ADDENDUM

Date: February 24, 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.: 3

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	Loren Cook
Variable Speed Drives – for Boiler Combustion Fans ONLY – to be provided by MC. This does not pertain to VFDs to be provided by the EC.	Yaskawa, Danfoss Graham
The following items were submitted for prior approval but have NOT been approved	

CHANGES TO PROJECT MANUAL:

Section 23 09 90 – Temperature Controls

1. 1.04.A shall read: The campus currently has Metasys control systems in buildings D, F and 15. Under this contract new fully functional control systems to control all new meters and equipment per the drawings and specifications shall be provided in buildings 25 (boiler plant), 18 (kitchen building), and 22 (laundry building). Connect energy meters in buildings 15 and 17 to the existing system in building 15. The controls system at each building shall control all new equipment and energy meters. A new PC work station shall be provided at each building. The new systems shall be capable of being tied together with the existing Metasys control systems under a single site to access every buildings control system on campus.

Section 23 52 39 – Fire Tube Boilers

1. 2.02.C shall read: Blower: shall be provided with and controlled by a VFD. The VFD shall be in accordance with specification section 26 29 23 Variable Frequency Motor Controllers, VFD manufacturer is not limited Allen Bradley and Square D as indicated, but is open to boiler manufactures' recommendations. 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

Section 23 53 16 – Deaerators

1. 2.01.I.2 shall read: Pumps shall be piped to a common header, 21 gpm pump shall run when 200 BHP boiler is running, 42 gpm pump shall run when 400 BHP boiler is running, and 21 gpm pump shall run when 200 BHP boiler is running.

CHANGES TO PROJECT DRAWINGS:

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

MECHANICAL

1. Sheet 25M2.2

A. Boiler Piping Schematic-ADD02.25M20-1

1) A demolition layer was mistakenly left on; refer to attached revised schematic ADD03.25M20-1. Refer to ADD02.25M20-2 for continuation of schematic.

2. Sheet 25M2.2

A. Boiler Detail-ADD02.25M22-2

1) Note callout stated “Manual orifice blowdown coordinate location with boiler manufacturer”. Revise note to read “Automatic surface blow down controlled by the boiler controls, coordinate location and pipe size with boiler manufacturer”.

3. Sheet 25M3.1

A. HVAC Plan

1) See attached drawing ADD03.25M31-1 showing an elevation of the boiler roof.
2) Key note shall read “Cut round opening in duct and provide crimped collar, provide size of opening as shown on plans.”

4. Sheet M5.0

A. Boiler Schedule

1) Note 4 shall read: Boiler combustion fan motors shall be provided with and controlled by a VFD. The boiler VFDs shall be provided and installed by the mechanical contractor and connected by the electrical contractor. VFD shall be in accordance with specification section 26 29 23 – Variable Frequency Motor Controllers, VFD manufacturer is not limited to Allen Bradley and Square D as indicated, but is open to the boiler manufacturer’s recommendations. Unit shall be dual rated for 208/230 volt 3 phase power. Electrical connection shall be single point power with NEMA type 1 enclosure.
2) Note 5 shall read: Boiler burner is to be 30ppm low NOX and natural gas supply pressure of 10psi (can be regulated further, responsibility of equipment supplier/MC to maintain CSD-1 compliance, including all additional venting to exterior as required).

5. Sheet M5.1

A. Piping Material and Insulation Schedule

1) Revision to steam condensate piping 3/4" and smaller shall be schedule 80 black steel. Refer to attached sheet ADD03.M51-1.
2) Added boiler feed water piping to schedule. Refer to attached sheet ADD03.M51-1.
3) Added rain water piping to schedule. Refer to attached sheet ADD03.M51-1.

ELECTRICAL

1. Sheet 18E1.0

A. Basement Electrical Plan

1) At EquipRm 02; provide new drip pan under new sanitary waste piping that is routed over existing transformer. Approximate dimension is 10'-0"(L) x 12"(W) X 6"(D). Provide 22-gauge galvanized sheet metal & hang from ceiling at an angle such that runoff will not drop onto electrical equipment. Coordinate installation w/MC and install per NEC.

2. Sheet 25E1.0

A. First Floor Electrical Plan

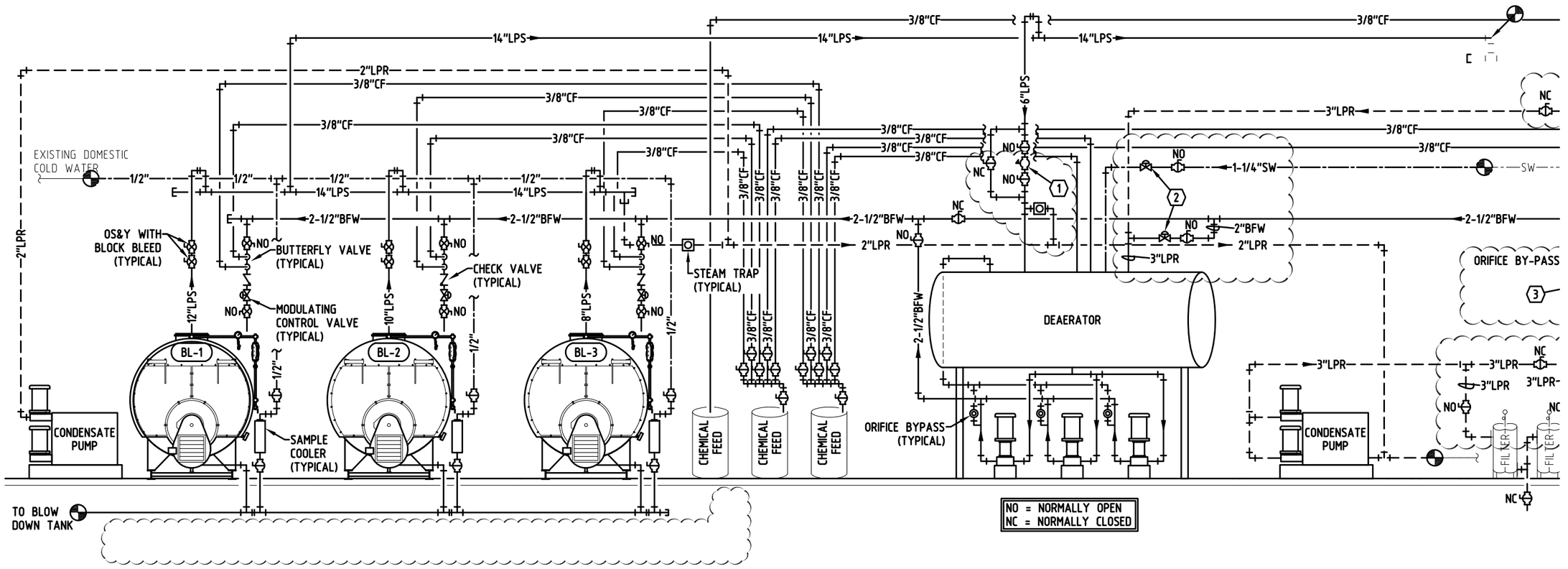
1) Add keynote 13; 'Furnish/install new emergency combination exit/egress light fixture w/remote lamp head; mftr: Lithonia LHQM S W R 120 HO/ELA T NX H0606 [or equal]. Connect to local unswitched circuit. See attached drawing ADD03.25E10.1 for locations.
2) Add keynote 14; 'Furnish/install new emergency combination exit/egress light fixture; mftr: Lithonia LHQM S W R 120 N [or equal]. Connect to local unswitched circuit. See attached drawing ADD03.25E10.1 for locations.
3) Add keynote 15; 'Furnish/install emergency lighting unit w/mounting shelf; mftr: Lithonia ELT24 N ELA MST [or equal]. Mount @8'-0"AFF. Connect to local unswitched circuit. See attached drawing ADD03.25E10.1 for locations.

3. Sheet 25E2.0

A. Riser Diagram Notes

1) Keynote 2 – delete the last sentence in this keynote "Provide boost transformers as needed to serve existing 240v. equipment."

By:	**Date:**
Kyle Wilkinson/Jason Leu	02-21-2012



D | 1
25M2.0

BOILER PIPING SCHEMATIC

SCALE: NONE

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ADVANCED ENGINEERING SYSTEMS

PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

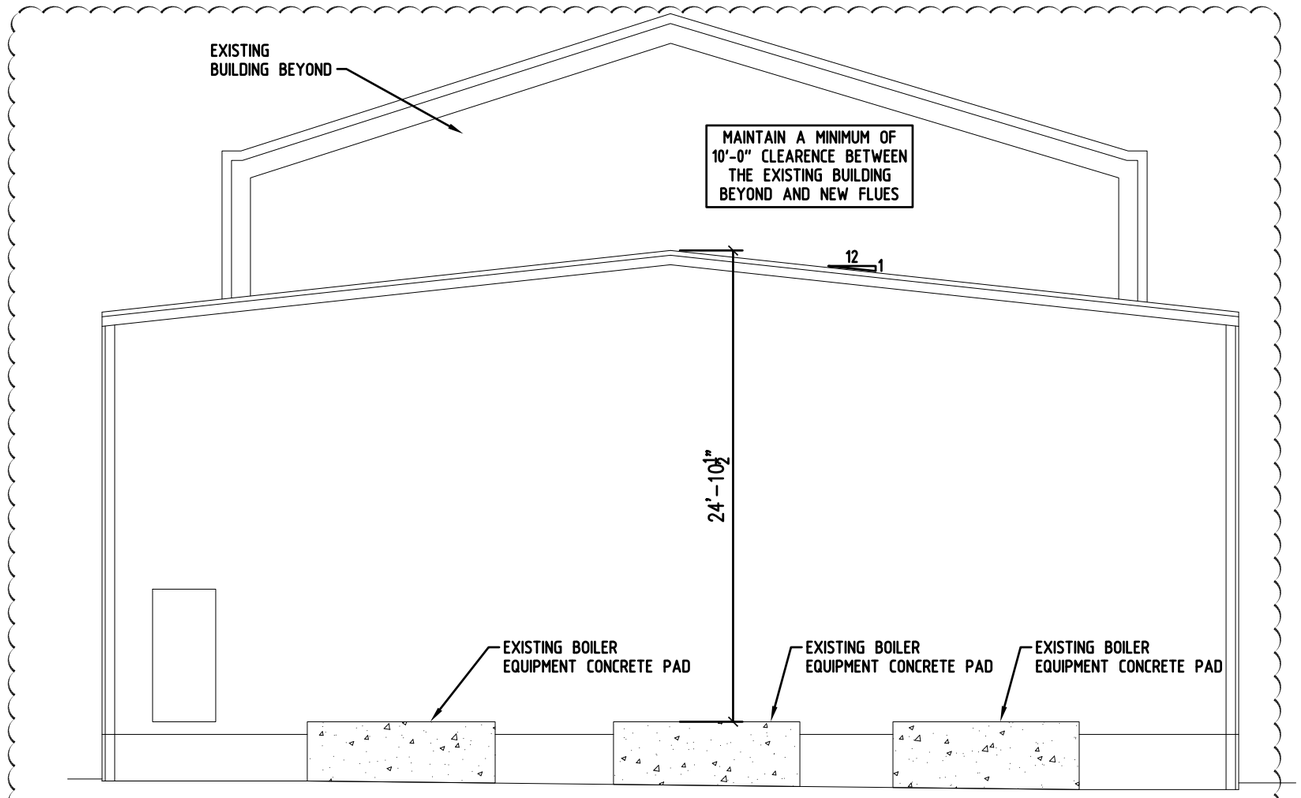
PROJECT #: 11037

DATE: 2-21-12

ADDENDUM: ADD03.25M20-1

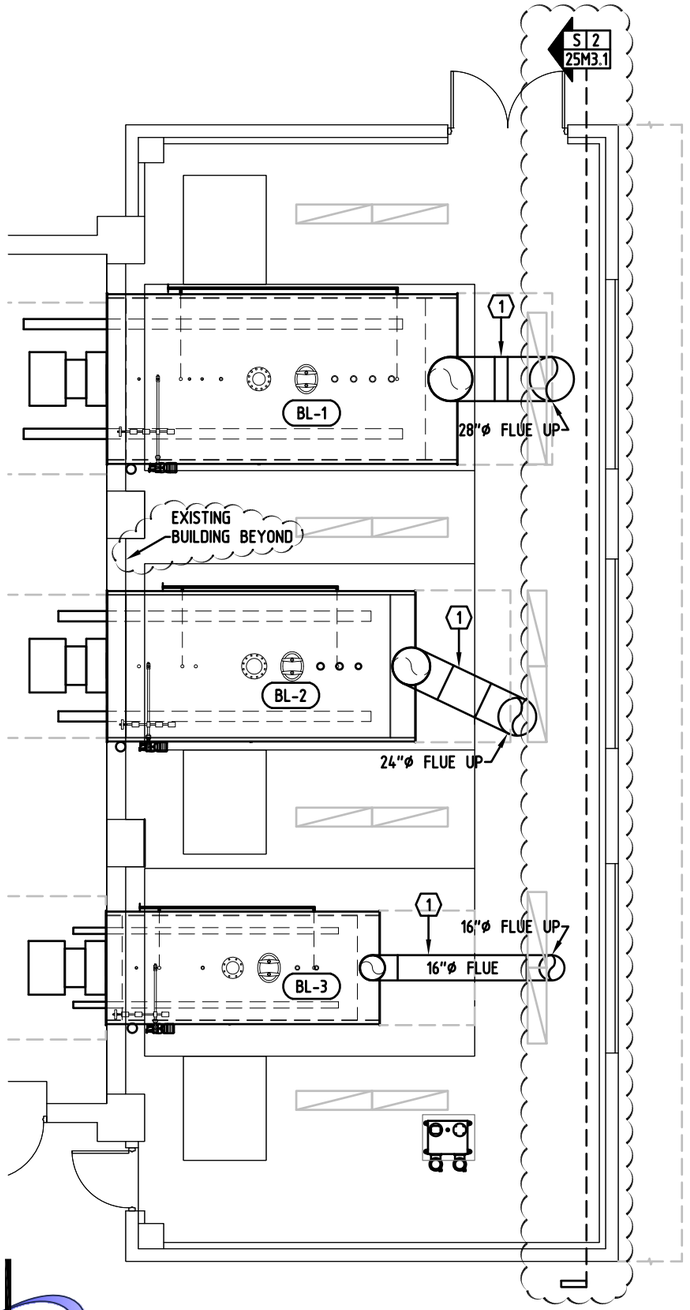
SHEET: **25M2.0**

NUMBER: 1 of 3



S|2
25M3.1 SECTION AT BOILER PADS

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



N

HVAC PLAN

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

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PROJECT: BEATRICE STATE DEVELOPMENTAL CENTER
CENTRAL HEATING PLANT UPGRADES

PROJECT #: 11037

DATE: 2-24-12

ADDENDUM: ADD03.25M31-1

SHEET: 25M3.1

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	
STEAM CONDENSATE RETURN	3/4" - LESS	ABOVE	SCHEDULE 80 BLACK STEEL	THREADED	1" 40'	RISING STEM GATE, GLOBE	ASTM A 53	MOLDED SECTION	JACKETED FIBERGLASS	2"	3	.22	75°	1
BOILER FEED WATER	ALL	ABOVE	SCHEDULE 80 BLACK STEEL	THREADED	-	BALL, BUTTERFLY	ASTM A 53	MOLDED SECTION	JACKETED FIBERGLASS	2"	3	.22	75°	1
RAINWATER	ALL	ABOVE	CAST IRON	NO-HUB CISPI 310	1/8" FOOT	-	ASTM A 888 CISPI 301	MOLDED SECTION	JACKETED FIBERGLASS	1"	3	.22	75°	1,4

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

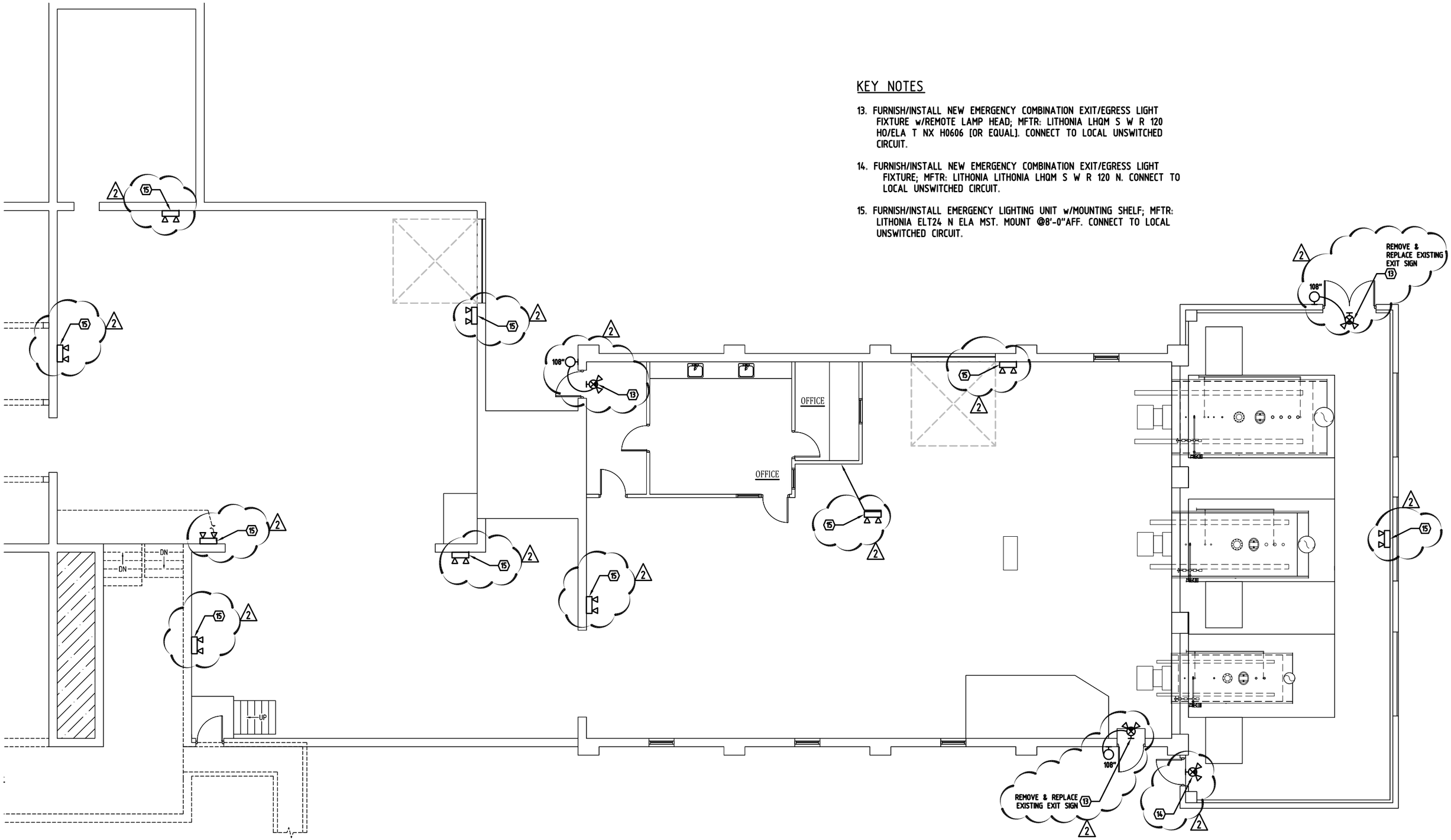
1. INSULATION & ADHESIVE SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS ACCORDING TO ASTM STANDARD AND NFPA 255. INSULATION SHALL BE INSTALLED BY A SKILLED INSTALLER IN A CLEAN WORKMANSHIP LIKE MANNER AFTER THE SYSTEM HAS BEEN PROPERLY TESTED. ALL JOINTS SHALL 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.

KEY NOTES

13. FURNISH/INSTALL NEW EMERGENCY COMBINATION EXIT/EGRESS LIGHT FIXTURE w/REMOTE LAMP HEAD; MFTR: LITHONIA LHQM S W R 120 HO/ELA T NX H0606 [OR EQUAL]. CONNECT TO LOCAL UNSWITCHED CIRCUIT.

14. FURNISH/INSTALL NEW EMERGENCY COMBINATION EXIT/EGRESS LIGHT FIXTURE; MFTR: LITHONIA LITHONIA LHQM S W R 120 N. CONNECT TO LOCAL UNSWITCHED CIRCUIT.

15. FURNISH/INSTALL EMERGENCY LIGHTING UNIT w/MOUNTING SHELF; MFTR: LITHONIA ELT24 N ELA MST. MOUNT @8'-0"AFF. CONNECT TO LOCAL UNSWITCHED CIRCUIT.



FIRST FLOOR ELECTRICAL PLAN

SCALE: 3/32"=1'-0"

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AES ADVANCED ENGINEERING SYSTEMS

PROJECT: Beatrice State Developmental Center
Central Heating Plant Upgrades

PROJECT #: 2011-037

DESCRIPTION: Addendum #3

SHEET: **E251.0**

ADD03.25E10-1