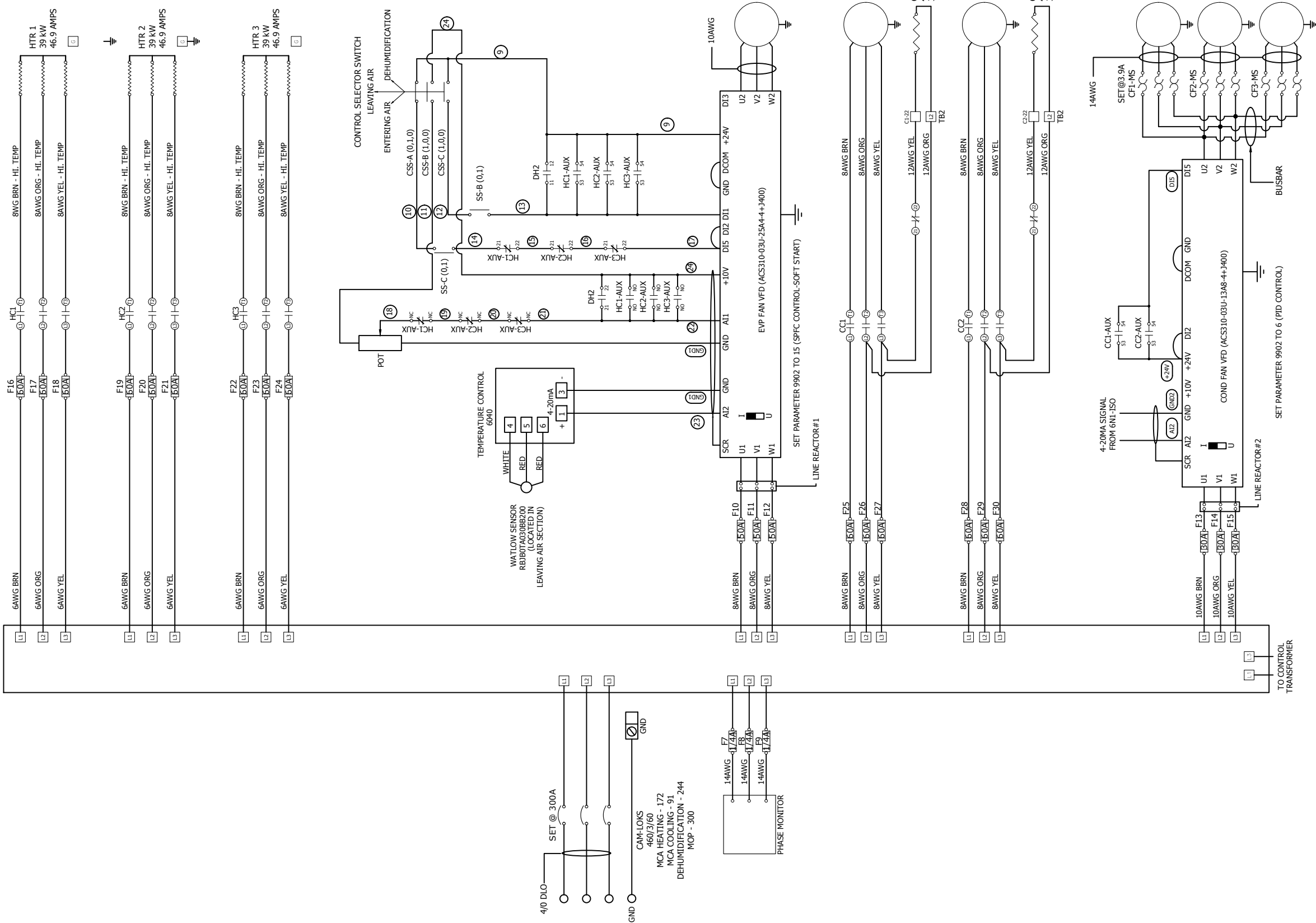


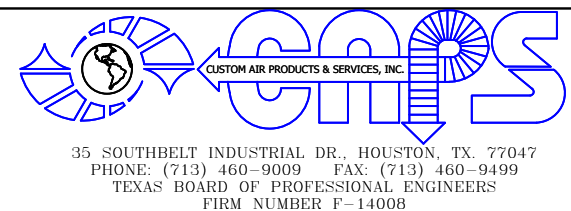
POWER DISTRIBUTION BLOCK



LOGO! SEQUENCE OF OPERATION

1- Compressor Sequence:
 The LOGO will begin the 15 second time delay upon a Y call from the thermostat. After the time delay expires, the compressor contactor will be energized as long as the high and low pressure switches are closed. If either switches is open after the delay expires, the compressor will not energize. If either switch opens while the compressor is energized, it will de-energize immediately and begin the anti-short cycle delay (1 minutes). The compressor will not be allowed to turn on again until the anti-short cycle delay expires and all switches are closed. The flow switch will have a 30-second bypass timer in which the control will ignore an open flow switch for the first 30-seconds. If the flow switch remains open after the 30-second bypass timer expires, the unit will de-energize the compressor and begin the anti-short cycle delay. If the control experiences three high pressure switch or low pressure switch faults in a 30-minute period, it will lock out the compressor. If the thermostat calls Y1 and Y2 at the same time, Compressor 1 contactor energizes first so does Compressor 2 contactor after 15 second delay.
 A manual reset of power will be required to reset the lockout condition.

2 Heater Sequence
 The LOGO will begin the 15 second time delay upon a W call from the thermostat. After the time delay expires, the heater contactor will be energized. The flow switch will have a 30-second bypass timer in which the control will ignore an open flow switch for the first 30-seconds. If the flow switch remains open after the 30-second bypass timer expires, the unit will de-energize the heater. If the thermostat calls W1 and W2 at the same time, Heat 1 contactor energizes first so does Heat 2 contactor after 15 second delay. A 30 second time delay between contactor 2 and contactor 3 is set



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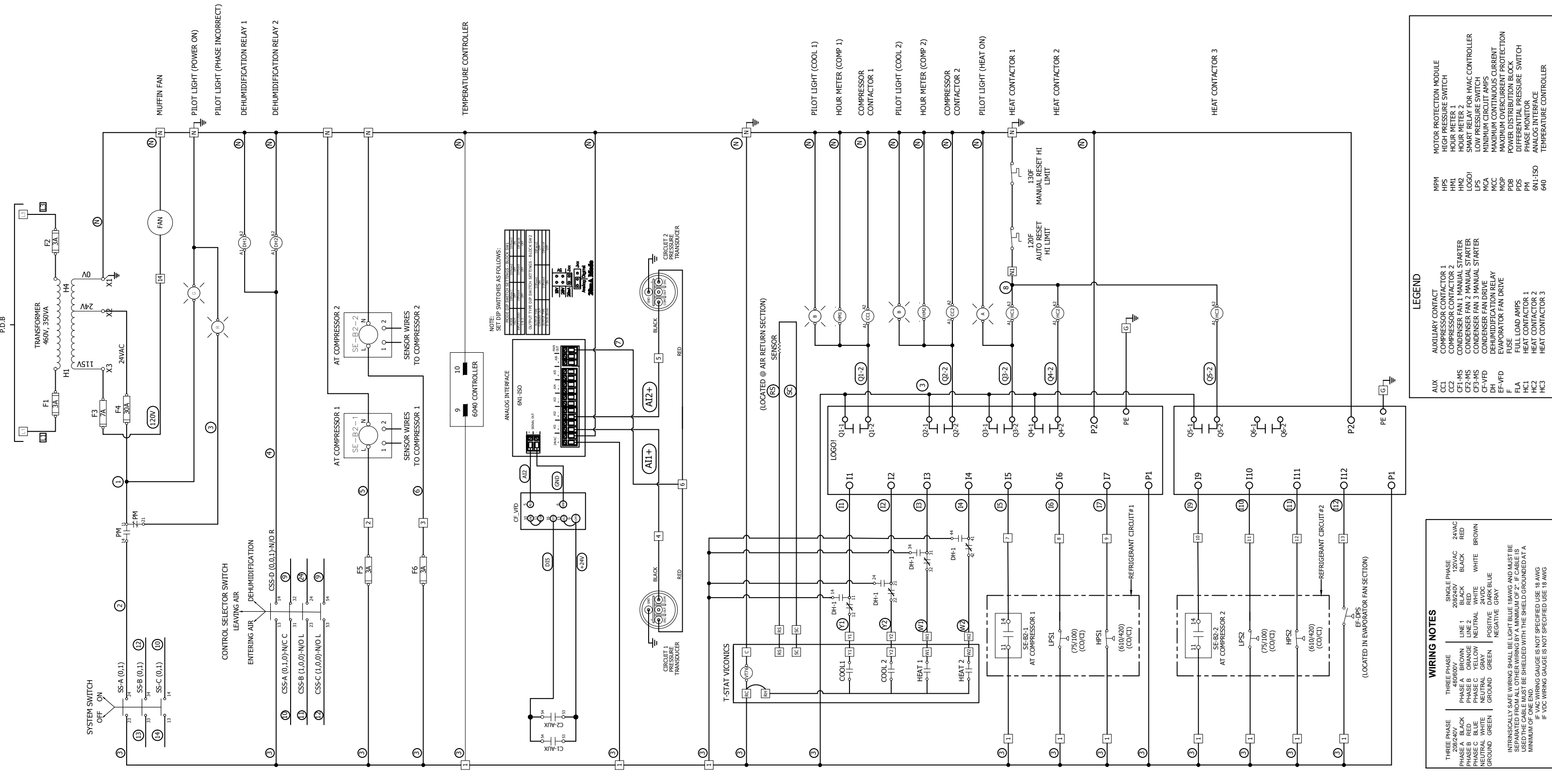
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| CAPS NO.: 17F-0868 | DRAWING: AE1 | DRAWN BY: TRUNG TRAN | DATE: 12/12/2017 |
| CUST. PO#: | SHEET: 1 OF 6 | CHECKED BY: DAVID NGUYEN | DATE: 12/13/2017 |
| SIZE: B | REV: 0 | APPROVED BY: LARRY NOVAK | DATE: 07/10/2018 |

| REV# | DATE | DESIGNER | DESCRIPTION |
|------|------------|------------|------------------------|
| 0 | 12/12/2017 | TRUNG TRAN | ISSUE FOR CONSTRUCTION |
| 1 | 07/10/2018 | J.O'MALLEY | AS BUILT |
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CUSTOMER: **HERC RENTALS**

40 TON PACKAGE UNIT WITH 117KW ELECTRIC HEATER VFD FOR EVAPORATOR CONDENSER FANS 460V/3PH/60HZ
ELECTRICAL DESIGN
HVAC WIRING DIAGRAM (HIGH VOLTAGE)

35 SOUTHBELT INDUSTRIAL DR., HOUSTON, TX. 77047
 PHONE: (713) 460-9009 FAX: (713) 460-9499
 TEXAS BOARD OF PROFESSIONAL ENGINEERS
 FIRM NUMBER F-14008



WIRING NOTES

| | | |
|---|--|---|
| THREE PHASE 208/240V PHASE A PHASE B PHASE C NEUTRAL GROUND | THREE PHASE 208/240V LINE 1 LINE 2 NEUTRAL GROUND | SINGLE PHASE 240VAC 208VAC 24VAC 24VDC 24VDC POSITIVE NEGATIVE |
|---|--|---|

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.
IF VAC WIRING GAUGE IS NOT SPECIFIED USE 18 AWG
IF VDC WIRING GAUGE IS NOT SPECIFIED USE 18 AWG

LEGEND

| | | | |
|--------|--------------------------------|---------|---------------------------------|
| AUX | AUXILIARY CONTACT | MPM | MOTOR PROTECTION MODULE |
| CC1 | COMPRESSOR CONTACTOR 1 | HPS | HIGH PRESSURE SWITCH |
| CC2 | COMPRESSOR CONTACTOR 2 | HIM1 | HOURLY METER 1 |
| CF1-MS | CONDENSER FAN 1 MANUAL STARTER | HIM2 | HOURLY METER 2 |
| CF2-MS | CONDENSER FAN 2 MANUAL STARTER | LOGO! | SMART RELAY FOR HVAC CONTROLLER |
| CF3-MS | CONDENSER FAN 3 MANUAL STARTER | LPS | LOW PRESSURE SWITCH |
| CF-VFD | CONDENSER FAN DRIVE | MCA | MINIMUM CIRCUIT AMPS |
| DH | DEHUMIDIFICATION RELAY | MCC | MAXIMUM CONTINUOUS CURRENT |
| EF-VFD | EVAPORATOR FAN DRIVE | MOP | MAXIMUM OVERCURRENT PROTECTION |
| F | FUSE | PDB | POWER DISTRIBUTION BLOCK |
| FIA | FULL LOAD AMPS | PDS | DIFFERENTIAL PRESSURE SWITCH |
| HCL1 | HEAT CONTACTOR 1 | PM | PHASE MONITOR |
| HCL2 | HEAT CONTACTOR 2 | 6N1-150 | ANALOG INTERFACE |
| HCL3 | HEAT CONTACTOR 3 | 640 | TEMPERATURE CONTROLLER |

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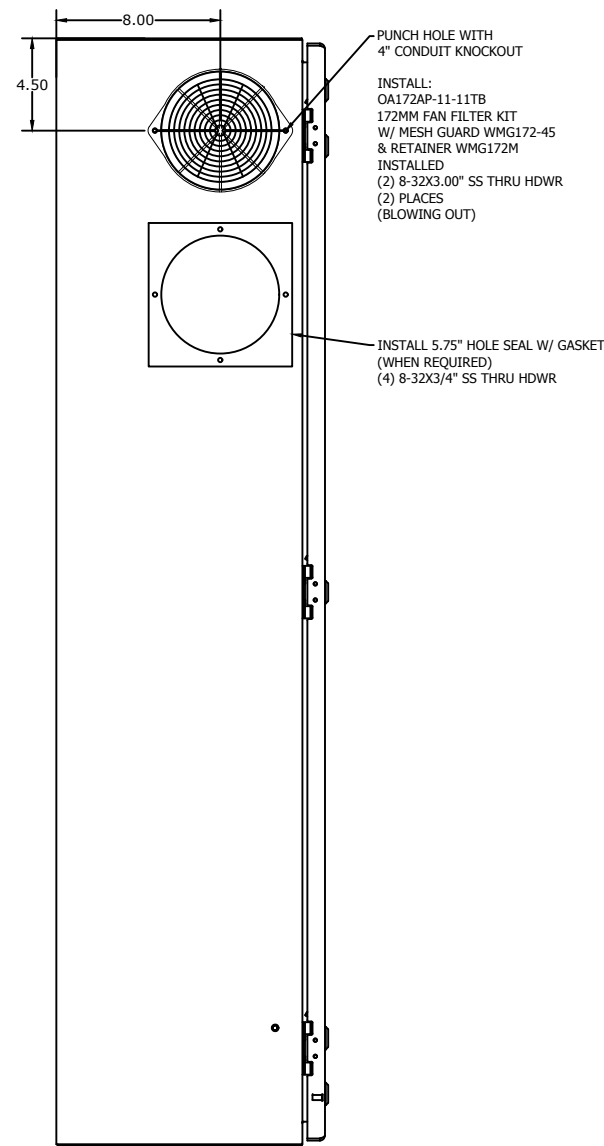
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CHECKER: _____ DATE: _____
APPROVER: _____ DATE: _____

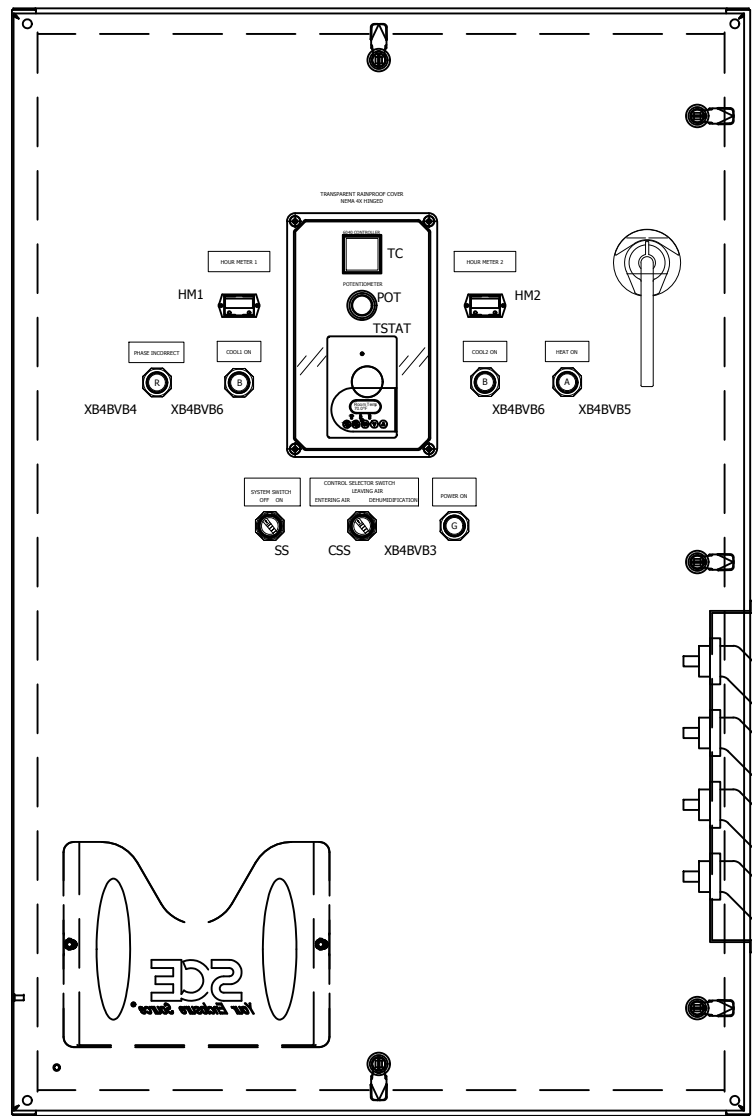
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| CAPS NO.: | 17F-0868 | DRAWING: | AE2 | DRAWN BY: | TRUNG TRAN | DATE: | 12/12/2017 |
| CUST. PO#: | | SHEET: | 2 OF 6 | CHECKED BY: | DAVID NGUYEN | DATE: | 12/13/2017 |
| SIZE: | B | REV: | 0 | APPROVED BY: | LARRY NOVAK | DATE: | 07/10/2018 |

CUSTOMER: **HERC RENTALS**

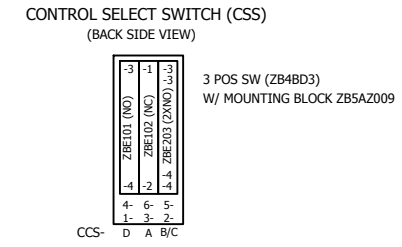
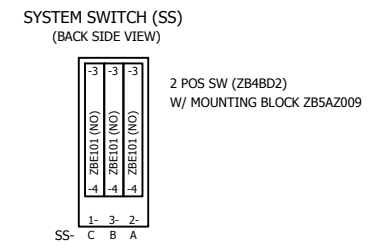
**40 TON PACKAGE UNIT WITH 117KW ELECTRIC HEATER
VFD FOR EVAPORATOR CONDENSER FANS
460V/3PH/60HZ
ELECTRICAL DESIGN
HVAC WIRING DIAGRAM (LOW VOLTAGE)**



L.H. SIDE VIEW

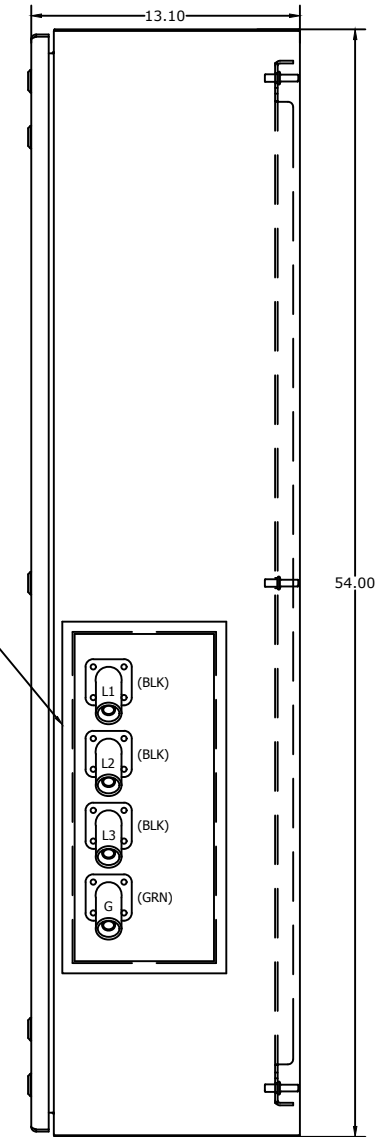


FRONT VIEW



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

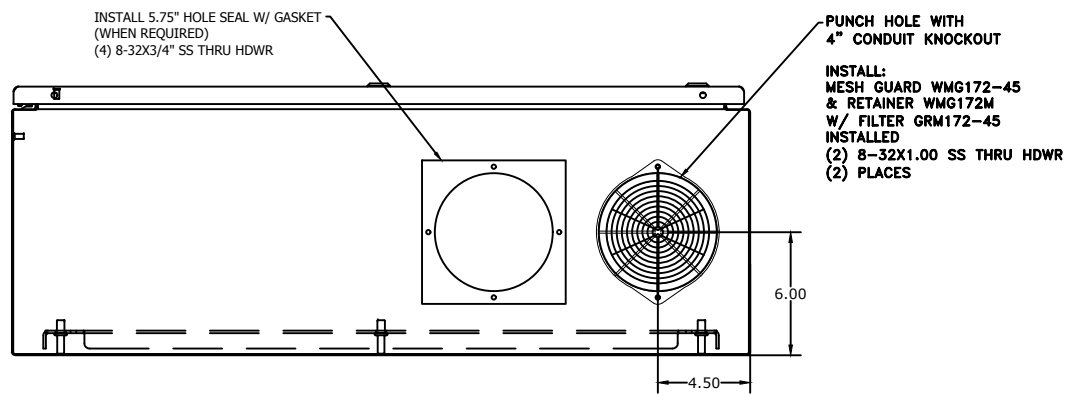
RECESSED CAM MOUNTING PLATE
(SEE ENGINEERING FOR
MOUNTING LOCATION & DETAILS)



R.H. SIDE VIEW

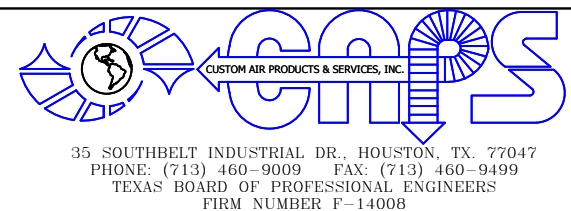
| LEGEND | | | |
|--------|--------------------------------|---------|---------------------------------|
| CC1 | COMPRESSOR CONTACTOR 1 | HC2 | HEAT CONTACTOR 2 |
| CC2 | COMPRESSOR CONTACTOR 2 | HC3 | HEAT CONTACTOR 3 |
| CF1-OL | CONDENSER FAN 1 OVERLOAD RELAY | HM1 | HOUR METER 1 |
| CF2-OL | CONDENSER 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 |
| HCL | HEAT CONTACTOR 1 | | |

- NOTES:
1. MARK EACH DEVICE ON SIDE OF DEVICE, INSIDE OF ENCLOSURE.
 2. SEE DRAWING NC-EMC012-P026 FOR ENCLOSURE CUTOUT DETAILS.
 3. USE MOUNTING INSTRUCTIONS & HDWR PROVIDED WITH DEVICE UNLESS OTHERWISE SPECIFIED.



BOTTOM VIEW

| REV# | DATE | DESIGNER | DESCRIPTION |
|------|------------|------------|------------------------|
| 0 | 12/12/2017 | TRUNG TRAN | ISSUE FOR CONSTRUCTION |
| 1 | 07/10/2018 | J.O'MALLEY | AS BUILT |
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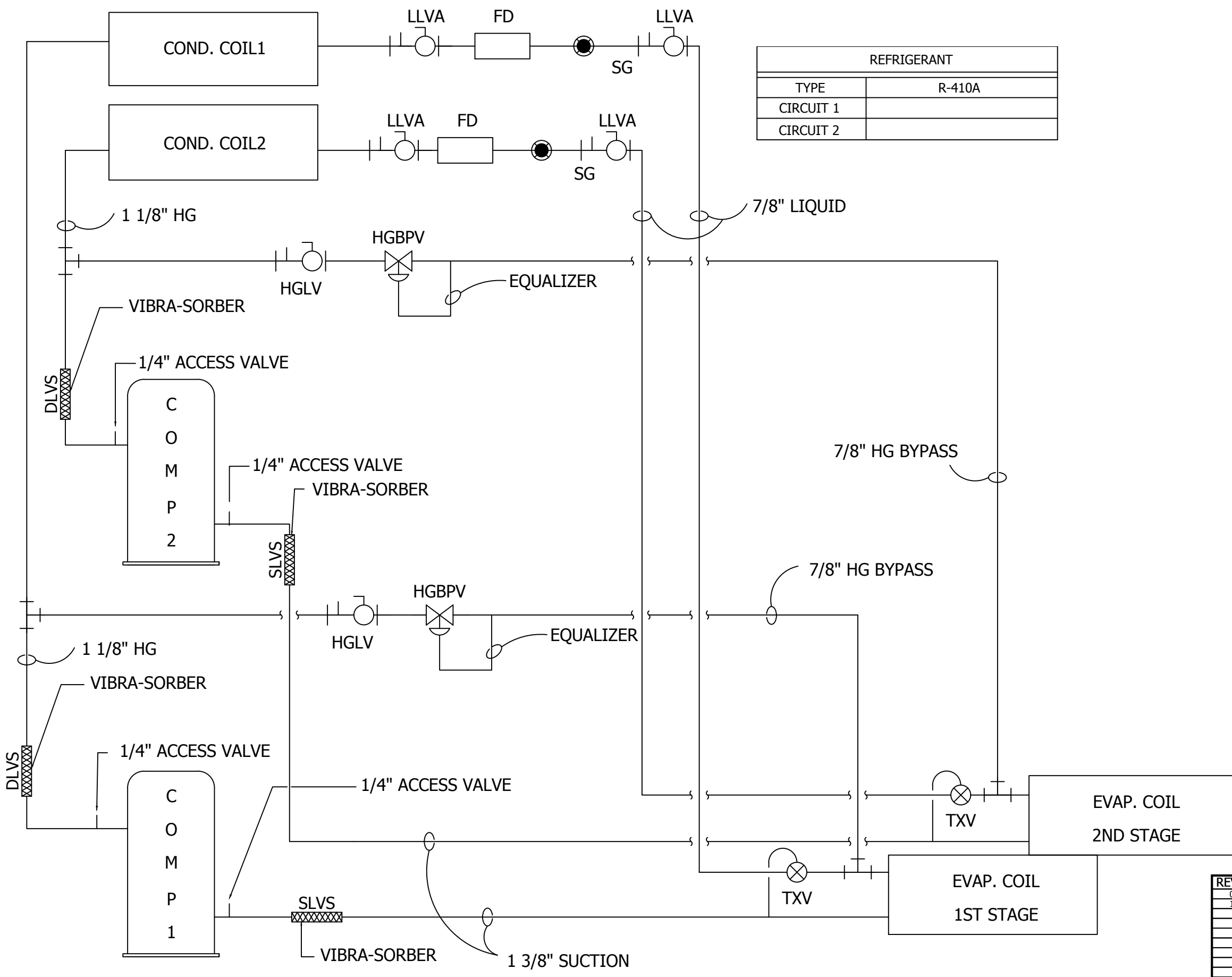
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|------------|----------|----------|--------|--------------|--------------|-------|------------|
| CAPS NO.: | 17F-0868 | DRAWING: | AE3 | DRAWN BY: | TRUNG TRAN | DATE: | 12/12/2017 |
| CUST. PO#: | | SHEET: | 3 OF 6 | CHECKED BY: | DAVID NGUYEN | DATE: | 12/13/2017 |
| SIZE: | B | REV: | 0 | APPROVED BY: | LARRY NOVAK | DATE: | 07/10/2018 |

CUSTOMER: **HERC RENTALS**

**40 TON PACKAGE UNIT WITH 117KW ELECTRIC HEATER VFD FOR EVAPORATOR CONDENSER FANS
460V/3PH/60HZ
ELECTRICAL DESIGN
HVAC CONTROL PANEL LAYOUT (OUTSIDE)**



| REFRIGERANT | |
|-------------|--------|
| TYPE | R-410A |
| CIRCUIT 1 | |
| CIRCUIT 2 | |

| REV# | DATE | DESIGNER | DESCRIPTION |
|------|------------|------------|------------------------|
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| CAPS NO.: | 17F-0868 | DRAWING: | AE5 | DRAWN BY: | TRUNG TRAN | DATE: | 12/12/2017 |
| CUST. PO#: | | SHEET: | 5 OF 6 | CHECKED BY: | DAVID NGUYEN | DATE: | 12/13/2017 |
| SIZE: | B | REV: | 0 | APPROVED BY: | LARRY NOVAK | DATE: | 07/10/2018 |

CUSTOMER: **HERC RENTALS**

**40 TON PACKAGE UNIT WITH 117KW ELECTRIC HEATER
 VFD FOR EVAPORATOR CONDENSER FANS
 460V/3PH/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
 - 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
 PHONE: (713) 460-9009 FAX: (713) 460-9499
 TEXAS BOARD OF PROFESSIONAL ENGINEERS
 FIRM NUMBER P-14008

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| CAPS NO.: 17F-0868 | DRAWING: AE6 | DRAWN BY: TRUNG TRAN | DATE: 12/12/2017 |
| CUST. PO#: | SHEET: 6 OF 6 | CHECKED BY: DAVID NGUYEN | DATE: 12/13/2017 |
| SIZE: B | REV: 0 | APPROVED BY: LARRY NOVAK | DATE: 07/10/2018 |

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| CUSTOMER: HERC RENTALS |
| 40 TON PACKAGE UNIT WITH 117KW ELECTRIC HEATER VFD FOR EVAPORATOR CONDENSER FANS 460V/3PH/60HZ ELECTRICAL DESIGN SEQUENCE OF OPERATION |