

| ABBREVIATIONS | |
|---------------|--|
| ABBREV. | DESCRIPTION |
| ACCU | AIR COOLED CONDENSING UNIT |
| AFC | ABOVE FINISHED CEILING |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AHU | AIR HANDLING UNIT |
| AMPS | AMPERES |
| APD | AIR PRESSURE DROP |
| BD | BACKDRAFT DAMPER |
| BFF | BELOW FINISHED FLOOR |
| BLDG | BUILDING |
| BOD | BOTTOM OF DUCT |
| BTU | BRITISH THERMAL UNIT |
| CD | CONDENSATE DRAIN |
| CFH | CUBIC FEET PER HOUR |
| CFM | CUBIC FEET PER MINUTE |
| CR | CONDENSATE RETURN |
| CW | COLD WATER |
| DB | DRY BULB |
| dB | DECIBEL |
| DC | DIRECT CURRENT |
| DEG | DEGREES |
| DIA | DIAMETER |
| DIM | DIMENSION |
| DISC | DISCONNECT |
| DN | DOWN |
| DWG(S) | DRAWING(S) |
| DX | DIRECT EXPANSION |
| EA | EXHAUST AIR, EACH |
| EAT | ENTERING AIR TEMPERATURE |
| EDB | ENTERING DRY BULB |
| EF | EXHAUST FAN |
| EFF | EFFICIENCY |
| ESP | EXTERNAL STATIC PRESSURE |
| EWB | ENTERING WET BULB |
| EXH | EXHAUST |
| EXIST. (E) | EXISTING |
| FC | FAN COIL |
| FD | FIRE DAMPER |
| FPI | FINS PER INCH |
| FT | FOOT, FEET |
| ° F | DEGREES FAHRENHEIT |
| GC | GENERAL CONTRACTOR |
| GPM | GALLONS PER MINUTE |
| HD | HEAD, HUB DRAIN |
| HP | HORSEPOWER, HEAT PUMP |
| HTG | HEATING |
| HZ | HERTZ |
| ID | INSIDE DIAMETER |
| IN | INCH |
| IN WG | INCHES WATER GAUGE |
| IN WC | INCHES OF WATER COLUMN |
| L | LENGTH |
| LAT | LEAVING AIR TEMPERATURE |
| LB(S),# | POUND(S) |
| LDB | LEAVING DRY BULB |
| LF | LINEAR FEET |
| LRA | LOCKED ROTOR AMPS |
| LWB | LEAVING WET BULB |
| MAX | MAXIMUM |
| MBH | 1000 BTU PER HOUR |
| MCA | MINIMUM CIRCUIT AMPACITY |
| MD | MOTORIZED DAMPER |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| NTS | NOT TO SCALE |
| OA | OUTSIDE AIR |
| OBD | OPPOSED BLADE DAMPER |
| OD | OUTSIDE DIAMETER |
| POC | POINT OF CONNECTION |
| PSI | POUNDS PER SQUARE INCH |
| QTY | QUANTITY |
| RA | RETURN AIR |
| RCP | REFLECTED CEILING PLAN, REINFORCED CONCRETE PIPE REQUIRED |
| REQD | REQUIRED |
| RH | RELATIVE HUMIDITY |
| RHG | REFRIGERANT HOT GAS |
| RL | REFRIGERANT LIQUID |
| RLA | RUNNING LOAD AMPS |
| RPM M | REVOLUTIONS PER MINUTE MOTOR |
| RPM F | REVOLUTIONS PER MINUTE FAN |
| RS | REFRIGERANT SUCTION |
| RTU | ROOF TOP UNIT |
| SA | SUPPLY AIR |
| SF | SQUARE FEET / SUPPLY FAN |
| SMACNA | SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION |
| SP | STATIC PRESSURE |
| SPEC | SPECIFICATION |
| SQ | SQUARE |
| SS | STAINLESS STEEL |
| SER | SERVICE SINK |
| T | TEMPERATURE, THERMOSTAT |
| TDH | TOTAL DYNAMIC HEAD |
| THRU | THROUGH |
| TSP | TOTAL STATIC PRESSURE |
| TYP | TYPICAL |
| U/C | UNDERCUT |
| V | VOLT |
| VA | VOLT-AMPERE |
| VD | VOLUME DAMPER |
| W | WATT, WIDTH |
| W/ | WITH |
| W/O | WITHOUT |
| WB | WET BULB |
| WC | WATER COLUMN |
| XFMR | TRANSFORMER |

| LEGEND | | SYMBOLS LISTED ARE FOR GENERAL USE. DISREGARD THOSE WHICH ARE NOT USED ON DRAWING. | |
|--------|---------|--|--|
| SYMBOL | ABBREV. | DESCRIPTION | |
| | | ARROW INDICATES DIRECTION OF FLOW | |
| | | ARROW INDICATES DIRECTION OF PIPE SLOPING DOWN | |
| | | CAPPED PIPE | |
| | | PIPE DOWN | |
| | | PIPE UP | |
| | | TEE DOWN | |
| | | VALVE IN RISER | |
| | | BALL VALVE | |
| | CV | CHECK VALVE | |
| | GV | GATE VALVE | |
| | GLV | GLOBE VALVE | |
| | PRV | PRESSURE REDUCING VALVE | |
| | | MOTORIZED 2-WAY ELECTRIC VALVE | |
| | | MOTORIZED 3-WAY ELECTRIC VALVE | |
| | | PNEUMATIC 2-WAY CONTROL VALVE | |
| | | PNEUMATIC 3-WAY CONTROL VALVE | |
| | | "Y" STRAINER | |
| | | "Y" STRAINER WITH SHUTOFF VALVE | |
| | | RELIEF VALVE (R) OR SAFETY VALVE (S) | |
| | | FLOW CONTROL VALVE | |
| | | FLOW METER | |
| | | GAS COCK | |
| | | BUTTERFLY VALVE | |
| | | ELECTRONIC CONTROL VALVE | |
| | | UNION | |
| | | FLANGE | |
| | PG | PRESSURE GAGE | |
| | | THERMOMETER IN WELL | |
| | | AUTOMATIC AIR VENT | |
| | | PIPE SIZE INCREASER | |
| | | BACKFLOW PREVENTER | |
| | | TEMPERATURE GAUGE | |
| | CWS | CHILLED WATER SUPPLY | |
| | CWR | CHILLED WATER RETURN | |
| | HWS | HEATING WATER SUPPLY | |
| | HWR | HEATING WATER RETURN | |
| | CW | COLD WATER | |
| | HW | HOT WATER | |
| | HWR | HOT WATER RETURN | |

BUILDING DEPARTMENT INFORMATION

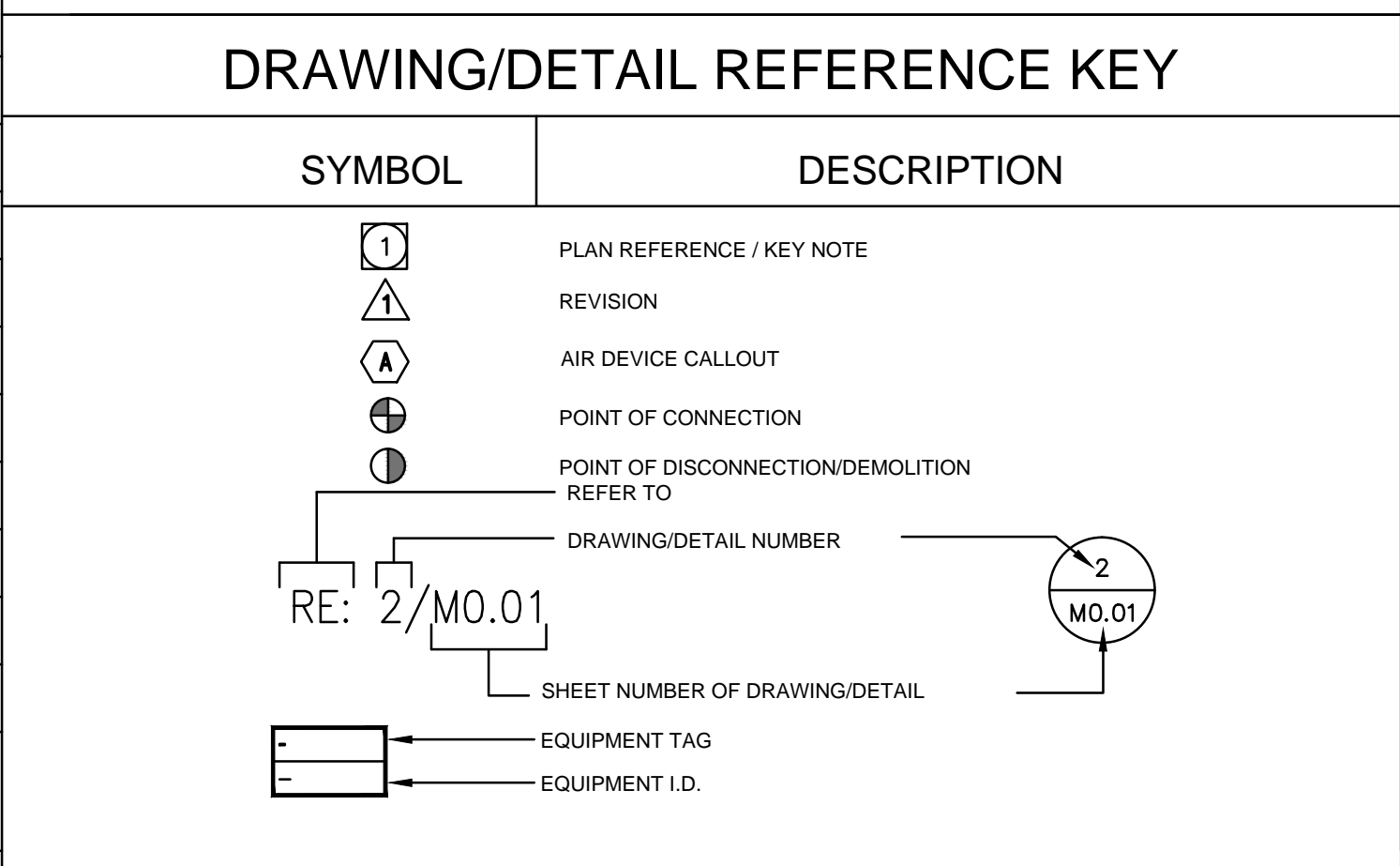
1. AUTHORITY HAVING JURISDICTION:
 COUNTY OF LOS ANGELES, DEPARTMENT OF PUBLIC WORKS, BUILDING AND SAFETY.
 18005 E. CENTRAL AVENUE
 LA PUENTE, CALIFORNIA 91744
 626.961.9614

SEISMIC NOTES

- ANCHORAGE AND/OR SEISMIC RESTRAINTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA.
- THE ANCHORAGE AND/OR SEISMIC RESTRAINT OF PERMANENT EQUIPMENT AND ASSOCIATED SYSTEMS LISTED SHALL BE DESIGNED TO RESIST THE TOTAL DESIGN SEISMIC FORCES PRESCRIBED IN SECTION 1632.2 OF THE 2010 CALIFORNIA BUILDING CODE.
- SEISMIC RESTRAINTS ARE REQUIRED FOR THE FOLLOWING INSTALLATIONS. REFER TO THE SMACNA GUIDELINES FOR SEISMIC RESTRAINTS FOR ADDITIONAL REQUIREMENTS:
 - A) FLOOR OR ROOF MOUNTED EQUIPMENT WEIGHING 400 LBS. OR GREATER.
 - B) SUSPENDED OR WALL MOUNTED EQUIPMENT WEIGHING 20 LBS. OR GREATER.
 - C) VIBRATION ISOLATION EQUIPMENT WEIGHING 20 LBS. OR GREATER.
 - D) PIPING 1-1/4 INCHES NOMINAL DIAMETER AND LARGER LOCATED IN BOILER, MECHANICAL EQUIPMENT AND REFRIGERATION MECHANICAL ROOMS.
 - E) PIPING 2-1/2 INCHES NOMINAL DIAMETER AND LARGER.
 - F) DUCTWORK 6 SQUARE FEET AND LARGER IN CROSS SECTIONAL AREA.
 - G) ROUND DUCTWORK 28" IN DIAMETER AND GREATER.
- PIPES AND DUCTS SUPPORTED BY A TRAPEZE WHERE NONE OF THOSE ELEMENTS WOULD INDIVIDUALLY REQUIRE BRACING NEED NOT BE BRACED IF CONNECTIONS TO THE PIPE/DUCT OR DIRECTIONAL CHANGES DO NOT RESTRICT MOVEMENT OF THE TRAPEZE. IF THIS FLEXIBILITY IS NOT PROVIDED, BRACING IS REQUIRED WHEN THE COMBINED OPERATING WEIGHT OF ALL ELEMENTS SUPPORTED BY THE TRAPEZE IS 10 LBS/FT OR GREATER.

APPLICABLE CODES

- 2016 CALIFORNIA PLUMBING CODE
- 2016 CALIFORNIA MECHANICAL CODE
- 2017 COUNTY OF LOS ANGELES BUILDING CODE
- 2017 COUNTY OF LOS ANGELES MECHANICAL CODE
- 2017 COUNTY OF LOS ANGELES PLUMBING CODE



GENERAL NOTES

- THESE DOCUMENTS WERE PREPARED WITHOUT AS-BUILT DOCUMENTS AS NONE WERE AVAILABLE. FIELD VERIFY ALL EXISTING CONDITIONS (SIZE, LOCATION, ETC.) PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ARCHITECT / ENGINEER OF ANY DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND EXISTING CONDITIONS.
- COORDINATE THE LOCATION AND ELEVATION OF EQUIPMENT, DUCTWORK AND PIPING WITH OTHER TRADES. TO AVOID INTERFERENCES.
- PROVIDE ADEQUATE SUPPORT (THRUST RESTRAINTS, ETC.) FOR PIPING AT POINTS WHERE EQUIPMENT IS DISCONNECTED FROM THE SYSTEM.
- CONNECTION, DEMOLITION OR INTERRUPTION TO EXISTING SERVICES SHALL BE MINIMIZED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE.
- EQUIPMENT SHALL BE INSTALLED, DUCTED AND/OR PIPED IN ACCORDANCE APPLICABLE CODES AND MANUFACTURERS RECOMMENDATIONS.
- EQUIPMENT DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY FASTENED IN PLACE. SEE SEISMIC NOTES.
- INSTALL PIPING OUT OF NATURAL WALKWAYS AND IN COMPLIANCE WITH CAL-OSHA SAFETY STANDARDS.
- PROVIDE (7) FOOT MINIMUM HEAD CLEARANCE AT OVERHEAD PIPING AND EQUIPMENT UNLESS OTHERWISE NOTED ON ARCHITECTURAL OR STRUCTURAL PLANS.
- THE LOCATION OF ACCESS PANELS FOR CONCEALED VALVES, FUSIBLE LINKS, DAMPER OPERATORS AND EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECTURAL TRADES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING AREAS, PIPING, DUCTWORK, ETC., EXISTING OR NEW, DAMAGED AS A RESULT OF THE WORK. REPAIR TO MATCH EXISTING CONDITIONS.
- HORIZONTAL PIPING AND TUBING SHALL BE SUPPORTED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP IT IN ALIGNMENT AND PREVENT EXCESSIVE SAGGING. SUPPORT EACH PIPE INDEPENDENTLY FROM OTHER PIPES. DO NOT USE WIRE OR PLUMBERS TAPE FOR HANGING OR STRAPPING PIPES.
- UNIONS SHALL BE PROVIDED AND INSTALLED PRIOR TO EQUIPMENT CONNECTIONS. PROVIDE DIELECTRIC UNIONS, GASKETS AND FASTENERS AT DISSIMILAR METAL CONNECTIONS OR CONTACT POINTS.
- PROVIDE 1/2" HIGH STENCIL LETTERING PAINTED ON MECHANICAL EQUIPMENT WITH PERMANENT PAINT, OR A SHEET METAL PLAQUE WITH ENLARGED LETTERING MOUNTED ON THE SIDE OF THE UNIT WITH SHEET METAL SCREWS IDENTIFYING UNIT NUMBER AND AREA SERVED BY SUCH UNIT.
- LABEL INSIDE THERMOSTAT HOUSING WITH A PERMANENT MARK TO CORRESPONDING UNIT OR ZONE TERMINAL AS SHOWN ON PLANS. MOUNT THERMOSTATS WHERE INDICATED ON PLAN 48" A.F.F.
- INTERCONNECT A/C UNITS TO DUCT SMOKE DETECTION SYSTEM COMPLYING TO CODE TO ACCOMPLISH UNIT SHUT DOWN UPON DETECTION OF ANY SMOKE DETECTOR. COORDINATE WIRING WITH ELECTRICAL CONTRACTOR.
- ACCURATE "AS-BUILT" DRAWINGS SHALL BE MAINTAINED DURING CONSTRUCTION AND SUBMITTED FOR APPROVAL UPON COMPLETION OF INSTALLATION. CONTRACTOR TO PROVIDE FINAL AS-BUILT PLANS IN HARD COPY AND ELECTRONIC (CAD) FORMAT.
- MECHANICAL SYSTEMS SHALL BE TESTED, BALANCED AND OPERATED TO DEMONSTRATE TO THE OWNER OR DESIGNATED REPRESENTATIVE THAT THE INSTALLATION AND PERFORMANCE OF THE SYSTEMS CONFORM TO THE DESIGN INTENT. ALL TESTING AND BALANCING SHALL BE PERFORMED BY A QUALIFIED INDEPENDENT AGENCY CERTIFIED BY THE ASSOCIATION AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TEST RESULTS SHALL BE DOCUMENTED AND SUBMITTED FOR APPROVAL.
- REFRIGERANT PIPING SHALL COMPLY WITH CHAPTER 11 OF THE MECHANICAL CODE.
- CONTRACTOR TO REPAIR ALL EXISTING WALL, FLOOR, CEILING, AND ROOF CONDITIONS TO MATCH EXISTING FOR EQUIPMENT REMOVED. COORDINATE WITH GC.

PIPE SCHEDULE

| SERVICE | LOCATION | MATERIALS | | | | FITTINGS |
|----------------------------|------------|---------------|---------------|--------------------------------|--------------|---|
| | | TYPE L COPPER | TYPE M COPPER | SCH. 40 PIPE OR 40 BLACK STEEL | POLYETHYLENE | |
| WATER | INSIDE | ● | | | | LEAD FREE SOLDERED FITTINGS |
| | OUTSIDE | ● | | | | LEAD FREE SOLDERED FITTINGS |
| WASTE (SANITARY) | ABV. FLR. | | | ● | | PVC SCHEDULE 40 PIPE AND FITTINGS |
| | BEL. FLR. | | | ● | | ABS SCHEDULE 40 PIPE AND FITTINGS |
| WASTE (SODA MACHINES) | BEL. FLR. | | | ● | | ABS SCHEDULE 40 PIPE AND FITTINGS |
| | ABV. FLR. | | | ● | | ABS SCHEDULE 40 PIPE AND FITTINGS |
| STORM DRAIN OVERFLOW DRAIN | BEL. FLR. | | | ● | | ABS SCHEDULE 40 PIPE AND FITTINGS |
| | ABV. FLR. | | | ● | | ABS SCHEDULE 40 PIPE AND FITTINGS |
| VENT (SANITARY) | BEL. FLR. | | | ● | | ABS SCHEDULE 40 PIPE AND FITTINGS |
| | INSIDE | | | ● | | LEAD FREE SOLDERED FITTINGS |
| INDIRECT WASTE | INSIDE | | | ● | | LEAD FREE SOLDERED FITTINGS |
| | OUTSIDE | | | ● | | LEAD FREE SOLDERED FITTINGS |
| CONDENSATE DRAIN | INSIDE | | | ● | | LEAD FREE SOLDERED FITTINGS, INSULATED |
| | OUTSIDE | | | ● | | LEAD FREE SOLDERED FITTINGS, INSULATED |
| GAS | INSIDE | | | ● | | SCH. 40 PIPE AND MALLEABLE IRON FITTINGS |
| | BEL. GRADE | | | ● | | P.E. PIPE AND FITTINGS W/ ELEC. FUSION JOINTS |
| STEAM | INSIDE | | | ● | | SCHEDULE 40 CI OR BLACK STEEL PIPE AND FITTINGS |
| | BEL. GRADE | | | ● | | SCHEDULE 40 CI OR BLACK STEEL PIPE AND FITTINGS |

*SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION

SHEET INDEX

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REGISTERED PROFESSIONAL ENGINEER
 M32264
 Exp. 12/31/18
 MECHANICAL
 STATE OF CALIFORNIA

ROWLAND UNIFIED SCHOOL DISTRICT
 RUTH RICHARD FOOD CENTER
 4032 S. ELLESFORD AVENUE
 WEST COVINA, CALIFORNIA 91792

STEAM SYSTEM BOILER
 REPLACEMENT PROJECT


REMARKS

| DATE | 50% PROGRESS SET | 60% PROGRESS SET | 80% PROGRESS SET | BID SET |
|----------|------------------|------------------|------------------|---------|
| 04/04/17 | | | | |
| 08/05/17 | | | | |
| 03/20/18 | | | | |

MECHANICAL
 GENERAL NOTES,
 SYMBOLS AND
 ABBREVIATIONS

3-way motorized temperature mixing valve

NA16469



Function: The NA16469 motorized three-way temperature mixing valve incorporates a motorized three-point floating actuator to regulate the fluid temperature in hydronic systems or radiant panel heating systems. It operates on a control signal from an outdoor reset controller. The flow in the valve is regulated by a specially designed orifice, offering a high flow rate in a small package. It features calibrated orifices that open and close the hot and cold water inlet ports to adjust the desired mixed outlet temperature with no savings due to sudden changes in thermal load. The valve is constructed of a single casting containing an internal chamber that brings the fluid from the cold inlet to the mixing chamber, resulting in a small size for easy installation. The internal components are made of stainless steel to minimize wear and ensure long operating life. The NA16469 also features installation flexibility with a reversible cold inlet and straight through flow direction from hot inlet to mixed outlet.

Product range: NA16469 3-way floating point 2kW temperature mixing valve, 7.7 Cv

Technical specifications:

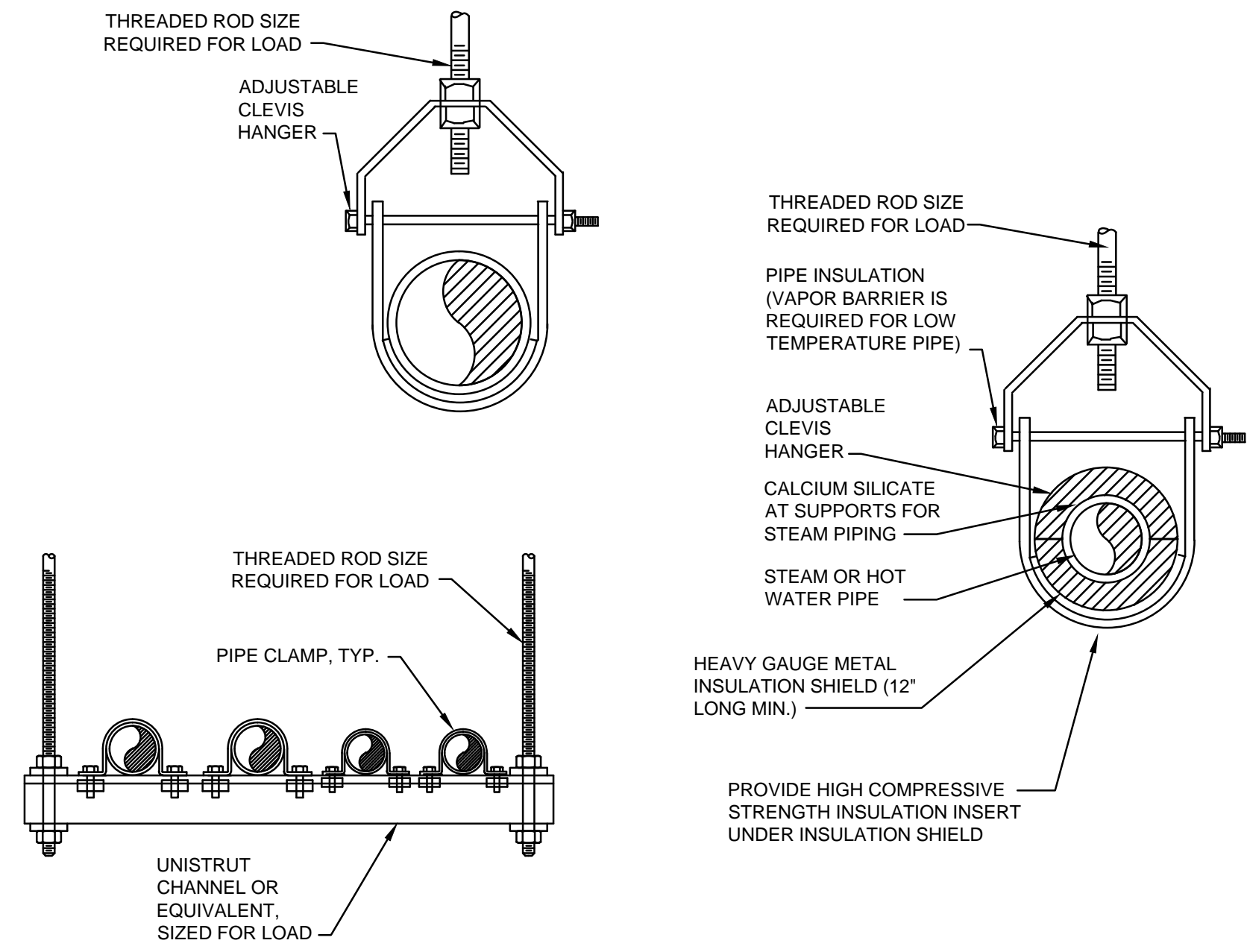
Materials:
 Body: brass
 Bonnet: stainless steel
 Shaft: stainless steel
 Seal: EPDM

Actuator (three-point floating type with auxiliary switch):
 Supply voltage: 24 VAC (50-60 Hz)
 Full stroke time: 50 s (position 1/2)
 Power consumption: 3 VA
 Current draw: 0.35 A
 Auxiliary switch capacity: 0.8 A, 24 V
 Protection class: IP44
 Max. ambient temperature: 130°F (50°C)
 Protection cover: self-extinguishing V0

Performance:
 Media: water, glycol solutions
 Substrate fluids: water, glycol solutions
 Max. percentage of glycol: 50%
 Temperature range: 40-210°F (5-100°C)
 Max. working pressure: 200 psi (14 bar)
 Or: 7.7
 Connections: 1" sweat union

Code:

| Code | A | B | C | D | Weight (lb) |
|---------|----|----|--------|----|-------------|
| NA16469 | 1" | 2" | 4.1/2" | 3" | 5.8 |



BOILER SCHEDULE

| | |
|------------------------|------------------------|
| MARK | B-1 |
| INPUT (BTUH) | 2,000,000 EACH |
| OUTPUT (BTUH) | 1,600,000 EACH |
| VENT SIZE (INCHES) | 10"Ø |
| MODEL NUMBER | BRYAN MODEL AB200 |
| MIN THERMAL EFFICIENCY | 80% |
| STEAM OUTPUT | 1649 LBS/HR |
| FLOW RATE | 94.7 GPM |
| OPERATING PRESSURE | 60 PSI |
| PRESSURE DROP | 3 FT HD MAX |
| GAS PRESSURE | 5 PSI MIN / 14 PSI MAX |
| OPERATING WEIGHT | 900 LBS |
| ELECTRICAL | 120/1/60 28 AMPS |

NOTES:
 1. PROVIDE STAND ALONE CONTROLLER WITH BMS PORTS, GAS TRAIN, VALVES AND FITTINGS.
 2. PROVIDE AUTO BLOWDOWN OPTION.
 3. CONTACT JEFF DISCOUNT AT DB SALES, 714.620.9555.

CONDENSATE TANK

| | |
|--------------------|---------------------|
| MARK | CT-1 |
| MANUFACTURER | BRYAN |
| MODEL | HFS-50 |
| GALLONS | 50 |
| SIZE | 34"x35"x52" (LxWxH) |
| PUMPS | DUPLEX, 1 HP EACH |
| FLOW RATE | 6.9 GPM |
| OPERATING WEIGHT | 900 LBS |
| ELECTRICAL | 208/3/60 |
| OPERATING PRESSURE | 60 PSI |

NOTES: PROVIDE CONTROL PANEL WITH BOILER COMMUNICATION CAPABILITY.

BLOWDOWN SEPERATOR

| | |
|--------------------------|----------------------|
| MARK | BD-1 |
| MANUFACTURER AND MODEL | BURNHAM B230 |
| DIMENSION | 10"Ø x 20", 3"Ø VENT |
| OPERATING PRESSURE (MAX) | 200 PSI |

NOTES: PROVIDE AUTOMATIC AFTER COOLER WITH MODULATING TEMP CONTROLLER.

PUMP SCHEDULE

| UNIT TAG | SYSTEM SERVED | MFR & MODEL NO. (OR APPROVED EQUAL) | TYPE | GPM | HEAD (FT. WTR) | HP | VOLTS/PH/Hz | RPM | WEIGHT LBS | REMARKS |
|----------|----------------------------|-------------------------------------|---------|-----|----------------|------|-------------|------|------------|---------|
| PCP-2 | DOMESTIC WATER RECIRC PUMP | WLO STAR S 21 ZFX | IN LINE | 7.5 | 5 | 0.25 | 115/1/60 | 1750 | 100 | 1 |

NOTES:
 1. PROVIDE CEILING SUPPORTS, PIPE TEMP SENSOR CONTROL AND DISCONNECT. PUMP TO HAVE ALL BRONZE/S.S. CONSTRUCTION.

THERMOSTATIC MIXING VALVE

| UNIT TAG | ITEM | MFR & MODEL NO. (OR APPROVED EQUAL) | TYPE | CONNECTIONS | LWT | MAX PRESSURE | MAX GPM | WEIGHT LBS | REMARKS |
|----------|---------------------------|-------------------------------------|-------|-------------|-------|--------------|---------|------------|---------|
| TMW-1 | THERMOSTATIC MIXING VALVE | CALEFFI NA16469 | 3-WAY | 1" | 140°F | 200 PSI | 7.5 | 6 | 1 |

NOTES:
 1. PROVIDE ADJUSTABLE, MOTORIZED MODEL WITH ALL BRONZE OR STAINLESS STEEL CONSTRUCTION. PROVIDE OUTDOOR RESET CONTROLLER. PROVIDE CHECK VALVES.

WATER SOFTENER SYSTEM

| UNIT TAG | ITEM | SOFTENER TANK MFR & MODEL NO. (OR APPROVED EQUAL) | CONTROL VALVE MFR & MODEL NO. (OR APPROVED EQUAL) | CONN | FLOW | BACKWASH | MAX PRESSURE | MAX TEMP | POWER | REMARKS |
|----------|----------------|---|---|------|--------|----------|--------------|----------|----------|---------|
| WS-1 | WATER SOFTENER | WAVE CYBER 186 GALLON 21"Ø x 62" | CLACK WSZEE | 2" | 66 GPM | 12 GPM | 100 PSI | 110°F | 120/1/60 | 1, 2 |
| WS-2 | WATER SOFTENER | WAVE CYBER 186 GALLON 21"Ø x 62" | CLACK WSZEE | 2" | 66 GPM | 12 GPM | 100 PSI | 110°F | 120/1/60 | 1, 2 |

NOTES:
 1. PROVIDE MICROPROCESSOR, METER, 2" MOTORIZED ALTERNATING VALVE
 2. EACH TANK SYSTEM IS SIZED FOR 50% CAPACITY FOR 100% TOTAL CAPACITY.
 3. CONTACT CHRIS MACKNIGHT WITH CUSTOM H20 AT 949.484.3200 OFFICE, 714.305.9015 CELL.

WATER TREATMENT

| UNIT NO. | MANUFACTURER & MODEL NO. | SERVICE | ELECTRICAL | | OPER. WT. (LBS.) | REMARKS |
|-------------------|-----------------------------|--------------|------------|----------|------------------|---|
| | | | H.P. | V/PH/Hz | | |
| BOILER CONTROLLER | WALCHEM W100W | STEAM BOILER | --- | 120/1/60 | --- | 3 POWERED RELAYS, PIGTAILS, BOILER SENSOR WITH ATC. |
| TANK | PEABODY SQUARE NATURAL | STEAM BOILER | --- | --- | --- | DUAL CONTAINMENT, 24Lx14Wx13.5H, ULTRIMINE SB-100K |
| PUMP | PROMINENT PUMP CONCEPT PLUS | STEAM BOILER | --- | 120/1/60 | --- | 0.26 GPH, 145 PSI. |
| INJECTION QUILL | NEPTUNE | STEAM BOILER | --- | --- | --- | 3/4", 316 S.S. WITH CHECK VALVE QC-316-75 |

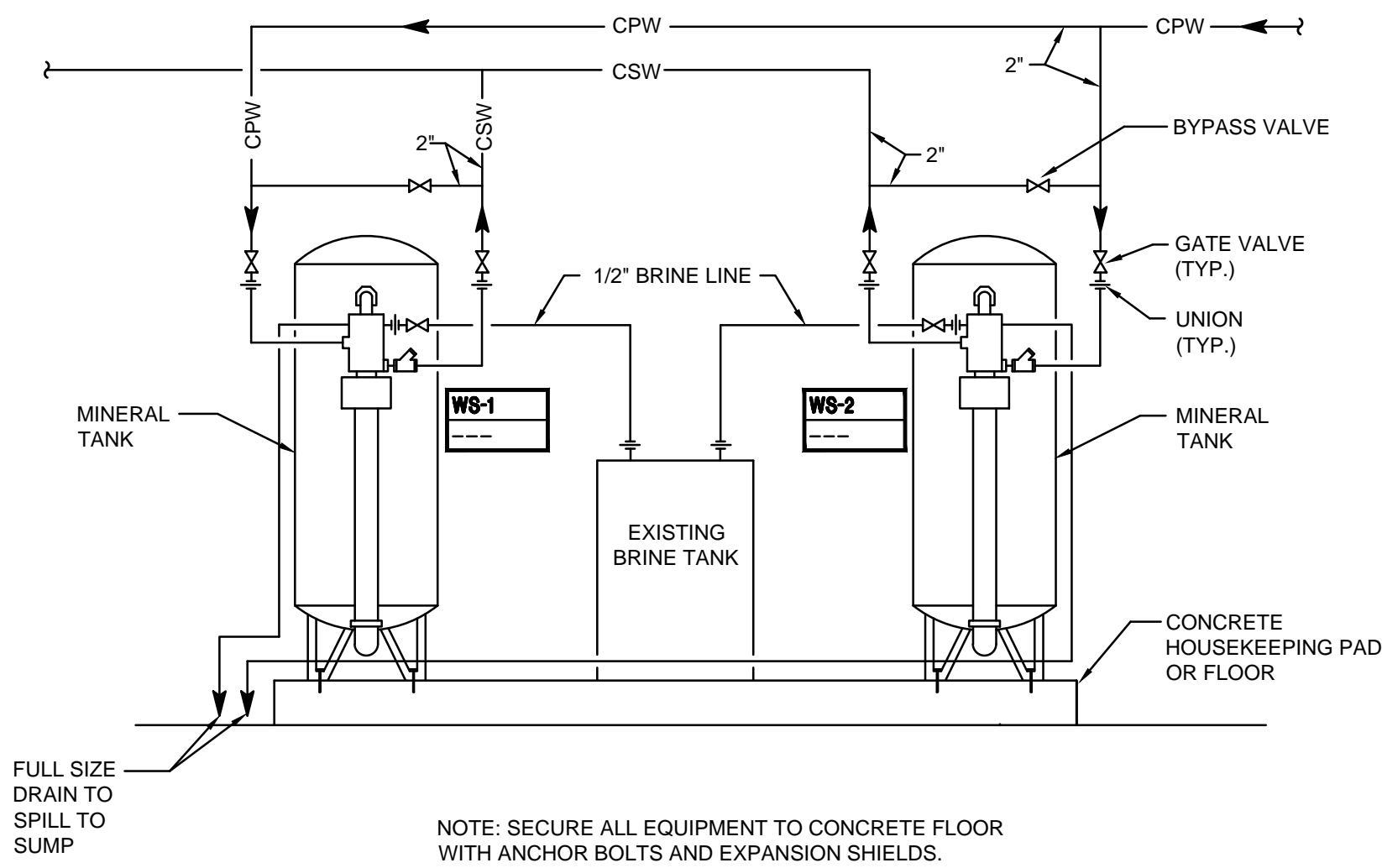
CONTACT: CHRIS BELLIZZI, ECONOMIC ALTERNATIVES, 951.272.8200

THERMOSTATIC MIXING VALVE DETAIL

SCALE: NONE 2

PIPE SUPPORT DETAILS

SCALE: NONE 1

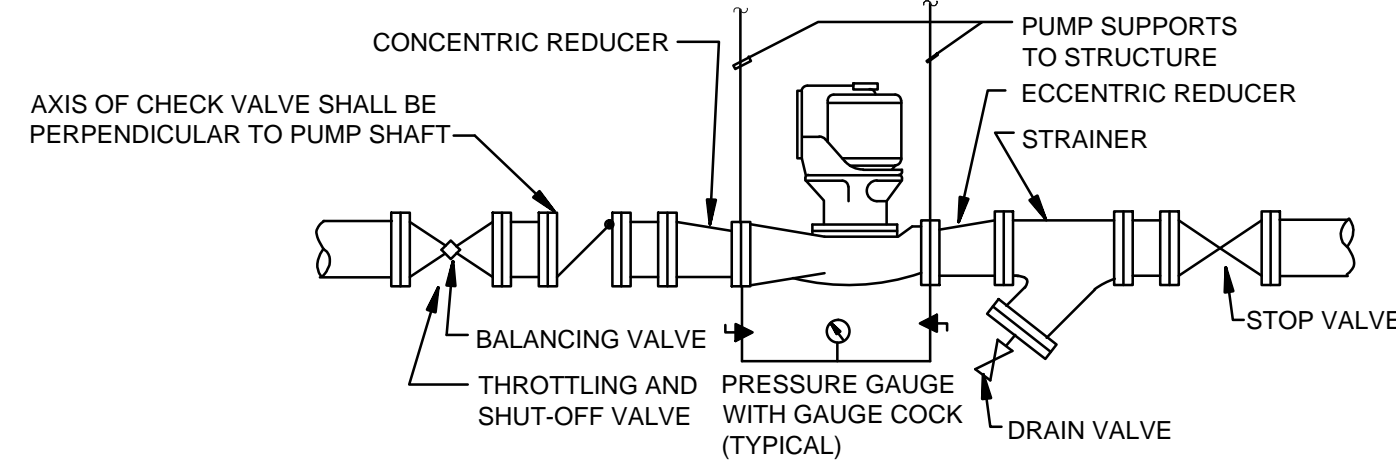
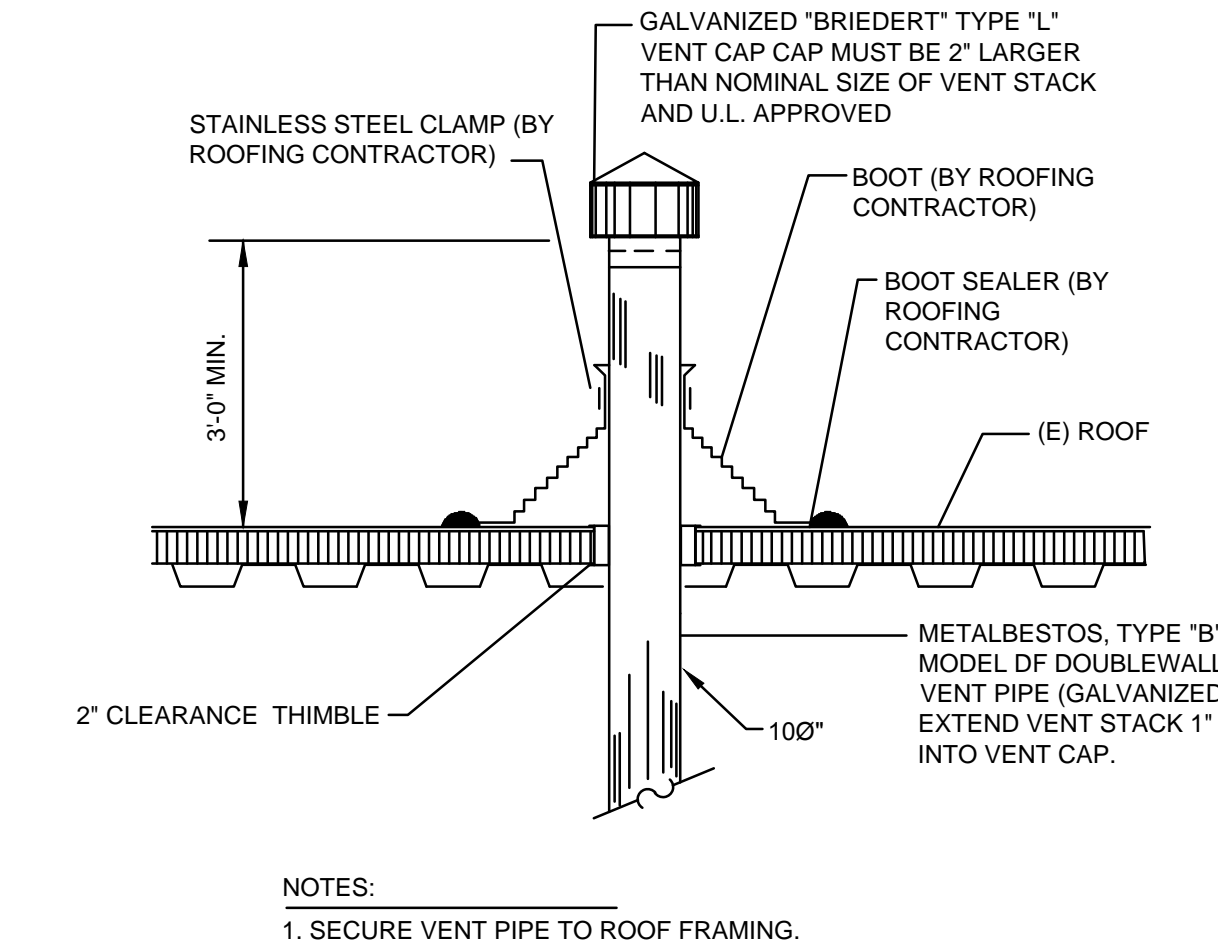


WATER SOFTENER DETAIL

SCALE: NONE 4

BOILER VENT THROUGH ROOF DETAIL

SCALE: NONE 3



INLINE PUMP DETAIL

SCALE: NONE 5

NOT USED

SCALE: NONE 6

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 STATE OF CALIFORNIA

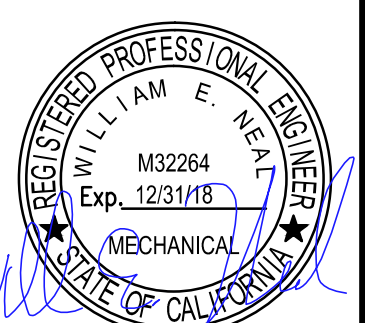
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MECHANICAL
 DETAILS AND
 SCHEDULES

SHEET
 M0.1

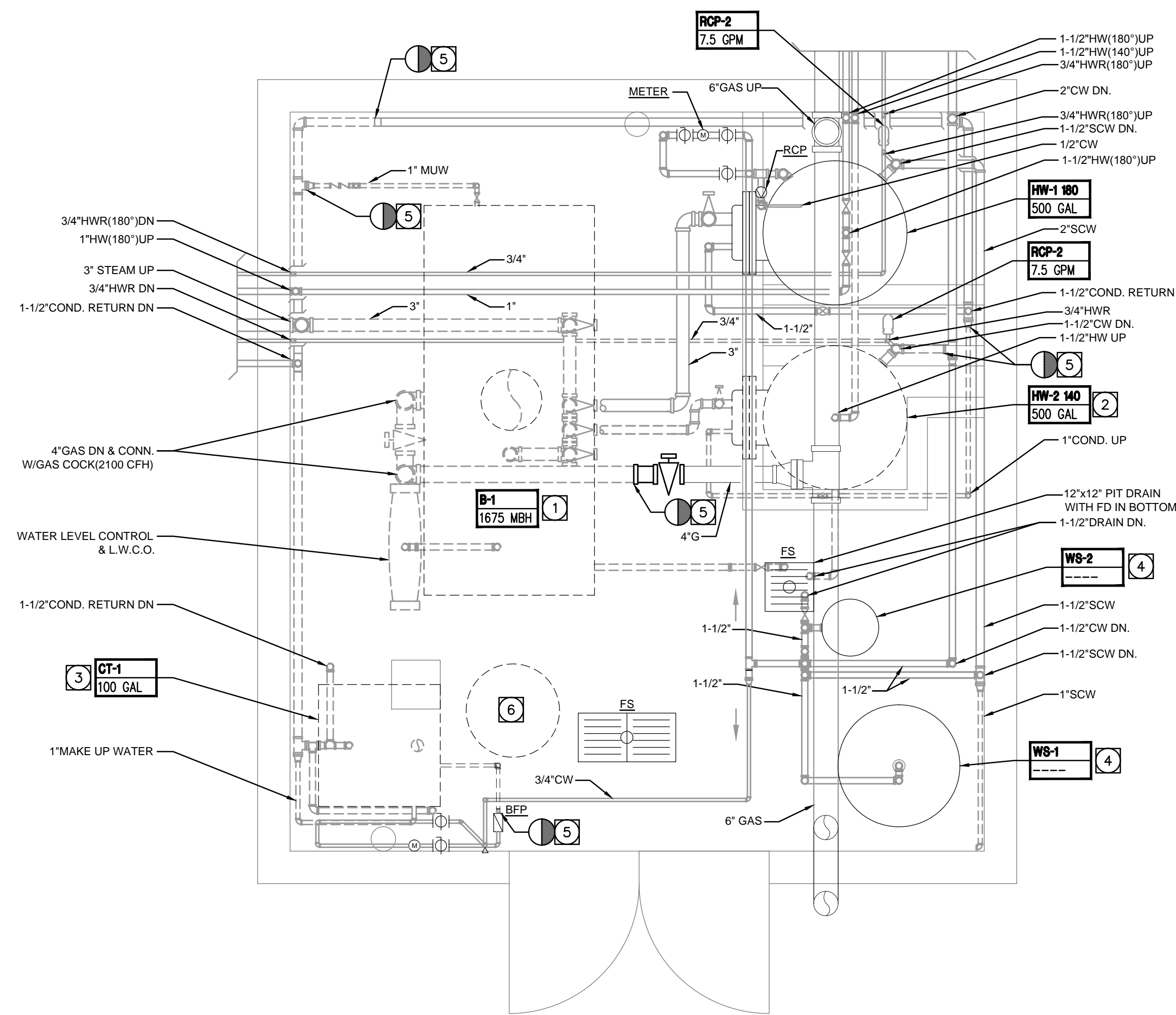


GENERAL NOTES:

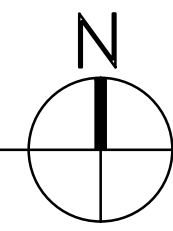
1. CONTRACTOR TO PERFORM THOROUGH SITE VISIT PRIOR TO BID AND TO ISSUE RFIS FOR ANY PART OF THE SCOPE THAT IS UNCLEAR.
2. CONTRACTOR TO INCLUDE ALL REQUIRED TRADES FOR A COMPLETE TURNKEY PROPOSAL.

PLAN NOTES:

- 1 DEMO BOILER, FLUE, PIPING TO SOV, GAS PIPING TO SOV, VENTS, CONTROLS AND POWER, PREPARE FOR NEW BOILER.
- 2 DEMO HW-2 TANK, PIPING, VALVES AND FITTINGS.
- 3 DEMO CT-1, PIPING, VALVES AND FITTINGS, TO BE REPLACED WITH NEW, 2-PUMP MODEL.
- 4 WS-1 AND WS-2 TO BE REMOVED AND RE-INSTALLED. PREPARE PIPING FOR TEMPORARY DISLOCATION.
- 5 DEMO EXISTING GAS PIPING AS INDICATED, PROVIDE NEW SOV AND TEMPORARY BLIND FLANGE.
- 6 DEMO CHEMICAL TREATMENT SYSTEM, TO BE REPLACED WITH NEW.



1 MECHANICAL DEMOLITION PLAN BOILER ROOM
SCALE: 1/2" = 1' - 0"



ROWLAND UNIFIED SCHOOL DISTRICT
RUTH RICHARD FOOD CENTER
4092 S. ELLESFORD AVENUE
WEST COVINA, CALIFORNIA 91792

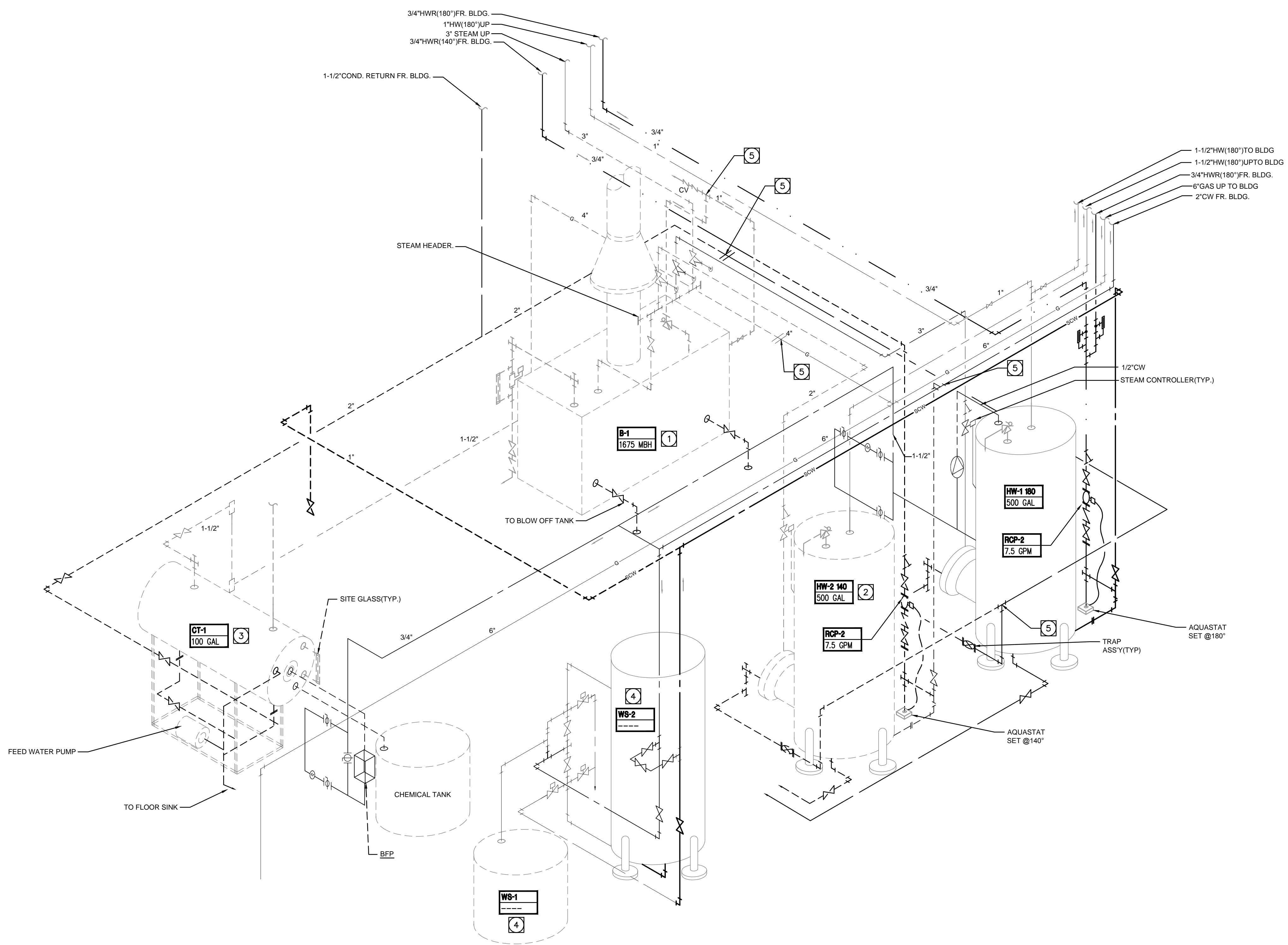
**STEAM SYSTEM BOILER
REPLACEMENT PROJECT**

| DATE | REMARKS |
|----------|------------------|
| 04/04/17 | 50% PROGRESS SET |
| 06/05/17 | 80% PROGRESS SET |
| 03/20/18 | BID SET |

**MECHANICAL
DEMOLITION
PLAN
BOILER ROOM**

PLAN NOTES:

- 1 DEMO BOILER, FLUE, PIPING TO SOV, GAS PIPING TO SOV, VENTS, CONTROLS AND POWER. PREPARE FOR NEW BOILER.
- 2 DEMO HW-2 TANK, PIPING, VALVES AND FITTINGS.
- 3 DEMO CT-1, PIPING, VALVES AND FITTINGS.
- 4 WS-1 AND WS-2 TO BE REMOVED AND RE-INSTALLED. PREPARE PIPING FOR TEMPORARY DISLOCATION.
- 5 DEMO EXISTING PIPING AS INDICATED, PREPARE FOR MODIFICATIONS.



1 MECHANICAL DEMOLITION ISOMETRIC PLAN BOILER ROOM
SCALE: N/A

TREK ENGINEERING, INC.
MECHANICAL PLUMBING ENGINEERING
321 Rampart Street, Suite 203
Orange, CA 92668
TEL 714.769.9700
WNeal@TrekEngineering.com

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STEAM SYSTEM BOILER
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MECHANICAL
DEMOLITION
ISOMETRIC PLAN
BOILER ROOM



GENERAL NOTES:

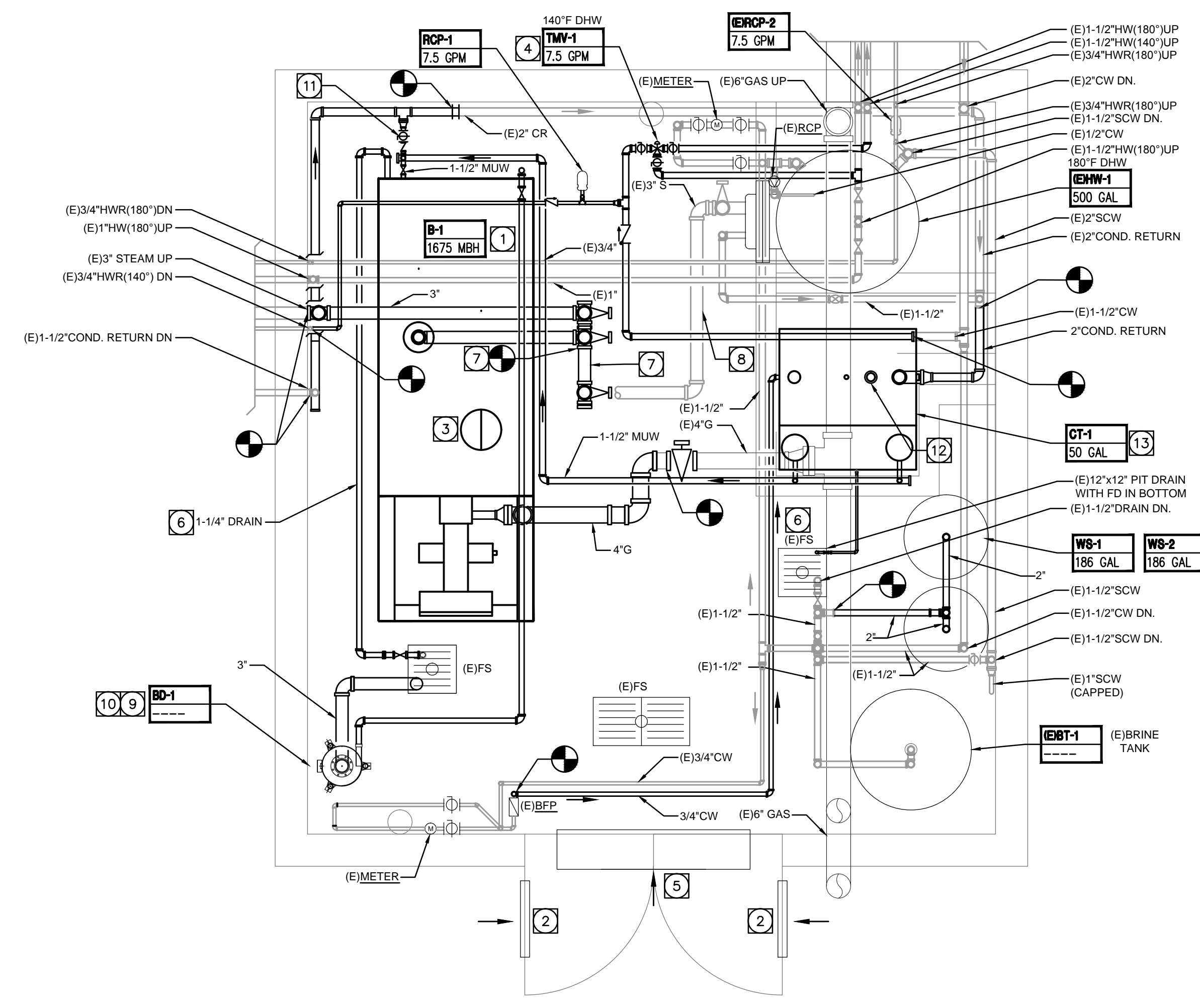
1. CONTRACTOR TO PERFORM THOROUGH SITE VISIT PRIOR TO BID AND TO ISSUE RFIS FOR ANY PART OF THE SCOPE THAT IS UNCLEAR.
2. CONTRACTOR TO INCLUDE ALL REQUIRED TRADES FOR A COMPLETE TURNKEY PROPOSAL.

PLAN NOTES:

1. INSTALL NEW BOILER. 10'0" FLUE, PIPING TO SOV, GAS PIPING TO SOV, VENTS, CONTROLS AND POWER. PROVIDE NEW 4" HK PAD, EXTEND 6" BEYOND BOILER EDGE.
2. (E) 19"x69" COMBUSTION AIR DOOR LOUVER, QTY 2.
3. 10'0" TYPE B FLUE UP THROUGH EXISTING ROOF OPENING. REUSE (E) FLUE GAP OR PROVIDE NEW.
4. THERMOSTATIC MIXING VALVE TO BE INSTALLED FOR 140°F DOMESTIC HOT WATER.
5. INSTALL 48"x24" DRAINABLE COMBUSTION AIR LOUVER AT 12" BELOW CEILING. PROVIDE INSECT SCREEN.
6. ROUTE BOILER DRAIN/RELIEF LINES TO EXISTING FLOOR SINK.
7. REPLACE (E) 3" STEAM HEADER AND VALVES WITH NEW.
8. (E) 3" STEAM, EXTEND TO NEW STEAM HEADER.
9. 3"Ø VENT FROM BD-1 UP THROUGH ROOF.
10. INSTALL 3"Ø AUTOMATIC AFTER COOLER WITH MODULATING TEMP CONTROLLER. PROVIDE 3"Ø DRAIN LINE TO FLOOR SINK. COORDINATE BLOWOFF INLET PIPE SIZE WITH BOILER.
11. SOV TO BE IN CLOSED POSITION.
12. 3" VENT THRU ROOF. PROVIDE WEATHER PROOF ROOF PENETRATION.
13. CHEMICAL TREATMENT SYSTEM, INSTALL AND CONNECT TO CT-1.

COMBUSTION AIR REQUIREMENTS

1. REQUIREMENTS: 1 SQIN FREE AREA PER 4000 BTUH.
 2. (1) BOILERS AT 2,000,000 BTUH.
 3. $(2,000,000 \text{ BTUH}) / (1 \text{ SQIN} / 4000 \text{ BTUH}) = 500 \text{ SQIN FREE AREA REQUIRED, HIGH AND LOW.}$
 4. EXISTING DOOR LOUVERS: $(2) 66" \times 19" = 2508 \text{ SQIN FREE AREA.}$
 5. EXISTING FREE AREA: $2508 \times 0.50 = 1254 \text{ SQIN FREE AREA.}$
- EXISTING DOOR LOUVERS ADEQUATE FOR LOW INTAKE REQUIREMENT.
 A NEW 48"x24" LOUVER AT 12" FROM CEILING REQUIRED FOR HIGH LOUVER.



1 MECHANICAL PLAN BOILER ROOM
 SCALE: 1/2" = 1' - 0"

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MECHANICAL
 PLAN
 BOILER ROOM

SHEET
M2.1

