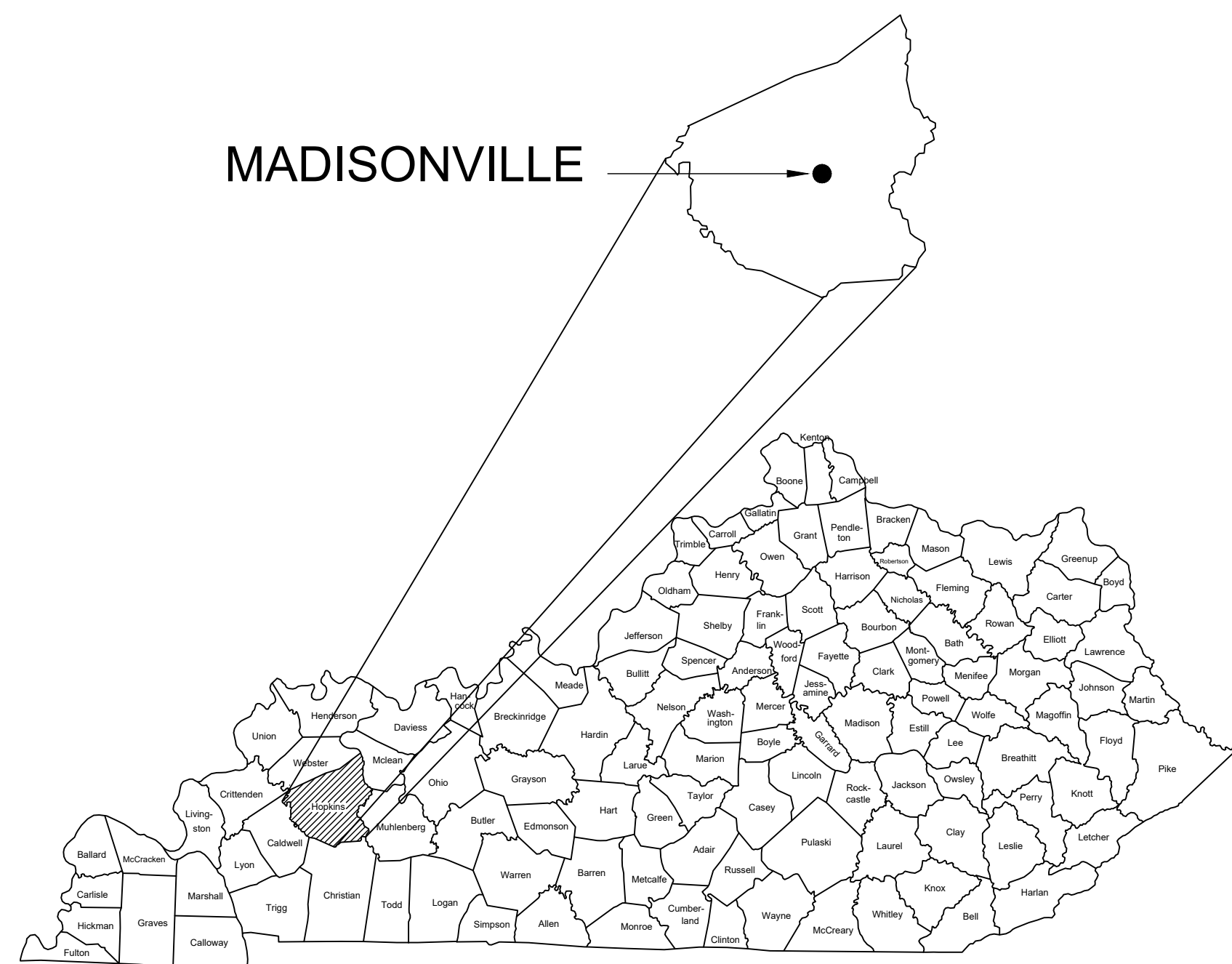


JAMES MADISON MIDDLE SCHOOL COOLING TOWER REPLACEMENT

CITY OF MADISONVILLE, KENTUCKY

HOPKINS COUNTY

MADISONVILLE



DRAWING INDEX:

COVER	COVER SHEET
M1.0	MECHANICAL - DEMO
M1.1	MECHANICAL - NEW

MECHANICAL ENGINEER



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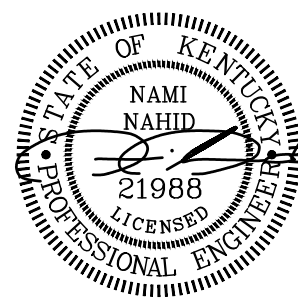
HOPKINS COUNTY PUBLIC SCHOOL

320 SOUTH SEMINARY STREET
MADISONVILLE, KENTUCKY 42431

SUPERINTENDENT MS. DEANNA ASHBY

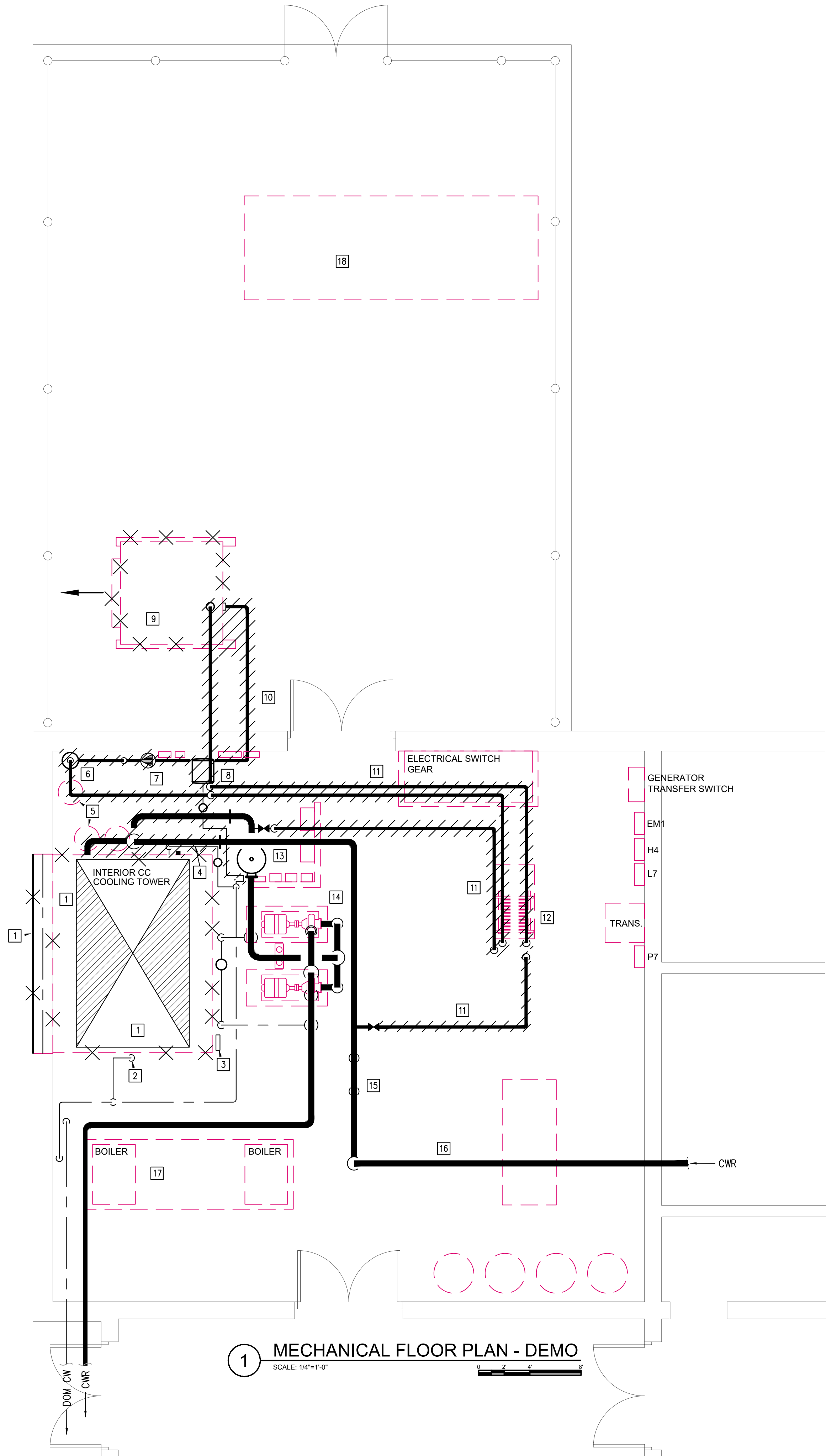
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DECEMBER 1, 2020

BG NO: 21-136



DEMO NOTES:

- 1 REMOVE INTERIOR CLOSED CIRCUIT COOLING TOWER WITH ASSOCIATED CIRCULATING PUMP, POWER, ROOF RELIEF DUCT DISCHARGE, INTAKE LOUVER, DRAIN, ETC.. INTAKE LOUVER SHALL BE SEALED WITH SOLID SHEETMETAL WITH 2" INSULATION AND ADDITIONAL INTERIOR SHEETMETAL COVER. SEAL EXHAUST ON THE ROOF WITH A SHEETMETAL COVER WITH INSULATION SIMILAR TO SIDEWALL. REMOVE PIPING AS SHOWN.
- 2 DOUBLE CHECK VALVE DRAIN PIPING SHALL BE RELOCATED TO SIDE-WALL AND DOWN TO FLOOR DRAIN. CURRENTLY SUPPORTED FROM COOLING TOWER TO BE REMOVED.
- 3 REMOVE FILTRATION PIPING MOUNTED ON COOLING TOWER AND CAP PIPING AT IT'S MAIN OR AT A TAKE OFF SHUT OFF VALVE.
- 4 EXISTING MAKE UP WATER TO INTERIOR COOLING TOWER TO BE DISCONNECTED AND REMOVED TO THE ELBOW AFTER WATER METER. THIS WATER LINE WILL BE ROUTED TO SERVE NEW EXTERIOR CLOSED CIRCUIT COOLING TOWER. TEMPORARY CAP FOR RECONNECTION.
- 5 COOLING TOWER CHEMICAL TREATMENT TANKS WITH PUMPS TO BE REMOVED. TURN THESE TANKS OVER TO OWNER AS THEY BELONG TO CHEMICAL TREATMENT COMPANY.
- 6 REMOVE WATER FILTRATION UNIT WITH ALL ASSOCIATED PIPING, DRAIN, ETC..
- 7 REMOVE EXISTING IN-LINE COOLING TOWER PUMP WITH ASSOCIATED PIPING, POWER, ETC..
- 8 REMOVE EXISTING EXPANSION TANK FOR EXTERIOR COOLING TOWER. UPPER LARGE EXPANSION TANK AND ASSOCIATED PIPING CONNECTED TO AIR SEPARATOR TO REMAIN.
- 9 REMOVE EXTERIOR COOLING TOWER WITH ASSOCIATED PIPING, POWER, I-BEAM BASE, ETC..
- 10 REMOVE COOLING TOWER SUPPLY AND RETURN PIPING. SEAL EXTERIOR WALL OPENING WATER TIGHT WHERE NOT REUSED FOR NEW COOLING TOWER PIPE ROUTING.
- 11 REMOVE EXISTING HEAT EXCHANGER SUPPLY AND RETURN PIPING WITH HANGERS, ETC..
- 12 REMOVE EXISTING PLATE FRAME HEAT EXCHANGER WITH ALL PIPING, BASE, ETC..
- 13 EXISTING AIR SEPARATOR TO REMAIN WITH ASSOCIATED PIPING.
- 14 EXISTING PUMPS TO REMAIN AND WILL BE RECONNECTED TO NEW COOLING TOWER SYSTEM. EXISTING WATER FILTRATION SYSTEMS TO REMAIN.
- 15 BOILER WATER CONNECTION TO RETURN PIPING TO REMAIN (EXTEND OF THIS PIPING TO BOILERS NOT SHOWN)
- 16 BUILDING CONDENSER RETURN WATER PIPING TO REMAIN.
- 17 EXISTING BOILERS AND PIPING TO REMAIN.
- 18 EXISTING ELECTRICAL SERVICE TO REMAIN.

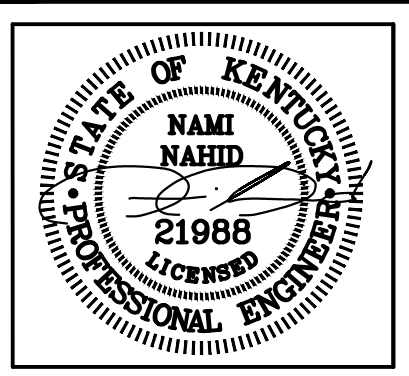
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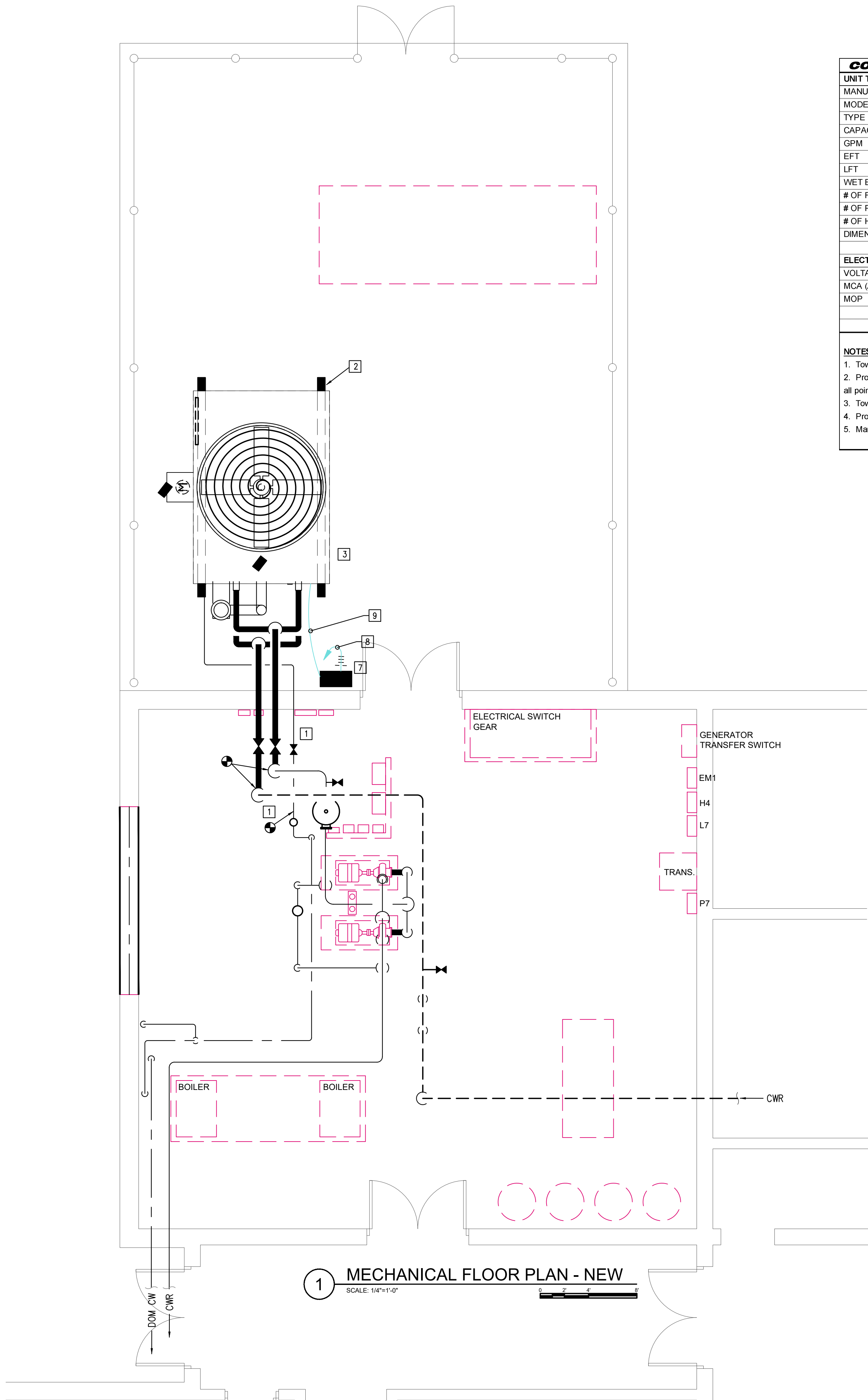


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JAMES MADISON MIDDLE SCHOOL
COOLING TOWER REPLACEMENT
MADISONVILLE, KY

DRAWN: RCM-NN	
APPROVED: NN	
PROJECT NUMBER: 20-058	
DATE: DECEMBER 11, 2020	MECHANICAL FLOOR PLAN DEMO
SHEET NAME:	
SHEET NO.:	

M1.0



COOLING TOWER SCHEDULE	
UNIT TAG	CT-1
MANUFACTURER	EVAPCO
MODEL	ESWB 9-48K12
TYPE	CLOSED CIRCUIT FLUID COOLER
CAPACITY (TONS)	210 TONS
GPM	630
EFT	95
LFT	85
WVET BULB	78 DEG F
# OF FANS @HP	1 @ 20
# OF PUMP MOTORS @HP	1 @ 7.5
# OF HEATERS @ KW	1 @ 7 KW
DIMENSIONS	8.5' x 12'
ELECTRICAL	
VOLTAGE / PHASE	480 V / 3 PH
MCA (A)	77
MOP	90

- NOTES:**
- Tower installed on (2) I-Beam support base.
 - Provide cooling tower with control panel with all disconnects to feed power / controls to all points of the tower. Electrical contractor to provide power from control panel to all tower connections.
 - Tower with 7KW sump electric heater.
 - Provide power to all electric strip heaters (DW, CWS, CWR)
 - Marley and BAC are acceptable Alternate tower manufactureres.

- ELECTRICAL SPECIFICATIONS:**
- ALL 120V AND HIGHER CIRCUITS SHALL BE IN CONDUIT.
 - INTERIOR, EXPOSED CONDUIT SHALL BE EMT.
 - EXTERIOR EXPOSED CONDUIT SHALL BE RIGID STEEL.
 - CONNECTION TO VIBRATING EQUIPMENT SHALL BE MADE IN LFMC.
 - ALL CONDUCTORS SHALL BE STRANDED, THHN/THWN INSULATED COPPER, AWG AS INDICATED.
 - ALL CIRCUITS SHALL INCLUDE A GREEN, INSULATED EQUIPMENT GROUNDING CONDUCTOR.

- NEW INSTALLATION NOTES:**
- NEW 1" MAKE UP WATER EXTENDED FROM EXISTING COPPER WATER LINE TO NEW COOLING TOWER. INSTALL A NEW SHUT OFF VALVE AT PIPING CONNECTION AND A NEW DRAIN VALVE FOR WINTER DRAINAGE. NEW WATER LINE SHALL BE TYPE L COPPER WITH 1" BLACK FOAM INSULATION IN MECHANICAL ROOM. INSTALL ADDITIONAL PVC JACKET AND ELECTRIC HEAT TRACING ON THE EXTERIOR OF THE MECHANICAL ROOM FROM EXTERIOR WALL TO THE COOLING TOWER CONNECTION. INSTALL ADDITIONAL VALVE AT COOLING TOWER CONNECTION WITH HEAT TRACING. INSULATION AT THE COOLING TOWER VALVE SHALL BE REMOVABLE STYLE.
 - STEEL I-BEAM 4" X 8" HEIGHT GALVANIZED STEEL PAINTED YELLOW WEATHER PROOF. COOLING TOWER BOLTED TO THE STEEL I-BEAM AND STEEL BOLTED TO CONCRETE FOUNDATION.
 - NEW FLUID COOLER (COOLING TOWER) INSTALLED WITH PUMP AND PIPING ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATIONS. INSTALL OVERFLOW DRAIN / DRAIN WITH SHUT OFF VALVE AS PER MANUFACTURER'S RECOMMENDATIONS.
 - INSTALL NEW 6" HDPE SUPPLY AND RETURN CONDENSER PIPING TO COOLING TOWER WITH SHUT-OFF VALVES. INSTALL 1.5" BLACK FOAM INSULATION WITH PVC JACKET AND HEAT TRACING FROM EXTERIOR WALL TO COOLING TOWER. PROVIDE SHUT OFF VALVES WITH VELCRO STYLE REMOVABLE PRE-MOLDED INSULATION. PROVIDE TEMPERATURE SENSOR PORTS IN SUPPLY AND RETURN PIPING WITHIN MECHANICAL ROOM FOR CONTROL CONTRACTOR SENSOR INSTALLATION. INSTALL ADDITIONAL TEMPERATURE THERMOMETER AT SUPPLY AND RETURN LINE IN MECHANICAL ROOM.
 - CONDENSER WATER PIPINGS WITH MAKE UP WATER PENETRATION THRU SIDEWALL. SEAL OPENING WATER TIGHT.
 - 6" HDPE SUPPLY AND RETURN CONDENSER WATER PIPING CONNECTED TO EXISTING CONNECTION WHERE SHOWN. INSTALL BUTTERFLY SHUT OFF VALVE AT PIPE CONNECTION.
 - INSTALL NEW COOLING TOWER CONTROL PANEL ON NEW SHEETMETAL WALL WITH SUPPORTING BRACKETS. RUN ALL POWER / CONTROL WIRING FROM THIS POINT TO COOLING TOWER POINTS OF CONNECTIONS.
 - CONNECT TO EXISTING MAIN SWITCHBOARD USING 3/3, 1#6G, IN 1-1/4" CONDUIT. PROVIDE NEW 250A FRAME/ 90A TRIP, HACR-RATED CIRCUIT BREAKER WITHIN EXISTING SPACE IN MAIN SWITCHBOARD (COOLING TOWER CONTROLLER FURNISHED BY MECHANICAL CONTRACTOR WITH HAND/OFF/AUTO SWITCH).
 - PROVIDE THE FOLLOWING CIRCUITS AND CONNECTIONS FROM CONTROL PANEL TO COOLING TOWER EQUIPMENT (COORDINATE LOCATIONS OF ALL EQUIPMENT WITH MECHANICAL DRAWINGS):
 - 20HP MOTOR: 3#8, 1#10G, 3/4"C.
 - 7.5 HP PUMP MOTOR: 3#12, 1#12G, 3/4"C.
 - 9KW HEATER: 3#12, 1#12G, 3/4"C.
 - 9KW HEATER: 3#12, 1#12G, 3/4"C.
 - 20-AMP GFCI RECEPTACLE: 2#12, 1#12G, 3/4"C.
 - HEAT TRACE 20-AMP GFCI RECEPTACLE: 2#12, 1#12G, 3/4"C.
 - PULSE PURE 20-AMP GFCI RECEPTACLE: 2#12, 1#12G, 3/4"C.

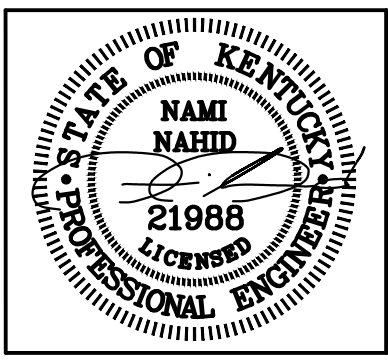
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