



ADDENDUM NO. 1

To the Contract Documents for:
Contra Costa County Office of Education
Boiler Replacement Project
04 – 2026

July 31, 2026

This addendum shall supersede all previously issued documents including but not limited to specifications, addenda, and drawings. All other conditions remain unchanged. The following clarifications, changes, modifications, corrections, and/or additions as set forth herein shall apply to the above documents and shall be made a part thereof and shall be subject to all the requirements thereof as though originally specified and/or shown.

Item No. 1.1 Information Items:

- 1.1.1 **Pre-Bid Conference Sign-in Sheet:** Dated July 21, 2026. (See attached).
- 1.1.2 **Staging Plan & Crane Operations Plan** (see attached).
- 1.1.3 **Revised Equipment Schedule Sheet M0.0** (see attached).

Item No 1.2 Additional Clarifications:

1.2.1 Equipment Layout: All serviceable equipment shall be installed in a manner that provides adequate access for future operation, inspection, and maintenance. Equipment shall not be obstructed by piping, system components, or other installations that would limit accessibility. Contractors shall include provisions for maintaining equipment serviceability when developing their installation approach

1.2.2 Boiler Vent/ Flue System: The existing boiler system shows signs of potential draft/venting issues, as evidenced by significant rusting on the equipment. The new boiler vent/flue system shall comply with all applicable code requirements. The vent shall terminate greater than or equal to 2 feet higher than anything within 10 feet. Contractor shall verify final vent termination height based on actual jobsite conditions to ensure proper draft performance, including consideration for wind conditions. Any additional vent height beyond the minimum code requirement shall be evaluated in the field.

1.2.3 LONworks Interface: The boiler equipment shall be connected and operational with the County's LONworks network at the time of equipment startup and commissioning.

1.2.4 Crane Operations: Due to safety concerns associated with crane operations at an occupied facility during normal weekday hours, Saturday work is authorized for crane operations. Contractor shall coordinate the proposed crane operation schedule with the Owner prior to performing the work

Item No 1.3 Contractor Scope Changes

1.3.1 Buffer Tank and Air Separator Insulation: Contractor shall provide all required materials, labor, and accessories necessary to insulate the buffer tank and air separator as part of the complete installation. Refer to revised Sheet M0.0.

Attachments: Pre-Bid Conference Sign-in Sheet dated July 21, 2026
Staging Plan & Crane Operations Plan
Revised Equipment Schedule Sheet M0.0

[END OF ADDENDUM 01]



Contra Costa County Office of Education
Mandatory Pre-Bid Conference -- Tuesday, July 21, 2026, at 10:00 a.m.
Project Name: Contra Costa County Office of Education Boiler Replacement Bid No. 04-2026

Name	Company (include City/State)	Phone	Email
Mike Turner	Bell Products Inc.	707 363-5544	mturner@bellproducts.com
James Alsterlund	Bell Air Mechanical	929 714 0444	bruce@bellairmechanical.com
Joel Thomas	Matrix Hg Inc	707 4339-3719	jthomas@matrixhginc.com
Ryan Byrcht	A & B Mechanical Inc	510-264- 5800	Bnewsby@abmechanical.com
JEFFREY BRAGE	UNITED MECHANICAL	341-254-0918	jbragg@umi1.com
Kevin Hall	Cal Hydro	510-734-0734	k1hall@CHChydro.com
Mike Ryder	Cal Hydro	510-427-1349	Mryder@CHChydro.com
Bryan Boudreau	Boudreau Eng. Inc	209 606-7052	Bryan@BoudreauEngineering.com

CONTRA COSTA COUNTY OF EDUCATION BOILER REPLACEMENT PROJECT

CONTRACTOR STAGING/CRANE OPERATIONS PLAN

Notes:

1. The designated contractor area shall be located in the south parking lot as shown on the map.
2. This staging area shall be used for: Material deliveries, equipment storage, contractor parking, waste containers and lay down.
3. All crane operations shall be performed from the designated area shown on the plan (due to the occupied nature of the building, all crane operations shall be performed on Saturdays, unless otherwise approved by the County).
4. The designated staging area and crane setup location will require temporary closure during construction.
5. The contractor shall furnish all barricades, fencing and signage necessary to secure the work area.
6. Emergency vehicle access shall be maintained at all times.



**CONTRACTOR
STAGING/CRANE
OPERATIONS
DESIGNATED
LOCATION**

PLUMBING GENERAL NOTES

1. SCOPE
CONTRACTOR SHALL PROVIDE SERVICE PIPING AS GENERALLY DELINEATED ON THE PLUMBING DRAWINGS. WORK SHALL INCLUDE DEMOLITION AS GENERALLY SHOWN ON THE DRAWINGS. WORK SHALL INCLUDE SERVICE PIPING AND FINAL CONNECTIONS TO EQUIPMENT FURNISHED AND INSTALLED BY OTHER TRADES AS MAY BE SHOWN ON THE ARCHITECTURAL, MECHANICAL, ELECTRICAL OR OTHER DRAWINGS OF THE CONTRACT DOCUMENTS.
2. CALIFORNIA CODE OF REGULATIONS:
ALL HOT WATER PIPING AND CIRCULATION LINES SHALL BE INSULATED IN ACCORDANCE WITH SECTION 120.3 OF THE CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 6, SUBCHAPTER 3.
3. ALL PLUMBING FIXTURES & EQUIPMENT USED (E.G. SHOWERHEADS, LAVATORY FAUCETS, SINK FAUCETS, WATER HEATERS) SHALL BE CERTIFIED TO COMPLY WITH EFFICIENCY STANDARDS, AS LISTED BY THE CALIFORNIA ENERGY COMMISSION FOR SUCH APPLIANCES, BY ITS MANUFACTURER, CODES.
4. ALL WORK, MATERIAL, AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY HAVING JURISDICTION. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT THE INSTALLATION OF WORK, MATERIAL, OR EQUIPMENT NOT CONFORMING TO THESE OR OTHER CODES APPLICABLE TO THIS PROJECT.
 - A. 2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 1.
 - B. 2025 CALIFORNIA BUILDING CODE (CBC), CCR TITLE 24, PART 2, BASED ON THE 2024 INTERNATIONAL BUILDING CODE (IBC).
 - C. 2025 CALIFORNIA ELECTRICAL CODE (CEC), CCR TITLE 24, PART 3, BASED ON THE 2023 NATIONAL ELECTRICAL CODE (NEC).
 - D. 2025 CALIFORNIA MECHANICAL CODE (CMC), CCR TITLE 24, PART 4, BASED ON THE 2024 UNIFORM MECHANICAL CODE (UMC).
 - E. 2025 CALIFORNIA PLUMBING CODE (CPC), CCR TITLE 24, PART 5, BASED ON THE 2024 UNIFORM PLUMBING CODE (UPC).
 - F. 2025 CALIFORNIA FIRE CODE (CEC), CCR TITLE 24, PART 6.
 - G. 2025 CALIFORNIA ENERGY CODE (CEC), CCR TITLE 24, PART 9, BASED ON THE 2024 INTERNATIONAL FIRE CODE.
 - H. 2025 CALIFORNIA GREEN BUILDING STANDARDS CODE, CALGREEN₂₀₂₅, CCR TITLE 24, PART 11.
5. WORKMANSHIP:
ALL WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER ACCORDING TO THE BEST TRADE PRACTICE BY THOSE SKILLED IN THE PARTICULAR TRADE. EQUIPMENT, FIXTURES, PIPING, AND ELECTRICAL PANELS SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING AND IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. EXISTING INFORMATION:
THE INFORMATION, MATERIAL, ETC., OF EXISTING UTILITIES IS PROVIDED FROM SOURCES DEEMED RELIABLE BUT IS NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY ALL DATA BEFORE PROCEEDING WITH ANY WORK. NO EXTRA COST WILL BE ALLOWED FOR SERVICES NOT AS SHOWN.
7. PERMITS AND UTILITY SERVICE FEES:
THE PLUMBING CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS, AND SERVICE CHARGES REQUIRED FOR THE INSTALLATION OF THE WORK.
8. ACCURACY
PLANS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND LOCATION OF WALLS, PARTITIONS, FIXTURES, ETC., AGAINST DESIGN PLANS FOR CONSISTENCY AND ACCURACY PRIOR TO COMMENCING WORK.
9. PROVIDE AND INSTALL CONDENSATE DRAIN WITH TRAP AT EACH A/C UNIT PER THE CPC. AT LOCATIONS SHOWN ON DRAWINGS, COORDINATE WORK WITH THE MECHANICAL CONTRACTOR.
10. PROVIDE ACCESS PANELS FOR ALL SHUT-OFF, ISOLATION, OR BRANCH VALVES NOT READILY ACCESSIBLE. ACCESS PANELS SHALL BE PROVIDED AND INSTALLED AT ALL TRAP PRIMER VALVES AND WATER HAMMER ARRESTORS.
11. ALL PASSING THROUGH CONCRETE FLOORS SHALL BE SLEEVED TO PROTECT PIPING AGAINST BREAKAGE.
12. HORIZONTAL DRAINAGE PIPING LESS THAN 4" IN DIAMETER SHALL BE SLOPED AT A MINIMUM OF 1/4" PER LF. (2%) DRAINAGE PIPING 4" AND LARGER SHALL BE SLOPED AT A MINIMUM OF 1/8" PER LF. (1%).
13. ALL PLUMBING FIXTURES AND PIPING SHALL BE LISTED BY AN APPROVED LISTING AND TESTING AGENCY AND PROPERLY LABELED.
14. INSULATION MATERIAL APPLIED TO THE SURFACE OF DUCTS AND PIPES SHALL HAVE A FLAME INDEX NOT TO EXCEED 25 AND A SMOKE-DEVELOPED INDEX NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723, PER 2025 CMC, SECTION 602.2.
15. INSPECT ALL DOMESTIC WATER PIPING PER 2025 CPC SECTION 602.0.1 AND 602.0.10.
16. PRESSURE TEST WATER PIPING PER 2025 CPC SECTION 600.4.
17. PRESSURE TEST WASTE PIPING PER 2025 CPC SECTION 612.0.

PLUMBING LEGEND		
SYMBOL	ABBREVIATION	DESCRIPTION
	SS	SOIL, WASTE OR SANITARY SEWER BELOW FLOOR
	SS	SOIL, WASTE OR SANITARY SEWER OVERHEAD
	V	VENT PIPING
	CW, ICW	COLD WATER, INDUSTRIAL COLD WATER
	HW, IHW (110°)	HOT WATER SUPPLY, INDUSTRIAL HOT WATER
	HWR	HOT WATER RETURN
	G	NATURAL GAS
	(E)	EXISTING TO BE REMOVED
	D OR IW	DRAIN OR INDIRECT WASTE
	CD	CONDENSATE DRAIN
	AFG	ABOVE FINISHED GRADE
	AD, AP	ACCESS DOOR, ACCESS PANEL
	AC	AIR CHAMBER
	BV	BALL VALVE
		BRANCH - TOP CONNECTION
		BRANCH - BOTTOM CONNECTION
		BRANCH - SIDE CONNECTION
	CBV	CALIBRATED BALANCE VALVE
	BFV	BUTTERFLY VALVE
	CB, RD	CATCH BASIN, ROOF DRAIN
	CKV	CHECK VALVE
	CO	CLEANOUT PLUG
	CR	CONCENTRIC REDUCER
	Ø	DIAMETER
	ER	ECCENTRIC REDUCER
	FC	FLEXIBLE CONNECTOR
	FCO	FLOOR CLEANOUT
	FD	FLOOR DRAIN
	GV	GATE VALVE
	GSCCK, PC	GAS COCK, PLUG COCK
	GPR	GAS PRESSURE REGULATOR
	GL V.	GLOBE VALVE
	GCO	GRADE CLEANOUT
	HB	HOSE BIBB
	AN	PIPE ANCHOR
	PG	PIPE GUIDE
	POC	POINT OF CONNECTION
	PRV	PRESSURE REDUCING VALVE
	PG	PRESSURE GAUGE
	T&PR	TEMPERATURE & PRESSURE RELIEF VALVE
	STR	STRAINER
	TH	THERMOMETER
	TP	TRAP PRIMER
	UN	UNION OR FLANGE
	WCO	WALL CLEANOUT

1. SCOPE:
PROVIDE NEW MECHANICAL EQUIPMENT AND WORK AS GENERALLY DELINEATED ON THE PLANS TO PROVIDE A COMPLETE FUNCTIONING BOILER AND HEATING HOT WATER DISTRIBUTION PUMPING SYSTEM. THE BOILER AND CONTROLS SHALL BE INTEGRATED WITH THE EXISTING BUILDING HEATING AND SYSTEMS. WORK SHALL INCLUDE, BUT IS NOT LIMITED TO: DEMOLITION AND/OR REMOVAL OF BOILER, HEATING HOT WATER PUMPS, PIPING AND ACCESSORIES, PROVIDE NEW BOILER, PUMPS, PIPING AND ACCESSORIES AS GENERALLY DETAILED IN THE CONSTRUCTION DOCUMENTS. ALL NEW EQUIPMENT AND WORK SHALL COMPLY WITH 24 CALIFORNIA CODE OF REGULATIONS.
2. CODES:
ALL WORK MATERIAL AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY HAVING JURISDICTION. NOTHING IN THESE PLANS SHALL BE CONSTRUED TO PERMIT THE INSTALLATION OF WORK, MATERIAL OR EQUIPMENT NOT CONFORMING TO THESE OR OTHER CODES APPLICABLE TO THIS PROJECT.
 - A. 2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 1.
 - B. 2025 CALIFORNIA BUILDING CODE (CBC), CCR TITLE 24, PART 2, BASED ON THE 2024 INTERNATIONAL BUILDING CODE (IBC).
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 - E. 2025 CALIFORNIA PLUMBING CODE (CPC), CCR TITLE 24, PART 5, BASED ON THE 2024 UNIFORM PLUMBING CODE (UPC).
 - F. 2025 CALIFORNIA ENERGY CODE (CEC), CCR TITLE 24, PART 6.
 - G. 2025 CALIFORNIA FIRE CODE (CFC), CCR TITLE 24, PART 9, BASED ON THE 2024 INTERNATIONAL FIRE CODE (IFC).
 - H. 2025 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSC), CCR TITLE 24, PART 11.
3. WORKMANSHIP:
ALL WORKMANSHIP SHALL BE DONE IN A NEAT AND ORDERLY MANNER ACCORDING TO THE BEST TRADE PRACTICE BY THOSE SKILLED IN THE PARTICULAR TRADE. EQUIPMENT, DUCTS, GRILLES, ETC. SHALL BE PLUMB, LEVEL, SQUARE OR CENTERED ETC., TO GIVE AN EASY AND PLEASING APPEARANCE. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. AVAILABLE POWER:
THE CONTRACTOR SHALL CONFIRM ALL SYSTEMS VOLTAGES BEFORE BIDDING OR ORDERING EQUIPMENT, AND SHALL ALLOW FOR BUCK & BOOST TRANSFORMERS IF REQUIRED.
5. AIR BALANCE:
NOT APPLICABLE TO THIS PROJECT.
6. PERMITS AND UTILITY SERVICE FEES:
THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS AND SERVICE CHARGES REQUIRED IN THE INSTALLATION OF THE WORK.
7. EXISTING INFORMATION:
LOCATION, SIZE, MATERIAL, ETC., OF EXISTING SYSTEMS, ETC., IS PROVIDED FROM SOURCES DEEMED TO BE RELIABLE BUT IS NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY ALL DATA BEFORE PROCEEDING WITH ANY WORK. NO EXTRA COST WILL BE ALLOWED FOR CONDITIONS NOT AS SHOWN.
8. ACCURACY:
THE PLANS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND LOCATIONS OF AC UNITS, EXHAUST FANS, WALLS, PARTITIONS ETC., AGAINST ARCHITECTURAL AND STRUCTURAL DESIGN PLANS FOR LOCATION CONSISTENCY & ACCURACY PRIOR TO COMMENCING WITH ANY WORK.
9. PAINTING: NOT APPLICABLE TO THIS PROJECT.
10. SIZES:
NOT APPLICABLE TO THIS PROJECT.
11. MECHANICAL EQUIPMENT:
ALL EQUIPMENT SHALL BE INSTALLED BY AN APPROVED TESTING AGENCY AND INSTALLED IN ACCORDANCE WITH ITS INSTALLATION INSTRUCTIONS AND LISTING.
12. PIPES, DUCTS AND CONDUITS SHALL BE SUPPORTED AND SERMICALLY BRACED PER CBC, CMC, CPC, OR BY DETAILS PROVIDED WITHIN THESE DRAWINGS.
13. INSULATING MATERIALS APPLIED TO THE SURFACE OF DUCTS AND PIPES SHALL HAVE A FLAME RESISTANCE TO EXCEED 25 AND A SMOKE-DEVELOPED INDEX NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723. PER 2025 CMC, SECTION 602.2

MECHANICAL LEGEND	
DESCRIPTION	SYMBOL
SUPPLY AIR DUCT SECTION	SA
RETURN AIR DUCT SECTION	RA
DUCT SIZE NET INSIDE DIMENSION	12 X 8
EXHAUST AIR DUCT SECTION	EA
SPLITTER DAMPER W/ LOCKING QUADRANT	
FLEXIBLE DUCT CONNECTION	
DUCT DROP/RISE	
DOOR LOUVER	
AIR EXTRACTOR	
ACCESS DOOR - A.D.	
VOLUME DAMPER W/ LOCKING QUADRANT	
AUTO MOTORIZED CONTROLLED DAMPER	
FIRE DAMPER / CEILING FIRE DAMPER	
MOTORIZED FIRE / SMOKE DAMPER	
1ST LETTER - LOCATION	C-CEILING W-WALL F-FLOOR
2ND LETTER - SERVICE	S-SUPPLY R-RETURN E-EXHAUST
NUMBER	5-SEE SCH FOR TYPE WS-1 300 CFM 14x12
300 CFM = AIRFLOW 12 X 12 = NECK SIZE	TA-TRANSFER AIR
SMOKE DETECTOR	
DUCT WITH ACOUSTICAL LINING	
TO BE REMOVED	
THERMOSTAT	
SENSOR	
2-WAY CONTROL VALVE	
3-WAY CONTROL VALVE	
BALANCE VALVE	
BUTTERFLY VALVE	
CHECK VALVE	
FLEXIBLE COUPLING	
GLOBE VALVE	
AUTOMATIC AIR VENT - AAV	
MANUAL AIR VENT - MAV	
PETES PLUG	
PRESSURE GAUGE	
REDUCER	
SHUT OFF COCK	
SHUT OFF VALVE	
STRAINER	
THERMOMETER	
UNION	
CONDENSATE DRAIN	
ABOVE	ABV
ABOVE FINISHED FLOOR	A.F.F.
ACCESS DOOR / ACCESS PANEL	A.D. / A.P.
ANALOG INPUT / ANALOG OUTPUT	A.I. / A.O.
AUTOMATIC AIR VENT	AAV
BELOW	BEL.
CEILING	CLG
CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	CFCI
CONCRETE	CONC.
CUBIC FEET PER HOUR (1000 BTU)	CFH
CUBIC FEET PER MINUTE	CFM
DIFFERENTIAL PRESSURE TRANSDUCER	DP
DIGITAL INPUT / DIGITAL OUTPUT	D.I. / D.O.
EXISTING	(E)
FLOW SWITCH	FS
GALLONS PER MINUTE	GPM
THOUSANDS OF BTU'S PER HOUR	MBH
MECHANICAL ENGINEER OF RECORD	MEOR
NEW	(N)
NOT IN MECHANICAL CONTRACT	N.I.M.C.
OUTSIDE AIR	OSA
OWNER FURNISH, CONTRACTOR INSTALLED	OFCI
POINT OF CONNECTION	POC ●
REFRIGERANT LIQUID / REFRIGERANT SUCTION	RL / RS
TEMPERATURE CONTROL PANEL	TCP
VALVE	V
WELL TEMPERATURE SENSOR	WTS

HEATING HOT WATER BOILER SCHEDULE															
FURNISHED BY	MARK #	MANUFACTURER & MODEL #	DESCRIPTION	GAS				WATER TEMP (°F)	FLOW (GPM)	WPD (FPI)	SHIPPING WEIGHT (LBS)	ELECTRICAL DATA			NOTES
				INPUT HI MBH	INPUT LO MBH	OUT HI MBH	OUT LO MBH					VOLTS	PHASE	HERTZ	
OFCI	B-1	RAYPAK #H7-1503A	OUTDOOR BOILER	1500	210	1293	181	180	87	16	840	120	1	60	1, 2, 3, 4 & 5
1. 66.2% THERMAL EFFICIENCY AT FULL RATE. FULL MODULATION FIRING W/ 7:1 TURN DOWN RATIO. NATURAL GAS TRAIN 7-11" WC INPUT, LOW GAS PRESSURE SWITCH, ALL WELDED HEAT EXCHANGER. 2. STAINLESS STEEL BURNER, SCAMDO RULE 1146.2 CERTIFIED, LOW NOX (LESS THAN 20 PPM), 1/1 AIR/GAS RATIO CONTROL & FLOW SWITCH, IGNITION MODULE, STANDARD 3-TRY, 120V, 60 Hz, 1 Ø. 3. POWER: PROVIDE 60 PSIG ASME PRESSURE RELIEF VALVE, ANCHOR W/ 1/2" K8 T22, 3 1/4" EMBEDMENT. 4. THE BOILER SHALL BE PROVIDED WITH AN INTEGRAL BOILER CONTROL. THE BOILER CONTROL PANEL WHICH SHALL BE ENABLED & MONITORED BY THE BUILDING MANAGEMENT CONTROL SYSTEM. 5. PROVIDE B-88 LONKWORKS SMS SHIP LOOSE. (VERIFY PRIOR TO ORDERING EQUIPMENT). COORDINATE WORK WITH CONTROLS SERVICE CONTRACTOR FOR TRANSITION OF EQUIPMENT AND CONTROLS. 6. PROVIDE COLD WATER START PROTECTION KIT, P-29. COMBUSTION AIR INTAKE ELBOW MUST BE USED FOR OUTDOOR INSTALLATIONS. IT IS SHIPPED LOOSE. THE ELBOW MUST BE ORIENTED WITH THE OPENING FACING DOWNWARD. PROVIDE AND INSTALL AN AIR FILTER, AIR FILTER KIT INSTALLATION INSTRUCTION PART NO. 241338. USE RAYPAK REPLACEMENT FILTERS KIT NUMBER 012552Z (16"X16"). 7. FLUE SHALL BE CATEGORY IV, MATERIAL SHALL BE AL29-4C TYPE 316 STAINLESS STEEL. PROVIDE OUTDOOR VENT SUPPORTS, D-23. 8. PROVIDE LOW WATER CUT-OFF REMOTE PROBE, F-10. ADJUSTABLE AUTO RESET, HIGH LIMIT 200°F MAX, I-13.															

HEATING HOT WATER PUMP SCHEDULE																		
FURNISHED BY	MARK	MANUFACTURER	DESCRIPTION	SIZE	HP/BHP	RPM	IMPELLER	ELECTRICAL			MOTOR	FLOW	TOTAL	SPECIFIC	WEIGHT	ACCESSORIES		NOTES
INSTALLED BY	NUMBER	& MODEL #					DIA	VOLTS	HZ	PHASE	HP	GPM	DEVELOPED HEAD, FT	GRAVITY	LB'S	TDV	SUC. DIF	
NA	HHWP-1	BELL & GOSSET #se-1510 SSF 7	END SUCTON, BASE MOUNTED	1.5AD	1.50/95	1750	6.875	460	60	3	ODP	56	40	1.0	250	30S.2S	NA	1,3 & 4
OCFI	HHWP-2	BELL & GOSSET #se-1510 SSF 7	END SUCTON, BASE MOUNTED	1.5AD	1.50/95	1750	6.875	460	60	3	ODP	56	40	1.0	250	30S.2S	NA	1,3 & 5
OCFI	HHWP-3	ARMSTRONG 4380 3x3x6	IN-LINE, CLOSE-COUPLED VERT	-	1/0.74	1743	5.05	460	60	3	ODP	87	21	1.0	198	NA	2 & 3	
1. HHWP-1 & HHWP-2 ARE CONSTANT VOLUME PUMPS AND SHALL BE PROVIDED W/ MOTOR STARTERS LOCATED IN A NEMA 1 RATED ENCLOSURE. ANCHOR WITH 5/8" KB T22, 3 1/4" MIN EMBEDMENT. PROVIDE WITH 50 DUROMETER 1/2" THICK NATURAL RUBBER BEARING PAD.																		
2. HHWP-3 IS A VARIABLE FLOW PUMP. NEMA PREMIUM 12 L2, INVERTED DUTY, CLASS F INSULATION. PROVIDE W/ VFD CONTROLLER LOCATED IN AN IP66 RATED ENCLOSURE. PROVIDE WITH WEG VFD #CFW500A02P6T4OB86DSG2, 16600000000. 460V, 3-Ø, RATED FOR 1 HP MOTOR, 6.5x8.95x10.43" (WIDE X DEPTH X HEIGHT) 14 LBS.																		
3. DIVISION 16 SHALL PROVIDE 460V/3Ø.																		
4. DATE CODE ON EXISTING PUMP IS C42. THIS IS A DATE OF MANUFACTURE OF MARCH, 2024. LOCATE THIS PUMP IN A SECURE LOCATION, SHALL BE UTILIZED IN NEW WORK.																		
5. DATE CODE ON EXISTING PUMP IS B12. THIS IS A DATE OF MANUFACTURE OF FEBRUARY, 2021. THE PUMP IS TO BE REPLACED BY AN IDENTICAL NEW PUMP. SEE SCHEDULE FOR DETAILS.																		

MULTI-PURPOSE TANK				
FURNISHED BY	MARK NUMBER	MANUFACTURER & MODEL #	DESCRIPTION	OPERATING WEIGHT LBS
INSTALLED BY	MPF-1	RAYPAK 951571	MULTI-PURPOSE TANK. CARBON STEEL CONSTRUCTION. 2 1/2" THREADED INLET/OUTLET. (1) 3/4" NPT TEMPERATURE/PRESSURE PORT ON SHELL. (1) 2" NPT INSPECTION OPENING. PROVIDE W/ STAINLESS STEEL INTERNAL PALL RING BASKETS. FACTORY INSTALLED 2" BLOWDOWN VALVE AND INTEGRAL AIR VENT CONNECTIONS. ASME CODE SECTION VIII. DIVISION 1. 125 PSIG. 240°F TEMPERATURE. PROVIDE ANCHORCLIPS. 2070 X 48" TALL.	765
CFCL			CONTRACTOR SHALL FIELD INSTALL. 2" INSULATION WITH AN INSULATION CONDUCTIVITY BETWEEN 0.25 - 0.29 BTU-IN/H-F-T ² -F. PROVIDE ALUMINUM JACKET FOR INSULATION. SEAL WEATHER TIGHT.	

ACCESSORIES				
FURNISHED BY INSTALLED BY	MARK NUMBER	MANUFACTURER & MODEL #	DESCRIPTION	OPERATING WEIGHT LBS
OFICI	PF-1	JL WINGERT DB-2HD	2 GAL POT FEEDER, CARBON STEEL, SAFETY BAR, POWDER COATED, DOMED BOTTOM, W/ FUNNEL PACKAGE, BASKET, LEG SUPPORT & DRAIN, HEATING HOT WATER SYSTEM. (4) 3/4" NPT CONNECTION POINTS, 250°F MAX TEMP, 150 PSI WORKING PRESSURE.	42
CPCI	AAV-1	METRAFLX #34-MV15A	AUTOMATIC MOUNT, CAST IRON BODY & COVER, CARBON STEEL COVER BOLTS, STAINLESS STEEL LEVER FRAME, SEAT, FLOAT, FLOAT ARM, PIVOT PIN AND RETAINER, 1" FLOAT AND PIPE, 21 US. 250°F MAX TEMP, 3/4" NPT INLET	5.5

EXPANSION TANK										
FURNISHED BY INSTALLED BY		MANUFACTURER & MODEL #	DESCRIPTION	TANK VOL GAL	DIA IN	HEIGHT FT	NPT SYSTEM CONN	SHIPPING WEIGHT LBS	OPERATING WEIGHT LBS	
OFCI	ET-1	WESSELS NLA-85	VERTICAL, ASME SECTION VIII DIVISION 1, CARBON STEEL TANK, HEAVY DUTY BUTYL RUBBER DIAPHRAGM WITH INTEGRATED BLADDER INTEGRITY MONITOR. PRE-CHARGED, 25 PSIG, WITH CHARGING VALVE CONNECTION. RED OXIDE PRIMER. PROVIDE MOUNTING CLIPS AND SEISMIC ANCHORING. 125 PSI WORKING PRESSURE, 240°F WORKING TEMPERATURE.	23	16	37	1"	90	290	

The factory boiler system controller shall provide stand-alone control or BAS workstation control of the supply heating water temperature setpoint (adj.).



1 BOILER COM
M0.0 SCALE: NOT TO SCALE

If this sheet is not 30"x42" it has been reduced, scale is not accurate

GREEN BUILDING MEASURES

1. ALL EQUIPMENT AND SYSTEMS SHALL BE TESTED BY AN INDEPENDENT TESTING AND BALANCING (TAB) CONTRACTOR. THE TAB CONTRACTOR SHALL PROVIDE A REPORT FOR THE MEOR APPROVAL. A COPY OF THE APPROVED REPORT SHALL BE PROVIDED TO THE BUILDING OWNER.
2. THE BUILDING OWNER SHALL BE PROVIDED WITH ADEQUATE TRAINING, DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND COPIES OF GUARANTEES AND/OR WARRANTIES FOR EACH SYSTEM AND ALL EQUIPMENT.

MECHANICAL PIPING MATERIAL SPECIFICATIONS

PLUMBING PIPING MATERIAL SPECIFICATIONS

GAS PIPING NOTES

1. GAS PIPING SHALL BE INSPECTED AND TESTED PER 2025 CPC 1213.0. THE PRESSURE TESTED SHALL BE CONDUCTED PER 2025 CPC 1213.3. WHERE LEAKAGE OF DEFECT IS DETECTED, THE AFFECTED PORTION OF THE PIPING SYSTEM SHALL BE REPAIRED OR REPLACED AND RETESTED.

HILTI KWIK BOLT™ T2 CARBON AND STAINLESS STEEL ANCHORS NORMAL OR LIGHT WEIGHT CONCRETE (f _c = 3000 PSI) ICC-ES ESR-2036										
		GENERAL CONCRETE				UNDERSIDE OF CONCRETE OVER STEEL DECK			TOP OF CONCRETE OVER STEEL DECK	
ANCHOR DIAMETER	da	3/8"	1/2"	3/4"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	
EFFECTIVE EMBEDMENT	he	2"	2"	3 3/4"	3 3/4"	3 3/4"	4 3/4"	2"	2"	2"
MINIMUM CONCRETE THICKNESS	h _{min}	4"	4"	5 1/2"	5 1/2"	6"	8"	2 1/2"	2 1/2"	3 1/4"
REQUIRED INSTALLATION TORQUE (F1-85 CARBON STEEL ANCHORS)	T _{inst}	30	50	40	110	50	80	29 1/2	30	50
REQUIRED INSTALLATION TORQUE (F1-85 STAINLESS STEEL ANCHORS)	T _{inst}	30	40	60	125	30	50	30	30	50

SHEET INDEX	
SHEET NO.	DESCRIPTION
M0.0	MECHANICAL - LEGEND, NOTES & SCHEDULES
M2.3	MECHANICAL - ROOF PLANS

BUFFER TANK CALCULATION

$BTR = (CT(MBO - MSL) / (SOT \times 500))$

BTR = MINIMUM BUFFER TANK SIZE
CT = MINIMUM RUN TIME, MINUTES
MBO = MINIMUM OUTPUT OF HEAT SOURCE, BTU/HR
MSL = MINIMUM SYSTEM LOAD, BTU/HR
SOT = ALLOWABLE SYSTEM DIFFERENTIAL, °F

BTR = 70 GALLONS
CT = 5 MINS
MBO = 210000 BTU/HR
MSL = 0 BTU/HR
SOT = 30 °F

M0.0