ADDENDUM

Date:	November 13th, 2012	**Project:**	Craft State Office Building - Chiller Replacement
To:	Bidding Contractors	**Project No.:**	11115
		Addendum No.:	1
		CC:	

This addenda is issued by the Architect/Engineer to all known bidders before receipt of proposals. Bidders shall acknowledge the receipt of this Addendum on their bid form and all information and instructions given herein shall become a part of the Contract Documents.

GENERAL

Prior Approvals – If not specifically called out as OR EQUAL under the specified product the following substitutes are acceptable as long as they meet specification; this is not a formal approval that can only be determined at shop drawing/submittal review stage.

Exhaust Fans	Loren Cook, Twin City Fan, ILG/American Coolair
Louvers	Ruskin, Air Balance, Inc., Safe-Air/ DOWCO, United Enertech
Chillers	York, McQuay
Hydronic Unit Heater	McQuay, Ritting, Sigma, Airedale div of Modine
Cooling Tower	Baltimore Air Coil, Marley
Variable Frequency Drives	ABB, Square D, Danfoss, Allen Bradley, General Electric, Danfoss
Air Handling Units	International Environmental Co., Enviro-Tec
Rotary Screw Compressor	Carrier
Hydronic Pumps	Armstrong, WILO
Hydronic Accessories	Armstrong, American Weatley
Automatic Flow Control Valves	Flow Design, Inc.
Glycol Feed Tank	J.L.Wingert
Flanged Strainer	Wheatley
Flexible Connectors	Wheatley
Packaged Hose Kits	Hydronic Components (HCI)
Back flow preventers	Apollo
Air and dirt separator	Spirotherm
Glycol Fill System	John Woods
Boiler Flue	Selkirk Metalbestos
Boiler (B-1) (Must meet scheduled Heat exchanger type and material)	Aldrich
Boiler (B-2) (Must meet scheduled Heat exchanger type and material)	Camus
The following items were submitted for prior approval but have NOT been approved.	

General Pre-Bid Meeting Item:

Sign-in sheets for the pre-bid meeting are attached for informational purposes only.

CLARIFICATIONS

CHANGES TO PROJECT MANUAL

23 09 90 – Temperature Controls

1. Paragraph 1.02, G: Note 1 shall read "Heating unit on south end of building on 1st floor in Building #1. Replace pneumatic valve with DDC control valve.
2. Paragraph 1.02, G: Delete note 2 entirely.

23 64 26 – Rotary – Screw Water Chillers

1. Paragraph 1.02, A: Note 2 shall read "Minimum Operating Condenser-Fluid Temperature: Chiller shall be capable of continuous operation over the entire capacity range indicated with an entering condenser-fluid temperature of 60 deg F".

26 24 16 – Panelboards

1. Paragraph 2.01: add the following part H – Panelboard manufacturer must have products available locally that are readily available.

CHANGES TO PROJECT DRAWINGS

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

Phasing Plan

1. Sheet P1.0

A. Phasing Plan – Sheet Notes (Key Notes)

1) Delete key Note 4 entirely.

Architectural

1. Sheet A1.1

A. Building#1 – Basement

1) Mechanical Room, remove door, frame and hardware provide and install new door with all associated hardware as shown on sheet ADD1.

Mechanical

1. Sheet M1.1

A. Basement Mechanical Plan – Phase 1 & Phase II

1) Remove and replace 2½" domestic cold water isolation valve. Turn off water in building #3. Coordinate with Owner time to change valve because most building #1 domestic cold water will have to be drained. (For Phase-I). See attached M1.1 sheet 1 of 4.
2) Re-insulate all existing hot and chilled water supply and return piping that remains in Mechanical Room. See attached M1.1 sheet 3 of 4.
3) Note 6 shall be reworded. See attached page 3 of 4 on sheet M1.1.
4) Modify chilled and hot water piping as shown on the sheets 1, 2, 3 of 4 on M1.1.

B. Third Floor Mechanical Room (See attached M1.1 sheet 4 of 4.)

1) Remove and replace damper actuator in FA duct with new DDC actuator.
2) Remove existing humidifier and associated piping to extends possible and cap. Patch and repair AHU.
3) Remove and replace 2" control valve with new DDC control valve. (Control contractor to provide control valve)

2. Sheet M1.2

A. Building #2, HVAC duct Insulation and Installation

1) Note #4 on sheet M1.2 Mechanical side of drawings shall read – "DUCT TO BE SEALED AND INSULATED. PRE-BID MEETING ATTENDANCE OR SITE VISIT IS REQUIRED TO FIELD VERIFY CONDITIONS/QUANTITIES BEFORE BIDDING. ALL CEILING WORK REQUIRED IS THE RESPONSIBILITY OF THIS CONTRACTOR. ANY DAMAGE IS THE RESPONSIBILITY OF THIS CONTRACTOR. IF DUCT IS TO TIGHT TO CEILING SEAL AND INSULATE THE 3 SIDES THAT CAN BE ACCESSED. CONTRACTOR TO PROTECT AND CLEAN ALL FURNITURE, APPLIANCES, ETC. OF THE CUSTOMER. COORDINATE WITH OWNER TO RELOCATE STATE EMPLOYEES IN THIS BUILDING IF REQUIRED."

3. Sheet M1.4

A. Building #4, HVAC duct Insulation and Installation

1) Note #6 on sheet M1.4 Mechanical side of drawings shall read – "DUCT TO BE SEALED AND INSULATED. PRE-BID MEETING ATTENDANCE OR SITE VISIT IS REQUIRED TO FIELD VERIFY CONDITIONS/QUANTITIES BEFORE BIDDING. ALL CEILING WORK REQUIRED IS THE RESPONSIBILITY OF THIS CONTRACTOR. ANY DAMAGE IS THE RESPONSIBILITY OF THIS CONTRACTOR. IF DUCT IS TO TIGHT TO CEILING SEAL AND INSULATE THE 3 SIDES THAT CAN BE ACCESSED. CONTRACTOR TO PROTECT AND CLEAN ALL FURNITURE, APPLIANCES, ETC. OF THE CUSTOMER. COORDINATE WITH OWNER TO RELOCATE STATE EMPLOYEES IN THIS BUILDING IF REQUIRED."

4. Sheet M2.1

A. Sheet Notes, Key Notes

1) Note 4 shall read "EXISTING STEAM PIPING AND EQUIPMENT MUST REMAIN OPERATIONAL DURING PHASE 1 OF PROJECT. COORDINATE CHILLER INSTALLATION WITH THE EXISTING EQUIPMENT. ALL DOWN TIME TO KEPT TO MINIMUM. REMOVE AND REPLACE EXISTING EQUIPMENT IF REQUIRED".

5. Sheet M2.2

A. Sheet Notes, Key Notes

1) New note #9 shall read "INSTALL BTU METER IN GAS PIPING. INSTALL PER MANUFACTURERS RECOMMENDATIONS. METER PROVIDED BY CONTROLS CONTRACTOR INSTALLED BY MECHANICAL CONTRACTOR. PROVIDE STRAIGHT RUN OF PIPE 15 TIMES PIPE DIAMETER UP STREAM OF METER AND 5 TIMES PIPE DIAMETER DOWN STREAM OF METER. METER TO BE INSTALLED UNDER ALTERNATE M-1". See attached M2.2 sheet 1 of 1.

6. Sheet M3.0

A. Pumps Schedule Notes

1) Note 3 shall read "VFD TO BE PROVIDED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. VFD SHALL BE PROVIDED WITH A NEMA 1, INTEGRAL CIRCUIT BREAKER DISCONNECT, AND MAINTENANCE BYPASS. PROVIDE WITH INTEGRAL COMMUNICATIONS CARD THAT IS COMPATIBLE WITH CONTROL SYSTEM. COORDINATE REQUIREMENTS WITH CONTROLS CONTRACTOR."

B. Water Cooled Chiller

1) Add note 6. "Chiller lead times shall be closely coordinated with phasing schematic to ensure chilled water system is operational by the target date, submittal review will be expedited by the Engineer."

7. **Sheet M3.1**
   - **A. Duct Material and Installation**
   1) See revised boiler flue schedule for B-1 & B-2 as shown on attached page 1 of 1 on sheet 3.1.
      - B-1 Flue: Heat Fab – Category – III positive pressure with 1" air gap.
      - B-2 Flue: A124-4C Heat Fab, Category – IV positive pressure with 1" air gap.
8. **Sheet M3.2**
   - **A. Sequence of operation (As part of metering Alternate)**
   1) Shall read "All motors (Gas, Btu, and Electrical) to be provided under Alternate." See attached page 1 of 1 on sheet M3.2.
   2) See revised control schematic as shown on attached page 1 of 1 on sheet M3.2.

   - **B. Sequence of operation (Building#1)**
   1) See attached page 1 of 1 on sheet M3.1.

Electrical

1. **Sheet E0.0S**
   - **A. Electrical Site Plan**
     1) At building 1, remove 5 existing light fixtures & replace with new type 9 fixtures. Reconnect to existing circuitry. See attached drawing AD01.E00S-1.

2. **Sheet E1.0S**
   - **A. Light Fixture Schedule**
     1) Add type 9. LED wall pack with bright white LED Kelvin color & bronze housing color, Cooper XTOR1A [or equal].

3. **Sheet E1.1S**
   - **A. Bldg 1 First Floor Electrical Plan (Alternate E1)**
     1) At first floor electrical room – existing telecom equipment will be relocated by owner. Contractor shall not perform any work associated with the removal/relocation of this equipment.

4. **Sheet E3.2S**
   - **A. Electrical One-Line Diagram**
     1) At building 1, add 30A fused disconnect after transformer T1C. Fuse at 20A. See attached drawing AD01.E32S-1.
     2) Aluminum conductors are acceptable for service entrance only. Contractor will be responsible for upsizing conduit/wire as required per NEC.
   - **B. Transformer Schedule**
     1) Transformer T2A shall be 30kVA in lieu of 15kVA.

5. **Sheet E4.2S**
   - **A. Panel Schedules**
     1) Panel 2M shall be 30-pole in lieu of 42-pole.

By:	**Date:**
Kyle Wilkinson and Jeff Johnson	11/13/12

ADVANCED ENGINEERING SYSTEMS

DATE: 11/6/12

PROJECT NAME: CRAFT MEP UPGRADES PROJECT

PROJECT NUMBER:

RE:

IN ATTENDANCE:

SIGN IN

Name	Organization	email
Kyle Wilkinson	AES	kyle.wilkinson@a-e-sys.com
Steve Lentell	Central Contracting	slentell@centralcontracting.net
AL RICHARDS	JOHNSON CONTROLS	allan.d.richards@jci.com
Darren Detrading	Johnson Controls	darren.A.detrading@jci.com
CHAS PORTER	SNELL	
Mike Robb	SNell	mikerobb@windstream.net
CHARLIE HIPWELL	SNELL SERVICES, INC	chipwell2@WINDSTREAM.NET
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Jim PINKERTON	SBD	jim.pinkerton@nebraska.gov
Mike Sexson	SBD	mike.sexson@nebraska.gov
Steen Nichols	AJ Sheetmetal / Midland Mech	steen@a-jsheetmetal.com
Conrad Buhrman	Ne Safety & Fire	Conradb@nebsafe.com
Ken Baxter	DAS	Ken.Baxter@Nebraska.gov
Jeff Johnson	AES	jeff.johnson@a-e-sys.com

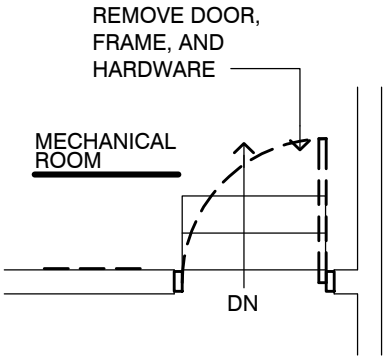
DOOR HARDWARE:

Set 2.0
Description: New single door

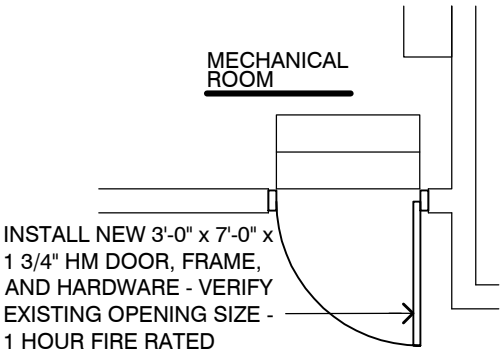
3 ea	Hinges	TA2714 41/2 x 41/2	US26D	MK
1	Exit Device	99L – F	US26D	VD
1	Cylinder	20-021	626	SC
1	Closer	281 P10	EN	SA
1	Wall Stop	409	US32D	RO
1	Smoke Seal	S88D		PE

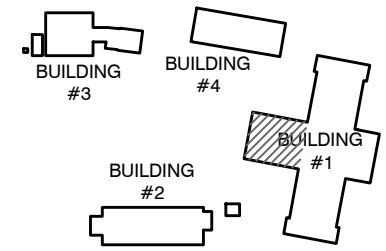
Notes:
1) Hardware supplier to verify keyway and cylinder required for lockset. Coordinate with owner

LEGEND:
MK – McKinney or approved equal
PE – Pemko or approved equal
RO – Rockwood or approved equal
SA – Sargent or approved equal
SC – Schlage or approved equal
VD – Von Duprin



BUILDING #1 BASEMENT DEMO PLAN - PHASE 1





SITE KEY PLAN

SCALE: NONE

BUILDING #1 BASEMENT REMODEL PLAN - PHASE 2

FILENAME: P:\AES\CRAFT STATE\CA

Craft State Office Building
Mech. Upgrades and Elec. Service Replacement
200 South Silber Avenue, North Platte, NE

Architectural Design Associates
Suite 105
7501 'O' Street
Lincoln Nebraska 68510

www.adalincoln.com
tel 402 486 3232

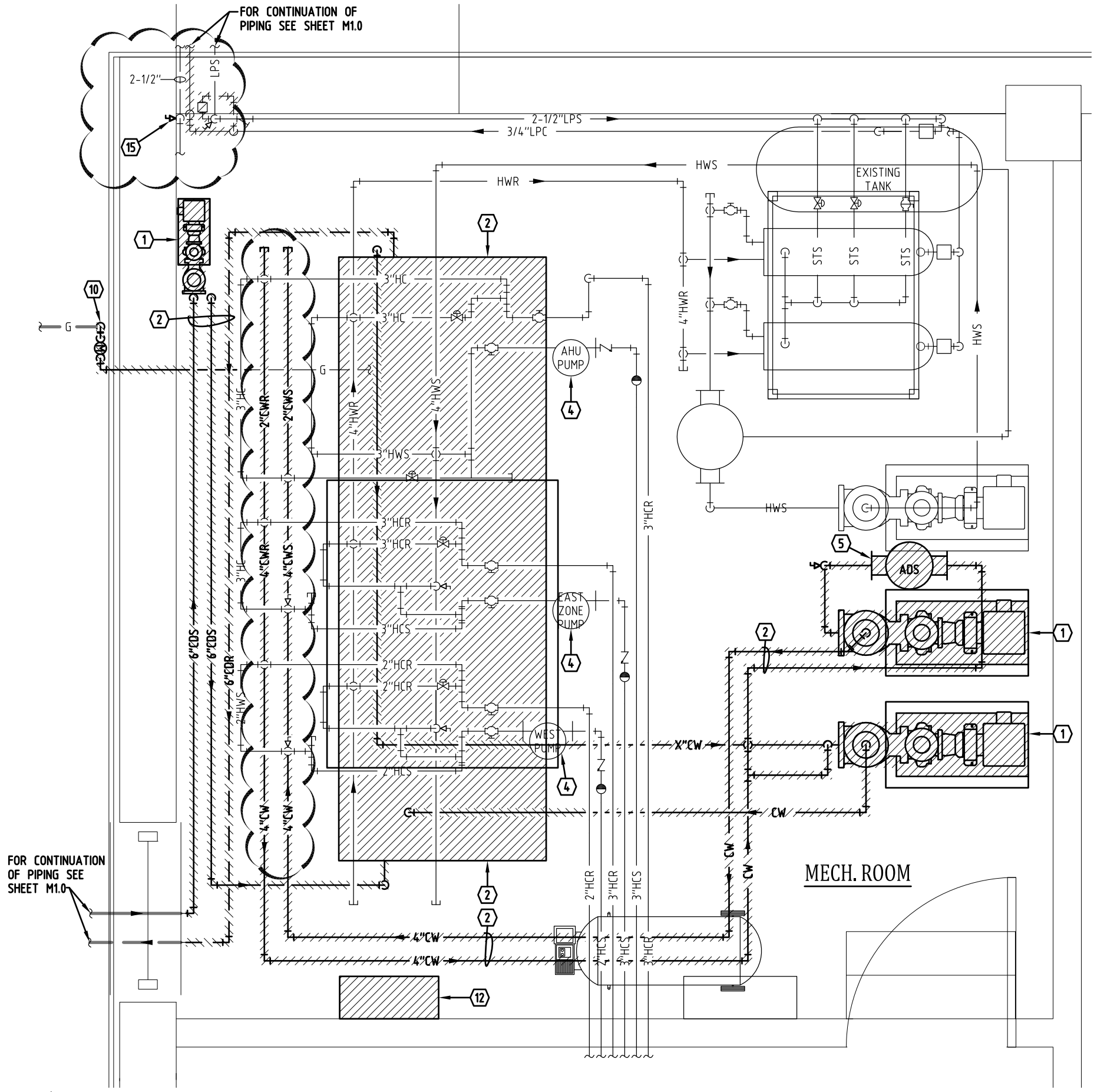
Project number
12-097

Date
11/12/2012

Revisions

ADD 1

12097A11-ADD



BASEMENT MECHANICAL DEMOLITION PLAN - PHASE I

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

DOMOLITION SIDE SHEET NOTES

14. REMOVE CONTROL VALVE AND ALL ASSOCIATED PIPING, CONTROLS.
15. REMOVE AND REPLACE 2-1/2" ISOLATION VALVE. TURN OFF WATER IN BUILDING #3. COORDINATE WITH OWNER TIME TO CHANGE VALVE BECAUSE MOST OF BUILDING #1 DOMESTIC COLD WATER WILL HAVE TO BE DRAINED. (PHASE 1)
16. REMOVE EXISTING HUMIDIFIER AND ASSOCIATED HUMIDITY DRAIN PIPING TO EXTENTS POSSIBLE AND CAP. PATCH AND REPAIR AHU.
17. REMOVE AND REPLACE FRESH AIR DAMPER CONTROLLER IN DUCT TO AHU. REMOVE AND REPLACE ALL ASSOCIATED CONTROLS WITH DDC CONTROLED DAMPER. VERIFY REQUIREMENTS IN FIELD BEFORE PROCEEDING.
18. REMOVE AND REPLACE 2" CONTROL VALVE WITH NEW DDC CONTROL VALVE.

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ADVANCED ENGINEERING SYSTEMS

PROJECT: CRAFT STATE OFFICE BLDG. MECHANICAL UPGRADES

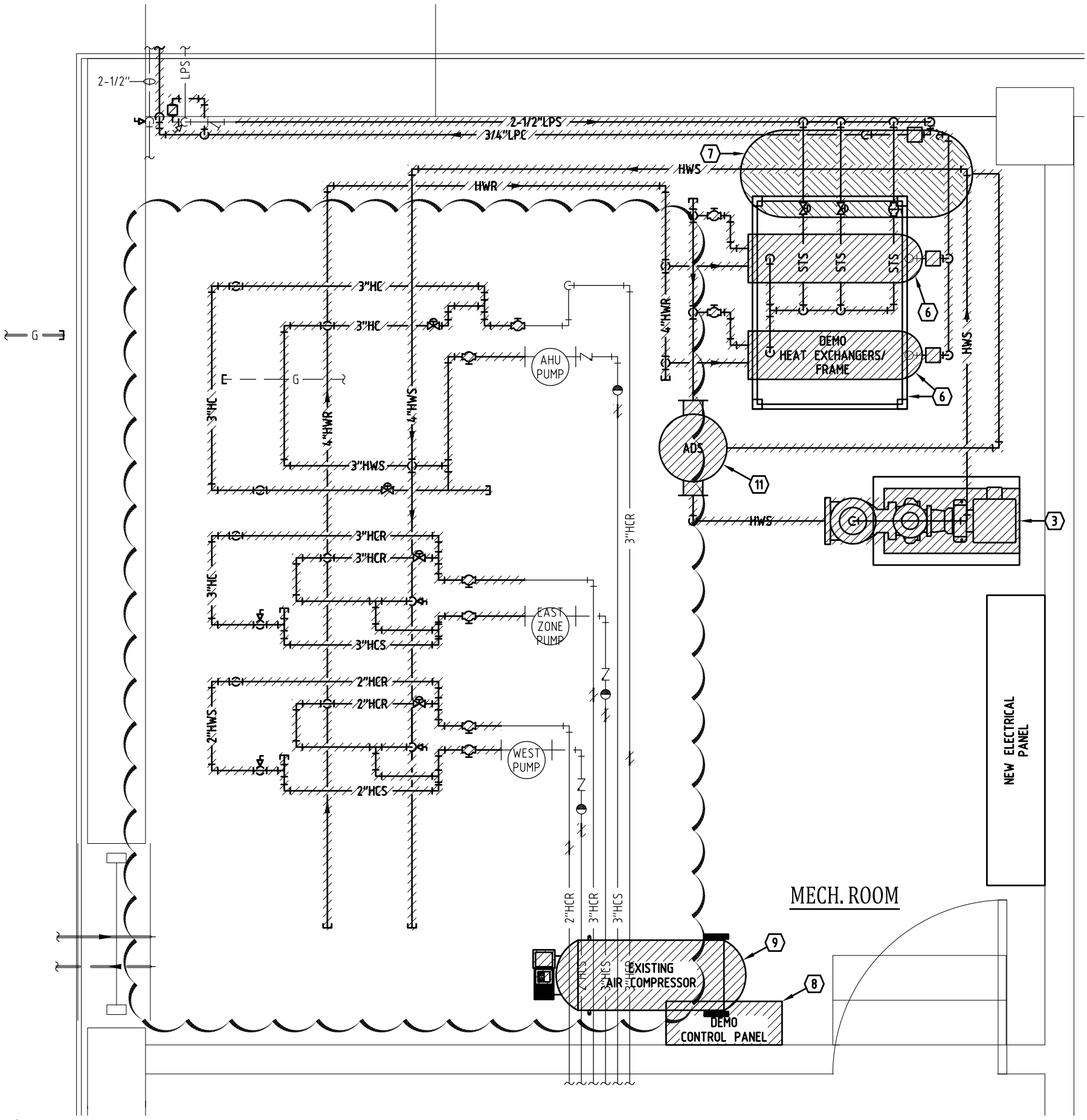
PROJECT #: 11115

DATE: 11-13-2012

ADDENDUM: 1

SHEET: M1.1

NUMBER: 1 of 4



BASEMENT MECHANICAL DEMOLITION PLAN - PHASE 2

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

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ADVANCED ENGINEERING SYSTEMS

PROJECT: CRAFT STATE OFFICE BLDG. MECHANICAL UPGRADES

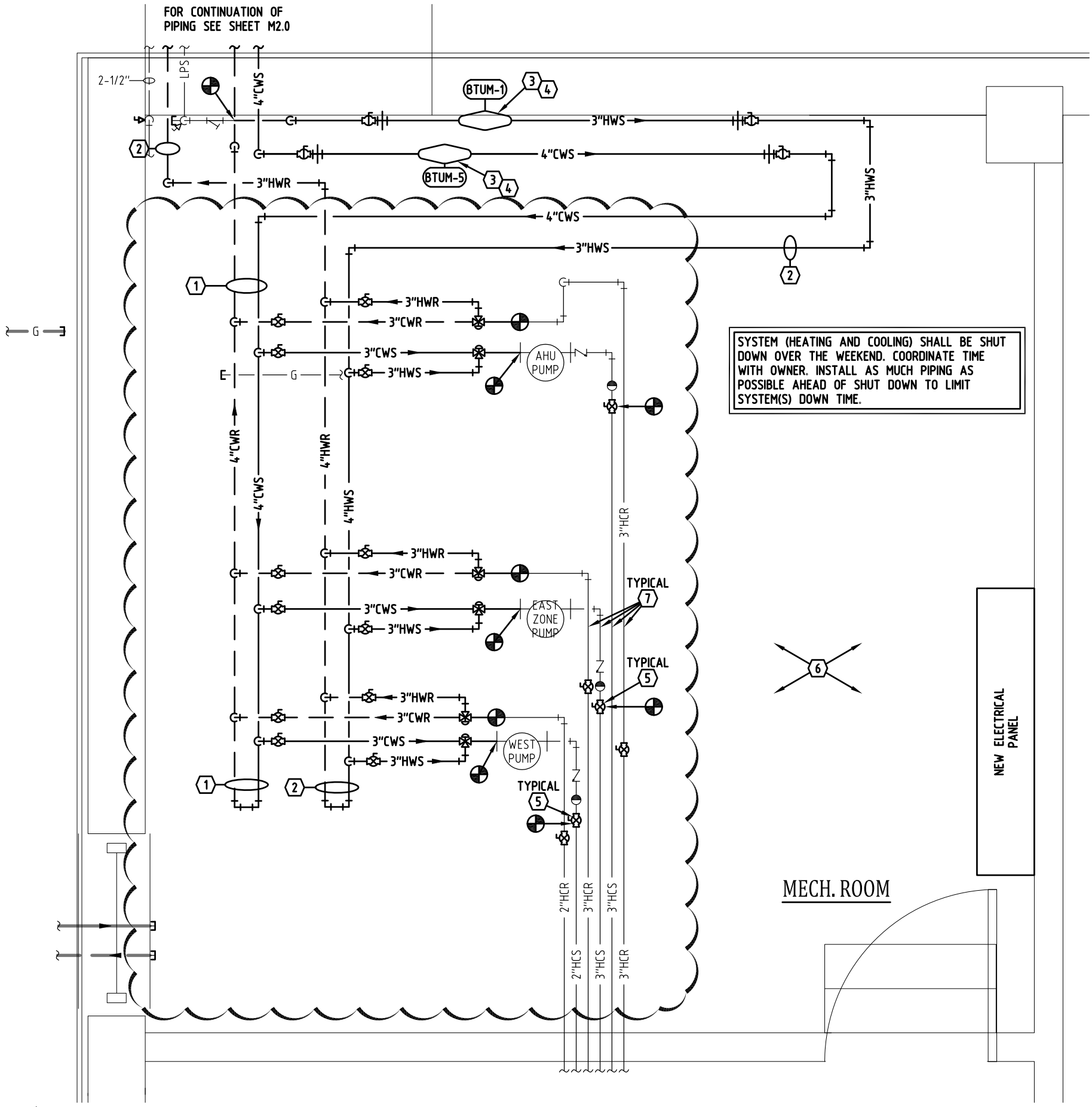
PROJECT #: 11115

DATE: 11-13-2012

ADDENDUM: 1

SHEET: M1.1

NUMBER: 2 of 4



SYSTEM (HEATING AND COOLING) SHALL BE SHUT DOWN OVER THE WEEKEND. COORDINATE TIME WITH OWNER. INSTALL AS MUCH PIPING AS POSSIBLE AHEAD OF SHUT DOWN TO LIMIT SYSTEM(S) DOWN TIME.

N

BASEMENT MECHANICAL PLAN - PHASE I & PHASE 2

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

5. INSTALL NEW SHUT OFF VALVE IN ZONE PIPING.

6. ALL EXISTING PNEUMATIC CONTROLS SHALL BE COMPLETELY REMOVED FROM THE CAMPUS. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE CONTROLS CONTRACTOR AND INSTALLING NEW VALVES AND DAMPERS. (CONTROLS CONTRACTOR TO PROVIDE VALVES. MECHANICAL CONTRACTOR TO INSTALL VALVES.) ALL EXISTING EQUIPMENT AND NEW EQUIPMENT SHALL BE CONTROLLED WITH EXISTING ELECTRONIC CONTROLS OR NEW DDC CONTROLS AS DESCRIBED IN THE PROJECT. EXISTING EQUIPMENT WITH PNEUMATICS TO BE REMOVED AND NEW CONTROLS INSTALLED, INCLUDE THE FOLLOWING:

   HEATING UNIT ON EACH END OF BUILDING ON EACH FLOOR IN BUILDING #1, (TWO UNITS PER FLOOR).

   FRESH AIR HVAC UNIT ON THIRD FLOOR OF BUILDING #1:

   - APPROX. 36"X16" OA DAMPER
   - APPROX. 2" CONTROL VALVE

7. INSULATE EXISTING CHILLED / HOT WATER PIPING IN MECHANICAL ROOM.

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ADVANCED ENGINEERING SYSTEMS

PROJECT: CRAFT STATE OFFICE BLDG. MECHANICAL UPGRADES

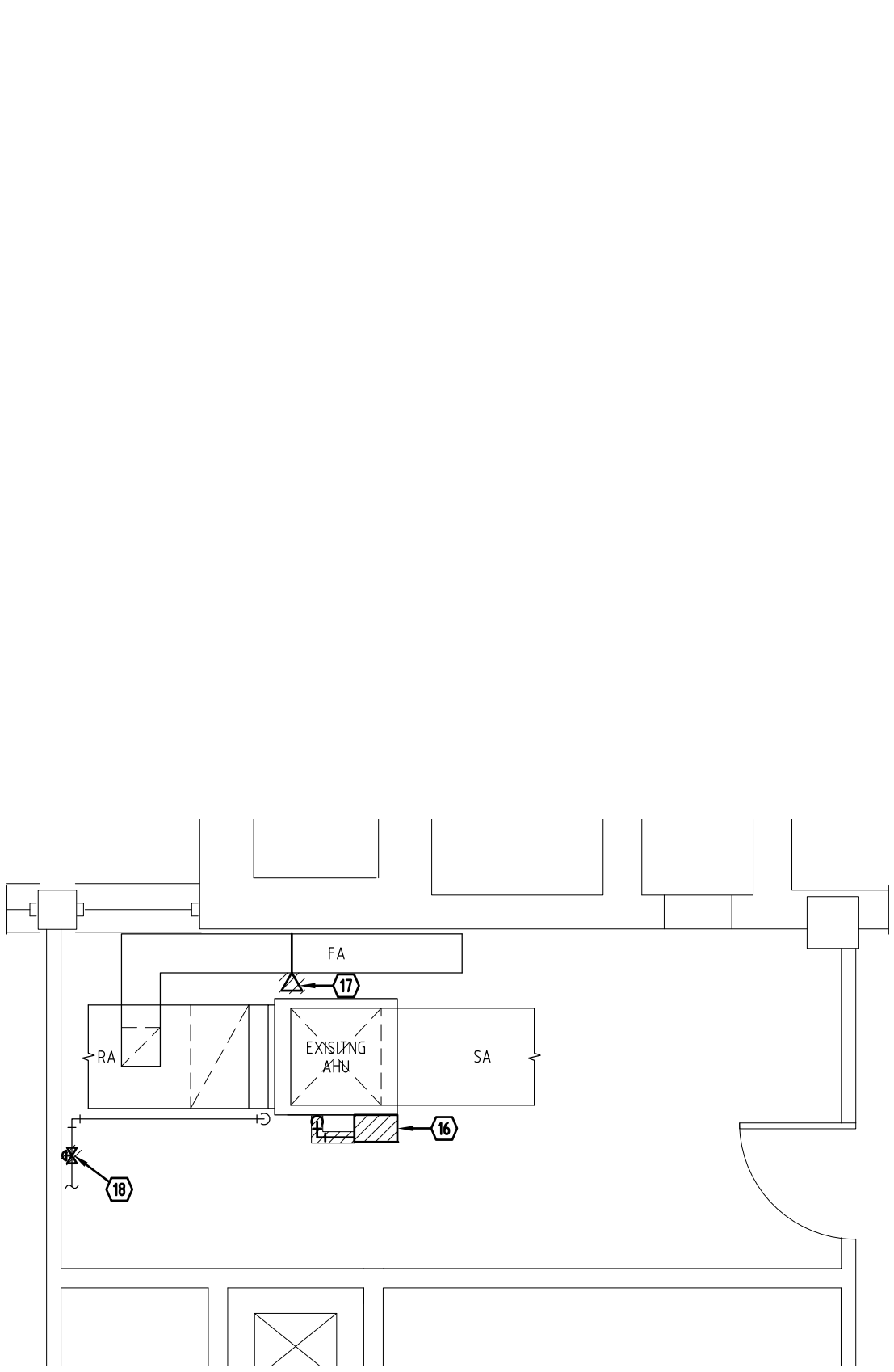
PROJECT #: 11115

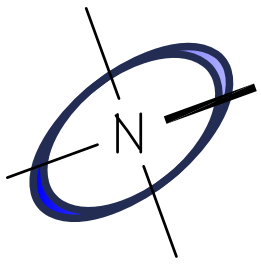
DATE: 11-13-2012

ADDENDUM: 1

SHEET: M1.1

NUMBER: 3 of 4





3RD FLOOR MECHANICAL ROOM – PHASE 1 & PHASE 2

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

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ADVANCED ENGINEERING SYSTEMS

PROJECT: CRAFT STATE OFFICE BLDG. MECHANICAL UPGRADES

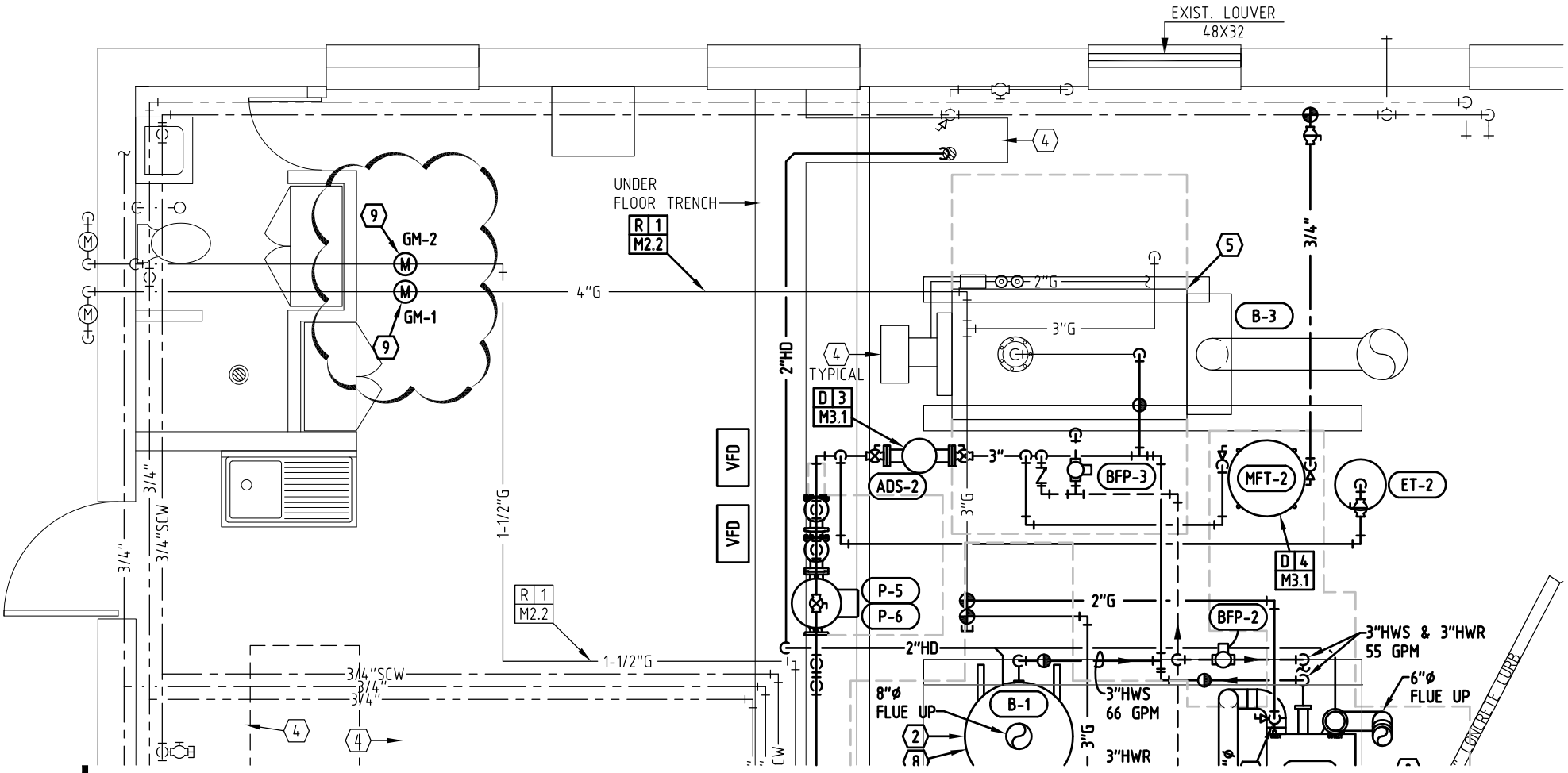
PROJECT #: 11115

DATE: 11-13-2012

ADDENDUM: 1

SHEET: M1.1

NUMBER: 4 of 4



BUILDING #3 MECHANICAL PLAN - PHASE 2

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

GAS PIPING, HEATING HOT WATER SUPPLY AND RETURN PIPING. EXTEND DRAIN AND CONDENSATE PIPING TO FLOOR DRAIN.

9. INSTALL BTU METER IN GAS PIPING. INSTALL PER MANUFACTURERS RECOMMENDATIONS. METER PROVIDED BY CONTROLS CONTRACTOR INSTALLED BY MECHANICAL CONTRACTOR. PROVIDE STRAIGHT RUN OF PIPE 15 TIMES PIPE DIAMETER UP STREAM OF METER AND 5 TIMES PIPE DIAMETER DOWN STREAM OF METER. METER TO BE INSTALLED UNDER ALTERNATE M-1.

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AES ADVANCED ENGINEERING SYSTEMS

PROJECT: CRAFT STATE OFFICE BLDG. MECHANICAL UPGRADES

PROJECT #: 11115

DATE: 11-13-2012

ADDENDUM: 1

SHEET: **M2.2**

NUMBER: 1 of 1

DUCT MATERIAL AND INSULATION

DUCT	DUCT LOCATION	SPACE	DUCT CONSTRUCTION			DUCT INSULATION						NOTES
			MATERIAL	TYPE	CONNECTION	TYPE	MATERIAL TYPE	SKIN TYPE	THICKNESS	DENSITY LB./FT^3	MINIMUM INSTALLED "R" VALUE	
SUPPLY AIR	CONCEALED	CONDITIONED	GALVANIZED STEEL	SINGLE WALL	SLIP & DRIVE	WRAP	FIBERGLASS	ALUMINUM FSK JACKET	1"	3/4	3	1,2,3
RETURN AIR	CONCEALED	CONDITIONED	GALVANIZED STEEL	SINGLE WALL	SLIP & DRIVE	LINER	FIBERGLASS	ACRYLIC POLYMER ANTI-MICROBIAL COATING	1/2"	2	2	1,2,4
BOILER FLUE B-1	CONCEALED / EXPOSED	SAME FOR ALL CONDITION TYPES	STAINLESS STEEL	CATEGORY III	INTERLOCKING CONNECTION	-	-	-	-	-	-	1,5,6
BOILER FLUE B-2	CONCEALED / EXPOSED	SAME FOR ALL CONDITION TYPES	STAINLESS STEEL	CATEGORY IV	INTERLOCKING CONNECTION	-	-	-	-	-	-	1,5,6
BOILER INTAKE	CONCEALED / EXPOSED	SAME FOR ALL CONDITION TYPES	GALVANIZED STEEL	SINGLE WALL	SCREWED	-	-	-	-	-	-	1,5

SPACE DEFINITION

- PARTIALLY CONDITIONED SPACE: A SPACE THAT HAS A TEMPERATURE DIFFERENTIAL BETWEEN THE AIR IN DUCT AND THE SURROUNDING GREATER THAN 15°. EXAMPLES INCLUDE: ATTIC SPACE (WITH INSULATION ON ROOF), CRAWL SPACE, GARAGE, MECHANICAL / ELECTRICAL ROOM, NON PLENUM RETURN CEILING SPACE.
- CONDITIONED SPACE: A SPACE THAT HAS A TEMPERATURE DIFFERENTIAL BETWEEN THE AIR IN DUCT AND THE SURROUNDING LESS THAN 15°. EXAMPLES INCLUDE: ABOVE CEILING RETURN PLENUM SPACE, HEATED AND COOLED SPACE.
- UNCONDITIONED SPACE: A SPACE WHOSE TEMPERATURE IS THE SAME AS OUTDOORS OR WORSE (FURTHER FROM ROOM SET POINT) OR IS THE OUTDOORS. EXAMPLES INCLUDING: ATTIC WITH INSULATION AT CEILING, DUCT CHASES.
- EXTERIOR (OUTSIDE): LOCATED OUTSIDE OF THE BUILDING ENVELOPE. EXPOSED TO THE WEATHER.

DUCT LOCATION DEFINITION

- CONCEALED: ANY NON VISIBLE DUCT. EXAMPLES INCLUDE: MECHANICAL ROOMS, JANITORS ROOMS, ATTICS AND CRAWL SPACES.
- EXPOSED: ANY VISIBLE DUCT IN ANY PUBLIC OR OCCUPIABLE SPACE. EXAMPLES INCLUDE: STORAGE ROOMS, CLOSETS.

DUCT MATERIAL AND INSULATION SCHEDULE NOTES

1. ALL DUCTWORK SHALL BE CONSTRUCTED, REINFORCED AND SUPPORTED ACCORDING TO CURRENT MECHANICAL CODE, SMACNA STANDARDS, AND PER REQUIREMENTS OF CURRENT EDITION OF INTERNATIONAL ENERGY CODES. DUCTS SHALL BE CONSTRUCTED BASED ON THE TOTAL FAN PRESSURE THE DUCTS ARE CONNECTED TO (A MINIMUM OF 2") AND BE TAKEN AS POSITIVE ON THE FAN DISCHARGE SIDE AND NEGATIVE ON THE FAN SUCTION SIDE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE FAN PRESSURES BEFORE BIDDING AND CONSTRUCTION. SINGLE WALL DUCT SHALL BE SEALED WITH EITHER FOIL TAPE OR DUCT SEAL COMPOUND ON ALL JOINTS INCLUDING LONG TRANSVERSE JOINTS. FOR LOW PRESSURE (< 2" W.C.) NON SPIRAL DUCT, ADJUSTABLE 1xRADIUS ELBOWS AND SNAPLOCK PIPE ARE ACCEPTABLE. FOR DUCT MATE/TDC CONNECTIONS FOAM TAPE, PLASTIC CLEATS ARE NOT ACCEPTABLE, BUTYL TAPE, METAL CLEATS AND NUT & BOLTS MUST BE USED.
2. INSULATION SHALL HAVE A FHC OF 25/50 AND BE CLASSIFIED AS MEETING THE REQUIREMENTS OF LIMITED COMBUSTIBILITY.
3. DUCT WRAP INSULATION: INSULATION SHALL COMPLY WITH ASTM C 553. TAPE AND SEAL INSULATION ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. EVERY JOINT SHALL BE COMPLETELY TAPPED WITH FACED TAPE (MEETING UL181 STANDARD) TO MATCH INSULATION AND COMPLETELY SEAL INSULATION PER MANUFACTURER'S RECOMMENDATIONS.
4. DUCT LINER INSULATION: INSULATION SHALL COMPLY WITH ASTM C 1071. PROVIDE MANUFACTURER'S SEALANT FOR COATING OF ALL EXPOSED EDGES, CONNECTIONS, OR MINOR SURFACE DAMAGE. WELD PINS OF SUFFICIENT LENGTH AND GLUE OR STAPLES WITH SHEET METAL DISCS SHALL BE USED TO FASTEN LINER TO DUCT. ALL BUTT EDGES SHALL BE COATED WITH ADHESIVE AND PRESSED TOGETHER. DUCT LINER SHALL HAVE PERMACOTE ANTI FUNGI AND BACTERIA GROWTH AGENT APPLIED TO THE LINER. ALL ROUND RETURN DUCT MUST BE WRAPPED WITH DUCT WRAP INSULATION OF AN EQUAL INSTALLED "R" VALUE SCHEDULED LINER.
5. SLOPE DUCT TO THE EXTERIOR AT 1/4" OF FALL PER FOOT.
6. VENTING SHALL BE POSITIVE PRESSURE WITH 1" AIR GAP. COORDINATE WITH MANUFACTURER FOR EXACT REQUIREMENTS.

SEQUENCE OF OPERATION (SEE SCHEMATIC ON SHEET M3.2)

SEQUENCE OF OPERATION
BUILDING 1

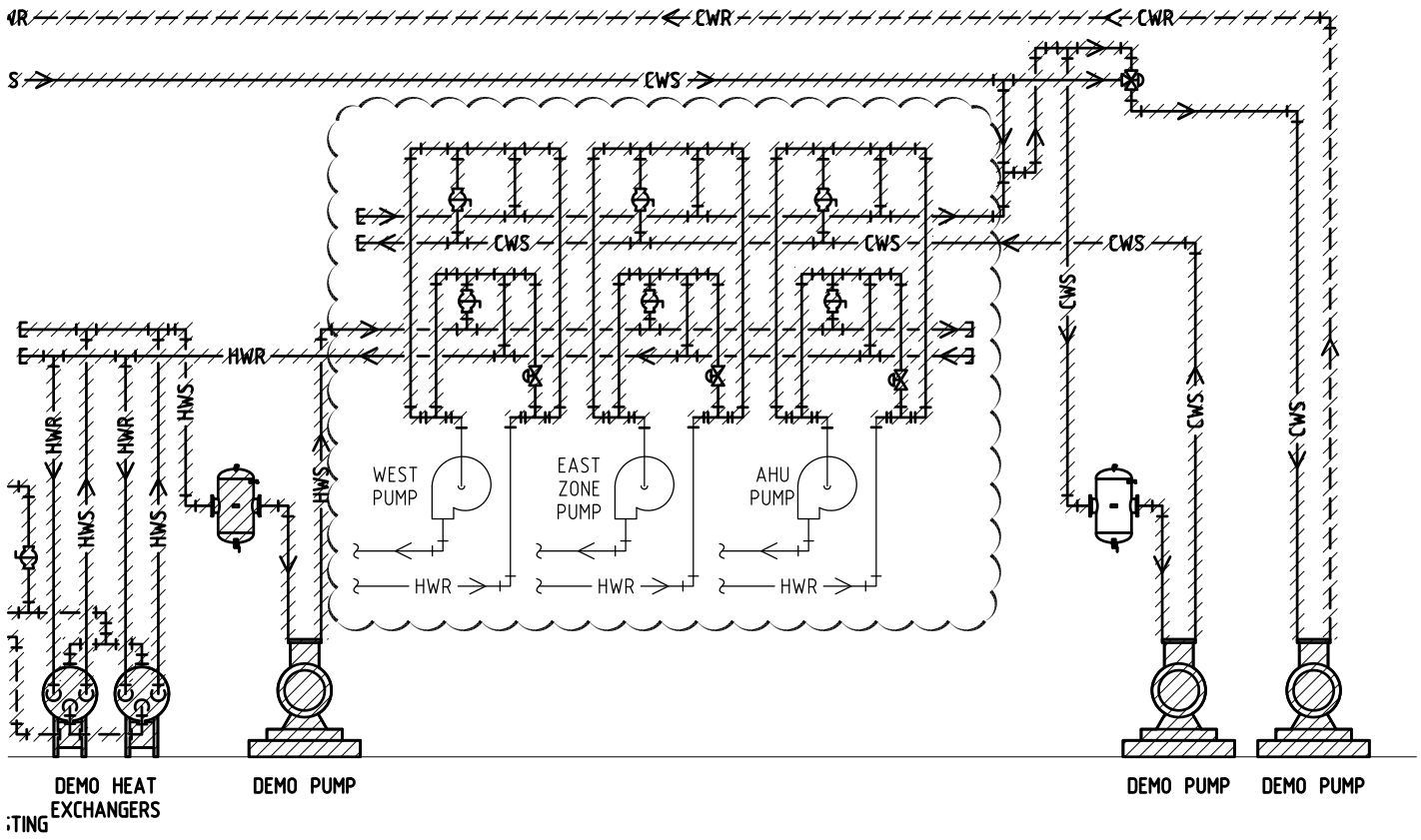
Alarms
- Copy first note from chilled water
- Alarms shall include but not limited to
  - High/low return water temperature
  - High/low space temperatures
  - High/Low MAU discharge supply temp

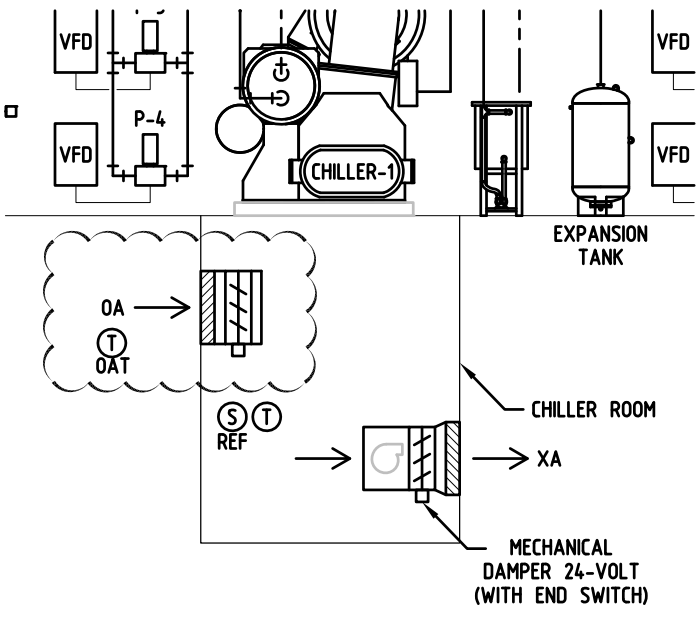
General
Copy from chilled water

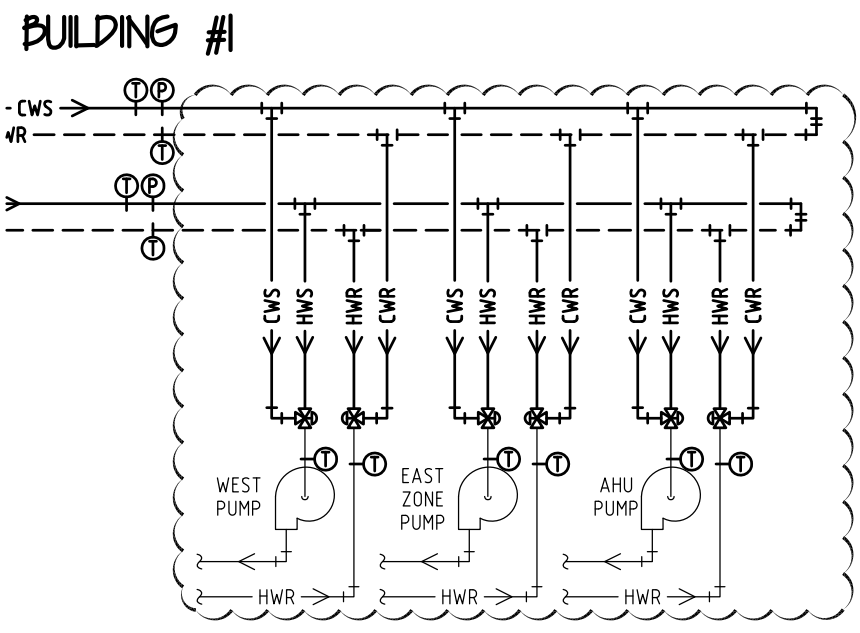
3-way Control Valves
- Hard wired temperature sensors shall be installed on each floor on both the west and east side of the building, the exact location shall be coordinated with the owner/engineer prior to installation.
- The 3-way valves for the East and West zone pumps shall be open to allow hot water to flow if the average or lowest reading is at 70F (adj) or below, if the hot water heating system is off for the summer, the valves shall not open to hot water even when below this set point.
- The 3-way valves for the East and West zone pumps shall be open to allow chilled water to flow if the average or highest reading is at 72F (adj) or above, if the chilled water system is off for the winter, the valves shall not open to chilled water even when above this set point.
- The 3-way valves for the MAU pump shall be open to allow hot water to flow if the OAT reading is at 70F (adj) or below, if the hot water heating system is off for the summer, the valves shall not open to hot water even when below this set point.
- The 3-way valves for the MAU zone pump shall be open to allow chilled water to flow if OAT reading is at 72F (adj) or above, if the chilled water system is off for the winter, the valves shall not open to chilled water even when above this set point.
- There shall be manual override buttons on the control screen to force the 3-way valves to be open for hot or chilled water despite what the temperature sensors are calling for. This shall be overridden for an adjustable time and then default back to the normal sequence.
- There shall be a temperature sensor in the supply and return lines adjacent to each 3-way valves for monitoring purposes.

3rd Floor MAU
- New 2ð control valve shall modulate to maintain supply air discharge set point (provide sensor) at 68-72F (adj) with no conditioning done in-between this set points.
- New fresh air damper actuator shall open during occupied hours and close during unoccupied hours.
- If supply air temperature is 38F or less, the unit shall shut down, OA damper close and an alarm be sent.

1st floor east restroom FCU
- New ½ð control valve shall modulate to maintain space set point (provide sensor).







D | 4
M4.0

CONTROLS SCHEMATIC

SCALE: NONE

SEQUENCE OF OPERATION (AS PART OF METERING ALTERNATE) – ALL METERS.(GAS, BTU, ELETRICAL) TO BE PROVIDED UNDER ALTERNATE

- ALL METERS SHALL REPORT MONTHLY CONSUMPTION AND OTHER INFORMATIONAL READINGS VIA EMAIL TO ALL STATE PERSONNEL THAT REQUIRE THE INFORMATION.
- THE METER SHALL ALL BE ABLE TO BE ACCESSED FROM THE CAMPUS BUILDING CONTROLS.
- ALL METERS SHALL BE CLEARLY LABELED AND IN THE CONTROLS SYSTEM THE METER LOCATION/# AND WHAT IT SERVES SHALL BE CLEARLY IDENTIFIED.

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ADVANCED ENGINEERING SYSTEMS

PROJECT: CRAFT STATE OFFICE BLDG. MECHANICAL UPGRADES

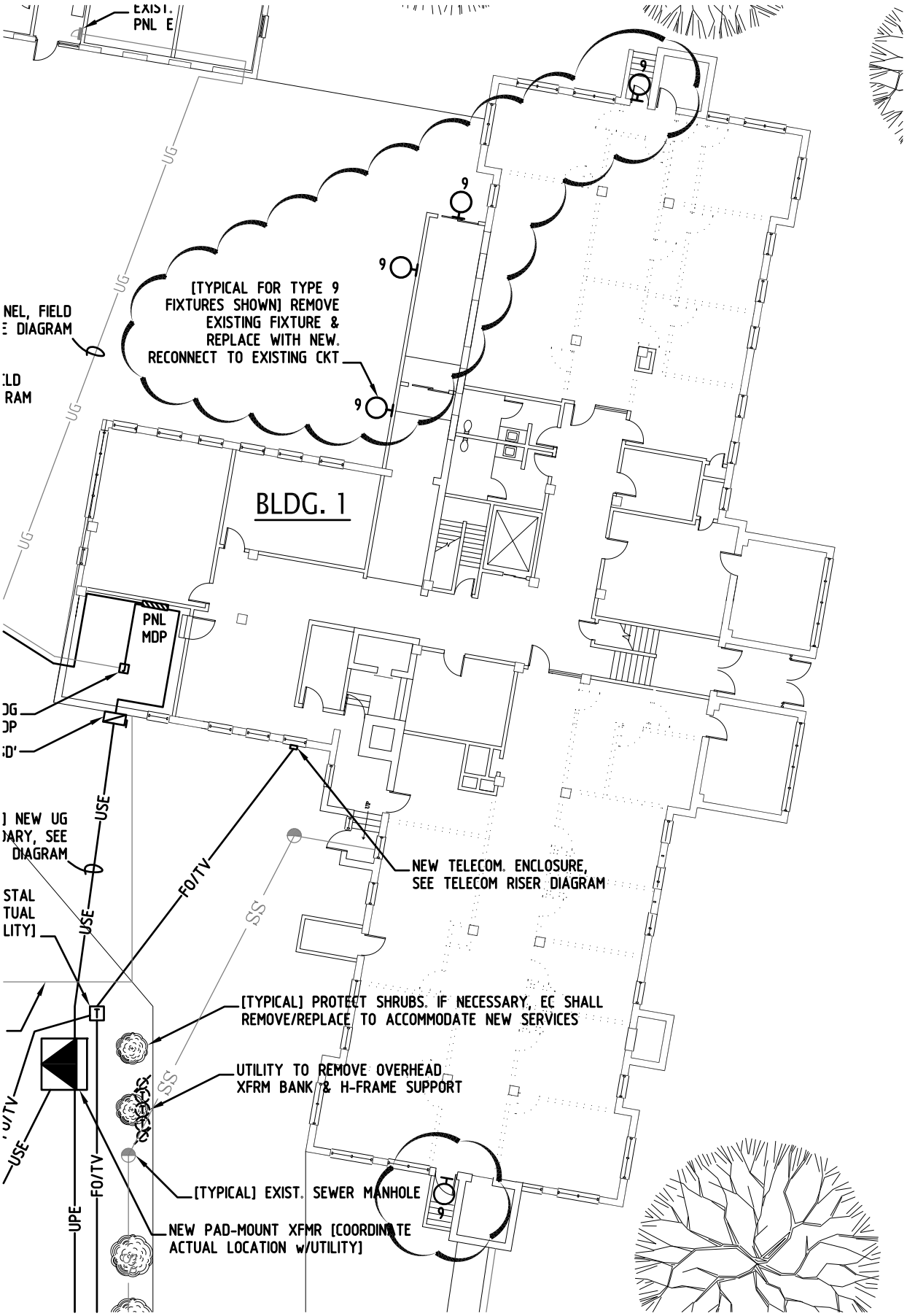
PROJECT #: 11115

DATE: 11-13-2012

ADDENDUM: 1

SHEET: M3.2

NUMBER: 1of 1



ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0"

AES ADVANCED ENGINEERING SYSTEMS

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PROJECT: Craft State Office Building
Mechanical Upgrades & Electrical Service Replacement

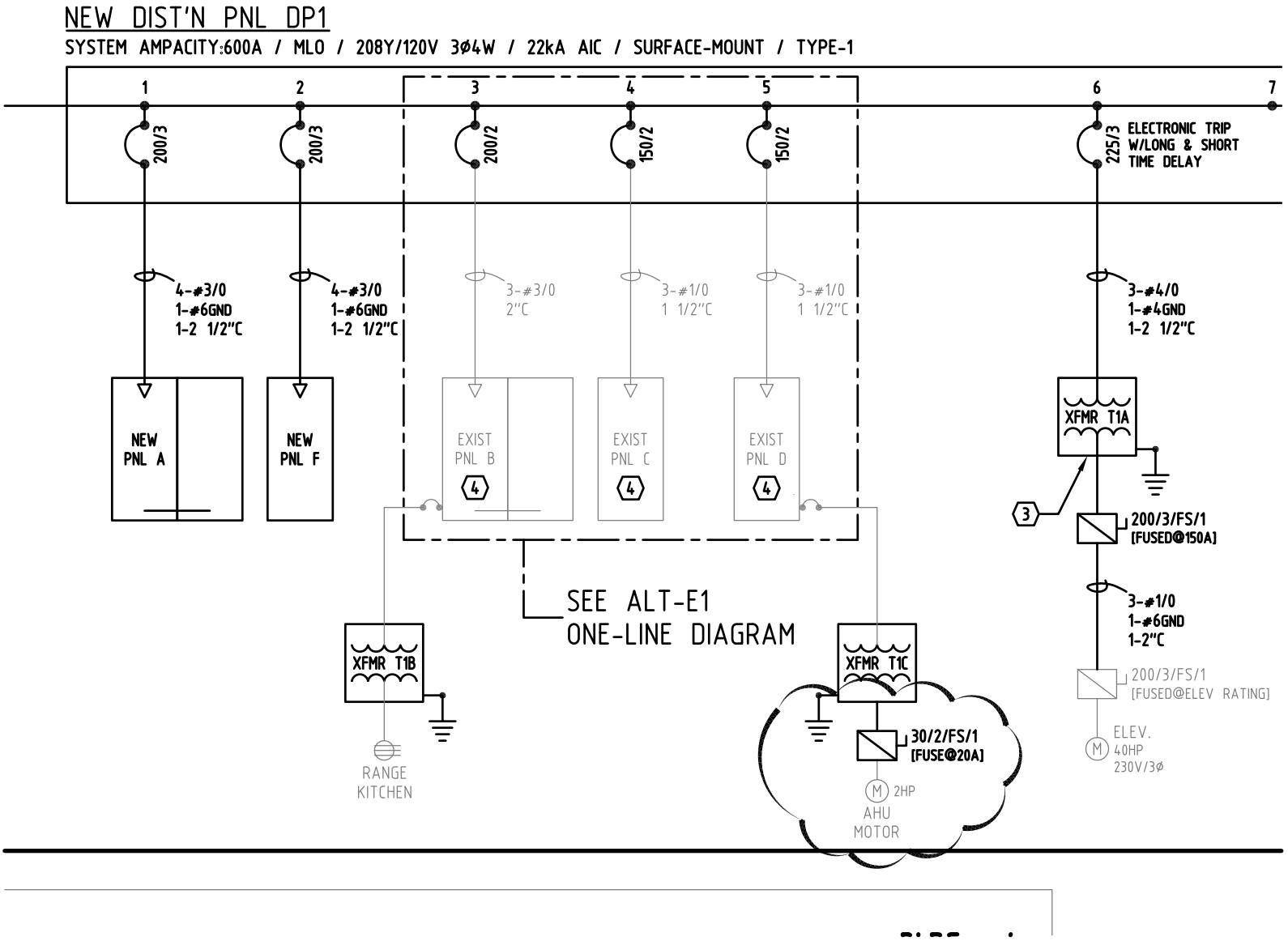
PROJECT #: 2011-116

DESCRIPTION: Addendum #1

SHEET: E0.0S

AD01.E00S-1

BLDG. #1



ELECTRICAL ONE-LINE DIAGRAM

NOT TO SCALE

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AES ADVANCED ENGINEERING SYSTEMS

PROJECT: Craft State Office Building Mechanical Upgrades & Electrical Service Replacement

PROJECT #: 2011-116

DESCRIPTION: Addendum #1

SHEET: E3.2S

AD01.E32S-1