

**Garfield School District Re-2  
 2017-18 Supplemental Budget  
 General Fund and Capital Projects Fund  
 4/10/18 Board Meeting**

REVENUES (CR):

TOTAL REVENUES & CREDITS \$ -

EXPENDITURES (DR):

Move Modularity for Classroom Space	8-43-141/171-40-4000-0723-000-0000	210,000
Heat Exchanger, Riverside	8-43-282-40-4000-0723-000-0000	36,500
Facility Master Plan	8-43-691-26-2600-0300-000-0000	70,000
Savings, Insurance Claims	8-10-800-28-2850-0800-000-0000	(26,500)
Savings, Insurance rates/dividend	8-10-800-28-2850-0526-000-0000	(35,000)
Transportation estimated savings	8-10-720-27-2740-0610-000-0000	(35,000)
BOCES anticipated savings due to fewer students	8-10-300-19-0030-0591-000-0000	(117,664)
Savings anticipated, legal fees	8-10-691-23-2315-0331-000-0000	(10,000)
Savings - no out-of-district students this year	8-10-300-19-1800-0569-000-0000	(50,000)
Post-secondary, additional student usage	8-10-300-19-0050-0569-000-0000	20,000
Unfilled teacher positions	8-10-100-11-0010-0110-201-0000	(62,336)
Transfer to Capital Projects	8-10-000-00-0000-5243-000-0000	(316,500)
Transfer to Capital Projects	8-43-000-00-0000-5210-000-0000	316,500

TOTAL EXPENDITURES & DEBITS \$ -

**APPROPRIATION RESOLUTION**

BE IT RESOLVED by the Board of Education of Garfield School District No.Re-2 in Garfield County that the above amounts be added to the 2017-18 Budget for Garfield Re-2. The Use of Fund Balance will remain the same for all funds.

  
 Date of Adoption

4/10/18  
 Signature of President of the Board

<b>Garfield School District No. Re-2</b>				
<b>Capital Projects Update/Projection</b>				
<b>2017-18 Projection</b>				
<b>Dated 4/10/18</b>				
<b>2017-18 Projection By Project, Dated 4/4/18</b>	<b>Budget</b>	<b>YTD Actual</b>	<b>Est. Actual</b>	<b>Over/Under Budget</b>
Blythe Fee, HES and CVE	\$353,008	\$14,936.71	\$353,008.00	\$0.00
HES Marquee	\$15,000	\$9,400.00	\$9,400.00	\$5,600.00
Wamsley Playground/reconfiguration/fence	\$50,000	\$51,329.80	\$51,329.80	-\$1,329.80
Wamsley Parking Lot	\$193,845	\$191,811.15	\$191,811.15	\$2,033.85
Graham Mesa Heat Exchanger	\$25,000	\$16,549.00	\$16,549.00	\$8,451.00
Cactus Valley repaint commons	\$10,000	\$9,745.00	\$9,745.00	\$255.00
Kathryn Senior Elementary Marquee	\$15,000	\$9,400.00	\$9,400.00	\$5,600.00
Kathryn Senior replace pK equipment	\$35,000	\$35,954.00	\$35,954.00	-\$954.00
Elk Creek replace fencing pK	\$5,500	\$2,540.00	\$2,540.00	\$2,960.00
Elk Creek Install sidewalk to basketball court	\$5,000	\$4,158.00	\$4,158.00	\$842.00
Elk Creek Install additional playground swings	\$5,000	\$7,000.00	\$7,000.00	-\$2,000.00
Elk Creek parking lot work	\$154,212	\$152,608.20	\$152,608.20	\$1,603.80
Rifle Middle School 3 modulares	\$41,202	\$41,202.84	\$41,202.84	-\$0.84
Science Rooms budget	\$79,500	\$5,400.00	\$79,500.00	\$0.00
Rifle Middle School Carpet installation and asbestos	\$51,217	\$51,191.00	\$51,191.00	\$26.00
Construct shade structure on north side	\$57,000	\$39,794.02	\$39,794.02	\$17,205.98
RMS replace scoreboards in main gym	\$7,000	\$6,800.00	\$6,800.00	\$200.00
Riverside Modular lease	\$10,740	\$10,740.00	\$10,740.00	\$0.00
Riverside Marquee	\$35,000	\$20,430.00	\$20,430.00	\$14,570.00
RHS replace sound system in main gym	\$22,000	\$21,580.95	\$21,580.95	\$419.05
RHS Curtains replaced	\$20,000	\$19,110.89	\$19,110.89	\$889.11
RHS OCR requirements (Bathrooms/ADA)	\$77,500	\$1,912.50	\$77,500.00	\$0.00
CRHS provide water and sewer to the current press box	\$20,000	\$16,200.00	\$16,200.00	\$3,800.00
Technology	\$60,000	\$51,225.21	\$51,225.21	\$8,774.79
Support Services delivery vehicle	\$28,000	\$28,000.00	\$28,000.00	\$0.00
Architect fees, vocational school	\$246,059	\$0.00	\$246,059.00	\$0.00
Replace main AHU unit in district office for security of tech	\$17,573	\$17,573.38	\$17,573.38	-\$0.38
Transportation bus for replace unit #12	\$110,000	\$0.00	\$110,000.00	\$0.00
Transportation small bus replace unit #25	\$70,840	\$0.00	\$70,840.00	\$0.00
Nutritional Services Steamer	\$15,000	\$0.00	\$15,800.00	-\$800.00
<b>PROJECTION 2017-18 Currently Budgeted Items</b>	<b>\$1,835,196</b>	<b>\$836,592.65</b>	<b>\$1,767,050.44</b>	<b>\$68,145.56</b>
<b>Plus: 4/10 Supplemental Budget items:</b>				
Move Modulares for Classroom Space	\$210,000.00	\$0.00	\$210,000.00	\$0.00
Heat Exchanger	\$36,500.00	\$0.00	\$36,500.00	\$0.00
Facility Master Plan	\$70,000.00	\$0.00	\$70,000.00	\$0.00
<b>TOTAL PROJECTION including 4/10 Supplemental Bud.</b>	<b>\$2,151,696.00</b>	<b>\$836,592.65</b>	<b>\$2,083,550.44</b>	<b>\$68,145.56</b>

**April 2, 2018**

**Re: Riverside Heat Exchanger on Boiler**

**Following you will find the comparisons of replacement of boiler vs. heat exchanger replacement.**

- **Boiler Replacement \$60,000.00**
- **Heat Exchanger Replacement \$36,491.00**

**My recommendation is to go with the heat exchanger replacement. Documentation is attached.**

**John Oldham**

Taft Engineering, Inc  
 12650 E Briarwood Ave Suite 203  
 Centennial CO 80112  
 (303) 753-4584



# Taft ENGINEERING

## Service Quote

Date	Estimate #
3/13/2018	4798

Manufacturers' Representative for  
 High Efficiency HVAC & Plumbing Products

Bill To	Property Location
Garfield County School District 215 E 30th Street Rifle, CO 81650	Garfield County School District Riverside Middle School 215 Alder Ave New Castle, CO 81647

Requested By	Quoted By	Terms
Mark Doty/John Oldham	Tom	Net 30

Item	Description	Total
27078 Field Service	3 0LN Primary HX Kit - 439 SS Includes insulation Kit, Upgraded ignitor and freight to jobsite Labor to remove failed heat exchanger on BMK3 0LN boiler and install replacement. Startup and commissioning of the boiler after installation of the new heat exchanger.	31,942.00 <del>5,970.00</del> 24,549

*Replaced*  
 ↓  
 \$36,491  
 \$97,912.00

Quote valid for 30 days Net plus tax. Freight not included Expedited shipping at addn'l cost.

**Total**

\$97,912.00

www.taft-engineering.com

Accepted By: \_\_\_\_\_



**PROJECT PROPOSAL for**

By and For:

**American Mechanical Services of Denver, LLC**  
770 Lindbergh Dr Unit 501 / PO Box 1649

Gypsum CO 81637  
Phone: 1-877-637-7397  
Fax: 970-328-5227  
POC: Eric Moberg 970-328-8012  
(AMS)

And **Garfield School District**  
Riverside Middle School  
215 Alder Ave  
New Castle, CO 81647

Phone: (970) 665-6800  
Fax: (970)  
ATTN: Mark Doty  
(The Client)

**PRICING IS BASED ON THE FOLLOWING SCOPE OF WORK AND ATTACHMENTS:**

American Mechanical Services of Denver will provide Project Services at: Riverside Middle School New Castle, Colorado.

The Project will provide materials to accomplish the work described in Scope of Work, all for the sum of Four Thousand Five Hundred Forty Nine Dollars and 00/100 cents (\$4,549.00).

This price is in effect for a period of thirty (30) days after the proposal date due to the volatility of the materials markets and can be extended beyond this period only at the option of AMS.

This work shall be provided in accordance with the terms and conditions contained herein including those on pages 2 and 3, and the scope as detailed on page 4. This Agreement shall constitute the entire agreement between us.

**Point of Contact at American Mechanical Services for this project:**

Eric Moberg- emoberg@amsfususa.com

***\*\*NOTE: In order to execute approval of this project, please fax one (1) signed copy of this proposal to your point of contact listed above.***

For AMS:

**American Mechanical Services of Denver**

**Approved For The Client:**

By: Eric Moberg

By: \_\_\_\_\_

Title: Service Manager

Title: \_\_\_\_\_

Date: 3/13/2017

Date: \_\_\_\_\_

# Winsupply

OF GRAND JUNCTION

BOX 2045  
 540 W GUNNISON  
 GRAND JUNCTION, CO 81502  
 PHONE (970) 243-6490  
 FAX (970) 243-6572

Job Name
PK PARTS

Quote No.	Date	Page
0017999	3/12/18	1
Expiration Date		4/11/18
Revised Date		3/12/18
Bid Due Date		3/12/18

Quoted To Customer
MONUMENT MECHANICAL SVC 2108 HODESHA WAY GRAND JUNCTION, CO 81507-1051
Phone (970) 778-0113 Fax

Quoted By
Curtis Young cyoung@winnelson.com (970) 243-6490

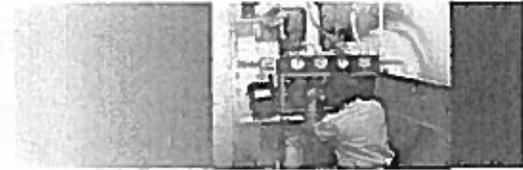
Customer	Payment Terms	Quoted To	Salesperson	FOB
001349	24 10TH PROX NET 30 DAYS	Paul Ochsner	CURTIS YOUNG	S

Line	Qty.	Description	Unit Price	UOM	Extended Price
1.0	1	SP-00000-374 PATTERSON KELLY ENVI CONTROL	1050.0000		<del>1050.00</del>
2.0	1	10-G3300-767 PTRSN KELLY UV SCANNER	255.0000		<del>255.00</del>
4.0	1	ARTIC 3MILL FLR MT CHDNDNG BOILER W/BACNET	39775.0000		39775.00
		FREIGHT IS SEPERATE-EST \$1000			
		SUBTOTAL			41080.00

Tax Area Id	Net Sales	41,080.00
	Freight	.00
	Tax	.00
	Quotation Total	41,080.00

39,775.00  
 + 1.12  
 40,220.48

~~5400~~  
 - have put in -  
 + pipins ?  
 = At least  
 \$60,000



TERMS AND CONDITIONS

1. Parties and Scope of Work – American Mechanical Services ("AMS" or the "Company") shall include the AMS company performing the work. "Customer" refers to the person or business entity ordering the work to be done by AMS. If Customer is acting on behalf of another, Customer represents and warrants that it is the duly authorized agent of said party. "Work" or "Covered Equipment" means the specific service to be performed by AMS as set forth in AMS' proposal, Customer's acceptance thereof and these terms & conditions ("T&C") (collectively, the "Agreement"). Additional work ordered by Customer shall also be subject to these T&C. Customer assumes sole responsibility for determining whether the quantity and the nature of the Work are adequate and sufficient for Customer's intended purpose. Customer shall communicate these T&C to each third party to whom Customer transmits any part of AMS' Work. The ordering of work from AMS, or the reliance on any of AMS' Work, shall constitute acceptance of the terms of AMS' proposal and these T&C, regardless of the terms of any subsequently issued document.

2. Access -All scheduled maintenance or other service provided under this Agreement shall be performed during the Company's normal working hours. Customer shall provide reasonable means of access to all Covered Equipment as necessary, including but not limited to appropriate building areas and/or utility or elevator services. Customer shall keep areas adjacent to the Covered Equipment free and clear of any obstructions that may impede performance of the Work contemplated herein. Any failure to provide such access may result in additional charges if a return call is required to perform the Work.

3. Operation of Equipment / Work By Others – Customer agrees that Customer shall (a) operate the Covered Equipment according to the manufacturer's recommendations, (b) keep accurate logs and information on the Covered Equipment, (c) ensure that all operators of the Covered Equipment are adequately trained, and (d) allow AMS to start and stop or temporarily suspend operation of the Covered Equipment so that AMS can perform the Services. Any subsequent work performed by another shall void any warranty and/or indemnity, if any, provided by AMS. With regard to maintenance work, (a) Customer agrees to have the Company perform all work on the Covered Equipment, (b) this Agreement is immediately terminable by the Company should the equipment be modified, moved or worked upon by anyone other than the Company, and (c) AMS shall have no liability for work performed by another on any Covered Equipment or equipment otherwise worked on or installed by AMS.

4. Maintainability – This Agreement assumes the Covered Equipment to be in maintainable condition. With regard to maintenance work, should repairs or replacements be found necessary upon initial inspection or initial seasonal start-up, repair and/or replacement charges will be submitted to the Customer for approval.

5. Exclusion - Non-Maintainable Components / Misuse of Equipment – Unless expressly included in the Work, equipment replacement and/or repair or replacement of non-maintainable components of the system(s) is not included. This exclusion applies to such items as refrigerant, boiler shell and tubes, ductwork, piping, cabinets, drains, electrical wiring (other than between equipment and its starter), electrical disconnect switches, coils, surfaces exposed to air and water as part of its function, cabinets, refractory materials, piping or tubing, gas lines, domestic water lines, structural supports, and damages resulting from freezing weather, corrosion, electrolysis, and/or drain stoppage, etc. Asbestos removal or related-work is also

excluded. AMS has the sole option of eliminating from this Agreement any piece of equipment that it finds to be economically unsound for further servicing or repairs. Unless expressly included in the Work, this Agreement also does not provide for service, repairs or replacements required because of operation, negligence or misuse of the systems or equipment by others, or by reason of any other cause beyond the Company's control, other than ordinary wear and tear. Unless expressly included in the Work, Company shall have no obligation to dispose of waste oil, refrigerants or other materials associated with the Covered Equipment or generated in the performance of this Agreement. Further, unless expressly included in the Work, any other obligation, work or service is excluded, including but not limited to the cost of temporary heating or cooling.

6. Original Design, Condition or Installation of Equipment or System – The Company shall not be responsible for the system's original or pre-existing design or installation (including air and/or water balance) or for its performance in maintaining design conditions other than through the failure of Covered Equipment. AMS shall also not be responsible for any damages resulting in whole or in part from any preexisting condition in the system. Unless expressly included in the Work, AMS is not assessing or making recommendations regarding Customer's entire HVAC or other mechanical systems.

7. Payment – The Customer will promptly pay invoices within ten (10) days of receipt. Should a payment become thirty (30) days or more delinquent, the Company may stop all work under this Agreement without notice. A finance charge will be added to past due accounts at the rate of one and one-half percent (1½%) per month, or at the highest legal rate, whichever is less. Failure to make payment when due or impairment of Customer's credit shall relieve AMS of the obligation of further performance of this Agreement.

~~8. Warranty – The Company warrants its services to be free from defects in workmanship and materials for a period of thirty (30) days from delivery of such services. AMS' sole obligation shall be to repair or replace defective materials or to properly re-perform any defective service. Except as expressly provided by this Agreement or as limited by law, AMS hereby expressly disclaims and negates any other representation or warranty, express or implied, relating to the services provided hereunder, including without limitation, any implied or express warranty of merchantability, fitness for a particular purpose, or conformity to models, samples or materials. AMS will transfer the benefit of any applicable manufacturer's warranty to Customer upon request. Any warranty claim for goods or equipment shall be made against the manufacturer only.~~

9. Limitation of Liability and Claims – Solely with regard to paragraphs 9 and 10, the term "Company" shall include the above-named Company performing the Work and its particular divisions, subsidiaries, parents, partners, managers, agents, employees, members, attorneys, affiliates, successors and/or assigns. The Company shall not be liable for the operation of the Covered Equipment or for injury or damage to person or property, except those arising or resulting directly from the negligent acts or omissions of its employees, agents, contractors or subcontractors, if any. Should AMS be found to have been negligent in the performance of its work, or to have made and breached any express or implied warranty, representation, or contract term, Customer, all parties claiming through Customer, and all parties claiming to have in any way relied on AMS' work agree that no action or claim, whether in tort, contract or otherwise, may be brought



against AMS more than one (1) year from the date the party knew or should have known of any claim the party may have, and further agree that in no event shall AMS be liable for any special, punitive, exemplary, indirect, consequential or incidental damages or for damages for lost profits, business interruption, revenue, use, or data. AMS shall also not be liable for expense in removing, replacing, or refinishing any part of the building structure. It shall not be liable for any loss or damage due to delays in furnishing labor or materials caused by reason of strikes or labor troubles affecting its employees or the employees of others, delays caused by priority or preference rating, orders or regulations established by any government or other authority having jurisdiction hereunder, by unusual delays in procuring supplies, by acts of God, war or terrorism, or for any other cause beyond its reasonable control.

**10. Mutual Indemnification** – Company and Customer mutually agree to indemnify, defend and hold the other harmless from and against all claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of, or resulting from the other's performance under, this Agreement.

**11. Regulatory Requirements** – The Company shall not be required to furnish any items of equipment or labor or make special tests as are recommended or required by insurance companies, federal, state, or municipal governments, or other authorities, other than those expressly included in the Work.

**12. Taxes and Assessments** – The Customer shall be responsible for all taxes and assessments applicable to the Work.

**13. Pricing, Timing and Scheduling of Work** – The services set forth in AMS' proposal and Customer's acceptance will be accomplished by AMS personnel at the prices quoted, plus applicable taxes, etc. If, through no fault of its own, AMS is required to delay commencement of the Work or if, upon embarking upon its Work, AMS is required to stop or interrupt the progress of its Work as a result of changes in the Work requested by Customer, to fulfill the requirements of third parties, interruptions in the progress of construction, or other causes beyond the direct reasonable control of AMS, any additional charges incurred will be paid by Customer. All Work to be provided under this Agreement shall be performed during Company's normal working hours. Any work performed after hours, including but not limited to emergency calls, repairs or replacements, regardless of the reason, shall be billed at applicable rates. Work not covered by this Agreement shall be billed at the Company's then-prevailing rates.

**14. Alternative Dispute Resolution ("ADR")** – If a dispute arises out of or relates to this Agreement, the parties agree that senior management shall attempt in good faith to settle the dispute to the satisfaction of all parties. If the parties are unable to settle the dispute within thirty (30) days from the time it arises, the parties agree to submit the dispute to arbitration. Upon expiration of the thirty-day period, the aggrieved party shall serve a written demand for arbitration upon the opposing party and the American Arbitration Association, and the parties shall select a mutually acceptable arbitrator with knowledge of the commercial construction and/or mechanical services industry. Arbitration shall occur in the metropolitan area in which the Work was performed and shall be in accordance with the Commercial Arbitration Rules of the American Arbitration Association in effect at the time of arbitration. The decision of the arbitrator shall be final, conclusive and binding upon all parties, and judgment may be entered upon the award in the appropriate state or federal court having jurisdiction over the dispute.

The arbitrator shall award the prevailing party all costs and expenses of such arbitration, including without limitation, reasonable attorneys' and experts' fees and/or costs. Failure to serve a demand for arbitration within one (1) year from the date the party knew or should have known of any claim the party may have shall be deemed a waiver of the party's claim.

**15. Attorneys' and Experts' Fees and Costs** – In the event of a dispute regarding this agreement or the Work contemplated herein and in conjunction with an award of fees contemplated under the ADR provision above, the prevailing party shall be entitled to be paid by the other party all reasonable attorneys' and experts' fees and costs, however incurred and in whatever forum or proceeding incurred, including but not limited to judicial, arbitral, and/or administrative.

**16. Insurance Proceeds** – If insurance proceeds are received by the Customer for mechanical failures which are ultimately repaired or replaced by the Company under this Agreement and AMS has not been paid for said Work, the Customer shall pay said insurance proceeds to the Company. The liability of Customer for the payment owed the Company shall not be limited to the insurance proceeds received.

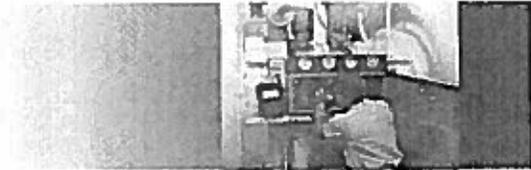
**17. Agreement Changes; Entire Agreement** – Any and all changes to this Agreement must be in writing and signed by authorized representatives of the Customer and Company. The Agreement, as defined above, is the entire agreement between the parties, and supersedes any prior oral or written understandings.

**18. Environmental** – If the Company, in course of performing the Work hereunder, discovers hazardous materials or substances upon, beneath, about, or inside Customer's equipment or property, the Company immediately shall report its findings to the Customer; provided, however, that the Customer agrees and acknowledges that the Customer shall be solely responsible for all costs, expenses, damages, fines, penalties, claims and liabilities associated, or incurred in connection, with such hazardous materials or substances and the Customer shall be solely responsible for reporting the presence of said hazardous materials or substances to the proper governmental authorities. The Customer further agrees and acknowledges that title to, ownership of, and legal responsibility and liability for any and all such hazardous materials and substances at all times shall remain with the Customer and that the Customer shall be solely responsible for the removal, handling, and disposal of all hazardous materials in accordance with all applicable governmental regulations. To the extent applicable to the Work and they exist, Customer shall provide Company with any reports or Material Safety Data Sheets required by OSHA.

**19. Severability** – If any term, covenant, condition or provision of this agreement, or the application thereof to any circumstance, shall, at any time or to any extent, be determined by a court of competent jurisdiction or an arbitrator to be invalid or unenforceable, the remainder of this agreement, or the application thereof to circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and each term, covenant, condition and provision of this agreement shall be valid and enforceable to the fullest extent permitted by law.

**20. Termination** – Either party may terminate this Agreement on thirty (30) days advance written notice without cause. In the event of termination by Customer, Contractor shall be paid all costs actually incurred to that date plus ten percent (10%) profit and overhead.

**21. Notice** – To be effective, any notice under this Agreement must be in writing and sent via certified mail, return receipt requested or via a third-party courier with a delivery tracking capability.



We are pleased to quote the following items of labor and material for the above referenced project:

**BASE BID SCOPE OF WORK:**

- Disassemble Boiler (previously has had glycol drained and recovered).
- Remove old heat exchanger with leaking tube.
- Install replacement heat exchanger (supplied by customer) and reassemble boiler.
- Reintroduce any recovered glycol.
- Start boiler and tune per manufacturer's specifications.

**EXCLUSIONS:**

- Overtime labor, normal hours 8:00am to 4:30pm.
- Any task not specified in the Scope of Work above.



Mark Doty <mdoty@garfieldre2.net>

Riverside heat exchanger

Cory Hesterwerth <cory@taft-engineering.com>  
To: "mdoty@garfieldre2.net" <mdoty@garfieldre2.net>  
Cc: Tom Scott <Tom@taft-engineering.com>

Tue, Mar 6, 2018 at 1:55 PM

Hi Mark,

It's been a while, I hope that you're doing well, aside from the below situation at Riverside Middle School.

As the original manufacturer's warranty (10yrs prorated from the date of shipment) has expired on these boilers I have listed below some budget options that we can offer to you. If you would like to discuss any of the options or obtain formal quotes for any of the options please let me know.

Option 1 - \$32,000 freight included

- Replacement 439SS heat exchanger kit for the existing boiler to include all gaskets necessary with new insulation
- 5yr. prorated warranty from the date of shipment
- Lead time to ship 2-3 weeks after order
- Installation by others

Option 2 - \$43,000 freight & startup included

- Complete new Aerco BMK3000 boiler same BTU capacity and voltage as the existing boiler – smaller foot print
- 439SS heat exchanger with 10yr non prorated warranty from the date of shipment
- 18 month parts warranty from the date of shipment
- Would require piping modifications as the connections are different than that of the existing boiler
- Lead time to ship 3-4 weeks after order
- Installation by others

Option 3 - \$39,000 freight & startup included

- Complete new Riello AR3000 boiler same BTU capacity as the existing boiler – larger foot print
- 316SS water lube heat exchanger with 10yr non prorated warranty from the date of shipment
- 18 month parts warranty from the date of shipment
- Would require piping modifications and electrical service modifications (208-240/1/60)
- Boiler has inherent redundancy with multiple modules each @ 500mbh with 5:1 turndown for a combined 30:1 turndown
- Lead time in stock
- Installation by others

*(Thursday) → (max. update)*

Best,  
Cory

Cory Hesterwerth



Taft Engineering | VP After Market Sales & Support  
12650 E. Briarwood Ave. #203 Centennial, CO 80112