

Stanwood Camano School District

TO : BOARD OF DIRECTORS
FROM : GARY PLATT, EXECUTIVE DIRECTOR – BUSINESS SERVICES
SUBJECT : STANWOOD ELEMENTARY BOILER REPLACEMENT PROJECT – PHASE 6
DATE : DECEMBER 6, 2016
TYPE : ACTION NEEDED



The Facilities and Technology Levy included funding for the replacement of the boilers and related equipment at Stanwood Elementary School. The project estimate, developed in 2012 and included in the levy was \$533,252. The proposed total cost of the project is \$570,620, including a contingency allowance of \$35,084. In our last two projects the contingency allowance was not used. Without the contingency allowance the project would be very close to budget. However, I will reserve the net estimated cost overrun amount of \$37,368 from the levy overhead and management allocation account to insure full project funding.

The cost breakdown is as follows:

Project engineering - McKinstry	\$144,692.78
Project Construction – McKinstry (to be bid)	418,857.15
Measurement and Verification of Energy Savings	3,070.07
Dept. of Enterprise Services – Project Management	<u>4,000.00</u>
Total Estimated Project Cost	<u>\$570,620.00</u>

This project is being procured pursuant to RCW 39.35C.050 through the state Department of Enterprise Services. The department reviews the contract proposals, issues documentation approving agreements, supervises the construction work, approves change orders, recommends release of payments to the contractor, and approves final completion dates.

Attached are the documents and details of the project.

December 6, 20146
Board Of Directors
Page 2

Recommendation:

We recommend the board *move to authorize the administration to execute Phase 6 documents with the Washington State Department of Enterprise Services and McKinstry Company for the construction of energy conservation measures and related improvements at Stanwood Elementary School .*



STATE OF WASHINGTON
DEPARTMENT OF ENTERPRISE SERVICES

1500 Jefferson St. SE, Olympia, WA 98501
PO Box 41476, Olympia, WA 98504-1476

November 18, 2016

TO: Gary Platt, Stanwood-Camano School District #401
FROM: Terrie Glave, Contracts Specialist, (360) 407-9330
RE: Agreement No. 2016-233 B (2)
Phase 6 - Boiler and Heating System Upgrades
McKinstry Essention, LLC
SUBJECT: Funding Approval

The Department of Enterprise Services, Engineering & Architectural Services, requires funding approval for the above referenced contract document(s). The amount required is as follows:

Design and Implementation of Energy Conservation Measures	\$132,624.00
WSST Tax (9.1%)	\$ 12,068.78
Total	\$144,692.78

In accordance with the provisions of RCW 43.88, the signature affixed below certifies to Engineering & Architectural Services that the above identified funds are appropriated, allotted or that funding will be obtained from other sources available to the using client/agency. The using/client agency bears the liability for any issues related to the funding for this project.

By _____ Date _____
Name / Title

Please sign and return this form to E&AS. If you have any questions, please call me.


2016233Bauthfundtg



STATE OF WASHINGTON
DEPARTMENT OF ENTERPRISE SERVICES

1500 Jefferson St. SE, Olympia, WA 98501
PO Box 41476, Olympia, WA 98504-1476

November 18, 2016

TO: Gary Platt, Stanwood-Camano School District #401
FROM:  Terrie Glave, Contracts Specialist, (360) 407-9330
RE: Contract No. 2016-233 H (2-1)
Phase 6 - Boiler and Heating System Upgrades
McKinstry Essention, LLC
SUBJECT: Funding Approval

The Department of Enterprise Services, Engineering & Architectural Services, requires funding approval for the above referenced contract document. The amount required is as follows:

ESCO Contract Amount	\$ 350,839.00
Sales Tax (9.1%)	\$ 31,926.35
Contingency Amount (with Tax)	\$ 36,091.80
Total	\$ 418,857.15

In accordance with the provisions of RCW 43.88, the signature affixed below certifies to Engineering & Architectural Services that the above identified funds are appropriated, allotted or that funding will be obtained from other sources available to the using client/agency. The using/client agency bears the liability for any issues related to the funding for this project.

By _____
Name / Title Date

Please sign and return this form to E&AS. If you have any questions, please call me.



STATE OF WASHINGTON
DEPARTMENT OF ENTERPRISE SERVICES

1500 Jefferson St. SE, Olympia, WA 98501
PO Box 41476, Olympia, WA 98504-1476

November 18, 2016

TO: Gary Platt, Stanwood-Camano School District #401
FROM: Terrie Glave, Contracts Specialist, (360) 407-9330
RE: Agreement No. 2016-233 C (3)
M&V Phase 6 - Boiler and Heating System Upgrades
McKinstry Essention, LLC

SUBJECT: Funding Approval

The Department of Enterprise Services, Engineering & Architectural Services, requires funding approval for the above referenced contract document(s). The amount required is as follows:

First Year Measurement & Verification	\$ 2,814.00
WSST Tax (9.1%)	\$ 256.07
Total	\$ 3,070.07

In accordance with the provisions of RCW 43.88, the signature affixed below certifies to Engineering & Architectural Services that the above identified funds are appropriated, allotted or that funding will be obtained from other sources available to the using client/agency. The using/client agency bears the liability for any issues related to the funding for this project.

By _____ Date _____
Name / Title

Please sign and return this form to E&AS. If you have any questions, please call me.

2016233Cauthfundtg

INTERAGENCY Amendment

Department of Enterprise Services

Date: November 18, 2016
Agreement No: K3788
Project No.: 2016-233
Amendment No: 4

**Interagency Agreement Between the
State of Washington
Department of Enterprise Services
and
Stanwood-Camano School District No. 401**

The parties to this Agreement, the Department of Enterprise Services, Engineering & Architectural Services, hereinafter referred to as "DES", and Stanwood-Camano School District No. 401, hereinafter referred to as the "CLIENT AGENCY", hereby amend the Agreement as follows:

1. Statement of Work

DES shall furnish the necessary personnel and services and otherwise do all things necessary for or incidental to the performance of the work set forth in Attachment "A" and Attachment "C", attached hereto and incorporated herein by reference. Unless otherwise specified, DES shall be responsible for performing all fiscal and program responsibilities as set forth in Attachment "A" and Attachment "C".

Energy/Utility Conservation projects shall be authorized by Amendment to this Agreement.

- 1.1 Phase 5 Mechanical, Lighting, and Controls Upgrades outlined in the McKinstry Essention, LLC Stanwood-Camano School District No. 401 Phase 5 Energy Services Proposal dated April 4, 2016.
- 1.2 Review of Measurement and Verification reports for the Phase 5 Mechanical, Lighting, and Controls Upgrades outlined in the McKinstry Essention, LLC Stanwood-Camano School District No. 401 Phase 5 Energy Services Proposal dated April 4, 2016 and the Phase 5 Energy Services Proposal Revision 1 dated June 6, 2016.
- 1.3 Additional Project Management fee for Phase 5 Mechanical, Lighting, and Controls Upgrades outlined in the McKinstry Essention, LLC Stanwood-Camano School District No. 401 Phase 5 Energy Services Proposal dated April 4, 2016.
- 1.4 **Project Management fee for Phase 6 – Boiler and Heating System Upgrades outlined in the McKinstry Essention, LLC Stanwood-Camano School District No. 401 Phase 6 Energy Services Proposal dated September 26, 2016.**

4. Consideration

Compensation under this Agreement shall be by Amendment to this Agreement for each authorized project. Each Amendment will include a payment schedule for the specific project.

For Project Management Services provided by DES under Attachment "A" of this Agreement, the CLIENT AGENCY will pay DES a Project Management Fee for services based on the total project value per Project Management Fees Schedule set forth in Attachment "B".

If the CLIENT AGENCY decides not to proceed with an Energy/Utility Conservation project that meets the CLIENT AGENCY's cost effective criteria, then the CLIENT AGENCY will be charged a Termination Fee per Attachment "B". The Termination Fee will be based on the estimated Total Project Value outlined in the Energy Audit and Energy Services Proposal prepared by the Energy Services Company (ESCO).

If measurement and verification services are requested by the CLIENT AGENCY and provided by DES under Attachment "C" of this Agreement, the CLIENT AGENCY will pay DES \$2,000.00 annually for each year of monitoring and verification services requested.

Compensation for services provided by the ESCO shall be paid directly to the ESCO by the CLIENT AGENCY, after DES has reviewed, approved and sent the invoices to the CLIENT AGENCY for payment.

4.1 Energy Project Management Fee for the work described in Section 1.1 is \$49,500.00. Anticipated billing date for this Amendment is January 1, 2017.

4.2 Measurement and Verification Fee for the work described in Section 1.2 is \$4,000.00. Anticipated billing dates for these Amendments are January 1, 2019 and January 1, 2020.

4.3 Additional Energy Project Management Fee for the work described in Section 1.3 is \$6,500.00. Anticipated billing date for this Amendment is January 1, 2017.

4.4 Energy Project Management Fee for the work described in Section 1.4 is \$4,000.00. Anticipated billing date for this Amendment is January 1, 2018.

The new total Agreement value is \$64,000.00.

All sections above have been fully amended and are shown in their entirety.

All other terms and conditions of this Agreement remain in full force and effect. The requirements of RCW 39.34.030 are satisfied by the underlying Agreement and are incorporated by reference herein.

Each party signatory hereto, having first had the opportunity to read this Amendment and discuss the same with independent legal counsel, in execution of this document hereby mutually agree to all terms and conditions contained herein, and as incorporated by reference in the original Agreement.

Stanwood-Camano School District No. 401

**Department of Enterprise Services
Engineering & Architectural Services**

Title Date

Roger A. Wigfield, P.E.
Energy Program Manager

Title Date

K3788am4tg

ESCO Contract No. 2016-233 H (2-1)
Project Phase 6 - Boiler and Heating System Upgrades
Agency Stanwood-Camano School District No. 401
Date November 18, 2016

STATE OF WASHINGTON

ENERGY SERVICE COMPANY (ESCO) CONSTRUCTION CONTRACT

For the DEPT. OF ENTERPRISE SERVICES, ENGINEERING & ARCHITECTURAL SERVICES

This Energy Service Company (ESCO) Construction Contract, made and entered into this 18th day of November 18, 2016, shall be the agreed basis of performing the following work by and between the State of Washington, Stanwood-Camano School District No. 401 acting through the Department of Enterprise Services, Engineering & Architectural Services, hereinafter referred to as the Owner, and

McKinstry Essention, LLC
5005 3rd Avenue South
PO Box 24567
Seattle, WA 98124-0567
Telephone: (206) 762-3311
E-mail: contractsdept@mckinstry.com

hereinafter referred to as the ESCO or Contractor.

WITNESSETH: Whereas the parties hereto have mutually covenanted and by these presents do covenant and agree with each other as follows:

FIRST: The said ESCO agrees to furnish all permits, material, labor, tools, equipment, apparatus, facilities, etc., necessary to perform and complete in a workmanship like manner the work called for in the attached Scope of Work, Energy Services Proposal dated September 26, 2016, for:

Energy Services Authorization No. 2016-233 B (2)
Master Energy Services Agreement No. 2015-181 G (7)

Audits and Proposals for this project were prepared by the ESCO according to the terms of the Contract Documents which include, but are not limited to, the Master Energy Services Agreement, Energy Services Authorization(s), the accepted Proposal, *General Conditions for Washington State Energy Savings Performance Contracting*, Addenda, Specifications, Drawings, Bond, and this Construction Contract.

November 18, 2016

SCOPE OF WORK

ESCO Contract No. 2016-233 H (2-1)

**Phase 6 - Boiler and Heating System Upgrades
Stanwood Camano School District No. 401**

Furnish and install the energy efficiency measures, including any and all necessary ancillary equipment, as described in the Stanwood-Camano School District's No. 401 Energy Services Proposal dated September 26, 2016.

ENERGY SERVICES AUTHORIZATION NO. 2016-233 B (2)
Phase 6 - Boiler and Heating System Upgrades
Stanwood-Camano School District #401
November 18, 2016
MASTER ENERGY SERVICES AGREEMENT NO. 2015-181 G (7)

The Owner and the Energy Services Company (ESCO) named below do hereby enter into this Authorization under terms described in the following sections:

Authorization to Proceed	Project Conditions
Compensation for Energy Services	

I. AUTHORIZATION TO PROCEED:

Energy Services Company:

McKinstry Essention, LLC
5005 3rd Avenue South
PO Box 24567
Seattle, WA 98124-0567
Telephone No. (206) 762-3311
Fax No. (206) 658-1769
E-Mail contractsdept@mckinstry.com

Owner:

Stanwood-Camano School District No. 401
acting through the
Department of Enterprise Services
Engineering and Architectural Services
PO Box 41476
Olympia, WA 98504

By _____
Name _____
Title _____
Date _____

By _____
Name Roger A. Wigfield, P.E.
Title Energy Program Manager
Date _____

State of Washington Contractor's License No. MCKINEL874CL
State of Washington Revenue Registration No. 603 259 907
Federal Tax Identification No. 46-1563231
MWBE Certification No. _____

II. COMPENSATION FOR ENERGY SERVICES:

Basic Services	COMPENSATION
Energy Audit and Energy Services Proposal	\$ 0.00
Design	\$ 49,624.00
Construction Management	\$ 19,849.00
Overhead and Profit	\$ 63,151.00
Grand Total (plus WSST as applicable)	\$ 132,624.00

III. PROJECT CONDITIONS:

The Project Conditions contained in the Master Energy Services Agreement will be used unless specifically changed herein.

IV. SCOPE OF WORK:

Energy efficiency measures under Contract No. 2016-233 H (2-1) will include installing high efficiency condensing boilers, heating water pumps with VFDs, boiler controls and water meter, including any and all necessary ancillary equipment. The ESCO will perform a detailed engineering design as needed to obtain Owner review and approval of the proposed systems and to obtain bids as required.

The ESCO will provide construction management, as-built drawings, and O&M manuals.

All work is per the Stanwood-Camano School District's No. 401 Energy Services Proposal dated September 26, 2016.

V. SCHEDULE FOR COMPLETION

Final completion within 400 calendar days after Authorization to Proceed.

2016233Bauthtg

MEASUREMENT & VERIFICATION (M&V) AUTHORIZATION No. 2016-233 C (3)

Stanwood Camano School District

Phase 6 - Boiler and Heating System Upgrades

November 18, 2016

MASTER ENERGY SERVICES AGREEMENT NO. 2015-181 G (7)

The Owner and the Energy Services Company (ESCO) named below do hereby enter into an Agreement under terms described in the following sections:

Authorization to Proceed
Compensation Schedule
Project Conditions

Scope of Work
Compensation for M&V Services
Schedule for M&V Services

I. AUTHORIZATION TO PROCEED:

Energy Services Company:

McKinstry Essention, LLC
5005 3rd Avenue South
PO Box 24567
Seattle, WA 98124-0567
Telephone No. (206) 762-3311
Fax No. (206) 658-1769
E-Mail contractsdept@mckinstry.com

Owner:

Stanwood-Camano School District No. 401
acting through the
Department of Enterprise Services
Engineering and Architectural Services
PO Box 41476
Olympia, WA 98504

By _____
Name _____
Title _____
Date _____

By _____
Name Roger A. Wigfield, P.E.
Title Energy Program Manager
Date _____

State of Washington Contractor's License No.
State of Washington Revenue Registration No.
Federal Tax Identification No.
MWBE Certification No.

MCKINEL874CL
603 259 907
46-1563231

II. COMPENSATION SCHEDULE:

Total Services being provided under this Agreement:

Services	Compensation
	New
Measurement and Verification Services Year 1	\$ 2,814.00
Grand Total (plus WSST as applicable)	\$ 2,814.00

III. PROJECT CONDITIONS:

The Project Conditions contained in the Master Energy Services Agreement will be used unless specifically changed herein. Specifically, after the project is constructed and the Notice of Commencement of Energy Cost Savings (NCES) has been issued, the Measurement and Verification (M&V) period begins. The guarantee of savings by the ESCO shall remain in effect for the term of the M&V Agreement.

IV. SCOPE OF WORK:

Provide M&V reporting for 365 days starting immediately after Owner acceptance of the NCES for the Phase 6 - Boiler and Heating System Upgrades, 2016-233 H (2-1), per the Stanwood Camano School District's Energy Services Proposal dated September 26, 2016.

The ESCO shall submit within sixty (60) days of the end of the annual M&V period, an M&V report consistent with the M&V procedures described in the ESCO's approved Energy Services Proposal (ESP). The M&V report shall describe the energy savings and equipment performance for the previous twelve-month period. The M&V report shall be consistent with and incorporate relevant data described in the ESCO energy audit, ESP and the project's Energy Services Authorization. Utility bill reporting, if appropriate, shall include reporting of current billing utility units compared to the baseline use both in tabular and graphic form, for the previous 12 months. Relevant data and calculations will support the conclusions and findings of the M&V report. It is understood that the ESCO and the Owner have agreed that the International Performance Measurement & Verification Protocol, will be used as a reference for the M&V report should there be questions or disagreements on the form or content of the report.

V. COMPENSATION FOR M&V SERVICES:

The Owner shall reimburse the ESCO annually, in accordance with the M&V fee schedule included in the original ESP or as agreed to under a separate proposal for ongoing M&V services. The total compensation for M&V services shall be \$2,814.00, from the guaranteed savings for the M&V services. The M&V fee shall be paid to the ESCO within sixty (60) days following acceptance of the M&V report. Payment to the ESCO shall be contingent upon the Owner's acceptance of the ESCO's M&V report. The ESCO's M&V report shall be considered accepted 30 days after its submission; unless the ESCO is notified in writing that the report has been rejected.

VI. SCHEDULE FOR M&V SERVICES:

M&V Services shall start immediately after Owner acceptance of the NCES and will run for 365 days plus 60 days for final report preparation, unless this Authorization is amended earlier to add additional years of M&V services. The amendment shall be based upon a proposal by the ESCO for ongoing M&V services. The proposal shall indicate the length of the guarantee period and the cost of required annual M&V reporting.

Summer 2017

Stanwood-Camano School District
Phase 6
Energy Services Proposal



STANWOOD, WA
SEPTEMBER 26, 2016

FOR THE
LIFE OF
YOUR
BUILDING

1. Executive Summary

1.1 Overview

McKinstry Essention (herein after as McKinstry) is pleased to present this Investment Grade Audit & Energy Services Proposal (ESP) for the implementation of energy conservation initiatives at Stanwood Camano School District.

This ESP follows the outline contained in Section 2 of the Energy Services Agreement. It outlines the project's scope, budget and expectations for improvements at Stanwood-Camano School District. This ESP package identifies the costs, energy baseline conditions, project scope, utility data analysis, energy saving information and measurement and verification plan for the districts energy efficiency upgrade project.

1.2 Project Description

This Project consists of measures that will provide new equipment for the district while saving energy.

The project facility improvement measures are as follows:

- Boiler Upgrades at Stanwood Elementary: upgrade existing copper fin to cast iron condensing units

1.3 Guarantees

McKinstry guarantees that the Maximum Project Cost will not exceed \$519,359. This cost does not include sales tax or the Department of Enterprise Services (WA DES) management fee. With sales tax and the WA DES fees included, the estimated Project Cost will be \$570,620. (McKinstry does not guarantee the value of sales tax or the WA DES management fee.)

For this project McKinstry is guaranteeing an annual energy savings of 2,870 Therms of natural gas.

1.4 Conclusion

This project represents an excellent opportunity for Stanwood Camano School District to continue their sustainable facility operations and demonstrate to their stakeholders their commitment for energy efficiency and greenhouse gas reduction practices. McKinstry looks forward to working with the School District and the State DES office in making this project a success.



Scope of Work

2.1 Facility Improvement Measure (FIM) Summary

For detailed scope of work descriptions please refer to Section 2, Attachment A – “Detailed Scope of Work.”

2.2 ESCO Services

McKinstry will include the following services related to this project:

1. *Energy Audit:*
The energy audit is complete and is submitted under Exhibit 1 – “Directed Engineering Study.”
2. *Design Services:*
McKinstry will provide a detailed engineering design as needed to obtain permitting, Owner review, and approval of the proposed systems. In addition, McKinstry will also provide construction support services, start-up, testing, as-built drawings of systems installed, and provide relevant operations and maintenance manuals.
3. *Construction:*
Provide, or cause to be provided, all material, labor, and equipment, including paying for permits, fees, bonds, and insurance, required for the complete and working installation of McKinstry’s equipment.
 - a. McKinstry will provide a site superintendent who will be responsible for the onsite supervision and coordination of trades and subcontractors. This individual’s responsibilities will also include regular work observations, quality control, site security, enforcement of the site-specific safety plan, as well as coordinating any impact upon building tenants with the Owner.
 - b. McKinstry may perform portions of the construction work or may subcontract portions to qualified firms. In either case, McKinstry will share information regarding actual costs of the work with the Owner.
 - c. When McKinstry has completed the installation of the equipment, including start-up, operations verification, and training in accordance with the Proposal, McKinstry will provide to Owner a “Notice of Commencement of Energy Savings.”
 - d. At the conclusion of the project, McKinstry will submit a “Notice of Substantial Completion” to the Owner.
4. *Construction Management:*
McKinstry will provide a dedicated construction manager who will provide contract administration services for the project. The owner is expected to coordinate day-to-day communications with tenants and any scheduling of tenant relocations in and around occupied areas.
5. *Operation Training:*
McKinstry will provide training of building staff during construction and a minimum of 2 hours of training on the PV array and monitoring system.
6. *Performance Maintenance:*
ESCO will provide ongoing monitoring and support services to help ensure that predicted savings are achieved throughout the term of the agreement. Ongoing services shall be under separate agreement. Ongoing services shall be at the discretion of Stanwood Camano School District to terminate. Specific tasks associated with proposed ongoing performance assurance tasks can be found in table 3.1 - “Energy Cost Savings Guarantee Summary.”
7. *Equipment Maintenance:*
McKinstry will provide no equipment maintenance or repairs after the warranty period. Following the completion of the installation and Owner acceptance of the equipment, the Owner shall provide all necessary service, repairs, and adjustments to the equipment so that the equipment will perform in the



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Scope of Work

manner and to the extent set forth in the Proposal. McKinstry shall have no obligation to service or maintain the equipment after the warranty period.

8. *Warranty:*

McKinstry will warrant equipment for one year following Notice of Substantial Completion. Specific information regarding equipment warranty will be passed on to owner.

9. *Hazardous Waste (other than PCB lighting ballasts):*

Should the project require removal or disposal of hazardous material, McKinstry may have the hazardous material or substances removed and disposed of at the request of the Owner. McKinstry typically does not assume ownership of the material but may act on behalf of the Owner to properly remove and dispose of the material. The Owner agrees and acknowledges that it has not relied on or employed McKinstry to analyze or identify the presence of any hazardous substance on the Owner's premises. The cost of hazardous material abatement and disposal is not included in this proposal.

10. *Hazardous Waste (associated with PCB lighting ballasts):*

Where PCB ballasts are discovered as part of lighting retrofit work, McKinstry shall dispose of PCB ballasts through an approved hazardous waste vendor. The cost of hazardous material abatement and disposal associated with PCB ballasts is included in this proposal.

2.3 Extent of Subcontracting

McKinstry may subcontract the energy audit, design, construction management, start-up, and training portions of this Contract to qualified firms upon review and approval by owner. Construction subcontracts will be awarded competitively. McKinstry will endeavor to satisfy the MWBE goals of Washington State.

2.4 Project Schedule

The following information lists several milestone dates for the project. McKinstry will develop a detailed schedule outlining all of the various design, pre-construction, construction, and closeout tasks associated with the project and that interfaces with other construction work not under this proposal.

	START	FINISH
ESP Review and Approval Process	09/12/16	09/26/16
Contract Routing / Signature	09/26/16	10/10/16
McKinstry Design and Pre-Construction	10/17/16	05/26/17
Construction/Commissioning	12/19/16	10/31/17



Detailed Scope of Work

FIM ID # 30160

01.01-SES: Upgrade Boilers and Boiler Controls Stanwood Elementary School

GENERAL

Existing Lochinvar (2) boilers were installed in 1995 and are at the end of their useful life. Boilers, boiler pumps, their instrumentation and system pumps shall be replaced. Back flow preventer is in good operational condition and shall remain in service. Water meter shall be replaced w/digital output capable unit.

Proposed: Provide high efficiency condensing boilers. Provide system pumps w/ VFD's. Provide piping from boilers to boiler room wall, provide water meter w/ digital output.

Replace boiler controls.

SCOPE OF WORK INCLUDES

1. Mechanical
 - A. Demolish two (2) Lochinvar boilers, their flues, boiler pumps, instrumentation, pipes and valves (6" ~ 70 LFT) up to main distribution zone shut-off valves (back flow prevention station to remain in service).
 - B. Demolish heating water system 3-way valve and associated appurtenances.
 - C. Demolish 75LF of 4" pipe
 - D. Demolish 60LF of 2-1/2" pipe
 - E. Demolish 80LF of 12" diameter flue to plenum box
 - F. Demolish 36"x24" plenum box
 - G. Demolish chemical pot feeder
 - H. Demolish air separator
 - I. Demolish expansion tank (floor mounted)
 - J. Demolish 30LF of 2" gas pipe and (1) gas regulator per boiler
 - K. Demolish 30LF of 1" gas vent
 - L. Demolish 36x30 combustion air intake duct, roof opening and intake hood to remain in service.
 - M. Provide two (2) KN-20 boilers, boiler pumps, neutralization kits and appurtenances as shown on Details -1 and 2.
 - N. Provide two (2) system pumps w/ VFD's - 280 GPM, 95 FT HD, 480-3-60
 - O. Provide 36"x24" SS plenum box
 - P. Provide two (2) 8" AL29-4C double wall vent to plenum box ~ 25LFT
 - Q. Provide two (2) 8" AL29-4C single wall vent up to roof with cap ~ 25LFT (use existing chase)
 - R. Provide two (2) 4" galvanized single wall vent from chimney up to roof with cap (use existing chimney) (DWH vent) ~ 40LF
 - S. Provide 6" deep plenum at the existing louver to connect (2) 8" combustion air intake (CPVC or sheet metal) ~ 25 LFT
 - T. Provide 4" insulated heating supply and return pipe ~75 LF total
 - U. Provide valves as shown on Boiler room diagram and Details -1 thru 3
 - V. Provide air dirt separator - Spirotherm - VDT500FA - Water in existing secondary system shall be cleaned. contractor to include system water cleaning before running it thru the boilers - install air/dirt separator in boilers by-pass and run until 200ppm, clean air/dirt separator and re-install in its permanent position at the boilers discharge)
 - W. Provide water meter w/ digital output installed by mechanical wired by control contractor
 - X. Provide sage gas meter, installed by mechanical wired by control contractor
 - Y. Provide (2) 2psig to Inches ventless gas pressure reducing valves (2").
 - Z. Provide 60LF of 3" heating water boiler connection pipe; insulate per WSEC.
 - AA. Provide chemical pot feeder
 - BB. Provide expansion tank (floor mount, vertical) B&G B-200.
 - CC. Install differential pressure sensor serving heating water loop.
2. Controls
 - A. Provide hardware and software for boilers and pumps scheduling, include variable speed pumps control, water temperature set back, water meter BAS connection and front end visibility, monitoring and alarms.
 - B. Provide wiring and BAS connection for water meter.
 - C. Implement HWST reset 120-180°F
 - D. Provide differential pressure sensor serving heating water loop.
3. Electrical
 - A. Basic Scope: (2) existing boilers and boiler pumps are being replaced with (2) condensing boilers and boiler pumps. (2) system pumps are being added (pure added load). Project will result in a net load increase.



Detailed Scope of Work

- B. Metering: Project will result in a net load increase. 30-day metering will be required. Assume (3) panels will need to metered.
- C. Demo:
 - 1) Existing boiler 'B-1' (120V, 18A):
 - (i) Safe-off and disconnect.
 - (ii) Demo existing 20A/3P breaker.
 - (iii) Demo existing disconnect.
 - (iv) Demo existing conduit and wire.
 - 2) Existing boiler 'B-2': Same as boiler 'B-1'.
 - 3) Existing boiler pump 'BP-1' (208V / 3-ph., ¾ hp):
 - (i) Safe-off and disconnect.
 - (ii) Demo existing motor starter.
 - (iii) Demo existing conduit and wire.
 - 4) Existing boiler pump 'BP-2': Same as boiler pump 'BP-1'.
 - 5) Existing system pump 'P-1':
 - (i) Disconnect power from pump.
 - (ii) Pump to be demo'd by MC.
 - (iii) Demo motor starter at pump.
 - (iv) Retain existing conduit and wire.
 - 6) Existing system pump 'P-2': Same as system pump 'P-1'.
- D. New Work:
 - 1) Boiler 'B-1' and 'B-2' (Hydrotherm KN-20, 208V / 1-ph., 7A):
 - (i) Provide 20A/2P breaker in panel 'P', to feed both boilers. Utilize spare poles 4 and 6.
 - (ii) Provide 208V / 1-ph. branch circuit to feed both boilers. ¾" conduit, (2) #12, #12 ground.
 - (iii) Provide disconnect at each boiler (20A/1P standard toggle switch).
 - 2) Boiler pump 'BP-1' (208V / 1-ph., 1 hp):
 - (i) Provide new fused disconnect at pump. 30A/2P, with 15A fuses, NEMA 1 enclosure, heavy-duty.
 - (ii) Provide new conduit and wire from boiler control panel to disconnect, and from disconnect to pump. ¾" conduit (2) #12, #12 ground.
 - 3) Boiler pump 'BP-2': Same as boiler pump 'BP-1'.
 - 4) System pump 'P-1' (208V / 3-ph., 15 hp):
 - (i) Provide 30A/3P breaker in panel 'P'. Utilize poles in panel 'P' vacated by demo'd boiler.
 - (ii) Provide new VFD. ABB ACH550, with integral disconnect, NEMA 1 enclosure, 23A input current rating.
 - (iii) Provide new branch circuit from panel 'P' to VFD, and from VFD to pump. ¾" conduit, with (3) #10, #10 ground.
 - 5) System pump 'P-2': Same as system pump 'P-1'.
- 4. Structural
 - A. Provide calculations for equipment anchorage details.
- 5. Architectural
 - A. Not applicable.
- 6. Acoustical
 - A. Not applicable.
- 7. Specialty
 - A. Provide first water treatment (system water is treated – include price for boiler room piping only)
 - B. Provide roof flashing and counterflashing for boiler flues.
- 8. Testing, Adjusting and Balancing (TAB)
 - A. Provide balancing for boiler room.
- 9. Commissioning
 - A. Provide PTP commissioning
- 10. Demolition and Removal
 - A. See Mech and electrical scopes.
- 11. Allotments
 - A. Not applicable.
- 12. Design:
 - A. Provide design as required for this FIM.
- 13. Measurement and Verification (M&V)
 - A. Refer to table 3.2.
- 14. Training
 - A. Provide training as required for this FIM.

Detailed Scope of Work

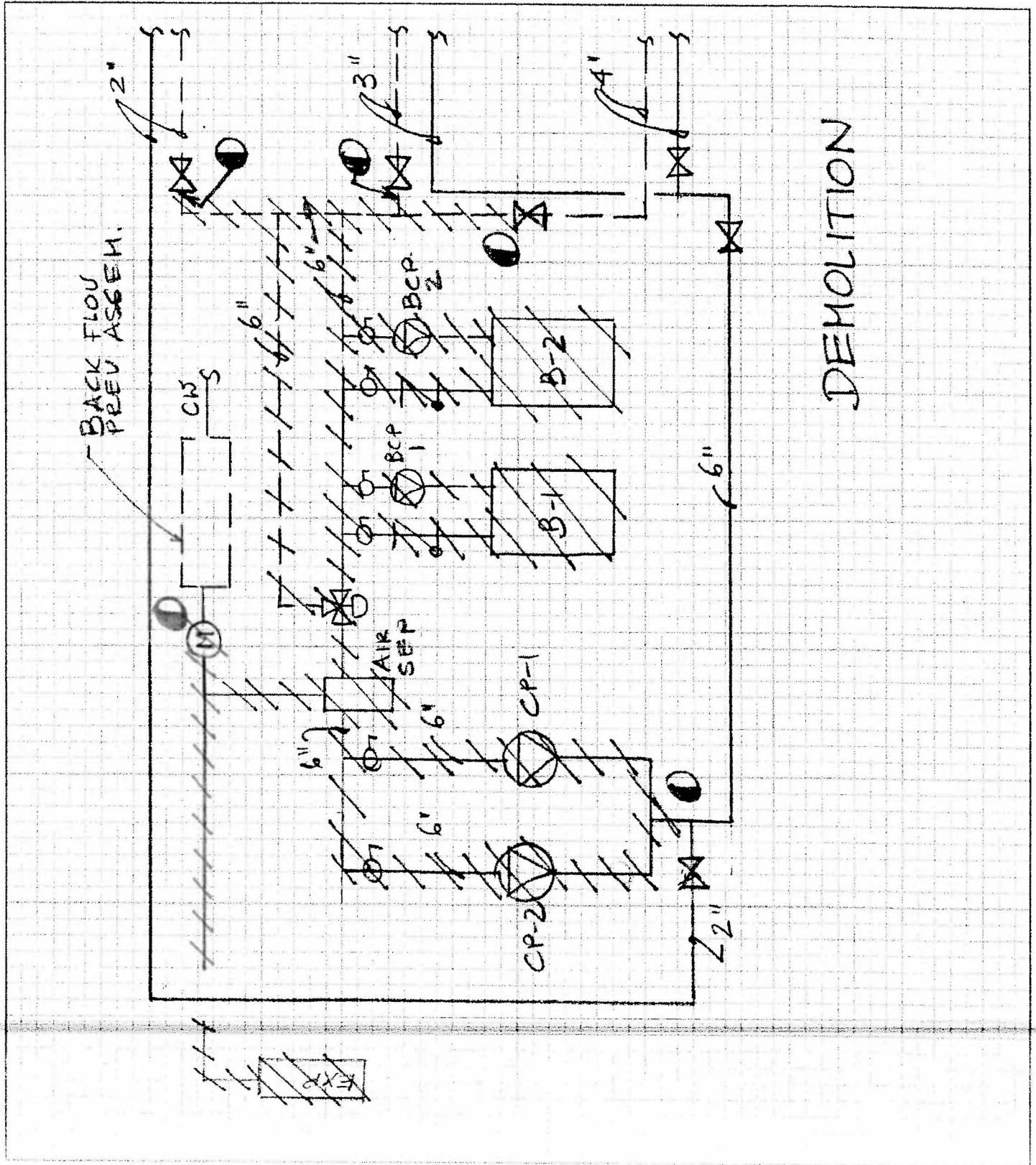
CLARIFICATIONS AND EXCLUSIONS

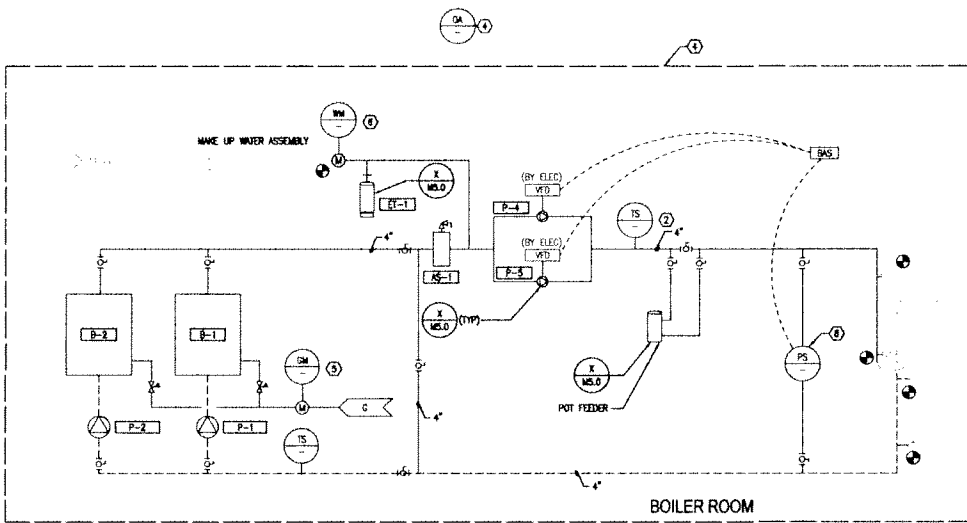
1. Hazardous materials analysis and abatement is excluded from this proposal
2. If existing equipment or components are reused, repairs to existing are not included unless specifically noted in the scope above.
3. Assume makeup water station providing adequate pressure for new system.
4. Assume utility gas meter has adequate capacity and pressure for new system.
5. Equipment heating cooling capacity and redundancy proposed is based on matching the existing equipment. Based on our discussions with the client, the existing equipment size / quantity is adequate, and there have been no issues meeting load.
6. Piping, ductwork, and Coils (condition, size, insulation, performance) beyond our point of connection are excluded.





STANWOOD ES (E) PIPING DIAGRAM





1 HEATING WATER DIAGRAM
SCALE: NOT TO SCALE

SHEET NOTES

- CONTROL VALVES FURNISHED BY CONTROLS CONTRACTOR, INSTALLED BY MECHANICAL.

KEY NOTES

- NOT USED.
- TEMPERATURE SENSOR FURNISHED BY MECHANICAL WIRE TO BOILER CONTROL PANEL.
- FLOW SWITCH FURNISHED BY MECHANICAL WIRE TO BOILER CONTROL PANEL.
- PROVIDE O₂ TEMPERATURE SENSOR ON A NORTH FACING EXTERIOR WALL.
- GAS METER PROVIDED, INSTALLED AND WIRED BY CONTROLS CONTRACTOR.
- WATER METER PROVIDED BY MECHANICAL WIRED BY CONTROLS CONTRACTOR.
- SEE X/MS.0 FOR DETAILS.
- DIFFERENTIAL PRESSURE SENSOR LOCATED IN ACCESSIBLE LOCATION WHERE PRESSURE DROP BETWEEN HWS AND HWB IS REPRESENTATIVE FOR WHOLE SYSTEM- SEE X/MS.0.

Energy Cost Savings Guarantee

3.1 Guarantee Overview

1. *Philosophy:*
McKinstry is prepared to guarantee any portion of a project over which it has direct control. Where McKinstry does not have direct control (such as burn hours associated with lighting), we are prepared to work with the customer to devise a method of Measurement and Verification (M&V), which will provide the highest degree of assurance that the energy cost savings exist.
2. *This Project:*
For this project, McKinstry is prepared to guarantee the performance of the installed initiatives to provide energy savings. The target kWh and Therms savings for the measures to be implemented are as follows: Refer to Section 3, Table 3.1. Based upon the stipulated conditions as enumerated by Stanwood Camano School District personnel and the utility rates as described below, the utility cost savings are also shown in Table 3.1.
3. *Ongoing Services:*
Refer to Table 4.1 for the cost and duration of ongoing M&V. The cost of ongoing M&V beyond the duration listed in Table 4.1 is at the discretion of Stanwood Camano School District. McKinstry is prepared to continue the guarantee as long as Stanwood Camano School District continues the ongoing services as described herein. When Stanwood Camano School District chooses to cancel the ongoing services, the guarantee will also be terminated at the same point in time. Please refer to Section 3, Table 3.2 for a summary of the proposed measurement and verification scope.

Specifically for this project, McKinstry plans to provide a total of (1) M&V Report.

3.2 FIM Specific Performance Assurance Methodology

1. *Guarantees:*
Table 3.1 Energy Savings Guarantee Summary provides the specific energy consumption savings for each facility improvement measure and the guarantee that McKinstry will provide associated with that measure. Savings calculations are based upon both baseline operating characteristics and proposed operation criteria:
 - a. Baseline: "Baseline" refers to the existing operating characteristics that were used to calculate energy cost savings. The baseline operating characteristics, including system performance and operational expenditures, which were used for this project are provided in Table 3.1. In general, all parties acknowledge the baseline associated with any specific measure has been derived from the following sources:
 - i. Actual operating information gathered through field observation, measurement, micro-data loggers, and Owner's operating logbooks.
 - ii. Owner provided information concerning stipulated factors such as burn hours, occupancy, or operational expenditures.
 - iii. In some instances, a modified baseline may have been developed to address areas whereby pre-retrofit conditions do not reflect a system that is operating per current code or what the client may deem as normal operation.
2. *Proposed:*
The proposed operating criteria, including system performance and operational expenditures, which were used for savings calculations are provided in Table 3.1. Systems must be operated per the proposed criteria to ensure energy cost savings are realized. McKinstry will provide the initial start-up, commissioning, and programming of the system to ensure the systems operate per the proposed operating criteria. Stanwood Camano School District acknowledges their responsibility to ensure these criteria are maintained and associated energy savings are realized. Energy Savings Guarantees are



Energy Cost Savings Guarantee

predicated based on Stanwood Camano School District maintaining their responsibilities as provided below in "Ongoing Owner Responsibilities" in Section 3.5.

3.3 Utility Rates

1. *Utility Rate:*

For the purpose of calculating savings, the utility rates used will be the utility rates as paid by Stanwood Camano School District the utility company during the pertinent period, adjusted for any rate schedule changes made by the utility company, except that the utility rate used for calculation will never go below the Floor Rate or above the Ceiling Rate. In the event that a building has multiple meters on different rate schedules, the per-unit cost of the utility will be the average of all the rate schedules in effect at that facility.

a. *Base Utility Rate:*

Refer to table 3.3 for the Base Utility Rates (including sales tax).

2. *Floor Utility Rate:*

The Floor Utility Rate is equal to the Base Utility Rate.

3. *Ceiling Utility Rate:*

The Ceiling Utility Rate is equal to 1.5 times the Base Utility Rate.

3.4 Standards Of Comfort Service – Not applicable

3.5 Ongoing Owner Responsibilities

Stanwood Camano School District shall provide the following services as part of this energy services project. In the event that these services are not provided, energy savings and associated guarantees will be modified to reflect the associated impact.

1. Maintain all equipment per manufacturer's recommendations and proposed maintenance schedule.
2. Maintain all sequence of operations and performance criteria related to installed systems as proposed and designed.
3. Provide other FIM specific ongoing responsibilities as provided in Table 3.2 - "Performance Assurance Plan Outline."
4. Provide McKinstry with copies of actual monthly utility billing information on a quarterly basis for the duration of the M&V service period. This includes electric, natural gas, and fuel oil. The associated facilities where utility information shall be provided include all meters providing direct or indirect service to all buildings included in this project.
5. Provide McKinstry all internal sub-meter data, including electric and condensate meters, providing direct or indirect service to all buildings included in this project.
6. Stanwood Camano School District shall notify McKinstry in writing concerning any changes or alterations to the building that will affect energy usage. This notification should be provided within two weeks of the change. This includes occupancy or use changes, computer load or other load changes, scheduling changes, and sequence of operations changes.

3.6 Non-Performance

In the event the equipment performance is not met, McKinstry accepts responsibility for additional electricity and natural gas used by the equipment, due to reduced performance. McKinstry may, at its option, execute any of the following options:



Energy Cost Savings Guarantee

1. Repair or replace equipment as necessary to meet required performance.
2. Make payments for the extra energy consumption to Stanwood Camano School District. In the event that McKinstry chooses the payment option, McKinstry reserves the right to select either an annual payment for the duration of the guarantee term or a one-time lump-sum payment of the same amount. In either case, the payment will be calculated based upon the quantity of additional electricity or natural gas used and the Base Utility Rate as described above.

3.7 Change Of Use

In the event that Stanwood Camano School District chooses to make changes to the facility that require set point adjustments, longer operating hours, or continuous equipment operation, Stanwood Camano School District agrees that:

1. Savings deemed as met described above will continue to be deemed as met.
2. Additional cost of extended equipment operation is a cost of the change, not due to a failure of McKinstry or their equipment.
3. McKinstry shall not be responsible for any increase in energy, maintenance, or any other costs incurred because of the extended equipment operation.
4. During the M&V portion of the project McKinstry at its option may make a baseline energy use adjustment to identify and account for a change-of-use at the facility.
5. McKinstry will calculate the change in energy consumption due to the specific change made to the system's operation.





Table 3.1 - Energy Savings Summary

Project Stanwood-Camano School District Ph 5
Scenario 2017 Base
Date 9/26/2016

Facility Improvement Measures	Facility	Net Effective Guarantee Multiplier *	Natural Gas		Total **
			Therm	Therm (\$)	(\$)
01.01-SES: Upgrade Boilers and Boiler Controls	Stanwood Elementary School	90.0%	2,780	\$2,476	\$2,476
Totals ***			2,780	\$2,476	\$2,476

* The savings shown in this table are less than the calculated savings unless a guarantee multiplier of 100% is shown.

** The guarantee is based on Key Performance Indicators shown in Table 3.2. Refer to Section 3 of the ESP for the method of converting Key Performance Indicators to dollars during the M&V period.

*** The guarantee is based on the aggregate savings for all FIMs, not on individual FIM savings.

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Table 3.2 - M&V Plan Outline

Project: Cherokee-Citrus, School District, Ph. 6
 Screening: 2017 Base
 Date: 9/26/2016

TUM Name	Facility	APR	Key Performance Indicators	Baseline Values	Proposed Values	Auto Steps (Baseline)	Post-Start (Commissioning)	Annual	Ongoing Owner Responsibilities	Stipulated Parties
						Tasks	Tasks	Tasks		
01-01-055, Upgrade Boilers and Boiler Controls	Starwood Elementary School	1.	Boiler type and efficiency	78% Efficient HW Boilers	92.5% Efficient Condensing Boilers	Nameplate Output/Input	Review Submittal, Combustion Efficiency Test Combustion Efficiency Test at 20% Input at 20°F DT and 80% Input at 20°F	Combustion Efficiency Test at 20% Input at 20°F DT and 80% Input at 20°F	Schedules, Setpoints, GA damper control, occupancy, weather	Schedules, Setpoints, GA damper control, occupancy, weather
			2.	HWST reset range	120°F-180°F	120°F-180°F	Review controls sequence	Review controls sequence		

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Table 3.3 - Base Utility Rates

Project: Stanwood-Camano School District Ph 6
Schedule: 2017 Base
Date: 9/26/2016

Building_Name	Utility_Provider	Rate_Name	Utility_Type	Dollars_Per_Unit	Units	Published_Date_Effective
Stanwood Elementary School	Cascade Natural Gas	Sch 504	Natural Gas	\$0.890620	Therms	8/17/2015
Stanwood Elementary School	Snohomish County Public Utility District (PUD)	Sch20	Electricity	\$0.078200	kWh	10/1/2015

Project Financials

4.1 Maximum Project Allowable Cost

McKinstry guarantees that the Maximum Project Cost will not exceed the guaranteed value shown in Table 4.1; this cost does not include sales tax, WA State Interagency fees, utility rebates or the Commerce grant. The sales tax and interagency fees are shown in Table 4.1 for reference. (McKinstry does not guarantee the value of sales tax, interagency fees, or any incentives or grants.)

Costs presented in this proposal are valid for 30 days from the date of publication. If the notice to proceed is issued after the 30 days from publication, McKinstry reserves the right to re-evaluate the project and make necessary modifications to the construction costs.

4.2 Project Cost Table

(See Table 4.1 – “Budget Summary” – all fee percentages and costs are unique to the project)

4.3 Items Included In Maximum Project Cost

1. Engineering audit, which includes the cost for the preparation of this proposal
2. Engineering design
3. Construction management services
4. Installation of McKinstry Equipment including the following costs as specified in the scope of work:
 - a. All costs paid by McKinstry for the installation of the equipment. This includes costs paid to subcontractors or directly to McKinstry personnel, when related to installation or system verification of McKinstry equipment.
 - b. The portion of reasonable travel, lodging, and meal expenses of officers or employees incurred while traveling in discharge of duties connected with the work. McKinstry will comply with OFM guidelines for reimbursement of travel expenses.
 - c. Cost of all equipment, materials, supplies, and equipment incorporated in the Work, including costs of transportation thereof.
 - d. Cost or rental charges, including transportation and maintenance, of all materials, supplies, equipment, temporary facilities, and hand tools not owned by the workers, which are consumed in the performance of the work and cost less salvage value on such items used but not consumed which remain the property of McKinstry.
 - e. Cost of premiums for all bonds and insurance, which McKinstry is required to purchase and maintain.
 - f. Sales, use, or similar taxes related to the Work and for which McKinstry is liable imposed by a governmental authority.
 - g. Permit fees, royalties, and deposits lost for causes other than McKinstry’s negligence.
 - h. Losses and expenses not compensated by insurance or otherwise, sustained by McKinstry in connection with the work, provided they have resulted from causes other than the fault or neglect of McKinstry. Such losses shall include settlements made with the written consent and approval of the Owner and the DES Energy Program. If, however, such loss requires reconstruction and McKinstry is placed in charge thereof, McKinstry shall be paid a fee for such services.
 - i. Demolition cost and cost of removal of all debris unless specifically excluded within the Scope of Work.



Project Financials

- j. Costs incurred due to an emergency affecting the safety of persons and property.
- k. Other costs incurred in the performance of the Work if and to the extent approved in advance in writing by the Owner.
- l. Contingency as defined in Section 4.4.
- m. Allowances as defined in Section 4.5.
- n. Cost of equipment startup, training, system verification, and balancing performed by McKinstry.
- o. Construction Bonds (including Performance & Payment Bond), Liability Insurance, and Builder's Risk Insurance.
- p. McKinstry fee. This includes McKinstry's remuneration for compensation of personnel, expenses, risks related to the project, overhead, and profit.
- q. McKinstry shall provide a Schedule of Values. The schedule of values will include all costs related to the installation of McKinstry's equipment.

4.4 Construction Contingency

A construction contingency as identified in Table 4.1 – "Budget Summary" has been established for this project. McKinstry can expend the contingency after a change order has been approved by the Owner, the ESCO, and the DES Project Manager for items necessary to complete the original scope of this project. The intent of the contingency is for "unforeseen conditions" beyond what was originally estimated. McKinstry and the Owner will jointly manage any contingency left after the project scope is completed. All unused construction contingency funds shall reduce the overall project cost to the Owner.

4.5 Allowances

McKinstry may set aside allowances as identified in Table 4.1 - "Budget Summary" for specific areas of work that have been identified as a potential cost impact but cannot be determined at this stage. Should the allowance not be adequate, the Owner and the DES Project Manager will be advised, and McKinstry will be compensated for any additional costs via Change Order to the contract. When actual costs for scope identified as Allowance are less than the Allowance amount, the difference will be allocated to Contingency. In extreme situations, McKinstry may request additional funds to cover cost overruns that could not have been foreseen by either party.

4.6 Ongoing Services

Refer to Table 4.1 for the cost and duration of any ongoing services.

4.7 Accounting Records

McKinstry shall check all material, equipment, and labor entering into the worksite and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement. The Owner and the DES Project Manager shall be afforded access to all the ESCO's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to this Contract, and the Contract shall preserve all such records for a period of seven years, or for such longer period as may be required by law, after the final payment.

4.8 Reconciliation of Labor & Material Costs

The maximum project allowable cost is based on firm negotiated bids or estimated labor and material costs developed by the ESCO. In recognition that actual Labor & Material costs may vary from the estimate, the



Project Financials

following procedures are established to reconcile this difference:

1. If the total maximum guaranteed project cost at completion exceeds the estimated amount (plus contingency), the additional costs will be borne by McKinstry at their expense.
2. If the total project costs at completion are less than the estimated proposal amount (less contingency), the savings will be retained by the Owner.
3. There shall be no cost savings split between the Owner and McKinstry.

The following Figure 4.A outlines proposed procurement and payment reconciliation methods. Changing the proposed method of reconciliation after the acceptance of the Proposal may require an adjustment to the Guaranteed Maximum Project Cost.

DEFINITIONS:

Major Equipment:

Major Equipment is any single piece of equipment purchased by McKinstry with a value over \$5,000.

Negotiated:

Construction contract value is to be established through negotiations with a select or single contractor (i.e. owner preferred controls contractor, mechanical contractor, etc.).

Bid:

Construction contract value is to be established through a bid process based upon formal bid documents including plans and specifications which will be bid to a minimum of two (typically three) pre-qualified contractors as approved by the ESCO and owner. Owner shall endorse any selection of a Subcontractor or equipment that is other than low bid through a properly executed change order.

Self-Perform:

McKinstry intends to perform work with McKinstry and/or McKinstry personnel.

Schedule of Values (SOV):

Cost shall be substantiated with a properly executed invoice from the subcontractor or supplier that matches the schedule of values in their contract or purchase order.

Time & Materials (T&M):

Published sell rates will be established prior to issuance of contract to subcontractor or commencement of work by McKinstry. A monthly labor and material report will be provided which will include labor hours and dollars per individual, and material and equipment invoices.

Firm:

Fees that are negotiated prior to proposal and are not reconciled at the end of the project.



Project Financials

FIGURE 4.A

Construction Cost Category (ref Table 4.1)	Proposed Construction Method	End of Project – Reconciled (SOV or T&M)
Controls Systems	Negotiated	SOV
Major Equipment	Negotiated	SOV
Sheet Metal	Negotiated	SOV
Electrical	Negotiated	SOV
Piping	Negotiated	SOV
Demolition	Negotiated	SOV
General Construction	Self-Perform	T&M
TAB/Start up	Self-Perform	T&M
Commissioning	Self-Perform	T&M
Change Order (CO)	As Specified in CO	T&M
ESCO Fees	Self-Perform	Firm

4.9 ESCO Compensation

1. TERMS:

Net 30 days (45 days for State Treasurer payments) from the date of invoice, monthly billings as the job progresses.

2. PAYMENTS:

At a minimum, payments will be made in the amount of 100% at the completion and implementation of any individual facility improvement measure (FIM) in the amount of that FIM as delineated in the contract. If more than one FIM is completed in a monthly period, all those FIMS will be paid.

3. FINANCE CHARGES ON UNPAID BALANCES:

Payments due and unpaid shall be subject to interest charges within 30 days (45 days for State Treasurer payments) of receipt of a properly completed invoice per RCW 39.76. Finance charges will be calculated on the un-billed balance at the rate of Prime + 2% per annum. Charges accrue until balances are paid in full. Interest charges will be calculated daily, compounded monthly.

4. CONSTRUCTION PERIOD FINANCE:

McKinstry may charge construction period finance for projects, independent of financing method, whereby the anticipated billing lags the earned schedule of values by more than 90 days. Table 4.5 provides the anticipated maximum construction period finance charges for this project based on the estimated earned value each month versus the anticipated billing collection schedule. If Owner controlled schedule delays occur during the progress of the project, the Contractor may request additional finance charges be added to the project. Construction period finance will be calculated on the un-billed balance at the rate of Prime + 2% per annum. Interest charges will be calculated daily, compounded monthly. Charges accrue until balances are paid in full.

McKinstry and the Owner will work together to minimize finance charges. Table 4.5 has been created based on the following criteria:

- a. WA DES accepts invoices in accordance with State Treasury loan cycle
- b. WA DES requires 5 working days to substantiate McKinstry invoice
- c. Owner requires 10 working days to process invoice
- d. McKinstry will submit invoices 15 working days prior to State Treasurer cutoff date

The construction schedule has been developed based on the following assumptions:

- a. Owner review of final Energy Services Proposal (ESP) 10 working days



Project Financials

b. McKinstry receives notice to precede within 15 working days from the final review responses

5. SUBSTANTIATION OF FINANCE CHARGE:

McKinstry will do an accounting of finance charges progressively through the project, and at contract completion submit a change request itemizing the summary of additional costs for implementation. The contract will then be increased to reflect the same and finance charges will be paid within 30 days of the date of approved substantiation. Maximum Project Cost will be adjusted to reflect the additional finance charges and billings will be adjusted accordingly.

4.10 Financing - Not Applicable

4.11 Termination Value

Refer to program guidelines for information on Termination values.

4.12 Terms of Agreement

The Contract shall be effective and binding upon the parties immediately upon its execution and the period from contract execution until the Commencement Date shall be known as the "Interim Period". All energy savings achieved during the interim period will be fully credited to Owner, and may be used to offset any loss of energy savings; as mutually agreed to by the Owner, DES Project Manager and McKinstry.

4.13 Insurance & Bonding

McKinstry shall provide a payment and performance bond and builders Risk Insurance.

For The Purposes of This Agreement, the "Sum Amount of Bond" Shall Be (See Table 4.1 –"Budget Summary Breakdown").

1. The bond amount consists of Labor and Materials and State Sales Tax.
2. This bond does not include any construction contingencies.
3. Certificates of General Liability Insurance will be provided prior to Contract Signing. The State Of Washington shall be named as An Additional Insured on all insurance certificates.

McKinstry shall provide a payment and performance bond in the amount of 100% of the construction cost, as defined in the Energy Services Agreement Addendum. The amount shall include all authorized changes and state sales tax. The Bond shall be in the form attached to the Conditions of the Energy Services Agreement. The Contract listed on the bond form shall be the Addendum No. and Agreement No., which incorporates the work, and the "Contract Date" shall be the date of the Addendum. The full and just sum of the Bond shall be as defined above and shall include the actual cost of purchasing and installing McKinstry's Equipment. The Bond shall specifically exclude coverage for those portions of the Energy Services Agreement and/or Energy Services Agreement Addendum pertaining to design services, energy cost savings guarantee, maintenance guarantee, utility incentives, efficiency guarantees, and any other clauses which do not relate specifically to construction management and supervision of work for purchasing and installing of McKinstry's Equipment, or for work to be accomplished by the Owner. The Bond shall be with a Surety or Bonding Company that is registered with the State of Washington Insurance Commissioner's Office.

While McKinstry stands behind our safety record, we cannot control the work flow around items we have no control over. At no point does McKinstry assume any responsibility for the loss of use of any equipment and we exclude any and all claims for consequential damages therein.



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Table 4.1 - Budget Summary



Project: Stanwood-Camano School District Ph 6
 Scenario: 2017 Base
 Date: 10/13/2016

Database ID	FIM Name	Mechanical	Electrical	EMCS	Equipment	Total
30160	01.01-SES: Upgrade Boilers and Boiler Controls	\$ 187,901	\$ 36,307	\$ 7,500	\$ 90,616	\$ 330,824
Total Base FIM Cost		\$ 187,901	\$ 36,307	\$ 7,500	\$ 90,616	\$ 330,824
A. Construction Costs						
	Site Supervision	%	5.00%	Percent of Total Base FIM Cost		\$ 16,541
Subtotal(FIM Cost and A)						\$ 347,365
	Construction Bonds	%	1.00%	Percent of Subtotal (FIM Cost and A)		\$ 3,474
Total Construction Cost						\$ 350,839
B. Professional Services Costs						
	Audit Fee	Lump	\$0			\$ -
	Design	%	15.00%	Percent of Total Base FIM Cost		\$ 49,624
	Const. Management & Proj. Admin	%	6.00%	Percent of Total Base FIM Cost		\$ 19,849
Total Professional Services Cost						\$ 69,473
C. Other Project Costs						
	Project Contingency	%	10.00%	Percent of Total Base FIM Cost		\$ 33,082
	Performance Assurance (M&V) - Year 1	Lump	\$2,814			\$ 2,814
Total Other Project Cost						\$ 35,896
D. Overhead Costs & Fees						
	Overhead	%	10.00%	Percent of Total Construction Cost		\$ 35,084
	Profit	%	8.00%	Percent of Total Construction Cost		\$ 28,067
Total Overhead Cost & Fee						\$ 63,151
E. Total Guaranteed Construction & ESCO Services (A + B + C + D)						\$ 519,359
F. Non-Guaranteed Costs						
	Sales Tax	%	9.10%	Percent of Section E		\$ 47,262
	Interagency Fee	Lump	\$4,000			\$ 4,000
Total Non-Guaranteed Cost						\$ 51,262
G. Total Maximum Project Cost (E + F)						\$ 570,620



Table 4.2 - Facility Improvement Measure (FIM) Summary

Project Stanwood-Camano School District Ph 5
Scenario 2017 Base
Date October 13, 2016

Facility Improvement Measures	FIM Description	Facility	Budget *	Annual Utility Savings	Potential Incentives ***	Net Customer Cost (with Incentives)
30160 01.01.SES: Upgrade Boilers and Boiler Controls	Existing Lochinvar (2) boilers were installed in 1995 and are at the end of their useful life. Boilers, boilers pumps, their instrumentation and system pumps shall be replaced. Back flow preventer is in good operational condition and shall remain in service. Water meter shall be replaced w/digital output capable unit. Proposed: Provide high efficiency condensing boilers. Provide system pumps w/ VFD's. Provide piping from boilers to boiler room wall, provide water meter w/ digital output. Replace boiler controls.	Stanwood Elementary School	\$570,620	\$2,476	\$19,200	\$551,420
Totals			\$570,620	\$2,476	\$19,200	\$551,420

* Since design cost, audit cost, etc. are distributed among the FIMs, the total project cost will not go up or down by exactly the amounts shown here if a FIM or FIMs are dropped.
 ** For non recurring operational savings, the values are averaged over the 30 year length of this analysis.
 *** Incentives are contingent on final approval and are not guaranteed. Funds are shown for reference only.

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5. Directed Engineering Study

Table of Contents

SECTION 5.1 PURPOSE AND ORGANIZATION

SECTION 5.2 EXISTING FACILITY DESCRIPTION

SECTION 5.3 FACILITY IMPROVEMENT MEASURES – CALCULATIONS

FIM 01.01-SES: UPGRADE BOILERS

SECTION 5.4 FIMS CONSIDERED BUT NOT INCLUDED IN THIS PHASE

SECTION 5.5 UTILITY DATA

SECTION 5.6 ADDITIONAL SURVEY DATA



Directed Engineering Study cont.

5.1 PURPOSE AND ORGANIZATION

This exhibit documents the analysis performed to establish the utility and operational savings for the project.

The information is organized by FIM (Facility Improvement Measure) as follows:

- FIM Narrative with key assumptions and criteria
- Savings calculation methodology and analysis

Additionally, relevant site survey data, measurement and verification data, utility information and miscellaneous back-up information are provided in the sections following the various FIM sections.

Directed Engineering Study cont.

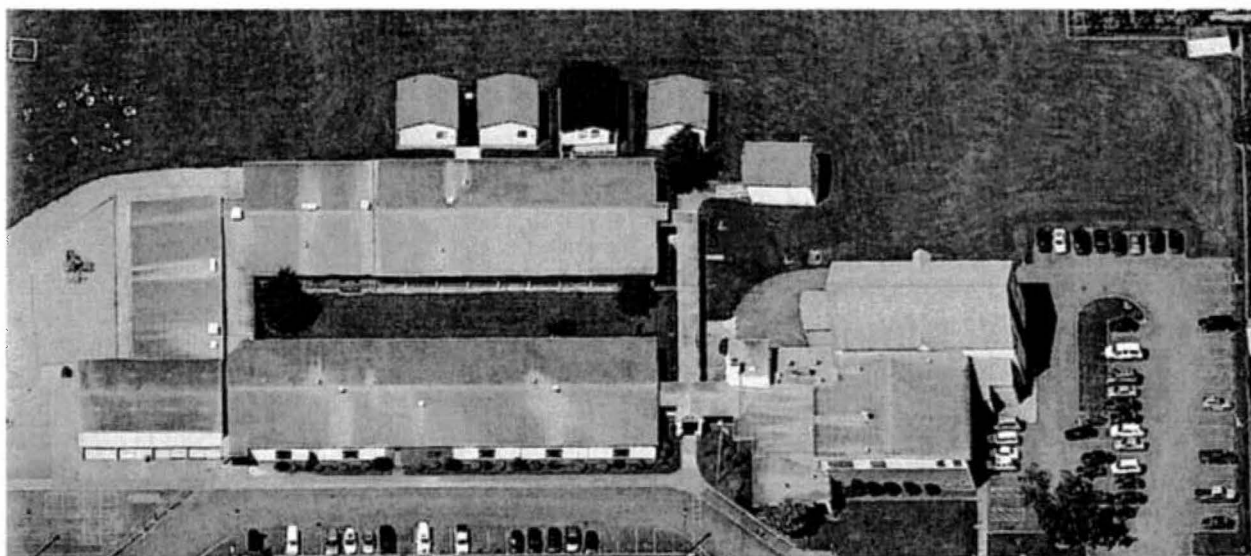
5.2 EXISTING FACILITY DESCRIPTIONS

Stanwood-Camano School District consists of ten (10) schools. In this phase, McKinstry investigated specific opportunities in the following facilities:

- Stanwood Elementary School

STANWOOD ELEMENTARY SCHOOL

10227 273rd Pl NW
Stanwood, WA 98191
64,161 square feet



General Building Information: Stanwood Elementary School serves ~350 students in kindergarten through 5th grade. Stanwood Elementary is a single story 64,161 square foot structure originally constructed in the 1950s with an addition made in the 1996. The facility includes a gym, a kitchen, classrooms, and admin areas. Electricity is provided by Snohomish PUD and natural gas is provided by CNG. The school is occupied from ~8:30am-3:30pm Monday through Friday.

HVAC system: Heating for the facility is provided by two (2) 2MBH Lochinvar hot water boilers. The original portion of the facility is heated and ventilated through unit ventilators in each classroom. The multipurpose room and administration addition is heated and ventilated through two (2) air constant volume handlers. AHU-1 serving the multipurpose room has a pre-heat and heating coil. AHU-2 serving the administration area provides heat through zone level hot water coils only. Exhaust fans exhaust air from restrooms and storage areas. Domestic hot water is provided by natural gas hot water heaters.

Heating temperature setpoints are maintained typically between 68° F and 72°F when the building is scheduled occupied and 55°F when the building is scheduled unoccupied. The building is scheduled for 7am through 4pm Monday through Friday.

Controls: A direct digital control (DDC) system manages schedules and operation of the building heating and ventilation system. The controls were installed in 1997 and are reaching the end of their useful life.

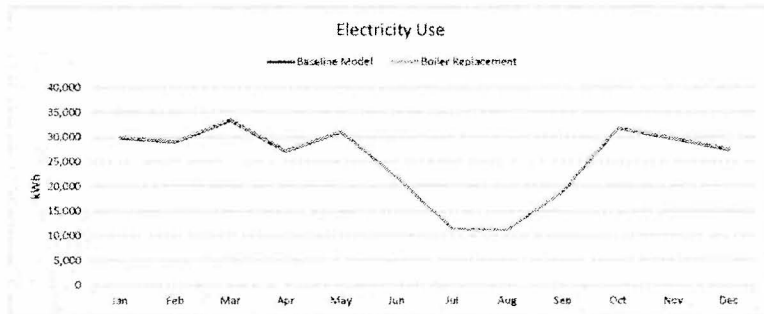
Lighting: The majority of the interior building spaces consist of T8 or T12 lighting fixtures. Lighting is manually operated. Exterior lighting is controlled by local photocells to deactivate lighting when a sufficient level of daylight is detected.

Directed Engineering Study cont.

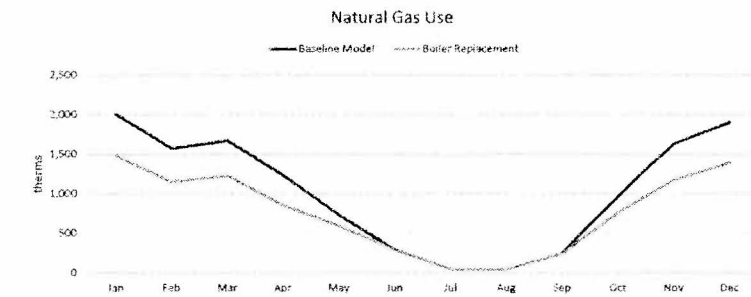
5.3 FACILITY IMPROVEMENT MEASURES - CALCULATIONS



eQUEST Model FIM Savings



Month	Baseline Model kWh	Boiler Replacement kWh	Savings kWh
Jan	29,830	30,040	(210)
Feb	28,980	29,160	(180)
Mar	33,380	33,590	(210)
Apr	27,100	27,300	(200)
May	31,030	31,130	(100)
Jun	21,800	21,800	-
Jul	11,360	11,360	-
Aug	11,170	11,170	-
Sep	18,880	18,880	-
Oct	31,790	31,890	(100)
Nov	29,650	29,840	(190)
Dec	27,350	27,560	(210)
Annual Total	302,320	303,710	(1,390)



Month	Baseline Model therms	Boiler Replacement therms	Savings therms
Jan	2,002	1,479	523
Feb	1,570	1,146	424
Mar	1,671	1,227	444
Apr	1,233	850	383
May	728	588	140
Jun	286	286	0
Jul	40	40	-
Aug	40	40	-
Sep	241	241	0
Oct	961	757	204
Nov	1,631	1,171	460
Dec	1,900	1,390	510
Annual Total	12,304	9,215	3,089

Notes

Baseline condition is (2) 1900 MBH hot water boilers with internal temperature setpoint of 140°F, controlled with a reset of 120/180°F. Proposed measure condition is (2) 1999 MBH condensing boilers with internal temperature setpoint of 140, controlled with a reset of 120/160°F.

Directed Engineering Study cont.

5.4 FIMS CONSIDERED BUT NOT INCLUDED IN THIS PHASE

The following FIMs were considered and are recommended for further study in a later phase.

- **TWIN CITY ELEMENTARY SCHOOL – REPLACE BOILERS**
The existing boilers are reaching the end of their lives. Replace the boilers with high efficiency condensing boilers.
- **MULTIPLE SCHOOLS – REPLACE CONTROLS SYSTEM**
The existing controls system is difficult to operate. The computers are original to the controls installation in 1997 and the screens are incredibly dim making graphics difficult to read. Many of the controllers no longer work. HVAC controls at individual school building shall be upgraded in future phases.

Directed Engineering Study cont.

5.5 UTILITY DATA



Utility Data Analysis



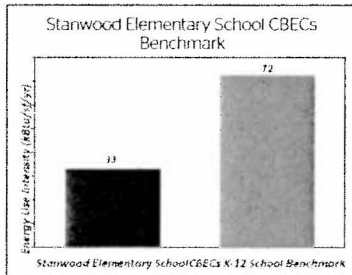
Stanwood Elementary School Building Analysis

10227 273rd Pl NW Stanwood, WA 98292
 64,161 Square feet
 Building Designation: K-12 School

ANALYSIS SUMMARY

Energy		Cost	
Electricity Use	275,160 kWh	Electricity Cost	\$23,284 \$/kWh/yr
Natural Gas Use	11,712 therms	Natural Gas Cost	\$11,799 \$/therm/yr
CO2e Emissions	168 metric tons/yr	Misc. Charges	\$/yr
Total Energy Use	2,110,017 kBTU	Total Cost	\$35,083 \$/yr
Energy Use Metrics			
Electricity Use Intensity	15 kBtu/sf/yr	Electricity Cost Intensity	\$0.36 \$/sf/yr
Natural Gas Use Intensity	18 kBtu/sf/yr	Natural Gas Cost Intensity	\$0.18 \$/sf/yr
Energy Use Intensity	33 kBtu/sf/yr	Energy Cost Intensity	\$0.55 \$/sf/yr

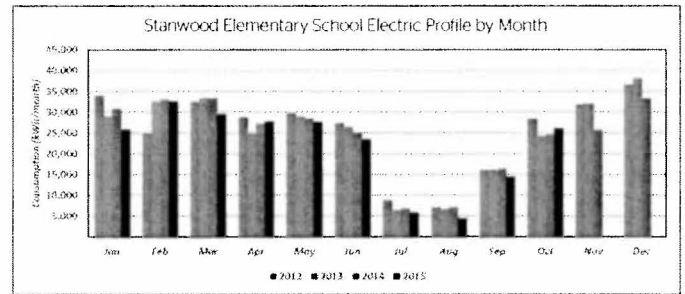
McKinstry has gathered energy use benchmark data in order to compare Stanwood Elementary School's energy use with similar facilities. Energy Use Intensity refers to the total annual energy use for a facility divided by the facility's square footage. By normalizing energy use by square footage, we are able to compare Stanwood Elementary School's energy use with similar facilities.



Stanwood Elementary School CBECs Benchmark	
Benchmark Building Type	K-12 School
Stanwood Elementary School	33 kBtu/sf/yr
CBECS K-12 School Benchmark	72 kBtu/sf/yr

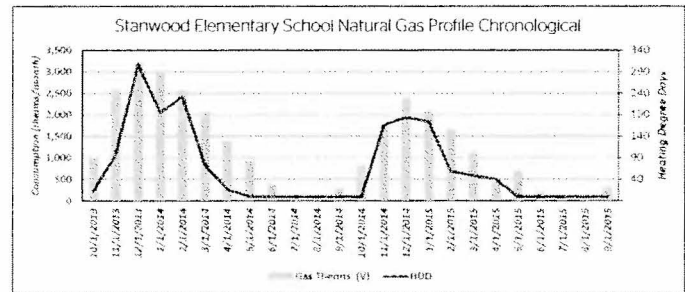
Insights
 CBECS (Commercial Buildings Energy Consumption Survey) is the U.S. Department of Energy's Energy Information Agency commercial building energy consumption survey that provides a high level look at average building performance by building type. In this case Stanwood Elementary School is performing better than the national average for the benchmark building type. This is due to the small amount of outside air the school conditions.

MONTHLY UTILITY DATA PROFILES



The figure above shows monthly Stanwood Elementary School electricity use for January 2012 through October 2015. Usage in the summer decreases due to fewer hours of operation.

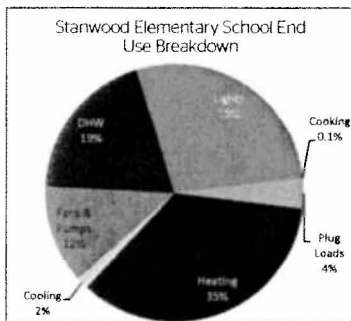
The figure below shows monthly Stanwood Elementary School natural gas use for October 2013 through September 2015 graphed with heating degree days. Heating degree days are an indicator of how weather affects the heating system. The chart below suggests there is opportunity for energy savings during the heating season.



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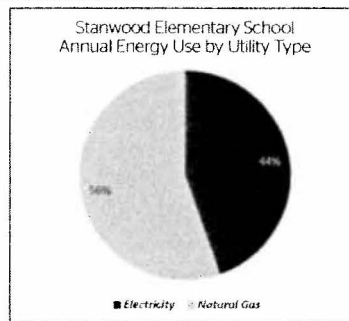
Utility Data Analysis

END USE BREAKDOWN



Stanwood Elementary School's end use breakdown shows where energy is distributed throughout the building. This end use breakout is based on the eQUEST model that was created in order to calculate energy savings. The model was calibrated within 10% of the electricity and natural gas utility bills. The largest portion of energy use is for heating, followed by lighting, and domestic hot water. HVAC fans and pumps are the next largest end use followed by plug loads, cooking, and cooling.

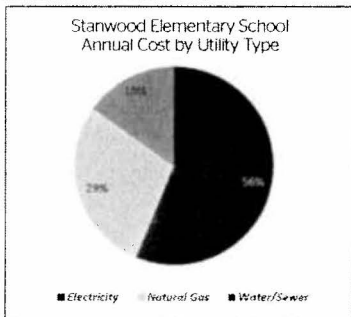
ANNUAL ENERGY USE BY UTILITY TYPE



Utility Type	Value	EUI
Electricity	15	kBtu/sf/yr
Natural Gas	18	kBtu/sf/yr
Total	33	kBtu/sf/yr

Stanwood Elementary School spends the most energy on natural gas.

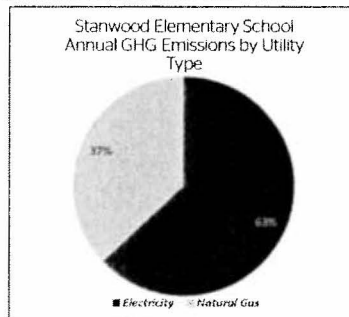
ANNUAL COST BY UTILITY TYPE



Utility Type	Value	Units
Electricity	23,284	\$/yr
Natural Gas	11,799	\$/yr
Water/Sewer	6,288	\$/yr
Total	41,371	\$/yr

The largest utility cost for Stanwood Elementary is electricity, followed by natural gas and water/sewer.

ANNUAL GHG EMISSIONS BY UTILITY TYPE



Utility Type	Value	Greenhouse Gas Units
Electricity	106	MT CO2e
Natural Gas	62	MT CO2e
Total	168	MT CO2e

The majority of the greenhouse gas emissions for Stanwood Elementary School come from electricity.

Directed Engineering Study cont.

5.6 ADDITIONAL SURVEY DATA

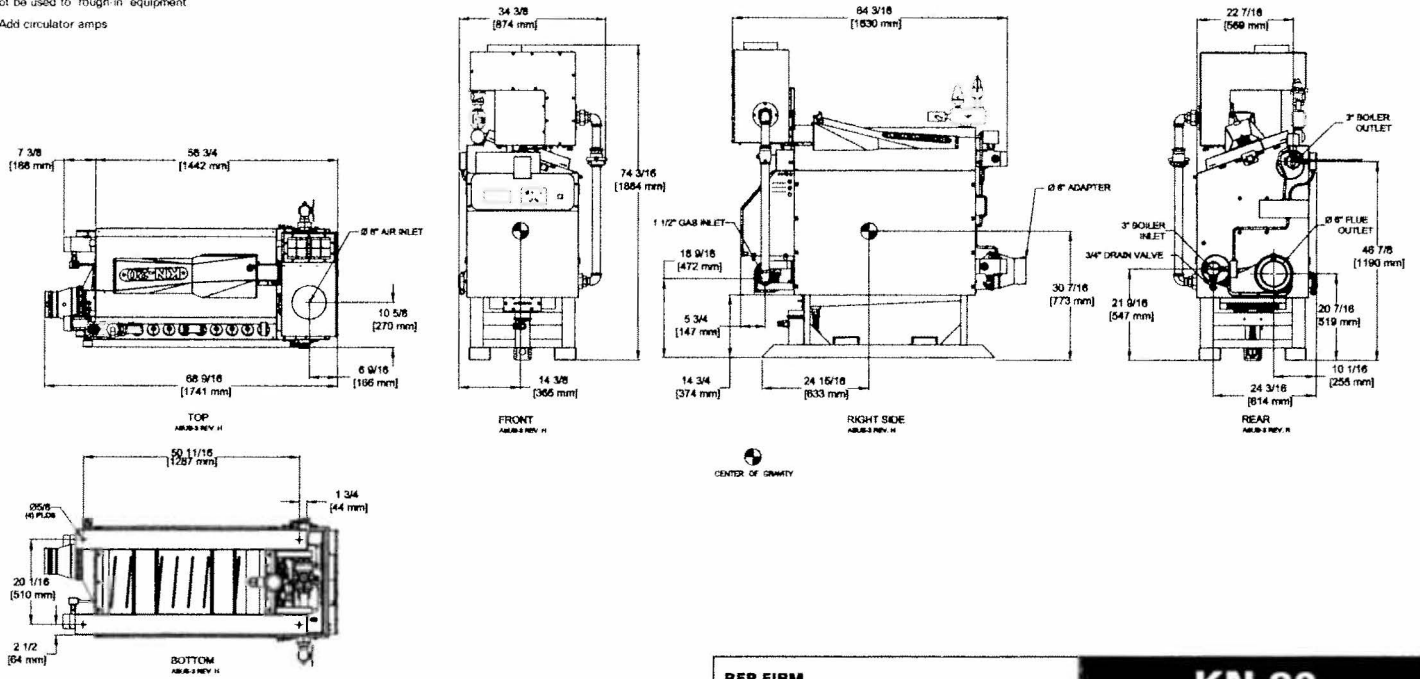



CODE OPTIONS

CSD-1	STANDARD
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NOTE: Dimensions are approximate and should not be used to "rough-in" equipment.

*Add circulator amps



REP FIRM	_____	KN-20 Category II or Category IV Appliance <small>(see Installation and Operation Manual for venting information)</small>  A Division of Mestek, Inc. Westfield, MA 01085 (413) 564-5515
SUBMITTED BY	_____	
JOB NAME	_____	
ARCHITECT	_____	
ENGINEER	_____	
CONTRACTOR	_____	
DATE	_____	



A.G.A. CERTIFIED RATINGS & CAPACITIES

Fuel Type	Natural/LP Gas	Boiler FLA	7 A*
Input BTU/hr.	1999 MBH/ 586 KW	Min. Gas Pressure Required	3" W.C.
Output BTU/hr.	1853 MBH/ 543 KW	Max. Gas Pressure Allowed	14" W.C.
Boiler HP	55.4	Water Volume	28 gal.
Electrical Requirements	208/230VAC 60hz/1PH with neutral	Operating Weight	2714 lbs. / 1232 kg.

BOILER TRIM & CONTROLS

Main Gas Valve	Dungs MBC	Air Switch	Huba
Firing Valve	1 1/2" Apollo	Flow Switch	ITT FS251
Ignition Control	Honeywell RM7895C	Blocked Flue Switch	Cleveland NS2
Operating Control	HeatNet**	Blower Motor	Ametek
High Limit	Honeywell L4006E	L.W.C.O.	750P-MT-120
Main Ball Valve	1 1/2" Apollo	Relief Valve	30, 50, 75 & 100 PSI
Pilot Cock	1/4" Conbraco	Pilot Regulator	Maxitrol RV12LT

*Add circulator amps

TEMPERATURE RISE / PRESSURE DROP (Based on Full Input)

20° F / 11.1° C		40° F / 22.2° C		60° F / 33.3° C		80° F / 44.4° C		100° F / 55.5° C	
Flow Rate	Pressure Drop	Flow Rate	Pressure Drop	Flow Rate	Pressure Drop	Flow Rate	Pressure Drop	Flow Rate	Pressure Drop
GPM	L/s	Ft	kPa	GPM	L/s	Ft	kPa	GPM	L/s
185.5	11.71	2.2	6.48	92.7	5.85	55	1.62	61.8	3.90
						.34	.84	46.4	2.93
						14	.41	37.1	2.34
								09	27

Flow GPM		Temp. Rise** (*F)		Vent Length (Equiv. Ft.)		Air Inlet Length (Equiv. Ft.)	
Min	Max	Min	Max	Min	Max	Min	Max
30	300	20	100	6	120	0	80

** Min/Max delta t reflects boiler operation at full input. For applications requiring operation above/below these parameters please consult factory.

A.S.M.E.

ASME Sect IV	115.91 Sq. Ft. / 10.77 Sq. M.	Design Data	100 PSI & 250° F
Fire Side Htg Surface			
ASME Sect IV	48.40 Sq. Ft. / 4.50 Sq. M.		
Water Side Htg Surface			
CV. GPM (1PSID)	190		

KN-20



Table 4.2 - Facility Improvement Measure (FIM) Summary

Project: Stanwood-Cemeno School District Ph 5
 Date: Commerce 2016 Option 3
 Date: March 3, 2016

Facility Improvement Measure	FIM Description	Facility	Budget **	Annual Utility Savings	Annual Operational Savings **	Potential Incentives ***	Per Customer Cost (with Incentives)	Simple Payback (SPB) (with Incentives)
03-01-TCES- Upgrade VAV Boxes	Upgrade VAV boxes. Gears are failing and damper controllers don't function correctly. Existing boxes are Barber Coleman and are parallel fan powered VAVs.	Twin City Elementary School	\$451,334	\$179	\$0	\$0	\$451,334	2520.9
09-01-PSMS- Upgrade Interior Lighting	The intent of this measure is to upgrade lighting fixtures at Port Susan Middle School located in the Gym, Foyer, and Cafeteria. Foyer has (10) compact fluorescent lamp fixtures 10' high and (10) fluorescent fixtures in clearstory. Gym has (30) 250W Metal Halide pendant fixtures. Cafeteria has (12) uprights and (14) compact fluorescent lamp fixtures.	Port Susan Middle School	\$43,357	\$3,072	\$676	\$6,500	\$36,857	9.8
09-01-SES- Upgrade Interior Lighting	The intent of this measure is to upgrade interior and exterior fixtures located at Stanwood Elementary School. Interior fixtures include fluorescent T12 fixtures with PCB ballasts in classrooms and high intensity discharge fixtures in gym/cafeteria. Exterior fixtures include high intensity discharge fixtures located in the covered play shed.	Stanwood Elementary School	\$118,430	\$5,033	\$702	\$10,647	\$107,783	18.8
09-01-TCES- Upgrade Interior Lighting	Upgrade existing T12 and compact fluorescent lamps to LED	Twin City Elementary School	\$112,335	\$6,611	\$1,000	\$13,984	\$98,351	12.9
16-01-SES- Implement Water Conservation Measures	Upgrade plumbing fixtures to provide water and energy savings	Stanwood Elementary School	\$28,758	\$2,324	\$0	\$0	\$28,758	12.4
16-05-SES- Implement Water Conservation Measures	Upgrade plumbing fixtures to provide water and energy savings	Cedarhome Elementary	\$21,126	\$3,195	\$0	\$0	\$21,126	6.6
16-06-TCES- Implement Water Conservation Measures	Upgrade plumbing fixtures to provide water and energy savings	Twin City Elementary School	\$29,879	\$2,757	\$0	\$0	\$29,879	10.8
16-07-PSMS- Implement Water Conservation Measures	Upgrade plumbing fixtures to provide water and energy savings	Port Susan Middle School	\$35,397	\$4,635	\$0	\$0	\$35,397	7.5
Totals			\$840,617	\$27,805	\$2,378	\$31,131	\$809,466	26.8

* Since design cost, audit cost, etc. are distributed among the FIMs, the total project cost will not go up or down by exactly the amounts shown here if a FIM or FIMs are dropped.
 ** For non recurring operational savings, the values are averaged over the 30 year length of this analysis.
 *** Incentives are contingent on final approval and are not guaranteed. Funds are shown for reference only.

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