



STENGENL-HILL
ARCHITECTURE

613 WEST MAIN STREET
LOUISVILLE, KENTUCKY 40202
502.893.1875
502.893.1876 fax

Civil Engineering



Structural Engineering



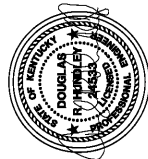
Mechanical/Electrical Engineering



Interior Design



Interior Design Studio

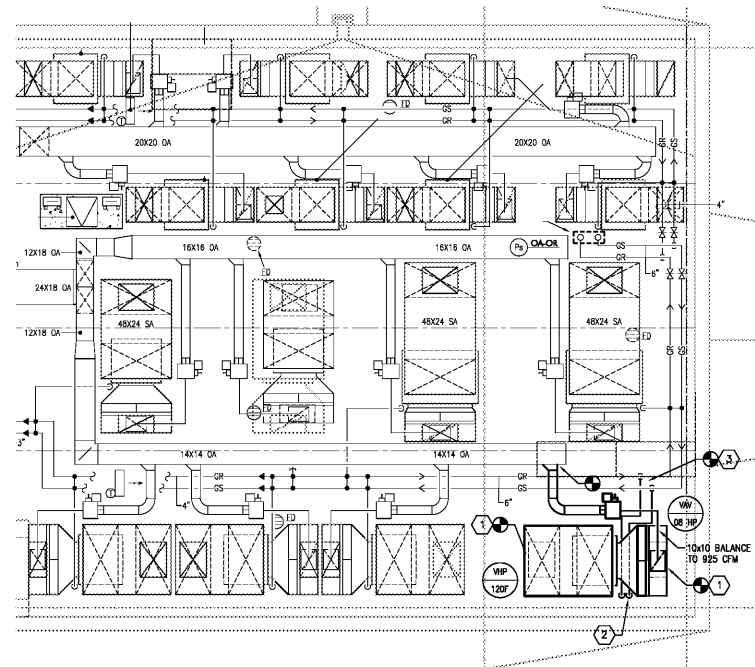


ENLARGED PENTHOUSE PLANS - MECH.
CATH LAB SUITE ADDITION
CLARK REGIONAL MEDICAL CENTER
WINCHESTER, KENTUCKY

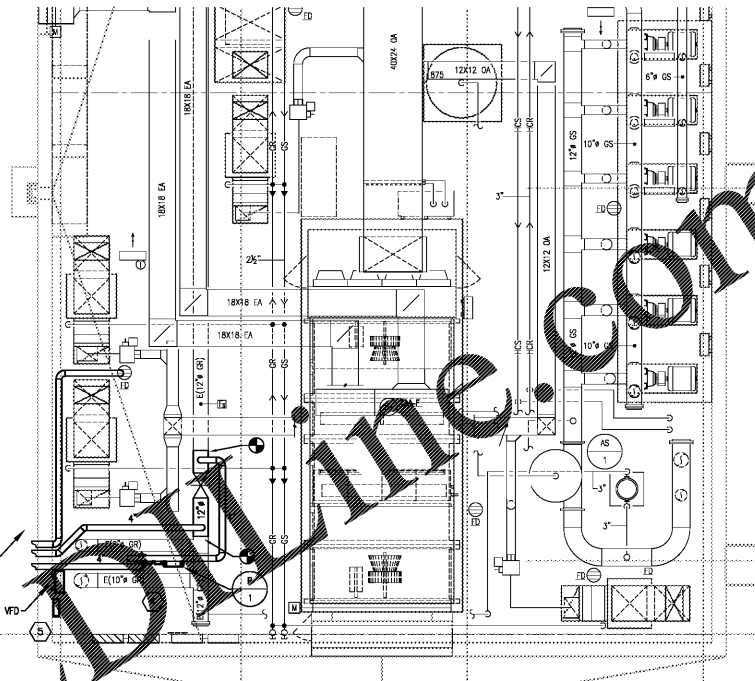
30 DECEMBER 2019
CMI1807

M3.2

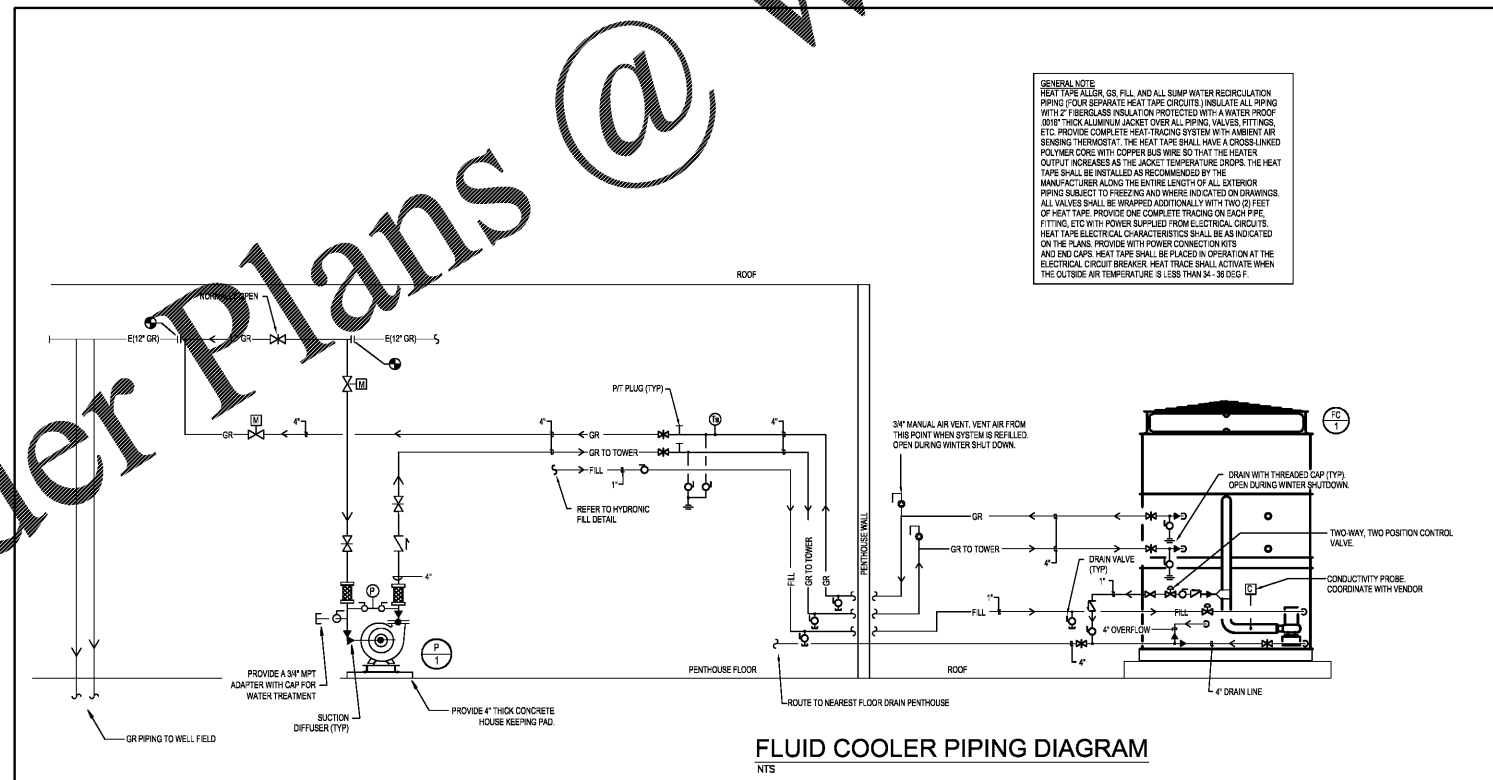
CONSTRUCTION DRAWINGS



02 ENLARGED PENTHOUSE "E"
PLAN - MECHANICAL
M3.2 1/4" = 1'-0" NORTH



01 ENLARGED PENTHOUSE "F"
PLAN - MECHANICAL
M3.2 1/4" = 1'-0" NORTH



FLUID COOLER PIPING DIAGRAM
NTS

GENERAL NOTE:
HEAT TAPE ALONG GR, FILL AND ALL SUMP WATER REDCIRCULATION PIPING FOR SEPARATE HEAT TAPE CIRCUITS. INSULATE ALL PIPING WITH 2" FIBERGLASS INSULATION PROTECTED WITH A WATER PROOF 30# THICK ALUMINUM JACKET OVER ALL PIPING, VALVES, FITTINGS, ETC. PROVIDE COMPLETE HEAT TRACING SYSTEM WITH AMBIENT AIR SENSING THERMOSTATS. THE HEAT TAPE SHALL HAVE A CROSSLINKED POLYMER CORE WITH COPPER BUS WIRE SO THAT THE HEATER OUTPUT INCREASES AS THE JACKET TEMPERATURE DROPS. THE HEAT TAPE SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER ALONG THE ENTIRE LENGTH OF ALL EXTERIOR PIPING SUBJECT TO FREEZING AND WHERE INDICATED ON DRAWINGS. ALL VALVES SHALL BE WRAPPED ADDITIONALLY WITH TWO (2) FEET OF HEAT TAPE. PROVIDE ONE COMPLETE TRACING ON EACH PIPE, FITTING, ETC WITH POWER SUPPLIED FROM ELECTRICAL CIRCUITS. HEAT TAPE ELECTRICAL CHARACTERISTICS SHALL BE AS INDICATED ON THE PLANS. PROVIDE WITH POWER CONNECTION KITS AND INDCAPS. HEAT TAPE SHALL BE PLACED IN OPERATION AT THE ELECTRICAL CIRCUIT BREAKER. HEAT TAPE SHALL ACTIVATE WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN 34 - 36 DEG F.

- GENERAL NOTES:
- A. COORDINATE ALL WORK AND TIE-INS WITH THE HOSPITAL PRIOR TO STARTING ANY WORK.
 - B. ALL NEW EQUIPMENT SHALL BE TIED INTO THE EXISTING CONTROL SYSTEM. PROVIDE ALL GRAPHICS, PROGRAMMING, ETC. FOR END USER TO HAVE A FULLY FUNCTIONING LAYOUT IN THE EXISTING SYSTEM.
- TAG NOTES:
1. CONNECT NEW 20x20 SA AND 20x14 RA TO EXISTING DUCTS LEFT IN PLACE FOR FUTURE CONNECTION. COORDINATE EXACT EQUIPMENT/DUCT LOCATION WITH EXISTING CONDITIONS. TRANSITION TO UNIT SIZES AS REQUIRED.
 2. NEW 2" CS/GR DOWN TO NEW HEAT PUMP. REFER TO INSTALLATION DETAIL, ROUTE WC CONDENSATE FROM NEW HEAT PUMP TO NEAREST FLOOR DRAIN.
 3. CONNECT NEW CS/GR PIPING TO EXISTING PIPE.
 4. REFER TO PIPING SCHEMATIC FOR ALL VALVES, CONNECTIONS ETC. REFER TO PUMP INSTALLATION DETAIL FOR ALL PUMP SPECIALTIES.
 5. HEAT TRACE CONTROL PANEL. PROVIDE 3.5 KW OF CROHWALOX SELF REGULATING HEAT TRACE WIRE.

- FLUID COOLER SEQUENCE OF OPERATION:
1. THE FACILITY IS SERVED BY A GEOTHERMAL WELL FIELD WHICH IS TO MAINTAIN THE LOWEST OPERATING SUPPLY WATER TEMPERATURE TO THE HEAT PUMPS. THE FLUID COOLER SHALL SUPPLEMENT THE OPERATION. THE FLUID COOLER IS PIPED AS A SIDE STREAM OPTION TO REMOVE HEAT FROM THE LOOP. REFERENCE REFER WITH THE GEOTHERMAL LOOP. SUPPLEMENTAL COOLING IS REQUIRED WHEN THE HEAT PUMP WATER SUPPLY TEMPERATURE EXCEEDS 55F. THE FLUID COOLER SHALL OPERATE WHEN THE HEAT PUMP SUPPLY TEMPERATURE EXCEEDS OUTDOOR AMBIENT CONDITIONS BY 5F.
 2. THE FLUID COOLER SHALL BE PROVIDED WITH COMPLETE PACKAGED DOC CONTROLS TO PROVIDE OUTSIDE FLUID TEMPERATURE CONTROL. WHEN INOPERATED THE FLUID COOLER SHALL OPERATE TO PROVIDE LOWEST LEAVING WATER TEMPERATURE BASED ON AMBIENT CONDITIONS AND MODULATING THE FAN SPEED.
 3. WHEN THE LOOP WATER TEMPERATURE REQUIRES HEAT REJECTION LOOP SP BY ABOVE AMBIENT CONDITIONS OR EXCEEDS 55F, THE FLUID COOLER SHALL OPERATE TO MAINTAIN LOOP WATER SET POINT AS LOW AS POSSIBLE (BUT MINIMUM).
 4. WELL FIELD COOLING OPERATION: IF WELL FIELD GROUND TEMPERATURE IS ELAVATED AND ADDING HEAT TO THE GEOTHERMAL LOOP. (GEOTHERMAL LEAVING WATER TEMPERATURE INCREASES WITH AMBIENT CONDITIONS ABOVE 40F AND GEOTHERMAL RETURN TEMPERATURES LESS THAN 35F) (ADJUSTABLE) THE FLUID COOLER SHALL BE IN OPERATION TO COOL THE WATER SUPPLY TO THE WELL FIELD. THE FAN SPEED SHALL MODULATE TO MAINTAIN 55F TO 60F FLUID COOLER LEAVING WATER TEMPERATURE.
 5. THE MAKE-UP WATER CONTROL VALVE SHALL OPEN/CLOSE TO MAINTAIN FLUID COOLER BASIN LEVEL BETWON.
 6. DISCHARGE DAMPER: DAMPER IS FURNISHED WITH EQUIPMENT. FURNISH ACTUATOR AND ALL REQUIRED WIRING AND CONTROLS.
 7. EVAPORATIVE COOLER SLAMP HEATERS: PROVIDE ALL REQUIRED WIRING FOR BASIN HEATER PROBE ETC. FOR OPERATION OF THE UNITS ELECTRIC SLAMP HEATERS.
 8. EVAPORATIVE COOLER SAFETIES: PROVIDE ALL REQUIRED WIRING FOR PUMP TEMPERATURE, OLI-CHP, LOW WATER OLI-CHP, VIBRATION SWI/OH, ETC.
 9. EVAPORATIVE COOLER WATER LEVEL CONTROLS: PROVIDE ALL REQUIRED WIRING FOR OPERATION OF THE UNITS WATER LEVEL CONTROLS. PROVIDE NEW MAKE-UP WATER VALVES AND ALL REQUIRED WIRING.
 10. SHOULD THE VIBRATION SWITCH TRIP, ONLY THE COOLING TOWER FAN SHALL SHUT OFF AND AN ALARM SIGNAL BE SENT TO DESIGNATED DANNVILLE MAINTENANCE STAFF.
 11. THE FLUID COOLER SHALL BE DISABLED IF THE OUTSIDE AIR TEMPERATURE IS BELOW THE OWNER'S REQUIREMENTS.

Order Plans @

WWW.LDOnline.com