



City Hall
208 North First Avenue
Alpena, Michigan 49707
www.alpena.mi.us

Engineering

**Waste Water Treatment Plant Boiler Replacement Project
Addendum #3**

March 13, 2017

This letter shall serve as Addendum #3 for the **Waste Water Treatment Plant Boiler Replacement Project**. Please record the receipt of this addendum on page 13 and 15 of the bid documents.

This addendum shall address the following:

1. The Contractor shall add the procurement and installation of an additional hot water unit heater. The unit heater shall be sized to deliver a minimum of 75,000 BTU/HR of heat to the waste water treatment plant control room area located directly above the existing boiler room. The unit shall be selected to operate with a minimum of 120 deg. F HWS temperature (See Sterling model HS-240, horizontal unit heater, 174,000 BTU/HR derated approximately 57% for 120 deg. F EWT, at 20.0 GPM (20 deg. F water temperature drop).
2. As noted at the pre-bid conference all equipment located in the Gas Room must be explosion proof. The existing fin-tube heating element may be converted to hot water. All piping should be pressure tested for water, and new valves, control valve, air vent, etc., should be included. An explosion proof electric heater may also be utilized.
3. The Contractor must upsize pump, P-103, to provide flow to the addition unit heater (described in Item #1 above) and if chosen converted fin-tube heat (as described in Item #2 above). Include an additional isolation valve and circuit setter. Size for a total flowrate of 26.0 GPM and approximately 20 feet of head. A 3-speed pump is recommended for flexibility. Base on Grundfos UPS 43-100.
4. The Contractor must add additional 2" piping to feed the new unit heater listed in Item #1 above, and the other new unit heater already scheduled. See UH-100. Each new piping branch must include a new HWS isolation ball valve, return side circuit setter, manual air vent, and flow switch must be included. See Unit Heater Piping Schematic, disregarding new flowrate and pipe sizes.
5. Subcontract electrical contractor to field wire and provide new circuit for the additional unit heater described in Item #1 above.
6. The new temperature control system shall include a stand-alone touch screen controller installed near the bottom of the stairs in the boiler room area. The new TCS shall control the new boilers and existing steam boiler. The existing steam boiler shall be controlled to operate by use of a programmable timer within the TCS that shall

allow the boiler to fire and burn waste methane when the methane pressure is adequate (utilizing an existing low pressure switch. If the low pressure switch is made, the boiler will fire, if not the new hot water boilers will begin to re-fire 5.0 minutes later (adj.)). When the steam boiler fires, a 5.0 minute (adj.) timed delay shall deenergize the new hot water boilers. At the end of the 5.0 minute (adj.) timed-out period, the new boilers shall be allowed to re-energize and modulate as needed to maintain the new system loop (comprised of sludge heat exchanger loop water, the sludge tank booster heater loop water, and the hydronic heating loop water.) This sequence will allow the waste methane to be used whenever available, but if the waste methane does not provide enough system heat, the new boiler will after 5.0 minutes (adj.) begin to supplement the steam heat. The new hot water boilers and steam boiler temperatures should be set to the same operating temperatures. Every 45 minutes, the system will enter methane burning steam heating mode. Control Solutions shall provide all necessary programming and materials for complete installation. Coordinate with Engineer.

7. See attached piping diagrams of the existing sludge heat exchanger loop and sludge tank booster heater loop. The piping diagrams may be used for guidance or reference for pricing. As noted at the pre-bid conference the Contractor may determine the most cost effective manner to pipe, pump, and control the operation of the new boiler systems. The schematics provided are based on a single system temperature (between 120 deg. F and 130 deg. F (adjustable)). They utilize consecutive tees to pipe to the sludge heat exchanger loop and the sludge tank booster heater loop. When the new boiler system operates, it will cycle water to the consecutive tees and if the existing system pumps are operating they will pull water out of the consecutive tees. The Contractor shall work with the engineer and the WWTP operators to develop a reasonable flowrate to each of the heating loops. See Supplemental Sheet M-SUP Attached as part of this document.
8. The Contractor shall remove the existing compression tank, and add a new expansion tank. Base new tank on Taco CBX-84, floor mount expansion tank, heavy duty butyl rubber, ASME Section VIII Div. 1. 125 PSIG (or equal). Ceiling mount expansion tanks may also be used. Pipe to new boiler system loop.
9. The Contractor may discuss design, piping, and equipment options with the engineer. It is the Contractor's prerogative to provide the most cost effective new boiler system meeting the Contractor's Scope, bidding documents, and addendums.

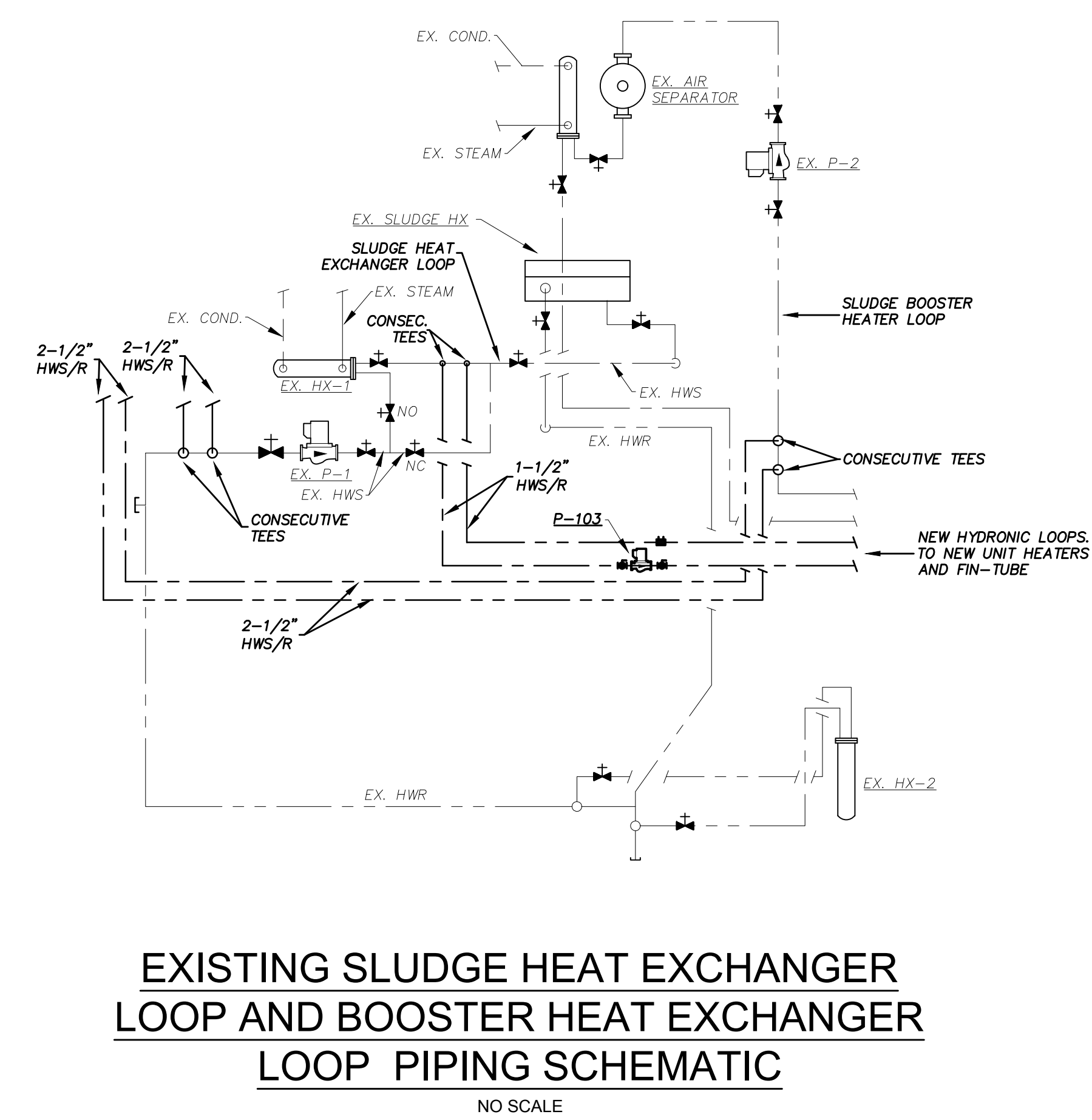
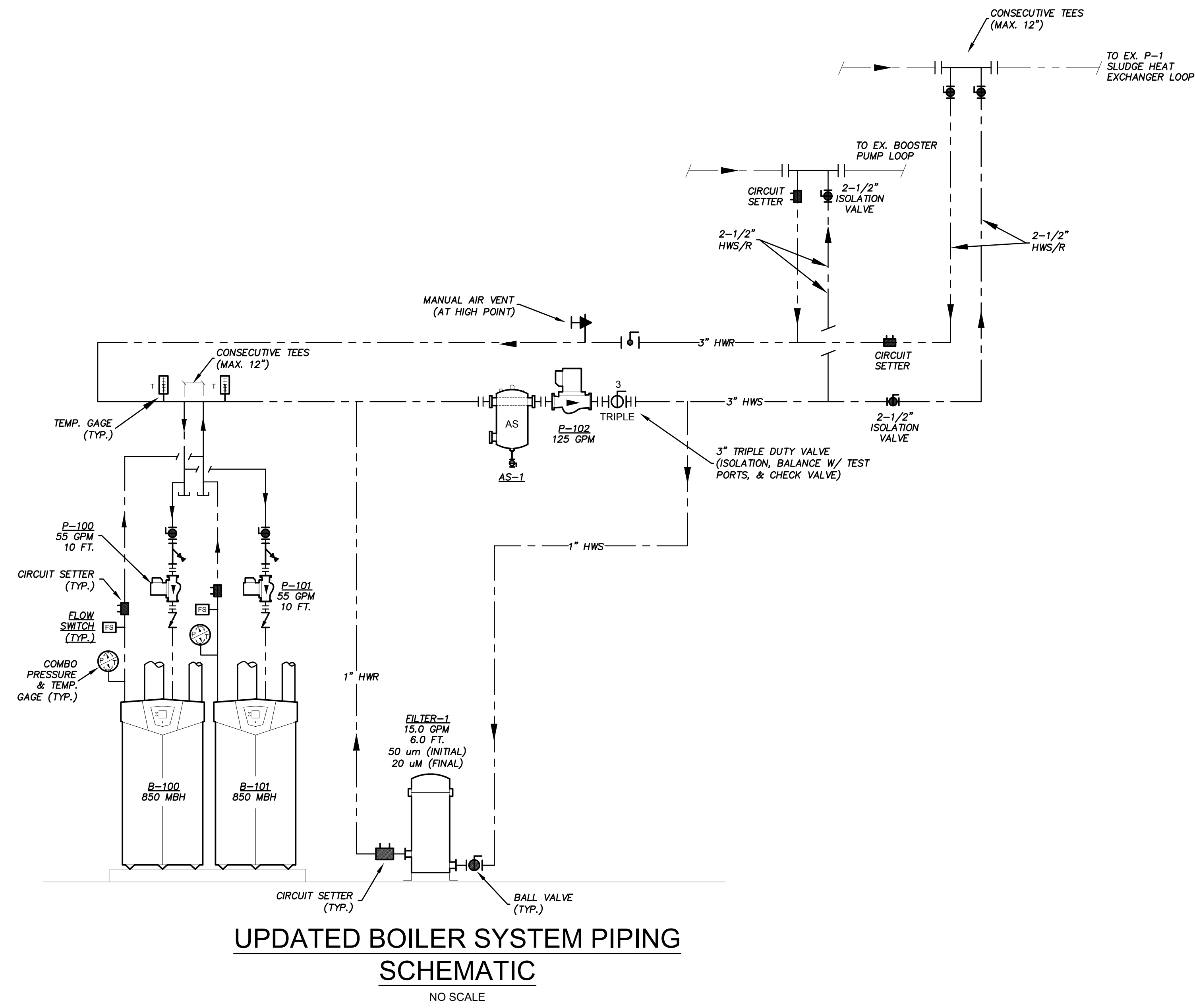
Any questions regarding this addendum should be directed to Mike Kieliszewski, Assistant Building Official, at (989) 354-1760 or by e-mail at mikek@alpena.mi.us.


Mike Kieliszewski, Assistant Building Official

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BY	MARK	REVISIONS	DATE
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<p>ALPENA WASTE WATER TREATMENT PLANT BOILER REPLACEMENT</p>			
<p>MECHANICAL SCHEDULES AND SPECIFICATIONS</p>			
		<p>SAGINAW OFFICE 230 S. Washington Ave. Saginaw, MI 48607 Tel. 989-754-4717 Fax. 989-754-4440 www.SpicerGroup.com</p>	
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DATE March 13, 2017	FILE NO. E-1124-3	SUP.	
SCALE 1/4" = 1'-0"			