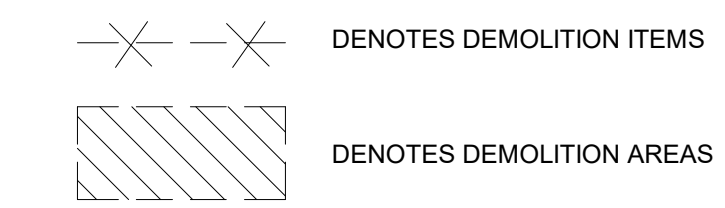


**GENERAL NOTES**

1. FOR THE PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE DIAGRAMMATIC AND FOR DESIGN INTENT ONLY. CONTRACTOR MUST VERIFY ALL DIMENSIONS BY FIELD MEASUREMENT BEFORE BEGINNING ANY FABRICATION OR CONSTRUCTION.
2. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL CODES IN ACCORDANCE WITH THE CURRENT INTERNATIONAL MECHANICAL CODE.
3. ALL NEW MATERIAL, METHODS, AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE BUILDING STANDARDS AS APPROVED BY THE OWNER.
4. CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
5. COORDINATION BETWEEN TRADES IS NECESSARY. MECHANICAL, ELECTRICAL, AND CONTROLS.
6. BALANCE AIR SYSTEMS WITHIN 10% OF CAPACITIES LISTED.
7. ALL ROTATING EQUIPMENT SHALL BE SUSPENDED WITH VIBRATION HANGERS.
8. MAINTAIN WORK SPACE IN ORDERLY CONDITION.
9. REMOVE ALL DEMOLITION DEBRIS FROM SITE.
10. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, BEST PRACTICES AND WARRANTY.
11. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND PROTECTING STRUCTURAL AND PRESTRESSED REINFORCEMENT PRIOR TO DRILLING ANY CONCRETE STRUCTURE.
12. EQUIPMENT BEING REPLACED SHALL MATCH COLOR, STYLE, AND MANUFACTURER OF EXISTING OR ADJACENT EQUIPMENT EXCEPT AS CALLED OUT.
13. COORDINATE EQUIPMENT LABELING AND MARKING OF SERVICE POINT ACCESS WITH OWNER/MAINTENANCE STAFF.
14. ALL DUCT SIZES INDICATE NET INSIDE DIMENSIONS UNLESS OTHERWISE NOTED.
15. PROVIDE FIRE CAULKING FOR PIPE AND/OR DUCT PENETRATIONS THROUGH FIRE RATED BARRIERS.
16. SEISMIC BRACING IS REQUIRED ON ALL DUCTING THAT IS 8" OR LARGER AND MUST COMPLY WITH SMACNA OR EQUIVALENT GUIDELINES. SUCH RUNS OF DUCTING MUST HAVE A MINIMUM OF TWO TRANSVERSE BRACES AND ONE LONGITUDINAL BRACE. BRANCH LINES MAY NOT BE USED AS A SUBSTITUTE FOR SEISMIC BRACING.
17. PROVIDE FLEXIBLE DUCT, PIPING, AND CONDUIT CONNECTIONS AT EQUIPMENT.

**DEMOLITION NOTES**

- 1 REMOVE AND DISPOSE OF EXISTING CHILLER AND PREPARE EXISTING ELECTRICAL POWER CONNECTIONS FOR CONNECTION TO NEW EQUIPMENT.
- 2 REMOVE AND DISPOSE OF EXISTING CONDENSER WATER PUMP AND DECOMMISSION EXISTING ELECTRICAL POWER CONNECTIONS.
- 3 REMOVE AND DISPOSE OF EXISTING CONDENSER WATER PIPING. PREPARE ROUTE FOR NEW REFRIGERANT LINES AND REPURPOSE HANGERS AS NECESSARY.
- 4 REMOVE AND DISPOSE OF EXISTING CHILLED WATER PUMP. PREPARE FOR INSTALLATION OF NEW.



**1 MECHANICAL BASEMENT DEMOLITION PLAN**  
 M1.01 SCALE: 1/4" = 1'-0"  
 0 2 4 8 16

HELIX ENERGY PARTNERS, LLC

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 HELIX, OR 97835  
 PHONE: +1 (541) 379-0271

REV	DATE	BY

UNION COUNTY SHERIFF'S OFFICE CHILLER REPLACEMENT

1009 K AVENUE LA GRANDE, OR 97850

MECHANICAL BASEMENT DEMOLITION PLAN

PROJECT TITLE  
 PROJECT ADDRESS  
 SHEET TITLE

PROJECT NO.	HEP-22-01
DESIGNED BY	MAL
DRAWN BY	YD
ISSUE DATE	06 JUN 2022
CHECKED BY	MAL
PHASE	90% CD REVIEW SET
SHEET NO.	

**M1.01**

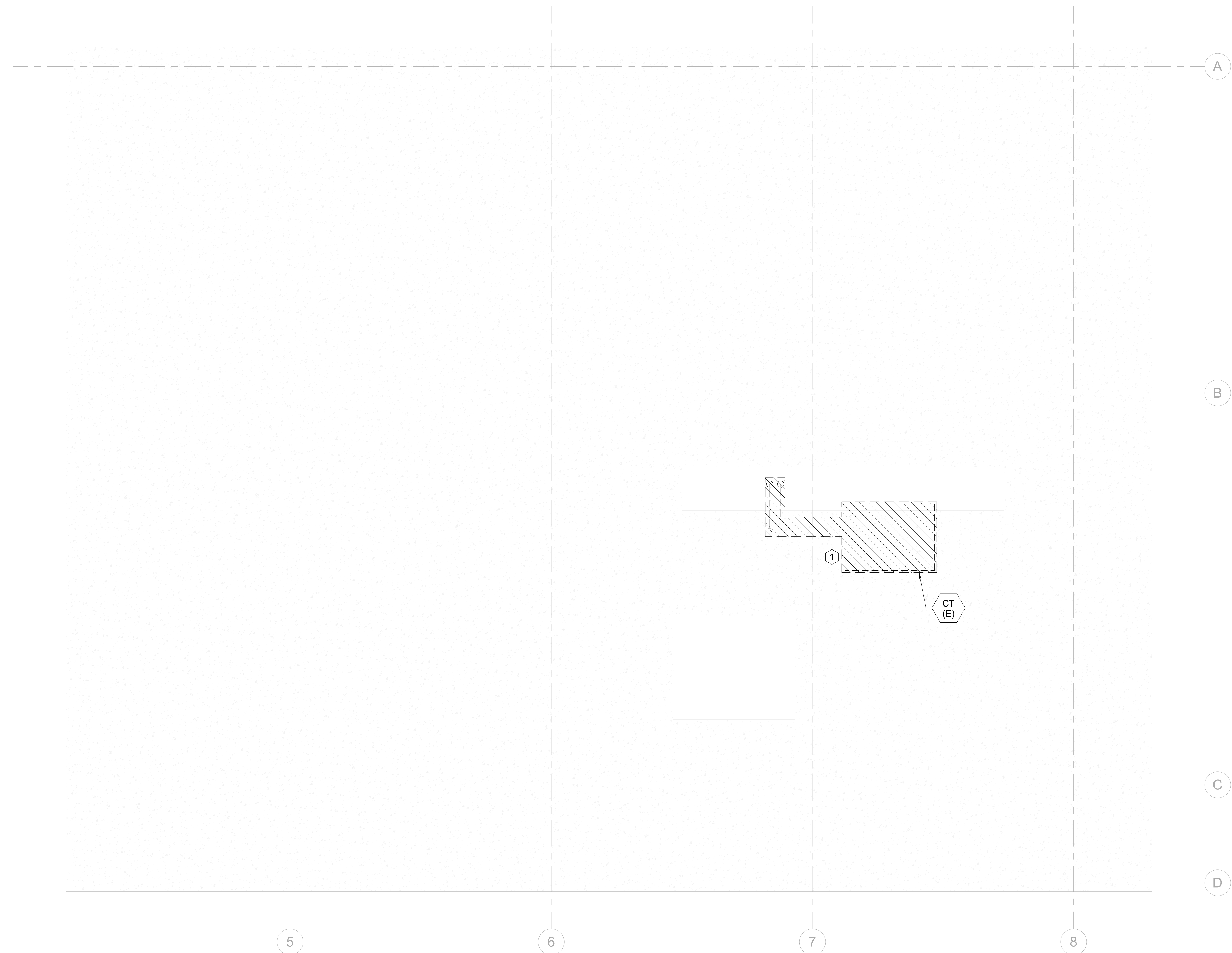
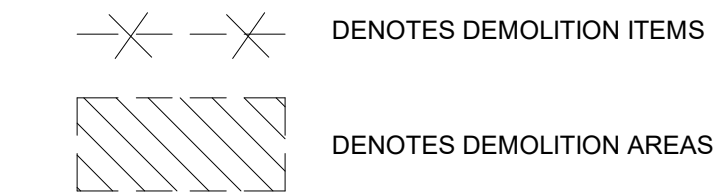


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17. PROVIDE FLEXIBLE DUCT, PIPING, AND CONDUIT CONNECTIONS AT EQUIPMENT.

**DEMOLITION NOTES**

- 1 REMOVE EXISTING COOLING TOWER AND CONDENSER WATER SUPPLY AND RETURN PIPES. PREPARE FOR INSTALLATION OF NEW EQUIPMENT ROOF CURBING. ONE OF THE EXISTING PENETRATIONS CAN BE REPURPOSED FOR THE NEW REFRIGERANT LINES AND POWER. PROVIDE WATER TIGHT PATCH TO ANY ADDITIONAL PENETRATIONS.



**1 MECHANICAL ROOF DEMOLITION PLAN**  
 M1.02 SCALE: 1/4" = 1'-0"  
 0 2 4 8 16

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REV	DATE	BY

UNION COUNTY SHERIFF'S OFFICE CHILLER REPLACEMENT  
 1009 K AVENUE LA GRANDE, OR 97850  
 MECHANICAL ROOF DEMOLITION PLAN

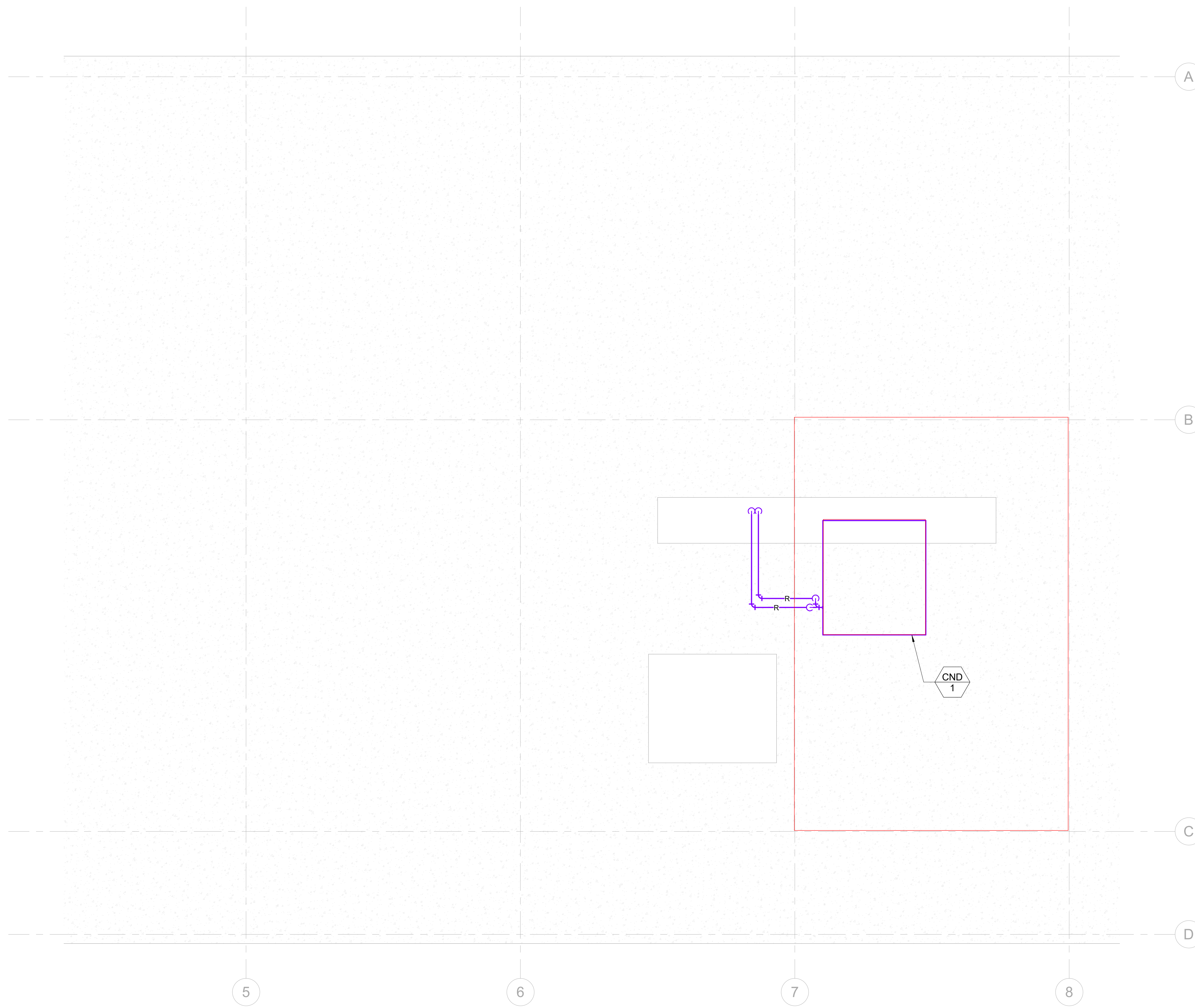
PROJECT NO.	HEP-22-01
DESIGNED BY	Designer
DRAWN BY	Author
ISSUE DATE	06 JUN 2022
CHECKED BY	Checker
PHASE	
SHEET NO.	

**M1.02**









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17. PROVIDE FLEXIBLE DUCT, PIPING, AND CONDUIT CONNECTIONS AT EQUIPMENT.

**KEYED NOTES**

- 1 PROVIDE AND INSTALL NEW ROOF CURB AND NEW REMOTE CONDENSER. PROVIDE ELECTRICAL POWER FROM EXISTING, REPURPOSED CIRCUITS. IF POSSIBLE, REUSE EXISTING ROOF PENETRATIONS.

**1**  
**M2.02 MECHANICAL ROOF REMODEL PLAN**  
 SCALE: 1/4" = 1'-0"  
 0 2 4 8 16

HELIX ENERGY PARTNERS, LLC



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REV	DATE	BY

UNION COUNTY SHERIFF'S OFFICE CHILLER REPLACEMENT

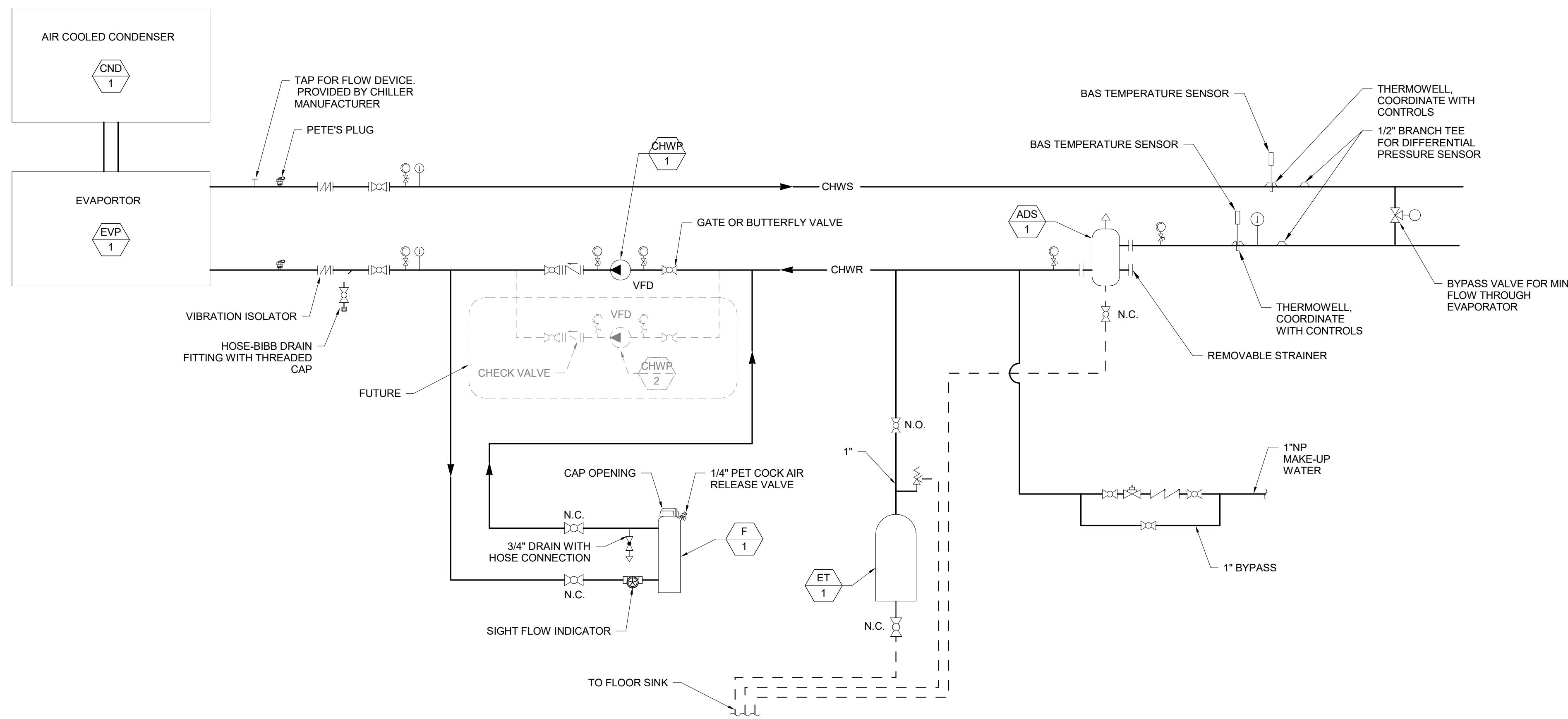
1009 K AVENUE LA GRANDE, OR 97850

MECHANICAL ROOF REMODEL PLAN

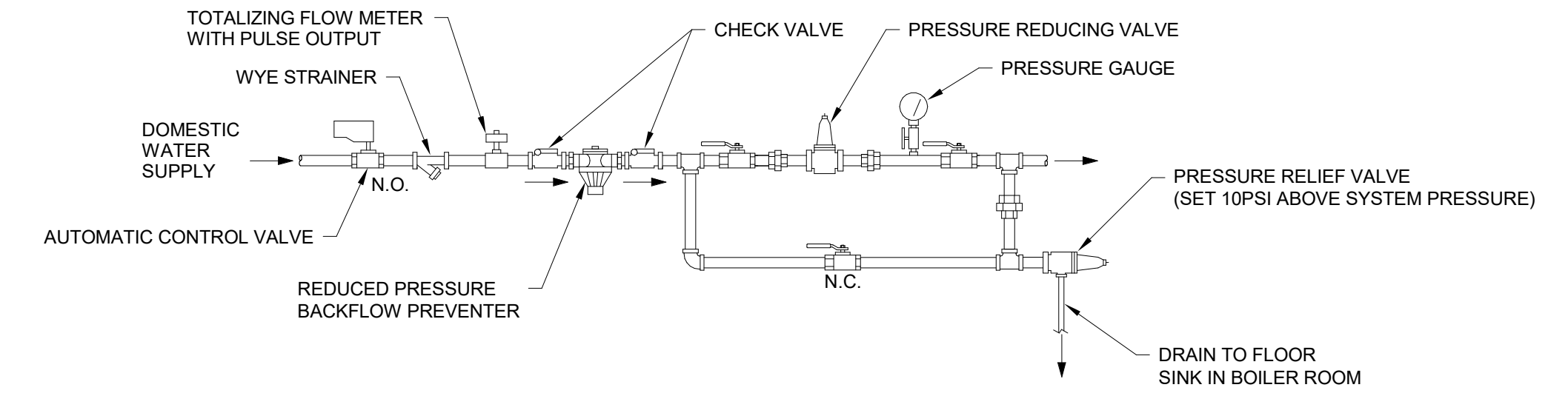
PROJECT TITLE	PROJECT ADDRESS	PROJECT NO.	HEP-22-01
DESIGNED BY	MAL	DESIGNED BY	MAL
DRAWN BY	YD	DRAWN BY	YD
ISSUE DATE	06 JUN 2022	ISSUE DATE	06 JUN 2022
CHECKED BY	MAL	CHECKED BY	MAL
PHASE	90% CD REVIEW SET	PHASE	90% CD REVIEW SET
SHEET NO.		SHEET NO.	

**M2.02**

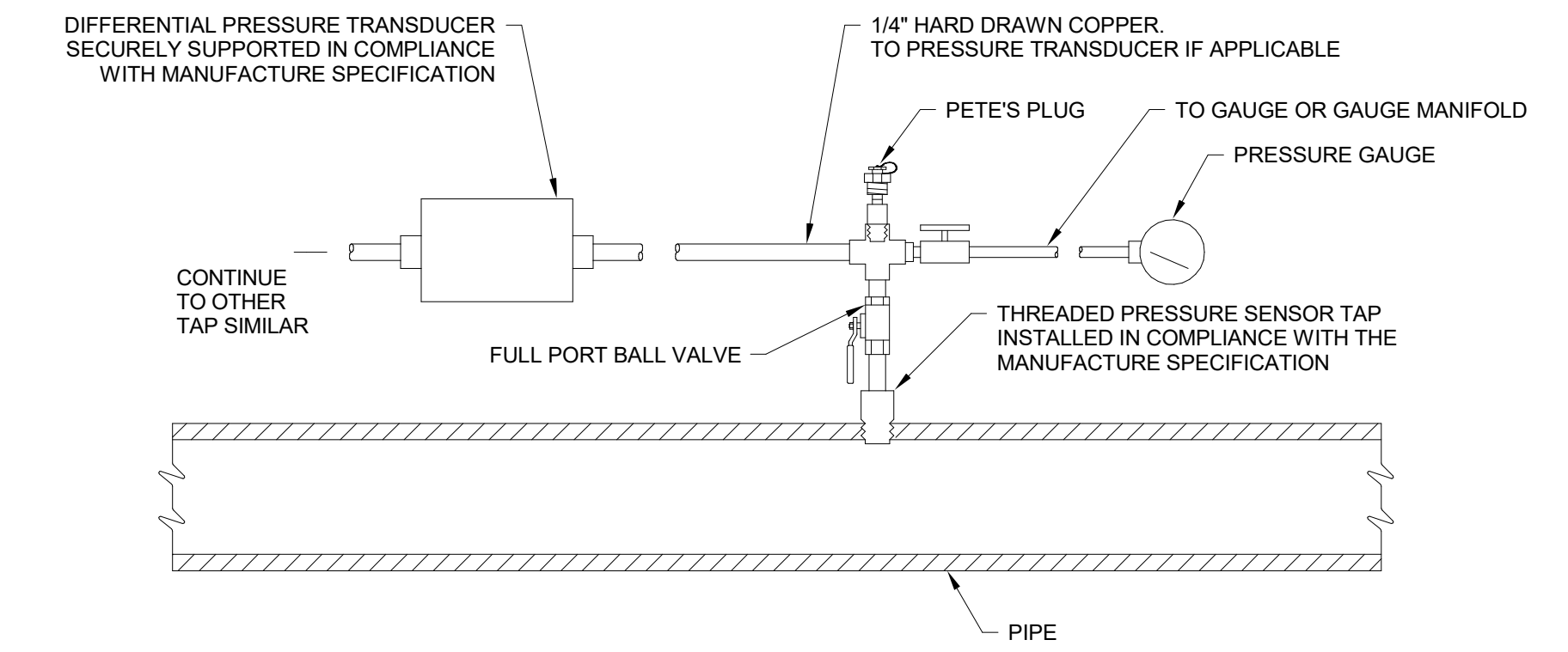




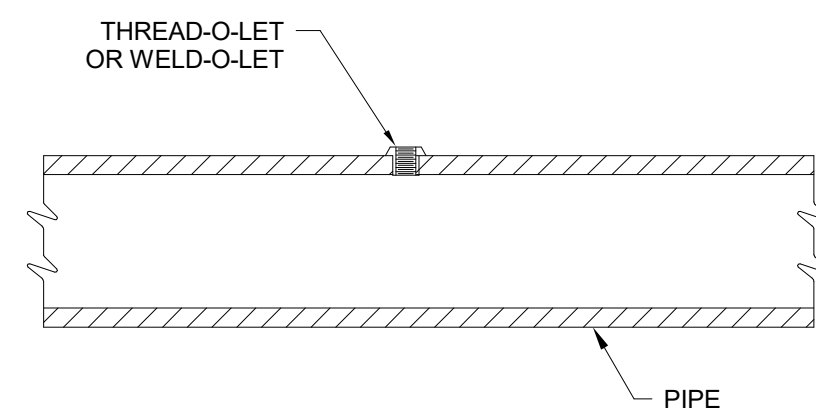
**1 CHILLED WATER PLANT SCHEMATIC DIAGRAM**  
M5.01 NOT TO SCALE



**2 MAKE-UP WATER DETAIL**  
M5.01 NOT TO SCALE

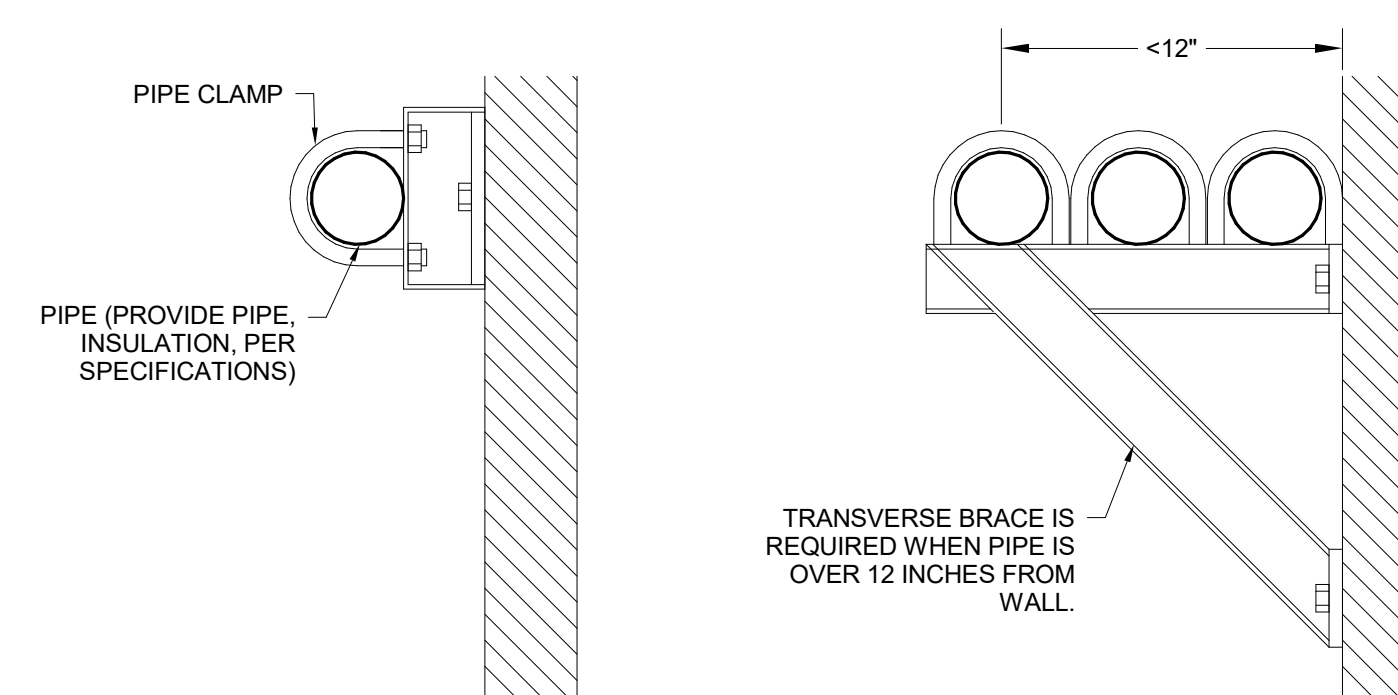


**3 TYPICAL PRESSURE SENSOR TAP DETAIL**  
M5.01 NOT TO SCALE

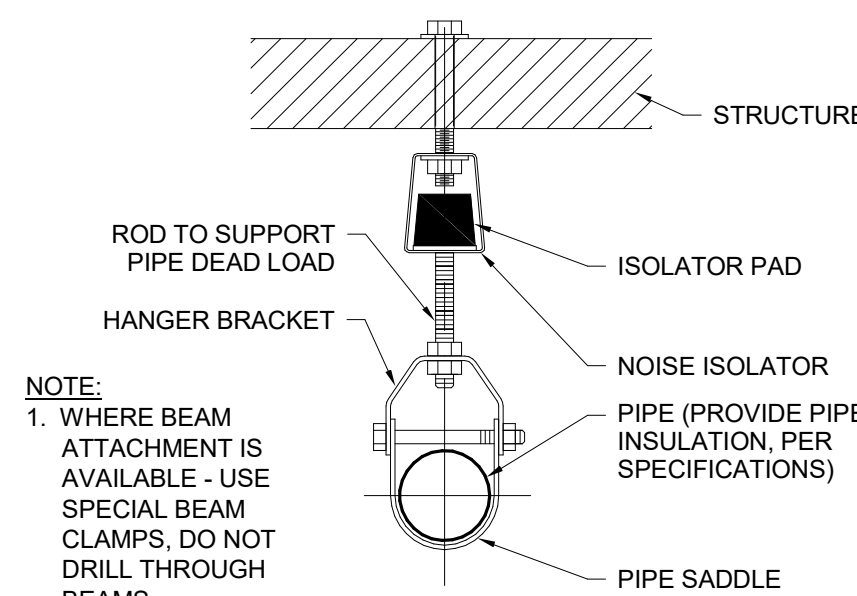


**NOTES:**  
1. SENSORS AND WELLS PROVIDED BY OTHERS (CONTROL CONTRACTOR) UNDER SEPARATE CONTRACT SHALL TO BE INSTALLED BY MECHANICAL CONTRACTOR. MECHANICAL CONTRACTOR IS REQUIRED TO COORDINATE INSTALLATION OF SENSORS AND WELLS WITH THE CONTROLS CONTRACTOR.  
2. INSTALL WIRING, PRESSURE SENSOR, AND WELD-O-LET IN COMPLIANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

**4 TYPICAL SENSOR TAP**  
M5.01 NOT TO SCALE

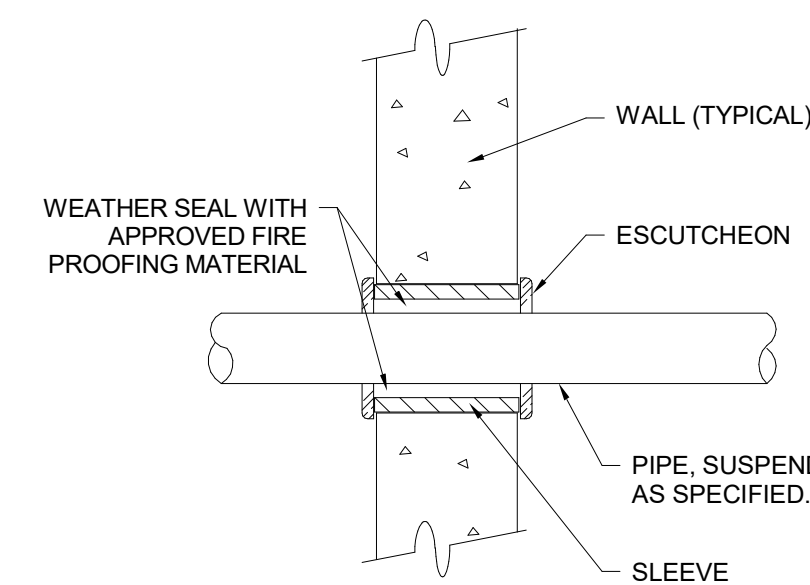


**5 WALL MOUNT PIPE SUPPORT DETAIL**  
M5.01 NOT TO SCALE



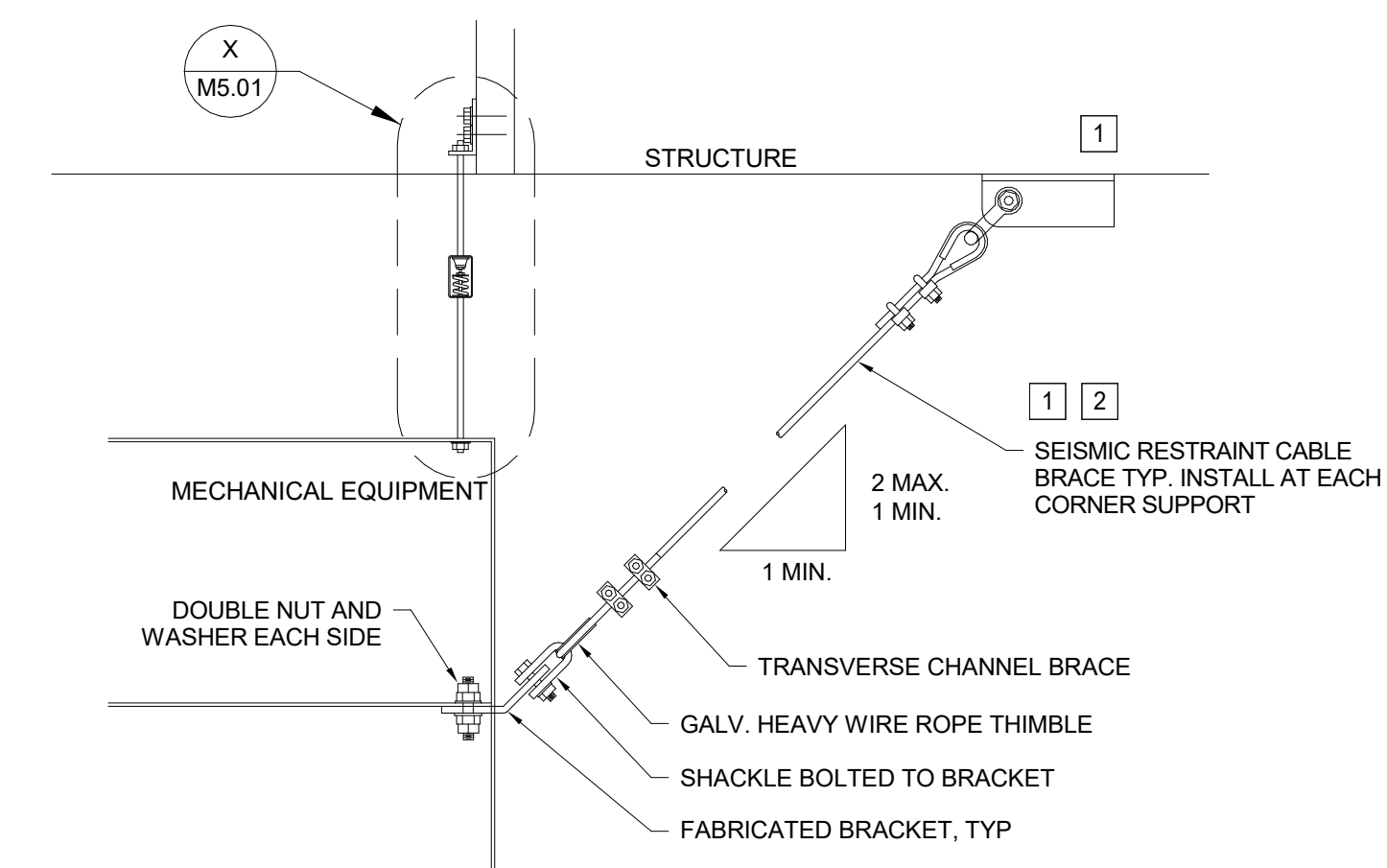
**NOTE:**  
1. WHERE BEAM ATTACHMENT IS AVAILABLE - USE SPECIAL BEAM CLAMPS, DO NOT DRILL THROUGH BEAMS.

**6 PIPE SUPPORT DETAIL**  
M5.01 NOT TO SCALE



**NOTES:**  
1. NEATLY CUT/BORE WALL AS REQUIRED TO INSTALL PIPE. ALLOW FOR ADEQUATE SLOPE WHEN BORING HOLES.  
2. REPAIR EXPOSED FINISH WHERE DAMAGED BY CUTTING PENETRATION.

**7 PIPE PENETRATION DETAIL**  
M5.01 NOT TO SCALE



**KEYED NOTES:**  
1 SUPPORT PER STRUCTURAL CODE.  
2 TENSION CABLES ONLY ENOUGH TO REMOVE SAG.

**8 MECH EQUIPMENT SEISMIC RESTRAINT DETAIL**  
M5.01 NOT TO SCALE



REV	DATE	BY

PROJECT TITLE	HEP-22-01
DESIGNED BY	MAL
DRAWN BY	YD
ISSUE DATE	06 JUN 2022
CHECKED BY	MAL
PHASE	90% CD REVIEW SET
SHEET NO.	M5.01



## GENERAL NOTES:

- REFER TO MECHANICAL DRAWINGS FOR LOCATION OF EQUIPMENT. COORDINATE EQUIPMENT WIRING AND SENSOR INSTALLATION WITH EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.
- BAS POINTS LIST WITH INTERFACE LEGEND INDICATES BASIC COMPONENT REQUIRED FOR INTERFACE BUT DOES NOT DETAIL ALL NECESSARY WIRING, POWER SUPPLIES, AND AUXILIARY DEVICES REQUIRED FOR FULL IMPLEMENTATION. INSTALLATION SHALL INCLUDE ALL REQUIRED COMPONENTS TO FULLY IMPLEMENT THE POINT FUNCTION.
- FURNISH AND INSTALL ANY INCIDENTAL WORK NOT SHOWN OR SPECIFIED BUT NECESSARY TO PROVIDE A COMPLETE AND WORKING SYSTEM.
- FOR ANY CONFLICT IN THE DRAWINGS AND/OR THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY. ANY SUCH CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO INSTALLATION OF AFFECTED COMPONENTS.
- SCHEMATIC DIAGRAMS SHOWING SENSOR POSITIONS ARE DIAGRAMMATIC. CONFIRM LOCATION AND INSTALLATION PROCEDURE WITH ENGINEER.
- ALL CONTROL WIRING IN BUILDING SPACES, SHALL BE INSTALLED IN CONDUIT. CONTROL WIRING ABOVE ACCESSIBLE CEILING MAY BE INSTALLED WITHOUT CONDUIT. INSTALL PLENUM RATED WIRE NEATLY BUNDLED, SUPPORT AT 5 FOOT INTERVAL. ALL WIRE AND CONDUIT INSTALLATION PER NEC CODE.
- ALL CONTROL POINTS AND SEQUENCES OF OPERATION ARE DIAGRAMMATIC AND MAY DIFFER BASED ON FINAL EQUIPMENT SELECTIONS OR SUBSTITUTIONS. ANY PROPOSED OR INCIDENTAL CHANGES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. CONTRACTOR IS RESPONSIBLE FOR A FULLY OPERATION SYSTEM.

## SCOPE OF WORK:

THE WORK UNDER THIS CONTRACT IS TO PROVIDE THE LABOR, MATERIAL, AND EQUIPMENT FOR THE COMPLETE INSTALLATION OF THE SYSTEMS DESCRIBED. FULLY CONNECT ALL POINTS AS OUTLINED IN THE POINTS LIST IN THE DRAWINGS, AND MEET THE SYSTEM REQUIREMENTS SPECIFIED. PROVIDE CONDUIT AND WIRING IN QUANTITIES AND LOCATIONS AS REQUIRED TO MEET THE FUNCTIONS AND PERFORMANCE SPECIFIED AND INDICATED ON THE DRAWINGS.

PROVIDE ALL LABOR, WIRE, CONDUIT, AND PANELS NECESSARY TO COMPLETE A FULLY FUNCTIONAL SYSTEM. PANELS ARE LOCATED IN MECHANICAL AND FAN ROOMS, COORDINATE WITH OWNER.

LOW VOLTAGE CONTROL WIRING AND LINE VOLTAGE WIRING AND CONDUIT TO CONTROL PANELS, DAMPER ACTUATORS, VFDS, AND MOTORS; AS SHOWN ON THE DRAWINGS, ARE WORK OF THE CONTRACT. COORDINATE WITH OWNER TO DETERMINE ACCEPTABLE ELECTRICAL PANELS AND CIRCUITS AT WHICH TO OBTAIN POWER.

ALL MOTORIZED VALVES SHALL USE SPRING RETURN ACTUATORS, CONFIGURED TO FAIL AS NOTED. ACTUATORS SHALL BE SIZED FOR ACTUAL REQUIRED DAMPER TORQUE.

MOTOR STARTERS AND LINE VOLTAGE MOTOR CONTACTORS ARE DEPICTED GENERICALLY BUT NOT DIFFERENTIATED ON THE DRAWINGS. CONTRACTOR TO VERIFY AND REUSE EXISTING MOTOR STARTERS OR REPLACE AT CONTRACTORS OPTION AND EXPENSE. REPLACEMENT OF VERIFIED FAULTY EXISTING COMPONENTS TO BE MADE ON A TIME AND MATERIAL BASIS.

WORK TO COMPLY WITH CURRENT NATIONAL, STATE, AND LOCAL CODES. OBTAIN PERMITS NECESSARY FOR WORK. ALL WORK MUST SATISFY CODE AUTHORITY WITH JURISDICTION.

COMMUNICATION TRUNK: COORDINATE PANEL LOCATION AND WIRE REQUIREMENTS WITH OWNER.

REMOVE NONFUNCTIONAL CONTROL PANELS AND CONTROL WIRE IN MECHANICAL ROOMS. CONTROL PANELS CONTAINING LIGHTING OR OTHER EXISTING FUNCTIONAL CONTROLS WILL BE RETAINED. REMOVE NONFUNCTIONAL CONTROLS, SENSORS, ACTUATORS, WIRE (UNLESS WIRE IS TO BE REUSED), CONDUIT (UNLESS CONDUIT IS TO BE REUSED), AND TUBING IN MECHANICAL ROOMS. REMOVE NONFUNCTIONAL CONTROL WIRE, CONDUIT, AND TUBING ABOVE DROP CEILINGS. REMOVE NONFUNCTIONAL ROOM THERMOSTATS AND SENSORS. ABANDON IN PLACE CONTROL WIRE, CONDUIT, AND TUBING ABOVE HARD CEILINGS AND IN WALLS. PROVIDE COMPLETE IDENTIFICATION OF ALL COMPONENTS AND CONDUCTORS. COLOR CODE AND NUMBER CONDUCTORS AND TERMINALS ACCORDING TO CONSISTENT SCHEME THROUGHOUT PROJECT. PROVIDE ENGRAVED IDENTIFICATION OR EQUIVALENT PERMANENCE ON PANEL FRONTS. USE EQUIPMENT IDENTIFICATION SAME AS INDICATED ON SUBMITTED POINTS LIST.

CONTRACTOR SHALL CONDUCT A POINT TO POINT CHECKOUT TO RESOLVE ISSUES WITH WIRING, COMPONENTS, SENSORS, ACTUATORS, OR EQUIPMENT INSTALLED UNDER THIS CONTRACT.

## CONTROLS SEQUENCE OF OPERATIONS:

### GENERAL NOTES

- PROVIDE AUTOMATIC CONTROL FOR SYSTEM OPERATION AS DESCRIBED HEREIN, ALTHOUGH WORD "AUTOMATIC" OR "AUTOMATICALLY", IS NOT USED.
- PROVIDE CONTROL DEVICES, CONTROL SOFTWARE AND CONTROL WIRING AS REQUIRED FOR AUTOMATIC OPERATION OF EACH SEQUENCE SPECIFIED.
- ANY REFERENCE TO MAKING A POINT ADJUSTABLE REQUIRES THAT THE POINT CAN BE MANIPULATED DIRECTLY FROM THE GRAPHIC DISPLAY WITHOUT ACCESSING OR MODIFYING THE CONTROL CODE.
- WORK OF THIS SECTION REQUIRES THAT A FULLY FUNCTIONAL SEQUENCE OF OPERATION BE IMPLEMENTED IN THE BMS. THE SEQUENCES OUTLINED HERE ARE PROVIDED AS A MINIMUM GUIDE TO ASSIST PROGRAMMING. SYSTEM OR OPERATIONAL CONSTRAINTS MAY REQUIRE ADDITIONAL LOGIC AND SEQUENCING FOR PROPER OPERATION. THE CONTROL CONTRACTOR SHALL IMPLEMENT CHANGES TO THE SEQUENCE, REQUIRED FOR PROPER OPERATION, AS WORK OF THIS SECTION FOR A FULLY FUNCTIONAL SYSTEM. A STEPPED SUBMITTAL, REVIEW, AND APPROVAL APPROACH SHALL BE EMPLOYED TO MODIFY, ADD, AND DELETE SEQUENCES. ALL ADDITIONS AND MODIFICATIONS OF SEQUENCE PROGRAMMING SHALL BE INCLUDED AS WORK OF THIS SECTION AT NO ADDITIONAL COST TO THE OWNER.
- UNIT PROOF POINTS:
  - PROVIDE UNIT PROOF POINTS FOR DEVICES (MOTORS, ETC.) WITH ANALOG CURRENT (AMPS) SENSORS AS INDICATED. UNIT PROOF POINTS SHALL BE VIRTUAL DIGITAL POINTS (SOFTWARE VARIABLES THAT FUNCTION AS REAL POINTS). PROOF POINTS SHALL INDICATE ON WHEN ANALOG CURRENT SENSOR IS ABOVE A SET (ADJUSTABLE) LEVEL AND OFF WHEN BELOW A SET (ADJUSTABLE) LEVEL. THE MODIFICATION OF THE TRIP LEVEL SHALL BE READILY AVAILABLE AND EASY TO ADJUST BY THE OPERATOR.
  - WHERE THE CURRENT INDICATION IS PROVIDED BY A VFD, SET THE LEVEL SUCH THAT, AT 50 PERCENT SPEED, LOSS OF FAN BELT, PUMP COUPLING, OR FREEWHEELING OF MOTOR WILL INDICATE AN OFF CONDITION. USE VFD PROOF POINT TO PREVENT FALSE LOW AMP ALARMS BELOW 50% SPEED.
  - FOR NON-VFD APPLICATIONS, ADJUST THE ON / OFF LEVEL TO REFLECT UNIT OPERATION. SET THE LEVEL SUCH THAT LOSS OF FAN BELT, PUMP COUPLING, OR FREEWHEELING OF MOTOR WILL INDICATE OFF CONDITION.
- UNIT PROOF ALARMS: ANY DISCREPANCY BETWEEN THE COMMANDED STATE OF A DEVICE AND ITS UNIT PROOF POINT WILL INITIATE A PROOF FAILURE ALARM. TO ELIMINATE NUISANCE ALARMS DUE TO COMMUNICATIONS DELAYS, A CONTINUOUS DISCREPANCY IS REQUIRED FOR 5 MINUTES (ADJUSTABLE) BEFORE INITIATING THE ALARM. A UNIT PROOF ALARM WILL IDENTIFY THE DEVICE THAT DOES NOT AGREE WITH ITS PROOF POINT AS WELL AS BOTH THE COMMANDED STATE OF THE DEVICE AND THE INDICATION FROM THE PROOF POINT.
- ALL ANALOG INPUT POINTS SHALL BE PROVIDED WITH HIGH AND LOW VALUE LIMITS THAT WILL NOTIFY THE OPERATOR INTERFACE OF SENSOR READINGS BEYOND NORMAL LIMITS.
  - THE LIMITS SHALL BE IN EFFECT ONLY WHEN THE ASSOCIATED UNIT IS OPERATING. DURING START-UP OF A SYSTEM, AN ADJUSTABLE TIME DELAY, INITIALLY SET AT 30 MINUTES, SHALL PREVENT THE REPORTING OF OUT OF LIMIT SENSORS UNTIL THE SYSTEM OPERATION IS STABILIZED.
  - TEMPERATURE SENSOR LIMITS SHALL BE INITIALLY SET TO THE FOLLOWING TABLE UNLESS SPECIFIED OTHERWISE OR SYSTEM CHARACTERISTICS OF THE SENSOR LOCATION REQUIRE DIFFERENT VALUES:

Sensor Type	Low Value	High Value
Duct Sensor	40	140
Room Temperature Sensor	67	82
Heating Water Sensors	60	220
Chilled Water Sensors	40	65

### ORDER OF PRECEDENCE:

A. THE SEQUENCES OF OPERATION FOR THE MECHANICAL EQUIPMENT ARE OUTPUT OBJECT ORIENTED. THEY ARE GROUPED, FIRST ACCORDING TO TYPE OF UNIT, THEN LISTED BY THE PHYSICAL OUTPUT POINTS CONTROLLING THAT UNIT. LISTED AFTER EACH OUTPUT ARE THE SEQUENCES THAT OPERATE THAT OUTPUT IN THE ORDER OF PRIORITY. ITEMS LISTED FIRST TAKE PRECEDENCE OVER SUBSEQUENT ITEMS. FOR EXAMPLE, WHEN REFERENCING THE SUPPLY FAN START/STOP OF A UNIT, THE FIRE ALARM IS LISTED AHEAD OF THE SCHEDULE MODE SINCE IT TAKES PRECEDENCE. IF A FIRE ALARM INPUT IS ACTIVATED REQUIRING A SUPPLY FAN TO STOP, THE OUTPUT IS STOPPED AND ALL FURTHER ITEMS OF CONTROL BELOW AND OF A LOWER PRIORITY ARE SKIPPED.

B. OFTEN MODES ARE THE BASIS FOR ACTIVATION OF AN OUTPUT. MODES DEFINE A SPECIAL OPERATIONAL CONDITION THAT THE OVERALL SYSTEM HAS ACTIVE (SUCH AS FIRE ALARM MODE), MODES ARE GLOBAL IN NATURE AND THEIR SEQUENCE OF ACTIVATION IS DEFINED SEPARATELY.

9. WHERE INDICATED ON THE FLOOR PLAN DRAWINGS, MULTIPLE SPACE SENSORS SHALL BE AVERAGED TO DETERMINE THE SPACE TEMPERATURE. UNIT SHALL STOP WHEN ITS SPACE TEMPERATURE IS LESS THAN THE UNOCCUPIED COOLING SETPOINT MINUS 5°F (USER ADJUSTABLE).

10. CONTROL ACTION BASED ON VALVES OR DAMPERS AT 0% OR 100% MAY NEED TO BE ADJUSTED IF MINIMUM ACTUATOR TRAVEL LIMITS OR OTHER SYSTEM LIMITATIONS PREVENT THE DEVICE FROM RELIABLY ATTAINING 0% OR 100%. 0% AND 100% POSITIONS REPRESENT THEORETICAL VALUES FOR THE CONTROL SEQUENCE. DEVIATION FROM THESE VALUES SHALL BE DOCUMENTED AND EXPLAINED ON THE GRAPHICS DISPLAY SO THAT AN OPERATOR CAN TROUBLESHOOT THE SYSTEM WITHOUT REFERENCE TO ADDITIONAL DOCUMENTS.

11. PUMP AND FANS WITH VFDS SHALL RAMP SLOWLY USING A 120 SECOND FULL SCALE RAMP UNLESS INDICATED OTHERWISE OR REQUIRED FOR PROPER SEQUENCE OPERATION. PUMPS SHALL RAMP DOWN ON SHUT OFF TO PREVENT WATER HAMMER. FANS SHALL SHUT OFF WITHOUT RAMP DOWN ON FAN STOP.

12. STAGE VALVING AND PUMPING TO PREVENT DEADHEADING AT THE PUMPS. ALWAYS OPEN A NEW CIRCUIT BEFORE CLOSING ALL EXISTING CIRCUITS. ALWAYS OPEN A CIRCUIT BEFORE STARTING A PUMP.

13. STAGE EQUIPMENT WITH VALVING, DAMPERS, FANS, AND PUMPS SO THAT IT STARTS AFTER AIR OR WATER LOOPS HAVE ATTAINED MINIMUM FLOW VALUES AND STOP EQUIPMENT BEFORE SHUTTING DOWN FLOW.

14. SHUTDOWN OF AN INDIVIDUAL PIECE OF EQUIPMENT DUE TO ANY ALARM, FAILURE, OR EQUIPMENT PROTECTION MODE SHALL CREATE AND RECORD AN ALARM THAT IDENTIFIES THE AFFECTED UNIT AND REASON FOR STOPPAGE. INDIVIDUAL EQUIPMENT ALARMS SHALL NOT BE DISPLAYED OR RECORDED FOR STOPPAGE DUE TO SYSTEM WIDE ALARMS UNLESS THE EQUIPMENT INITIATED THE ALARM.

### CALL FOR HEAT:

- A CALL FOR HEAT IS CREATED IF AT LEAST 20 MINUTES (USER ADJUSTABLE) HAS PASSED SINCE THE PREVIOUS CALL FOR HEAT WAS CANCELED AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE HEAT LOCK OUT TEMPERATURE (HLT), 65°F (USER ADJUSTABLE).
- A CALL FOR HEAT IS CANCELED IF AT LEAST 15 MINUTES (USER ADJUSTABLE) HAS PASSED SINCE THE CALL FOR HEAT WAS INITIATED AND OUTSIDE AIR TEMPERATURE IS GREATER THAN HLT +5°F (USER ADJUSTABLE).

### UNOCCUPIED LOW LIMIT OPERATION:

- DURING UNOCCUPIED PERIODS, UNOCCUPIED LOW LIMIT OPERATION SHALL BE TRIGGERED BY A SPACE TEMPERATURE THAT INDICATES LESS THAN THE UNOCCUPIED HEATING SETPOINT, 55°F (USER ADJUSTABLE ZONE BY ZONE)
- DURING UNOCCUPIED LOW LIMIT OPERATION, ALL UNITS WITH INDICATED SPACE TEMPERATURES LESS THAN THEIR UNOCCUPIED HEATING SETPOINT WILL START AND RUN.
- DURING UNOCCUPIED LOW LIMIT OPERATION, EACH RUNNING UNIT SHALL STOP WHEN ITS SPACE TEMPERATURE IS GREATER THAN THE UNOCCUPIED HEATING SETPOINT PLUS 5°F (USER ADJUSTABLE).

### UNOCCUPIED HIGH LIMIT OPERATION:

- DURING UNOCCUPIED PERIODS, UNOCCUPIED HIGH LIMIT OPERATION SHALL BE TRIGGERED BY A SPACE TEMPERATURE THAT INDICATES GREATER THAN THE UNOCCUPIED COOLING SETPOINT 85°F (USER ADJUSTABLE AT ZONE BY ZONE)
- DURING UNOCCUPIED HIGH LIMIT OPERATION, ALL UNITS WITH INDICATED SPACE TEMPERATURES GREATER THAN THEIR UNOCCUPIED HEATING SETPOINT WILL START AND RUN.
- DURING UNOCCUPIED HIGH LIMIT OPERATION, EACH RUNNING UNIT SHALL STOP WHEN ITS SPACE TEMPERATURE IS LESS THAN THE UNOCCUPIED COOLING SETPOINT MINUS 5°F (USER ADJUSTABLE).

### OPTIMAL START/STOP

- THE BUILDING AUTOMATION SYSTEM SHALL CALCULATE OPTIMAL START AND STOP TIMES BASED ON HISTORICAL SYSTEM PERFORMANCE AND FORECASTED TEMPERATURES OR TEMPERATURE EXTREMES OF THE PREVIOUS DAY.

DDC INPUT / OUTPUT MODE	
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
NET	NETWORK
VI	VARIABLE INPUT

I/O	DEVICE	POINT NAME
		ICES FC 1 MA T

BUILDING
ICES ISLAND CITY ELEMENTARY SCHOOL

SYSTEM		FOLLOWED BY NUMERIC SUFFIX (X) IF APPLICABLE	
ACU	ROOFTOP UNIT WITH AC		
ASU	AIR SUPPLY UNIT		
B	BOILER		
CH	CHILLER		
CHW	CHILLED WATER		
CT	COOLING TOWER		
CUH	CABINET UNIT HEATER		
CW	CONDENSER WATER		
EA	EXTRACTION ARM		
EF	EXHAUST FAN		
FC	FAN COIL		
H	DOWN FLOW HOOD		
MAU	MAKEUP AIR UNIT		
PS	PRESSURE SENSOR		
RTU	ROOFTOP UNIT		
UH	UNIT HEATER		

POINT DEVICE	
ADPS	AIR DIFFERENTIAL PRESSURE SENSOR
ADTS	AVERAGING DUCT TEMP SENSOR
AFS	AIR FLOW SENSOR
ATS	AIR TEMPERATURE SENSOR
CSW	CURRENT SWITCH
CT	CURRENT TRANSDUCER
DC	DIRECT CONNECTION
DCS	DUCT CO2 SENSOR
DSD	DUCT SMOKE DETECTOR
DTS	DUCT TEMPERATURE SENSOR
EDA	ELECTRIC DAMPER ACTUATOR
ES	END SWITCH
EVA	ELECTRIC VALVE ACTUATOR
FT	FREEZE THERMOSTAT
OATS	OUTSIDE AIR TEMPERATURE SENSOR
OCC	SPACE OCCUPANCY SENSOR
OVR	OCCUPANCY OVERRIDE
RCS	ROOM CO2 SENSOR
RLY	RELAY
RTS	ROOM TEMPERATURE SENSOR
WDPS	WATER DP SENSOR
WFM	WATER FLOW METER
WTS	WATER TEMPERATURE SENSOR

FUNCTION	
ALM	ALARM
AMPS	AMPS
CDT	CONDUCTIVITY SENSOR
CO2	CARBON DIOXIDE
CT	CURRENT TRANSDUCER
D	DAMPER
DMD	DEMAND
DP	DIFFERENTIAL PRESSURE
ENA	ENABLE
FAULT	FAULT
FLO	FLOW
FZ	FREEZE STATUS
H	HOURS
LO	LOCK OUT
LW	LOW WATER M MODE
OCC	SPACE OCCUPANCY SENSOR
PRF	PROOF
PRES	PRESSURE RPM SPEED
RPM	FAN SPEED
RST	RESET
SX	STAGE OF HEAT OR COOL
SD	SMOKE DETECTOR
SS	START/ STOP
ST	SPACE TEMPERATURE
STOP	STOP
STPT	SETPOINT
T	TEMPERATURE
V	VALVE

SUBSYSTEM	
BP	BYPASS
CC	COOLING COIL
CD	COLD DECK
CO2	CARBON DIOXIDE
COOL	COOLING
CMP	COMPRESSOR
CP	CIRCULATION PUMP
CW	CHILLED WATER
D	DUCT
DC	DUST COLLECTOR
EA	EXHAUST AIR
EC	ECONOMIZER
EDH	ELECTRIC DUCT HEAT
EF	EXHAUST FAN
EFT	EFFECTIVE
EOL	END OF LINE
EW	ENERGY WHEEL
EWBP	ENERGY WHEEL BYPASS
F	FAN
FLO	FLOW
FLT	FILTER
FAN	THERMOSTAT FAN CONTROL
G	GAS
H	HOOD
HEAT	HEATING
HC	HEATING COIL
HD	HOT DECK
HW	HEATING WATER
I	ISOLATION
IA	INTAKE AIR
MA	MIXED AIR
OA	OUTSIDE AIR
PH	PRE HEAT
PX	PUMP X
RA	RETURN AIR
RF	RETURN FAN
RFG	REFRIGERANT
RH	ROOF HEAD
RL	RELIEF AIR
RM	ROOM
RW	RETURN WATER
SA	SUPPLY AIR
SF	SUPPLY FAN
SSP	SOLIDS SEPARATOR
SUMP	SUMP
SW	SUPPLY WATER
T	THERMOSTAT
Z	ZONE

### LEGEND

	IT DROP
	CONTROL PANEL (BY OTHERS)
	BACnet IP CONNECTION
	BACnet MS/TP
	RELAY
	MANUAL VALVE
	AUTOMATIC VALVE
	TEMPERATURE SENSOR
	PUMP
	MOTOR STARTER
	VARIABLE FREQUENCY DRIVE
	DIFFERENTIAL PRESSURE SWITCH/SENSOR
	DAMPER ACTUATOR
	HAND - OFF - AUTO
	DAMPER
	DUCT AVERAGING TEMPERATURE SENSOR
	AIR FILTER
	AIR FLOW METER
	DUCT CO2 SENSOR
	DUCT SMOKE SENSOR

HELIX ENERGY PARTNERS, LLC



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REV	DATE	BY

UNION COUNTY SHERIFF'S OFFICE CHILLER REPLACEMENT

1009 K AVENUE LA GRANDE, OR 97850

MECHANICAL CONTROLS COVER SHEET

PROJECT TITLE	HEP-22-01
PROJECT ADDRESS	
DESIGNED BY	MAL
DRAWN BY	YD
ISSUE DATE	06 JUN 2022
CHECKED BY	MAL
PHASE	90% CD REVIEW SET
SHEET NO.	

M6.01









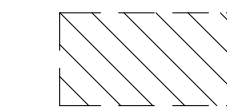


**GENERAL NOTES**

1. ALL WORK TO MEET NATIONAL ELECTRIC CODE. MAINTAIN ACCESSIBILITY OF EQUIPMENT AND JUNCTION BOXES AS PER NEC AND TO OWNERS SATISFACTION.
2. THE WORD "PROVIDE" WHEN USED ON THESE ELECTRICAL PLANS IS INTENDED TO MEAN THAT THE ELECTRICAL CONTRACTOR IS TO FURNISH AND INSTALL THE RELATED WORK DESCRIBED. COORDINATE WITH OTHER TRADES AS NECESSARY DURING ALL PHASES OF WORK.
3. MOUNT ALL DUPLEX RECEPTACLES AND COMMUNICATION OUTLETS UP +18" UNLESS OTHERWISE NOTED.
4. MATCH ALL DEVICE PLATES.
5. PROVIDE SEPARATE NEUTRAL WITH EACH RECEPTACLE CIRCUIT. CARRY GROUND WIRE WITH ALL CIRCUITS.
6. UNLESS OTHERWISE NOTED, INTERIOR CONDUIT SHALL BE MIN. 1/2" EMT. CONDUCTORS SHALL BE #12 THWN, 600V CU.
7. REUSE EXISTING CIRCUITS AS MUCH AS PRACTICAL. HOME RUNS ARE NOT DETAILED. UNLESS NOTED OTHERWISE, FOLLOW THE BEST ROUTE. COORDINATE LOCATIONS WITH OWNER AND OTHER TRADES.
8. PROVIDE TYPEWRITTEN UPDATED PANEL SCHEDULES TO REFLECT CONNECTED LOAD.
9. COORDINATE CONDUIT, JUNCTION BOXES, SUPPORTING EQUIPMENT, ETC. AFFECTING NORMAL OPERATING AND MAINTENANCE ACTIVITIES RELATED TO MECHANICAL EQUIPMENT, PIPING, VALVES, ACCESSORIES, ETC.
10. ALL HOLES REMAINING DUE TO DEMOLITION TO BE PATCHED AND FINISHED TO MATCH ADJACENT CEILING, WALL FLOOR AND ROOF SURFACES AS REQUIRED.
11. COORDINATE WITH OTHER TRADES AS NECESSARY DURING ALL PHASES OF WORK.
12. SEE DRAWING M0.01 FOR ADDITIONAL NOTES.

**DEMOLITION NOTES**

1. EXISTING AIR HANDLER, BOOSTER FAN, AND ORIGINAL MAIN FAN WILL BE REMOVED. DISCONNECT POWER, REMOVE BREAKERS FROM PANEL, AND MARK AS EMPTY.



DENOTES DEMOLITION AREAS

**KEYED NOTES**

1. PROVIDE CIRCUIT, CONDUIT, AND CONDUCTORS TO NEW EQUIPMENT.
2. UPGRADE MAIN SERVICE PANEL LOCATED INSIDE OLD BOILER ROOM.
3. UPGRADE (POTENTIALLY) UTILITY TRANSFORMER AND OVERHEAD LINES.
4. PROVIDE NEW CONDUIT AND CONDUCTORS FROM MAIN PANEL.

HELIX ENERGY PARTNERS, LLC



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REV	DATE	BY

UNION COUNTY SHERIFF'S OFFICE CHILLER REPLACEMENT

1009 K AVENUE LA GRANDE, OR 97850

**ELECTRICAL - SITE PLAN**

PROJECT TITLE	
PROJECT ADDRESS	
PROJECT NO.	HEP-22-01
DESIGNED BY	MAL
DRAWN BY	YD
ISSUE DATE	06 JUN 2022
CHECKED BY	MAL
PHASE	90% CD REVIEW SET
SHEET NO.	

**E1.01**

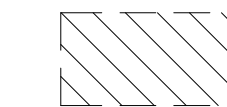


**GENERAL NOTES**

1. ALL WORK TO MEET NATIONAL ELECTRIC CODE. MAINTAIN ACCESSIBILITY OF EQUIPMENT AND JUNCTION BOXES AS PER NEC AND TO OWNERS SATISFACTION.
2. THE WORD "PROVIDE" WHEN USED ON THESE ELECTRICAL PLANS IS INTENDED TO MEAN THAT THE ELECTRICAL CONTRACTOR IS TO FURNISH AND INSTALL THE RELATED WORK DESCRIBED. COORDINATE WITH OTHER TRADES AS NECESSARY DURING ALL PHASES OF WORK.
3. MOUNT ALL DUPLEX RECEPTACLES AND COMMUNICATION OUTLETS UP +18" UNLESS OTHERWISE NOTED.
4. MATCH ALL DEVICE PLATES.
5. PROVIDE SEPARATE NEUTRAL WITH EACH RECEPTACLE CIRCUIT. CARRY GROUND WIRE WITH ALL CIRCUITS.
6. UNLESS OTHERWISE NOTED, INTERIOR CONDUIT SHALL BE MIN. 1/2" EMT. CONDUCTORS SHALL BE #12 THWN, 600V, CU.
7. REUSE EXISTING CIRCUITS AS MUCH AS PRACTICAL. HOME RUNS ARE NOT DETAILED. UNLESS NOTED OTHERWISE, FOLLOW THE BEST ROUTE. COORDINATE LOCATIONS WITH OWNER AND OTHER TRADES.
8. PROVIDE TYPEWRITTEN UPDATED PANEL SCHEDULES TO REFLECT CONNECTED LOAD.
9. COORDINATE CONDUIT, JUNCTION BOXES, SUPPORTING EQUIPMENT, ETC. AFFECTING NORMAL OPERATING AND MAINTENANCE ACTIVITIES RELATED TO MECHANICAL EQUIPMENT, PIPING, VALVES, ACCESSORIES, ETC.
10. ALL HOLES REMAINING DUE TO DEMOLITION TO BE PATCHED AND FINISHED TO MATCH ADJACENT CEILING, WALL FLOOR AND ROOF SURFACES AS REQUIRED.
11. COORDINATE WITH OTHER TRADES AS NECESSARY DURING ALL PHASES OF WORK.
12. SEE DRAWING M0.01 FOR ADDITIONAL NOTES.

**DEMOLITION NOTES**

- 1 EXISTING AIR HANDLER, BOOSTER FAN, AND ORIGINAL MAIN FAN WILL BE REMOVED. DISCONNECT POWER, REMOVE BREAKERS FROM PANEL, AND MARK AS EMPTY.



DENOTES DEMOLITION AREAS

**KEYED NOTES**

- 1 PROVIDE CIRCUIT, CONDUIT, AND CONDUCTORS TO NEW EQUIPMENT.

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REV	DATE	BY

UNION COUNTY SHERIFF'S OFFICE CHILLER REPLACEMENT

1009 K AVENUE LA GRANDE, OR 97850

**ELECTRICAL - LEVEL B PLAN**

PROJECT TITLE	
PROJECT ADDRESS	
PROJECT NO.	HEP-22-01
DESIGNED BY	MAL
DRAWN BY	YD
ISSUE DATE	06 JUN 2022
CHECKED BY	MAL
PHASE	90% CD REVIEW SET
SHEET NO.	

**E1.02**