ADDENDUM NO. 1

DATE: **July 21, 2009**

PROJECT: **POLAR SHORES MODIFICATIONS**
LAKE SUPERIOR ZOO

ENGINEERS: **FOSTER, JACOBS & JOHNSON, INC.**
345 CANAL PARK DRIVE, SUITE 200
DULUTH, MINNESOTA 55802
PHONE(218) 722-3060
FAX (218) 722-1931

This Addendum is issued to modify, interpret or supplement the Bidding Documents and is hereby made a part of the Bidding Documents. Please attach this Addendum to the Project Manual in your possession and insert the number of this Addendum in the blank space provided in the Bid Form.

SPECIFICATIONS:

1. Document 00002 - Table of Contents

   A. Delete Section 15146 – Plumbing Specialties.

2. Section 15183 – Hydronic Specialties:

   A. Combination air separator/dirt separator shall be equal to Caleffi Model 546120A, or equal.

3. Add new Section 15940 – Sequence of Operation (copy attached).

DRAWINGS:

Drawing M-1:

A. For removal of existing boilers from 2nd floor (and installation of new), Contractor may open the existing roof above the existing boilers. Approx. location of opening in existing roof deck is indicated on attached addendum drawing 2. Otherwise boilers will need to be removed and installed through the existing opening between the 2nd floor boiler room and the open two-story space located to the southeast.

Drawing M-1 & M-2:

A. Basement level - Existing supply & return pipe sizes to & from Polar Bear Family Pool (at bottom of page) are 8".

Drawing M-2:

A. Basement Plan – clarify note for 6" supply & return piping leaving the NE corner - serves the Seal Pool (still Pool #1).

B. Second Floor – Where the new boiler combustion air & venting is noted, the Laars boilers (basis of design) would require 8" galvanized intake piping with R-5 insulation, while the vent material would be 6" stainless steel Category IV material (complying with UL Standard 1738), with R-5 insulation. Note: Alternate boiler suppliers may require alternate venting materials, e.g. AL-429C in lieu of stainless steel – installation shall comply with manufacturer's recommendations.

Drawing M-3

A. Detail 3 – Add 3/4" cold water makeup connection (less meter) to the supply piping for systems serving Pools #5 & #6.

B. Revise detail 7 – Boiler Piping Schematic as per the attached addendum drawing MA-1.

Drawing E-1 & E-2:

A. First Floor – To the south of the existing switchboard, there is an existing spare fuse cabinet. Relocate cabinet to a nearby wall (as directed) and re-install, to make room for new Panel A.

B. First Floor – An existing security system cable runs out of the building, through the existing glass block opening which will be enclosed by the new addition, to a roof-mounted antennae. Remove for construction of new roof assembly, re-install and re-connect after new construction is complete. See attached addendum drawing 1.

SUBSTITUTIONS:

The following manufacturers and their products have been approved for substitution; however, such prior approval in no way relieves the supplier from complying in every respect with the requirements of the Bidding Documents.

Section	Product	Manufacturer
05300	Metal Roof and Wall Panels	Berridge
06100	Nailboard	Hunter
07315	Drainage Membrane & Mats	Polyguard
15182	Hydronic Piping	Viega ProPress
15495	Commercial Pressure Filter	Neptune/Benson, Astral
15514	Boilers	RBI Futera Fusion, Thermal Solutions, Raypak
15725	Heat Recovery Units	Renewaire
15762	Unit Heater	Vulcan, Sigma
15834	Axial Fan	Acme

Attachments:

Planholders List
List of Attendees at Pre-Bid Meeting
Section 15940 – Sequence of Operation
Addendum Drawings 1 & 2 – Revised Security Antennae and Boiler Room Roof Details
Addendum Drawing MA-1 – Revised Boiler Piping Schematic

End of Addendum No. 1

Planholders list

Project# OT-0713 Bid Date: Tues July 28th : 2pm

Project name: Polar Shores Deposit $25 non Refundable

1	City Architect	1532 W Michigan St	Duluth	MN 55802		NA				
2	City Purchasing Office	City Hall, Room 100	Duluth	MN 55802		NA				
3	City Engineering Office	City Hall, Rm 211	Duluth	MN 55802		NA				
4	Duluth Builders Exchange	802 Garfield Avenue	Duluth	MN 55802	P 722.2836 F 722.2626	NA				
5	McGraw Hill Plan Room	1401 Glenwood Avenue North	Mpls	MN 55405	P 612.381-2290 F 612-381-2295	NA				
6	Mpls Builders Exchange	1123 Glenwood Avenue	Mpls	MN 55405	P 612.381.2620 F 612.381.2621	NA				
7	Reed Construction Data	30 Technology Parkway Suite 100	Norcross	GA 39982	P 770.417.4000 F 800.205.3655	NA				
8	St. Paul Builders Exchange	445 Farrington Street	St. Paul	MN 55103	P 651.224.7545 F 651.224.7549	NA				
9	Foster Jacobs Johnson	345 Canal Park Drive	Duluth	MN 55802	P218 722-3060 F 218-722-1931	NA				
10	Lake Sup Zoo	72nd Avenue West & Grand Avenue	Duluth	MN 55802		NA				
11	Milwaukee Builders	10400 Innovation Dr	Milwaukee	WI 53226	P414-778-4100 F414-778-4119	NA				
12	Bid+ Builders Exchange	4814 E Brodway	Madison	WI 53716	P 608-221-3148 F 608-221-0536	NA				
13	API Electric	4330 W Suoerior st	Duluth	MN 55807	P 218-628-3323	$25				
14	Gorham Oien	841 Forest Ave	Mora	MN 55051	P 320-679 1612 F 320-679-1619	$25				
15	Rice Lake construction	22360 County Rd 12	Deerwood		P 218-546 5519 F 218-546-7016	$25				
16	Shannons	1919 Main Ave	Int Falls	MN 556649	P 218-283-6011 F 218-283-2803	Download				
17	AW Kuettle	1225 Port Terminal Dr	Duluth	MN 55802	P	$25				
18	Horizon Roofing	2010 County Road 137	Waite Park	MN 56387	P 320.252.1608 F 320.252.6939	$25				
19	Electric Systems	4731 Grand Avenue	Duluth	MN 55807	P 218.722.0764 F 218.723.2319	$25				
20	Pool Construction, Inc.	3220 Terminal Drive	Eagan	MN 55121	P 651.406.8424 F 651.406.8242	$25				
21	AREA	1088 West Mowry Drive	Homestead	FL 33030	P 305.224.9282 F 305.248.1756	$25				
22	Erling Hansen	2222 West 2nd Street	Duluth	MN 55816	P 722.0589 F 722.9836	$25				
23	Four Star Construction	7500 Tower Avenue	Superior	WI 54880	P 715.394.9564 F 715.394.6788	$25				
24	Mechanical Inc.	2279 Yellow Creek	Freeport	IL 61032	P 815.297.6036 F 815.235.1940	$25				
25	Badger Swim Pools Inc	N 789 Golf Road	Prairie du Sac	WI 53578	P 608.643.6440 F 608.643.3732	$25				
26	Aqua Logic	501 Industrial Blvd	Waconia	MN 55387	P 952.856.7550 F 952.856.7551	$25				
27	Ray Riihiluoma	1415 South Highway 33	Cloquet	MN 55720	P 218.879.3317 F 218.879.3319	$25				

PRE-BID MEETING
July 14, 2009

POLAR SHORES MODIFICATIONS
LAKE SUPERIOR ZOO – DULUTH, MN

NAME	FIRM	PHONE	FAX	E-MAIL
Robert Gamble	Ray Riihiluoma	879-3317	879-3319	rob@riihiluoma.com
Dean Crotteau	APi Electric			dean.crotteau@apielectric.us
AL BARTA	AWK UETTEL	722-3901	722-6113	ABarta@AWKuettel.com
Doug Morin	A.G.O.	729-9062	729-9774	dmorin@cpinternet.com
Tom Johnson	Four Star Const.	394-9564	394-6788	tom@fourstarconstruction.us
Steve Hansen	ER Hansen	7220589	7229836	ERHANSENgen@charter.net
Steve Becks	NYLUND ELECTRIC	624-5706	624-5707	SJBecks@charterinternet.com
JOHN MICHALSKI	ELECTRIC SYSTEMS	722-0764	723-2319	CONTACT@ELECTRICSYSTEMSOFDULUTH.com
NATE SAPIK	Benson Electric	394-5547	394-5718	nate@becotm.com

SECTION 15940

HVAC SEQUENCE OF OPERATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section defines the manner and method by which controls function. Requirements for each type of control system operation are specified. Provide DDC (direct digital control) - based equipment, devices, and system components required for control systems as specified.

B. Controls shall be furnished by Johnson Control, Invensys/TAC, Honeywell, Siemens, or approved equal.

C. Sequence of operation for:
   1. Heat exchangers.

D. Controls for the unit heater, heat recovery ventilator, and boilers are specified with those pieces of equipment.

1.02 SYSTEM DESCRIPTION

A. Line voltage wiring required to accomplish the sequence listed here in shall be provided under this section. Including but not limited to line voltage for temperature control panels.

1.03 SUBMITTALS

A. Sequence of Operation Documentation: Submit written sequence of operation for entire HVAC system and each piece of equipment.

B. Control System Diagrams: Submit graphic schematic of the control system showing each control component and each component controlled, monitored, or enabled.

PART 2 PRODUCTS

2.01 CONTROL VALVES

2.02 Globe Pattern:

A. Up to 2 inches: Bronze body, bronze trim, rising stem, renewable composition disc, screwed ends with backseating capacity repackable under pressure.

B. Over 2 inches: Iron body, bronze trim, rising stem, plug-type disc, flanged ends, renewable seat and disc.

C. Hydronic Systems:
   1. Rate for service pressure of 125 psig at 250 degrees F.
   2. Replaceable plugs and seats of stainless steel.
   3. Size for 2 psig maximum pressure drop at design flow rate.

D. Electronic Operators:
   1. Valves shall spring return to normal position as indicated on freeze, fire, or temperature protection.
   2. Select operator for full shut off at maximum pump differential pressure.

2.03 INPUT/OUTPUT SENSORS

A. Temperature Sensors:
   1. Resistance temperature detectors with resistance tolerance of plus or minus 0.1 percent at 70 degrees F, interchangeability less than plus or minus 0.2 percent, time constant of 13 seconds maximum for fluids and 200 seconds maximum for air.
   2. Measuring current maximum 5 mA with maximum self-heat of 0.031 degrees F/mW in fluids and 0.014 degrees F/mW in air.
   3. Provide 3 lead wires and shield for input bridge circuit.
   4. Insertion elements for liquids shall be with brass socket with minimum insertion length of 2-1/2 inches.

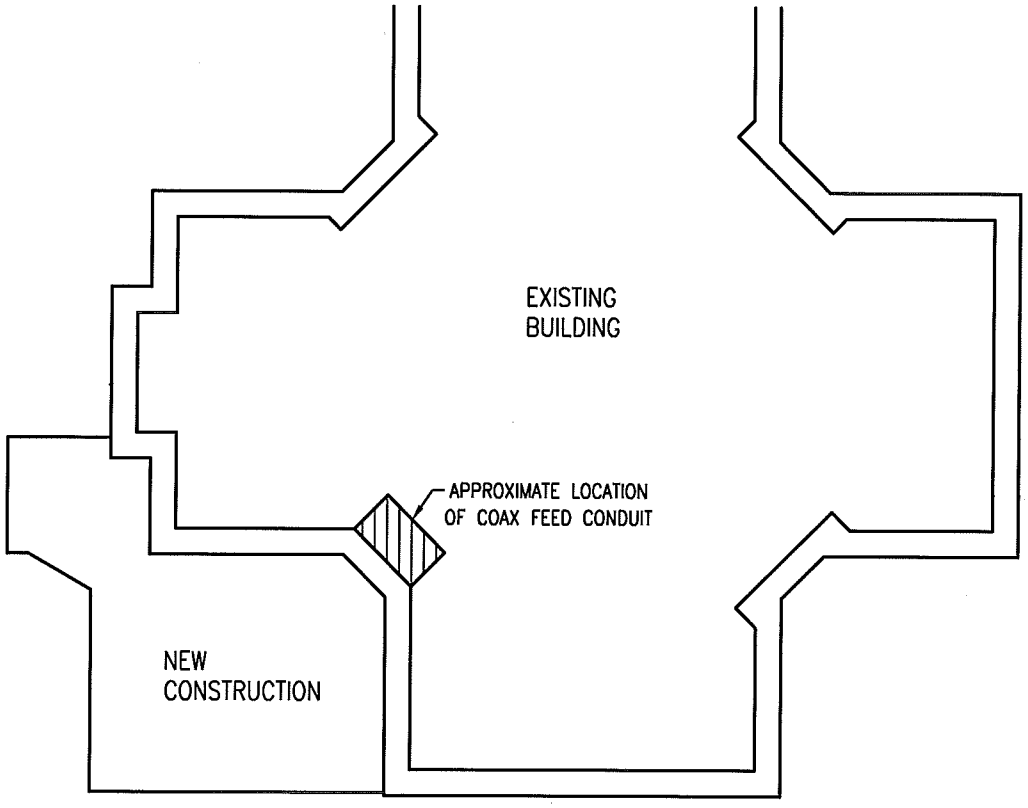
PART 3 EXECUTION

3.01 HEAT EXCHANGER CONTROL

A. Control pool water return temperature set at 52 degrees F (adjustable) by modulating the three-way control valve in the boiler water piping.

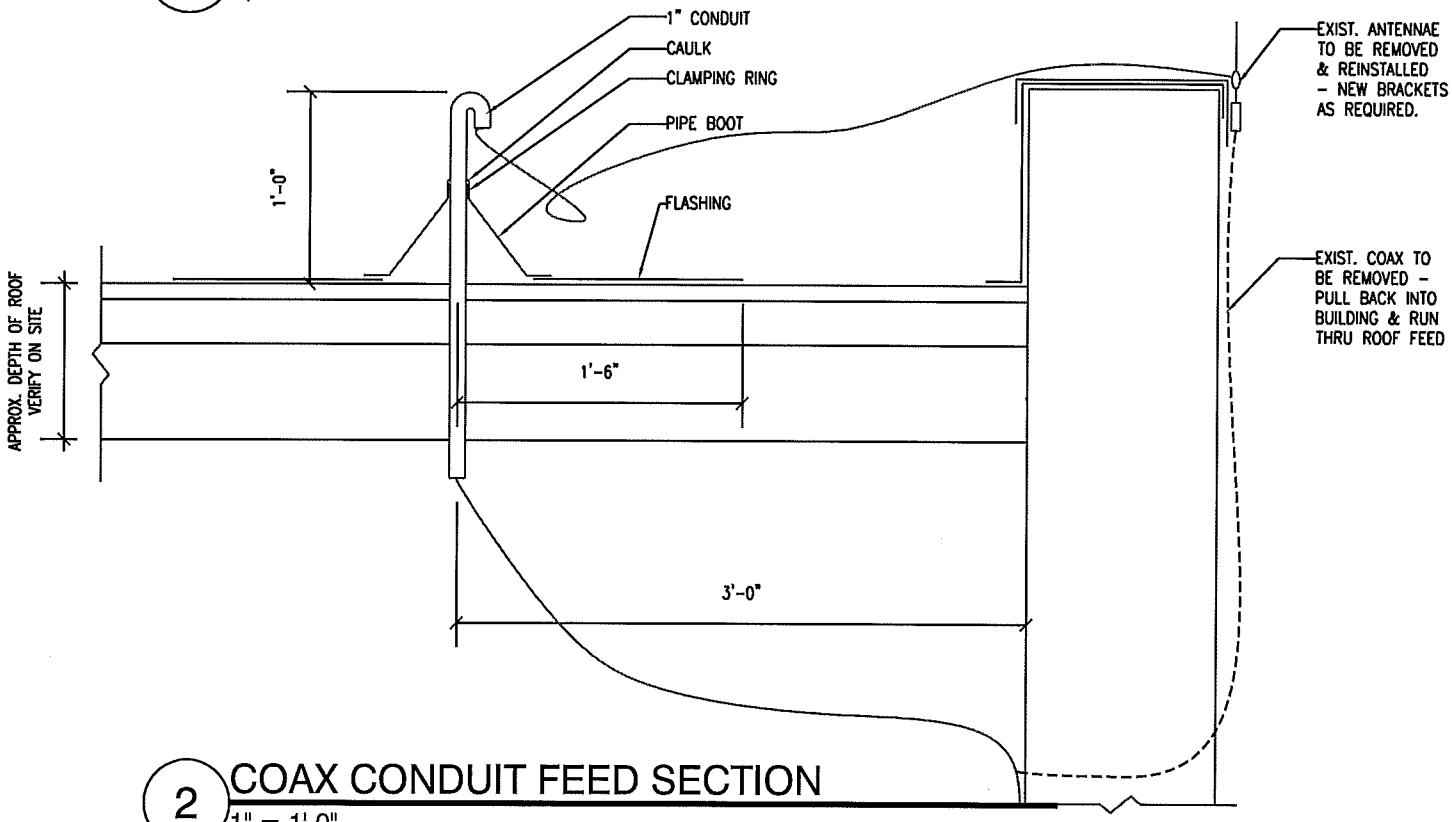
B. Provide a high-limit control to maintain the maximum supply water temperature at 90F (adjustable).

END OF SECTION



1 LOCATION PLAN

1/16" = 1'-0"



2 COAX CONDUIT FEED SECTION

1" = 1'-0"

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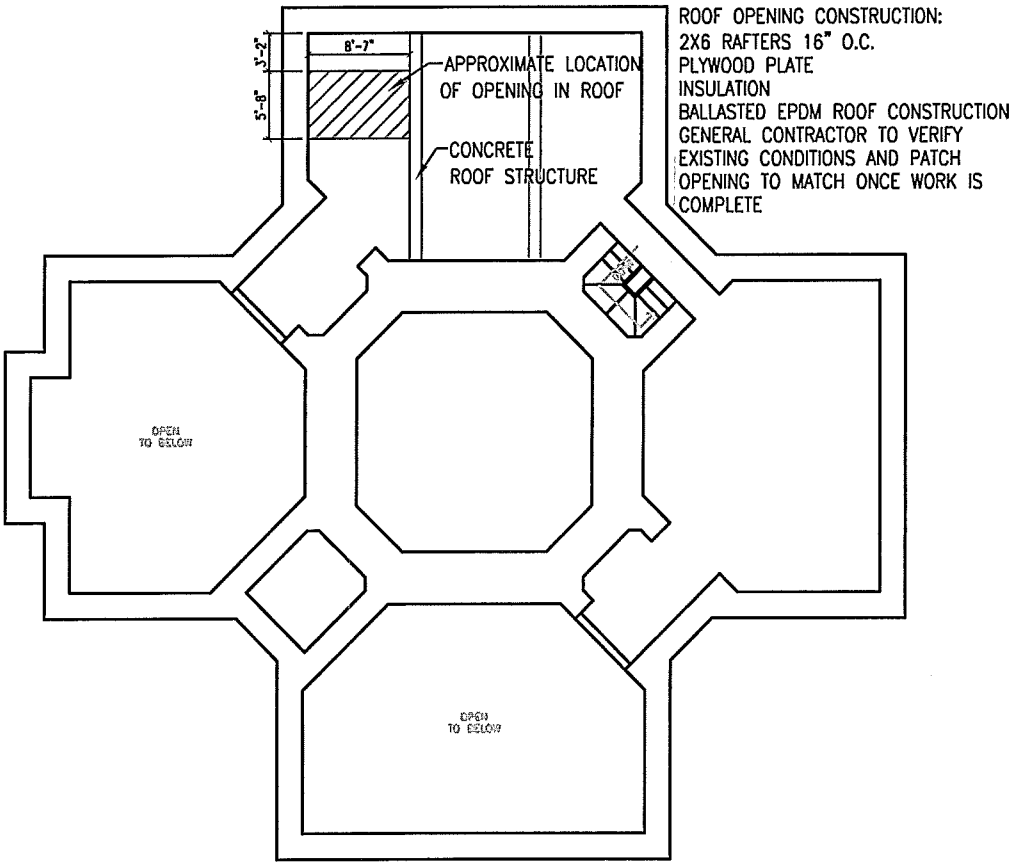
Polar Shores Modifications
Lake Superior Zoo
Duluth, Minnesota
ADDENDUM DRAWING

DATE: July 17, 2009
BY: LBT
PROJECT: 08059

LINE IS 1 INCH AT FULL SIZE (IF NOT 1"-SCALE ACCORDINGLY)

DRAWING NO: 1

Sheet 1 of 2



1 2nd FLOOR ROOF ACCESS LOCATION PLAN

1/16" = 1'-0"

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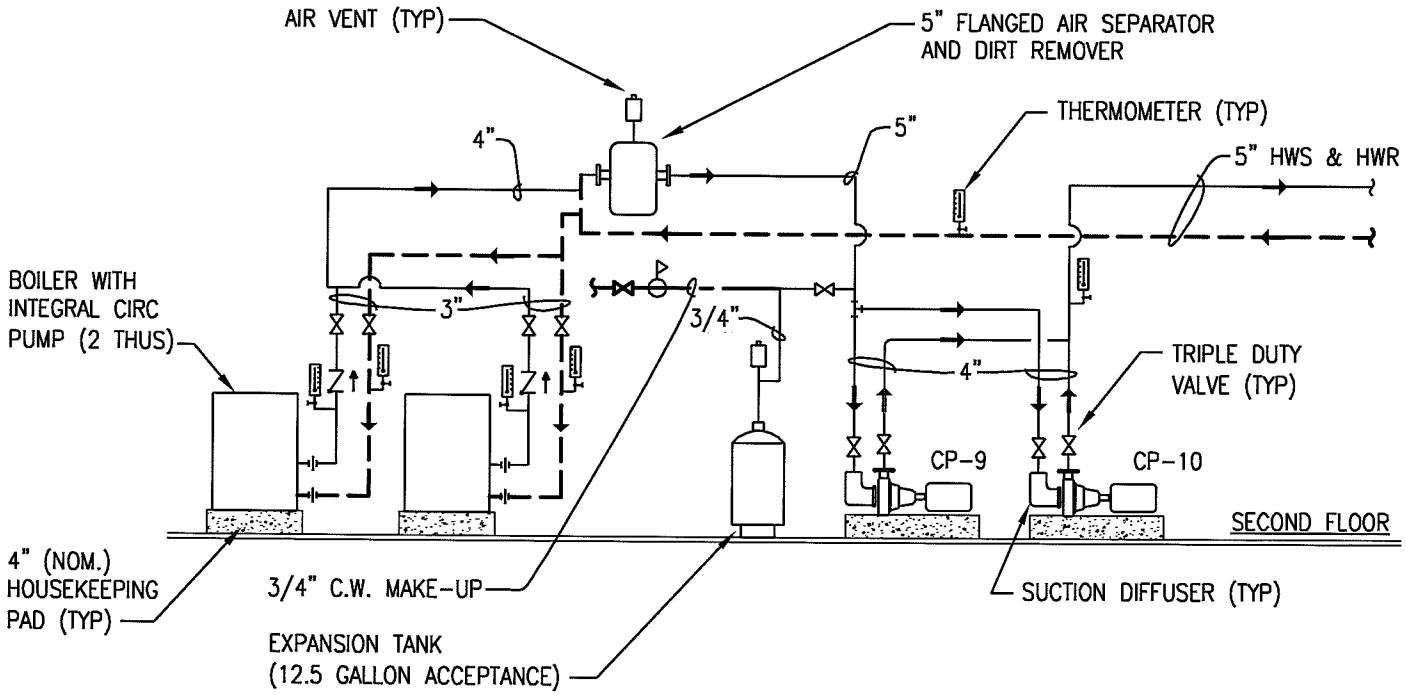
LINE IS 1 INCH AT FULL SIZE (IF NOT 1"-SCALE ACCORDINGLY)

DRAWING NO: 2

Sheet 2 of 2



7/M3 BOILER PIPING SCHEMATIC

NOT TO SCALE

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ADDENDUM DRAWING

DATE: 7/13/2009
BY: JRJ
PROJECT: 08059

LINE IS 1 INCH AT FULL SIZE (IF NOT 1"-SCALE ACCORDINGLY)

DRAWING NO: **MA-1**

Sheet 1 of 1