

Kenai Peninsula Borough

Purchasing and Contracting Department

MEMORANDUM

TO: Charlie Pierce, Mayor

THRU: John Hedges, Purchasing & Contracting Director JH

FROM: Carmen Vick, Project Manager CV

DATE: June 4, 2020

RE: Homer High School Digital Control Retrofit to Siemens, Under the Government General Services Administration (GSA) Contract

There exists a strong need to replace the existing pneumatic controls at the Homer High School facility. Much of the existing system is obsolete and no longer maintainable. The lack of control causes large temperature variations together with inefficiencies in heating. A conversion from pneumatic to digital control and monitoring will allow communication with PC based remote monitoring.

It is our preference to align the proposed system with the other systems in place within the Borough where Siemens technology has been applied. It would be in the best interest of the Borough to standardize the building automation system at this facility. This would greatly streamline the demand on maintained parts inventory, service technician training and server maintenance costs. Purchasing and Contracting has received a proposal from Siemens Industries that includes group purchasing organization (GPO) involvement, specifically GSA. The Siemens Industries proposal matches our system compatibility and building automation needs.

Utilizing the established GSA pricing structure, Siemens Industries has provided a quotation for the sum of \$737,912.00, to provide parts and services for the conversion of the Homer High School system. For reasons stated above, Purchasing & Contracting would like to award Siemens Industries with the contract to convert the existing HHS pneumatic systems to digital control. The main qualifiers restated: Increased system control and performance, local system alignment, parts, training and system requirement savings as well as the satisfaction of procurement code through GPO/GSA involvement.

Your approval is hereby requested. Funding for this project is in account number 400.72010.20CON.48311.

Charlie Pierce
Charlie Pierce, Mayor

6/5/2020
Date

FINANCE DEPARTMENT FUNDS VERIFIED	
Acct No.:	<u>400.72010.20CON.48311</u>
Amount:	<u>\$737,912.00</u>
By: <u>BH</u>	Date: <u>6/5/2020</u>
NOTES: n/a	



PROPOSAL

HOMER HIGH SCHOOL DDC SYSTEM REPLACEMENT

PREPARED BY

Siemens Industry, Inc.

PREPARED FOR

Kenai Peninsula Borough

DELIVERED ON

May 21, 2020





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Contact Information

Proposal #:	4822605 REV1
Date:	May 21, 2020

Siemens Contact:	Jim McDonough
Office Address:	5333 Fairbanks Street Suite B Alaska, 99518
TelephCone:	(907) 227-2199
Email Address:	jim.mcdonough@siemens.com

Customer Contact:	Carmen Vick - Project Manager
Customer:	Kenai Peninsula Borough
Address:	47140 E Poppy Lane Soldotna AK 99669-9743
Services shall be provided at:	Homer High School 600 E Fairview Avenue, Homer AK 99603



Homer High School DDC System Replacement - Scope of Work

Siemens Industry, Inc., having examined the physical conditions at the Homer High School, and having reviewed the as-built documentation provided, hereby proposes to provide labor, material, equipment, transportation, supervision and other facilities to execute the work described in this document. The clarifications and exclusions listed below are intended to clarify the scope of work and compensation agreed upon between Siemens and the Kenai Peninsula Borough (KPB).

Scope of Work - Base Bid (New Digital Control System for Primary HVAC Systems)

1. Siemens will provide fully-engineered shop drawings, wiring diagrams, sequences of operation, DDC panel layouts and product data to KPB for review and comment prior to construction. The completed submittal package will be provided in both electronic and printed format (3 copies).
2. Siemens will provide a "turnkey" project delivery based upon the clarifications and exclusion listed below.
3. Siemens will provide demolition and on-site disposal of the existing control system field panels and devices as required to accommodate the new control system installation.
4. Siemens will provide replacement of the existing Andover temperature sensors to assure compatibility with the new digital control system.
5. Siemens will provide replacement of the existing control damper actuators with new actuators.
6. Siemens will provide replacement of the existing valve actuators with new actuators. Existing valve bodies were observed to be in working order, so the existing valve bodies will be reused. This project will not require any modifications to the existing piping/plumbing system.
7. Siemens will provide replacement of the existing smoke isolation damper actuators on AHU-1 and AHU-2 with new damper actuators. Existing power and signal wiring will be reused.
8. Siemens will replace the existing Andover control panels (typical of 4 locations) with new Siemens PXC Modular controllers. Existing wiring and conduit raceways will be reused wherever possible.
9. Siemens will connect the new boilers and pumps to the new DDC system. Siemens will provide a recommended sequence of operation for the boilers as part of our submittal package.
10. Siemens will convert the existing pneumatic controls on the hot water generators to DDC controls. The existing control valves (2) are in good working order, so only the actuators will be replaced. Siemens will remove the existing controls air compressor and deliver it to KPB.
11. Siemens will provide new temperature sensors to monitor the existing walk-in freezer and walk-in cooler.
12. Siemens will provide CAT6 Ethernet data cable connections to the new DDC panels. Siemens will coordinate with the KPB IT department to make final terminations and to assign IP addressed to each of the four panels and the new DESIGO client workstation.
13. Siemens will provide system programming, check-out and start-up at the completion of the installation.
14. Siemens will provide a complete set of as-built documentation (O & M Manuals) at the completion of the project in both electronic and printed format (3 copies). Siemens will also provide printed panel termination layouts inside each of the new DDC panels.



15. Siemens will provide one new DESIGO client workstation at the facility for local control and monitoring. Siemens will provide system graphics for all mechanical equipment that is connected to the new DDC system. The entire system database will reside on the existing DESIGO server located at KPBFacilities.
16. Siemens will provide five (5) additional DESIGO client licenses at the existing server.
17. Siemens will provide 8 hours of on site demonstration and training at the completion of the project. Additional formal classroom training can be purchased separately through our Anchorage office.
18. Quoted price includes all travel, lodging and subsistence costs associated with this installation.
19. We consider this project to be a collaboration between Siemens and the KPBF. We will work closely with KPBF staff to determine proper DDC system setpoints, sequences, temperature setpoints, occupancy schedules, alarm thresholds, etc.

Scope of Work - Bid Option 1 (New Digital Control System for existing VAV and Fan-powered terminal units)

1. Siemens will provide demolition and on-site disposal of the existing VAV and Fan-Powered terminal zone controllers, actuators and room/duct temperature sensors (typical of 118 zones).
2. Siemens will provide new Siemens DXR zone controllers, duct temperature sensors and room temperature sensors for the existing VAV zones. Room temperature sensors will be full-feature with temperature display, setpoint adjustment and night override capabilities.
3. It was determined that the existing PWM-type actuators are not compatible with the Siemens DXR zone controllers. Therefore, Siemens will provide new floating-point actuators for all of the existing heating valves and dampers.
4. The existing control valve bodies on the terminal units appear in good working order. Therefore, the existing control valve bodies will be reused. Only the valve actuators will be replaced.
5. Siemens will provide a new Ethernet communication network to accommodate the new DXR zone controllers. The existing 24VAC power circuits are functional and will be reused.
6. It was determined during the site visit that the the existing unit and cabinet unit heaters in the foyers and entryways have local electric thermostats that will remain.
7. Siemens will provide system programming, check-out and start-up at the completion of the installation.
8. Siemens will provide system graphics for the system, including floorplans representative of all room temperatures and locations.

Scope of Work - Bid Option 2 (Certified Testing and Balancing of Air Handling Systems)

1. Siemens will provide supervision of the certified balancing and testing of the air systems by Alaska Air Balancing per the scope identified in the proposal dated 5/18/2020. A copy of the Alaska Air Balancing scope of work summary has been attached to this proposal as a reference.
2. Please note that balancing of the water system is excluded. We are not modifying the piping system under this project. The main heating flows are being balanced separately under a separate boiler replacement project.



Date: 5/18/2020

To: Jim McDonough

From: Jason Garner

Quotation Number: 1459

Project Name: Homer High School Controls Upgrade

600 E Fairview Ave

Homer, AK 99603

DESCRIPTION

For your consideration, we propose NEBB Certified testing and balancing, as per the mechanical plans and specification section Not Provided. This proposal is based on the following:

SCOPE OF WORK

Air Balance

INCLUSIONS & EXCLUSIONS

Description	Included	Excluded	Description	Included	Excluded
Air Balancing	X		Project Orientation	X	
Water Balancing		X	Sheave / Belt Material Costs		X
NC Sound Testing		X	Sheave / Belt Labor Changes		X
DALT (Duct Air Leakage Testing)		X	Remote-In (phone) Coordination Meeting	X	
TAB Support of Commissioning		X	Cost of obtaining drawing, specifications, or submittals	X	
Pre-Demolition TAB Measurements		X	Balancing Tolerance at +/- 10%	X	
Man Lifts / Scaffolding		X	Balancing Tolerance at +/- 5%		X
Daily Reports	X		Travel To/From Jobsite	X	
Cost of obtaining the Control Contractors software, hardware or labor costs to support the balancing.		X	Transportation while at Jobsite	X	
Work to be performed between the hours of 7:00 AM and 5:00 PM	X		Room/Board	X	
Work to be performed Monday through Friday.	X		90-Day Return Trip		X
Work to be performed between the hours of 5:00 PM and 7:00 AM (Off Shift Hours)		X			
Work to be performed on Saturday, Sunday and Holidays (Overtime Hours)		X			
Work to be performed during owner occupation		X			



Clarifications & Specific Exclusions

1. Quoted price assumes that all work will be performed during normal daytime business hours.
2. Quoted price assumes that the new DDC panels and client workstation will reside on the KPB IT network. The panels and client will communicate over Ethernet with the existing KPB DESIGO server.
3. Quoted price excludes handling or removal of hazardous materials. If hazardous material are encountered, Siemens will notify KPB immediately to determine a proper course of action.
4. Quoted price assumes that the existing HVAC equipment (AHUs, fans, boilers, pumps, VAVs, etc.) is functional and in working order. If we encounter failed or broken HVAC equipment, we will notify KPB immediately to determine the repair strategy and any additional cost impacts.
5. Quoted price excludes dumpster rental or disposal fees.
6. Quoted price excludes painting and patching of architectural surfaces.
7. Quoted price excludes new ceiling tiles. We will do our best to remove and replace the existing tiles. If we do encounter a broken tile, we will notify KPB and replace the tile from existing stock.
8. Quoted price excludes water systems balancing. We are providing balancing of the air systems only as we are not modifying any of the piping system under this project.



Project Price Quote & Schedule of Values

Base Bid - New Digital Control System for Primary HVAC Systems:	\$424,227.00
Bid Option 1 - New Digital Control System for VAV & FTU terminal units:	\$264,130.00
Bid Option 2 - Certified Testing and Balancing of Air Systems:	\$ 49,555.00
Total Project Price: Base Bid + Bid Option 1 + Bid Option 2:	\$737,912.00

SCHEDULE OF VALUES	
ITEM DESCRIPTION	SCHEDULED VALUE
BASE BID	
Design/Engineering/Submittals	\$ 55,150
Material, Components, Devices	\$114,541
Project Manager/Supervision	\$ 33,938
System Installation	\$148,479
Programming/System Start-Up	\$ 63,634
O & M/Close-Out/Training	\$ 8,485
BID ALTERNATE 1	
Design Engineering/Submittals	\$ 18,489
Material, Components, Devices	\$ 79,239
Project Manager/Supervision	\$ 18,489
System Installation	\$118,859
Programming/System Start-Up	\$ 23,772
O & M/Close-Out/Training	\$ 5,283
BID ALTERNATE 2	
Testing and Balancing of Air Systems	\$ 49,555
TOTAL BASE BID:	\$424,227
TOTAL ALTERNATE 1:	\$264,130
TOTAL ALTERNATE 2:	\$ 49,555
TOTAL PROJECT PRICE:	\$737,912



Preliminary Equipment List (subject to change based on final system design)

Please reference the attached Material by Area Report. This is a preliminary report. Descriptions are subject to change based upon final system design and submittals.

Payment Terms

Payment Terms Acceptance Agreement

The total price of: \$737,912.00 and the estimated return on investment are based on the items outlined in this proposal. ANY statements made herein regarding savings that may be achieved by implementing the services offered in this proposal are estimates only. No warranty, either expressed or implied, shall be construed to arise from such statements, nor shall such statements be construed as constituting a guarantee by Siemens that such savings will occur if the services are implemented.

Terms and Conditions Disclaimer

The Customer acknowledges that when approved by the Customer and accepted by Siemens Industry, Inc.: (i) the Proposal and the Contract Terms and Conditions, (together with any other documents incorporated into the forgoing) shall constitute the entire agreement of the parties with respect to its subject matter (collectively, hereinafter referred to as the "Agreement") and (ii) in the event of any conflict between the terms and conditions of the Proposal and the terms and conditions of The Contract Terms and Conditions, the Contract Terms and Conditions shall control.

BY EXECUTION HEREOF, THE SIGNER CERTIFIES THAT (S)HE HAS READ ALL OF THE TERMS AND CONDITIONS AND DOCUMENTS, THAT SIEMENS OR ITS REPRESENTATIVES HAVE MADE NO AGREEMENTS OR REPRESENTATIONS EXCEPT AS SET FORTH THEREIN, AND THAT (S)HE IS DULY AUTHORIZED TO EXECUTE THE SIGNATURE PAGE ON BEHALF OF THE CUSTOMER.

This Proposal is based on the Siemens Industry, Inc. Standard Terms and Conditions and the "Scope of Work" and are to be considered part of this proposal. Proposal is valid for thirty (30) days from the delivery date of May 21, 2020. Payment is due within 30 days of invoice date.

Payment Terms: 25% mobilization in advance, progress payments

Total: \$737,912.00



Terms & Conditions Link(s)

Terms and Conditions (Click to download)

[Terms & Conditions](#)

(www.siemens.com/download?A6V10946842)

As a result of the global Covid-19 Virus outbreak, temporary delays in delivery, labor or services from Siemens and its sub-suppliers or subcontractors may occur. Among other factors, Siemens' delivery is subject to the correct and punctual supply from sub-suppliers or subcontractors, and Siemens reserves the right to make partial deliveries or modify its labor or services. While Siemens shall make every commercially reasonable effort to meet the delivery or service or completion date mentioned above, such date is subject to change.

Attachment A

Riders (Click on rider below to download)

[SI Monitoring Rider](#)

(www.siemens.com/download?A6V10946171)

[SI Online Backup and Data Protection](#)

(www.siemens.com/download?A6V10946174)

[SI UBM or Utility Procurement](#)

(www.siemens.com/download?A6V10946178)

[SI Software License Warranty](#)

(www.siemens.com/download?A6V10946180)

[SI Consulting Rider](#)

(www.siemens.com/download?A6V10946838)



Signature Page

Proposed by:

Siemens Industry, Inc.

Company

Jim McDonough

Name

4822605 REV1

Proposal #

\$737,912.00

Proposal Amount

May 21, 2020

Date

Accepted by:

Kenai Peninsula Borough

Company

Name (Printed)

Signature

Title

Date

Purchase Order #

SIEMENS**Material by Area**

Sales Person:	Jim McDonough	Print Date:	07-May-2020
Estimate Name:	HOMER HIGH SCHOOL	Job Start:	01-Jun-2020
Estimate ID:	a2e043a2-1e3d-4114-a713-2c58d46db32e	Job End:	01-Oct-2020

Area Level:MECH ROOM A200

Material Reference #	Typical Of	Description	QTY	Total QTY
Controller:				
PXC100-E96.A		PXC MOD, BACNET, TX-I/O, 96 NODE, APOGEE	1	1
PXX-485.3		PXC MOD EXPANSION MODULE, 3 RS-485	1	1
PXA-ENC34		ENCLOSURE ASSY 34	1	1
PXA-SB115V192VA		SERVICE BOX 115V, 24VAC, 192VA	1	1
TXM1.16D		16 DIGITAL INPUT MODULE	1	1
TXM1.6R-M		6 RELAY OUTPUT MODULE W/OVD	2	2
TXM1.8X-ML		8 UNIV I/O W/ 4-20MA, OVD&LCD	3	3
TXS1.12F4		24VDC SUPPLY 1200MA, 4 A FUSE	1	1
System: AHU-1 & EF-7				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	16	16
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	2	2
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	1	1
2641001WB11A1C		DP TRAN AIR,1%,+/-1" ENC	1	1
171G-10323S		VALVE RETROFIT KIT WITH GMA161.1P	1	1
System: AHU-9 & EF-3				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	6	6
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	2	2
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	1	1
171G-10323S		VALVE RETROFIT KIT WITH GMA161.1P	1	1
QAA24		ROOM TEMP SNSR, NI, 1K OHM @ 32F	1	1
System: AHU-10 & RHEF-3				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	1	1
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	1	1
171G-10323S		VALVE RETROFIT KIT WITH GMA161.1P	1	1
QAA24		ROOM TEMP SNSR, NI, 1K OHM @ 32F	1	1
System: WORKSTATION/WIRE				
A7F30024321		HVAC CBL 20AWG,STR,3COND,CMP 1kR	1	1
H-2C14-CL3P		HVAC CBL 14AWG,STR,2COND,CL3P 1000'ROLL	2	2
A7F30024327		HVAC CBL 20AWG,STR,1TP,CMP 1kR	3	3
PSH500A		PS FIVE 100VA C2 120-24VAC ENC	2	2
A7F30016543		HVAC FL485,24AWG,STR,TP+1C,OAS,LOCAP,CMP	2	2
R9999		CLIENT WORKSTATION-COMPUTER	1	1

SIEMENS**Material by Area**

Sales Person:	Jim McDonough	Print Date:	07-May-2020
Estimate Name:	HOMER HIGH SCHOOL	Job Start:	01-Jun-2020
Estimate ID:	a2e043a2-1e3d-4114-a713-2c58d46db32e	Job End:	01-Oct-2020

Area Level:MECH ROOM A200

Material Reference #	Typical Of	Description	QTY	Total QTY
System: Desigo CC Client Licenses				
P55802-Y119-A200		CCA-1-CL CC ADD 1 CLIENT	5	5
P55802-Y157-A412		CCA-100-BA CC ADD 100 BA DP	2	2
P55802-Y157-A452		CCA-500-BA CC ADD 500 BA DP	1	1

SIEMENS**Material by Area**

Sales Person:	Jim McDonough	Print Date:	07-May-2020
Estimate Name:	HOMER HIGH SCHOOL	Job Start:	01-Jun-2020
Estimate ID:	a2e043a2-1e3d-4114-a713-2c58d46db32e	Job End:	01-Oct-2020

Area Level:BOILER ROOM 600

Material Reference #	Typical Of	Description	QTY	Total QTY
Controller:				
PXC100-E96.A		PXC MOD, BACNET, TX-I/O, 96 NODE, APOGEE	1	1
PXX-485.3		PXC MOD EXPANSION MODULE, 3 RS-485	1	1
PXA-ENC34		ENCLOSURE ASSY 34	1	1
PXA-SB115V192VA		SERVICE BOX 115V, 24VAC, 192VA	1	1
TXM1.8D		8 DIGITAL INPUT MODULE	1	1
TXM1.16D		16 DIGITAL INPUT MODULE	1	1
TXM1.6R-M		6 RELAY OUTPUT MODULE W/OVD	3	3
TXM1.8X-ML		8 UNIV I/O W/ 4-20MA, OVD&LCD	6	6
TXS1.12F4		24VDC SUPPLY 1200MA, 4 A FUSE	1	1
System: AHU-2 & RAF-1				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	16	16
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	2	2
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	1	1
171G-10323S		VALVE RETROFIT KIT W/GMA161.1P	1	1
QAA24		ROOM TEMP SNSR, NI, 1K OHM @ 32F	4	4
System: EF-2 & EF-8				
GCA221.1U		2 PT SR,115V,MED	2	2
System: AHU-3 & ILEF-6				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	2	2
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	2	2
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	1	1
2641001WB11A1C		DP TRAN AIR,1%,+/-1" ENC	1	1
System: BOILERS				
QAC2012		OUTDR TEMP SNSR, PT 1K OHM(385), PLASTIC	1	1
RIBU1C		RIB 120VAC 24VAC/DC SPDT	12	12
544-577-25		IMMERSION TMP SNSR, PT 1K OHM(375) 2.5"	5	5
A7F30057285		Current Sw,Sp lit,Pre-Set Adj,1-150A	3	3
QBE20012-P16		PRESSURE SENSOR FOR L & G 0-232 PSI	1	1
System: DOMESTIC HW SYSTEM				
544-577-25		IMMERSION TMP SNSR, PT 1K OHM(375) 2.5"	4	4
RIBU1C		RIB 120VAC 24VAC/DC SPDT	2	2
A7F30057285		Current Sw,Split,Pre-Set Adj,1-150A	2	2

SIEMENS**Material by Area**

Sales Person:	Jim McDonough	Print Date:	07-May-2020
Estimate Name:	HOMER HIGH SCHOOL	Job Start:	01-Jun-2020
Estimate ID:	a2e043a2-1e3d-4114-a713-2c58d46db32e	Job End:	01-Oct-2020

Area Level:BOILER ROOM 600

Material Reference #	Typical Of	Description	QTY	Total QTY
171D-10369S		VALVE RETROFIT KIT W/GMA161.1P	2	2
QBE2002-P16		PRESSURE SENSOR FOR L & G 0-232 PSI	1	1
System: GENERATOR				
GCA221.1U		2 PT SR,115V,MED	2	2
RIBU2SC		RIB 120/24 SPST NO & SPDT	2	2

SIEMENS**Material by Area**

Sales Person:	Jim McDonough	Print Date:	07-May-2020
Estimate Name:	HOMER HIGH SCHOOL	Job Start:	01-Jun-2020
Estimate ID:	a2e043a2-1e3d-4114-a713-2c58d46db32e	Job End:	01-Oct-2020

Area Level:GYM MEZZANINE

Material Reference #	Typical Of	Description	QTY	Total QTY
Controller:				
PXC100-E96.A		PXC MOD, BACNET, TX-I/O, 96 NODE, APOGEE	1	1
PXX-485.3		PXC MOD EXPANSION MODULE, 3 RS-485	1	1
PXA-ENC34		ENCLOSURE ASSY 34	1	1
PXA-SB115V192VA		SERVICE BOX 115V, 24VAC, 192VA	1	1
TXM1.16D		16 DIGITAL INPUT MODULE	1	1
TXM1.6R-M		6 RELAY OUTPUT MODULE W/OVD	2	2
TXM1.8X-ML		8 UNIV I/O W/ 4-20MA, OVD&LCD	5	5
TXS1.12F4		24VDC SUPPLY 1200MA, 4 A FUSE	1	1
System: AHU-4 & 5				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	12	12
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	4	4
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	2	2
171G-10323S		VALVE RETROFIT KIT W/GMA161.1P	1	1
QAA24		ROOM TEMP SNSR, NI, 1K OHM @ 32F	7	7
System: AHU-6 & LCEF-5				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	6	6
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	2	2
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	1	1
171G-10323S		VALVE RETROFIT KIT W/GMA161.1P	2	2
QAA24		ROOM TEMP SNSR, NI, 1K OHM @ 32F	2	2
System: MAU-1 & LCEF-2				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	1	1
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	1	1
171G-10323S		VALVE RETROFIT KIT W/GMA161.1P	2	2
544-577-25		IMMERSION TMP SNSR, PT 1K OHM(375) 2.5"	1	1

SIEMENS**Material by Area**

Sales Person:	Jim McDonough	Print Date:	07-May-2020
Estimate Name:	HOMER HIGH SCHOOL	Job Start:	01-Jun-2020
Estimate ID:	a2e043a2-1e3d-4114-a713-2c58d46db32e	Job End:	01-Oct-2020

Area Level:POOL MECH ROOM F200

Material Reference #	Typical Of	Description	QTY	Total QTY
Controller:				
PXC100-E96.A		PXC MOD, BACNET, TX-I/O, 96 NODE, APOGEE	1	1
PXX-485.3		PXC MOD EXPANSION MODULE, 3 RS-485	1	1
PXA-ENC34		ENCLOSURE ASSY 34	1	1
PXA-SB115V192VA		SERVICE BOX 115V, 24VAC, 192VA	1	1
TXM1.16D		16 DIGITAL INPUT MODULE	1	1
TXM1.6R-M		6 RELAY OUTPUT MODULE W/OVD	3	3
TXM1.8X-ML		8 UNIV I/O W/ 4-20MA, OVD&LCD	5	5
TXS1.12F4		24VDC SUPPLY 1200MA, 4 A FUSE	1	1
System: AHU-7 & RAF-2				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	6	6
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	2	2
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	1	1
2641001WB11A1C		DP TRAN AIR,1%,+/-1" ENC	1	1
171G-10323S		VALVE RETROFIT KIT W/GMA161.1P	1	1
QFA3212.FWNN		ROOM RHT 1K OHM PT(385) FULL HMI NO LOGO	1	1
544-577-25		IMMERSION TMP SNSR, PT 1K OHM(375) 2.5"	1	1
System: AHU-8 & LCEF-1				
GCA161.1P		MOD(V) SR,24V, MED. PLNM	6	6
544-339-18		DCT PT SNSR, PT 1K OHM, (375), 18" PROBE	1	1
544-342-16		FLEX AVER SNSR, PT 1K OHM, 16FT PROBE	1	1
171G-10323S		1.5" 2W 40CV SS BALL VLV+GMA161.1P	2	2
QAA24		ROOM TEMP SNSR, NI, 1K OHM @ 32F	4	4
544-577-25		IMMERSION TMP SNSR, PT 1K OHM(375) 2.5"	1	1
System: Pool Heat Exch				
544-577-25		IMMERSION TMP SNSR, PT 1K OHM(375) 2.5"	1	1
RIBU1C		RIB 120VAC 24VAC/DC SPDT	1	1
A7F30057285		Current Sw,Split,Pre-Set Adj,1-150A	1	1
171G-10369S		VALVE RETROFIT KIT W/GMA161.1P	1	1
System: Baseboards				
QAA24		ROOM TEMP SNSR, NI, 1K OHM @ 32F	9	9
GDE131.1U		ACT NSR 24/108L 5NM,NO PLENUM	9	9

SIEMENS**Material by Area**

Sales Person:	Jim McDonough	Print Date:	07-May-2020
Estimate Name:	HOMER HIGH SCHOOL	Job Start:	01-Jun-2020
Estimate ID:	a2e043a2-1e3d-4114-a713-2c58d46db32e	Job End:	01-Oct-2020

Area Level: BID ALT. 1 - VAV BOXES

Material Reference #	Typical Of	Description	QTY	Total QTY
System: VAVS w/REHEAT				
GDE131.1U		ACT NSR 24/108L 5NM, NO PLENUM	286	286
QAM2030.010		DUCT PT SNSR, NTC 10K OHM TYP2, 4 IN LG	118	118
DXR2.E12P-102B		DXR2.E12P Room Automation Station	118	118
QMX3.P34-1WSB		QMX3 ROOM TEMP WITH DISPLAY (COO=USA)	118	118
System: MISC/WORKSTATION/WIRE				
A7F30010824		E-4TP24CAT5-CM ETHERNET 24AWG / SOL / 4T	12	12