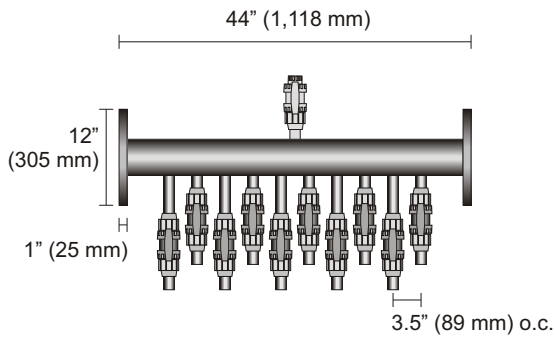
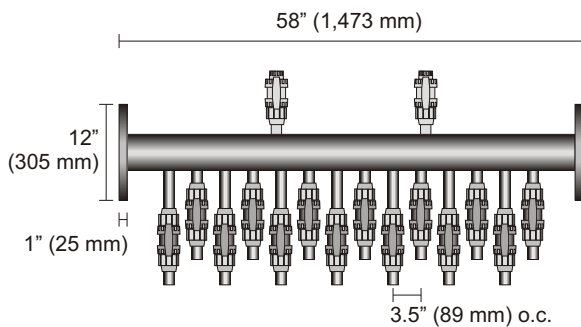




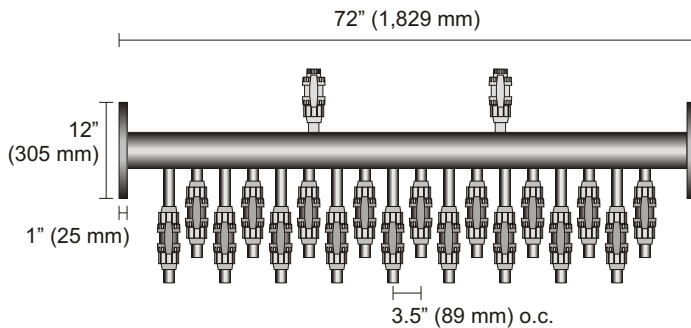
IKS High Density Polyethylene Header Specifications



10 x 1" (25 mm) circuits



14 x 1" (25 mm) circuits



18 x 1" (25 mm) circuits

Header Specifications:

Header material is to be SDR11 high-density polyethylene pipe (HDPE). All circuit connections are to be fusion welded to the wall of the header pipe.

Standard size flanges are to be fusion welded to the header pipe to allow connection to other header sections, or to other piping material, including PVC pipe, copper pipe or steel pipe.

All valves for the circuit piping are to be compression x compression fittings to allow easy connection or removal of the pipe circuits as required. Valves are to be manufactured of polyethylene.

Access valves are to be 1" (25 mm) compression x 1" FPT thread to allow connection of pressure or temperature gauges, and to allow air to be bled from the headers.

Features & Benefits:

Headers are compact and reduce the space required in the mechanical room.

Material is compatible with any fluid used in geothermal earth loop systems.

The compression fitting valves can be simply taken apart to allow access to individual circuits if required. The only tools required for installation of valves is a strap wrench.

Standard pipe flanges allow connection to virtually any material used inside the building to connect heat pumps to earth loop, including PVC, copper or steel with minimal opportunity for fluid leaks.

Flanges allow connection of several header sections to accommodate almost any earth loop configuration.

Access valves on top of header allow bleeding air from the headers and permit easy installation of pressure and/or temperature gauges as required.

Notes:

Bolts to connect two HDPE flanges and HDPE flange to building PVC flange or steel flange are 3/4"x4.5" (19mmx115 mm).

Eight bolts are required for each flange set, grade 5 bolts supplied and recommended. Each bolt assembly should include a bolt, 2 flat washers and hex nut. A removable strength thread locker is to be applied to the nuts, contractor supplied.

Ice Kube Systems supplies flange gaskets & bolts for connections between HDPE flanges and between building system connections to HDPE headers.

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Standard Rink Headers

**High Density Polyethylene
(HDPE) Headers
Header Section Dimensions
and Specifications**

Date: 06/20/05

Rev:

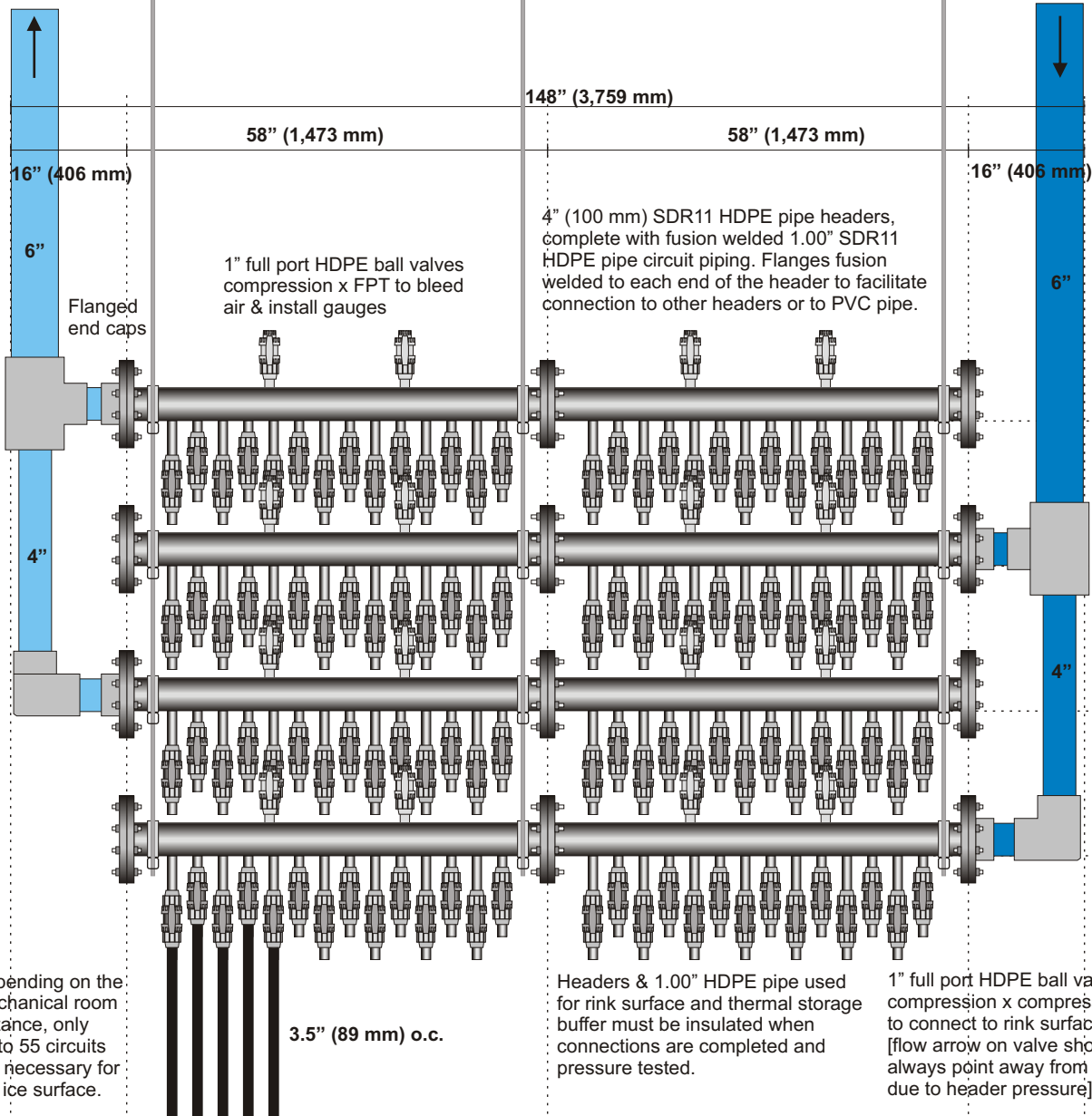
Rev:



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Ice Surface Return

Ice Surface Supply

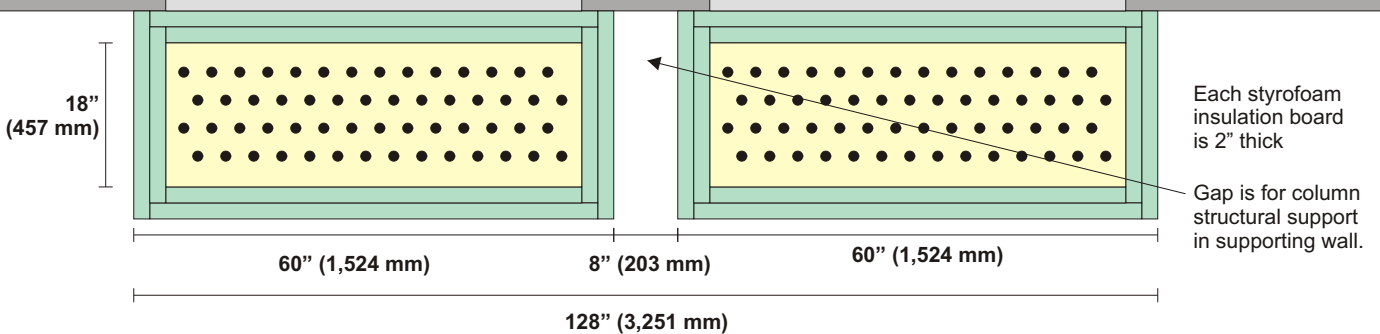


PVC flange & fittings to connect to system (by others)

Depending on the mechanical room distance, only 54 to 55 circuits are necessary for the ice surface.

Headers & 1.00" HDPE pipe used for rink surface and thermal storage buffer must be insulated when connections are completed and pressure tested.

1" full port HDPE ball valves compression x compression to connect to rink surface pipe [flow arrow on valve should always point away from header due to header pressure]



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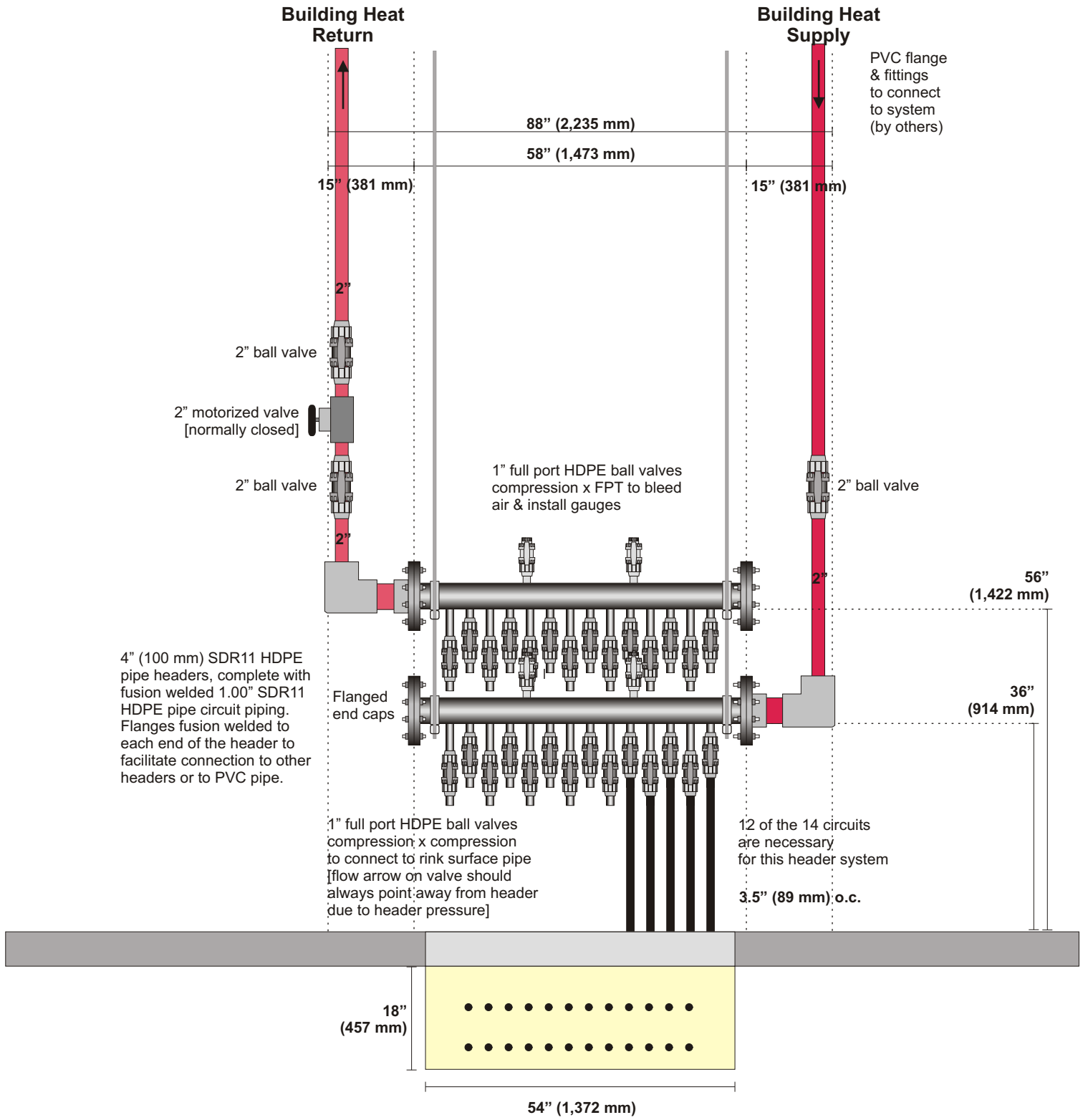
Standard Ice Surface Header

**High Density Polyethylene (HDPE) Headers
Ice Surface - 56 Circuits
Front View**

Date: 06/20/05
Rev: 06/28/05
Rev: 07/11/05
Rev: 12/15/05



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4" (100 mm) SDR11 HDPE pipe headers, complete with fusion welded 1.00" SDR11 HDPE pipe circuit piping. Flanges fusion welded to each end of the header to facilitate connection to other headers or to PVC pipe.

1" full port HDPE ball valves compression; x compression to connect to rink surface pipe [flow arrow on valve should always point away from header due to header pressure]

12 of the 14 circuits are necessary for this header system
3.5" (89 mm) o.c.

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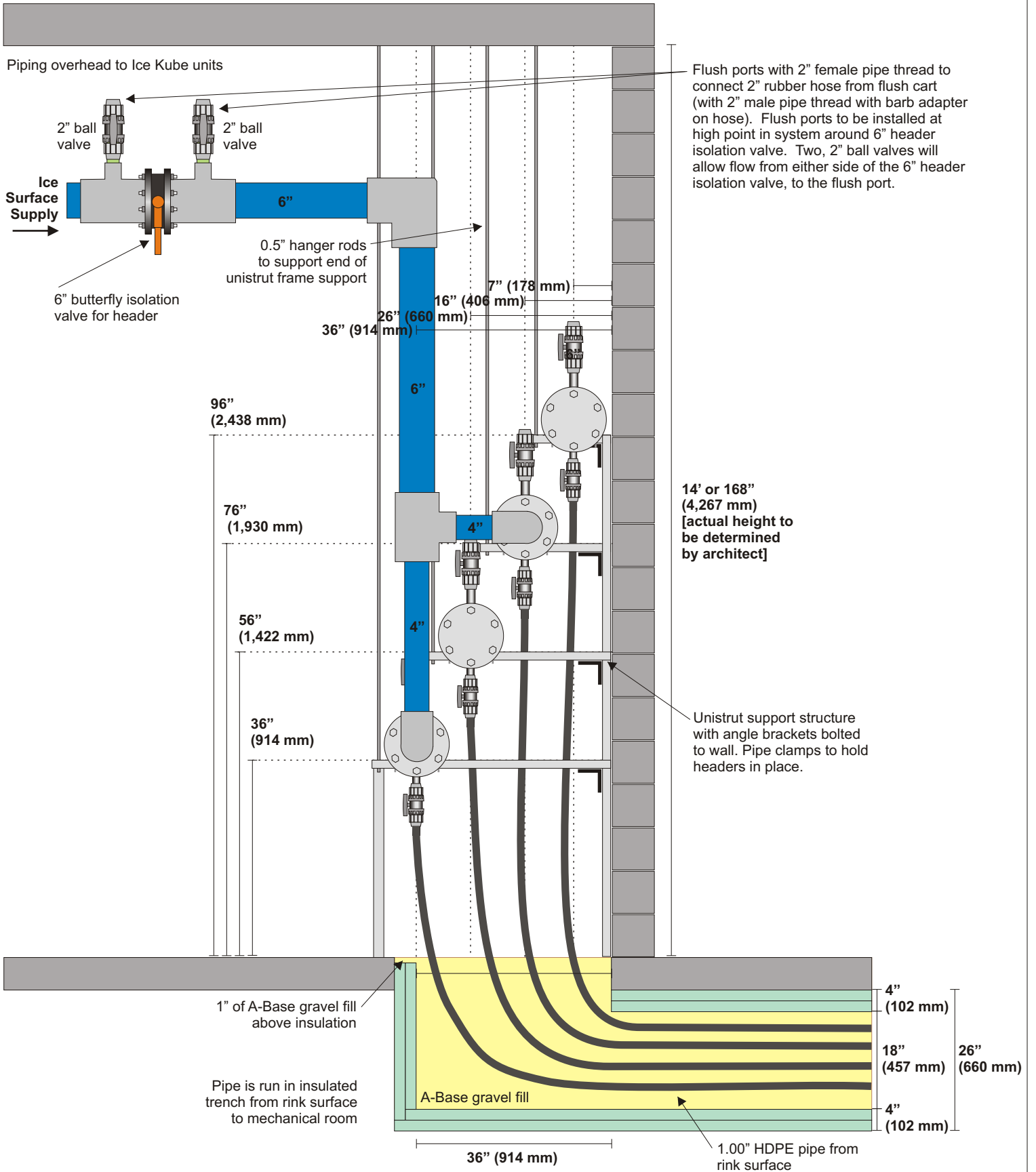
Standard Under-Ice Heat Header

High Density Polyethylene (HDPE) Headers Under-Ice Heat - 12 Circuits Front View

Date:	06/20/05
Rev:	06/28/05
Rev:	07/11/05
Rev:	12/15/05



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Standard Ice Surface Header

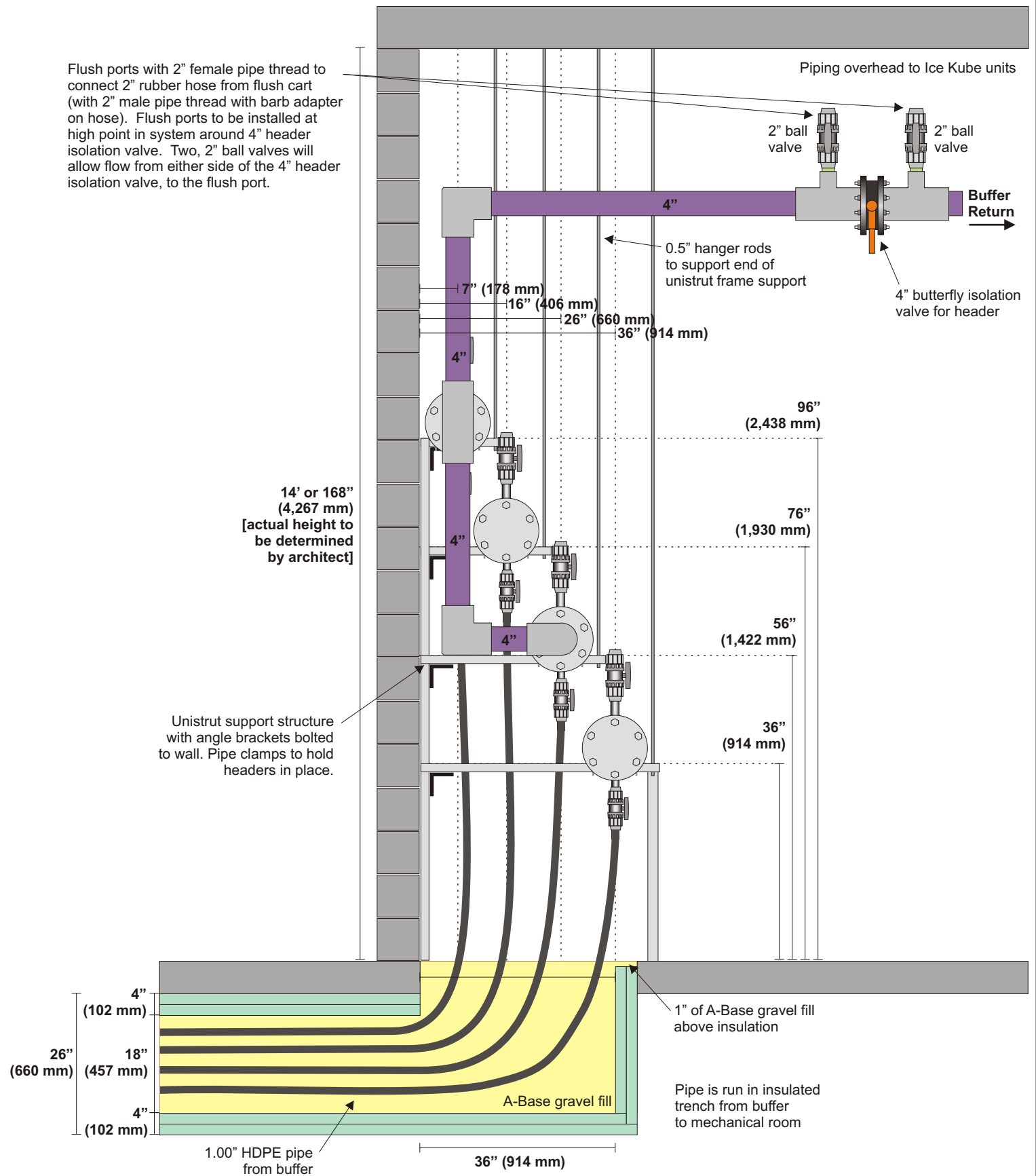
**High Density Polyethylene (HDPE) Headers
Ice Surface - 56 Circuits
Right Side View**

Date:	06/20/05
Rev:	06/28/05
Rev:	07/11/05
Rev:	12/15/05



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Flush ports with 2" female pipe thread to connect 2" rubber hose from flush cart (with 2" male pipe thread with barb adapter on hose). Flush ports to be installed at high point in system around 4" header isolation valve. Two, 2" ball valves will allow flow from either side of the 4" header isolation valve, to the flush port.



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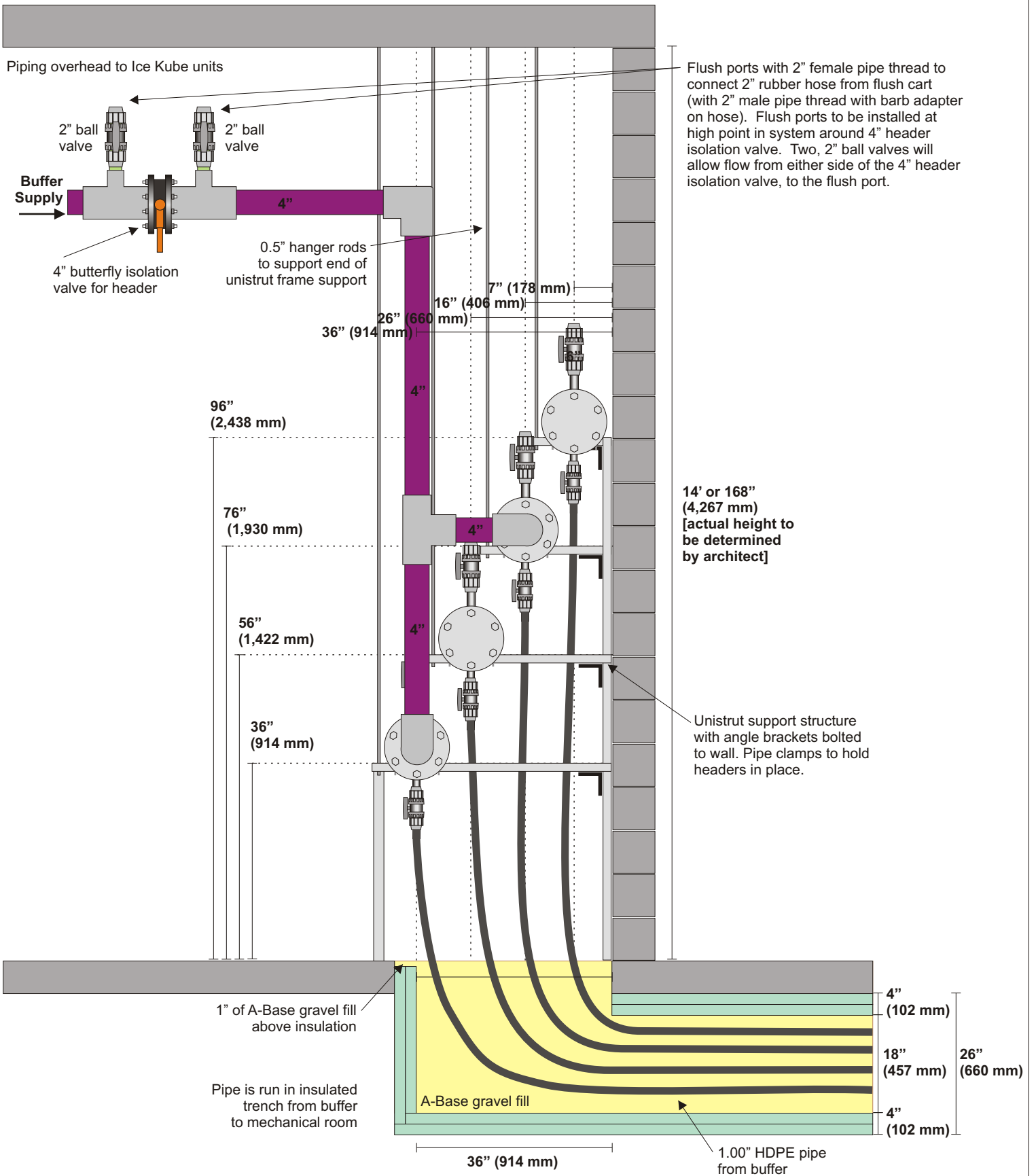
Standard Buffer Header

High Density Polyethylene (HDPE) Headers Buffer - 36 Circuits Left Side View

Date:	06/20/05
Rev:	06/28/05
Rev:	07/11/05
Rev:	12/15/05



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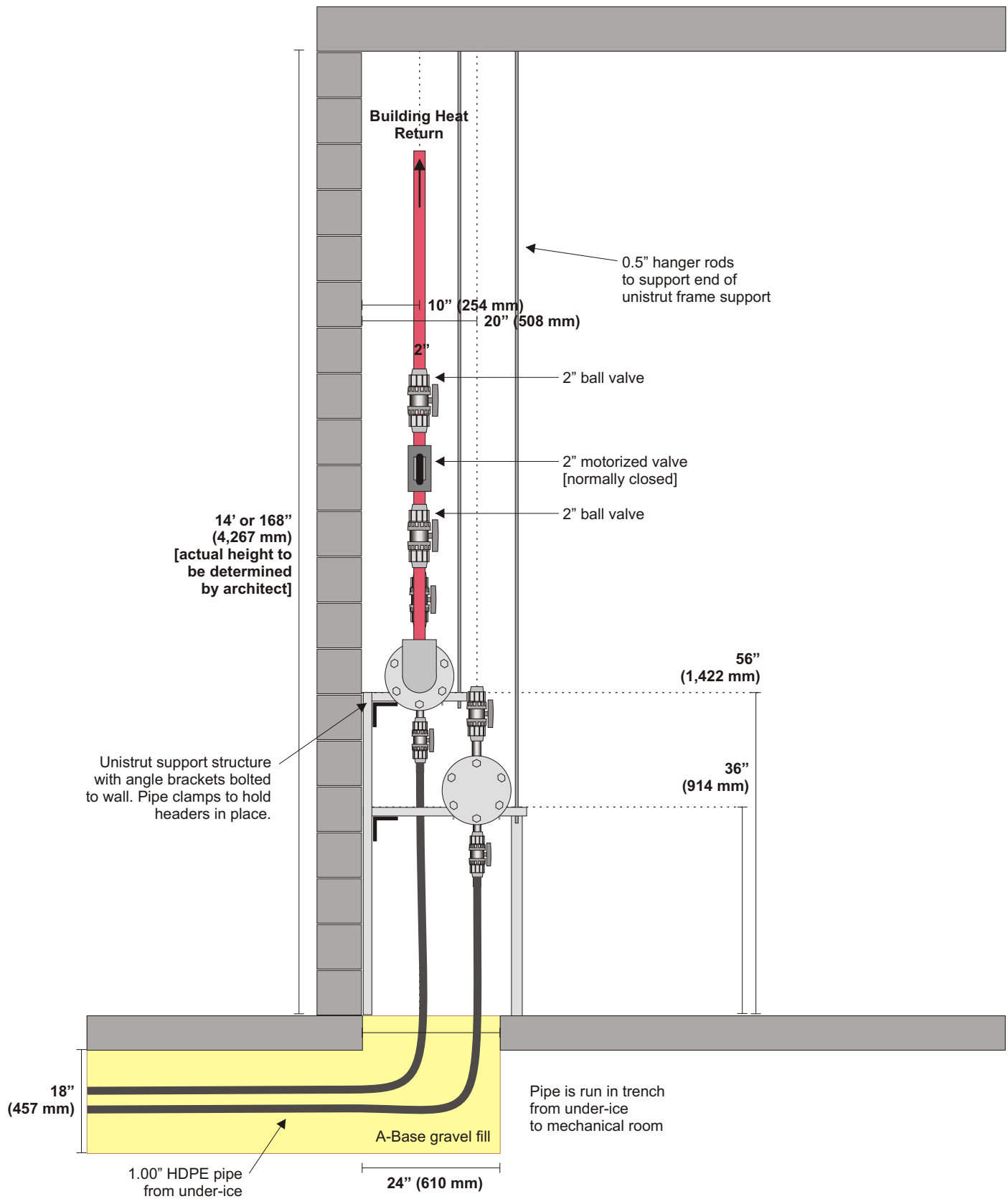
Standard Buffer Header

**High Density Polyethylene (HDPE) Headers
Buffer - 36 Circuits
Right Side View**

Date: 06/20/05
 Rev: 06/28/05
 Rev: 07/11/05
 Rev: 12/15/05



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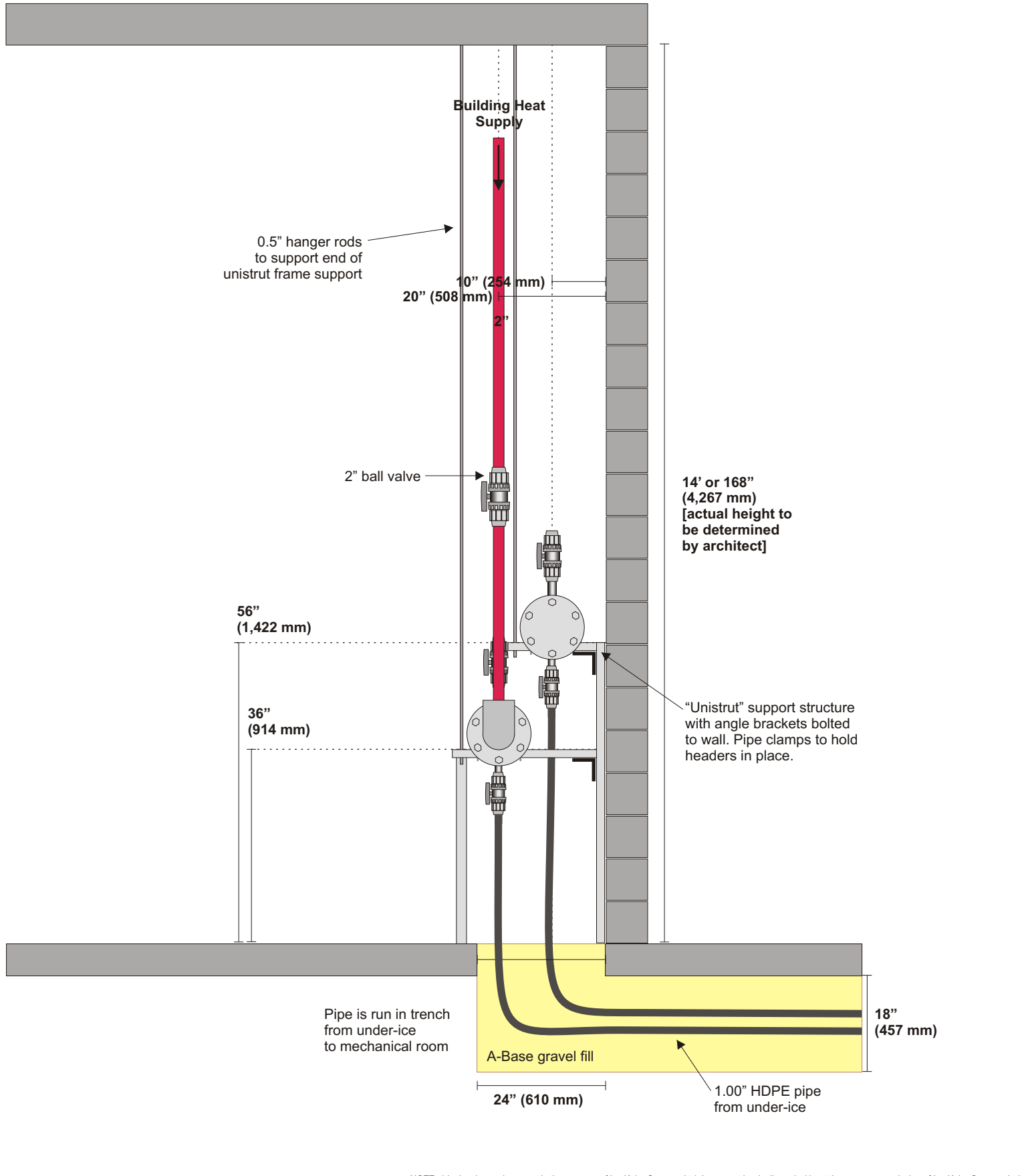
Standard Under-Ice Heat Header

High Density Polyethylene (HDPE) Headers Under-Ice Heat - 12 Circuits Left Side View

Date: 06/20/05
Rev: 07/11/05
Rev: 12/15/05



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Standard Under-Ice Heat Header

High Density Polyethylene (HDPE) Headers Under-Ice Heat - 12 Circuits Right Side View

Date: 06/20/05
 Rev: 07/11/05
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