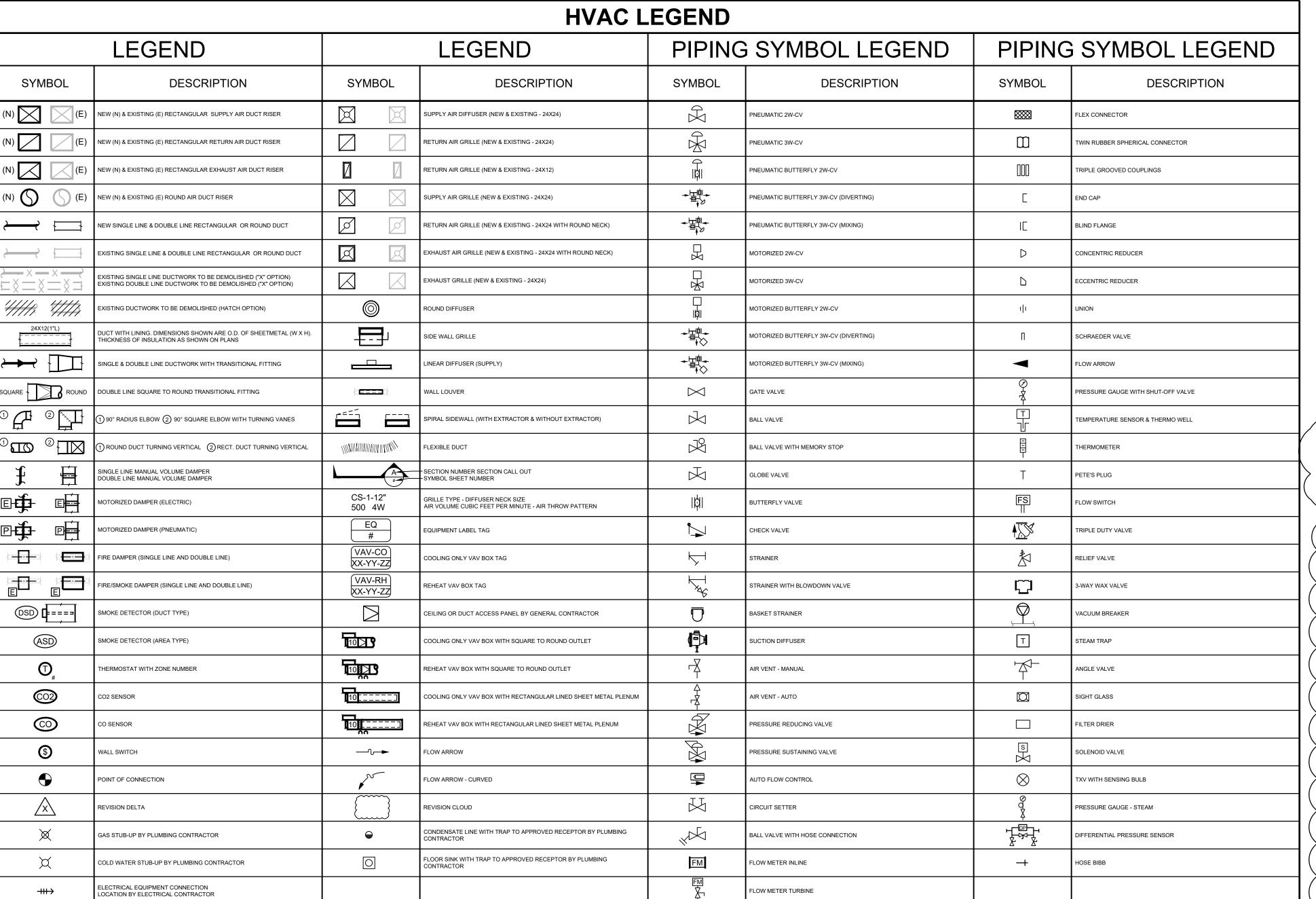
MWDOC CRAC UNIT INSTALL



		ABE	BREVIATIONS		
ABBR.	DESCRIPTION	ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
AFF JASD BBF DO BOO CS CC	ABOVE FINISHED FLOOR AUTHORITY HAVING JURISDICTION AREA SMOKE DETECTOR BACKDRAFT DAMPER BOTTOM FLAT BOTTOM OF DUCT BOTTOM OF INSULATION BOTTOM OF PIPE CEILING SUPPLY CEILING RETURN CEILING EXHAUST CENTERLINE CEILING CUBIC FEET PER MINUTE CHILLED WATER RETURN CHILLED WATER SUPPLY CONCRETE MASONRY UNIT CONCRETE CONTRACTOR CONDENSER WATER RETURN CONDENSER WATER SUPPLY CONDENSATE DUCT SMOKE DETECTOR DRAWING EXISTING EXHAUST AIR EXHAUST AIR GRILLE ELBOW ELECTRICAL EQUIPMENT EXHAUST EXTERIOR FUTURE FIRE DAMPER FLEXIBLE FLOOR	GA GALV GA GALV GA GALV H H H H ID IN IT (L) RS A CH MFR D LA D G O O O O O O O O O O O O O O O O O O	GAUGE GALVANIZED GENERAL CONTRACTOR GALLONS PER HOUR GALLONS PER MINUTE GYPSUM BOARD HEIGHT HAND-OFF-AUTO HOT WATER RETURN HOT WATER SUPPLY INSIDE DIMENSION INSULATION INTERIOR LINED LINEAR RETURN LINEAR SUPPLY MIXED AIR MECHANICAL MANUFACTURER MOUNTED METAL MAKE UP AIR MANUAL VOLUME DAMPER NEW NOT APPLICABLE NORMALLY CLOSED NOT IN CONTRACT NORMALLY OPEN NOT TO SCALE OPPOSED BLADE DAMPER ON CENTER OUTSIDE DIMENSION OPENING OUTSIDE AIR	(R) RA RG RMF RND REQ'D SA SG SM SS STD TF TOD TOP T'STAT UBC UC UMC UNO UTR V VAV VFD VOL WMS XFER	RELOCATE RETURN AIR RETURN OR TRANSFER GRILLE RAPID MOUNT FRAME ROUND REQUIRED SUPPLY AIR SUPPLY GRILLE SHEET METAL STAINLESS STEEL STANDARD TOP FLAT TOP OF DUCT TOP OF PIPE THERMOSTAT UNIFORM BUILDING CODE UNDERCUT UNDERGROUND UNIFORM MECHANICAL CODE UNLESS NOTED OTHERWISE UP THROUGH ROOF VENT VARIABLE AIR VOLUME VARIABLE SPEED DRIVE VOLUME WIRE MESH SCREEN TRANSFER
FR FS FSD	FLOOR RETURN FLOOR SUPPLY FIRE SMOKE DAMPER	POC	POINT OF CONNECTION		

APPLICABLE CODES

CALIFORNIA MECHANICAL PROJECTS:

ALL WORK SHALL BE IN FULL ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL CODES, LAWS AND REGULATIONS. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH, BUT NOT LIMITED TO:

- CALIFORNIA CODE OF REGULATIONS (CCR) 2016 CALIFORNIA BUILDING CODE - CCR TITLE 24 PART 2 2016 CALIFORNIA ELECTRICAL CODE - CCR TITLE 24 PART 3 2016 CALIFORNIA MECHANICAL CODE - CCR TITLE 24 PART 4
- 2016 CALIFORNIA PLUMBING CODE CCR TITLE 24 PART 5 2016 CALIFORNIA ENERGY CODE - CCR TITLE 24 PART 6 2016 CALIFORNIA FIRE CODE - CCR TITLE 24 PART 9 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE - CCR
- ALL WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING
- ADDITIONAL GUIDELINES WHERE REQUIRED BY CODE:
- NATIONAL ASSOCIATION (SMACNA) AMERICAN SOCIETY OF HEATING, REFRIGERATION AND

SHEET METAL AND AIR CONDITIONING CONTRACTORS

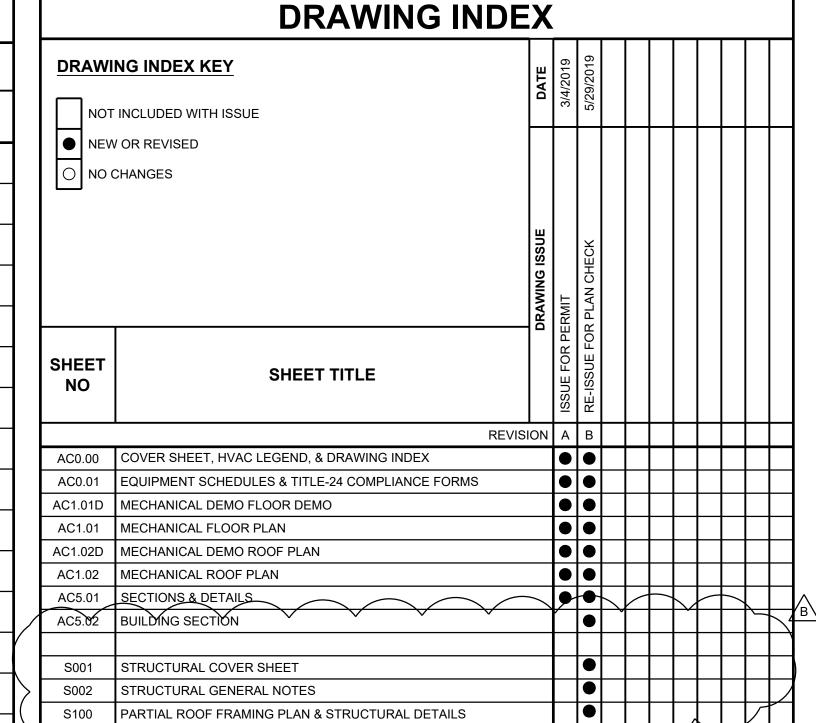
- AIR-CONDITIONING ENGINEERS (ASHRAE) AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
- NATIONAL FIRE PROTECTION AGENCY (NFPA) OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
- LOCAL UTILITY GUIDELINES AND REGULATIONS LOCAL AIR QUALITY MANAGEMENT DISTRICTS

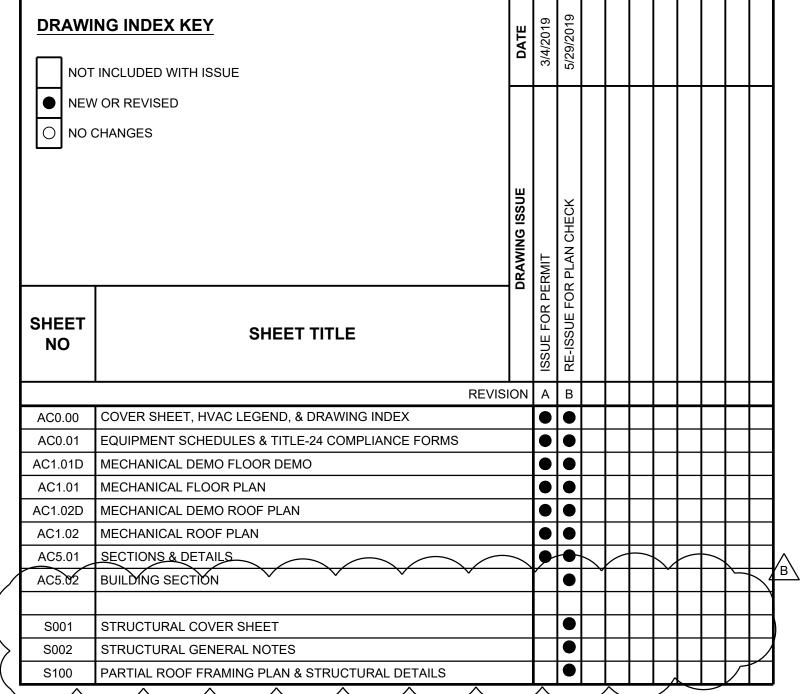
SCOPE OF WORK

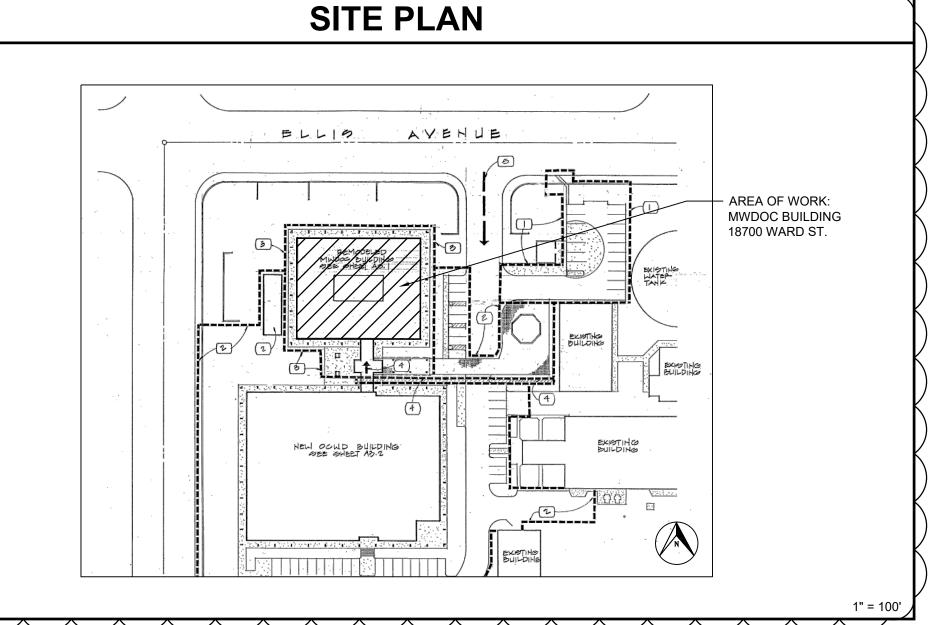
18700 WARD STREET IS AN EXISTING BUILDING, LOCATED IN THE CITY OF FOUNTAIN VALLEY, CA. THE MECHANICAL SCOPE OF WORK IS TO INSTALL (1) NEW CRAC UNIT AND ASSOCIATED SUPPLY, RETURN DUCTWORK.

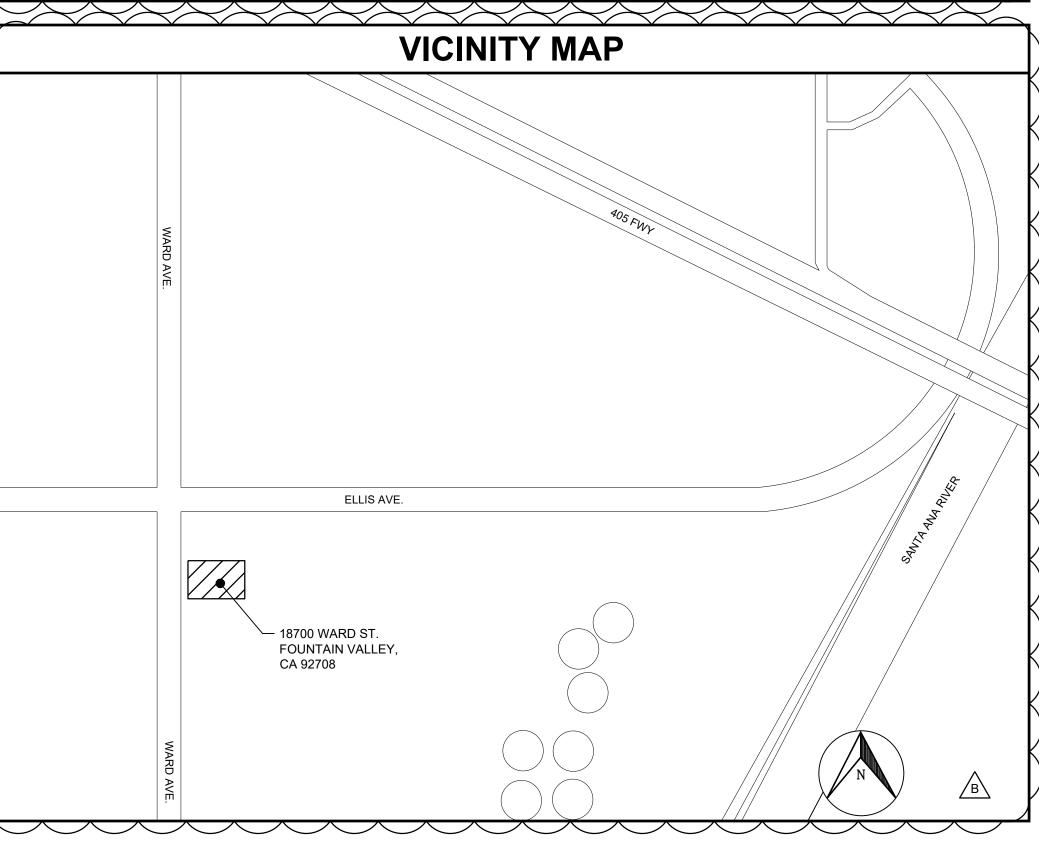
GENERAL NOTE

ELECTRICAL WORK DEFERRED, AND TO BE SUBCONTRACTED AT A LATER DATE BY CONTRACTOR PERFORMING WORK.









ROSENBERG + **ASSOCIATES**

6645 MOORE DRIVE LOS ANGELES, CA 90048

5/28/19 RE-ISSUE FOR PLAN CHECK ISSUE FOR PLAN CHECK

MWDOC CRAC UNIT INSTALL

18700 WARD ST. **FOUNTAIN VALLEY, CA 92708**

COVERSHEET, **HVAC LEGEND, & DRAWING INDEX**

LES ROSENBERG

Job Number

AC0.00

PIPE INSULATION REQUIREMENTS (PER TABLE 120.3-A PIPE INSULATION THICKNESS) NOMINAL PIPE DIAMETER (INCHES) INSULATION FLUID RANGE MEAN TEMPERATURE 1 AND LESS | 1 TO <1.5 | 1.5 TO <4 | 4 TO <8 (in Btu-inch per RATING RANGE (°F) hour per square TEMP. (°F INSULATION THICKNESS REQUIRED (in inches) foot per °F)

DUCT INSULATION REQUIREMENTS (PER 2016 BUILDING ENERGY EFFICIENCY STANDARDS)

1.5

1.5

SPACE COOLING SYSTEM (CHILLED WATER, REFRIGERANT AND BRINE)

(7 ii 127 ii 12 3 ,			
DUCT LOCATION	INSULATION R-VALUE	INSTALLED INSULATION THICKNESS			
- OUTDOORS - SPACE BETWEEN ROOF & INSULATED CEILING - IN VENTED ATTIC SPACES - IN UNCONDITIONED SPACES	R-8	2"			
- IN RETURN AIR PLENUM - ALL OTHER SPACES	R-4.2	1"			
- ENCLOSED IN DIRECTLY CONDITIONED SPACE	NONE REQUIRED	N/A			

NOTES:

BELOW 40

0.20-0.26

- 1. INSULATION THICKNESS VALUES BASED ON JOHNS MANVILLE INSULATION. 2. THE INSTALLED INSULATION THICKNESS OF DUCT LINING FOR PURPOSE OF COMPLIANCE IS
- EQUIVALENT TO ITS NOMINAL THICKNESS. 3. THE INSTALLED INSULATION THICKNESS OF DUCT WRAP FOR PURPOSE OF COMPLIANCE IS 75% OF ITS NOMINAL THICKNESS.

CEC-NRCC-MCH-02-E (Revised 01/16)			CALIF	ORNIA EN	IERGY COMMIS
CERTIFICATE OF COMPLIANCE		NRCC-MCH			
HVAC Dry System Requirements					(Page 1
Project Name: MWDOC CRAC UNIT REP	PLACEMENT			Date Pre	pared: 05/28/201
A. Equipment Tags and System Descrip	otion ¹	CRAC/CU-1			
MANDATORY MEASURES	T-24 Sections	Reference to the Re	equirements	in the Co	ntract Documen
Heating Equipment Efficiency ³	110.1 or 110.2(a)	N/A			
Cooling Equipment Efficiency ³	110.1 or 110.2(a)	12.2 EER			
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)	AC1.01			
Furnace Standby Loss Control	110.2(d)	N/A			
Low leakage AHUs	110.2(f)	N/A			
Ventilation ⁴	120.1(b)	N/A			
Demand Control Ventilation ⁵	120.1(c)4	N/A			
Occupant Sensor Ventilation Control ⁶	120.1(c)5, 120.2(e)3	N/A			
Shutoff and Reset Controls ⁷	120.2(e)	N/A			
Outdoor Air and Exhaust Damper Control	120.2(f)	N/A			
Isolation Zones	120.2(g)	N/A			
Automatic Demand Shed Controls	120.2(h)	N/A			
Economizer FDD	120.2(i)	N/A			
Duct Insulation	120.4				
PRESCRIPTIVE MEASURES					
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	⊠ Yes □ No	□ Yes	□ No	□ Yes □
Supply Fan Pressure Control	140.4(c)	N/A			
Simultaneous Heat/Cool ⁸	140.4(d)	N/A			
Economizer	140.4(e)	N/A			
Heat and Cool Air Supply Reset	140.4(f)	N/A			
Electric Resistance Heating ⁹	140.4(g)	N/A			
Duct Leakage Sealing and Testing ¹⁰	140.4(I)	N/A			

requirements are applicable (e.g. full and part load) include all. Where appliance standards apply (110.1), identify where

plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document.

For all systems identify the specification for the thermostats and time clocks (If applicable).

10. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central

unit schedules and sequences of operation. If one or more space is naturally ventilated identify where this is documented in the

If one or more space has demand controlled ventilation identify where it is specified including the sensor specifications and the

If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and

If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required).

Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification

Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.

equipment is required to be listed per Title 20 1601 et sea.

of the zone controls. Provide a MCH-03-E compliance document.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

sequence of operation.

the sequence of operation

STATE OF CALIFORNIA	
HVAC SYSTEM REQUIREMENTS	
CEC-NRCC-MCH-02-E (Revised 01/16)	CALIFORNIA ENERGY COMMISS
CERTIFICATE OF COMPLIANCE	NRCC-MCH-
HVAC Dry System Requirements	(Page 3
Project Name: MWDOC CRAC UNIT REPLACEMENT	Date Prepared: 05/28/20
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is a	
Documentation Author Name: LES ROSENBEREG	Documentation Author Signature: fun (p. k)
Company: ROSENBERG & ASSOCIATES	Signature Date: 05/28/2019
Address: 6645 MOORE DRIVE	CEA/HERS Certification Identification (if applicable):
City/State/Zip: LOS ANGELES, CA 90048	Phone: (310)739-4153
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
 design identified on this Certificate of Compliance (responsible 3.) The energy features and performance specifications, material design or system design identified on this Certificate of Compliant of Title 24, Part 1 and Part 6 of the California Code of Regulat 4. The building design features or system design features identified information provided on other applicable compliance document plans and specifications submitted to the enforcement agency 	true and correct. as Code to accept responsibility for the building design or system le designer). als, components, and manufactured devices for the building pliance conform to the requirements ations. tified on this Certificate of Compliance are consistent with the ents, worksheets, calculations, by for approval with this building permit application. of Compliance shall be made available with the building permit(s) and agency for all applicable is Certificate of Compliance is required to be included with the
Responsible Designer Name: LES ROSENBERG	Responsible Designer Signature: fun (1.1)
responsible besigner name. Les reserve	Data Circulate AFIGO10040
Company: ROSENBERG & ASSOCIATES	Date Signed: 05/28/2019
	License: 17741

STATE OF CALIFORNIA MECHANICAL SYSTEMS CEC-NRCC-MCH-01-E (Revised 01/16 CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE NRCC-MCH-01-Mechanical Systems (Page 1 of 4 Date Prepared: 05/28/2019 Project Name: MWDOC CRAC UNIT REPLACEMENT A. MECHANICAL COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included) For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2016 Nonresidential Manual Note: The Enforcement Agency may require all forms to be incorporated onto the building plans. NO Form/Worksheet # NRCC-MCH-01-E (Part 1 of 3) Certificate of Compliance, Declaration. Required on plans for all submittals. NRCC-MCH-01-E (Part 2 of 3) Certificate of Compliance, Required Acceptance Tests (MCH-02A to 11A). Required on plans for all submittals. NRCC-MCH-01-E (Part 3 of 3) Certificate of Compliance, Required Acceptance Tests (MCH-12A to 18A). Required on plans where applicable. NRCC-MCH-02-E (Part 1 of 2) Mechanical Dry Equipment Summary is required for all submittals with Central Air Systems. It is optional on plans. NRCC-MCH-02-E (Part 2 of 2) Mechanical Wet Equipment Summary is required for all submittals with chilled water, hot water or condenser water systems. It is optional on plans. NRCC-MCH-03-E Mechanical Ventilation and Reheat is required for all submittals with multiple zone heating and cooling systems. It is optional on plans. NRCC-MCH-07-E (Part 1 of 2) Powered Consumption of Fans. Required on plans where applicable

	X	NRCC-MCH-0	7-E (Part 2 of 2)	Powered Cons	sumption of Fan	s. Declaration.	Required on pla	ns where applic	cable.				EVERY SPACE IN A BUILDING SHALL BE DESIGNED TO HAVE OUT VENTILATION OR MECHANICAL VENTILATION.
CA Building	Energy Efficie	ency Standards	s - 2016 Nonresi	dential Complia	nce						January 2016		TIMES OF OCCUPANCY. THE MINIMUM RATE OF OUTDOOR AIR R SPACE AT ALL TIMES WHEN THE SPACE IS USUALLY OCCUPIED.
STATE OF C	CALIFORNIA												DUCTING FOR ZONAL HEATING AND COOLING UNITS. WHERE A F TO A ZONAL HEATING OR COOLING UNIT WHICH THEN SUPPLIES REQUIREMENTS OF SECTION 120.1(d), THE OUTDOOR AIR SHALL THE UNIT; OR WITHIN 15 FEET OF THE UNIT, SUBSTANTIALLY TO FEET PER MINUTE.
MECHAN	IICAL SY	STEMS											DESIGN AND CONTROL REQUIREMENTS FOR QUANTITIES OF OU SPACE-CONDITIONING SYSTEMS SHALL BE DESIGNED WITH AND
CEC-NRCC-	MCH-01-E (F	Revised 01/16)							CALIFO	RNIA ENERGY	COMMISSION		CONTROLS TO ALLOW OUTSIDE AIR RATES TO BE OPERATED AT
CERTIFICAT									0, 1,2 0		CC-MCH-01-E		SECTION 120.1(b) 1 OR 2 THE RATE REQUIRED FOR MAKE-UP OF PROCESS, FOR CONTROL OF ODORS, OR FOR THE REMOVAL OF
Mechanical	Systems										(Page 2 of 4)		mand Controlled Ventilation (§120.1(c)3
Project Name	e: MWDOC (CRAC UNIT RE	PLACEMENT				Date Prepared	: 05/28/2019					(0)
B. MECHAN Test Perforr		ACCEPTANC	E FORMS (che	ck box for requ	ired forms)								EVERY SPACE REQUIRING DEMAND CONTROL VENTILATION. THI SPACE WITH A DESIGN OCCUPANT DENSITY, OR A MAXIMUM OC GREATER THAN OR EQUAL TO 25 PEOPLE PER 1000 FT ² (40 FT ² P WITH ANY CONTROLS OR MULTIPLE ZONE SYSTEMS WITH DIREC
Designer:	пес Бу.											Cor	ntrols (§120.2)
applicable bodescription and Installing Cor The contractor has responsible are responsible Enforcement Plancheck —	oxes for all accepted the number of the numb	ceptance tests to a systems. It is a systems. It is a system is a system is a system of the equipment occuptance testing the system is a system of the system is a system of the system	hat apply and lis nt is responsible ng, each person liance document	t all equipment to to either conduc shall sign and s	that requires an a et the acceptance ubmit the Certific ed a completed o	acceptance test. test themselve cate of Acceptar document and is	. All equipment on a second control of the control	of the same type iffied entity run t the portion of t ted by the build	e that requires a the test for them. The construction of the department to	gner is required to test, list the equipole of	oment person which they		HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HE OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEATIN WHICH THE CUT-ON TEMPERATURE FOR COMPRESSION HEAT SUPPLEMENTARY HEATING, AND THE CUT-OFF TEMPERATURE FOUT-OFF TEMPERATURE FOR SUPPLEMENTARY HEATING. THERMOSTATS, ALL UNITARY HEATING AND/OR COOLING SYSTE CENTRAL ENERGY MANAGEMENT CONTROL SYSTEM (CEMS) SHOTHERMOSTATIC CONTROLS FOR EACH ZONE. THE SUPPLY OF HEADACE-CONDITIONING ZONE OR DWELLING UNIT SHALL BE CONTROLS FOR EACH ZONE.
					d process system	·						1	THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE AND THA 120.2(a).
Test Des	cription	MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A		CRITERIA FOR ZONAL THERMOSTATIC CONTROLS. THE INDIVIDL 120.2(b) SHALL MEET REQUIREMENTS; FOR HEATING SHALL BE C
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Controlled Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control	- H	TO 55°F OR LOWER. OR FOR COOLING IT SHALL BE CAPABLE OF HIGHER. FOR HOTEL/MOTEL GUEST ROOM AND HIGH-RISE RESIDENTIAL I
CRAC/CU-1	1		57			` '			+ -			-	TEMPERATURE SETPOINTS IN °F; AND SETPOINT STOPS ACCESS
310.0700-1	•	<u> </u>		П	П			П					OVER-HEATING AND OVER-COOLING AND MEET SECTION 150(i).
													HEAT PUMP CONTROLS. ALL HEAT PUMPS WITH SUPPLEMENTAF WITH CONTROLS THAT COMPLY WITH SECTION 110.2(b).
													SHUT-OFF AND RESET CONTROLS FOR SPACE-CONDITIONING S
													COMPLY WITH CONTROLS CAPABLE OF AUTOMATICALLY SHUTT
													SHALL HAVE BY HAVING AN AUTOMATIC TIME SWITCH CONTROL ALLOWS OPERATION OF THE SYSTEM FOR UP TO 4 HOURS.
CA Building	Energy Efficie	ency Standards	s - 2016 Nonresi	dential Complia	nce						January 2016		DAMPERS FOR AIR SUPPLY AND EXHAUST EQUIPMENT. OUTDOO
CA building i		siicy Stailuaius	5 - 20 10 NOHIESI		ILE					1	January 2010	I_ '	DAMI ENOTON AIN OUT ET AND EXHAUUT EQUI MENT. OUTD



MECHANICAL MANDATORY MEASURES

Certification of Equipment Efficiencies (§110.2 thru §110.11)

- ANY APPLIANCE FOR WHICH THERE IS A CALIFORNIA STANDARD ESTABLISHED IN THE APPLIANCE EFFICIENCY REGULATIONS MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED TO THE COMMISSION THAT THE APPLIANCE COMPLIES WITH THE APPLICABLE STANDARD FOR THAT APPLIANCE.
- **HVAC Equipment Efficiencies** (§110.2) MECHANICAL EQUIPMENT INSTALLED IN A BUILDING SUBJECT TO THESE REGULATIONS MUST BE CERTIFIED AS MEETING CERTAIN MINIMUM EFFICIENCY, THESE REQUIREMENTS ARE CONTAINED IN \$112, THE AFUE, COP. EER. IPLV.
- COMBUSTION EFFICIENCY, AND THERMAL EFFICIENCY VALUES OF ALL EQUIPMENT MUST BE DETERMINED USING THE APPLICABLE TEST METHOD SPECIFIED IN THE STANDARDS THE FOLLOWING SPACE-CONDITIONING EQUIPMENT MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED THAT THE EQUIPMENT MEETS OR EXCEEDS ALL APPLICABLE EFFICIENCY REQUIREMENTS OF THE STANDARDS: ALL AIR
- CONDITIONERS, HEAT PUMPS AND CONDENSING UNITS >135,000 BTU/HR; ALL WATER CHILLERS; ALL GAS AND OIL FIRED AIR FURNACES WITH INPUT RATING >225,000 BTU/HR SHALL HAVE AN INTERMITTENT IGNITION OF INTERRUPTED DEVICE (IDD), AND HAVE EITHER POWER VENTING OR A FLUE DAMPER.
- ALL ENCLOSED SPACES IN A BUILDING THAT ARE NORMALLY USED BY HUMANS SHALL BE VENTILATED IN ACCORDANCE
- WITH THE REQUIREMENTS OF THIS SECTION AND THE CBC. THE OUTDOOR AIR-VENTILATION RATE AND AIR-DISTRIBUTION ASSUMPTIONS MADE IN THE DESIGN OF THE VENTILATING SYSTEM SHALL BE CLEARLY IDENTIFIED ON THE BUILDING PLANS REQUIRED BY §10-103 OF TITLE 24, PART 1.
- EVERY SPACE IN A BUILDING SHALL BE DESIGNED TO HAVE OUTDOOR AIR-VENTILATION EITHER BY NATURAL
- VENTILATION OR MECHANICAL VENTILATION. TIMES OF OCCUPANCY. THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY SECTION 120.1 SHALL BE SUPPLIED TO EACH
- DUCTING FOR ZONAL HEATING AND COOLING UNITS. WHERE A RETURN PLENUM IS USED TO DISTRIBUTE OUTDOOR AIR TO A ZONAL HEATING OR COOLING UNIT WHICH THEN SUPPLIES THE AIR TO A SPACE IN ORDER TO MEET THE REQUIREMENTS OF SECTION 120.1(d). THE OUTDOOR AIR SHALL BE DUCTED TO DISCHARGE EITHER: WITHIN 5 FEET OF THE UNIT; OR WITHIN 15 FEET OF THE UNIT, SUBSTANTIALLY TOWARD THE UNIT, AND AT A VELOCITY NOT LESS THAN 500
- DESIGN AND CONTROL REQUIREMENTS FOR QUANTITIES OF OUTDOOR AIR. ALL MECHANICAL VENTILATION AND SPACE-CONDITIONING SYSTEMS SHALL BE DESIGNED WITH AND HAVE INSTALLED DUCTWORK, DAMPERS, AND CONTROLS TO ALLOW OUTSIDE AIR RATES TO BE OPERATED AT THE LARGER OF (1) THE MINIMUM LEVELS SPECIFIED IN SECTION 120.1(b) 1 OR 2 THE RATE REQUIRED FOR MAKE-UP OF EXHAUST SYSTEMS THAT ARE REQUIRED FOR A PROCESS, FOR CONTROL OF ODORS, OR FOR THE REMOVAL OF CONTAMINANTS WITHIN THE SPACE. **Demand Controlled Ventilation** (§120.1(c)3
- EVERY SPACE REQUIRING DEMAND CONTROL VENTILATION. THEY MUST HAVE AN AIR ECONOMIZER; AND THEY SERVE A SPACE WITH A DESIGN OCCUPANT DENSITY, OR A MAXIMUM OCCUPANT LOAD FACTOR FOR EGRESS PURPOSES. GREATER THAN OR EQUAL TO 25 PEOPLE PER 1000 FT2 (40 FT2 PER PERSON); AND IS EITHER A SINGLE ZONE SYSTEM WITH ANY CONTROLS OR MULTIPLE ZONE SYSTEMS WITH DIRECT DIGITAL CONTROLS (DDC) TO THE ZONE LEVEL. **Controls** (§120.2)
- HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEATERS; SHOULD PREVENT SUPPLEMENTARY HEATER OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEAT PUMP ALONE; AND
- IN WHICH THE CUT-ON TEMPERATURE FOR COMPRESSION HEATING IS HIGHER THAN THE CUT-ON TEMPERATURE FOR SUPPLEMENTARY HEATING, AND THE CUT-OFF TEMPERATURE FOR COMPRESSION HEATING IS HIGHER THAN THE CUT-OFF TEMPERATURE FOR SUPPLEMENTARY HEATING.
- THERMOSTATS, ALL UNITARY HEATING AND/OR COOLING SYSTEMS HEAT PUMPS THAT ARE NOT CONTROLLED BY A CENTRAL ENERGY MANAGEMENT CONTROL SYSTEM (CEMS) SHALL HAVE A SETBACK THERMOSTAT.
- THERMOSTATIC CONTROLS FOR EACH ZONE. THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH SPACE-CONDITIONING ZONE OR DWELLING UNIT SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE AND THAT MEETS THE APPLICABLE REQUIREMENTS OF SECTION
- CRITERIA FOR ZONAL THERMOSTATIC CONTROLS. THE INDIVIDUAL THERMOSTATIC CONTROLS REQUIRED BY SECTION 120.2(b) SHALL MEET REQUIREMENTS; FOR HEATING SHALL BE CAPABLE OF BEING SET, LOCALLY OR REMOTELY, DOWN TO 55°F OR LOWER. OR FOR COOLING IT SHALL BE CAPABLE OF BEING SET, LOCALLY OR REMOTELY, UP TO 85°F OR
- FOR HOTEL/MOTEL GUEST ROOM AND HIGH-RISE RESIDENTIAL DWELLING UNIT THERMOSTATS; SHALL HAVE: NUMERIC TEMPERATURE SETPOINTS IN °F; AND SETPOINT STOPS ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL, TO RESTRICT OVER-HEATING AND OVER-COOLING AND MEET SECTION 150(i).
- HEAT PUMP CONTROLS. ALL HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEATERS SHALL BE INSTALLED WITH CONTROLS THAT COMPLY WITH SECTION 110.2(b).
- SHUT-OFF AND RESET CONTROLS FOR SPACE-CONDITIONING SYSTEMS; SHALL BE INSTALLED WITH CONTROLS THAT COMPLY WITH CONTROLS CAPABLE OF AUTOMATICALLY SHUTTING OFF THE SYSTEM DURING PERIODS OF NONUSE AND SHALL HAVE BY HAVING AN AUTOMATIC TIME SWITCH CONTROL DEVICE AND ACCESSIBLE MANUAL OVERRIDE THAT ALLOWS OPERATION OF THE SYSTEM FOR UP TO 4 HOURS.
- DAMPERS FOR AIR SUPPLY AND EXHAUST EQUIPMENT. OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL B INSTALLED WITH DAMPERS THAT AUTOMATICALLY CLOSE UPON FAN SHUTDOWN.

ISOLATION AREA DEVICES. EACH SPACE-CONDITIONING SYSTEM SERVING MULTIPLE ZONES WITH A COMBINED CONDITIONED FLOOR AREA OF MORE THAN 25,000 SQUARE FEET SHALL BE DESIGNED, INSTALLED, AND CONTROLLED TO

- AUTOMATIC DEMAND SHED CONTROLS. HVAC SYSTEMS WITH DDC TO THE ZONE LEVEL SHALL BE PROGRAMMED TO
- ALLOW CENTRALIZED DEMAND SHED FOR NON-CRITICAL ZONES. ALL NEWLY INSTALLED AIR COOLED PACKAGED DX UNITS GREATER THAN 54,000 BTU/HR WITH AN ECONOMIZER SHALL
- HAVE FAULT DETECTION AND DIAGNOSTICS.
- DDC CONTROLS TO ZONE SHALL BE PROVIDED AS SPECIFIED BY TABLE 120.2-A. SPACE CONDITIONING SYSTEMS WITH DDC CONTROLS SHALL HAVE OPTIMUM START/STOP CONTROLS.
- Pipe Insulation (§120.3) THE PIPING FOR ALL SPACE-CONDITIONING AND SERVICE WATER-HEATING SYSTEMS WITH FLUID TEMPERATURES LISTED IN TABLE 120.3-A SHALL INSTALL THE AMOUNT OF INSULATION SPECIFIED.
- ALL AIR DISTRIBUTION SYSTEM DUCTS AND PLENUMS, INCLUDING, BUT NOT LIMITED TO, BUILDING CAVITIES, MECHANICAL CLOSETS, AIR-HANDLER BOXES AND SUPPORT PLATFORMS USED AS DUCTS OR PLENUMS, SHALL BE INSTALLED. SEALED AND INSULATED TO MEET THE REQUIREMENTS OF THE 2016 CMC SECTIONS 601, 602, 603, 604, 605, AND SMACNA-006-2006 HVAC DUCT CONSTRUCTION STANDARDS METAL & FLEXIBLE, 3RD EDITION.
- Acceptance Tests (§120.5 and Reference Nonresidential NA7.5) BEFORE AN OCCUPANCY PERMIT IS GRANTED THE CERTIFICATE OF ACCEPTANCE SHALL BE SUBMITTED TO THE
- ENFORCEMENT AGENCY THAT CERTIFIES THAT THE EQUIPMENT AND SYSTEMS MEET THE ACCEPTANCE REQUIREMENTS Ionresidential Building Commissioning (§120.8) NEW NONRESIDENTIAL BUILDINGS SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF SECTIONS 120.8(a)
- THROUGH 120.8(i) IN THE BUILDING DESIGN AND CONSTRUCTION PROCESSES. Commercial Boilers (§120.9)
- ALL NEW BOILERS OVER 2,500,000 BTU/HR SHALL COMPLY WITH COMBUSTION AIR AND COMBUSTION AIR FAN

GENERAL NOTES

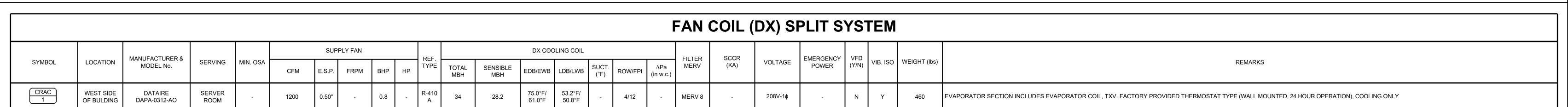
- REMOVABLE CEILING PANEL OR PANELS AT FACE OF ALL FIRE AND FIRE/SMOKE DAMPERS BY GENERAL CONTRACTOR (24" x 24" MIN.) UNLESS OTHERWISE NOTED.
- INCOMBUSTIBLE PLENUM ABOVE CEILING FOR RETURN/RECIRCULATING AIR BY GENERAL CONTRACTOR. CONCEALED BUILDING SPACES USED AS RETURN AIR PLENUMS SHALL BE IN COMPLIANCE WITH CMC 602.2. ACCESS DOORS AND/OR ACCESS PANELS THROUGH FIRE RATED WALLS, SHAFTS, CEILINGS, ETC., MUST EQUAL THE
- ALL AIR SHAFTS SHALL BE MADE AIR TIGHT BY GENERAL CONTRACTOR.

Duct Construction and Insulation (§120.4)

- ALL UNDERCUT DOORS AND DOOR LOUVERS ARE BY GENERAL CONTRACTOR. ALL APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY FASTENED IN PLACE.
- ALL SPACE CONDITIONING EQUIPMENT SHALL BE LABELED AS TO WHICH AREA IT SERVES.
- INSTALLATION PRACTICES OF SOFT-COPPER REFRIGERANT PIPING FOLLOW THE INTERPRETATION THAT CEILING STRUCTURES AND WALL STRUCTURES MEET THE REQUIREMENTS OF PIPING PROTECTION REQUIRED BY 2016 CMC 1109.7

TITLE 24 COMPLIANCE FORMS

January 2016



	SPLIT SYSTEM CONDENSING UNIT																	
s	SYMBOL	LOCATION	MANUFACTURER &	SERVING	REF.	COOLIN	SUCT		COMP'R # OF			INGLE POIN		EMERGENCY	EER @	VIB. ISO	WEIGHT (lbs	REMARKS
			MODEL No.		TYPE	TOTAL MBH	°F	AMB	QTY. CIRCUITS	MCA	MOP	(KA)	VOLTAGE	POWER	ARI			
	CU 1	SW SECTION OF ROOF	DATAIRE DRCU-0312-3	CRAC 1	R-410A	34	-	95°F	1 1	29.9	50	-	208V-1¢	-	12.2	Υ	349	PROVIDE INVERTED TRAP AT TOP OF DISCHARGE LINE, PROVIDE TRAPS EVERY 15-30 FEET OF DISCHARGE LINE, PROVIDE TRAP AT THE BOTTOM OF DISCHARGE LINE, PROVIDE DISCHARGE LINE CHECK VALVE (SEE IOM), HOT GAS BYPASS

W	EIGHT TABL	Ε
SYMBOL	OLD UNIT WEIGHT	NEW UNIT WEIGHT
(E) AC 1 CU 1	289 LBS.	349 LBS.

	GRILLES & DIFFUSERS													
SYMBOL	TAG	MANUFACTURER & MODEL No.	MODULE SIZE	BORDER TYPE	FACE TYPE	REMARKS								
X	SAG1	TITUS PAR	24"x24"	T-BAR SUPPLY	PERFORATED	-								
	RAG1	TITUS PAR	24"x24"	T-BAR RETURN	PERFORATED	-								

ROSENBERG +

LOS ANGELES, CA 90048

RE-ISSUE FOR PLAN CHECK ISSUE FOR PLAN CHECK Description Revisions

MWDOC CRAC UNIT INSTALL

18700 WARD ST. **FOUNTAIN VALLEY, CA 92708**

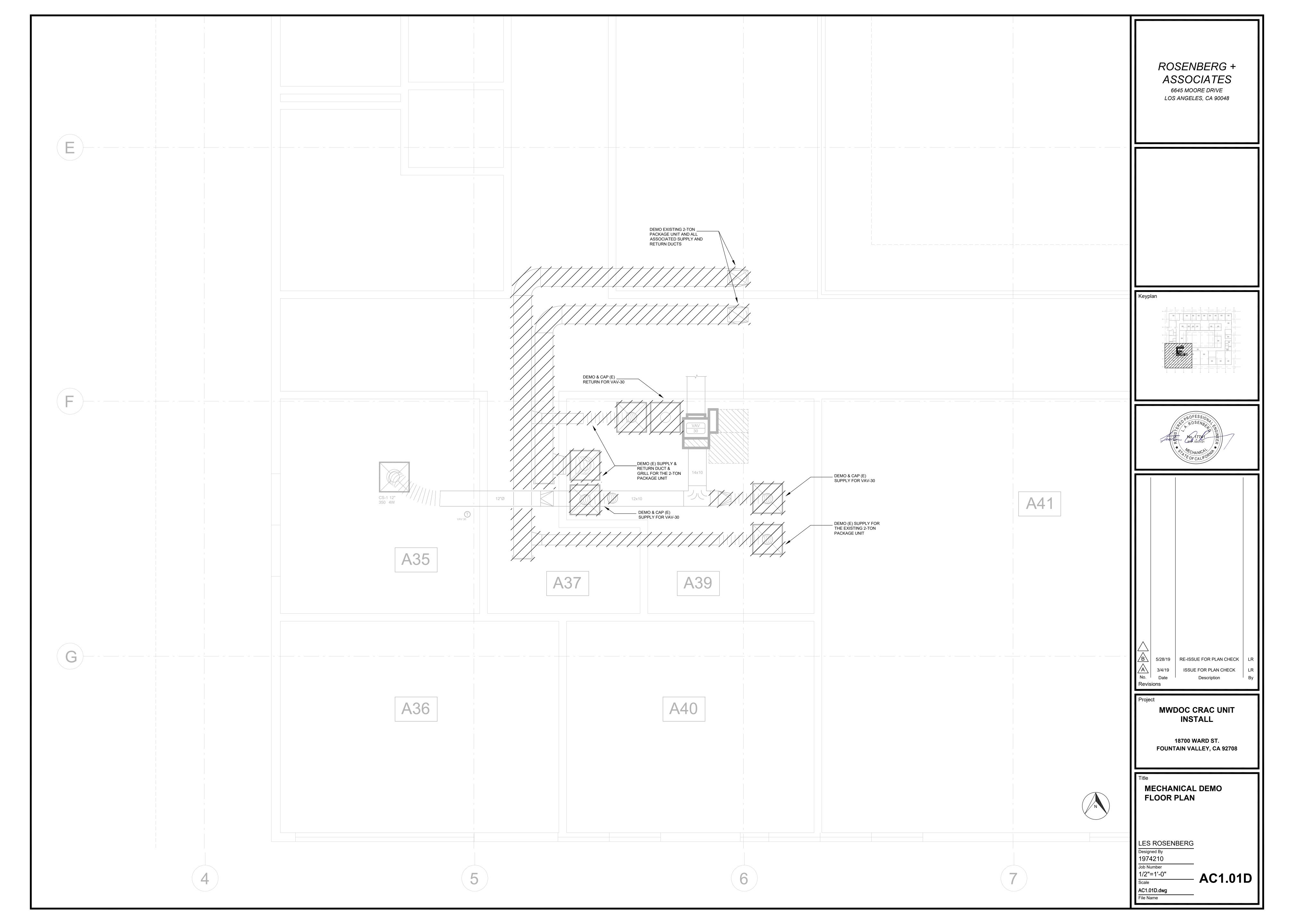
EQUIPMENT SCHEDULES & TITLE-24 COMPLIANCE **FORMS**

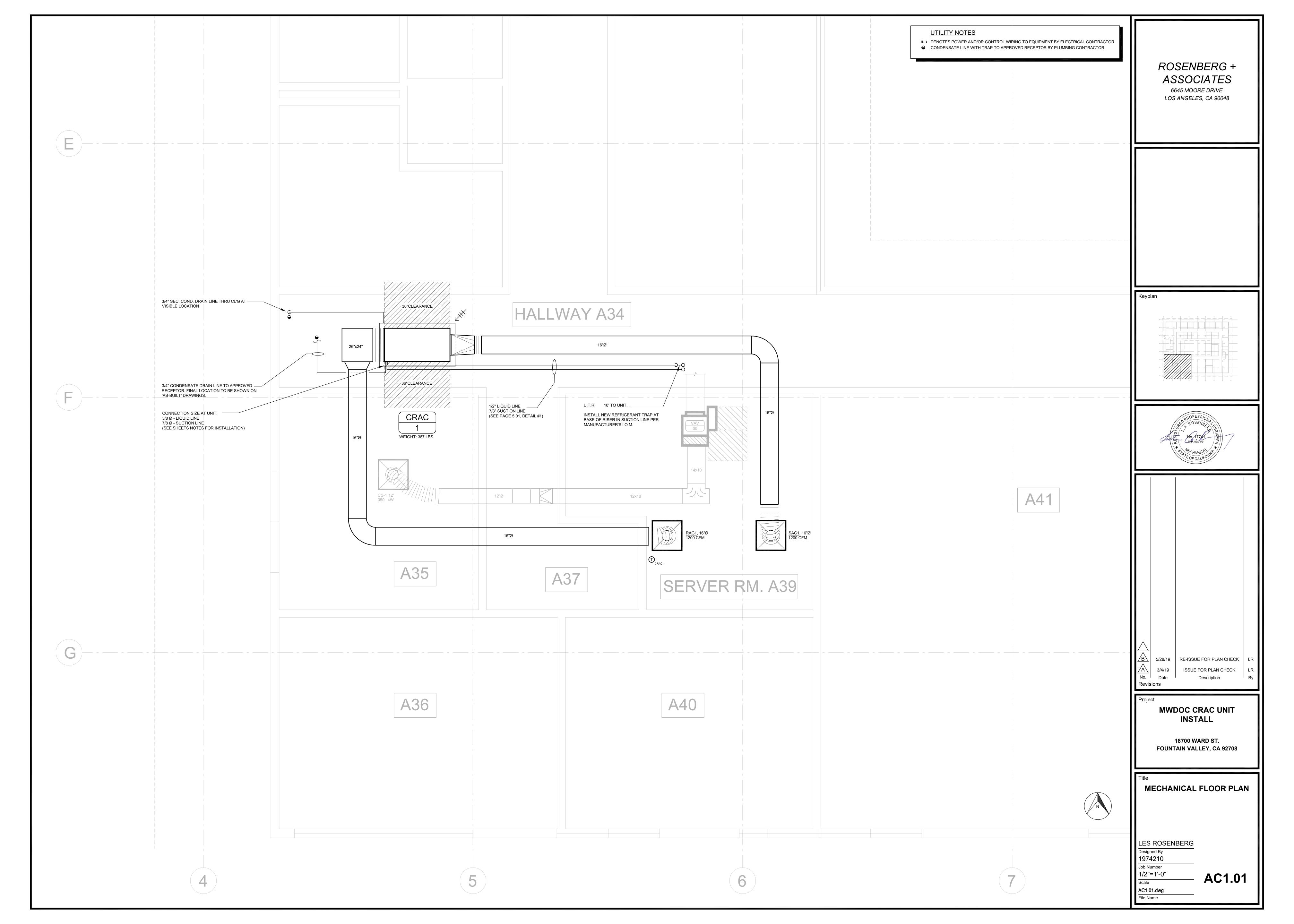
LES ROSENBERG 1974210 Job Number NONE

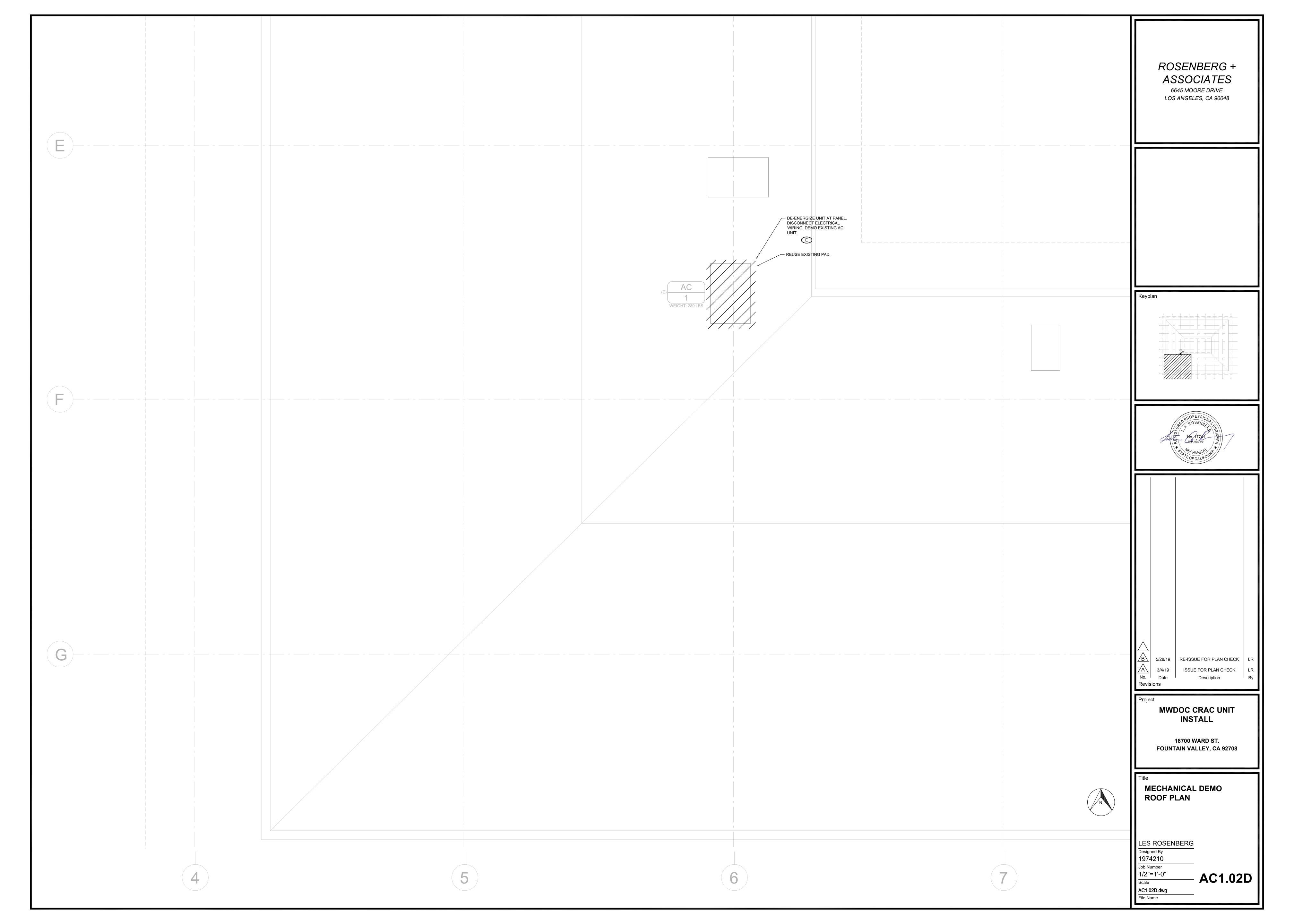
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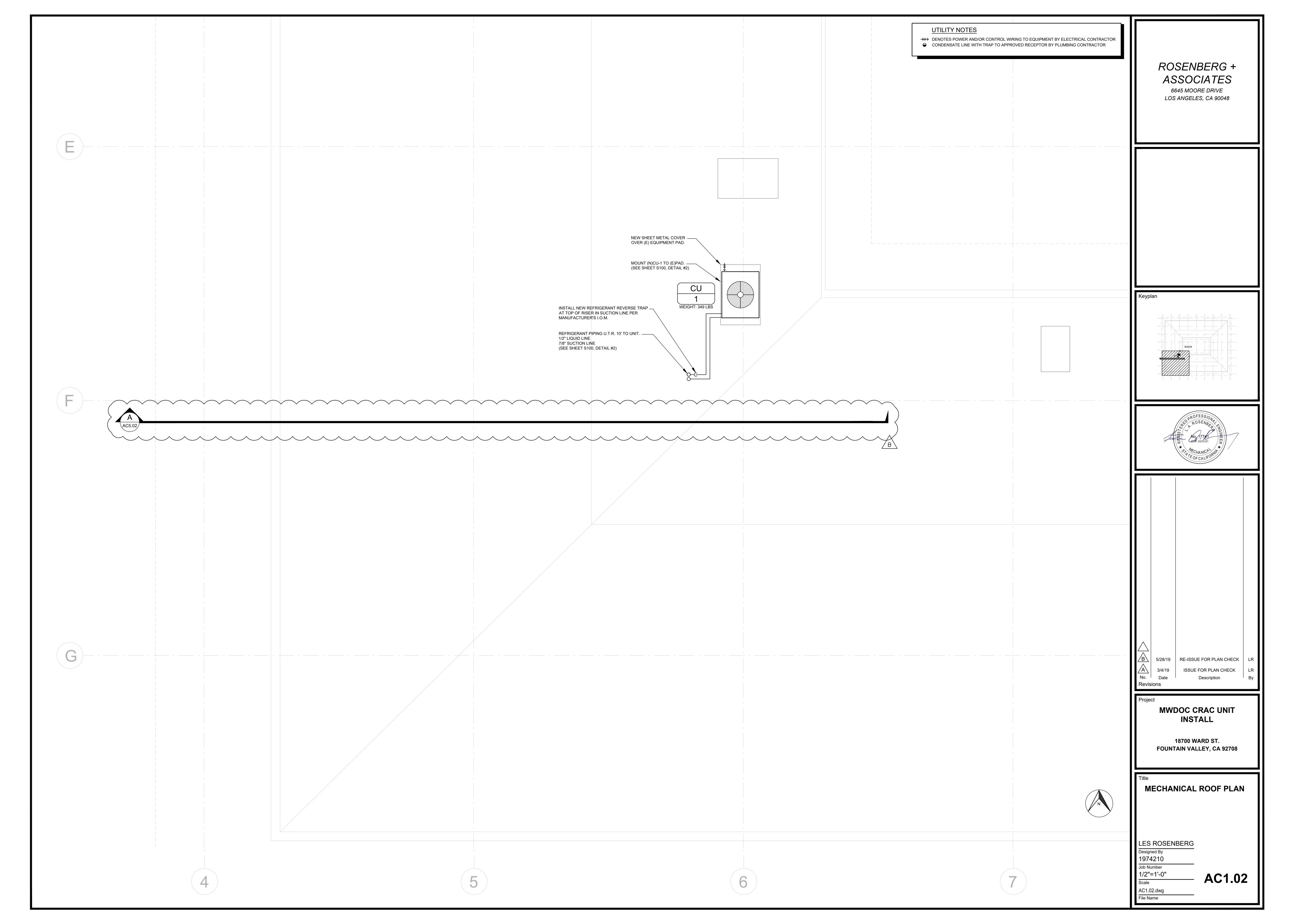
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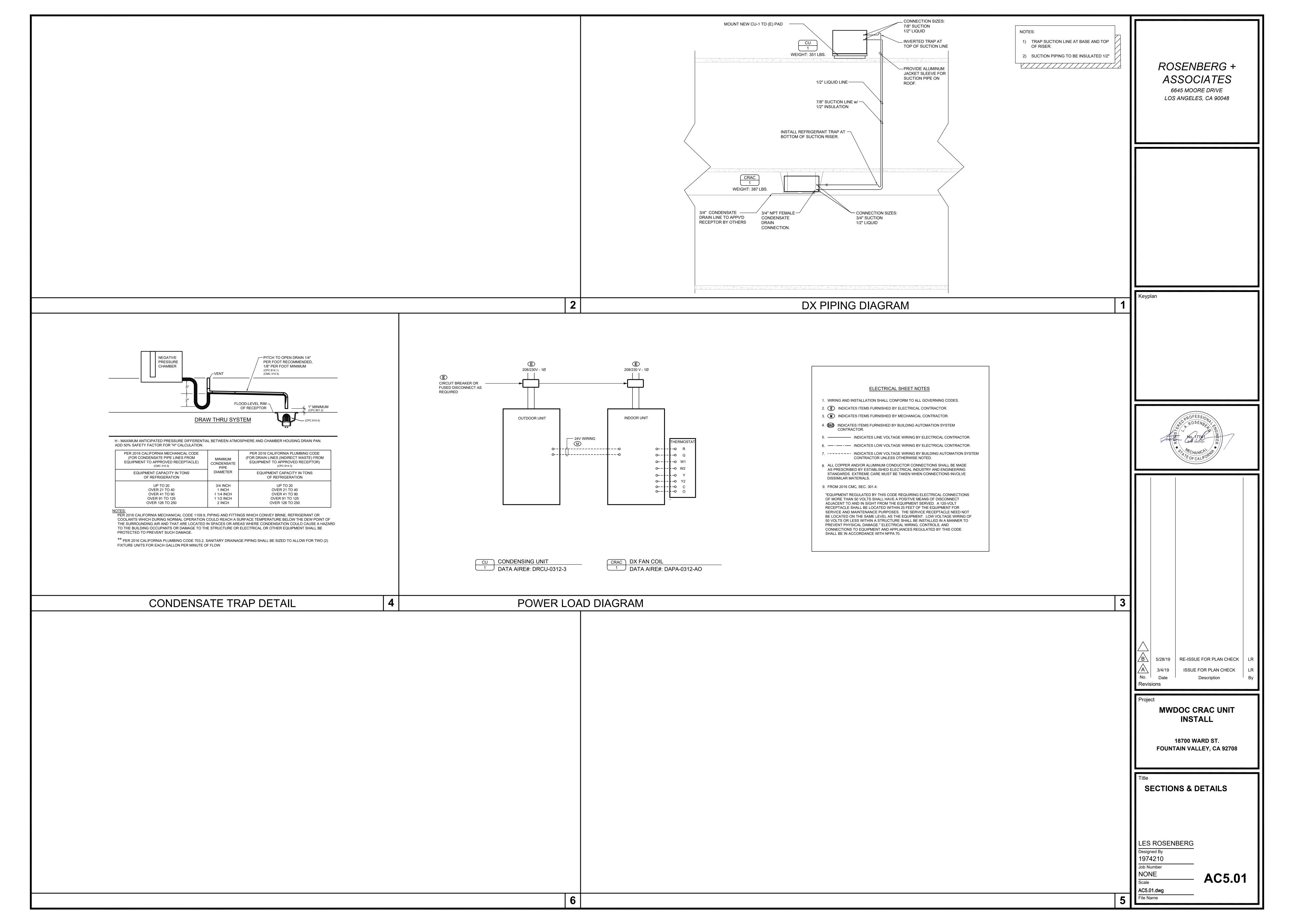
EQUIPMENT SCHEDULE

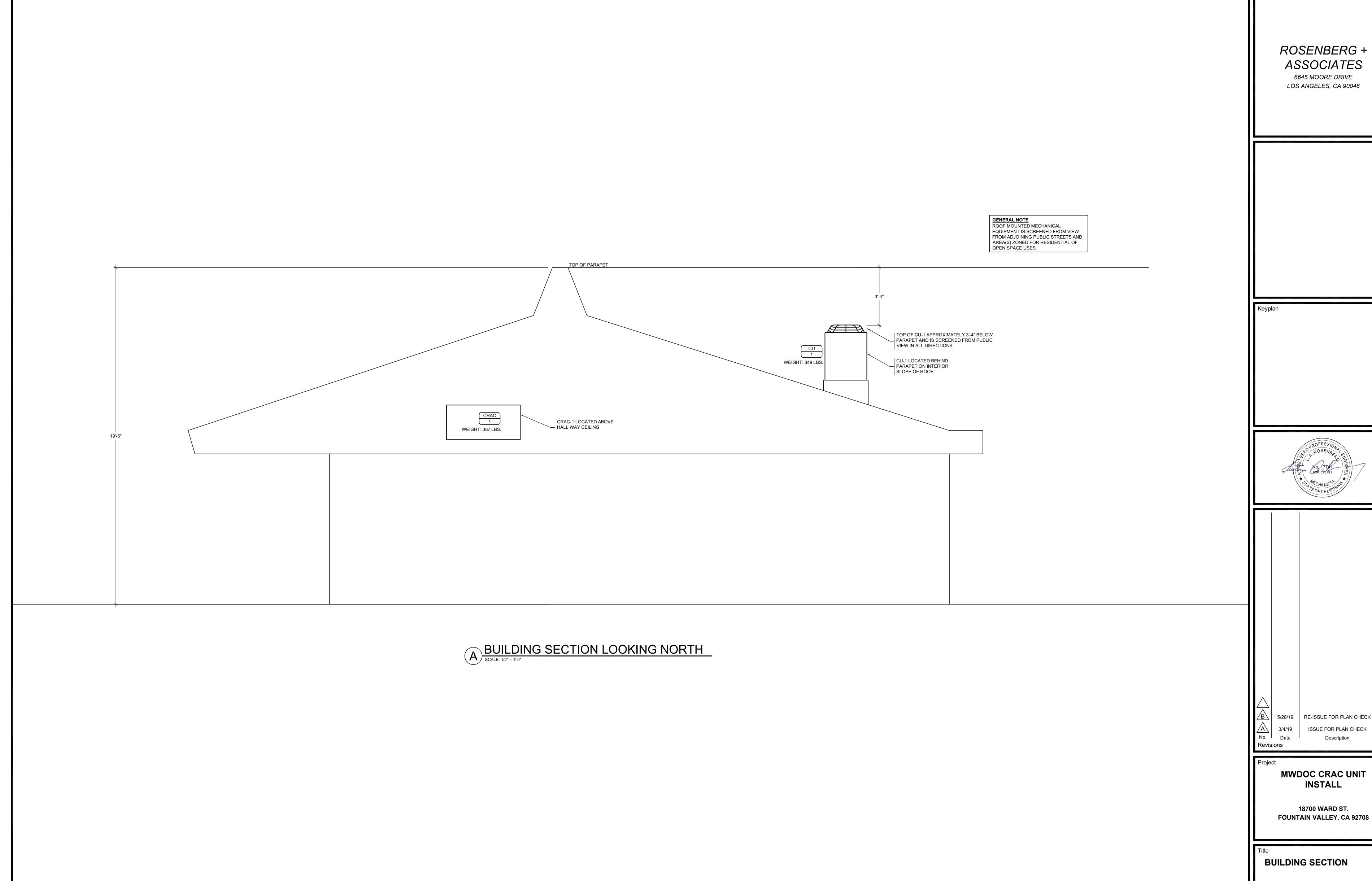












ASSOCIATES

5/28/19 RE-ISSUE FOR PLAN CHECK

MWDOC CRAC UNIT

FOUNTAIN VALLEY, CA 92708

LES ROSENBERG

Designed By
1974210

Job Number
AS SHOWN

Scale

AC5.02.dwg

File Name

AC5.02



MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

18700 WARD STREET FOUNTAIN VALLEY, CA 92708





18700 WARD STREET FOUNTAIN VALLEY, CA 92708



