

BEE COUNTY LEC DOAS REPLACEMENT

BID DOCUMENTS

INDEX OF DRAWINGS

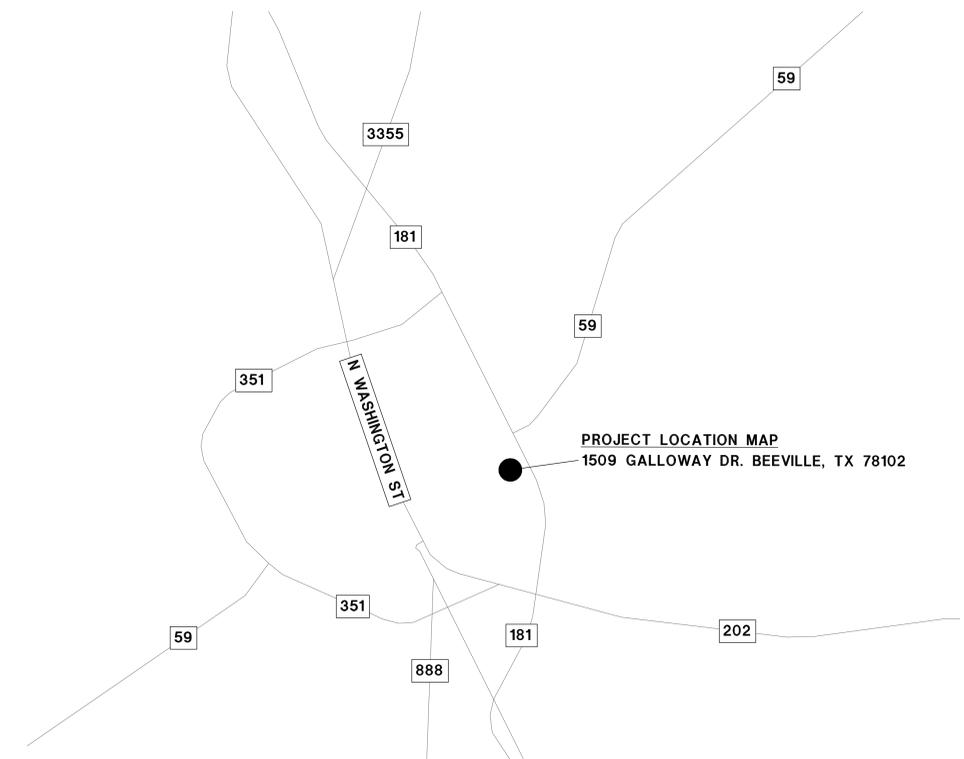
COVER SHEET

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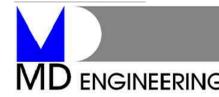
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TRUE NORTH

VICINITY MAP

PRIME CONSULTANT



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Project No.: 17877

PROJECT NUMBER: 17877

ISSUE DATE:
MARCH 14, 2022

ELECTRICAL ABBREVIATIONS
(ALL ABBREVIATIONS MAY NOT APPEAR ON DRAWINGS.)

2SCP	2-SPEED, CONSEQUENT POLE	FLEX	FLEXIBLE	NFS	NON-FUSIBLE SAFETY SWITCH
2SSW	2-SPEED, SEPARATE WINDING	FS	FUSIBLE SAFETY SWITCH OR FUSIBLE SWITCH	NIC	NOT IN CONTRACT
A	AMPERE(S)	FVNR	FULL VOLTAGE, NON-REVERSING	NL	NIGHT LIGHT
AC	ALTERNATING CURRENT	FVR	FULL VOLTAGE, REVERSING	NO	NORMALLY OPEN
ACCU	AIR-COOLED CONDENSING UNIT	G	GROUND	NTS	NOT TO SCALE
ADA	AMERICANS WITH DISABILITIES ACT	GFI	GROUND FAULT CIRCUIT INTERRUPT	OH	OVERHEAD
AFB	ABOVE FINISHED FLOOR	HACR	HEATING AND AIR CONDITIONING RATING	P	POLE(S)
AFD	ABOVE FINISHED CEILING	HID	HIGH INTENSITY DISCHARGE	PA	PUBLIC ADDRESS SYSTEM
AFG	ABOVE FINISHED GRADE	HOA	HAND-OFF-AUTOMATIC	PF	POWER FACTOR
AHU	AIR HANDLING UNIT	HP	HORSEPOWER	PL	PILOT LIGHT
AIC	AMPERE INTERRUPTING CAPACITY (ROOT MEAN SQUARE SYMMETRICAL)	HPS	HIGH PRESSURE SODIUM	PNL	PANELBOARD
ALT	ALTERNATE	HVAC	HEATING, VENTILATION AND AIR CONDITIONING	PVC	POLYVINYL CHLORIDE
APPROX	APPROXIMATE OR APPROXIMATELY	HZ	HERTZ	RC	REMOTE CONTROL
ARCH	ARCHITECT	RC	REMOTE CONTROL	RCF	REFLECTED CEILING PLAN
ATS	AUTOMATIC TRANSFER SWITCH	REC	RECEPTACLE(S)	RGS	RIGID GALVANIZED STEEL
AUX	AUXILIARY	IES	ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA	RVSS	REDUCED VOLTAGE, SOLID STATE
AWG	AMERICAN WIRE GAGE	IG	ISOLATED GROUND	S	SECURITY
BFC	BELOW FINISHED CEILING	IMC	INTERMEDIATE METALLIC CONDUIT	SP	SQUARE FOOT OR FEET
BFG	BELOW FINISHED GRADE	JBOX	JUNCTION BOX	SPDT	SINGLE-POLE, DOUBLE-THROW
BLDG	BUILDING	KA	KILOAMPERE(S)	SPST	SINGLE-POLE, SINGLE-THROW
C	CONDUIT OR TUBING	KW	KILOWATTS(S)	SS	START-STOP
CATV	CABLE TELEVISION	KWH	KILOWATT-HOUR(S)	SW	SWITCH
CB	CIRCUIT BREAKER	KV	KILOVOLT(S)	SWBD	SWITCHBOARD
CCTV	CLOSED-CIRCUIT TELEVISION	KVA	KILOVOLT-AMPERE(S)	TA	TRIP AMPERE(S)
CKT	CIRCUIT	KVAR	KILOVOLT-AMPERE(S) REACTIVE	TAS	TEXAS ACCESSIBILITY STANDARDS
CLG	CEILING	LPS	LOW PRESSURE SODIUM	TEL	TELEPHONE
COMM	COMMUNICATIONS	LTG	LIGHTING	TEMP	TEMPORARY
CT(S)	CURRENT TRANSFORMER(S)	M	METER(S)	TU	TEXAS UTILITIES ELECTRIC
DC	DIRECT CURRENT	MAX	MAXIMUM	TV	TELEVISION
DISC	DISCONNECT	MCA	MAXIMUM CURRENT AMPACITY	TYP	TYPICAL
DPDT	DOUBLE-POLE, DOUBLE THROW	MCB	MAIN CIRCUIT BREAKER	UG	UNDERGROUND
DPST	DOUBLE POLE, SINGLE THROW	MCC	MOTOR CONTROL CENTER	UL	UNDERWRITERS LABORATORIES, INC.
DWG(S)	DRAWING(S)	MCP	MOTOR CIRCUIT PROTECTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
EC	EMPTY CONDUIT OR TUBING	MH	METAL HALIDE	V	VOLTAGE OR VOLT(S)
EGS	ENGINE-GENERATOR SET	MIC	MICROPHONE	VA	VOLT-AMPERE(S)
EHH	ELECTRICAL HANDHOLE	MIN	MINIMUM	VFD	VARIABLE FREQUENCY DRIVE
ELEV	ELEVATION	MLO	MAIN LUGS ONLY	W	WATT(S)
EMERG	EMERGENCY	mm	MILLIMETER(S)	WP	WEATHERPROOF
EMH	ELECTRICAL MANHOLE	MMS	MANUAL MOTOR STARTER	WI	WITH
EMT	ELECTRICAL METALLIC TUBING	MOC	MAXIMUM OVER-CURRENT PROTECTION	WIO	WITHOUT
EW	ELECTRICAL WATER COOLER	MTS	MANUAL TRANSFER SWITCH	XFMR	TRANSFORMER
EX	EXISTING	MVA	MEGAVOLT-AMPERE(S)	XP	EXPLOSION-PROOF
F	FUSE(S)	MVAR	MEGAVOLT-AMPERE(S) REACTIVE	Δ	DELTA
FAAP	FIRE ALARM ANNUNCIATOR PANEL	MW	MEGAWATT(S)	#	NUMBER
FACP	FIRE ALARM CONTROL PANEL	NC	NORMALLY CLOSED		
FBO	FURNISHED BY OWNER	NEC	NATIONAL ELECTRICAL CODE		
FL	FLOOR	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION		
FLA	FULL LOAD AMPERE(S)	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION		

WIRING METHOD NOTES:

- DON'T COMBINE NEUTRALS AND GROUNDS OF SEPARATE BRANCH CIRCUITS.
- DO NOT USE MC OR AC CABLE.
- WIRE SHALL BE COPPER THWN - SOLID FOR SIZES 12, 10, 8; STRANDED FOR SIZES 6 AND LARGER.

ELECTRICAL SYMBOLS LIST
(ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.)

	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED LIGHT FIXTURE.	\$S	— SINGLE POLE SWITCH AT 48" ABOVE FINISHED FLOOR WITH SECURITY DETENTION PLATE.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED EMERGENCY LIGHT FIXTURE.	\$	— SINGLE-POLE SWITCH AT 48" ABOVE FINISHED FLOOR UNO.
	— WALL-MOUNTED RECESSED OR SURFACE LIGHT FIXTURE.	\$D	— SINGLE-POLE DIMMING SWITCH AT 48" ABOVE FINISHED FLOOR UNO.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL LIGHT FIXTURE.	\$2	— TWO-POLE SWITCH AT 48" ABOVE FINISHED FLOOR UNO.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL EMERGENCY LIGHT FIXTURE.	\$3	— THREE-WAY SWITCH AT 48" ABOVE FINISHED FLOOR UNO.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL LIGHT FIXTURE.	\$4	— FOUR-WAY SWITCH AT 48" ABOVE FINISHED FLOOR UNO.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL LIGHT FIXTURE.	\$K	— KEY-OPERATED SWITCH AT 48" ABOVE FINISHED FLOOR UNO.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL EMERGENCY LIGHT FIXTURE.	\$L	— LOW VOLTAGE LIGHT SWITCH WIRED TO THE LIGHTING CONTROL PANEL AT 48" ABOVE FINISHED FLOOR.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL LIGHT FIXTURE.	\$OS	— SINGLE POLE LINE VOLTAGE OCCUPANCY SWITCH WITH OVERRIDE BUTTON AT 48" ABOVE FINISHED FLOOR.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL EMERGENCY LIGHT FIXTURE.	\$P	— SINGLE-POLE SWITCH AND PILOT LIGHT AT 48" ABOVE FINISHED FLOOR UNO.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED INDIVIDUAL EMERGENCY LIGHT FIXTURE.	\$T	— TIME SWITCH AT 48" ABOVE FINISHED FLOOR UNO.
	— CEILING-MOUNTED RECESSED, SURFACE OR SUSPENDED CONTINUOUS-ROW LIGHT FIXTURE.	\$WP	— SINGLE-POLE SWITCH WITH WEATHERPROOF COVERPLATE AT 48" ABOVE FINISHED GRADE OR FLOOR UNO.
	— CEILING-MOUNTED SURFACE OR SUSPENDED FLUORESCENT STRIP.	TV	— ISOLATED GROUND NEMA 5-20R DUPLEX RECEPTACLE INSTALLED INSIDE THE TV BACK BOX. REFER TO AV PLANS AND DETAILS. COORDINATE EXACT LOCATION WITH AV SYSTEM INSTALLER.
	— CEILING-MOUNTED SURFACE OR SUSPENDED FLUORESCENT STRIP ON EMERGENCY.	2	— MOTOR SYMBOL. THE NUMBER INSIDE INDICATES HP.
	— WALL WASH DOWNLIGHT; UNSHADED HALF INDICATES ILLUMINATION DIRECTION.	⊠	— COMBINATION DISCONNECT SWITCH/MOTOR STARTER.
	— POLE MOUNTED FLOODLIGHTS (2 LUMINAIRS SHOWN).	⊞	— NON FUSED DISCONNECT SWITCH.
	— CEILING-MOUNTED SURFACE OR SUSPENDED SINGLE-FACE EXIT SIGN WITH DIRECTIONAL ARROW AS INDICATED; SHADED QUADRANT INDICATES FACE OF SIGN.	⊞	— FUSED DISCONNECT SWITCH.
	— CEILING-MOUNTED SURFACE OR SUSPENDED DOUBLE-FACE EXIT SIGN WITH DIRECTIONAL ARROWS AS INDICATED; SHADED QUADRANT INDICATES FACE(S) OF SIGN.	⊞	— LOW VOLTAGE PANEL.
	— WALL-MOUNTED EXIT SIGN WITH DIRECTIONAL ARROW(S) AS INDICATED; SHADED QUADRANT(S) INDICATE FACE(S) OF SIGN.	⊞	— HIGH VOLTAGE PANEL.
	— EMERGENCY LIGHT FIXTURE.	⊞	— MICROPHONE RECEPTACLE.
	— JUNCTION BOX.	⊞	— SWITCH.
	— J-BOX WITH CIRCUIT SERVED FROM UPS.	⊞	— FUSE.
	— SINGLE RECEPTACLE; NEMA 5-20R AT 18" ABOVE FINISHED FLOOR UNO.	⊞	— GROUND.
	— DUPLEX RECEPTACLE; NEMA 5-20R AT 18" ABOVE FINISHED FLOOR UNO.	⊞	— OVERLOADS.
	— DUPLEX RECEPTACLE; NEMA 5-20R ABOVE COUNTER OR SIMILAR SURFACE. REFER TO ARCHITECTURAL ELEVATION FOR EXACT LOCATION.	⊞	— CIRCUIT BREAKER.
	— QUADRUPLEX RECEPTACLE; NEMA 5-20R AT 18" ABOVE FINISHED FLOOR UNO.	⊞	— TRANSFORMER.
	— RECEPTACLE W/WEATHERPROOF COVERPLATE; DUPLEX NEMA 5-20R 18" ABOVE FINISHED GRADE OR FLOOR UNO.	⊞	— AUTOMATIC TRANSFER SWITCH.
	— DUPLEX RECEPTACLE WITH DETENTION STEEL PLATE.	⊞	— CEILING MOUNTED OCCUPANCY SENSOR FOR CONTROL OF ALL THE LIGHTING FIXTURES IN THE ROOM. INSTALL "POWER PACKS" AS NEEDED.
	— DUPLEX RECEPTACLE NEMA 5-20R AT 18" AFF. UNO. SERVED FROM UPS CIRCUIT.	⊞	— ROOF MOUNTED PHOTOCELL - AIMING NORTH.
	— GROUND-FAULT CIRCUIT INTERRUPTER RECEPTACLE; DUPLEX NEMA 5-20R 18" ABOVE FINISHED GRADE OR FLOOR UNO.	⊞	— DAYLIGHT HARVEST SENSOR WITH POWER PACK. IT SHALL CONTROL ALL THE DAYLIGHT ZONE, AS SHOWN ON THE PLAN.
	— ISOLATED GROUND RECEPTACLE; DUPLEX NEMA 5-20R AT 18" ABOVE FINISHED FLOOR UNO.	⊞	
	— RECEPTACLE MOUNTED n INCHES ABOVE FINISHED FLOOR OR GRADE; NEMA 5-20R UNO.	⊞	
	— SPECIAL PURPOSE SINGLE 120V, 208V OR 100 _{max} V RECEPTACLE. MATCH NEMA TYPE WITH THE FIXED EQUIPMENT PLUG. USE A LOCKING TYPE RECEPTACLE WHEN SERVING A UPS.	⊞	
	— SPECIAL PURPOSE SINGLE 120V, 208V OR 100 _{max} V RECEPTACLE COORDINATE THE PARTICULAR NEMA TYPE WITH THE OWNER REPRESENTATIVE BASED ON THE MOST LIKELY PORTABLE EQUIPMENT TO BE PLUGGED.	⊞	
	— MULTIOUTLET ASSEMBLY.	⊞	
	— FLOOR-MOUNTED SINGLE RECEPTACLE; NEMA 5-20R UNO.	⊞	
	— FLOOR-MOUNTED DUPLEX RECEPTACLE; NEMA 5-20R UNO. INSTALLED IN THE AV FLOOR BOX. REFER TO AV PLANS AND DETAILS. COORDINATE EXACT LOCATION WITH AV INSTALLER.	⊞	
	— FLOOR-MOUNTED SERVICE BOX; SEE SPECIAL PURPOSE RECEPTACLE, CONNECTION AND FLOOR BOX SCHEDULE ON DRAWING.	⊞	

ELECTRICAL CONVENTIONS
(ALL CONVENTIONS MAY NOT APPEAR ON DRAWINGS.)

GENERAL NOTES APPLY TO ELECTRICAL DRAWING SET.
DRAWING NOTES APPLY TO DRAWING ON WHICH NOTE APPEARS.
SYMBOL NOTES APPLY TO DRAWING ON WHICH AND WHERE SYMBOL APPEARS.
WIRE SIZES ARE INDICATED BY AMERICAN WIRE GAGE OR CIRCULAR MILS.

LB-3.5 — PANELBOARD, SWITCHBOARD OR MOTOR CONTROL CENTER DESIGNATION; ARROWHEADS INDICATE NUMBER OF BRANCH CIRCUITS
— BRANCH CIRCUIT HOMERUN TO PANELBOARD, SWITCHBOARD OR MOTOR CONTROL CENTER; ARROWHEADS INDICATE NUMBER OF BRANCH CIRCUITS
— WIRE AND RACEWAY RUN CONCEALED IN WALL OR CEILING (3-#12 IN 3/4" RACEWAY UNLESS OTHERWISE NOTED)
— WIRE AND RACEWAY RUN CONCEALED IN WALL OR CEILING (3-#12 IN 3/4" RACEWAY UNLESS OTHERWISE NOTED)
— WIRE AND RACEWAY RUN CONCEALED IN OR BELOW SLAB OR BELOW GRADE (3-#12 IN 3/4" RACEWAY UNLESS OTHERWISE NOTED)

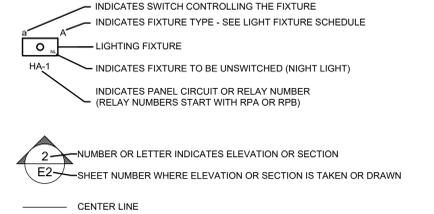
FOR LIGHTING BRANCH CIRCUITS, QUANTITY OF WIRE AND SIZE OF RACEWAY SHALL BE INCREASED AS REQUIRED TO FACILITATE INDICATED SWITCHING AND EMERGENCY LIGHTING OPERATION.

WIRING SYMBOLS LEGEND

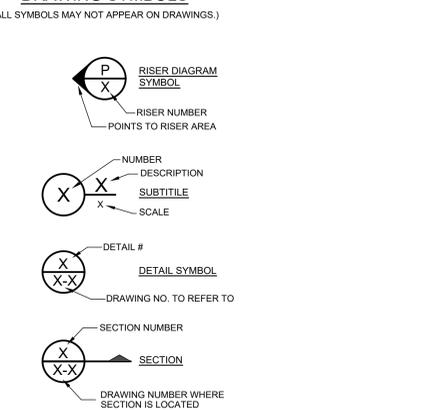
⊞ — INDICATES NUMBER OF HOT, NEUTRAL, GROUND, AND SWITCH LEG WIRES.
⊞ — GROUND WIRE
⊞ — SWITCH LEG WIRE
⊞ — HOT WIRE
⊞ — NEUTRAL WIRE

— HEAVY WEIGHT LINES INDICATE REMOVAL WORK ON DEMOLITION DRAWINGS AND NEW WORK ON NEW WORK DRAWINGS UNLESS OTHERWISE NOTED.
— LIGHT WEIGHT LINES INDICATE EXISTING CONDITIONS UNLESS OTHERWISE NOTED.

TYPICAL LIGHTING NOTATIONS SHOWN ON LIGHTING PLAN:



DRAWING SYMBOLS
(ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.)



DATE:	DESCRIPTION
1/18/2022	100% CONSTRUCTION DOCUMENTS
2/28/2022	OWNER COMMENTS
3/14/2022	OWNER COMMENTS



Job No.	21612
Sheet No.	E0.0

POWER TO MECHANICAL EQUIPMENT - JAIL									
ITEM	HP	MCA	KVA	BRKR	VOLTS/PH	PANEL	WIRE & CONDUIT	DISC. SW.	NOTES
DOAS-1		36.3	24.1		480/3	SDP-9	3#8,1#10G, 1" C.	60A/40F3/NEMA 3R	E
DOAS-2		26.7	17.8	150/3	480/3	SDP-9	3#10,1#10G, 3/4" C.	30A/30F3/NEMA 3R	E
DOAS-3		26.7	17.8		480/3	SDP-9	3#10,1#10G, 3/4" C.	30A/30F3/NEMA 3R	E
DOAS-4		27.3	18.1		480/3	SDP-9	3#10,1#10G, 3/4" C.	30A/30F3/NEMA 3R	E

GENERAL NOTES - POWER TO MECHANICAL:
A. REFER TO MECHANICAL PLANS FOR LOCATIONS OF ALL EQUIPMENT.
B. PROVIDE HACR TYPE BREAKERS FOR ALL HVAC EQUIPMENT IN SCHEDULE.
C. PROVIDE OVERLOADS ON ALL MANUAL MOTOR STARTERS.
D. OUTSIDE AIR APPLICATIONS SHALL HAVE 2 POSITION ACTUATORS (120V/1PH - N.C.) BY HOOD MANUFACTURER. END SW. BY CONTROLS CONTRACTOR.
E. UNIT TO BE SERVED FROM ROOF MOUNTED WIREWAY AND DISCONNECT SWITCHES - SEE DETAIL #11, DWG. J-E5.1.

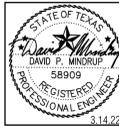
MAIN SWITCHBOARD 'JDP'										
BREAKER NO.	VOLTAGE		PHASE		WIRE		MAIN			LOCATION:
	277/480	480	3	4	REC	MECH	MSC	LARGEST MOTOR	600A MLO	JAIL
	FRAME AMPS	TRIP AMPS	LIGHTS KVA	REC KVA	MECH KVA	MSC KVA	LARGEST MOTOR KVA	LOAD SERVED		REMARKS
1	100	60						Surge Prot Device		
2	400	300	16.2	0.0	160.8	0.0				
3	150	125	0.0	21.1	20.9	36.4				JLB
4	150	150								FUTURE
5	100	25	0.0	1.4	6.7	0.0				JTPB
6	100	100	0.0	0.0	33.7	32.2	16.20			JHK
7	150	125	0	1	36	37				JLKA
8	100									SPACE
9	150				77					DOAS UNITS
										ROOF
MIN. NC = 22,000		TOTALS:	16.6	23.6	335.3	106.0	0.0	TOTAL CONNECTED KVA	482	
		FACTOR	X1.25	NEC 220.44	X1.0	X0.65	X0.25	TOTAL CONNECTED AMPS	580	
		DESIGN	21	17	335	69	4	TOTAL DESIGN KVA	446	
BUS SIZE = 600A				With 20% Spare Capacity:	644 A			DESIGN AMPS:	537	

* INDICATES HACR TYPE CIRCUIT BREAKER.



BEE COUNTY LEC
DOAS REPLACEMENT
 1509 GALLOWAY DR, BEEVILLE, TX 78102

DATE	DESCRIPTION
1/18/2022	10% CONSTRUCTION DOCUMENTS
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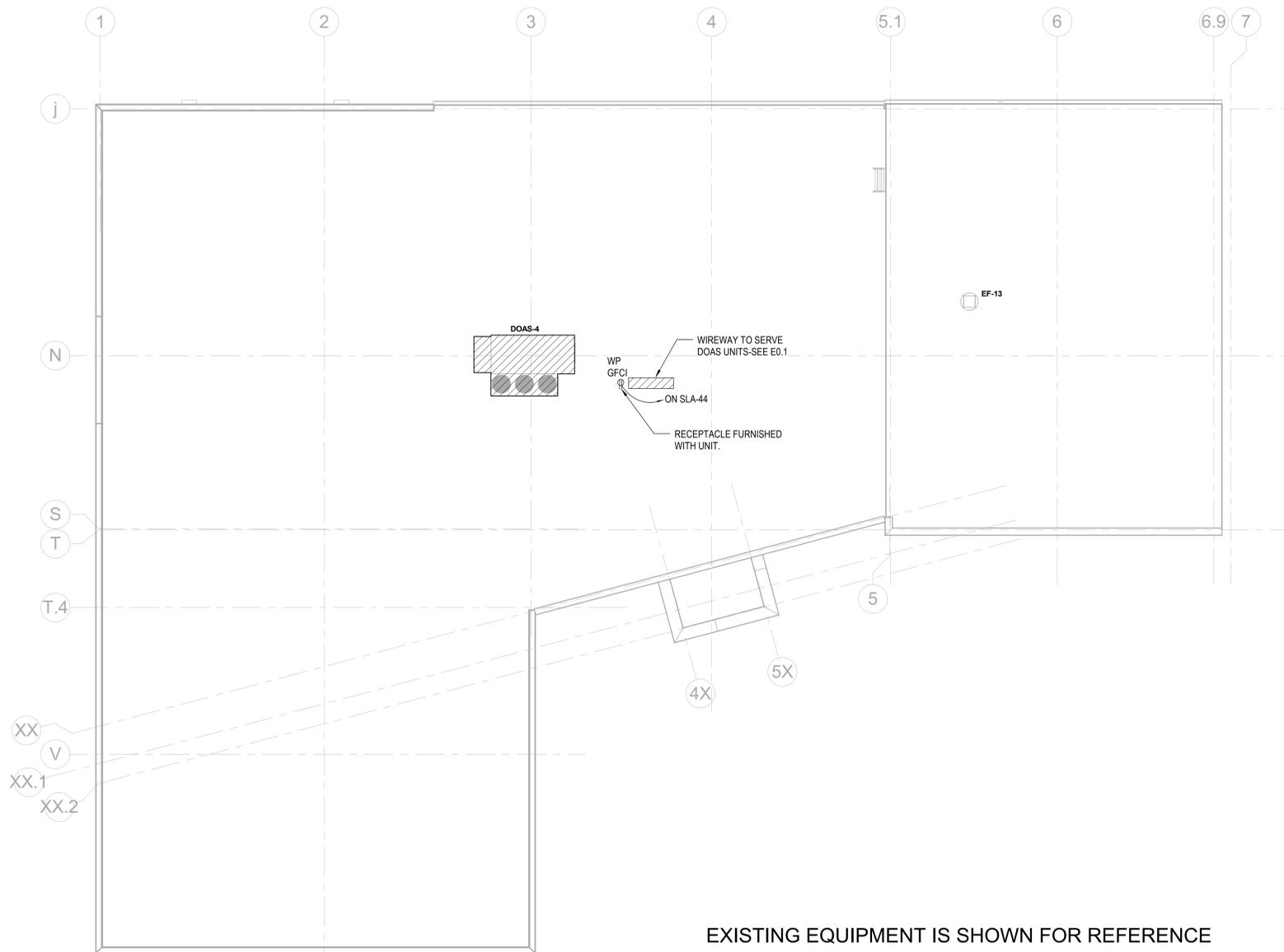


Job No.
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Sheet No.
E0.5
PANEL SCHEDULES

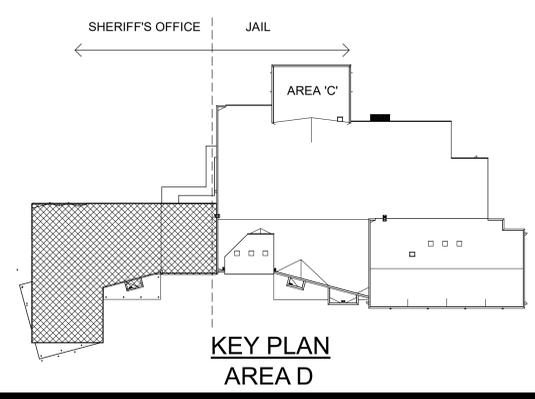
GENERAL NOTES:

1. REFER TO THE "POWER TO MECHANICAL" SCHEDULE FOR BRANCH CIRCUIT REQUIREMENTS OF MECHANICAL EQUIPMENT. VERIFY VOLTAGE, PHASE, MCA AND MSCP OF EQUIPMENT SUBMITTALS WITH THIS SCHEDULE.
2. COORDINATE THE PROVISION OF DISCONNECT SWITCHES AND MOTOR STARTERS WITH MECHANICAL CONTRACTOR.
3. WHERE EQUIPMENT IS SCHEDULED BUT NOT SHOWN ON THESE DRAWINGS, REFER TO THE MECHANICAL FOR LOCATION.
4. COORDINATE WITH MECHANICAL, PLUMBING AND FIRE PROTECTION TRADES AND IDENTIFY ALL MISCELLANEOUS MECHANICAL EQUIPMENT REQUIRING POWER. PROVIDE CONDUIT, WIRE, DISCONNECT SWITCH, OVER CURRENT AND SHORT CIRCUIT PROTECTION FOR ALL EQUIPMENT, WHETHER SHOWN OR NOT.
5. EXACT MECHANICAL EQUIPMENT LOCATION AND TYPE SHALL BE COORDINATED WITH MECHANICAL PLANS AND MECHANICAL CONTRACTOR.
6. ALL CONDUIT AND/OR WIRING SHALL BE INSTALLED BETWEEN THE BOTTOM AND TOP OF CORD OF JOIST. DO NOT INSTALL CONDUIT WITHIN 3'-0" OF ANY A/C UNITS UNLESS THE CONDUIT AND/OR WIRING SERVICES THE A/C UNIT.

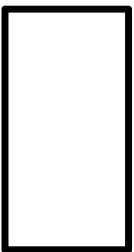


EXISTING EQUIPMENT IS SHOWN FOR REFERENCE

1 ROOF PLAN - POWER TO MECHANICAL
1/8" = 1'-0"



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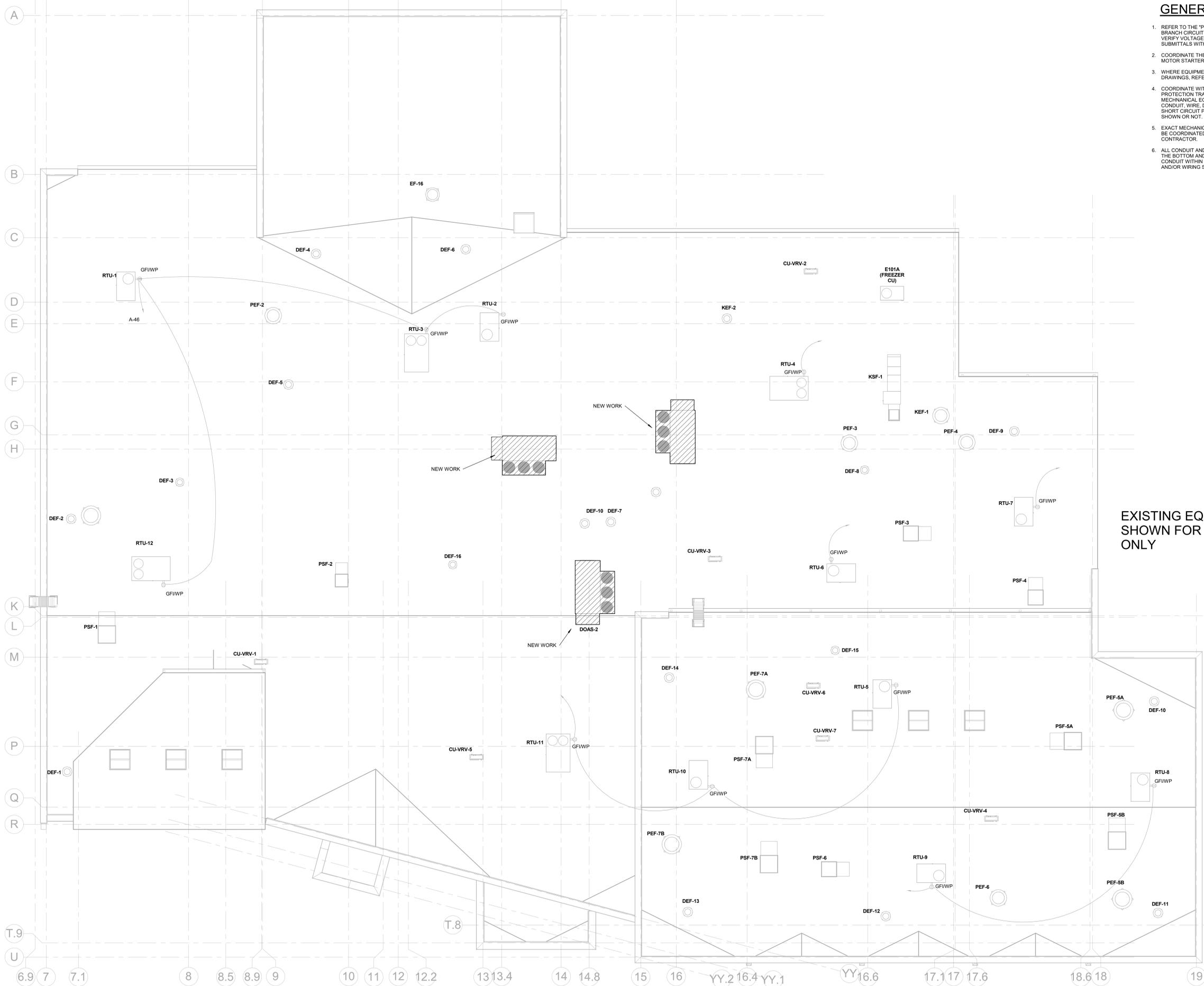


Job No.
21612

Sheet No.
E4.2
ROOF PLAN - POWER TO MECHANICAL

GENERAL NOTES:

1. REFER TO THE "POWER TO MECHANICAL" SCHEDULE FOR BRANCH CIRCUIT REQUIREMENTS OF MECHANICAL EQUIPMENT. VERIFY VOLTAGE, PHASE, NCA AND MOCP OF EQUIPMENT SUBMITTALS WITH THIS SCHEDULE.
2. COORDINATE THE PROVISION OF DISCONNECT SWITCHES AND MOTOR STARTERS WITH MECHANICAL CONTRACTOR.
3. WHERE EQUIPMENT IS SCHEDULED BUT NOT SHOWN ON THESE DRAWINGS, REFER TO THE MECHANICAL FOR LOCATION.
4. COORDINATE WITH MECHANICAL, PLUMBING AND FIRE PROTECTION TRADES AND IDENTIFY ALL MISCELLANEOUS MECHANICAL EQUIPMENT REQUIRING POWER. PROVIDE CONDUIT, WIRE, DISCONNECT SWITCH, OVER CURRENT AND SHORT CIRCUIT PROTECTION FOR ALL EQUIPMENT, WHETHER SHOWN OR NOT.
5. EXACT MECHANICAL EQUIPMENT LOCATION AND TYPE SHALL BE COORDINATED WITH MECHANICAL PLANS AND MECHANICAL CONTRACTOR.
6. ALL CONDUIT AND/OR WIRING SHALL BE INSTALLED BETWEEN THE BOTTOM AND TOP OF CORD OF JOIST. DO NOT INSTALL CONDUIT WITHIN 3'-0" OF ANY A/C UNITS UNLESS THE CONDUIT AND/OR WIRING SERVICES THE A/C UNIT.



EXISTING EQUIPMENT IS SHOWN FOR REFERENCE ONLY

1 OVERALL ROOF PLAN - POWER TO MECHANICAL
1/8" = 1'-0"

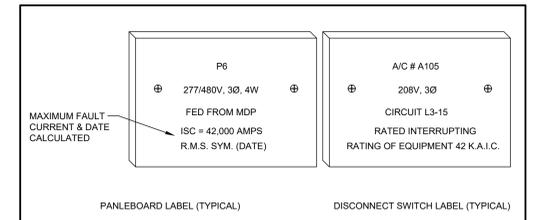


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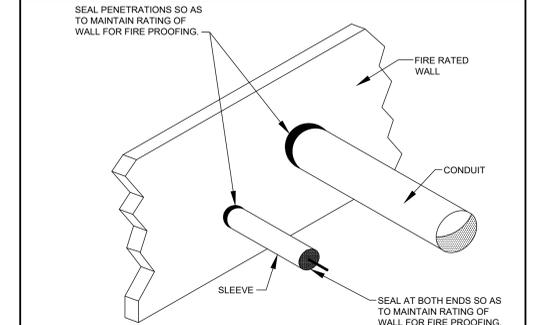
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Sheet No.
E4.3
OVERALL ROOF PLAN -
POWER TO MECHANICAL

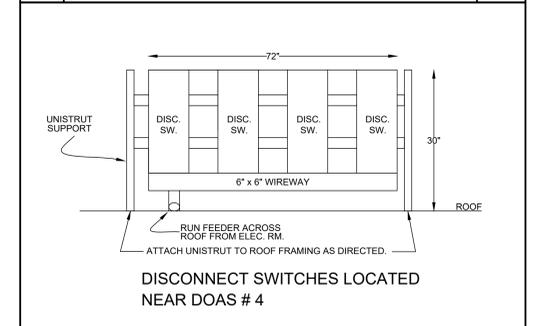


- NOTES:**
1. ATTACH SECURELY WITH NON-CORRODING STAINLESS STEEL SCREWS, NON-CORRODING POP RIVETS ARE ACCEPTABLE, ADHESIVE ATTACHMENT IS NOT ACCEPTABLE.
 2. LABEL ALL PANELBOARDS, SWITCHBOARDS, SAFETY SWITCHES, AND MOTOR CONTROL CENTERS AS REQUIRED, REFERENCE SPECIFICATION, AND NEC 110.24.

01 ELECTRICAL EQUIPMENT I.D. SCALE: NTS

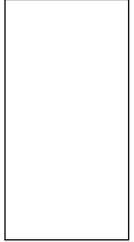


02 RATED WALL PENETRATIONS SCALE: NTS



03 DISCONNECT SWITCHES @ DOAS SCALE: NTS

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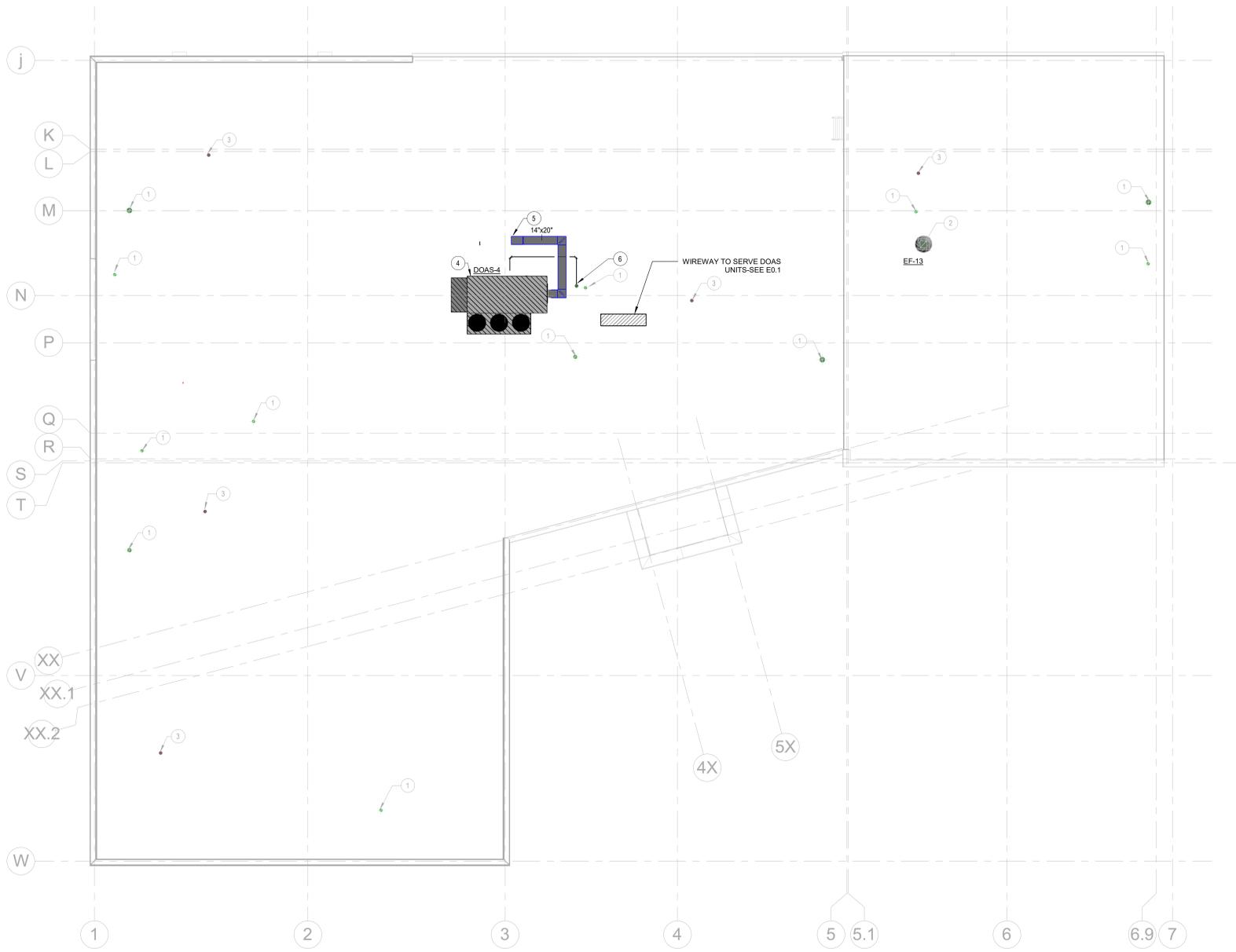


Job No.
21612

Sheet No.
E5.1
 ELECTRICAL DETAILS

ALL ROOF WORK TO BE PERFORMED BY A CONTRACTOR THAT CAN MAINTAIN ROOF WARRANTY.

ROOF IS 60 MIL WHITE TPO MANUFACTURED BY FIRESTONE. ROOF MANUFACTURER SHALL INSPECT THE CURBS TO VERIFY INSTALLATION COMPLIES TO MAINTAIN MANUFACTURER'S WARRANTY.



- GENERAL NOTES:**
- COORDINATE WITH ALL TRADES BEFORE INSTALLING ANY EQUIPMENT, CONDENSATE DRAINS, REFRIGERANT LINES, OR DUCTWORK.
 - UNLESS OTHERWISE NOTED ALL AIR DEVICES SHALL BE DESIG. "A".
 - ALL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA FOR APPROPRIATE PRESSURE.
 - ALL SHEET METAL DUCTWORK PENETRATING FIRE RATED WALLS SHALL BE MINIMUM OF 26 GAUGE. ALL OTHER DUCT SHALL BE CONSTRUCTED AS SPECIFIED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS".
 - UNIT SMOKE DETECTORS SHALL BE INSTALLED TO COMPLY WITH APPLICABLE CODES AND NFPA.
 - UNLESS OTHERWISE NOTED ALL RETURN AIR GRILLES AND EXHAUST GRILLES DESIG. "B".
 - INSTALL CONDENSING UNITS AND SIZE REFRIGERANT LINES PER MANUFACTURER'S GUIDELINES AND REQUIREMENTS.
 - INSTALL CARBON MONOXIDE AND NITROGEN DIOXIDE SENSORS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN LOCATIONS APPROVED BY THE ARCHITECT.
 - PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCE FOR SERVICE OF INDOOR VRV UNITS.
 - ALL RUNOUTS TO AIR DEVICES SHALL INCLUDE BALANCING DAMPERS IN ALL SUPPLY AIR, RETURN AIR, AND EXHAUST AIR TAPS AND BRANCH DUCTWORK UNLESS OTHERWISE NOTED. PROVIDE REMOTE BALANCING DAMPERS FOR ALL TAPS MADE ABOVE INACCESSIBLE CEILINGS.
 - ALL DIFFUSERS SHALL BE 4 WAY UNLESS OTHERWISE NOTED.
 - PROVIDE CONDENSATE PUMPS FOR ALL CEILING AND WALL MOUNTED UNITS. TERMINATE DRAIN IN CLOSEST APPROVED RECEPTOR.

- NOTES BY SYMBOL "O":**
- EXHAUST UP TO ROOF EXHAUST CAP.
 - EF-13 FOR OWNER PROVIDED FUME HOOD.
 - SANITARY VENT THROUGH ROOF.
 - DOAS-4 TO BE PLACED WITH CENTER OF UNIT CENTERED ON THE INTERSECTION OF GRIDLINES N AND 3 AS SHOWN TO AVOID STRUCTURAL MODIFICATIONS.
 - SF-1 TO BE REMOVED AND DUCTWORK FROM DOAS-4 TO TIE INTO EXISTING DUCT.
 - ROUTE CONDENSATE FROM DOAS TO MOP SINK IN JANITOR 1213.

1 ROOF PLAN - HVAC
1/8" = 1'-0"

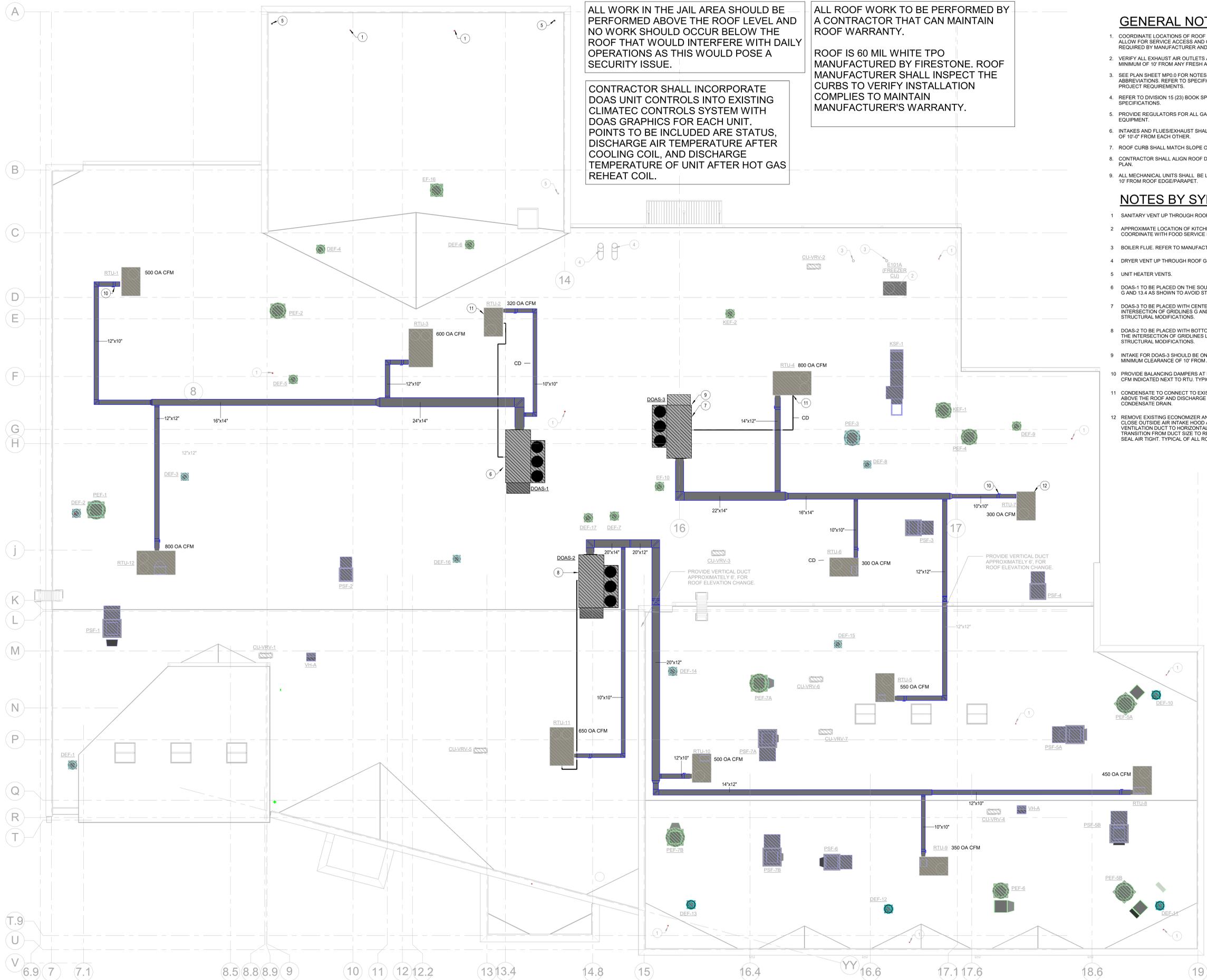


DATE	DESCRIPTION
1/16/2022	100% CONSTRUCTION DOCUMENTS
2/22/2022	OWNER CHANGES
03/14/2022	OWNER COMMENTS



Job No.
21612

Sheet No.
M2.2
ROOF PLAN - HVAC



ALL WORK IN THE JAIL AREA SHOULD BE PERFORMED ABOVE THE ROOF LEVEL AND NO WORK SHOULD OCCUR BELOW THE ROOF THAT WOULD INTERFERE WITH DAILY OPERATIONS AS THIS WOULD POSE A SECURITY ISSUE.

CONTRACTOR SHALL INCORPORATE DOAS UNIT CONTROLS INTO EXISTING CLIMATEC CONTROLS SYSTEM WITH DOAS GRAPHICS FOR EACH UNIT. POINTS TO BE INCLUDED ARE STATUS, DISCHARGE AIR TEMPERATURE AFTER COOLING COIL, AND DISCHARGE TEMPERATURE OF UNIT AFTER HOT GAS REHEAT COIL.

ALL ROOF WORK TO BE PERFORMED BY A CONTRACTOR THAT CAN MAINTAIN ROOF WARRANTY.
 ROOF IS 60 MIL WHITE TPO MANUFACTURED BY FIRESTONE. ROOF MANUFACTURER SHALL INSPECT THE CURBS TO VERIFY INSTALLATION COMPLIES TO MAINTAIN MANUFACTURER'S WARRANTY.

- GENERAL NOTES:**
- COORDINATE LOCATIONS OF ROOF MOUNTED EQUIPMENT TO ALLOW FOR SERVICE ACCESS AND CLEARANCES AS REQUIRED BY MANUFACTURER AND CODE.
 - VERIFY ALL EXHAUST AIR OUTLETS AND PLUMBING VENTS ARE MINIMUM OF 10' FROM ANY FRESH AIR OPENING.
 - SEE PLAN SHEET MP-0 FOR NOTES, SYMBOLS, AND ABBREVIATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS.
 - REFER TO DIVISION 15 (23) BOOK SPECIFICATIONS FOR HVAC SPECIFICATIONS.
 - PROVIDE REGULATORS FOR ALL GAS FIRED ROOF MOUNTED EQUIPMENT.
 - INTAKES AND FLUES/EXHAUST SHALL BE LOCATED A MINIMUM OF 10'-0" FROM EACH OTHER.
 - ROOF CURB SHALL MATCH SLOPE OF THE ROOF.
 - CONTRACTOR SHALL ALIGN ROOF DEVICES AS INDICATED ON PLAN.
 - ALL MECHANICAL UNITS SHALL BE LOCATED A MINIMUM OF 10' FROM ROOF EDGE/PARAPET.

- NOTES BY SYMBOL "O":**
- SANITARY VENT UP THROUGH ROOF.
 - APPROXIMATE LOCATION OF KITCHEN FREEZER CONDENSING UNIT. COORDINATE WITH FOOD SERVICE SUPPLIER.
 - BOILER FLUE. REFER TO MANUFACTURERS RECOMMENDATIONS.
 - DRYER VENT UP THROUGH ROOF GOOSE NECK.
 - UNIT HEATER VENTS.
 - DOAS-1 TO BE PLACED ON THE SOUTHEAST CORNER OF GRIDLINES G AND 13.4 AS SHOWN TO AVOID STRUCTURAL MODIFICATIONS.
 - DOAS-3 TO BE PLACED WITH CENTER OF UNIT CENTERED ON THE INTERSECTION OF GRIDLINES L AND 16 AS SHOWN TO AVOID STRUCTURAL MODIFICATIONS.
 - DOAS-2 TO BE PLACED WITH BOTTOM EDGE OF UNIT CENTERED ON THE INTERSECTION OF GRIDLINES L AND 14.8 AS SHOWN TO AVOID STRUCTURAL MODIFICATIONS.
 - INTAKE FOR DOAS-3 SHOULD BE ON PLAN NORTH SIDE WITH A MINIMUM CLEARANCE OF 10' FROM ALL EXHAUST.
 - PROVIDE BALANCING DAMPERS AT EACH RTU AND BALANCE TO OA CFM INDICATED NEXT TO RTU. TYPICAL EACH RTU.
 - CONDENSATE TO CONNECT TO EXISTING CONDENSATE DRAIN ABOVE THE ROOF AND DISCHARGE INTO EXISTING RTU CONDENSATE DRAIN.
 - REMOVE EXISTING ECONOMIZER AND ECONOMIZER DAMPER AND CLOSE OUTSIDE AIR INTAKE HOOD AND SEAL AIR TIGHT. CONNECT VENTILATION DUCT TO HORIZONTAL RETURN AIR PANEL WITH DUCT TRANSITION FROM DUCT SIZE TO RETURN AIR OPENING SIZE AND SEAL AIR TIGHT. TYPICAL OF ALL ROOFTOP UNITS.

1 ROOF PLAN - HVAC
 1/8" = 1'-0"

DATE	DESCRIPTION
1/16/2022	100% CONSTRUCTION DOCUMENTS
2/26/2022	OWNER CHANGES
03/14/2022	OWNER COMMENTS



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21612

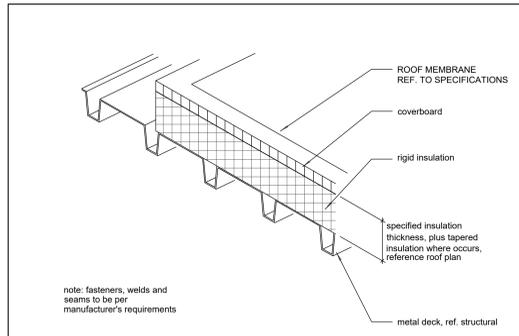
Sheet No.
J-M2.3
 OVERALL ROOF PLAN
 - HVAC



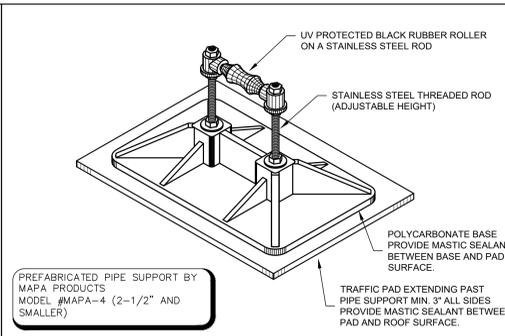
DOAS PACKAGE HEAT PUMP UNIT SCHEDULE																												
DESIG.	SERVES	TYPE	NOM. TONS	SUPPLY FAN DATA					DX COOLING COIL DATA					HEATING CAPACITY			RE-HEAT COIL			ELECTRICAL			SEER / EER @ ARI	COP	MFG	MODEL NUMBER	OP. WEIGHT W/O CURB (LBS)	REMARKS
				CFM	O/A CFM	E.S.P. (IN)	DRIVE	HP	V / PH	TOTAL MBH	SENS. MBH	EAT DB/WB (F)	LAT DB/WB (F)	AMBIENT (F)	MBH @ _F_ AMB	EAT DB (F)	LAT DB	CAPACITY (MBH)	LAT DB/WB (F)	MCA	MOCPP	V / PH						
DOAS-1	VENTILATION	HORIZ. DISCHARGE	20.0	2200	2200	0.5	DIRECT	1	460 / 3	219.3	86.4	91.1 / 82.1	52.3 / 52.2	105	185.0	40	113.5	42.0	70 / 59.22	43	50	480 / 3	11.6	2.89	AAON	RNA-020-C-0-3-DJAGA	3158	1-9
DOAS-2	VENTILATION	HORIZ. DISCHARGE	18.0	1950	1950	0.5	DIRECT	1	460 / 3	194.3	76.4	91.1 / 82.1	52.2 / 52.2	105	163.9	40	113.6	37.0	70 / 59.24	34	45	480 / 3	11.9	2.95	AAON	RNA-018-C-0-3-DJAGA	3043	1-9
DOAS-3	VENTILATION	HORIZ. DISCHARGE	18.0	1950	1950	0.5	DIRECT	1	460 / 3	194.3	76.4	91.1 / 82.1	52.2 / 52.2	105	163.9	40	113.6	37.0	70 / 59.24	34	45	480 / 3	11.9	2.95	AAON	RNA-018-C-0-3-DJAGA	3043	1-9
DOAS-4	VENTILATION	HORIZ. DISCHARGE	18.0	1950	1950	0.5	DIRECT	1	460 / 3	194.3	76.4	91.1 / 82.1	52.2 / 52.2	105	163.9	40	113.6	37.0	70 / 59.24	34	45	480 / 3	11.9	2.95	AAON	RNA-018-C-0-3-DJAGA	3043	1-9

- NOTES:
- ROOF CURB, 14" HIGH TO MATCH ROOF SLOPE. LEVEL TOP OF ROOF CURB PRIOR TO RTU INSTALLATION.
 - INTERLOCK WITH EMS / BAS
 - EXTERNAL STATIC PRESSURE (E.S.P.) IS DUCTWORK AND GRILLES ONLY. BHP SHOULD INCLUDE TWICE THE INITIAL FILTER LOSSES.
 - ROUTE CONDENSATE AS INDICATED ON PLANS.
 - PROVIDE RELAYS, XFMRs, CONTROLS, ETC. FOR A SINGLE POINT ELECTRICAL CONNECTION. MANUF. NON FUSED DISCONNECT SWITCH NEMA 3R WEATHERPROOF.

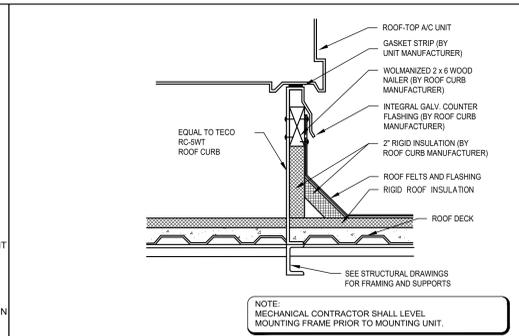
- PROVIDE CONDENSER COIL SECTION HAIL GUARDS.
- FILTERS - 2" MERV 13 RATED HIGH CAPACITY FILTER BANK, PROVIDE ONE SPARE SET.
- PROVIDE PREMIUM EFFICIENCY MOTORS.
- PROVIDE 5-YEAR COMPRESSOR WARRANTY.



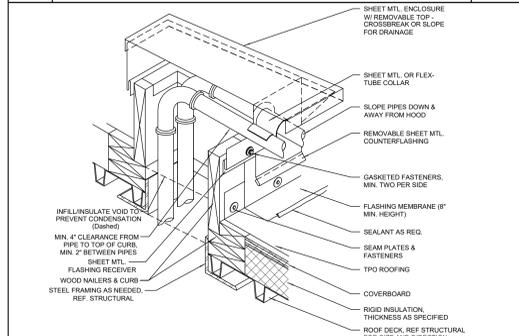
08 ROOF DECK TOP - TYP SCALE: NTS



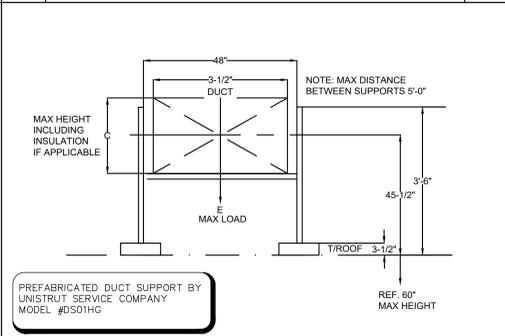
04 ROOF PIPE SUPPORT SCALE: NTS



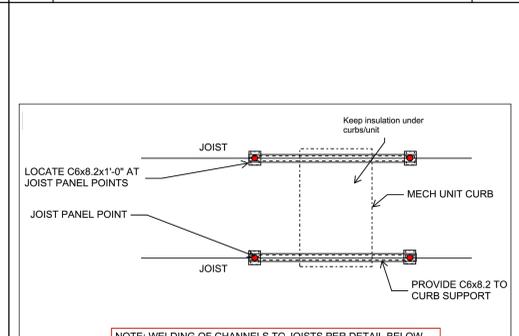
01 ROOFTOP CURB SCALE: NTS



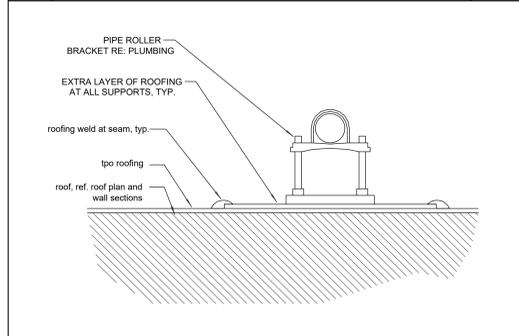
09 ROOF DECK PIPING ENCLOSURE TYP SCALE: NTS



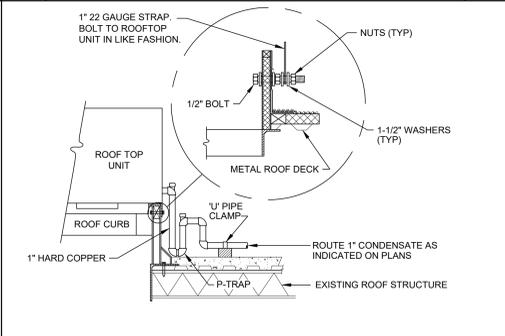
05 ROOF DUCT SUPPORT SCALE: NTS



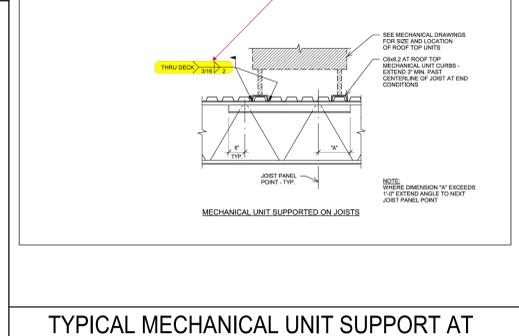
TYPICAL MECHANICAL UNIT SUPPORT AT JOIST



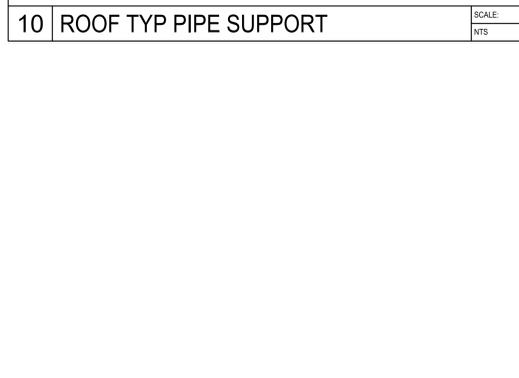
10 ROOF TYP PIPE SUPPORT SCALE: NTS



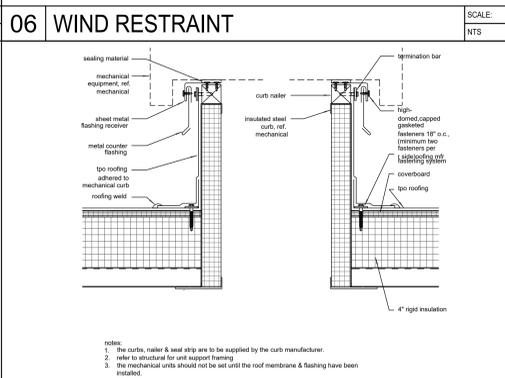
06 WIND RESTRAINT SCALE: NTS



02 KCS AND K-SERIES JOIST DETAIL SCALE: NTS



07 ROOF DECK MECH CURB TPO SCALE: NTS



03 ROOFTOP UNIT CONDENSATE PIPING SCALE: NTS

DATE	DESCRIPTION
1/18/2022	100% CONSTRUCTION DOCUMENTS
2/28/2022	OWNER COMMENTS
3/14/2022	OWNER COMMENTS



Job No.
21612

Sheet No.
M4.1

MECHANICAL SCHEDULE & DETAILS

MEP ABBREVIATIONS

ABV	ABOVE
AC	ALTERNATING CURRENT
AC	AIR CONDITIONER
AFC	ABOVE FINISHED CEILING
AF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AG	ABOVE GRADE AND GFI
AHAP	AS HIGH AS POSSIBLE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AMB	AMBIENT TEMPERATURE (F. DEGREE)
AMP	AMPERE
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
AVG	AVERAGE
B	BELOW GRADE
B.G.	BELOW GRADE
BMS	BUILDING MANAGEMENT SYSTEM
BRD	BAROMETRIC RELIEF DAMPER
BTU	BRITISH THERMAL UNIT
CD	CONSTRUCTION DOCUMENTS
CFM	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHEM	CHEMICAL
CHP	CHILLED WATER PUMP
CKT	CIRCUIT
CLG	CELLINGS
CMPR	COMPRESSOR
CT	COOLING TOWER
CTU	BRITISH THERMAL UNIT
CU	CONDENSING UNIT
CU	CONDENSING UNIT
DB	DRY BULB
DEFL	DEFLECTION
DEG. F	DEGREES FAHRENHEIT
DET	DETAIL
DD	DESIGN DEVELOPMENT
DIA	DIAMETER
DISC	DISCONNECT SWITCH
DM	DIMENSION
EA	EXHAUST AIR
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV.	ELEVATION
EMCS	ENERGY MGMT. CONTROL SYSTEM
E.S.P.	EXTERNAL STATIC PRESS. (IN. W.G.)
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST.	EXISTING
F/A	FREE AREA OPENING (SQ. FT.)
FCU	FAN COIL UNIT
FHP	FRACTIONAL HORSE POWER
FLR	FLOOR
FPI	COIL FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT OR FEET
GFI	GROUND FAULT INTERRUPTER
GPM	GALLONS PER MINUTE
HD	HEAD
HDA	HANDSOFF/AUTO MOTOR STARTER
HP	HORSE POWER
HPU	HEAT PUMP UNIT
HR	HOURS
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEAT VENT AND AIR CONDITIONING
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
HZ	FREQUENCY (HERTZ)
ID	INSIDE DIAMETER OR DIMENSION
IN	INCHES
KW	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING WATER TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MCA	MINIMUM CURRENT AMPS
MCCP	MAX. OVER CURRENT PROTECTION
MBH	1000 BTU PER HOUR
MECH.	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MVD	MANUAL VOLUME DAMPER
NA	NOT APPLICABLE
NC	NOISE CRITERIA
NIC	NOT IN CONSTRUCTION
NK	NECK DIMENSION
NO	NUMBER
OA	OUTSIDE AIR
OAR	OWNER'S AUTHORIZED REPRESENTATIVE
OD	OPPOSITE BLADE DAMPER
OD	OUTSIDE DIAMETER
OFI	OWNER FURNISHED CONTRACTOR INSTALLED
ORIG.	ORIGINAL
P.D.	PRESSURE DROP (FT)
PH	PHASE
PMB	POWERED MIXING BOX
PLBG	PLUMBING
PANL	PANEL
PRESS	PRESSURE
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RD	RADIUS
RE	REFERENCE
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
S/S	SINGLE SPEED MOTOR
S/S	START/STOP/STATUS
SA	SUPPLY AIR
SAG	SUPPLY AIR GRILLE
SDC	STAND ALONE DIGITAL CONTROLLER
SEER	SEASON ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SP	STATIC PRESSURE
SQ	SQUARE
STR	MOTOR STARTER
TEMP	TEMPERATURE
T.S.P.	TOTAL STATIC PRESSURE (IN. W.G.)
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VAV	VARIABLE AIR VALVE
VEL	VELOCITY
W	WATT
W	WITH
W/O	WITHOUT
W.G.	WATER GAUGE
WB	WET BULB
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WPS	WEATHERPROOF GFI
WTR	TRANSFORMER

DUCTWORK LEGEND

16X12	SHEET METAL DUCT	
	DIRECTION OF FLOW	
	INTERNALLY INSULATED SHEET METAL DUCT	
	HIDDEN SHEET METAL DUCT	
	ROUND ELBOW DOWN (R/A SIMILAR)	
	ROUND ELBOW UP (R/A SIMILAR)	
	RADIUS ELBOW (R=1.5 MIN.)	
	45 DEGREE ELBOW (R=1.5 MIN.)	
	SIZE OR SHAPE TRANSITION	
	FLEXIBLE DUCT CONN. W/DAMPER	
	BRANCH TAKE-OFF	
	WYE JUNCTION	
	SUPPLY DUCT SECTION UP	
	SUPPLY DUCT SECTION DOWN	
	RETURN DUCT SECTION UP	
	RETURN DUCT SECTION DOWN	
	EXHAUST DUCT SECTION UP	
	90 DEGREE S/A ELBOW DOWN	
	90 DEGREE S/A ELBOW UP	
	90 DEGREE R/A ELBOW DOWN	
	90 DEGREE R/A ELBOW UP	
	RADIUS ELBOW (R=1.5 MIN.)	
	SQUARE ELBOW WITH DOUBLE WALL TURNING VANES	
	BRANCH TAKE-OFF WITH VANED EXTRACTOR	
	SPIN-IN TAP WITH DAMPER	
	TEE WITH SQUARE ELBOWS, TURNING VANES & SPLITTER DAMPER	
	SIDEWALL SUPPLY GRILLE OR REGISTER WITH AIR EXTRACTOR	
	S/A GRILLE/REGISTER W/ ROUND NECK & FLEX CONNECTION, 4-WAY THROW (U.N.O.)	
	S/A GRILLE/REGISTER W/ SQUARE NECK, 4-WAY THROW (U.N.O.)	
	R/A GRILLE OR REGISTER	
	VOLUME DAMPER	
	COUNTER WEIGHTED BACKDRAFT DAMPER	
	FIRE DAMPER	
	FIRE/SMOKE DAMPER (WITH SM. DET.)	
	SMOKE DAMPER (WITH SM. DET.)	
	MOTORIZED DAMPER	
	STATIC PRESSURE SENSOR	
	AIRFLOW MEASURE STATION	
	AIRFLOW IONIZER STATION	
	THERMOSTAT OR TEMP SENSOR/ HUMIDISTAT/CARBON DIOXIDE SENSOR	
	ACCESS DOOR	
	DUCT MOUNTED SMOKE DETECTOR (TUBE SENSING TYPE)	

ALL SYMBOLS ON THIS LIST ARE NOT NECESSARILY USED ON THIS PROJECT.

ASHRAE CO ₂ DIFFERENTIAL	
	700 PPM --- 15 CF/PERSON
	500 PPM --- 20 CF/PERSON
	350 PPM --- 30 CF/PERSON

HVAC & PLUMBING, VALVE & FITTINGS SYMBOLS

	TEE
	TEE, UP
	TEE, DOWN
	SINGLE SWEEP TEE
	CROSS
	LATERAL
	45 DEGREE ELBOW
	90 DEGREE ELBOW
	90 DEGREE ELBOW UP
	90 DEGREE ELBOW DOWN
	CAP
	SINGLE W.F. LATERAL STUB
	DOUBLE W.F. LATERAL STUB
	SINGLE W.F. LAT. & TRAP
	DOUBLE W.F. LAT & TRAP
	FLOOR DRAIN RISER W/TRAP
	FLOOR CLEAN OUT
	CLEAN OUT
	FLOOR DRAIN
	HUB DRAIN
	DOWN SPOUT
	FIRE HOSE CABINET
	VENT THRU ROOF
	COVERED ROOF DRAIN
	ROOF DRAIN
	CHECK VALVE
	OS & Y VALVE
	GLOBE VALVE
	GATE VALVE
	BALANCING VALVE (WITH PETE'S PLUG EITHER SIDE)
	BUTTERFLY VALVE
	BALL VALVE
	SOLENOID VALVE
	PLUG VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	CONTROL, 2 WAY VALVE
	CONTROL, 3 WAY VALVE
	MOTORIZED ISOLATION VALVE (2-POSITION/24V)
	MOTORIZED CONTROL VALVE (MODULATING/24V)
	ANGLE GATE VALVE
	ANGLE GLOBE VALVE
	MANUALLY CALIBRATED BALANCING VALVE
	AUTOMATIC FLOW CONTROL VALVE
	STRAINER & BLOW OFF VALVE
	PRESSURE GAUGE & COCK
	UNION OR COMPANION FLANGES
	THERMOMETER
	PRESSURE & TEMPERATURE TAP (PETE'S PLUG)
	THERMOSTAT
	HUMIDISTAT
	FLOW METER
	ANCHOR (PIPE)
	EXPANSION JOINT
	PIPE GUIDE
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	HOSE END DRAIN
	HOSE BIBB
	THERMOMETER & WELL
	TEMPERATURE SENSOR
	FLOW SWITCH
	PRESSURE SENSOR
	COMPRESSED AIR TAP
	FLOAT AND THERM. TRAP
	BUCKET STEAM TRAP
	PIPE SIZE REDUCER (CONCENTRIC)
	PIPE SIZE REDUCER (ECCENTRIC)

ALL SYMBOLS ON THIS LIST ARE NOT NECESSARILY USED ON THIS JOB.

GENERAL HVAC NOTES:

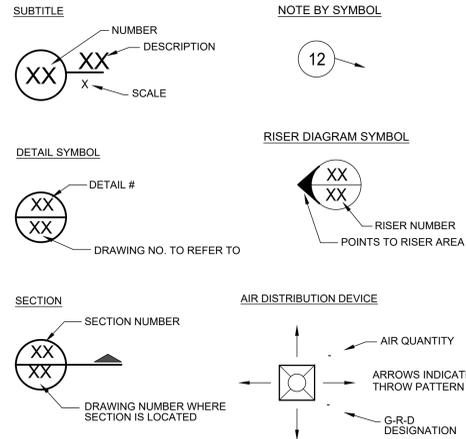
- ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED WITHIN FURRED CHASES OR ABOVE SUSPENDED CEILING.
- ALL DUCTWORK SIZES ARE PROVIDED IN CLEAR INSIDE AIRSTREAM DIMENSIONS. INCREASE DUCT SIZES TO ACCOMMODATE ANY INTERNAL INSULATION REQUIREMENTS (AS SPECIFIED). PROVIDE A MINIMUM OF 15 LINEAR FT. OF INTERNAL ACOUSTIC LINER ON SUPPLY AND RETURN AIR DUCTWORK FROM ANY FCU, AHU, AC, OR RTU (UNO). PROVIDE 8LFT INTERNAL LINER FOR MIXING OR VAV BOXES.
- PROVIDE FLEXIBLE CONNECTIONS ON AT THE INTAKE AND DISCHARGE OF ALL MOTOR DRIVEN EQUIPMENT.
- PROVIDE VIBRATION ISOLATORS FOR MOTOR-DRIVEN MECHANICAL EQUIPMENT.
- ALL FLEXIBLE DUCTWORK SHALL HAVE A MAXIMUM DEVELOPED LENGTH OF (5) FIVE FT.
- CONTRACTOR SHALL VERIFY THE EQUIPMENT CLEARANCE REQUIREMENTS WITH THE MANUFACTURER'S RECOMMENDATIONS. EXACT LOCATION OF SELECTED EQUIPMENT SHALL BE COORDINATED WITH THE STRUCTURE TO PROVIDE RECOMMENDED CLEARANCES FOR MAINTENANCE.
- LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED MAINTENANCE ACCESS FOR ALL UNIT ACCESS PANELS, CONTROLS AND VALVING.
- SMOKE DETECTORS SHALL BE FURNISHED BY THE FIRE ALARM CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN THE DUCTWORK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS. DETECTORS SHALL BE PROVIDED IN THE SUPPLY AND THE RETURN DUCTWORK (PRIOR TO MIXING WITH THE OUTSIDE AIR) FOR ANY AIR HANDLING UNIT SYSTEM 2000 CFM SUPPLY AIR AND ABOVE. THE DETECTOR SHALL BE HARDWIRED TO THE UNITS STARTER TO SHUT DOWN THE FAN UPON DETECTION OF PRODUCTS OF COMBUSTION AS WELL AS SEND AN ALARM SIGNAL TO THE FIRE ALARM PANEL (IF PROVIDED). FOR VAV SYSTEMS THE BMS SHALL DISABLE ASSOCIATED MIXING BOX FANS UPON DETECTION OF SMOKE AT EITHER OF THE AHUS SMOKE DETECTORS. ENABLE MIXING BOX FANS UPON SMOKE SIGNAL CLEAR.
- ANY DUCTWORK EXPOSED TO VIEW SHALL BE INTERNALLY LINED VERSUS EXTERNALLY INSULATED.
- FINISH ALL EXPOSED TO VIEW DUCTWORK AND WALL LOUVERS PER ARCHITECTS RECOMMENDATIONS.
- ALL FLOOR BRANCHES OF PIPE RISERS SHALL BE PROVIDED WITH SHUT OFF VALVES AND DRAIN CONNECTION.
- DUCTWORK AND ITS CONSTRUCTION WILL BE GALVANIZED SHEET METAL AND CONSTRUCTED ACCORDING TO THE LATEST SMACNA STANDARDS.
- ALL DUCTWORK IS SHOWN IN SCHEMATIC FORM. DUCT RISES AND DROPS ARE NOT SHOWN. PROVIDE OFFSETS AS REQUIRED TO MEET SPACE REQUIREMENTS AND TO AVOID INTERFERENCE WITH OTHER TRADES. EACH TRADE SHALL BE RESPONSIBLE FOR COORDINATION WITH OTHER TRADES.
- PIPING IS SHOWN IN SCHEMATIC FORM. ROUTE PIPING AS REQUIRED FOR CLEARANCE WITH STRUCTURAL CONDITIONS. COORDINATE WITH OTHER TRADES AS REQUIRED. PIPING SHALL BE INSTALLED WITH ADEQUATE SLOPE AS REQUIRED FOR EACH PARTICULAR SYSTEM.

GENERAL PROJECT NOTES:

- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEM AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY ALL NATIONAL, STATE AND LOCAL CODES.
- CONTRACT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
- COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON THE OTHER CONTRACT DRAWINGS.
- WHEN TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURE SHALL BE USED.
- ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE LATEST EDITION NATIONAL ELECTRIC CODE AND DIVISION 16 (23) OF THE SPECIFICATION.
- ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM METAL DECK.
- LOCATION AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES.
- PROVIDE REMOTE BALANCING DAMPERS SIMILAR TO YOUNG CONCEALED REGULATORS FOR ALL TAPS MADE ABOVE INACCESSIBLE CEILING OR WALLS. FINISH CONCEALMENT COVERS PER ARCHITECTS RECOMMENDATIONS.
- ALL AHU AND FCU FANS SHALL OPERATE CONTINUOUSLY DURING THE OCCUPIED MODE OF OPERATION WITH ASSOCIATED OUTSIDE AIR MOTORIZED DAMPERS IN THE FULL OPEN POSITION (UNLESS NOTED OTHERWISE OR DCV SYSTEM). DAMPER SHALL BE CLOSED WITH THE FANS OPERATIONAL IN THE MORNING WARM UP OR COOL DOWN MODES.
- CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 10'-0" BETWEEN OUTSIDE AIR INTAKE POINTS AND ANY EXHAUST AIR, CONTAMINATED RELIEF AIR OR PLUMBING VENT TERMINATION POINTS.
- CONDENSATE PIPING DOWN TO A PLUMBING FIXTURE SHALL BE FULLY INSULATED WITHIN WALL. PROVIDE ESCUTCHEON PLATE AT WALL. PIPING SHALL NOT BE ROUTED EXPOSED TO VIEW.
- ALL REMOTE MOUNTED DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT SHALL HAVE I.D. NAME PLATES.
- PIPING ON ROOF - CONTRACTOR SHALL PROVIDE ROOF PIPE SUPPORTS ON 10'-0" CENTERS, EACH CHANGE IN DIRECTION, EACH ROOFTOP UNIT AND EACH PIPE PENETRATION THROUGH ROOF. REFER TO MECHANICAL SPECIFICATIONS FOR REQUIRED OFFSETS OR LOOPS FOR PIPE EXPANSION.

DRAWING SYMBOLS

(ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS)



PIPING DESIGNATIONS

(ALL DESIGNATIONS MAY NOT APPEAR ON DRAWINGS.)

SYMBOL	DESCRIPTION
	SANITARY SEWER
	STORM DRAIN PIPING
	SUBM DRAIN
	OVERFLOW DRAIN
	PLUMBING VENT
	DOMESTIC COLD WATER
	DOMESTIC TEMPERED WATER (130 F)
	DOMESTIC TEMPERED WATER RECIRC.
	DOMESTIC HOT WATER (140 F)
	FIRE LINE
	BRANCH FIRE LINE WITH SPRINKLER HEADS
	MEDIUM PRESSURE NATURAL GAS LINE
	LOW PRESSURE NATURAL GAS LINE
	REFRIGERANT LIQUID LINE
	REFRIGERATED SUCTION LINE
	HOT WATER FOR HEATING SUPPLY
	HOT WATER FOR HEATING RETURN
	CONDENSATE DRAIN LINE (HVAC)
	PUMPED CONDENSATE
	REFRIGERANT SUCTION & LIQUID LINES
	REFRIG. SUCTION, LIQUID, HOT GAS LINES

DATE:	DESCRIPTION
1/18/2022	100% CONSTRUCTION DOCUMENTS
2/28/2022	OWNER COMMENTS
3/14/2022	OWNER COMMENTS



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