

**LEGEND**

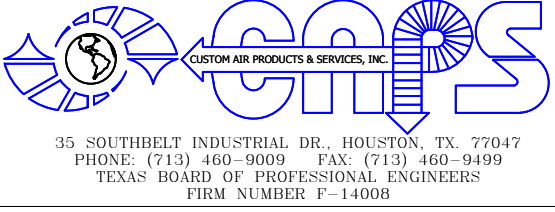
AUX	AUXILIARY CONTACT	MPM	MOTOR PROTECTION MODULE
CC1	COMPRESSOR CONTACTOR 1	HPS	HIGH PRESSURE SWITCH
CC2	COMPRESSOR CONTACTOR 2	HM1	HOUR METER 1
CF-1-MS	CONDENSER FAN 1 MANUAL STARTER	HM2	HOUR METER 2
CF-2-MS	CONDENSER FAN 2 MANUAL STARTER	LOGO1	SMART RELAY FOR HVAC CONTROLLER
CF-3-MS	CONDENSER FAN 3 MANUAL STARTER	LPS	LOW PRESSURE SWITCH
CF-VFD	CONDENSER FAN DRIVE	MCA	MINIMUM CIRCUIT AMPS
DH	DEHUMIDIFICATION RELAY	MCC	MAXIMUM OVERCURRENT PROTECTION
EF-VFD	EVAPORATOR FAN DRIVE	MCP	MAXIMUM OVERCURRENT PROTECTION
F	FUSE	PDB	POWER DISTRIBUTION BLOCK
FLA	FULL LOAD AMPS	PDS	DIFFERENTIAL PRESSURE SWITCH
HC1	HEAT CONTACTOR 1	PM	PHASE MONITOR
HC2	HEAT CONTACTOR 2	6N1-150	ANALOG INTERFACE
HC3	HEAT CONTACTOR 3	640	TEMPERATURE CONTROLLER

**WIRING NOTES**

THREE PHASE 208/240V	PHASE A	BROWN	LINE 1	208/240V	120VAC	24VAC
THREE PHASE 480/600V	PHASE B	ORANGE	LINE 2	BLACK	BLACK	RED
THREE PHASE 208/240V	PHASE C	YELLOW	NEUTRAL	RED	WHITE	BROWN
THREE PHASE 480/600V	PHASE A	BROWN	LINE 1	BLACK	BLACK	RED
THREE PHASE 480/600V	PHASE B	ORANGE	LINE 2	RED	WHITE	BROWN
THREE PHASE 480/600V	PHASE C	YELLOW	NEUTRAL	RED	WHITE	BROWN
THREE PHASE 480/600V	NEUTRAL	GRAY	POSITIVE	24VDC	GRAY	BLUE
THREE PHASE 480/600V	GROUND	GREEN	NEGATIVE	GRAY	GRAY	GRAY

INTRINSICALLY SAFE WIRING SHALL BE LIGHT BLUE 18AWG AND MUST BE SEPARATED FROM ALL OTHER WIRING BY A MINIMUM OF 2". IF CABLE IS USED THE CABLE MUST BE SHIELDED WITH THE SHIELD GROUNDED AT A MINIMUM OF ONE END. WIRING GAUGE IS NOT SPECIFIED USE 18 AWG IF VDC. WIRING GAUGE IS NOT SPECIFIED USE 18 AWG

REV#	DATE	DESIGNER	DESCRIPTION
0	12/12/2017	TRUNG TRAN	ISSUE FOR CONSTRUCTION
1	06/06/2018	B. LANDRY	AS-BUILT



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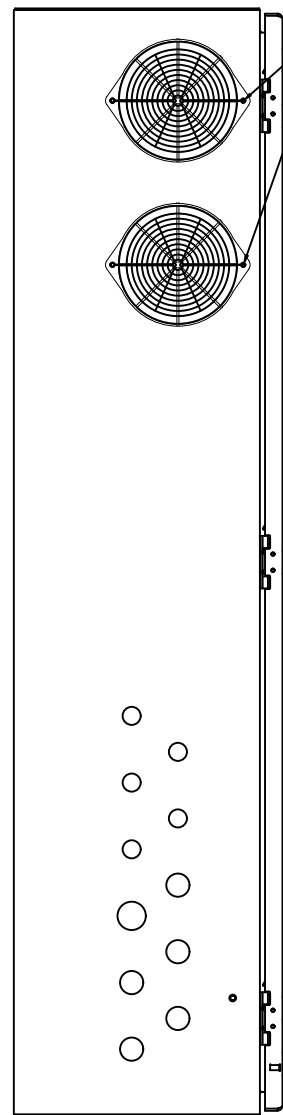
CAPS NO.: 17F-0867  
 DRAWING: AE2  
 DRAWN BY: TRUNG TRAN  
 DATE: 12/12/2017

CUST. PO#: \_\_\_\_\_  
 SHEET: 2 OF 6  
 CHECKED BY: DAVID NGUYEN  
 DATE: 06/06/2018

SIZE: B  
 REV: 1  
 APPROVED BY: LARRY NOVAK  
 DATE: 06/06/2018

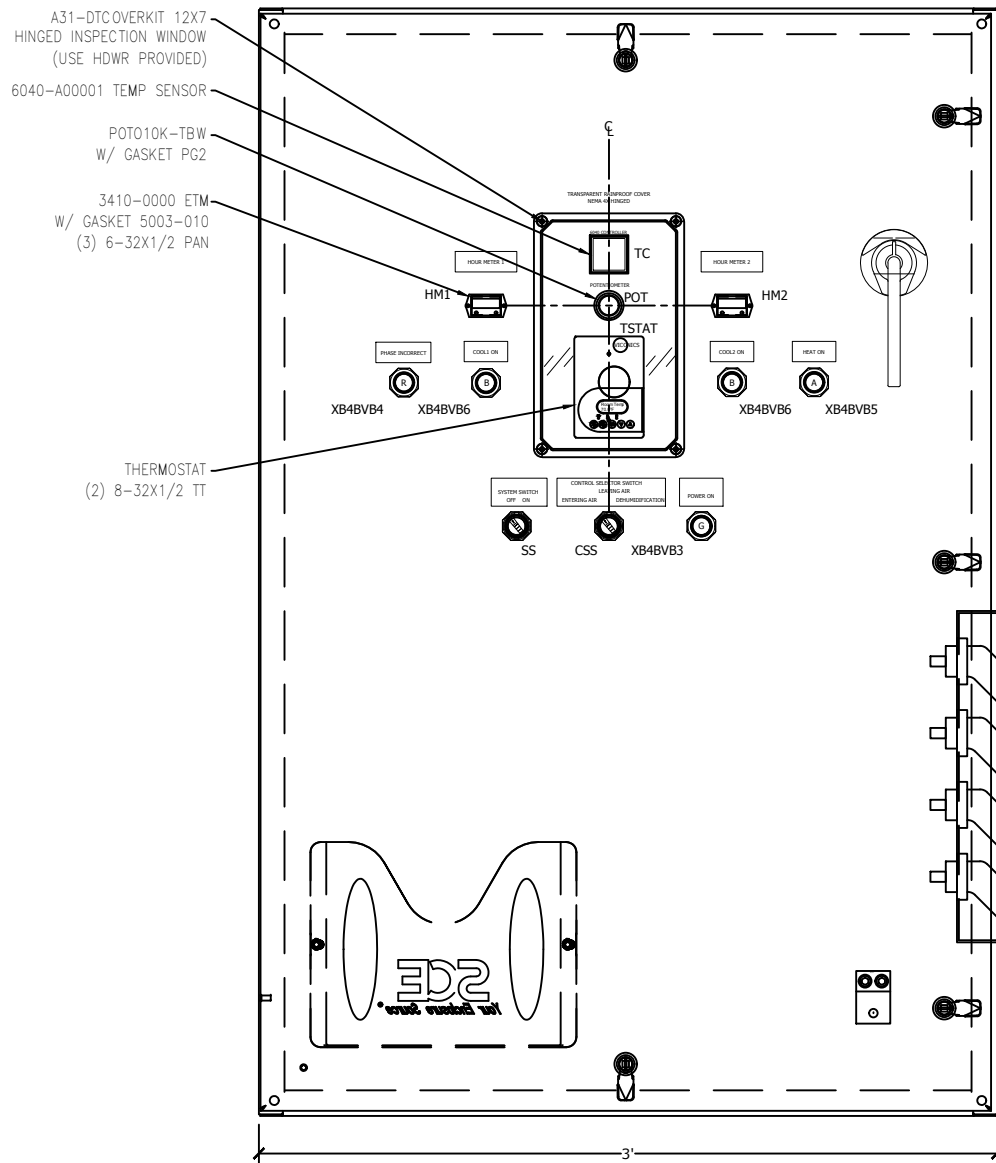
CUSTOMER: HERC RENTALS

70 TON COMPACT PACKAGE UNIT  
 136KW ELECTRIC HEAT  
 460V/3P/60HZ  
 ELECTRICAL DESIGN  
 HVAC WIRING DIAGRAM (LOW VOLTAGE)



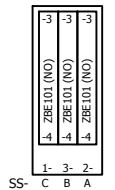
L.H. SIDE VIEW

INSTALL:  
 OA172AP-11-11TB  
 172MM FAN FILTER KIT  
 W/ MESH GUARD WMG172-45  
 & RETAINER WMG172M  
 INSTALLED  
 (2) 8-32X3.00" THRU HDWR  
 (2) PLACES  
 (BLOWING OUT)



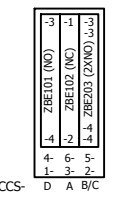
FRONT VIEW

SYSTEM SWITCH (SS)  
 (BACK SIDE VIEW)



2 POS SW (ZB4BD2)  
 W/ MOUNTING BLOCK ZB5AZ009

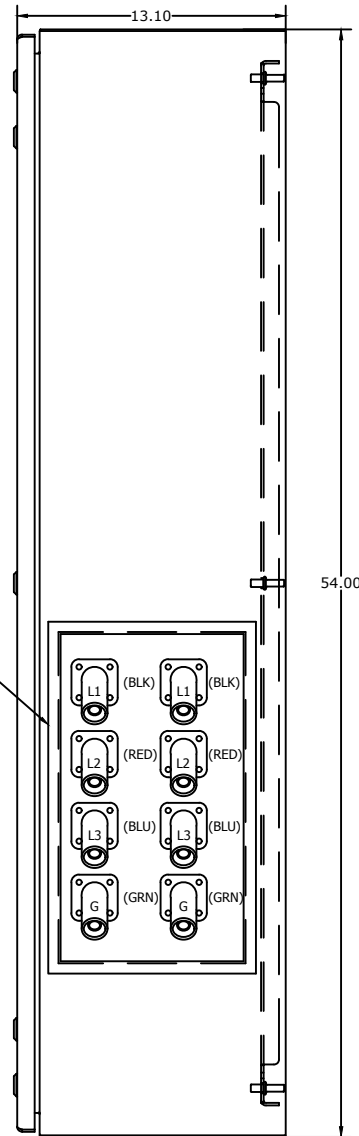
CONTROL SELECT SWITCH (CSS)  
 (BACK SIDE VIEW)



3 POS SW (ZB4BD3)  
 W/ MOUNTING BLOCK ZB5AZ009

16R29 SERIES  
 USE 1/2" DIA CRIMP LUG  
 45 DEG

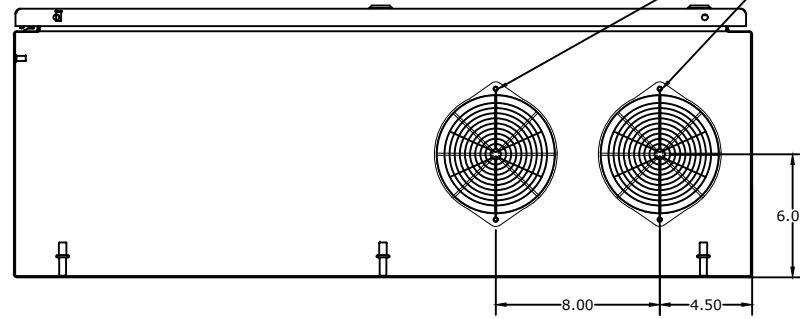
RECESSED CAM MOUNTING PLATE  
 (INSTALLED BY CUSTOMER)



R.H. SIDE VIEW

LEGEND			
CC1	COMPRESSOR CONTACTOR 1	HC2	HEAT CONTACTOR 2
CC2	COMPRESSOR CONTACTOR 2	HC3	HEAT CONTACTOR 3
CF1-OL	CONDENSER FAN 1 OVERLOAD RELAY	HM1	HOUR METER 1
CF2-OL	CONDENSER FAN 2 OVERLOAD RELAY	HM2	HOUR METER 2
CF3-OL	CONDENSER FAN 3 OVERLOAD RELAY	LOGO!	SMART RELAY FOR HVAC CONTROLLER
CF-VFD	CONDENSER FAN DRIVE	PDB	POWER DISTRIBUTION BLOCK
DH	DEHUMIDIFICATION RELAY	PM	PHASE MONITOR
DOM	DELAY ON MAKE TIMER	6N1-ISO	ANALOG INTERFACE
EF-VFD	EVAPORATOR FAN DRIVE	640	TEMPERATURE CONTROLLER
F	FUSE	R1	EVAPORATOR RUN COMMAND RELAY
HC1	HEAT CONTACTOR 1		

- NOTES:
- MARK EACH DEVICE ON SIDE OF DEVICE, INSIDE OF ENCLOSURE.
  - SEE DRAWING NC-EMC012-P037 FOR ENCLOSURE CUTOUT DETAILS.
  - USE MOUNTING INSTRUCTIONS & HDWR PROVIDED WITH DEVICE UNLESS OTHERWISE SPECIFIED.
  - MOUNT VENT AND ACCESSORIES INTERNAL TO ENCLOSURE.
  - CAM PLATE TO BE PROVIDED & INSTALLED BY CUSTOMER. CAM-LOK W/ CABLES TO BE SHIPPED WITH UNIT.



BOTTOM VIEW

INSTALL:  
 MESH GUARD WMG172-45  
 & RETAINER WMG172M  
 W/ FILTER GRM172-45  
 INSTALLED  
 (2) 8-32X1.00 THRU HDWR  
 (2) PLACES  
 SEE NOTE 4

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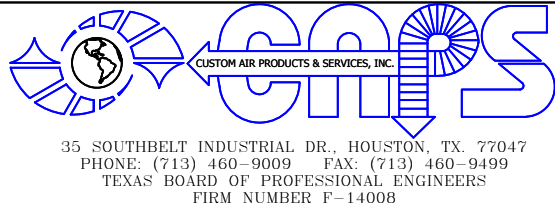
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CAPS NO.:	DRAWING:	DRAWN BY:	DATE:
17F-0867	AE3	TRUNG TRAN	12/12/2017
CUST. PO#:	SHEET:	CHECKED BY:	DATE:
	3 OF 6	DAVID NGUYEN	06/06/2018
SIZE:	REV:	APPROVED BY:	DATE:
B	1	LARRY NOVAK	06/06/2018

CUSTOMER: **HERC RENTALS**

**70 TON COMPACT PACKAGE UNIT  
 136KW ELECTRIC HEAT  
 460V/3P/60HZ  
 ELECTRICAL DESIGN  
 HVAC CONTROL PANEL LAYOUT**



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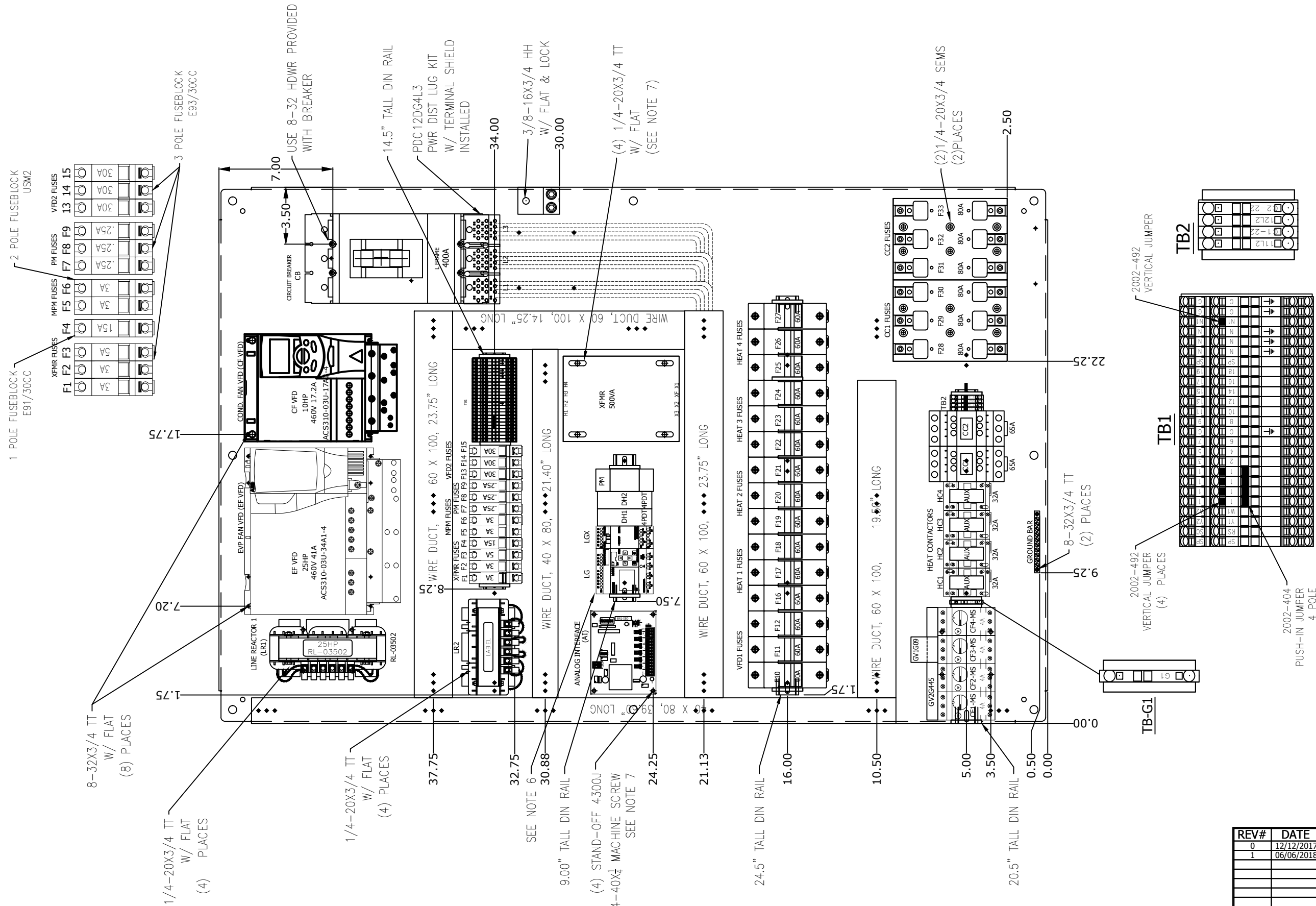
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 APPROVER: \_\_\_\_\_ DATE: \_\_\_\_\_

CAPS NO.: 17F-0867	DRAWING: AE4	DRAWN BY: TRUNG TRAN	DATE: 12/12/2017
CUST. PO#:	SHEET: 4 OF 6	CHECKED BY: DAVID NGUYEN	DATE: 06/06/2018
SIZE: B	REV: 1	APPROVED BY: LARRY NOVAK	DATE: 06/06/2018

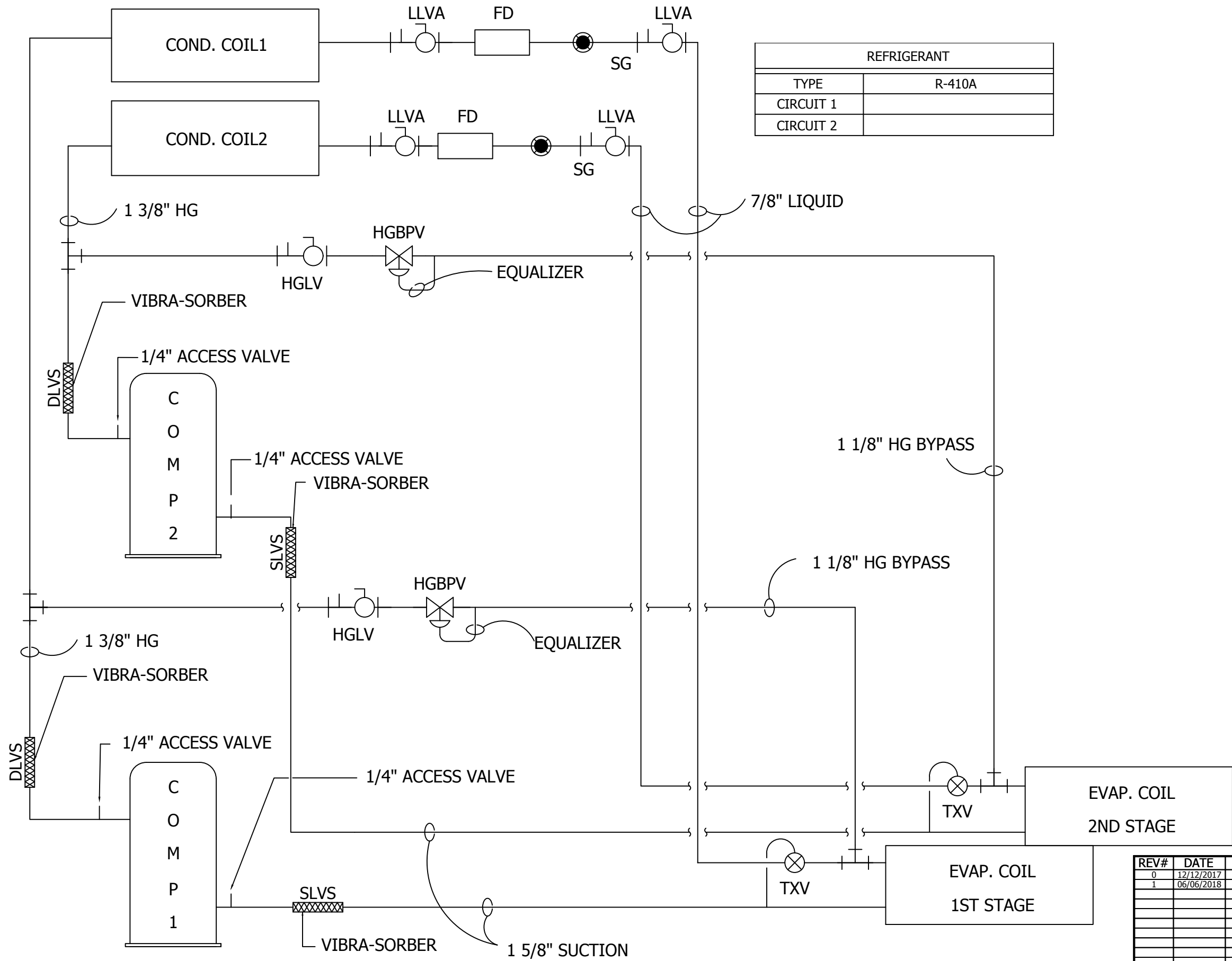
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CUSTOMER: **HERC RENTALS**

**70 TON COMPACT PACKAGE UNIT  
 136KW ELECTRIC HEAT  
 460V/3P/60HZ  
 ELECTRICAL DESIGN  
 HVAC CONTROL BACK PAN LAYOUT**



- NOTES:**
1. TERMINAL MARKER FOR TERMINALS MARKED "SP" WILL BE BLANK TERMINAL MARKERS.
  2. EACH DEVICE TO HAVE (2) LABELS. ONE ON DEVICE, ONE ON PANEL BEHIND DEVICE.
  3. SEE NC-EMC012-P027 FOR BACK PANEL DIMENSION DETAILS.
  4. ALL DIN RAIL AND WIRE DUCT MOUNTED WITH 10-32X1/2 TT IN HOLES PROVIDED
  5. ALL OTHER DEVICES MOUNTED WITH 10-32X1/2 TT EXCEPT WHERE NOTED.
  6. REMOVE CONNECTION CAP FROM SIDE OF LOGO MODULE. ENGAGE INTERLOCK BETWEEN LOGO PRIMARY AND LOGO EXPANSION MODULE.
  7. REMOVE FACTORY INSTALLED FUSEBLOCK AND WIRING ON TOP OF TRANSFORMER. SEE WIRE CHART FOR CONNECTIONS.
  8. ROUTE ALL SHIELDED CABLE AND CONTROL WIRING TO LEFT SIDE WIRE DUCT. ROUTE POWER WIRE THROUGH RIGHT SIDE WIRE DUCT.



REFRIGERANT	
TYPE	R-410A
CIRCUIT 1	
CIRCUIT 2	

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CAPS NO.:	17F-0867	DRAWING:	AE5	DRAWN BY:	TRUNG TRAN	DATE:	12/12/2017
CUST. PO#:		SHEET:	5 OF 6	CHECKED BY:	DAVID NGUYEN	DATE:	06/06/2018
SIZE:	B	REV:	1	APPROVED BY:	LARRY NOVAK	DATE:	06/06/2018

CUSTOMER: **HERC RENTALS**

**70 TON COMPACT PACKAGE UNIT  
 136KW ELECTRIC HEAT  
 460V/3P/60HZ  
 ELECTRICAL DESIGN  
 P&ID**

SEQUENCE OF OPERATION

THE SYSTEM IS PLACED INTO INITIAL OPERATION AS FOLLOWS:

- TURN SYSTEM SWITCH TO "OFF"
- TURN CIRCUIT BREAKER "ON"
- IF THE "PHASE INCORRECT" LIGHT IS ON, TURN OFF THE CIRCUIT BREAKER; REVERSE TWO (2) PHASE OF INCOMING POWER FOR PROPER PHASE SEQUENCING THEN CHECK THE INCOMING POWER SOURCE TO BE SURE THE UNIT HAS A GOOD POWER SOURCE 460V/3P/60HZ
- IF THE "POWER ON" LIGHT IS ON AND THE "PHASE INCORRECT" LIGHT IS OFF, THE UNIT IS READY FOR OPERATION
- TURN SYSTEM SWITCH "ON"
- CONTROL SELECTOR SWITCH:
- LEAVING: THE HVAC IS CONTROLLED BY THE LEAVING AIR TEMPERATURE
- ENTERING: THE HVAC IS CONTROLLED BY THE RETURN AIR TEMPERATURE WHEN HVAC RUNS AT COOLING MODE, USE THE POT SWITCH TO ADJUST EVAPORATOR FAN SPEED
- DEHUMIDIFICATION: SYSTEM WILL BYPASS THERMOSTAT; BOTH HEAT AND COOL TURN ON AT THE SAME TIME TO REMOVE MOISTURE FROM THE ENTERING AIR
- THERMOSTAT SETTINGS:
- PRESS MENU KEY TO ACCESS THE MAIN USER MENU OR EXIT THE MENU
- PRESS THE DOWN ARROW KEY TO DECREASE "TEMPERATURE SETPOINTS" AND TO ADJUST THE DESIRED VALUES WHEN CONFIGURING THE TERMINAL EQUIPMENT CONTROLLER
- PRESS THE UP ARROW KEY TO INCREASE "TEMPERATURE SETPOINTS" AND TO ADJUST THE DESIRED VALUES WHEN CONFIGURING THE TERMINAL EQUIPMENT CONTROLLER
- PRESS THE "YES" KEY TO CONFIRM A SELECTION, TO MOVE ONTO THE NEXT MENU ITEM AND TO MANUALLY SCROLL THROUGH THE DISPLAYED INFORMATION
- PRESS THE "NO" KEY WHEN YOU DO NOT DESIRE A PARAMETER CHANGE, AND TO ADVANCE TO THE NEXT MENU ITEM. CAN ALSO BE USED TO TOGGLE BETWEEN HEATING AND COOLING SETPOINTS.
- DEPENDING ON THE DIFFERENCE BETWEEN SETPOINT TEMPERATURE AND ENTERING OR LEAVING TEMPERATURE. THERMOSTAT WILL CALL HEAT OR COOL. WHEN A COMPRESSOR ENERGIZES, IT'S PILOT LIGHT WILL TURN ON. WHEN HEAT IS ON, HEAT PILOT WILL TURN ON.
- IF A COMPRESSOR IS FAILED, IT WILL BE TURNED OFF AND LOCKED OUT
- ONLY USE SYSTEM SWITCH TO TURN OFF THE UNIT

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35 SOUTHBELT INDUSTRIAL DR., HOUSTON, TX. 77047  
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 TEXAS BOARD OF PROFESSIONAL ENGINEERS  
 FIRM NUMBER P-14008

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CUST. PO#:	SHEET:	CHECKED BY:	DATE:
	6 OF 6	DAVID NGUYEN	06/06/2018
SIZE:	REV:	APPROVED BY:	DATE:
B	1	LARRY NOVAK	06/06/2018

CUSTOMER:	HERC RENTALS
	70 TON COMPACT PACKAGE UNIT
	136KW ELECTRIC HEAT
	460V/3P/60HZ
	ELECTRICAL DESIGN
	SEQUENCE OF OPERATION