCE AND PHYSICAL PROPERTIES. 2. QUARTZ: MATERIAL STANDARD: COMPLY WITH ASTM C 615.
- 3. ALL COUNTERTOPS SHALL BE GRANITE AS SELECTED BY THE OWNER WITH SQUARE EDGES AND MATCHING SIDE AND BACKSPLASHES. TOP AND BOTTOM EXPOSED EDGES SHALL BE SLIGHTLY EASED. 4. FINISH: POLISHED. 5. WATER CLEANABLE EPOXY ADHESIVE: ANSI A118.3., WATER • CLEANABLE EPOXY GROUT: ANSI A118.3,
- CHEMICAL RESISTANT, WATER CLEANABLE, TILE SETTING AND GROUTING EPOXY. 6. SEALANT FOR COUNTERTOPS: MILDEW • RESISTANT JOINT SEALANT: MILDEW RESISTANT, SINGLE COMPONENT, NONSAG, NEUTRAL CURING, SILICONE. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
- 7. GROMMETS: 2 INCH ROUND GROMMETS BY DOUG MOCKETT & COMPANY, INC. OR APPROVED EQUAL. E. STONE FABRICATION:
- 1. SELECT MATERIAL FOR INTENDED USE TO PREVENT FABRICATE AINING CRACKS. SEAMS, AND STARTS THAT COULD IMPAIR STRUCTURAL INTEGRITY OR FUN 2. FABRICATE STONE COUNTERTOPS IN SIZES AND SHAPES WITH REQUIREMENTS INDICATED
- COVE DESIGN MANUAL VI." 3. GENERAL: COMPLY WITH RECOMMENDATIONS I<sup>▶</sup> 4. NOMINAL THICKNESS: PROVIDE THICKNESS № JS THAN 3 CM (EXCEPT APARTMENT UNIT BATHROOM COUNTERTOPS SHALL P GAGE BACKS TO PROVIDE UNITS OF IDENTICAL THICKNESS. 5. SPLASHES: PROVIDE 3/4 · INCH TH' J END SPLASHES UNLESS OTHERWISE INDICATED. 6. JOINTS: FABRICATE COUNTE ✓HEREVER POSSIBLE. 7. CUTOUTS & HOLES:UNDEP1 AKE CUTOUTS FOR UNDERCOUNTER FIXTURES IN SHOP USING
  - MANUFACTURER. FORM CUTOUTS TO SMOOTH, EVEN CURVES. COUNTERTOPS IN SHOP FOR FIELD CUTTING OPENINGS FOR OPS FOR CUTOUTS AND DRILL HOLES AT CORNERS OF CUTOUT OF LARGEST RADIUS PRACTICAL.
- LOCATIONS. MAKE COR 9. FITTINGS: DRILL COUNTER IN SHOP FOR PLUMBING FITTINGS. UNDERCOUNTER SOAP DISPENSERS, AND SIMILAR ITEMS.
- F. INSTALLATION 1. GENERAL: INSTALL COUNTERTOPS OVER PLYWOOD SUBTOPS WITH FULL SPREAD OF WATER CLEANABLE FPOXY ADHESIVE
- 2. GENERAL: INSTALL COUNTERTOPS BY ADHERING TO SUPPORTS WITH WATER CLEANABLE EPOXY ADHESIVE.
- 3. SET STONE TO COMPLY WITH REQUIREMENTS INDICATED. SHIM AND ADJUST STONE TO LOCATIONS INDICATED, WITH UNIFORM JOINTS OF WIDTHS INDICATED AND WITH EDGES AND FACES ALIGNED
- ACCORDING TO ESTABLISHED RELATIONSHIPS. 4. SPACE JOINTS WITH 1/16. INCH GAP FOR FILLING WITH SEALANT. USE TEMPORARY SHIMS TO ENSURE UNIFORM SPACING. CLAMP UNITS TO TEMPORARY BRACING, SUPPORTS, OR EACH OTHER TO ENSURE THAT
- COUNTERTOPS ARE PROPERLY ALIGNED AND JOINTS ARE OF SPECIFIED WIDTH. 5. COMPLETE CUTOUTS NOT FINISHED IN SHOP. MASK AREAS OF COUNTERTOPS ADJACENT TO CUTOUTS TO PREVENT DAMAGE WHILE CUTTING. USE POWER SAWS WITH DIAMOND BLADES TO CUT STONE. MAKE
- CUTOUTS TO ACCURATELY FIT ITEMS TO BE INSTALLED, AND AT RIGHT ANGLES TO FINISHED SURFACES UNLESS BEVELING IS REQUIRED FOR CLEARANCE. EASE EDGES SLIGHTLY TO PREVENT SNIPPING
- 6. INSTALL BACKSPLASHES AND END SPLASHES BY ADHERING TO WALL WITH WATER CLEANABLE EPOXY ADHESIVE. LEAVE 1/16. INCH GAP BETWEEN COUNTERTOP AND SPLASHES FOR FILLING WITH SEALANT.
- USE TEMPORARY SHIMS TO ENSURE UNIFORM SPACING. 7. GROUT JOINTS TO COMPLY WITH ANSI A108.10. REMOVE TEMPORARY SHIMS BEFORE GROUTING.
- TOOL GROUT UNIFORMLY AND SMOOTHLY WITH PLASTIC TOOL. 8. APPLY SEALANT TO JOINTS AND GAPS SPECIFIED FOR FILLING WITH SEALANT: COMPLY WITH
- SECTION 079200 "JOINT SEALANTS," REMOVE TEMPORARY SHIMS BEFORE APPLYING SEALANT. 9. ASSURE THAT SEAMS ARE SMOOTH. LEVEL AND TIGHT. SEAMS SHALL BE FILLED ENTIRELY SO FLUSH WITH COUNTERTOP. POLISH SURFACE AT SEAM. ASSURE THAT FILLER IS "NON · YELLOWING." 10. CLEANING: CLEAN COUNTERTOPS AS WORK PROGRESSES. REMOVE ADHESIVE, GROUT MORTAR, AND SEALANT SMEARS IMMEDIATELY. CLEAN STONE COUNTERTOPS NO FEWER THAN SIX DAYS AFTER
- COMPLETION OF INSTALLATION, USING CLEAN WATER AND SOFT RAGS. DO NOT USE WIRE BRUSHES, ACID TYPE CLEANING AGENTS, CLEANING COMPOUNDS WITH CAUSTIC OR HARSH FILLERS, OR OTHER MATERIALS OR METHODS THAT COULD DAMAGE STONE.
- 11.SEALER APPLICATION: APPLY STONE SEALER TO COMPLY WITH STONE PRODUCER'S AND SEALER MANUFACTURER'S WRITTEN INSTRUCTIONS.





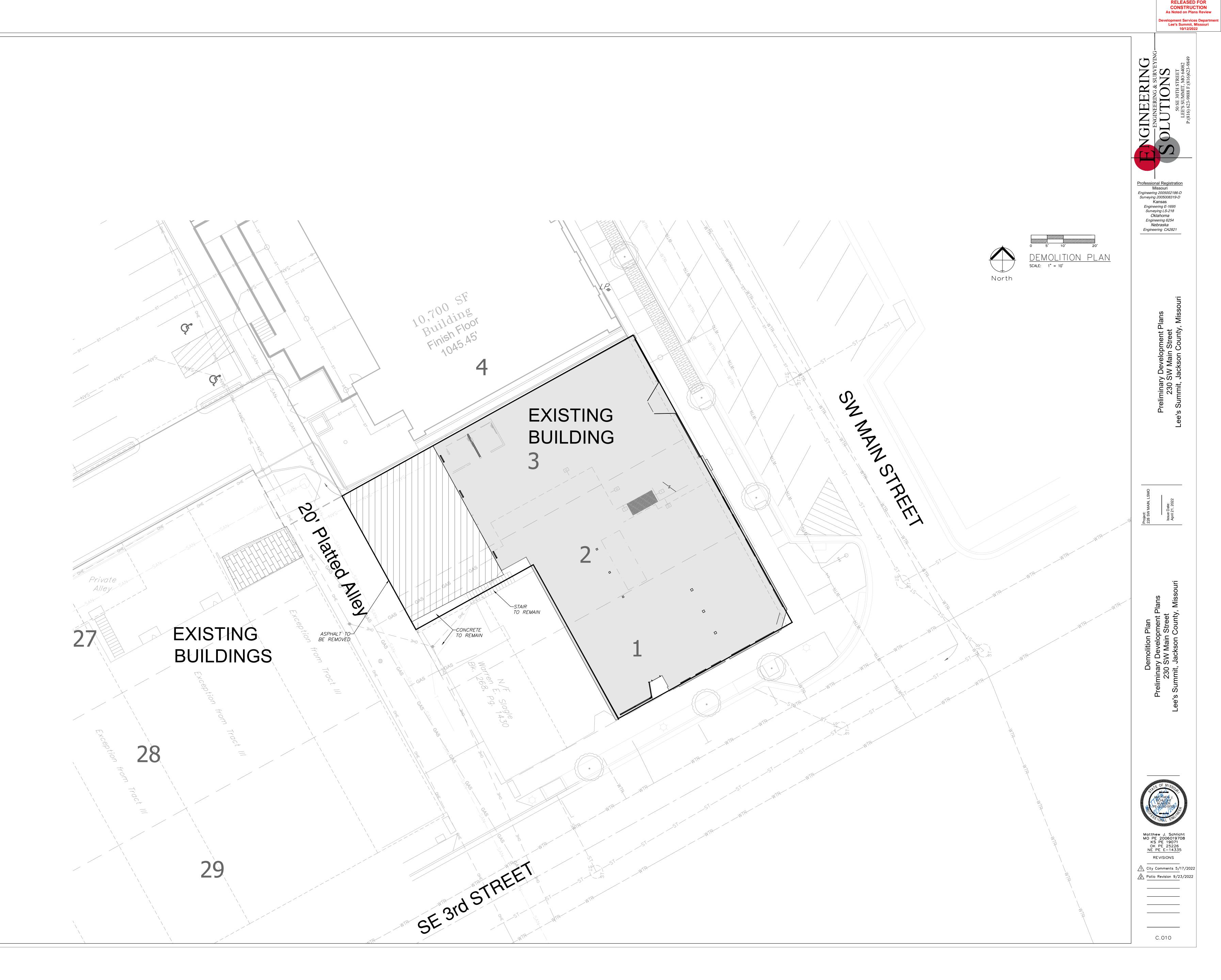
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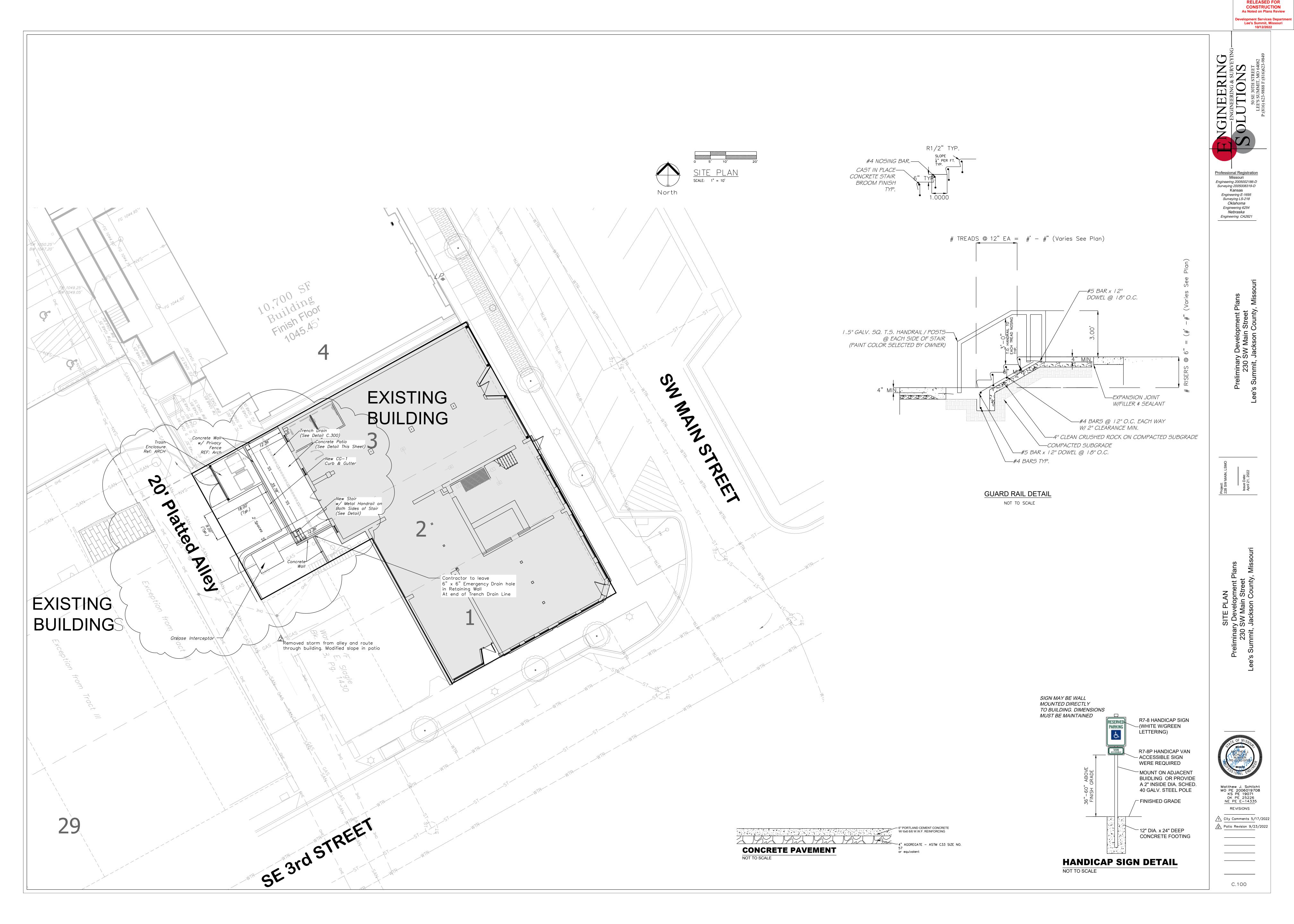


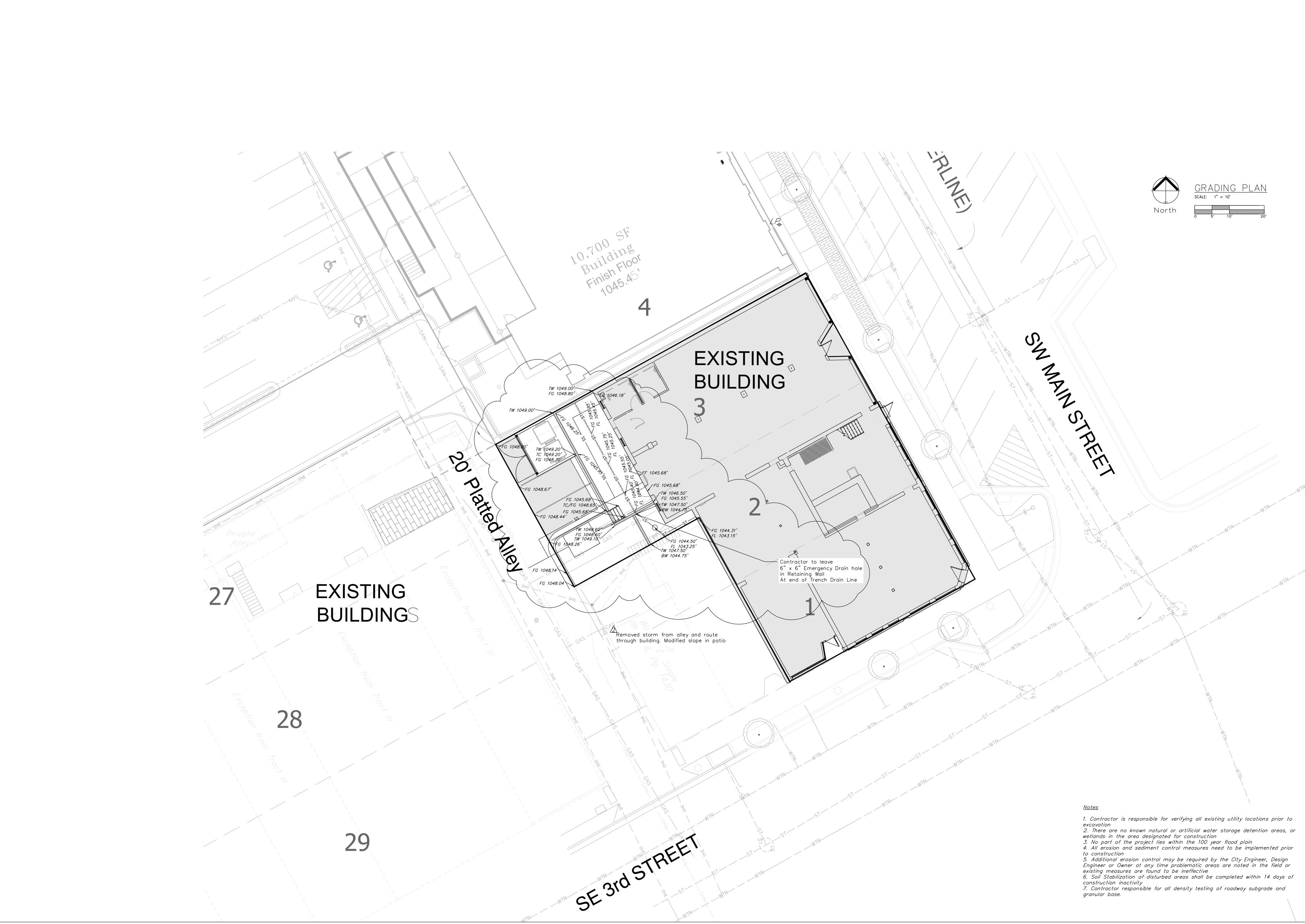
3 -

A8 2ND FLOOR DEMO PLAN 1/8" = 1'-0"

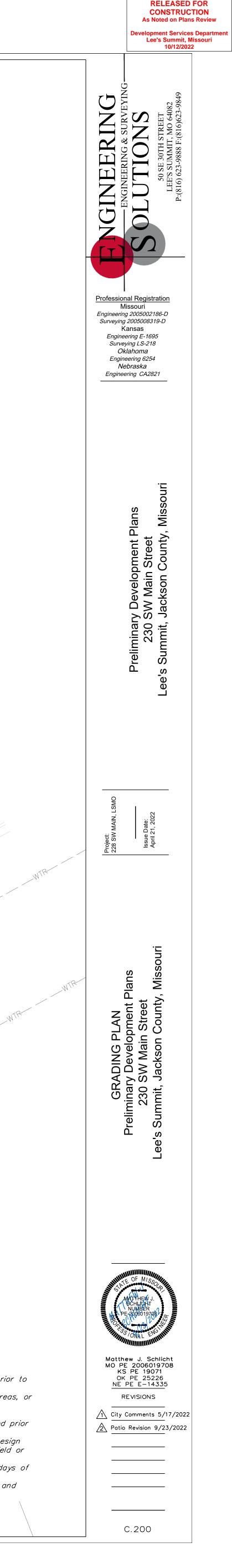
		RELEASED FOR CONSTRUCTION As Noted on Plans Review
	<ul> <li>GERN. DEEMONDATES</li> <li>CONTRACTOR TO VISIT PROJECT SITE AND BUILDING, PRIOR TO BID.</li> <li>BUILDING AND SITE TO REMAIN SECURE DURING DEMOLITION AND CONSTRUCTION.</li> <li>PROTECT ALL ITEMS TO REMAIN (WALLS, PLUMBING FIXTURES, PIPING, HVAC UNITS, COLUMNS, ETC).</li> <li>CARE IS TO BE EXERCISED IN THE DEMOLITION OPERATIONS. EXISTING SURFACES TO REMAIN SHALL BE PROTECTED. ANY DAMAGE INCURRED AS A RESULT OF DEMOLITION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR'S HALL BEAR THE COST OF REPAIRING SUCH DAMAGE.</li> <li>ALL OPENINGS IN WALLS AND ROOFS RESULTING FROM EQUIPMENT AND/OR PIPE REMOVAL SHALL BE SEALED WEATHERTIGHT. ALL CONDITIONS SHALL BE LEFT SAFE AND HAZARD FREE.</li> <li>CONTRACTOR TO REPAIR ANY AREAS DAMAGED DURING DEMOLITION.</li> <li>CONTRACTOR TO COORDINATE DEMOLITION OPENINGS WITH NEW PLANS AND ELEVATIONS.</li> <li>ALL MEP SYSTEMS TO BE REMOVED TO BE FULLY COORDINATED WITH EXISTING CONDITIONS. ALL SYSTEMS TO BE REMOVED COMPLETELY THAT ARE NOT BEING RE- UTILIZED.</li> <li>PROTECT EXISTING CONDITIONS AND MAINTAIN WEATHER TIGHTNESS FOR ALL OCCUPIED/UNOCCUPIED SPACES. BOTH VERTICALLY AND HORIZONTALLY FOR THE ENTIRE DURATION THAT THE BUILDING IS EXPOSED TO THE ELEMENTS. PATCH/REPAIR/REPLACE AS REQUIRED.</li> </ul>	307B SW Market Street, Lee's Summit, Missouri (www.collinsandwebb.com)
A B C C A D D B E E F F C C A D D B E E F F C C A D D B E E F F C C A D D B E E F F C C A D D B E E F F C C A D D D D B E E F F C C A D D D D B E E F F C C A D D D D B E F F C C A D D D D B E F F C C A D D D D B E F F C C A D D D D B E F F C C A D D D D B E F F C C A D D D D B E F F C C A D D D D D D D D D D D D D D D D D		DEMNI DOCUMENTS

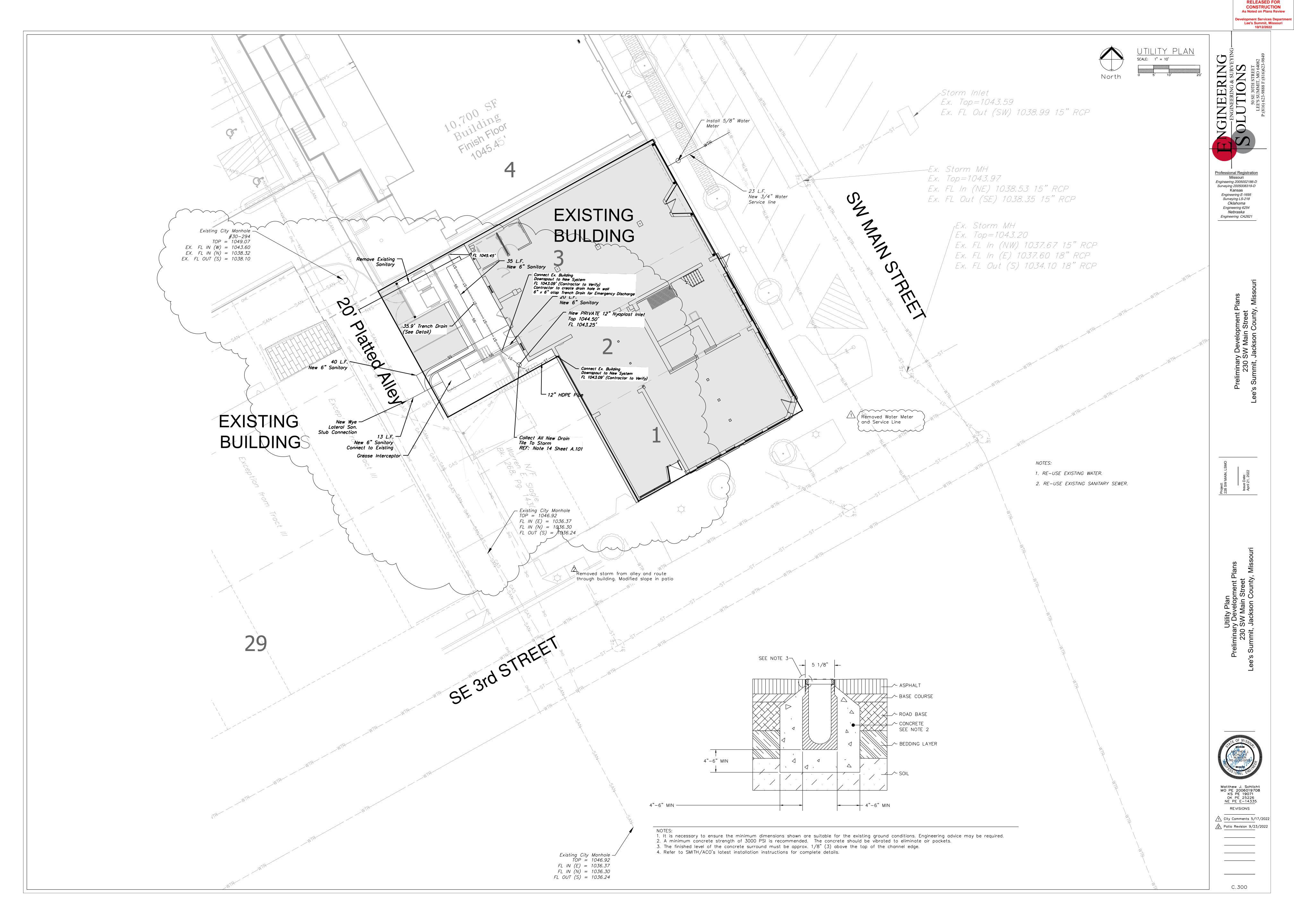




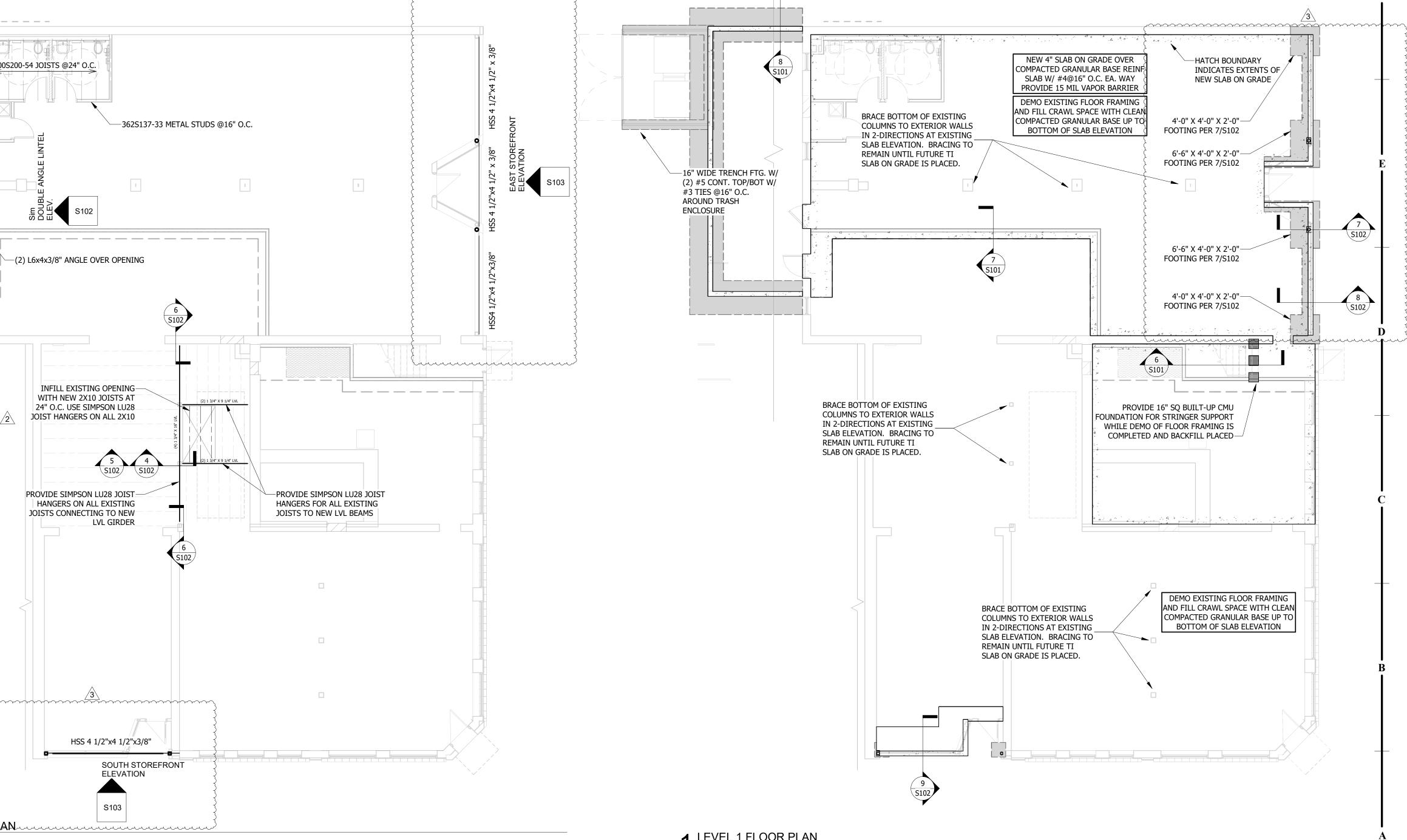


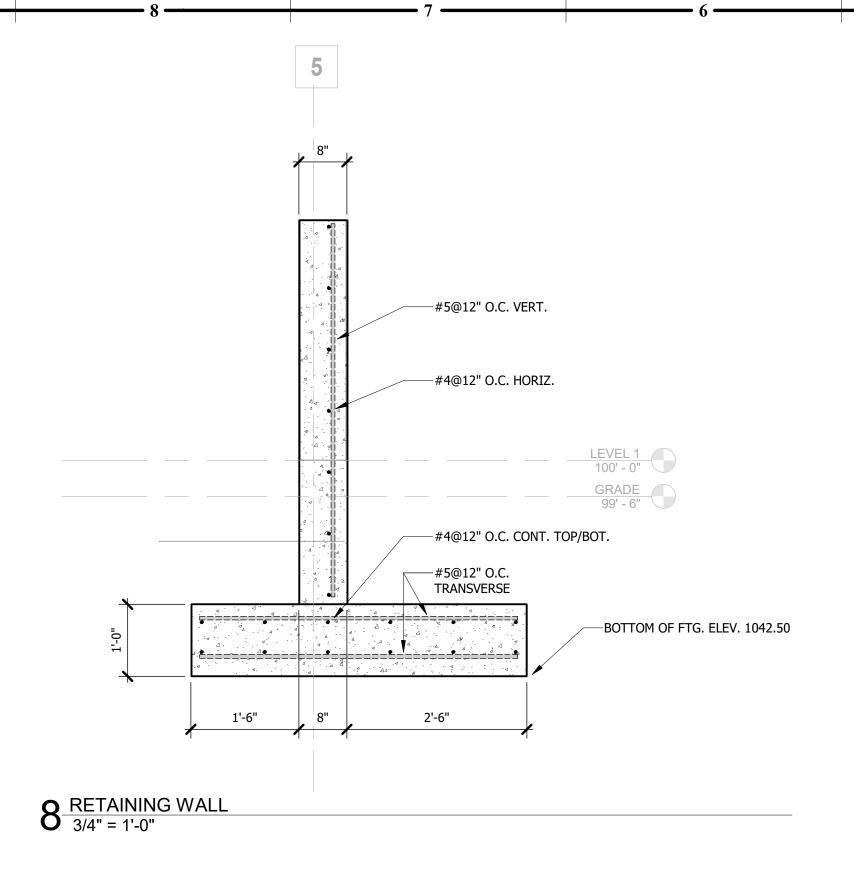
construction inactivity 7. Contractor responsible for all density testing of roadway subgrade and



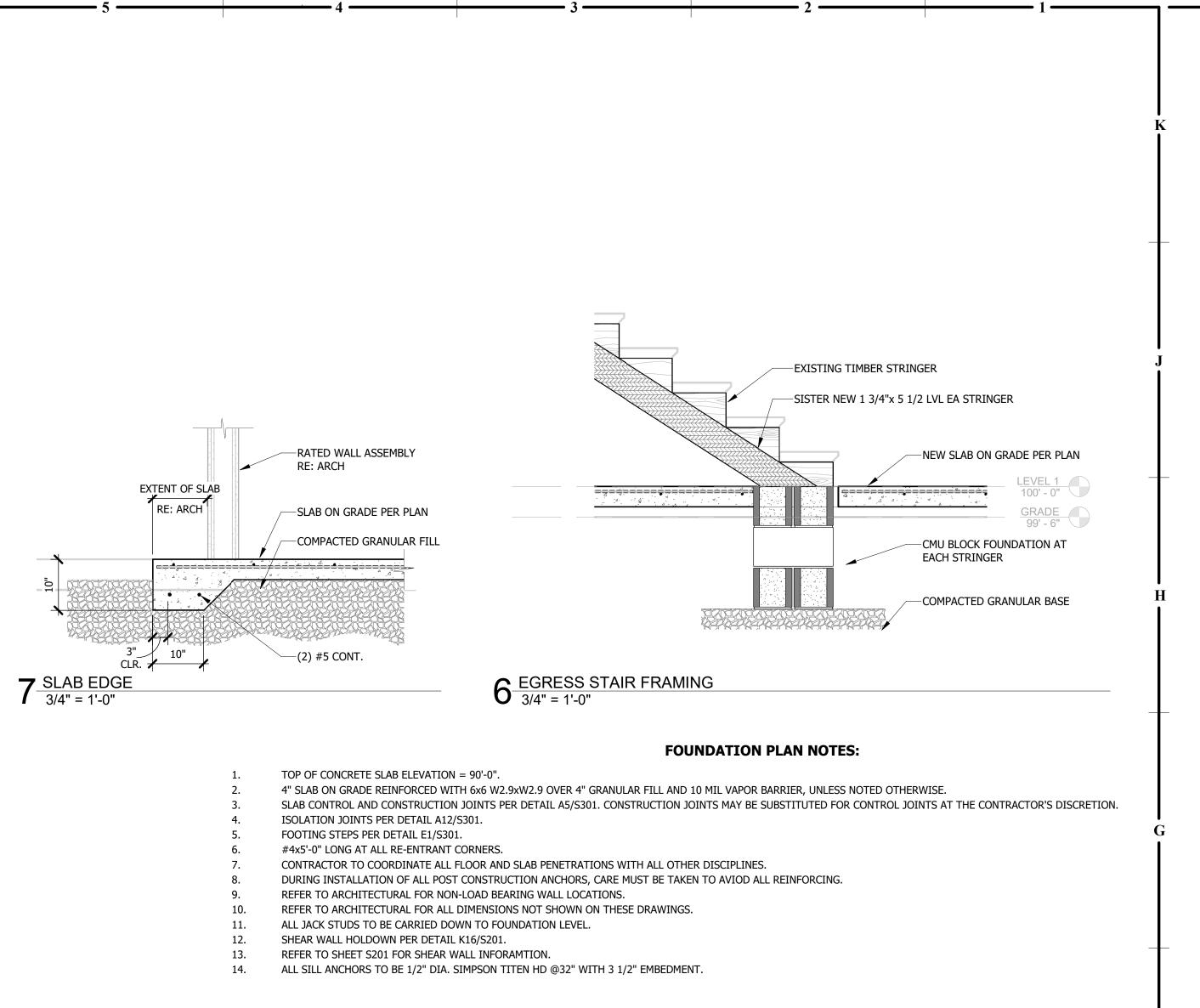


1. 2.	THE C	ORK SHALL CONFORM TO 2018 INTERNATIONAL BUILDING CODE AS ADOPTED AND . TY OF LEE'S SUMMIT, MISSOURI. N LOADS	AMENDED BY
	A.	OVERALL BUILDING CLASSIFICATIONS1.RISK CATEGORY2.SNOW IMPORTANCE FACTOR, Is1.00	
		2.SNOW IMPORTANCE FACTOR, Is1.003.ICE IMPORTANCE FACTOR - WIND, Iw1.004.SEISMIC IMPORTANCE FACTOR, Ie1.00	
	В.	SLAB ON GRADE FLOOR LOADS1.LIVE LOAD2.CONCENTRATED LOAD3000 LB ACTING	
	C.	2. CONCENTRATED LOAD 3000 LB ACTING 4.5 IN. BY 4.5 IN ROOF DEAD AND LIVE LOADS	
		1.DEAD LOAD TOP CHORD20 PSF2.DEAD LOAD BOT. CHORD5 PSF3.LIVE LOAD TOP CHORD20 PSF	
	D.	3.LIVE LOAD TOP CHORD20 PSF4.LIVE LOAD BOT. CHORD0 PSF (U.N.O)ROOF SNOW LOADS0 PSF (U.N.O)	
		1.         GROUND SNOW LOAD, Pg         15 PSF           2.         FLAT ROOF SNOW LOAD, Pf         11.34 PSF	
		3.SNOW EXPOSURE FACTOR, $C_e$ 0.94.THERMAL FACTOR, $C_t$ 1.25.SLOPE FACTOR, $C_s$ 0.6	
	E.	6. DRIFTING PER CODE WIND LOADS	
		1.BASIC WIND SPEED (3 SECOND GUST)107 MPH2.EXPOSURE CATEGORYC3.INTERNAL PRESSURE COEFFICIENT, GCpi+/- 0.18	
	F.	4. COMPONENTS AND CLADDING PER ASCE 7-16. REFER TO XX/XXXX. SEISMIC LOADS	
		1.       Ss       0.189         2.       S1       0.105         3.       SITE CLASS       C	
		4.         S <sub>DS</sub> 0.164           5.         S <sub>D1</sub> 0.105	
		6.       SEISMIC DESIGN CATEGORY       B         7.       SEISMIC FORCE RESISTING SYSTEM       WOOD WALLS SI         WITH WOOD ST       WITH WOOD ST	
		8.     DESIGN BASE SHEAR     C <sub>S</sub> W	FOR SHEAR
		9.       DESIGN RESPONSE COEFFICIENT, Cs       0.025         10.       RESPONSE MODIFICATION COEFFICIENT, R       6.5         11.       ANALYSIS PROCEDURE USED       EQUIVALENT LATE	
	G.	(ELF) PROCEDUR ROOF RAIN LOADS	
		1.60-MIN DURATION/100 YEAR RAIN INTENSITY, i3.20 IN2.15-MIN DURATION/100 YEAR RAIN INTENSITY, i1.61 IN	
3.		ACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO FABRICATION.	
4. 5.	ENGIN	CREPANCIES EXIST BETWEEN CONTRACT DRAWINGS, AND/OR SHOP DRAWINGS NO EER OF RECORD. DNTRACTOR SHALL REVIEW DRAWINGS FROM ALL OTHER DISCIPLINES FOR PERTIN	
6.	ITEMS THE B	OR INFORMATION RELATED TO THE STRUCTURAL WORK AND COORDINATE AS REQ JILDING IS NOT STRUCTURALLY STABLE UNTIL ALL CONNECTIONS, FRAMING, SHEAI	QUIRED. R WALLS,
	THEIR	NENT BRACING, AND EXTERIOR LOAD-BEARING WALLS ARE COMPLETE AND HAVE A RESPECTIVE DESIGN STRENGTHS. CONTRACTOR IS SOLELY RESPONSIBLE FOR MAII TURAL STABILITY DURING ERECTION AND CONSTRUCTION. TEMPORARY BRACING S	NTAINING
7.	NOT T PROVI	D BE REMOVED UNTIL STRUCTURAL WORK IS COMPLETE. DE ADEQUATE SHORING DURING CONSTRUCTION TO RESIST FORCES SUCH AS WIN	D AND
	UNBAL DAYS.	ANCED LOADS DUE TO CONSTRUCTION. DO NOT BACKFILL UNTIL CONCRETE HAS C	UKEU 14
9.			RI F
	Α.	CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO LATEST APPLICAL AMERICAN CONCRETE INSTITUTE DOCUMENTS, ACI-301, 305, 306, 315, 318, AND NOTED OTHERWISE IN THESE CONTRACT DOCUMENTS.	
	В.	ALL CONCRETE, UNLESS NOTED OTHERWISE, SHALL DEVELOP A 28 DAY COMPRESS STRENGTH AND HAVE MAXIMUM WATER/CEMENT RATIOS AS FOLLOWS:	
		1.FOOTINGS, GRADE BEAMS, WALLS, BEAMS, COLUMNS:4000 PSI (w/c M2.SLAB ON GRADE:4000 PSI (w/c M3.REFER TO THE SPECIFICATION FOR AIR-ENTRAINED CONCRETE.	
	C. D.	SLABS-ON-GRADE SHALL DEVELOP A 90 DAY COMPRESSIVE STRENGTH. IT IS THE INTENT OF THESE CONCRETE SPECIFICATIONS THAT THE CONTRACTOR	
		CONCRETE MIXES WITH A MINIMUM AMOUNT OF WATER IN ORDER TO LIMIT PLAS SHRINKAGE CRACKING IN FRESHLY PLACED CONCRETE. IT IS EXPECTED THAT PRO WORKABILITY FOR CONCRETE MIXES WILL REQUIRE THE ADDITION OF WATER-RI	DDUCING
	E.	CHEMICAL ADMIXTURES. CONCRETE MIX DESIGNS SHALL INCLUDE ALL APPLICABLE ADMIXTURES.	
	F.	CONCRETE SLUMP SHALL BE A MAXIMUM OF 4" +/- 1" (ASTM C-145) AS DELIVERED FIELD. CONTRACTOR MAY USE CHEMICAL ADMIXTURES TO ATTAIN A MAXIMUM SL FOR WORKABILITY IF ADMIXTURE IS TO BE ADDED IN THE FIELD IS SHALL BE ADD	LUMP OF 8"
	G.	THROUGH THE USE OF AN EXTERNAL MEASURING DEVICE (I.E. 5 GALLON BUCKET CONCRETE EXPOSED TO WEATHER, PARKED VEHICLES, AND/OR DEICING CHEMIC	).
	Н.	CONTAIN 6% (+/- 1%) ENTRAINED AIR BY VOLUME. CHAMFER ALL EXPOSED CORNERS OF CONCRETE WALLS, 3/4" UNLESS NOTED OTH	IERWISE.
	I.	ALL CONTROL JOINTS IN CONCRETE SLABS-ON-GRADE SHALL BE CUT TO 1/3 OF D USING WET-CUTTING PROCESS AND 1/4 OF DEPTH WHEN USING EARLY-ENTRY DF PROCESS. CUT JOINTS AS SOON AS APPLICABLE PER PROCESS USED AFTER CONCI	RY-CUT RETE HAS
	J.	BEEN PLACED WITHOUT DISLODGING AGGREGATE, OR USE A KEYED COLD JOINT. CUT SLABS-ON-GRADE INTO AREAS OF APPROXIMATELY 225 SQUARE FEET MAINT	AINING AS
	К.	CLOSE TO SQUARE AREAS AS POSSIBLE. LENGTH TO WIDTH RATIOS OF JOINTED I NOT EXCEED 1.5:1. COORDINATE LOCATIONS OF CONTROL JOINTS WITH ARCHITI CONTROL JOINTS IN WALLS SHALL BE PLACED AT 20'-0" O.C. MAXIMUM UNLESS N	ECT.
		OTHERWISE. LOCATE JOINTS BESIDE PIERS INTEGRAL WITH WALLS, NEAR CORNE CONCEALED LOCATIONS WHERE POSSIBLE. CONSTRUCTION JOINTS MAY BE PLACE	ERS, AND IN ED IN LIEU OF
	L.	CONTROL JOINTS AT CONTRACTOR'S DISCRETION. COORDINATE LOCATION OF CO JOINTS WITH ARCHITECT. PRIOR TO PLACING CONCRETE IN ANY LOCATION, IT IS THE RESPONSIBILITY OF	
		CONTRACTOR TO HAVE THOROUGHLY CHECKED AND COORDINATED ALL DIMENSI ELEVATIONS, OPENINGS, RECESS, AND BLOCKOUTS AS SHOWN ON ANY CONTRAC	IONS, T DRAWINGS.
		IN THE EVENT ERRORS, CONFLICTS, OR OMISSIONS EXIST, IT SHALL BE THE CONTRESPONSIBILITY TO CONTACT THE ARCHITECT OR ENGINEER FOR NECESSARY COACTION.	
	M.	EMBEDDED ITEMS ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR I PLACING CONCRETE.	
	N. O.	ANCHOR RODS AND ANCHOR BOLTS SHALL BE HELD IN PLACE WITH A RIGID TEMI HORIZONTAL JOINTS BEYOND THOSE SHOWN IN THE CONTRACT DOCUMENTS SHA CONSTRUCTED WITHOUT THE APPROVAL OF THE ARCHITECT AND ENGINEER.	
12.	MASOI	IRY	
	А. В.	MASONRY UNIT COMPRESSIVE STRENGTH ( $f'_m$ ) = 1500 PSI. MORTAR - TYPE S. LINTELS SHALL BE STEEL BEAMS OR MASONRY BOND BEAMS AS SHOWN ON THE P OPENINGS LESS THAN 4'-0" WIDE SHALL BE A BOND BEAM WITH (2) #5 CONTINUE	
	C.	EXTENDING PAST OPENINGS A MIN. OF 2'-0". GROUT ALL REINFORCED CELLS AND CELLS BELOW GRADE SOLID.	
	D. E.	PLACE A BOND BEAM WITH/ (2) #5 CONTINUOUS AT THE TOP OF WALLS & 8'-0" O VERTICALLY. REINFORCE 8" CMU WALLS WITH #5 @ 32" O.C. VERT. AND 12" CMU WALLS WITH	
		O.C. VERT. UNLESS NOTED OTHERWISE. IN ADDITION, REINFORCE WALL CORNER OF WINDOWS AND DOORS WITH (2) #5 EXTENDING PAST OPENINGS A MIN. OF 2	S AND JAMBS
13.	F. ROUGI	BRACE THE TOPS OF PARTITION WALLS TO THE UNDERSIDE OF DECK.	
_3.	A.	HEADERS, JOISTS, AND RAFTERS SHALL MEET OR EXCEED THE FOLLOWING MINIM REQUIREMENTS. (EXAMPLE SPECIES: #2 SPRUCE-PINE-FIR)	IUM
		1.     FB     875 PSI       2.     FV     135 PSI       3.     FC     1150 PSI	
	В.	4. E 1400 KSI TIMBER FRAMING MEMBERS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM	
		REQUIREMENTS. (EXAMPLE SPECIES: #2 SPRUCE-PINE-FIR)1. $F_B$ 875 PSI2. $F_V$ 135 PSI	
		3.         Fc         1150 PSI           4.         E         1400 KSI	
	C. D.	ALL LVL MEMBERS SHALL BE 2.0E MICROLLAM OR APPROVED EQUAL. ALL WOOD FRAMING MEMBERS INDICATED ARE NOMINAL SIZES. PROVIDE ACTUA SIZES, KILN-DRIED, WITH MAXIMUM IN-PLACE MOISTURE CONTENT OF 19%.	L DRESSED
	E.	ALL BOLTS ARE A36 OR A307, GRADE 1, AND ALL NAILS ARE COMMON WIRE NAILS NOTED OTHERWISE.	
		LAY ALL STRUCTURAL PANELS WITH FACE GRAIN PERPENDICULAR TO SUPPORTIN AND OFFSET END JOINTS 4'-0". PANELS TO BE APA RATED AND STAMPED FOR THE	E LOADING
	F.		
	F. G.	SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHO PLANS. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING FA	
		SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHOPLANS. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING FAWITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTH FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FAST	IERWISE.
	G.	SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHOPLANS. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING FA WITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTH FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FAS SCHEDULE (TABLE 2304.9) UNLESS NOTED OTHERWISE. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PE	IERWISE. STENING
14.	G. Н. І.	SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHOPLANS. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING FA WITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTH FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FAST SCHEDULE (TABLE 2304.9) UNLESS NOTED OTHERWISE.	IERWISE. STENING
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14.	G. H. I. STRUC	SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHO PLANS. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING F, WITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTH FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FAS SCHEDULE (TABLE 2304.9) UNLESS NOTED OTHERWISE. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PF TREATED. TURAL STEEL ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACC WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST APPLICA AND AISC CODE OF STANDARD PRACTICE. ALL STRUCTURAL STEEL FOR WIDE FLANGE SHALL BE A992 GRADE 50 UNLESS NOT	HERWISE. STENING RESERVATIVE ORDANCE BLE EDITION TED
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14.	G. H. I. STRUC A. B. C.	SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHOPLANS. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING F. WITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTH FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FAS SCHEDULE (TABLE 2304.9) UNLESS NOTED OTHERWISE. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PF TREATED. TURAL STEEL ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACC WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST APPLICA AND AISC CODE OF STANDARD PRACTICE. ALL STRUCTURAL STEEL FOR WIDE FLANGE SHALL BE A992 GRADE 50 UNLESS NOT OTHERWISE. ALL ANGLES, PLATES AND CHANNELS SHALL BE ASTM A36 UNLESS NOT OTHERWISE. ALL RECTANGULAR AND ROUND HSS SHAPES SHALL BE ASTM A500, C ALL BOLTS SHALL BE 3/4" Ø A-325 BOLTS WITH HEAVY HEX HEADS UNLESS NOTED ALL CONNECTIONS SHALL HAVE A MINIMUM OF (2) 3/4" Ø BOLTS, BEARING TYPE O ONLY.	HERWISE. STENING RESERVATIVE ORDANCE BLE EDITION TED DTED GRADE B. D OTHERWISE. CONNECTIONS
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14.	G. H. I. STRUC A. B. C. D. E.	<ul> <li>SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHOPLANS.</li> <li>ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING F.</li> <li>WITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTH FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FASS SCHEDULE (TABLE 2304.9) UNLESS NOTED OTHERWISE.</li> <li>ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PETREATED.</li> <li>TURAL STEEL</li> <li>ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCOWITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST APPLICA AND AISC CODE OF STANDARD PRACTICE.</li> <li>ALL STRUCTURAL STEEL FOR WIDE FLANGE SHALL BE A992 GRADE 50 UNLESS NOTED OTHERWISE. ALL ANGLES, PLATES AND CHANNELS SHALL BE ASTM A36 UNLESS NOTED ALL BOLTS SHALL BE 3/4" Ø A-325 BOLTS WITH HEAVY HEX HEADS UNLESS NOTED ALL CONNECTIONS SHALL HAVE A MINIMUM OF (2) 3/4" Ø BOLTS, BEARING TYPE ONLY.</li> <li>ALL STRUCTURAL STEEL WELDS IN THE SHOP OR IN THE FIELD SHALL BE PERFORM QUALIFIED WELDER AND SHALL CONFORM TO THE CURRENT REQUIREMENTS OF A SHOP WELDED AND FIELD BOLTED CONNECTIONS ARE PREFERRED UNLESS NOTED OTHERWISE.</li> <li>THE CONTRACTOR SHALL PROVIDE SHELF ANGLES, GLASS SUPPORTS, LINTELS, AN MISC. STEEL AS SHOWN ON THESE DRAWINGS AS REQUIRED TO PROVIDE SUPPOF (STABILIZATION) AROUND AND THROUGHOUT THE BUILDING. SEE ARCHITECTURAL</li> </ul>	HERWISE. STENING RESERVATIVE ORDANCE BLE EDITION TED DTED GRADE B. O OTHERWISE. CONNECTIONS MED BY A A.W.S. D ND OTHER RT 9 <u>2ND FLOOR F</u>
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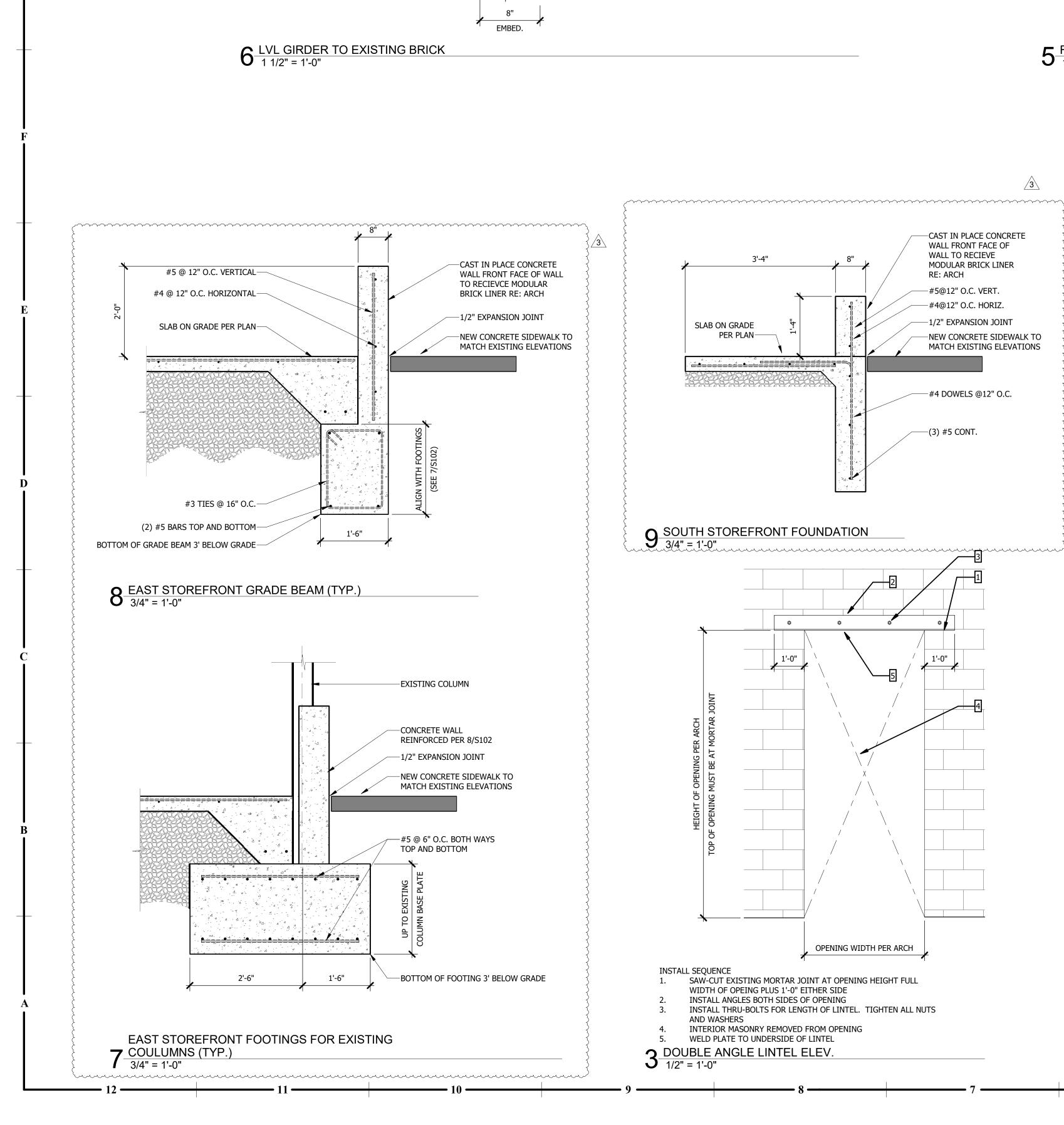


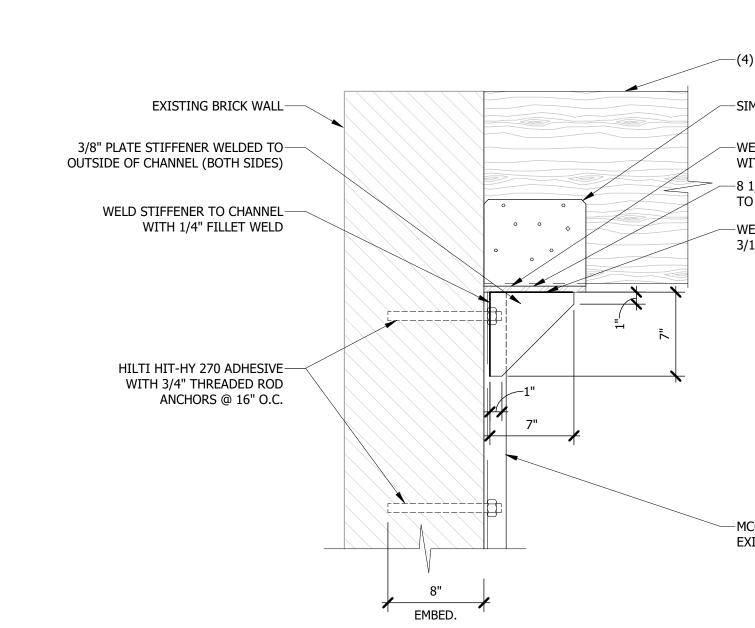
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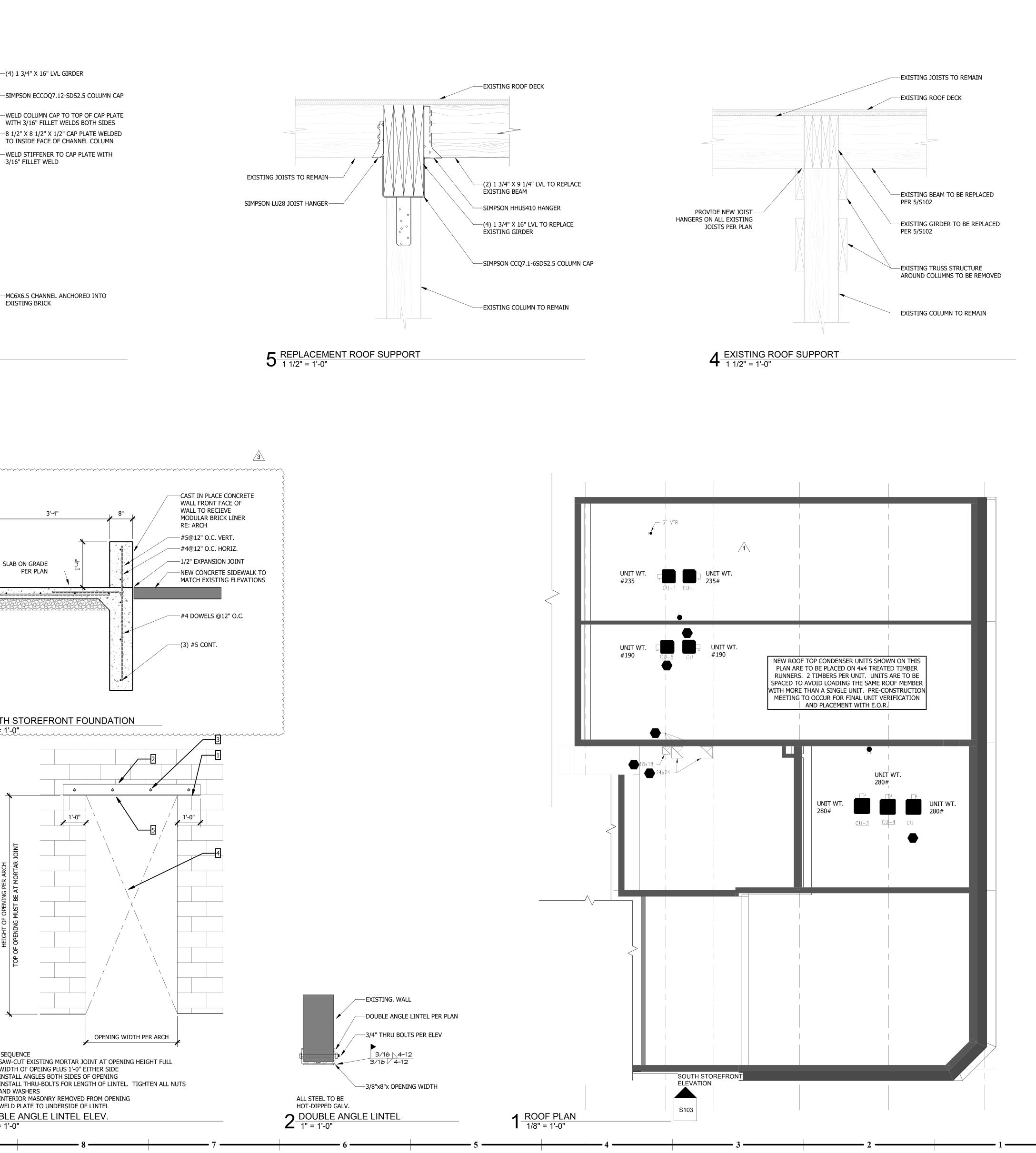
1 <u>LEVEL 1 FLOOR PLAN</u> 1/8" = 1'-0"







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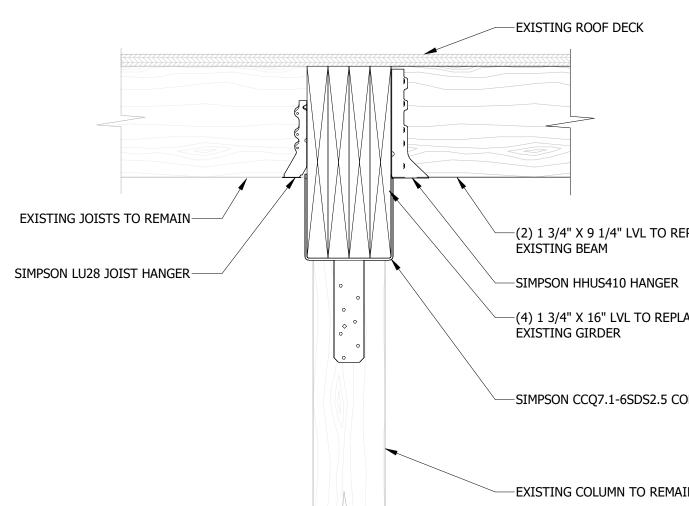


## —MC6X6.5 CHANNEL ANCHORED INTO EXISTING BRICK

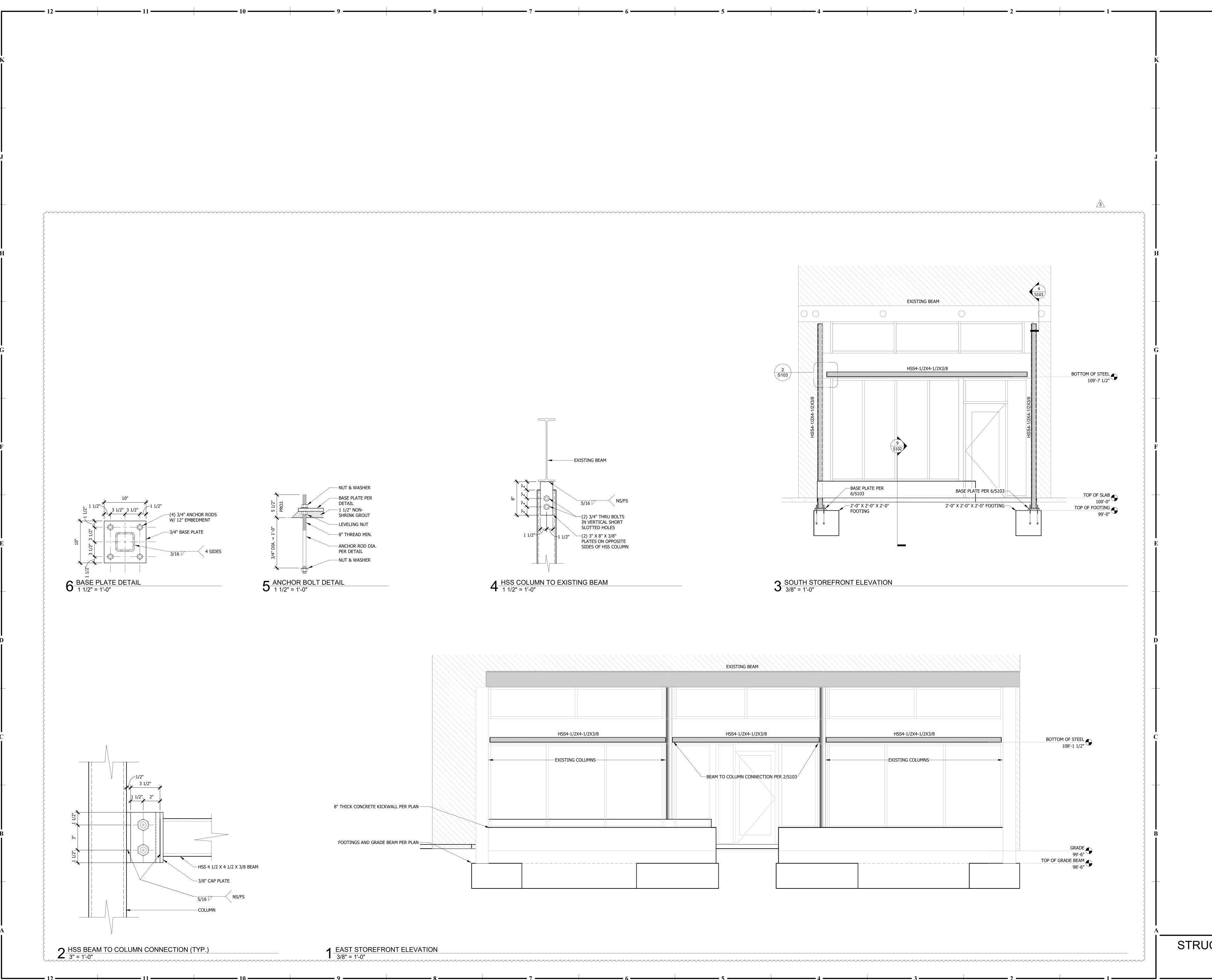
-WELD STIFFENER TO CAP PLATE WITH 3/16" FILLET WELD

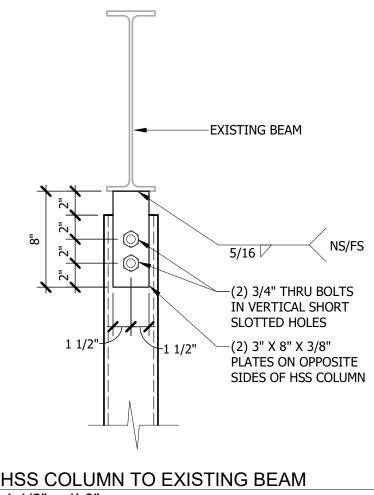
-WELD COLUMN CAP TO TOP OF CAP PLATE WITH 3/16" FILLET WELDS BOTH SIDES TO INSIDE FACE OF CHANNEL COLUMN

-SIMPSON ECCOQ7.12-SDS2.5 COLUMN CAP

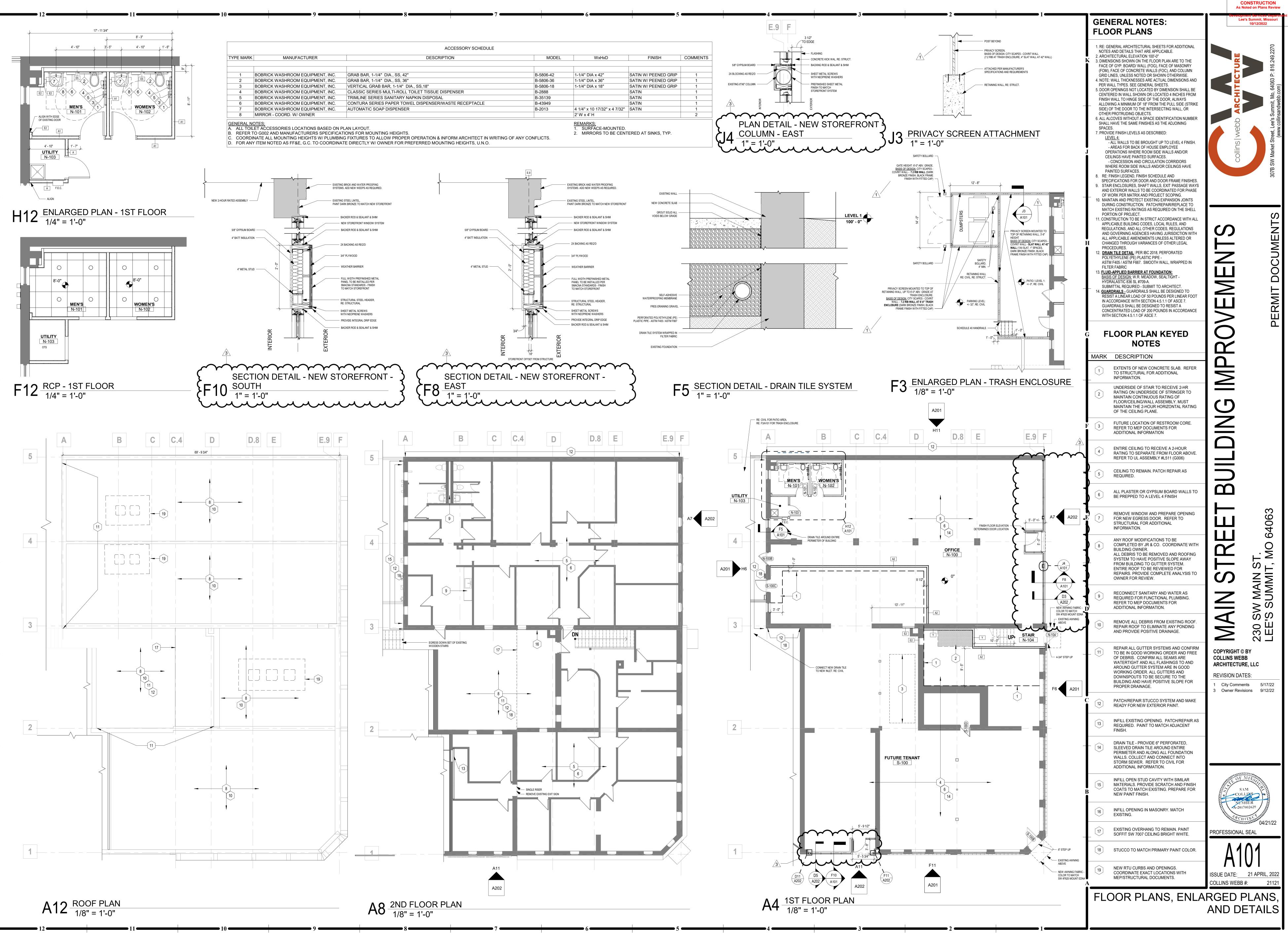




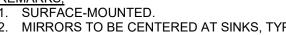


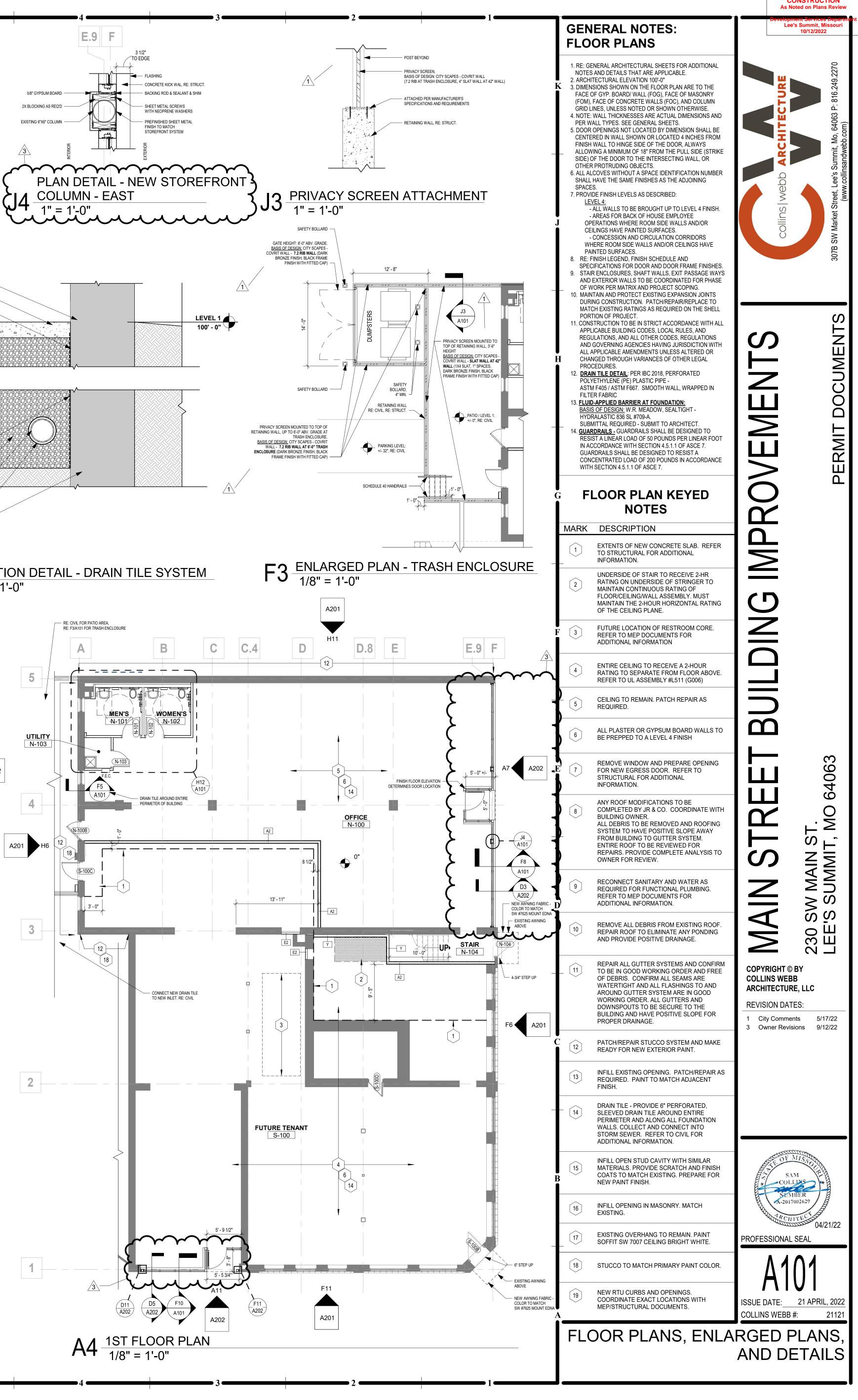






ACCESSORY SCHEDULE				
DESCRIPTION	MODEL	WxHxD	FINISH	COMMENTS
GRAB BAR, 1-1/4" DIA., SS, 42"	B-5806-42	1-1/4" DIA x 42"	SATIN W/ PEENED GRIP	1
GRAB BAR, 1-1/4" DIA., SS, 36"	B-5806-36	1-1/4" DIA x 36"	SATIN W/ PEENED GRIP	1
VERTICAL GRAB BAR, 1-1/4" DIA., SS,18"	B-5806-18	1-1/4" DIA x 18"	SATIN W/ PEENED GRIP	1
CLASSIC SERIES MULTI-ROLL TOILET TISSUE DISPENSER	B-2888		SATIN	1
TRIMLINE SERIES SANITARY NAPKIN DISPOSAL	B-35139		SATIN	1
CONTURA SERIES PAPER TOWEL DISPENSER/WASTE RECEPTACLE	B-43949		SATIN	1
AUTOMATIC SOAP DISPENSER	B-2013	4 1/4" x 10 17/32" x 4 7/32"	SATIN	1
		2' W x 4' H		2





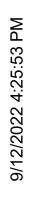
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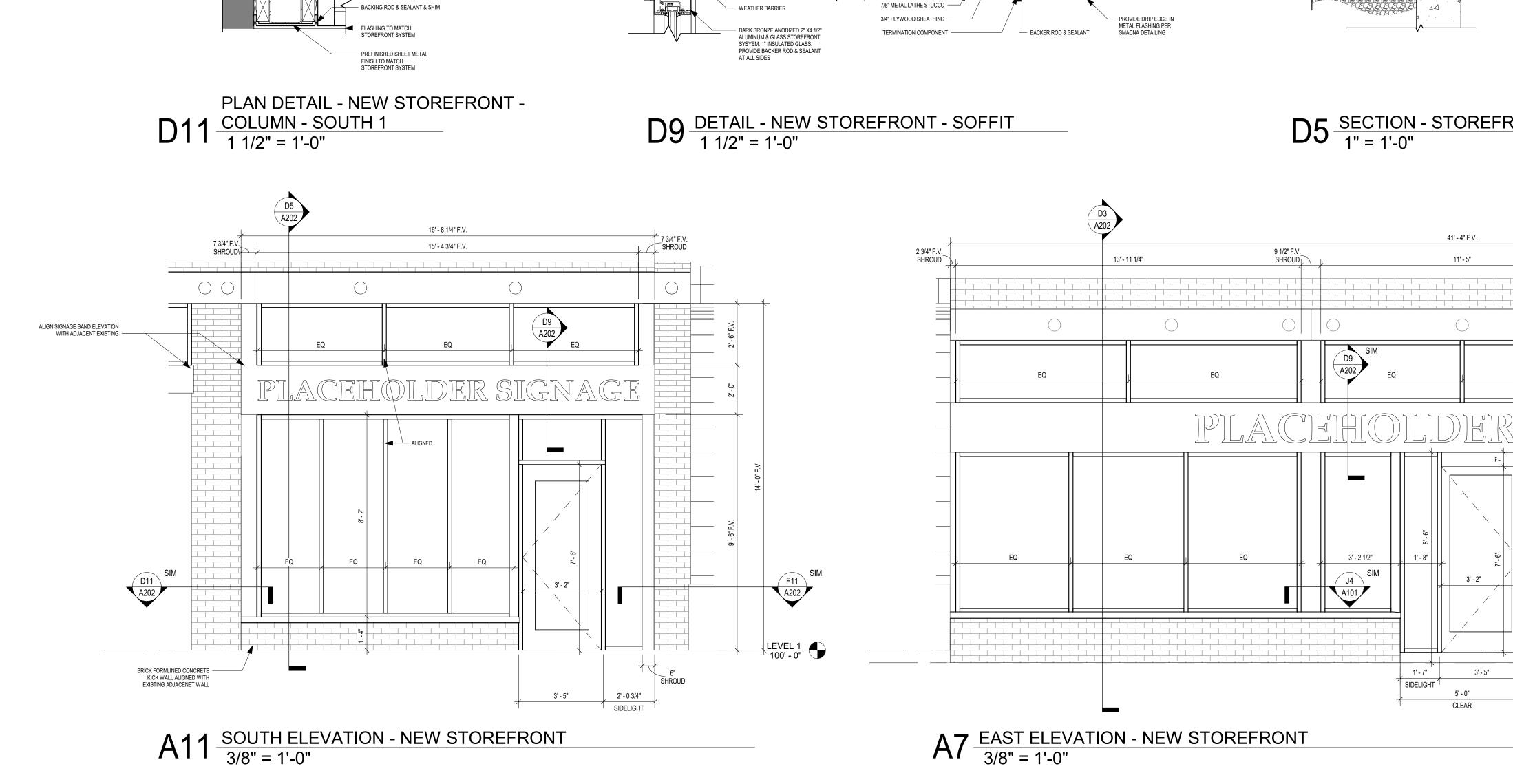


					DOOR SCHEL	JULE				
					DOOR		FR/	AME		
DOOR #	WIDTH	HEIGHT	ROOM NAME	TYPE	MATERIAL	FINISH	MATERIAL	FINISH	RTG	REMARKS
N-100B	3' - 0"	7' - 0"	OFFICE	D2	ALUM/GLASS		ALUM		N/A	1, 3, 4, 5, 6, 7
N-101	3' - 0"	7' - 0"	MEN'S	D1	SCWD	PAINT	HM	PAINT	N/A	1, 3, 4, 6
N-102	3' - 0"	7' - 0"	WOMEN'S	D1	SCWD	PAINT	HM	PAINT	N/A	1, 3, 4, 6
N-103	2' - 8"	7' - 0"	UTILITY	D1	SCWD	PAINT	HM	PAINT	N/A	3, 4
N-104	EXIST	EXIST	STAIR	EXIST	EXIST	PAINT	EXIST	PAINT	N/A	1, 2, 3
S-100B	EXIST	EXIST	FUTURE TENANT	EXIST	EXIST	PAINT	EXIST	PAINT	N/A	1, 2, 3
S-100C	3' - 0"	7' - 0"	FUTURE TENANT	D1	HM	PAINT	HM	PAINT	N/A	1, 3, 4, 6
S-100D	EXIST	EXIST	FUTURE TENANT	EXIST	EXIST	EXIST	EXIST	EXIST	N/A	2, 3







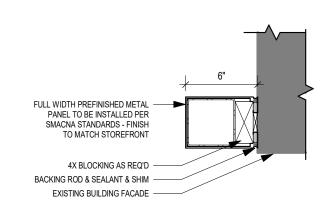


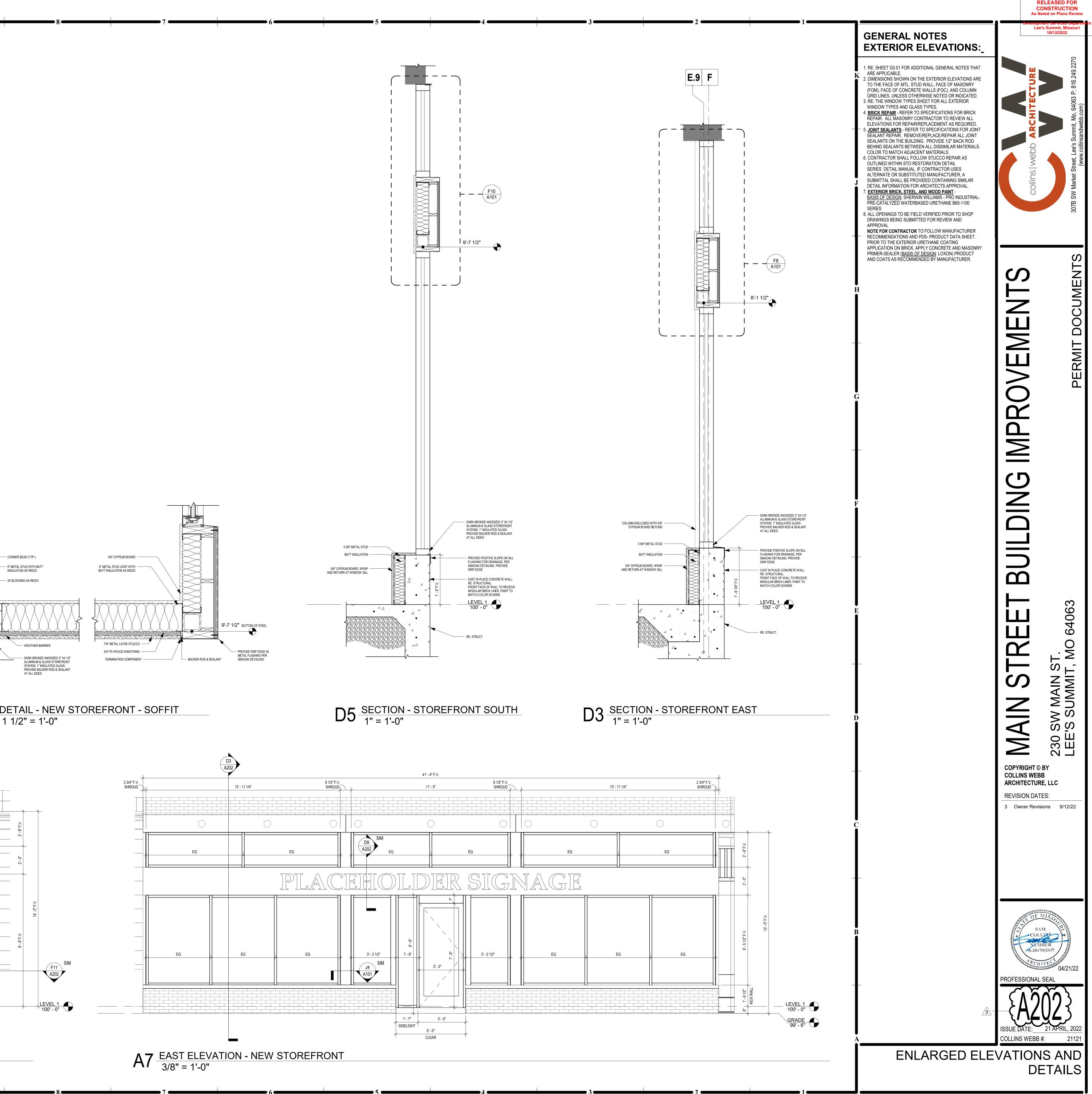
# PLAN DETAIL - NEW STOREFRONT -F11 <u>COLUMN - SOUTH 2</u> 1 1/2" = 1'-0"

EXISTING BUILDING FACADE

- 5/8" GYPSUM BOARD

2X BLOCKING AS REQ'D





MF SYMRAIS M	D ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED		
RCUITING	D ADDREVIATIONS ON THIS LEGEND MAT NOT BE USED	POWER DEVICE	S
	HOME RUN (2#12 1#12G UNO)		— DUPLEX RECEPTACLE.
	INDICATES 2 PHASE, 1 N, & 1 GRD CONDUCTOR	<del>©</del>	LINE THRU DEVICE INDICATES ABOVE COUNTER
	HOME RUN: INDICATES SHARED CIRCUIT		SPECIAL DUPLEX RECEPTACLE
	HOME RUN: INDICATES #10 CONDUCTORS ENTIRELY		(GFCI, ISOLATED GROUND, ETC.)
,		_	QUADPLEX RECEPTACLE
<u>TILITIES</u>	UNDERGROUND ELECTRICAL	$\ominus_{5-50R}$	SIMPLEX RECEPTACLE W/NEMA CONFIG AS NOTED
	OVERHEAD ELECTRICAL	€5_50R	MULTI-POLE RECEPTACLE W/NEMA CONFIG AS NOT
	TELECOMMUNICATIONS CONDUIT	$\Theta$	CEILING MOUNTED RECEPTACLE
UGT	UNDERGROUND TELECOMMUNICATIONS CONDUIT		RECEPTACLE/DEVICE MOUNTED IN "TOMBSTONE"
GHTING		$\textcircled{\bullet}$	POKE-THRU WITH POWER
•	GRID-MOUNTED TROFFER LIGHT FIXTURE		POKE-THRU WITH TELECOMMUNICATIONS
•	STRIP LIGHT FIXTURE		POKE-THRU W/POWER AND TELECOM
• ·	SURFACE/RECESSED LIGHT FIXTURE	FB	FLOOR BOX
Н Ю	WALL-MOUNTED LIGHT FIXTURE		DIVIDED POWER POLE
	POLE-MOUNTED LIGHT FIXTURE	$\odot$	CLOCK RECEPTACLE
	EXIT LIGHT		PLUG MOLD / WIRE MOLD AS SPECIFIED
	BATTERY-OPERATED EMERGENCY LIGHT (WALL MTD)	$\bigcirc$	JUNCTION BOX
	BATTERY-OPERATED EMERGENCY LIGHT (CEILING MTD)	CH	PUSH BUTTON
	WALL-MOUNTED COMBINATION EXIT LIGHT/	<i>/</i> <b>·</b> <i>/</i>	MOTOR
\$	BATTERY–OPERATED EMERGENCY LIGHT LIGHT SWITCH – SINGLE POLE	TELEPHONE/DA	ТА
4	LIGHT SWITCH - 3-WAY		TELEPHONE OUTLET (SINGLE-GANG BOX WITH (1)
∿3 \$₄	LIGHT SWITCH - 4-WAY		3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)
≁₄ \$ <sub>K</sub>	LIGHT SWITCH - KEY	$\triangleleft$	LINE THRU DEVICE INDICATES ABOVE COUNTER
-	LIGHT SWITCH – DIMMER	<	DATA OUTLET (DOUBLE–GANG BOX WITH (2) 3/4" CONDUITS TO ABOVE ACCESSIBLE CEILING)
\$ <sub>D</sub> \$	LIGHT SWITCH - PILOT LIGHT	◄	TELEPHONE/DATA OUTLET (DOUBLE-GANG BOX WIT
\$ <sub>PL</sub> ¢	LIGHT SWITCH – 2 POLE		(2) 3/4" CONDUITS TO ABOVE ACCESSIBLE CLG PHONE OUTLET WITH NUMBER OF PHONE JACKS A
\$ <sub>2P</sub> \$ <sup>D</sup> \$3	LIGHT SWITCH - 3-WAY DIMMER	$\triangleleft$ 1V	INDICATED - SEE DETAILS FOR ADD'L INFO.
	WALL-MOUNTED MOTION SWITCH	◀ 1D	DATA OUTLET WITH NUMBER OF PHONE JACKS AS INDICATED – SEE DETAILS FOR ADD'L INFO.
\$ <sub>M</sub>		<b>◀</b> 1D/1V	PHONE/DATA OUTLET WITH NUMBER OF PHONE/DAT
M SB	CEILING-MOUNTED MOTION SWITCH		JACKS AS INDICATED – SEE DETAILS FOR ADD'L I
	SWITCHBANK – REFER TO DETAILS	ΗŴ	WALL-MOUNTED WIRELESS INTERNET TRANSMITTER
FD1	DIMMER BOARD	Ŵ	CEILING-MOUNTED WIRELESS INTERNET TRANSMITTE
RCS-1	REMOTE CONTROL SWITCH AS SCHEDULED	AUDIO/VISUAL	
TC	TIMECLOCK – REFER TO PLANS / DETAILS		TELEVISION OUTLET (SINGLE GANG BOX WITH (1)
JIPMENT			3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)
C	DISCONNECT SWITCH. RE: PLANS FOR INFORMATION.	(TR)	REVERSE TELEVISION OUTLET - CABLE TO HEAD E
$\boxtimes$	MAGNETIC MOTOR STARTER	<b>TAV</b> E	RECESSED COMBINATION AV AND POWER OUTLET COORD LOCATION OF DEVICE WITH TV MOUNT
R	COMBINATION DISCONNECT SWITCH / MOTOR STARTER	TDC	TEACHER'S DESK CONNECTIONS - RE: DETAILS
\$	TOGGLE-TYPE DISCONNECT. FURNISH WITH THERMAL	⊢©	WALL SPEAKER
	MOTOR PROTECTION WHERE SERVING FANS/PUMPS.	S	CEILING SPEAKER
	SURFACE PANELBOARD	S <sub>SUB</sub>	CEILING SPEAKER - SUBWOOFER
	RECESSED PANELBOARD	sos S	CEILING SPEAKER - SOUND SYSTEM
	DISTRIBUTION PANELBOARD	-ss +v	VOLUME CONTROL
	SWITCHBOARD. FEEDER/MAIN CIRCUIT BREAKER SECTION AND DISTRIBUTION SECTION.		Sound system audio jack
	Section and Distribution Section.	RM	REMOTE MICROPHONE CONTROL
IERAL SYMB	OLS	<b>KM</b>	REMOTE MICROFTIONE CONTROL
Ð	INDICATES CONNECT TO EXISTING		DNS SYMBOLS
$\oplus$	INDICATES ELEVATION	1	INTERCOM CALL STATION
	EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE		INTERCOM HANDSET
	FOR ELECTRICAL CONNECTIONS AND LOAD INFO FOR KITCHEN, SHOP, ETC. EQUIPMENT	PAS	PUBLIC ADDRESS SYSTEM AMPLIFIER
		IMS	INTERCOM MASTER STATION
		 ⊢©⊲	WALL SPEAKER – HORN TYPE
		\ \s\\	CEILING SPEAKER – HORN TYPE
		ECS	ELEVATOR 2-WAY COMMUNICATION STATION
		ECM	ELEVATOR 2-WAY COMMUNICATION MASTER STATION
		ECSP	ELEVATOR 2-WAY COMMUNICATION MASTER STATION
		2001	LELTION 2 MAI COMMONICATION I OWEN SUPPLI

## ABBREVIATIONS

- A/E ARCHITECT / ENGINEER AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE
- AG ABOVE GRADE
- AHJ AUTHORITY HAVING JURISDICTION AHU AIR HANDLING UNIT
- ARCH ARCHITECT
- BFP BACKFLOW PREVENTER
- BG BELOW GRADE BLDG BUILDING
- BMS BUILDING MANAGEMENT SYSTEM CONDUIT
- CD CANDELA
- CD COLD DECK CLG COOLING
- CM COORDINATE MOUNTING HEIGHT CO CLEAN OUT
- CTE CONNECT TO EXISTING DCVA DOUBLE CHECK VALVE ASSEMBLY
- DCW DOMESTIC COLD WATER DDC DIRECT DIGITAL CONTROLS
- DF DRINKING FOUNTAIN
- DHW DOMESTIC HOT WATER DHWR DOMESTIC HOT WATER RETURN
- DIA DIAMETER DN DOWN
- E/C ELECTRICAL CONTRACTOR
- EA EXHAUST AIR EDF ELECTRIC DRINKING FOUNTAIN
- ELEV ELEVATION MH MANHOLE ЕМ EMERGENCY FIXTURE/DEVICE EWT ENTERING WATER TEMPERATURE EXISTING ITEM FFA FROM FLOOR ABOVE FFB FROM FLOOR BELOW FFCO FINISHED FLOOR CLEAN OUT FGCO FLUSH GRADE CLEAN OUT FLOW LINE FLR FLOOR RA RETURN AIR FP FIRE PROTECTION FPM FEET PER MINUTE RF RELIEF FAN FWCO FLUSH WALL CLEAN OUT RI GROUND / GANG G RR RESTROOM G/C GENERAL CONTRACTOR GROUND FAULT CIRCUIT INTERUPTER SA SUPPLY AIR GFI GFIP GFI-PROTECTED DEVICE ST SHUNT TRIP GPM GALLONS PER MINUTE HD HOT DECK HTG HEATING ISOLATED GROUND IG JUNCTION BOX LIGHT EMITTING DIODE TYP TYPICAL LED LWT LEAVING WATER TEMPERATURE M/C MECHANICAL CONTRACTOR MIXED AIR MA WCO WALL CLEANOUT MAU MAKE UP AIR UNIT WG WIRE GUARD MCB MAIN CIRCUIT BREAKER

MECH MECHANICAL

- MLO MAIN LUGS ONLY NFA NET FREE AREA NIGHT LIGHT OUTSIDE AIR ORD OVERFLOW ROOF DRAIN P/C PLUMBING CONTRACTOR PSI POUNDS PER SQUARE INCH PVC POLYVINYLCHLORIDE RE/REF REFER / REFERENCE RELOCATED ITEM RPZ REDUCED PRESSURE ZONE SPD SURGE PROTECTIVE DEVICE TRANSFER AIR TFA TO FLOOR ABOVE TFB TO FLOOR BELOW TP TAMPERPROOF UNO UNLESS NOTED OTHERWISE VRF VARIABLE REFRIGERANT FLOW VTR VENT THROUGH ROOF
- WP WEATHERPROOF

	FIRE ALARM	
	-[F]	MANUAL PULL STATION
JNTER		CEILING SMOKE DETECTOR
		DUCT SMOKE DETECTOR
	⟨H⟩ ■ WF	HEAT DETECTOR WATERFLOW SWITCH
S NOTED	■ wr ■ TS	TAMPER SWITCH
IG AS NOTED	■ 73 文 75	WALL-MOUNTED FA STROBE WITH CANDELA RATING. 15cd RATING UNLESS OTHERWISE NOTED ON PLANS.
STONE"		WALL-MOUNTED FA HORN
		WALL-MOUNTED FA SPEAKER
	<b>⊠</b> <i>∖</i> 30	WALL-MOUNTED FA HORN/STROBE WITH CANDELA RATING. 15cd UNLESS OTHERWISE NOTED ON PLANS. WALL-MOUNTED FA SPEAKER/STROBE WITH CANDELA
	<b>⊠ 4</b> 30 <b>⊠</b> 75	RATING. 15cd UNLESS OTHERWISE NOTED ON PLANS. CEILING-MOUNTED FA STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
		CEILING–MOUNTED FA SPEAKER.
		CEILING-MOUNTED FA HORN/STROBE WITH CANDELA
	30 X	RATING. MINIMUM OF 15cd RATING. CEILING–MOUNTED FA SPEAKER/STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
	R	RELAY
	FACP	FIRE ALARM CONTROL PANEL
WITU (1)	FAAP	FIRE ALARM ANNUNCIATOR PANEL
WITH (1) CEILING)	FARA	REMOTE ANNUNCIATOR PANEL
JNTER	FAEC	FIRE ALARM EXTENDER CABINET
(2) 3/4" ING)	DH	DOOR HOLDER
BOX WITH	D <sub>120V</sub>	SINGLE / MULTI-STATION 120V SMOKE ALARM
JACKS AS	ZAM	ZONE ADDRESSABLE MODULE
IFO.	IAM	INDIVIDUAL ADDRESSABLE MODULE
ACKS AS IFO.	HFSS	KITCHEN HOOD FIRE SUPPRESSION SYSTEM PANEL
PHONE/DATA DR ADD'L INFO.	H	KITCHEN HOOD REMOTE PULL STATION
NSMITTER	ARA	AREA OF RESCUE ASSISTANCE STATION
RANSMITTER	ARAM	AREA OF RESCUE ASSISTANCE MASTER STATION
	NURSE CALL	
VITH (1)	HN	NURSE CALL STATION
CEILING)	⊢₽C	NURSE CALL EMERGENCY PULL CORD
o head end	⊢Œ	CODE BLUE STATION
OUTLET IOUNT	⊢SS	NURSE CALL STAFF STATION
ETAILS	⊢@B	NURSE CALL DUAL PUSHBUTTON STATION (CODE BLUE / STAFF ASSIST)
	H(PM)	PATIENT MONITOR STATION
	⊢@\$	NURSE CALL DUTY STATION
	DL-	NURSE CALL DOME LIGHT
	(ZL)-	NURSE CALL ZONE LIGHT
	NCM	NURSE CALL MASTER STATION
	RCM	RESIDENT CALL MASTER STATION
	HPC)	RESIDENT CALL EMERGENCY PULL CORD
	SECURITY	
		FIXED CAMERA
	PTZ	PAN/TILT/ZOOM CAMERA
	PROX	PROXIMITY TYPE CARD READER
	CARD	SWIPE CARD READER
	ES	ELECTRIC STRIKE
NN NN	KP	KEYPAD / MAG LOCK
	В	BUTTON / MAG LOCK
R STATION		

## **FIRE SEALING NOTES**

- 1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE
- REQUIREMENTS. 2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE THROUGH-PENETRATION
- FIRESTOP SYSTEMS. 3. DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM
- INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY AUTHORITIES HAVING JURISDICTION. 4. COMPATIBILITY: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS THAT ARE COMPATIBLE WITH ONE ANOTHER; WITH THE SUBSTRATES FORMING OPENINGS: AND WITH THE ITEMS. IF ANY. PENETRATING THROUGH-PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS C SERVICE AND APPLICATION, AS DEMONSTRATED THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
- 5. PROVIDE COMPONENTS FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED. 6. PROVIDE SLEEVES THROUGH ALL FIRE-RATED WALLS AND FILL VOIDS
- SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS. 7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED
- THROUGH FIRE RATED WALLS. 8. PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS, FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING

FOR CONSTRUCTION.

SOME SYMBOLS A	ND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED		
SHEET METAL		MECHANICAL P	IPING
	HIGH EFFICIENCY ROUND DUCT TAKEOFF	RL	– REFRIGERANT LIQUID
	(WITH & WITHOUT MANUAL DAMPER)		- REFRIGERANT SUCTION
TT TT	SPIN–IN ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER)		- DRAIN (CONDENSATE)
م⊥' ⊥م⊥ م	(MITT & MITTOOT MANOAL DAMILERY		– COMPRESSED AIR – CHILLED WATER SUPPLY
	CONICAL BELLMOUTH ROUND TAKEOFF		- CHILLED WATER SUPPLY - CHILLED WATER RETURN
			- CHILLED/HOT WATER SUPPLY
	ROUND DUCT RUNOUT WITH FLEX DUCT	•	- CHILLED/HOT WATER RETURN
			- HOT WATER SUPPLY
	DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES)	—— HWR ——	– HOT WATER RETURN
≫ <del>L</del>	FD:FIRE DAMPER FS:FIRE/SMOKE DAMPER	—— CTWS ——	- COOLING TOWER SUPPLY
	SD:SMOKE DAMPER BD:BACKDRAFT DAMPER (GRAVITY)		- COOLING TOWER RETURN
	AUTOMATIC MOTORIZED DAMPER		– STEAM (ANY #'S DENOTE PRESSURE)
			– CONDENSATE RETURN (#'S DENOTE PRESSURE)
<u>8"ø</u> <u>225</u>	SUPPLY DIFFUSER AND DIFFUSER CALLOUT (NECK SIZE, TYPE AND CFM)		- REFRIGERANT VENT
	LINEAR/SLOT DIFFUSER	RD	– RUPTURE DISK
	RETURN GRILLE OR EXHAUST REGISTER	PLUMBING PIPI	NG
 <b>∢</b>	SUPPLY AIR FLOW INDICATOR	•	- DOMESTIC COLD WATER
~_►	RETURN AND EXHAUST AIR FLOW INDICATOR		- DOMESTIC HOT WATER
Ð	THERMOSTAT		- RECIRCULATING DOMESTIC HOT WATER
Ð	TEMPERATURE SENSOR		- WASTE ABOVE GRADE OR FLOOR
н®	HUMIDISTAT		- WASTE BELOW GRADE OR FLOOR - STORM ABOVE GRADE OR FLOOR
//	CONTROL WIRING		- STORM ABOVE GRADE OR FLOOR - STORM BELOW GRADE OR FLOOR
			- STORM BELOW GRADE OR FLOOR - STORM OVERFLOW ABOVE GRADE OR FLOOR
EDICAL GAS		- 7 -	- STORM OVERFLOW BELOW GRADE OR FLOOR
— MV —	MEDICAL VACUUM PIPING	,	- PLUMBING VENT
— 0 —	OXYGEN PIPING		- WATER SERVICE
	NITROUS OXIDE PIPING MEDICAL COMPRESSED AIR PIPING	G	- GAS (NATURAL)
— SA — — N —	NITROGEN PIPING	—— PD ——	- FROM SUMP PUMP DISCHARGE
CO	CARBON DIOXIDE PIPING		— COMPRESSED AIR
— v v—	VACUUM VENT PIPING	——— LP ———	
— WAGD —	WASTE ANESTHETIC GAS DISPOSAL PIPING		- SOFT DOMESTIC COLD WATER
— GV —	MEDICAL GAS VENT PIPING		- SOFT DOMESTIC HOT WATER
⊢∽ <sub>x</sub>	MEDICAL GAS OUTLET W/ DESIGNATION (RE: BELOW)	SRW ACID	- SOFT RECIRCULATING HOT WATER
	O OXYGEN		- ACID WASTE - ACID WASTE VENT
	N NITROGEN		- NON-POTABLE
	NO NITROUS OXIDE		- DEIONIZED WATER
	WAGD WASTE ANESTHETIC GAS DISPOSAL CO CARBON DIOXIDE		- REVERSE OSMOSIS WATER
	MV MEDICAL VACUUM	W&V	
	SA SURGICAL AIR	$\left( \begin{array}{c} 1 \\ xx \end{array} \right)$	PLUMBING RISER CALLOUT (REFERS TO RISER DIAG
	S MEDICAL SLIDE	$\bigcirc$	
		FIRE SPRINKLE	R
ENERAL SYMB		— F ——	FIRE PROTECTION PIPING
	INDICATES CONNECT TO EXISTING	&	SPRINKLER HEAD SIDEWALL SPRINKLER HEAD
$\oplus$	INDICATES ELEVATION	Ý	SIDEWALL SPRINKLER HEAD FIRE PROTECTION SIAMESE CONNECTION
XXX	EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE FOR MECHANICAL CONNECTIONS AND LOAD INFO FOR KITCHEN, SHOP, ETC. EQUIPMENT	—-+⊗+—-	POST INDICATOR VALVE

# **GEN. MECHANICAL NOTES**

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS INDICATED ON ELECTRICAL PLANS. ANY ADDITIONAL LINE VOLTAGE OR LOW VOLTAGE POWER REQUIRED BY THE M/C OR SUBCONTRACTORS TO HAVE A FULLY FUNCTIONING SYSTEM SHALL BE
- PROVIDED BY THE M/C CONTRACTOR OR SUBS. 3. ALL EQUIPMENT SHALL BE ADEQUATELY AND PROPERLY SUPPORTED AND FASTENED FROM STRUCTURE. 4. ALL EQUIPMENT AND ACCESSORIES INSTALLED IN CONCEALED SPACES REQUIRING ACCESS SHALL BE PROVIDED WITH ACCESS DOORS MEETING ANY FIRE REQUIREMENTS OF THE WALL/CEILING THEY ARE
- INSTALLED. 5. EACH AIR HANDLING UNIT OVER 2000CFM SHALL BE PROVIDED WITH A SMOKE DETECTOR TO SHUT DOWN THE UNIT PER IMC 606 AS
- REQUIRED BY AHJ. COORDINATE WITH OTHER TRADES. 6. START UP AND ADJUST ALL EQUIPMENT AND VERIFY ALL MECHANICAL SYSTEMS IN OPERATE IN ACCORDANCE WITH THEIR INTENDED PURPOSES. SUBMIT BALANCE AND START UP REPORTS TO THE A/E. REFER TO SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS.

# **GENERAL PLUMBING NOTES**

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL PLUMBING CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. NO PIPING SHALL BE INSTALLED WHERE IT WILL SUBJECT
- FREEZING TEMPERATURES. PIPING IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF BUILDING INSULATION, INSULATED AND THE CHASE SHALL BE VENTILATED WITH GRILLES ALLOWING INDOOR AMBIENT CONDITIONS TO CIRCULATE THROUGH THE CHASE. 3. PROVIDE CLEANOUTS IN THE FOLLOWING LOCATIONS:
- 3.1. IN ALL HORIZONTAL DRAINS (WITHIN THE BUILDING) NOT MORE THAN 100 FEET APART. 3.2. IN BUILDING SEWERS LOCATED NO MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. 3.3. EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A
- RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING. 3.4. AT THE BASE OF EACH WASTE OR SOIL STACK. 3.5. NEAR THE JUNCTION OF THE BUILDING DRAIN AND BUILDING SEWER.

# **GENERAL ELECTRICAL NOTES**

- . COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, LOCAL AND STATE CODES. AND REQUIREMENTS OF THE AHJ.
- P. COORDINATE LOCATIONS OF RECEPTACLES, SWITCHES, ETC. WITH ARCHITECTURAL CASEWORK AND ELEVATIONS. 3. REFER TO MOUNTING HEIGHTS DETAIL FOR MOUNTING HEIGHTS OF
- ALL DEVICES NOT INDICATED OTHERWISE. 4. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS AND BUSHED
- 5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIEW WHERE REASONABLY POSSIBLE. 5.2. REFER TO SPECIFICATIONS FOR ALLOWABLE WIRING METHODS
- THROUGHOUT PROJECT. 5.3. ALL EXPOSED WIRING SHALL BE IN EMT OR METALLIC CONDUIT, EXCEPT AS PERMITTED BY SPECIFICATIONS FOR WHIPS TO
- FOUIPMENT 6. ALL CONDUCTOR SIZES INDICATED ON DRAWINGS ARE FOR COPPER CONDUCTORS UNLESS SPECIFICALLY NOTED OTHERWISE. ALUMINUM CONDUCTORS MAY BE USED ONLY UNDER THE FOLLOWING CONDITIONS: 6.1. CONTRACTOR SHALL INCLUDE A DEDUCT ALTERNATE FOR USE
- OF SAME WITH BIDS, FOR OWNER ACCEPTANCE. 6.2. AL CONDUCTORS MAY ONLY BE USED ON FEEDERS 100A OR GREATER – NO EXCEPTIONS
- 6.3. ALUMINUM CABLING SHALL BE COMPACTED ALUMINUM (STABILOY). 6.4. PROVIDE COMPRESSION-TYPE ONE-HOLE OR TWO-HOLE LUG
- TERMINATIONS. 6.5. PROVIDE ANTI-OXIDANT COMPOUND AT TERMINATIONS.
- 6.6. CABLE TERMINATIONS SHALL BE MARKED "AL/CU". 6.7. FINAL SIZES OF CONDUCTORS TO BE CONFIRMED BY ENGINEER 6.8. ALUMINUM SERVICE CONDUCTORS MUST HAVE "AA-8000" SERIES LABELING ON CABLE JACKETS PER EVERGY REQUIREMENTS -NO EXCEPTIONS.

ENGINEER RESERVES FINAL RIGHT TO ACCEPT/DENY USE OF ALUMINUM CONDUCTORS FOR PART OR ALL OF PROJECT.

## **COORDINATION NOTES** COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND

- EQUIPMENT WITH ALL OTHER TRADES. 2. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF ALL SYSTEMS, CONDUITS, PIPES, DUCTS, ETC WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS FOR SYSTEMS AND COMPONENTS AS NEEDED TO INSTALL THE MEP SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS IN POTENTIAL CONFLICT WITH ROUTING.
- 3. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS. 4. CHECK SPACE REQUIREMENTS WITH OTHER TRADES AND STRUCTURE/CONSTRUCTION TO ENSURE THAT ALL MATERIALS AND EQUIPMENT CAN BE INSTALLED IN THE SPACE ALLOTTED INCLUDING FINISHED SUSPENDED CEILINGS AND OTHER SPACES. CHASES. ETC
- WITHIN THE BUILDING. MAKE MODIFICATIONS THERETO AS REQUIRED AND APPROVED. 5. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE
- TIME FOR INSTALLATION. 6. WHEREVER WORK INTERCONNECTS WITH WORK OF OTHER TRADES. COORDINATE WITH THOSE TRADES TO ENSURE THAT ALL SUBCONTRACTORS HAVE THE INFORMATION NECESSARY SO THAT
- THEY MAY PROPERLY INSTALL ALL CONNECTIONS AND EQUIPMENT. IDENTIFY ALL ITEMS OF WORK THAT REQUIRE ACCESS SO THAT THE CEILING TRADE WILL KNOW WHERE TO INSTALL ACCESS DOORS AND PANELS. . COORDINATE, PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
- 3. DRAWINGS SHOW THE GENERAL RUNS OF CONDUITS, PIPING AND DUCTWORK AND APPROXIMATE LOCATION OF OUTLETS. ANY SIGNIFICANT CHANGES IN LOCATION OF ITEMS NECESSARY IN ORDER TO MEET FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER AND RECEIVE HIS APPROVAL BEFORE SUCH ALTERATIONS ARE MADE. ALL SUCH MODIFICATIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES. 10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT INTERFERENCES, BOTH ANTICIPATED AND ENCOUNTERED. DETERMINE
- THE EXACT ROUTE AND LOCATION OF EACH ITEM PRIOR T FABRICATION. MAKE OFFSETS, TRANSITIONS AND CHANGES IN DIRECTION IN SYSTEMS AS REQUIRED TO MAINTAIN ADEQUATE CLEARANCES AND HEADROOM. 11. WHEREVER THE WORK IS OF SUFFICIENT COMPLEXITY, PREPARE ADDITIONAL COORDINATION DRAWINGS AND ORGANIZE ON-SITE
- MEETINGS WITH ALL RELATED SUBCONTRACTORS TO COORDINATE THE WORK BETWEEN TRADES . DRAWINGS SHALL CLEARLY SHOW TH WORK AND ITS RELATION TO THE WORK OF OTHER TRADES. AND BE SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP FABRICATION OR ERECTION IN THE FIELD. 12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL
- NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO ACCOMPLISH THE WORK 13. COORDINATE THE MOUNTING OF SUSPENDED LIGHT FIXTURES UTILIZING INDIRECT LIGHT SO THAT CONDUIT, DUCTWORK, STRUCTURAL MEMBERS, ETC. ARE NOT LOCATED DIRECTLY ABOVE THE LIGHT FIXTURE. MAINTAIN A MINIMUM OF 24" CLEARANCE FROM

THESE ITEMS WHENEVER POSSIBLE.

			1
	PIPING SYMBOL	5	
	— <b>i</b> >i	SHUTOFF VALVE IN RISER	
		BALANCING VALVE	
		PLUG VALVE	
		AUTO FLOW CONTROL VALVE	
		PIPING ELBOW UP	
	्र — भ	PIPING ELBOW DOP PIPING ELBOW DOWN	
	+ 	PIPING TEE	
		PIPING ELBOW	
		PIPING TEE UP	
		PIPING TEE DOWN	
	— <del>  4</del> —	INCREASER / REDUCER	
	<del>  </del>	UNION	
	]	CAP	
	+~ <del> </del>	PIPE FLEX	
	<del>-  <b>,</b>  -</del>	STRAINER	
		CHECK VALVE	
	-+()+	INLINE STRAINER	
	<u> </u>	TEST PLUG	
		GUIDE	
	— <del>×</del> —	ANCHOR	
	—Ø—	TRIPLE DUTY VALVE	
	¥	AUTOMATIC 2-WAY CONTROL VALVE	
	P		
	Ϋ́Υ Γ	AUTOMATIC 3-WAY CONTROL VALVE	
		SOLENOID VALVE	
	PIPING SPECIAL	TIES	
	Ť.	PRESS/ TEMP GAUGE WITH COCK	
		THERMOMETER.	
	HI ► LOW		
	$-\Phi$	PRESSURE REDUCING VALVE	
	-Υ Υ	RELIEF VALVE	
	<del></del>	WATER HAMMER ARRESTER	
	PLUMBING FIXTU	JRES/EQUIPMENT	
		HOSE BIBB	
AGRAM)	E-I WH	WALL HYDRANT	
AGNAWI		CLEAN OUT	
		REDUCED PRESSURE BACKFLOW PREVENTER	
		DOUBLE CHECK BACKFLOW PREVENTER	
		PLUMBING FIXTURE AND CALLOUT	
	$\frac{WC-1}{\Theta} = \frac{S-1}{FD-1}$	FD: FLOOR DRAIN, AD: AREA DRAIN,	
	<ul> <li>□ ····</li> </ul>	FS: FLOOR SINK RD: ROOF DRAIN	
	(() <u>RD-1</u>	ORD: OVERFLOW ROOF DRAIN	
			I

## **DEMOLITION NOTES**

- 1. ALL WORK SHOWN DARK AND DASHED IS TO BE DEMOLISHED. WORK SHOWN LIGHT IS EXISTING TO REMAIN. 2. REFER TO ARCHITECTURAL PLANS FOR FURTHER EXTENT OF
- DEMOLITION REQUIREMENTS. 3. ALL EXISTING PIPING SCHEDULED FOR DEMOLITION THAT ROUTES BELOW SLAB SHALL BE GROUND FLUSH WITH FLOOR, PLUGGED AND
- THE FLOOR PATCHED TO MATCH SURROUNDING FLOOR. 4. COORDINATE ALL DEMOLITION WORK WITH OWNER.
- 5. CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT LOCATION OF UTILITIES BELOW GRADE. 6. MAINTAIN ALL EXISTING DEVICES, EQUIPMENT, ASSOCIATED CIRCUITS ETC, SHOWN AS EXISTING TO REMAIN OR OTHERWISE UNRELATED TO THE SCOPE OF THE PROJECT IN WORKING ORDER.
- . CONTRACTOR SHALL REMOVE LAY-IN CEILINGS. LIGHT FIXTURES. ETC. AS REQUIRED FOR CONSTRUCTION WHERE NEEDED PRIOR 1 DEMOLITION AND REPLACE SAME AFTER CONSTRUCTION. EXISTING CONDUITS ABOVE CEILINGS SHALL BE RELOCATED AND/OR TEMPORARILY REMOVED TO FACILITATE THE INSTALLATION OF NEW FOUIPMENT.
- 8. THE OWNER SHALL REMOVE ALL ITEMS THEY DESIRED TO SALVAGE PRIOR TO CONSTRUCTION BEGINNING. 9. NOTES AND DRAWINGS ARE BASED UPON A FIELD EXAMINATION OF THE SITE AND MAY NOT INDICATE ALL ITEMS. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND THE SCOPE OF WORK FOR THE CONTRACT PRIOR TO BID. ANY EXISTING CONDITION WHICH IS APPARENT OR COULD BE REASONABLY INFERRED FROM A VISIT TO THE SITE SHALL NOT BE THE BASIS FOR A CHANGE IN THE CONTRACT AMOUNT.
- 10. REFER TO NEW WORK PLANS FOR ANY ITEMS THAT MAY REQUIRE RELOCATION AFTER DEMOLITION. 11. PROPERLY DISPOSE OF ALL DEMOLISHED ITEMS OFF SITE. 12. REMOVE ALL MISCELLANEOUS CONDUITS, PIPES, ETC, THOUGH NOT SPECIFICALLY SHOWN ON PLAN, THAT ARE EITHER UNUSED OR WILL
- BECOME UNUSED DUE DEMOLITION ACTIVITIES, IN ORDER TO PROVIDE A "CLEAN" SPACE FOR THE OWNER. 13. PROTECT ALL EXISTING SURFACES AND EQUIPMENT DURING
- CONSTRUCTION. EXISTING ITEMS TO REMAIN SHALL BE ADEQUATELY PROTECTED FROM DEMOLITION AND NEW CONSTRUCTION WORK, REQUIRED. ANY ITEMS DAMAGED OR MARRED SHALL B ADEQUATELY CLEANED OR REPLACED TO THE OWNERS SATISFACTION
- TO ORIGINAL CONDITION BEFORE CONSTRUCTION. 14. PATCH ANY HOLES IN STRUCTURE CREATED BY REMOVAL OF DUCTWORK, CONDUITS, PIPES, ETC. 15. REMOVE ALL ITEMS SHOWN IN WALLS TO BE DEMOLISHED. ALL
- ELECTRICAL CONDUIT AND WIRING SHALL BE REMOVED BACK TO PANELBOARDS AND PROPERLY TERMINATED. 16. SAW CUT FLOOR FOR THE INSTALLATION OF NEW SANITARY PIPING. REFER TO PLUMBING PLANS SHOWING NEW WORK.
- 17. SAVE, CLEAN, AND RE-LAMP ALL LIGHT FIXTURES NOTED AS BEING RELOCATED. REFER TO NEW WORK PLANS AND LIGHT FIXTURE SCHEDULE FOR DESCRIPTIONS, QUANTITIES, AND LOCATIONS OF FIXTURES TO BE RE-USED.

## **GENERAL NOTES**

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- . SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF CIARIFYING PLAN. REFER TO ARCHITECTURAL PLANS FOR REFERENCE TO ROOM NAMES NOT SHOWN. 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND KEEP AT THE JOB SITE. AN UP TO DATE SET OF "RECORD
- DRAWINGS" SHOWING ALL CHANGES FROM THE ORIGINAL PLANS. THE CONTRACTOR SHALL DELIVER THE "RECORD DRAWINGS" TO THE ENGINEER AT THE CONCLUSION OF THE PROJECT ELECTRONICALLY. 3. THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS (NEW AND EXISTING), DIMENSIONS, AND
- CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK AND SHALL INCLUDE ALL COSTS, EQUIPMENT, MATERIAL, ACCESSORIES, ETC REQUIRED FOR A FULLY COMPLETE, FUNCTIONAL AND CODE COMPLIANT INSTALLATION. 4. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT ETC
- SHALL BE INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM ARCHITECTURAL PLANS. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM MEP DRAWINGS. 5. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS,
- APPROVALS, LICENSES, ETC. AS NEEDED FOR THE COMPLETE INSTALLATION AND PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THIS.

## **GEN. RENOVATION NOTES**

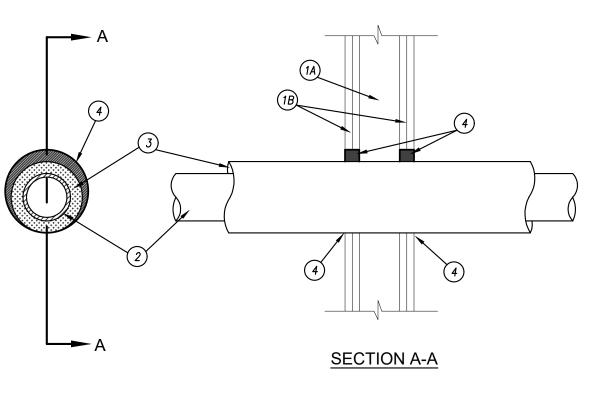
- . DISCONNECT AND REMOVE ANY EQUIPMENT, PIPING OR DUCTWORK THAT WAS INSTALLED AS PART OF THE BUILDING SHELL THAT IS NOT NEEDED OR CONFLICTS WITH THIS BUILD OUT.
- 2. EXISTING UNDERGROUND PIPING LOCATIONS ARE ESTIMATED BASED UPON ANTICIPATED ROUTINGS. FIELD VERIFY EXACT LOCATIONS DURING CONSTRUCTION AND PROVIDE ALL NECESSARY MODIFICATIONS. 3. SAWCUT GRADE FLOOR SLABS TO INSTALL NEW PIPING, MECHANICAL
- SYSTEMS, ELECTRICAL FLOOR BOXES AND ALL ASSOCIATED CONDUIT, ETC. PATCH FLOOR TO MAKE LIKE NEW AFTER INSTALLATION. TAKE CARE TO LOCATE EXISTING CONDUIT, ETC AND AVOID CUTTING EXISTING CONDUITS BY NOT OVER-CUTTING SLAB DEPTH.
- 4. SAWCUT AND CORE DRILL OPENINGS AS REQUIRED FOR ABOVE GRADE SLAB PENETRATIONS. X-RAY SLABS TO ASCERTAIN STEEL AND EXISTING CONDUIT PENETRATIONS PRIOR TO CUTTING. VERIFY OPENINGS WITH STRUCTURAL ENGINEER PRIOR TO CUTTING. 5. HOMERUN CIRCUITS TO 20 AMP, SINGLE POLE BREAKERS IN
- PANELBOARDS INDICATED. UTILIZE SPARE BREAKERS MADE AVAILABLE BY DEMOLITION, IF NO SPARE BREAKER IS AVAILABLE, PROVIDE NEW BREAKER. 6. EXISTING CIRCUITING MAY BE RE-USED WHERE POSSIBLE.
- 7. CONCEAL NEW CIRCUITING IN WALLS WHERE POSSIBLE. FOR NEW DEVICES INSTALLED ON EXISTING SOLID WALLS, CONCEAL CIRCUITING IN WIREMOLD. COORDINATE FINISH AND GENERAL ROUTING OF WIREMOLD WITH ARCHITECT TO BE AS CONCEALED AND/OR ROUTED IN A NEAT AND ORGANIZED CONSISTENT MANNER.
- 8. ALL LIGHTING FIXTURES THAT ARE RELOCATED OR OTHERWISE AFFECTED BY THE SCOPE OF WORK SHALL BE CLEANED AND RELAMPED.





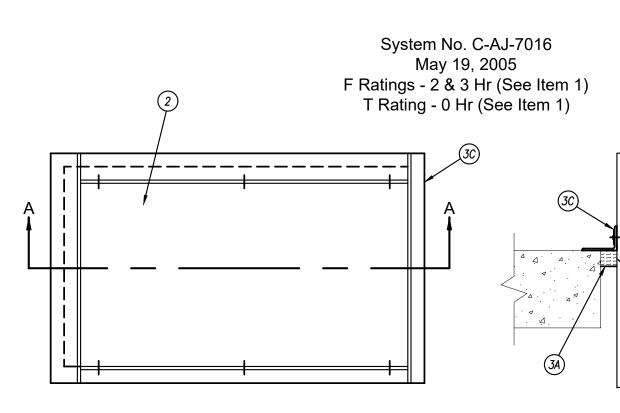
RELEASED FOR CONSTRUCTION As Noted on Plans Review Lee's Summit, M 10/12/202  $\mathcal{O}$ EME M MP M 7  $\mathcal{O}$ 00 4 Ò Ο M ĻΣ ν L MAIN UMMU S  $\leq \infty$ S S S ΟШ  $\leq$ ЭШ  $\sim$   $\sim$ **COPYRIGHT © BY** COLLINS WEBB **ARCHITECTURE, LLC REVISION DATES:** OF MI ----DAVID LAWRENCE DEATHERAGE E-29880 ---David Lawrence Deatherage - Engineer MO# E-29880 PROFESSIONAL SEAL ISSUE DATE: APRIL 21, 202 COLLINS WEBB #: 2112 COVER SHEET

System No. W-L-5040 September 7, 2004 F Ratings - 1 and 2 HR (See Item 1) T Ratings - 1/4, 1/2 and 3/4 HR (See Item 2)



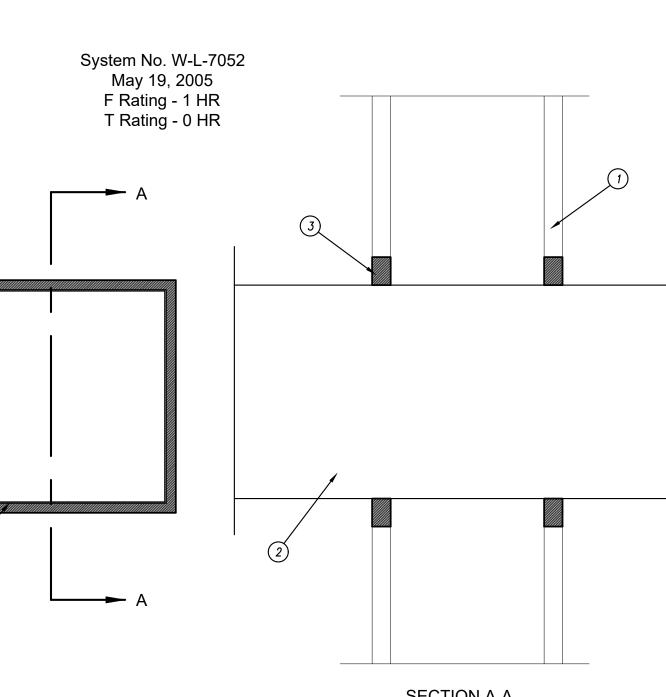
- 1. WALL ASSEMBLY THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: 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. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE AND SPACED MAX 24 IN. OC. B. GYPSUM BOARD\* - NOM 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IN WALLBOARD LAYERS IS 7 IN. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS 1 HR WHEN INSTALLED IN A 1 HR FIRE RATED WALL AND 2 HR WHEN INSTALLED IN A 2 HR FIRE RATED WALL.
- 2. THROUGH PENETRANTS ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED: A. STEEL PIPE - NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. WHEN STEEL PIPE IS USED, T RATING IS 3/4 HR.
- B. COPPER TUBING NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. T RATING IS 3/4 HR FOR COPPER TUBING OF NOM 2 IN. DIAM AND SMALLER. FOR COPPER TUBING GREATER THAN NOM 2 IN. DIAM, T RATING IS 1/4 AND 1/2 HR WHEN INSTALLED IN 1 AND 2 HR RATED WALLS, RESPECTIVELY. C. COPPER PIPE - NOM 4 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. T RATING IS 3/4
- HR FOR COPPER PIPE OF NOM 2 IN. DIAM AND SMALLER. FOR COPPER PIPE GREATER THAN NOM 2 IN. DIAM, T RATING IS 1/4 AND 1/2 HR WHEN INSTALLED IN 1 AND 2 HR RATED WALL RESPECTIVELY.
- 3. PIPE INSULATION PLASTICS# NOM 3/4 IN. THICK ACRYLONITRILE BUTADIENE/POLYVINYL CHLORIDE (AB/PVC) FLEXIBLE FOAM FURNISHED IN THE FORM OF TUBING. THE ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE EDGE OF THE THROUGH OPENING SHALL BE MIN ZERO IN. (POINT CONTACT) TO MAX 1-1/4 IN. SEE PLASTICS# (QMFZ2) CATEGORY IN THE RECOGNIZED COMPONENT DIRECTORY FOR NAMES OF MANUFACTÜRÈRS. ANY RECOGNIZED COMPONENT TUBE INSULATION MATERIAL MEETING THE ABOVE SPECIFICATIONS AND HAVING A UL94 FLAMMABILITY CLASSIFICATION OF 94-5VA MAY BE USED.
- 4. FILL, VOID OR CAVITY MATERIALS\* CAULK OR SEALANT MIN 5/8 IN. THICKNESS OF CAULK APPLIED WITHIN THE ANNULAR SPACE, FLUSH WITH EACH SURFACE OF WALL. A MIN 1/2 IN. DIAM BEAD OF CAULK SHALL BE APPLIED TO THE PIPE INSULATION/ WALLBOARD INTERFACE AT THE POINT CONTACT LOCATION ON BOTH SIDES OF WALL. 3M COMPANY – CP 25WB+ CAULK OR FB-3000 WT SEALANT

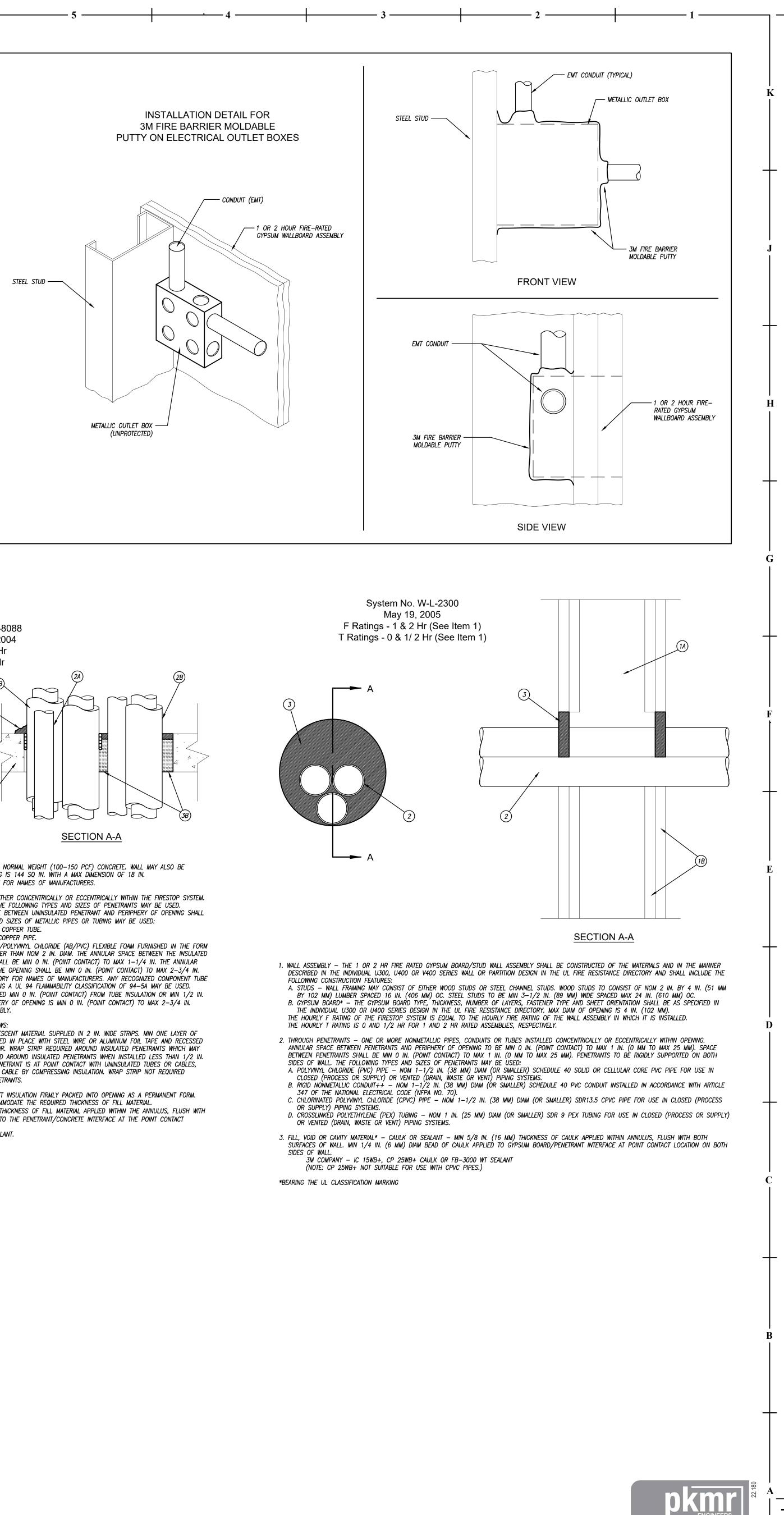
\*BEARING THE UL CLASSIFICATION MARKING



- 1. FLOOR OR WALL ASSEMBLY MIN 2-1/2 IN. (64 MM) THICK OR MIN 4-1/2 IN. (114 MM) THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. THE F RATING IS 2 HR AND 3 HR FOR MIN 2-1/2 IN. (64 MM) OR MIN 4-1/2 IN. (114 MM) THICK ASSEMBLIES. MAX AREA OF OPENING IS 576 SQ IN. (3716 C/M2) WITH MAX DIMENSION OF 36 IN. (914 MM) FOR 2 HR ASSEMBLIES AND 544 SQ IN. (3510 C/M2) WITH MAX DIMENSION OF 34 IN. (864 MM) FOR 3 HR ASSEMBLIES. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- 2. THROUGH PENETRANTS ONE STEEL DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. AN ANNULAR SPACE OF MIN O IN. (POINT CONTACT) TO MAX 4 IN. (O MM TO MAX 102 MM) IS REQUIRED WITHIN THE FIRESTOP SYSTEM FOR 2 HR ASSEMBLIES AND MIN O IN. (POINT CONTACT) TO MAX 2 IN. IS REQUÍRED WITHIN THE FIRESTOP SYSTEM FOR 3 HR ASSEMBLIES. STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING SIZES OF STEEL DUCTS MAY BE USED: A. STEEL DUCT - NOM 32 IN. BY 14 IN. (813 MM BY 356 MM) (OR SMALLER) NO. 22 GAUGE (OR HEAVIER) GALV STEEL DUCT. B. STEEL DUCT – NOM 30 IN. BY 12 IN. (762 MM BY 305 MM) (OR SMALLER) NO. 24 GAUGE (OR HEAVIER) GALV STEEL DUCT.
- 3. FIRESTOP SYSTEM THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING: A. PACKING MATERIAL – NOM 1 IN. (25 MM) THICKNESS OF TIGHTLY PACKED MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL.
- B. FILL, VOID OR CAVITY MATERIAL\* CAULK OR SEALANT MIN 1 IN. (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL ASSEMBLY. AT THE POINT CONTACT LOCATION BETWEEN DUCT AND CONCRETE, A MIN 1/4 IN. (6 MM) DIAM BEAD OF SEALANT SHALL BE APPLIED TO THE CONCRETE/DUCT INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL ASSEMBLY. 3M COMPANY - CP 25WB+, IC 15WB+ CAULK OR FB-3000 WT SEALANT.
- C. RETAINING ANGLES MIN 16 GAUGE GALV STEEL ANGLES SIZED TO LAP DUCT A MIN OF 2 IN. (51 MM) IN. AND LAP TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL A MIN OF 1 IN. (25 MM). ANGLES ATTACHED TO DUCT WITH MIN 1/2 IN. (13 MM) LONG, NO. 10 (OR LARGER) SHEET METAL SCREWS SPACED A MAX OF 1 IN. (25 MM) FROM EACH END OF DUCT AND SPACED A MAX OF 6 IN. (152 MM) OC. \*BEARING THE UL CLASSIFICATION MARKING

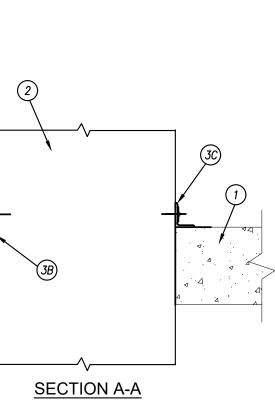


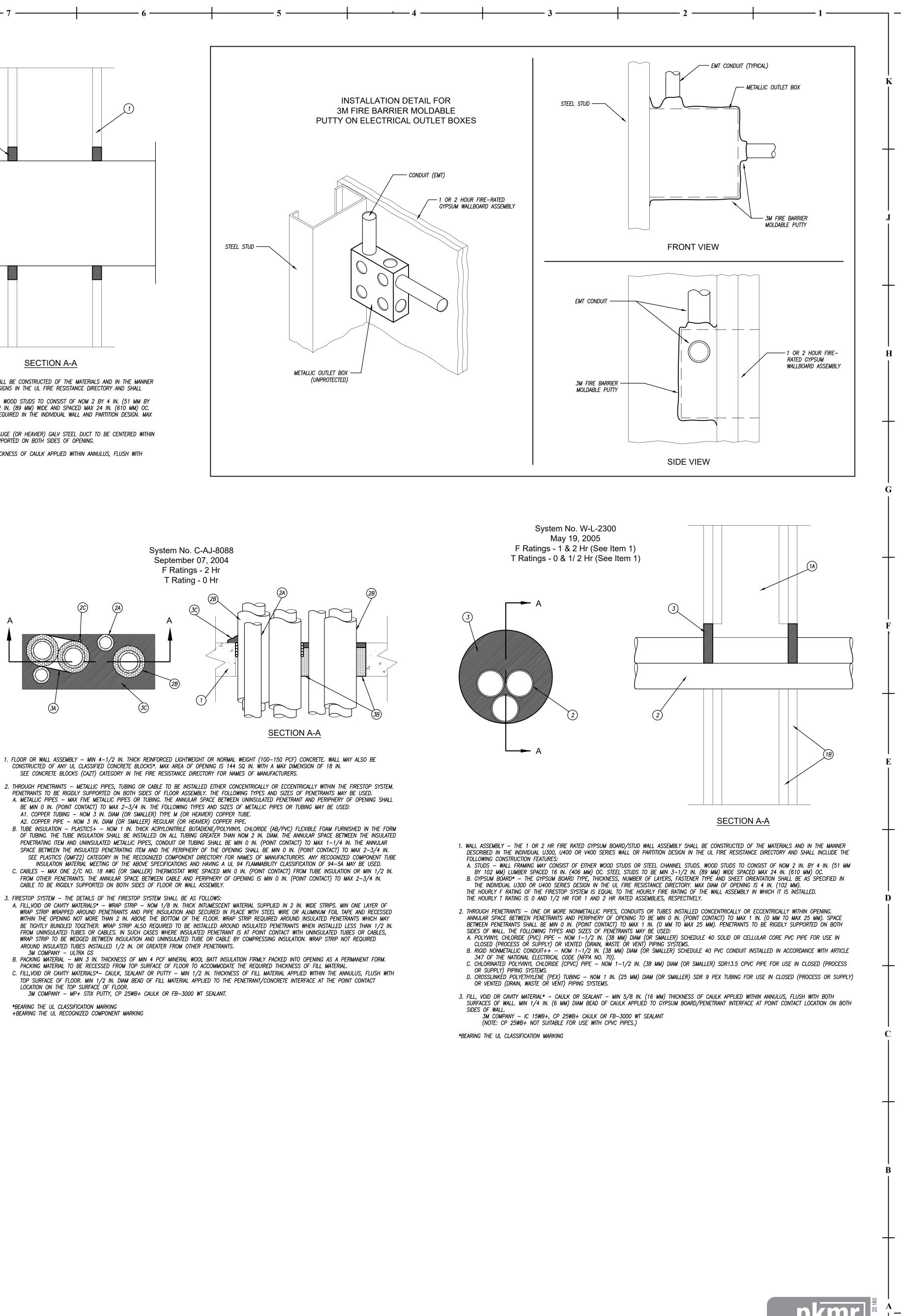




1. WALL ASSEMBLY - THE 1 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES. A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 MM BY 102 MM) LUMBER SPACED 16 IN.( 406 MM) OC. STEEL STUDS TO BE MIN 3-1/2 IN. (89 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC. B. GYPSUM BOARD\* - THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS AS REQUIRED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX SIZE OF OPENING IS 14 BY 14 IN. (356 MM BY 356 MM) SQUARE. 2. STEEL DUCT - NOM 12 BY 12 IN. (305 MM BY 305 MM) (OR SMALLER) NO. 24 GAUGE (OR HEAVIER) GALV STEEL DUCT TO BE CENTERED WITHIN OPENING WITH A NOM ANNULAR SPACE OF 1 IN. (25 MM). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF OPENING. 3. FILL, VOID OR CAVITY MATERIAL\* - CAULK OR SEALANT - MIN 5/8 IN. (16 MM) THICKNESS OF CAULK APPLIED WITHIN ANNULUS, FLUSH WITH

BOTH SURFACES OF WALL ASSEMBLY. 3M COMPANY - CP 25WB+, IC 15WB+ CAULK OR FB-3000 WT SEALANT \*BEARING THE UL CLASSIFICATION MARK





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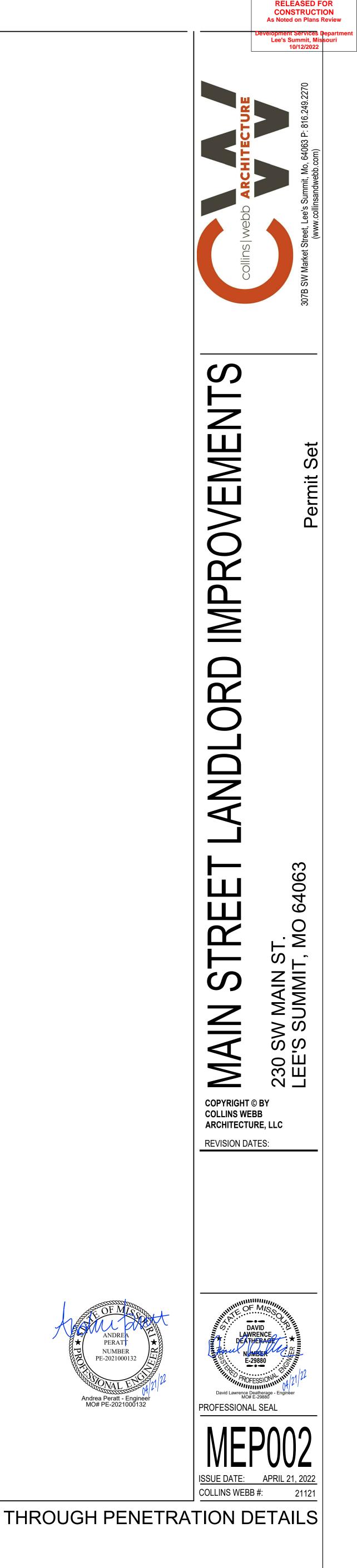
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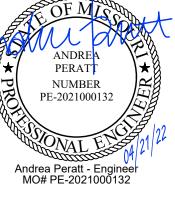
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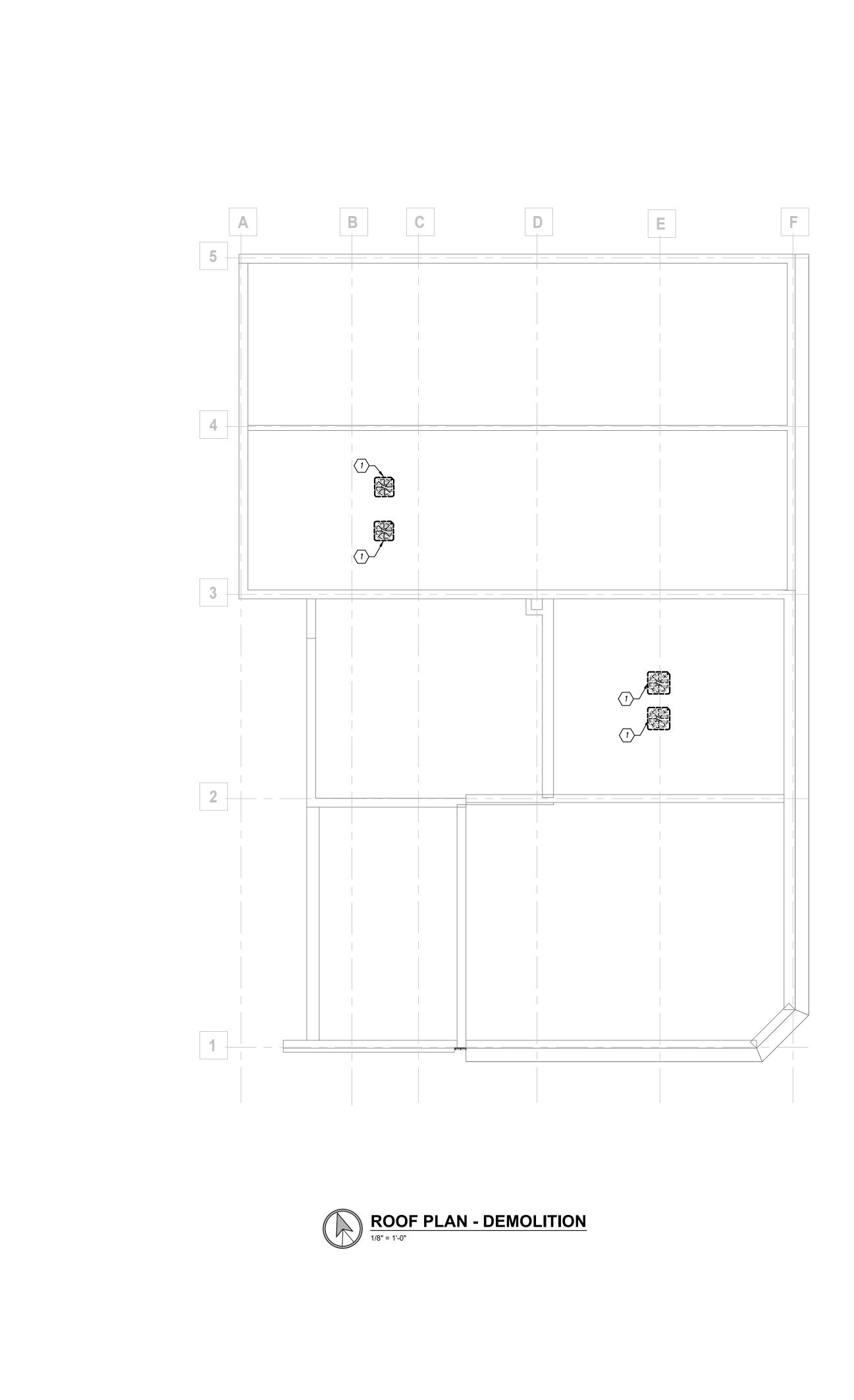
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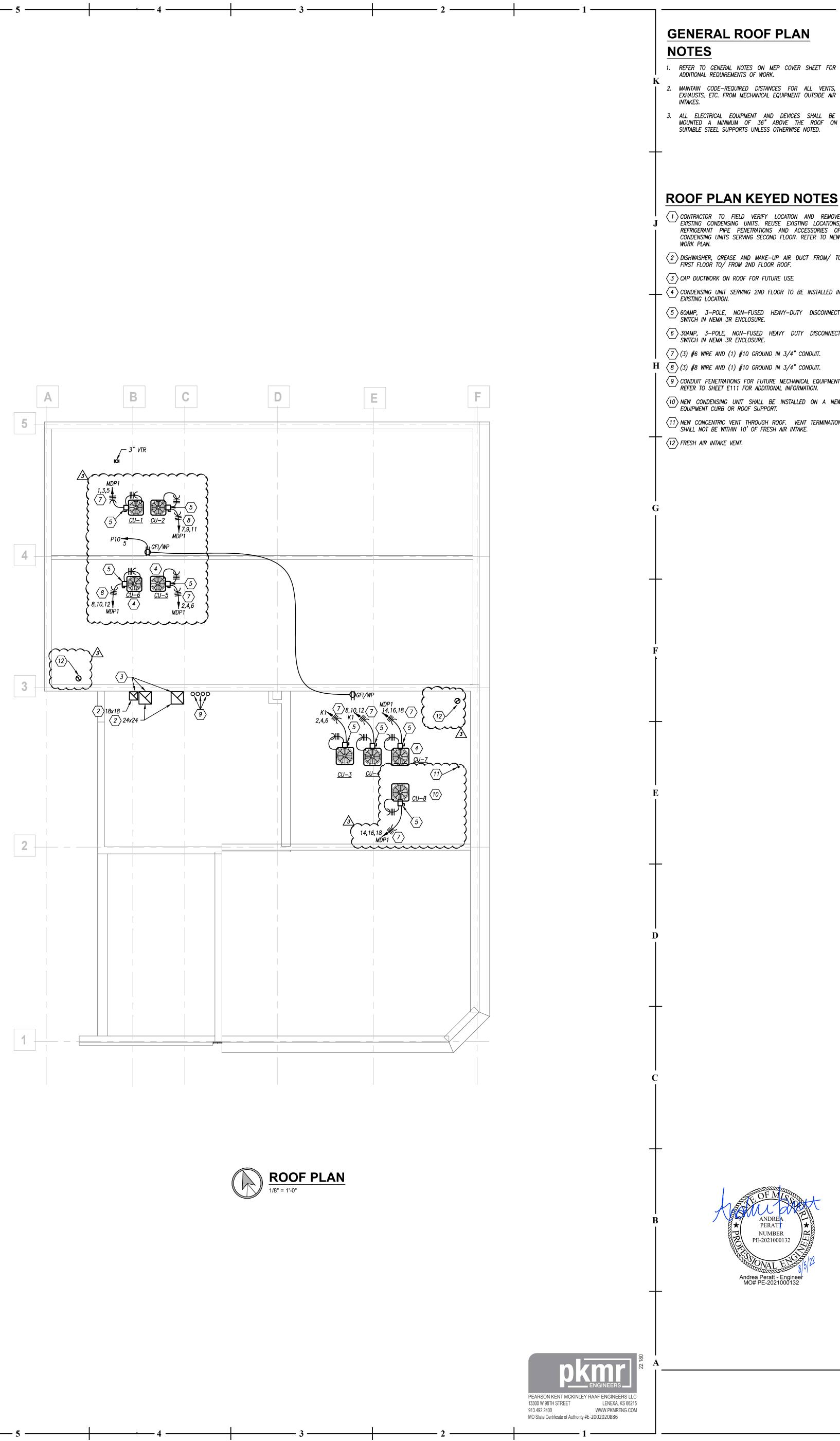




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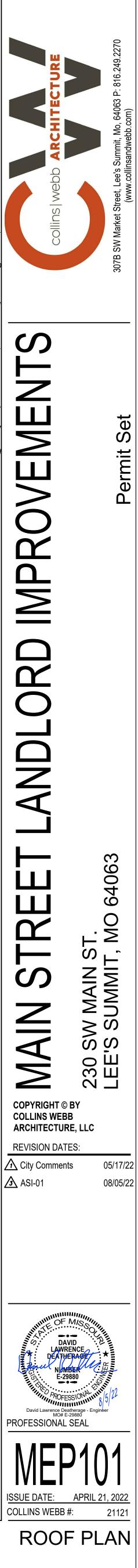
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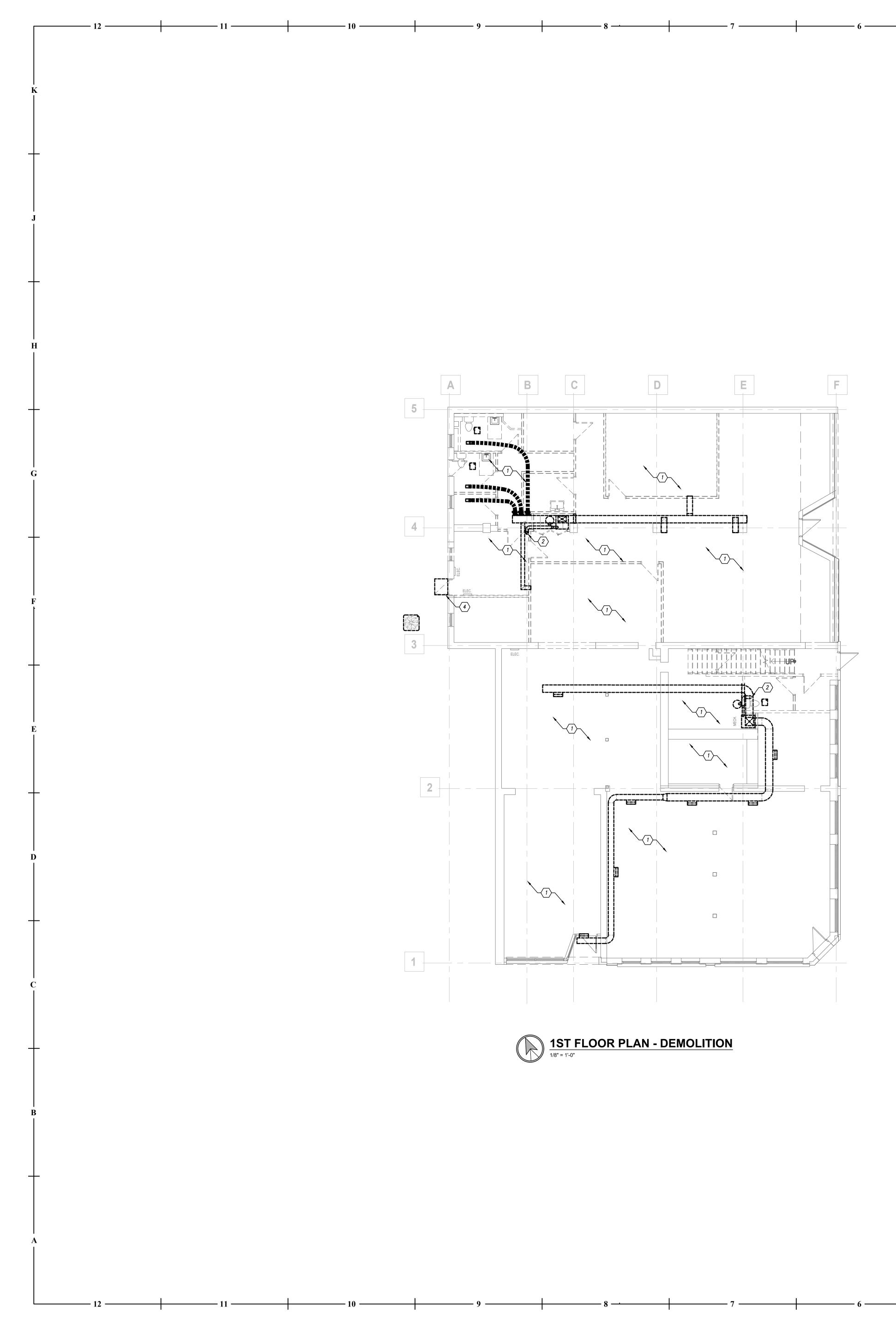


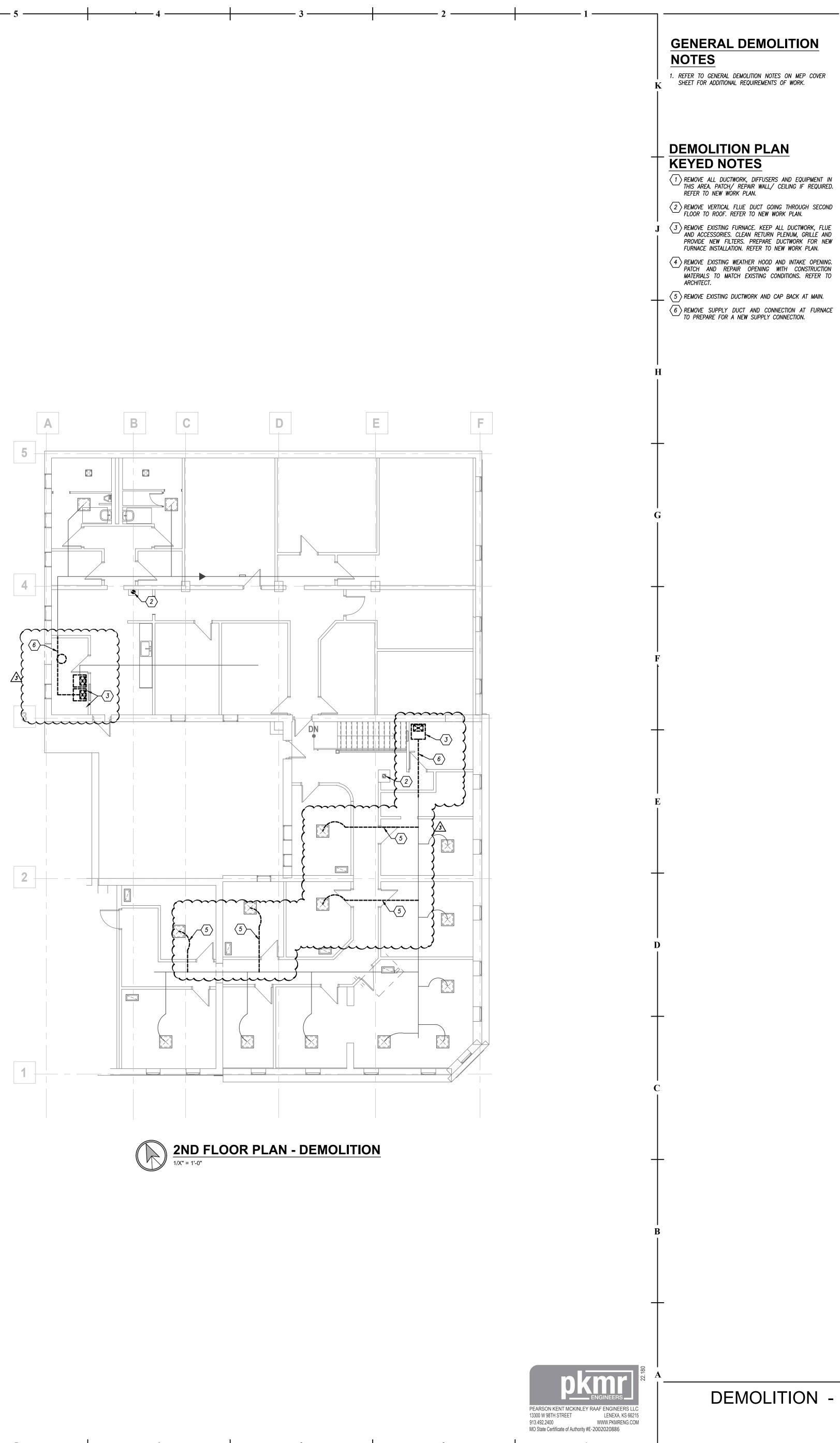
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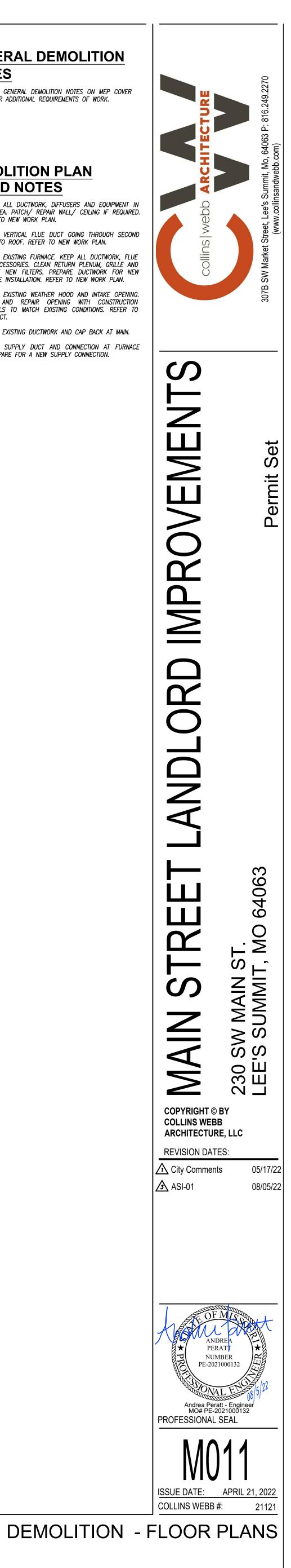
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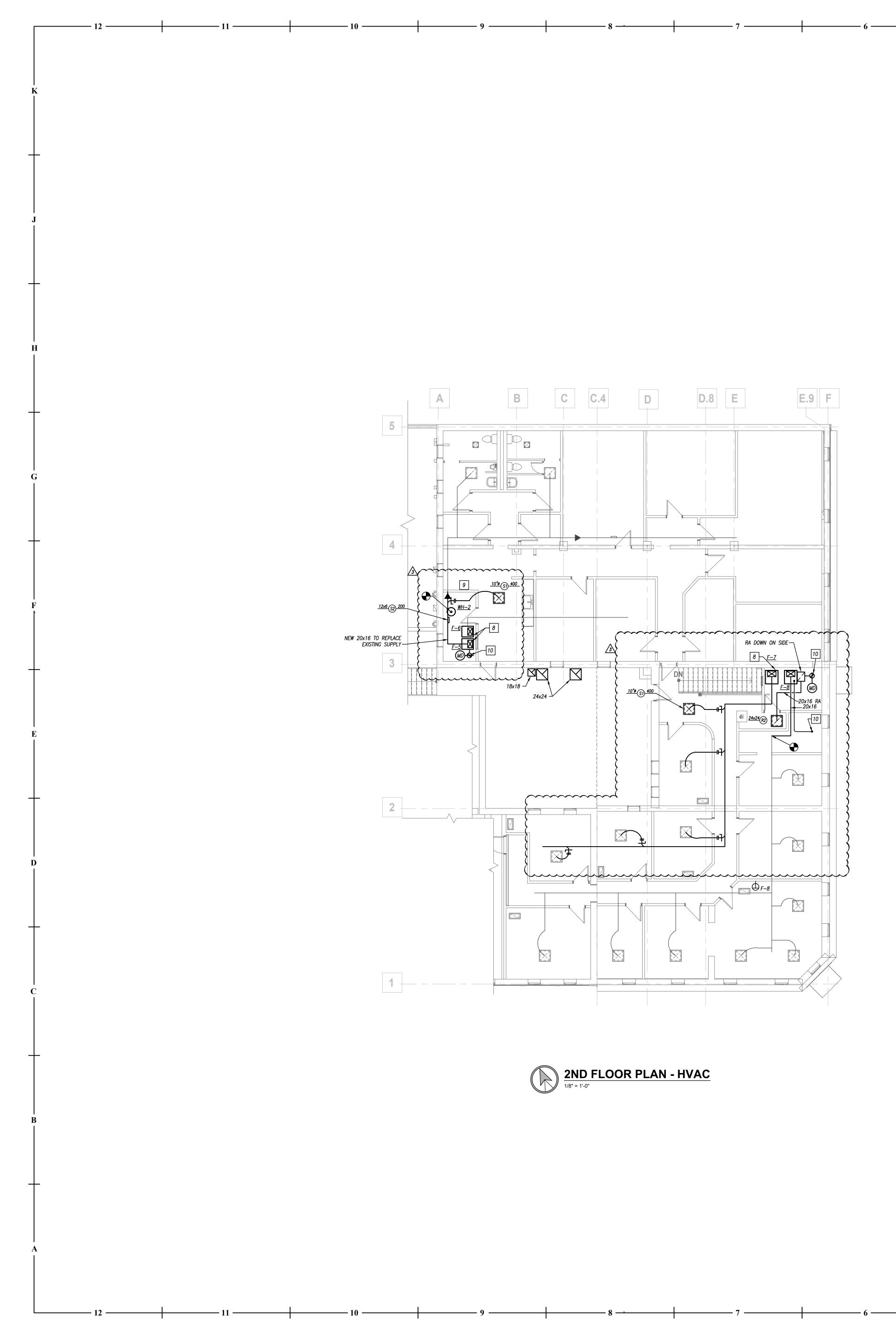
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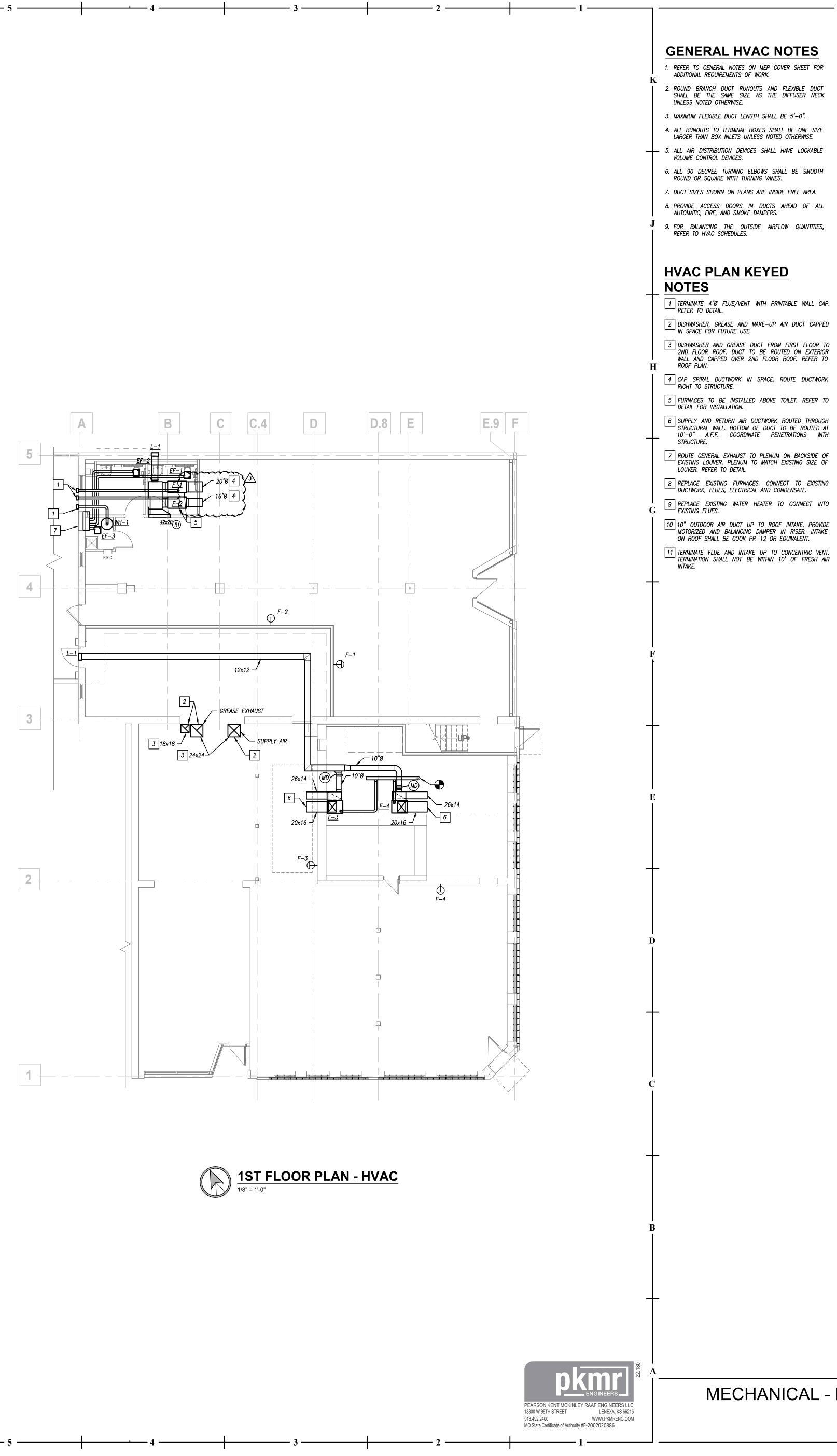




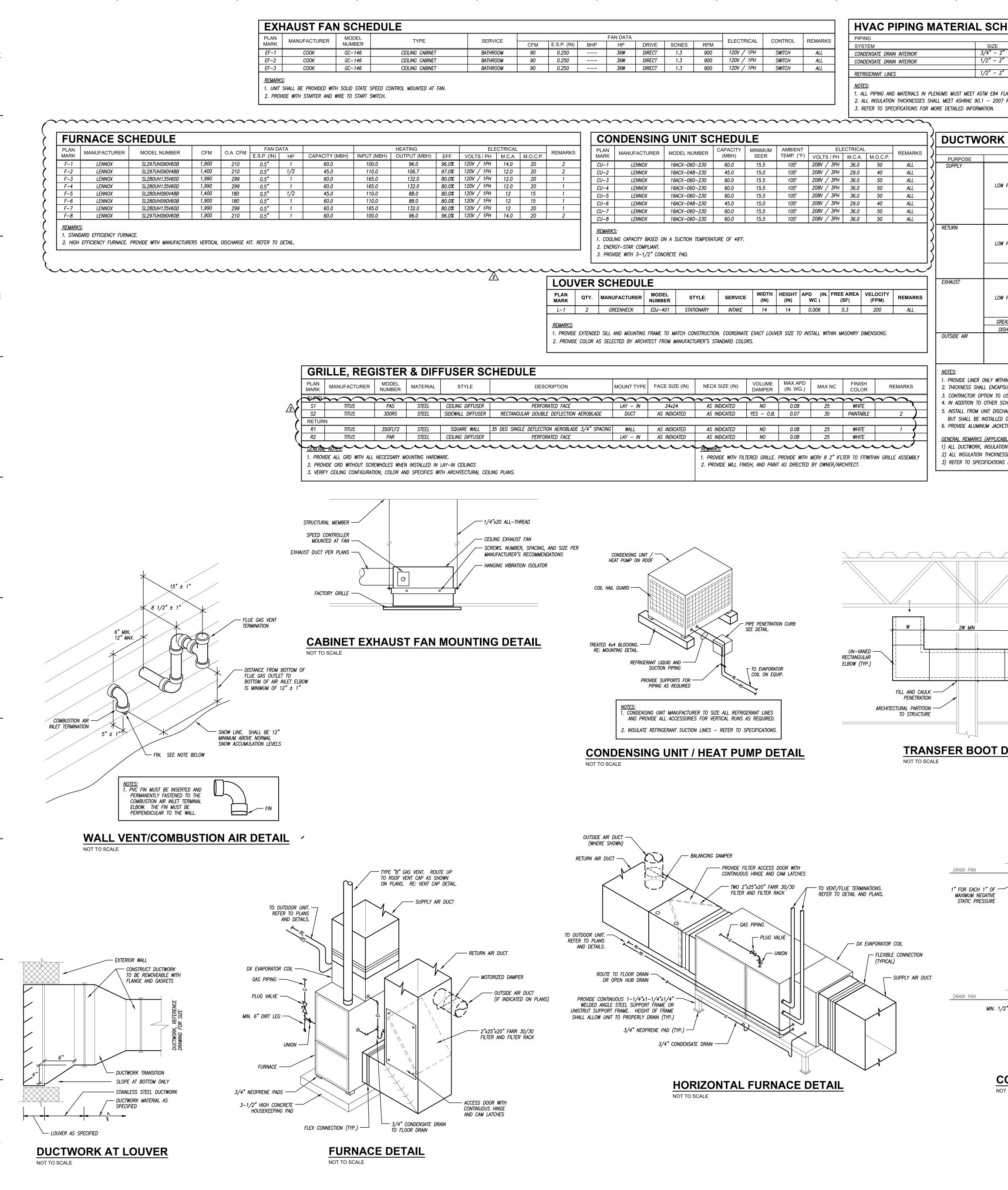




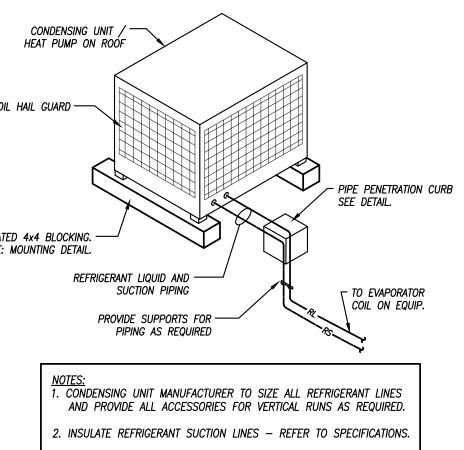


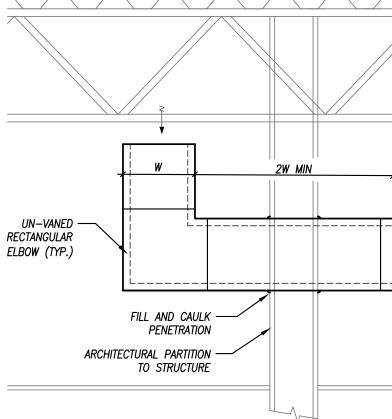






	<u> </u>	4	211
	FAN DATA       CFM     E.S.P. (IN)     BHP     HP     DRIVE     SONES     RPM       ATHROOM     90     0.250      36W     DIRECT     1.3     900     120V / 1PH     SWITCH     ALL	SIZE     TYPE/SCHED     MATERIAL     ACCEPTABLE FITTINGS       3/4" - 2"     SCH. 40     CPVC     SOLVENT JOINED	PRESSURE/TIME     PLENUMS     TYPE     THICKNESS       10 FT - 1/2HR     YES     FIBERGLASS W/ ASJ     1/2" (PLENUM ONLY)
	NTHROOM       90       0.250        36W       DIRECT       1.3       900       120V / 1PH       SWITCH       ALL         REFRIGERANT LINES       NOTES:       1. ALL PIPING AND MATERIALS IN 2. ALL INSULATION THICKNESSES	1/2" - 2"     ACR     COPPER     BRAZED       N PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.     S     S     S       S SHALL MEET ASHRAE 90.1 - 2007 REQUIREMENTS AT A MINIMUM.     S     S	
		DUCTWORK INSULATION SCHEDULE           PURPOSE         DUTY         LOCATION         STYLE           SUPPLY         DUTY         LOCATION         STYLE           LOW PRESSURE/VELOCITY         EXPOSED         RECTANGULAR           LOW PRESSURE/VELOCITY         EXPOSED         ROUND           ALL         UNCONDITIONED ATTICS (02.1-4)         ALL           RETURN         CONCEALED         RECTANGULAR           LOW PRESSURE/VELOCITY         EXPOSED         ROUND           UNCONDITIONED ATTICS (02.1-4)         ALL         UNCONDITIONED ATTICS (02.5-8)           LOW	MATERIAL         APPLICATION         THICKNESS         NOTES           HBERGLASS         LINED         1/2"          J           MINERAL FIBER         WRAPPED         1-1/2"          J           REFORMED FIBERGLASS         LINED         1/2"          J           REFORMED FIBERGLASS W/ASJ-PT         WRAPPED         2"         3           NONE           FIBERGLASS         LINED         1/2"            FIBERGLASS & MINERAL FIBER         LINED & WRAPPED (R-12 MIN)         1" & 2.2"         6         FIBERGLASS         LINED         1/2"            MINERAL FIBER         LINED & WRAPPED (R-12 MIN)         1" & 3"         6          FIBERGLASS         LINED         1/2"            MINERAL FIBER         LINED         1/2"           FIBERGLASS         LINED         1/2"            FIBERGLASS         LINED         1/2"           FIBERGLASS         ENED         1/2"            FIBERGLASS         LINED         1/2"           FIBERGLASS         LINED         1/2"
	/4*20 AL-THREAD SELING EXHAUST FAN GORDENS MURED, SPROING, AND SIZE FER MANDRACTURERS'S RECOMMENDATIONS MANGNC VIBRATION ISOLATOR NGC DETAIL NGC DETAIL NGC DETAIL NGC DETAIL NGC SE NGC MONTING DEVAL NGC SE NGC SE NGC MONTING DEVAL NGC SE NGC SE NGC MONTING DEVAL NGC SE NGC SE	Image: Constraint of the second se	AIR CUSHION AT END OF RUN BEYOND LAST TAP OR BRANCH DUCT TAKE-OFF BRANCH DUCT TAKE-OFF SUPPLY DUCT ANES STER DUCT PROVIDE VOLUME DAMPER SUPPLY DUCT PROVIDE VOLUME DAMPER SQUARE ELBOW SHOWN. PROVIDE VOLUME DAMPER DUCT PROVIDE VOLUME DAMPER DUCT PROVIDE VOLUME DAMPER DUCT PROVIDE VOLUME DAMPER DUCT PLAN VIEW AIR SPLIT TYPE DUCT TAKE-OFF
2 <sup>1</sup> /2 <sup>5</sup> /2 <sup>0</sup> /2 <sup>3</sup> /4 <sup>2</sup> NEOPRENE PAD (1/PF.) - 3/4 <sup>2</sup> CONDENSATE DRAIN       3/4 <sup>a</sup> NEOPRENE PAD (1/PF.) - 3/4 <sup>a</sup> CONDENSATE DRAIN       1 <td>AR DUCT UNITION WITHOUT (FINDICATED DAMPER - OUTSIDE AR DUCT (FINDICATED DAMPER - OUTSIDE AR DUCT - OUTSIDE A</td> <td>SCALE</td> <td>NOT TO SCALE</td>	AR DUCT UNITION WITHOUT (FINDICATED DAMPER - OUTSIDE AR DUCT (FINDICATED DAMPER - OUTSIDE AR DUCT - OUTSIDE A	SCALE	NOT TO SCALE
DOOR WITH OUS HINGE M LATCHES	3/4" CONDENSATE DRAIN HORIZONTAL FURNACE DETAIL NOT TO SCALE	ECONDENSATE TRAP DETAIL	BELOW WALL GUIDE GREASE DUCT ON WALL DETAIL –

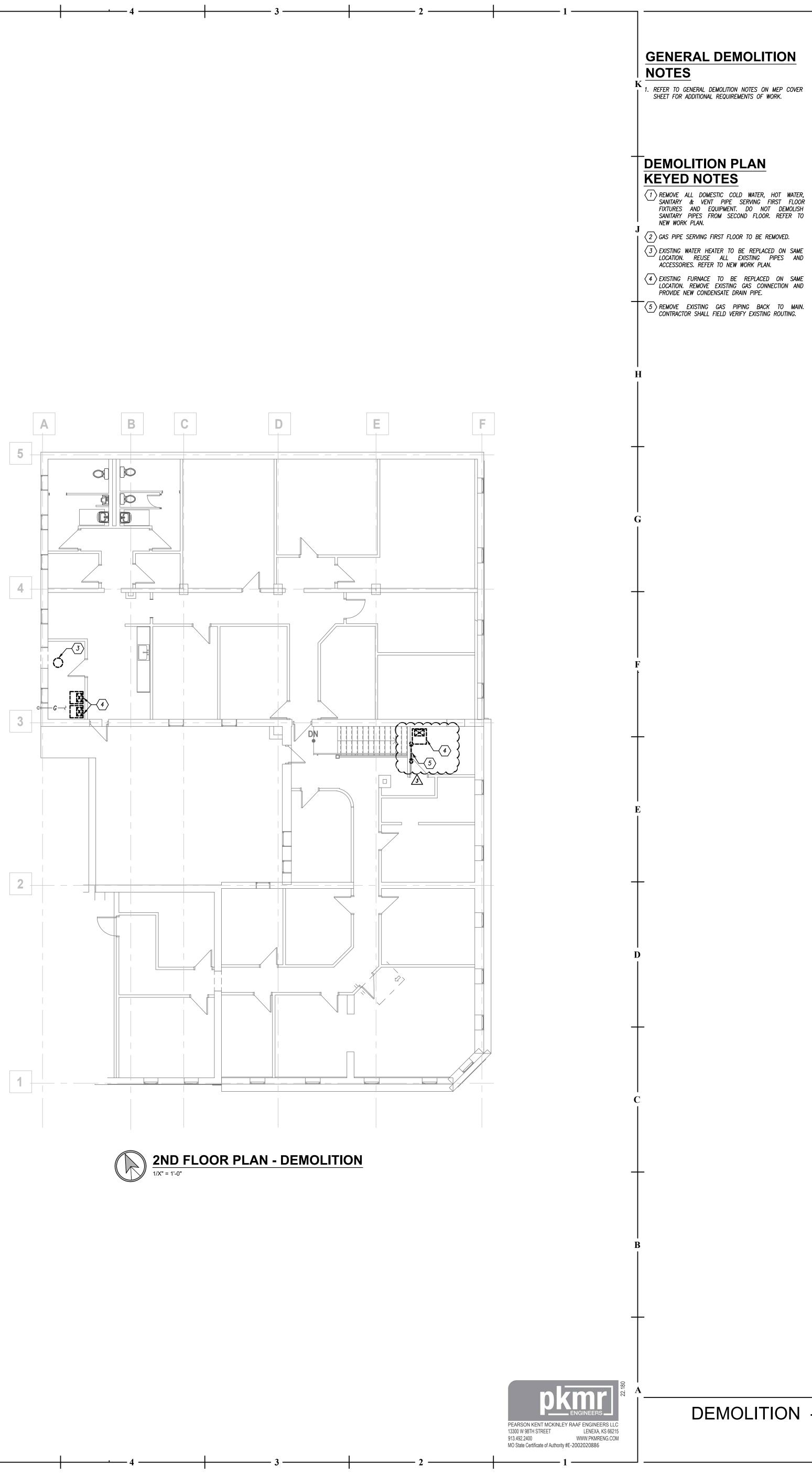




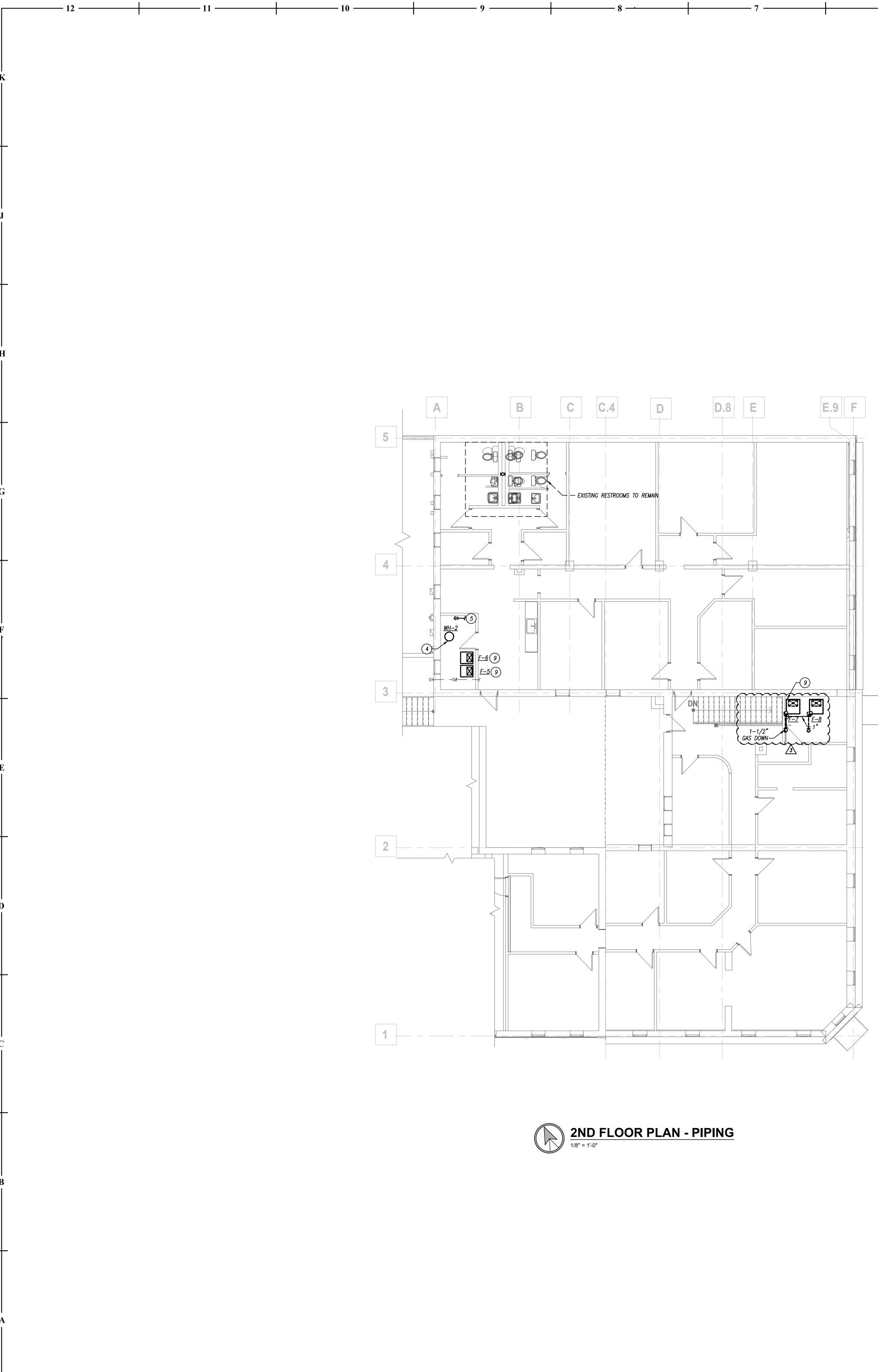


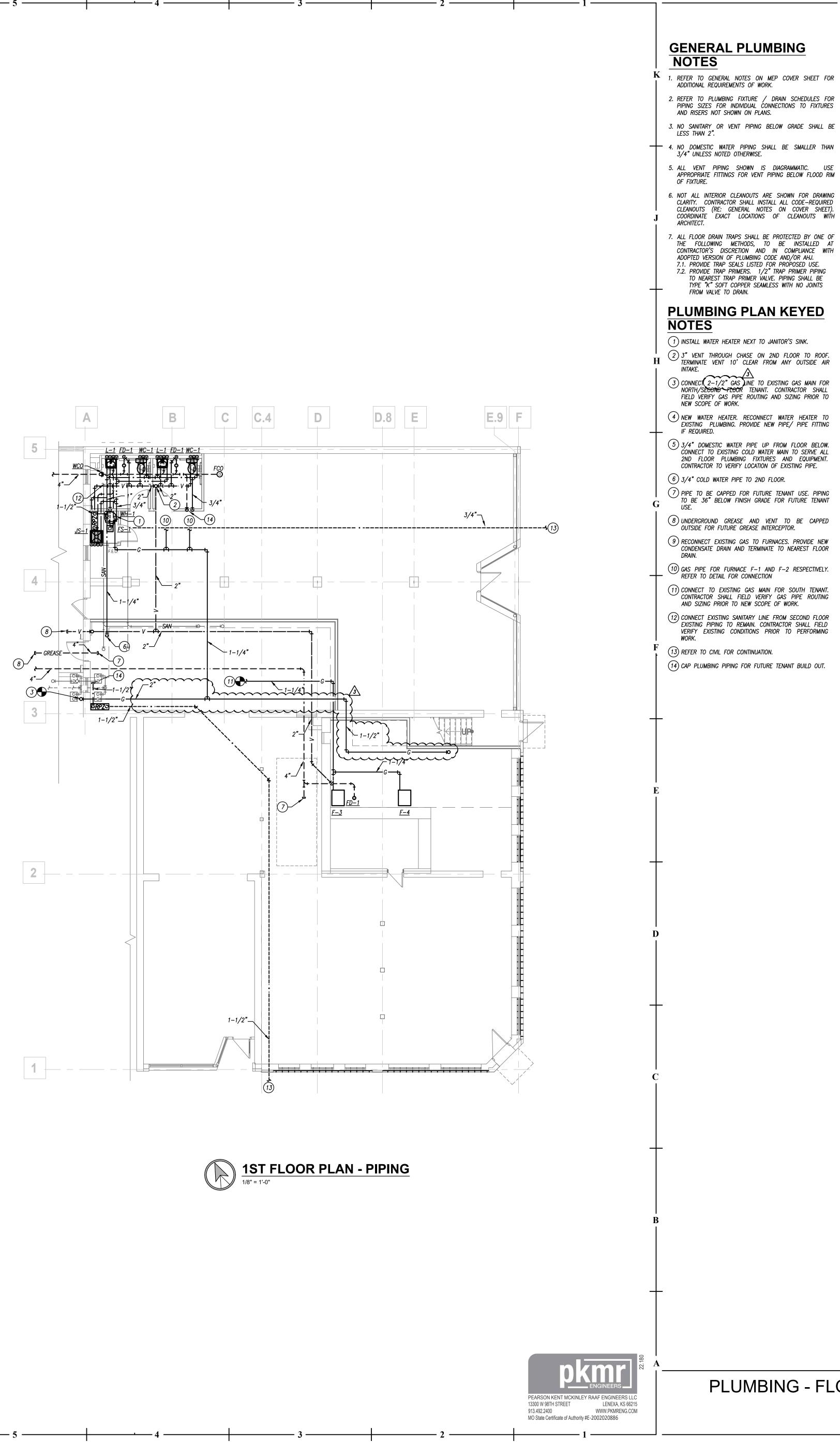


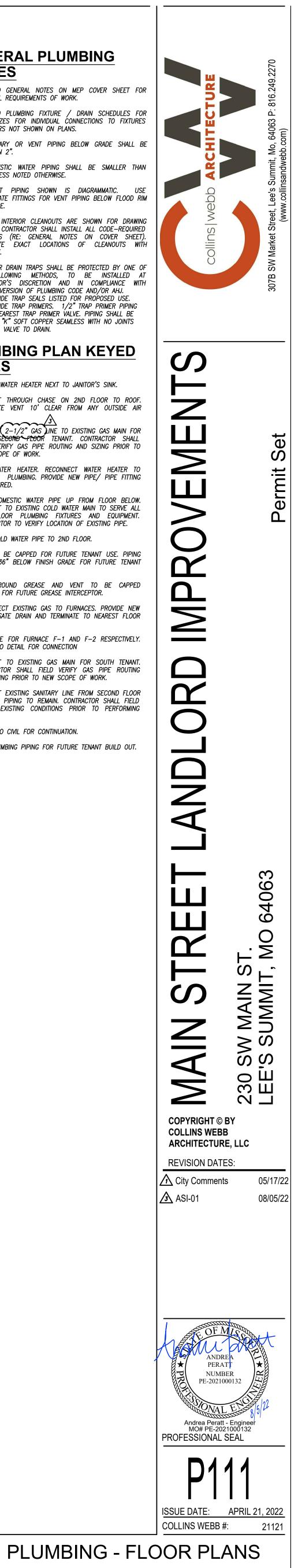












PIPING					FIELD TEST	ALLOWABLE IN	INSULA	ATION
SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	PRESSURE/TIME	PLENUMS	TYPE	THICKNESS
DOMESTIC COLD WATER	1/2"-2-1/2"	L	COPPER	SOLDER, PRO-PRESS	130 PSI – 1/2HR	YES	FIBERGLASS W/ ASJ	1/2"
DOMESTIC HOT WATER & HW RETURN	1/2"-1-1/4"	L	COPPER	SOLDER, PRO-PRESS	130 PSI – 1/2HR	YES	FIBERGLASS W/ ASJ	1"
DOMESTIC HOT WATER & HW RETURN	-1/2"-2-1/2	1L	COPPER	SOLDER, PRO-PRESS	130 PSI – 1/2HR	YES	FIBERGLASS W/ ASJ	1-1/2"
NATURAL GAS – ABOVE GRADE	1/2"-2"	SCH. 40	STEEL- SEEMLESS	THREADED IRON OR WELDED4	75 PSI – 1HR	YES		
SOIL & WASTE ABOVE GRADE	1-1/2"-6"	NO HUB / SERVICE WT.	CAST IRON	NO HUB	10 FT - 1/2HR	YES		
SOIL & WASTE ABOVE GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO		
SOIL & WASTE BELOW GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO		
RPZ AND SIMILAR EXPOSED DRAIN LINES	ALL	L	COPPER	SOLDER, PRO-PRESS	10 FT — 1/2HR	YES		
CONDENSATE DRAIN ON ROOF	3/4"-2"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO		
CONDENSATE DRAIN INTERIOR	3/4"-2"	SCH. 40	CPVC	SOLVENT JOINED	10 FT - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM ONI
CONDENSATE DRAIN INTERIOR	1/2"-2"	1	COPPER	SOLDER, PRO-PRESS	10 FT - 1/2HR	YES	FIBERGLASS W/ ASJ	

DHW

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\_\_\_\_ 1/2"

1/2"

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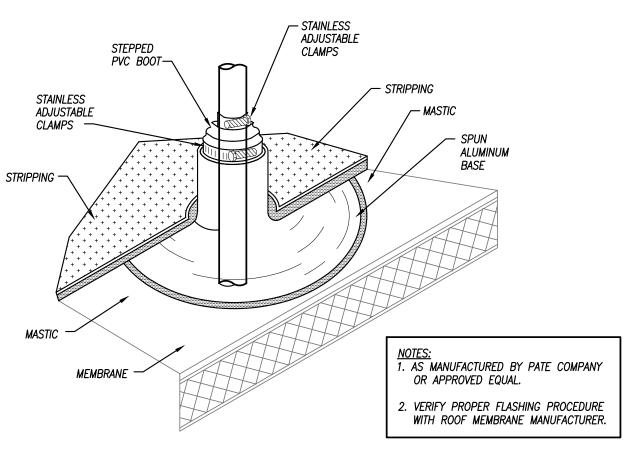
1/2"

<u>NOTES</u> 1. ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50. 2. ALL INSULATION THICKNESSES SHALL MEET ADOPTED IECC AND ASHRAE 90.1 - 2016 REQUIREMENTS AT A MINIMUM. 3. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

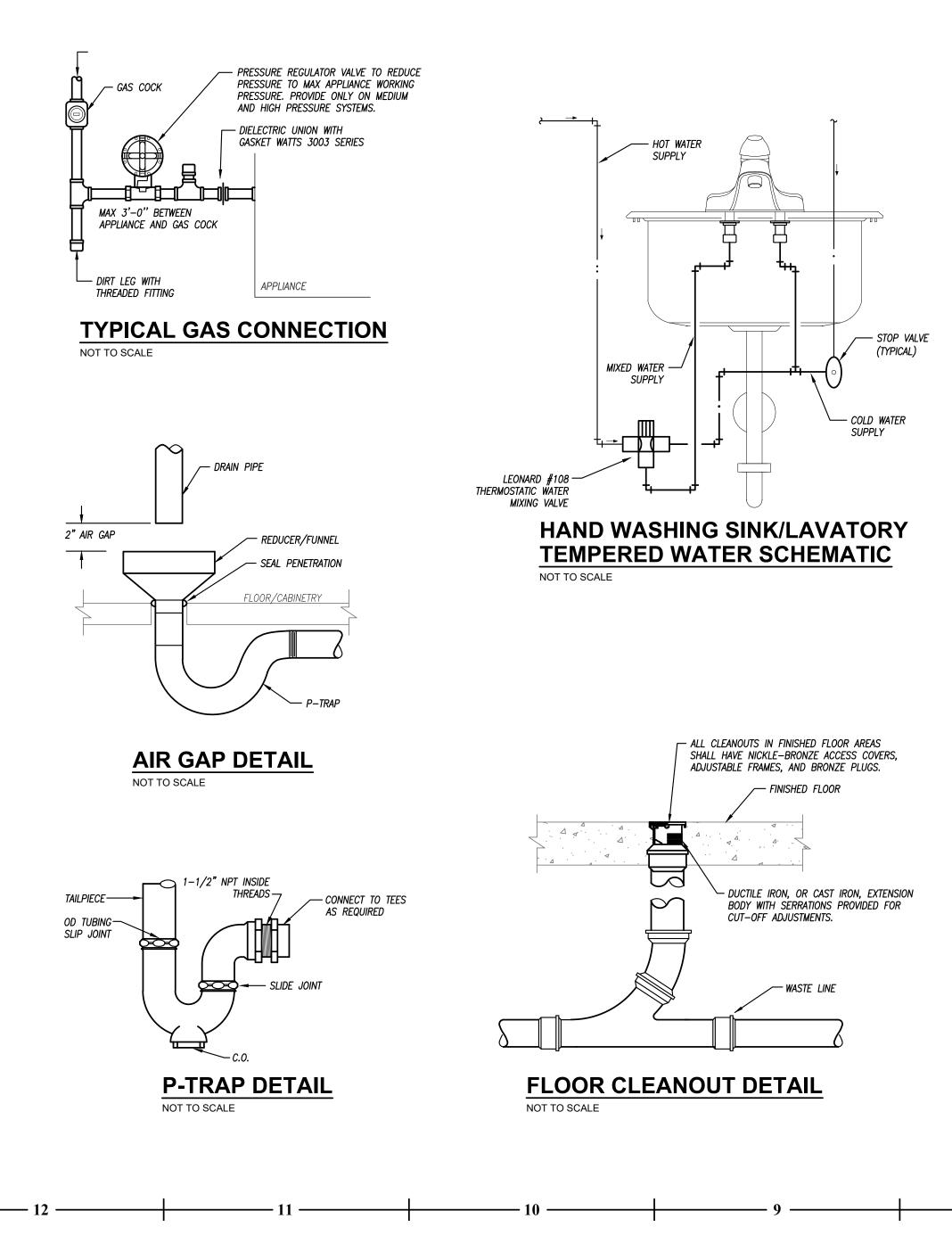
4. WELDED PIPING IS REQUIRED FOR GAS PIPING WHEN: A) PIPING IS AT OR OVER 2PSI; B) WHEN PIPING OF ANY PRESSURE IS ROUTED THROUGH CONCEALED SPACES.

## **PLUMBING FIXTURE BRANCH CONNECTION SCHEDULE** PLUMBING FIXTURE PIPE SIZES

FIXTURE TYPE	TRAP		LOWDING LIVE	
FIXTORE ITPE	IRAP	WASTE	VENT	DCW
WATER CLOSET (FLUSH VALVE)	INTEGRAL	4"	2"	1"
URINAL (FLUSH VALVE)	INTEGRAL	2"	2"	3/4"
FLUSH TANK WATER CLOSET	INTEGRAL	4"	2"	1/2"
LAVATORY	PROVIDE TRAP	2"	1-1/2"	1/2"
SINK	PROVIDE TRAP	2"	2"	1/2"
MOP SINK	PROVIDE DEEP SEAL TRAP	3"	2"	1/2"
FLOOR DRAIN	PROVIDE DEEP SEAL TRAP	AS SCHEDULED	1-1/2"	
FLOOR SINK	PROVIDE TRAP	AS SCHEDULED	1-1/2"	
DRINKING FOUNTAINS/EWC'S	PROVIDE TRAP	1-1/2"	1-1/2"	1/2"
SHOWERS/TUBS	PROVIDE TRAP	2"	1-1/2"	1/2"
SHOWERS	PROVIDE TRAP	2"	1-1/2"	1/2"
ICE MACHINE HOOKUP BOX				1/2"
WASHER HOOKUP BOXES	PROVIDE TRAP	2"	1-1/2"	1/2"





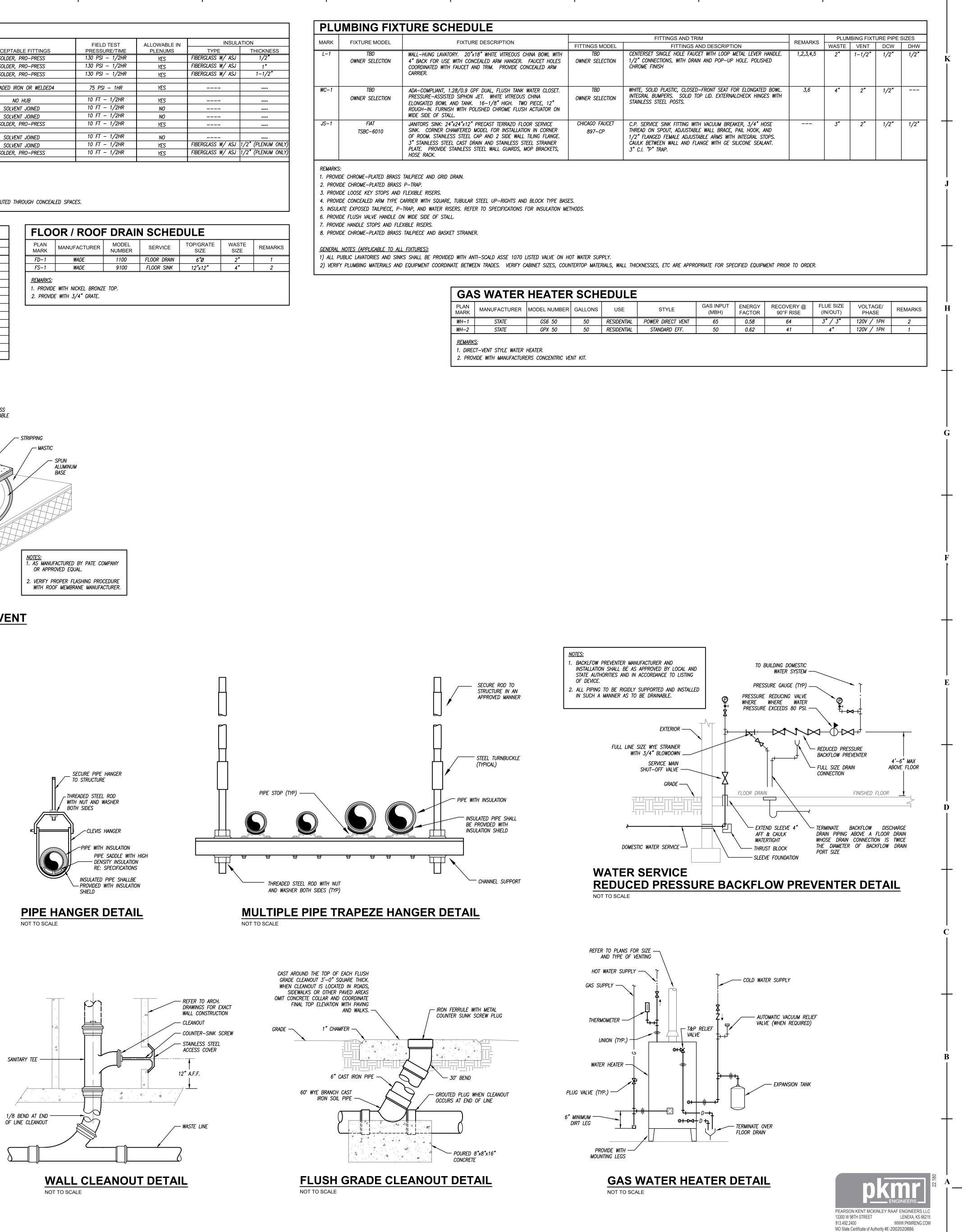


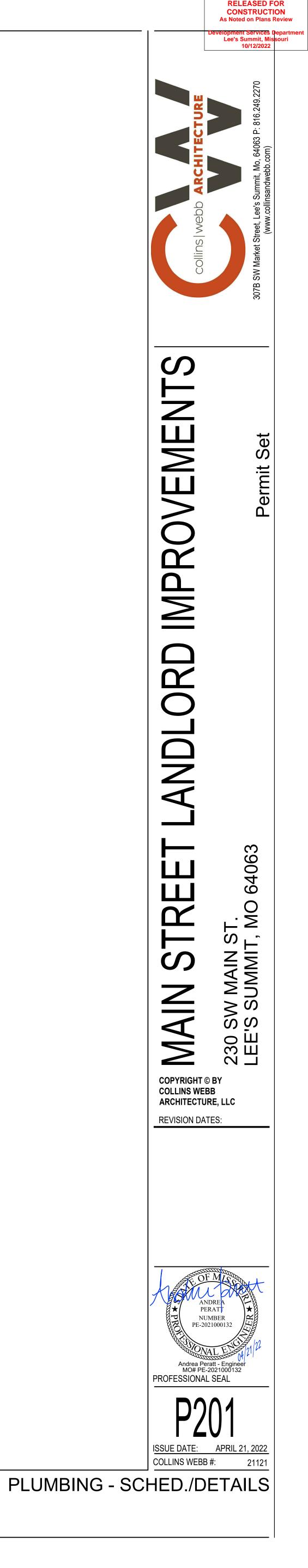
PLAN MARK	MANUFACTURER	MODEL NUMBER	SERVICE	TOP/GRATE SIZE	WASTE SIZE	REMARKS
FD-1	WADE	1100	FLOOR DRAIN	6ӯ	2"	1
FS-1	WADE	9100	FLOOR SINK	12"x12"	4"	2

PLL	IMBING FIX	<b>FURE SCHEDULE</b>
MARK	FIXTURE MODEL	FIXTURE DESCRIPTI
L-1	TBD OWNER SELECTION	WALL-HUNG LAVATORY. 20"x18" WHITE VITH 4" BACK FOR USE WITH CONCEALED ARM H COORDINATED WITH FAUCET AND TRIM. PRO CARRIER.
WC-1	TBD OWNER SELECTION	ADA–COMPLIANT, 1.28/0.9 GPF DUAL, FLUS PRESSURE–ASSISTED SIPHON JET. WHITE V ELONGATED BOWL AND TANK. 16–1/8" HIC ROUGH–IN. FURNISH WITH POLISHED CHROM WIDE SIDE OF STALL.
JS-1	FIAT TSBC-6010	JANITORS SINK: 24"x24"x12" PRECAST TERR SINK. CORNER CHAMFERED MODEL FOR IN: OF ROOM. STAINLESS STEEL CAP AND 2 SIL 3" STAINLESS STEEL CAST DRAIN AND STAIN PLATE. PROVIDE STAINLESS STEEL WALL GU HOSE RACK.
	S: DE CHROME–PLATED BRASS IDE CHROME–PLATED BRASS	

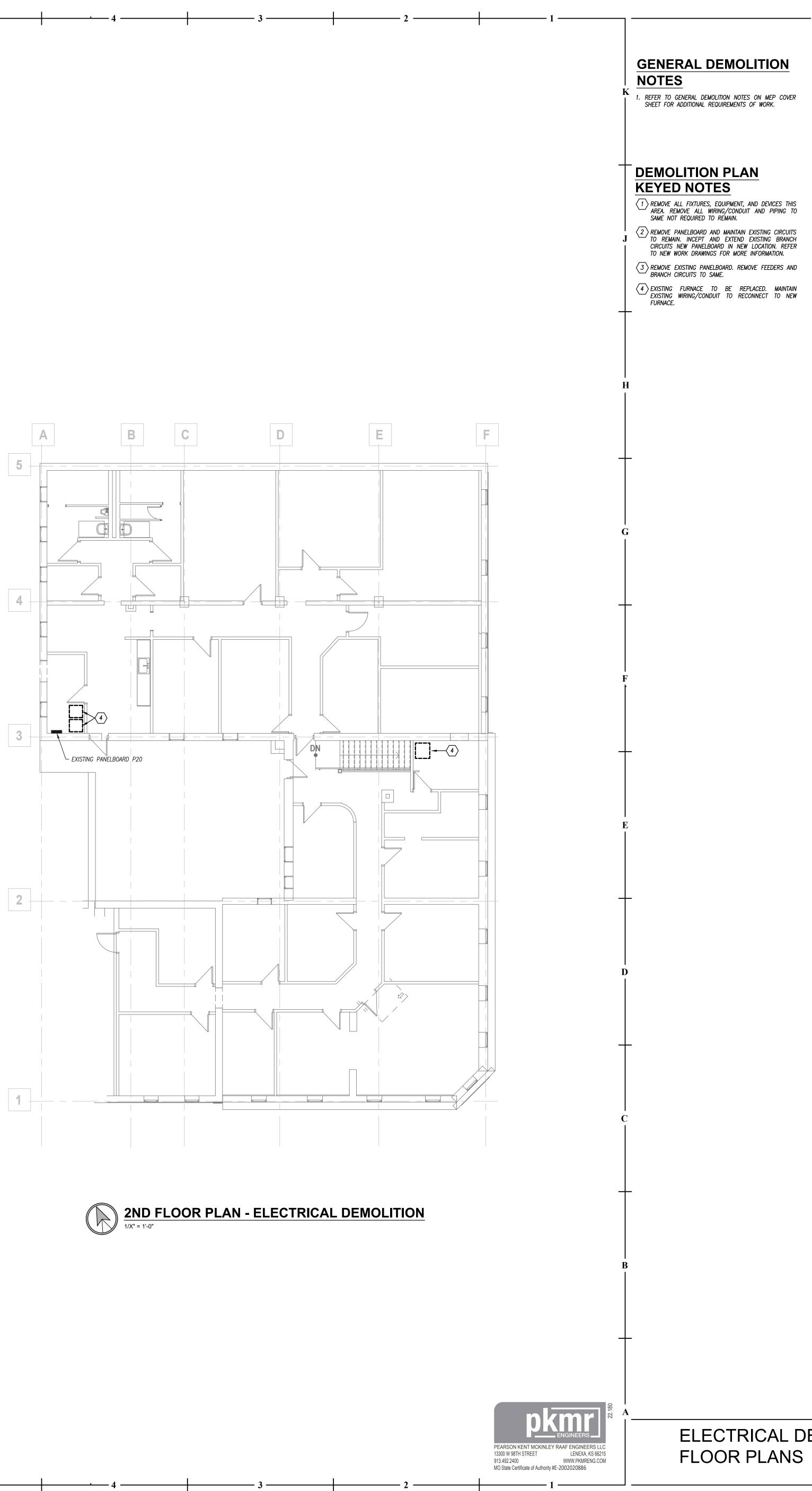
GA	S WAT
PLAN MARK	MANUFACT
WH—1	STATE
WH-2	STATE
	<u>s:</u> CT–VENT STYLE /IDE WITH MANU

# **ROOF PLUMBING VENT**

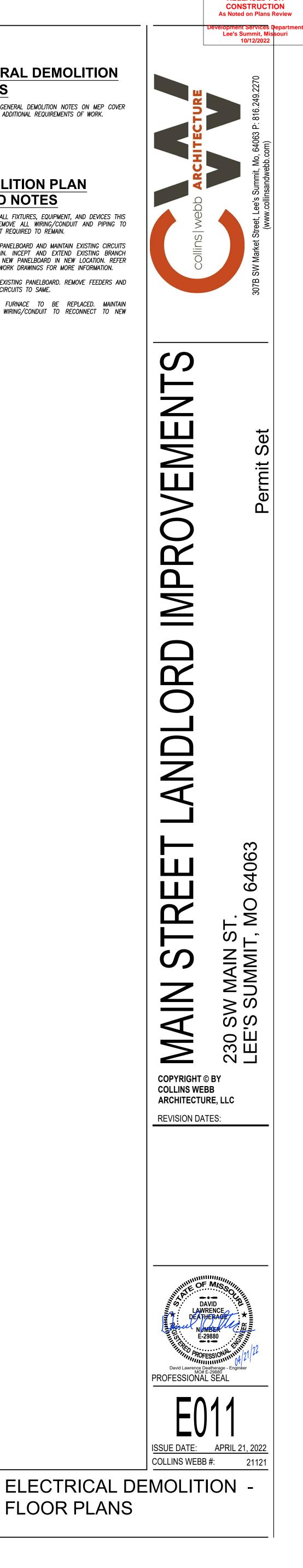


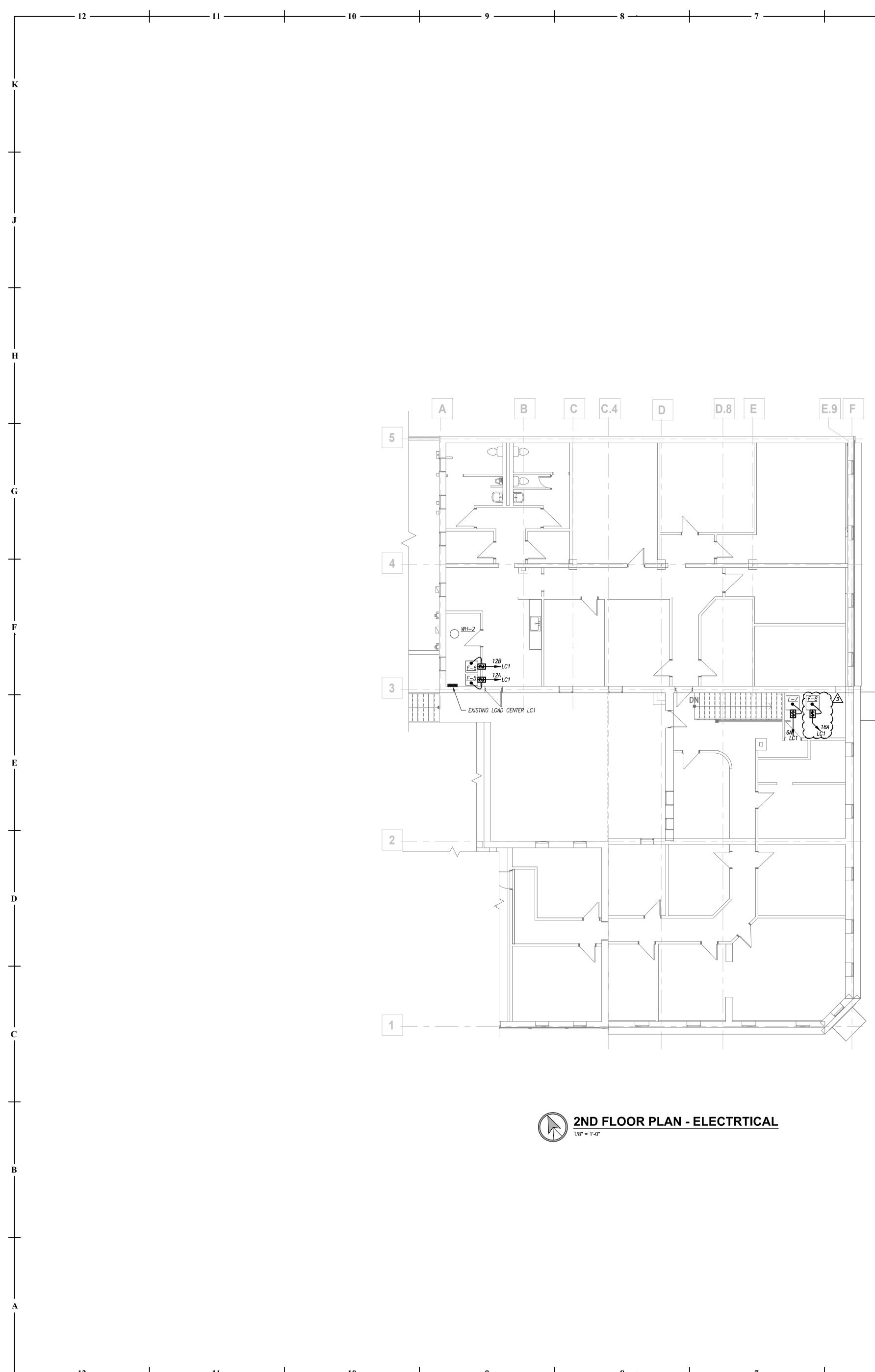


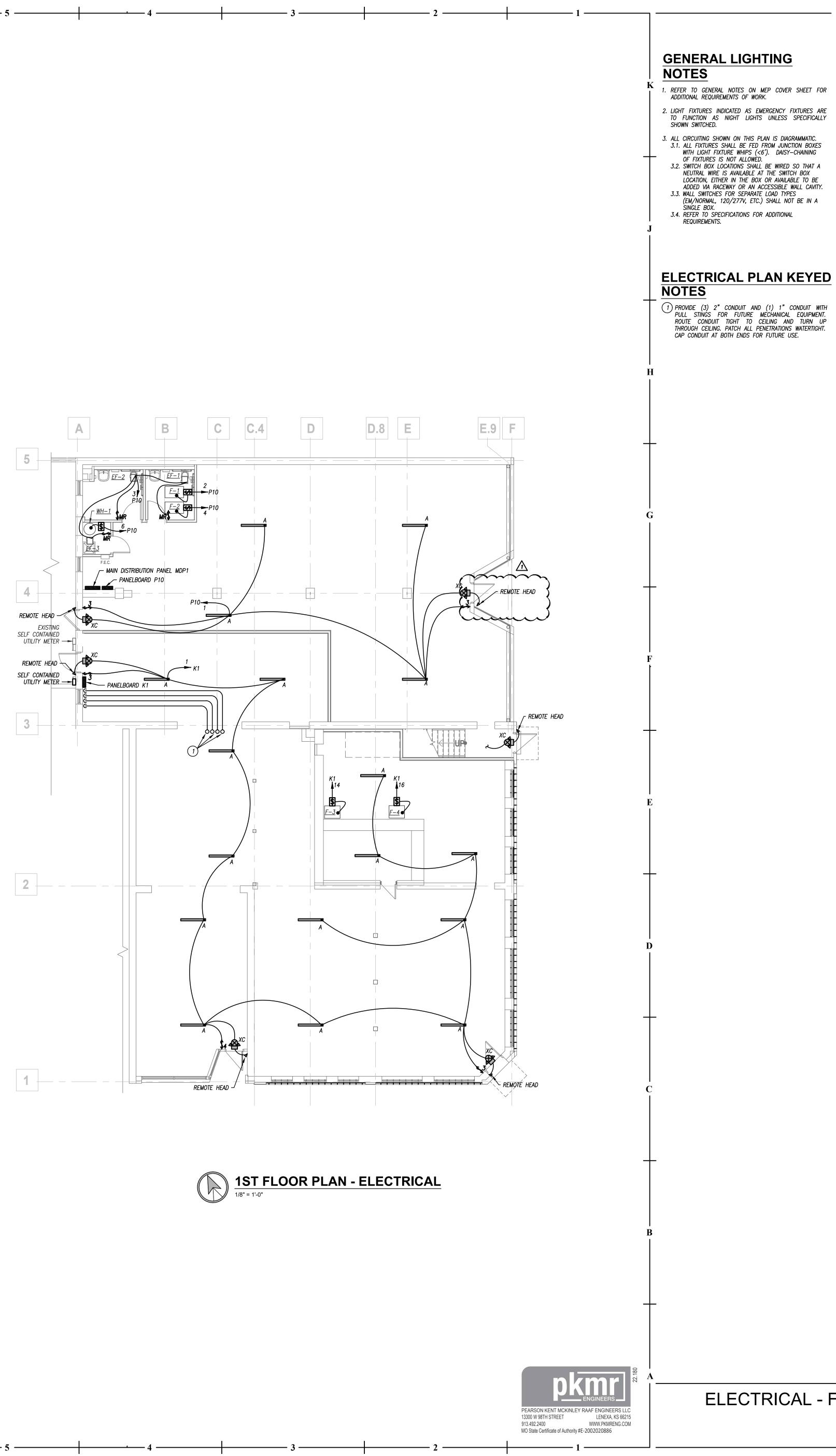




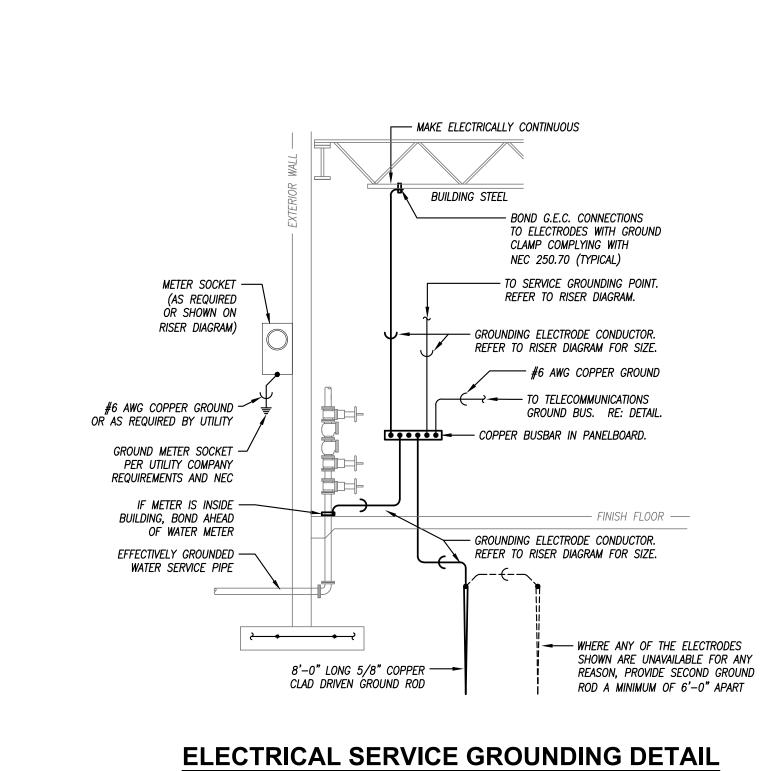
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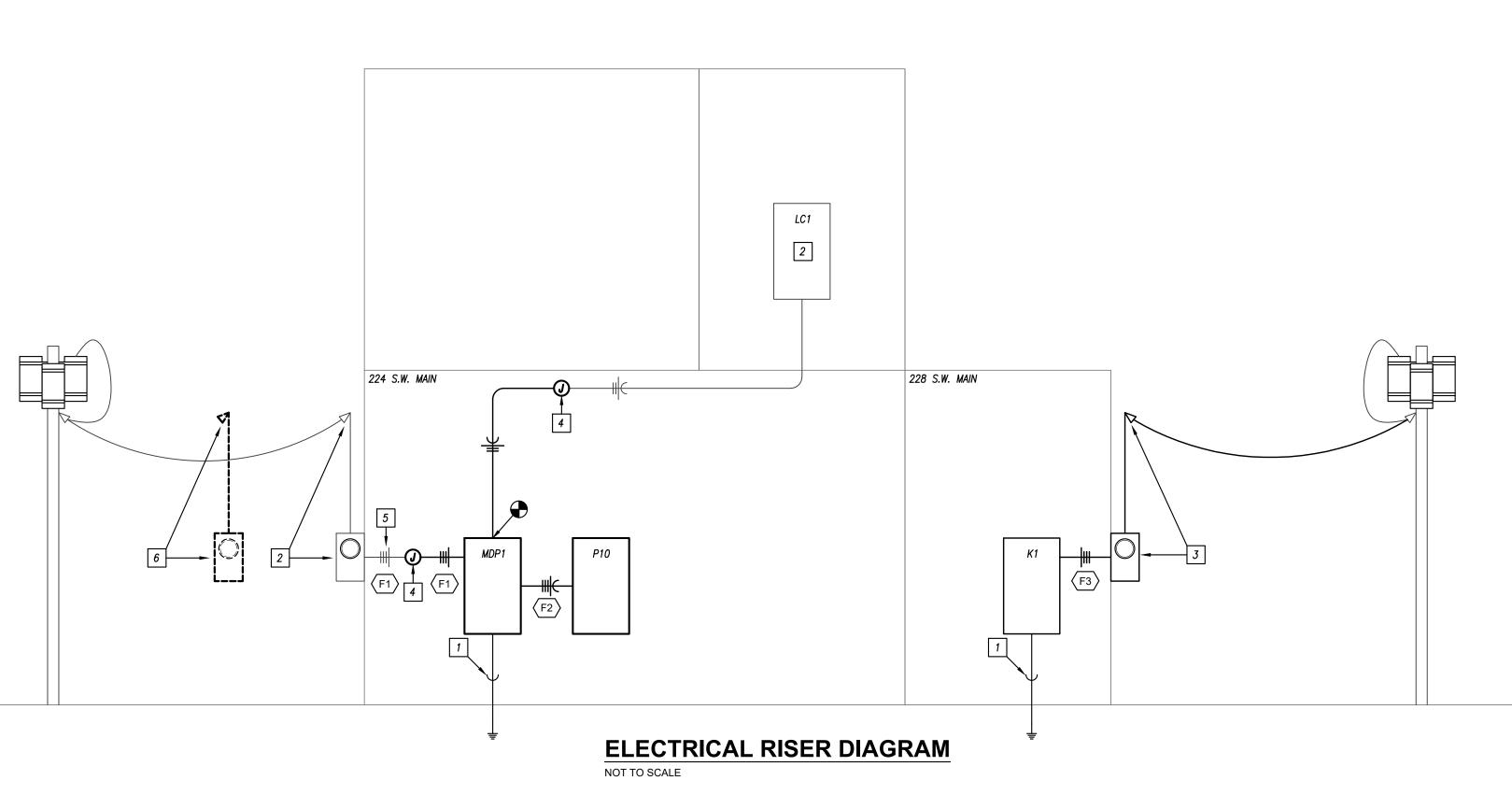








NOT TO SCALE



PANEL DESIGNATION	:: <b>K1</b>									AMPS:		S	CCR RATING (AIC):	22,000
MOUNTING		<b>F</b>				#   ⊢		IV		EAKER:	400 208/12	0		
LOCATION			S 100				5			E/WIRE:	-	0		
LUCATION	I FUIURE		5-100			Ē								
DESCRIPTION		PHASE B	С	TRIP	/B POLE			C/ POLE	B TRIP		PHASE B	С	DESCRIF	PTION
LTS: FUTURE TENAT S-100	A 546			20	POLE		2	PULE	IRIP	A 3459	D			
SPARE	540	_		20	1	1	2	3	50	5459	3459			IG UNIT CU-
SPARE		-	_	20		5	4 6	5	50		5459	3459	CONDENSIN	
SPARE	_		_	20	1	5	0 8			3459		5459		
SPARE	_	_		20	1		0 10	3	50	5459	3459			IG UNIT CU-
SPARE		_	_	20	1	-	10	5	50		5459	3459	CUNDENSIN	IG UNIT CU-
SPARE	_		_	20			14	1	20	1920		5455	F	URNANCE F-
SPARE	_	_		20	1		14	1	20	1920	1920			URNANCE F-
SPARE		-	_	20	1		18	1	20		1920	_	F	SPAR
SPARE				20	1		20	1	20	_				SPAR SPAR
SPARE	-	_		20	1		20	1	20		_			SPAR SPAR
SPARE			_	20	1		22	1	20		_			SPAR SPAR
			_		1			1				-		
SPARESPARE	-			20 20	1		26 28	1	20 20	-				SPAR SPAR
		-					28 30	1			-			
SPARE			-	20	1		30 32	1	20			-		SPAR
SPARE	-			20				,	20	-				SPAR
SPARE		-		20	1		34	1	20		-			SPAR
SPARE			-	20	1		36	1	20			-		SPAR
SPARE	-			20	1	-	38	1	20	-				SPAR
SPARE		-		20	1		40	1	20		-			SPAR
SPARE			-	20	1		42	1	20			-		SPAR
SPARE	-			20	1		44	1	20	-				SPAR
SPARE		-		20	1	-	46	1	20		-			SPAR
SPARE			-	20	1		48	1	20			-		SPAR
SPARE	-			20	1		50	,	20	-				SPAR
SPARE		-		20		51		1	20		-			SPAR
SPARE			-	20	1	53		1	20			-		SPAR
SPARE	-	_		20	1	55		1	20	-				SPAR
SPARE		-		20	1	57		1	20		-			SPAR
SPARE			-	20	1	_	60	1	20			-		SPAR
							62	7		-				
			LARGE S	DB-FEL	BREAKE		64 66	3	-		_			
	540						00			0070	0070	-		
TOTAL	s 546	0	0	I						8838	8838	6918	TOTALS	
[	PANELB		SIZING		)							CONN	ECTED PHASE L	OADS
_OAD DESCRIPTION		ECTED	-			(	СОГ	DE MIN.	(VA)		PHA		VA	AMPS
LIGHTS	_	46		1.25		$\vdash$		683				40L 4	9,384	78.1
RECEPTACLES		0	10KVA	+ 50%	REST			000				3	8,838	73.6
MOTORS		340			M OF REST			4,320				, ,	6,918	57.6
		754		1.00				20,754				ALS	25,140	69.8
SPACE HEATING		, <u>,,,</u> 0		0.00		-		0				,0		03.0
	_	0		1.00		-		0			REMARK	S٠		
CONTINUOUS	_	0		1.25				0					R-LINE 1X OR EQUA	ı
NON-CONTINUOUS	-	0		1.25				0					R-LINE TX OR EQUA RANCE RATED.	L.
COODIN HINDOOD	1 1		1	1.00				U			Z. JERV	IUL LIVII	WHITLE MAILU.	

SIZING LOAD (AMPS):

EQUIPMENT FAULT CURRENT R	ATING SCH	IEDULE	
EQUIPMENT	SCA **	SCCR	NOTES
DISTRIBUTION PANELBOARD MDP1	11,046	22,000	1,2
PANELBOARD P10	10,664	22,000	1,2
PANELBOARD K1	9,924	22,000	1,2
<u>NOTES:</u> 1. RATING BASED ON AN ASSUMED FAULT AT UTIL 2. FOLLIOMENT MAY BE SERVES BATED	LITY CO. TRANSF	ORMER OF 38,9	)14A.

2. EQUIPMENT MAY BE SERIES RATED. \*\* CALCULATIONS PERFORMED USING BUSSMANN POINT-TO-POINT METHOD.

EQUIF	MENT FEEDER SCHEDULE	EQUIPMENT FEEDER SCHEDULE												
FEEDER	EQUIPMENT	LOAD			FEEDE	٦		CONDUIT						
NO.		(AMPS)	SETS	# OF WIRES	SIZE	GROUND	MATERIAL	SIZE						
F1	DISTRIBUTION PANELBOARD MDP1	228.0	2	4	#3/0	-	COPPER	2"						
F2	PANELBOARD P10	11.0	1	4	#3/0	<b>#</b> 6	COPPER	2"						
F3	PANELBOARD K1	71.5	1	4	500 MCM	-	COPPER	3-1/2"						

71

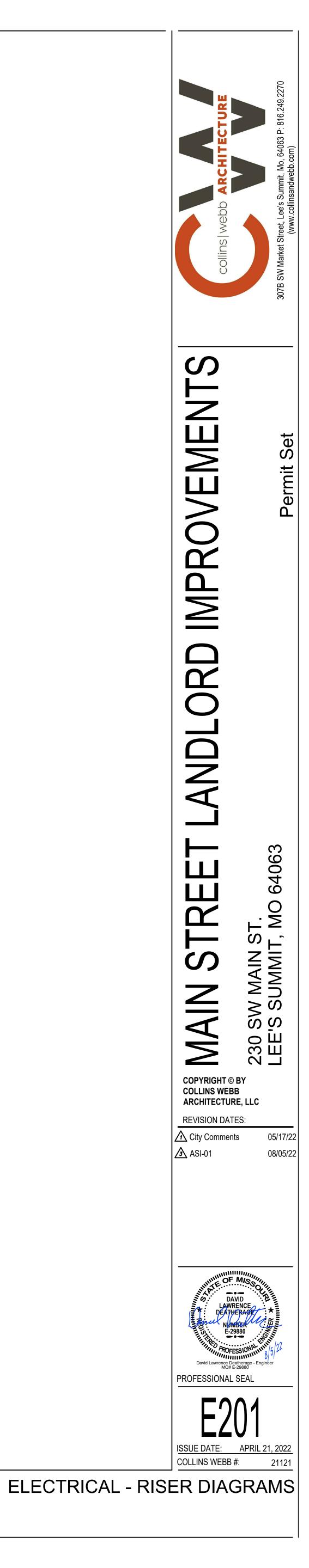
## **RISER DIAGRAM KEYED NOTES**

- 1 #1/0 GROUNDING ELECTRODE IN 1" CONDUIT.
- 2 EXISTING TO REMAIN.
- 3 PROVIDE METER AND WEATHERHEAD PER EVERGY STANDARDS.
- 4 INTERCEPT AND EXTEND FEEDER TO NEW MDP LOCATION. 5 FIELD VERIFY FEEDER SIZE.
- 6 REMOVE EXISTING ELECTRICAL SERVICE.

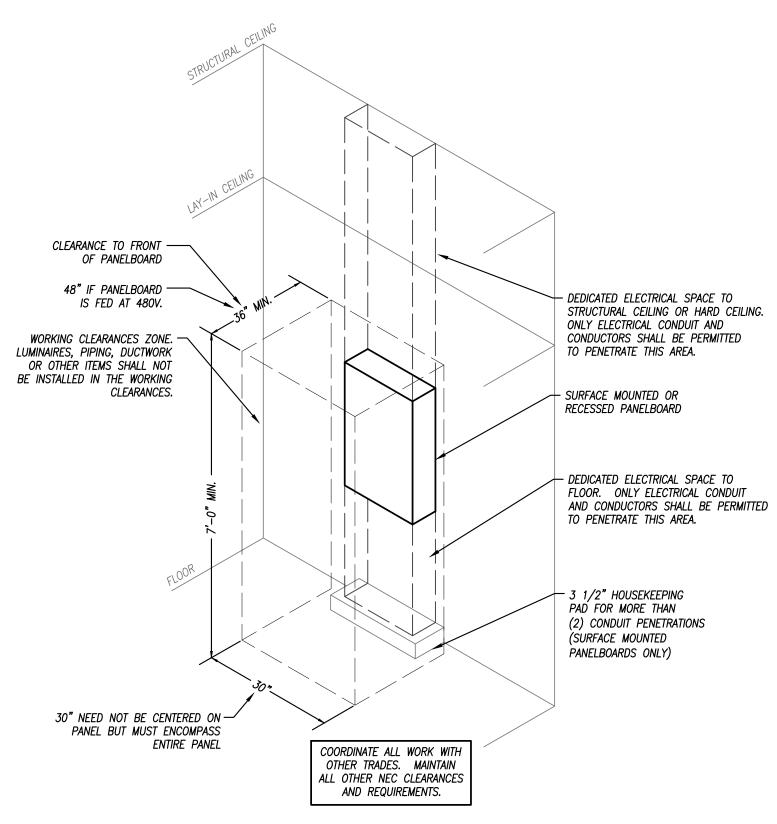
PANEL DESIGNATION:	MD	P1				-++				AMPS: EAKER:		S	CCR RATING (AIC):	22,000
MOUNTING:	SURFAC	E				#					208/12	0		
LOCATION:						CIRCUIT	8			E/WIRE:	-	-		
		PHASE		С	/B		5	C			PHASE			
	A	В	C_	IRIP	POLE		ľ	POLE	TRIP	A	B			
	3456			~ <b>~</b>		1	2			3456				
ONDENSING UNIT CU-1		3456		50	3	3	4	3	50		3456		CONDENSIN	IG UNIT CU-5
			3456			5	6					3456		
	2786	$\sim$	$\sim$	$\sim$	$\sim$	7	8			2784				
ONDENSING UNIT CU-2		2786		40	3	9	10	3	40		2784		CONDENSIN	IG UNIT CU–6
			2786			11	12					2784		
	-					13	14	$\sim$		5459		$\sim$		
PACE		-		-	1	15	16	3	50		3459		CONDENSIN	IG UNIT CU-7
			-			17	18	$\sim$	$\frown$			3459	$\sim\sim\sim$	$\sim$
	-						20			3456				
PACE		_		-	1		2	3	50		3456		CONDENSIN	IG UNIT CU-8
			-			-	24					3456		
	-						26	~	20		$\sim$	$\sim \sim$		SPARE
PACE		-		-	1		28	1	20		-			SPARE
			-				30	1	20			-	SPARE	
ARE	-			20	1		32	1	20	-				SPARE
ARE		-		20	1	+	34	1	20		-			SPARE
ARE			-	20			36	1	20			-		SPARE
PARE	-			20	1		38	1	20	-	10000			SPARE
PARE		-		20	1		40	2	200		10000	10000	LOAD	) CENTER LC
PARE			-	20			42 44			1344		10000		
			LARGE S				44 46	3	200	1344	1290			IELBOARD P10
			LARGE S	DD-FED	DREAN	-	40	5	200		1290	860	PAN	ELDUARD FIU
TOTALS	6242	6242	6242				40			14499	24445		TOTALS	
TOTALS	0272	0242	0242							1++33	27773	24013	TOTALS	
PA		OARD	SIZING		)					1		CONN	ECTED PHASE L	OADS
DAD DESCRIPTION		ECTED		DEMAN		(		E MIN.	(VA)		PH/		VA	AMPS
GHTS	10	58		1.25				210				4	20,741	172.7
ECEPTACLES		60	10KVA	+ 50%	REST			360		1		3	30,687	255.5
OTORS		466		GEST + SU		1		2,760		1	(		30,257	252.0
IR CONDITIONING	58,	191		1.00				58,191			тот	ALS	81,685	226.7
PACE HEATING	-	0		0.00		1		0		1	L			
EAT PUMP	(	0		1.00				0			REMARK	<u>S:</u>		
ONTINUOUS	50	00		1.25				625		1	1. EATO	N POW-H	R-LINE 3X OR EQUA	L.
ON-CONTINUOUS		0		1.00				0		1	2. SERV	ICE ENTR	RANCE RATED	
IISC. LOADS 1	(	0		1.00				0		1				
			•	SIZINO	LOAD:	1		82,146		1				
			SIZING					228		1				

PANEL DESIGNATION:	P10						#			AMPS: EAKER:		S	CCR RATING (AIC)	: 22,000	
MOUNTING:	SURFAC	E					ŧ II			LTAGE:		0			
LOCATION:							כואכיטוו			E/WIRE:	•				
		PHASE		С	/B	1 2	5	C	/B		PHASE				
DESCRIPTION	A	В	С	TRIP	POLE	İ		POLE	TRIP	A	В	С	DESCRIF	PTION	
LTS: OFFICE N-100	168			20	1	1	2	1	20	1176				FURNACE F-1	
EXHAUST FANS		114		20	1	3	4	1	20		1176			FURNACE F-2	
RECEPT: ROOF			360	20	1	5	6	1	15			500	WATER	HEATER WH-1	
SPARE	-			20	1	7	8	1	20	-				SPARE	
SPARE		-		20	1	9	10	1	20		-			SPARE	
SPARE			-	20	1	11	12	1	20			-		SPARE	
SPARE	-			20	1	13	14	1	20	-				SPARE	
SPARE		-		20	1	15	16	1	20		-			SPARE	
SPARE			-	20	1	17	18	1	20			-		SPARE	
SPARE	-			20	1	19	20	1	20	-				SPARE	
SPARE		-		20	1	21	22	1	20		-			SPARE	
SPARE			-	20	1	23	24	1	20			-		SPARE	
SPARE	-			20	1	25	26	1	20	-				SPARE	
SPARE		-		20	1	27	28	1	20		-		5		
SPARE			-	20	1	29	30	1	20			-	S		
SPARE	-			20	1	31	32	1	20	-			SF		
SPARE		_		20	1	33	34	1	20		-			SPARE	
SPARE			-	20	1	35	36	1	20			-		SPARE	
SPARE	_			20	1	37	38	1	20	-				SPARE	
SPARE		-		20	1	39	40	1	20		-			SPARE	
SPARE			-	20	1	41	42	1	20			-		SPARE	
TOTALS	168	114	360		•					1176	1176	500	TOTALS		
			0.70.10							1		<u></u>			
	ANELB					-	001		() ( A )				ECTED PHASE I		
LOAD DESCRIPTION	CONN				ر 	<u> </u>		DE MIN.	(VA)		PHA		VA	AMPS	
LIGHTS		58 60	10101	1.25	DECT			210			4		1,344	11.2	
RECEPTACLES		50		+ 50%		<u> </u>		360			E		1,290	10.7	
MOTORS		466	1.25 x LAF	RGEST + SU	m u⊦ Rest			2,760			(	-	860	7.2	
AIR CONDITIONING		2		1.00				0			тот	ALS	3,494	9.7	
SPACE HEATING		)		0.00				0			DEMADY	<b>c</b> .			
		)		1.00		<u> </u>		0		4	REMARK			14	
		00		1.25				625			I. EAIO	N POW-	R–LINE 1X OR EQUA	L.	
NON-CONTINUOUS		2		1.00				0							
MISC. LOADS 1		)		1.00				0		ł					
					G LOAD: (AMPS):			3,955 11		ł				ĺ	





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**TYPICAL PANELBOARD INSTALLATION DETAIL** NOT TO SCALE

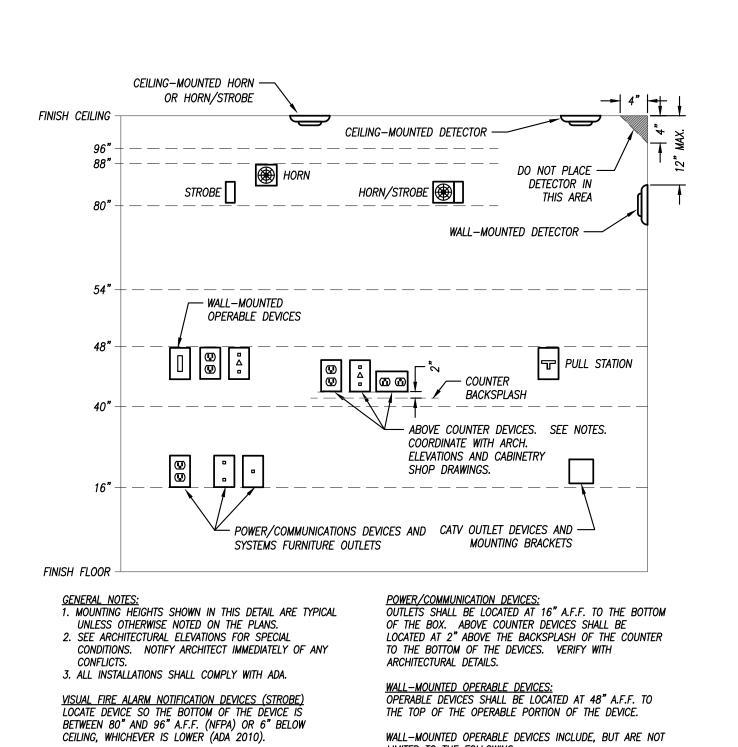
LIGHT FIXTURE SCHEDULE											
FIXTURE TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LED MODULE / DRIVER							REMARKS
				ID	WATTS	LUMENS	CRI	ССТ	DIMMING	VOLTAGE	REIVIARKS
A	WILLIAMS	SERIES 75S	4'-0" LONG COMMERCIAL-GRADE STRIP FIXTURE WITH SQUARE LENS. SURFACE MOUNT. WHITE FINISH.	L65	42	6500	80	3500K	NO	277/120	1
XC	DUAL-LITE	EVC SERIES	COMBINATION EMERGENCY LIGHTING UNIT / EXIT LIGHT. UV-STABLE THERMOPLASTIC HOUSING, FINISH WHITE. ADJUSTABLE EYEBALL STYLE LIGHTING HEADS WITH GLASS	TOTAL POWER CONSUMPTION =		-	-	-	-	277/120	1
		LENS FOR EMERGENCY LIGHT. EXIT SIGN TO HAVE RED LETTERS WITH DIRECTIONAL ARROWS AS INDICATED ON THE PLANS. MAINTENANCE-FREE LITHIUM ION PHOSPHATE BATTERY FOR 90 MINUTE OPERATION OF LAMPS AND EXIT SIGN. FURNISH WITH CAPACITY FOR REMOTE HEAD. FULLY AUTOMATIC, SOLID-STATE CHARGER WITH TEST SWITCH AND AC-ON LIGHT.	EMERGENCY: FOUR (4) HIGH-OUTPUT		-	-	-	-	1		
			CAPACITY FOR REMOTE HEAD. FULLY AUTOMATIC, SOLID-STATE CHARGER WITH TEST		FØØR (4) UTPUT LEDS.		-	-	-		
		EVO	OUTDOOR REMOTE WITH 2 HEADS. BLACK FINISH.								

FIXTURE TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LED MODULE / DRIVER							REMARKS
				ID	WATTS	LUMENS	CRI	ССТ	DIMMING	VOLTAGE	
A	WILLIAMS	SERIES 75S	4'-0" LONG COMMERCIAL-GRADE STRIP FIXTURE WITH SQUARE LENS. SURFACE MOUNT. WHITE FINISH.	L65	42	6500	80	3500K	NO	277/120	1
ХС	DUAL-LITE	EVC SERIES	COMBINATION EMERGENCY LIGHTING UNIT / EXIT LIGHT. UV-STABLE THERMOPLASTIC HOUSING, FINISH WHITE. ADJUSTABLE EYEBALL STYLE LIGHTING HEADS WITH GLASS	LASS CONSUM	L POWER UMPTION =	-	-	-	-	277/120	1
			LENS FOR EMERGENCY LIGHT. EXIT SIGN TO HAVE RED LETTERS WITH DIRECTIONAL ARROWS AS INDICATED ON THE PLANS. MAINTENANCE-FREE LITHIUM ION PHOSPHATE BATTERY FOR 90 MINUTE OPERATION OF LAMPS AND EXIT SIGN. FURNISH WITH CAPACITY FOR REMOTE HEAD. FULLY AUTOMATIC, SOLID-STATE CHARGER WITH TEST SWITCH AND AC-ON LIGHT.	EMERGENCY. FOUR (4) HIGH-OUTPUT EXIT: LFBOR (4) HIGH-OUTPUT LEDS.		-	1	-	-		
						-		-	_		
		EVO	OUTDOOR REMOTE WITH 2 HEADS. BLACK FINISH.								

1. FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

1) EQUALS ARE ACCEPTABLE ON ALL LIGHT FIXTURES UNLESS SPECIFICALLY NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR APPROVED EQUAL FIXTURE MANUFACTURERS. 2) ALL DRIVERS ARE INTEGRAL TO FIXTURE UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS FOR ADDITIONAL FIXTURE/DRIVER/BALLAST REQUIREMENTS. 3) ALL FIXTURES WITH PAINTED METAL PARTS SHALL BE PAINTED AFTER FABRICATION.



WALL-MOUNTED OPERABLE DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: LIGHT SWITCHES, DIMMERS, CONTROLS, ETC. PUSH BUTTONS NURSE/PATIENT CALL DEVICES (INLUDING THOSE FOR STAFF USE) OTHER CONTROL OR "CALL" DEVICES

<u>FIRE ALARM ACTIVATION DEVICES (PULL STATION)</u> LOCATE FRONT-APPROACH DEVICES SO THAT THE HIGHEST OPERABLE PORTION OF THE DEVICE IS NOT MORE THAN 48" A.F.F (ADA 2010) AND NOT LESS THAN 42" A.F.F. (NFPA).

<u>AUDIBLE FIRE ALARM NOTIFICATION DEVICES (HORN)</u> LOCATE DEVICE SO THAT THE TOP OF UNIT IS NOT MORE THAN 90" A.F.F. AND NOT LESS THAN 6" BELOW CEILING

(NFPA)

## **MOUNTING HEIGHTS FOR WALL-MOUNTED DEVICES** NOT TO SCALE

4) LUMENS LISTED FOR LED FIXTURES ARE GENERALLY DELIVERED LUMENS UNLESS NOTED OTHERWISE.



# SCHEDULES

RELEASED FOR CONSTRUCTION As Noted on Plans Review ent Services Depa Lee's Summit, Missouri 10/12/2022 S IMPROVEMENT Set rmit CD ( Ω  $\frown$ **N** ND  $\leq$ 64063 Ш Ш Ц Ц Ц MO. SW MAIN ST S'S SUMMIT, I S 7 4 Щ Ш Ш 30  $\geq$  $\Box$   $\beta$ COPYRIGHT © BY COLLINS WEBB ARCHITECTURE, LLC **REVISION DATES:** ·--- OF Mi DAVID LAWRENCE DEATHERAGE NUMBER E-29880 David Lawrence Deatherage - Engineer MO# E-29880 PROFESSIONAL SEAL E202 ISSUE DATE:APRIL 21, 2022COLLINS WEBB #:21121 ELECTRICAL - PANELBOARD