

OWNER:

HENDERSON COUNTY SCHOOLS
A.B. CHANDLER ELEMENTARY SCHOOL
HENDERSON, KY

HENDERSON COUNTY BOARD OF EDUCATION
1805 SECOND STREET
HENDERSON, KENTUCKY 42420

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MECHANICAL/ ELECTRICAL ENGINEER:

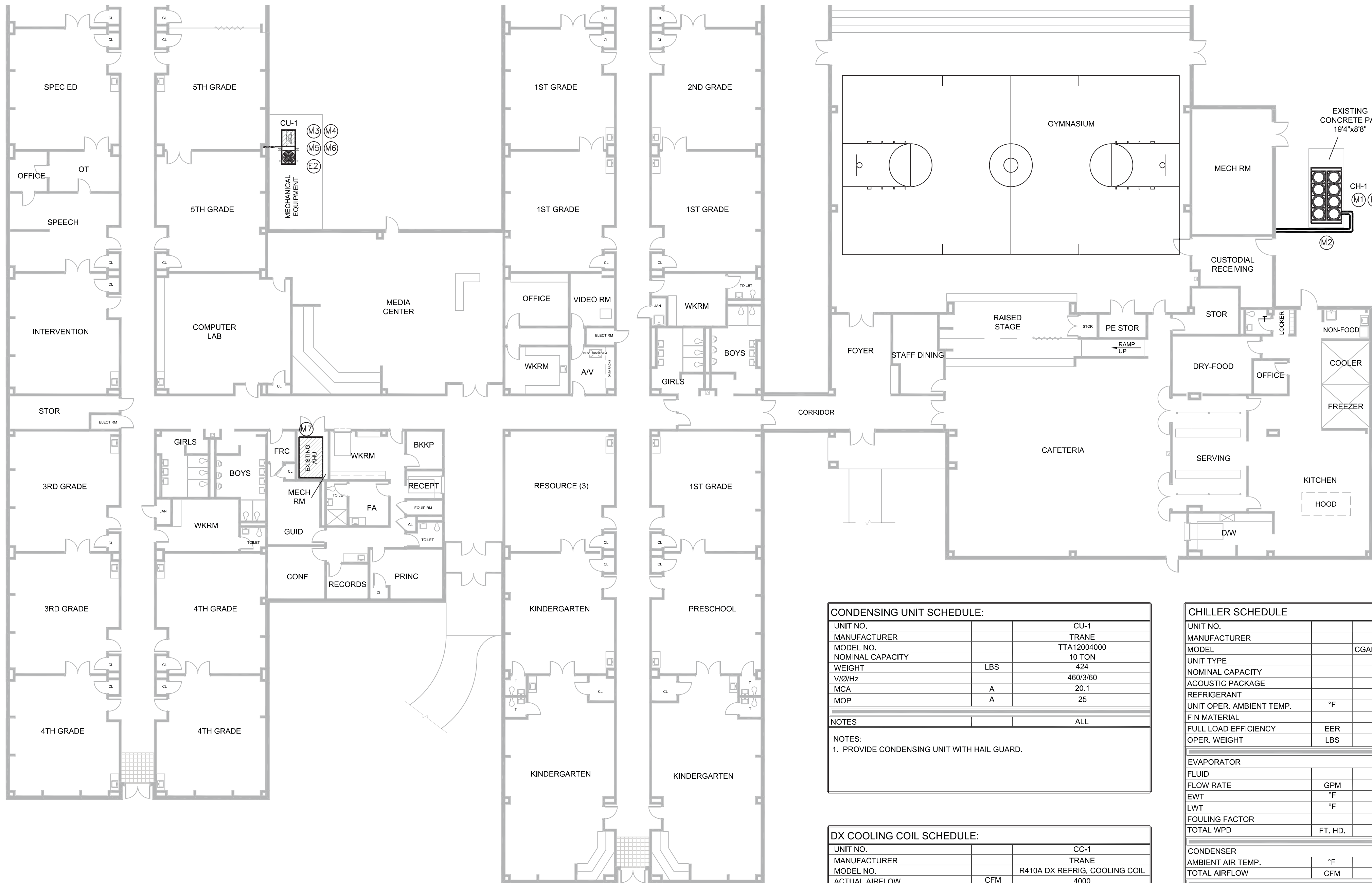
WBW ENGINEERING, INC.
3000 CANTON STREET
HOPKINSVILLE, KENTUCKY 42240
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MECH/ELEC PLAN

SCALE: 1/16" = 1'-0"



CONDENSING UNIT SCHEDULE:			
UNIT NO.		CU-1	
MANUFACTURER		TRANE	
MODEL NO.		TTA12004000	
NOMINAL CAPACITY		10 TON	
WEIGHT	LBS	424	
V/Ø/HZ		460/3/60	
MCA	A	20.1	
MOP	A	25	
NOTES:			
1. PROVIDE CONDENSING UNIT WITH HAIL GUARD.			

DX COOLING COIL SCHEDULE:			
UNIT NO.		CC-1	
MANUFACTURER		TRANE	
MODEL NO.		R410A DX REFRIG. COOLING COIL	
ACTUAL AIRFLOW	CFM	4000	
FIN MATERIAL		ALUMINUM	
ROWS		4	
APD	IN H2O	0.391	
TOTAL CAPACITY	MBH	136	
SENSIBLE CAPACITY	MBH	101.22	
EAT DB	°F	78	
EAT WB	°F	65	
LAT DB	°F	54.93	
LAT WB	°F	53.65	
AIRFLOW AND CONNECTION SIDE		LEFT SUPPLY	
DISTRIBUTOR TYPE - ENT. AIR SIDE		3/16" (5mm) DIA.	
RIGGING WEIGHT	LBS	103.5	
FACE VELOCITY	FT/MIN	415 MAX.	
SATURATED SUCTION TEMP.		45	
LIQUID TEMP. ENT. TXV		115	
CIRCUITING TYPE		INTERWIND CIRCUITS	
# OF DISTR. - ENT. COIL TYPE #1	EA	2	
REFRIGERANT		R-410A	
NOTES:			

CHILLER SCHEDULE			
UNIT NO.		CH-1	
MANUFACTURER		TRANE	
MODEL		CGAM120 AIR COOLED SCROLL CHILLER	
UNIT TYPE		HIGH EFFICIENCY	
NOMINAL CAPACITY		120	
ACOUSTIC PACKAGE		SUPER QUIET	
REFRIGERANT		HFC-410A	
UNIT OPER. AMBIENT TEMP.	°F	0-125	
FIN MATERIAL		MICROCHANNEL	
FULL LOAD EFFICIENCY	EER	10.127	
OPER. WEIGHT	LBS	5965.7	
EVAPORATOR			
FLUID		WATER	
FLOW RATE	GPM	276	
EWIT	°F	55	
LWT	°F	45	
FOULING FACTOR		0.0001	
TOTAL WPD	FT. HD.	19.64	
CONDENSER			
AMBIENT AIR TEMP.	°F	95	
TOTAL AIRFLOW	CFM	73,168	
MOTOR			
UNIT POWER	kW	136.8	
UNIT VOLTAGE	V/Ø/HZ	460 / 3 / 60	
MCA	A	243.6	
MOP	A	250	
ACCESSORIES			
MISC.		SEE NOTES	
NOTES:			
1. HIGH EFFICIENCY UNIT			
2. FULL FACTORY REFRIGERANT CHARGE			
3. FACTORY INSTALLED FREEZE PROTECTION			
4. UNIT HAS CHILLER EVAPORATOR FACTORY INSTALLED HEAT TAPE. REQUIRES SEPARATE 120V/1Ø/60Hz/20A POWER CIRCUIT.			
5. REFRIGERANT ISOLATION VALVES (DISCHARGE VALVE)			
6. ASHRAE 90.1-2010 COMPLIANT			
7. AHRI CERTIFIED			
8. FACTORY INSTALLED FLOW SWITCH			
9. PHASE REVERSAL PROTECTION			
10. GROOVED PIPE CONNECTION			
11. FACTORY INSULATION - ALL COLD PARTS			
12. ACROSS THE LINE STARTER / DIRECT ON LINE			
13. SINGLE POINT CONNECTION MAIN LINE UNIT POWER - ANCILLARY ITEMS REQUIRE OTHER POWER			
14. CIRCUIT BREAKER ELECTRICAL DISCONNECT SWITCH			
15. ENCLOSURE TYPE UL 1995 RATED FOR OUTDOOR APPLICATIONS			
16. DEDICATED BAS INTERFACE MODULE TO COMMUNICATE 100% SEAMLESSLY TO TRANE TRACER ES SYSTEM			
17. EXTERNAL CHILLED AND DEMAND LIMIT SETPOINT ADJUSTMENT VIA 2-10Vdc OR 4-20mA SIGNAL			
18. 5000-Amp SHORT CIRCUIT WITHSTAND RATING			
19. WITH WATER STRAINER FACTORY INSTALLED			
20. ARCHITECTURAL LOUVERED PANELS COVERING CONDENSER COILS			
21. FACTORY AUTHORIZED CHILLER STARTUP SERVICE			
22. 1st YEAR PARTS, LABOR, REFRIGERANT WARRANTY - WHOLE UNIT			
23. 1/2 DAY OWNER TRAINING SESSION ON CHILLER			

- MECHANICAL GENERAL NOTES:**
- CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL MECHANICAL DUCT ROUTING, PIPING, ETC. WITH EXACT LOCATIONS OF STRUCTURAL COMPONENTS, LIGHTING, SUPPORTS, ARCHITECTURAL COMPONENTS, ETC.
 - CONTRACTOR SHALL COORDINATE MECHANICAL WORK WITH OTHER TRADES. CONTRACTOR SHALL PERFORM WORK IN STRICT ACCORDANCE PER LOCAL, INTERNATIONAL, OR OTHER GOVERNING CODES.
 - CONTRACTOR SHALL SIZE CONDENSATE DRAINS PER MANUFACTURER'S RECOMMENDATIONS. COMBINE CONDENSATE DRAINS AS NECESSARY. PROVIDE CONDENSATE PUMPS WITH ASSOCIATED POWER WHERE NECESSARY. ROUTE INDOOR UNIT CONDENSATE DRAINS TO NEAREST FLOOR DRAIN OR MOP SINK.
 - CONTRACTOR SHALL COORDINATE WITH OTHER TRADES ANY CHANGE OF EQUIPMENT DEVIATING FROM THE PROVIDED SCHEDULES IN THE CONTRACT DOCUMENTS.
 - PROVIDE ACCESS PANELS IN DRYWALL/PLASTER CEILINGS FOR MAINTENANCE OF EQUIPMENT LOCATED ABOVE CEILING. REFER TO MANUFACTURER'S EQUIPMENT ACCESS TO LOCATE PANELS.
 - CONTRACTOR SHALL AVOID ROUTING DUCTWORK OVER LIGHTING FIXTURES WHERE SPACE IS LIMITED ABOVE CEILING.
 - CONTRACTOR SHALL MOUNT ALL THERMOSTATS 48" A.F.F.
 - LOCKABLE PROTECTIVE PLASTIC THERMOSTAT COVERS SHALL NOT EXCEED MORE THAN 2" AROUND THERMOSTAT SIZE.
 - CONTROL WIRING SERVING WALL MOUNTED THERMOSTATS, CO2 SENSORS, ETC. SHALL BE CONCEALED IN WALLS.
 - CONTRACTOR SHALL PROVIDE SMOKE DAMPERS AT ANY LOCATION WHERE DUCTWORK PENETRATES A SMOKE WALL. REFER TO ELECTRICAL DRAWINGS FOR POWER AND FIRE ALARM CONNECTION DETAILS.
 - SLEEVE ALL DUCTWORK AND HVAC PIPING PENETRATIONS. PROVIDE FIRE CAULK AT RATED WALLS FOR PIPING PENETRATIONS.
 - EQUIP. CURBS SHALL BE SLOPED AS REQUIRED TO MATCH ROOF PITCH. REFER TO ARCHITECTURAL DRAWINGS.
 - PROVIDE TURNING VANES IN ALL 90° RECTANGULAR DUCTWORK BENDS.
 - THESE PLANS ARE SCHEMATIC IN NATURE & INDICATES THE APPROX. & GEN. LOCATION OF DUCTWORK, EQUIPMENT & PIPING.
 - SEAL ALL TRANSVERSE DUCT JOINTS W/ AN APPROVED DUCT SEALER TO INSURE THAT THE SUM OF DIFF. OUTLETS/INLETS ARE WITHIN 10% OF THE DESIGN AIRFLOW.
 - CONTRACTOR SHALL FLASH AND SEALL ALL ROOF AND WALL PENETRATIONS.
 - THE CONTR. SHALL BE RESPONSIBLE FOR THE COMPLETE & PROPER INSTALLATION OF THERMOSTATS AND ALL OTHER NECESSARY FIELD MOUNTED CONTROL COMPONENTS. THE HVAC EQUIPMENT MANUF. SHALL FURNISH COMPLETE WIRING DIAGRAMS TO THE INSTALLER FOR USE IN WIRING CONTROLS. ALL CONTROL WIRING SHALL BE IN CONDUIT & INSTALLED IN STRICT ACCORDANCE W/ THE LATEST EDITION OF THE N.E.C. (NATIONAL ELECTRIC CODE).
 - PROVIDE 1" MIN. OR SAME SIZE AS UNIT CONN. COND. DRAIN FROM EACH UNIT TRAPPED TO MAINTAIN A WATER SEAL 1" GREATER THAN THE FAN TOTAL STATIC PRESSURE.
 - PROVIDE FLEXIBLE CONN. BETWEEN HVAC UNITS & SHEET METAL DUCTWORK.
 - ALL PIPE AND DUCT SUPPORTS & RESTRAINTS SHALL BE DESIGNED FOR SEISMIC CATEGORY FOR BUILDING LOCATION AS SHOWN IN SEISMIC CRITERIA ON PLANS. INSTALL SUPPORTS & RESTRAINTS IN ACCORDANCE WITH ASHRAE SEISMIC DESIGN GUIDELINES.
 - INSTALL ALL EQUIP. AS PER MFR'S. RECOMMENDATIONS UNLESS NOTED OTHERWISE.
 - FAN COIL UNITS, VENT FANS, HEAT PUMP UNITS, ETC. SHALL BE INSTALLED IN SUCH A MANNER THAT ALL FILTERS, VALVES, MOTORS, PANELS ETC. ARE COMPLETELY ACCESSIBLE AND SERVICEABLE. PROVIDE ELECTRICAL SERVICE CLEARANCES IN ACCORDANCE WITH THE LATEST EDITION OF THE N.E.C.
 - MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES ON ALL EQUIP.
 - CONTRACTOR SHALL PROVIDE FIRE DAMPERS PER LOCAL AND GOVERNING CODES. AT ANY LOCATION WHERE DUCTWORK PENETRATES A FIRE RATED ASSEMBLY OR WALL TO MAINTAIN THAT ASSEMBLY'S FIRE RATING, REFER TO ARCH. DRAWINGS FOR FIRE RATINGS.
 - DUCTWORK, PIPING ETC. SHALL NOT BE ROUTED OVER TOP OF ELECTRICAL PANEL BOARDS.

- MECHANICAL NOTES:**
- M1 CH-1 TO BE PLACED ON EXISTING CONCRETE PAD. FIELD VERIFY EXACT LOCATION OF PAD.
 - M2 WATER LINE LOCATION IS APPROX. CONTRACTOR TO FIELD VERIFY LOCATION OF LINES.
 - M3 CONTRACTOR TO RECOVER R-22 FROM EXISTING CONDENSING UNIT AND REFRIG. PIPING INTO CYLINDER AND DELIVER TO OWNER.
 - M4 EXISTING R-22 PIPING TO BE REMOVED. ROUTE NEW REFRIGERANT PIPING TO EXISTING AHU IN MECH. ROOM. REFRIG. PIPING SHALL BE ROUTED STRAIGHT AS POSSIBLE WITH MINIMUM BENDS. SUSPEND PIPING WITH PIPE HANGERS.
 - M5 PROVIDE REFRIGERANT PIPING WITH 3/4" FOAM INSULATION AND UV PROTECTED PVC JACKET WHERE EXPOSED TO WEATHER (TYP.). SEAL WALL PENETRATION WATER TIGHT.
 - M6 PROVIDE REFRIGERANT PIPING CHANNEL SUPPORT EVERY 4' (TYP.). PIPING SHALL BE SECURED TO SUPPORT WITH RESTRAINT BRACKET.
 - M7 REMOVE R-22 DX COIL FROM EXISTING AHU. REPLACE WITH CC-1. CONTRACTOR TO FOLLOW MANUFACTURER'S RECOMMENDATION FOR REMOVAL AND REPLACEMENT.

- ELECTRICAL NOTES:**
- E1 CONTRACTOR SHALL EXTEND EXISTING 250A 480VAC 3 PHASE CIRCUIT TO NEW CHILLER CH-1. ALSO PROVIDE 120VAC 20AMP-4HR CIRCUIT FOR HEAT TRACE. REROUTE CONDUIT AND WIRING AS REQUIRED TO EXTEND TO NEW POINT OF CONNECTION.
 - E2 CONTRACTOR TO REPLACE EXISTING NEMA3R FUSIBLE DISCONNECT AND EXTEND EXISTING CIRCUIT TO POINT OF CONNECTION AT NEW CONDENSING UNIT CU-1. FUSE AS REQUIRED. IF NEW EQUIPMENT REQUIREMENT EXCEEDS CAPACITY OF EXISTING CIRCUIT PROVIDE NEW CIRCUIT TO NEAREST ELECTRICAL PANEL. PROVIDE BREAKER AS REQUIRED.