ADDENDUM

Date: February 21, 2012

To: Fred Hiatt
State of Nebraska, AS/State Building Division
521 S. 14th Street
P.O. Box 98940
Lincoln, NE 68509-8940

Project: BSDC - Central Heating Plant Upgrades

Project No.: 11037-178

Addendum No.: 2

CC:

GENERAL

Prior Approvals – If not specifically called out as NO EQUAL under the specified product the following substitutes acceptable as long as they meet specification, this is not a formal approval, products pending upon approvals /shop drawing review.

Louvers	Raskin
Make Up Air Units	Captiveaire, Titan Air Incorporated
Condensate Pumps	Russell Pump
The following items were submitted for prior approval but have NOT been approved	

CHANGES TO PROJECT MANUAL

Section 00 41 13 – Proposal Form

1. See attached revised proposal form.

Section 01 77 00 – Closeout Procedures

1. 1.02 Add section C to read: Each phase shall have its own substantial completion after punch list have been completed and equipment is fully operational. The substantial completion dates shall correspond with the unit startup dates.
2. 1.05.A shall read: Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of each phases' Substantial Completion is indicated.

Section 01 78 23 – Operations and Maintenance Data

1. 1.02.A.2 shall read: Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Contractor shall deliver 3 completed copies to the owner.
2. 2.01.F.1 shall read: Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, maximum thickness of 3-1/2", sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine and front cover to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

Section 02 41 19 – Selective Structure Demolition

1. 3.01.E shall read: Not used.

Section 22 05 00 – Common Work Results for Plumbing

1. 1.02.B shall read: Summary: General requirements for motors, hangers and supports, and meters and gages.
2. 3.02.F shall read: Install unions at final connection to each piece of equipment. No dielectric union are allowed at connections to equipment.
3. 3.04.A shall read: Not used.
4. 3.05.B shall read: Not used.

Section 22 05 13 – Common Motor Requirements for Plumbing Equipment

1. 2.01.B Add line 5: A motor shaft grounding kit shall be provided and installed by the manufacturer.

Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment

1. 1.04.C shall read: Not used.
2. 3.02.H shall read: Not used

Section 22 05 53 – Identification for Plumbing Piping and Equipment

1. 3.03.A shall read: Not used.

Section 22 34 00 – Fuel Fired domestic water heaters

1. 2.02.D shall read: Water Heater Stands: Water heater manufacturer's factory-fabricated steel stand for floor mounting and capable of supporting water heater and water. Provide dimension that will support bottom of water heater a minimum of 18 inches above the floor. Steel stand are not required if equipment pad is provided.
2. 2.02.E shall read: Not used.
3. 2.02.F shall read: Not used.

Section 23 05 00 – Common work results for HVAC

1. 1.02.B shall read: Summary: General requirements for motors, hangers and supports, and meters and

gages.

2. 2.01.A.9 shall read: Motors with Varialble-Frequencey Controllers: ratings, characteristics, and features coordinated with and approved by controller manufacturer. A motor shaft grounding kit shall be provided and installed by the manufacturer.
3. 3.04.A shall read: Not used
4. 3.05.B shall read: Not used

Section 23 05 23 – General Duty Valves for HVAC Piping

1. 2.01 Add line H: Fiberglass reinforced pipe gate valve: Class 125, FRP body and non-rising or rising stem.
2. 2.01 Add line I: Fiberglass reinforced pipe Ball valve: Class 125, FRP body and bronze or stainless steel ball.

Section 23 05 29 – Hangers and Supports for HVAC Piping and Equipment

1. 3.02.H shall read: Install hangers and supports to allow controlled thermal movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

Section 23 05 53 – Identification for HVAC Piping and Equipment

1. 3.03.A shall read: Not used.

Section 23 22 13 – Steam and Condensate Heating Piping

1. 3.01.B shall read: Condensate piping above Grade: 1" and above shall be fiberglass reinforced pipe: with all joints per manufacturer's recommendations. ¾" and below shall be Schedule 40, Type S, Grade B, Steel pipe; class 125 cast iron fittings and threaded joints.
2. Delete 3.01.C.
3. 3.02 add line G: Flue condensate piping shall be drawn-temper copper tubing with wrought copper fittings with brazed joints.
4. 3.04 add line W: Lateral side wall saddle connections are acceptable as long as they are continuously welded and the center hole plug is removed from the piping.
5. 3.09 add line H: Continuously welded joints: joints shall be continuously welded and be grinded smooth and free of slag.

Section 23 31 13 – Metal Ducts

1. 3.04.B.5 shall read: Not used.

Section 23 52 39 – Fire-Tube Boilers

1. 1.03.B.1 shall read: Include diagrams for power, signal and control wiring.
2. 1.03.B.2 shall be deleted
3. 1.07.A.1 shall read: Horizontal, Fire-Tube Boilers: Complete one (1) year parts and labor warranty from date of substantial completion. Also provide an extended prorated five (5) year limited parts warranty

coverage of the boiler shell, tube sheet, and furnace tube equivalent to the attached Extended Boiler Warranty as follows:

4. 2.01.B.5 shall read: Not used
5. 2.01.D.4.a shall read : Not used
6. 2.01.E shall read: A flue outlet locking quadrant damper shall be added as recommended by the boiler manufacturer.
7. 2.02.A shall read: Assembly: The complete burner system including the control system shall be UL listed and bear the UL label. The system must also meet CSD-1 and NFPA requirements. Provide an observation port, electronic modulation system with manual limiting potentiometer and a gas/electric ignition system.
8. 2.02.B shall read: Burner: Welded construction with multivane, stainless-steel, flame-retention diffuser for natural gas and propane-air curtailment. Burner shall permit access to combustion chamber. Unit shall be accessible without disconnecting anything. Shall be capable of firing against a furnace pressure from negative 0.10" wc to the positive pressure required without a reduction in capacity or efficiency.
9. 2.02.C shall read: Blower: shall be provided with and controlled by a VFD. The supply all air for combustion with an integral, axial flow, backward incline fan driven by a NEMA rated motor. The combustion air volume shall be controlled as needed. Adjustment of individual air damper blades shall not be required to set proper air flow. The air flow pattern shall be controlled to result in two counter-rotating flows to insure uniform and intimate fuel / air mixture. The air blades shall be adjustable to set the rate of fuel/air mixing and properly shape the flame geometry to the combustion chamber.
10. 2.02 Add paragraph F to read: Flue-Gas Recirculation: Burner connections shall be equipped for recirculating flue gas. Maximum Oxides of Nitrogen Emissions: 30 ppm.
11. 2.04.B.5.a shall read: Century Control CC-600 Boiler Master Controller (or equal, equal may include multiple controllers working together to perform the same tasks, all additional wiring required must be included by the boiler manufacturer) with automatic lead/lag and idle boiler warm up. Controller must be JCI Metasys BACNet MS/TP compatible.
12. 3.02.J shall read: Install flue-gas recirculation duct from vent to burner. Comply with requirements in Section 235100 "Breechings, Chimneys, and Stacks" for recirculation duct materials. This duct shall be provided and installed by the boiler manufacturer. A condensation drain shall be provided and routed to the nearest floor drain by the contractor.
13. 3.03.A shall read: Not used.

Section 23 53 13 – Boiler Feedwater Pumps

1. 1.04.A shall read: Not used.
2. 3.01.A.2 shall read: Not used.
3. 3.01.A.3 shall read: Construct concrete bases at least 4 inches high and extend base not less than 6 inches in all directions beyond the maximum dimensions of feedwater unit.

Section 23 53 16 – Deaerators

1. 1.04.A shall read: Not used.
2. 2.01.F.1 shall read: Not used.
3. 2.01.G.3 shall read: Not used.
4. 3.01.A.2 shall read: Not used.

5. 3.01.A.3 shall read: Construct concrete bases 4 inches high and extend base not less than 6 inches in all directions beyond the maximum dimensions of deaerator.

Section 23 64 26 – Modular Scroll Compressor Water Cooled Chillers

1. 1.03.A shall read: Not used.
2. 1.03.A.1 shall read: Not used.
3. 1.05.B shall read: Not used.
4. 2.01.B shall read: Not used

Section 26 05 13 – Medium Voltage Cables

1. 12.03.F: delete "crosslinked polyethylene" and replace with "Ethylene-Propylene Rubber"

Section 26 24 19 – Motor Control Centers

1. 2.01.A: The only acceptable manufacturer shall be SQUARE D only. Delete Allen Bradley from this paragraph.

Section 26 29 23 – Variable-Frequency Motor Controllers

1. 2.01: Acceptable Manufacturers – the only acceptable manufacturers are Allen Bradley and Square D, no exceptions or substitutions.
2. 3.02.A: replace with the following "Controls contractor shall furnish & install conduit & wiring between VFDs and remote devices and facility's central control system. Controls connections, wiring, and conduit from VFDs to BAS shall be by the Controls Contractor.

CHANGES TO PROJECT DRAWINGS:

All work shall be in accordance with the terms, stipulations, and conditions of the original contract.

GENERAL

1. Building #17

A. The building and all applicable sheets shall be called "Hospital West Wing & Infirmary"

ARCHITECTURAL

1. Sheet 18A1.0

A. Partial Basement Demolition Plan

1) See attachment *AD002.18A10-1* (clouded area) for area of existing concrete floor slab to be removed to allow for an extension to existing house-keeping pad.

2. Sheet 18A2.0

A. Partial Basement Floor Plan

1) See attachment *AD001.18A20-1* (clouded area) for new house-keeping pad extension.

B. House-keeping Pad Extension Detail

1) See attachment *AD002.18A20-2* for detail at new house-keeping pad extension.

3. Sheet 25A1.0

A. First Floor Demolition Plan

1) See attachment *AD001.18A20-1* (clouded area) for location of existing wall openings that are to be made larger to accommodate new mechanical pipes. Coordinate with Mechanical on sizes of new pipes and adjust existing openings accordingly.

MECHANICAL

1. Sheet P1.0

A. Site Utility Plan

1) An additional staging area will be provided on the south side of the kitchen and dining building #18. See attached drawing ADD02.P10-1.
2) A General note shall be added that reads "All staging areas shall be fenced and locked at all times, coordinate closely with owner."
3) A General note shall be added that reads "All streets shall be kept open as much as possible, road block/ street shut downs shall be kept to a minimum and coordinated closely with the owner and local fire department."

2. Sheet U1.0

A. Site Utility Plan

1) Building #17 shall be named "Hospital West Wing & Infirmary".

3. Sheet 18M1.0

A. Basement Demolition plan.

1) Remove sanitary waste piping in the electrical room as shown on ADD02.18M10-1.

4. Sheet 18M2.0

A. Basement Mechanical plan.

1) Install new sanitary waste piping in the electrical room as shown on ADD02.18M20-1.

5. Sheet 22M2.0

A. Steam Trap Schedule

1) Add note 2 to read "All traps shall be rated up to 125 PSI and 450F, see steam piping accessories on sheet M5.0". Note 2 is applicable to all traps.

6. Sheet 25M1.0

A. Demolition Plan

1) See attachment AD02.25M10-1, notes to remove existing rain water piping to extents shown

7. Sheet 25M2.0

A. Boiler Piping Schematic

1) Schematic shall be labeled D1 – 25M2.0.
2) Pressure reducing valve, soft water make up control valve and boiler feed water make up piping control valve serving Deaerator shall be provided with the BFDA-1 and installed by mechanical contractor.
3) Note pointing to Orifice bypasses shall read "Orifice bypass and pipes shall be sized by pump manufacturer to maintain minimum flow as needed through the pumps."
4) See revised piping detail and piping Mechanical Plan on ADD02.25M20-1 & ADD02.25M20-2
5) Connect to existing rain water and route piping as shown on attached sheet ADD02.25M20-3

8. Sheet 25M2.1

A. Domestic Water / Gas Mechanical Plan

1) Gas piping to pressure regulator serving DWH's from MAU shall be labeled 1" (15PSI).
2) Domestic soft cold water from water softeners shall be 1-1/4" not 1-1/2" as shown.

B. Detail 1 Water heater and Softener detail

1) Remove the water meter from the detail, the meter(s) shall be provided with the water softener.

9. Sheet 25M2.2

A. Feed Water Detail D4-25M2.2

1) Domestic soft cold make-up water to BFDA-1 shall be 1-1/4".
2) The 1" label on the condensate return piping shall read 2".
3) See revised detail on ADD02.25M22-1

B. Chemical Feed Detail D2-25M2.2

1) Add Note to read "Chemical treatment shall be provided by Rochester Midland Corporation, Contact Nicholas Valente at 402-637-1922. Chemical treatment vendor is responsible for start-up of the system, coordinate with phasing plan."

C. Boiler Detail D1-25M2.2

1) Add manual surface blow down valve and ½" piping to be connected to the blow down piping. Coordinate exact location with boiler manufacturer.
2) Overflow piping shall be 1", steam trap shall be by boiler manufacturer recommendations.
3) Flue condensate piping shall be copper and have a P-trap at each flue.
4) Contractor to extend condensate drain from boiler recirculation flue gas duct to nearest drain.
5) See revised detail on ADD02.25M22-2

10. Sheet 25M3.1

A. MAU connection Detail

1) Modification to to routing to accomidate existing conduit. See revised detail on ADD02.25M31-1 and ADD02.25M31-2

11. Sheet M4.0

A. Building #18 Kitchen and Dining – Chilled and Condenser water controls sequence

1) Under Existing Cooling Tower the last sentence shall read "The fan shall then be brought on to maintain the set point or lower as the second stage, the fan shall start at low speed and remain at low speed if the water set point is maintained, fan shall increase to high speed if needed to maintain set point".
2) Under alarms, a double bullet shall be added to read "High/low refrigerant temperature and pressure."
3) Second bullet under Chiller shall read "Shall modulate compressors and control valves as required to maintain 45F (adj) supply water temperature set point with a 5F (adj) dead band."

B. Building #25 Central Plant – Boilers Combustion air sequence

1) Add bullet under Boilers On, it shall read "Building control system shall communicate to the boiler control panel the combustion air status (on/off), the MAU's shall be controlled by the building control system not the boiler control panel."

12. Sheet M4.1

A. Boiler sequence

1) Delete the bullet that reads "the boiler air to fuel ratio shall vary automatically depending on the oxygen content in the air".

2) Under Alarms section, add bullet note to read, an audible and visual alarm shall be provided and alarm upon which ever alarms the owner chooses. Coordinate with the owner during programming.

13. Sheet M5.0

A. Domestic Water Heater Schedule

1) Note 4 shall read "Units shall be ASME rated".
2) Note 4 shall apply to DWH-25A, DWH-25B and DWH-25C. It shall be removed from DWH-28A and DWH-28B.
3) Note 5 shall read" Water heater must be rated for natural gas curtailment for propane-air stand-by system. The propane air mixture is directly compatible with natural gas burners; the mixture is set up to mimic the same density as natural gas.

B. Boilers Schedule

1) Note 2 shall read "Boiler must be rated for natural gas curtailment for propane-air stand-by system. The propane air mixture is directly compatible with natural gas burners; the mixture is set up to mimic the same density as natural gas."
2) Note 4 shall read "Boiler combustion fan motors shall be provided with and controlled by a VFD, and shall be dual rated for 208/230 volt 3 phase power. Electrical connection shall be single point power connection with NEMA type 1 enclosure."
3) Add note 11 to read "The boilers shall be shipped at different times to work with the phasing schedule to avoid storing boilers outside for an extended period of time. Boilers shall be protected if stored outside for any period of time." Note 11 shall apply to all 3 boilers.
4) Boiler schedule dictates "maximum turndown", should be noted as "minimum turndown".

C. Hydronic piping cleaning and chemical treatment

1) Redline shall read Rydlyme.
2) Add line to Read "Chemical treatment shall be provided by Rochester Midland Corporation, Contact Nicholas Valente at 402-637-1922 . Chemical treatment vendor is responsible for start-up of the system, coordinate with phasing plan."

D. Water Softener Schedule

1) Note 4 shall read "Softener shall be controlled by a progress flow duplex meter to control what the system regenerates. The meter shall be provided with the softener."

E. Boiler Feed Deaerator Schedule

1) In Note 1 .03 cc/liter shall read .005 cc/Liter
2) Note 5 shall read "Feed water header shall have pressure transducer to monitor pump status."
3) Under Water capacity @ Flow, 1214 shall read 1214 gallons.

F. Modular Water Cooled Chiller Schedule

1) Note 2 shall read "Each modular unit shall have a shell and tube heat exchanger on the condenser water side and brazed plate on the chilled water side. A brazed plate will be acceptable on the condenser water side if it is clearly identified on the bid as having such. All chiller options presented on the bid form shall also have the type of heat exchanger used on the condenser water side. Any chiller with a brazed plate on the condenser water side must have a second strainer installed upstream with a fine mesh as recommended by the chiller manufacturer.

G. Alternate Descriptions

1) Under chiller pricing options, York is an acceptable bidder.

14. Sheet M5.1

A. Piping Material and Insulation Schedule

1) Add Note 6, it shall read "All gas piping with gas pressure greater than 5 psi shall be continuously welded for all sizes". Note 6 shall apply to all gas piping.
2) Steam condensate return piping and fittings shall be fiberglass reinforced piping for sizes 1" and up.
3) Add a steam condensate piping line for sizes ¾" and less. Material shall be schedule 40 black steel

with threaded fittings, Insulation shall be the same as the 1" and up line.

4) Under first bullet in valve schedule notes, part of note shall read "…..Central Plant shall be lockable valves with lock out tag out in all steam, ……"
5) Chemical feed piping line shall read "All Sizes" under Pipe Size column.
6) Add a line for flue condensate piping, it shall be copper
7) See ADD02.M51-1 for changes.

15. Sheet M5.2

A. Building #18 Kitchen and Dining – Chilled water piping Detail D8-M5.2

1) Pressure Relief valve is labeled pressure reducing valve and should be labeled pressure relief valve.

B. Detail 2 Water Softener detail

2) Remove the water meter from the detail, the meter(s) shall be provided with the water softener.

ELECTRICAL

1. Sheet 25E1.0

A. First Floor Demolition Plan

1) Under Alternate-E1; at the location to the three-3 50kVA tub transformers, there is a 4th 50kVA tub transformer that is not connected but shall also be removed along with the other three-3. These four-4 transformers are to be removed from the campus premises & disposed of properly.
2) Under Alternate-E1; existing starter/disconnect & panel adjacent split-bus distribution panels shall be relocated; see attached drawing ADD02.25E10-1&2.
3) Relocate existing j-boxes & three-3 1"C as required to accommodate new makeup air units; see attached drawing ADD02.25E10-1.
4) EC shall be prepared to relocate three-3 existing light fixtures [approximately 10'-0"] to accommodate new makeup air unit ductwork. Coordinate actual locations w/MC. See attached drawing ADD02.25E10-1.
5) Revise keynote 8; 'Remove existing light fixture. Maintain existing circuitry/switching to remaining fixtures'.

B. First Floor Electrical Plan

1) Under Alternate-E1; the security fence that is be extended by the GC shall be grounded & bonded per NEC. All sections shall be bonded together.
2) Under Alternate-E1; relocate main distribution pnl 'MDP' & emergency distribution pnl 'EDP1'; see attached drawing ADD02.25E10-2.
3) Add keynote 11; 'Furnish/install new general purpose industrial fixture; mftr: Lithonia TEJSA 2 32 MVOLT GEB10IS WGL [or equal]. Chain-hang fixtures at height noted or high as possible, coordinate actual locations w/mechanical systems'. See attached drawing ADD02.25E10.3 for locations & circuit as shown.
4) Add keynote 12; 'Furnish/install new fluorescent high bay fixture; mftr: Lithonia IBZ 454L MVOLT HBBS36 WGIBZ14 [or equal]. Chain-hang fixtures at 18'-0" or high as possible, coordinate actual locations w/mechanical systems'. See attached drawing ADD02.25E10.3 for locations & circuit as shown.

2. Sheet 25E2.0

A. Riser Diagram Notes

1) Add the following General Note 'F'. Under Alternate E1 - Electrical Contractor shall provide temporary power to Building 25 as required to ensure there is minimal downtime of power to this facility. A temporary generator set shall be provided and connected (for as long as needed) to the existing electrical service as necessary to ensure a smooth transition and switchover to the new equipment.

B. Electrical Riser Diagram – Alternate E1

2) Existing split-bus distribution panel shall be refed from new emergency distribution panel EDP1. See panel schedule for feeder size.

By:	**Date:**
Kyle Wilkinson/Jason Leu	02-21-12

SECTION 00 41 13

PROPOSAL FORM

The undersigned, being familiar with local conditions affecting the cost of the work, and the Proposed Contract Documents, including the Advertisement for Bids, Instructions to Bidders, Proposal Form, Contract Form, Form of Contract Performance Bond, Form of Appointment of Purchasing Agent, Form of Exempt Sales/Use Tax Certificate, General Conditions, Special Conditions, Specifications and Plans all on file in the Office of the DAS/State Building Division, Planning & Construction, Lincoln, Nebraska, hereby proposes to furnish all plant, equipment, transportation, materials, tools, labor and skills necessary and required to perform all work as described in the Proposed Contract Documents entitled:

All in strict accordance with the Proposed Contract Documents including Addenda Numbers _____, _____, and _____, issued and attached thereto:

For the total contract sum of $_____

Provide the controls cost that are included in the base bid amount, (this is not an alternate).

$_____

Alternate A-1 price: Add / Deduct $_____

Alternate M-1 price: Add / Deduct $_____

Alternate M-2 price: Add / Deduct $_____

Alternate M-3 price: Add / Deduct $_____

Alternate E-1 price: Add / Deduct $_____

Chiller Option prices: for the manufacturer included in the base bid, please write in $0 for the price and write “included in base bid” on the price line. Please fill in any 3 of the 4 options, do not include more than one option from any one manufacturer. The add / deduct price shall be the cost difference between base bid manufacturer and the additional options.

Artic-chill price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

Multi-stack price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

Smart price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

Tandem price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

York price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

(For all Add / Deduct Alternates above the Contractor must circle “Add” or “Deduct”.)

Bidders shall acknowledge the receipt of any and all addenda issued in the space provided above.

The undersigned agrees to complete all work within _____ calendar days following the award of the Contract.

The undersigned states that he is complying with, and will continue to comply with, fair labor standards in the pursuit of his business and in the execution of the contract on which he is bidding.

The undersigned acknowledges having reviewed provisions outlined for exemption of payment of sales taxes to the State of Nebraska and also understands the requirements for registration of any and all nonresident contractors and subcontractors with the Nebraska Department of Revenue.

Bid security is required and accompanies this proposal, the same being subject to forfeiture in the event of default by the undersigned.

In submitting this bid, it is understood that the right is reserved by the DAS/State Building Division to reject any or all bids and to waive informalities, and it is further agreed that this bid may not be withdrawn during the period of Sixty (60) days following the scheduled closing time for receipt of the bids.

_____	_____
Date	Firm Name
_____	_____
By:	Address
_____	_____
Title	Address
_____	
Firm's Federal Identification Number	

PROPOSAL FORM (CONTRACTOR COPY)

The undersigned, being familiar with local conditions affecting the cost of the work, and the Proposed Contract Documents, including the Advertisement for Bids, Instructions to Bidders, Proposal Form, Contract Form, Form of Contract Performance Bond, Form of Appointment of Purchasing Agent, Form of Exempt Sales/Use Tax Certificate, General Conditions, Special Conditions, Specifications and Plans all on file in the Office of the DAS/State Building Division, Planning & Construction, Lincoln, Nebraska, hereby proposes to furnish all plant, equipment, transportation, materials, tools, labor and skills necessary and required to perform all work as described in the Proposed Contract Documents entitled:

All in strict accordance with the Proposed Contract Documents including Addenda Numbers _____, _____, and _____, issued and attached thereto:

For the total contract sum of $_____

Provide the controls cost that are included in the base bid amount, (this is not an alternate).

$_____

Alternate A-1 price: Add / Deduct $_____

Alternate M-1 price: Add / Deduct $_____

Alternate M-2 price: Add / Deduct $_____

Alternate M-3 price: Add / Deduct $_____

Alternate E-1 price: Add / Deduct $_____

Chiller Option prices: for the manufacturer included in the base bid, please write in $0 for the price and write “included in base bid” on the price line. Please fill in any 3 of the 4 options, do not include more than one option from any one manufacturer. The add / deduct price shall be the cost difference between base bid manufacturer and the additional options.

Artic-chill price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

Multi-stack price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

Smart price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

Tandem price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

York price: Add / Deduct $_____

IPLV_____Full Load kW/Ton_____

(For all Add / Deduct Alternates above the Contractor must circle “Add” or “Deduct”.)

Bidders shall acknowledge the receipt of any and all addenda issued in the space provided above.

The undersigned agrees to complete all work within _____ calendar days following the award of the Contract.

The undersigned states that he is complying with, and will continue to comply with, fair labor standards in the pursuit of his business and in the execution of the contract on which he is bidding.

The undersigned acknowledges having reviewed provisions outlined for exemption of payment of sales taxes to the State of Nebraska and also understands the requirements for registration of any and all nonresident contractors and subcontractors with the Nebraska Department of Revenue.

Bid security is required and accompanies this proposal, the same being subject to forfeiture in the event of default by the undersigned.

In submitting this bid, it is understood that the right is reserved by the DAS/State Building Division to reject any or all bids and to waive informalities, and it is further agreed that this bid may not be withdrawn during the period of Sixty (60) days following the scheduled closing time for receipt of the bids.

_____	_____
Date	Firm Name
_____	_____
By:	Address
_____	_____
Title	Address
_____	
Firm's Federal Identification Number	

GENERAL

1.01 SCHEDULE OF ALTERNATES

A. Alternate No. A-1 - Provide an alternate price to provide an electronic web based shop drawing, product data and documentation file transmitting website in lieu of the traditional 7 paper copy shop drawings system. Website shall be Submittal Exchange, (1-800-714-0024). This should include the amount saved in time, postage and printing costs by not providing at least 7 hard copies of every shop drawings for review.

1. Base Bid: A traditional shop drawing system where all documentation is delivered through the mail or delivery service. 7 copies of all shop drawings / documentation shall be provided by the contractor.

B. Alternate No. M-1 - Provide an alternate price to remove all high pressure steam piping in the tunnel between the kitchen building (#18) and the boiler plant building (#25, central plant).

1. Base Bid: Leave high pressure steam piping in tunnel between the kitchen building (#18) and the boiler plant building (#25, central plant), piping will be abandoned in place.

C. Alternate No. M-2 - Provide an alternate price to provide electrical, gas, steam condensate and steam energy meters to be tied to the building automation system.

1. Base Bid: do not provide the energy meters or associated controls but provide a straight piece of pipe with unions on each end where the meters are shown for future installation.

D. Alternate No. M-3 – Provide self cleaning water filter for the condenser water system in kitchen building (#18).

1. Base Bid: do not provide a self cleaning water filter, instead there should be capped valves for the future installation of a water filter in the main condenser water pipes as shown.

E. Alternate No. E-1 - Provide an alternate price to replace the existing transformer at the boiler plant building (#25, power plant). Remove existing tub transformers, underground secondary and main service disconnect. Provide new pad mounted transformer t1, underground secondary, panel mdp & transformer t2. All mechanical equipment will be rated at 208 volt.

1. Base Bid: Leave the existing transformer in place. All mechanical equipment will be rated at 240 volt.

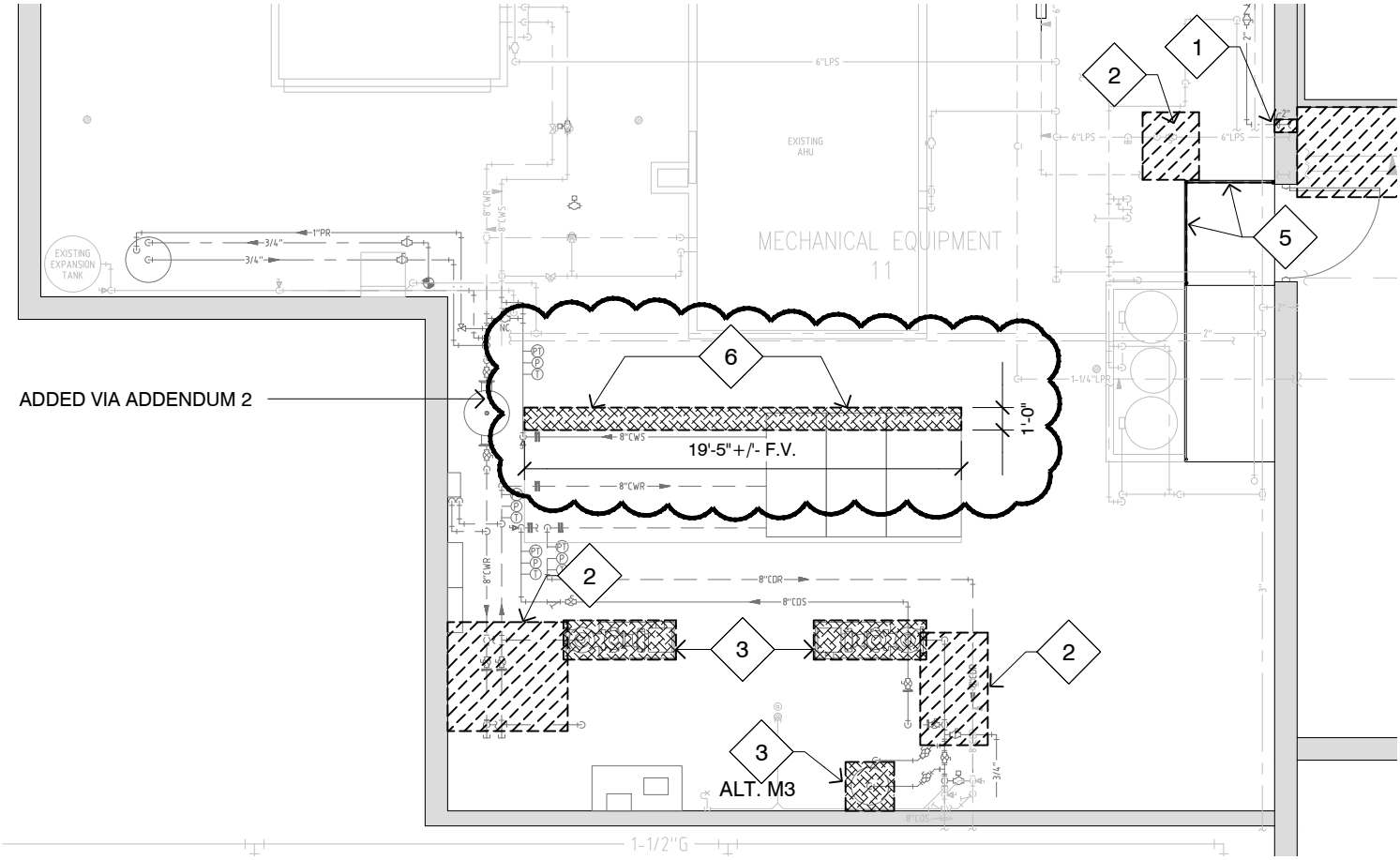
F. Chiller Option Pricing – Each bid shall include the bidders choice of chiller manufacturer in the base bid. Each bid must also include a cost add/deduct to go with each different chiller manufacturer listed. The cost add/deduct should be the cost difference between the base bid chiller and each optional manufacturer and shall include any piping deviations (add or deduct) from what is shown on the plans. Along with each chiller option, including the base bid, the IPLV and full load efficiency at the conditions specified must be provided.

1. Chiller Manufacturers: Multi-stack, Arcti-chill, Smart, Tandem, and York.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 00 41 13



PARTIAL BASEMENT DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

FILENAME: m:\aes\bsdc remodel\addendum\attachments\addendum_02-21-12\addendum_02-21-12_attachments.dwg

KEY NOTES: SYMBOL = ◇

6. DEMO PORTION OF EXISTING CONCRETE FLOOR SLAB - SAW CUT AND REMOVE 12" PORTION OF EXISTING SLAB TO ALLOW FOR EXTENSION TO EXISTING HOUSE-KEEPING PAD - SEE 18A2.0 FOR PAD EXTENSION.

PARTIAL KEYNOTES

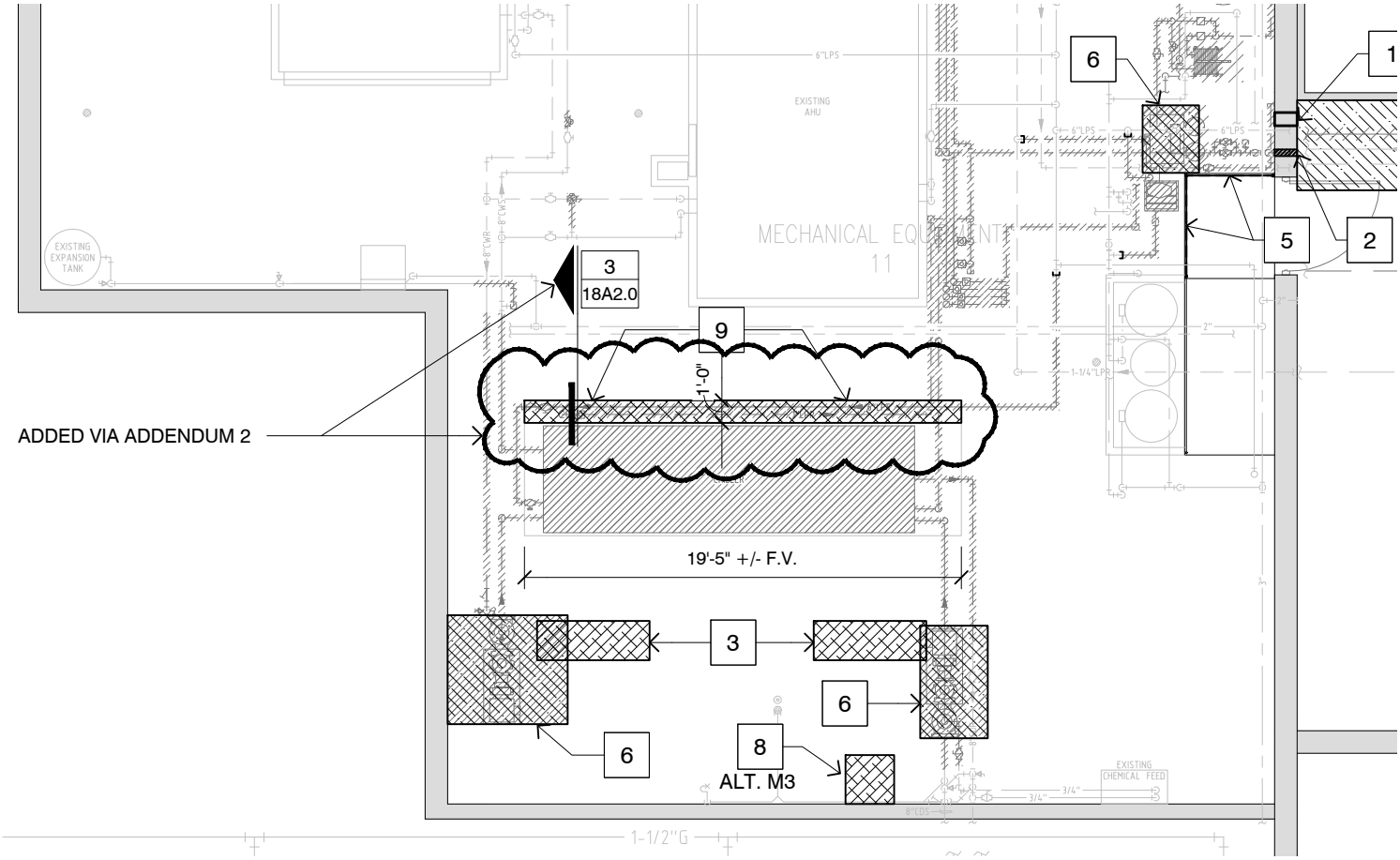
4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT:	Beatrice State Developmental Center - Central Heating Plant Upgrades
PROJECT #:	2011-037
DATE:	February 21, 2012
DESCRIPTION:	Addendum #2

SHEET: 18A1.0

AD002.18A10-1



PARTIAL BASEMENT FLOOR PLAN

SCALE: 1/8" = 1'-0"

FILENAME: m:\aes\bsdc remodel\addendum\attachments\addendum_02-21-12\addendum_02-21-12_attachments.dwg

KEY NOTES: SYMBOL = #

9. CAST NEW CONCRETE HOUSE-KEEPING PAD EXTENSION (MATCH THICKNESS OF EXISTING PAD) - DOWEL AND EPOXY NEW AND EXISTING PADS WITH MIN. #4 REBAR AT 16" O.C. WITH MIN. 6" EMBEDMENT - PROVIDE 1/2" EXPANSION JOINT AT PERIMETER OF SLAB WITH COMPRESSIBLE FILLER AND URETHANE SEALANT - SEE DETAIL THIS SHEET.

PARTIAL KEYNOTES

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: Beatrice State Developmental Center - Central Heating Plant Upgrades

PROJECT #: 2011-037

DATE: February 21, 2012

DESCRIPTION: Addendum #2

SHEET: 18A2.0

AD002.18A20-1

3 HOUSE-KEEPING PAD EXTENSION DETAIL

SCALE: 1 1/2" = 1'-0"

FILENAME: m:\aes\bsdc remodel\addendum\attachments\addendum_02-21-12\addendum_02-21-12_attachments.dwg

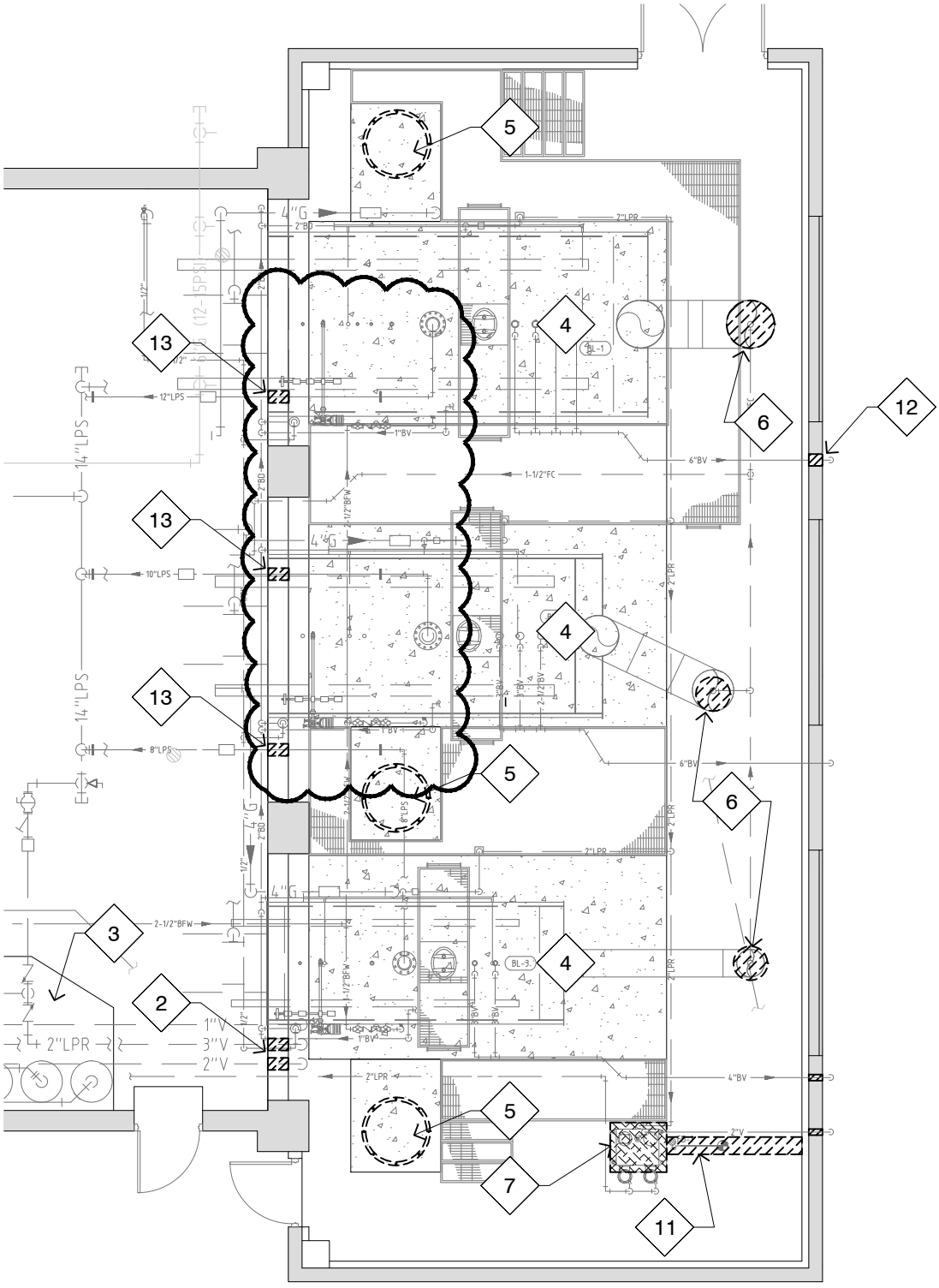
4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT:	Beatrice State Developmental Center - Central Heating Plant Upgrades
PROJECT #:	2011-037
DATE:	February 21, 2012
DESCRIPTION:	Addendum #2

SHEET: 18A2.0

AD002.18A20-2



KEY NOTES: SYMBOL = ◇

13. MODIFY EXISTING WALL PENETRATION AS REQUIRED FOR NEW PIPING PENETRATION - COORDINATE WITH MECHANICAL ON SIZE OF PIPE AND MODIFY OPENING ACCORDINGLY.

FIRST FLOOR DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

FILENAME: m:\aes\bsdc remodel\addendum\attachments\addendum_02-21-12\addendum_02-21-12_attachments.dwg

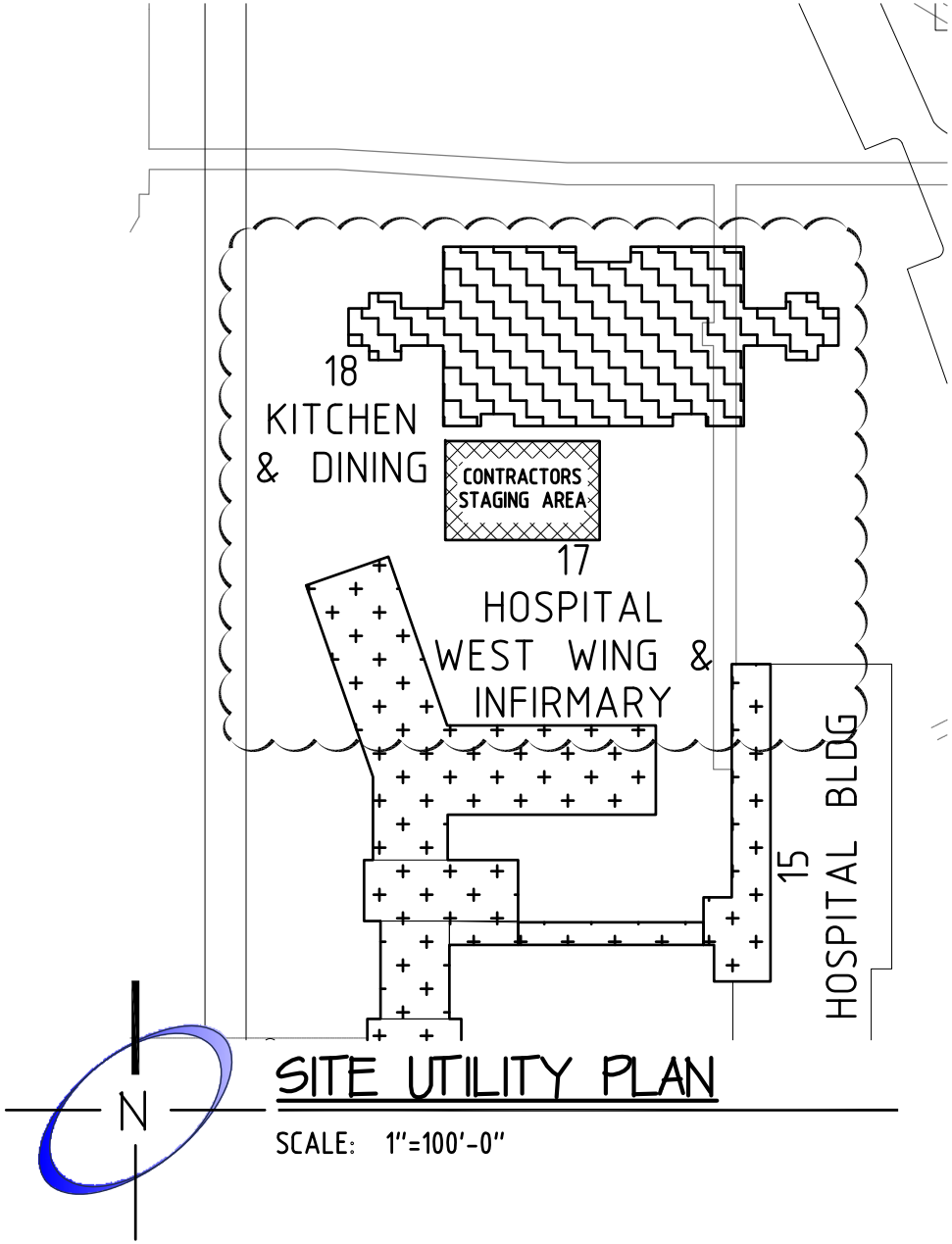
4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT:	Beatrice State Developmental Center - Central Heating Plant Upgrades
PROJECT #:	2011-037
DATE:	February 21, 2012
DESCRIPTION:	Addendum #2

SHEET: 25A1.0

AD002.25A10-1



SITE UTILITY PLAN

SCALE: 1"=100'-0"

- ANY WELDING, BRAZING OR SOLDERING DONE IN ANY BUILDING WITH RESIDENTIAL LIVING OCCUPANCY (BUILDING 28) MUST HAVE A FIRE WATCH PERSON DURING THE SAID WORK. ANY REQUIRED TEMPORARY SIGNAGE OR BARRIERS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR MUST COMPLY WITH ALL STATE AND FACILITY SAFETY RULES. ALL RULES WILL BE SUMMARIZED AT THE PRE BID MEETING.
- ALL TOOLS SHALL REMAIN SECURE, EITHER WITH THE CONTRACTOR DURING THE COURSE OF THE WORK DAY OR LOCKED UP AFTER WORK HOURS. ALL VEHICLES SHALL BE PARKED IN THE CONTRACTOR STAGING AREA UNLESS GIVEN PERMISSION TO PARK ELSEWHERE BY OWNER.
- ALL STAGING AREAS SHALL BE FENCED AND LOCKED AT ALL TIMES, COORDINATE CLOSELY WITH OWNER.
- ALL STREETS SHALL BE KEPT OPEN AS MUCH AS POSSIBLE, ROAD BLOCK/ STREET SHUT DOWNS SHALL BE KEPT TO A MINIMUM AND COORDINATED CLOSELY WITH THE OWNER AND LOCAL FIRE DEPARTMENT

KEY NOTES

1. 2 WEEKS FOR PUNCH LIST AT END OF PHASE. TESTING AND BALANCING MUST BE DONE AT END OF EACH PHASE, WITH REPORT ISSUED FOR EACH PHASE.
2. CLOSELY COORDINATE WITH CAMPUS STAFF ANY UTILITY OUTAGES (INCLUDING BUT NOT LIMITED TO: STEAM, CAMPUS DOMESTIC HOT WATER, BUILDING HOT WATER, AND ELECTRICITY). REFER TO STEAM SUMMER USAGE AND CAMPUS DOMESTIC HOT WATER NOTES SHOWN ON THIS SHEET AND COORDINATE ACCORDINGLY.

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPEMNETAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

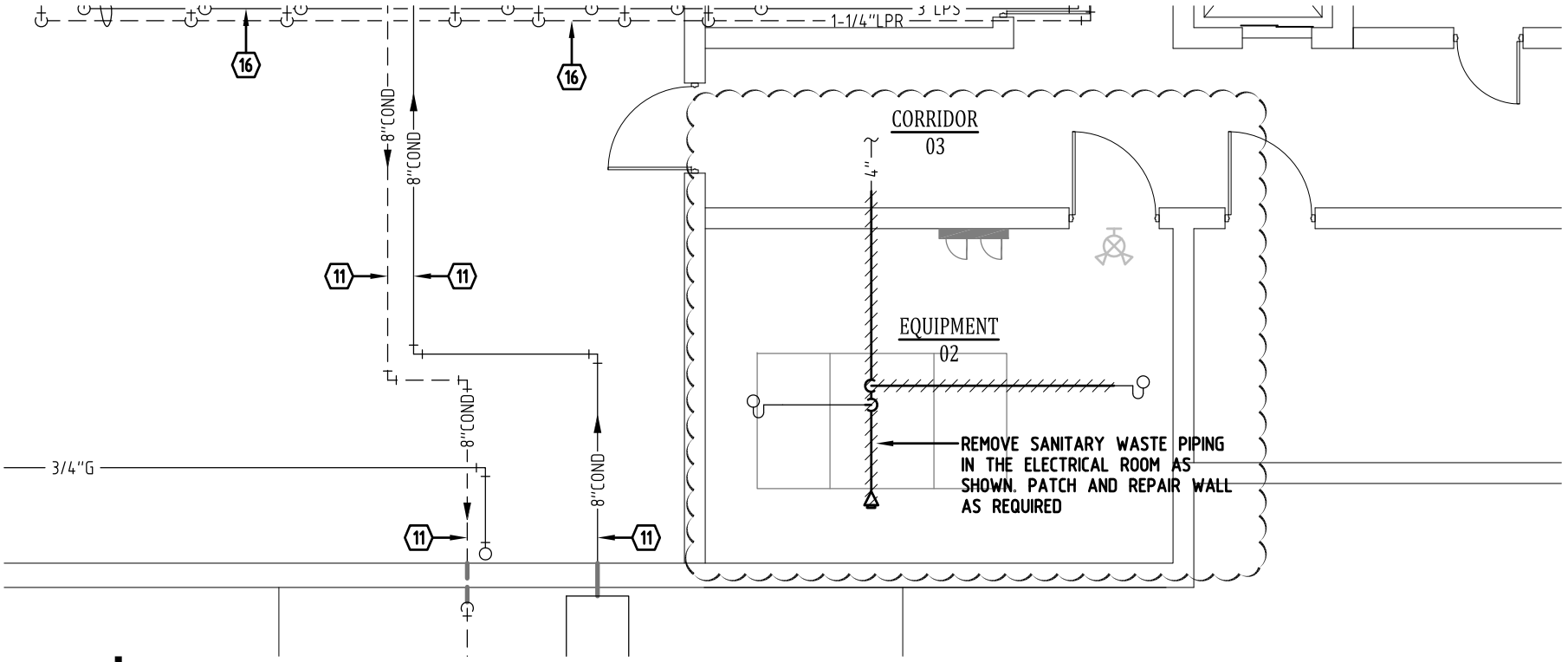
DATE: 2-21-12

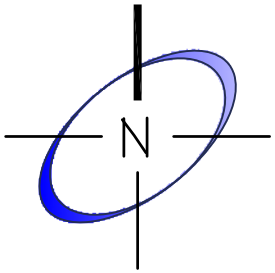
ADDENDUM: ADD02.P10-1

SHEET:

P1.0

NUMBER: 1 of 1





BASEMENT DEMOLITION PLAN

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: CENTER CENTRAL HEATING PLANT UPGRADES
BEATRICE STATE DEVELOPMENTAL

PROJECT #: 11037

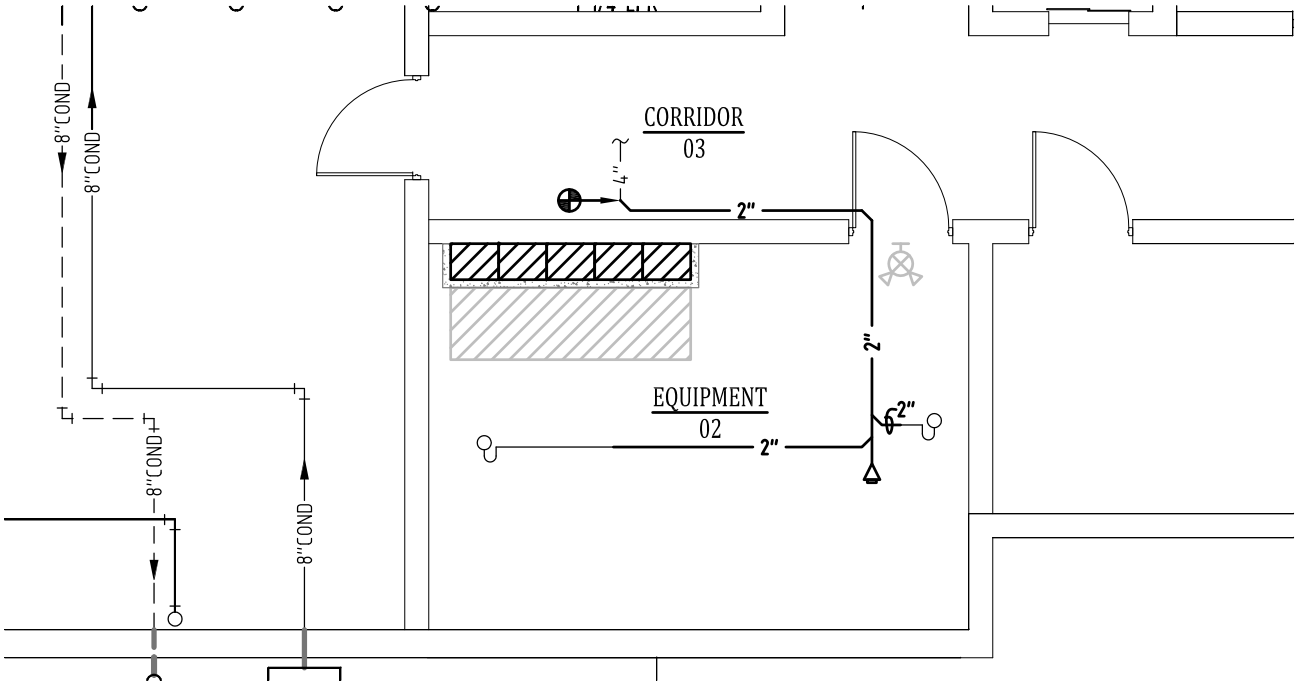
DATE: 2-21-12

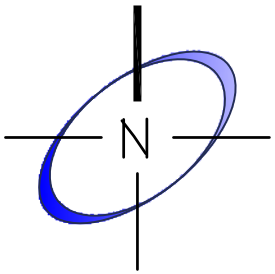
ADDENDUM: ADD02.18M10-1

SHEET:

18M1.0

NUMBER: 1 of 1





BASEMENT MECHANICAL PLAN

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: CENTER CENTRAL HEATING PLANT UPGRADES
BEATRICE STATE DEVELOPMENTAL

PROJECT #: 11037

DATE: 2-21-12

ADDENDUM: ADD02.18M20-1

SHEET:

18M2.0

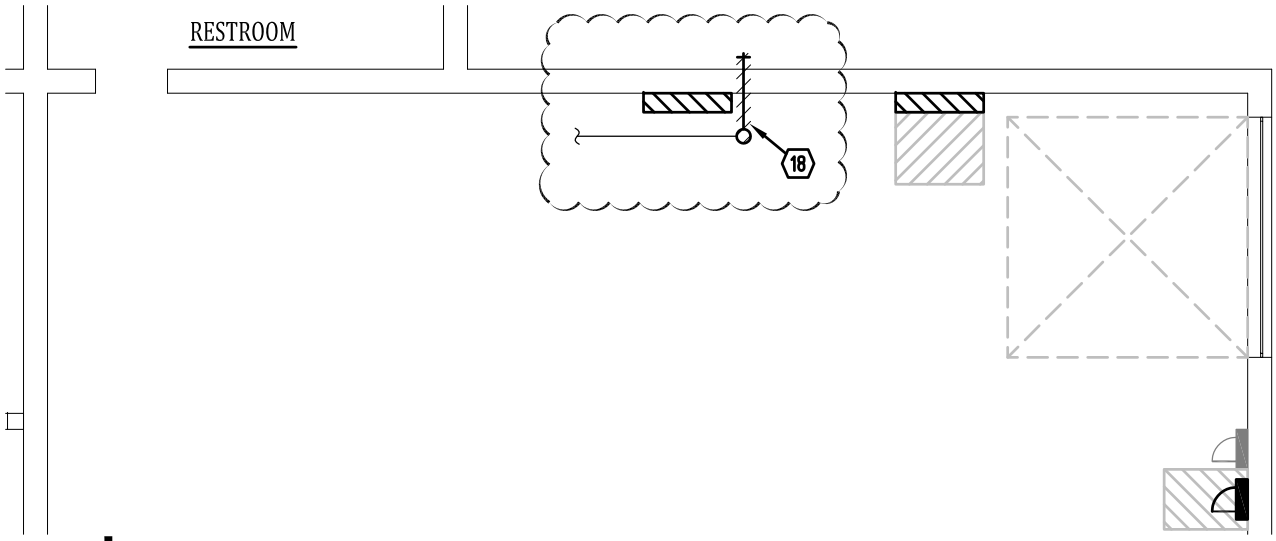
NUMBER: 1 of 1

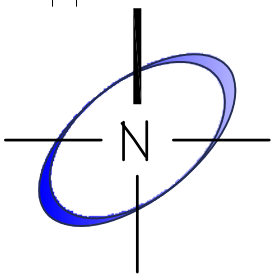
15. REMOVE EXISTING BOILER FEED WATER PIPING. REMOVE ALL ASSOCIATED HANGERS AND SUPPORTS.

16. REMOVE EXISTING HIGH PRESSURE STEAM DRIP LEG STEAM TRAP AND PIPING TO CONDENSATE PUMP. CONDENSATE PUMP IS TO REMAIN.

17. REMOVE EXISTING DEAERRATOR.

18. REMOVE EXISTING RAINWATER PIPING AS SHOWN. PATCH AND REPAIR WALL AS REQUIRED.





DEMOLITION PLAN – STEAM & CONDENSATE

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPEMNETAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

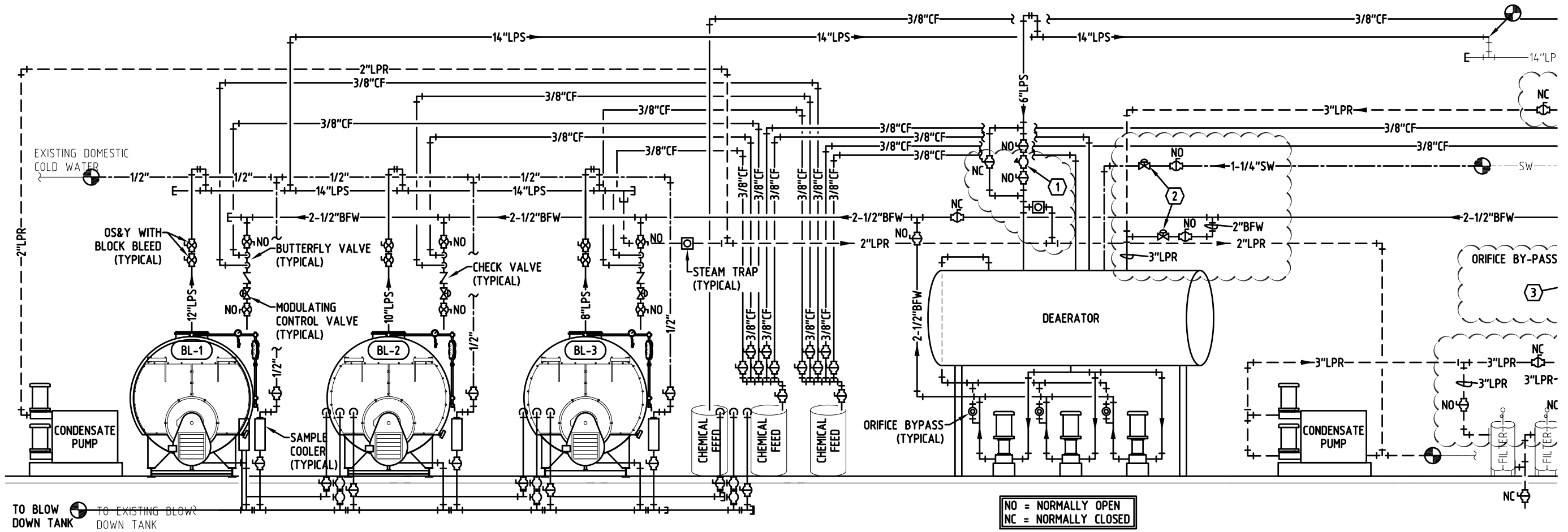
DATE: 2-21-12

ADDENDUM: ADD02.25M10-1

SHEET:

25M1.0

NUMBER: 1 of 1



D | 1
25M2.0

BOILER PIPING SCHEMATIC

SCALE: NONE

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

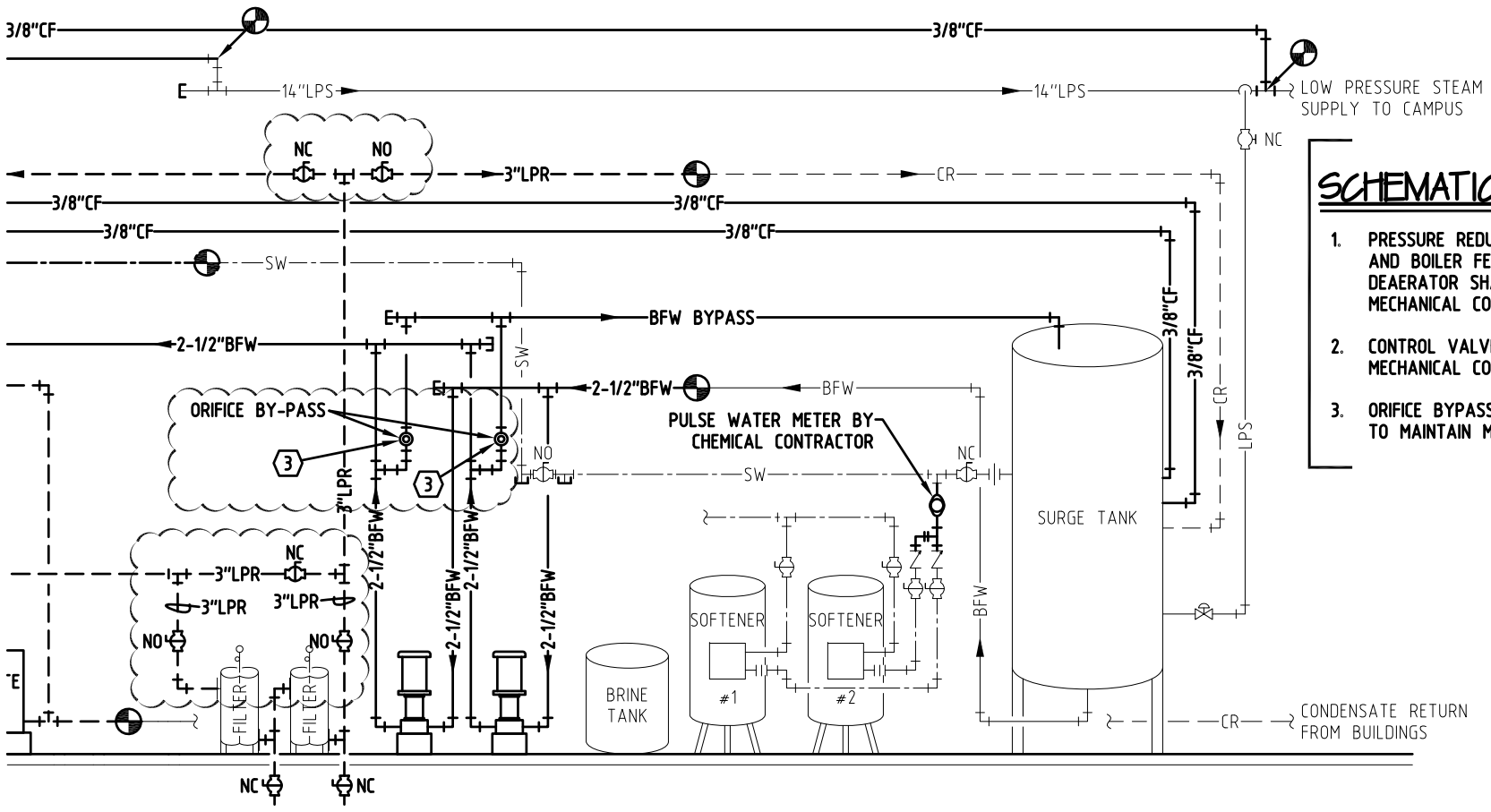
PROJECT #: 11037

DATE: 2-21-12

ADDENDUM: ADD02.25M20-1

SHEET: 25M2.0

NUMBER: 1 of 3



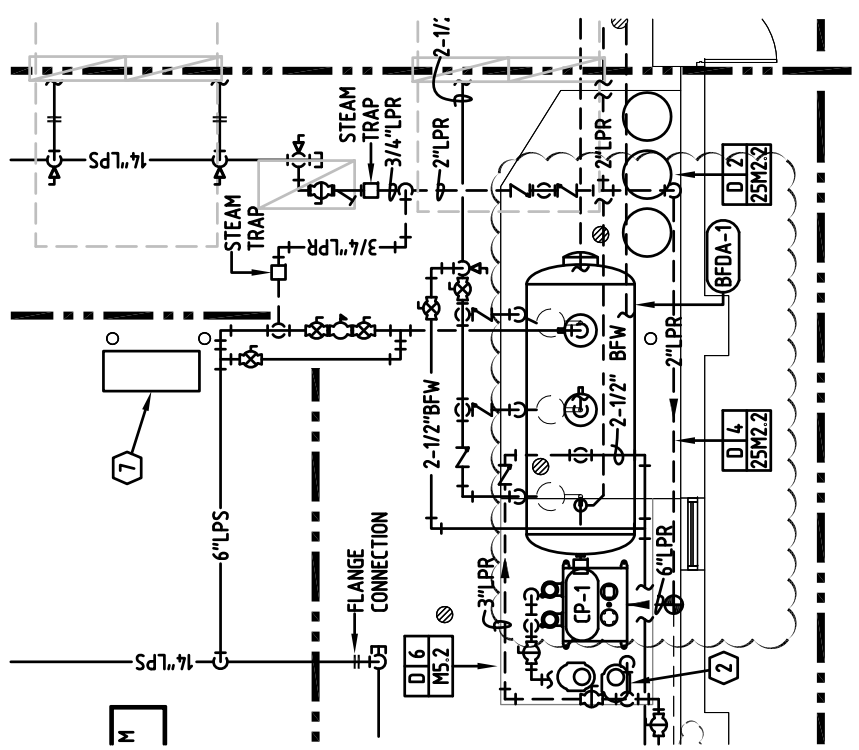
SCHEMATIC NOTES

1. PRESSURE REDUCING VALVE, SOFT WATER MAKE UP CONTROL VALVE AND BOILER FEED WATER MAKE UP PIPING CONTROL VALVE SERVING DEAERATOR SHALL BE PROVIDED WITH THE BFDA-1 AND INSTALLED BY MECHANICAL CONTRACTOR.
2. CONTROL VALVES PROVIDED BY DEAERATOR SUPPLIER INSTALLED BY MECHANICAL CONTRACTOR.
3. ORIFICE BYPASS AND PIPES SHALL BE SIZED BY PUMP MANUFACTURER TO MAINTAIN MINIMUM FLOW AS NEEDED THROUGH THE PUMPS

D | 1
25M2.0

BOILER PIPING SCHEMATIC

SCALE: NONE



MECHANICAL PLAN

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

DATE: 2-21-12

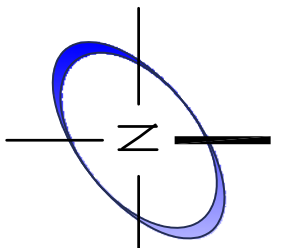
ADDENDUM: ADD02.25M20-2

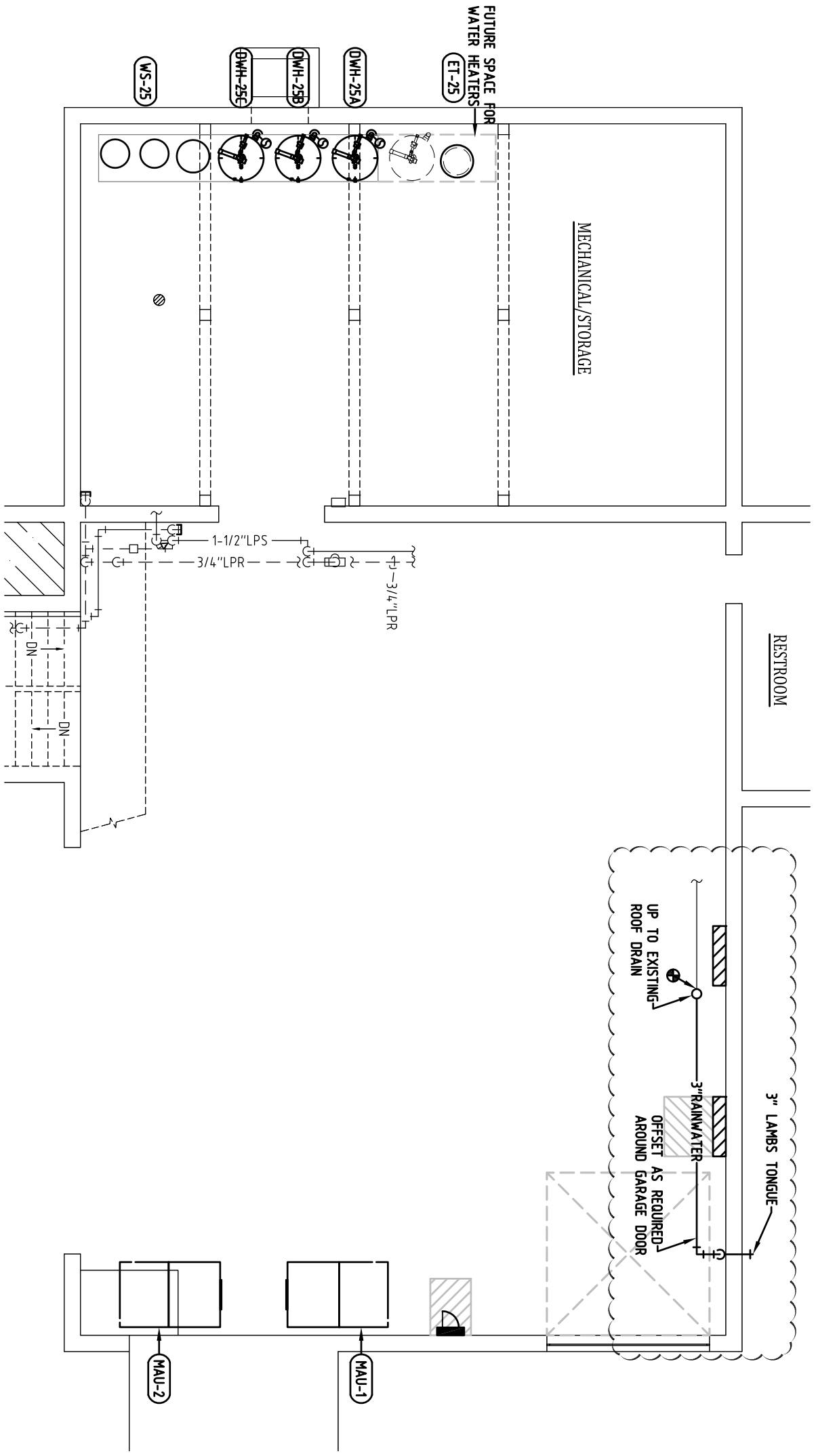
SHEET: 25M2.0

NUMBER: 2 of 3

MECHANICAL PLAN

SCALE: 1/8"=1'-0"





4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

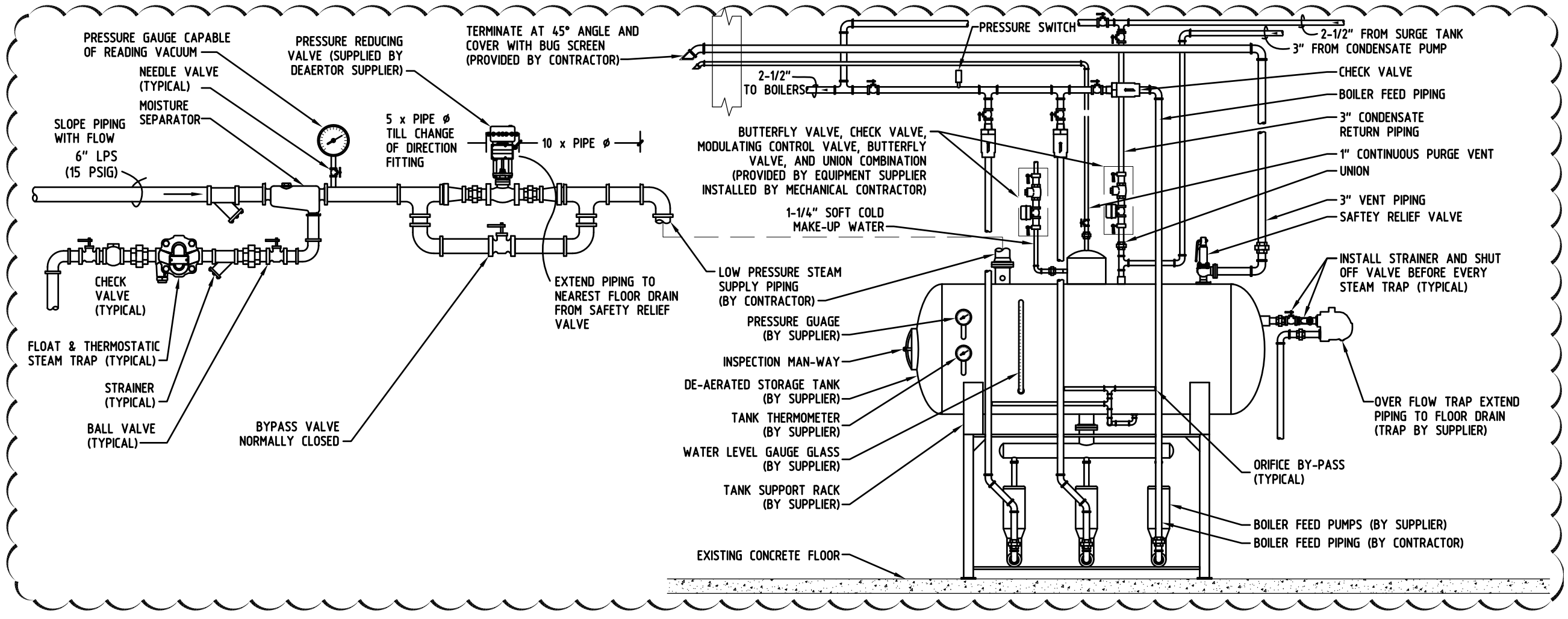
DATE: 2-21-12

ADDENDUM: ADD02.25M20-3

SHEET:

25M2.0

NUMBER: 3 of 3



D | 4
25M2.2

FEED WATER DETAIL

SCALE: 1/4"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

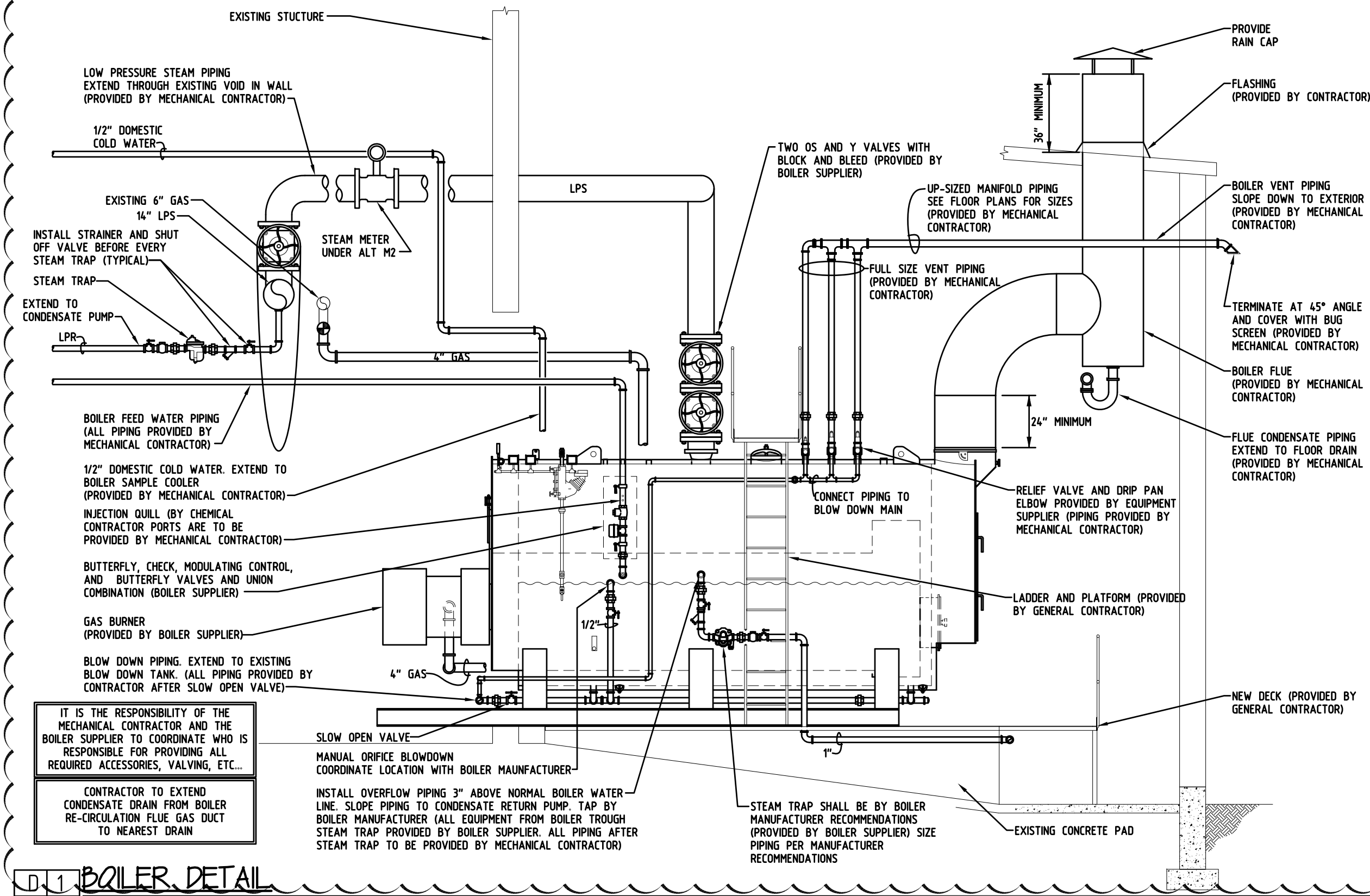
PROJECT #: 11037

DATE: 2-21-12

ADDENDUM: ADD02.25M22-1

SHEET: 25M2.2

NUMBER: 1 of 2



IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND THE BOILER SUPPLIER TO COORDINATE WHO IS RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESSORIES, VALVING, ETC...

CONTRACTOR TO EXTEND CONDENSATE DRAIN FROM BOILER RE-CIRCULATION FLUE GAS DUCT TO NEAREST DRAIN

D 1
25M2.2

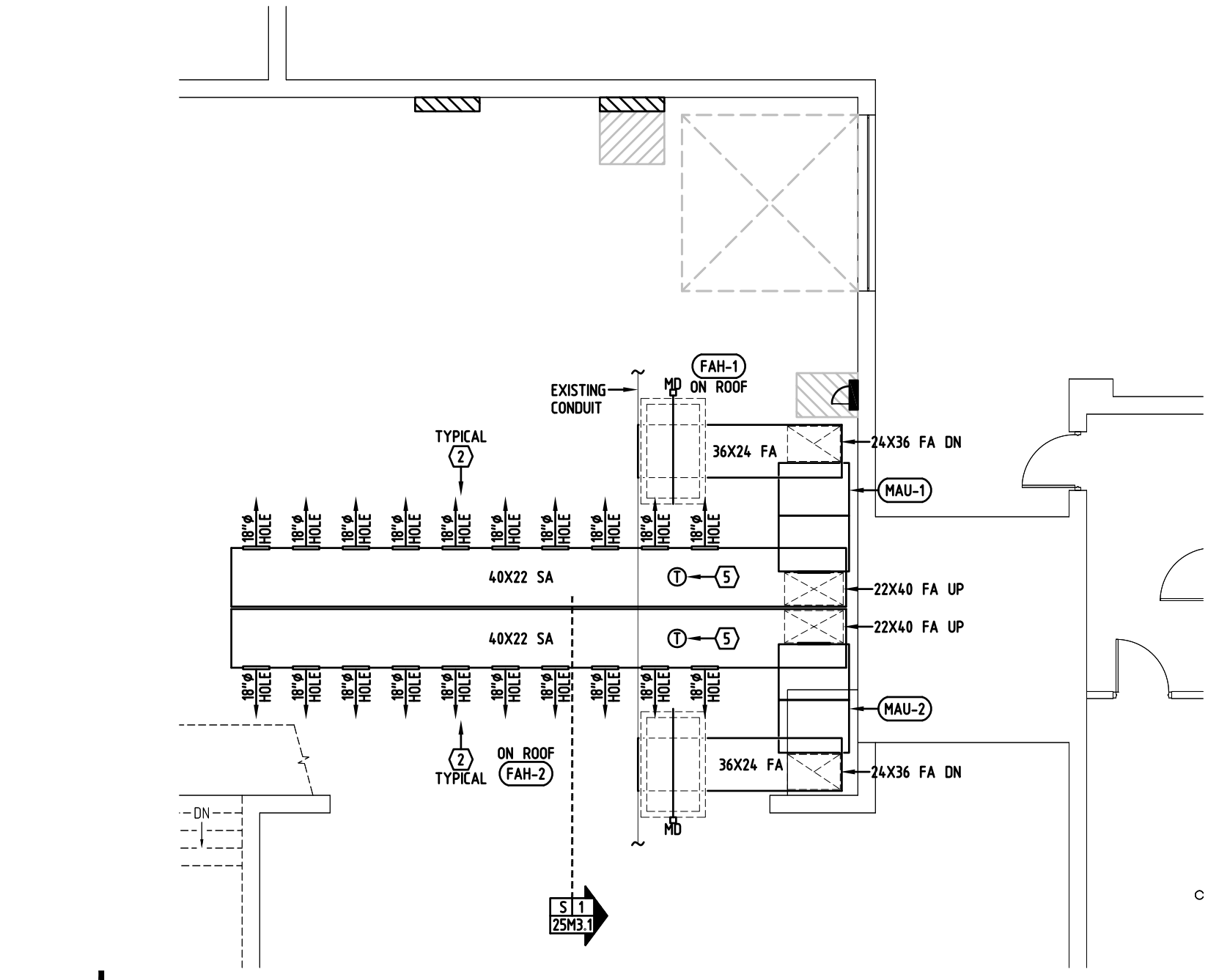
BOILER DETAIL

SCALE: NONE

ADVANCED ENGINEERING SYSTEMS
4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES
PROJECT #: 11037
DATE: 2-21-12
ADDENDUM: ADD02.25M22-2

SHEET: 25M2.2
NUMBER: 2 of 2



HVAC PLAN

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

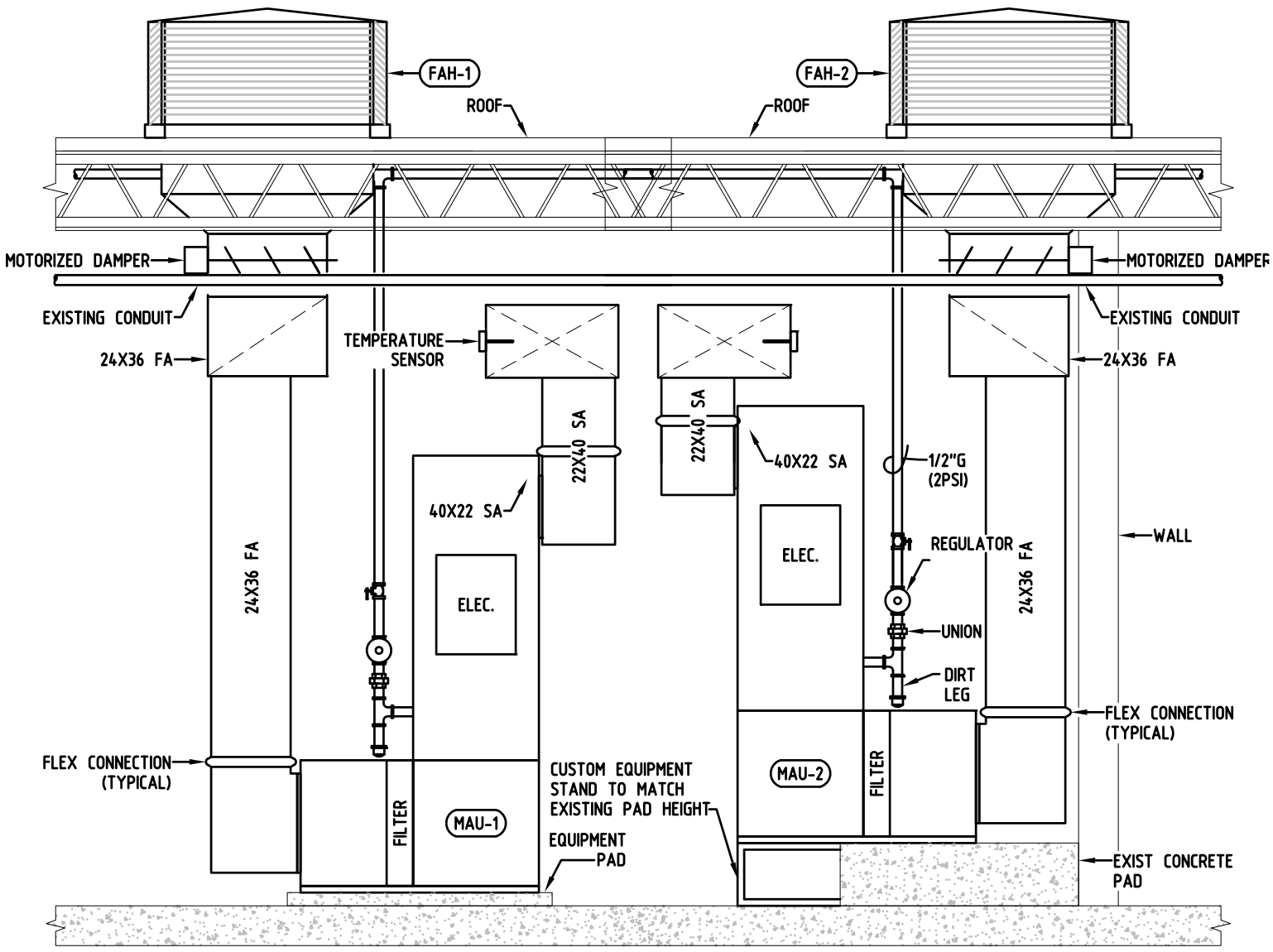
PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

DATE: 2-21-12

ADDENDUM: ADD02.25M31-1

SHEET: **25M3.1**



S 1
25M3.1

MAU CONNECTION DETAIL

SCALE: 1/4"= 1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

DATE: 2-21-12

ADDENDUM: ADD02.25M31-2

SHEET: **25M3.1**

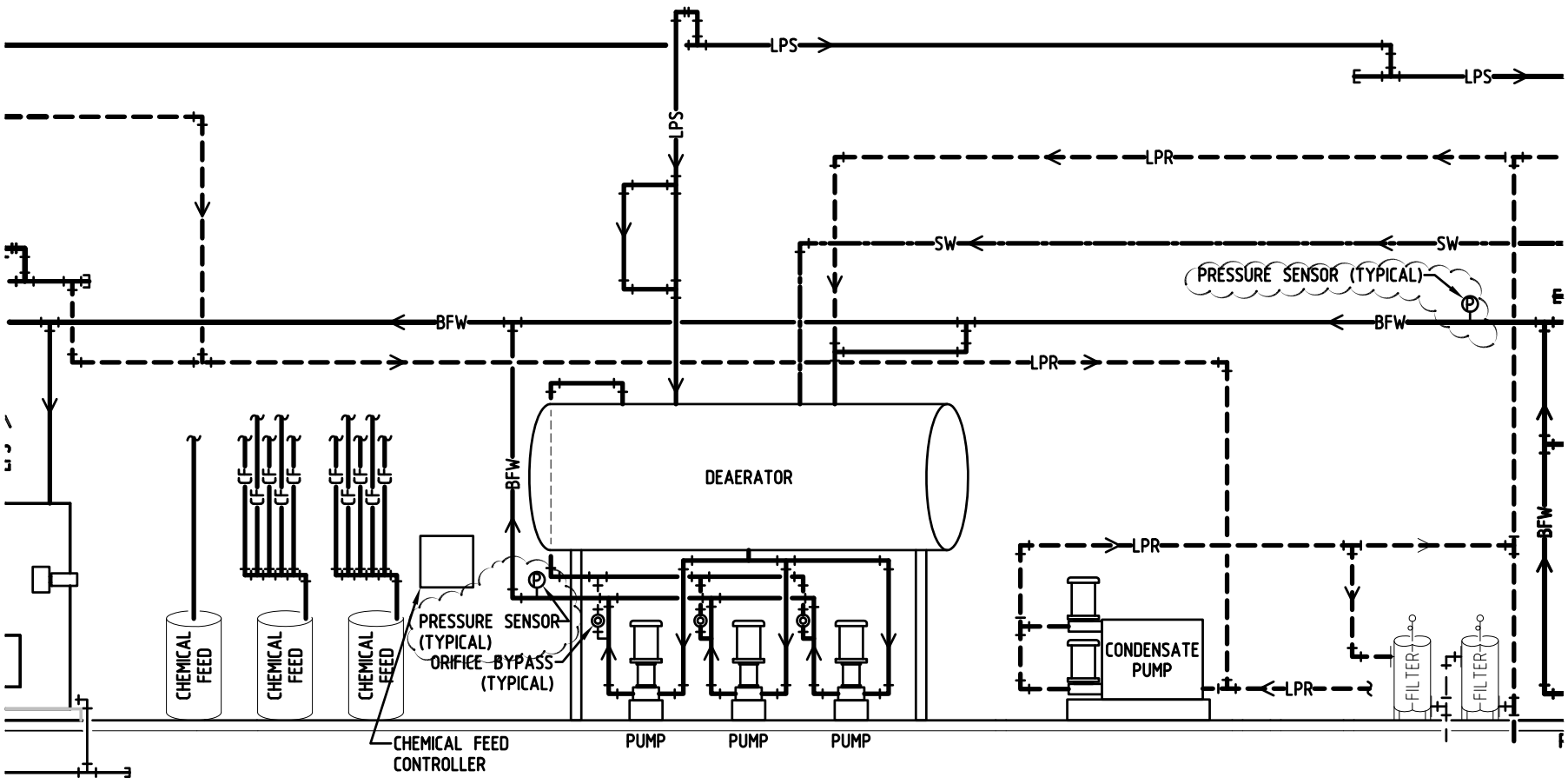
SEQUENCE OF OPERATION OCCUPIED

GENERAL:
- ALL POINTS SHALL HAVE STATUS CLEARLY IDENTIFIED ON THE CONTROLS SCREEN.
- ALL SET POINTS SHALL BE ADJUSTABLE AND CLEARLY IDENTIFIED AS SET POINTS AND NOT READ ONLY VALUES.
- ALL SEQUENCES AND CONTROLS STRATEGIES SHALL CONFORM TO CURRENT NFPA REQUIREMENTS AND MANUFACTURER'S RECOMMENDATIONS ON OPERATION.
- THE BOILER AND FEED WATER CONTROL PANEL(S) SHALL CONTROL THE SYSTEM. THE BAS SHALL BE TIED TO THE CONTROL PANEL(S) TO MONITOR, SEE ALARMS, AND ADJUST SET POINTS. ALL WIRING CONDUIT AND DEVICES NEEDED TO PROPERLY INTERFACE ARE THE RESPONSIBILITY OF THE CONTROLS CONTRACTOR.

NORMAL OPERATION (FOR GUIDELINES; ACTUAL SEQUENCE TO BE AS RECOMMENDED BY MANUFACTURERS):
- CONDENSATE SHALL RETURN TO THE BUILDING AND GO THROUGH THE FOLLOWING EQUIPMENT IN THE FOLLOWING ORDER.
  1. CONDENSATE PUMP
  2. EXISTING CONDENSATE FILTERS
  3. EXISTING SURGE TANK
  4. NEW TRANSFER FEED WATER PUMPS
  5. NEW DEAERATOR SYSTEM WITH PUMPS
  6. NEW BOILERS
- SYSTEM IS DESIGNED TO BYPASS THE SURGE TANK OR DEAERATOR SYSTEM AS NEEDED FOR MAINTENANCE PURPOSES.
- THE BOILERS SHALL SEQUENCE ON BASED ON THE BOILER EFFICIENCY CURVES TO MATCH THE MOST EFFICIENT UNIT(S) WITH THE ACTUAL DEMAND DETERMINED FROM THE TEMPERATURE AND PRESSURE IN THE MAIN STEAM HEADER. THE SMALLEST BOILER SHALL BE USED FOR THE LOW LOAD HOURS LIKE DURING THE SUMMER. ALL BOILERS SHALL START ON LOW FIRE AND HAVE THE FIRING RATE INCREASED GRADUALLY TO MATCH LOAD WITHOUT OVER SHOOTING.
- THE BOILERS/SYSTEM SHALL GO THROUGH ALL RECOMMENDED PURGING, SAFETY PROCEDURES AND PRE-START UP CHECKS BEFORE ANY EQUIPMENT IS TURNED ON. THIS SHALL BE MONITORED BY THE BAS.
- THE BOILERS SHALL BE PROTECTED ON START UP FROM THERMAL SHOCK BY THE BAS SYSTEM THROUGH MONITORING THE TEMPERATURE/PRESSURE AND RATE OF CHANGE.
- THE BAS SHALL MONITOR AND TREND BOILER EFFICIENCY BASED ON OXYGEN SENSOR, STACK SENSOR, AND AMBIENT (ROOM) AIR TEMPERATURE.

PUMPS (P-25A & 25B):
- THE PUMPS ARE REDUNDANT, ONLY 1 PUMP SHOULD OPERATE AT A TIME, UNLESS MORE THAN 600 BHP OF BOILER IS BEING OPERATED.
- WHEN PUMPS ARE SUPPLYING WATER DIRECTLY TO THE BOILERS, THEN 1 PUMP SHOULD BE ON IF THE RUNNING BOILER HORSEPOWER IS LESS THAN 600, IF GREATER THEN BOTH PUMPS SHALL BE ON. THE SECOND SHALL COME ON IF THE PRESSURE CANNOT BE MAINTAINED.
- WHEN THE PUMPS ARE SUPPLYING WATER TO THE DEAERATOR THEN 1 PUMP SHOULD BE ON TO MAINTAIN PRESSURE AT THE PRESSURE SWITCH. THE SECOND SHALL COME ON IF THE PRESSURE CANNOT BE MAINTAINED.
- WHEN SURGE TANK IS NOT BEING USED THE PUMPS SHALL BE OFF.

ALARMS:
- ALL MANUFACTURERS ALARMS ARE TO BE REPORTED TO THE BAS WITH EMAILS BEING SENT OUT TO THE RESPECTIVE PARTIES, LIST OF EMAIL ADDRESSES IS TO BE PROVIDED BY OWNER.
- A AUDIBLE AND VISUAL ALARM SHALL BE PROVIDED AND ALARM UPON WHICH EVER ALARMS THE OWNER CHOOSES. COORDINATE WITH THE OWNER DURING PROGRAMMING
- ALARMS SHALL INCLUDE BUT NOT LIMITED TO:
  - LOW STEAM PRESSURE
  - LOW/HIGH WATER ALARM
  - LOW CHEMICAL(S) LEVELS.
  - HIGH BOILER INTERNAL TEMPERATURE AND PRESSURE.
  - HIGH FIRE GAS TEMPERATURE.



D 1 / M4.1

BOILER SEQUENCES

SCALE: NONE

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

DATE: 2-21-12

ADDENDUM: ADD02.M41-1

SHEET: M4.1

NUMBER: 1 of 1

PIPE MATERIAL AND INSULATION

PIPE	PIPING							PIPING INSULATION				"K VALUE"		NOTES
	PIPE SIZE	RELATION TO GRADE	MATERIAL	FITTING TYPE	MINIMUM SLOPE	VALVES	MUST COMPLY WITH	INSULATION TYPE	MATERIAL TYPE	THICKNESS INCH	DENSITY LBS/FT^3	MIN. VALUE	AT TEMP	
CHEMICAL FEED PIPING	ALL SIZES	ABOVE	SCHEDULE 40 316 STAINLESS STEEL	THREADED	-	BALL, BUTTERFLY	ASTM A312 ASTM A999	-	-	-	-	-	-	2
CHILLED WATER	1/2" - 2"	ABOVE	SCHEDULE 40 BLACK STEEL	THREADED	-	BALL, BUTTERFLY	ASTM A 53	MOLDED SECTION	JACKETED FIBERGLASS	1-1/2"	3	.22	75°	1
CHILLED WATER	2-1/2" - UP	ABOVE	SCHEDULE 40 BLACK STEEL	CONTINUOUSLY WELDED	-	BALL, BUTTERFLY	ASTM A 53	MOLDED SECTION	JACKETED FIBERGLASS	1-1/2"	3	.22	75°	1
CONDENSER WATER	1/2" - 2"	ABOVE	SCHEDULE 40 BLACK STEEL	THREADED	-	BALL, BUTTERFLY	ASTM A 53	-	-	-	-	-	-	2
CONDENSER WATER	2-1/2" - UP	ABOVE	SCHEDULE 40 BLACK STEEL	CONTINUOUSLY WELDED	-	BALL, BUTTERFLY	ASTM A 53	-	-	-	-	-	-	2
DOMESTIC COLD WATER	1/2" - 1-1/2"	ABOVE	TYPE "K" COPPER	LEAD FREE SOLDER	-	BALL	ASTM B 88	MOLDED SECTION	JACKETED FIBERGLASS	1/2"	3	.22	75°	1
DOMESTIC COLD WATER	2" - UP	ABOVE	TYPE "K" COPPER	BRAZED	-	BALL, BUTTERFLY	ASTM B 88	MOLDED SECTION	JACKETED FIBERGLASS	1"	3	.22	75°	1
DOMESTIC HOT WATER	1/2" - 1-1/2"	ABOVE	TYPE "K" COPPER	LEAD FREE SOLDER	-	BALL	ASTM B 88	MOLDED SECTION	JACKETED FIBERGLASS	1-1/2"	3	.22	75°	1
DOMESTIC HOT WATER	2" - UP	ABOVE	TYPE "K" COPPER	BRAZED	-	BALL, BUTTERFLY	ASTM B 88	MOLDED SECTION	JACKETED FIBERGLASS	2"	3	.22	75°	1
DOMESTIC WATER	1/2" - UP	BELOW	TYPE "K" SOFT COPPER	NONE	-	NONE	ASTM B 88	-	-	-	-	-	-	2
FLUE CONDENSATE	ALL	ABOVE	TYPE "K" COPPER	BRAZED	-	BALL, BUTTERFLY	ASTM B 88	MOLDED SECTION	JACKETED FIBERGLASS	1"	3	.22	75°	1
GAS (<74 PSI)	1/2" - UP	BELOW	POLYETHYLENE SDR 11	HEAT FUSION	-	NONE	ASTM D 2513	-	-	-	-	-	-	3,5
GAS	1/2" - 1-1/2"	ABOVE	SCHEDULE 40 BLACK STEEL	THREADED	-	BALL	ASTM A 53	-	-	-	-	-	-	2
GAS	2" - UP	ABOVE	SCHEDULE 40 BLACK STEEL	CONTINUOUSLY WELDED	-	BALL	ASTM A 53	-	-	-	-	-	-	2
HEATING HOT WATER	1/2" - 2"	ABOVE	TYPE "K" COPPER	BRAZED	-	BALL, BUTTERFLY	ASTM B 88	MOLDED SECTION	JACKETED FIBERGLASS	1-1/2"	3	.22	75°	1
HUMIDITY CONDENSATE	ALL	ABOVE	TYPE "L" COPPER	CAST SOLDER	1/8" FOOT	-	ASTM B 88	NON-SPLIT CLOSED CELL	FLEXIBLE ELASTOMERIC	1/2"	3	.25	75°	1,4
PRESSURE RELIEF	1/2" - 1-1/2"	ABOVE	TYPE "K" COPPER	LEAD FREE SOLDER	1/8" FOOT	-	???	-	-	-	-	-	-	2
SANITARY WASTE	1-1/2" - UP	BELOW	SERVICE WEIGHT CAST IRON	GASKETED	1/8" FOOT	-	ASTM A 74	-	-	-	-	-	-	2,4
SANITARY WASTE	1-1/2" - UP	ABOVE	CAST IRON	NO-HUB CISPI 310	1/8" FOOT	-	ASTM A 888 CISPI 301	-	-	-	-	-	-	2,4
WASTE VENT	1-1/2" - UP	BELOW	SERVICE WEIGHT CAST IRON	GASKETED	-	-	ASTM A 74	-	-	-	-	-	-	2,4
WASTE VENT	1-1/2" - UP	ABOVE	CAST IRON	NO-HUB CISPI 310	-	-	ASTM A 888 CISPI 301	-	-	-	-	-	-	2,4
STEAM <100 PSIG	1/2" - 1-1/2"	ABOVE	SCHEDULE 40 BLACK STEEL	THREADED	1" 40'	RISING STEM GATE, GLOBE	ASTM A 53	MOLDED SECTION	JACKETED FIBERGLASS	2"	3	.22	75°	1
STEAM <100 PSIG	2" - UP	ABOVE	SCHEDULE 40 BLACK STEEL	CONTINUOUSLY WELDED	1" 40'	RISING STEM GATE, GLOBE	ASTM A 53	MOLDED SECTION	JACKETED FIBERGLASS	3"	3	.22	75°	1
STEAM CONDENSATE RETURN	1" - UP	ABOVE	FIBERGLASS REINFORCED PIPE	PRIMED AND GLUED	1" 40'	RISING STEM GATE, GLOBE	ASTM D 2105	MOLDED SECTION	JACKETED FIBERGLASS	2"	3	.22	75°	1
STEAM CONDENSATE RETURN	3/4" - LESS	ABOVE	FIBERGLASS REINFORCED PIPE	PRIMED AND GLUED	1" 40'	RISING STEM GATE, GLOBE	ASTM D 2105	MOLDED SECTION	JACKETED FIBERGLASS	2"	3	.22	75°	1

PIPE MATERIAL AND INSULATION GENERAL NOTES

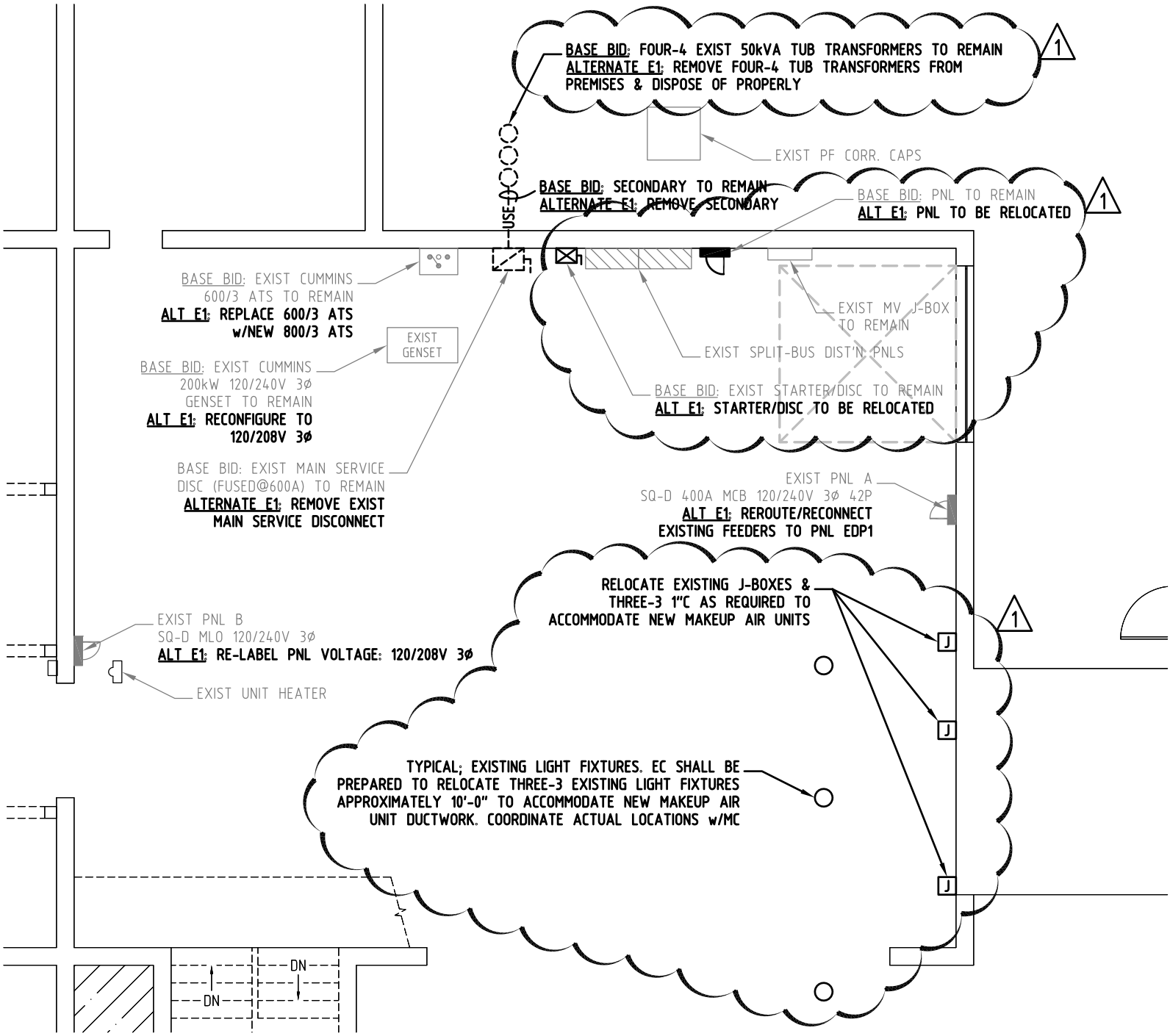
- INSTALL ALL PIPING ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- ALL PIPING SHALL BE TESTED, CLEANED AND CERTIFIED FOR INTENDED USE. ALL PIPING SYSTEMS SHALL BE PRESSURE TESTED WITH 1-1/2 TIMES THE OPERATING PRESSURE FOR NO LESS THAN 4 HOURS. PIPING TO BE CLEANED AND FLUSHED WITH CRITICAL CONTROL VALVES BYPASSED.
- ALL FITTINGS CONNECTING TO DI-ELECTRIC FITTINGS SHALL BE SOFT SOLDERED TO THE PIPING.
- ALL WELDED PIPE AND FUSION WELDED SHALL BE WELDED BY A CERTIFIED WELDER/ FUSION CONTRACTOR. ALL WELDING SHALL BE DONE BY A CERTIFIED WELDER (CERTIFICATES MUST BE SUBMITTED) AND ALL WORK SHALL BE STAMPED. BOLTED FLANGES SHALL BE INSTALLED ON 2" AND LARGER PIPE TO SECTIONALIZE THE SYSTEM INTO WORKABLE SECTIONS, INSULATION SHALL GO AROUND FLANGES.

VALVE SCHEDULE

- ALL VALVES SERVING DEAERATOR (BFDA-1), BOILERS (BL-1, BL-2 & BL-3), EXISTING SURGE TANK, MAU-1, MAU-2, AND DWHS IN BUILDING #25: CENTRAL PLANT SHALL BE LOCKABLE VALVES WITH LOCK OUT TAG OUT IN ALL STEAM, CONDENSATE, GAS, BOILER FEED WATER, AND BOILER BLOW DOWN PIPING.
- ALL VALVES IN STEAM, CONDENSATE, AND BOILER FEED PIPING SHALL BE RATED FOR USE WITH STEAM.
- CALIBRATED BALANCE VALVES: SHALL BE A BRONZE OR BRASS BALL VALVE WITH A SET SCREW STOP.
- BALL VALVE: SHALL BE NSF RATED FOR POTABLE WATER, BRASS OR BRONZE BODY WITH CHROME PLATED BRONZE BALL.
- BUTTERFLY VALVE: SHALL BE CAST IRON BODY WITH FLANGED ENDS, WAFFER STYLE VALVES ARE NOT ALLOWED.
- GATE VALVE: SHALL BE A BRONZE OR CAST IRON BODY WITH A RISING STEM AND SOLID BRONZE WEDGE.
- GLOBE VALVE: SHALL BE A BRONZE OR CAST IRON BODY WITH A BRONZE DISC.
- ALL VALVES SHALL BE INSTALLED WITH FULL STEM MOVEMENT.
- ALL VALVES INSTALLED HIGHER THAN 8'-0" ABOVE FINISHED FLOOR SHALL HAVE CHAIN GEAR OPERATORS AND CHAINS

PIPE MATERIAL AND INSULATION SCHEDULE NOTES

1. INSULATION & ADHESIVE SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS ACCORDING TO ASTM STANDARD AND NFPA 255. INSULATION SHALL BE INSTALLED BY A SKILLED INSTALLER IN A CLEAN WORKMANSHIP LIKE MANNER AFTER THE SYSTEM HAS BEEN PROPERLY TESTED. ALL JOINTS SHALL BE PROPERLY SEALED TO KEEP INTEGRITY OF VAPOR BARRIER INTACT. ALL INSULATION SHALL HAVE PVC JACKETS ON ALL ELBOWS AND THE ENTIRE PIPING SHALL BE JACKETED WITH PVC WHERE EXPOSED IN PUBLICLY ACCESSIBLE AREAS.
2. NO INSULATION IS REQUIRED UNLESS PIPING IS A PLASTIC MATERIAL IN A RETURN AIR PLENUM (SEE NOTE 1 IF INSULATION IS REQUIRED).
3. PIPING MUST HAVE TRACER WIRE INSTALLED ON PIPING.
4. SCHEDULE 40 PVC DWV PIPING WITH PRIMED AND GLUED FITTINGS IS AN ACCEPTABLE ALTERNATIVE ONLY IF PIPING IS NOT SERVING ANY DRAINS THAT MAY HAVE WATER HOTTER THAN 150° IN IT OR EXPOSED IN ANY KITCHEN AND ALLOWED BY LOCAL CODES. INSTALL INSULATION ON PIPING IN A CEILING PLENUM RETURN ACCORDING TO NOTE #1.
5. SOFT TYPE "K" COPPER WITH NO FITTINGS IS AN ACCEPTABLE ALTERNATIVE ONLY IF LOCAL CODES ALLOW.
6. ALL GAS PIPING WITH GAS PRESSURE GREATER THAN 5 PSI SHALL BE CONTINUOUSLY WELDED FOR ALL SIZES.



FIRST FLOOR DEMOLITION PLAN

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

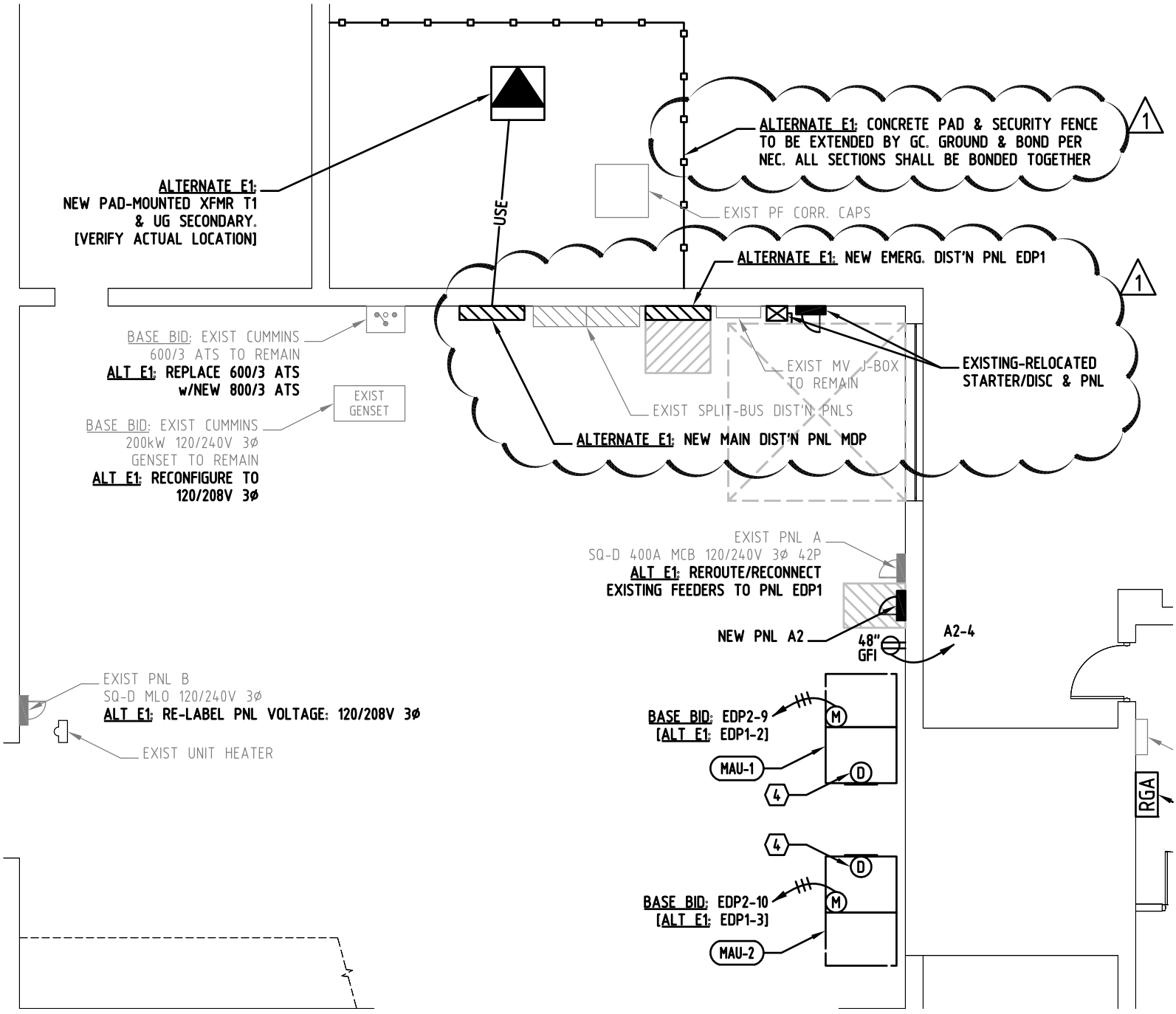
PROJECT: Beatrice State Developmental Center
Central Heating Plant Upgrades

PROJECT #: 2011-037

DESCRIPTION: Addendum #2

SHEET: **E251.0**

ADD02.25E10-1



FIRST FLOOR ELECTRICAL PLAN

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

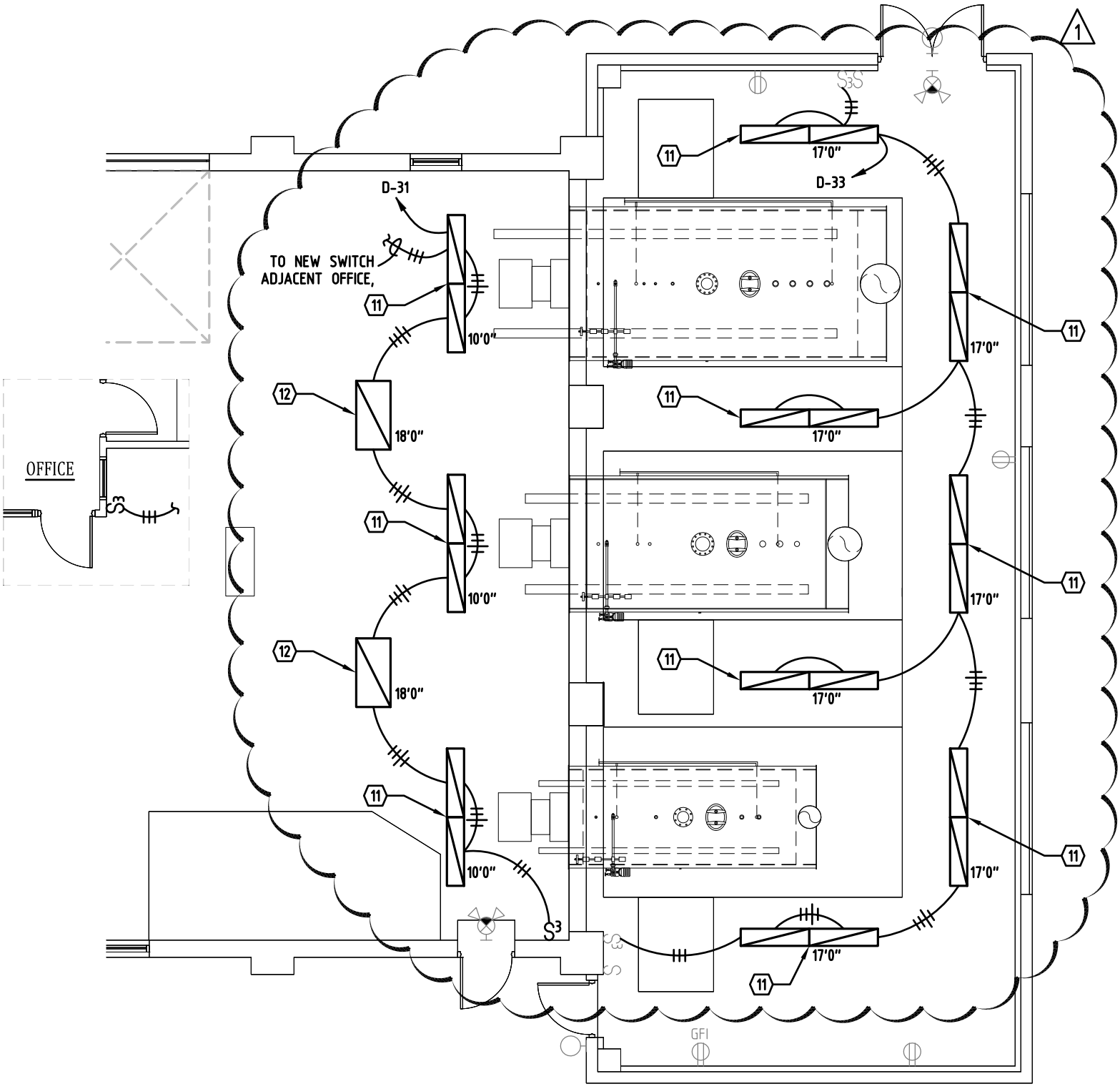
PROJECT: Beatrice State Developmental Center
Central Heating Plant Upgrades

PROJECT #: 2011-037

DESCRIPTION: Addendum #2

SHEET: **E251.0**

ADD02.25E10-2



11. FURNISH/INSTALL NEW GENERAL PURPOSE INDUSTRIAL FIXTURE; MFTR: LITHONIA TEJSA 2 32 MVOLT GEB10IS WGL [OR EQUAL]. CHAIN-HANG FIXTURES AT HEIGHT NOTED OR HIGH AS POSSIBLE, COORDINATE ACTUAL LOCATIONS w/MECHANICAL SYSTEMS.

12. FURNISH/INSTALL NEW FLUORESCENT HIGH BAY FIXTURE; MFTR: LITHONIA IBZ 454L MVOLT HBBS36 WGIBZ14 [OR EQUAL]. CHAIN-HANG FIXTURES AT 18'-0" OR HIGH AS POSSIBLE; COORDINATE ACTUAL LOCATIONS w/MECHANICAL SYSTEMS.

FIRST FLOOR ELECTRICAL PLAN

SCALE: 1/8"=1'-0"

4630 Antelope Creek Rd Ste 200 • Lincoln, NE 68506 • P: 402-488-0075 • F: 402-488-0272 • www.a-e-sys.com

AES ADVANCED ENGINEERING SYSTEMS

PROJECT: Beatrice State Developmental Center
Central Heating Plant Upgrades

PROJECT #: 2011-037

DESCRIPTION: Addendum #2

SHEET: **E251.0**

ADD02.25E10-3