



ADDENDUM NO. 1
Penguin Life Support System Upgrade
REQUEST FOR BIDS #11-1717
August 11, 2010

Acknowledge receipt of this addendum by inserting its number in the Proposal Form. The contents of this addendum are to be covered in the bids and in closing the Contract will become a part thereof. Changes noted herein affect only the specific words in paragraphs mentioned and the balance of the Drawings and/or Specifications remains in full force.

THE FOLLOWING ARE CHANGES TO THE CONTRACT DOCUMENTS

PROJECT MANUAL:

I. SPECIFICATION SECTIONS ADDED:

A. SECTION 262913 - ENCLOSED CONTROLLERS

II. MODIFICATIONS TO SPECIFICATIONS:

A. SECTION 001166 - INVITATION BIDS

1. Page 1; Title, REVISE:

“INVITATION TO BID”

2. Page 1; Summary of Work, REVISE:

“Construction mobilization and permits required for this Work must be available before starting.”

3. Page 2; Contractor Qualifications, REPLACE:

Preregistration for the mandatory Pre-Bid Conference is requested, but is not mandatory. Registration through Ford Graphics is requested by 5:00 PM, Tuesday, August 17, 2010 (in order to prepare zoo admission tickets).

B. SECTION 012300 - ALTERNATES

1. Page 2; Paragraph 3.1.C, REPLACE:

“Add Alternate 3: Air Quality in Visitor Viewing Area:

- a. Replace 2 existing furnace units and associated duct work in visitor viewing area.
- b. Seal off wall penetrations into exhibit area, and seal off recessed light soffits above viewing windows with glass per Plans and Specifications.”

The Owner reserves the right to accept one or both elements of Add Alternate 3. The bid form is revised to reflect the separations of costs. A revised bid form is attached to this Addendum.

2. Page 2; Paragraph 3.1.G, REPLACE:

“Add Alternate 7: Rubberized Surfacing on Exhibit Rockwork:

- a. Remove existing rubberized coating on artificial rockwork, prepare surface and install Resilient Flooring as described in Section 096600 where indicated on the Plans and in coordination with the Owner.
- b. Prepare surface and install Resilient Flooring as described in Specification Section 096600, in the Keeper Kitchen.”

The owner reserves the right to accept one of both elements of Add Alternate 7. The bid form is revised to reflect the addition of the Keeper Kitchen flooring. A revised bid form is attached to this Addendum.

C. SECTION 004100 - BID FORMS

1. Page 3 - Schedule of Bid Prices; REPLACE:

Revised bid form is attached to this Addendum.

D. SECTION 220500 – PLUMBING MATERIALS & METHODS

1. Article 2.5 C 3: ADD:

- “3. PVC Valves ½” to 4”: True union style ball valve.
 - a. Pressure rated for at least 150 psi at 70° F water.
 - b. Locking handle.
 - c. End connection as required for application.
 - d. PTFE/EPDM seats and seal.
 - e. ASAHI/America, Spears or approved.”

E. SECTION 221000 – PLUMBING PIPING & PUMPS

1. Article 2.1 D: ADD:

“D. Plastic Pipe:

1. Application: Where approved by Code.
 - a. Domestic water
 - b. Non-potable water
2. Pipe:
 - a. Polyvinyl Chloride Pipe for Water Service: SDR-PR pipe, ASTM D2241; Schedule 80 only, ASTM D1785.
3. Fittings: Provide fittings of the type indicated, matching piping manufacture. Where not otherwise indicated, provide fittings produced and recommended by the piping manufacturer for the service indicated.”

2. Article 2.3 K (Backwater Valve): Make addition as shown in bold.

“**K. Backwater Valve:** For exterior below grade installations only. **PVC body with swing check valve in removable cassette. Provide with proper extension to outdoor access cover. Adapt-A-Valve or equal.**”

3. Article 2.3 L (Building Shut Off Valve Box): REPLACE:

“L. Backwater Valve: Cast iron body with bronze swing check. Provide with proper extension to set floor plate flush with finished floor. Smith 70R series or equivalent Josam, Wade,

Watts or Zurn.”

4. Article 2.3 M: ADD:

“M. Backwater and Gate: Cast iron body with brass wedge gate, brass swing check, and separate handle. Provide with proper extension to set floor plate flush with finished floor. Smith 7150 or equivalent Josam, Wade, Watts or Zurn.”

5. Article 2.3 N: ADD:

“N. Compound Meters:

1. Compound meters shall consist of a combination of an AWWA Class II turbine meter for measuring low rates of flow enclosed in a single maincase. An automatic valve shall direct flows through the disc meter at low flow rates and through the turbine meter at high flow rates. At high flow rates, the automatic valve shall also serve to restrict the flow through the disc meter to minimize wear.
2. Operating Characteristics: Register flows as low as 1/8 GPM at as high as 450 GPM. Maximum pressure loss of 8 psi at 350 GPM.
3. Case and Cover: The maincase and cover shall be cast from an ANSI/NSF 61 certified no lead high copper alloy containing a minimum of 85% copper. The size, model, and arrows indicating direction of flow shall be cast in raised characters on the maincase and cover. The covers all contain a stainless steel calibration vane for the purpose of calibrating the turbine measuring element while the meter is in-line and under pressure. A test plug shall be located in the maincase or the cover for the purpose of field testing of the meter.
4. External Bolts: Casing bolts shall be made of AISI Type 316 stainless steel.
5. Connections: Maincase shall be round flanged per Table 4, AWWA C702.
6. Registers: Separate magnetic-drive registers shall record the flow of the turbine and disc meters and their total will be the registration of the compound meter. The registers shall be permanently roll-sealed, straight reading indicating in cubic feet, gallons, or cubic meters. Registers shall include a center-sweep test hand, a low flow indicator, and a glass lens. The registers shall be serviceable without interruption of the meter's operation.
7. Register Boxes: Register boxes and covers shall be of bronze composition. The name of the manufacturer shall be clearly identifiable and located on the register box covers.
8. Register Box Sealing: Register shall be affixed to the cover by means of a plastic tamperproof seal pin that must be destroyed in order to remove the register.
9. Meter Serial Number: The meter serial number shall be imprinted on the meter flange or cover as well as the register box covers.
10. Measuring Chambers:
 - a. The turbine measuring chamber shall be a self-contained unit, attached to the cover for easy removal. The turbine shaft shall be tungsten carbide with tungsten carbide inserts and shall rotate in removable graphite bushings. Thrust bearings shall be tungsten carbide.
 - b. The nutating disc chamber shall be a self-contained unit mounted on the cover and easily removable from the cover. It shall conform to AWWA Standard C700 with 5/8" size. The inlet to the disc chamber shall be a 'single' opening of adequate size not to be susceptible to plugging and water restriction by water-borne debris.
11. Unitized Measuring Element: A UME is a complete assembly, factory calibrated to AWWA standards, that includes the cover, registers, and both a turbine measuring element and a nutating disc chamber assembly. It shall be easily field removable from the meter body without the requirement of unbolting flanges.
12. Intermediate Gear Train – Turbine Section: The intermediate gear train shall be

directly coupled from the turbine rotor and magnetically coupled to the register through the meter cover. The gear train shall be housed in the turbine measuring chamber. All moving parts of the gear train shall be made of a self-lubricating polymer or stainless steel for operation in water.

13. Automatic Valve:

- a. The automatic valve shall be of the spring-loaded, poppet type. All valve parts shall be made of no-lead high copper alloy containing a minimum of 85% copper, stainless steel, or a suitable polymer with a replaceable semi-hard EPDM rubber seat.
- b. Only the cover must be removed to gain access to the valve for inspection or service.
- c. The disc meter shall include a self-actuated valve that directs flow through the disc meter at low flow rates and through the turbine meter at high flow rates. At high flow rates, the self-actuated throttle valve shall restrict the flow through the disc meter to minimize wear.

14. Strainer: A strainer shall be provided for the disc meter. It shall be easily removable and have an effective straining area of double the disc meter inlet.

15. Registration Accuracy: Registration accuracy over the normal operating range shall be 98.5% to 101.5%. Registration at the crossover shall not be less than 95% with direct reading registers. Registration at the crossover shall not be less than 90% with absolute encoder or generator remote registers. Registration at the extended low flow rate shall not be less than 95%.

16. Manufacturer: Neptune, Hersey or approved equal.”

6. Article 2.3 O: ADD:

“O. Flow Control Valve: Cast iron body with 5” inlet and outlet and air intake opening for connection to vent. J.R. Smith or approved equal.”

7. Article 2.3 P: ADD:

“P. Standard Meters:

1. Manufactured and tested to meet or exceed all applicable parts of ANSI/AWWA C700 Standard. EnviroBrass II options meet requirements of NSF Standard 61.
2. Operating flow range of 80 GPM with pressure loss of 2 psi or less. Maximum working pressure of 150 PSI.
3. Temperature range of 33° F to 100° F water temperature.
4. Nutating disc measuring element. Disc nutations (per gallon) = 3.92.
5. Register Type: Straight reading, permanently sealed, magnetic drive with low flow indicator.
6. Materials: Maincase – bronze UNSC84400, measuring chamber – thermoplastic, magnets – ceramic, strainer – thermoplastic, casing bolts – stainless steel ANSI B18, register box and lid – thermoplastic.
7. Neptune, Hersey or Approved.”

F. SECTION 230500 – HVAC MATERIALS & METHODS

1. Article 1.2 F: DELETE:

Entire paragraph (commissioning shall be performed on this project...).

G. SECTION 230923 – DIRECT DIGITAL CONTROLS

1. Article 1.2 A: REVISE as shown with bold/strikethrough.

“A. Building Automation System (BAS) system shall utilize DDC to Integrate ozone equipment alarms and lighting control into the ~~existing~~ central control network.”

2. Article 1.2 E: ADD:

“E. Provide controls as required by 225500 specification. These controls need not connect to BAS system.”
3. Article 1.3 D 3: REVISE:

“School District” should read “Zoo”.
4. Article 1.4 B: ADD:

“Delta” as an approved manufacturer and add sentence, “Control devices to carry a current BACnet testing lab (BTL) listing.”
5. Article 1.4 G: REVISE:

“G. System shall be web based and web accessible. System shall operate from owner’s existing remote workstation ~~tie to existing Zoo Delta BACnet system. See 1.8 L for other requirements.~~”
6. Article 1.6 B 5: ADD:

“5. Control of and Integration to the Life Support Systems: Review the entire specification section 225500. Provide devices, installation, supervision, coordination, documentation, training and closeout per specification section.”
7. Article 1.8 A: Make addition to paragraph as shown in bold.

“A. Shop drawing submittals are required for the following, in accordance with Section 23 05 00. The Contractor shall not start the project until the Shop Drawings have been submitted and approved. **Shop drawings for life support system shall be per 225500-2.9 B and submitted separately from those connected to the central BAS system.** Shop drawings shall include:”
8. Article 1.8 L: DELETE:

Entire paragraph (Verification of Interoperability: Coordinate...).
9. Article 3.1 A 1: REVISE:

“School District” should read “Zoo”.
10. Article 2.1 C: ADD:

“C. See 225500 for conduit, wire and devices associated with life support system.”
11. Article 5.5 B: REVISE:

“Date trended” should read “Data trended”.
12. Article 5.5 C: REVISE as shown with bold/strikethrough.

“C. Establish data trended (every 5 ~~45~~ minutes) of the following points after system acceptance:

 1. **Ozone level** ~~Outside Air Temperature~~
 2. **Any ozone alarms** ~~Outside Air Enthalpy~~
 3. ~~Occupancy schedule~~

- 4. ~~For each air handler~~
 - a) ~~On/Off status~~
 - b) ~~Damper position (as determined by BAS)~~
 - c) ~~Damper Output Signal~~
 - d) ~~Damper position (as determined from actuator output)~~
 - e) ~~Cooling Setpoint~~
 - f) ~~Heating Setpoint~~
 - g) ~~Discharge Air Temperature for each zone~~
 - h) ~~Discharge Air Temperature setpoint for each zone~~
 - i) ~~Mixed Air Temperature~~
 - j) ~~Mixed Air Temperature setpoint~~
 - k) ~~Return Air Temperature~~
 - l) ~~Return Air Enthalpy~~
 - m) ~~Heater status~~
 - n) ~~Heater stages~~
 - o) ~~DX status~~
 - p) ~~DX stages~~
- 5. ~~Space Temperatures and temperature setpoints~~
- 6. ~~Percent heating and Cooling Load for each zone~~

13. Article 5.11 G: ADD:

“G. See 225500 for labeling of life support system components.”

14. Article 6.1 A: ADD:

Sentence to item “Connect to ozone unit dry contact.”

15. Article 6.1 B: ADD:

Sentence to item “Connect to ozone generator analog output signal (may be 4-20 mA or 0-10V).”

16. Article 7.2 E: ADD:

“E. See 225500 for commissioning and testing of life support system.”

17. Article 7.5 D 5: REVISE:

“School District” should read “Zoo”.

18. Article 7.5 E: REVISE:

“School District staff” should read “Zoo staff”.

19. Article 7.5 I: ADD:

“I. See 225500 for training associated with life support systems.”

H. SECTION 236000 – CENTRAL COOLING EQUIPMENT

1. Article 2.1 A 1.: ADD new items noted in bold:

- 1. Complete packaged, roof-mounted, air-cooled chiller with accessible digital (variable speed) scroll type compressor **or tandem scroll compressors with hot gas by-pass on lead compressor** with three-phase motor in sound attenuating enclosure with condenser fan discharge noise alternators, air cooled condenser, operation control panel and full R-410A **or 407C** refrigerant charge.

2. Article 2.1 A 5: REVISE:
 5. ~~Provide with~~ York, Carrier, Trane, McQuay, Aeon or Approved. Verify chiller and maintenance and operating clearances are per drawings prior to submittal.

3. Article 2.1: ADD:
 - “6. Provide with factory BACnet integration communication card with RS 485 communication port. Integration device shall allow BAS connection and sharing of diagnostics, control, and alarm function in the future. Current control of chiller required is based on modulating signal from field installed temperature sensor. Operate based on Life Support System pool temperature sensor. Modulate based on maintaining pool return temperature @ 55 degrees F.”

4. Article 2.2 A: ADD new item to beginning of section as shown in bold:

“A . **Double Wall** Plate and frame style rated for flow rate and capacity as listed on drawings.”

5. Article 2.2 F: REVISE sentence as follows. Change in bold:

“F. Bell and Gossett **P14-W** or equal Taco, or approved.”

6. Article 2.3: ADD new section 2.3 as follows:

“2.3 TEMPERATURE SENSOR

 - A. Remote sensor to modulate chiller. 4-20mA output signal with stainless steel well. KELE or Approved.”

7. Article 2.4: ADD new section 2.4 as follows:

“2.4 THERMAL STORAGE TANK

 - A. Steel construction rated for 125 PSI test pressure. Provide with integral baffle. Include inlet and outlet connection for full size pipe connections and base to anchor to floor. Insulate with 1-1/2” fiberglass insulation with service jacket. Tank may be field insulated.”

8. Article 3.3 B: ADD:

“B. Connect remote sensor to chiller controller. Program chiller to operate from remote device.”

DRAWINGS:

I. NEW DRAWINGS ISSUED:

NONE

II. REVISIONS TO DRAWINGS:

A. DRAWING RA01 NAME: G1.6 ADD ALTERNATE LOCATE PLAN, REVISION MADE:

1. ADD hatch to indicate rubberized flooring scope to keeper kitchen area.
2. ADD portion of Note “Add Alternate 7” to read (ADD IS SHOWN IN **BOLD TYPE**):

“RUBBERIZED SURFACING ON EXHIBIT ROCKWORK-
RUBBERIZED SURFACING ON KEEPER KITCHEN FLOOR-

REFER TO SHEETS: R1.0, **A2.1**
REFER TO SPEC SECTION: 09-6600"

- B. DRAWING RA02 NAME: A2.1 ARCHITECTURAL PLANS, REVISION MADE:
1. 2/A2.1 - ADD detail bubble and tag with note to read:

"ADD ALTERNATE 7
INSTALL RUBBERIZED FLOOR SURFACING ON KEEPER KITCHEN FLOOR - REFER TO
SPEC SECTION 096600"
- C. DRAWING RM.01 NAME: 2/M2.1 Mechanical - Main Floor Plan, REVISION MADE:
1. As shown on drawing.
- D. DRAWING RM.02 NAME: 6/M2.1 Mechanical - Main Floor Plan, REVISION MADE:
1. As shown on drawing.
- E. DRAWING RM.03 NAME: M6.0 Mechanical Legend, Schedule & Details, REVISION MADE:
1. As shown to mechanical schedules on drawing.
- F. DRAWING RM.04 NAME: M6.0 Mechanical Legend, Schedule & Details, REVISION MADE:
1. As shown on drawing.
- G. DRAWING RM.05 NAME: 5/M6.0 Mechanical Legend, Schedules & Details, REVISION MADE:
1. As shown on drawing.
- H. DRAWING P2.0 NAME: 1/P2.0 Demo-Plumbing Foundation Plan, REVISION MADE:
1. REVISE Keyed Note 2 to read:
"REBUILD (E) CHECK VALVE LOCATED IN SUB-SOIL SUMP."
- I. DRAWING RP.01 NAME: 1/P2.1 Plumbing Foundation Level Plan, REVISION MADE:
1. As shown on drawing.
- J. DRAWING RP.02 NAME: 2/P2.1 Basement Level Plan, REVISION MADE:
1. As shown on drawing.
- K. DRAWING RP.03 NAME: 3/P2.1 Plumbing Level Plan, REVISION MADE:
1. As shown on drawing.
- L. DRAWING RP.04 NAME: 1/P6.0 Plumbing Foundation Level Plan, REVISION MADE:
1. ADD Mechanical Room Piping Schematic 1/P6.0 as shown on drawing.
- M. DRAWING P6.0 NAME: 1/P2.1 Plumbing Legend, Schedule & Details, REVISION MADE:
1. REVISE Plumbing Connection Schedule Remarks for Floor Sink 'FS-1' to read: "12x12
Stainless Steel J.R.Smith 3002 or equal - no grate."

SUBSTITUTION REQUESTS:

I. THE FOLLOWING MANUFACTURERS ARE ACCEPTABLE:

A. SECTION 265000 - LIGHTING

- | | |
|-------------|--|
| 1. Type 'A' | Lightolier – ST4WA232UNVP2 |
| 2. Type 'B' | L.C. Doane Company – 400-13D-1-C-120-EL-P-AP-W |
| 3. Type 'C' | Lighting By Project – AS03 BZ K5 F13 E |
| 4. Type 'D' | ExcelLine – UF2A070PMA-8 |
| 5. Type 'E' | ExcelLine – 613050PMAL-8 |

CONTRACTOR QUESTIONS:

1. For bonding purposes, what is the engineer's estimate for the project?

Answer: The owner has opted not to share estimates for this project. The scope of the work is well enough defined for contractors to determine their own bonding needs.

ATTACHED DOCUMENTS

- Section 26 29 13 Enclosed Controllers
- Revised Drawing RA 01
- Revised Drawing RA 02
- Revised Drawing RM 01
- Revised Drawing RM 02
- Revised Drawing RM 03
- Revised Drawing RM 04
- Revised Drawing RM 05
- Revised Drawing RP 01
- Revised Drawing RP 02
- Revised Drawing RP 03
- Revised Drawing RP 04
- Revised Bid Form

END OF ADDENDUM NO. 1

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Provide motor starters of the size and type as specified on the Drawings and in the Specifications.

1.2 SUBMITTAL AND RECORD DOCUMENTATION

- A. Submit product data for products specified in this Section. Include dimensions, ratings, and data on features and components.

PART 2 - PRODUCTS

2.1 STARTERS

A. Starter Units:

1. Starter units shall be combination starter/fusible disconnect switch, magnetic type. Motor starters shall be full voltage, across the line, single speed, sized for load controlled but not less than NEMA type 1.
2. Include on/off/auto switch, pilot lights, reset, trip-free relay on each phase, and devices for coordination with control system including 120 volt transformer.
3. Starters shall have thermal overload protection in each ungrounded phase leg. These protectors shall be of the inverse-time-limit type, sensitive to motor current, and properly sized to protect a "T" frame motor with a safe locked rotor time of 15 seconds. Overload relays shall be manual-reset type with externally operated reset button.
4. Provide with (1) normally open and (1) normally closed set of auxiliary contacts with separate poles.
5. Provide each starter with a separate NEMA 1 enclosure unless otherwise noted.
6. Starter unit to be provided with a red running pilot light with push to test.

B. Solid-state Type Reduced Voltage Starter Units:

1. Starters shall be suitable for use with standard NEMA design B, 3-phase induction motors, providing adjustable acceleration rate control using voltage or current amp.
2. Provide adjustable starting torque control with up to 500 percent current limitation for 20 seconds.
3. Provide surge suppresser in solid-state power circuits to provide 3-phase protection against damage from supply voltage surges 10 percent or more above nominal line voltage.
4. Provide snubbers to prevent malfunction due to system voltage transients.
5. Provide overload protection for NEMA Class 10 or better.

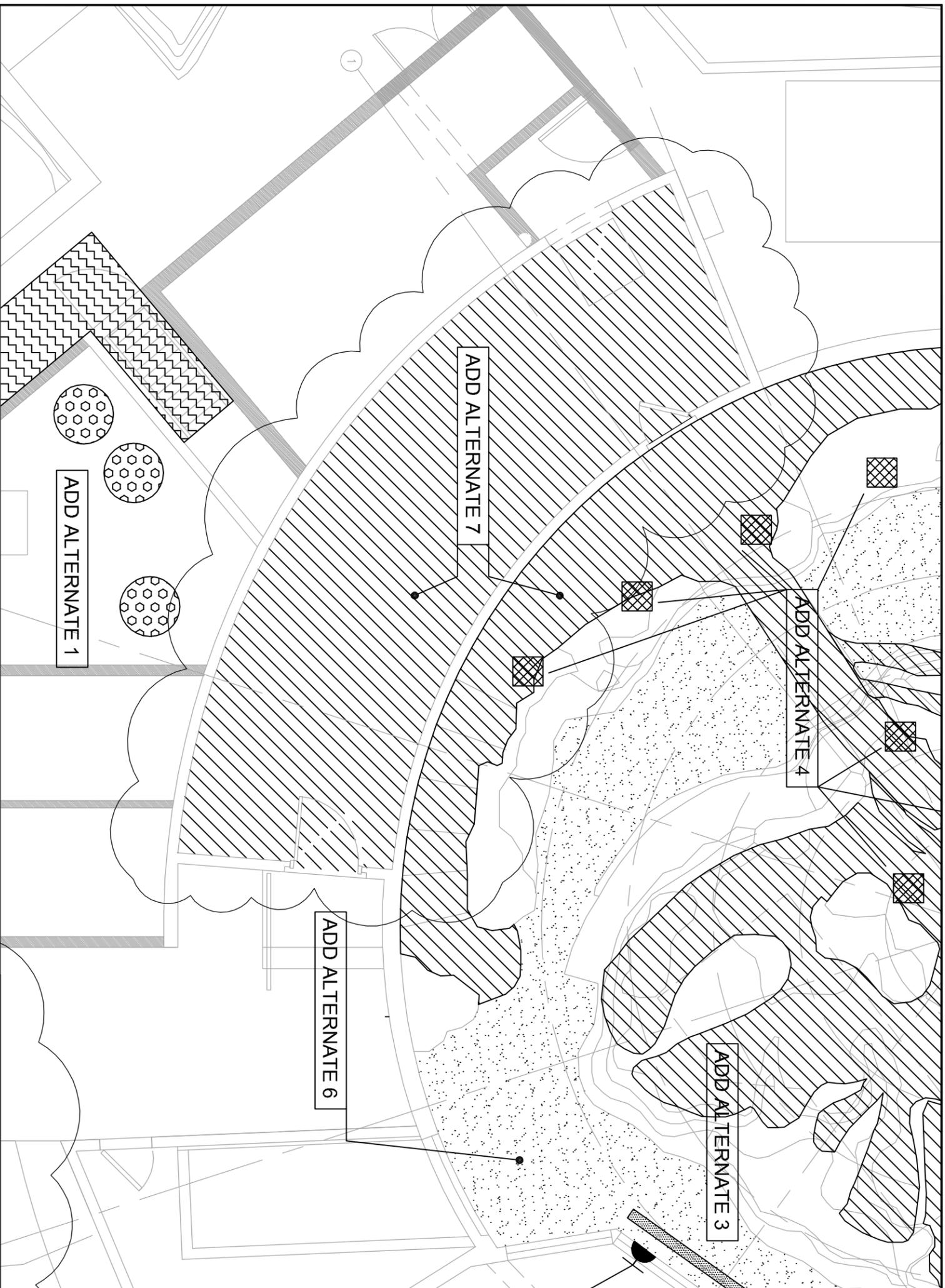
6. Provide lamps to indicate motor and control status including fault, supply voltage on, running, and completed start ramp.
 7. Provide potentiometers for setting ramp time during start, ramp time during stop, initial voltage, step-down voltage, current limit at start, and rated current of motor.
 8. Provide automatic voltage reduction controls to reduce voltage when motor is running at light load.
 9. The starter shall have dry contacts to signal controller failure and running motor.
 10. The starter shall be capable of accepting the following control inputs:
 - a. Start signal (Form C).
 11. Provide the starter with the following features:
 - a. NEMA 12 enclosure with manufacturer's standard interior and exterior color and finish compatible with NEMA rating.
 - b. Enclosure shall be front accessible only.
 - c. Control switches, indicating instruments, conductors, and protective overcurrent devices shall be manufacturer's standard.
 12. Provide auxiliary contacts, switches, relays, etc., as shown on drawings. Refer to Division 13 for additional requirements and coordination purposes.
 13. Manufacturers: The reduced voltage starters shall be Safronics or approved equal and shall be provided programmed to perform the required control functions.
- C. Manufacturers: Westinghouse, Square D, Siemens, Cutler-Hammer, GE, and Challenger.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install starters in accordance with manufacturer's recommendations and as shown on the Contract Drawings.
- B. Starters shall be securely anchored in position and properly labeled per Section 16195.
- C. Starters have been sized based on one manufacturer. Contractor shall verify actual size required for equipment supplied.

END OF SECTION



ADD ALTERNATE 7



RUBBERIZED SURFACING ON EXHIBIT ROCKWORK-
 RUBBERIZED SURFACING ON KEEPER KITCHEN FLOOR-
 REFER TO SHEETS: R1.0, A2.1
 REFER TO SPEC SECTION: 09-6600

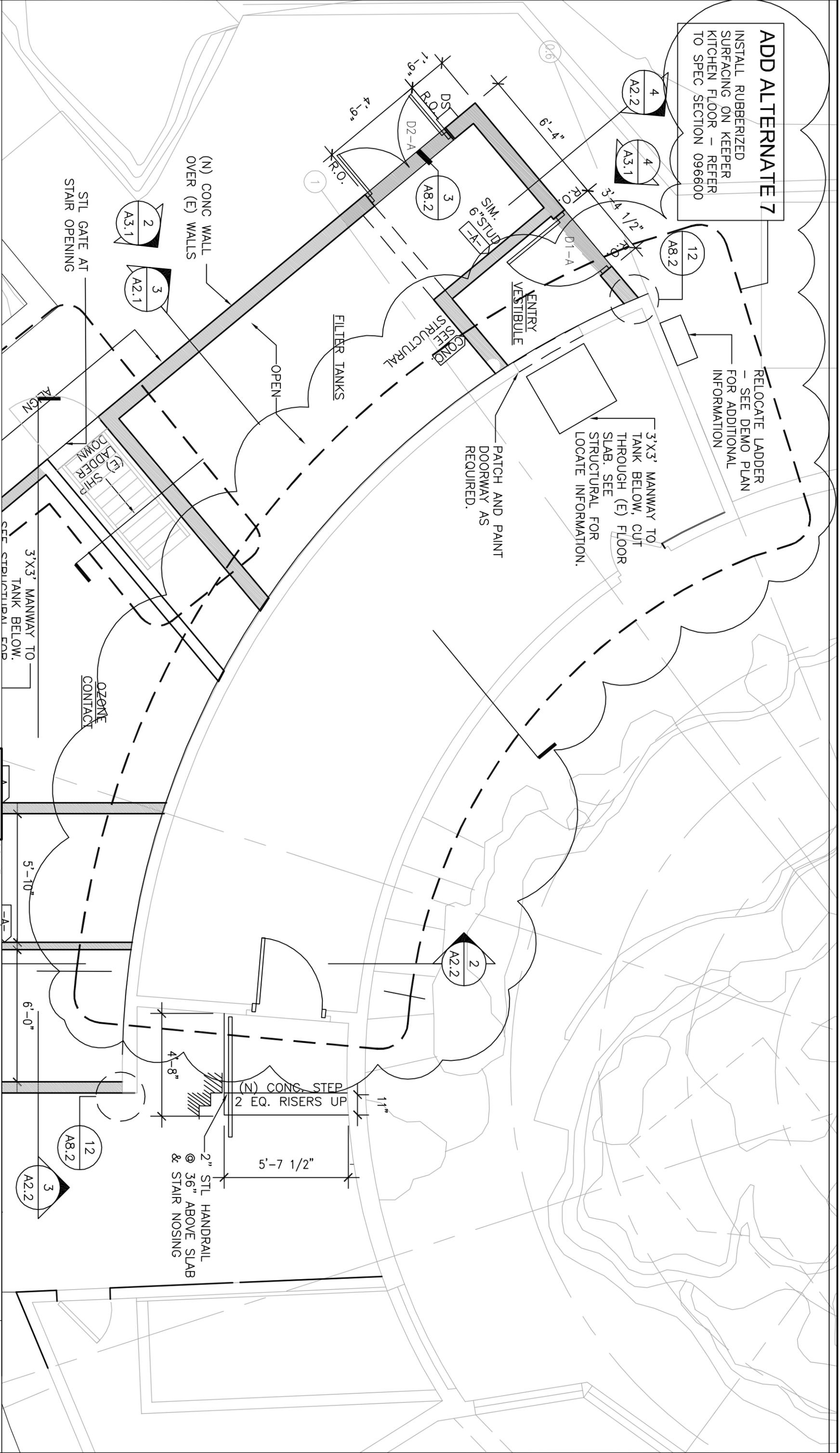
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	NTS	APPENDUM #1	RA01
JOB NO.:	PROJECT:	REFERENCE SHEET NO.:	
309265	PENGUIN LIFE SUPPORT SYSTEM UPGRADE	G1.6	
DATE:	OREGON ZOO		
08/10/10			

ADD ALTERNATE 7
INSTALL RUBBERIZED SURFACING ON KEEPER KITCHEN FLOOR - REFER TO SPEC SECTION 096600

RELOCATE LADDER - SEE DEMO PLAN FOR ADDITIONAL INFORMATION

3'X3' MANWAY TO TANK BELOW, CUT THROUGH (E) FLOOR SLAB. SEE STRUCTURAL FOR LOCATE INFORMATION.

PATCH AND PAINT DOORWAY AS REQUIRED.



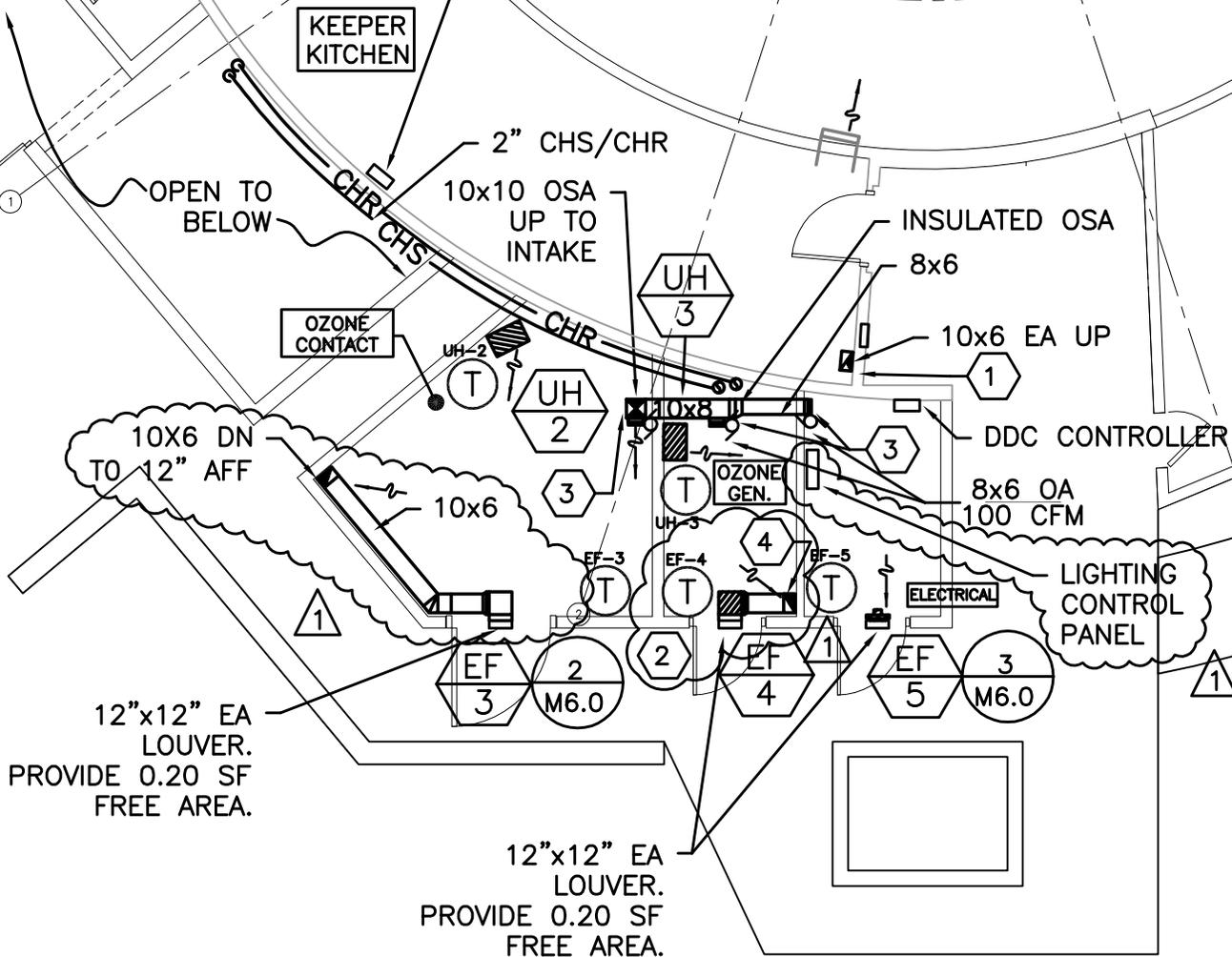
Kpftf
Consulting Engineers
111 S.W. Fifth Avenue
Portland, Oregon 97204
STRUCT. FAX (503) 227-7980
CIVIL FAX (503) 274-4891

SCALE: 1/4" = 1'-0"
JOB NO.: 309265
DATE: 08/10/10

TITLE: ADDENDUM #1
PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO

SHEET NO.: RA02
REFERENCE SHEET NO.: A2.1

FOR COMMUNICATIONS CONDUCTOR FIBER AS REQUIRED.



DDC CONTROL POINTS CONNECT TO CENTRAL SYSTEM

POINT DESCRIPTION	INPUT		OUTPUT		ALAI
	DIGITAL	ANALOG	DIGITAL	ANALOG	
OZONE LEVEL*		X			
OZONE HIGH LEVEL ALARM*	X				X
OZONE LOW LEVEL ALARM*	X				X

*CONNECT TO OZONE UNIT IN OZONE GENERATOR ROOM.

- 1) INTEGRATE LIGHTING CONTROL PANEL, SEE SPECS.
- 2) PROVIDE CONTROL OF DEVICES AND SYSTEMS PER SPEC SECTION 22 55 00.



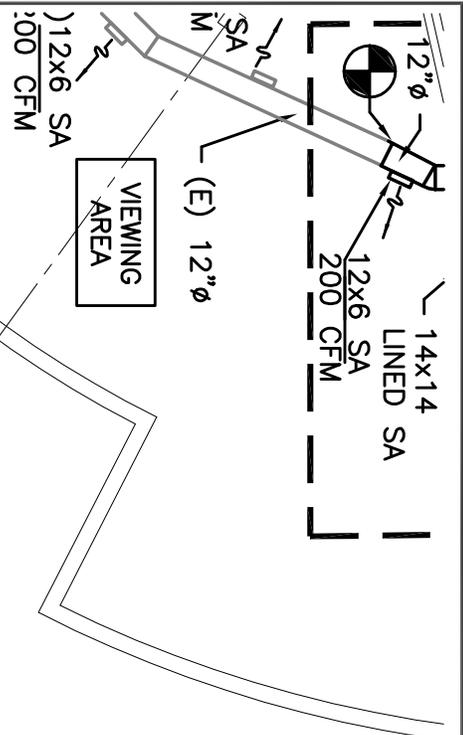
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SCALE:
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JOB NO.:
309265
DATE:
08/10/2010

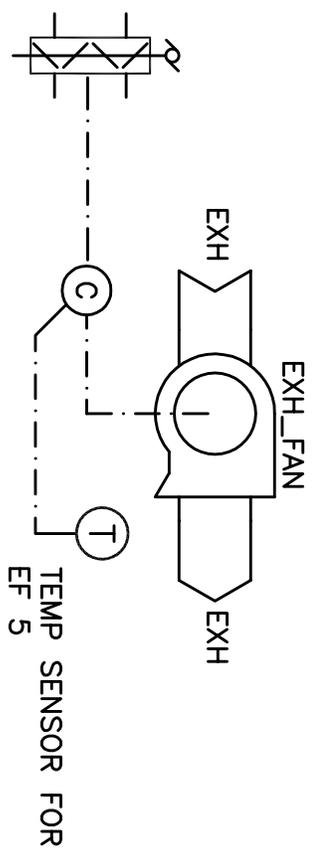
TITLE:
ADDENDUM#-1
PROJECT:
PENGUIN LIFE SUPPORT SYSTEM
OREGON ZOO

SHEET NO.:
RM.01
REFERENCE SHEET NO.:
2/M2.1

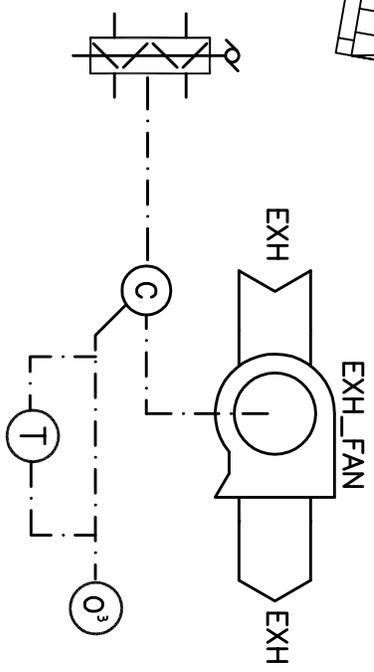


KEYED NOTES:

1. ROUTE EXHAUST DUCTWORK IN (E) OPENING OF FLOOR GRILLE, PROVIDE PATCH AS REQUIRED TO CLOSE OFF REMAINDER OF EXISTING OPENING.
2. EXHAUST FANS 'EF-3' & 'EF-4' TO BE CONTROLLED BY OZONE GENERATOR ALARM SIGNAL.
3. PROVIDE 120 V TWO-POSITION CONTROL DAMPER FOR OPERATION WITH EXHAUST FANS EF-3, EF-4 & EF-5.
4. 10x6 EA DUCT DN. PROVIDE EXHAUST AIR OPENING @ 12" AFF.



6 EF-5 CONTROL DIAGRAM
SCALE: SCHEMATIC



7 EF 3&4 CONTROL DIAGRAM
SCALE: SCHEMATIC



SCALE: 1/8"=1'
JOB NO.: 309265
DATE: 08/10/2010

TITLE: ADDENDUM#-1
PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO

SHEET NO.: RM.02
REFERENCE SHEET NO.: 2/M2.1

WATER TO WATER HEAT EXCHANGER		
MARK NUMBER		
TYPE	 PLATE & FRAME DOUBLE WALL	
COLD SIDE	GPM	35
	ENT. WATER (° F)	42
	LVG. WATER (° F)	52
	MAX PRESS DROP (PSI)	2.5
	% GLYCOL	25%
HOT SIDE	GPM	280
	ENT. WATER (° F)	55
	LVG. WATER (° F)	53.75
	MAX PRESS DROP (PSI)	13.5
	% GLYCOL	 -
MIN HEATING SURFACE (SQ.FT)	180	
FOULING FACTOR	-	
DESIGN WEIGHT (LBS)	1150	
NO. OF PLATES	114/147	
CAPACITY	176 MBH/h	

EXHAUST FAN	
MARK NUMBER	
TYPE	CABINET
CFM	1700
TOTAL SP. (IN H2O)	0.75
RPM	1725
MOTOR HP	3/4
VOLTAGE/HZ PHASE	115/60/1
INTERLOCK WITH	F-1&F-2
BACK DRAFT DAMPER	YES*
DESIGN WEIGHT (LBS)	265
MAX. SONES	10.0
BASIS OF DESIGN	GREENHECK BC

EXHAUST FANS					
MARK NUMBER					
TYPE	SIDEWALL	IN-LINE	IN-LINE	IN-LINE	
CFM	125	125	200	125	
TOTAL SP. (IN H2O)	0.25	.35	0.25	0.25	
RPM	1050 *	1050 *	1050 *	1050 *	
MOTOR HP	1/30	50 WATTS	1/30	1/30	
VOLTAGE/HZ PHASE	115/60/1	115/60/1	115/60/1	115/60/1	1
CONTROLLED BY	TIME CLOCK	TIME CLOCK	OZONE ALARM	OZONE ALARM	TEM
INTERLOCK WITH	OSA DAMPER	OSA DAMPER	-	OZONE GEN.	
BACK DRAFT DAMPER	YES	YES	YES	YES	
ISOLATION	-	YES	-	-	
DESIGN WEIGHT (LBS)	15	15	15	15	

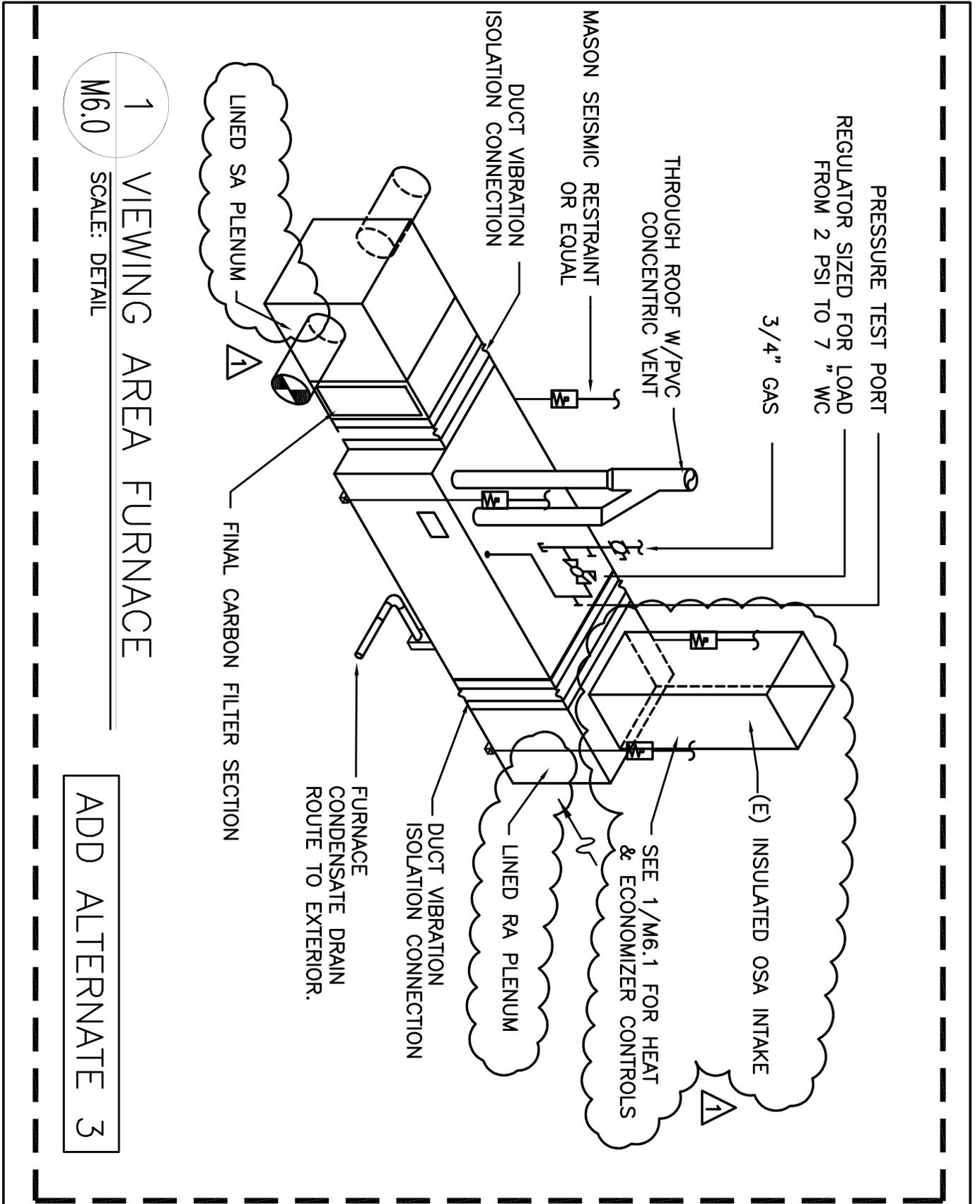


SCALE:
NTS
JOB NO.:
309265
DATE:
08/10/2010

TITLE:
ADDENDUM#-DESCRIPTION
PROJECT:
PENGUIN LIFE SUPPORT SYSTEM
OREGON ZOO

SHEET NO.:
RM.03
REFERENCE SHEET NO.:
M6.0

08/10/2010 10:25am Plotted: 8/9/10 at 10:25am By: maureen.combest



1 VIEWING AREA FURNACE
 M6.0 SCALE: DETAIL

ADD ALTERNATE 3



SCALE: NTS
 JOB NO.: 309265
 DATE: 08/10/2010

TITLE: ADDENDUM#-1
 PROJECT: PENGUIN LIFE SUPPORT SYSTEM
 OREGON ZOO

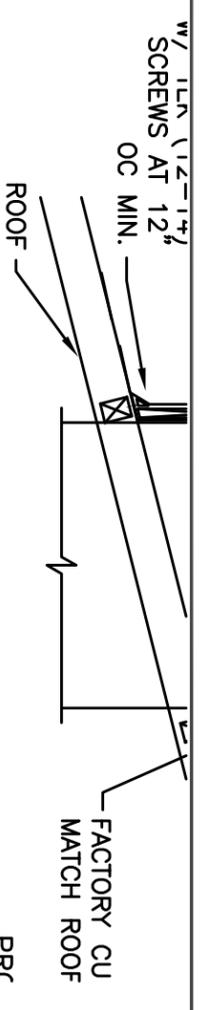
SHEET NO.: RM.04
 REFERENCE SHEET NO.: 1/M6.0

4:M:\K:\AV1_GWD\paw_cc1q\wcaW\jiauxr7\unibue_1_007\ubegun_cc1q\444\1.g: 11:11:08 11/11/03

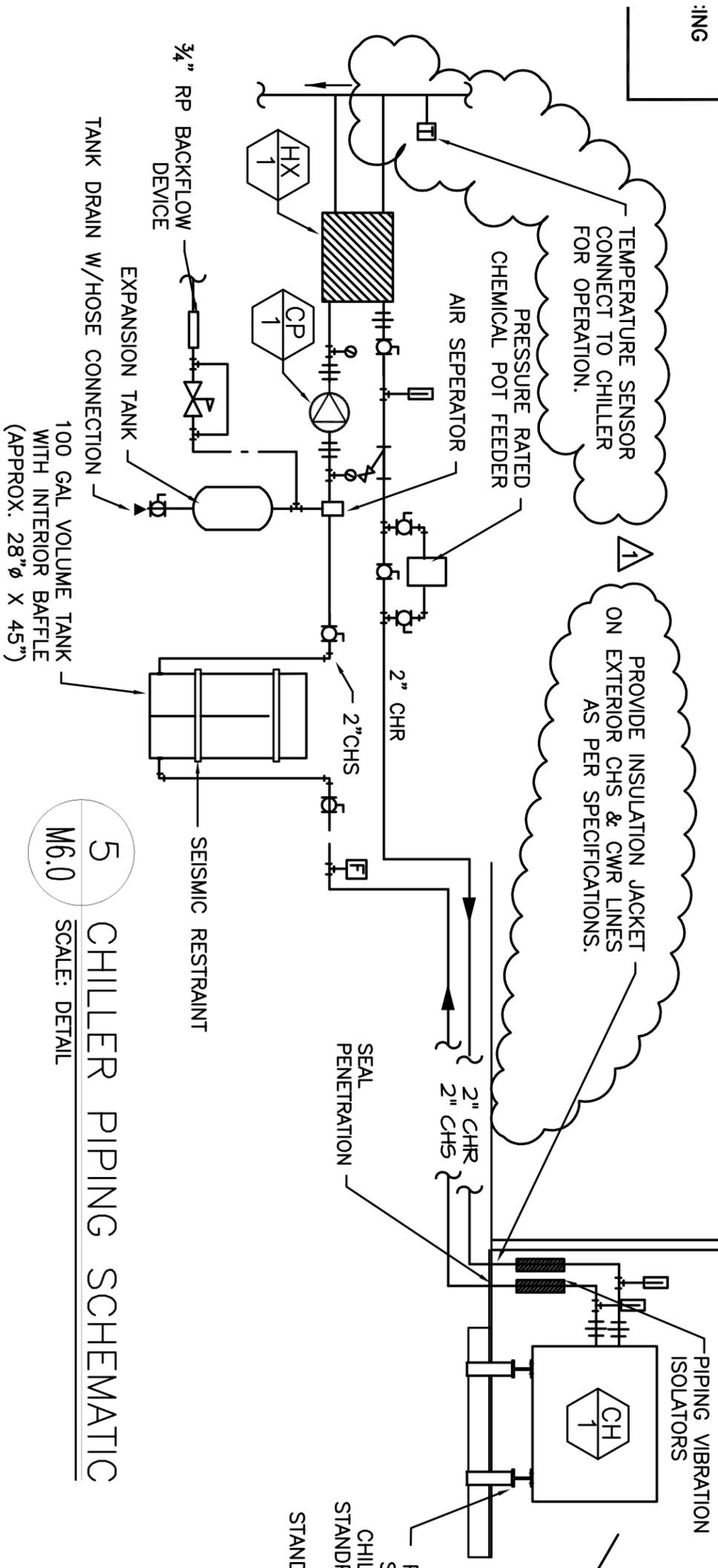
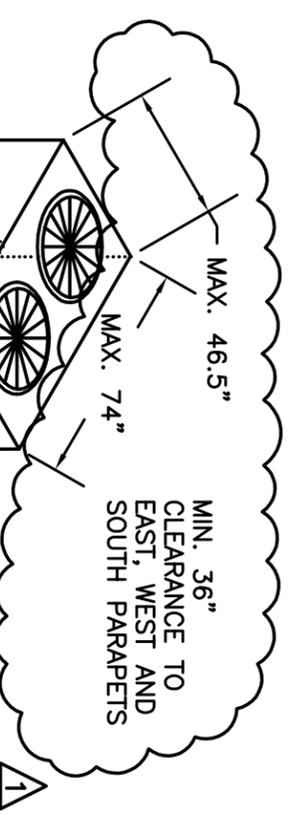
Plotted: 8/9/10 at 11:37am By: maureen.combest

CHILLER	
MARK NUMBER	CH 1
NOMINAL TONS	17
CAPACITY (MBH)	176 MBHh
DESCRIPTION	SCROLL
GPM	35
ENT. WATER (° F.)	52
LVG. WATER (° F.)	42
PRESS. DROP (FT)	
REFRIGERANT	407C
% GLYCOL	25%
DESIGN WEIGHT (LBS)	1300
BASIS OF DESIGN	MCQUAY AGZ

CHILLER PUMP	
MARK NUMBER	CP 1
SERVICE	CHILLER
TYPE	IN-LINE
FLOW RATE (GPM)	35
HEAD (FT)	15
MOTOR HP	0.5
RPM	1750
BASIS OF DESIGN	TACO 1600 SERIES



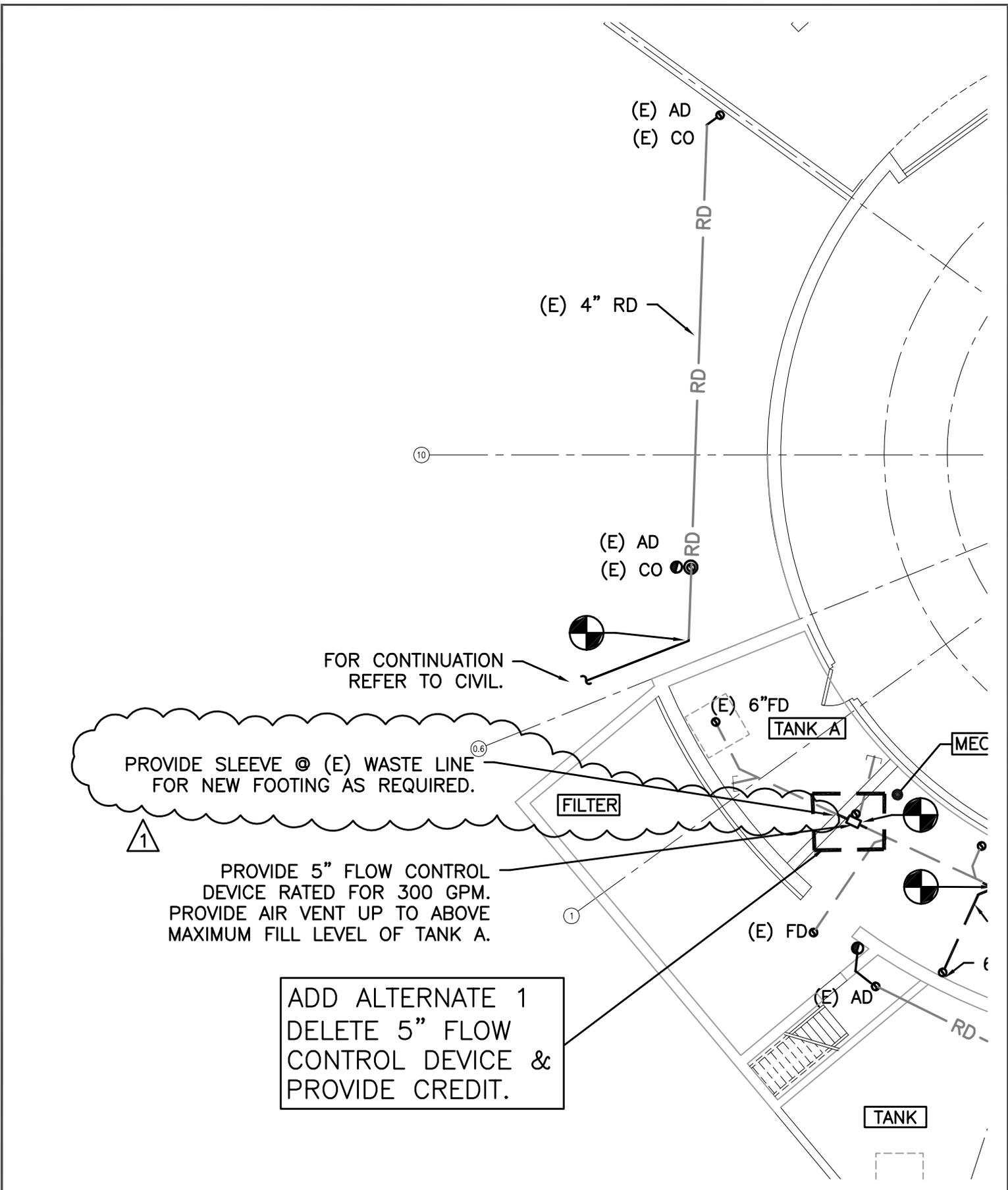
4 INTAKE/RELIEF/EXHAUST HOOD
SCALE: DETAIL
M6.0



5 CHILLER PIPING SCHEMATIC
SCALE: DETAIL
M6.0

PROVIDE STRUCTURAL STEEL FOR MOUNTING CHILLER TO STRUCTURAL STANDPIPES. FASTEN STEEL TO CHILLER AND STANDPIPES AS REQUIRED.

<p>Kpft Consulting Engineers 70 SW Palm Avenue Portland, Oregon 97204 (503) 227-4551 STRUCT. FAX (503) 227-7889 OHL FAX (503) 227-4891</p>	SCALE: NTS	TITLE:	SHEET NO.:
	JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO	ADDENDUM#-1
DATE: 08/10/2010			REFERENCE SHEET NO.: 5/M6.0



PROVIDE SLEEVE @ (E) WASTE LINE FOR NEW FOOTING AS REQUIRED.

PROVIDE 5" FLOW CONTROL DEVICE RATED FOR 300 GPM. PROVIDE AIR VENT UP TO ABOVE MAXIMUM FILL LEVEL OF TANK A.

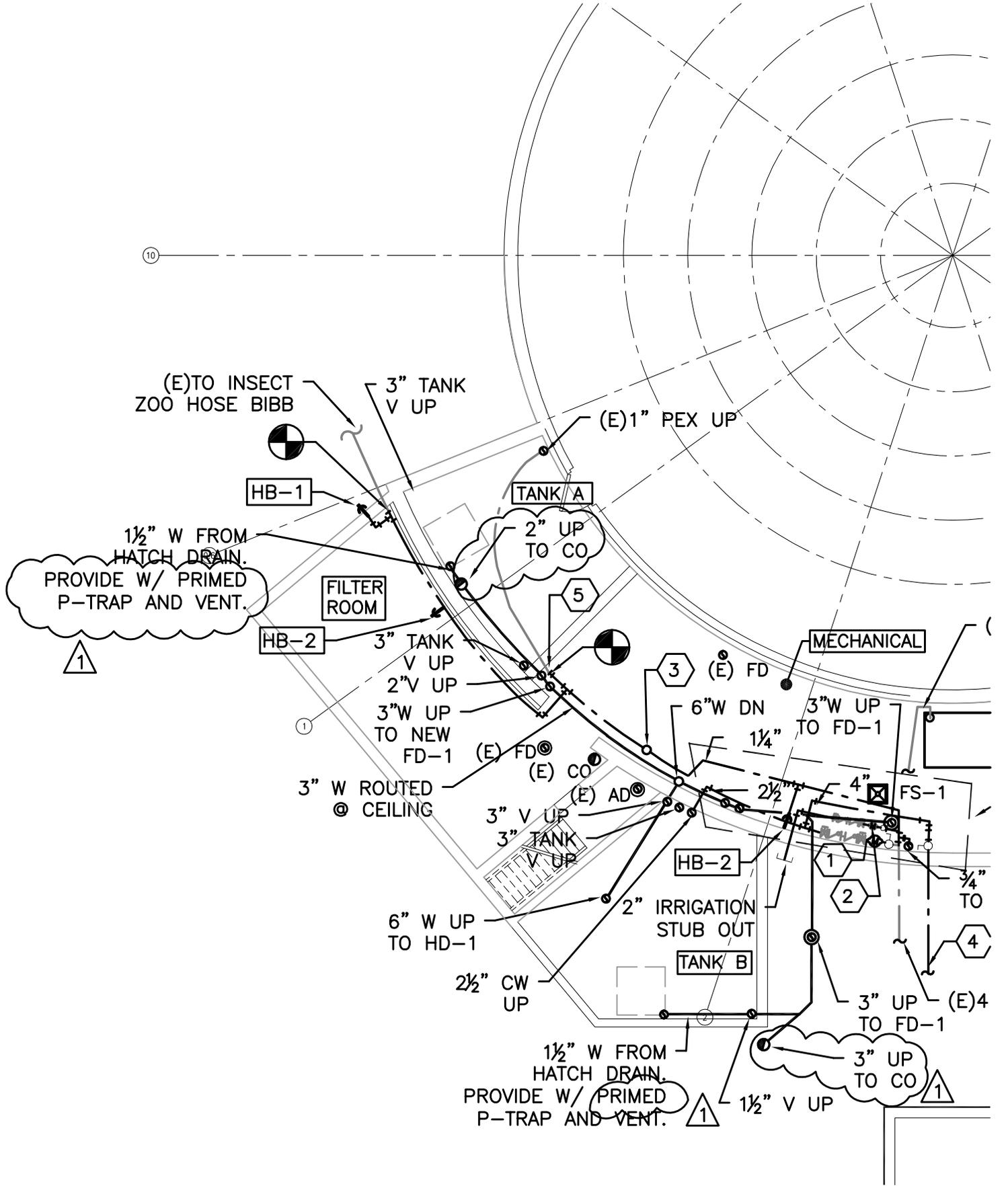
ADD ALTERNATE 1
DELETE 5" FLOW CONTROL DEVICE & PROVIDE CREDIT.



SCALE:
1/8"=1'
 JOB NO.:
309265
 DATE:
08/10/2010

TITLE:
ADDENDUM#-1
 PROJECT:
**PENGUIN LIFE SUPPORT SYSTEM
 OREGON ZOO**

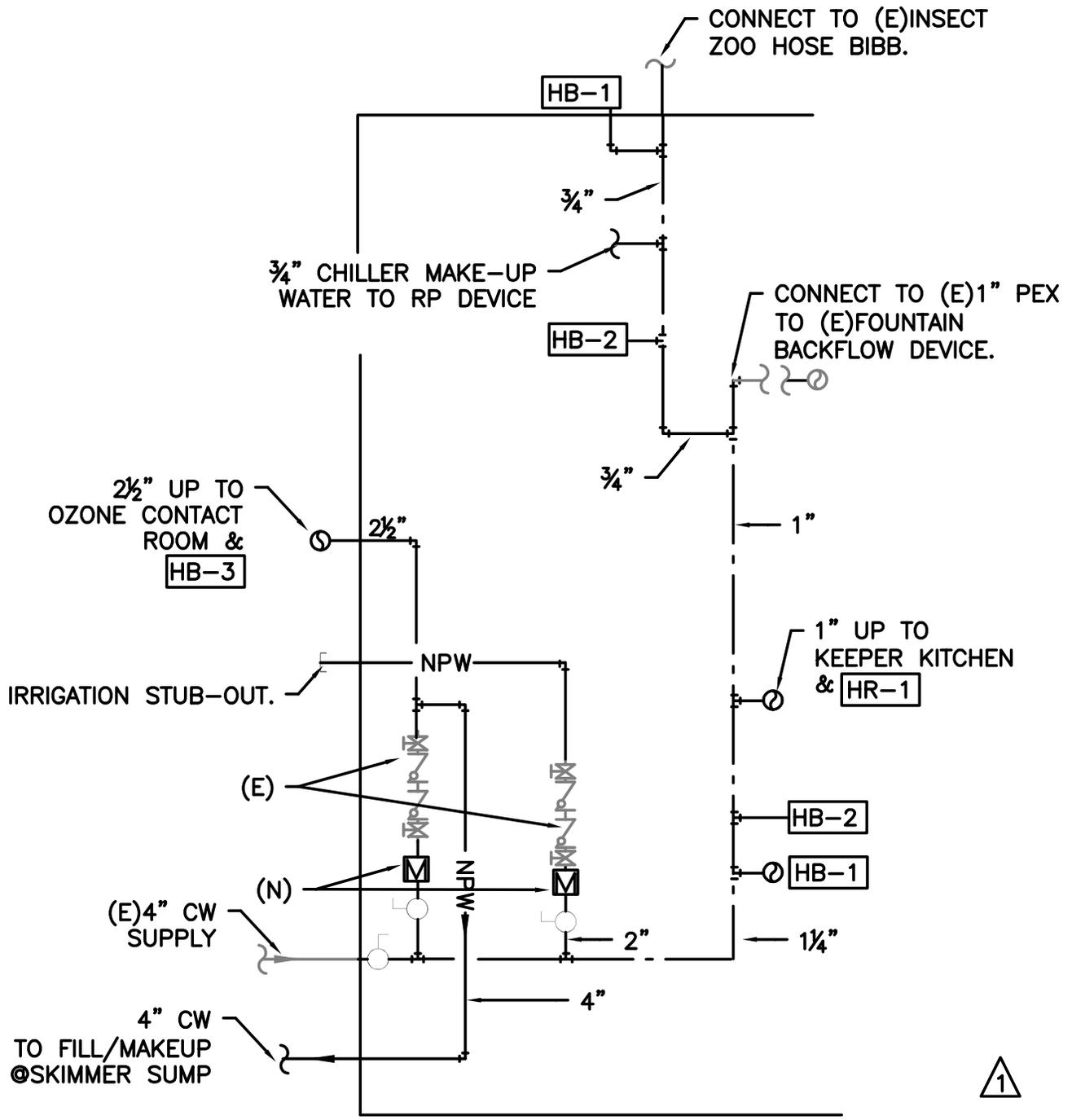
SHEET NO.:
RP.01
 REFERENCE SHEET NO.:
1/P2.1



SCALE:
 1/8"=1'
 JOB NO.:
 309265
 DATE:
 08/10/2010

TITLE:
 ADDENDUM#-1
 PROJECT:
 PENGUIN LIFE SUPPORT SYSTEM
 OREGON ZOO

SHEET NO.:
 RP.02
 REFERENCE SHEET NO.:
 2/P2.1



1 MECHANICAL ROOM PIPING SCHEMATIC
 P6.0 SCALE:NTS

B:5X11RC File: G:\KPF\8155_Oregon Zoo Penguin Exhibit\Mech\8155_P60.dwg TAB: RP.04



SCALE:
 NTS
 JOB NO.:
 309265
 DATE:
 08/10/2010

TITLE:
 ADDENDUM#-1
 PROJECT:
 PENGUIN LIFE SUPPORT SYSTEM
 OREGON ZOO

SHEET NO.:
 RP.04
 REFERENCE SHEET NO.:
 1/P6.0

Bid Form

SCHEDULE OF BID PRICES

Bidder to reference Specifications of Division 01, Section 01 11 00–Summary of Work; Section 00 11 16– Invitation to Bid.

PART A –PENGUIN LIFE SUPPORT SYSTEM UPGRADE

Item	Description	Qty	Unit	Unit Cost	Total Amount
1	Complete Base Bid Project Less Artificial Rockwork Repair	NA	NA	NA	
2	Artificial Rockwork Repair	150	SF		
Total Base Bid					

(_____ DOLLARS)

BASE BID (in words)

(_____ DOLLARS)

ADD ALTERNATE #1 BID – BACKWASH RECOVERY SYSTEM (in words)

(_____ DOLLARS)

ADD ALTERNATE #2 BID – MECHANICAL ROOM STAIR MODIFICATIONS (in words)

(_____ DOLLARS)

ADD ALTERNATE #3 BID TOTAL – AIR QUALITY IN VISITOR VIEWING AREA (in words)

a) REPLACE TWO EXISTING FURNACE UNITES AND ASSOCIATED DUCTWORK \$ _____

b) SEAL OFF WALL PENETRATIONS WILL GLASS \$ _____

(_____ DOLLARS)

ADD ALTERNATE #4 BID – EXHIBIT ROCKWORK LIGHTING (in words)

(_____ DOLLARS)

ADD ALTERNATE #5 BID – EXHIBIT VIEWING WINDOW SOFFIT LIGHTING (in words)

(_____ DOLLARS)

BID ALTERNATE #6 BID –EXHIBIT POOL COATING (in words)

(_____ DOLLARS)

ADD ALTERNATE #7 BID TOTAL (in words)

a) RUBBERIZED SURFACING ON EXHIBIT ROCKWORK \$ _____

b) RUBBERIZED SURFACING IN KEEPER KITCHEN \$ _____