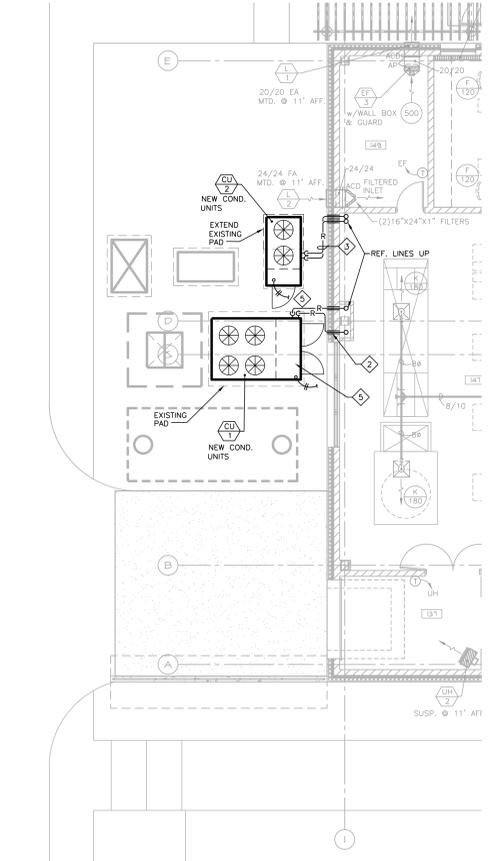
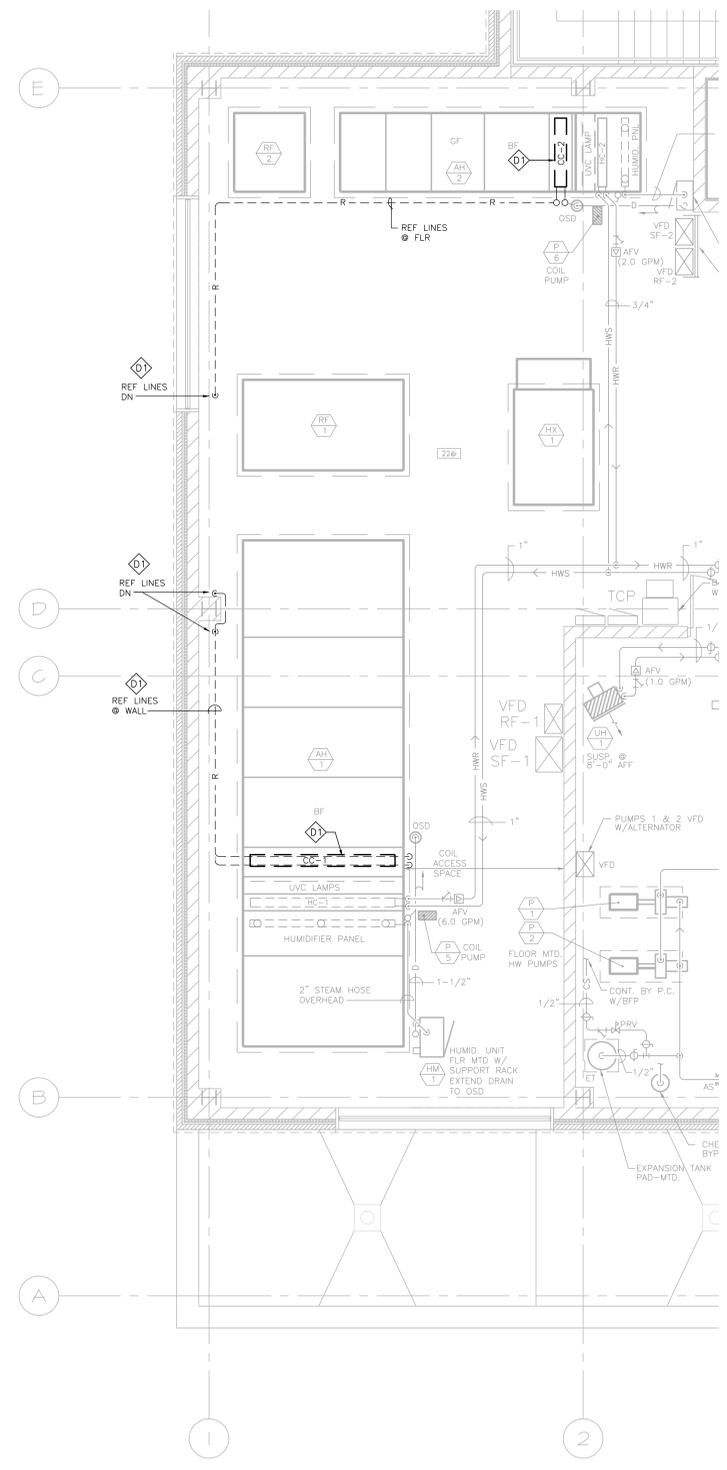


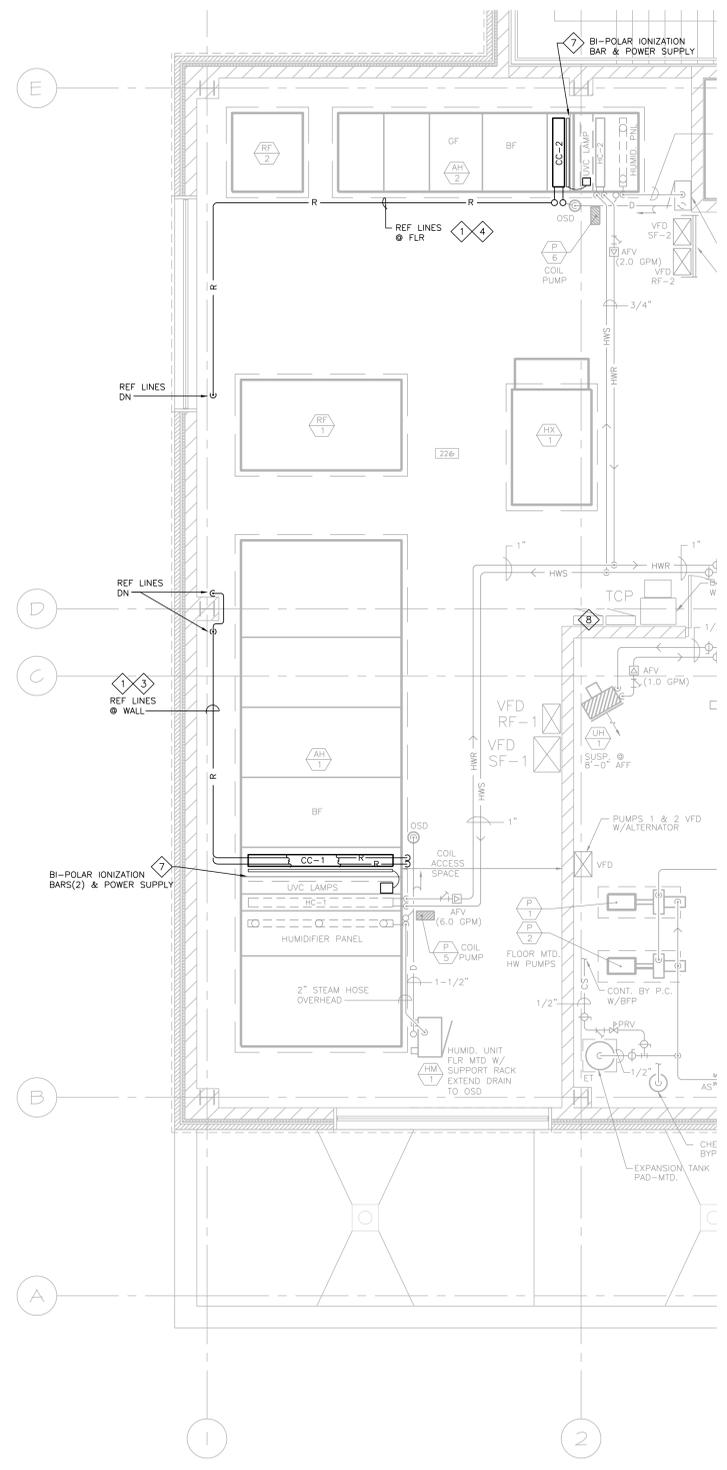
1 PARTIAL FIRST FLOOR - HVAC DEMOLITION PLAN
1/8" = 1'-0"



2 PARTIAL FIRST FLOOR - HVAC PLAN
1/8" = 1'-0"



3 PARTIAL SECOND FLOOR - HVAC DEMOLITION PLAN
1/4" = 1'-0"



4 PARTIAL SECOND FLOOR - HVAC PLAN
1/4" = 1'-0"

HVAC GENERAL NOTES:

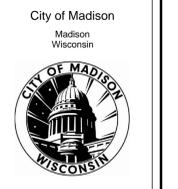
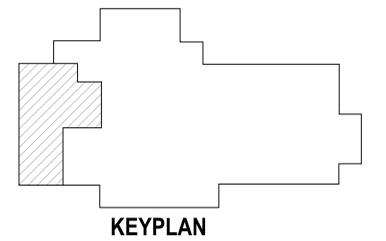
1. HVAC CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS. THE DRAWINGS ARE INTENDED TO BE AN EXPRESSION OF THE DESIGN INTENT AND NOT ALL INCLUSIVE OF HVAC WORK REQUIRED.
2. COORDINATE AND SCHEDULE ALL HVAC WORK WITH THE OWNER PRIOR TO STARTING WORK.
3. COORDINATE DEMOLITION & NEW WORK WITH ELECTRICAL TRADE.

HVAC DEMOLITION PLAN NOTES:

- 1. EVACUATE & RECOVER (R22) REFRIGERANT IN REFRIGERANT COIL LINES. REMOVE DX COIL AND REFRIGERANT LINES AND FITTING SPECIALTIES.
- 2. EVACUATE & RECOVER (R22) REFRIGERANT AT EXISTING CONDENSING UNITS. DISCONNECT AND REMOVE CONDENSING UNITS. COORDINATE WORK WITH ELECTRICAL TRADE.

HVAC PLAN NOTES:

- 1. REFRIGERANT LINE SIZES:
CU-1: 2 SETS 1 1/8" RS & 1 1/4" RL
CU-2: 2 SETS 1 1/8" RS & 1 1/2" RL
- 2. SLEEVE & SEAL WALL PENETRATION WATERTIGHT.
- 3. SUPPORT REF. PIPING @ WALL.
- 4. SUPPORT REF. PIPING @ FLOOR.
- 5. LV CONTROL WIRING.
- 6. INSTALL NEW DX COILS IN EXISTING COOLING COIL SECTION. BLANK-OFF ANY OPENINGS AROUND COIL FRAME.
- 7. INSTALL MAGNETIC EMITTER BAR ON DOWN STREAM SIDE OF COOLING COIL FRAME. PROVIDE TWO (2) BARS AT CC-1 & ONE (1) AT CC-2. INSTALL ASSEMBLY PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE WORK WITH ELECTRICAL TRADE.
- 8. MODIFY DC CONTROLS TO PROVIDE FOUR (4) 0-5 VDC ANALOG OUTPUT SIGNALS TO CONTROL MODULATING COMPRESSORS AT CU-1 & 2. REFER TO SPECIFICATIONS.



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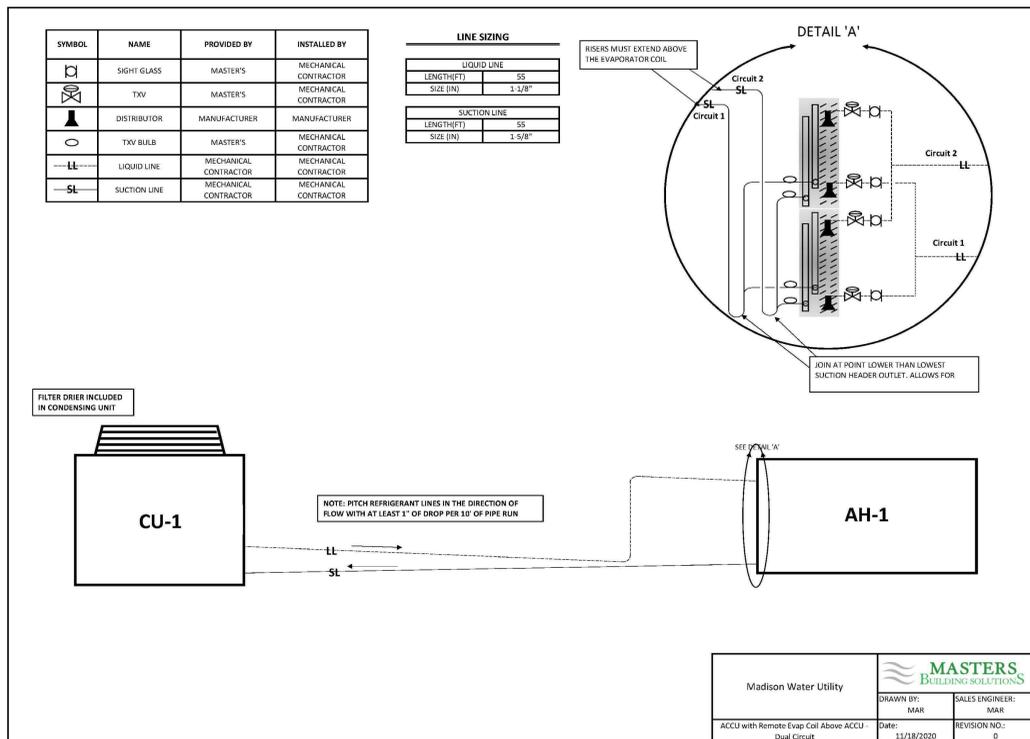
CITY OF MADISON WATER UTILITY
 HEIM ADMINISTRATION BUILDING
 AC REPLACEMENT
 MADISON, WISCONSIN

ISSUED FOR:
BID: 11-30-2020

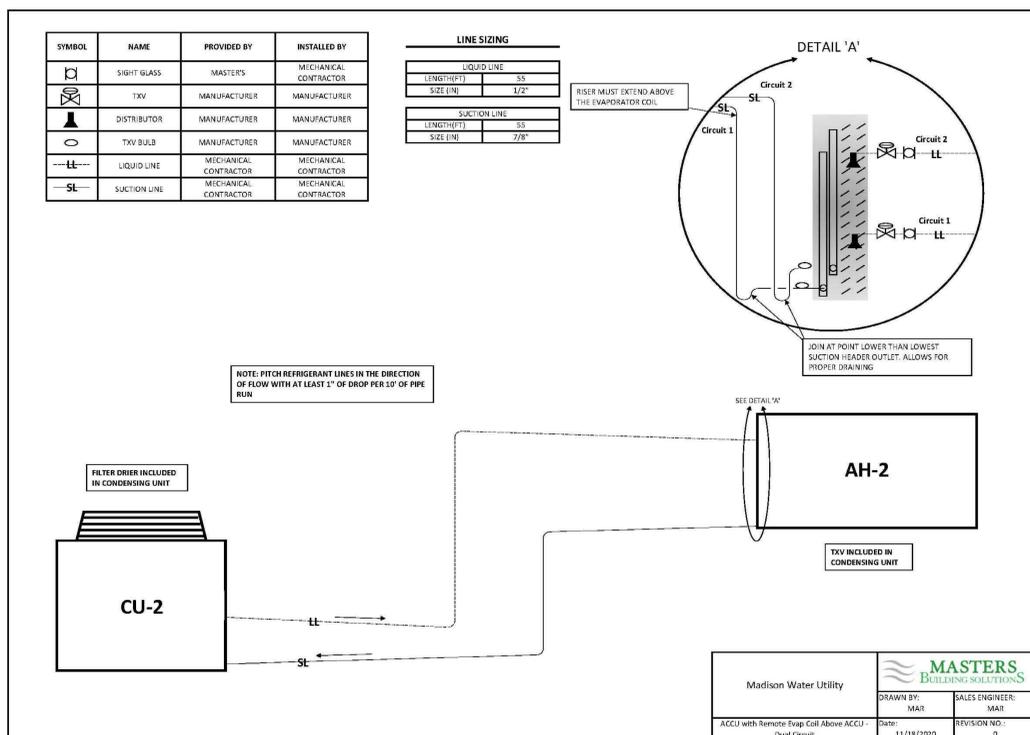
HVAC PLANS

PROJECT #: H2020
SHEET NUMBER

M-1



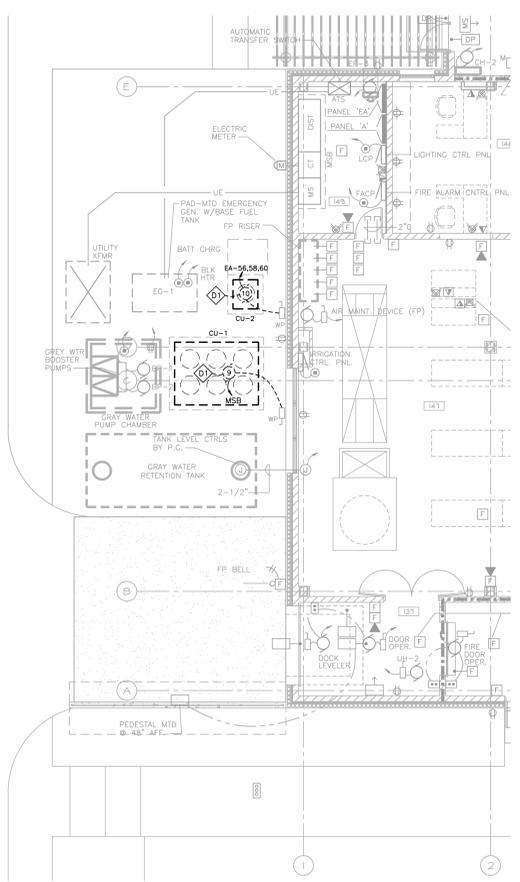
REFRIGERANT PIPING DETAIL CU-1



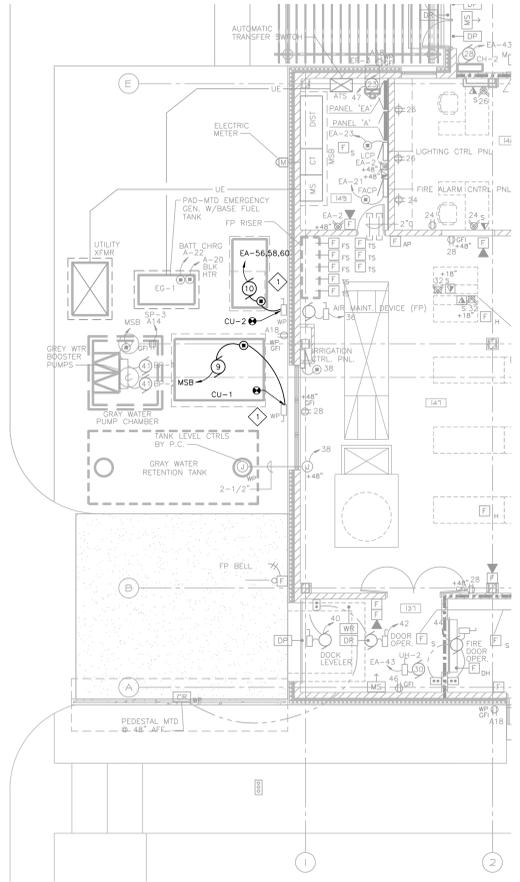
REFRIGERANT PIPING DETAIL CU-2

AIR-COOLED CONDENSING UNIT SCHEDULE		
GENERAL TAG	CU-1	CU-2
SERVICE	AH-1/CC-1	AH-2/CC-2
MANUFACTURER	AAON	AAON
MODEL NO.	CFA-050-D-A-8-GCOOL	CFA-009-B-A-8-DCOOK
NOMINAL TONS CAP.	50	8
AMBIENT TEMP.(F)	95	95
SUCTION TEMP F	47	47
CAPACITY MBH	604.5	99.5
NO. CAPACITY STEPS	MODULATING	MODULATING
AIR FLOW (CFM)	-	-
NO. COND. FANS	4	2
NO. CIRCUITS	2	2
NO. COMPRESSORS	4	2
REFRIGERANT	R-410A	R-410A
REF. LINE SIZE:	RS 2 @ 1-5/8" @ RL 2 @ 1-1/8" @	2 @ 7/8" @ 2 @ 1/2" @
EER (SEER)	12.3	13.6
IPLV (ESTIMATED)	N.A.	N.A.
ELECTRICAL:		
VOLTAGE/PHASE	208/3	208/3
COMPRESSORS FLA	4x48.1	16.1 + 13.7
COND. FAN FLA	4x7.2	2.8 + 2.8
FLA	221	35
MCA	233	39
MOCP	250	50
REMARKS:	WT = 2547 LBS ①②③④⑤⑥⑦	WT = 1069 LBS ①②③④⑤⑥⑦
① EXTENDED 5 YEAR WARRANTY ON ALL COMPRESSORS. ② SERVICE VALVES, MOISTURE INDICATORS & LIQ LINE FILTER ON ALL REF. CONRUCITS. ③ AMBIENT HEAD PRESSURE CONTROL: MODULATING CONDENSER FAN SPEED CONTROL - ECM MOTORS. ④ VARIABLE CAPACITY DIGITAL SCROLL COMPRESSORS WITH INTEGRATED CONTROLS (MCIC). ⑤ TERMINAL CONTROL BLOCK WITH CONTROL TRANSFORMER, FIELD INSTALLED DDC CONTROLS BY TEMP. CTRL CONTRACTOR WITH ISOLATION RELAYS. ⑥ ANTI-CORROSION PAINT. ⑦ SINGLE-POINT DISCONNECT SWITCH WITH UNIT.		

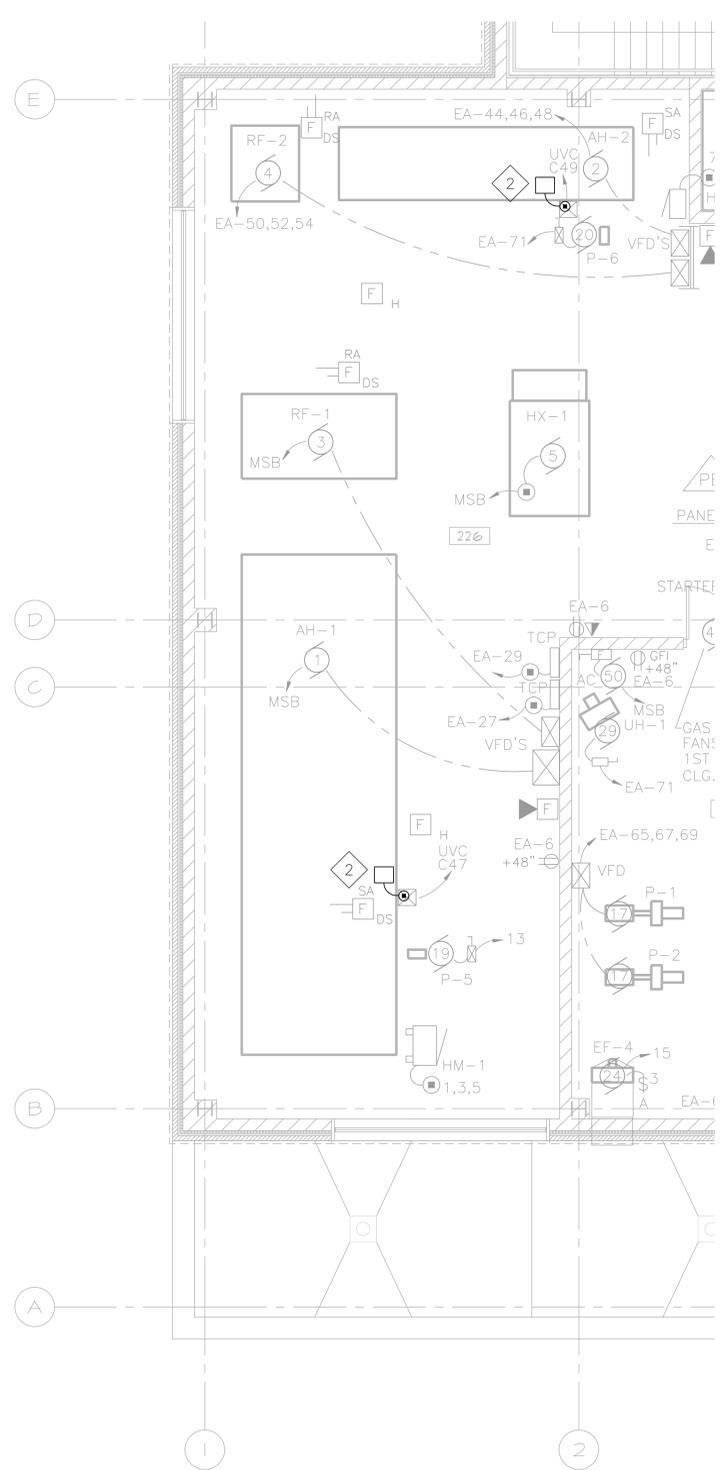
AIR HANDLING UNIT SCHEDULE		
GENERAL TAG	AH-1	AH-2
LOCATION	AIR HAND. RM. 226	AIR HAND. RM. 226
SERVICE	UTILITY BUILDING	MEETING RMS.
MANUFACTURER	TRANE	TRANE
MODEL/SIZE	MCC 40D	MCC 8B
ARRANGEMENT	HTD/ TOP FRONT	HTD/ TOP FRONT
SUPPLY FAN CFM (INITIAL)	20,000 (16,000)	3000
O.A.% (CFM)	20% (4000)	26.7% (800)
O.V. VELOCITY	-	-
EXTERNAL S.P. ("W.G.)	1.50	1.00
TOTAL S.P. ("W.G.)	5.05	3.55
RPM	1521	1639
MOTOR HP (BHP)	25 (22.4)	5 (3.3)
VOLTAGE/PHASE	208/3	208/3
FAN WHEEL SIZE/TYP	27" AF SWDI	12-1/4" FC SWDI
SYSTEM TYPE	VAV w/VFD	VAV w/VFD
COOLING COIL:	CC-1	CC-2
NO COILS	2	1
FINNED HT	26.25"	25"
FINNED LENGTH	97"	37"
ROWS/FPI	6R/10FPI	6R/10FPI
CONFIGURATION	DUAL-CIRCUIT INTERWINED	DUAL-CIRCUIT INTERWINED
AIR:		
EAT (db/wb °F)	78.5/64.6	78.9/64.5
LAT (db/wb °F)	55.6/54.6	54.4/53.6
APD ("W.G.)	1.05	0.78
FV (FPM)	565	467
DIRECT EXPANSION:		
TOTAL CAP (MBH)	607.3	98.1
SENSIBLE CAP (MBH)	499.4	80.1
SUCTION TEMP.(F)	47.5	47
REFRIGERANT	R410A	R410A
AIR TREATMENT:		
TYPE	BI-POLAR IONIZATION	BI-POLAR IONIZATION
MANUF/MODEL	GPS-IMOD	GPS-IMOD
NO. BARS	2	1



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1/8" = 1'-0"



2 PARTIAL FIRST FLOOR - ELECTRICAL PLAN
1/8" = 1'-0"



3 PARTIAL SECOND FLOOR - ELECTRICAL PLAN
1/4" = 1'-0"

**ELECTRICAL MOTOR/
EQUIPMENT SCHEDULE**

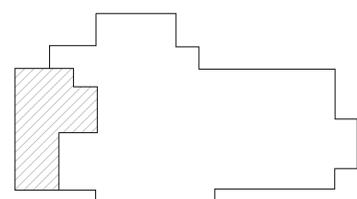
TAG	9	10
PANEL NO.	MSB	EA
CIRCUIT BREAKER	-	56,58,60
BREAKER	300	60
ROLE	3	3
WIRING NO.	3+C	3+C
TYPE	THWN/CU	THWN/CU
SIZE	350MCM	#6
COND.	2-1/2"	1"
ELECTRICAL HP (KW)	(79.6)	(12.6)
VOLT	208	208
PHASE	3	3
FLA (MCA)	221 (233)	35 (39)
STARTER TYPE	W/ UNIT	W/ UNIT
SIZE	-	-
BY	H.C.	H.C.
CONTROL TYPE	BAS	BAS
BY	H.C.	H.C.
DISCONNECT TYPE	NEMA 3R	NEMA 3R
SIZE	400	60
FUSE	-	-
BY	E.C.	E.C.
REMARKS	COND. UNIT CU-1	COND. UNIT CU-2

- ① PROVIDE GREEN WIRE GROUND TO ALL MOTORS AND EQUIPMENT PER NEC 250-95.
- ② HVAC-TYPE CIRCUIT BREAKER.
- ③ DUAL ELEMENT TIME DELAY FUSES.

- ELECTRICAL GENERAL NOTES:**
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS. THE DRAWINGS ARE INTENDED TO BE AN EXPRESSION OF THE DESIGN INTENT AND NOT ALL INCLUSIVE OF DEMOLITION WORK REQUIRED.
 - COORDINATE AND SCHEDULE ALL DEMOLITION WORK WITH THE OWNER PRIOR TO STARTING WORK.

- ELECTRICAL DEMOLITION PLAN NOTES:**
- ◇ DISCONNECT AND REMOVE POWER TO EXISTING CONDENSERS CU-1 & CU-2. REUSE EXISTING FUSED DISCONNECT, CONDUCTORS AND RACEWAY IF CONFORMING TO NEW PLAN.

- ELECTRICAL PLAN NOTES:**
- ◇ EXTEND POWER TO NEW CONDENSING UNIT FROM EXISTING FUSED DISCONNECT SWITCH. COORDINATE WORK WITH HVAC TRADE.
 - ◇ EXTEND 120V/1 PHASE TO BI-POLAR IONIZATION POWER SUPPLY BY HVAC TRADE FROM UVC LIGHT POWER SUPPLY. COORDINATE WORK WITH HVAC TRADE.



KEYPLAN