GENERAL NOTES:

1. ALL MECHANICAL UNITS SHOWN WITHIN THIS SET OF DRAWINGS ARE A ONE FOR ONE REPLACEMENT UNLESS OTHERWISE NOTED. THE DRAWINGS ARE INTENDED TO PROVIDE A SCOPE OF THE DEMOLITION/NEW WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISCONNECTION OF ALL EXISTING MECHANICAL UNITS AND THE RE-CONNECTION OF ALL NEW/REPLACEMENT MECHANICAL UNITS. COORDINATE EXACT LOCATION AND CONNECTION POINTS OF ALL MECHANICAL EQUIPMENT WITH DIVISION 23 PRIOR TO ROUGH IN. VERIFY EXACT LOCATIONS OF MECHANICAL UNITS WITH MECHANICAL DRAWINGS. PROVIDE A NEW DISCONNECT FOR EACH NEW UNIT. ADJUST LOCATION OF DISCONNECTING MEANS AND BRANCH CIRCUITRY AS REQUIRED.

2

- 2. FIELD VERIFY THAT EXISTING UNIT VOLTAGE, CIRCUIT, WIRE, CONDUIT, AND ELECTRICAL CHARACTERISTICS MATCH MECHANICAL EQUIPMENT SPECIFICATIONS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
- 3. COORDINATE EXACT LOCATION AND CONNECTION POINTS OF ALL MECHANICAL UNITS PRIOR TO ROUGHING IN. 4. CONTRACTOR SHALL FIELD VERIFY DESIGNATION OF EACH NEW UNIT AND UPDATE AFFECTED PANELBOARD
- DIRECTORIES AS NECESSARY TO CORRECTLY REFLECT UNITS SERVED FROM EACH PANEL.
- 5. PROVIDE ENGRAVED LABEL AT EACH DISCONNECT NOTING UNIT DESIGNATION, VOLTAGE/PHASE AND PANEL/CIRCUIT NUMBER SERVING UNIT. SEE DETAIL 2/E101.
- 6. FIELD VERIFY EXACT LOCATION OF ALL EXISTING PANELS.
- 7. FIELD VERIFY EXISTING CIRCUITS SERVING UNITS MATCH THE ELECTRICAL REQUIREMENTS FROM THE UNIT MANUFACTURER. SEE NOTE 2 ABOVE.
- 8. LOCATE DISCONNECT AT UNIT AS REQUIRED TO MAINTAIN PROPER CLEARANCES PER NEC.
- 9. RECONNECT EXISTING CONDUIT/WIRE TO NEW UNIT DISCONNECT. CONNECT NEW DISCONNECT TO NEW UNIT CONNECTION POINT WITH NEW EXTERIOR FLEXIBLE CONDUIT/WIRE TO MATCH EXISTING SIZE. 10. ALL EXTERIOR FLEXIBLE CONDUIT SHALL BE METALLIC WATERPROOF.
- 11. THE ELECTRICAL DRAWINGS ARE ONLY A PART OF THE CONTRACT DOCUMENTS. ALL OF THE DRAWINGS AND SPECIFICATIONS MUST BE REVIEWED FOR THEIR INTERRELATIONSHIP AND REQUIRED COORDINATION BETWEEN DISCIPLINES.
- 12. DIVISION 26 CONTRACTOR SHALL WARRANTY ALL EQUIPMENT AND INSTALLATION OF SUCH FOR TWO (2) YEARS FROM DATE OF PROJECT ACCEPTANCE. WARRANTY APPLIES TO ENTIRE DIVISION 26 SCOPE.
- 13. SCOPE OF THE FIRE ALARM SYSTEM ON THIS PROJECT IS REPLACEMENT OF EXISTING DUCT DETECTORS IN UNITS BEING REPLACED. MANUFACTURER SHALL MATCH EXISTING FIRE ALARM SYSTEM. NO EQUALS WILL BE **EXCEPTED.** RECONNECT NEW DEVICES TO EXISTING FIRE ALARM CIRCUITS.

KEYED NOTES:

B

C

 $|\mathsf{D}|$

E

- 1 EXISTING ROOFTOP UNIT TO BE REPLACED WITH NEW UNIT. DISCONNECT AND REMOVE EXISTING DISCONNECT AND ASSOCIATED CONDUCTORS AND RACEWAY BETWEEN DISCONNECT AND MECHANICAL UNIT. PROVIDE NEW 60A/3P FUSED DISCONNECT (FUSED AT 60 AMPS) AND CONNECT TO NEW UNIT CONNECTION POINT WITH NEW EXTERIOR FLEXIBLE CONDUIT/WIRE TO MATCH EXISTING SIZE. DISCONNECT SHALL BE NEMA 3R, 240V RATED.
- 2 EXISTING ROOFTOP UNIT TO BE REPLACED WITH NEW UNIT. DISCONNECT AND REMOVE EXISTING DISCONNECT AND ASSOCIATED CONDUCTORS AND RACEWAY BETWEEN DISCONNECT AND MECHANICAL UNIT. PROVIDE NEW 60A/2P FUSED DISCONNECT (FUSED AT 60 AMPS) AND CONNECT TO NEW UNIT CONNECTION POINT WITH NEW EXTERIOR FLEXIBLE CONDUIT/WIRE TO MATCH EXISTING SIZE. DISCONNECT SHALL BE NEMA 3R, 240V RATED.
- 3 PROVIDE NEW ROOFTOP MOUNTED RACK FOR NEW DISCONNECTS.

MECHANICAL UNIT PC	WER DATA	NOTES
UNIT NAME: RTU-MC-1		N
VOLTAGE/PHASE:	208/3	
PANEL:	A	
BREAKER:	125A/3P	
DISCONNECT:	100A/3P (100A FUSES)	RD
NEW UNIT DATA:		90
VOLTAGE/PHASE:	208/3	30
BREAKER:	125A/3P	EB
DISCONNECT:	60A/3P (60A FUSES)	ND
CIRCUIT REQUIREMEN	NTS:	EC

MECHANICAL POWER UNIT DATA NOTES:

- N- NEW UNIT
- EB- EXISTING BREAKER TO BE REUSED EC- EXISTING CIRCUIT TO BE REUSED, SEE GENERAL NOTE 7. RD- EXISTING DISCONNECT TO BE REPLACED.
- ND- NEW DISCONNECT, FUSE PER UNIT NAMEPLATES, SEE DETAIL 2/E101. SD- PROVIDE DUCT SMOKE DETECTION IN SUPPLY DUCT.

<u>MECHANICAL UNIT PO</u> JNIT NAME: RTU-MC-2 OLTAGE/PHASE NEW UNIT DATA: VOLTAGE/PHASE: <u>∂0A/2P</u> 60A/2P (60A FUSES) CONNECT IRCUIT REQUIREMENTS:

<u>FOR</u>	DISCONNE	CTS		POWER LABEL SHALL BE: BLACK PHENOLIC PLATE <u>WITH</u> ENGRAVED WHITE LETTERING, POP RIVETED TO EQUIPMENT
 LL	ENGTH AS REQUIRED			
0	RTU-4 FED FROM: HK-8 208V/3PH	0	<u>NOTE:</u>	DESIGNATIONS ARE FOR REFERENCE ONLY. LABELING SHALL BE OF EQUIPMENT BEING SERVED.

EQUIPMENT IDENTIFICATION TAG DETAIL E101 SCALE: NOT TO SCALE



3	4	5	



3	4	5	





3	4	5	





3	4	5	

DEL NO.	REMARKS
12	(2)(4)
06	(2)(3)

		8	7	
			HVAC SPECIFICATION	
		licable Local, State and National Codes, current requirements of NFPA, ectric Code.	<u>GENERAL</u> : Entire system shall be installed to meet app State Heating and Air Conditioning Code and National E	
D		e manufacturer's instructions. Installing contractor shall furnish fully	All equipment shall be installed in accordance with th functioning systems.	
	A	wn on the plans. The Contractor is responsible for verifying actual job g duct. Any discrepancies discovered shall be reported to the Owner.	EXISTING CONDITIONS: Not all existing work is sh site conditions prior to ordering equipment and fabricating	
		ng shall be provided by the HVAC Contractor. Provide and submit trols, relays, etc. necessary for a complete system. Run all wiring in	ELECTRICAL: All line and low voltage control wir complete wiring diagrams and all switches, starters, co EMT raceways.	
		ower is designated under the Electrical division. Model numbers listed d to indicate electrical characteristics. Furnish written documentation	Voltage and phase of mechanical equipment requiring j in mechanical equipment schedule shall not be constru	
		ment have been coordinated with and confirmed by the electrical	that all electrical characteristics of mechanical equi subcontractor.	
		r approval before ordering equipment.	SHOP DRAWINGS: Submit 3 sets of Shop Drawings for	
		as per SMACNA Manual for HVAC Duct Construction Standards for 1"	DUCTWORK: 1. Low Pressure, Metal: Fabricate of galvanized steel	
		tap-ins sealed. ealant: Flexible, adhesive sealant, resistant to UV light when cured, UL for class 1 ducts. Duct tape shall not be used.	 W.C., with transverse joints, branch connections an Duct sealant shall be water-Based Joint and Seam 3 723 listed, and complying with NFPA requirements Elavible Ducts shall be factory fabricated insulates 	
		cement: Steel-wire helix encapsulated in the inner liner. Outer Jacket: thylene film. Pressure Rating: 10-inches wg, positive. R value = 6.0 hall be supported 3 feet maximum on center with 3" wide by 26 gauge	5. Flexible Ducts shall be factory-fabricated, insulated insulation around a continuous inner liner. Reinfo Glass-reinforced, silver mylar. Inner Liner: polya Flexible duct shall not exceed 4 feet in length and	
		nch ducts and outlets with stainless steel worm drive strap or nylon SMACNA Standards.	galvanized hangers. Duct shall be secured to br self-locking strap around the inner liner only.4. All ductwork shall be supported in accordance with	
	B		INSULATION:	
		eturn ductwork with 3/4 lb. 2" thick fiberglass blanket insulation with n, staple 4" o.c. and seal with vapor barrier mastic reinforced with fiber 24" o.c. on bottom of 30" wide and larger ducts. Cover top of all air	 Ductwork: Insulate lined and unlined supply and FSK jacket. Lap all vapor barrier joints 2" minimu glass mesh ("glas-fab and mastic"). Use Stik-clips davice shalls with insulation 	
			PIPING:	
			 Condensate drain piping shall be PVC. Support gas piping in accordance with the following: -1/2 - to - 1-1/4 inch piping - 8 feet on center. 	
			 -1-1/2 - to - 2-1/2 inch piping - 12 feet on center. -3- to - 4 inch piping - 15 feet on center. -Provide pipe support at all connections to hvac units. 	
		r nameplate amps and running amps during Heating and Cooling	TESTS: 1. Heat and Cooling Units: Record all motor and heat	
		n motor amps for motors ¹ / ₂ HP and larger. itlets, return grille and outside air duct. All airflow quantities shall uantity.	 cycle (below 60 degrees F. cooling). Record all fi Air Side Systems: Record air quantities at supply of be balanced to be within + or - 10% of design air 	
		pe and capacity as indicated on the Drawings.	PACKAGED ROOFTOP UNIT: Unit shall be of size, t	
		ned for roof or slab installation; and consisting of compressors, condensers, rigeration and temperature controls, filters, and dampers.	A. Description: Factory assembled and tested; desi evaporator coils, condenser and evaporator fans, re	
	C	corrosion-protection coating and exterior finish, removable panels or access ess to internal parts, minimum 1/2-inch-thick thermal insulation, knockouts for te drain connection, and lifting lugs. Furnish condenser coil guards.	 B. Casing: Manufacturer's standard construction with doors with neoprene gaskets for inspection and acc electrical and piping connections, exterior condens 	
		tly driven with permanently lubricated motor bearings. h permanently lubricated motor bearings. nless copper tube in galvanized steel casing with equalizing-type vertical on with flat, micro-channel tubes. Furnish stainless steel drain in accordance	 C. Evaporator Fans: Forward curved, centrifugal, dir D. Condenser Fans: Propeller type, directly driven w E. Refrigerant Coils: Aluminum-plate fin and sea distributor or all-aluminum, fully brazed construct 	
		ators and crankcase heaters. Furnish reversing valve for heat pump units. tion for gas-fired heat exchangers and burners with the following controls:	with ASHRAE Standard 62. F. Compressors: Hermetic with integral vibration iso G. Heat Exchangers: Manufacturer's standard constru	
			 Redundant gas valves. Intermittent pilot ignition. Electronic-spark ignition system. High-limit cutout. 	
		e of providing dehumidification function where indicated on schedule. ampers, outside-air filter, fully modulating electronic-control system with	 5. Forced-draft proving switch. H. Furnish hot gas reheat coil and control valve capab I. Economizer Control: Return- and outside-air 	
		geover g setback and cooling setup with 7-day programming.	adjustable mixed-air thermostat and automatic cha J. Low Ambient Control: Head-pressure control. K. Thermostat: Programmable, electronic; with heati	
		l-fault protected convenience outlet shall be internally mounted with an tacle with hinged cover. Division 26.	 Convenience Outer. 1. Optional factory-installed, unpowered, grour externally accessible 115-V 2-plug female rece 2. Voltage shall be field-applied as specified in 	
		NEC and UL approved. Disconnect shall provide unit power shutoff. shall provide power off lockout capability.	Q. Electrical Disconnect:1. Shall be factory-installed, internally mounted2. Shall be accessible from outside the unit and	
		ned for roof or slab installation; and consisting of compressors, condensers,	2.3 ROOFTOP UNITS, 7-1/2 TO 20 TONSA. Description: Factory assembled and tested; designation	
	D	rigeration and temperature controls, filters, and dampers. a corrosion-protection coating and exterior finish, removable panels or access ess to internal parts, minimum 1/2-inch-thick thermal insulation, knockouts for te drain connection, and lifting lugs. Eurnish condenser coil guarda	 evaporator coils, condenser and evaporator fans, re B. Casing: Manufacturer's standard construction with doors with neoprene gaskets for inspection and accelectrical and piping connections, sufference and set of the standard construction. 	
		It driven with adjustable sheaves or direct-drive fans; and with permanently h permanently lubricated motor bearings.	 C. Evaporator Fans: Forward curved, centrifugal, b lubricated motor bearings. D. Condenser Fans: Propeller type, directly driven w 	
		nless copper tube in galvanized steel casing with equalizing-type vertical on with flat, micro-channel tubes hermetic compressors with integral vibration isolators and crankcase heaters. ressure, high pressure, and compressor motor overload protection	 E. Refrigerant Coils: Aluminum-plate fin and sea distributor or all-aluminum, fully brazed construct F. Compressors: Serviceable, semi-hermetic, or fully 1 Safety Controls: Manual root time for lower 	
		holds compressor off for 5-minutes after last run. tion for gas-fired heat exchangers and burners with the following controls:	 Barcy Controls. Manual-reset type for low j 2. Timed-Off Control: Automatic-reset contro Heat Exchangers: Manufacturer's standard constru 1. Redundant, dual gas valves (2-stage heating) 	
			 Intermittent pilot ignition. Electronic-spark ignition system. High-limit cutout. Forced draft province switch 	
		e of providing dehumidification function where indicated on schedule. ampers, outside-air filter, fully modulating electronic-control system with geover through adjustable enthalpy-control device.	I. Furnish hot gas reheat coil and control valve capab J. Economizer Control: Return- and outside-air adjustable mixed-air thermostat and automatic cha	
		g setback and cooling setup with 7-day programming. sessor controls and monitors unit and communicates with central control	 K. Low Ambient Control: Head-pressure control. L. Thermostat: Programmable, electronic; with heati M. Operating Controls: Factory-installed micropro- 	
		ling; and automatic or continuous fan operation and economizer damper	 Processor. 1. Control Outputs: 2-stage heating, 2-stage co operation. 2. Control Sensors: Return-air-temperature ser 	
		ack-override switch. gh or low enthalpy and night/unoccupied mode.	sensor, room-temperature sensor, and night-set 3.Control Features: Day/occupied modes for h R. Convenience Outlet:	
	F	tacle with hinged cover. Division 26.	externally accessible 115-V 2-plug female rece 2. Voltage shall be field-applied as specified in S. Electrical Disconnect:	
		NEC and UL approved. Disconnect shall provide unit power shutoff. shall provide power off lockout capability.	1. Shall be factory-installed, internally mounted 2. Shall be accessible from outside the unit and OPERATING AND MADITEMANCE MADILLAR CONTRACTOR	
		on period to familiarize the Owner in the operation and maintenance of	on each piece of HVAC equipment.	
		by by the owner in the operation and maintenance of by	the HVAC System. Document attendance and material of <u>CONTROLS</u> : Control system consists of sensors in	
		o controllers to operate mechanical systems according to sequences of a accordance with HVAC equipment manufacturer's wiring diagrams.	equipment, other apparatus, and accessories connected operation indicated or specified. Installation shall be Control components shall form a fully functional system	
		ble thermostat. y contacts for control actuation. Duct sampling tube shall extend full width of	 Thermostats: Manufacturers Standard 7-day programma Smoke detectors shall be photoelectric type with auxilia 	
		е.	duct. Provide access door at smoke detector/damper.3. Sequence of Operation: Manufacturers standard sequen	
S				
S				

PLOT DATE: 02/12/21 FILENAME: 20106M1

PLOT SCALE: 1 = 96

WGC

7

FERENCE SCALE

COPYRIG PRUETT, AUGUST

