

CITY OF EDINBURG FIRE STATION HVAC IMPROVEMENTS

OWNER: CITY OF EDINBURG

415 W. University Drive

Edinburg, Texas 78539

CONSULTANTS: SIGMA HN ENGINEERS, PLLC

701 S. 15th St.

McAllen, Texas 78501

CLH ENGINEERING, INC.

701 S. 15th St.

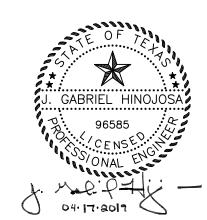
McAllen, Texas 78501

SITE LOCATION MAP



PROPOSED

SITE







Y OF EDINBURG FIRE STATION HVAC IMPROVEMENTS

EDINBURG, TX

SSUED: 04/17/2019
REVISIONS:

NO. DATE DESCRIPTION

WN BY: CKED BY: TTTITLE:

MEP COVER PAGE

MEP-0.0

MECHANICAL			
GENERAL MECHANICAL NOTES: A. THISE DAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOTE SCALED. THE GENERAL CONTRACTOR IS SESPONSIBLE FOR COORDINATING ALL CONSTRUCTION EFFORMS. COVIDEAL INFECESSARY OFFSETS AND FITTINGS AS REQUIRED BY FIELD CONDITIONS. SHALL FILE DEVELOPE PRISES AND FITTINGS AS REQUIRED BY FIELD CONDITIONS. B. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND/OR OWNER. C. THE CONTRACTOR IS FULLY RESPONSIBLE FOR REPORDINGS THE WORK IN FULL COMPILANCE WITH ALL APPLICABLE LOCAL STATE. AND FEDERAL CIDES UNDER THIS SECTION OF THE CONTRACT. IS THE CONTRACT OR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPILANCE WITH THE APPLICABLE LOCAL CODES. HE SHALL INFORM THE OWNER PRISOT TO CONSTRUCTION START FOR DIRECTION. SHALL BE IN CONTRACT ON SHALL AND THE LIEVE THE CONTRACT OF SHALL HAND SHALL AND THE LIEVE THE CONTRACT OF HIS RESPONSIBILITY TO MEET APPLICABLE LOCAL CODES. HE SHALL INFORM THE OWNER PRISOT CORS. AND REWORK SHALL BE AT CONTRACT ON SEAPHER. CONTRACTORS FALL HAND AND INSTALL ALL DUCTWORK TIGHT WITH THE BUILDING STRUCTURES AND PRINCIPLE WITH THE WORK CHARLES AND PARTICIPATE IN CONTRACTOR SHALL HAND AND INSTALL ALL DUCTWORK TIGHT WITH THE BUILDING STRUCTURES, ARCHITECTURAL BUILDIOLD. MECHANICAL CONTRACTOR SHALL HAND AND INSTALL ALL DUCTWORK SHALL BE MODIFIED AS NECESSARY AND REQUIRED TO IT AROUND BUILDING STRUCTURES, ARCHITECTURAL BUILDIOLD. MECHANICAL CONTRACTOR SHALL PROVIDE ALL CELING DIFFUSES AS SHOWN. CONNECT LOCAL PROVIDE COMPLETE THE NEW SYSTEMS AS INDICATED. E. CONTRACTOR SHALL PROVIDE ALL CELING DIFFUSES AS SHOWN. CONNECT TOACH OF THE ADDITION OF THE A			

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GINEERS, PLL Firm No. F-14767

CITY OF EDINBURG FIRE STATION HVAC IMPROVEMENTS

EDINBURG, TX

PROJECT NO.: 19011 ISSUED: 04/17/20 REVISIONS:

IO. DATE DESCRIPTION

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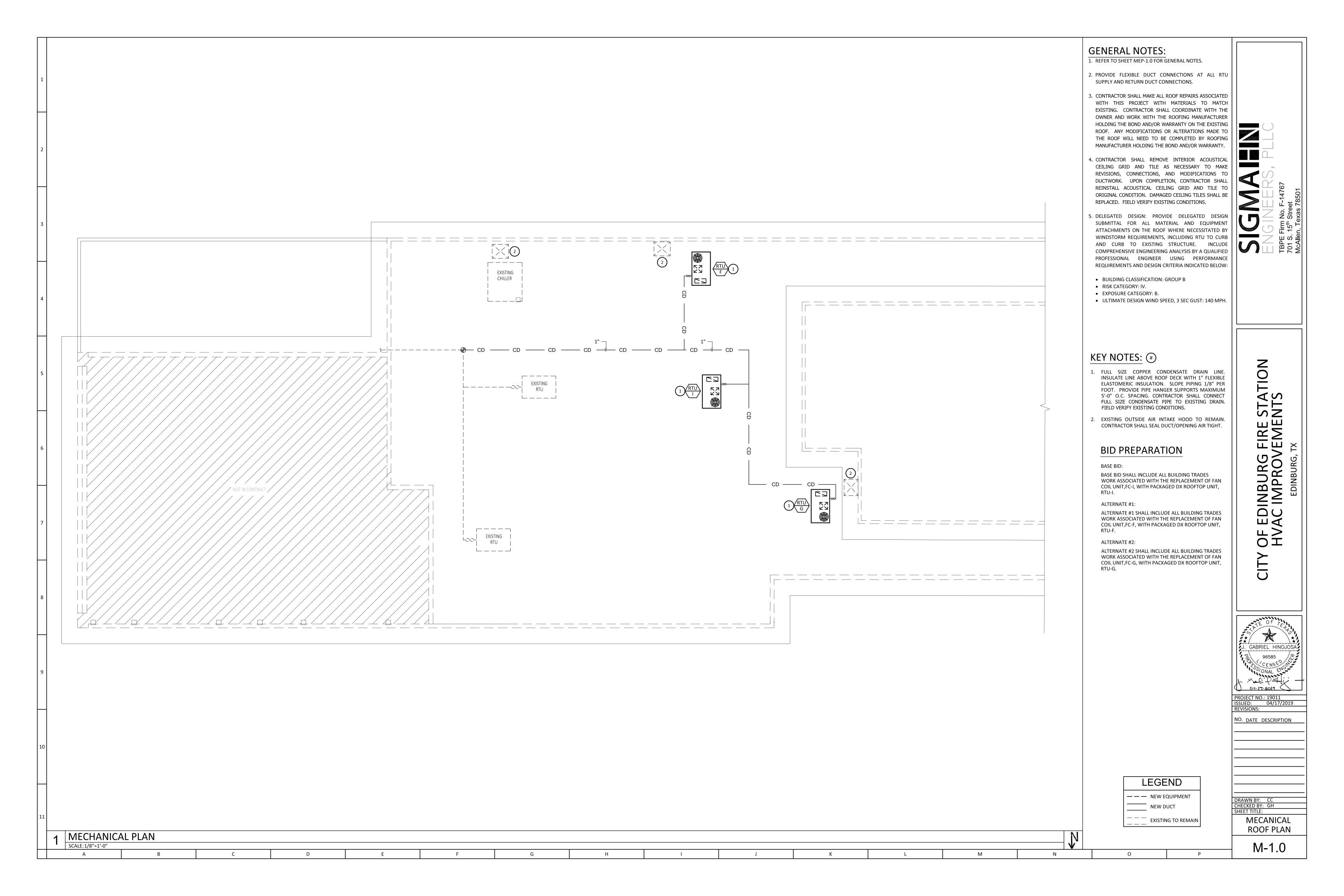
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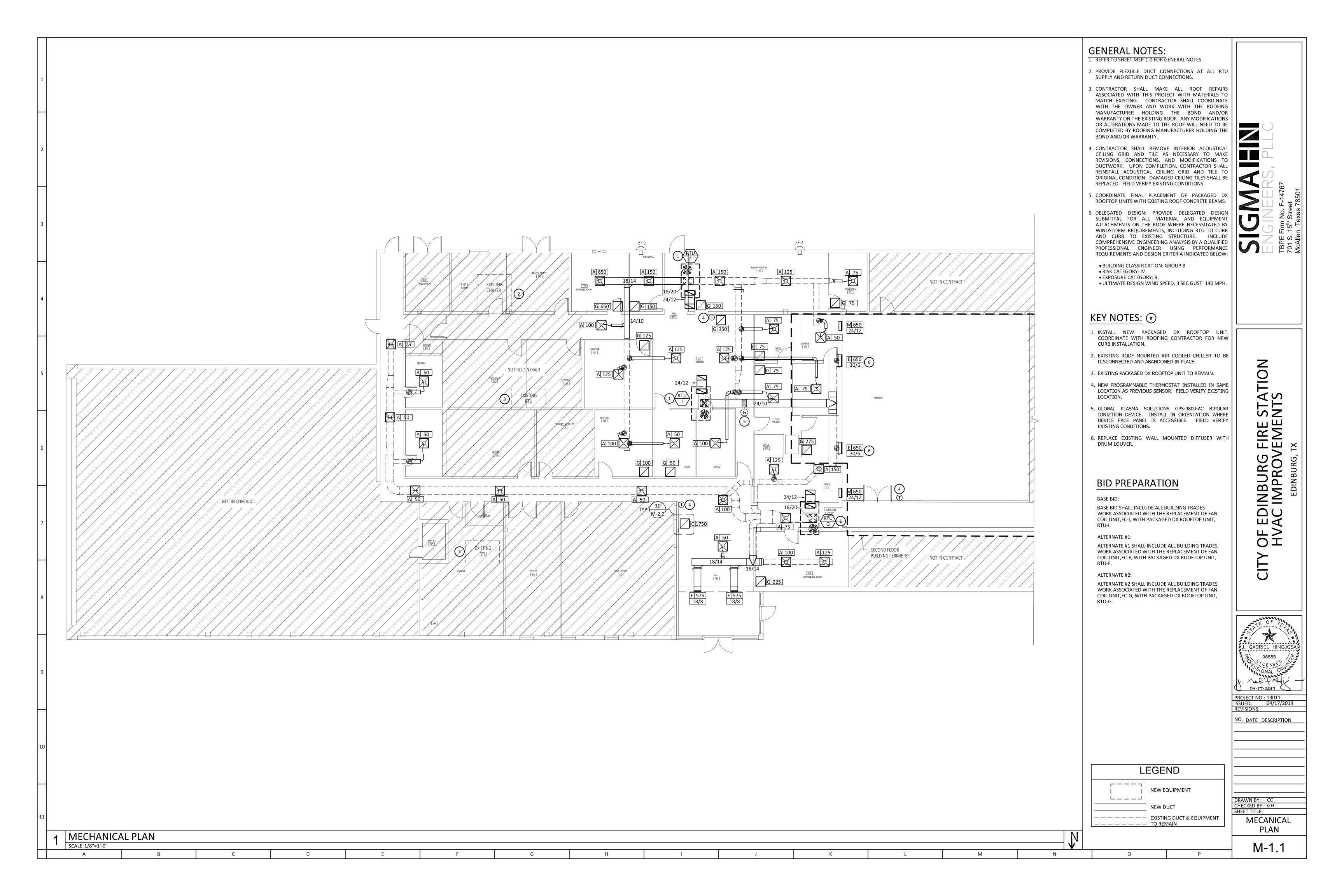
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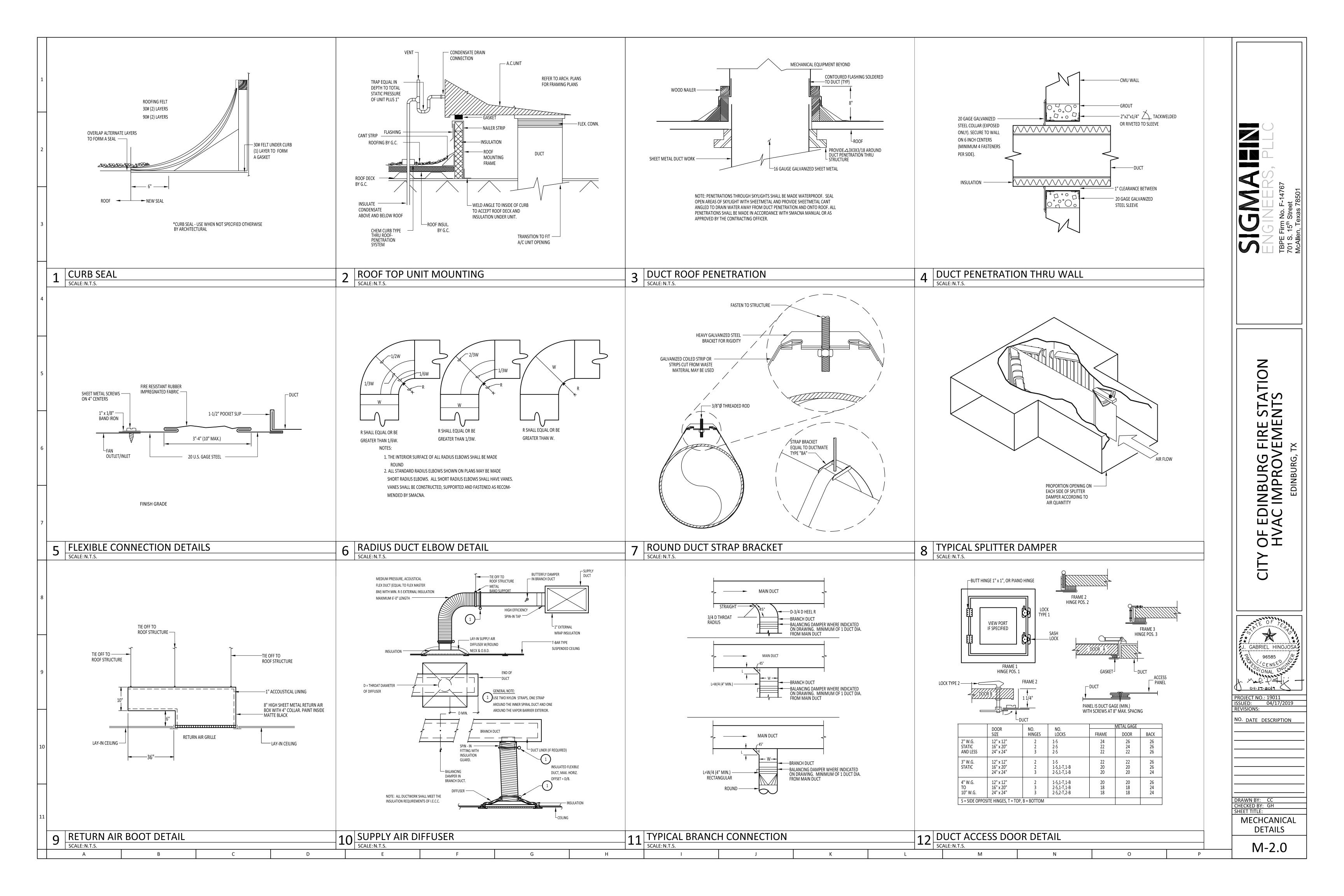
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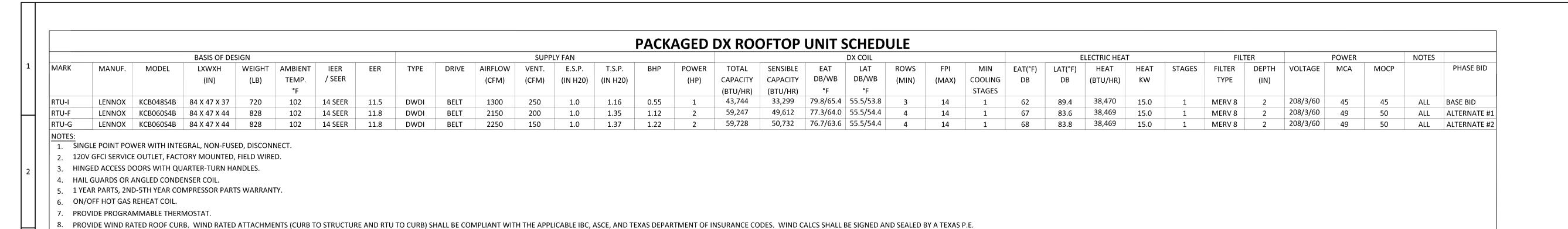
MEP-1.0











MECHAN	IICAL GENI	ERAL LEGEN	ID DUCTWORK SYMB	OLS				
DESCRIPTION	SINGLE LINE	DOUBLE LINE	DESCRIPTION	SINGLE LINE	DOUBLE LINE			
ACCESS DOOR	<u>AD</u>	AD	ROUND DUCT, DIAMETER IN INCHES (NET CLEAR INSIDE DIMENSION)	8"Ø	8"Ø }			
BACKDRAFT DAMPER	BDD —	BDD	AIR FLOW IN DIRECTION OF ARROW					
FIRE DAMPER	(F) ———	(F)	45 ⁰ BRANCH TAKE-OFFS					
FLEXIBLE CONNECTION	FC HII	FC T	CONICAL LATERAL BRANCH TAKE-OFFS	-				
MOTORIZED DAMPER	<u>М</u> — СD М	CDM	CEILING SUPPLY DIFFUSERS	<u></u>	141			
CONTROL DAMPER VOLUME DAMPER, MANUAL	 	† ↓ † † † † † † † † † † † † † † † † † †	DIRECTION SUPPLY GRILLE, HATCH INDICATES BLOCKED QUADRAN	NT —				
DUCT ELBOW WITH TURNING VANES		Mic.	CEILING RETURN GRILLE/REGISTER					
DUCT SECTION - SUPPLY AIR	\boxtimes \bigcirc	\boxtimes \bigcirc	CEILING EXHAUST FAN (EF)		EF-			
DUCT SECTION - EXHAUST AIR			CEILING EXHAUST GRILLE/REGISTER					
DUCT SECTION - RETURN, OUTSIDE, OR RELIEF AIR			SIDEWALL SUPPLY GRILLE/REGISTER	H-]-	-			
DUCT, INCLINED DROP DUCT, INCLINED RISE	++		SIDEWALL RETURN/EXHAUST GRILLE/REGISTER	H-v-				
FLEXIBLE DUCT - ROUND DUCT TRANSITION 14		14/10 10/10	EXTRACTOR	l				
DUCT TRANSITION 10 (SQUARE OR RECTANGULAR TO ROUND)	/10 	12/12 8"Ø	DUCT TEE WITH SPLITTER DAMPER					
RECTANGULAR DUCT, SIZE IN INCHES, FIRST DIMENSION IS SIDE SHOWN (NET CLEAR INSIDE DIMENSION)	_10/14	10/14	DOOR UNDERCUT	—UC— -	—UC—			
,	NAICC		US SYMBOLS	—L— <u> </u>	—L—			
⟨P⟩ DUCT STATIC PRESS			DIFFUSER, GRILLE C	OR REGISTER MARK				
SD DUCT SMOKE DETEC			A 250 AIR FLOW (CFM) 12"Ø NECK SIZE/ RECTAN 6 TYP. QUANTITY / NOTES	GULAR FACE SIZE / N				
CO ₂ CARBON DIOXIDE SE	ENSOR		QUANTITY OF EXISTING OUTSIDE AIR DIFFUSERS 1@300 — AIR FLOW (CFM) PER DIFFUSER					
• NEW CONNECTION	TO EXISTING		300 TOTAL AIR FLOW (C					
HUMIDISTAT				ING SUPPLY DIFFUSE	RS			
RH RELATIVE HUMIDITY	/ SENSOR		1@300 AIR FLOW (CFM) PE					
EJ EXPANSION JOINT			EQUIPMENT MARK 1 EQUIPMENT NUMB	ER				
THERMOSTAT OR TE	EMPERATURE SENSO	R (MOUNT 48" AFF)	DIRECTION OF SECTION					

— IDENTIFYING NUMBER OR LETTER FOR SECTIONS.

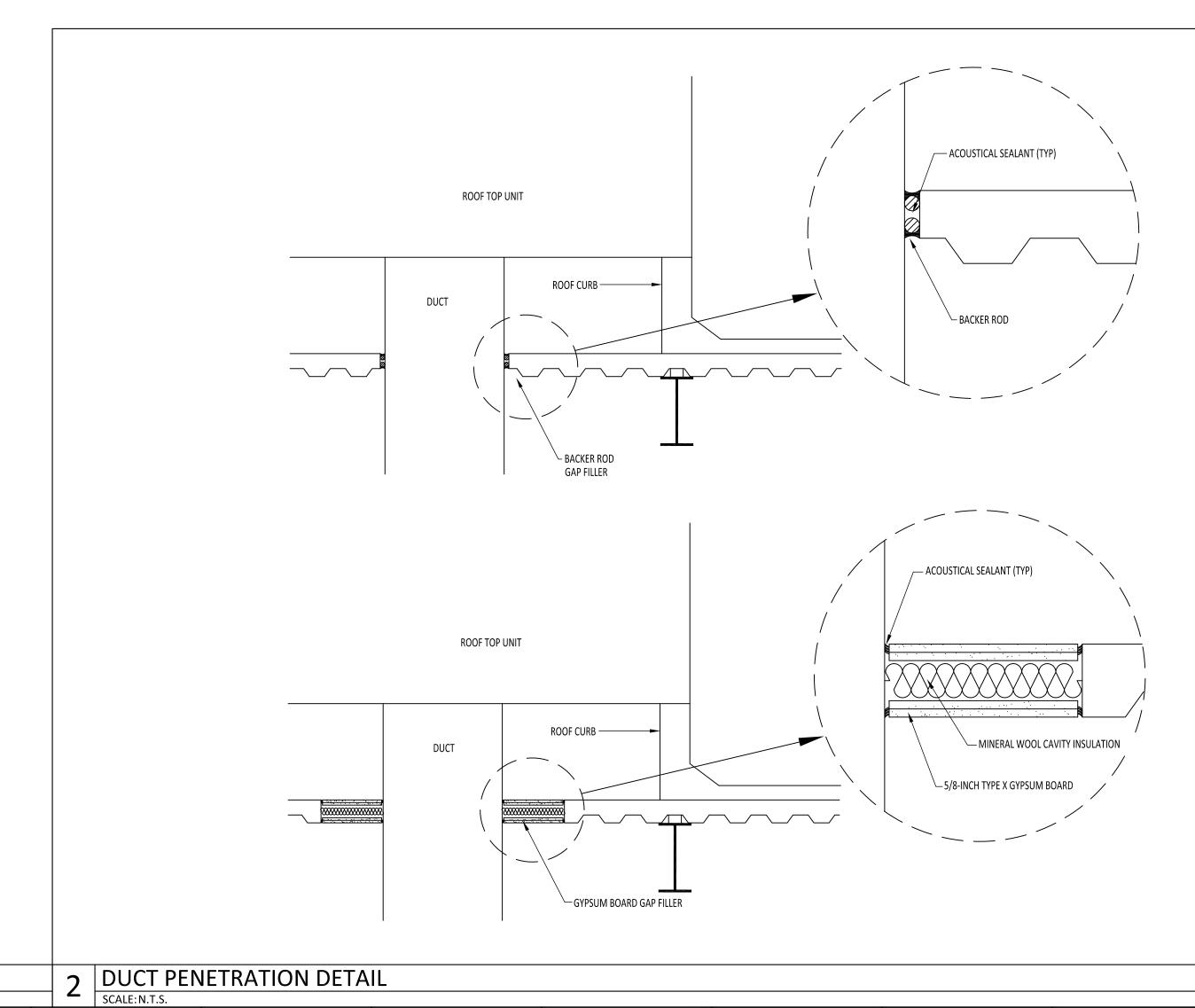
01 IDENTIFYING NUMBER OR LETTER FOR DETAILS.

ENLARGED DETAIL REFERENCE

— NUMBER OF REFERENCE DRAWING WHERE SECTION IS

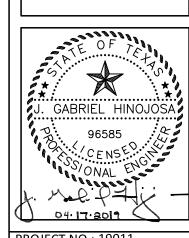
NUMBER OF REFERENCE DRAWING WHERE DETAIL IS SHOWN.

			MANUFACTURER	MAX. NC.	_
MARK	SERVICE	DESCRIPTION	MODEL NO.	LEVEL (1)	REMARKS
		24"X24" MODULE SIZE, ALUMINUM, PLAQUE, LAY IN DIFFUSER WITH 4 WAY	TITUS		WHITE
Α	SUPPLY	THROW, ROUND NECK.	OMNI-AA	30	FINISH
		ALUMINUM DRUM LOUVER WITH INDIVIDUALLY ADJUSTABLE BLADES, MINIMUM	TITUS		WHITE
Е	SUPPLY	50° ANGLE OF ROTATION, OPPOSED BLADE DAMPER.	DL	35	FINISH
		24"X24" EGGCRATE FACE, CEILING RETURN GRILL WITH BORDER FOR LAY-IN	TITUS		WHITE
G	RETURN	CEILING, ALUMINUM CONSTRUCTION.	50F	30	FINISH
		HEAVY DUTY SURFACE MOUNTED ALUMINUM RETURN GRILLE WITH 1/2"	TITUS		WHITE
M	RETURN	BLADE SPACING AND 30° FIXED DEFLECTION.	63FL	30	FINISH
$\langle F \rangle$	=THIS WILL D	ESIFNATE A STEEL			NECK/FLEXIB
\		AIR DEVICE TYPE. AIR OUTLET DESIGNATION ON PLANS	CARACITY	FACE	
\ <u>r</u> \	FIRE RATED	AIR DEVICE TYPE. AIR OUTLET DESIGNATION ON PLANS	CAPACITY	FACE	CONNECTIO
\F\	FIRE RATED	AIR OUTLET DESIGNATION ON PLANS	0-150	<u>FACE</u> 6 X 6	CONNECTION 6"
	FIRE RATED				
		TECT	0-150	6 X 6	6"
CBA = CO		TECT MARK — ► A 250 - AIR FLOW (CFM	0-150 151-285	6 X 6 9 X 9	6" 8"
CBA = CO	LOR BY ARCHI	TECT MARK A 250 AIR FLOW (CFM 12"Ø RECTANGULAR FACE SIZE	0-150 151-285 286-440	6 X 6 9 X 9 12 X 12	6" 8" 10"



OF EDINBURG FIRE STATION HVAC IMPROVEMENTS

EDINBURG, TX CITY



NO. DATE DESCRIPTION

MECH. SCHEDULES & DETAILS

M-3.0

MECHANICAL SCHEDULES SCALE: N.T.S.

TC

DUCT TEMPERATURE SENSOR

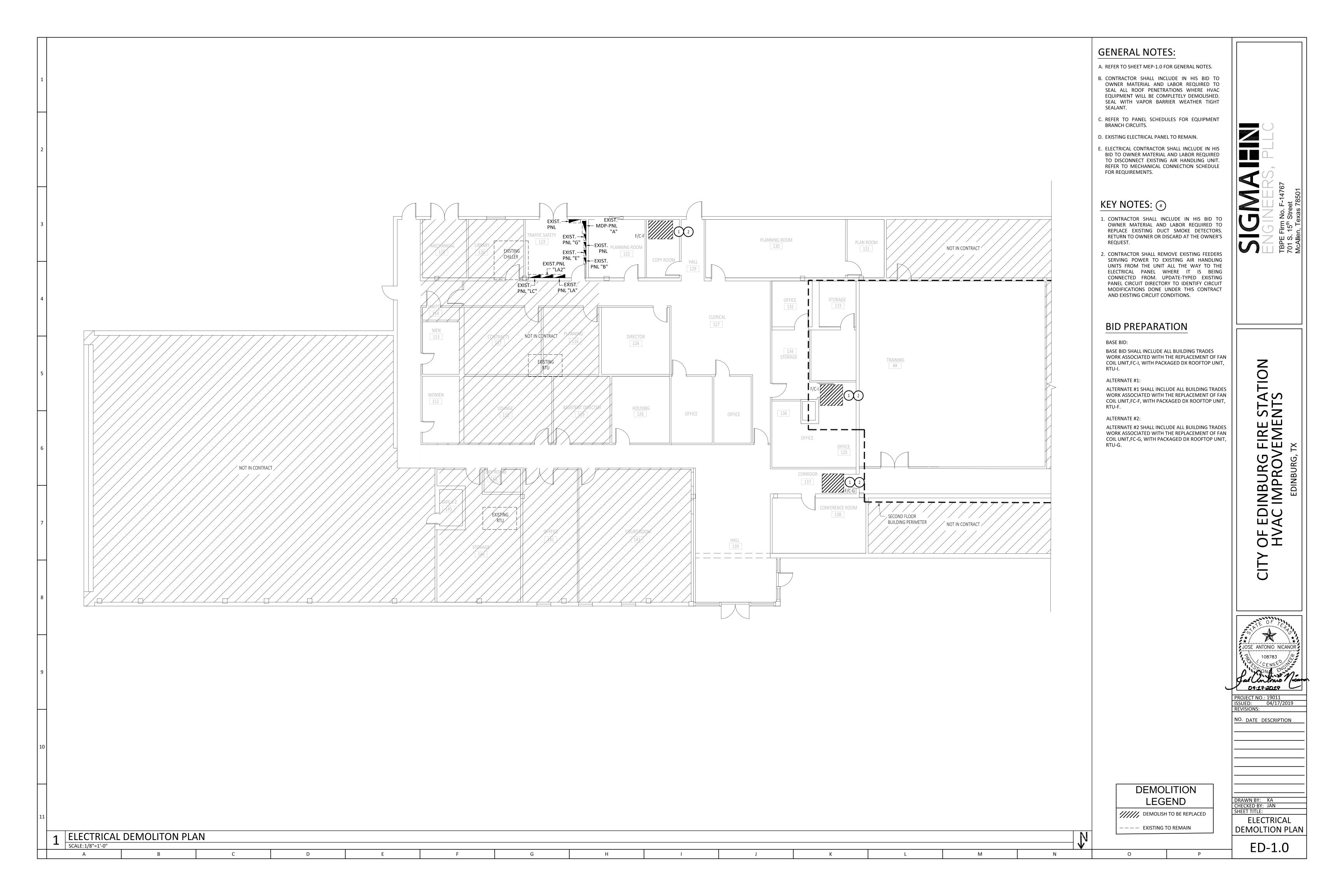
—////////. LINE WITH HATCHING DESIGNATES DEMOLITION WORK

TIME CLOCK

FREEZESTAT

9. PROVIDE 0-30% MOTORIZED OA HOOD.

10. PROVIDE FIELD WIRED GPS IONIZATION DEVICE FOR RTU-I ONLY. 11. CONTACT PERRY MECHANICAL SYSTEMS AT 956-357-2928.



MECHANICAL EQUIPMENT CONNECTION ROOF TOP UNITS BRANCH CIRCUIT SAFETY DISCONNECT SWITCHES 3#6, 1#8G, 1"C FACTORY PROVIDED 3#6, 1#8G, 1"C RTU-2 FACTORY PROVIDED 3#6, 1#8G, 1"C FACTORY PROVIDED A. SAFETY DISCONNECT SWITCHES SHALL BE INSTALLED ON WITHIN 4-FEET OF B. REFER TO PANELS FOR CIRCUIT DESIGNATIONS.



GENERAL NOTES:

A. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.

- B. CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER MATERIAL AND LABOR REQUIRED TO SEAL ALL ROOF PENETRATIONS WHERE HVAC EQUIPMENT WILL BE COMPLETELY DEMOLISHED. SEAL WITH VAPOR BARRIER WEATHER TIGHT
- C. REFER TO PANEL SCHEDULES FOR EQUIPMENT BRANCH CIRCUITS.
- D. EXISTING ELECTRICAL PANELS TO REMAIN..
- E. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER MATERIAL AND LABOR REQUIRED TO DISCONNECT EXISTING EXISTING AIR HANDLING UNITS. REFER TO MECHANICAL CONNECTION SCHEDULE FOR REQUIREMENTS.

KEY NOTES:

- 1. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER MATERIAL AND LABOR REQUIRED TO CONNECT NEW ROOF TOP UNIT. FURNISH AND INSTALL NEW DUCT SMOKE DETECTORS & TEST SWITCHES; CONNECT SMOKE DETECTOR TO EXISTING FIRE ALARM. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE FOR NEW FEEDER SIZE REQUIREMENTS.
- 2. FURNISH AND INSTALL POWER FOR MAINTENANCE PURPOSE HVAC PACKAGED ROOF MOUNTED GFCI. CONTRACTOR SHALL INCLUDE IN HIS BID MATERIAL AND LABOR REQUIRED TO CONNECT POWER CONSISTING OF (2#12, 1#12EGC, 1/2"C) BRANCH CIRCUIT FROM PANEL "TN". CONTRACTOR SHALL PROVIDE WARNING LABELS INDICATING THAT GFCI RECEPTACLE IS BEEN SERVED BY PANEL "TN". PROVIDE LABEL WITH CIRCUIT AND ELECTRICAL PANEL IDENTIFICATION AND LOCATION.
- 3. APPROXIMATE LOCATION OF EXISTING MAIN DISTRIBUTION PANEL "A". CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER MATERIAL AND LABOR REQUIRED TO REPLACE EXISTING 100AMP/3POLE SQUARE-D BRANCH BREAKER WITH NEW 200AMP/3 POLE FOR POWER TO NEW PANEL "TN". EXISTING 100 AMP BRANCH BREAKER AND FEEDERS CURRENTLY SERVING POWER TO PANEL "B" SHALL BE RETURNED TO OWNER OR DISCARDED AT THE OWNER'S REQUESTS. EXISTING MAIN DISTRIBUTION PANEL "A" IS A SQUARE D, TYPE ML 800AMP,208Y/120 VOLT, THREE PHASE, 4 WIRE CATALOG #10141.
- 4. APPROXIMATE LOCATION OF NEW PROPOSED PANEL "TN". CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER MATERIAL AND LABOR REQUIRED TO FURNISH AND INSTALL NEW FEEDERS AS FOLLOWS:
- A. QTY.(1) SET CONSISTING OF 3#3/0, 1#3/0-NEUTRAL, 1#6EGC, 2-1/2"EMT-CONDUIT. FROM NEW PANEL "TN" TO EXISTING MDP "A". B. QTY.(1) SET CONSISTING OF 3#3/0, 1#3/0-NEUTRAL, 1#6EGC, 2-1/2"EMT-CONDUIT FROM NEW PANEL "TN" TO EXISTING PANEL
- 5. APPROXIMATE LOCATION OF EXISTING PANEL "B". RECONNECT POWER TO THIS ELECTRICAL PANEL USING NEW FEEDERS NOTED ON KEYNOTE#4, THIS
- 6. EXISTING 250 AMP/3-POLE BRANCH BREAKER SERVING HVAC CHILLER TO BE TURNED TO THE OFF POSITION. ALL FEEDERS FROM PANEL "A" TO THE CHILLER SHALL BE REMOVED; CONDUIT TO REMAIN IN PLACE.
- 7. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER MATERIAL AND LABOR REQUIRED TO FURNISH AND INSTALL NEW (2#12,1#12EGC, 1/2"C) BRANCH CIRCUIT FOR GPS, DUCT MOUNTED SENSORS.

BID PREPARATION

BASE BID:

BASE BID SHALL INCLUDE ALL BUILDING TRADES WORK ASSOCIATED WITH THE REPLACEMENT OF FAN COIL UNIT,FC-I, WITH PACKAGED DX ROOFTOP UNIT,

ALTERNATE #1:

ALTERNATE #1 SHALL INCLUDE ALL BUILDING TRADES
WORK ASSOCIATED WITH THE REPLACEMENT OF FAN
COIL UNIT, FC-F, WITH PACKAGED DY ROOSTOP LINE. COIL UNIT, FC-F, WITH PACKAGED DX ROOFTOP UNIT, 4 09:17:2019 RTU-F.

ALTERNATE #2:

M

ALTERNATE #2 SHALL INCLUDE ALL BUILDING TRADES WORK ASSOCIATED WITH THE REPLACEMENT OF FAN NO. DATE DESCRIPTION COIL UNIT, FC-G, WITH PACKAGED DX ROOFTOP UNIT, RTU-G.

LEGEND — NEW -- EXISTING TO REMAIN DRAWN BY: KA
CHECKED BY: JAN
SHEET TITLE: ELECTRICAL PLAN

STA

FEDINBURG FIRE STAC IMPROVEMENED FINBURG, TX

OF HV

E-1.0

ELECTRICAL PLAN & ELECTRICAL MECHANICAL CONNECTION SCHEDULE SCALE: 1/8"=1'-0"

ELECTRICAL GENERAL LEGEND

ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS. SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

DESCRIPTION

DUPLEX RECEPTACLE, 20A, GROUND FAULT INTERCEPTOR; C

GENERAL ABBREVIATIONS

NO (N.O.)

PNL

SPD

UG UNO

WG

WP

XFMR

RCPT(S)

SO (S.O.)

ST (S.T.)

JUNCTION BOX - SIZE & MOUNTING AS REQUIRED

= CEILING MOUNTED.

DUCT SMOKE DETECTOR

PANELBOARD

ABOVE BACK SPLASH

CIRCUIT BREAKER

EMPTY CONDUIT ELECTRICAL PRIMARY

GROUND (EQUIPMENT)

ISOLATED GROUND

MOUNT OR MOUNTED

GROUND FAULT INTERRUPTER

HORIZONTAL CROSS CONNECT INTERRUPTING CAPACITY

INTERMEDIATE CROSS CONNECT

Κ

CONDUIT

CEILING

EXISTING

FUSE

ABOVE FINISHED FLOOR

BELOW FINISHED CEILING

SYMBOL

 \Box

AFF

CLG

HCC

ICC

IG MTD

MNTG. HT. UNO

(SEE NOTE 1)

15" AFF

AS REQD.

M

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NORMALLY CLOSED

NOT IN CONTRACT

NORMALLY OPEN

RECEPTACLE(S)
SPACE ONLY

SHUNT TRIP

UNDERFLOOR

WIRE GUARD

WEATHERPROOF

TRANSFORMER

UNDERGROUND

SWITCH

TYPICAL

SURGE PROTECTION DEVICE

UNLESS NOTED OTHERWISE

NONFUSED

NIGHT LIGHT

PANEL

SPARE

CITY

NO. DATE DESCRIPTION

ELECTRICAL SCHED. & GEN. LEGEND

E-2.0

			ſ	NEW P	PANE	ELBO	DAR	D "TN'	ı			
VOLTAGE: 2	208Y/120 VOL	T 3 PHASE 4	WIRE								LOCAT	ION: ROOM
200 A MAIN	I BREAKER									MOUN ⁻	TING: SURFA	CE, NEMA 1
BUSES: MA	IN - 225 A; NE	UTRAL -100	%; EQUIPMENT GROUND							Isc = 10,000	O A RMS SYM	1 AVAILABLI
VA:L	VA:R	VA:O	LOAD	BKR	СКТ	PH	СКТ	BKR	LOAD	VA:L	VA:R	VA:O
0	0	4800	RTU-1	50/3	1	Α	2	50/3	RTU-3	0	0	4680
0	0	4800	п	-	3	В	4	-	II .	0	0	4680
0	0	4800	п	-	5	С	6	-	II .	0	0	4680
0	0		RTU-2	45/3	7	Α	8	50/3	SPARE	0	0	
0	0	4320	п	-	9	В	10	-	II .	0	0	
0	0	4320	II .	-	11	С	12	-	II .	0	0	
0	540		MAINTENANCE RTU'S RECEPT.	20/1	13	Α	14	20/1	GPS SENSOR	0	180	
0	0		SPACE	20/1	15	В	16	20/1	SPACE	0	0	
0	0		SPACE	20/1	17	С	18	20/1	SPACE	0	0	
0	0		SPACE	20/1	19	Α	20	20/1	SPACE	0	0	
0	0		SPACE	20/1	21	В	22	20/1	SPACE	0	0	
0	0		SPACE	20/1	23	С	24	20/1	SPACE	0	0	
VAJ /HCH	INC)		0	CONNECTE	:D				0	DEMAND		
VA:L (LIGHTING) 0 VA:R (RECEPTACLES) 720									720			
VA:N (NECE VA:O (OTHI	•			CONNECTE						DEMAND		
VA: TOTAL	-11)			CONNECTE								
AMPS: TOT	AL			CONNECTE						DEMAND		
L	R	0		TOTAL								
0	720	13800	VA CONNECTED TO A PHASE	14520	VA =			121	AMPS CONNECTED TO A PHASE @ 120 VOLTS			
0	0	13800	VA CONNECTED TO B PHASE	13800	VA =			115	AMPS CONNECTED TO B PHASE @ 120 VOLTS			
0	0	13800	VA CONNECTED TO C PHASE		VA =			115	AMPS CONNECTED TO C PHASE @ 120 VOLTS			
0	720	41400	TOTAL	42120	VA							

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ELECTRICAL PANEL SCHEDULE AND ELECTRICAL GENERAL LEGEND

В

SCALE: N.T.S.

				NEW P	ANI	ELB(DAR	D "TN'	II			
VOLTAGE: 2	.08Y/120 VO	LT 3 PHASE 4	WIRE								LOCAT	ION: ROOM
200 A MAIN	I BREAKER									MOUN	TING: SURFAC	CE, NEMA 1
BUSES: MAI	N - 225 A; NI	EUTRAL -100	%; EQUIPMENT GROUND							Isc = 10,000	A RMS SYM	AVAILABL
VA:L	VA:R	VA:O	LOAD	BKR	СКТ	PH	СКТ	BKR	LOAD	VA:L	VA:R	VA:O
0	0	4800	RTU-1	50/3	1	Α	2	50/3	RTU-3	0	0	468
0	0	4800	п	-	3	В	4	-	11	0	0	468
0	0	4800	п	-	5	С	6	-	Ш	0	0	468
0	0	4320	RTU-2	45/3	7	Α	8	50/3	SPARE	0	0	
0	0	4320	п	-	9	В	10	-	II .	0	0	
0	0	4320	п	-	11	С	12	-	"	0	0	
0	540		MAINTENANCE RTU'S RECEPT.	20/1	13	Α	14	20/1	GPS SENSOR	0	180	
0	0		SPACE	20/1	15	В	16	20/1	SPACE	0	0	
0	0		SPACE	20/1	17	С	18	20/1	SPACE	0	0	
0	0		SPACE	20/1	19	A	20	20/1	SPACE	0	0	
0	0		SPACE	20/1	21	В	22	20/1	SPACE	0	0	
0	0		SPACE	20/1	23	С	24	20/1	SPACE	0	0	
	::NC)			CONNECTE	. D					DENAME		
VA:L (LIGHT	•			CONNECTE CONNECTE						DEMAND DEMAND		
/A:R (RECEI	•			CONNECTE						DEMAND		
VA:O (OTHE VA: TOTAL	:к)			CONNECTE								
VA. TOTAL AMPS: TOTA	٨١			CONNECTE						DEMAND		
-1VII 3. 1017	-1 L		117	CONNECTE	.0				117	DEIVIAND		
L	R	0		TOTAL								
0	720	13800	VA CONNECTED TO A PHASE	14520					AMPS CONNECTED TO A PHASE @ 120 VOLTS			
0	0	13800	VA CONNECTED TO B PHASE	13800					AMPS CONNECTED TO B PHASE @ 120 VOLTS			
0	0	13800	VA CONNECTED TO C PHASE	13800	-			115	AMPS CONNECTED TO C PHASE @ 120 VOLTS			
0	720	41400	TOTAL	42120	VA							

GENERAL NOTES

DESIGN CRITERIA

1. FRAMING DESIGN IS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE 2012.

2. ALL WELDING BY AWS QUALIFIED OPERATORS.

REFERENCES:

AWS D1.1-86 - "STRUCTURAL WELDING CODE - STEEL" AWS D1.3-81 - "STRUCTURAL WELDING CODE - SHEET STEEL"

STRUCTURAL STEEL CONNECTIONS

- 1. WELDING SHALL CONFORM TO ANSI/AWS DI.I, LATEST EDITION.
- 2. BOLTS SHALL CONFORM TO ASTM A325. BOLTS SHALL BE DESIGNED USING VALUES FOR BEARING TYPE BOLTS WITH THREAD ALLOWED IN THE SHEAR
- 3. ANCHOR BOLTS SHALL BE: ASTM F1554 GR. 36
- 4. STRUCTURAL STEEL CONNECTION NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR UNDER THE DIRECT SUPERVISION OF A REGISTERED ENGINEER LICENSED IN THE STATE OF TEXAS. SEALED CALCULATIONS FOR ALL CONNECTIONS DESIGNED BY THE CONTRACTOR SHALL BE SUBMITTED FOR THE ARCHITECT'S FILES.
- 5. BEAM CONNECTIONS SHALL BE DESIGNED AND DETAILED AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE DRAWINGS:
- A. CONNECTION SHALL BE AISC TYPE 2 SIMPLE FRAMING CONNECTIONS. SHEAR TAB CONNECTIONS SHALL NOT BE USED.
- B. IN GENERAL, SHOP CONNECTIONS SHALL BE BOLTED OR WELDED AND FIELD CONNECTIONS SHALL BE BOLTED.
- C. WHERE INDICATED, CONNECTIONS SHALL BE DESIGNED FOR THE SCHEDULED SHEAR FORCE, THE SHEAR FORCE INDICATED ON THE DRAWINGS AS "V=", AND THE HORIZONTAL FORCE INDICATED AS
- D. IF NOT INDICATED ON THE DRAWINGS, CONNECTIONS SHALL BE DESIGNED FOR 55 PERCENT OF THE TOTAL LOAD CAPACITY FOR THE BEAM SPAN SHOWN IN THE BEAM TABLES IN SECTION 2 OF THE AISC MANUAL,
- E. THE MINIMUM NUMBER OF ROWS OF BOLTS SHALL BE 1/6 OF THE BEAM DEPTH WITH ANY FRACTION BE ROUNDED TO THE NEXT HIGHER NUMBER.
- F. BOLTS SHALL BE "SNUG TIGHT", U.N.O.
- G. SHORT SLOTTED HOLES SHALL BE PERMITTED PROVIDED WASHERS ARE INSTALLED IN ACCORDANCE WITH AISC REQUIREMENTS. WASHERS SHALL BE HARDENED WHERE A325 BOLTS ARE UTILIZED.
- 6. WIND BRACE CONNECTION SHALL BE DESIGNED AND DETAILED AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE DRAWINGS:
- A. CONNECTIONS SHALL BE WELDED.
- B. CONNECTIONS SHALL BE DESIGNED AND DETAILED FOR THE FORCES SHOWN ON THE DRAWINGS.
- C. IF FORCES ARE NOT INDICATED ON THE DRAWINGS, CONNECTIONS SHALL BE DESIGNED TO DEVELOP THE FULL TENSILE CAPACITY OF THE
- 7. FOR CONNECTIONS NOT SPECIFICALLY ADDRESSED BY THESE NOTES OR THE DRAWINGS, PROVIDE FILLET WELDS AT ALL CONTACT SURFACES SUFFICIENT TO DEVELOP THE TENSILE STRENGTH OF THE SMALLER MEMBER AT THE
- 8. MOMENT CONNECTIONS INDICATED ON DRAWINGS SHALL BE WELDED TO DEVELOP THE FULL CAPACITY OF THE MEMBER.
- 9. ROOF EDGE ANGLES SHALL BE CONTINOUS AND SHALL BE SPLICED ONLY AT SUPPORTS. SPLICES SHALL BE BUTT WELDED TO DEVELOP FULL CAPACITY OF THE MEMBER.
- 10. FILLET WELDS WITH NO SIZE SPECIFIED SHALL BE 3/16" OR MINIMUM SIZE REQUIRED BY AISC, WICHEVER IS LARGER.

STRUCTURAL STEEL

A. STRUCTURAL STEEL: W SECTIONS ASTM- A572 FY= 50 KSI HSS SECTIONS ASTM- A500 GRADE B ALL OTHER SECTIONS ASTM- A36 HIGH STRENGTH BOLTS: ASTM A325 OR A490 ANCHOR BOLTS: ASTM A307 OR A36: ELECTRODES: SERIES E70

- STRUCTURAL PIPES: ASTM A53 OR A501, FY = 35 KSI EXPANSION BOLTS: HILTI "KWIK BOLTS" OR APPROVED EQUAL. 2. SPECIFICATIONS: WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1. UNLESS SPECIFICALLY SHOWN
- OTHERWISE, DESIGN, FABRICATION AND ERECTION TO BE GOVERNED BY A. AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (JUNE 1, 1989).
- B. AISC CODE OF STANDARD PRACTICE (SEPTEMBER 1, 1986). C. STRUCTURAL WELDING CODE, AWS D1.1-88 OF THE AMERICAN WELDING SOCIETY.). SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS (NOVEMBER 13, 1985).
- CONNECTIONS: A. CONNECTIONS TO BE DESIGNED BY THE FABRICATOR TO DEVELOP FULL STRENGTH OF MEMBER. FOLLOW INSTRUCTIONS ON DRAWINGS FOR GENERAL ARRANGEMENT OR PARTICULAR DETAILS. FIELD CONNECTIONS TO BE BOLTED. SHOP CONNECTIONS
- TO BE WELDED OR BOLTED. B. FULL PENETRATION AND PARTIAL PENETRATION FIELD WELDS IN MATERIAL OVER 5/16 INCH THICK SHALL BE SUBJECT TO NON-DESTRUCTIVE TESTING (OTHER THAN VISUAL INSPECTION) BY AN INDEPENDENT LABORATORY.
- C. ALL BOLTS IN BRACED FRAMES AND BOLTS IN SHEAR CONNECTIONS USED IN CONJUNCTION WITH FULL PENETRATION FLANGE WELDS SHALL BE SLIP CRITICAL (FRICTION) TYPE.
- A. DO NOT PAINT ANY STEEL WHICH WILL BE CONCEALED FROM VIEW. PAINT ALL
- VISIBLE STEEL GRAY. 5. GALVANIZING: ALL SHELF ANGLES, LINTELS IN EXTERIOR WALLS, AND ALL EXTERIOR STEEL EXPOSED TO THE ELEMENTS SHALL BE GALVANIZED.
- A. PROVIDE HOLES FOR OTHERS. IF OPENING IS NOT SHOWN ON THE STRUCTURAL
- DRAWINGS, OBTAIN PRIOR APPROVAL.
- B. STEEL SUPPORTING OR CONNECTED TO HVAC AND OTHER EQUIPMENT AND ROOF OPENINGS AS SHOWN ON THE DRAWINGS IS SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL RECONCILE EXACT SIZE AND LOCATION BEFORE PROCEEDING WITH HIS WORK.
- C. GROUT UNDER BEARING PLATES, BASE PLATES, AND SETTING PLATES TO BE
- D. STEEL BELOW GRADE TO BE PROTECTED BY A MINIMUM OF 3 INCHES OF CONCRETE.
- E. PROVIDE 1/4 INCH THICK SETTING PLATES FOR ALL BEAMS BEARING ON MASONRY WHICH DO NOT REQUIRE A BEARING PLATE. F. PROVIDE SHOP WELDED ANCHORS FOR ATTACHMENTS OF MASONRY. SPACING
- G. PROVIDE HEAVY WASHER AT ALL ANCHOR BOLTS. H. FINISH ENDS OF ALL COLUMNS, STIFFENERS AND ALL OTHER MEMBERS IN

TO BE 16 INCHES ON COLUMNS AND BEAMS.

- DIRECT BEARING. PROVIDE BOLT HOLES FOR JOISTS BOLTED TO BEAMS AND ATTACHMENT FOR
- JOINING EXTENDED JOIST BOTTOM CHORDS. MINIMUM BEAM BEARING ON MASONRY = 8 INCHES UNLESS NOTED OTHERWISE.
- EMBEDMENT LENGTH OF EXPANSION BOLTS INTO SOLID MASONRY OR CONCRETE SHALL BE AS FOLLOWS: 1/2 INCH DIAMETER BOLTS --- 3 1/2 INCHES EMBEDMENT
- 3/4 INCH DIAMETER BOLTS --- 5 INCHES EMBEDMENT M. PROVIDE 8,000 LBS. OF RED IRON ALLOWANCE. ALLOWANCE SHALL INCLUDE THE COST OF LABOR.
- N. PROVIDE ADEQUATE AND APPROPRIATE STRUCTURAL STEEL FRAMING APPROVED BY THE ENGINEER FOR THE SUPPORT AND MOUNTING OF MECHANICAL FOUIPMENT ESTING ON, OR SUSPENDED FROM, STEEL JOISTS, MAXIMUM WEIGHT TO BE HUNG OFF JOISTS BETWEEN "PANEL POINTS" (THE JUNCTURES OF CHORDS AND DIAGONAL WEB MEMBERS) IS 50 LBS. LOADS IN EXCESS OF 50 LBS. REQUIRED JOISTS TO BE MODIFIED OR STRENGTHENED TO CARRY SUCH LOADS.
- O. STEEL STAIRS TO BE DESIGNED AND DETAILED FOR LL=100 PSF BY STEEL FABRICATOR UNDER DIRECT SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. SHOP DRAWINGS TO BE SIGNED AND SEALED BY THE SPECIALTY ENGINEER.
- P. QUALITY ASSURANCE:
- A) INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH A MINIMUM 5 YEARS DOCUMENTED EXPERIENCE B) FABRICATOR QUALIFICATIONS: A QUALIFIED FABRICATOR, SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH A MINIMUM OF 10 YEARS DOCUMENTED EXPERIENCE, THAT PARTICIPATES IN THE AISC QUALITY CERTIFICATION
- PROGRAM AND IS DESIGNATED AN AISC-CERTIFIED PLANT, CATEGORY STD. C) WELDING: QUALITY PROCEDURES AND PERSONNEL ACCORDING TO AWS D1.1, "STRUCTURAL WELDING CODE-STEEL.
- Q. STRUCTURAL FRAMING CONNECTIONS SHALL BE SEATED COLUMN CAPS, CLIP ANGLES WEB PLATES AS SHOWN ON DETAILS. USE A325 HIGH STRENGTH BOLTS OR WELDS SUFFICIENT TO DEVELOP REACTION CAPACITY SHOWN IN AISC MANUAL (9TH EDITION) AS THE ALLOWABLE UNIFORM LOAD/SPAN DIVIDED BY TWO AS SHOWN IN THE (9TH EDITION) OR THE MAXIMUM TOTAL UNIFORM LOAD/SPAN DIVIDED BY TWO AS SHOWN IN TABLES 3-6 THROUGH 3-9 OF THE 13TH EDITION (ASD).



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NO. DATE DESCRIPTION

GENERAL NOTES

ENGINEERING, INC. TBPE FIRM No. F-8719 701 S. 15th STREET MCALLEN, TX. 78501

4. ASCE 7-05

CODES

GENERAL

1. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER

THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S

TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS

DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING,

SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS WHICH MIGHT BE

2. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE

AFTER THE COMPLETION OF THE PROJECT.

THE STRICTEST PROVISION SHALL GOVERN.

PROCEEDING WITH ANY WORK.

APPROPRIATE CONTRACTOR.

NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY

SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

TO HVAC, PLUMBING, OR ELECTRICAL REQUIREMENTS ARE SHOWN FOR BIDDING

PURPOSES ONLY. CONTRACTOR SHALL OBTAIN APPROVAL OF THE INVOLVED

TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS

4. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT

COST RELATED TO VARIATION IN THESE REQUIREMENTS TO BE BORNE BY THE

WITH THESE STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER,

5. REFER TO THE ARCHITECTURAL, MECHANICAL ELECTRICAL AND PLUMBING

7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION

8. THE STRUCTURAL INTEGRITY OF ANY BUILDING RELIES ON THE FULL

NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.

FOR SLEEVES, CURBS, INSERTS, ETC. NOT SHOWN ON STRUCTURAL DRAWINGS.

ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT AND BE RESOLVED BEFORE

PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT

PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL

INTERACTION OF ALL ITS COMPONENT PARTS, WITH NO PROVISIONS MADE FOR

CONDITIONS AND/OR SEQUENCES OF CONSTRUCTION AND THE STRUCTURAL

DESIGN IS BASED ON THIS PREMISE. THEREFORE THE CONTRACTOR SHALL

PROVIDE ADEQUATE BRACING OF SUPERSTRUCTURED DURING CONSTRUCTION.

10. CONTRACTOR SHALL VERIFY ALL DROPS, OFFSETS, BLOCKOUTS, FINISHES, AND

INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY

JOB EXPENSE, REAL OR IMPLIED, DUE TO ANY ERRORS THAT MAY OCCUR.

12. CONTRACTOR IS RESPONSIBLE FOR ALL METHODS AND PROCEDURES DURING

CONSTRUCTION. CONTRACTOR SHALL TAKE ALL NECCESSARY PRECAUTIONS

14. STRUCTURAL MEMBERS HAVE BEEN LOCATED AND DESIGNED TO ACCOMMODATE

THE MECHANICAL EQUIPMENT AND OPENINGS SPECIFIED BY THE MECHANICAL

SCOPE OF THE STRUCTURAL WORK FROM THE CONTRACT DOCUMENTS TAKEN

STRUCTURAL SHALL NOT BE CONSIDERED SEPARATELY FOR THE PURPOSES OF

AS A WHOLE INCLUDING ARCHITECTURAL AND MECHANICAL DRAWINGS. THE

BIDDING THE STRUCTURAL WORK. CONTRACTOR SHALL REVIEW THE ENTIRE

WORK INCLUDING NECCESSARY COORDINATION SHOWN IN OTHER CONSULTANT

DRAWING PACKAGE IN ORDER TO DETERMINE THE SCOPE OF STRUCTURAL

16. NOTED SCALES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR

17. ANY ALTERNATES ACCEPTED BY THE OWNER, GENERAL CONTRACTOR OF

SUBCONTRACTOR SHALL BE THE RESPONSIBILITY OF THE GENERAL

SHALL NOT SCALE THE DRAWINGS FOR THE PURPOSE OF DETERMINING

18. PRINCIPAL OPENINGS ARE INDICATED ON THE STRUCTURAL DRAWINGS. OTHER

OPENINGS (SLEEVES, BLOCKOUTS, ETC.) ARE SHOWN IN THE ARCHITECTURAL

ENGINEER A PLAN WITH ALL PROPOSED OPENINGS COORDINATED WITH ALL

1. ONLY LARGER SLEEVE OPENINGS AND FRAMED OPENINGS IN STRUCTURAL FRAMING COMPONENET MEMBERS ARE INDICATED ON THE STRUCTURAL

DRAWINGS. HOWEVER, ALL SLEEVES, INSERTS AND OPENINGS, INCLUDING FRAMES AND/OR SLEEVES SHALL BE PROVIDED FOR PASSAGE, PROVISION AND/OR INCORPORATION OF THE WORK OF THE CONTRACT, INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WORK. THIS WORK SHALL INCLUDE THE COORDINATION OF SIZES, ALIGNMENT, DIMENSIONS, POSITION, LOCATIONS, ELEVATIONS AND GRADES AS REQUIRED TO SERVE THE INTENDED PURPOSE. OPENINGS NOT INDICATED ON THE STRUCTURAL DRAWINGS, BUT REQUIRED AS NOTED ABOVE, SHALL

2. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR FLOOR ELEVATIONS, SLOPES, DRAINS AND LOCATION OF

3. COMPABILITY OF THE STRUCTURE AND PROVISIONS FOR BUILDING EQUIPMENT SUPPORTED ON OR FROM STRUCTURAL COMPONENTS SHALL BE VERIFIED AS TO SIZE, DIMENSIONS, CLEARANCES, ACCESSIBILITY, WEIGHTS AND REACTION WITH THE EQUIPMENT FOR WHICH THE STRUCTURE HAS BEEN DESIGNED PRIOR TO SUBMISSION OF SHOP DRAWINGS AND DATA FOR EACH PIECE OF EQUIPMENT AND FOR STRUCTURAL COMPONENTS. DIFFERENCES SHALL BE

4. SHOP DRAWINGS SHALL BE PREPARED FOR ALL STRUCTURAL ITEMS AND SUBMITTED FOR REVIEW BY THE ENGINEER. CONTRACT DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS. ALL ITEMS DEVIATING FROM THE CONTRACT DRAWINGS OR FROM PREVIOUSLY SUBMITTED SHOP

5. THE DETAILS DESIGNATED AS "TYPICAL DETAILS" APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE

BRACES, FALSEWORK, SUPPORTS AND ANCHORS FOR SAFETY LINES, CRIBBING, OR ANY OTHER TEMPORARY ELEMENTS REQUIRED FOR THE EXECUTION OF THE CONTRACT ARE NOT INCLUDED IN THESE DRAWINGS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. TEMPORARY SUPPORTS SHALL NOT RESULT IN THE OVERSTRESS OR DAMAGE OF THE ELEMENTS TO BE BRACED NOR ANY ELEMENTS USED AS BRACE SUPPORTS.

6. THE DESIGN AND PROVISION OF ALL TEMPORARY SUPPORTS SUCH AS GUYS,

1. BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE WITH CITY OF EDINBURG, TEXAS AMENDMENTS.

2. STRUCTURAL CONCRETE: BUILDING CODE REQUIREMENTS FOR REINFORCED

CONCRETE, AMERICAN CONCRETE INSTITURE, ACI 318.

AND MECHANICAL DRAWINGS. CONTRACTOR SHALL SUBMIT TO ARCHITECT AND

THE TRADES. ADDITIONAL REINFORCEMENT AND/OR STRUCTURAL MEMBERS MAY

15. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL DETERMINE THE

CONSULTANT. ANY SUBSTITUTIONS RESULTING IN REVISIONS TO THE STRUCTURE

SHALL BE THE RESPONSIBILTY OF THE CONTRACTOR TO COORDINATE WITH THE

9. CONTRACTOR SHALL BE RESPONSIBLE FOR RIGID BRACING OF ALL WALLS, FORMWORK, SHORING AND FALSE WORK DURING CONSTRUCTION.

DIMENSIONS. WITH ARCHITECTURAL PLANS PRIOR TO PROJECT LAYOUT.

CONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER IN LIEU OF

PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL

11. THE USE OF REPRODUCTION OF THESE CONTRACT DRAWINGS BY ANY

TO MAINTAIN INTEGRITY OF STRUCTURE DURING CONSTRUCTION.

SPECIFICATIONS AND REFERENCE CODE.

DRAWINGS.

DIMENSIONAL INFORMATION.

BE REQUIRED UPON REVIEW.

COORDINATION

BE SUBMITTED TO THE ENGINEER FOR REVIEW.

DEPRESSED AND ELEVATED FLOOR AREAS.

NOTED ON THE SUBMITTALS.

DRAWINGS SHALL BE CLOUDED.

DESCRIBED IN THE DETAILS.

13. ALL MATERIAL AND WORKMANSHIP SHALL COMPLY WITH THE DRAWINGS,

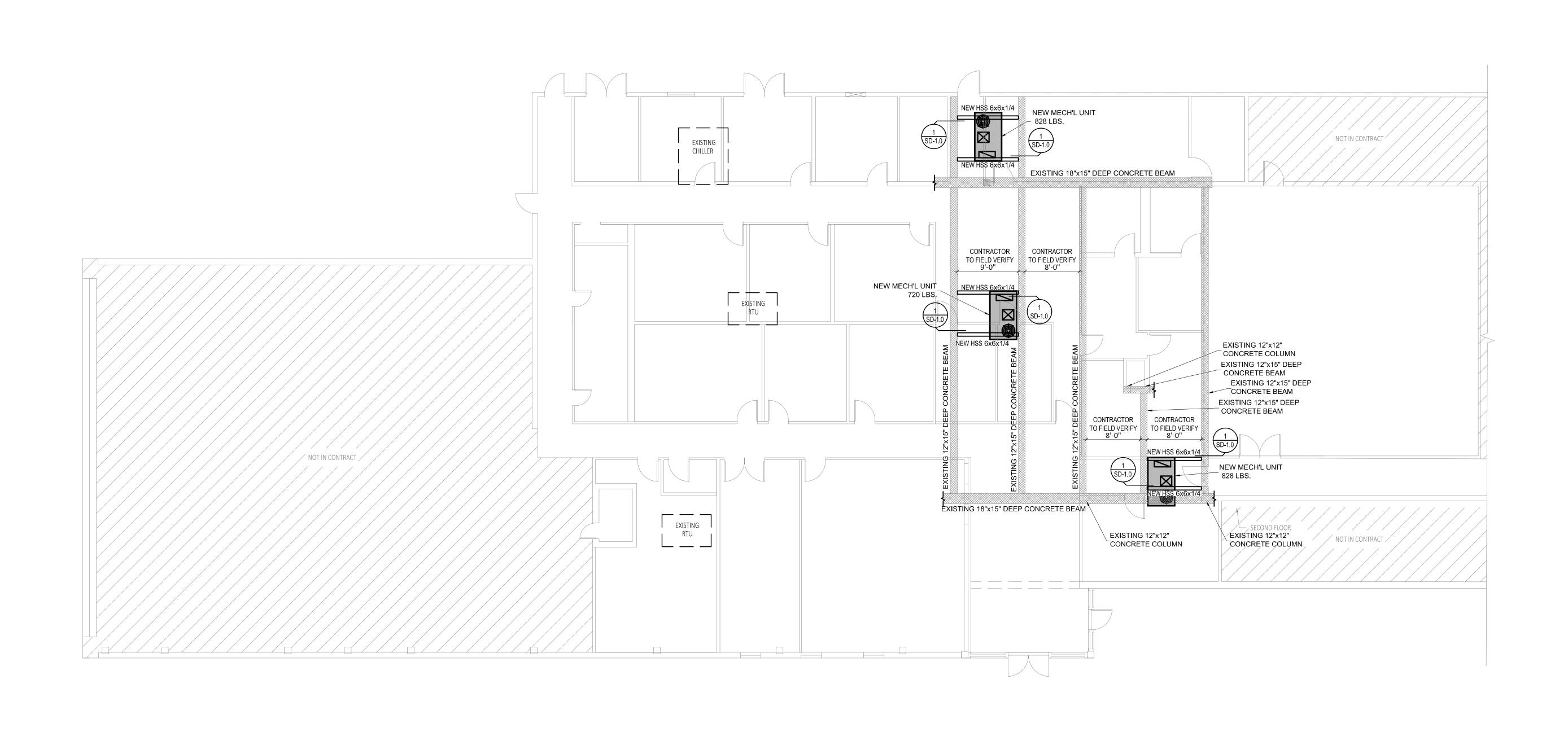
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF

3. EQUIPMENT FRAMING LOADS. OPENINGS AND STRUCTURE IN ANY WAY RELATED

RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND

3. STRUCTURAL STEEL: MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, NINITH EDITION.

(956) 687-5560 (956) 687-5561 FAX



NOTES:

1. ALL STRUCTURAL REINFORCING SHALL BE PLACED WHERE REQUIRED PRIOR TO PLACING NEW MECH'L UNITS.



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NO. DATE DESCRIPTION

DRAWN BY:

REINFORCING
PLAN

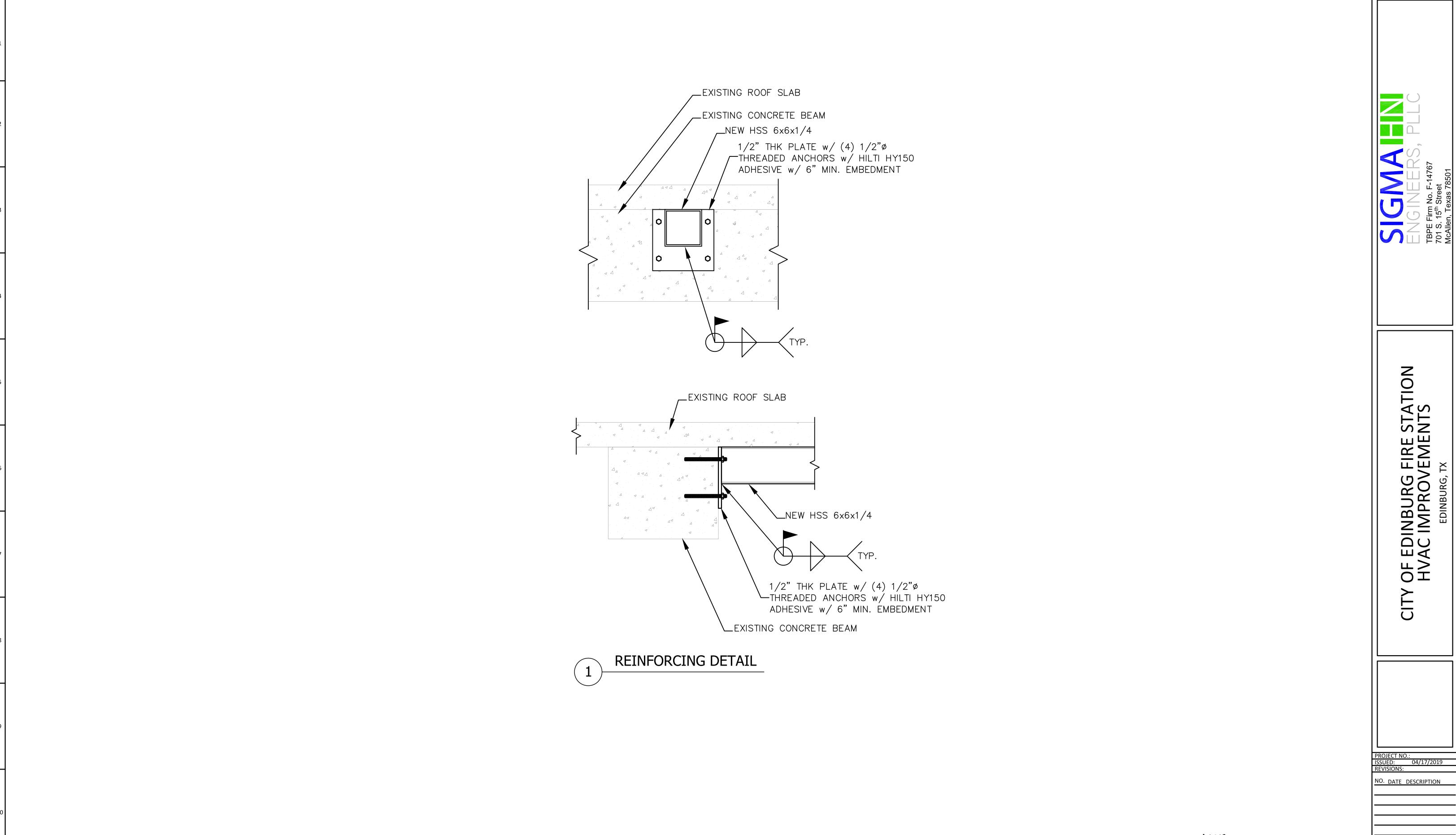
OF EDINBURG FIRE STATION HVAC IMPROVEMENTS

EDINBURG, TX

S-2.0

1 REINFORCING PLAN

SCALE: 1/8"=1'-0



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ENGINEERING, INC.

TBPE FIRM No. F-8719

701 S. 15th STREET MCALLEN, TX. 78501
(956) 687-5560 (956) 687-5561 FAX

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DETAILS PLAN

SD-1.0