

KETCHIKAN GATEWAY BOROUGH SCHOOL DISTRICT
AGENDA STATEMENT

No. 10 b

MEETING OF May 13, 2020

Reviewed By

Item Title:

NEW BUSINESS

Motion to approve a sole source contract with
PDC Engineers for engineering & design services

Superintendent
 Finance
 Maintenance

SUBMITTED BY Al Jacobson, Facilities & Maintenance Director

Contact Person/Telephone

APPROVED FOR SUBMITTAL

Katie Jo Parrott
Name

247-2116
Phone

SUMMARY STATEMENT:

Administration is seeking approval of a sole source contract with PDC Engineers for mechanical and electrical engineering and design services related to the Ketchikan High School Boiler repair and replacement project.

ISSUE: Board Policy governs the district's purchasing and contracting procedures. Board Policy requires Board approval for expenditures over \$25,000. Though this request is technically under \$25,000, because it is part of a larger capital improvement project, and because of the occasional cost overrun in capital projects that calls for a contingency amount that would put this contract over the \$25,000 threshold, the Board is being asked to provide approval. Additionally, owing to the urgent nature of the need for this project, the district is pursuing engineering and design services with PDC Engineers under a sole source contract and desires to be transparent with the Board and the public.

BACKGROUND: Ketchikan High School has three Weil-McLain 94 series oil-fired cast-iron sectional boilers that provide heat for the facility. These boilers are 25 years old, with a typical service life of 30-40 years. However, they have experienced deficiencies with cracks and leaking over the last several years, and have been repaired and parts replaced many times. Both Boiler #1 & #2 have now experienced failures, and need to be replaced. Boiler #2 replacement planning was already in process, but engineering and design services to include a Boiler #1 is being recommended. PDC Engineers are already familiar with the Kayhi boiler system and have provided support to the district in the past. Because of the urgent need to move forward with a replacement of at least Boiler #2, this work needs to be completed as soon as possible, with consideration for the longer term plan to also replace Boiler #1.

RECOMMENDATION:

Approval of the sole source contract with PDC Engineers.

FISCAL NOTE

EXPENDITURE	AMOUNT
REQUIRED <u>\$24,757</u>	AVAILABLE <u>\$25,000</u>

EXHIBITS ATTACHED

- Maintenance Director's Request & Justification
- PDC Engineers Fee Proposal and Technical Memorandum

RECOMMENDED ACTION:

"I move that the Board of Education approve the sole source contract agreement renewal with PDC Engineers for engineering and design services for the Kayhi Boiler repair and replacement project, in the amount of \$24,757 and allowing for a 5% contingency."

Sole Source Justification

Name: _____

Date: _____

Supervisor: _____

Dept./School: _____

Vendor: _____

Amount: _____

Item(s) description:

Reason for Sole Source request:

Item(s) is only manufactured by the listed vendor.

Item(s) is only shipped to AK by the listed vendor.

Item(s) must match existing material(s), which is:

Item(s) is a repair/replacement for existing material(s), which is:

Other reasons, specify below:

Continue on next page if needed.



April 28, 2020

Al Jacobson
 PKGBSD Maintenance Director
 333 Schoenbar Rd.
 Ketchikan, Alaska 99901

SUBJECT: PDC Fee Proposal for Ketchikan High School Boilers Replacement Design

Dear Mr. Jacobson:

As requested, we are providing a fee proposal for the mechanical and electrical engineering design required for bid ready documents of the replacement of 2 boilers at the Ketchikan High School.

Scope of Services includes review existing conditions, site trip, and preparation of mechanical and electrical bid-ready documents. One site trip by the mechanical engineer will be necessary to as-built boiler room conditions. Design will include the replacement of Boiler #1 and #2 with four smaller boilers. The dual oil supply pumps will also be relocated to accommodate the new boilers.

We can provide the design services for a fixed fee of \$24,787. See summary below and attached fee schedules for a breakdown. We understand that you need this bid ready package as soon as possible for possible summer construction work and can accomplish that for you.

PDC Summary Sheet

#	PHASE	MECH	ELECT	PDC Reimb. Markup	Total
35	Construction Documents	\$ 19,000	\$ 5,290		\$ 24,290
	Reimbursable	\$ 497	\$ -	\$ -	\$ 497
	Phase Total	\$ 19,497	\$ 5,290	\$ -	\$ 24,787
Subtotal		\$ 19,497	\$ 5,290	\$ -	\$ 24,787

The fee and services are based on our understanding of the project and the following assumptions and exceptions: **Bidding and Construction Services are not included.**

Thank you for this opportunity; we look forward to beginning this work. Please call if you have any questions or comments.

Sincerely,

Doug Murray, PE
 Principal, PDC Engineers
 Attached: Fee Schedules



MECHANICAL ENGINEERING

#	TASK	Principal Mechanical Engineer	Senior Mechanical Engineer	Staff Mechanical Engineer	Lead Engineering Technician	Billing Rate (\$/hr)				
						\$250.00	\$180.00	\$130.00	\$110.00	
35	Construction Documents								Hourly Subtotal	Subtotal Cost
	Set Up Project; File, Drawings, CAD Existing	1	1	1	8				11	\$ 1,440
	Review/Update Calculations, Equipment		1	3					4	\$ 570
	Mechanical Design - Boilers		6	36	32				74	\$ 9,280
	Mechanical Design - Oil Supply Pumps		2	6					8	\$ 1,140
	Site Trip			10					10	\$ 1,300
	Specifications; 8 Sections		8	2					10	\$ 1,700
	Project Coordination		2	4					6	\$ 880
	QC	3	1	1	1				6	\$ 1,170
	95% and 100% Submittals		2	2	3				7	\$ 950
	Respond to Comments		1	3					4	\$ 570
	Hourly Subtotal		4	24	68	44				140
Cost		\$ 1,000	\$ 4,320	\$ 8,840	\$ 4,840					\$ 19,000
Discipline Totals		4	24	68	44				140	
Design Services		\$ 1,000	\$ 4,320	\$ 8,840	\$ 4,840					\$ 19,000

4/28/2020

ELECTRICAL ENGINEERING

#	TASK	Senior Electrical Engineer	Project Electrical Engineer	Electrical EIT	Staff Engineering Technician	Billing Rate (\$/hr)	\$200.00	\$160.00	\$105.00	\$110.00	Hourly Subtotal	Subtotal Cost
35	Construction Documents											
	Set Up Project; File, Drawings, CAD Existing		2		2						4	\$ 540
	Review Project Material		2								2	\$ 320
	Electrical Design - Burners, Oil Pumps		10		6						16	\$ 2,260
	Site Trip (None)		0								0	\$ -
	Specifications; 5 Sections		3								3	\$ 480
	Project Coordination		2								2	\$ 320
	QC	2	1		1						4	\$ 670
	95% and 100% Submittals		2		2						4	\$ 540
	Respond to Comments		1								1	\$ 160
	Hourly Subtotal		23	0	11						36	
	Cost	\$ 400	\$ 3,680	\$ -	\$ 1,210							\$ 5,290
	Discipline Totals		23	0	11						36	
	Design Services	\$ 400	\$ 3,680	\$ -	\$ 1,210							\$ 5,290

REIMBURSABLE EXPENSES

#

35 Construction Documents

Mechanical

Electrical

Total

Item	unit	unit cost	#	subtotal	#	subtotal	Total
Copies/Prints/Scans (Letter)	ea	\$ 0.10		\$ -		\$ -	\$ -
Copies/Prints/Scans (11x17)	ea	\$ 0.20		\$ -		\$ -	\$ -
Copies/Prints/Scans (Full Size Drawing)	ea	\$ 1.00		\$ -		\$ -	\$ -
Teleconference Costing	hr/line	\$ 3.00		\$ -		\$ -	\$ -
Airfare	ea	\$ 320.00	1	\$ 320		\$ -	\$ 320
Rentals	day	\$ 100.00	1	\$ 100		\$ -	\$ 100
Survey GPS Rental	day	\$ 309.00		\$ -		\$ -	\$ -
Shipping	ea	\$ 25.00		\$ -		\$ -	\$ -
Parking	day	\$ 14.00	1	\$ 14		\$ -	\$ 14
Hotel	day	\$ -		\$ -		\$ -	\$ -
Per Diem	man day	\$ 125.00	1	\$ 63		\$ -	\$ 63
Subtotal				\$ 497		\$ -	\$ 497

For additional efficiencies recommended considering or doing further investigation on

- Installation of an automatic valve on the heating return with bypass to isolate the boiler during off operation. With the proposed boiler piping arrangement the bypass should not be needed with the three-way valve and spring check closing the system off.
- Installation of an automatic stack control damper in each boiler combustion to isolate the boiler and prevent stack gases from other boilers infiltrating the off boiler. Control sequence will need to open stack damper fully with verification prior to igniting the burner. Manufacturer representatives recommending this addition for better efficiency.
- Installation of a barometric draft damper is being investigated; calculations have been requested from the manufacturer. Smaller boilers operating with the larger ones may require a draft damper in order for the smaller boilers to operate properly. Calculations are needed for determination.

Boiler Replacement Cost Opinion

A rough order of magnitude of cost for the removal of one WM 94 boiler and the installation of two WM 888 boilers is included in Attachment E.

End of Report



Project:	KGBSD Boiler Replacment
Project #:	20027JN
Title:	Heating Model
Engineer	SJB
Phase:	SD

Heating Model

Peak Loads	Input (GAL)	Factor (HF#2)	Net Total (kBTU)
Annual Energy Usage (5YR AVG)	120,000	139.6	13,401,600

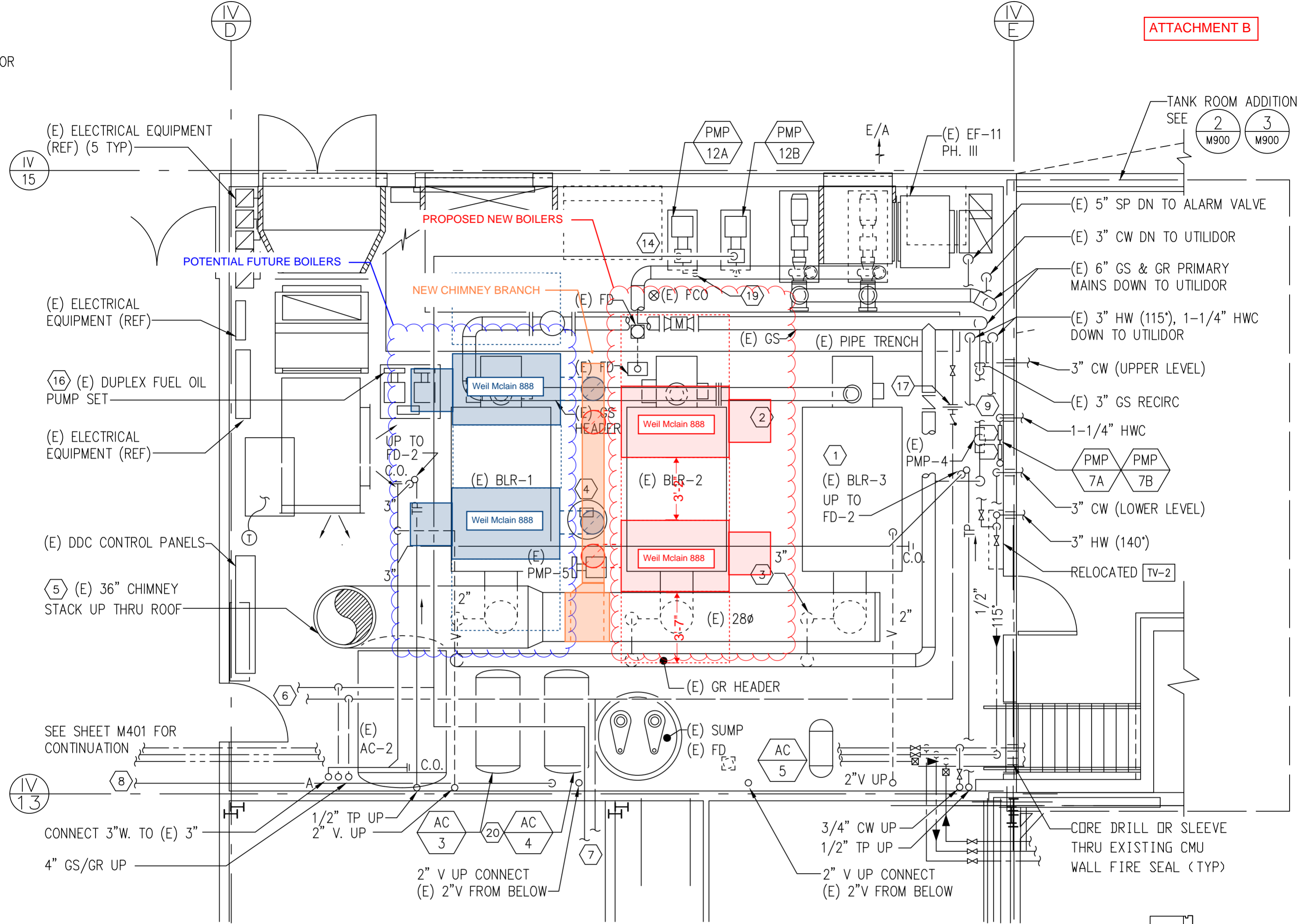
KETCHIKAN WEATHER DATA

SUMMER TEMPERATURE	72
WINTER TEMPERATURE	19
MAAT	45.5
HEATING DEGREE TEMP	65
COLDEST DAY	15

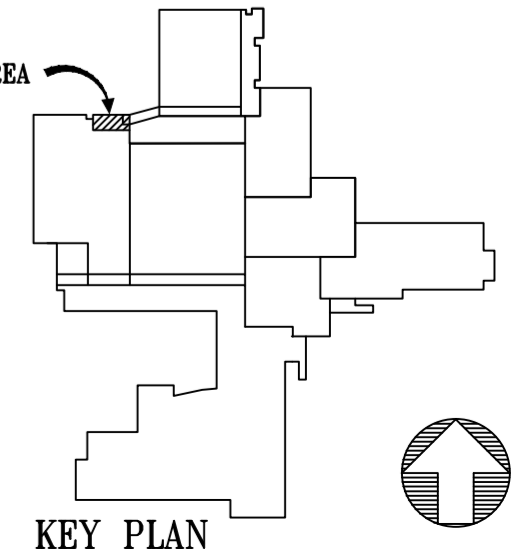
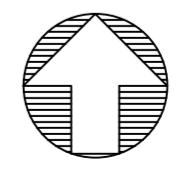
ENVIRONMENT				HEATING*				
MONTH	DAYS	AVG DESIGN TEMP	HEATING DEGREES	AVG NET LOADS (MBH)	BOILERS (988)	BOILERS (888)	BOILERS (788)	TOTAL (kBTU)
JANUARY	31	19.9	45.1	3,367.26	1.80	2.00	2.30	2,505,241
FEBRUARY	28	20.0	45.0	3,358.29	1.70	2.00	2.30	2,256,773
MARCH	31	26.2	38.8	2,892.62	1.50	1.70	2.00	2,152,112
APRIL	30	38.2	26.8	2,002.43	1.10	1.20	1.40	1,441,751
MAY	31	51.7	13.3	993.23	0.60	0.60	0.70	738,962
JUNE	30	63.9	1.1	79.75	0.10	0.10	0.10	57,417
JULY	31	70.9	0.0	-	-	-	-	-
AUGUST	31	71.2	0.0	-	-	-	-	-
SEPTEMBER	30	64.3	0.7	51.06	0.10	0.10	0.10	36,764
OCTOBER	31	52.7	12.3	921.28	0.50	0.60	0.70	685,433
NOVEMBER	30	38.7	26.3	1,963.57	1.00	1.20	1.40	1,413,772
DECEMBER	31	26.9	38.1	2,840.56	1.50	1.70	2.00	2,113,376
Totals:	365							13,401,600

* Number of boilers indicated shows how many are required to meet that months heating load. The WM 94 boilers would be utilized as backup.

OR

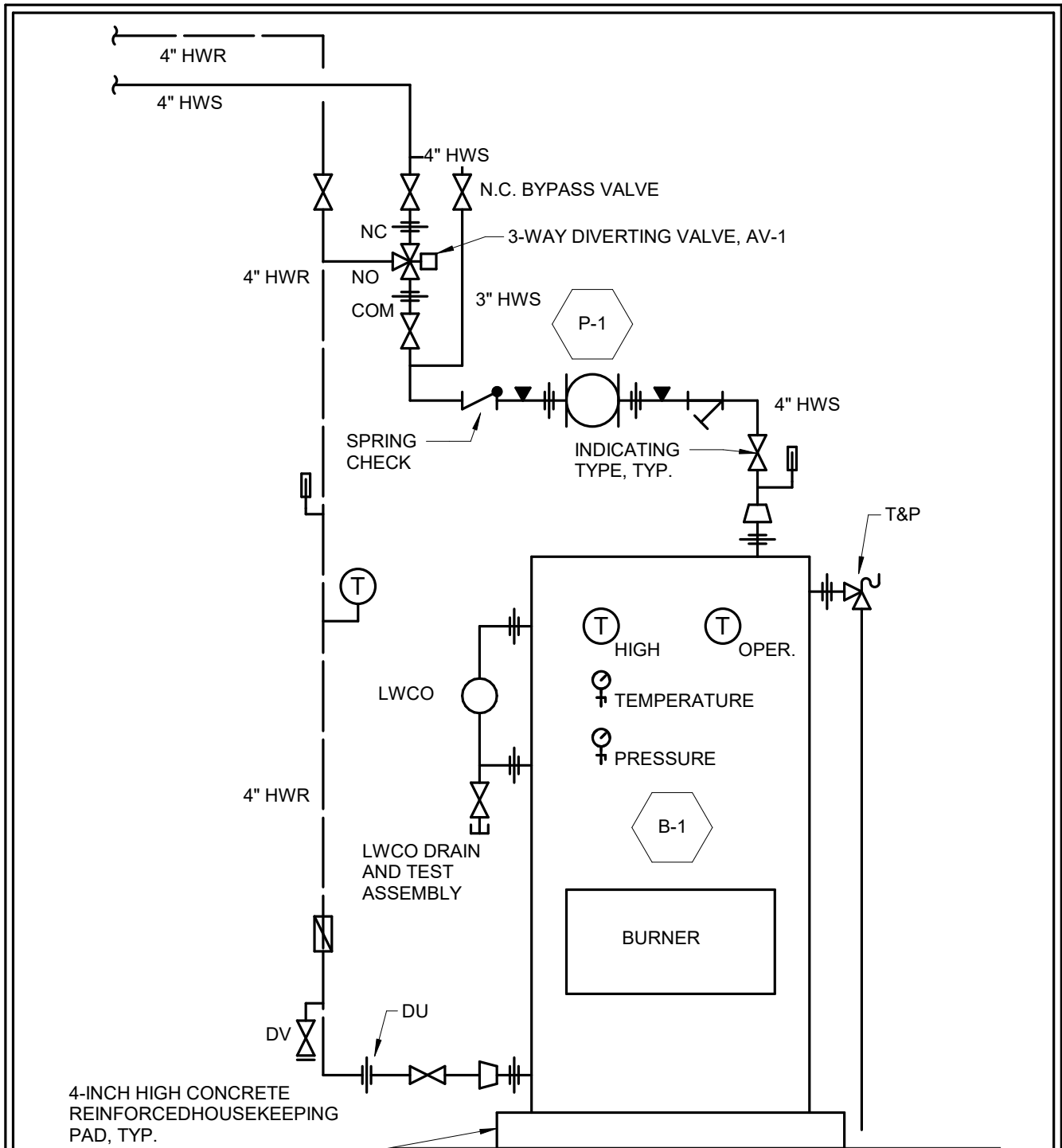


1 FLOOR PLAN - EXISTING BOILER ROOM
 M800 SCALE: 1/4" = 1'-0"



KEY PLAN

IV
14



1
M1.1

HEATING PLANT BOILER PIPING DIAGRAM

SCALE: NO SCALE

**Ketchikan Gateway Borough School District
High School Boiler Replacement
Ketchikan, Alaska**

March 10, 2020

ATTACHMENT E

Preliminary Cost Estimate

Cost Element	Quantity	Rate	Subtotal	Total
01 Architectural Work				
011 Modify Concrete pad for New Boilers	1 ls	\$1,500 ls	\$1,500	
	Total			\$1,500
02 Mechanical Equipment				
021 Demo Ex Boiler #2, Piping, Trim, Breeching	1 ls	\$5,000 ls	\$5,000	
022 Boiler - Material Cost Only WM BL-888-W with Becket Burner CF-2500	2 ls	\$32,000 ls	\$64,000	
023 Install Boiler - Labor Only	2 ls	\$8,000 ls	\$16,000	
024 Install HS/HR Piping, Valves, 4-inch sizes	2 ls	\$11,000 ls	\$22,000	
025 Install Oil Piping	2 ls	\$1,500 ls	\$3,000	
026 Install Breeching; Common plus indiv chimney connections	2 ls	\$4,500 ls	\$9,000	
026B Install Breeching Damper	2 ls	\$1,500 ls	\$3,000	
027 Misc Trim, Gages, Equip, Auto Valve 4"	2 ls	\$4,000 ls	\$8,000	
028 Insulate HS/HR Piping	2 ls	\$6,000 ls	\$12,000	
029 Testing, Start-Up, Boilers	1 ls	\$7,000 ls	\$7,000	
030 DDC Controls; 6 pts per boiler plus engineering	2 ls	\$8,000 ls	\$16,000	
	Total			\$165,000
05 Electrical				
051 Demo Burner, Auto valve	1 ea	\$1,250 ea	\$1,250	
052 Burner power plus safties (3)	2 ea	\$2,500 ea	\$5,000	
053 Controls Rough-in	2 ea	\$1,500 ea	\$3,000	
	Total			\$9,250
12 General Requirements				
121 Mobilization/Demobilization	1 ls	\$3,000 ls	\$3,000	
122 Freight Costs	1 ls	\$3,000 ls	\$3,000	
123 Operation Costs, Submittals, O&M, Training	1 ls	\$2,500 ls	\$2,500	
124 Profit & Overhead		30%	\$55,275	
	Total			\$63,775
13 Contingencies				
131 Estimating Contingency		15%	\$35,929	
132 Escalation to 2020		0%	\$0	
	Total			\$35,929
TOTAL ESTIMATED CONSTRUCTION COST:				\$275,454
Note: Cost does not include design services or construction administration				
14 Design and Administration				
141 Design (Mechanical and Electrical)		ls	\$18,000	
142 Bidding & Construction Administration (Mechanical and Electrical)		ls	\$0 NI, By Owner	
Total Project Cost				\$293,454