

DATE: February 6, 2015

FROM: The Schemmer Associates  
Architects-Engineers-Planners  
1044 North 115th Street, Suite 300  
Omaha, Nebraska 68154-4436  
Phone: (402) 493-4800  
Telefax: (402) 493-7951

TO: Prospective Bidders and Plan Holders

RE: Addendum No. 1 to the Bidding Documents for:  
Stanton Tower Boiler Replacement  
Fremont Housing Authority  
Housing Authority Project No. NE100501-14-01  
Schemmer Project No. 06577.001

This addendum is issued by the Architect to the Contractor. This Addendum shall be made a part of the Contract Documents. Acknowledge receipt of this Addendum shall be provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

Prior approval of manufacturers is a general approval only for bidding purposes. Final approval of the products is contingent upon the submittal of product data and/or shop drawings which will have to meet the specific design requirements and the specifications.

This addendum consists of four (4) pages of written addendum items, three (3) Pre-bid Conference Sign-in Sheets, one (1) specification section and two (2) pages of supplemental drawings.

THE SCHEMMER ASSOCIATES INC.  
ARCHITECTS | ENGINEERS | PLANNERS

# **PROJECT MANUAL**

## **ARCHITECTURAL**

### **Item No. SA-1, Section 001116**

Paragraph 1.2.B. shall read "Bids will be thereafter opened and read publicly."

Paragraph 1.4 See Pre-Bid Conference Sign-in sheets (3) as part of this addendum.

Paragraph 1.5.B. Replace Fremont Chamber of Commerce Address as follows: 128 E. 6<sup>th</sup> Street, Fremont, Nebraska 68025, Telephone (402) 721-2641, FAX (402) 721-9359

### **Item No. SA-2, Section 006000**

Paragraph 1.2.F. Add item "5" as follows:

5. Substitution Request Form, Refer to Section 012500.

### **Item No. SA-3, Section 011000**

Add paragraph 1.5.G. as follows: "Mandatory daily sign-in and out for all Contractors shall be located on site."

## **MECHANICAL**

### **Item No. SM-1**

The manufacturers listed below shall be added to the plans and are listed for the purposes of bidding only. These are not pre-approvals. Final approval of the products is contingent upon the submittal of product data and/or shop drawings, which have met the specific design requirements as scheduled and/or specified for this project.

<u>Section</u>	<u>Item</u>	<u>Manufacturer</u>
221123.13	Packaged Booster System	Canariis Corporation
223500	Domestic Water Heat Exchanger	PVI EZ-Plate
232113	Expansion Tanks	Patterson
232113	Air Separators	Patterson
232113	Balancing Valves	PRO Hydronic Specialties
232113	Automatic Flow Control Valves	PRO Hydronic Specialties
232113	Automatic Flow Control Valves	Nexus Valve
238239.16	Unit Heaters	Vulcan
238239.16	Unit Heaters	Rittling
238239.16	Unit Heaters	Sterling

### **Item No. SM-2, Section 230993.11**

Add Section 230993.11, Sequence of Operations, included as part of this addendum.

# DRAWINGS

## MECHANICAL

### Item No. DM-1, Phasing Notes, all Mechanical Plans

For Phasing Notes B and F, revise portion of note regarding 'final connections' to read "...final connections can be made during an overnight system shut down or during the day, provided system will not be shut down for longer than 12 hours or overnight unless temporary services are provided at contractor's expense."

### Item No. DM-2, General Demolition Notes, General Mechanical Notes, General Plumbing Demolition Notes, and General Plumbing Notes

Add General Note as follows: "Do not drill or cut into concrete floor or floor above. The floors are post-tensioned slabs. Use existing supports/steel embedded into floor above for hanging supports in mechanical room."

### Item No. DM-3, Sheet M0-01

Referenced Demolition Note #10; add the following at the end of the note "Patch wall opening at Maint. 123 to match existing."

### Item No. DM-4, Sheet M0-01

In Lobby 102, disregard demolition note #11 in Southwest corner on plan 2/M0-01.

### Item No. DM-5, Sheet M1-01

See supplemental drawing SDM-01 included with this addendum for HWS/HWR piping modifications and added Referenced Note #11.

### Item No. DM-6, Sheet M1-01

Phasing Notes shall be the same as those shown on Sheet M0-01.

### Item No. DM-7, Sheet M1-01

Referenced HVAC Note #8 shall read: "Route 3/4" drain line from bottom of boiler flue to existing floor drain on west side of existing AH-2."

### Item No. DM-8, Sheet M1-01

Referenced HVAC Note #10 shall read: "Take 3/4" HWS and HWR off existing HCWS and HCWR mains to serve unit heater."

### Item No. DM-9, Sheet M1-01

Replace 2-way valves with 3-way valves at the following ground floor existing equipment locations:

CUH-1 in West stair	3/4"
CUH-1 in East stair	3/4"
CUH-2 in Entry South Vest.	3/4"
CUH-2 in Corr 125 North Door	3/4"
CUH-2 in Rec 122	3/4"
UH-1 (exposed) in Maint 123	1-1/2"
FC-6 in East Comm. Room	1"
FC-6 in East Comm. Room	1"
FC-6 in East Comm. Room	1"
FC-6 in Lobby 102	1"

All existing equipment are horizontal concealed ceiling units, except UH-1. Pipe sizes listed are per existing drawings. Coordinate valve replacements in FC-6 units with owner as these units will be in cooling mode during construction.

**Item No. DM-10, Sheet M2-01**

See supplemental drawing SDM-02 for updated Gas-Fired Hot Water Boiler Schedule, Pump Schedule, and Miscellaneous Mechanical Equipment Schedule.

**Item No. DM-11, Sheet P1-01**

Disregard HWS and HWR piping serving UH-1 and UH-2 in Mech 120.

**ELECTRICAL**

**Item No. DE-1, Sheet E1-01**

Delete mechanical piping shown on Electrical Floor Plan. Delete all half-tone referenced note markers on Electrical Floor Plan.

**Item No. DE-2, Sheet E1-01**

Change referenced electrical note 7 to read "CONNECT PUMPS P-8A AND P-8B TO (1) NEW 30/3 CIRCUIT BREAKER IN SPACE IN PANEL 'MA'."

**Item No. DE-3, Sheet E1-01, Equipment Electrical Schedule**

Change P-8A,P-8B items to the following: voltage – 208; PH – 3; HP – 5; disconnect type, size and fuse – FD, 30, 30; Feeder size – 3#10, 1#10G, 3/4" C.

END OF ADDENDUM NO. 1



PROJECT Stanton Tower Boiler Replacement  
 Fremont Housing Authority  
 PROJECT NO. 06577.001  
 DATE: January 28, 2015 at 9:00 a.m.

## PRE-BID CONFERENCE SIGN-IN

Location: Fremont Housing Authority

NAME / TITLE	ORGANIZATION	CONTACT INFORMATION
Sue Kleider	FHA	Tel. No. (402) 727-4848
		E-Mail fhauthority@fremonthousing.org
Ed Thilliander	FHA	Tel. No. (402) 727-4848
		E-Mail fhamaintenance@fremonthousing.org
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Renee Meyersick	Schemmer	Tel. No. (402) 493-4800
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DAN PHILLIPPE	PLATTE RIVECH	Tel. No.
		E-Mail 402-727-4460
JUSTIN BLACKLEDGE	GRUWALD MECHANICAL	Tel. No. (402) 342-1911
		E-Mail
DAVE LETCHER	PRAIRIE MECHANICAL	Tel. No. 402-331-9050
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DAVE Getzschman	Getzschman Heating	Tel. No. 402 721 6301
		E-Mail davidg@getzschman.com
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		E-Mail Keitheverly@ncb.rr.com
Mark Anthis	Monster Electric	Tel. No. 402-990-5356
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Ed Thilliander	FHA	Tel. No.	(402) 727-4848
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		Tel. No.	
		E-Mail	
		Tel. No.	
		E-Mail	

## SECTION 230993.11

### SEQUENCE OF OPERATIONS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section includes control sequences for DDC for HVAC systems, subsystems, and equipment.

##### 1.2 GENERAL

- A. The existing heating and cooling systems serving Stanton Tower are two-pipe design and consist of fan coil units, cabinet convectors and finned tube radiation units. Two way valves that isolate cabinet convectors and finned tube radiation units, etc. from the chilled water loop shall remain fully operational.

##### 1.3 CONTROL SEQUENCES

- A. Heating Plant operation:

1. Integrate the existing Trane Tracer Summit DDC system with the Aerco Control System (ACS)/Boiler Management Sequencer to enable the heating plant consisting of three new condensing high efficiency hot water boilers when the changeover from summer operation to winter operation is manually initiated by the building engineer. The existing DDC system will continue to control the existing supply water changeover valves (CO valves 1 and 2) to open to allow flow through the hot water system while the existing return water changeover valves (CO valves 3 and 4) will close to prevent return water flow during start-up. Hot water changeover startup sequence will initiate to prevent thermal shock to boilers.

- B. Hot Water Changeover Startup Sequence:

1. The existing hot water bypass valve will open 100%. The existing hot/chilled water pumps (P-1 and P-3) will be started and operated at reduced flow during startup sequencing. After 2 minutes if either lead pump has not been proven to be operating via current sensor, the existing lag hot water pump (P-2) will start and the affected lead pump alarmed.
2. After hot water flow has been confirmed, the Aerco Control System (ACS) shall enable the lead boiler, If after 5 min (adj.), the lead boiler has not been proven to be operating, the boiler will be alarmed and the next sequenced boiler will be enabled. This sequence will repeat until a boiler is successfully brought online. Lead boiler will be automatically rotated weekly.
3. During hot water startup, the ACS shall coordinate boiler firing rate and enabling boilers until hot water supply temperature is brought up to setpoint. At this point, the existing mixing valves will start modulating open to bleed in return water. Once the mixing valve is 50% (adj.) open and the building chilled water return temperature rises to within 10 deg F (adj.) of set point, the existing return water changeover valves will open to all return water flow and the existing bypass valve will modulate closed. Normal hot water sequence will be initiated.

C. Normal Hot Water Sequence:

1. The existing hot/chilled water lead pumps (P-1 and P-3) shall operate to maintain heating water pressure setpoint. Minimum flow for the pumps will be set at 60 gpm (adj.). An existing flow meter ensures minimum flow is always present in the system and the existing hot water bypass valve shall open if system flow drops below this range. The existing DDC system shall detect hot water pump run status via existing current sensors. If the lead start/stop relay is enabled and the current sensor does not detect flow for more than 30 seconds (adj.) the DDC system shall annunciate a hot water pump failure alarm and start the lag pump (P-2). When a pump failure exists, lead/lag automation is disabled and the currently running pump becomes the lead pump. Once the problem has been corrected the operator is able to clear the alarm failure from the DDC system. This action will re-enable the lead/lag pump sequence.

D. Boiler Sequencing:

1. Once the lead boiler is enabled, the ACS shall coordinate boiler firing rate and enabling boilers until the hot water supply temperature is brought up to setpoint. If the hot water distribution system supply temperature falls 5 deg F (adj.) below the hot water setpoint for a period of 10 minutes(adj.) or more, the ACS shall increase boiler firing rate or enable an additional boiler.
2. When the hot water temperature rises 5 deg F (adj.) above the hot water setpoint for a period of 10 minutes (adj.) or more, the ACS shall reduce boiler firing rate and disable boilers. Boiler firing rates shall continue being reduced and boilers disabled, if the hot water temperature remains 5 deg F (adj.) above the hot water setpoint for a period of 10 minutes (adj.) or more. During the initial hot water startup sequence, this time is reduced to 5 minutes (adj.) to expedite unloading boilers as heating loads are anticipated to be lighter.

E. Existing Hot Water Reset Sequence shall remain as follows:

1. The hot water setpoint shall be typically linearly reset according to outdoor air temperature where hot water supply temperature shall be maintained at 180 deg F (adj.) at an outside air temperature of 0 deg F (adj.) and 140 deg F (adj.) at an outside temperature of 60 deg F (adj.). If the hot water bypass valve opens to maintain minimum flow through the heating hot water loops, it shall also initiate a hot water reset schedule until the hot water bypass valve is closed.

**EXISTING CHILLER OPERATION SHALL REMAIN. THE FOLLOWING EXISTING CHILLER SEQUENCES ARE PROVIDED FOR REFERENCE ONLY.**

F. Existing Chiller Evaporator Bundle and Piping Freeze Protection Sequences shall remain as follows:

1. During winter operation, the chilled water bypass valve shall modulate as required to maintain a minimum temperature of 50 deg. F (adj.) and maximum temperature of 70 deg F (adj.) in the chilled water supply and return piping. Existing changeover valves (CO valves 1 and 2) shall modulate as required to accommodate this flow. An existing immersed well type temperature sensor in the chilled water supply line outside the building shall measure the temperature of the chilled water medium. An alarm shall be annunciated if the medium temperature drops below 50 deg F (adj.). Then the DDC system shall prove existing electric heat tape is functioning and shall annunciate an alarm if not, or otherwise freeze protection becomes compromised.
2. If freeze protection becomes fully compromised for any reason, the existing DDC system shall alarm and display a message on the display screen to manually valve the chiller off and drain the exterior chilled water lines and chiller evaporator bundle.

- G. Existing Cooling Plant Operation shall remain as follows:
1. The existing DDC system will enable the existing chiller plant based on a call for summer operation as initiated manually by the building operator. The existing supply water changeover valves (CO valves 1 and 2) will open to allow flow through the chilled water system. The existing return water changeover valves shall close to prevent return water flow during startup. Chilled water changeover startup sequence will initiate to prevent thermal shock to the chiller.
- H. Existing Chilled Water Changeover Startup Sequence shall remain as follows:
1. The existing chilled water bypass valve will open 100%. The existing hot/chilled water lead pumps (P-1 or P-3) will start and operate at reduced flow during startup sequencing. After 2 minutes if either lead pump has not been proven to be operating via existing current sensors, the existing lag chilled water pump (P-2) will start and the affected lead pump alarmed.
  2. After chilled water flow has been confirmed the existing chiller will be enabled. Existing internal chiller controls will modulate to maintain the default chilled water setpoint of 43 deg F (adj.) Once the chilled water setpoint is achieved the existing mixing valves will start modulating open to bleed in return water. Once the mixing valve is 50% (adj.) open and the building chilled water return temperature drops to within 10 deg F (adj. ) of setpoint, the existing return water changeover valves (CO Valves 3 and 4) will open to allow return water flow and the bypass valve with modulate closed. Normal chilled water sequence will be initiated.
- I. Existing Normal Chilled Water Sequence:
1. The existing hot/chilled water lead pumps (P-1 and P-3) will operate to maintain chilled water pressure setpoint. The existing BAS controller detects chilled water pump run status by an existing current switch. If the lead start/stop relay is enabled and the current switch status is off for more than 30 seconds (adj.), the DDC system shall annunciate a chilled water pump failure alarm to the DDC system and start the existing lag pump (P-2). When a pump failure exists, lead/lag automation is disabled and the currently running pump becomes the lead pump. Once the problem has been corrected, the operator is able to clear the alarm failure form the DDC system. This action will re-enable the lead/lag sequence.
  2. Internal existing chiller controls will modulate to maintain the default chilled water setpoint of 43 deg F (adj.) If for a period of 30 minutes the chilled water temperature falls 5 deg F (adj.) below the chilled water setpoint, the chiller will be disabled.
- J. Existing Bypass Valve Control:
1. The existing BAS controller monitors the evaporator differential pressure of the chiller. When the pressure of then operating chiller indicates a low pressure (flow rate of less than 145 GPM (adj.)), the existing DDC system shall provide an analog signal that is sent to the bypass valve to maintain minimum pressure (flow) on the chiller.
- K. Existing Pump Operation:
1. As the central heating/cooling plant is enabled, the existing hot/chilled water loop pumps shall be enabled via existing variable frequency drives. Existing differential pressure sensors placed two-thirds downstream in both the NE and SW zones shall modulate the speed of the existing hot/chilled water pumps VFDs to maintain the setpoint of 10 PSIG (adj.).

1.4 TERMINAL UNIT OPERATING SEQUENCE

A. Unit Heater, Hydronic:

1. Space Temperature:
  - a. Cycle fan to maintain 75 deg F (adj.) space temperature.
  - b. Modulate valve to maintain 75 deg F (adj.) space temperature.
2. Low-Temperature Safety: Stop fan when return heating-water temperature falls below 50 deg F (adj.).

**PART 2 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION (Not Applicable)**

**END OF SECTION**

## SUPPLEMENTAL DRAWING

DATE: 02/05/2015

DRAWN: MAK

SCALE: 1/4" = 1'-0"

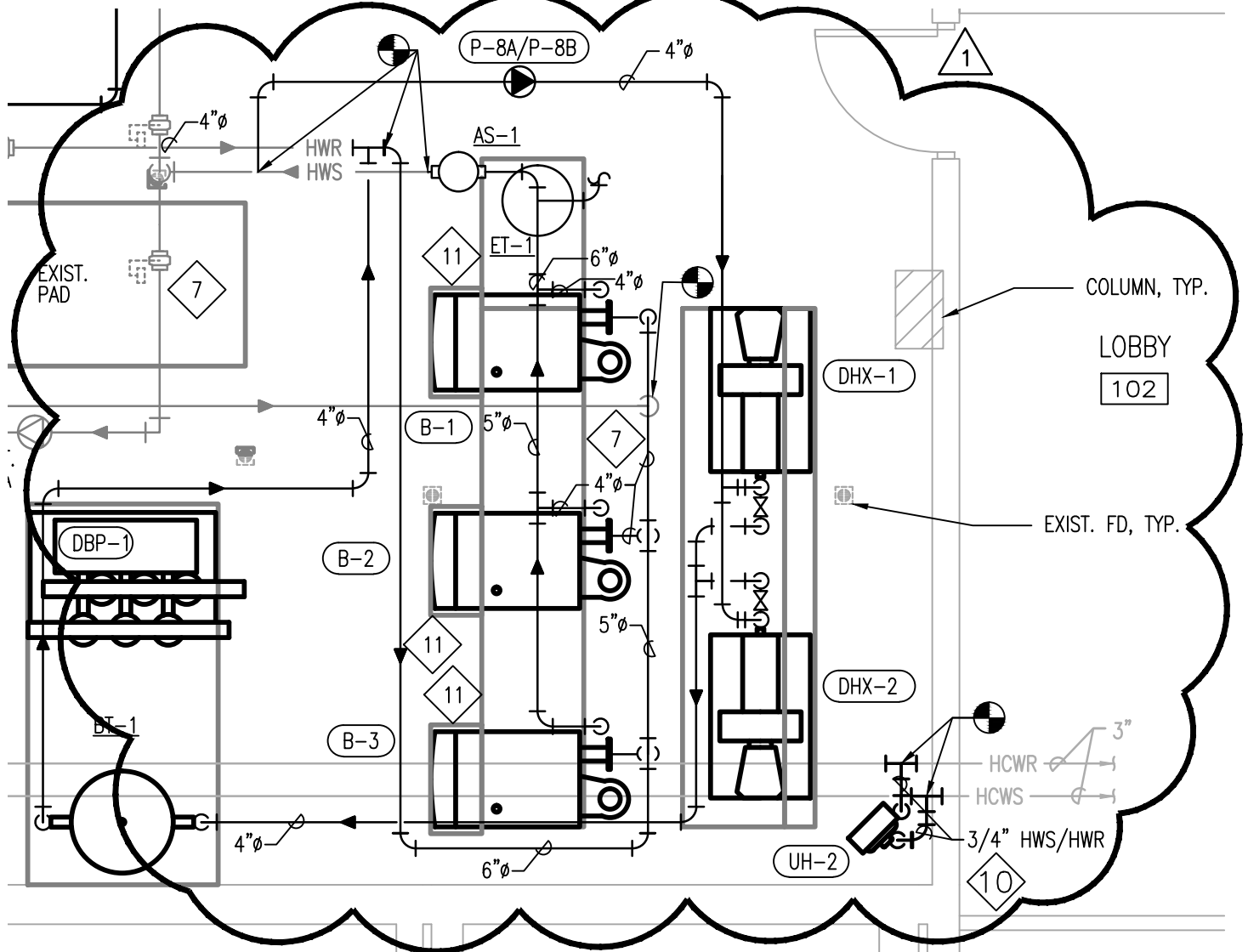
SHEET NO: SDM-01

SHEET TITLE: MECHANICAL ROOM - HVAC BOILER PIPING

REF: M1-01

### REFERENCED HVAC NOTES: (◇)

11. MAINTAIN MANUFACTURER AND CODE REQUIRED CLEARANCES AROUND BOILER. ROUTE CONDENSATE DRAIN FROM BOILER TO NEAREST EXISTING FLOOR DRAIN PER MANUFACTURER'S RECOMMENDATIONS.



1 MECHANICAL ROOM - HVAC PIPING PLAN

1/4" = 1' - 0"

NOT TO SCALE UNLESS OTHERWISE NOTED

**SUPPLEMENTAL DRAWING**

DATE: 02/05/2015    DRAWN: MAK    SCALE: NO SCALE    SHEET NO: SDM-02  
SHEET TITLE: SCHEDULING DETAILS    REF: M2-01

1

**GAS FIRED HOT WATER BOILER SCHEDULE**

MARK	LOCATION	TYPE	INPUT MBH (NAT GAS)	COMBUSTION EFFICIENCY (%)	WORKING PRESSURE (PSI)	TURN DOWN	WATERSIDE DATA				ELECTRICAL DATA				MANUFACTURER AND MODEL NUMBER	REMARKS
							GPM	EWT (°F)	LWT (°F)	MAX PD FT WAT	FLA	VOLT	PH	HZ		
B-1	MECHANICAL ROOM	HIGH EFFICIENCY CONDENSING	1500	94.6	160	20:1	200	150	180	3	16	120	1	60	AERCO BMK 1500	1, 2, 3, 4
B-2	MECHANICAL ROOM	HIGH EFFICIENCY CONDENSING	1500	94.6	160	20:1	200	150	180	3	16	120	1	60	AERCO BMK 1500	1, 2, 3, 4
B-3	MECHANICAL ROOM	HIGH EFFICIENCY CONDENSING	1500	94.6	160	20:1	200	150	180	3	16	120	1	60	AERCO BMK 1500	1, 2, 3, 4

1. PROVIDE BOILER VALVE CONTROLLER AND MOTORIZED VALVES.
2. PROVIDE 3 YEAR EXTENDED PARTS WARRANTY.
3. SEE AERCO BENCHMARK VENTING GUIDES FOR COMPLETE INSTALLATION INSTRUCTIONS.
4. PROVIDE AERCO CONTROL SYSTEM (ACS) FOR BOILER CONTROL, BOILER VALVE CONTROLLER, AND AERCO GATEWAY FOR INTEGRATION WITH EXISTING TRANE TRACER SUMMIT CONTROL SYSTEM INSTALLED IN 2011 WITH CHILLER AND SYSTEM PUMP REPLACEMENTS.

**PUMP SCHEDULE**

MARK	LOCATION	SERVES	TYPE	TOTAL FLOW GPM	HEAD FT WG	MIN % EFF	MOTOR DATA (TYPICAL OF 3 PUMPS)					MANUFACTURER AND MODEL NUMBER	REMARKS
							RPM	HP	VOLT	PH	HZ		
DBP-1, 2, 3	MECHANICAL ROOM	DOMESTIC WATER	VARIABLE SPEED TRIPLEX DOMESTIC WATER BOOSTER PUMP SYSTEM	250 (83 GPM EACH PUMP)	90	67	3600	3	208	3	60	TIGERFLOW SERIES ES-3000-V-VFD-NSF	---
P-7	MECHANICAL ROOM	DOMESTIC HOT WATER RECIRC	INLINE	20	10	40	1750	1/4	120	1	60	B&G SERIES 60 1 X 1 X 5 1/4	---
P-8A	MECHANICAL ROOM	HEATING WATER TO DHX	INLINE	164	46	60	1750	5	208	3	60	B&G SERIES 80 2 1/2 X 2 1/2 X 9 1/2 B	---
P-8B	MECHANICAL ROOM	HEATING WATER TO DHX	INLINE	164	46	60	1750	5	208	3	60	B&G SERIES 80 2 1/2 X 2 1/2 X 9 1/2 B	---

1. NOTES

**MISCELLANEOUS MECHANICAL EQUIPMENT SCHEDULE**

MARK	FUNCTION	SERVES	LOCATION	OPERATING CONDITIONS	CAPACITY AND MOTOR HP	MANUFACTURER AND MODEL NUMBER	REMARKS
AS-1	AIR SEPARATOR	HEATING WATER SYSTEM	MECH. ROOM	---	---	BELL & GOSSETT MODEL RL-6F	---
ET-1	EXPANSION TANK	HEATING WATER SYSTEM	MECH. ROOM	TEMP. RANGE = 50-180 FILL PRESSURE = 25 PSIG MAX. OPER. PRESS = 50 PSIG	110 GALLON ASME TANK	AMTROL EXTROL AX-200V	---
BT-1	BUFFER TANK	HEATING WATER SYSTEM	MECH. ROOM	---	210 GALLONS	AERCO	1

1. TANK CONSTRUCTION SHALL BE ASME SECTION VIII CERTIFIED.