

REQUEST FOR PROPOSALS

(COMPETITIVE SEALED PROPOSALS)

Hospital Reheat Hot Water System Upgrade

RFP No:
HHSC 21-0044
ADDENDUM #2
(Revised/new items are highlighted)

for



Hawaii Health Systems Corporation
West Hawaii Region
Kona Community Hospital



Yvonne S. Taylor, Contracts
Kona Community Hospital
79-1019 Haukapila Street
Kealahou, HI 96750
Telephone (808) 322-9311
Fax (808) 322-4488
<http://www.kch.hhsc.org/Procurement/default.aspx>
An Agency of the State of Hawaii


1. Revised drawings and notes are attached.

2. Revised timetable

No.	Activity	Planned Date
1.	RFP Public Announcement	October 8, 2020
1A	Pre-Proposal Conference at Kona Community Hospital Tour of Hospital Facilities. Reservation form (Appendix G) and signed Confidentiality Agreement (Appendix H) must be received no later than Friday, Oct 16, 2020 This meeting is MANDATORY for all Offerors. See Appendix F for Agenda.	Tuesday October 20, 2020 8:30am – 10:00am HST
2.	Closing Date for Receipt of Questions	Friday, October 23, 2020 2:00pm HST
3.	Addendum #1 for HHSC Response to OFFEROR's Questions	Mon, November 16, 2020
4	Addendum #2 for additional project information	Mon, December 9, 2020
4.	Closing Date for Receipt of Proposals	Wed, December 23, 2020 2:00pm HST
5.	Mandatory Requirements Evaluation	December 29, 2020
6.	Proposal Evaluations	December 31, 2020
7.	Proposal Discussions (optional)	
8.	Best and Final Offers (optional)	
9.	Contractor Selection/Award Notification (on/about)	January 5, 2021
10.	Contract Execution Period	January 6-13, 2021
11.	Contract Tentative Award Date	January 13, 2021

PUMP SCHEDULE										
UNIT NO.	SERVICE	TYPE	MOTOR TYPE	FLOW (GPM)	HEAD (FT)	MOTOR DATA		PUMP CONSTRUCTION		REMARKS
						HP	V/PH/HZ			
 1	HOSPITAL AHU REHEAT	IN-LINE PUMP	TEFC	110	100	7.5	460/3/60	STAINLESS STEEL		AURORA PENTAIR PUMP OR APPROVED EQUAL. PROVIDE WITH VFD.
 2	HOSPITAL AHU REHEAT	IN-LINE PUMP	TEFC	110	100	7.5	460/3/60	STAINLESS STEEL		AURORA PENTAIR PUMP OR APPROVED EQUAL. PROVIDE WITH VFD.

PROPANE GAS BOILER SCHEDULE																		
UNIT NO.	SERVICE	LOCATION	FUEL	GAS PRESSURE MIN-MAX	MAX OUTPUT (MBH)	MAX INPUT (MBH)	MIN INPUT (MBH)	FLUE (IN.)	THERMO EFF. (%)	EWT/LWT (°F)	V/PH/HZ	AMPS	MAX GPM	MIN GPM	WATER VOLUME (GAL)	WEIGHT (LBS)	dBA	REMARKS
 1	HOSPITAL AHU REHEAT	ROOF (SHELTERED)	PROPANE	4"-14" WC	1,425	1,500	75	3"	99.3	120/140	120/1/60	16	225	25	27	1606	70	AERCO BENCHMARK OR APPROVED EQUAL. REFER TO BOILER NOTES.
 2	HOSPITAL AHU REHEAT	ROOF (SHELTERED)	PROPANE	4"-14" WC	1,425	1,500	75	3"	99.3	120/140	120/1/60	16	225	25	27	1606	70	AERCO BENCHMARK OR APPROVED EQUAL. REFER TO BOILER NOTES.

BUFFER TANK SCHEDULE						
UNIT NO.	TYPE	VOLUME (GAL)	ASME PRESSURE RATING (PSIG)	WEIGHT (LB)	SYSTEM CONN. (IN)	REMARKS
 1	2-PORT TANK	210	125	2160 (FILLED)	3"	AERCO BUFFER TANK OR APPROVED EQUAL. PROVIDE WITH TEMPERATURE/PRESSURE RELIEF VALVE AND AUTOMATIC AIR VENT.

TESTING, ADJUSTING, AND BALANCING NOTES

1. BALANCE, ADJUST, AND TEST: AN INDEPENDENT TEST AND BALANCE FIRM WHICH IS AABC OR NEBB CERTIFIED SHALL BE RETAINED FOR CHECK/TEST-START-UP AND TESTING AND BALANCING OF AIR AND WATER SYSTEMS. THE TEST REPORT SHALL BE IN A FORMAT APPROVED FOR SYSTEMS OF THIS TYPE AND COMPLEXITY. QUALIFICATIONS OF INDEPENDENT TEST AND BALANCE FIRM SHALL BE SUBMITTED FOR REVIEW. TAB WORK SHALL COMPLY WITH THE LATEST PROCEDURAL STANDARDS AND SMACNA'S TAB PROCEDURAL GUIDE.
2. TAB CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR AND CONTROLS CONTRACTOR TO PROVIDE THE CFM AND GPM AS SHOWN ON SCHEDULES FOR EACH EQUIPMENT. CONTROLS CONTRACTOR TO COORDINATE WITH WHFD AND/OR PROJECT MANAGER AND TAB CONTRACTOR FOR ANY SHUTDOWNS OR SYSTEM OVERRIDES REQUIRED FOR TAB WORK.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR BALANCING EXISTING SYSTEMS AS MAY BE NECESSARY TO ACHIEVE DESIGN AIRFLOW AND CHILLED WATER FLOW FOR NEW EQUIPMENT SPECIFIED ON THIS PROJECT. THE ADDITIONAL FLOW REQUIRED FOR THIS PROJECT WILL REQUIRE ADDITIONAL GPM IN THE LOOP SERVICING THE PROJECT. THIS SHALL BE ACHIEVED BY ADJUSTING THE EXISTING MAIN BRANCH BALANCING VALVES TO PROVIDE SUFFICIENT FLOW TO THE EQUIPMENT SPECIFIED.
4. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION AND PROPER OPERATION OF ALL EXISTING AND NEW BALANCING VALVES AND VOLUME DAMPERS (1) WEEK MINIMUM PRIOR TO COMMENCEMENT OF TAB WORK, AND REPORT TO THE CONSTRUCTION MANAGER ANY DEFICIENCY WHICH MAY PROHIBIT OR OTHERWISE ADVERSELY AFFECT THE TEST AND BALANCE WORK. SHOULD LACK OF SUCH EXAMINATION RESULT IN ADDITIONAL TEST AND BALANCE WORK, THE COST FOR SUCH WORK SHALL BE BORNE BY THE CONTRACTOR.
5. SEE WRITTEN SPECIFICATIONS FOR ADDITIONAL TAB REQUIREMENTS.
6. TAB CONTRACTOR SHALL TEST THE REHEAT WATER SYSTEM WITH THE OR REHEAT WATER SYSTEM IN OPERATION. TAB CONTRACTOR SHALL ALSO TEST THE REHEAT WATER SYSTEM WITH THE OR REHEAT SYSTEM SHUT DOWN, USING THE MAIN HOSPITAL REHEAT SYSTEM AS ALTERNATIVE SOURCE OF REHEAT WATER.
7. TAB CONTRACTOR SHALL SUBMIT A TEST PLAN FOR WHFD AND/OR PROJECT MANAGER REVIEW AND APPROVAL TWO WEEKS MINIMUM BEFORE PERFORMING WORK. TAB CONTRACTOR SHALL PROVIDE A PRELIMINARY SUMMARY OF RESULTS TO WHFD AND/OR PROJECT MANAGER AT A MAXIMUM OF 7 BUSINESS DAYS AFTER PERFORMING WORK. FINAL REPORT SHALL BE PROVIDED TO WHFD AND/OR PROJECT MANAGER NO LONGER THAN 14 BUSINESS DAYS AFTER PERFORMING WORK.

WORK PHASING/SCHEDULING

1. CONTRACTOR COORDINATE WITH WHFD AND/OR PROJECT MANAGER PRIOR TO SCHEDULING ANY WORK WITHIN THE FACILITY.
2. MAXIMUM SHUTDOWN TIME SHALL NOT EXCEED 4 HOURS AT ANY GIVEN TIME. CONSIDERATION SHOULD BE GIVEN TO SCHEDULING WORK THAT WILL CRITICALLY IMPACT THE HOSPITALS FUNCTIONING TO EARLY MORNINGS, EVENING HOURS AND/OR WEEKENDS. COORDINATE WITH WHFD AND/OR PROJECT MANAGER
3. WORK PHASING SHALL FOLLOW THE SEQUENCE (VEIFY WITH WHFD AND/OR PROJECT MANAGER):

o. INSTALL ALL LOOP VALVES AND ACCESSORIES ON EACH LOOP.

o. INSTALL BY-PASS VALVE AND DIFFERENTIAL PRESSURE SENSOR AND PIPING AS SHOWN ON PLAN.

o. INSTALL NEW BOILERS, BUFFER TANK AND RELATED PIPING PRIOR TO REMOVAL OF EXISTING RINNAI WATER HEATERS AND STORAGE TANK.

o. REPLACE EXISTING COMPRESSION TANK, AIR SEPARATOR AND INTERCONNECTING PIPING.

o. REMOVE EXISTING RINNAI WATER HEATERS, HOT WATER STORAGE TANK AND INSTALL NEW PIPING TO CONNECT NEW SYSTEM TO EXISTING REHEAT SYSTEM.

o. REPLACE REHEAT HOT WATER PUMP 1, RELATED PIPING, VALVES, VFD & ACCESSORIES.

o. REPLACE REHEAT HOT WATER PUMP 2, RELATED PIPING, VALVES, VFD & ACCESSORIES.

VALVE REPLACEMENT NOTES

1. CONTRACTOR TO FIELD VERIFY LOCATION, SIZE, AND QUANTITY OF REHEAT HOT WATER SHUTOFF AND BALANCING VALVES, PIPING, AND ACCESSORIES. NOTIFY WHFD AND/OR PROJECT MANAGER FOR DISCREPANCIES PRIOR TO START OF WORK.
2. SEE WRITTEN SPECIFICATIONS FOR REQUIREMENTS FOR POST CONSTRUCTION FIELD DOCUMENTATION.

NOTES

1. PROVIDE PSX 700 OR APPROVED EQUAL FOR ALL EXTERNAL FAN BLADES AND OUTDOOR EQUIPMENT HOUSINGS (INTERNAL & EXTERNAL).
2. PROVIDE FRANKLIN VFD. PROVIDE AC LINE REACTOR TO REDUCE HARMONICS. PROVIDE DC FILTERS WHEN CABLE LENGTHS ARE GREATER THAN 20'.

DUCT AND PLENUM INSULATION NOTES

1. DUCT INSULATION THICKNESS SHALL BE GREATER THAN OR EQUAL TO R-6 FOR SUPPLY AND RETURN DUCTS AND PLENUMS LOCATED IN UNCONDITIONED SPACES.
2. DUCT INSULATION THICKNESS SHALL BE GREATER THAN OR EQUAL TO R-8 FOR SUPPLY AND RETURN DUCTS AND PLENUMS LOCATED OUTDOORS.
3. DUCTS AND PLENUMS TO BE SEALED PER IMC 2015.

PIPING INSULATION NOTES

1. PROVIDE PIPE INSULATION THICKNESSES PER IECC 2015 TABLE C403.2.10




BOILER NOTES

1. PROVIDE WITH FACTORY BOILER MANAGEMENT SYSTEM, BMS.
2. PROVIDE WITH AL29-4C STAINLESS STEEL
3. PROVIDE WITH ZERO CLEARANCE KIT. VENTING PER UL1738



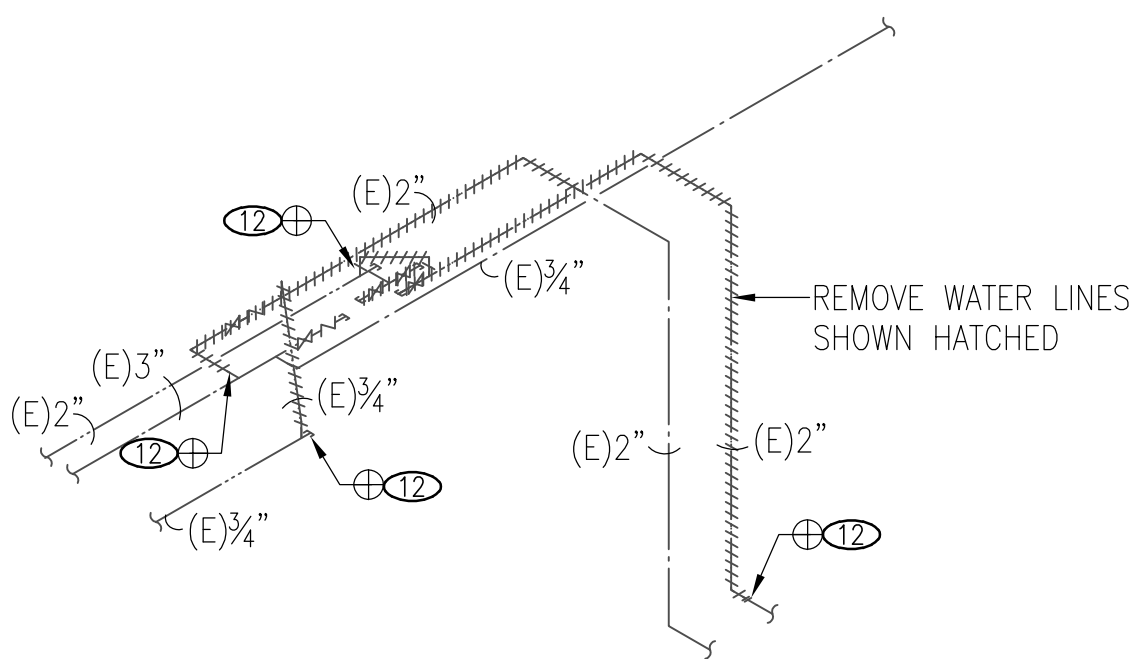
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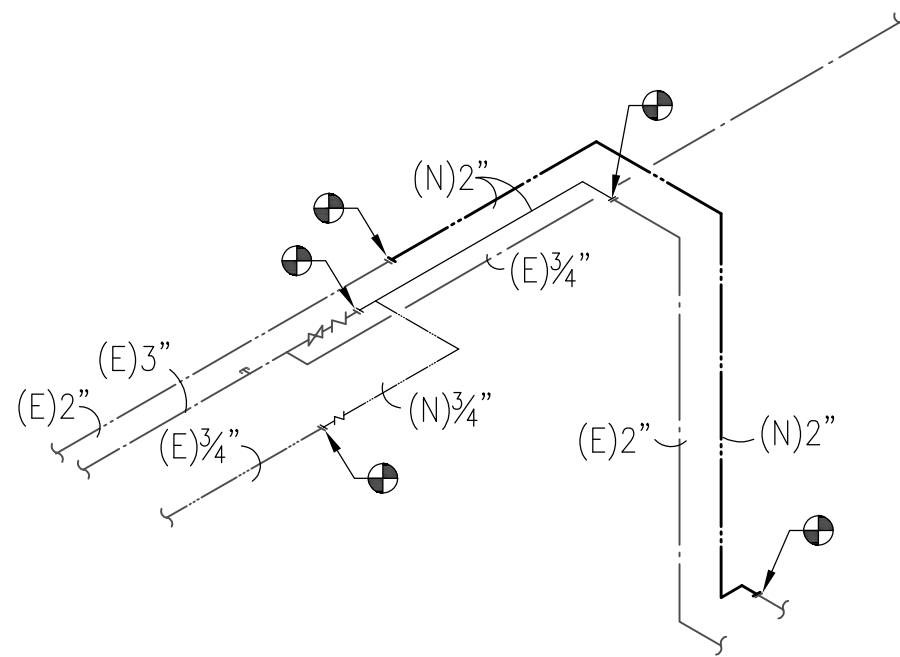
MECHANICAL SCHEDULES	
DATE: JULY, 2020	REV. 
ADDENDUM #1 - 12/4/20	REV. 
	REV. 

HVAC MODIFICATIONS FOR: REHEAT SYSTEM	
KONA COMMUNITY HOSPITAL	
79-1019 HAUUKAPILA ST, KEALAKEKUA, HI 96750	
TMK: (3) 7-9-010:081	

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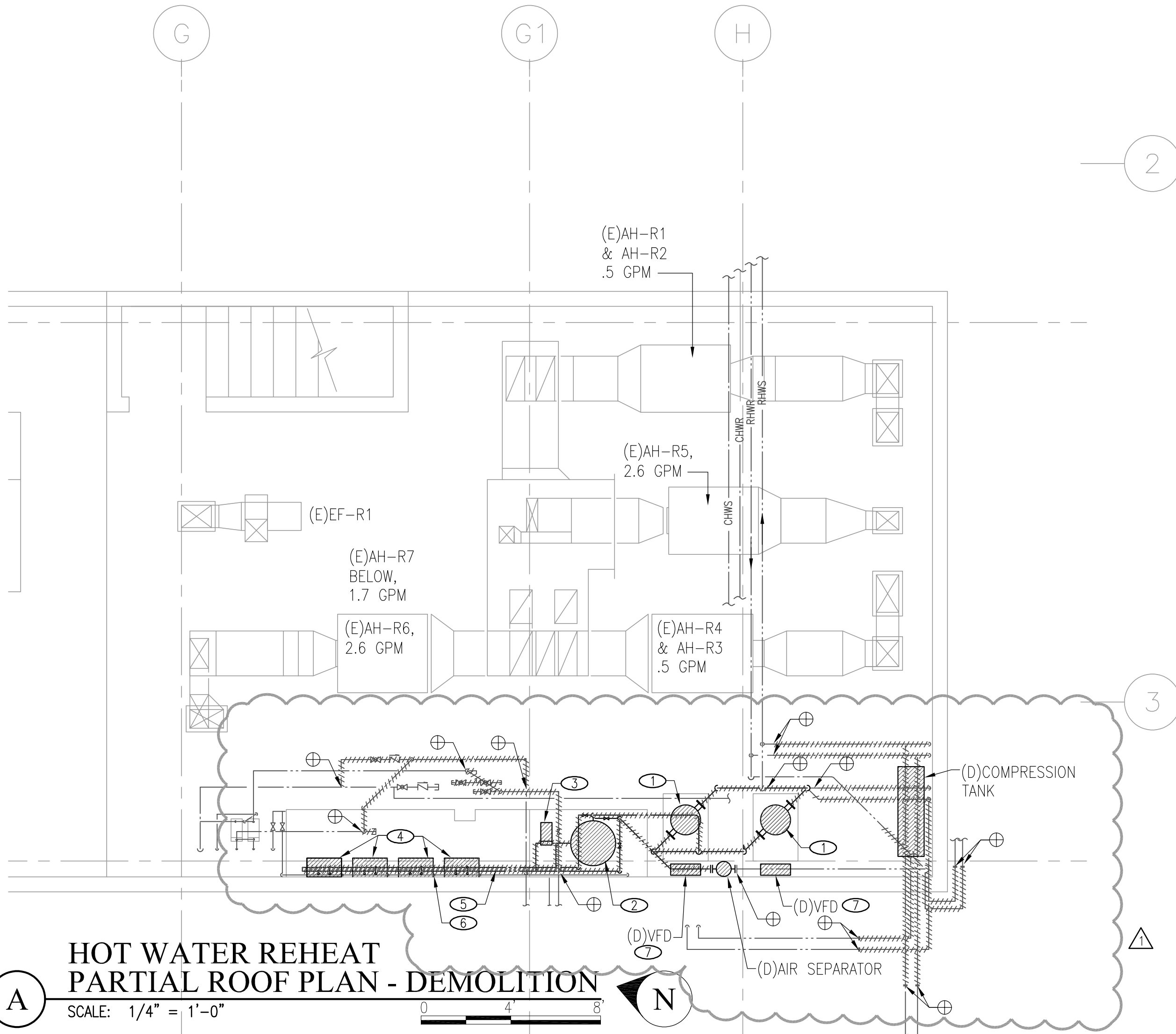
1 EXISTING/DEMOLITION
DOMESTIC WATER PIPING DIAGRAM
NO SCALE



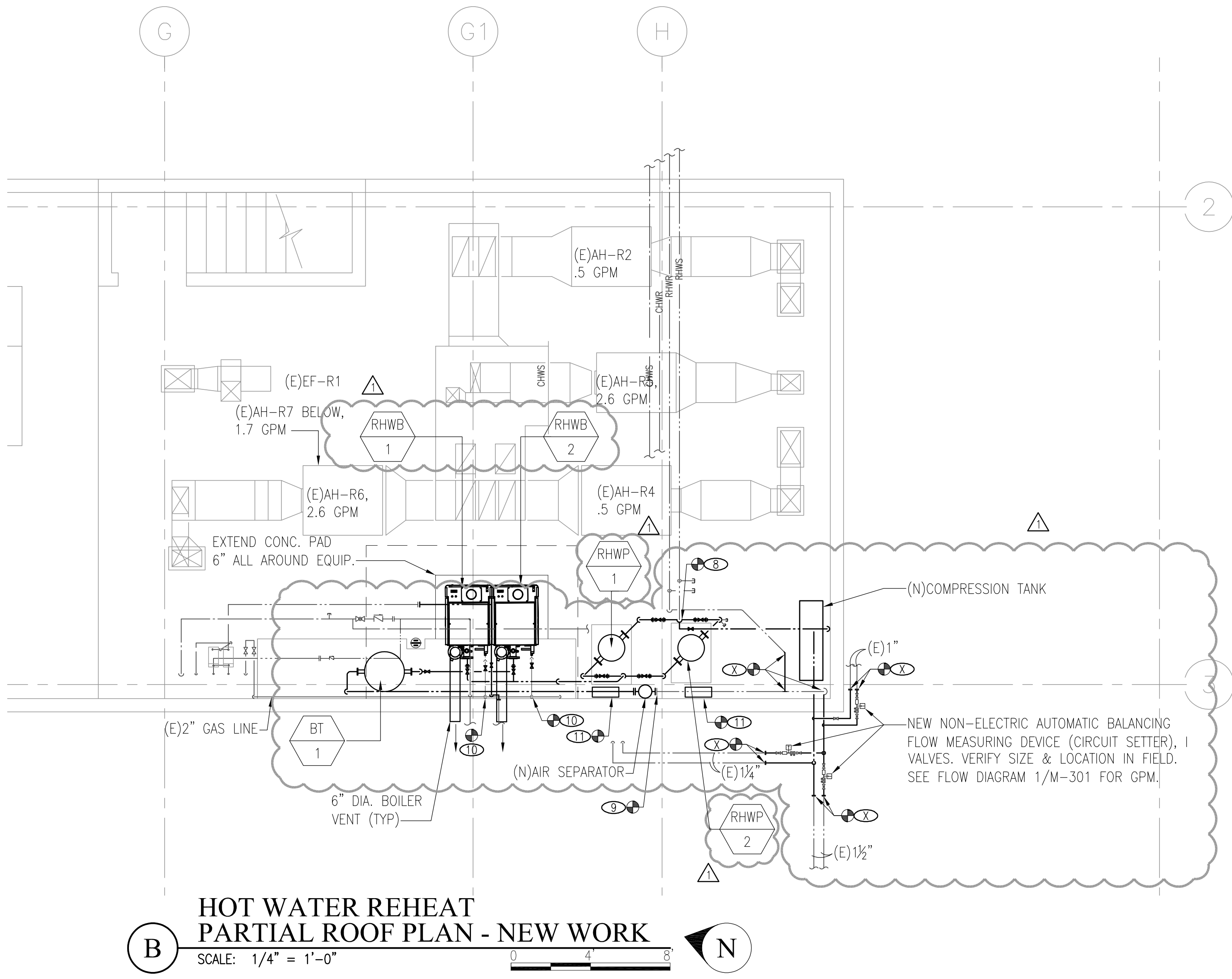
2 EXISTING/NEW
DOMESTIC WATER PIPING DIAGRAM
NO SCALE

NOTES

- 1 REMOVE EXISTING PUMP AND RELATED PIPING AND VALVES SHOWN HATCHED.
- 2 REMOVE EXISTING STORAGE TANK AND RELATED PIPING AND VALVES SHOWN HATCHED.
- 3 REMOVE EXISTING CIRCULATING PUMP AND RELATED PIPING AND VALVES SHOWN HATCHED.
- 4 REMOVE EXISTING WATER HEATERS AND RELATED PIPING AND VALVES AND HEATER FLUE SHOWN HATCHED. PATCH ROOF PENETRATION TO MATCH EXISTING.
- 5 REMOVE EXISTING HOT WATER SUPPLY AND RETURN PIPING AND VALVES SHOWN HATCHED.
- 6 REMOVE EXISTING GAS LINES SERVING WATER HEATERS BACK TO HEADER AND CAP PIPING.
- 7 REMOVE EXISTING VFDS.
- 8 CONNECT NEW 2" RHWS PIPING TO EXISTING 2" RHWS PIPING.
- 9 CONNEXT NEW RHWR PIPING TO EXISTING RHWR PIPING AT AIR SEPARATOR.
- 10 CONNECT NEW 2" GAS LINE TO EXISTING 2" GAS LINE.
- 11 PROVIDE NEW FRANKLIN P SERIES OR EATON VFD. PROVIDE 36" MIN. CLEARANCE IN FRONT OF THE VFDS. FRANKLIN Q-LINK SERIES ARE NOT ACCEPTABLE.
- 12 DISCONNECT HOT AND COLD WATER AT LOCATIONS SHOWN.
- 13 CONNECT NEW HOT AND COLD WATER AT LOCATIONS SHOWN.



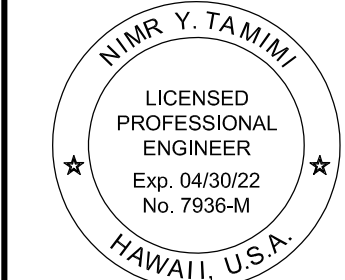
A HOT WATER REHEAT
PARTIAL ROOF PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"



B HOT WATER REHEAT
PARTIAL ROOF PLAN - NEW WORK
SCALE: 1/4" = 1'-0"



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SIGNATURE

HOT WATER REHEAT PARTIAL
ROOF PLAN - DEMO/NEW

HVAC MODIFICATIONS FOR: REHEAT SYSTEM
KONA COMMUNITY HOSPITAL
79-1019 HAUUKAPILA ST, KEALAKEKUA, HI 96750
TMK: (3) 7-9-010:081

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SHEET NO. 08 OF 15	



SEQUENCE OF OPERATION

REHEAT HOT WATER (RHW) SYSTEM

THE REHEAT HOT WATER(RHW) SYSTEM CONSISTS OF TWO GAS BOILERS (ONE BEING REDUNDANT) AND TWO REHEAT HOT WATER PUMPS (ONE BEING REDUNDANT) TO SERVE THE AIR HANDLING UNIT AND VAV REHEAT COILS. THE BOILERS ARE FURNISHED WITH A UNIT CONTROL PANEL (UCP) WITH AN INTEGRAL DISPLAY FOR READOUT AND LOCAL OPERATOR'S OVERRIDE CAPABILITY. THE UCP MONITORS ALL CRITICAL FUNCTIONS, AND CONTROLS THE CAPACITY OF THE SYSTEM OUTPUT. THE UCP IS INTERFACED TO THE EXISTING BUILDING MANAGEMENT SYSTEM (BMS) FOR REMOTE MONITORING & SYSTEM CONTROL. REHEAT HOT WATER PUMPS (ONE BEING REDUNDANT) ARE EQUIPPED WITH A VARIABLE FREQUENCY DRIVE (VFD) TO VARY PUMP SPEED.

START-STOP SEQUENCE: UPON START-UP, ENABLE THE RHW PUMPING SYSTEM AND BOILERS. UPON SHUTDOWN, DISABLE ALL RHW PUMPING SYSTEMS AND DISABLE BOILERS. THIS SEQUENCE SHALL BE FUNCTIONAL FOR ANY REASON THE PUMP STARTS-STOPS IN ANY MODE OF OPERATION (ALL H-O-A MODES, ALL VFD MODES, ALL AUTOMATIC AND SAFETY FUNCTIONS, AND LOCAL MANUAL START-STOP).

PUMP CONTROL (LEAD/STANDBY EACH PUMP SIZED AT 100%):

- ONCE ENABLED THE PUMP SPEED SHALL BE MODULATED TO MAINTAIN THE CALCULATED DIFFERENTIAL PRESSURE SETPOINT.
- SOFTWARE LEAD/STANDBY PUMP CONTROL FUNCTION SHALL ALLOW EITHER OF THE RHW WATER PUMPS TO ACT AS THE LEAD PUMP, WHILE DESIGNATING THE OTHER PUMP AS A STANDBY PUMP.
- DIFFERENTIAL PRESSURE RESET CONTROL: THE BAS SHALL CONTINUOUSLY POLL THE VALVE POSITION OF ALL REHEAT HOT WATER COILS. THE BAS SHALL RESET DIFFERENTIAL PRESSURE SET-POINT UP OR DOWN TO CONTINUALLY RESET THE SYSTEM DIFFERENTIAL PRESSURE SETPOINT FOR OPTIMUM PERFORMANCE. WHEN TWO REMOTE DIFFERENTIAL PRESSURE SENSORS ARE USED, CONTROL TO THE SENSOR THAT IS FARTHEST FROM SETPOINT.
- IN THE EVENT REMOTE DIFFERENTIAL PRESSURE SENSORS BECOME UNRELIABLE, UTILIZE LOCAL DIFFERENTIAL PRESSURE FOR PUMP CONTROL TAKING INTO CONSIDERATION THE ADJUSTED SETPOINT
- ALARM ON PUMP FAILURE DETECTED VIA CURRENT SENSING SWITCH. UPON FAILURE OF THE LEAD PUMP, THE STANDBY PUMP SHALL START AUTOMATICALLY. THE BAS SHALL MAINTAIN A START COMMAND AT THE LEAD PUMP AND RESUME CONTROL WHEN THE LEAD PUMP HAS RETURNED TO NORMAL OPERATION.
- A FAILURE OF ANY PUMP WILL SHUT DOWN THAT PUMP, SUSPEND BOILER OPERATION, START THE ASSOCIATED STAND-BY PUMPS WILL ALARM THE BMS. FAILURE OF BOTH HEATING WATER PUMPS WILL ALARM THE BMS AND SHUT DOWN THE REHEAT HOT WATER SYSTEM.
- LEAD PUMP DESIGNATION SHALL BE ROTATED WEEKLY (ADJ) IN ACCORDANCE WITH THE BAS SCHEDULE.
- IF BYPASS FAILS TO OPEN AND SYSTEM PRESSURE INCREASES BEYOND AN ADJUSTABLE LIMIT, RECIRCULATION PUMPS SHALL SHUT DOWN AND AN ALARM SHALL BE ISSUED TO THE BMS.

PUMP ROTATION: UPON SIGNAL FROM THE BAS TO ROTATE THE PUMPS, EXECUTE THE FOLLOWING SEQUENCE.

- INITIATE ROTATION IN ACCORDANCE WITH A BAS SCHEDULE OR BY MANUAL INITIATION.
- WHILE THE CURRENT LEAD PUMP IS STILL ACTIVE START THE STANDBY PUMP AND DESIGNATE AS THE NEW LEAD PUMP.
- UPON PROOF OF NEW STANDBY PUMP RUNNING STATUS VIA CURRENT SENSING RELAY, COMMAND THE NEWLY DESIGNATED STANDBY PUMP TO OFF AND CLOSE ASSOCIATED ISOLATION VALVES.
- MAINTAIN DIFFERENTIAL PRESSURE CONTROL WITH THE NEW LEAD PUMP.

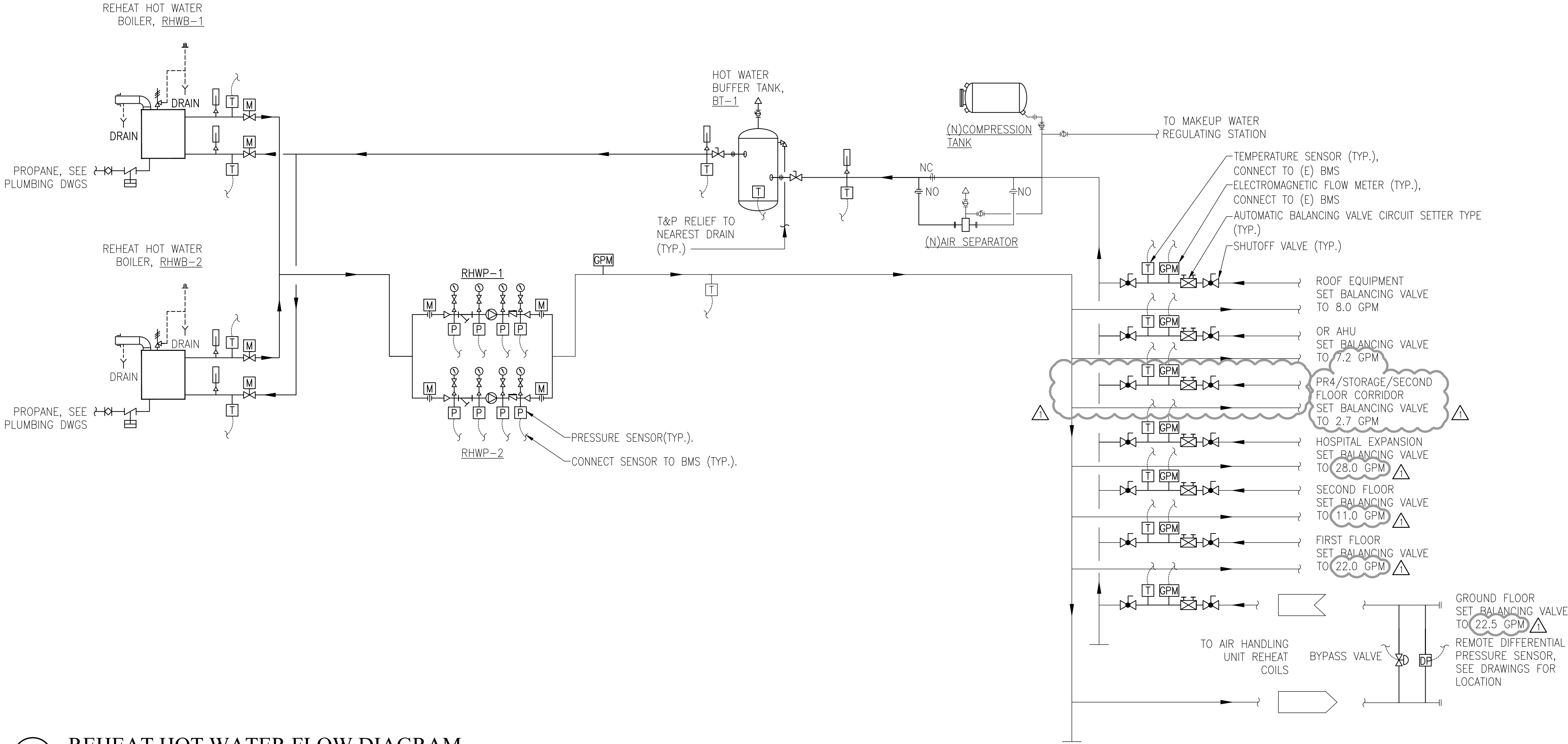
BOILER CONTROL (LEAD/STANDBY EACH PUMP SIZED AT 100%): UPON SIGNAL FROM THE BAS TO RUN THE BOILER SYSTEM SHALL START.

- THE BAS SHALL SEND AN ENABLE COMMAND TO THE BOILER CONTROL SYSTEM.
- THE BOILER CONTROL SYSTEM SHALL DETERMINE THE OPTIMUM RUN CONDITION OF ALL BOILERS AND MAINTAIN THE HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT, 140 DEG F (ADJ.)
- BOILER ISOLATION VALVES SHALL BE INTERLOCKED WITH THE BOILER TO OPEN ONLY WHEN THE BOILER IS ACTIVE.
- THE ACTIVE BOILER SHALL HAVE A MINIMUM RUN TIME OF 15 MINUTES (ADJ.).

DDC POINT LIST																		
	INPUTS											OUTPUTS		SYSTEM FEATURES				
	ANALOG									DIGITAL		ANALOG	DIGITAL					
	4-20mA H2O	4-20mA H2O	*F	GPM	*F	*F	*F	*F	PERCENT OPEN	4-20mA H2O	ON/OFF	ON/OFF	PERCENT	START/STOP				
	INLET PRESSURE	OUTLET PRESSURE	TANK TEMPERATURE	REHEAT WATER FLOW	INLET TEMPERATURE	OUTLET TEMPERATURE	REHEAT WATER SUPPLY TEMP	REHEAT WATER RETURN TEMP	BYPASS VALVE POSITION	DIFFERENTIAL PRESSURE	SHUT OFF VALVE POSITION	RUN STATUS	PUMP SPEED CONTROL	START/STOP	VFD CONTROL	SCHEDULE	TREND	ALARM
EQUIPMENT LIST:																		
REMOTE DIFFERENTIAL PRESSURE SENSOR									X								X	X
MOTORIZED BYPASS VALVES (TYP.)								X			X						X	X
MOTORIZED ISOLATION VALVES (TYP.)										X	X							X
P-1,2	X	X		X			X	X			X	X	X	X	X	X	X	X
B-1,2					X	X	X	X			X			X		X	X	X
ELECTROMAGNETIC FLOW METERS				X													X	X
REHEAT HOT WATER SUPPLY TEMPERATURE SENSORS							X										X	X
REHEAT HOT WATER RETURN TEMPERATURE SENSORS								X									X	X
BUFFER TANK			X		X	X											X	X

NOTES

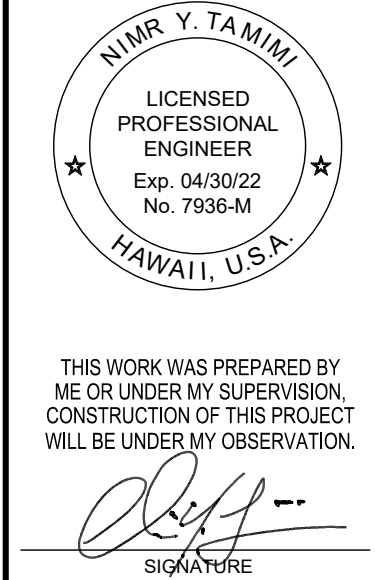
- ALL POINTS TO SHOW ON EXISTING DELTA BMS GRAPHICS.
- ALL CONTROL WIRING SHALL BE INSTALLED AS SPECIFIED BY MFR (TYP.).
- ALL CONTROL WIRING SHALL BE INSTALLED IN EMT/FMC (TYP.).



1 REHEAT HOT WATER FLOW DIAGRAM
NO SCALE



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SEQUENCE OF OPERATIONS AND
DDC POINTS LIST

DATE: JULY, 2020
REV. 1
ADDENDUM #1 - 12/14/20
REV. 1
REV. 1

HVAC MODIFICATIONS FOR: REHEAT SYSTEM
KONA COMMUNITY
HOSPITAL

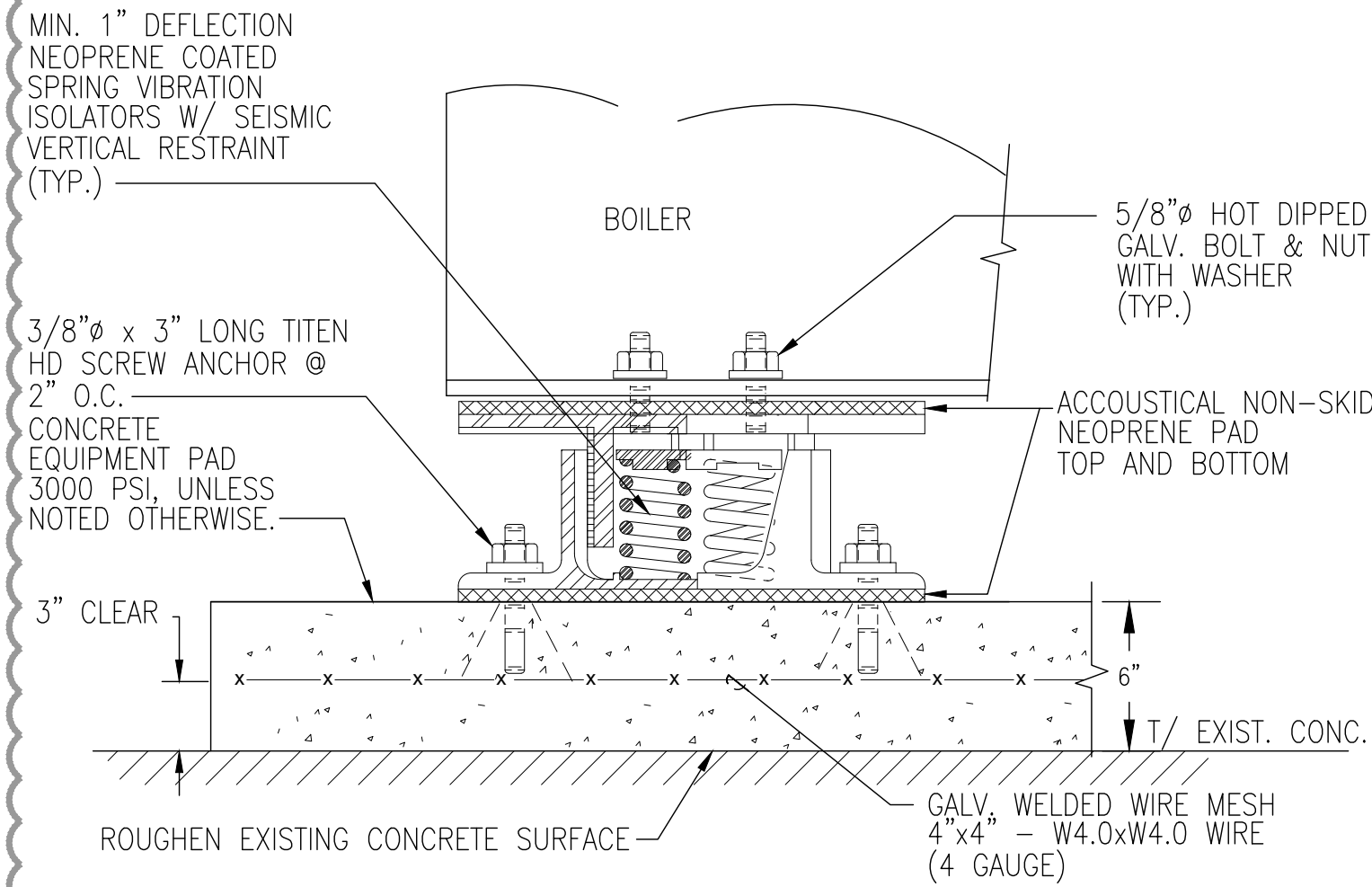
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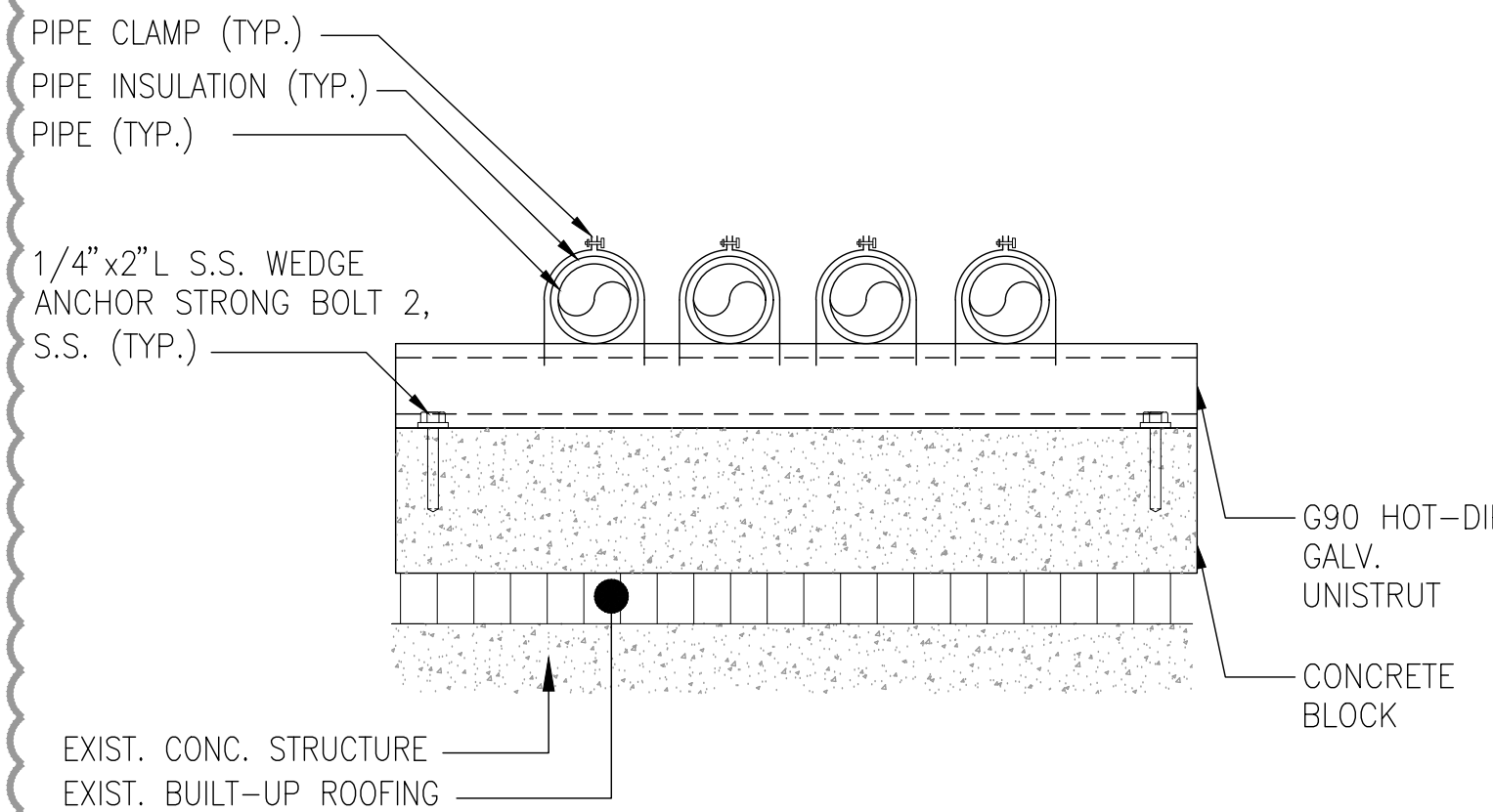
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SHEET NO. 10 OF 15



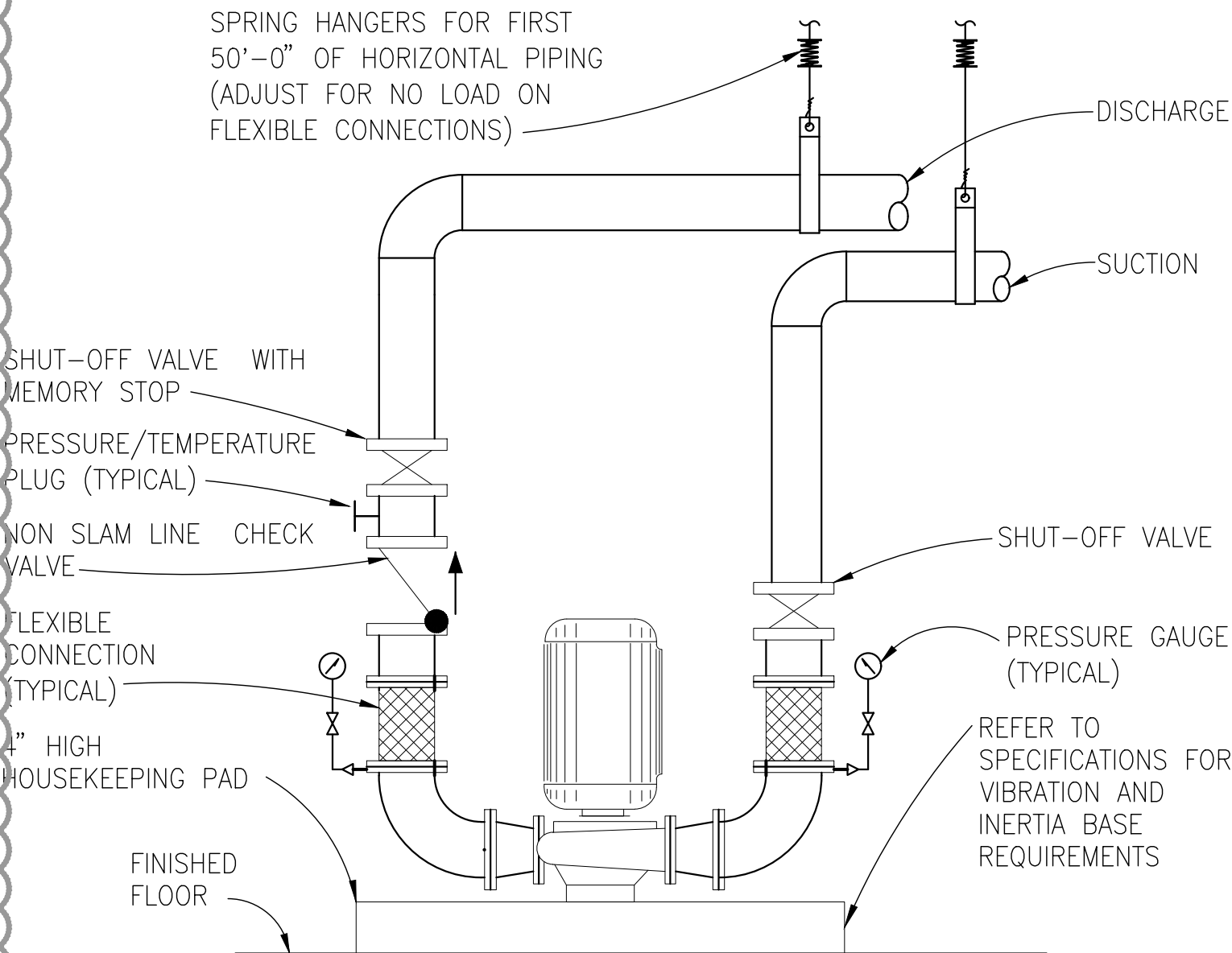
**BOILER UNIT
MOUNTING DETAIL**

4 NO SCALE



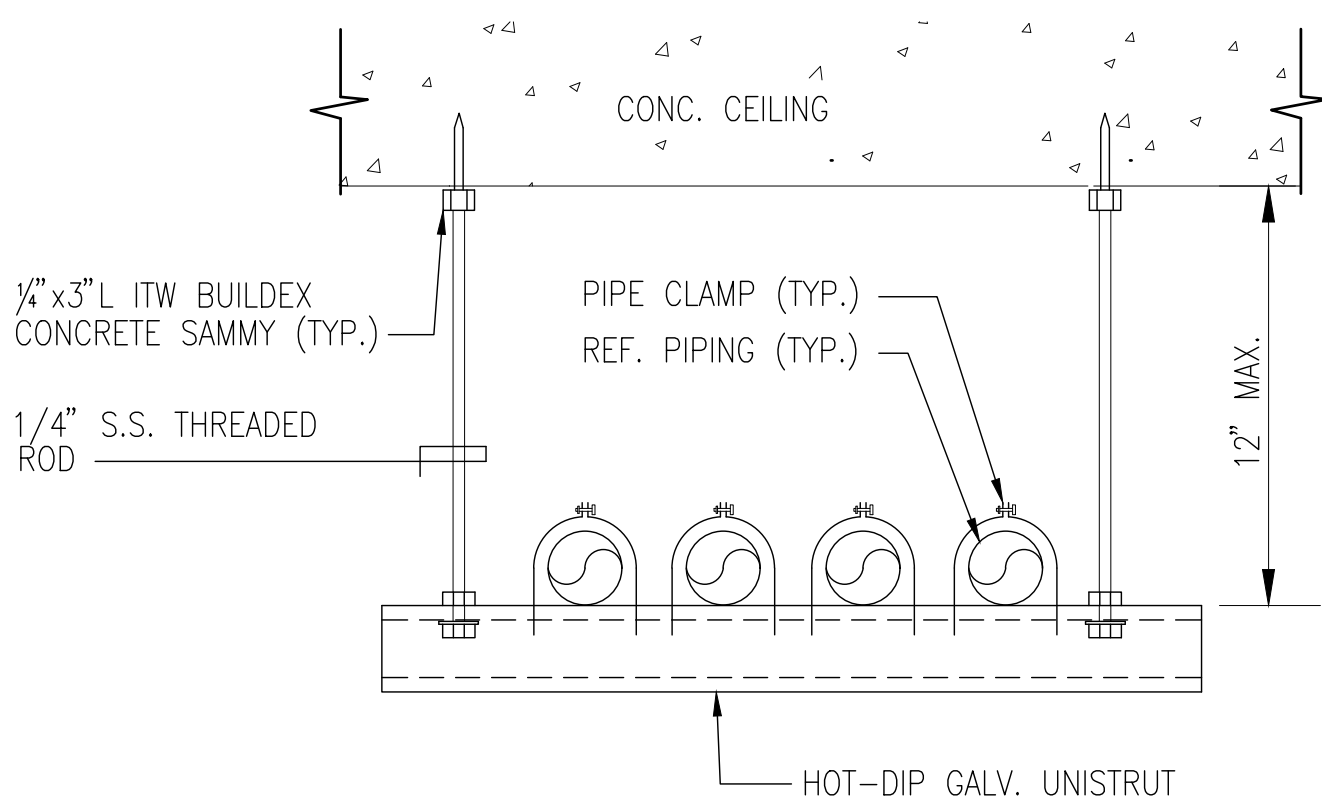
PIPE ROOF SUPPORT DETAIL

5 NO SCALE



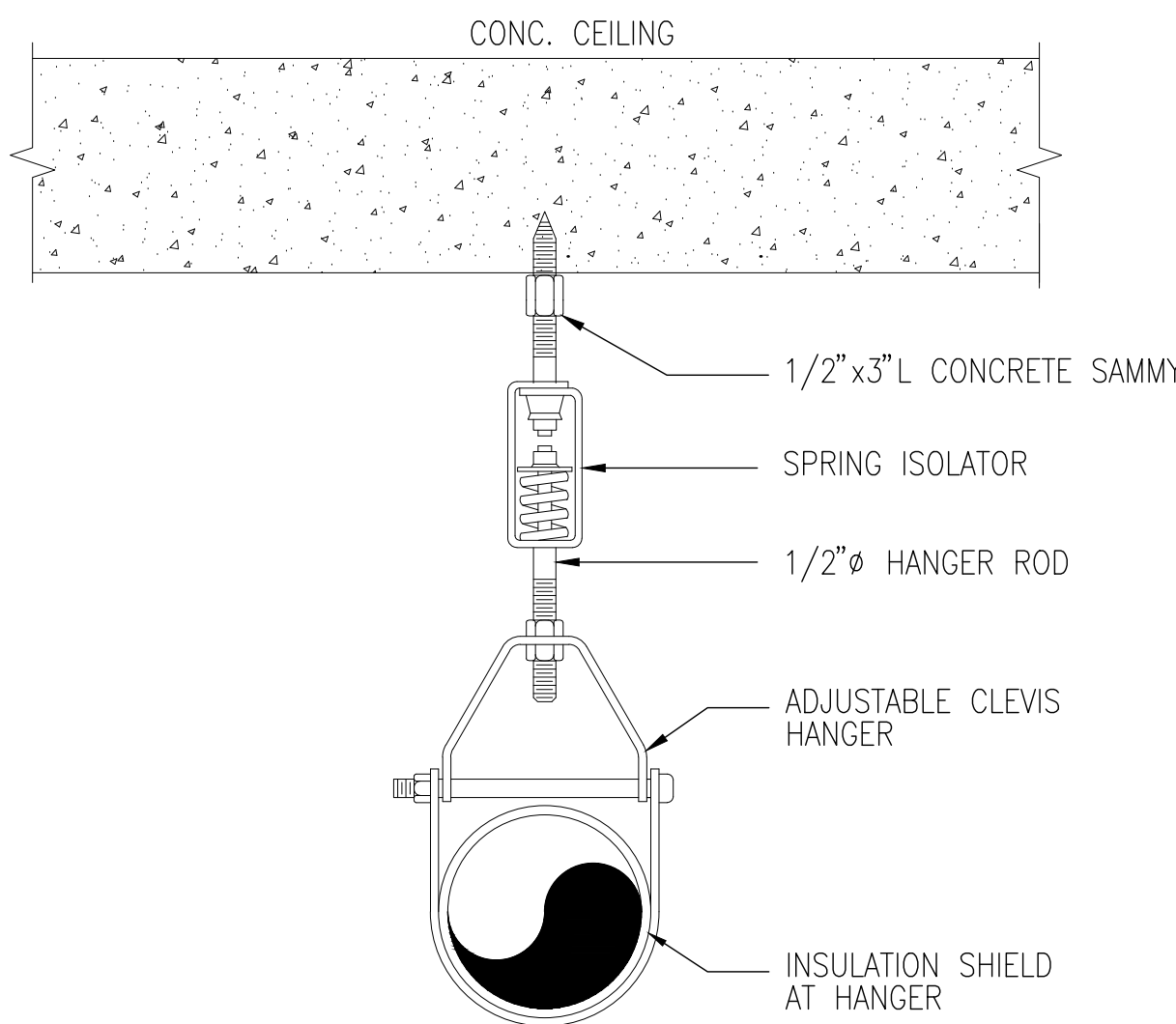
VERTICAL IN-LINE PUMP DETAIL

1 NO SCALE



**PIPING
HANGER DETAIL**

2 NO SCALE

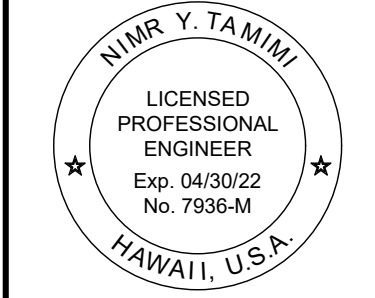


PIPE HANGER DETAIL

3 NO SCALE



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MECHANICAL DETAILS

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HOSPITAL**
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