Job Name: 347 West Grand Blvd Apartments

Date: May 8, 2026 8:55 AM

CAS-HVAC1-I.75-15-4T-DOAS (#1) Weight: 1250 lbs./103 curb

RTU with Indirect Fired Heat and 15" Direct Drive Plenum Fan, 1 Furnace, Electronic Full Modulation, Constant 81% Efficiency, and 6:1 Max Turndown for NG, (5:1 Max Turndown for LP). Stainless Steel Burner and Heat Exchanger.

SUPPLY MOTOR

Model DTP0014 • 1.000 HP, 3 Phs, 208 V, 60 Hz, 3.1 FLA, ODP, Premium (E-Plus3) Eff.

SUPPLY PERFORMANCE

Supply Air:	600 CFM	RPM:	1017
Return Air:	0 CFM	Outdoor Air:	600 CFM
Tip Speed:	3994 ft/min	BHP:	0.3120
SP:	0.827" w.g. (0.750" Ductwork Discharge ESP + 0.077" Opt.)		
Altitude:	594 ft		

BLOWER

15 Inch Plenum Fan for size 1 RTU. Hub specified to match motor shaft.

TEMPERATURE CONTROL

Advanced Hotel Corridor Unit Option - Control Logic set points, sequence of operation, and unit options optimized for Hotel Corridor.

AIRFLOW DIRECTION

- Down Discharge - Air Flow Left -> Right

CURB & SUPPORTS

- ROOF CURB - 41" Width, 71" Length, 20" Supply Height, Insulated

HEATING SCHEDULE

Altitude:	594 ft
GAS HEAT	
Output BTU:	60,750 BTU/Hr
Input BTU:	75,000 BTU/Hr
Based Off:	BTUs Actual Air Density
Gas Type:	Natural
Winter Outdoor Air Dry Bulb Temp:	6.0°F
Temp Rise:	84.0°F
Discharge Dry Bulb Temp:	90.0°F
HEAT PUMP	
Entering Temp:	40.0°F
Max Temp Rise:	45.0°F
Discharge Dry Bulb Temp:	85.0°F
COP:	3.5
Capacity:	27.5 MBH

COOLING SCHEDULE

Outdoor Air Dry Bulb Temp:	85.7°F
Outdoor Air Wet Bulb Temp:	75.9°F
Max Outdoor Air %:	100%
Mixed Air Dry Bulb Temp:	85.7°F
Mixed Air Wet Bulb Temp:	75.9°F
Mixed Air Dew Point:	72.3°F
Leaving Dry Bulb Temp (Coil):	52.5°F
Leaving Wet Bulb Temp (Coil):	52.5°F
Leaving Dry Bulb Temp (Unit):	53.9°F
Leaving Wet Bulb Temp (Unit):	53.1°F
Leaving Dew Point:	52.6°F
Moisture Removal Rate:	22.2 Lb/Hr
Total Capacity:	46.9 MBH
Sensible Capacity:	21.6 MBH
Latent Capacity:	25.3 MBH
Reheat Coil Capacity:	42.4 MBH
Reheat Coil Leaving Dry Bulb Temp:	70.0°F
Reheat Coil Leaving Wet Bulb Temp:	59.3°F
Reheat Coil Leaving Relative Humidity:	54%
IEER:	17.9
ISMRE2:	6.9

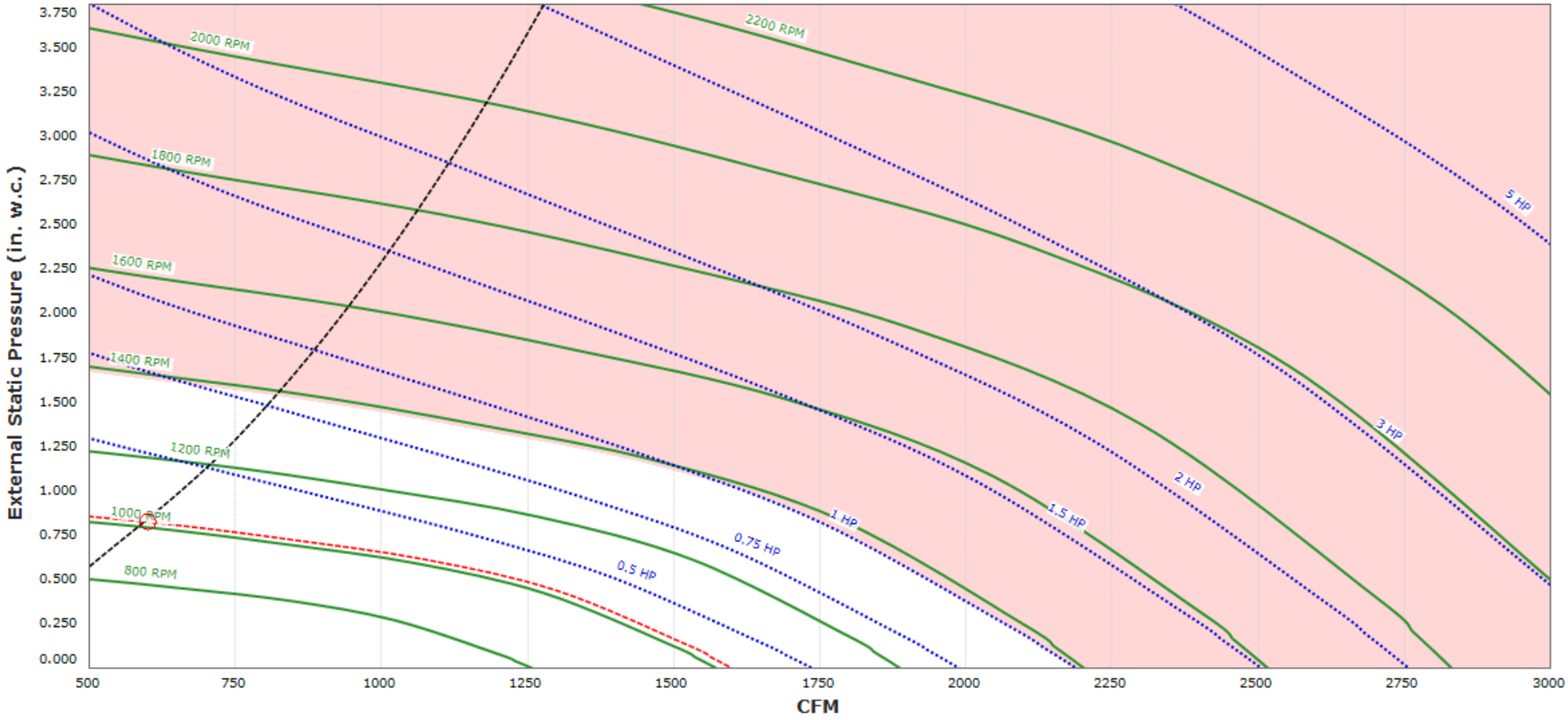
SUPPLY INSTALLATION INFORMATION

Gas Pressure:	7 in. w.c. - 14 in. w.c.
Insurance Requirements:	No Insurance Requirement (ANSI)
Unit Voltage:	1 phs 208 V 60Hz
Unit Main Input	44.3 Amps MCA • 50 Amps MOP • 208 V • 8 AWG Wire Min.
SCCR:	10 kAmp
A2L Min. Room Area / Airflow / Height:	183.6 ft2 • 330 CFM • 7.2 ft **

*** Minimum room area assumed 7.2' supply diffuser height and is calculated per UL60335-2-40 4th ed. Values based on factory charge. Actual site charge may differ.*

CONFIGURED OPTIONS

- Gas Pressure Gauge, 0-35", 2.5" Diameter, 1/4" Thread Size
- Gas Pressure Gauge, 0 to +10 Inches Wc., 2.5" Diameter, 1/8" Thread Size, Rear Thread
- Cooling Override
- Single Point Electrical Connection for RTU. QNTY 1 750va Transformer Used. If a Non-DCV Prewire controls this unit, the #28, #47, "MA", or "E2" Option Prewire must be selected. Do not provide supply starter in prewire.
- Unit will be shipped with construction mode ON. This is used to provide tempering for a building in construction. Activation is set to Intake, Tempering is set to Discharge, Mixing Box is set to 100% OA and HMI number is 1.
- RTU Blower Door Switch. Used to turn on DOOR INTERLOCK Schematic Layer. Does Not Include Door Switch.
- 2" Merv 13 Filters for Size 1 RTU. QTY 4, 16 x 16 x 2 Merv 13 Filters
- 2" Merv 8 Filters for Size 1 RTU. QTY 4, 16 x 16 x 2 Merv 8 Filters
- Overheat Stat factory set at 80°F and 10 minutes. Prevents unit from overheating the space when cooling.
- CFM monitoring for MUA units. Uses rivet nuts, 1/4" airflow tubing and push to connect fittings.
- Blower Delay Stop. Allows supply fan to run after the burner has shut off Factory set at 90 secs for indirect 30 secs for direct.
- VFD factory mounted and wired in unit control vestibule.
- RTU Size 1 Down Discharge
- RTU Fixed 100% Outdoor Air Intake.
- Size 1 RTU Curb Duct Hanger - Adjustable Duct Hanger Support Brackets installed for both return and discharge duct.
- Intake Firestat. Set to 135°F
- Freezestat
- Discharge Firestat. Set to 240°F
- CASLink building monitoring system communications module. Requires internet & field wired ethernet connection or 3G cellular service. Includes Rev 3 Comm Module, RJ45 to modbus converter, 3 FT cat5 cable, and 1 FT of shielded twisted pair.
- VAV (Variable-Air-Volume) Wiring Package for Commercial Fans. Manual Speed Control Variable Frequency Drive Included
- Supply i500 Variable Frequency Drive - 1 HP Max., 230 V, 1Ph or 3Ph, 4.2 A Max., NEMA 1 Enclosure, PART NEEDS PROGRAMMING
- 4 Ton Modulating Cooling Option with Heat Pump, 208/230V - 1 Phase. R454B Refrigerant, Variable Speed Inverter Duty Compressor, ECM Condensing Fan(s).
- RTU1 Accumulator Option. Includes the RTU3700 / A0027205 Accumulator.
- Low ambient cooling controls down to 0F ambient temperatures. To be used in recirculating applications.
- RTU Compressor Oil Sensor Factory Installed. M12 Style Connector.
- R454B Refrigerant Leak Detector Option. Includes 20% LFL sensor and harness.
- 4 Ton Heat Pump Modulating Reheat Option for Discharge Control - R454B
- Commercial Smoke Detector Interlock (Detector By Others)
- Occupied Scheduling Defaulted for IBT/RTU.
- GFCI 15 amp Convenience Outlet For RTU1 Enclosure. 120V power supply by others. Includes receptacle, jbox & cover.
- RTU Size 1 No Return
- Option for Metal Mesh Filters in RTU1 OA Intakes



CAS-HVAC1-I.75-15-4T-DOAS SOUND (1017 RPM) AT 5 FT. IN OCTAVES:

1	2	3	4	5	6	7	8
81.8	81.6	78.1	75.4	75.7	72.2	69.6	71.6

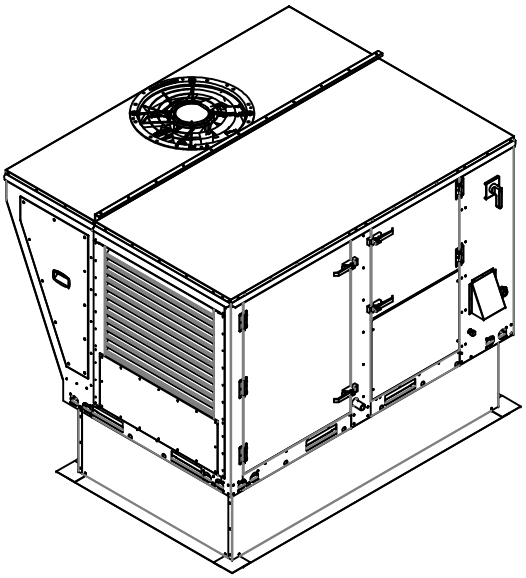
LWA:	80.4	Sones:	19.5	DBA:	70.1

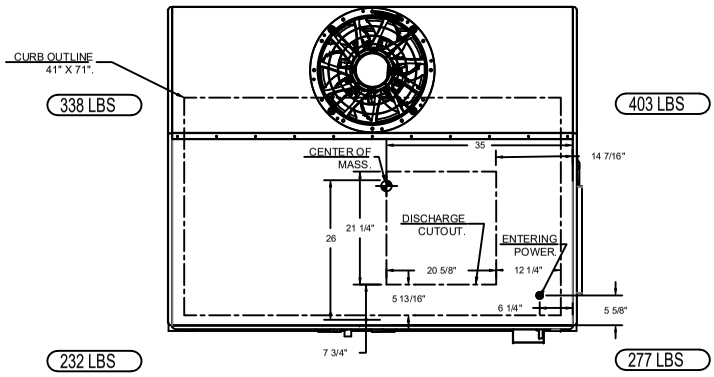
Note: Sound data across operational range. Tested in accordance to AHRI Standard 270/370.

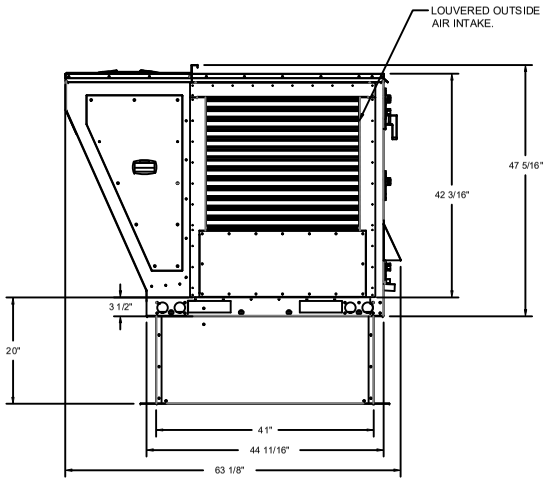
FAN #1 CAS-HVAC1-I.75-15-4T-DOAS - HEATER

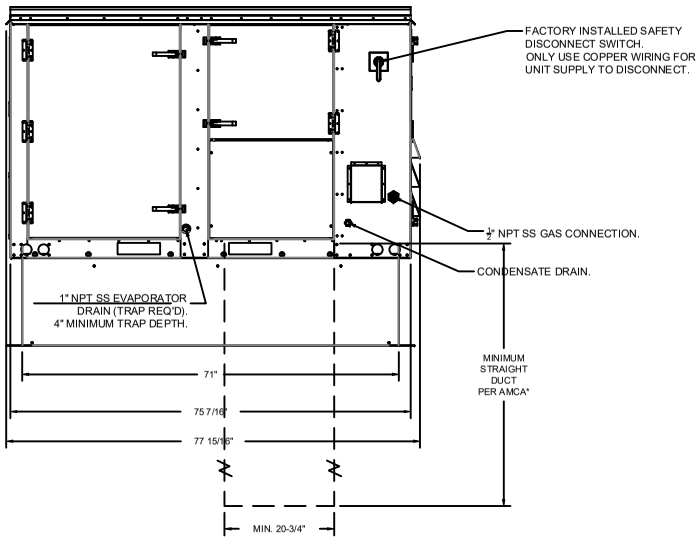
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
5. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.
SUGGESTED SUPPLY STRAIGHT DUCT SIZE IS 20-3/4" x 21-1/2".

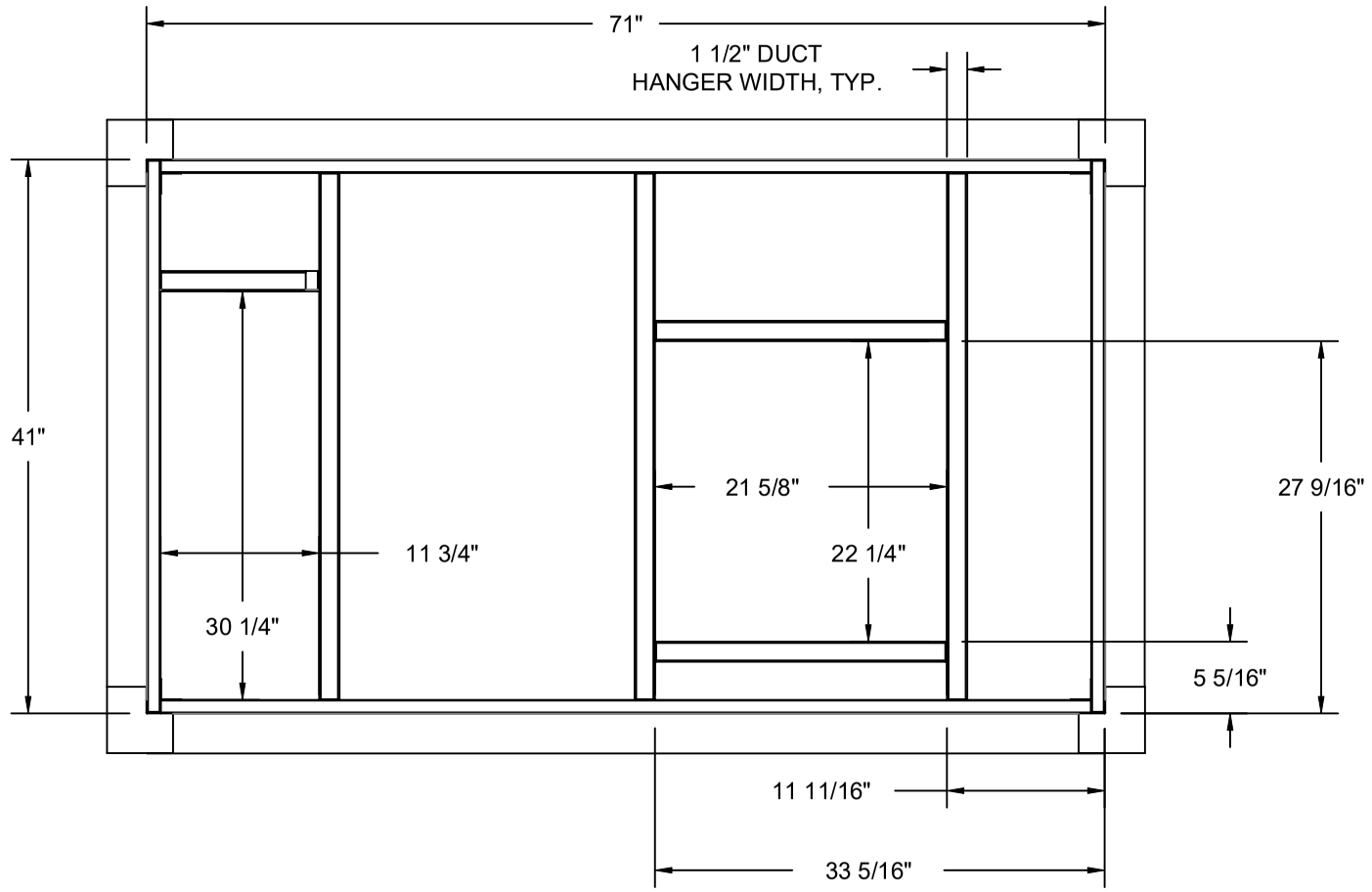


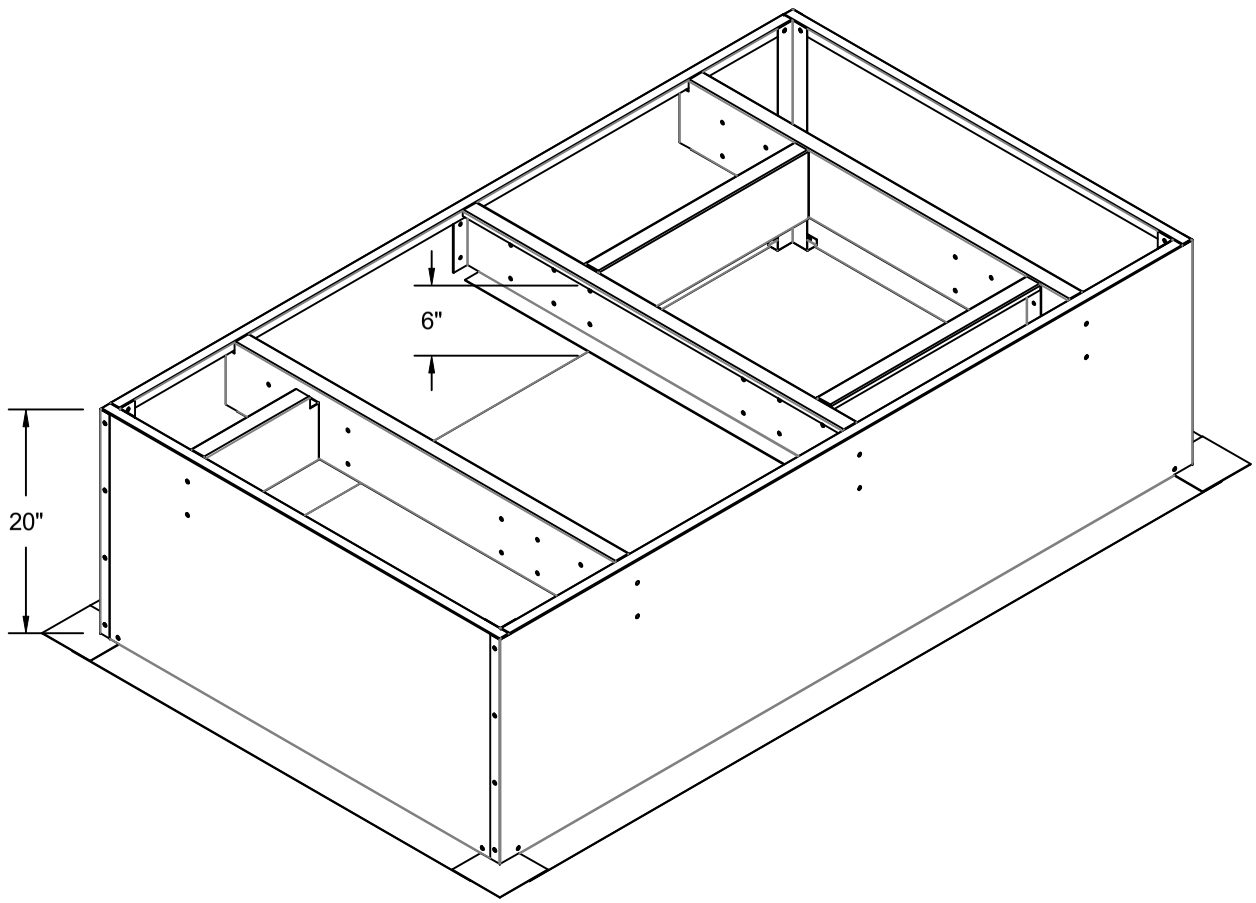


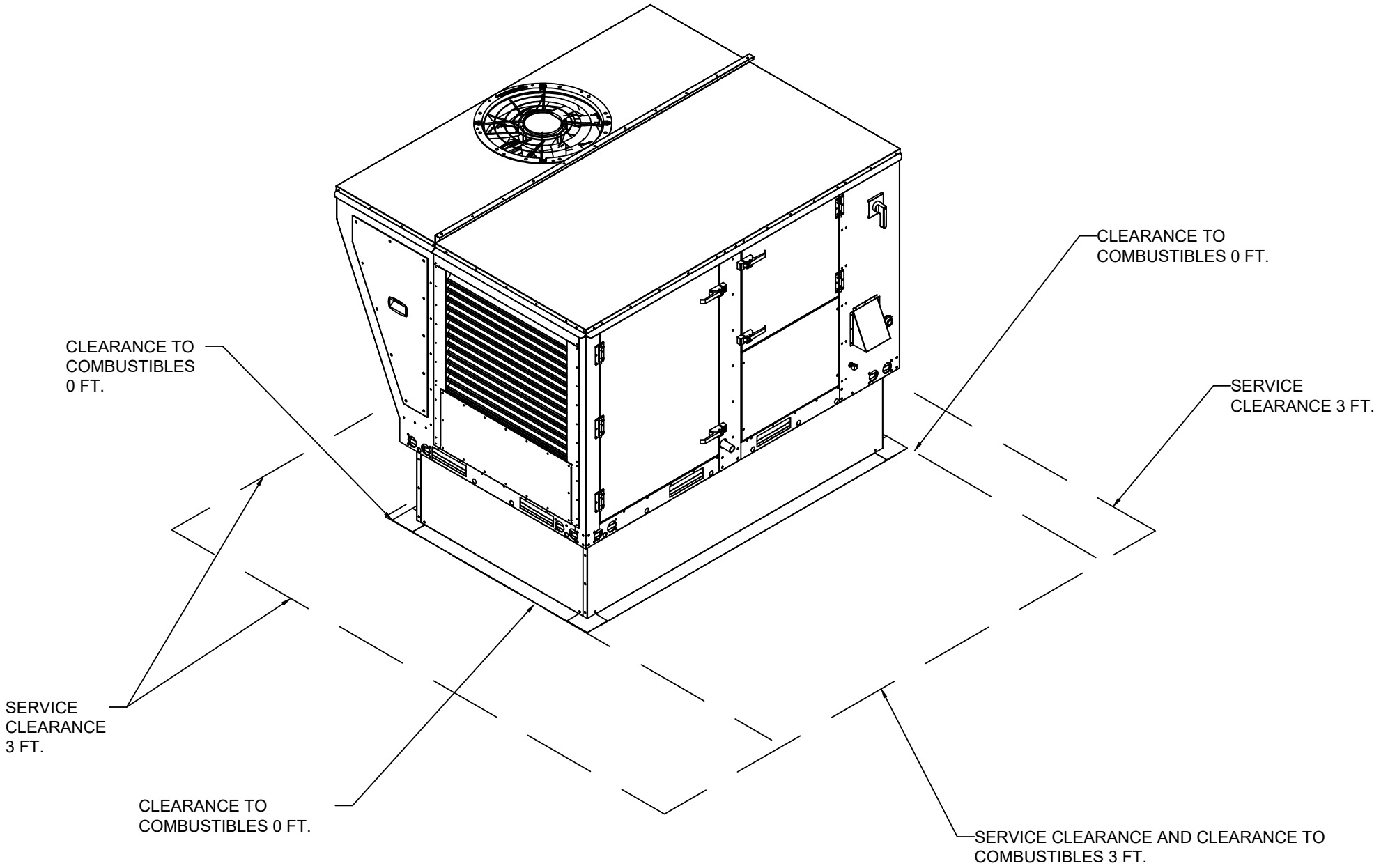




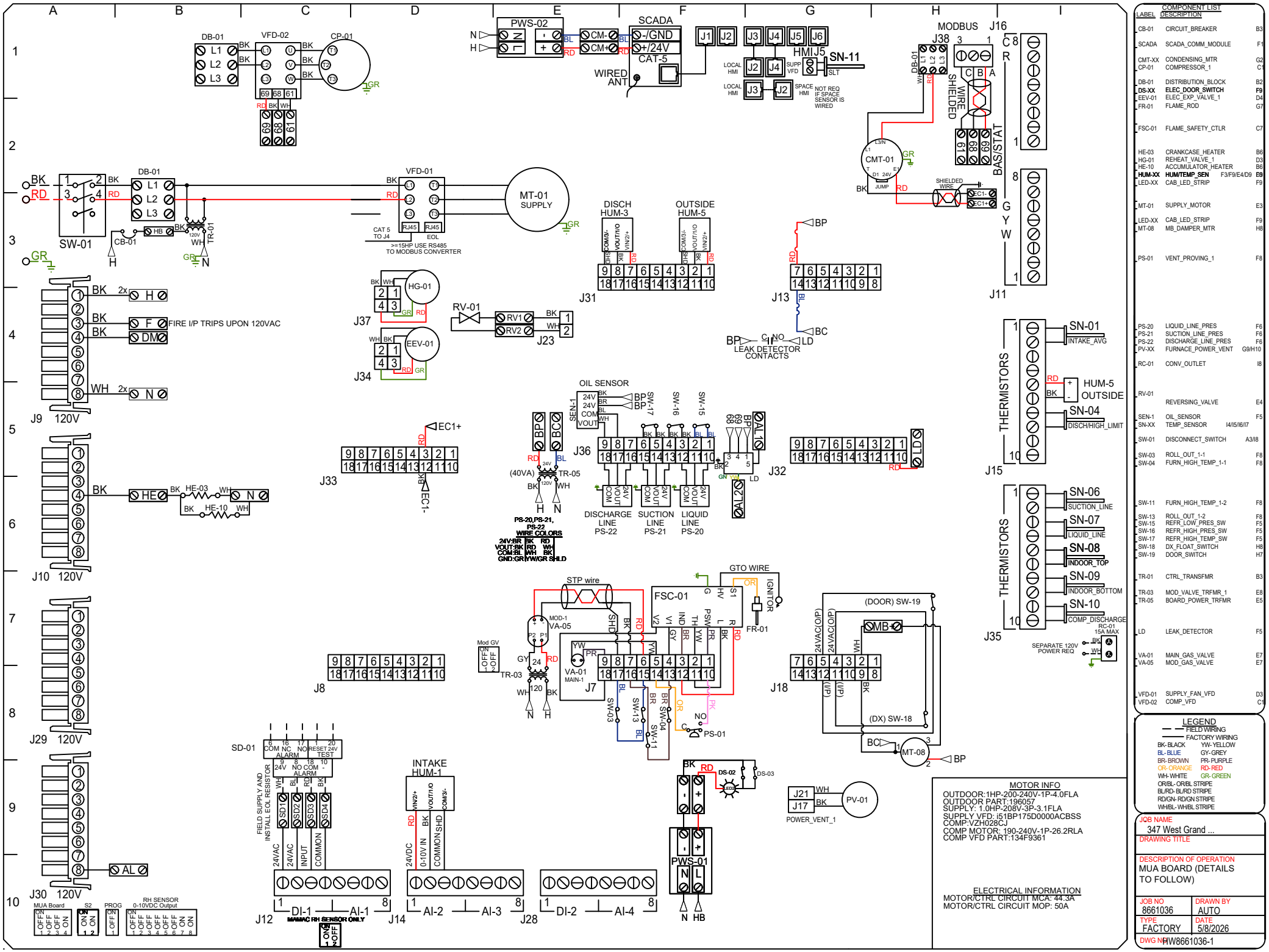
Fan #1 Curb
ROOF CURB - 41" Width, 71" Length, 20" Supply Height, Insulated







SIZE 1 - 1 CONDENSER



COMPONENT LIST

LABEL	DESCRIPTION	
CB-01	CIRCUIT_BREAKER	B3
SCADA	SCADA_COMM_MODULE	F1
CMT-XX	CONDENSING_MTR	G2
CP-01	COMPRESSOR_1	C1
DB-01	DISTRIBUTION_BLOCK	B2
DS-XX	ELEC_DOOR_SWITCH	F9
EEV-01	ELEC_EXP_VALVE_1	D4
FR-01	FLAME_ROD	G7
FSC-01	FLAME_SAFETY_CTLR	C7
HE-03	CRANKCASE_HEATER	B6
HG-01	REHEAT_VALVE_1	D3
HE-10	ACCUMULATOR_HEATER	B6
HUM-XX	HUM/TEMP_SEN	F3/F9/E4/D9
LED-XX	CAB_LED_STRIP	F9
MT-01	SUPPLY_MOTOR	E3
LED-XX	CAB_LED_STRIP	F9
MT-08	MB_DAMPER_MTR	H8
PS-01	VENT_PROVING_1	F8
PS-20	LIQUID_LINE_PRES	F6
PS-21	SUCTION_LINE_PRES	F6
PS-22	DISCHARGE_LINE_PRES	F6
PV-XX	FURNACE_POWER_VENT	G9/H10
RC-01	CONV_OUTLET	I8
RV-01	REVERSING_VALVE	E4
SEN-1	OIL_SENSOR	F5
SN-XX	TEMP_SENSOR	I4/I5/I6/I7
SW-01	DISCONNECT_SWITCH	A3/I8
SW-03	ROLL_OUT_1-1	F8
SW-04	FURN_HIGH_TEMP_1-1	F8
SW-11	FURN_HIGH_TEMP_1-2	F8
SW-13	ROLL_OUT_1-2	F8
SW-15	REFR_LOW_PRES_SW	F5
SW-16	REFR_HIGH_PRES_SW	F5
SW-17	REFR_HIGH_TEMP_SW	F5
SW-18	DX_FLOAT_SWITCH	H8
SW-19	DOOR_SWITCH	H7
TR-01	CTRL_TRANSFMR	B3
TR-03	MOD_VALVE_TRFMR_1	E8
TR-05	BOARD_POWER_TRFMR	E5
LD	LEAK_DETECTOR	F5
VA-01	MAIN_GAS_VALVE	E7
VA-05	MOD_GAS_VALVE	E7
VFD-01	SUPPLY_FAN_VFD	D3
VFD-02	COMP_VFD	C1

LEGEND

FIELD WIRING
FACTORY WIRING

BK- BLACK
BL- BLUE
BR- BROWN
OR- ORANGE
WH- WHITE
YW- YELLOW
GY- GREY
PR- PURPLE
RD- RED
GR- GREEN
OR/BL- OR/BL STRIPE
BL/RD- BL/RD STRIPE
RD/GN- RD/GN STRIPE
WH/BL- WH/BL STRIPE

MOTOR INFO

OUTDOOR:1HP-200-240V-1P-4.0FLA
OUTDOOR PART:196057
SUPPLY: 1.0HP-208V-3P-3.1FLA
SUPPLY VFD: I51BP175D0000ACBSS
COMP:VZH028CJ
COMP MOTOR: 190-240V-1P-26.2RLA
COMP VFD PART:134F9361

ELECTRICAL INFORMATION

MOTOR/CTRL CIRCUIT MCA: 44.3A
MOTOR/CTRL CIRCUIT MOP: 50A

JOB NAME: 347 West Grand ...
DRAWING TITLE:
DESCRIPTION OF OPERATION: MUA BOARD (DETAILS TO FOLLOW)

JOB NO	DRAWN BY
8661036	AUTO
TYPE	DATE
FACTORY	5/8/2026

DWG NO: HW8661036-1

RTU VFD SCHEMATIC

SMV VFD PARAMETER SETTINGS

P100	(START SOURCE) = 01
P150	(TB-30 OUTPUT) = 1
P194	PASSWORD = 225
P410	MODBUS ADDRESS = 21

ADJUST MANUALLY ON ALL DRIVES	
P103	VFD MAX FREQUENCY
P107	00 (IF 120 OR 208 VAC)
	01 IF(230, 480 OR 575VAC)
P108	(MOTOR FLA X 100) / DRIVE OUTPUT RATING
P167	REFERENCE BUILD SHEET
P171	P108 - 1

i500 PARAMETER SETTINGS

P200.00	[0] FlexIO
P440.01	[1] 0-10 VDC (AO1 Range)
	PASSWORD = 225
P510.01	MODBUS ADDRESS = 21

ADJUST MANUALLY ON ALL DRIVES	
P211.00	47.6
P208.01	[0] 230V [1] 400V [2] 480V
	[3] 120V [6] 600V
P308.01	150%
P303.02	REFERENCE BUILD SHEET
P323.00	Blower Motor FLA
P324.00	99%

*NOTE: THE DEFAULT FOR THE DRIVE IS "225".

All external control wires to motor speed control should be 16-20 AWG shielded multi-conductor cables and must not be run in the same conduit or raceway with any high power wiring. Ground Shielded Cable at the drive chassis ONLY.

PG. 11, 19, 23 OF THE DRIVE MANUAL DESCRIBES THE PROPER HANDLING OF THE VARIABLE FREQUENCY DRIVE.

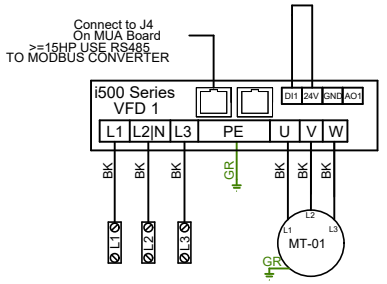
IT MAY BE REQUIRED TO FULLY POWER DOWN THE DRIVE AND TURN BACK ON IN ORDER TO INITIATE NEW PARAMETER SETTINGS.

**Min. and Max. Frequency Settings override all other Preset speeds/Parameters. Do not adjust these on the VFD. Min. and Max. Frequency should be adjust on the RTU HMI.

i500 SERIES VFD

TERMINAL	FUNCTION
DI1	Digital Input:(Start/Stop) if P400.02 = [11]
GND	Analog Common
AI1	Analog Input: 0-10 VDC
10V	Internal DC Supply for Speed Pot: +10 VDC
AI2	Analog Input: 4-20 mA, P431.01 = [4]
AO1	Analog Output: Configurable by P440.01
GND	Digital Reference/Common
24V	Internal 24VDC Supply for External Devices
DI2	Digital Input: Configurable with P400.XX
DI3	Digital Input: Configurable with P400.XX
DI4	Digital Input: Configurable with P400.XX
DO1	Digital Output: Configurable with P420.02
16	Relay Output: Configurable with P420.01
17	
RJ45	MODBUS CONNECTIONS
GND	Analog Common
PE	Ground Terminal
L1	3 Phase Input or Single Phase Input
L2	3 Phase Input or Single Phase Input
L3 (N)	3 Phase input (Neutral for 120v)
U	3 Phase AC Motor
V	3 Phase AC Motor
W	3 Phase AC Motor

*Note: Not Suitable for Corner Grounded 3 Phase Input power

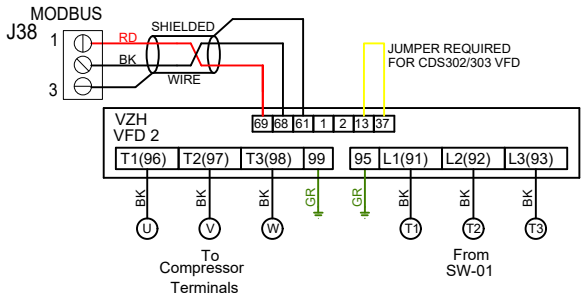


COMPRESSOR DRIVE PARAMETER SETTINGS MUST BE CONFIGURED BEFORE STARTUP

0-60	225	0-22	1610
1-71	10 SECONDS	0-40	2
3-02	30	0-61	1
3-15	[0] NO FUNCTION	0-66	1
3-16	[0] NO FUNCTION	1-20*	6.09
3-41	200.00s	1-22*	219
3-42	200.00s	1-23*	200
4-18	IF 208V = 76(028), 92(035), 108(044)	1-24*	33.3
	IF 480/575v = 79(028), 92(035), 115(044)	1-25*	6000
8-01	[2] CTRL WORD ONLY	1-26*	15.5
8-03	20 SECONDS	1-30*	0.19
8-04	[2] STOP	1-37*	1.2
8-30	[2] MODBUS RTU	1-38*	2.67
8-31	1	1-40*	33
8-32	19200	1-45*	2.67
8-33	[0] EVEN PARITY, 1 STOP BIT	1-68*	0.003
8-43-2	**10**	1-69*	0.003
8-43-3	**10**	1-74	3000
8-43-4	**13**	1-75*	100
8-43-5	**13**	1-77*	900
8-43-6	**14**	1-78*	30
8-43-7	**14**	1-79*	3
8-43-8	33	1-81*	0
8-43-9	**33**	1-82*	0
8-43-10	19	1-86*	840
8-43-12	35	1-87*	28
8-43-13	35	14-12	2
28-00	DISABLE	3-19	900
28-11	1440m	3-51	30
28-12	24h	3-52	30
28-15(14)	100Hz (3000RPM)	4-11*	900
28-17(16)	140Hz (4200RPM)	4-12*	30
		4-52	850

*Must be programmed using software

*Changing 8-30 will reset 8-01 and 8-03 if programmed after 8-01 and 8-03 are set



VZH SERIES COMPRESSOR VFD

TERMINAL	FUNCTION
13	24+
37	Pressure Switch In
1	Relay 1 to oil solenoid
2	Relay 1 to oil solenoid
61	COM RS-485
68	N RS-485
69	P RS-485
95	INPUT Ground
L1 (91)	3 Phase Input or Single Phase Input
L2 (92)	3 Phase Input or Single Phase Input
L3 (93)	3 Phase Input
T1 (96)	Compressor
T2 (97)	Compressor
T3 (98)	Compressor
99	Compressor Ground

MOTOR INFO
OUTDOOR:1HP-200-240V-1P-4.0FLA
OUTDOOR PART:196057
SUPPLY: 1.0HP-208V-3P-3.1FLA
SUPPLY VFD: i51BP175D0000ACBSS
COMP:VZH028CJ
COMP MOTOR: 190-240V-1P-26.2RLA
COMP VFD PART:134F9361

ELECTRICAL INFORMATION
MOTOR/CTRL CIRCUIT MCA: 44.3A
MOTOR/CTRL CIRCUIT MOP: 50A

COMPONENT LIST

LABEL	DESCRIPTION
PWS-01	24VDC Power Supply
SW-01	Main Disconnect Sw
VFD-2	Compressor VFD

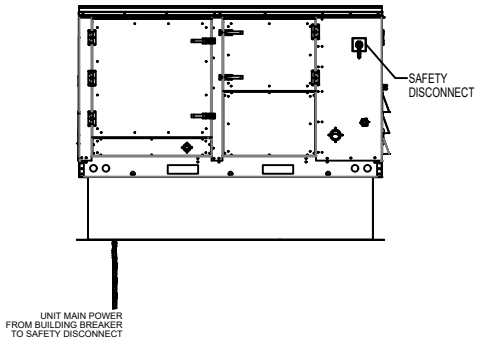
LEGEND

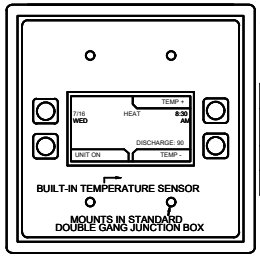
FIELD WIRING
FACTORY WIRING

BK- BLACK
BL- BLUE
BR- BROWN
OR- ORANGE
WH- WHITE
YW- YELLOW
GY- GREY
PR- PURPLE
RD- RED
GR- GREEN
OR/BL- OR/BL STRIPE
BL/RD- BL/RD STRIPE
RD/GN- RD/GN STRIPE
WH/BL- WH/BL STRIPE

JOB NAME: 347 West Grand ...
DRAWING TITLE:
DESCRIPTION OF OPERATION: MUA BOARD (DETAILS TO FOLLOW)
JOB NO: 8661036
DRAWN BY: AUTO
TYPE: FACTORY
DATE: 5/8/2026
DWG NO: RTUVFD8661036-1

RTU Installation Wiring	JOB	*347 West Grand Blvd Apartments*
DRAWING NUMBER *INST8661036-1*		MODEL CAS-HVAC1-I.75-15-4T-DOAS





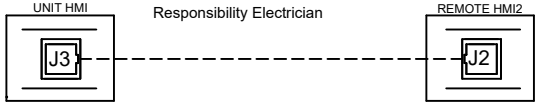
REMOTE HMI2
(ACTUAL SCREEN MAY BE
DIFFERENT FROM ABOVE IMAGE)

CAT-5, J2, J3 CONNECTIONS ON REVERSE
J3 ON HMI1 TO J2 OF HMI2
MAX OF 4 ADDITIONAL HMIS CAN BE DAISY CHAINED
PLACE END OF LINE DEVICE IN LAST HMI

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #1	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #1	HMI #2 - SPACE		AVERAGED	56

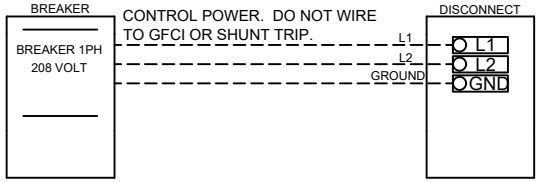
UNIT HMI TO REMOTE HMI

Responsibility Electrician



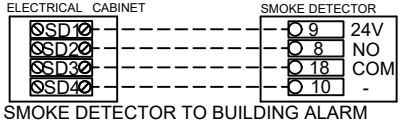
BREAKER TO PRIMARY DISCONNECT

Responsibility Electrician
BREAKER



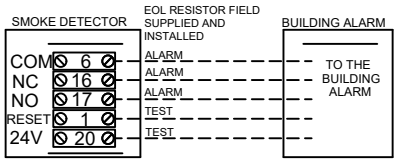
ELECTRICAL CABINET TO SMOKE DETECTOR

Responsibility Electrician



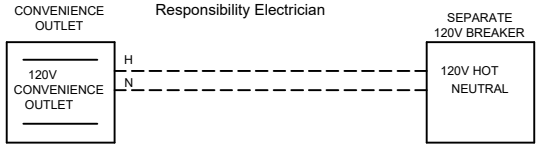
SMOKE DETECTOR TO BUILDING ALARM

Responsibility Electrician

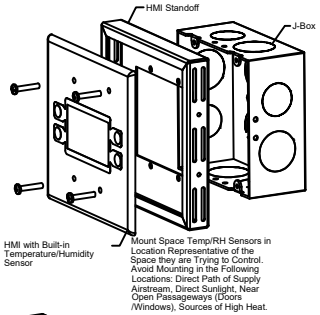


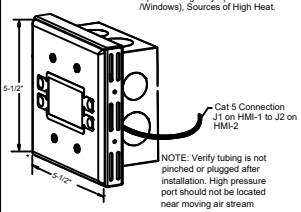
CONVENIENCE OUTLET TO SEPARATE 120V

Responsibility Electrician



Installed Options





NOTES

— — — Field Wiring

WIRE COLOR

BK - BLACK	YW - YELLOW
BL - BLUE	GR - GREEN
BR - BROWN	GY - GRAY
OR - ORANGE	PR - PURPLE
RD - RED	PK - PINK
WH - WHITE	

Rigging

WARNING!

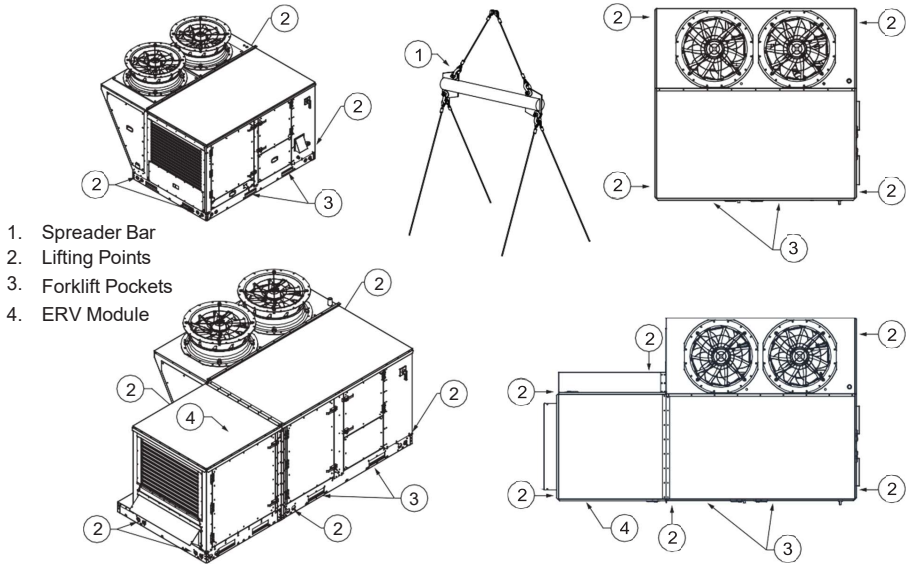
Ensure that all the lifting equipment used is properly rated for the weight of the unit being lifted. Each of the lifting implements (chains, slings, or straps), hooks, and shackles used to lift the unit must be capable of supporting the entire weight of the unit. Each lifting point must use individual lifting implements. Lifting implements may not be of the same length. Adjust as necessary for even unit lift. Other lifting arrangements could cause equipment or property damage. Failure to follow the instructions above or properly lift the unit could result in dropping the unit. This can result in death or serious injury to the operator/technician.

Spreader bars must be used and should extend past the edges of the equipment to avoid damage to the casing. Not using spreader bars may cause damage to the unit casing. Refer to **Figure 3** for rigging details.

WARNING: DO NOT LIFT UNIT BY THE INTAKE LOUVER, OR DOOR OPENINGS – USE ALL LIFTING POINTS PROVIDED WITH A SPREADER BAR OR SLINGS UNDER THE UNIT – USE CARE NOT TO DAMAGE COILS, SWITCHES OR PROTRUDING SHEET METAL COMPONENTS.

- Units are supplied with multiple lifting points (eyes) on the bottom corners of the structural rails.
- Always use spreader bars to prevent damage to the unit casing.
- Test lift the unit approximately **2 feet** to verify proper center of gravity lift point. To avoid dropping unit, re-position lifting point if unit is not level. Failure to properly lift unit could result in unit dropping and possibly crushing operator/technician, which could result in death or serious injury and possible equipment or property damage.

Figure 3 - Rigging (Size 2 Unit Shown)



1. Spreader Bar
2. Lifting Points
3. Forklift Pockets
4. ERV Module

NOTE: For units without ERV, you must use at least four lifting point locations. For ERV units, at least 6 lifting points are required when raising the unit.