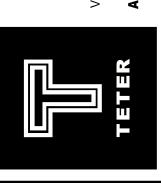
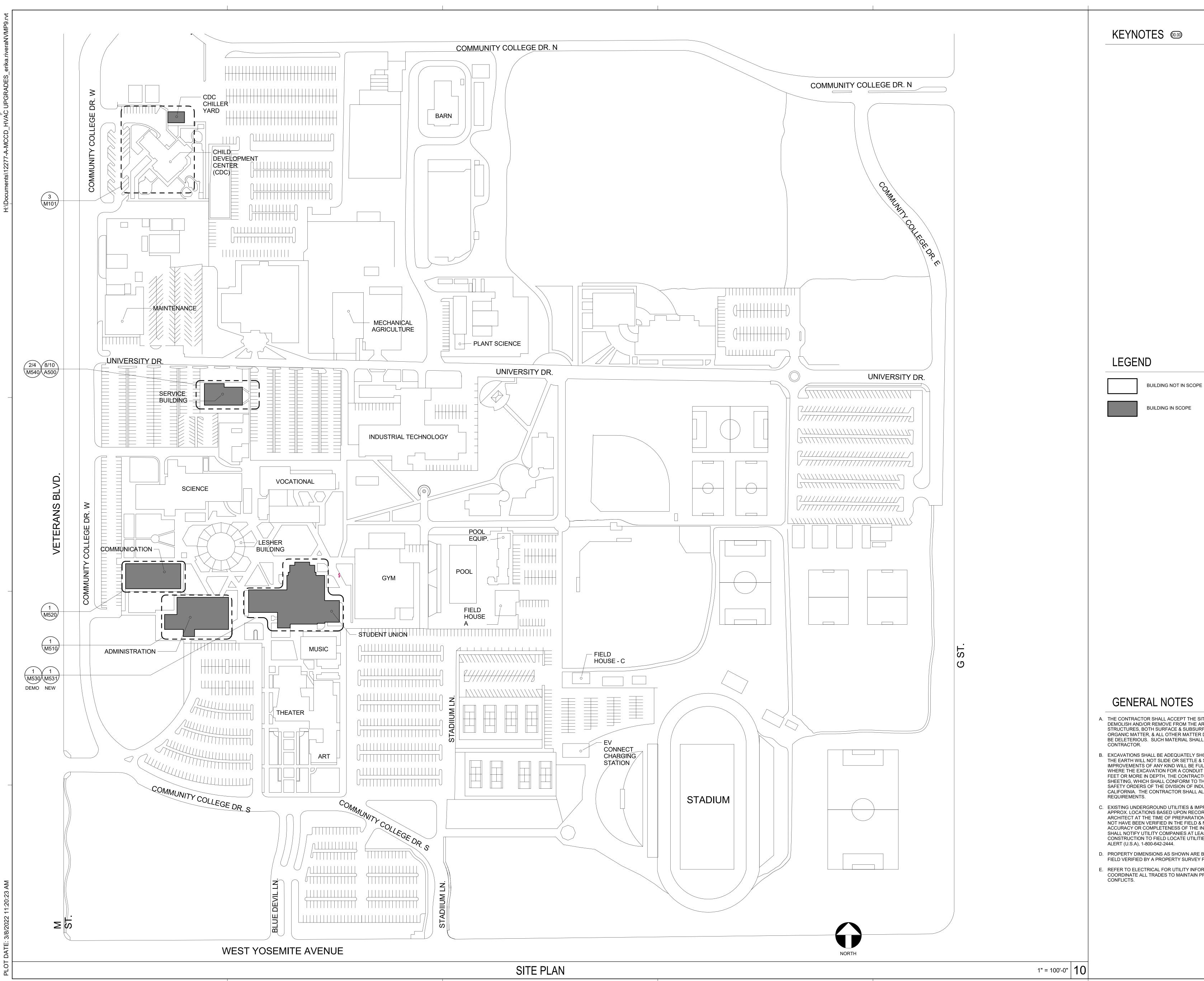
ABBREVIATIONS		e ak
ABBREVIATIONS: WHEN USED IN THESE DOCUMENTS SHALL CONFORM TO THE FOLLOWING LIST UNLESS OTHERWISE NOTED. DRAWINGS OF OTHER DISCIPLINES (SUCH AS CIVIL, STRUCTURAL, PLUMBING, MCHANICAL, AND ELECTRICAL) MAY CONTAIN SPECIFIC ABBREVIATIONS, REFERENCES, AND LEGENDS WITH INTERPRETATION INTENDED ONLY FOR THOSE DISCIPLINES. 8 AND FA FIRE ALARM O.C. ON CENTER O.C. ON CENTER O.C. ON CENTER O.C. ON CENTER OWNER/OTHERS DIMENSION OF DIMENSION O	HVAC REPLACEMENT AT VARIOUS BUILD MERCED COMMUNITY COLLEGE DISTRI MERCED, CA.	
Authors	GENERAL SITE OF COMMING CODES SECRETAL SECRETAL SECRETARY OF CODES	M813 MECHANICAL DETAILS ELECTRICAL E101 ELECTRICAL PLANS - CDC CHILLER YARD E200 ELECTRICAL PLANS - ADMINISTRATION BUILDING E210 ELECTRICAL PLANS - COMMUNICATIONS BUILDING E220 ELECTRICAL PLANS - STUDENT UNION E230 ELECTRICAL PLANS - SERVICE BUILDING E800 ELECTRICAL SCHEDULES, LEGENDS, AND NOTES 6 TOTAL PAGES: 28
CFC CALIFORNIA FIRE CODE CMC CALIFORNIA MECHANICAL CODE CPC CALIFORNIA PLUMBING CODE DSA DIVISION OF THE STATE ARCHITECT ICBO INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS NSF NATIONAL SANITATION FOUNDATION NFPA NATIONAL FIRE PROTECTION ASSOCIATION NEC NATIONAL ELECTRICAL CODE W.C. WATER CLOSET W.CH. WHELC CHAIR WO WOD WDW. WINDOW WF WIDE FLANGE W.H. WATER HEATER W/O WITHOUT W.P. WATERPROOF W.S. WOOD SCREW WT. WEIGHT WWF WELDED WIRE FABRIC XFMR TRANSFORMER	PROJECT INFORMATION	SY O
E: 3/8/2022 1:55:27 PM	OWNER MERCED COLLEGE 3500 "W' STREET MERCED, CA. 95348 (209)384-6000 CONTACT: MARCUS METCALF OWNERCAL PROJECT ARCHITECT TETER, LLP MECHANICAL ENGINEER NET POSITIVE CONSULTING ENGINEERS 1446 TOLLHOUSE RD., SUITE #102 CLOVIS CA. 93811 (559) 497-7293 CONTACT: JAMES E. HICKMAN, JR. MECHANICAL ENGINEER TETER, LLP 1446 TOLLHOUSE RD., SUITE #102 CLOVIS CA. 93811 (559) 940-7293 CONTACT: JON SCHLUNDT CONTACT: JON SCHLUNDT CONTACT: BRYAN GLASS	HVAC UPGARDE MERCED COLLE
ABBREVIATIONS 6	PROJECT DIRECTORY	SHEET INDEX



3600 M. SRE
MERCED, CA. 95348
DRAWING TITLE
COVER

?1-12277

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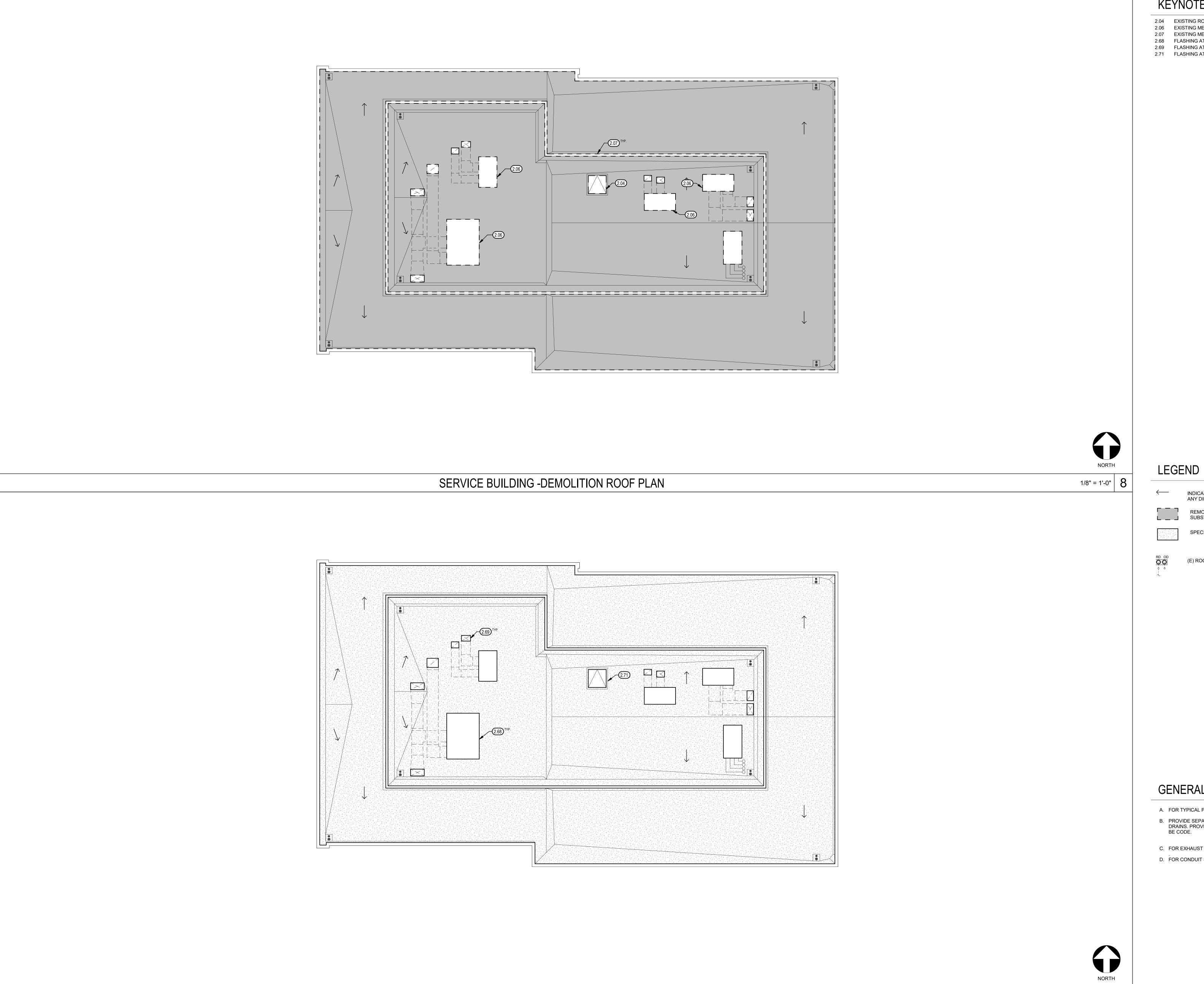
- A. THE CONTRACTOR SHALL ACCEPT THE SITE IN ITS PRESENT CONDITION & DEMOLISH AND/OR REMOVE FROM THE AREA OF THE PROJECT ALL STRUCTURES, BOTH SURFACE & SUBSURFACE, TREES, BRUSH, ROOTS, DEBRIS, ORGANIC MATTER, & ALL OTHER MATTER DETERMINED BY THE INSPECTOR TO BE DELETERIOUS. SUCH MATERIAL SHALL BE REMOVED FROM THE SITE BY THE
- B. EXCAVATIONS SHALL BE ADEQUATELY SHORED, BRACED & SHEETED SO THAT THE EARTH WILL NOT SLIDE OR SETTLE & SO THAT ALL EXISTING IMPROVEMENTS OF ANY KIND WILL BE FULLY PROTECTED FROM DAMAGE. WHERE THE EXCAVATION FOR A CONDUIT TRENCH, AND/OR STRUCTURE IS FIVE FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING, WHICH SHALL CONFORM TO THE APPLICABLE CONSTRUCTION SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL ALWAYS COMPLY WITH OSHA
- C. EXISTING UNDERGROUND UTILITIES & IMPROVEMENTS ARE SHOWN IN THEIR APPROX. LOCATIONS BASED UPON RECORD INFO. AVAILABLE TO THE ARCHITECT AT THE TIME OF PREPARATION OF THESE PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD & NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFO. SHOWN. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST 2 WORKING DAYS IN ADVANCE OF CONSTRUCTION TO FIELD LOCATE UTILITIES. CALL UNDERGROUND SERVICE
- D. PROPERTY DIMENSIONS AS SHOWN ARE BASED ON RECORD INFO. & SHOULD BE FIELD VERIFIED BY A PROPERTY SURVEY PRIOR TO CONSTRUCTION.
- E. REFER TO ELECTRICAL FOR UTILITY INFORMATION. CONTRACTOR TO COORDINATE ALL TRADES TO MAINTAIN PROPER CLEARANCES & AVOID CONFLICTS.

HVAC UPGA MERCED CC 3600 M. SRE MERCED, CA. 95348

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21-12277

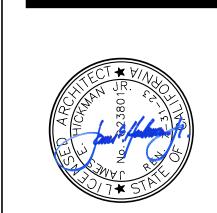
A100



SERVICE BUILDING - PROPOSED ROOF PLAN

KEYNOTES @

- 2.04 EXISTING ROOF ACCESS DOOR AND CURB TO REMAIN 2.06 EXISTING MEHANICAL UNIT AND DUCT TO REMAIN, SEE MECHANICAL 2.07 EXISTING MECHANIAL SCREEN PARAPET WALL TO REMAIN
- 2.68 FLASHING AT EXISTING MECHANICAL CURB, SEE 7/A801 2.69 FLASHING AT EXSITING CURB AND DUCT WORK, SEE 8/A801
- 2.71 FLASHING AT EXISTING CURB, SEE 8/A801



GENERAL NOTES

A. FOR TYPICAL PIPE THROUGH ROOF PENETRATIONS, SEE 9 / A801 & 10 / A801

INDICATES DOWNWARD DIRECTION OF ROOF SLOPE MIN. SLOPE IN ANY DIRECTION SHALL NOT BE LESS THAN 1/4" :12"

REMOVE EXISTING ROOFING SYSTEM DOWN TO EXISTING SUBSTRATE TYP.

SPECIFIED ROOFING SYTEM

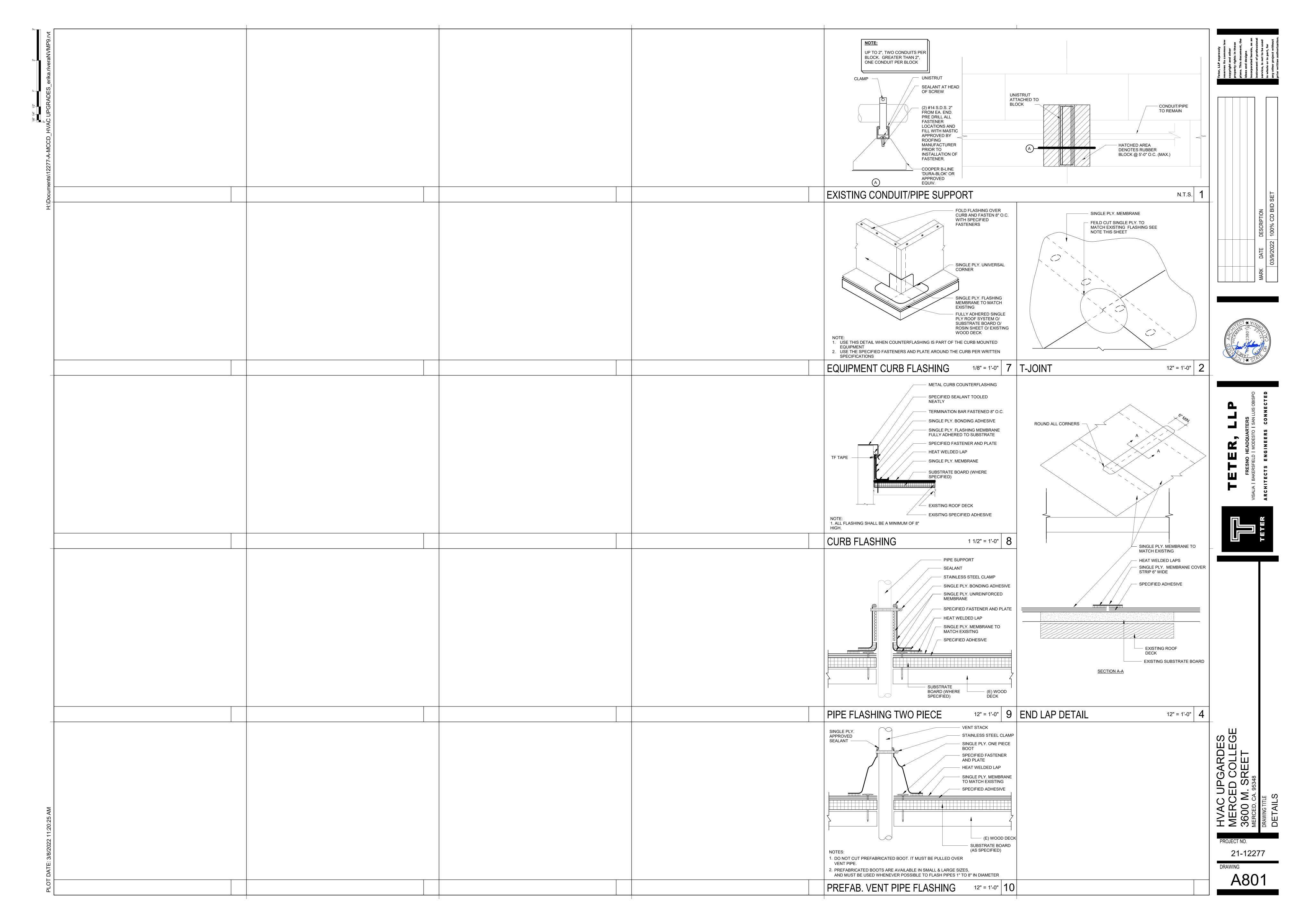
(E) ROOF DRAIN / OVER FLOW DRAIN

- B. PROVIDE SEPARATE DRAIN LINES FOR ROOF DRAINS AND OVERFLOW DRAINS. PROVIDE ALL HANGERS + SUPPORTS FOR PIPE AS REQUIRED BE CODE.
- C. FOR EXHAUST FAN OPENIGN THROUGH ROOF, SEE 8 / A801
- D. FOR CONDUIT SUPPORT SEE 1 / A801

1/8" = 1'-0" 10

21-12277

A500



MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

- ALL PERMANENT EQUIPMENT AND COMPONENTS. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES
- HAVING A FLEXIBLE CABLE. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR
- ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL, AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

- OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. MP MD PP E - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL APPLICABLE OSHPD PRE-APPROVAL

(OPM #) #0043-13.

GENERAL NOTES

- 1. COORDINATION OF WORK: LAYOUT OF MATERIALS, EQUIPMENT AND SYSTEMS IS GENERALLY DIAGRAMMATIC UNLESS SPECIFICALLY DIMENSIONED. SOME WORK MAY BE SHOWN OFFSET FOR CLARITY.
- 2. THE ACTUAL LOCATION OF ALL MATERIALS, PIPING, DUCTWORK, FIXTURES, EQUIPMENT, SUPPORTS, ETC. SHALL BE CAREFULLY PLANNED, PRIOR TO INSTALLATION OF ANY WORK TO AVOID ALL INTERFERENCES WITH EACH OTHER, OR WITH STRUCTURAL, ELECTRICAL, ARCHITECTURAL OR OTHER ELEMENTS.
- 3. VERIFY THE PROPER VOLTAGE AND PHASE OF ALL EQUIPMENT WITH THE ELECTRICAL PLANS. ALL CONFLICTS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT AND THE ENGINEER PRIOR TO THE INSTALLATION OF ANY WORK OR THE ORDERING OF ANY EQUIPMENT.
- 4. PROVIDE ALL DUCT TRANSITION PIECES AND FITTINGS REQUIRED TO ACCOMMODATE MECHANICAL EQUIPMENT CONNECTIONS, STRUCTURE, ARCHITECTURAL ELEMENTS, AND CHANGES IN DUCT SIZES.
- 5. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE STANDARDS ADOPTED BY SMACNA AND CHAPTER 6 OF THE 2019 CMC.
- 6. ALL DUCTWORK AND PIPING SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF 2019 CMC. INSULATION MATERIALS SHALL MEET THE CALIFORNIA QUALITY STANDARD PER SECTION 110.8, 120.3, AND 120.4 OF THE 2019 CALIFORNIA ENERGY CODE.
- 7. ALL DUCT SIZES SHOWN ARE NET INSIDE DIMENSIONS.
- 8. DUCTWORK SHALL BE SHEET METAL CONSTRUCTED IN COMPLETE CONFORMANCE WITH CMC LATEST EDITION, CHAPTER 6 AND THE LATEST SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- 9. ALL DRAWINGS AND SPECIFICATIONS ARE TO BE CONSIDERED PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO ANY CONSTRUCTION, INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR THE OWNER REPRESENTATIVE.
- 10. PROVIDE VOLUME DAMPERS IN ALL BRANCH DUCTS (SUPPLY, RETURN, OSA AND EXHAUST) FOR SYSTEM BALANCING.
- 11. HANDLE, STORE AND INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND AS DIRECTED IN THE PROJECT MANUAL.
- 12. ALL AIR SYSTEMS SHALL BE TESTED, ADJUSTED AND BALANCED TO MEET THE REQUIRED FLOW. TAB METHODOLOGY SHALL BE SUBMITTED TO OWNER REPRESENTATIVE PRIOR TO IMPLEMENTATION AND IN ACCORDANCE WITH PROJECT SEQUENCING.

ACCESSORIES

SHEET INDEX

M001 MECHANICAL SCHEDULES, LEGEND AND GENERAL NOTES

M002 MECHANICAL EQUIPMENT SCHEDULES M100 MECHANICAL SITE PLAN - MERCED COLLEGE

M101 MECHANICAL PLANS - MERCED COLLEGE - CDC CHILLER YARD

M102 MECHANICAL SITE PLAN - LOS BANOS CAMPUS

M510 MECHANICAL PLANS - MERCED COLLEGE - ADMINISTRATION BUILDING M511 MECHANICAL PLANS - MERCED COLLEGE - ADMINISTRATION BUILDING PENTHOUSE

M520 MECHANICAL PLANS - MERCED COLLEGE - COMMUNICATIONS BUILDING M530 MECHANICAL DEMOLITION ROOF PLAN - MERCED COLLEGE - STUDENT UNION

M531 MECHANICAL ROOF PLAN - MERCED COLLEGE - STUDENT UNION

M540 MECHANICAL PLANS - MERCED COLLEGE - SERVICE BUILDING

M550 MECHANICAL ROOF PLAN - LOS BANOS CAMPUS - BUILDING A

M551 MECHANICAL ROOF PLAN - LOS BANOS CAMPUS - BUILDING B

M800 MECHANICAL DETAILS M810 MECHANICAL DETAILS

M811 MECHANICAL DETAILS

M812 MECHANICAL DETAILS M813 MECHANICAL DETAILS

MECHANICAL SCHEDULES

PUMP SCHEDULE				
DESIGNATION	P-1	P-2	P-3	P-4
HORSEPOWER	3	3	1	1
VOLTS/PHASE	460 / 3	460 / 3	460 / 3	460 / 3
RPM	1745	1745	1750	1750
GPM/TDH (FT.)	150 / 50	150 / 50	FIELD VERIFY	FIELD VERIFY
EFFICIENCY (%)	73	73	73	73
MANUFACTURER	TACO	TACO	TACO	TACO
TYPE	END SUCTION CENTRIFUGAL	END SUCTION CENTRIFUGAL	CLOSE-COUPLED END SUCTION	CLOSE-COUPLED END SUCTION
MODEL NUMBER	FI2009D	FI2009D	CI1507D	CI1506D
LOCATION	CHILD DEVELOPMENT CENTER	CHILD DEVELOPMENT CENTER	LOS BANOS - A	LOS BANOS - B
OPER. WT. (LBS)	328	328	121	121
ACCESSORIES	1	1	2	2

1.	PROVIDE VFD AND PREMIUM EFFICIENCY MOTOR.
2.	ECM VARIABLE SPEED MOTOR.

DESIG	NATION	CH-1
CADA	OITV (TONO)	70
	CITY (TONS)	70
	S/PHASE	460 / 3
MCA /	MOCP	145 / 175
EER		10.05
IPLV /	NPLV	15.26 / 14.77
	QUANTITY	4
Ξ.	RLA - EACH	25, 33, 33, 25
ОТС	OPER. KW (TOTAL)	88.5
COMP. MOTOR		
8		
•4	GPM	150
TOR	PRESSURE DROP (FT.)	8.43
JRA	EWT / LWT (0F)	54 / 44
APC	SCALE FACTOR	0.00010
EVAPORATOR		
AMBIE	NT AIR (0F)	105
MANU	FACTURER	TRANE
TYPE		AIR COOLED
MODE	NUMBER	CGAM070F2
LOCAT	TION	CHILD DEVELOPMENT CENTER
OPER.	WT (LBS)	5,300
ACCES	SSORIES	-

IND	OOR UNIT SCH	EDULE
DESIGN	NATION	CRAC-1
	SUPPLY AIR (CFM)	4800
_	EXT. S P (IN. WC)	0.50
BLOWER	MIN. O.S.A. (CFM)	0
	VOLTS/PHASE	460 / 3
"	MCA / MOCP	27 / 40
	DRIVE	DIRECT
(0)	SENSIBLE (MBH)	26.9
COOLING	TOTAL (MBH)	32.6
	EADB/EAWB (oF)	80 / 62.9
	QUANTITY/SIZE	2 / 31.5x21.28
ERS	TYPE	30% PLEATED
	P D (IN WC)	
MCA / MOCP DRIVE SENSIBLE (MBH) TOTAL (MBH) EADB/EAWB (oF) QUANTITY/SIZE TYPE P D (IN WC) MANUFACTURER TYPE MODEL NUMBER	STULTZ	
TYPE		VERTICAL AIR COOLED DX
MODEL	NUMBER	COS-120
LOCATI	ON	SERVICE BLDG SERVER ROOM
OPER. V	WT (LBS)	810

1. WIRED WALL MOUNTED THERMOSTAT 2. REFRIGERANT LINE SET COVERS FOR EXPOSED PIPING IN ROOM (AC COVER GUARD)

1,2

DESIG	NATION	ODU-1	ODU-2	
	VOLTS / PHASE	460 / 3	460 / 3	
ICAL	MCA / MOCP	66.3 / 90	9.3 / 15	
ELECTRICAL				
	NOM. COOLING CAP. (MBH)	343.4	204.0	
ACE.	EER / IEER	10.8 / -		
MAI	AMBIENT AIR (oF)	95	105	
PERFORMANCE				
MANUF	ACTURER	CARRIER	STULTZ	
ТҮРЕ		SINGLE CIRCUIT	SINGLE CIRCUIT	
MODEL	NUMBER	38APS	SCS-252-SEC	
LOCAT	ION	ADMIN BLDG ROOF	SERVICE BLDG ROOF	
OPER. WT (LBS)		1,282	495	

MECHANICAL LEGEND

REFRIGERANT DISCHARGE

REFRIGERANT SUCTION

RL REFRIGERANT LIQUID

—SCW—— SOFT COLD WATER

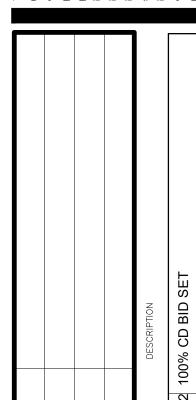
SYMBOL	ITEM	ABBR.	SYMBOL	ITEM	ABB
	ABOVE	ABV	s	STEAM SUPPLY	S
	ABOVE CEILING	ABV CLG	——CR——	STEAM CONDENSATE RETURN	CR
	ABOVE FINISHED FLOOR	AFF	——SBD——	SURFACE BLOWDOWN	
	ALTERNATE	ALT	——D—	DRAIN	D
	AIR CONDITIONING	AC		PIPING CAP	
	AIR FLOW STATION	AFS		EXISTING (DESIGNATED)	(E)
	AIR HANDLER UNIT ANALOG INPUT	AHU	<i>/////</i>	REMOVE / DEMO EXISTING (DESIGNATED) DIRECTION OF FLOW	
	ANALOG INFUT	AO	<u> </u>	SUPPLY AIR	SA
&	AND	AO		RETURN AIR	RA
	ARCHITECT / ARCHITECTURAL	ARCH		EXHAUST AIR	EA
@	AT			PIPE/DUCT TURN DOWN	
	BACKDRAFT DAMPER	BDD	~	PIPE/DUCT TURN UP	
	BELOW FINISH CEILING	BFC	2	ROUND DUCT (SMALLER THAN 10"Ø)	
	BELOW FLOOR	BEL FLR	}~~~~~	ROUND FLEXIBLE DUCT	
	BELOW GRADE	BEL GR		RECTANGULAR OR ROUND DUCT (10"Ø AND LARGER)	
	BLIND FLANGE	BLF		EXISTING DUCT	
	BRITISH THERMAL UNIT	BTU	<u> </u>	(DESIGNATED)	
	BRITISH THERMAL UNIT PER HOUR	BTUH		REMOVE/ DEMO EXISTING DUCT (DESIGNATED)	
	CALIFORNIA MECHANICAL CODE	CMC	<u> </u>	DUCT WITH ACOUSTIC LINING	
	CALIFORNIA PLUMBING CODE CEILING	CLG		SUPPLY AIR DUCT DROP	+
r	CEILING CENTER LINE	- CLG		SUPPLY AIR DUCT RISE	+
<u>G</u>	CONTINUATION	CONT		RETURN AIR DUCT DROP	+
	CUBIC FEET OF AIR PER MINUTE	CFM		RETURN AIR DUCT RISE	1
	CURRENT SENSOR	CS		EXHAUST AIR DUCT DROP	
Ø	DIAMETER	DIA		EXHAUST AIR DUCT RISE	
	DIFFERENTIAL PRESSURE SWITCH	DPS	 -<1	OUTSIDE AIR DUCT DROP	
	DIGITAL INPUT	DI		OUTSIDE AIR DUCT RISE	
	DIGITAL OUTPUT	DO		TURNING VANES	TV
	DOWN	DN		EXTRACTOR	
	DRAWING	DWG	<u>©</u>	CO ₂ SENSOR	
	ELECTRICAL	ELEC	(DD)	DUCT DETECTOR	DD
	ELBOW	ELL	HD	HEAT DETECTOR	HD
	EXHAUST	EXH	(SD)	SMOKE DETECTOR	SD
	EXHAUST AIR	EA	M	MOTORIZED DAMPER	
	EXHAUST FAN	EF	•	FIRE DAMPER W/MOTORIZED RESET AND ACCESS DOOR	
	EXISTING	(E)		FIRE DAMPER WITH ACCESS PANEL	
	FLOOR	FLR	1111	OR SECURITY BARS	
	FLOW LINE	FL	-OR- ▲	FIRE DAMPER WITH ACCESS PANEL	FD
	FLOW SWITCH	FS	-OR- ■	FIRE/SMOKE DAMPER WITH ACCESS PANEL	F/SI
	GAUGE	GA		VOLUME CONTROL DAMPER WITH LOCKING	VCI
	GALLON	GAL	^	QUADRANT	
	GALLONS PER HOUR	GPH		REMOTE T'STAT WITH SENSOR IN DUCT	
	GALLONS PER MINUTE	GPM	T	THERMOSTAT; THERMOSTAT LABEL	T'ST/
	INSIDE DIAMETER	ID	<u>AC-1</u>	EXAMPLE : THERMOSTAT FOR AC-1	
	MAKE-UP AIR UNIT	MAU	×	POINT OF CONNECTION TO EXISTING	PO
	MAXIMUM	MAX		BYPASS TIMER	BP ⁻
	MINIMUM	MIN		THERMOMETER	БР
	NEW	(N)	<i>(</i>	PRESSURE GAGE	+
	NOT IN CONTRACT	NIC		SECURITY BARS	+
	NOT TO SCALE	NTS	Y	PETE'S PLUG	+
#	NUMBER	NO.		BALANCING COCK	1
	OUTSIDE DIAMETER	OSA		BALL VALVE	
	OUTSIDE DIAMETER POUNDS	OD LBS		BUTTERFLY VALVE	
	POUNDS PER SQUARE INCH	PSI		CHECK VALVE	
	POUNDS PER SQUARE INCH ABSOLUTE	PSIA		CONCENTRIC REDUCER	
	POUNDS PER SQUARE INCH GAUGE	PSIG		TWO-WAY CONTROL VALVE	
	POLYVINYL CHLORIDE	PVC		FLOW SWITCH	FS
	PRESSURE STATION	PS		FLEXIBLE CONNECTION	FLE
	RETURN AIR	RA		GATE VALVE	
	ROOM	RM		GLOBE VALVE	
	SUPPLY AIR	SA		INSTRUMENT WELL	_
	SPECIFICATION	SPEC		PLUG VALVE	
	SQUARE FEET	SQ FT		PRESSURE RELIEF VALVE "Y" TYPE STRAINER	PR
	STAINLESS STEEL	SS		UNION	-
	TEMPERATURE	TEMP	(1)	KEYNOTE	-
	TEMPERATURE SENSOR	TS			
	THROUGH	THRU	A	GRILLE TAG	
	TYPICAL	(TYP)	EF 8	NEW EQUIPMENT TAG	
	UNDER GROUND VARIABLE AIR VOLUME UNIT	U/G VAV	8	EXAMPLE: DESCRIPTION EF, MARK NUMBER 8	
				DETAIL DESERVACE	
	WITHOUT	W/O	M202	DETAIL REFERENCE EXAMPLE: DETAIL 2, SHEET M202	
	WITHOUT BOILER BLOWDOWN	W/O			_
—вр <i>—</i> —	BOILER BLOWDOWN BOILER FEED		3	SECTION REFERENCE	
 СF	CHEMICAL FEED		M400	EXAMPLE: SECTION 3, SHEET M400	
—A——	COMPRESSED AIR	A		ı	
-CHWS	CHILLED WATER SUPPLY	CHWS			
CHWR—	CHILLED WATER RETURN	CHWR			
HHWS	HEATING HOT WATER SUPPLY	HHWS			
	LIEUTING HOT WATER RETURN	HHWR			
HHWR	HEATING HOT WATER RETURN	I IIIIVVIX J			

RD

RS

NET POSITIVE consulting e n g i n e e r s

www.NPCeng.com
project no. 1087







21-12277
DRAWING

MECHANICAL SCHEDULES

AIR	HANDLER SCHED	ULE - ADMINISTRATION
DESIG	NATION	AHU-A1
OIL	AIR FLOW (CFM)	14,025
	CAPACITY TOT. (MBH)	360.0
DX COOLING COIL	CAPACITY SENS. (MBH)	343.4
L N	EADB / EAWB (°F)	80 / 67
Ö	AMBIENT AIR (°F)	105
X	REFRIGERANT	R-410A
	INPUT CAP. (MBH)	500.0
HEATING	OUTPUT CAP. (MBH)	400.0
	FUEL	NATURAL GAS
뿦	AFUE (%)	80%
	QUANTITY / SIZE	4 / 19.5x19.5 4 / 19.5x24.5
RS	EFFICIENCY (MERV)	MERV 13
FILTERS	FINAL PD MX (IN. WC)	0.25
ш		
MANUF	 ACTURER	ENERGY LABS
TYPE		MULTI-ZONE VAV
MODEL	NUMBER	- CUSTOM -
LOCAT	ON	PENTHOUSE
SERVIC	E	ADMINISTRATION
NO. OF	ZONES	7

^{1.} SUPPLY DUCT SMOKE DETECTOR (SYSTEM SENSOR D4120). PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED FOR UNIT SHUTDOWN UPON DETECTION OF SMOKE. FURNISH REMOTE TEST SWITCH (RTS451KEY) TO ELECTRICAL FOR

1,250

1, 2, 3

OPER. WT (LBS)

ACCESSORIES

SIGNAT	TION	AHU-C1	AHU-C2A	AHU-C2B	AHU-C3	AHU-C4
0.0.0.		7.110 01	7110 0271	7.110 025	Alle Go	74110 04
Al	IR FLOW (CFM)	2,115	2,920	2,480	5,500	3,940
MI	IN. O.S.A. (CFM)	260	150	150	250	220
E	XT. SP (IN. WC)	1.5	1.5	1.5	1.5	1.5
TO	OTAL SP (IN. WC)	3.00	3.00	3.00	3.00	3.00
_	P / BRAKE HP	3 / 1.5	3 / 2.27	3 / 1.81	7.5 / 3.82	5 / 2.58
OI	UANTITY / SIZE	1 / 135	1 / 135	1 / 135	1 / 182	1 / 182
-	FD (Y/N)	Y	Υ Υ	Υ Υ	Υ Υ	Υ
	()	<u>'</u>	'	'	'	<u>'</u>
C	APACITY TOT. (MBH)	88.2	90.1	81.6	173.8	127.5
	APACITY SENS. (MBH)	72.9	81.7	71.7	150.2	109.7
<u> </u>	AX. F.V. (FT/MIN)	397.0	487.0	413.0	458.0	438.0
-	OWS / FPI	6 / 10	6/8	6/8	6 / 8	6 / 8
	IR PD (IN. WC)	0.61	0.62	0.49	0.60	0.56
	ADB (°F)					
-	ADB (°F)	85.3	81.1	81.4	80.1	80.4
-		53.4	55.2	54.6	54.8	54.6
<u>=</u> ,	WT / LWT (°F)	46 / 56	46 / 56	46 / 56	46 / 56	46 / 56
	LUID PD (ET. WC)	17.7	17	16	34.4	25.2
<u> </u>	LUID PD (FT. WC)	8.86	9.16	5.51	8.74	8.49
-	RANCH SIZE (IN.)	1-1/2	1-1/2	1-1/2	2.00	2
-	ONTROL VALVE CV	10.22	9.81	9.24	19.86	14.55
C	ONTROL VALVE	2-WAY	3-WAY	2-WAY	2-WAY	2-WAY
\perp						
_	APACITY (MBH)	89.1	105.7	108.8	193.8	145.7
M	AX. F.V. (FT/MIN)	397.0	487.0	413.0	458.0	438.0
-	OWS / FPI	2 / 10	2/9	2 / 10	2 / 10	2 / 10
Al	IR PD (IN. WC)	0.17	0.22	0.18	0.21	0.20
E	ADB (°F)	65	65	65	65	65
LA	ADB (°F)	104.0	98.5	105.0	97.6	99.2
E/ L/ E\ FL	WT / LWT (°F)	170 / 140	170 / 140	170 / 140	170 / 140	170 / 140
FL	LOW RATE (GPM)	3.2	3.5	4.2	5.5	4.2
FL	LUID PD (FT. WC)	3.08	4.00	5.51	5.46	7.52
В	RANCH SIZE (IN.)	3/4	3/4	3/4	1.00	3/4
C	ONTROL VALVE CV	1.8	2.0	2.4	3.2	2.4
C	ONTROL VALVE	3-WAY	3-WAY	2-WAY	2-WAY	2-WAY
QI	UANTITY / SIZE	1 / 24x24	1 / 24x24	1 / 24x24	2 / 24x24	2 / 24x24
	FFICIENCY (MERV)	1 / 12X24 MERV 13	1 / 12X24 MERV 13	1 / 12X24 MERV 13	2 / 12X24 MERV 13	2 / 12X24 MERV 13
	NAL PD MAX (IN. WC)					0.11
-"	INAL PD WAX (IN. WC)	0.11	0.11	0.11	0.11	0.11
-						
14	OLTS / PHASE	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3
	CCR (kA)	460 / 3	460 / 3 25	460 / 3 25	460 / 3 25	460 / 3
		4.8	4.8	4.8	12.0	7.6
<u> </u>	LA					
M	CA	6	6	6	15	10
M	OCP	15	15	15	25	15
-	ONV. OUTLET (Y / N)	N NON FLIGER	N NON FUED	N NON FUEED	N NON FLIGER	N NON FUED
	ISCONNECT	NON-FUSED	NON-FUSED	NON-FUSED	NON-FUSED	NON-FUSED
-	OLT / PH	460/3	460/3	460/3	460/3	460/3
HF		1	1	1	2	1
FL	LA	2.8	2.8	2.8	6.5	2.8
		1				
UFACT	TURER	ENERGY LABS				
		SINGLE ZONE				
EL NUI	MBER	- CUSTOM -				
ATION		ROOF	ROOF	ROOF	ROOF	ROOF
/ICE						
OF ZON	NES	1	1	1	1	1
R. WT ((LBS)	1,685	1,757	1,757	1,975	1,980
	RIES	1, 2, 3, 4, 5, 6,7	1, 2, 3, 4, 5, 6,7	1, 2, 3, 4, 5, 6,7	1, 2, 3, 4, 5, 6,7	1, 2, 3, 4, 5, 6,7

^{1.} FACTORY-INTEGRATED MODULATING 0-100% DRY-BULB ECONOMIZER.

DESIG	NATION	AHU-S1	AHU-S2	AHU-S3	AHU-S4	AHU-S5	AHU-S6	AHU-S7
	AIR FLOW (CFM)	F 000	1,800	2,800	1.050	8,000	10,000	0.200
	MIN. O.S.A. (CFM)	5,000	<u> </u>	·	1,950	·	10,000	9,200 1,100
-	EXT. SP (IN. WC)	540 1.5	165 1.5	200	130 1.5	600 2.0	790 2.00	2.00
FILTERS HW HEATING COIL CHW COOLING COIL SUPPLY FAN	TOTAL SP (IN. WC)	4.25	3.00	3.00	3.00	2.96	3.14	2.99
	HP / BRAKE HP	7.5 / 4.65	3 / 1.28	5 / 2.13	3 / 1.37	5 / 3.38 (x2)	5 / 3.38 (x2)	5 / 3.38 (x2)
SUP	QUANTITY / SIZE	1 / 182	1 / 135	1 / 135	1 / 135	2 / 500	2 / 560	2 / 560
	VFD (Y/N)	Υ Υ	Υ	Υ	Y	Υ Υ	Υ Υ	Υ Υ
ELECTRICAL FILTERS HW HEATING COIL CHW COOLING COIL SUPPLY FAN	, ,							
	CAPACITY TOT. (MBH)	170.0	64.3	84.5	61.0	320.8	400.7	400.7
CHW COOLING COIL	CAPACITY SENS. (MBH)	170.0	64.3	74.0	54.0	252.9	316.1	316.1
	MAX. F.V. (FT/MIN)	500.0	500.0	500.0	500.0	451.0	462.0	462.0
	ROWS / FPI	6/9	6/9	6/9	6/9	4 / -	4 / -	4 / -
Ę	AIR PD (IN. WC)	1.23	0.68	1.28	0.84	0.35	0.36	0.36
ပ	EADB (°F)	85	85	79.6	78.8	84	84	84
ELEC ELECTRICAL FILTERS HW HEATING COIL CHW COOLING COIL SUPPLY FAN	LADB (°F)	53.4	51.9	55.1	53.1	55	55	55
	EWT / LWT (°F)	46 / 56	46 / 56	46 / 56	46 / 56	46 / 56	46 / 56	46 / 56
	FLOW RATE (GPM)	33.4	12.4	16.8	12	63.85	79.76	79.76
	FLUID PD (FT. WC)	7.62	5.08	5.77	6.97	6.649	6.259	6.259
	BRANCH SIZE (IN.)	2	1-1/4	1-1/4	1-1/4	2-1/2"	3"	3"
	CONTROL VALVE CV	19.28	7.16	9.70	6.93	36.86	46.05	46.05
	CONTROL VALVE	3-WAY	2-WAY	2-WAY	3-WAY	2-WAY	2-WAY	2-WAY
	CAPACITY (MBH)	253.0	110.4	98.0	46.6	349.2	436.5	436.5
	MAX. F.V. (FT/MIN)	500.0	500.0	500.0	500.0	467.0	478.0	478.0
	ROWS / FPI	2 / 10	2 / 10	2 / 10	2 / 10	2/-	2/-	2/-
	AIR PD (IN. WC)	0.54	0.32	0.66	0.43	0.16	0.16	0.16
HW HEATING C	EADB (°F)	58	58	60	58	60	60	60
	LADB (°F)	104.9	110.4	92.4	80.1	100.0	100.0	100.0
	EWT / LWT (°F)	170 / 140	170 / 140	170 / 140	170 / 140	170 / 140	170 / 140	170 / 140
	FLOW RATE (GPM)	16.3	6.7	5.4	2.5	34.9	44	44
¥	FLUID PD (FT. WC)	4.74	1.71	1.44	0.52	7.20	6.53	6.53
	BRANCH SIZE (IN.)	1-1/4	1.00	1.00	0.75	1-1/4"	2"	2"
	CONTROL VALVE CV	9.4	3.9	3.1	1.4	20.2	25.2	25.2
	CONTROL VALVE	3-WAY	2-WAY	2-WAY	3-WAY	2-WAY	2-WAY	2-WAY
	QUANTITY / SIZE	2 / 24x24 2 / 12X24	1 / 24x24 1 / 12X24	1 / 24x24 1 / 12X24	1 / 24x24 1 / 12X24	3 / 17.5x24 3 / 19.5x24	4 / 19.5x19.5 4 / 19.5x24.5	4 / 19.5x19.5 4 / 19.5x24.5
SS	EFFICIENCY (MERV)	MERV 13	MERV 13	MERV 13				
Ę	FINAL PD MX (IN. WC)	0.11	0.11	0.11	0.11	0.23	0.25	0.25
≣								
2								
	VOLTS / PHASE	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3	460 / 3
=	SCCR (kA)	25	25	25	25	-	-	-
CAL	FLA	12.0	4.8	4.8	4.8	13.9	13.9	13.9
TRI	MCA	15	6	6	6	17.4	17.4	17.4
:LEC	МОСР	25	15	15	15	25.0	25.0	25.0
ш	CONV. OUTLET (Y / N)	N	N	N	N	N	N	N
	DISCONNECT	NON-FUSED	NON-FUSED	NON-FUSED	NON-FUSED	NON-FUSED	NON-FUSED	NON-FUSED
	VOLT / PH	460/3	460/3	460/3	460/3			
LEC	НР	2	1	1	1			
H.	FLA	6.5	2.8	2.8	2.8			
Υ Σ								
M								
ASSESSON TO BE SENTING COIL SECOND TO BE SEC								
ANUF	ACTURER	ENERGY LABS	ENERGY LABS	ENERGY LABS	ENERGY LABS	VTS AMERICA INC.	VTS AMERICA INC.	VTS AMERICA INC.
		SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	MULTI-ZONE VAV	SINGLE ZONE	MULTI-ZONE VAV
	NUMBER	- CUSTOM -	- CUSTOM -	- CUSTOM -				
		ROOF	ROOF	ROOF	ROOF	PENTHOUSE	PENTHOUSE	PENTHOUSE
		BOOKSTORE	STUDENT HEALTH	FINANCIAL AID	FINANCIAL AID OFFICE	CENTRAL OFFICE	STUDENT ACTIVITIES	CAFETERIA
		1	1	1	1	3	1	4
)PER.	WT (LBS)	1,998	1,803	1,878	1,844	1,658	1,499	1,998
		1, 2, 3, 4, 5, 6, 8	1, 2, 3, 4, 5, 6, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4, 5, 8	1, 2, 3, 4, 5, 8	1, 2, 3, 4, 5, 8

^{1.} FACTORY-INTEGRATED MODULATING 0-100% DRY-BULB ECONOMIZER.

AIR HANDLER SCHEDULE - STUDENT CENTER

^{6.} FIELD-INSTALLED, DUCT-MOUNTED MODULATING POWERED EXHAUST WITH PRESSURE TRANSDUCER AND HONEYWELL JADE CONTROLLER. PROVIDE SEPARATE POWER CONNECTION PER SCHEDULE ABOVE. 7. FACTORY-INSTALLED, UNIT-MOUNTED MODULATING POWERED EXHAUST WITH PRESSURE TRANSDUCER AND HONEYWELL JADE CONTROLLER. PROVIDE SEPARATE POWER CONNECTION PER SCHEDULE ABOVE. 8. CO2 SENSOR FOR DEMAND CONTROL VENTILATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION.

DESIGNATION		SF-1A		RF-1A SF-1B		SF-2B	RF-2B
IR FLC	OW (CFM)	23,000	21,730	19,000	17,950	12,070	2,310
	MANUFACTURER TECO TECO		TECO	TECO	MARATHON	TECO	
	TYPE/ MODEL	ASHE	AEHEUW	ASHEUW	ASHEUW	254TTDCA6026	PROP
፳	CAT. NO.	D0306	E0158	DH0256	DH0106	GT0022	FIELD VERIF
MOTOR	HP / kW	30 / 22	15 / 11	25 / 18.5	10 / 7.5	15 / 11	1.5 / 1
N N	FRAME	326T	286T	324T	256T	254T	FIELD VERIFY
FA	VOLTS / PHASE	208 / 3	208 / 3	208 / 3	208 / 3	208 / 3	208 / 3
	AMPS	83.5	44.5	69.3	28.5	40.0	FIELD VERIFY
	RPM	1,175	880	1,175	1,170	1,770	FIELD VERIFY
	MANUFACTURER	ENERGY LABS	ENERGY LABS	ENERGY LABS	ENERGY LABS	ENERGY LABS	ENERGY LABS
긥	TYPE	PLENUM FAN PLENUM FAN	PLENUM FAN	PLENUM FAN	PLENUM FAN	PROP	
WHEE	ROTATION	FIELD VERIFY	CW	FIELD VERIFY	CW	FIELD VERIFY	FIELD VERIFY
A N	FAN WHEEL SIZE	FIELD VERIFY	365	FIELD VERIFY	330	FIELD VERIFY	FIELD VERIFY
Α	WIDTH	N/A	105	N/A	85	N/A	N/A





PROJECT NO. 21-12277

M002

^{2.} FIELD VERIFY FILTER QUANTITY TO BE INSTALLED IN EXISTING CABINET PRIOR TO ORDERING. 3. FIELD INSTALL ALL CONTROL AND ELECTRICAL FROM EXISTING ELECTRICAL TO

^{2.} SINGLE-POINT POWER FOR AIR HANDLER. 3. FACTORY-MOUNTED VFD'S AND PREMIUM EFFICIENCY MOTORS AND GROUND SHAFT PROTECTION.

^{4.} FACTORY-INSTALLED BACNET COMPATIBLE CONTROL MODULE FOR DDC TIE-INTO CAMPUS JOHNSON METASYS. 5. SUPPLY DUCT SMOKE DETECTOR (SYSTEM SENSOR D4120). PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED FOR UNIT SHUTDOWN UPON DETECTION OF SMOKE.

FURNISH REMOTE TEST SWITCH (RTS451KEY) TO ELECTRICAL FOR INSTALLATION. 6. FIELD-INSTALLED, DUCT-MOUNTED MODULATING POWERED EXHAUST WITH PRESSURE TRANSDUCER AND HONEYWELL JADE CONTROLLER. PROVIDE SEPARATE POWER

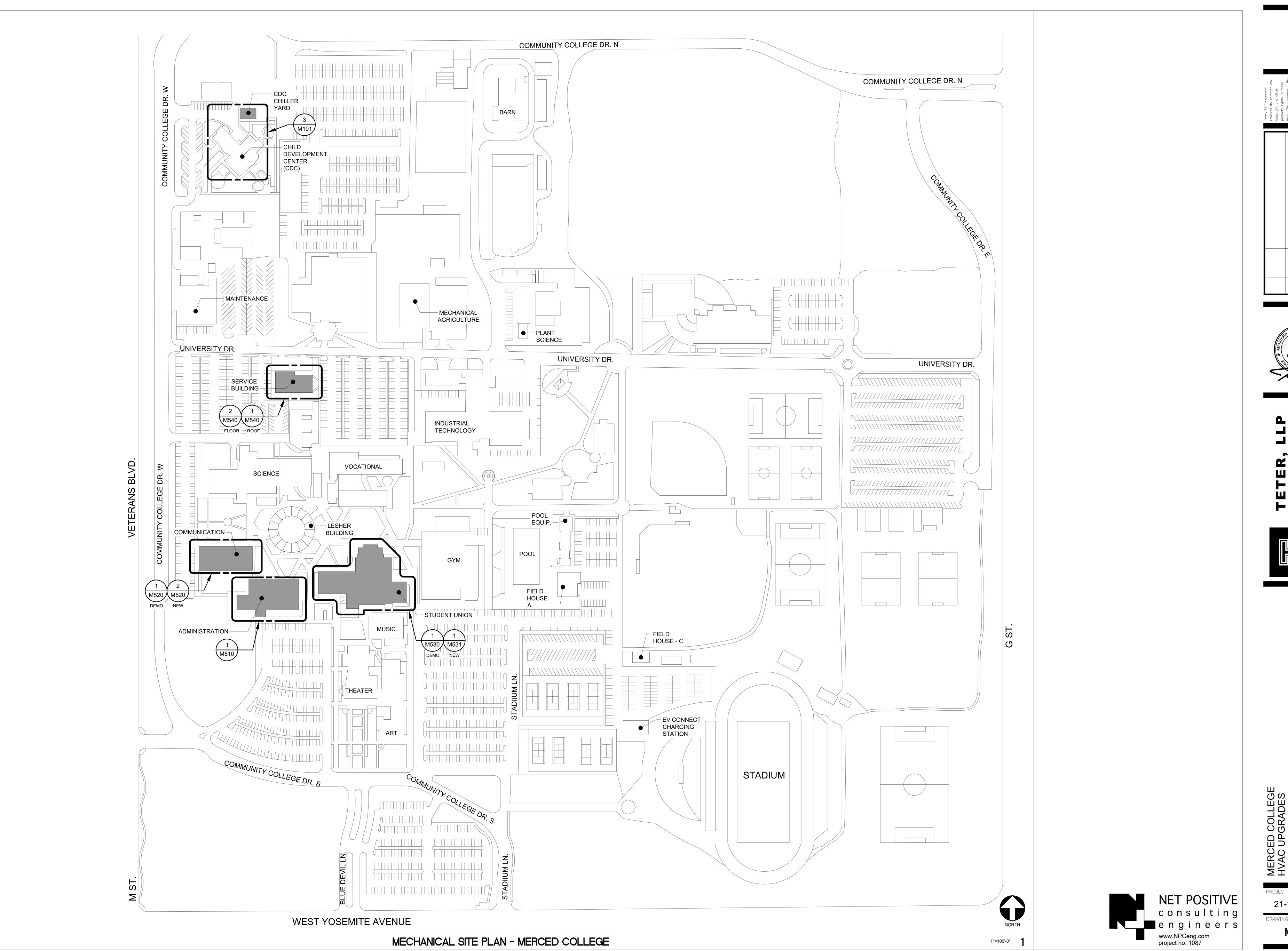
CONNECTION PER SCHEDULE ABOVE.

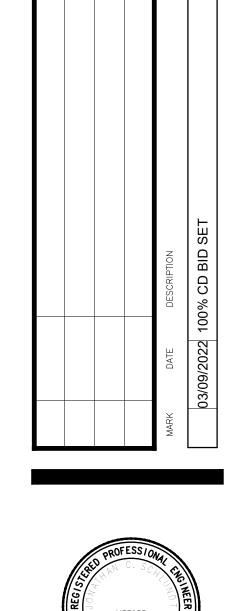
^{7.} CO2 SENSOR FOR DEMAND CONTROL VENTILATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION.

^{2.} SINGLE-POINT POWER FOR AIR HANDLER. 3. FACTORY-MOUNTED VFD'S AND PREMIUM EFFICIENCY MOTORS AND GROUND SHAFT PROTECTION.

^{4.} FACTORY-INSTALLED BACNET COMPATIBLE CONTROL MODULE FOR DDC TIE-INTO CAMPUS JOHNSON METASYS.

^{5.} SUPPLY DUCT SMOKE DETECTOR (SYSTEM SENSOR D4120). PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED FOR UNIT SHUTDOWN UPON DETECTION OF SMOKE. FURNISH REMOTE TEST SWITCH (RTS451KEY) TO ELECTRICAL FOR INSTALLATION.







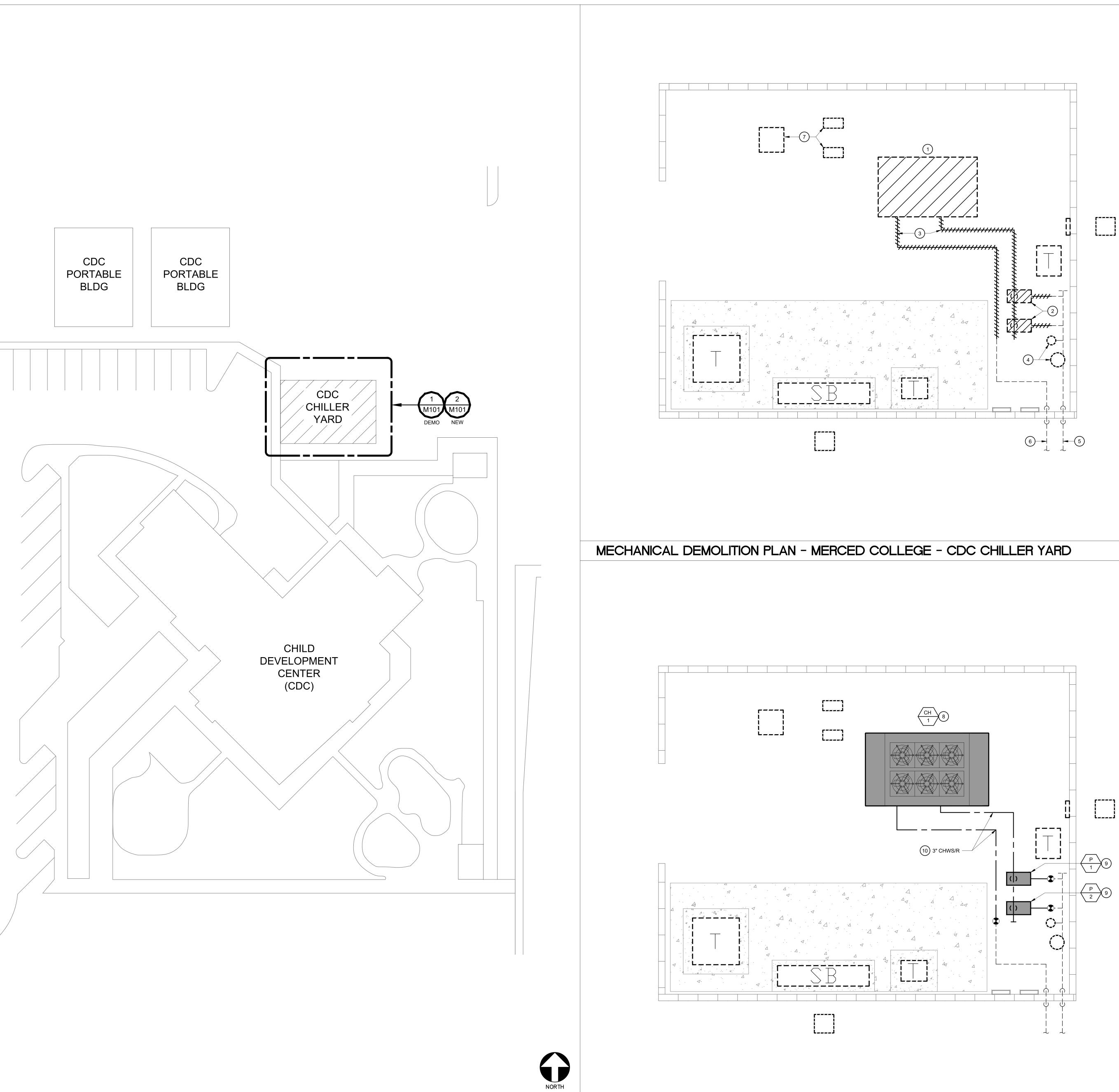


ED COLLEGE UPGRADES T, MERCED, CA 95348

PROJECT NO.

21-12277

DRAWING M100





1/4" = 1'-0"

1/4" = 1'-0"

KEY PLAN

REMOVE AIR COOLED CHILLER.

(2) REMOVE GROUND MOUNTED END SUCTION PUMP. (TYP OF 2)

(3) REMOVE PIPE SHOWN HATCHED.

(E) AIR SEPARATOR AND EXPANSION TANK TO REMAIN.

5 (E) CHWR PIPE TO REMAIN.

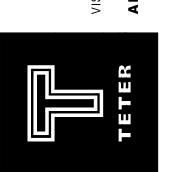
6 (E) CHWS PIPE TO REMAIN.

(E) BOILER AND PUMPS TO REMAIN. HWS/R PIPING NOT SHOWN FOR CLARITY.

8 CHILLER MOUNTED ON (E) HOUSE KEEPING PAD PER DETAIL 1/M800.

9 PUMP FRAME MOUNTED ON (E) HOUSEKEEPING PAD PER DETAIL 2/M800. PIPE MOUNTED ON (E) UNISTRUT FRAMES WITH (N) PIPE CLAMP. FIELD VERIFY ACTUAL PIPE SIZE AND MATCH EXISTING.





MERCED COLLEGE HVAC UPGRADES 3600 M ST, MERCED, CA 95348

PROJECT NO. 21-12277

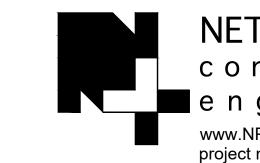
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consulting

e n g i n e e r s

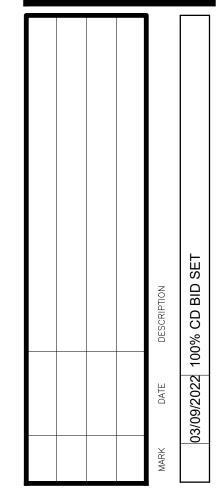
www.NPCeng.com project no. 1087

DRAWING M101



1"=100'-0"

NET POSITIVE e n g i n e e r s www.NPCeng.com project no. 1087





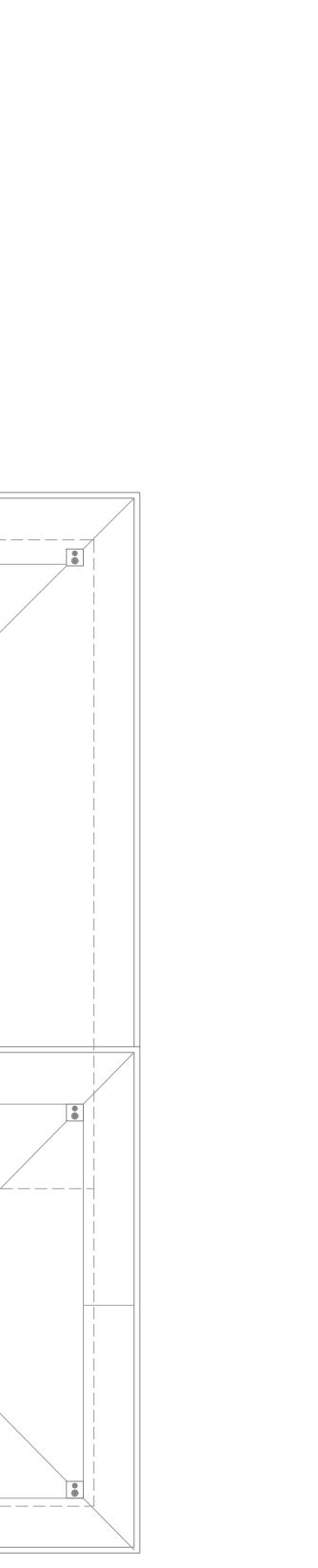


PROJECT NO. 21-12277

DRAWING M102

PROJECT NO. 21-12277

DRAWING M510



LOWER ROOF

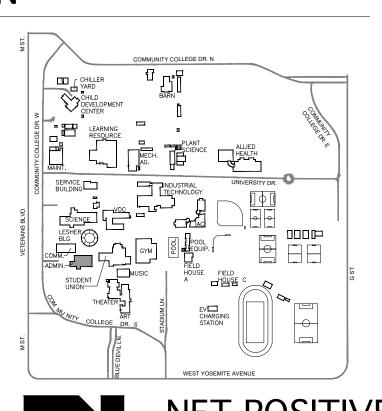
KEY PLAN

1/8' = 1'-0"

KEYNOTES

(E) ROOF TOP AIR HANDLER TO REMAIN.

(E) ROOF TOP PACKAGE UNIT TO REMAIN.



MECHANICAL EQUIPMENT WELL

MECHANICAL EQUIPMENT PENTHOUSE

LOWER ROOF

LOWER ROOF

MECHANICAL DEMOLITION PLAN - MERCED COLLEGE - ADMINISTRATION BLDG PENTHOUSE

KEYNOTES

- 1) REMOVE PORTION OF AIR HANDLER CONTAINING DX COOLING COIL AND FURNACE. REMOVE INTERCONNECTING POWER AND CONTROL WIRING.
- REMOVE MULTIZONE DUCT SECTION, UNIT MOUNTED CONTROL DAMPERS AND ACTUATORS.
- 3 DISCONNECT 9"Ø FLUE DUCT AND PRESERVE PENETRATION THRU ROOF, (TYP OF 2)
- 4 REMOVE CONDENSING UNIT MOUNTED ON STRUCTURAL STAND. PRESERVE STRUCTURAL STAND FOR (N).
- 5 FAN SECTION TO REMAIN. SERVICE BY REMOVING DUST AND BUILDUP FROM CABINET AND FAN BLADES, REPLACE SHAFT BEARINGS AND BELT, ALIGN AND BALANCE FAN AND SHAFT.
- 6 FILTER SECTION TO REMAIN. SERVICE BY REMOVING DUST AND BUILDUP FROM CABINET. REPLACE FILTERS WITH 2" MERV-13 FILTERS. FIELD
- 7) REMOVE 1-1/2" GAS PIPING AND CAP AT WALL FOR FUTURE.
- (8) REMOVE AND PRESERVE EXTERIOR WALL LOUVER AS NECESSARY FOR EQUIPMENT ACCESS.
- 9 PRESERVE RA PENETRATIONS THRU FLOOR, MIXING BOX, AND OSA DUCT. REMOVE AND REPLACE DAMPER ACTUATORS.
- (10) PRESERVE SA PENETRATIONS THRU FLOOR. (TYP. OF 7)
- (11) REMOVE REFRIGERANT PIPING.
- (12) (N) PARTIAL AIR HANDLER SECTION MOUNTED ON (E) ISOLATORS AND WÍDE-FLANGE BEAM PER DETAIL 7/M800. PROVIDE (N) GASKET AT CONNECTION TO FAN CABINET TO REMAIN.
- (13) SUPPLY AIR DUCT DETECTOR MOUNTED PER DETAIL 10/M800.
- POC OF MULTI ZONE DUCTS TO (E) FLOOR PENETRATIONS: 20"X14", 26"X14", 16"X14", 14"X12", 15"X12", 20"X14", 20"X14".
- (15) POC OF (N) 9"Ø FLUE TO (E) ROOF PENETRATION. (TYP OF 2) (N) CONDENSATE DRAIN CONNECTION WITH TRAP PER DETAIL 3/M800. DISCHARGE INTO (E) FLOOR SINK WITH 1" AIR GAP.
- (17) (N) 7/8" LIQUID AND 1-5/8" SUCTION SUSPENDED PER 4/M800.
- (N) CONDENSING UNIT MOUNTED ON EXISTING STRUCTURE PER 22/M800.
- (N) 1-1/2" GAS ROUTED TIGHT TO STRUCTURE ON (E) SUPPORTS. PROVIDE DIRT LEG AT UNIT CONNECTION PER 6/M800.

GENERAL NOTES

A. PROVIDE FLEX CONNECTION BETWEEN DUCT AND UNIT.B. PROVIDE TURNING VANES AT ALL RECTANGULAR ELBOWS.



1/4" = 1'-0"



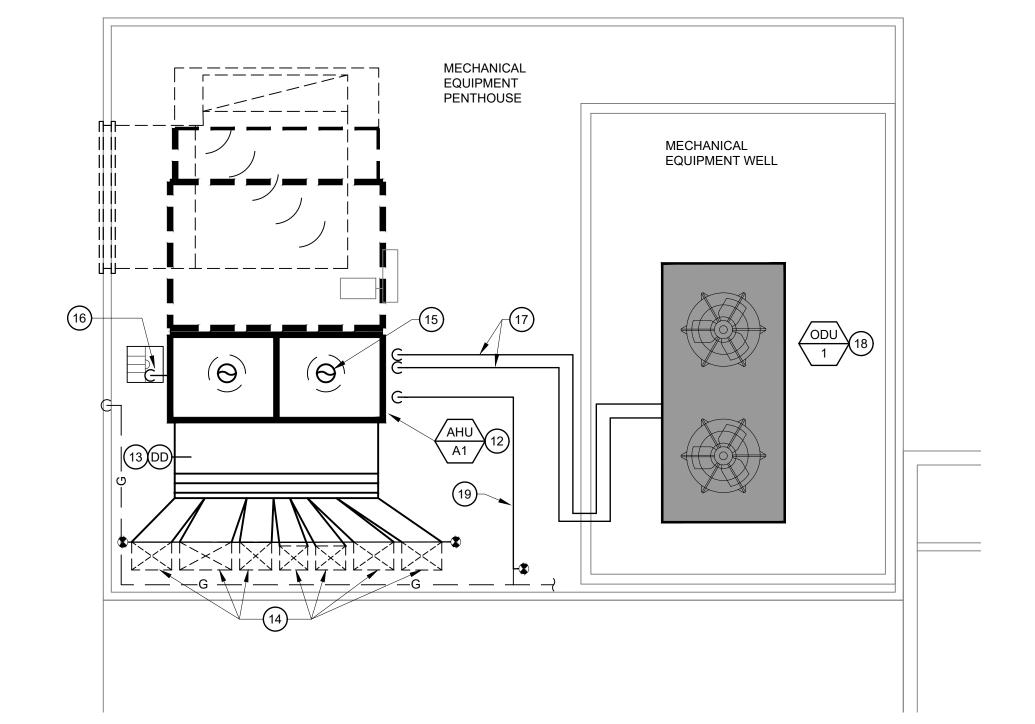
MERCED COLLEGE HVAC UPGRADES 3600 M ST, MERCED, CA 95348

PROJECT NO. 21-12277

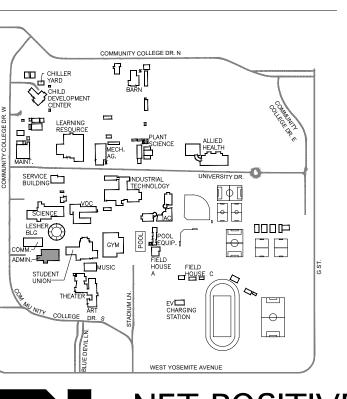
M511

DRAWING

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KEY PLAN



e n g i n e e r s www.NPCeng.com project no. 1087

KEYNOTES

1) REMOVE ROOF MOUNTED AIR HANDLER, CHW AND HHW COIL VALVE ASSEMBLY. PRESERVE CONDENSATE MAIN.

(2) REMOVE DUCT MOUNTED BAROMETRIC RELIEF DAMPER. (3) REMOVE DUCT SHOWN AS HATCHED. (TYP.)

(N) AIR HANDLER MOUNTED ON (E) ROOF CURB PER DETAIL 12/M800.

5 P.O.C. (N) CHWS/R & HHWS/R TO (E) PIPING ABOVE ROOF. PROVIDE (N) PIPING AND VALVES FOR (N) AIR HANDLER PER DETAIL 8/M800. (6) P.O.C. (N) DUCT TO (E) DUCT ABOVE ROOF. (TYP.)

(7) (E) CHWS/R & HHWS/R PIPING BELOW ROOF. (TYP.)

GENERAL NOTES

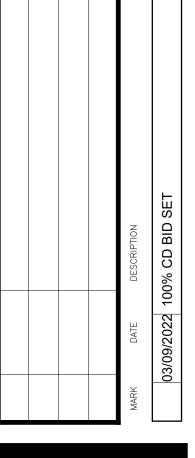
KEY PLAN

A. PROVIDE FLEX CONNECTION WITH SHEET METAL COVER FOR ROOF MOUNTED DUCT AT PACKAGE UNITS. SEE DETAIL 11/M800. (TYP.)
B. PROVIDE TURNING VANES AT ALL RECTANGULAR ELBOWS.

8 FIELD-INSTALLED, DUCT-MOUNTED MODULATING POWER EXHAUST. SEE EQUIPMENT SCHEDULE.

(9) (N) ROOF-MOUNTED DUCTWORK SUPPORTED PER DETAIL 15/M800. (TYP.) (10) SUPPLY AIR DUCT DETECTOR MOUNTED PER DETAIL 10/M800.

CONDENSATE DRAIN CONNECTION WITH TRAP PER DETAIL 3/M800. RE-CONNECT TO (E) CONDENSATE MAIN.







MERCED COLLEGE HVAC UPGRADES 3600 M ST, MERCED, CA 95348

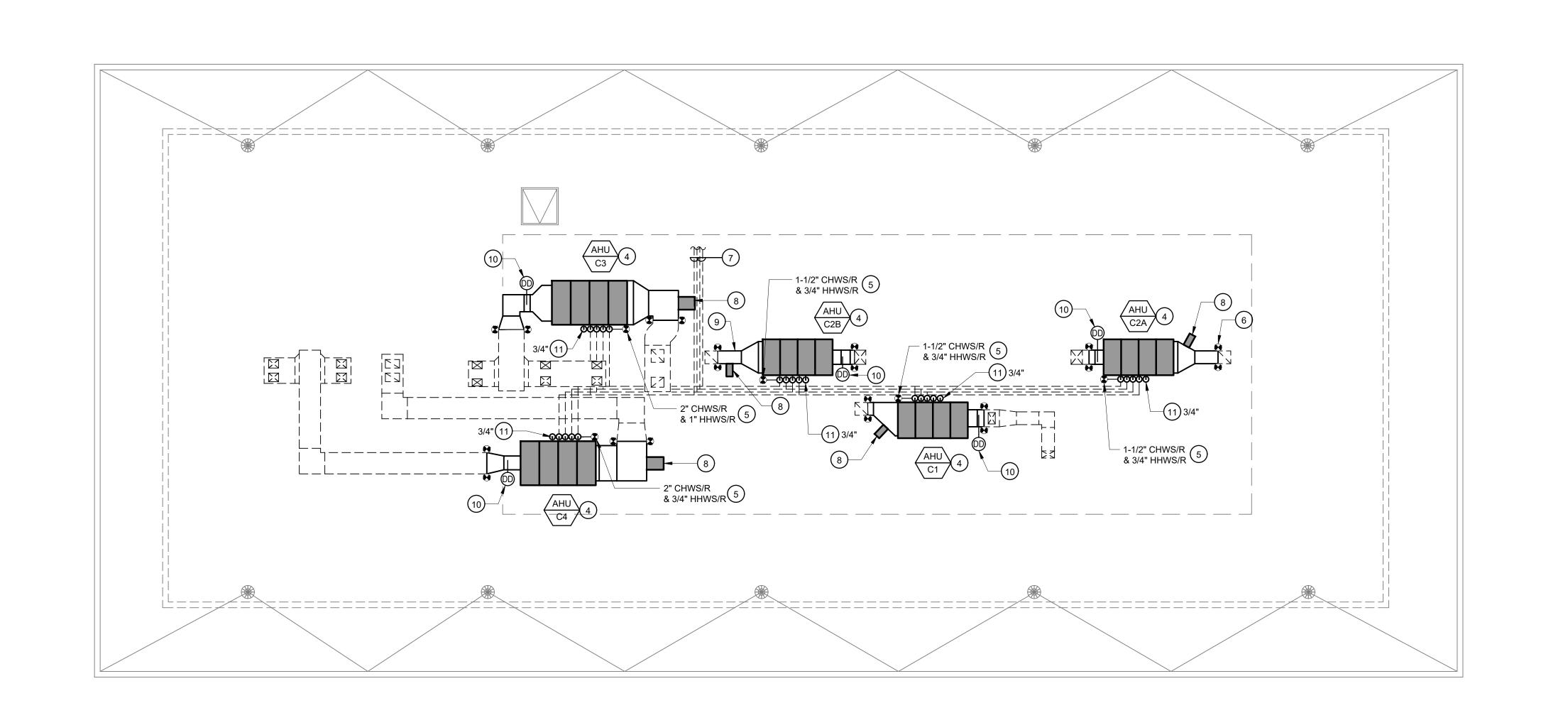
PROJECT NO. 21-12277 DRAWING

M520

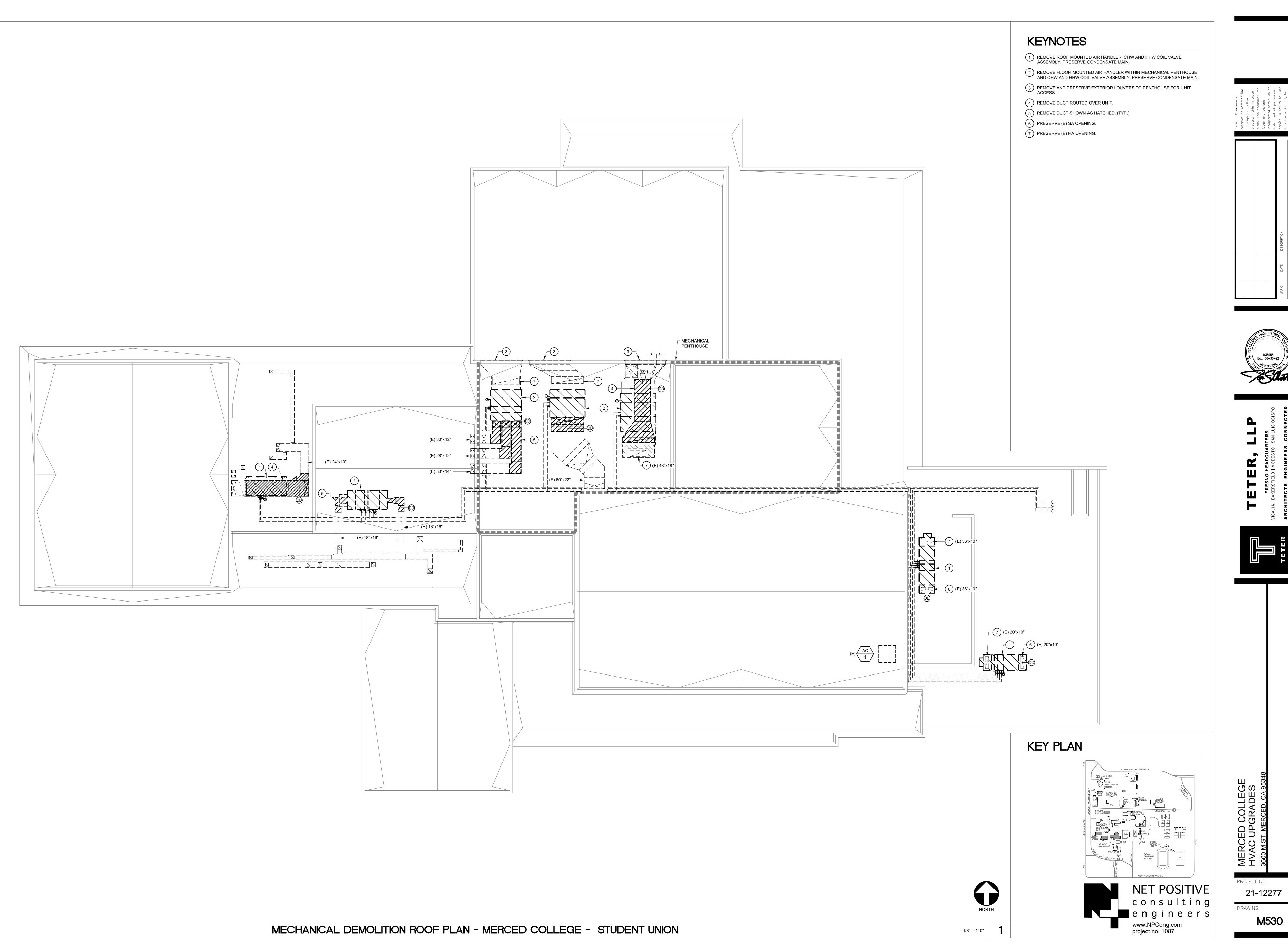
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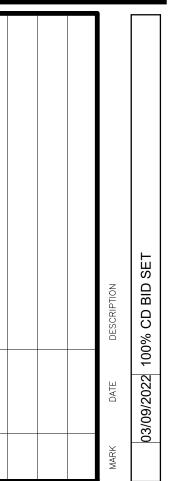


MECHANICAL DEMOLITION ROOF PLAN - MERCED COLLEGE - COMMUNICATIONS BUILDING



MECHANICAL ROOF PLAN - MERCED COLLEGE - COMMUNICATIONS BUILDING



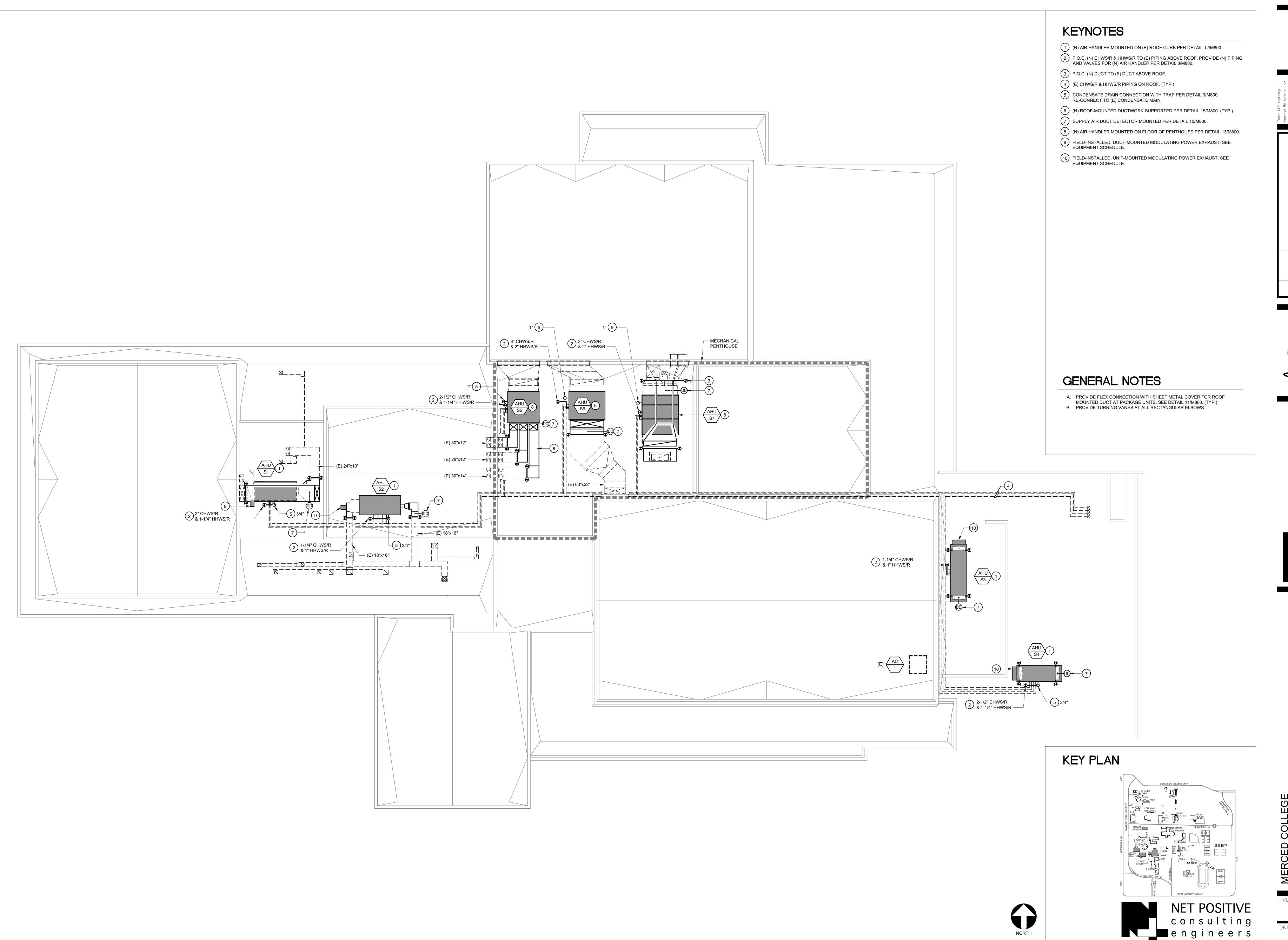


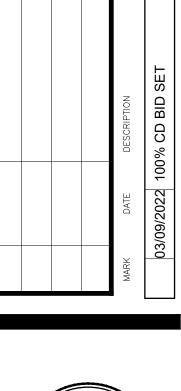




PROJECT NO. 21-12277

DRAWING









MERCED COLLEGE HVAC UPGRADES 3600 M ST, MERCED, CA 95348

PROJECT NO. 21-12277

M531

DRAWING

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KEYNOTES

(1) (E) ROOF MOUNTED PACKAGE UNIT TO REMAIN.

2 COMPUTER ROOM AIR CONDITIONING UNIT WITH DOWN FLOW CONFIGURATION WITH MANUFACTURERS STAND MOUNTED TO SLAB ON GRADE PER 18/M800. REMOVE PORTION OF RAISED FLOOR AS REQUIRED FOR UNIT, AND PROVIDE NEW FLOOR FRAMING AND TRIM AT CUT JOINT PER MANUFACTURER INSTRUCTIONS.

OUTDOOR CONDENSING UNIT MOUNTED ON (N) ROOF TOP SLEEPERS PER 16/M800.

REFRIGERANT PIPING ROUTED DN THRU ROOF IN (N) PIPE ENCLOSURE PER 17/M800.

(5) (E) SERVER RACKS ON RAISED FLOOR, SHOWN FOR REFERENCE.

(6) (E) UPS ON RAISED FLOOR, SHOWN FOR REFERENCE.

(7) (E) WALL MOUNTED FAN COIL TO REMAIN.

(E) SUPPLY GRILLE FROM ROOF MOUNTED PACKAGE UNIT TO REMAIN (TYP OF 4)

(E) RETURN GRILLE FROM ROOF MOUNTED PACKAGE UNIT TO REMAIN (TYP OF 2)

(10) STORAGE SHELVES RELOCATED FROM NORTH WALL BY DISTRICT.

(E) ROOM HUMIDIFIER TO REMAIN.

(E) HALON SYSTEM TO REMAIN.

(13) ROUTE REFRIGERANT PIPING UP THRU ROOF PER DETAIL 17/M800.

(14) REFRIGERANT PIPING SUSPENDED IN ATTIC PER 4/M800.

TERMINATE 1" CONDENSATE INTO (E) MOP SINK WITH 2" AIR GAP ABOVE FLOOD RIM.

(16) POC, 1/4" CW TO (E) CW SUPPLY AT HUMIDIFIER.

CONTROLS AUTOMATION: SEQUENCE CRAC SYSTEM AS PRIMARY SYSTEM FOR ROOM COOLING. IN THE EVENT OF CRAC FAILURE:

A. ALARM SHALL NOTIFY USER.

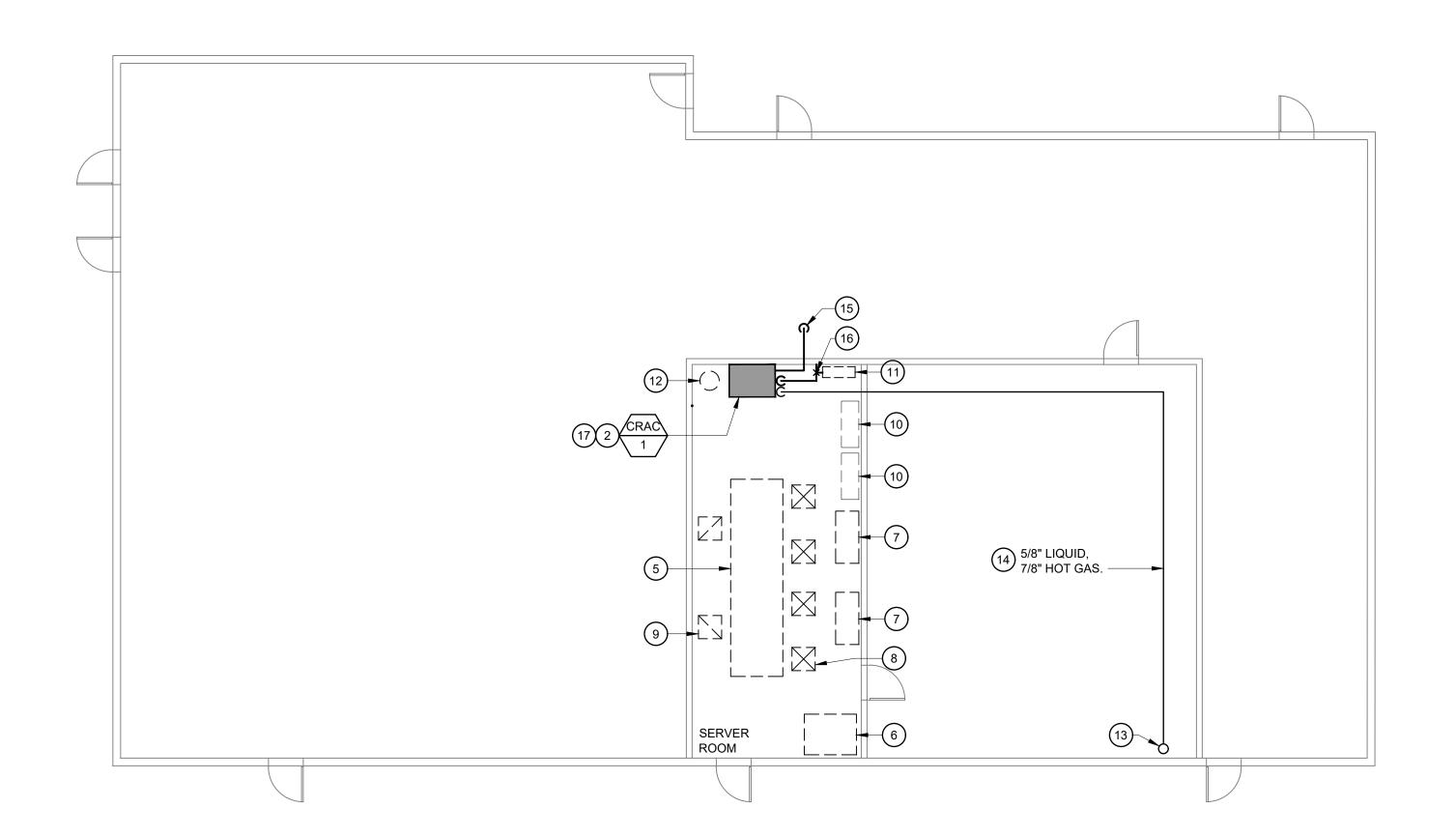
B. ROOF TOP PACKAGE UNIT AND IN-ROOF FAN COILS SHALL ENERGIZE TO COOL THE SPACE.

GENERAL NOTES

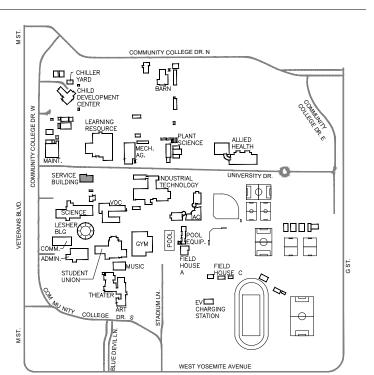
A. SUPPORT ROOF MOUNTED REFRIGERANT PIPING PER 21/M800.

B. SUPPORT SUSPENDED REFRIGERANT PIPING PER 4/M800.

MECHANICAL ROOF PLAN - MERCED COLLEGE - SERVICE BUILDING



KEY PLAN



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1/8" = 1'-0"

21-12277 DRAWING

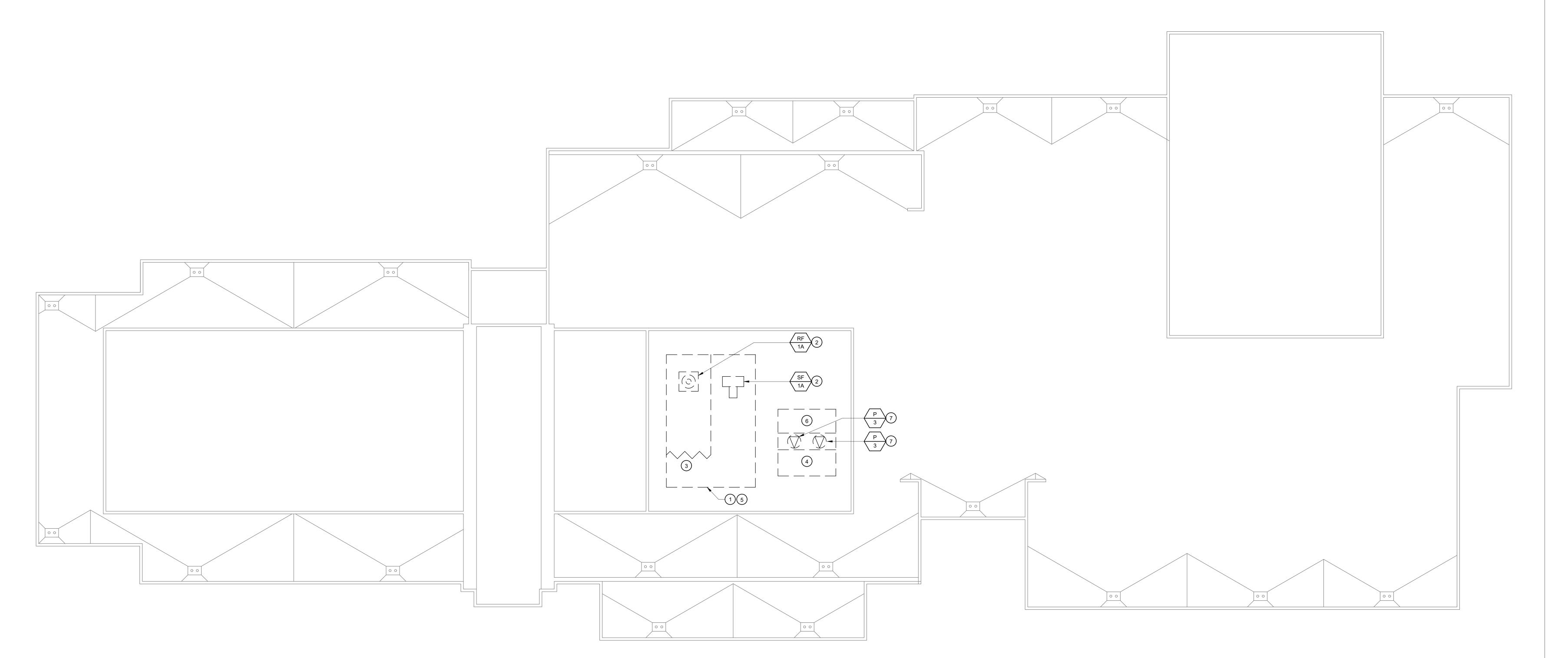
PROJECT NO.

MERCED COLLEGE HVAC UPGRADES 3600 M ST, MERCED, CA 95348

M540

MECHANICAL FLOOR PLAN - MERCED COLLEGE - SERVICE BUILDING

- 1 EXISTING AIR HANDLER TO REMAIN. SERVICE BY REMOVING DUST AND BUILD-UP THROUGHOUT CABINET. PRESSURE WASH EVAPORATOR COIL AND HOT WATER COIL. VACUUM AND CLEAN ALL CONTROL DEVICES, AIR MONITORING STATION, AND ACTUATORS. TEST ALL DEVICES TO ENSURE PROPER FUNCTION AFTER SERVICE.
- REMOVE AND REPLACE FAN WHEEL AND MOTOR WITH SAME SIZE AND ELECTRICAL. MOUNT ON (E) FAN FRAME W/ HARDWARE TO MATCH EXISTING. FIELD VERIFY FAN WHEEL AND MOTOR PRIOR TO ORDERING.
- REPLACE FILTERS WITH 4" PLEATED MERV-13 FILTERS. 9EA 24"X24" AND 6EA 12"X24"
- 4 EXISTING CUSTOM DX COOLING TOWER TO REMAIN (ORIGINALLY MANUFACTURED BY ENERGY LABS INC.). SERVICE BY PRESSURE WASHING COPPER TUBES AND STAINLESS STEEL BASIN, REPLACE WATER NOZZLES, CHEMICALLY FLUSH SYSTEM TO REMOVE ALL SCALE. REPLACE FILTER MEDIA.
- 5 LEAK TEST THE EXISTING REFRIGERANT SYSTEM AND REPAIR ANY LEAKS. EVACUATE AND DISPOSE OF R22, AND REPLACE WITH R-407C. CALIBRATE AND RESET THERMAL EXPANSION VALVE, PRESSURE REGULATORS, AND HIGH-PRESSURE SAFETY CONTROLS FOR NEW REFRIGERANT. REPLACE FILTER DRIERS PER MANUFACTURER INSTRUCTIONS. PROVIDE COMPRESSOR LUBRICANT COMPATIBLE WITH NEW REFRIGERANT.
- (E) CONTROL AND COMPRESSOR CABINET TO REMAIN.
- 7 REMOVE AND REPLACE TOWER PUMP WITH SAME SIZE AND ELECTRICAL. MOUNT ON (E) PLATFORM W/ HARDWARE TO MATCH EXISTING. FIELD VERIFY PRIOR TO ORDERING.

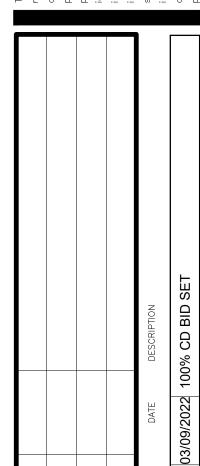




1/8" = 1'-0"

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engineers
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HVAC UPGRADES
3600 M ST, MERCED, CA 95348

MECHANICAL ROOF PLAN

PROJECT NO.

PROJECT NO.

21-12277

DRAWING

M550

PROJECT NO.

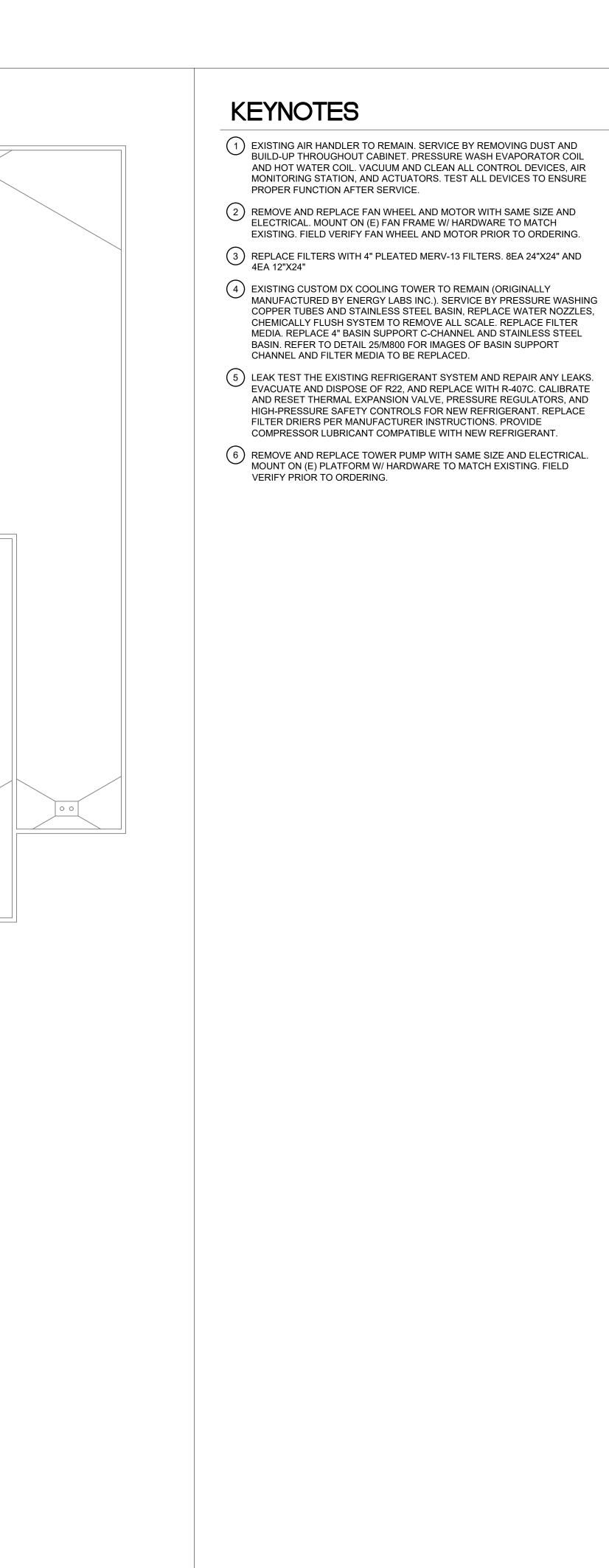
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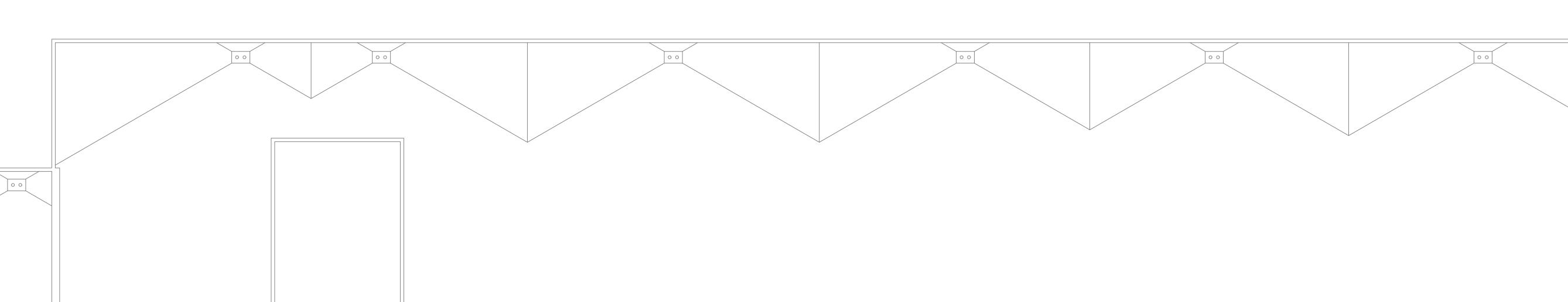
M551

consulting engineers

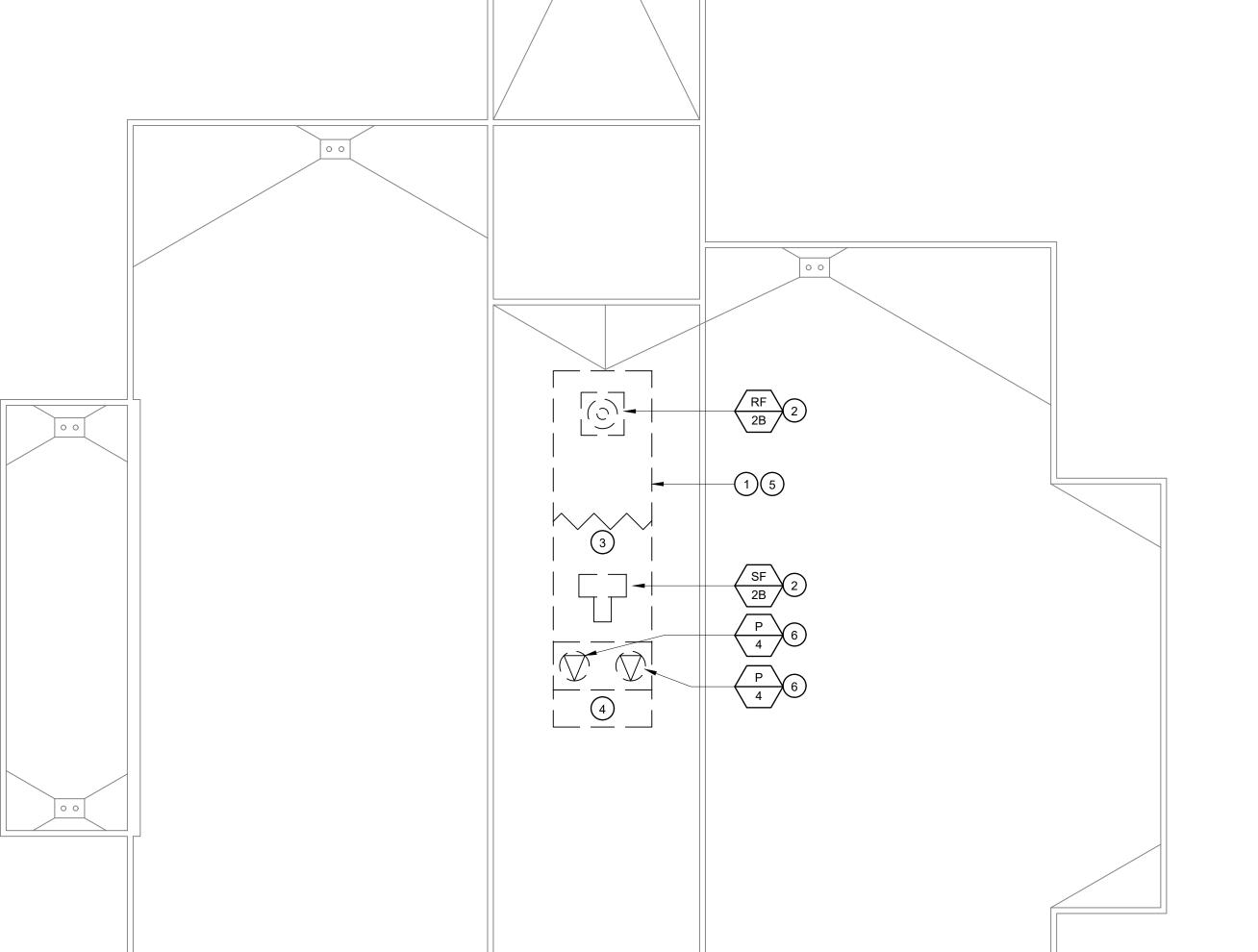
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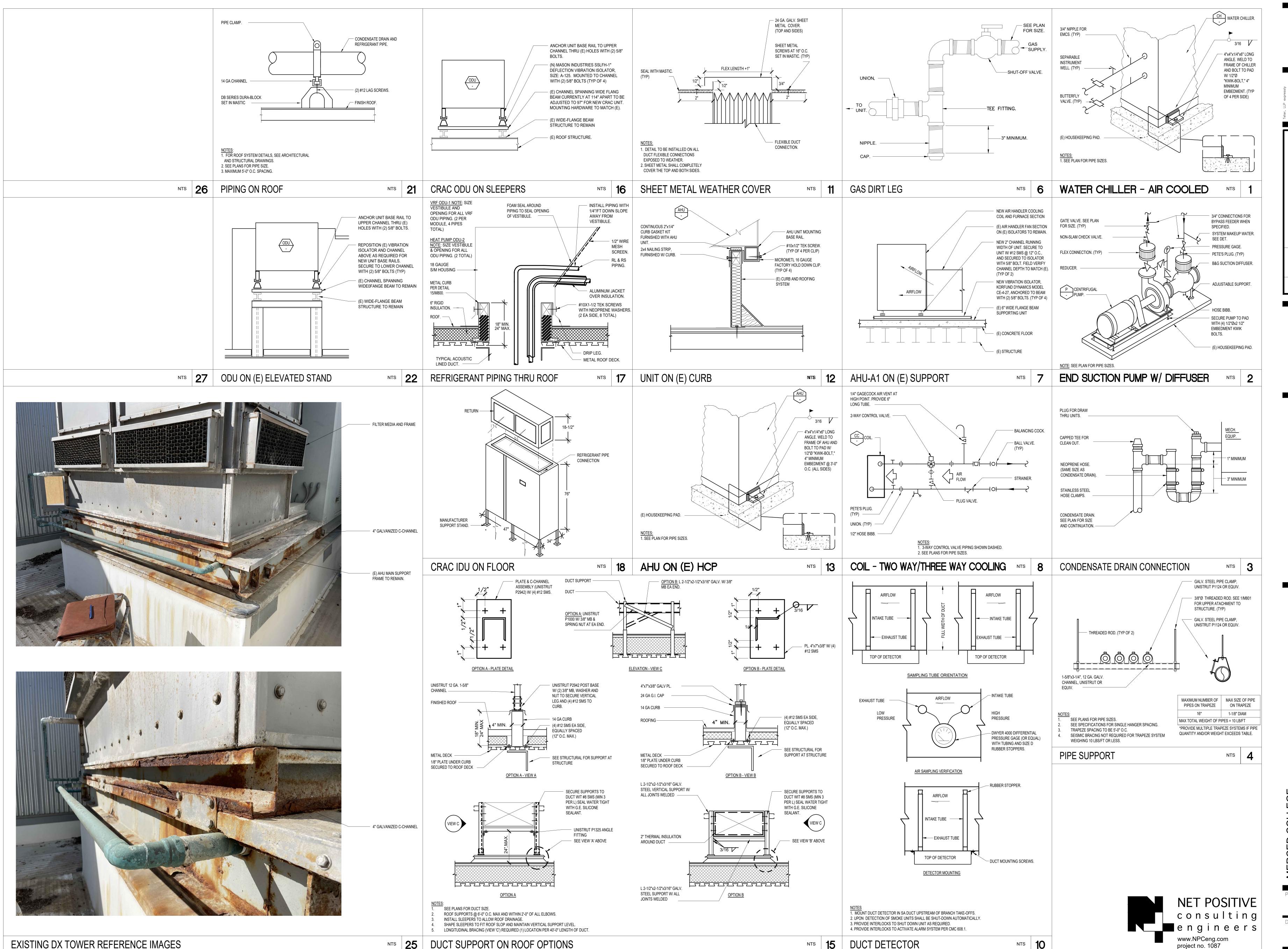


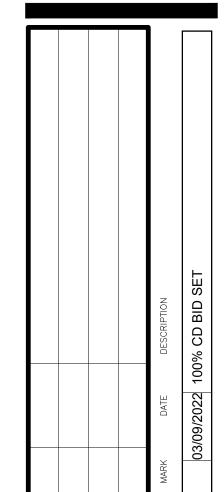






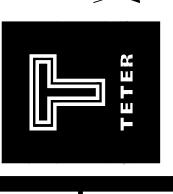








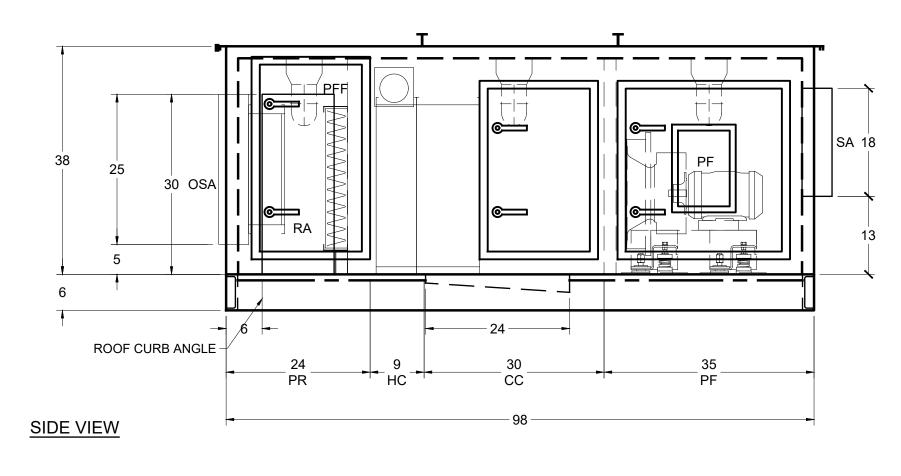




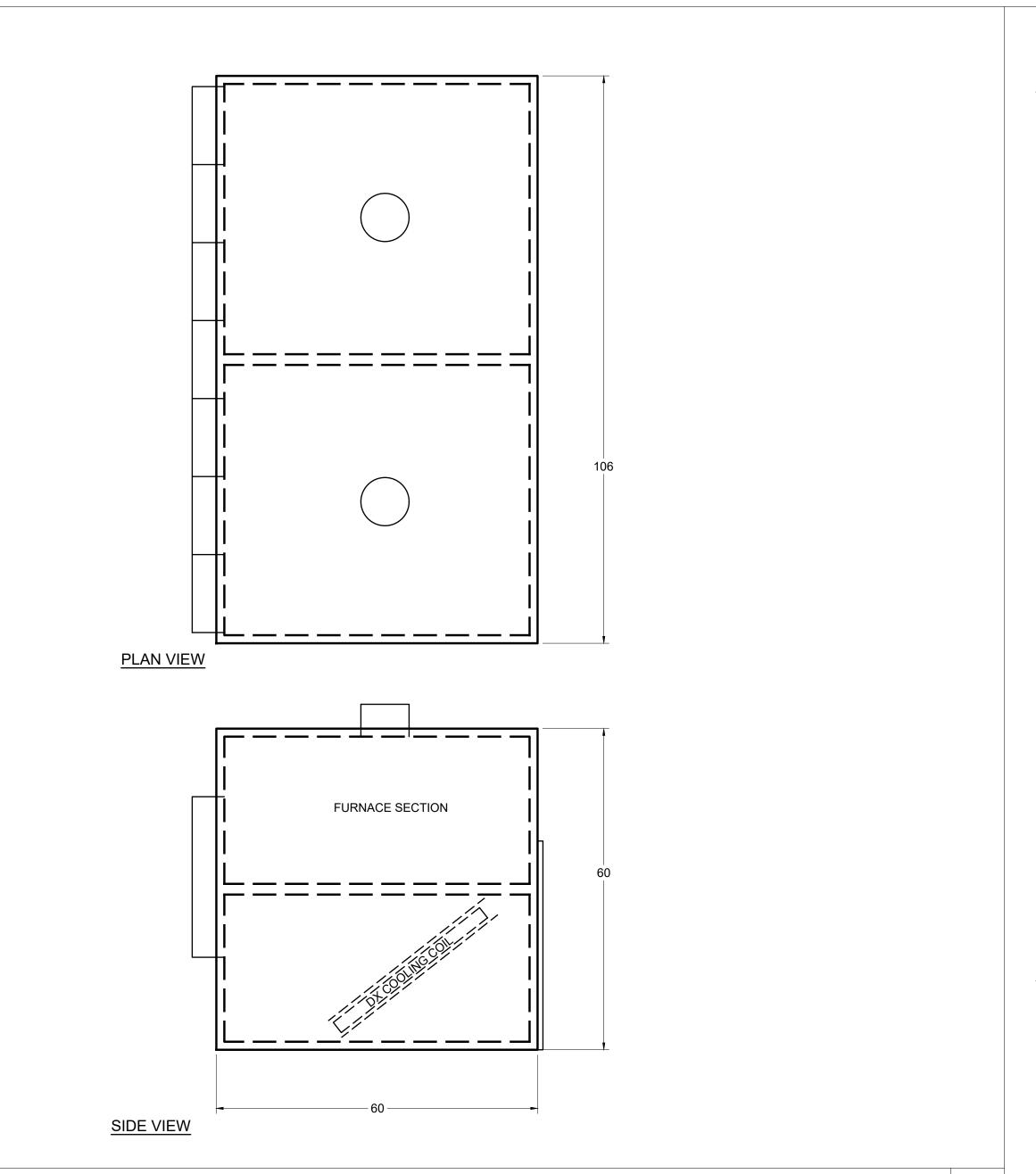
PROJECT NO. 21-12277

project no. 1087

DRAWING M800



AHU-C2A DETAIL



KEYNOTES

DETAIL LEGEND

OSA = Outside Air RA = Return Air NS = Near Side HS = High Side

SCAV= Scavenger Air SA = Supply Air EA = Exhaust Air FS = Far Side LS = Low Side

MB = Mixing Box MS = Moisture Separator

MZ = Multizone PF = Plenum Fan

PL = Plenum PR = Pre-Filter SC = Steam Coil

ST = Sound Trap VF = Vee Filter

PFF = Pre/Final Filter

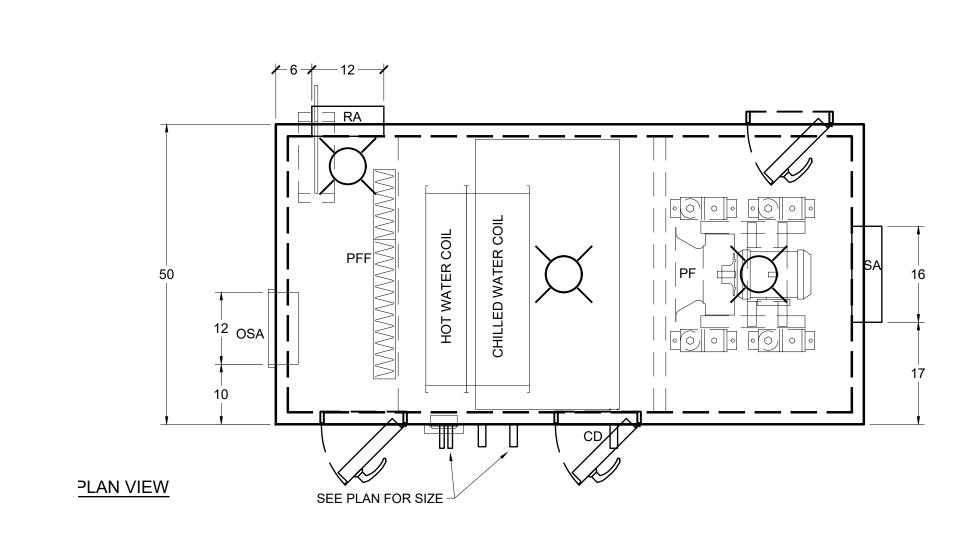
AB = Air Blender CC = Cooling Coil CU = Condensing Unit DE = Direct Evaporative DF = DWDI Fan DX = DX Coil EC = Economizer

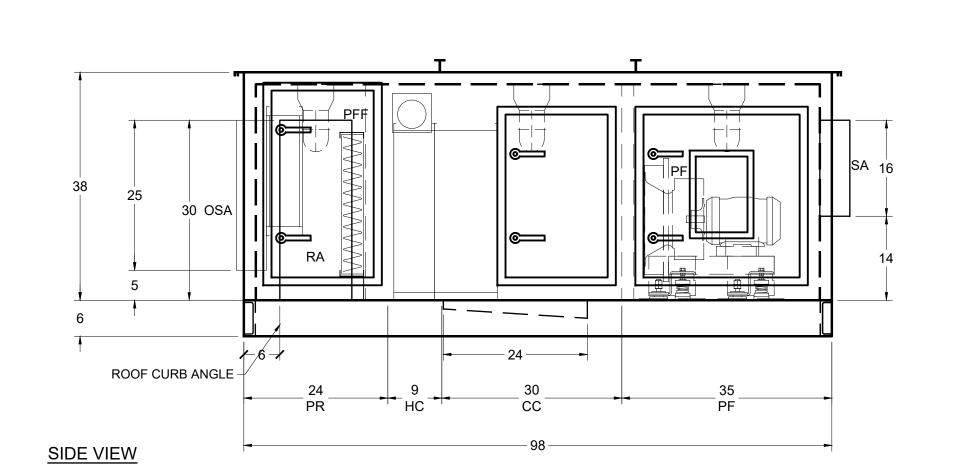
FF = Final Filter FU = Furnace HC = Heating Coil IE = Indirect Evaporative
OLF = OptilineHE Fan

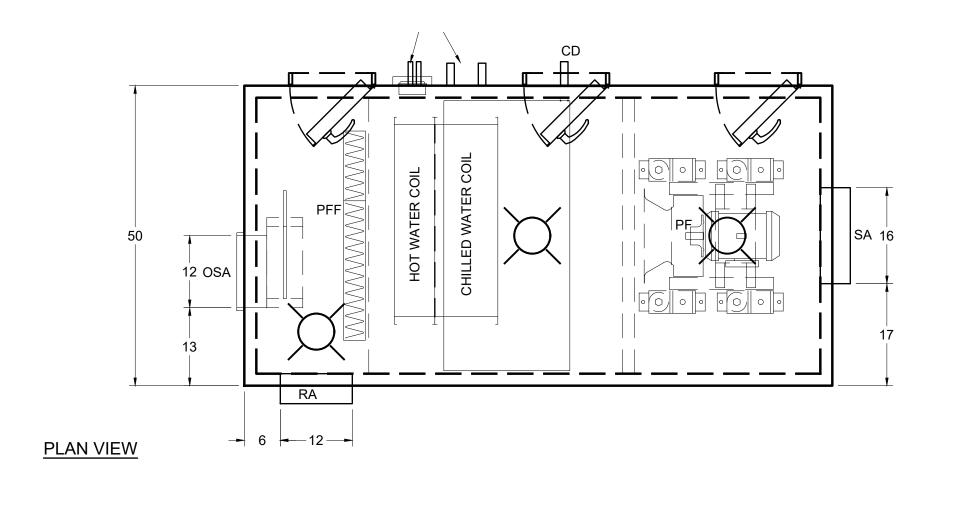
1. All dimensions are in inches unless otherwise specified.

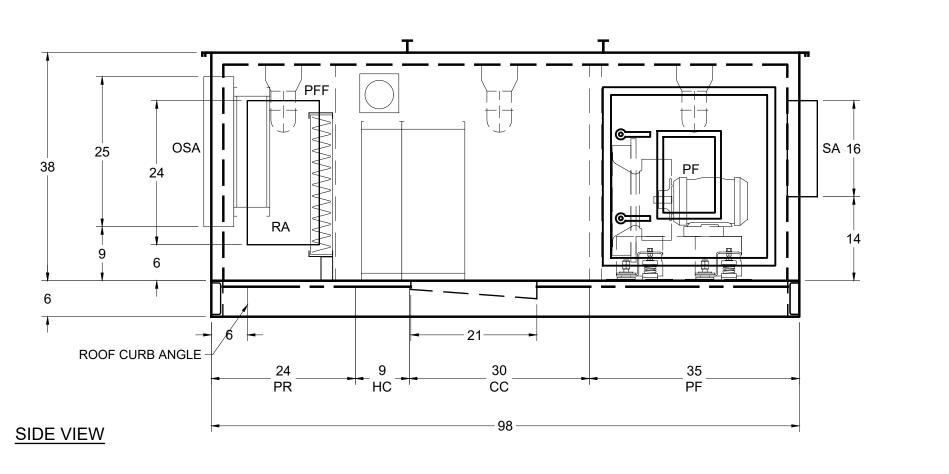
Opening dimension tolerances are ± 0.50, all other cabinet dimension tolerances are ± 1.00.

3. Lifting lug locations on mechanical drawings are for representation only. Actual lifting location will vary depending on Energy Labs Engineering review.









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PROJECT NO. **21-12277**DRAWING

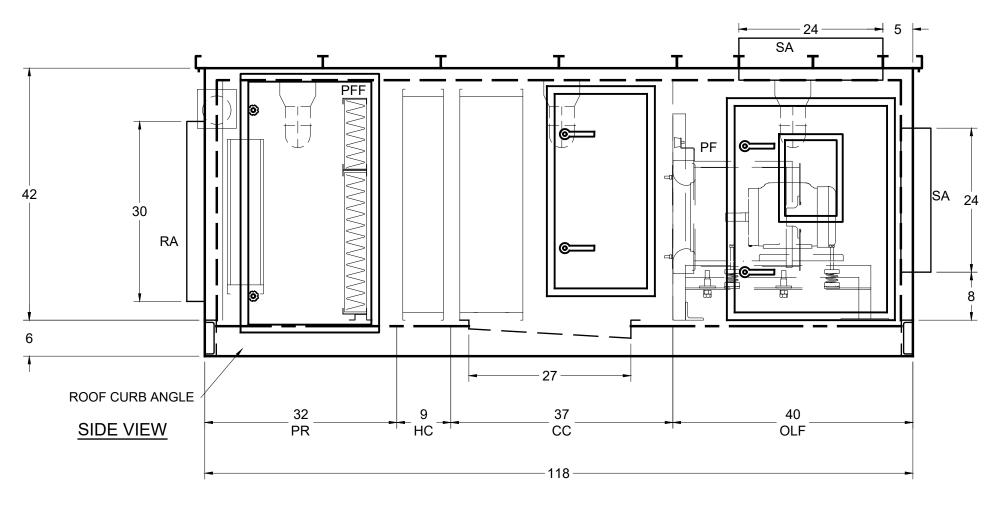
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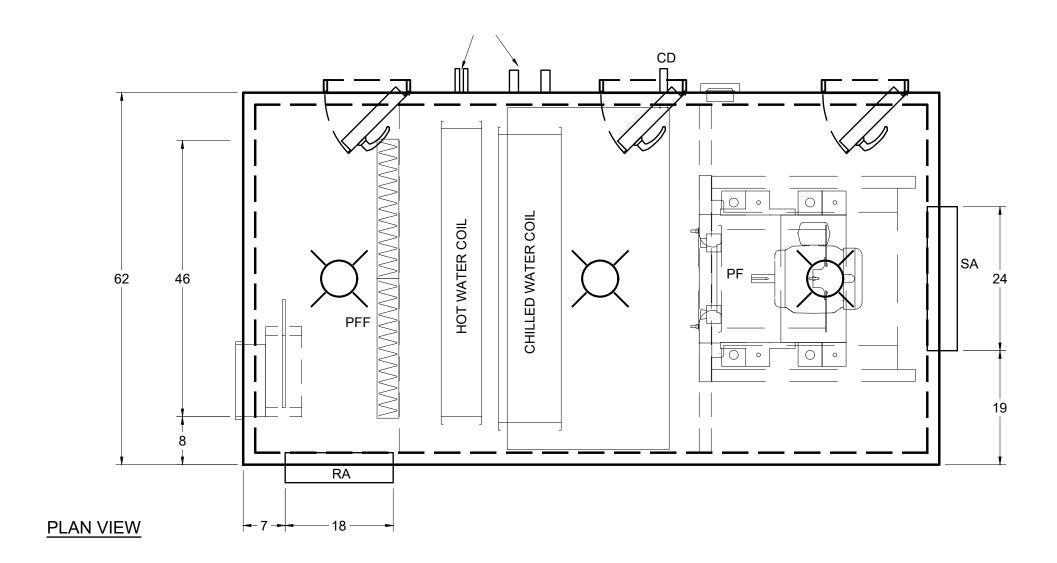
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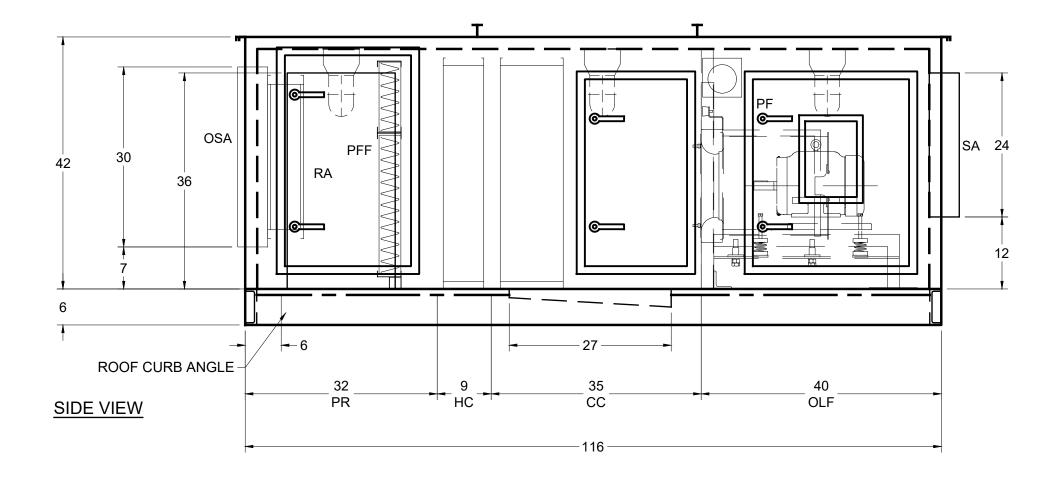
AHU-A1 DETAIL

AHU-C2B DETAIL

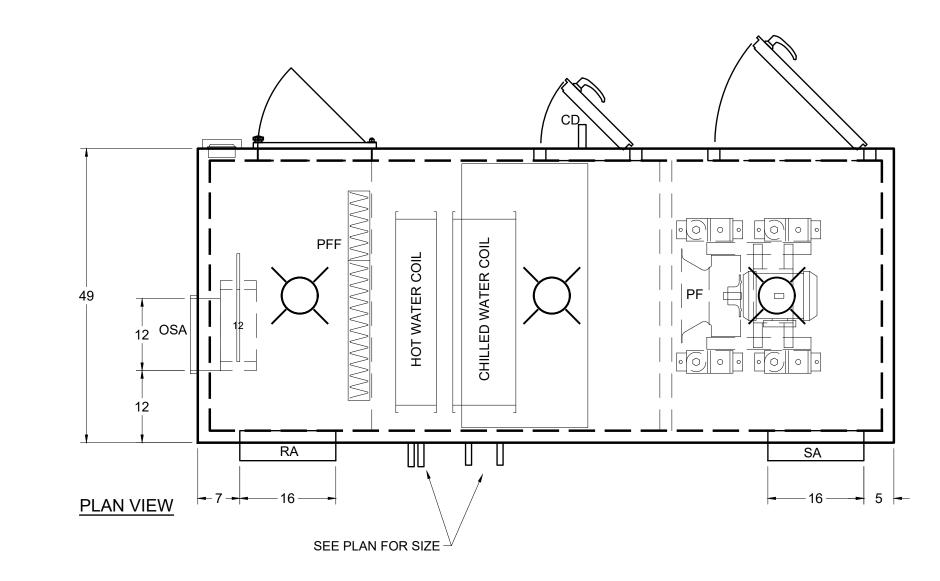
NTS 2

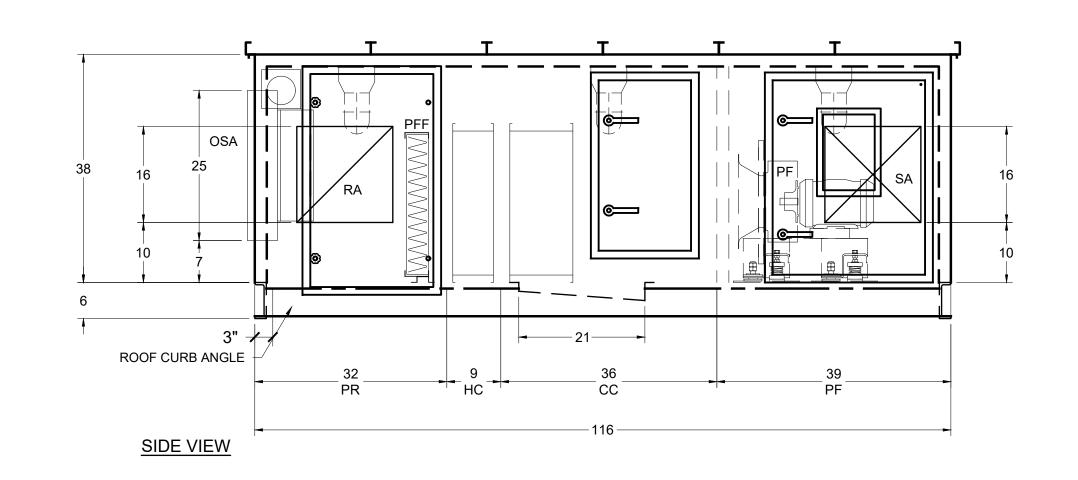


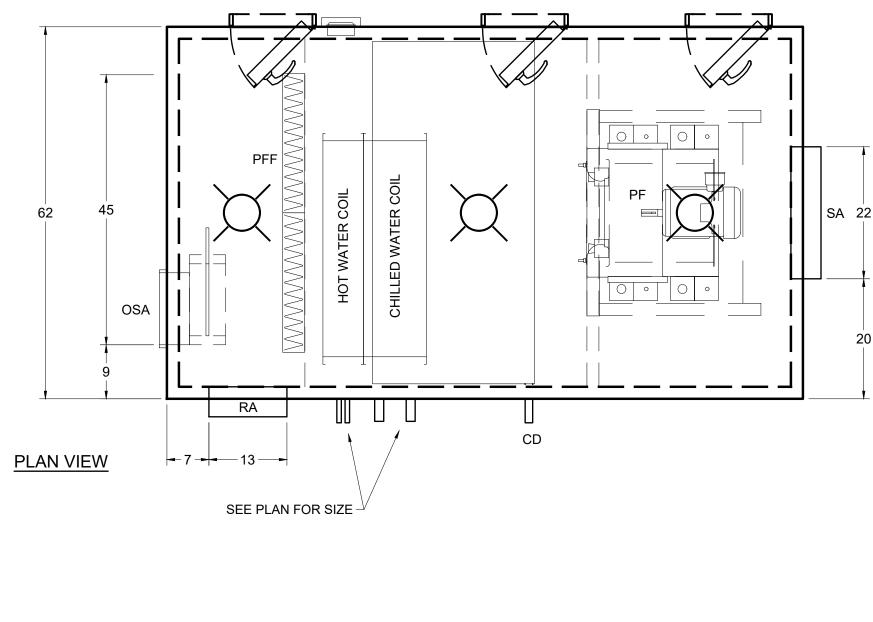


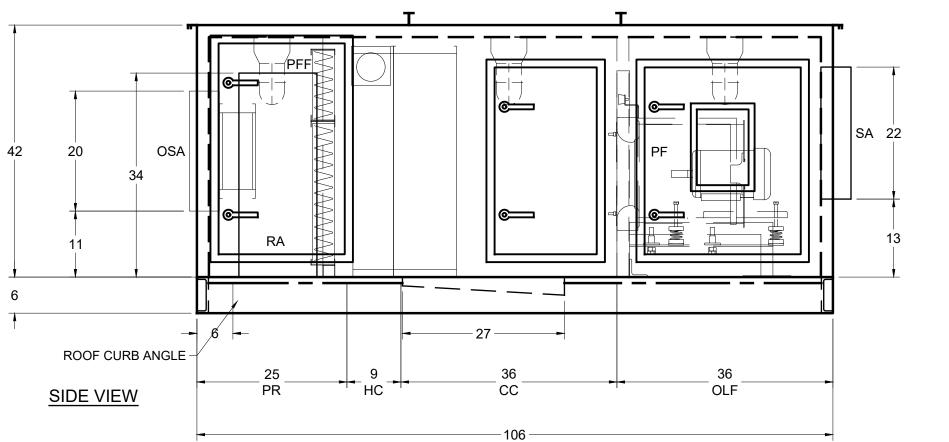


AHU-S1 DETAIL AHU-C3 DETAIL

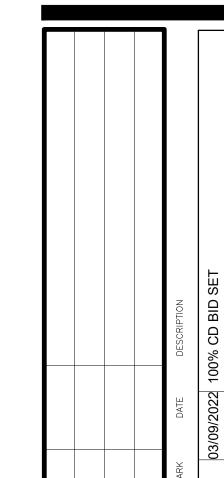














DETAIL LEGEND

SCAV= Scavenger Air SA = Supply Air EA = Exhaust Air FS = Far Side LS = Low Side OSA = Outside Air RA = Return Air NS = Near Side HS = High Side

MB = Mixing Box MS = Moisture Separator

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OLF = OptilineHE Fan

1. All dimensions are in inches unless otherwise specified.

Opening dimension tolerances are ± 0.50, all other cabinet dimension tolerances are ± 1.00.

3. Lifting lug locations on mechanical drawings are for representation only. Actual lifting location will vary depending on Energy Labs Engineering review.

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DRAWING M811

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AHU-S2 DETAIL

AHU-C4

NTS 2

SIDE VIEW

AHU-S4 DETAIL

AHU-S6 DETAIL

KEYNOTES





PROJECT NO.

NET POSITIVE

consulting

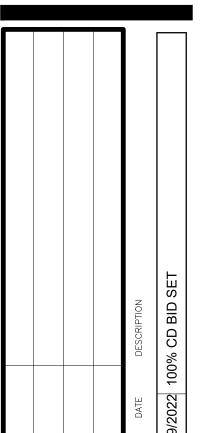
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NTS 2

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21-12277 DRAWING M812

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MERCED, CA 95348

MERCED COLLEGE HVAC UPGRADES 3600 M ST, MERCED, CA 9534

PROJECT NO.

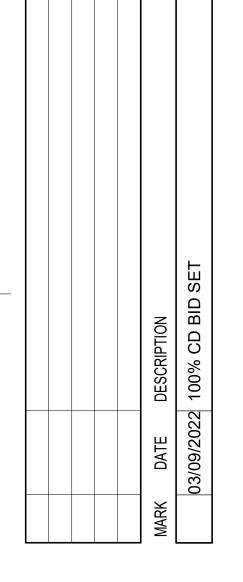
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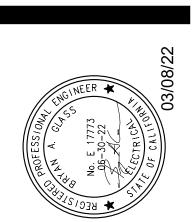
M813

ELECTRICAL POWER PLAN - CDC CHILLER YARD

KEYNOTES

- DISCONNECT EXISTING AIR COOLED CHILLER. DISCONNECT AND REMOVE EXISTING FLEX CONDUIT. PRESERVE EXISTING BRANCH CIRCUIT FEEDER.
- DISCONNECT EXISTING PUMPS. DISCONNECT AND REMOVE EXISTING FLEX CONDUIT AND EXISTING CONDUCTORS TO JUNCTION BOX EQUIPMENT DISCONNECTS. MOTOR STARTERS AND CONTROL WIRING SHALL REMAIN AND BE CONNECTED IN ASSOCIATION WITH NEW PUMPS.
- 3 PROVIDE NEW 18"x18"x6" NEMA 3R PULLCAN. PROVIDE NEW 2" LIQUIDTIGHT FLEXIBLE CONDUIT WITH 3#2/0 CU THWN AND 1#4 CU GND AND PROVIDE CONNECTION TO 460V, 3φ, 145 MCA, 175 MOCP WATER
- PROVIDE NEW 3/4"C LIQUIDTIGHT FLEXIBLE CONDUIT WITH 3#12 CU THWN AND 1#12 CU GND. PROVIDE CONNECTION TO 460V, 3\(\phi\), 3HP PUMP 'P-1'.
- PROVIDE NEW 3/4" LIQUIDTIGHT FLEXIBLE CONDUIT WITH 3#12 CU THWN AND 1#12 CU GND. PROVIDE CONNECTION TO 460V, 3φ, 3HP PUMP 'P-2'.







GENERAL NOTES

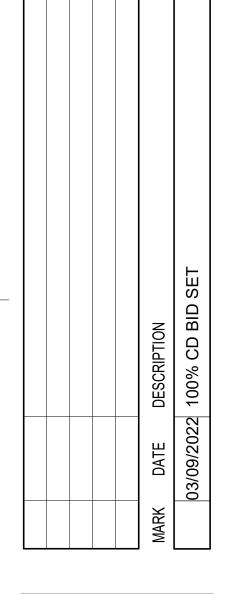
- A. ELECTRICAL FACILITIES SHOWN DASHED ARE EXISTING: THOSE SHOWN LIGHTWEIGHT (FADED) SHALL REMAIN AND REQUIRE MODIFICATION AS NOTED.
 - THOSE SHOWN HEAVYWEIGHT (DARK) REQUIRE REMOVAL AS NOTED.
- B. EXISTING ELECTRICAL FACILITIES AND CIRCUITING SHOWN ARE BASED ON LIMITED RECORD DRAWINGS AND LIMITED SITE VISITS. THE DRAWINGS MAY NOT ACCURATELY REPRESENT ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND RING OUT EXISTING CIRCUITS TO DETERMINE EXACT ROUTING.

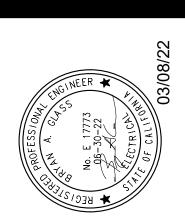
21-12277

E101



- DISCONNECT EXISTING CONDENSING UNIT. DISCONNECT AND REMOVE EXISTING DISCONNECT AND EXISTING BRANCH CIRCUIT TO SOURCE CIRCUIT BREAKER.
- 2 REPLACE EXISTING DUCT SMOKE DETECTOR WITH NEW DUCT SMOKE DETECTOR AS DIRECTED BY MECHANICAL ENGINEER. DUCT SMOKE DETECTOR SHALL BE MONITORED THROUGH THE FIRE ALARM SYSTEM.
- REMOVE EXISTING 70A, 3-POLE CIRCUIT BREAKER AT SPACE 8,10,12 SUPPLYING OUTDOOR CONDENSING UNIT AND PROVIDE NEW 90A, 3-POLE CIRCUIT BREAKER IN PLACE FOR PROTECTION OF NEW OUTDOOR UNIT 'ODU-1' FEEDER.
- 4) ONE 1-1/4"C 3#4 CU THWN AND 1#8 CU GND.
- 5 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 100A, 3-POLE FUSED DISCONNECT WITH 90A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 66.3 MCA, 90 MOCP OUTDOOR UNIT 'ODU-1'.



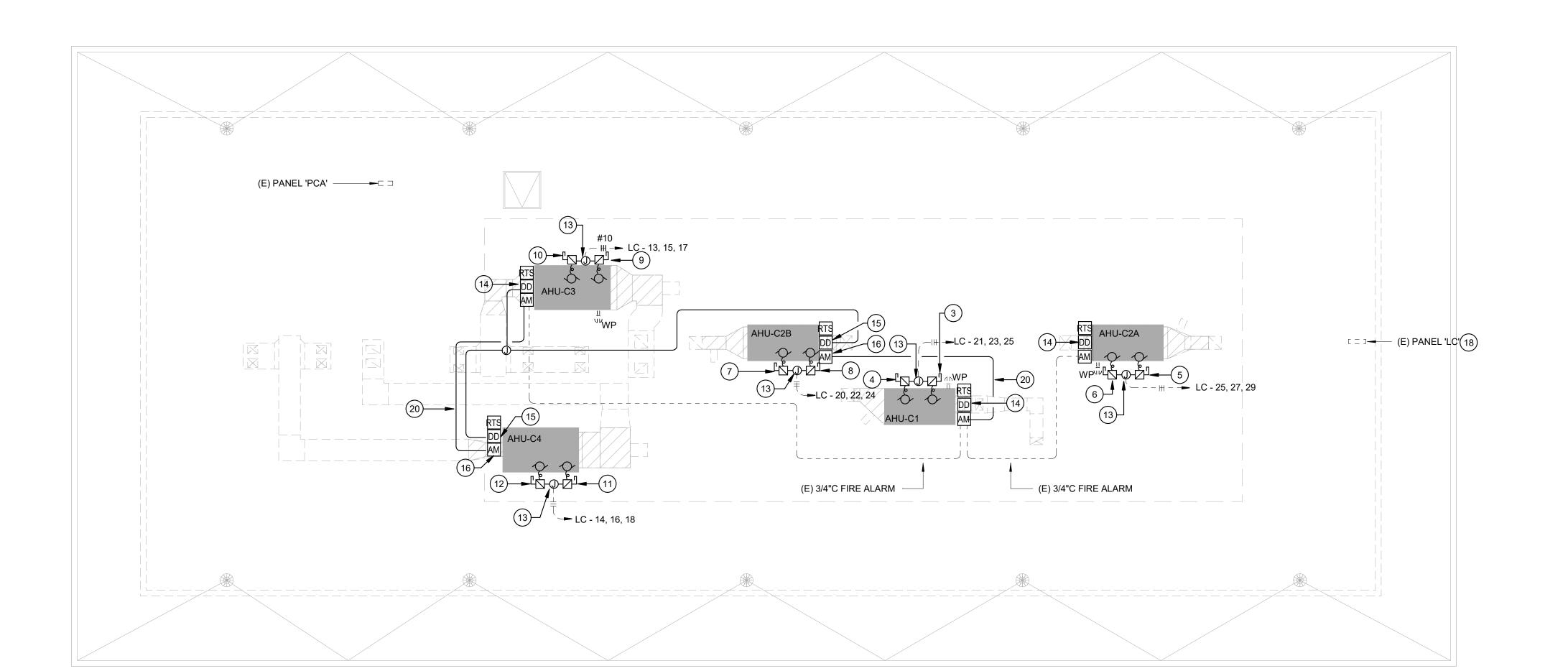




GENERAL NOTES

- A. ELECTRICAL FACILITIES SHOWN DASHED ARE EXISTING:
 - THOSE SHOWN LIGHTWEIGHT (FADED) SHALL REMAIN AND REQUIRE MODIFICATION AS NOTED.
 - THOSE SHOWN HEAVYWEIGHT (DARK) REQUIRE REMOVAL AS
- B. EXISTING ELECTRICAL FACILITIES AND CIRCUITING SHOWN ARE BASED ON LIMITED RECORD DRAWINGS AND LIMITED SITE VISITS. THE DRAWINGS MAY NOT ACCURATELY REPRESENT ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND RING OUT EXISTING CIRCUITS TO DETERMINE EXACT ROUTING.
- C. PENETRATIONS THROUGH WALLS, CEILINGS, FLOORS, AND/OR ROOFS SHALL BE SEALED.

21-12277 E200 ELECTRICAL DEMOLITION PLAN - COMMUNICATION BUILDING



KEYNOTES

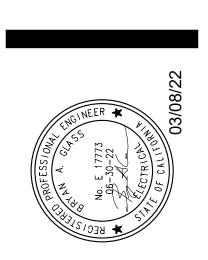
- DISCONNECT EXISTING MECHANICAL UNIT. DISCONNECT AND REMOVE EXISTING DISCONNECT. PRESERVE EXISTING ELEX CONDUIT AND EXISTING DISCONNECT. PRESERVE EXISTING FLEX CONDUIT AND EXISTING BRANCH CIRCUIT.
- DISCONNECT EXISTING MECHANICAL UNIT. DISCONNECT AND REMOVE EXISTING DISCONNECT, EXISTING BRANCH CIRCUIT BACK TO SOURCE IN
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 6 MCA, 15 MOCP AIR HANDLER UNIT 'AHU-C1'.
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 2.8 FLA POWER EXHAUST AT AIR HANDLER UNIT 'AHU-C1'.
- 5 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 6 MCA, 15 MOCP AIR HANDLER UNIT 'AHU-C2A'.
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 36, 2.8 FLA POWER WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3¢, 2.8 FLA POWER EXHAUST AT AIR HANDLER UNIT 'AHU-C2A'.
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3¢, 6 MCA, 15 MOCP AIR HANDLER UNIT 'AHU-C2B'.
- 8 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3\(\phi\), 2.8 FLA POWER
- EXHAUST AT AIR HANDLER UNIT 'AHU-C2B'. 9 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE DISCONNECT WITH 25A FUSES PROVIDE CONNECTION FOR 460V, 3φ, 15 MCA, 25 MOCP
- AIR HANDLER UNIT 'AHU-C3'.
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 6.5 FLA POWER EXHAUST AT AIR HANDLER UNIT 'AHU-C3'.
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 10 MCA, 15 MOCP AIR HANDLER UNIT 'AHU-C4'. PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE DISCONNECT

WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 2.8 FLA POWER

- EXHAUST AT AIR HANDLER UNIT 'AHU-C4'. (13) PROVIDE NEW JUNCTION BOX. SPLICE NEW BRANCH CIRCUIT CONDUCTORS AND PROVIDE POWER TO AIR HANDLER UNIT DISCONNECT AND ASSOCIATED POWER EXHAUST DISCONNECT.
- PROVIDE CONNECTION TO NEW DUCT SMOKE DETECTORS, NEW REMOTE TEST SWITCH, AND NEW FIRE ALARM ADDRESSABLE MODULE UTILIZING PRESERVED EXISTING FIRE ALARM SYSTEM (SIEMENS) CONDUCTORS AND PRESERVED EXISTING FIRE ALARM CIRCUITS. DUCT DETECTOR WIRED FOR UNIT SHUTDOWN PER MECHANICAL.
- PROVIDE CONNECTION TO DUCT SMOKE DETECTOR UTILIZING EXISTING FIRE ALARM CIRCUIT, ONE 3/4"C, 2#12 CU THWN AND 1#12 CU GND.
- PROVIDE CONNECTION TO NEW DUCT SMOKE DETECTORS, NEW REMOTE
 TEST SWITCH, AND NEW FIRE ALARM ADDRESSABLE MONITOR MODULE TEST SWITCH, AND NEW FIRE ALARM ADDRESSABLE MONITOR MODULE TO EXISTING FIRE ALARM SYSTEM (SIEMENS). DUCT DETECTOR WIRED FOR UNIT SHUTDOWN PER MECHANICAL.
- DISCONNECT AND REMOVE EXISTING DUCT SMOKE DETECTOR AND EXISTING FIRE ALARM CONTROL MODULE. PRESERVE EXISTING BRANCH CIRCUIT AND EXISTING CONDUCTORS TO FIRE ALARM SYSTEM (SIEMENS).
- PROVIDE NEW 30A, 3-POLE CIRCUIT BREAKER FOR AIR HANDLER UNIT 'AHU-C3.
- (19) REMOVE EXISTING 20A, 3-POLE SOURCE CIRCUIT BREAKER IN EXISTING PANEL 'LC' FOR AIR HANDLER UNIT 'AHU-C3'.
- ONE 3/4"C WITH 4#18 FPL SHIELDED FIRE ALARM CABLE.

DEMOLITION NOTES

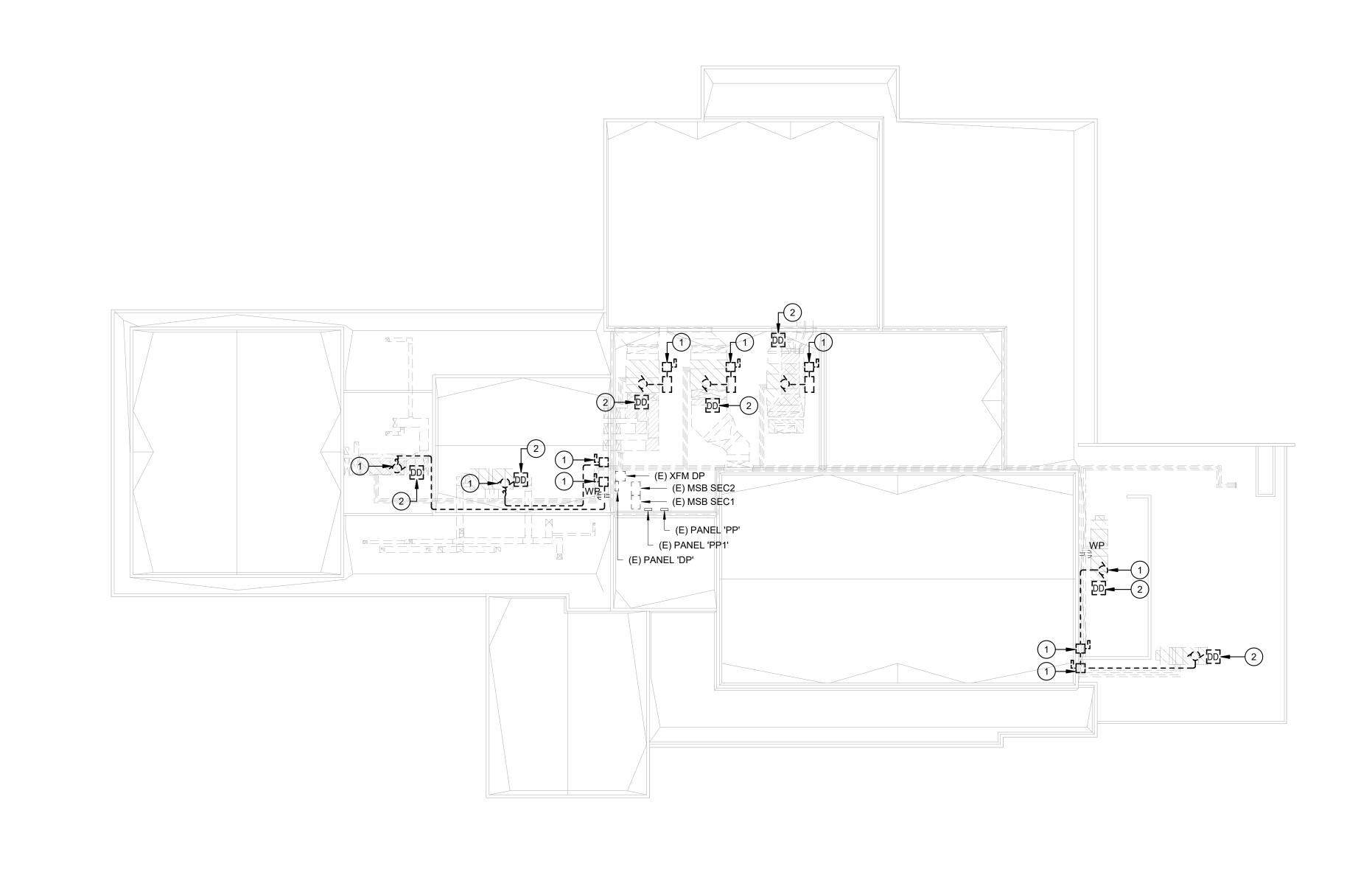
- ELECTRICAL FACILITIES SHOWN DASHED ARE EXISTING:
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 - THOSE SHOWN HEAVYWEIGHT (DARK) REQUIRE REMOVAL AS
- EXISTING ELECTRICAL FACILITIES AND CIRCUITING SHOWN ARE BASED ON LIMITED RECORD DRAWINGS AND LIMITED SITE VISITS. THE DRAWINGS MAY NOT ACCURATELY REPRESENT ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND RING OUT EXISTING CIRCUITS TO DETERMINE EXACT ROUTING.
- PENETRATIONS THROUGH WALLS, CEILINGS, FLOORS, AND/OR ROOFS SHALL BE SEALED.





E210

21-12277

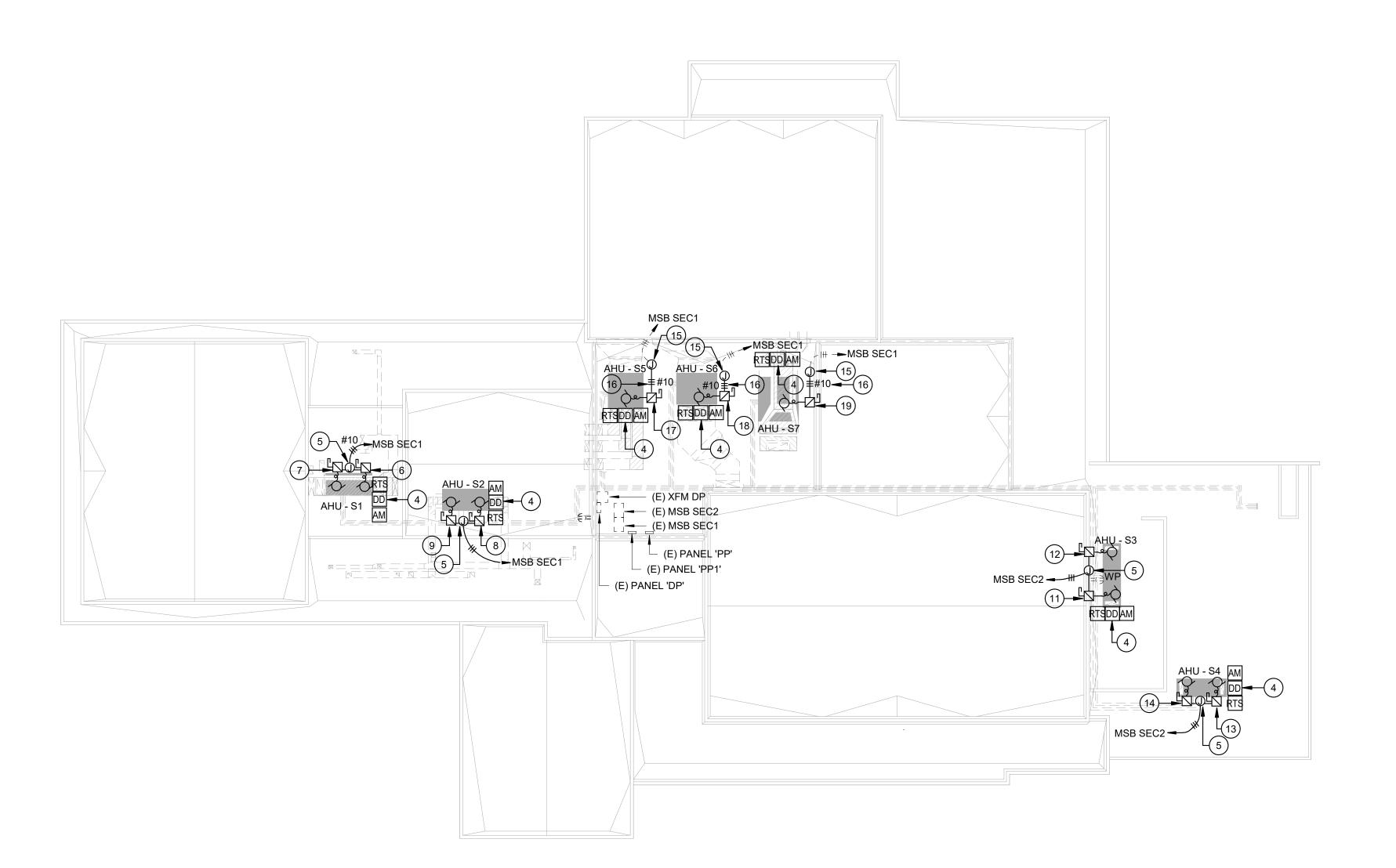


STUDENT UNION BLDG - MSB SEC 1

N.T.S. 3 | ELECTRICAL DEMOLITION PLAN - STUDENT UNION

1/16" = 1'-0"







1/16" = 1'-0"

KEYNOTES

- 1) DISCONNECT EXISTING MECHANICAL UNIT. REMOVE EXISTING EQUIPMENT DISCONNECT, MOTOR STARTER, AND PORTION OF EXISTING
- DISCONNECT AND REMOVE EXISTING DUCT SMOKE DETECTOR.
 PRESERVE EXISTING 120V FIRE ALARM BRANCH CIRCUIT POWER AND EXISTING BRANCH FIRE ALARM CONDUCTORS TO FIRE ALARM SYSTEM
- 3 REMOVE EXISTING 40A 3-POLE CIRCUIT BREAKER. PROVIDE NEW 25A, 3-POLE, 18kAIC CIRCUIT BREAKER, MATCH EXISTING (SQUARE D QED POWER STYLE)
- PROVIDE CONNECTION TO NEW DUCT SMOKE DETECTORS, NEW REMOTE TEST SWITCH, AND NEW FIRE ALARM ADDRESSABLE MODULE UTILIZING EXISTING FIRE ALARM SYSTEM (SIEMENS) CONDUCTORS AND EXISTING FIRE ALARM CIRCUIT. DUCT DETECTOR WIRED FOR UNIT SHUTDOWN PER MECHANICAL.
- 5 PROVIDE NEW WEATHERPROOF SPLICE BOX. TAP AIR HANDLER UNIT BRANCH CIRCUIT TO ASSOCIATED POWER EXHAUST.
- 6 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 25A FUSES. PROVIDE POWER CONNECTION, 3#10 CU THWN AND 1#10 CU GND, FOR 460V, 3\(\phi\), 15 MCA, 25 MOCP AIR HANDLING UNIT 'AHU-S1'.
- 7 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3\(\phi, 6.5 \) FLA POWER EXHAUST AT AIR HANDLING UNIT 'AHU-S1'.
- 8 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE POWER CONNECTION, 3#12 CU THWN AND 1#12 CU GND, FOR 460V, 3φ, 6 MCA, 15 MOCP AIR HANDLING UNIT 'AHU-S2'.
- 9 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3φ, 2.8 FLA POWER EXHAUST AT AIR HANDLING UNIT 'AHU-S2'.

POWER STYLE)

- REMOVE EXISTING 30A, 3-POLE CIRCUIT BREAKER. PROVIDE NEW 15A, 3-POLE, 18kAIC CIRCUIT BREAKER, MATCH EXISTING (SQUARE D QED
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE POWER CONNECTION, 3#12 CU THWN AND 1#12 CU GND, FOR 460V, 3φ, 6 MCA, 15 MOCP AIR HANDLING UNIT 'AHU-S3'.
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3¢, 2.8 FLA POWER EXHAUST AT AIR HANDLING UNIT 'AHU-S3'.
- (13) PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE POWER CONNECTION, 3#12 CU THWN AND 1#12 CU GND, FOR 460V, 3\,\text{\phi}, 6 MCA, 15 MOCP AIR HANDLING UNIT 'AHU-S4'.
- PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES. PROVIDE CONNECTION FOR 460V, 3\, 2.8 FLA POWER EXHAUST AT AIR HANDLING UNIT 'AHU-S4'.
- PROVIDE NEW JUNCTION BOX FOR EXISTING PRESERVED BRANCH CIRCUITS.
- ONE 3/4"C, 3#10 CU THWN AND 1#10 GND FOR CONNECTION TO FUSED DISCONNECT. PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 25A FUSES. PROVIDE POWER CONNECTION, 3#10 CU
- THWN AND 1#10 CU GND, FOR 460V, 36, 13.9 FLA, 17.4 MCA, 25 MOCP AIR HANDLING UNIT 'AHU-S5'. PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 25A FUSES. PROVIDE POWER CONNECTION, 3#10 CU

THWN AND 1#10 CU GND, FOR 460V, 3φ, 13.9 FLA, 17.4 MCA, 25 MOCP AIR

PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 25A FUSES. PROVIDE POWER CONNECTION, 3#10 CU THWN AND 1#10 CU GND, FOR 460V, 3\(\phi\), 13.9 FLA, 17.4 MCA, 25 MOCP AIR

GENERAL NOTES

- A. ELECTRICAL FACILITIES SHOWN DASHED ARE EXISTING:
- THOSE SHOWN LIGHTWEIGHT (FADED) SHALL REMAIN AND REQUIRE MODIFICATION AS NOTED.
- THOSE SHOWN HEAVYWEIGHT (DARK) REQUIRE REMOVAL AS
- EXISTING ELECTRICAL FACILITIES AND CIRCUITING SHOWN ARE BASED ON LIMITED RECORD DRAWINGS AND LIMITED SITE VISITS. THE DRAWINGS MAY NOT ACCURATELY REPRESENT ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND RING OUT EXISTING CIRCUITS TO DETERMINE EXACT ROUTING.
- PENETRATIONS THROUGH WALLS, CEILINGS, FLOORS, AND/OR ROOFS SHALL BE SEALED.
- PANELBOARDS, MSB, AND TRANSFORMERS ARE LOCATED ON 2ND FLOOR MEZZANINE.



HVAC UPGF MERCED CC 3600 M. STR

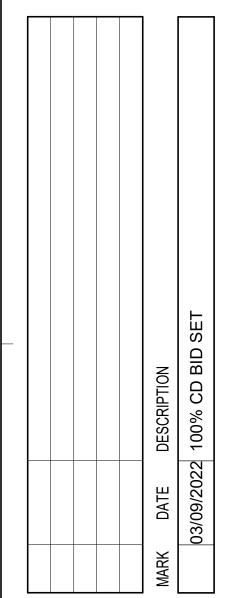
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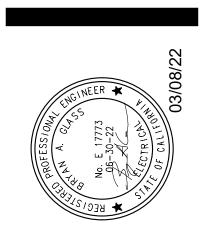
E220

ELECTRICAL PLAN - SERVICE BUILDING - SERVER ROOM

KEYNOTES

- 1 PROVIDE HEAVY DUTY WEATHERPROOF 600V, 30A, 3-POLE FUSED DISCONNECT WITH 15A FUSES, PROVIDE CONNECTION FOR 460V, 3φ, 9.3 MCA, 15 MOCP OUTDOOR UNIT 'ODU-2'.
- PROVIDE CONNECTION FOR 460V, 3φ, 27 MCA, 40 MOCP INDOOR UNIT 'CRAC-1' VIA INTEGRAL DISCONNECT.
- 3 UTILIZE EXISTING 20A, 3-POLE SHUNT TRIP CIRCUIT BREAKER FOR PROTECTION OF NEW FEEDER TO OUTDOOR UNIT 'ODU-2' DISCONNECT.
- PROVIDE NEW 40A, 3-POLE HACR TYPE CIRCUIT BREAKER FOR PROTECTION OF NEW FEEDER SUPPLYING INDOOR UNIT 'CRAC-1' UNIT.
- (5) ONE 1"C, 3#8 CU THWN, 1#10 CU GND.
- 6 ONE 3/4"C, 3#12 CU THWN, 1#12 CU GND.
- 7 PROVIDE CONNECTION TO 120V SHUNT TRIP UNIT AT 'ODU-2' FEEDER CIRCUIT BREAKER TO EXISTING 120V A/C SHUNT TRIP CONTROL CIRCUIT CONTROLLING EXISTING SERVER ROOM AC UNIT.





FRESNO HEADQUARTERS

BAKERSFIELD | MODESTO | SAN LUIS OBISPO



GENERAL NOTES

- A. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
- B. PENETRATIONS THROUGH WALLS, CEILINGS, FLOORS, AND/OR ROOFS SHALL BE SEALED.

HVAC UPGRADE
MERCED COLLEG
3600 M. STREET
MERCED, CA 95348

ROJECT NO.
21-12277

DRAWING E230

KEYNOTES

- (1) PROVIDE NEW 30A, 3-POLE CIRCUIT BREAKER MATCHING EXISTING. (SQUARE D NF PANEL)
- (2) PROVIDE NEW 40A, 3-POLE CIRCUIT BREAKER MATCHING EXISTING. (SQUARE D NF PANEL)
- 3 PROVIDE NEW 90A, 3-POLE CIRCUIT BREAKER MATCHING EXISTING. (SQUARE D NF PANEL)

PANEL: MH 400 AMP BUS 277/480V, 3 PH, 4 W		400 AMP BUS 277/480V, 3 PH, 4 W					ETIC	LOCATION: CDC CHILLER YARD MOUNTING: SURFACE									
	LBOAF			100% RATED NEUTRAL		A.I.C.:	14000			ENCLOSURE: NEMA							
CIRC	PNL	BREAKER		SERVES		V	OLT-AMPERE	S		SERVES	BREAKE	R	CIRC	CKT			
NO.	SPACE	AMP	POLE	POLE	POLE	MP POLE	SERVES	LOAD	Α	В	С	LOAD	SERVES	AMP	POLE	SPACE	1
1	1				38508	38508							2	2			
3	3	175	3	(N) AIR COOLED CHILLER 'CH-1'	38508		38508						4	4			
5	5				38508			38508					6	6			
7	7				746	746			0				8	8			
9	9	15	3	(N) PUMP 'P-1'	746		746		0	(E) A/C #2	15	3	10	10			
11	11	_			746			746	0				12	12			
13	13				746	746	-		0				14	14			
15	15	15	3	(N) 'PUMP' P-2	746		746		0	(E) A/C #2	15	3	16	16			
17	17				746			746	0				18	18			
19	19	20	1	EXISTING LOAD	0	0	_			SPACE		1	20	20			
21	21	20	1	EXISTING LOAD	0		0			SPACE		1	22	22			
23	23	20	1	EXISTING LOAD	0			0	0	SPACE		1	24	24			
25	25	20	1	EXISTING LOAD	0	0	-		0	SPACE		1	26	26			
27	27	20	1	EXISTING LOAD	0		0		0	SPACE		1	28	28			
29	29		1	SPACE	0			0	0	SPACE		1	30	30			
31	31		1	SPACE	0	0			0	SPACE		1	32	32			
33	33		1	SPACE	0		0		0	SPACE		1	34	34			
35	35		1	SPACE	0			0	0	SPACE		1	36	36			
37	37		1	SPACE	0	0			0	SPACE		1	38	38			
39	39		1	SPACE	0		0		0	SPACE		1	40	40			
41	41		1	SPACE	0			0	0	SPACE		1	42	42			
				TOTAL CONNECTED LOAD (VA):		40000	40000	40000									
				25% LCL/LML (VA):		9627	9627	9627									
				TOTAL CALCULATED LOAD (VA):		49627	49627	49627	TOTAL	CALCULATED LOAD FOR PANEL:							
				TOTAL CALCULATED LOAD (AMPS):		179.2	179.2	179.2		148881 VA							

EXISTI	NEL: ING LBOAI		Α	400 AMP BUS 277/480V, 3 PH, 4 W 100% RATED NEUTRAL		MAIN: 400A CB TRIP: THERMAL-MAGNETIC A.I.C.: 14000 A			TIC	LOCATION: ADMINISTRATION BUILDING MOUNTING: SURFACE ENCLOSURE: NEMA				
CIRCUIT BREA		BREAK	ER	_		\	VOLT-AMPERES				BREAK	ER	CIRC	UIT
CKT NO.	PNL SPACE	AMP	POLE	SERVES	LOAD	A	В	С	LOAD	SERVES	AMP	POLE	PNL SPACE	CKT NO.
1	1				13856	20867			7011				2	2
3	3	100	3	(E) TRANSFORMER PA	13856		20867		7011	(E) ADM-1 AIR HANDLER	30	3	4	4
5	5				13856			20867	7011				6	6
7	7				6928	24536			17608				8	8
9	9	50	3	(E) ADM-3	6928		24536		17608	(N) CONDENSING UNIT 'ODU-1'	90	3	10	10
11	11				6928			24536	17608				12	12
13	13				16627	37411			20784				14	14
15	15	100	3	(E) ADM-2	16627		37411		20784	(E) PANEL LA	100	3	16	16
17	17				16627			37411	20784				18	18
19	19				20784	20784			0	SPACE		1	20	20
21	21	100	3	(E) PANEL AA	20784		20784		0	SPACE		1	22	22
23	23				20784			20784	0	SPACE		1	24	24
25	25		1	SPACE	0	0			0	SPACE		1	26	26
27	27		1	SPACE	0		0		0	SPACE		1	28	28
29	29		1	SPACE	0			0	0	SPACE		1	30	30
				TOTAL CONNECTED LOAD (VA):		103598	103598	103598						
				25% LCL/LML (VA):		1753	1753	1753						
				TOTAL CALCULATED LOAD (VA):		105351	105351	105351	TOTAL C	ALCULATED LOAD FOR PANEL:				
				TOTAL CALCULATED LOAD (AMPS):		380.3	380.3	380.3		316052 VA				

PAI EXISTI	NEL:		A-1	 125 AMP BUS 277/480V, 3 PH, 4 W			125A THERMAI	L-MAGNE	TIC	LOCATION: SERVICE BULDIN MOUNTING: SURFACE	G			
PANE	LBOAF	RD		100% RATED NEUTRAL		A.I.C.:	14000	Α		ENCLOSURE: NEMA				
CIRC	UIT	BREAK	ER			V	OLT-AMPERE	:S			BREAK	(ER	CIRC	UIT
CKT NO.	PNL SPACE	АМР	POLE	SERVES	LOAD	A	В	С	LOAD	SERVES	AMP	POLE	PNL SPACE	CKT NO.
1	1				12000	14272			2272				2	2
3	3	70	3	(E) TRANSFORMER	12000		14272		2272	(N) OUTDOOR UNIT 'ODU-2'	20	3	4	4
5	5				12000			14272	2272				6	6
7	7	20	1	(E) LIGHTS -COMPUTER OFFICES	620	620			0	120V SHUNT-TRIP UNIT	20	1	8	8
9	9	20	1	(E) LIGHTS - COMPUTER ROOM	650		8132		7482				10	10
11	11	20	1	(E) LIGHTS - COMPUTER ROOM	650			8132	7482	(N) INDOOR UNIT 'CRAC-1'	40	3	12	12
13	13	20	1	SPARE	0	7482			7482				14	14
15	15	20	1	SPARE	0		0		0	SPARE	20	1	16	16
17	17	20	1	SPARE	0			0	0	SPARE	20	1	18	18
				TOTAL CONNECTED LOAD (VA):		22374	22404	22404						
				25% LCL/LML (VA):		568	568	568						
				TOTAL CALCULATED LOAD (VA):		22942	22972	22972	TOTAL	CALCULATED LOAD FOR PANEL:				
				TOTAL CALCULATED LOAD (AMPS):		82.8	82.9	82.9		68887 VA				

PAI EXIST	NEL:		LC	400 AMP BUS 277/480V, 3 PH, 4 W		MAIN: TRIP:	400A CB	MAGNE	LOCATION: COMM BLDG ETIC MOUNTING: RECESSED				
PANE	LBOAR	RD		100% RATED NEUTRAL		A.I.C.:	65000	Α	ENCLOSURE: NEMA				
CIRC		BREAK	ER			٧	OLT-AMPERE	S		BREAK	ER	CIRCU	
CKT NO.	PNL SPACE	АМР	POLE	SERVES	LOAD	Α	В	С	LOAD	АМР	POLE	PNL SPACE	CKT NO.
1	1	20	1	(E) READING LAB LIGHTS	2191	4111			1920 (E) FACILITY OFFICE LIGHTS	20	1	2	2
3	3	20	1	(E) WRIITING & HI TECH LIGHTS	2400		3000		600 (E) RECEPTACLES RESTROOMS	20	1	4	4
5	5	20	1	(E) COMPUTER LAB LIGHTS	2750			3080	330 (E) CORRIDOR LIGHTS	20	1	6	6
7	7	20	1	(E) EXIT SIGNS	77	1277			1200 (E) EXTERIOR DOWNLIGHTS	20	1	8	8
9	9		1	SPACE	0		0		0 SPACE	20		10	10
11	11		1	SPACE	0		-	0	0 SPACE	20		12	12
13	13				3050	5068			2018	15	3	14	14
15	15	30	3	(N) AIR HANDLER UNIT 'AHU-C3'	3050		5068		2018 (N) AIR HANDLER UNIT' AHU-C4'			16	16
17	17				3050			5068	2018			18	18
19	19				1275	2550			1275			20	20
21	21	15	3	(N) AIR HANDLER UNITAHU-C1	1275		2550		1275 (N) AIR HANDLER UNIT 'AHU-C2B'	15	3	22	22
23	23				1275			2550	1275			24	24
25	25			(N) AIR HANDLER UNIT 'ACH-C2A'	1275	1275			0 SPACE	20		26	26
27	27	15	3		1275		1275		0 SPACE	20		28	28
29	29				1275			1275	0 SPACE	20		30	30
31	31		1	SPACE		7900			7900			32	32
33	33		1	SPACE	0		7500		7500 (E) TRANSFORMER T-3 PNL PCB	70	3	34	34
35	35		1	SPACE	0			7000	7000			36	36
37	37				9300	16720			7420			38	38
39	39	90	3	(E) TRANSFORMER T-1 PNL PCA	8580		14860		6280 (E) TRANSFORMER T-2 PNL PCC	70	3	40	40
41	41				9860			15940	6080			42	42
				TOTAL CONNECTED LOAD (VA):		38901	34253	34913					
				25% LCL/LML (VA) :		763	763	763					
				TOTAL CALCULATED LOAD (VA):		39663	35015	35675	TOTAL CALCULATED LOAD FOR PANEL:				
				TOTAL CALCULATED LOAD (AMPS):		143.2	126.4	128.8	110353 VA				

U.G. DENOTES UNDERGROUND INSTALLATION V.P. DENOTES VAPOR TIGHT CONSTRUCTION W.P. DENOTES WEATHERPROOF CONSTRUCTION W.T. DENOTES WATER TIGHT CONSTRUCTION A.F.F. DENOTES ABOVE FINISHED FLOOR

A.F.G. DENOTES ABOVE FINISHED GRADE F.B.O. DENOTES FURNISHED BY OTHERS U.O.N. DENOTES UNLESS OTHERWISE NOTED (E) DENOTES EXISTING TO REMAIN, NO WORK U.O.N.

(N) DENOTES NEW (1) ELECTRICAL KEYNOTES: DENOTES KEYNOTE #1 OF NOTES ON SAME SHEET A-3 CIRCUIT HOME RUN: DENOTES PANEL A, CKT. #3, -3/4"C. MINIMUM, U.O.N. 1 CIRCUIT FEEDER: DENOTES FEEDER 'F1' PER SYSTEM FEEDER SCHEDULE

CONDUIT IN ATTIC/WALL: DENOTES 3/4"C-2#12 AWG CU THWN, 1#12 CU GND, U.O.N. — - — CONDUIT IN FLOOR/U.G.: DENOTES 3/4"C-2#12 AWG CU THWN, 1#12 CU GND, U.O.N. |---| DENOTES EXISTING CONDUIT RUN TO REMAIN CONDUIT RUN - STUBBED, CAPPED AND LABELED.

— HH— CONDUIT RUN: DENOTES 3/4"C - 3 #12 AWG CU THWN + 1 #12 CU GND, U.O.N. HH CONDUIT RUN: DENOTES 3/4"C - 4 #12 AWG CU THWN + 1 #12 CU GND, U.O.N. HHH CONDUIT RUN: DENOTES 3/4"C - 5 #12 AWG CU THWN + 1 #12 CU GND, U.O.N. HH HH CONDUIT RUN: DENOTES 1"C - 6 #12 AWG CU THWN + 1 #12 CU GND, U.O.N.

JUNCTION BOX JUNCTION BOX WITH FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT NON-FUSIBLE DISCONNECT SWITCH FUSIBLE DISCONNECT SWITCH

FUSIBLE DISCONNECT SWITCH WITH INTEGRAL MAGNETIC STARTER ELECTRIC MOTOR ELECTRICAL PANELBOARD PER PLANS, FLUSH MOUNTED IN WALL ELECTRICAL PANELBOARD PER PLANS, SURFACE MOUNTED ON WALL FIRE ALARM PANEL PER PLANS, FLUSH MOUNTED IN WALL

FIRE ALARM PANEL PER PLANS, SURFACE MOUNTED ON WALL

FIRE ALARM INDIVIDUAL ADDRESSABLE MODULE RTS FIRE ALARM REMOTE TRANSFER SWITCH FIRE ALARM DUCT DETECTOR IN HVAC DUCT

TAMPER-RESISTANT DUPLEX RECEPTACLE IN WALL @ +18", U.O.N. TAMPER-RESISTANT DUPLEX GFI RECEPTACLE, IN WALL @ 18", U.O.N. € WP TAMPER-RESISTANT WEATHER RESISTANT (W/R) DUPLEX GFCI RECEPTACLE W/ W.P. COVER TAMPER-RESISTANT QUADRUPLEX RECEPTACLE IN WALL @ +18", U.O.N.

JUNCTION BOX JUNCTION BOX WITH FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT タ FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT

SYMBOL LEGEND & NOTES

CODES, RULES & REGULATIONS

ALL WORK SHOWN HEREIN SHALL COMPLY WITH THE CURRENT REGULATIONS OF THE CALIFORNIA STATE FIRE MARSHAL, CALIFORNIA BUILDING CODE, TITLES 8 AND 19 THROUGH 24, SERVING UTILITY RULES AND ALL OTHER APPLICABLE STATE ORDINANCES. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE INTERPRETED AS TO PERMIT ANY WORK NOT IN CONFORMANCE WITH THESE CODES, RULES AND REGULATIONS. WHERE WORK OF A GREATER DEGREE IS INDICATED IN THESE PLANS OR SPECIFICATIONS, THAT REQUIREMENT SHALL GOVERN SUCH WORK.

GENERAL NOTES (TYPICAL)

REFER TO THE MECHANICAL AND PLUMBING PLANS FOR THE EXACT LOCATION OF ALL MECHANICAL, HVAC AND PLUMBING EQUIPMENT.

MEP COMPONENT ANCHORAGE NOTE

COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES WHOSE WORK WILL IMPACT PLACEMENT OR CONNECTION OF ELECTRICALLY POWERED EQUIPMENT REGARDLESS OF RESPONSIBILITY FOR SUPPLYING EQUIPMENT.

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

- ALL PERMANENT EQUIPMENT AND COMPONENTS.
- TEMPORARY, MOVEABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING FLEXIBLE CABLE.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER). COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

ELECTRICAL DISTRIBUTION SYSTEMS:

SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) #OPM-0052-13, "SEISMIC BRACING AND SUPPORT SYSTEMS"



HVAC MERC 3600 MERCED, 0

21-12277