PREFERRED CONTRACTORS, INC.

WENDELL A. BARWOOD ARENA

Refrigerated Floor and Dasher Board Assessment

April 19, 2018

223 Center Street, Pembroke, Massachusetts 02359 (781) 293-1200/FAX (781) 293-1207

INDEX

PREFERRED CONTRACTORS, INC.

April 17, 2018

Town of Hartford
171 Bridge Street
White River Junction, Vermont 05001

Attn: **Mr. Scott Hausler**
Department of Recreation

Re: **Wendell A Barwood Arena**
Refrigerated Floor Assessment

Dear Mr. Hausler,

Per your RFP guidelines we visited the Wendell A. Barwood Arena site on March 26, 2018 to review the cold floor and dasher board installation and present condition. Subsequently we were able to track down an original installation sketch of the floor as well as supplement information which you were able to provide.

Ice had been removed just the week before so cold conditions still existed as well as suspected frozen sub soil.

It appears the initial floor installation was in 1983. There is no firm data to back this up but local interviews and recollections confirm this best estimate. This initial refrigeration system was a sand storage system with a smaller chiller. The initial design was flawed and a chiller of adequate size was required. This subsequently was installed in 1990 and the sand cold storage was demolished.

This estimated floor age of 35 years old is what we will assume at this time. The projected life cycle floor age of that period was 25-30 years of reliable use when using brine as secondary refrigerant with steel headers/nozzles and clamped PE tubing. This floor has exceeded projected life cycle by 10 years.

The cold floor design was fairly standard with plastic poly tubing installed on top of insulation at 4" on center. The tubing and rebar grid were elevated by floor chairs with a top 6/6 wire mesh installed prior to pouring. What was not standard was a telescoping steel header. This proved to be troublesome in 2006 and again in 2012 when brine contamination blocked the 2 ½ inch steel header piping causing an area in the floor that prevented flow on the far end of the header against the stands. This caused repair in this area as evidenced by a large concrete patch in the floor where concrete was removed to expose the headers and connected clamped tubing. We were told that the tubing needed to be removed, nozzles cleaned , brine replaced and all reinstalled.

From the drawing sketches we were able to attain the floor thickness was designed at 5". From memories of one of the townsfolk present he remembers 4" thick concrete floor. There is a hole that remains on the header concrete patch. We were able to remove some sand and expose a clamped tube. The subsoil was still fairly frozen but at the section exposed we could find 3"-4" thickness of concrete. We were unable to expose any insulation below. From the drawing sketches provided two (2) staggered layers of 1" Styrofoam were called for as part of the design. Evidence of underfloor drainage is not present nor are there drawings to support the installation or need for this drainage. There is a higher

grade along the one side of the building with a fire road in between. We do not see evidence of issues beyond the standard mud and roof snow shedding during the spring thaw.

There is a concrete berm exterior to the cold floor that the dasher boards are bolted to. There is asphalt that pitches to the exterior of the building from this berm. This is indicative of an open air rink. There are drawings from 1990 that reflect new boards. We make the assumption that prior to this time a homemade set of boards were in place using steel fence posts that are evidenced at the exterior near or under the present dasher boards. These dasher boards were also removed and replaced and upgraded in this 1990 period.

We submitted a sample of your existing calcium chloride brine to an independent lab for testing. The results indicate that it is very high in suspended iron and has an acidic PH level. This is evidence of substantial degradation of steel piping internals. Inspection of the piping at the exposed section under the players boxes also indicate heavy external corrosion on the piping with a reduction in external wall thickness at this area.

Visual inspection of the concrete cold floor shows considerable cracking. The cracking is mostly laterally across the floor. The cracking is uniform in between the column lines but not on the column lines and in places has opened to exceed .25". There are several areas where the cracks have forked and traveled longitudinally across the floor. There are surface tension cracks at the edges of the floor that are thin and have more than likely been present since the initial pouring and contraction of the floor.

Using a laser transit at center ice a grid of the floor was obtained. We initially used the entrance at the Zamboni door as our zero benchmark, travelling over the entire floor. However, post readings adjustment ¼" lower presented that most of the floor was within a ¼". We did find a low area by ½" in front of the home team players bench. In front of the seating area it was low from 3/8" through ½".

There is one high spot on the floor from the far goal travelling down the center of the floor stopping before the blue line. If we were to rate this floor based on flatness it would score an 8 out of 10. If we were to rate this floor based on cracking we would rate it a 2 out of 10.

The most recent repairs to the blocked header were performed in house. There is a significant skim coat patch of concrete over this repair.

Summary

It is our opinion that the cold floor steel header piping was not designed correctly. The immense amount of suspended iron in the exiting acidic brine coupled with demonstrated external corrosion will lead to a steel failure. We are uncertain when this will happen but suspect it to be short term and will more than likely present its ugly head during pressurized winter operation. This will create a potential for contamination of the subsoil and (at minimum) render the facility unsuitable for immediate repairs. Rotten steel pipe may thwart any welded repair placing the facility out of operation.

The replacement of the steel headers is in essence the need for a more efficient new floor. As part of this we would recommend increasing the insulation to 4" versus the 2" in place and minimizing energy loss into the subsoil. We would advise that the existing concrete berm be removed and a new haunch of proper dimension and radiuses be installed.

Obviously, at the juncture of replacing the floor, consideration may be given to removing external asphalt on at least the players bench and entry ends and pouring new concrete aprons as well as installing new dasher boards and glass.

Cold Floor Replacement Estimate

Demolition and removal of existing cold floor and berm to negative 11"	$100,000
Optional demolition and removal of 3,000 square feet of asphalt	20,000
Form and pour new rink haunch oval and radiuses	60,000
Form and pour optional 3,000 square feet of floor with reinforcement wire	30,000
Install 2" layer of precision graded stone dust, vapor barrier, 4" insulation, slip sheet, all fused headers from mechanical room, all fused HDPE cold floor 3.5" on center, floor chairs, 12/14 #4 rebar grid, 6/6 WMF and place 260 yards of 4,500 PSI HRWR concrete laser screeded	300,000

Estimated Floor Replacement cost: $460,000
(Four Hundred Sixty Thousand Dollars)

ADD: Optional 3,000 square feet of Asphalt Apron $50,000

The estimates above are not inclusive of any contingency costs. On an unknown project such as this we would advise between 5-10% as an additional carry cost to accommodate unforeseen conditions or $25,000- $50,000

Enclosed is a pictorial of our inspection along with lab test results and additional documents pertinent to this synopsis.

Please contact us with any further questions.

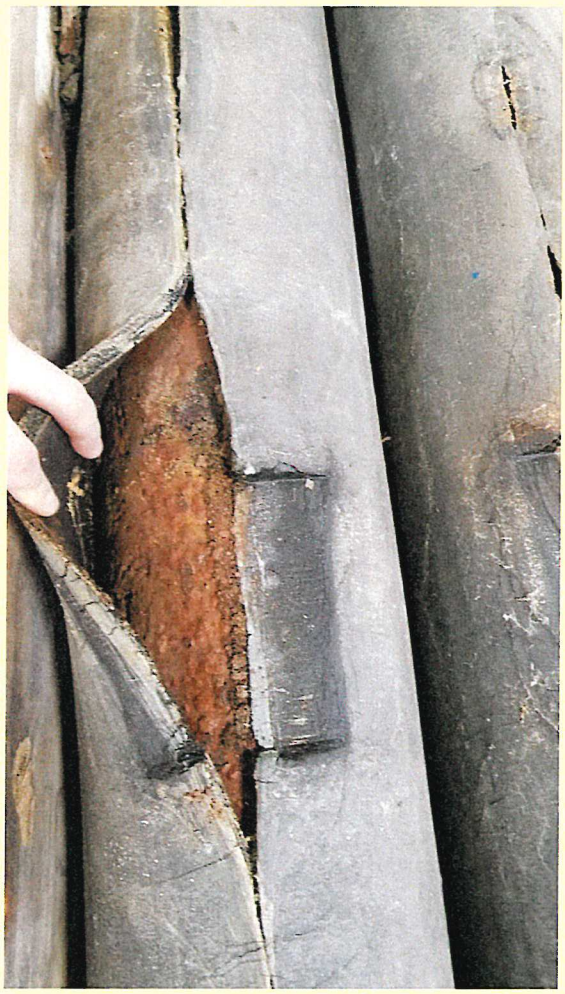
Regards,
Preferred Contractors, Inc.
John Meade
John Meade

Attachments:
Exhibit A: Photographs of Existing Conditions
Exhibit B: Photographs of Past Repairs
Exhibit C: Laser Test Readings
Exhibit D: Brine Sample Laboratory Test Results
Exhibit E: Existing Arena Drawings & Sketches

Enclosure:
Dasher Board Review by Becker Arena Products

EXHIBIT A: PHOTOGRAPHS OF EXISTING CONDITIONS

Heavy External Corrosion
Corrosion on steel piping between refrigeration room and header trench.



Floor Cracks

Floor cracks with up to ¼" openings.

EXHIBIT B: PHOTOGRAPHS OF REPAIRS

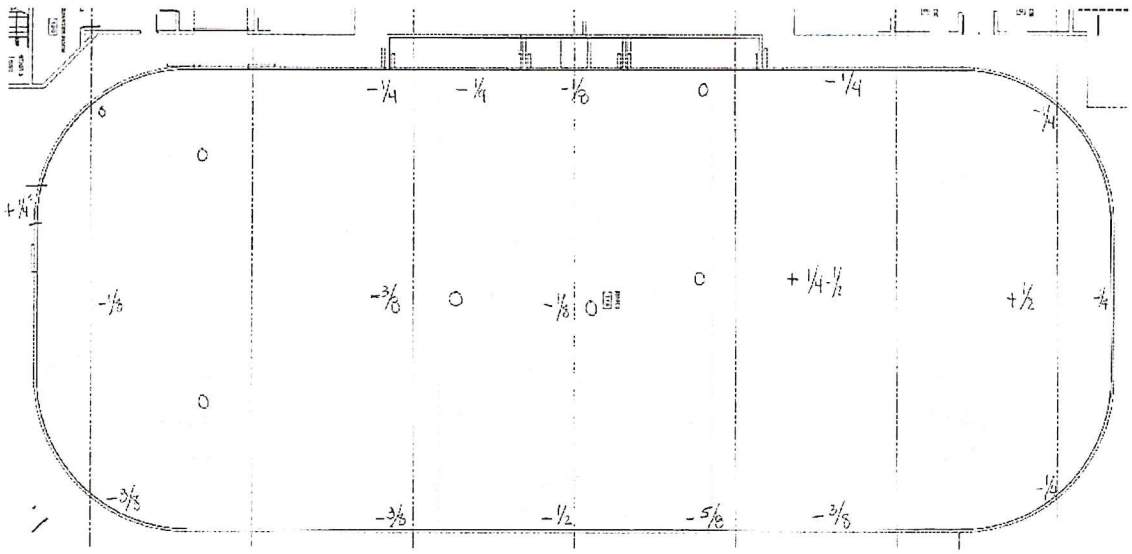
Concrete patch at header trench recently performed to repair blocked nozzles.

Open hole at concrete patch, shrinkage cracks at perimeter as well as tennis post holes.

Tubing and clamped repair on header.

Old post hole at perimeter.

EXHIBIT C: LASER TEST READINGS



W. A Brewood Hartford VT

(Ice was removed 4 Days Prior
Sub Soil was still frozen)

EXHIBIT D: BRINE SAMPLE LABORATORY REST RESULTS

BARCLAY
BETTER WORKING WATER.

LABORATORY REPORT

CLIENT: **PREFERRED MECHANICAL SERVICES**
ADDRESS: 223 Center Street
Pembroke, MA 2359

REPORT NO. **181011**
SAMPLE DATE: 3/28/2018
REPORT DATE: 3/30/2018

ATTENTION: Alex Meade

FIELD ENGINEER: Alex Jarvis

REFERENCE: BARWOOD

CONSTITUENTS	CALCIUM CHLORIDE BRINE				
pH, Units	5.3				
Iron, Dissolved, mg/L	295				
Iron, Total, mg/L	1450				
Copper, Dissolved, mg/L	2.39				
Copper, Total, mg/L	14.5				
Zinc, Dissolved, mg/L	26.5				
Zinc, Total, mg/L	40.7				
Aluminum, Dissolved, mg/L	0.44				
Manganese, Dissolved, mg/L	13.1				
Total Phosphorus as PO_4, mg/L	35				
Ortho Phosphate as PO_4, mg/L	35				
Phosphonate, mg/L	<0.5				
Molybdenum as Mo, mg/L	<0.5				
Anhydrous $CaCl_2$, %	20.3				
Freezing Point, °F	-2				
Sediment	Very Heavy				

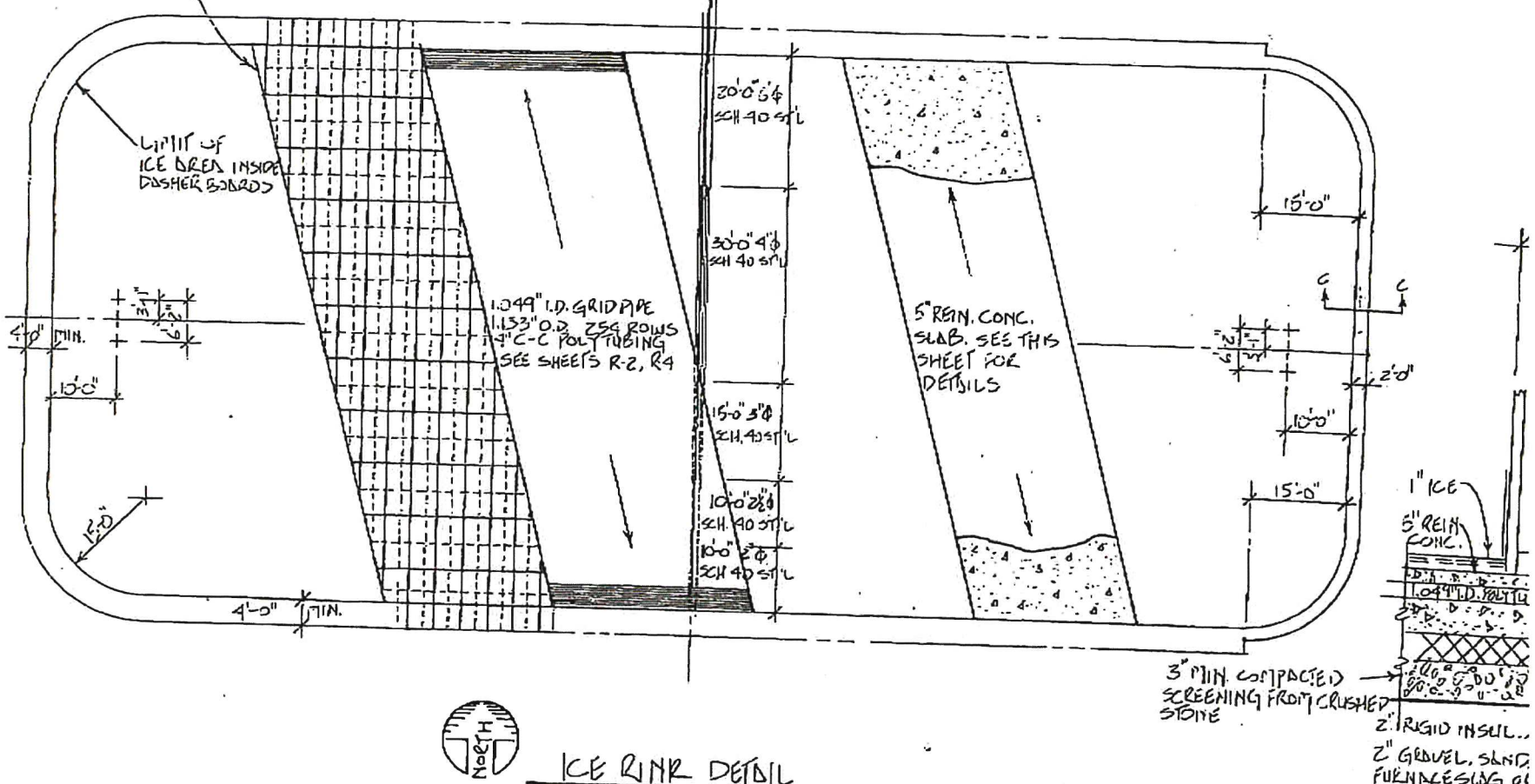
Yours truly,

Mark Payton

Mark Payton, Chemist

EXHIBIT E: EXISTING RINK DRAWINGS & SKETCHES

HARTFORD VT
Hartford Municipal Arena



ICE RINK DETAIL
SCALE 1/16"=1'-0"

SECTIC
1/2"=1'

EXISTING LIGHTING

TOWN OF HARTFORD
3/2006 10:14 2956382
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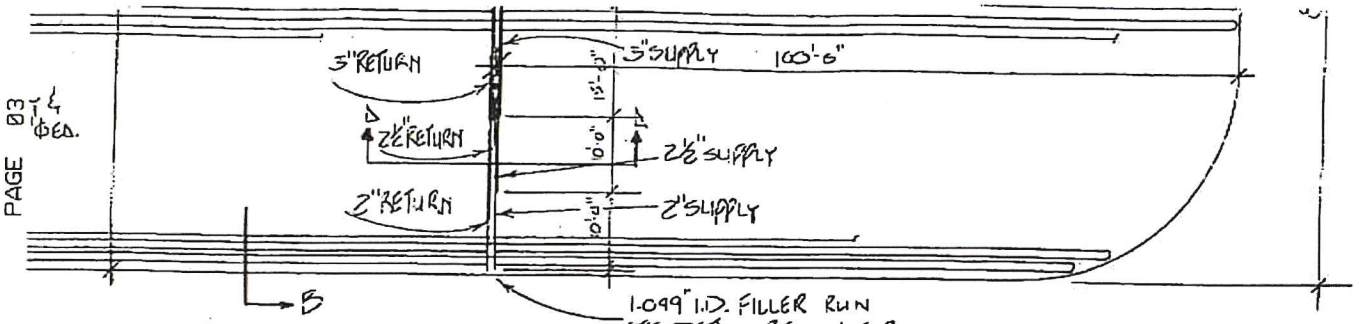
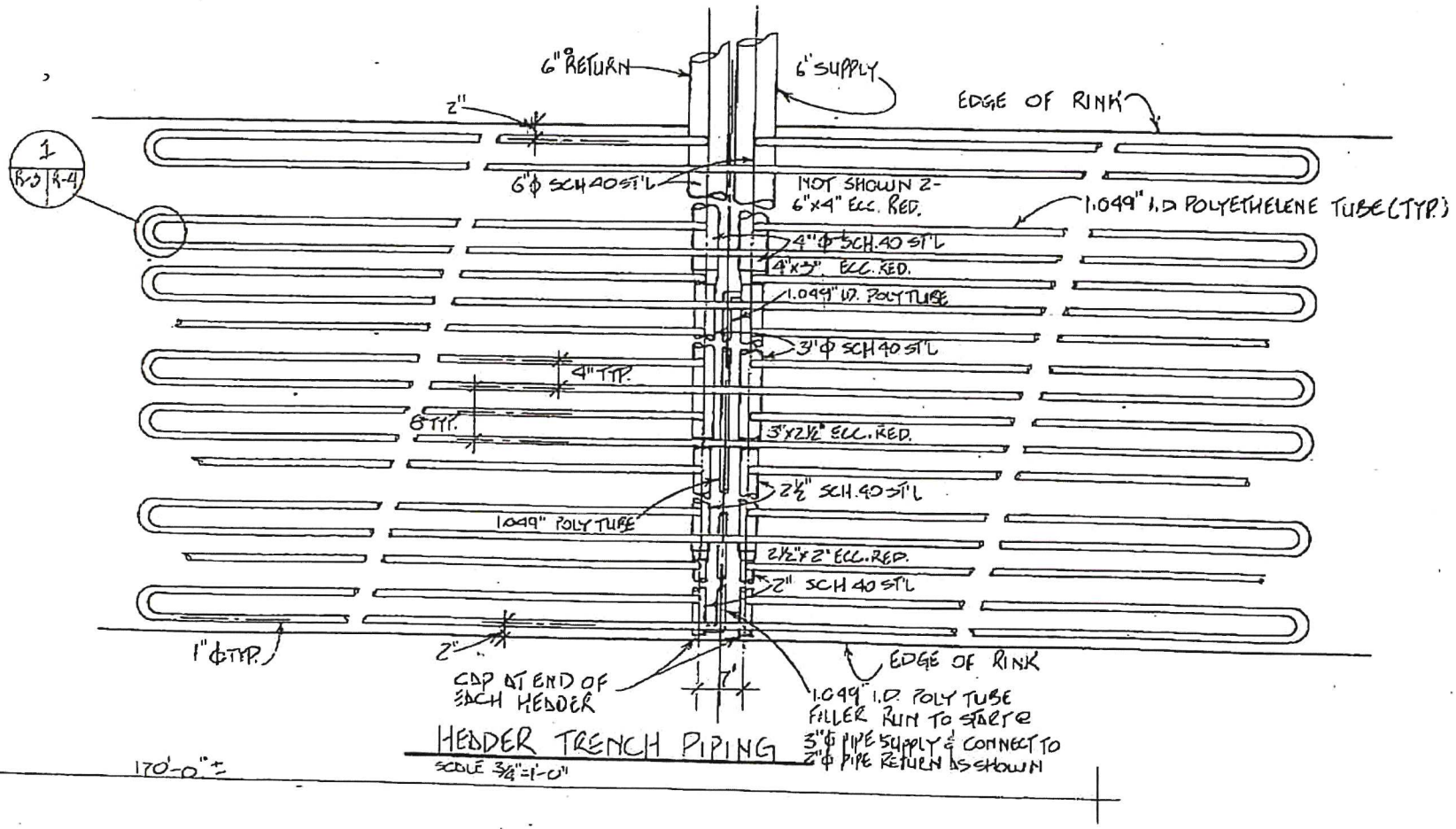
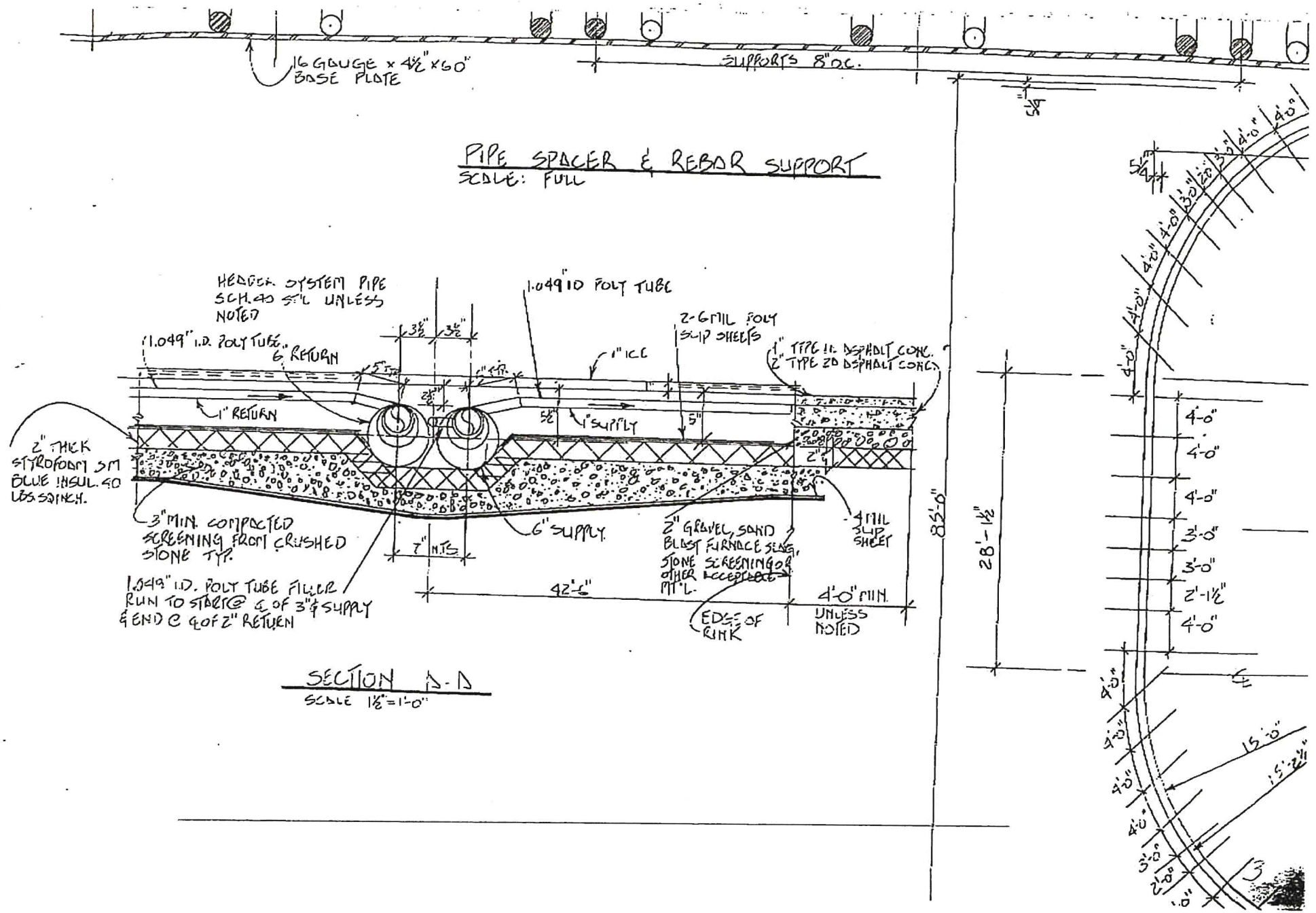


ICE RINK PLAN
1/16" = 1'-0"



HEADER TRENCH PIPING
SCALE 3/4"=1'-0"

170'-0" ±


16 GAUGE x 4½" x 60" BASE PLATE
SUPPORTS 8" OC.
PIPE SPACER & REBAR SUPPORT
SCALE: FULL
HEADER SYSTEM PIPE SCH. 40 S.S. UNLESS NOTED
1.049" I.D. POLY TUBE
1.049" I.D. POLY TUBE
6" RETURN
1" RETURN
6" SUPPLY
2-6 MIL POLY SLIP SHEETS
1" TYPE II ASPHALT CONC.
2" TYPE 2D ASPHALT CONC.
2" THICK STYROFOAM SM BLUE INSUL. 40 LBS/CU.FT.
3" MIN. COMPACTED SCREENING FROM CRUSHED STONE TYP.
1.049" I.D. POLY TUBE FILLER RUN TO START @ ℄ OF 3" ℄ SUPPLY & END @ ℄ OF 2" RETURN
2" GRAVEL, SAND BLAST FURNACE SLAG, STONE SCREENINGS OR OTHER ACCEPTABLE MTL.
4 MIL SLIP SHEET
42'-6"
4'-0" MIN. UNLESS NOTED
EDGE OF RINK
85'-0"
28'-1½"
SECTION A-D
SCALE 1½"=1'-0"

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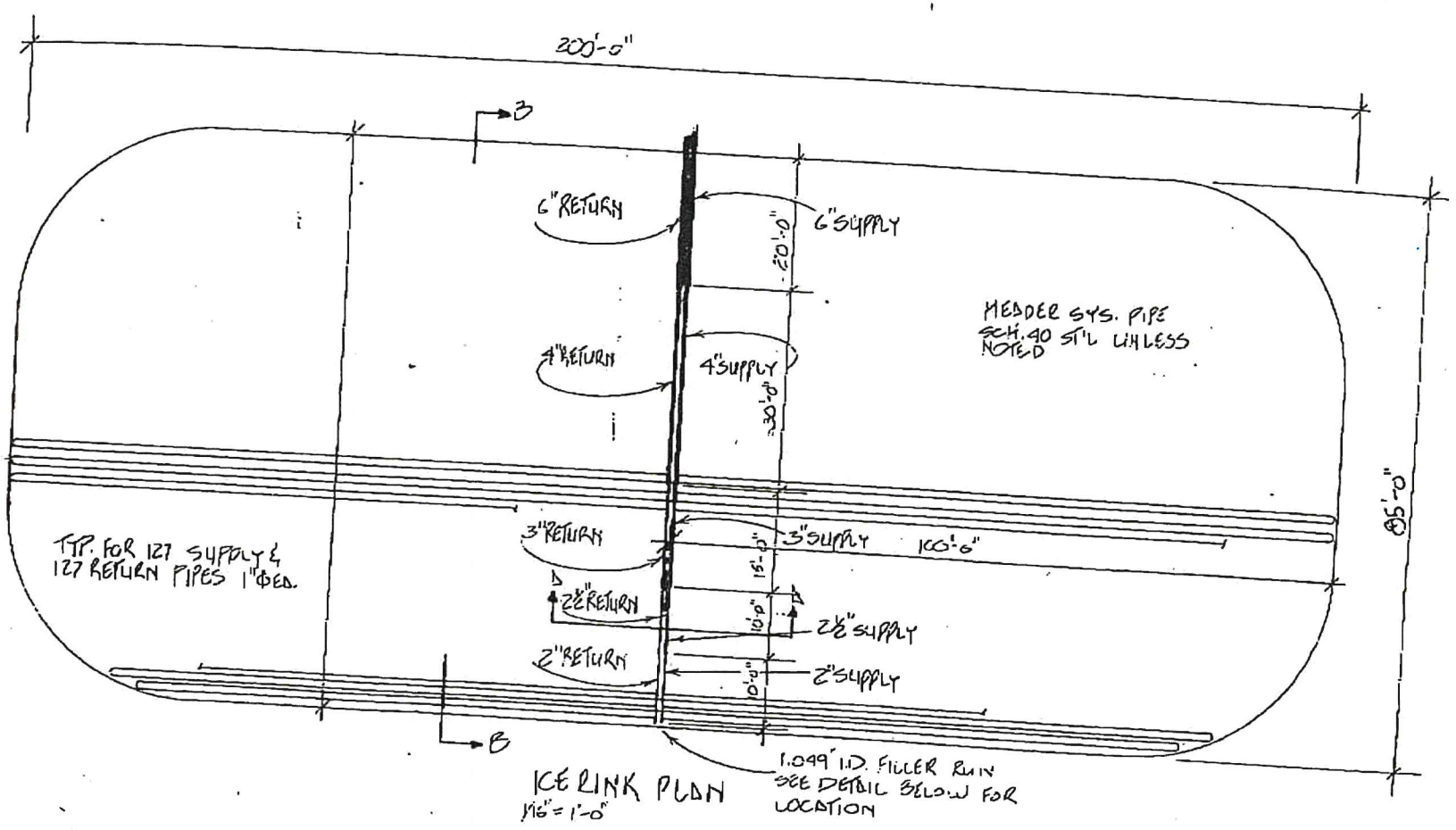
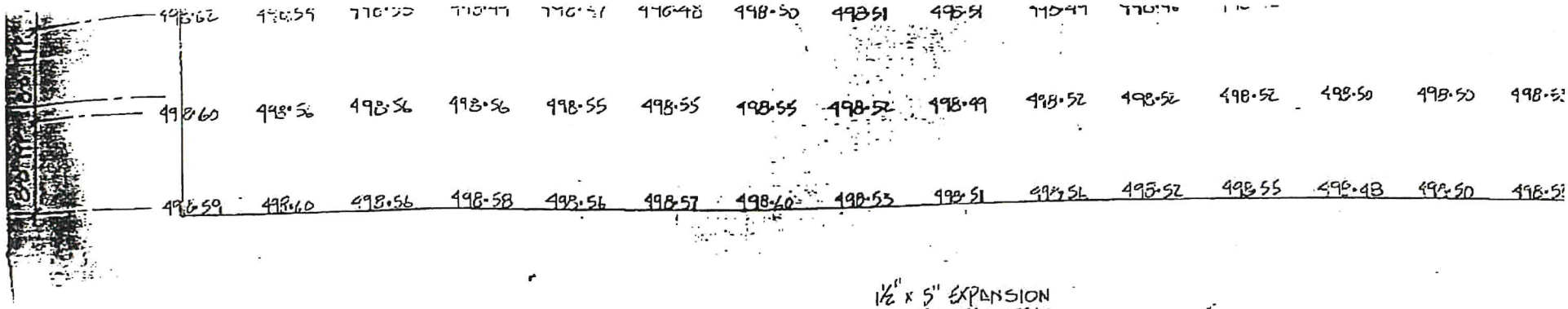
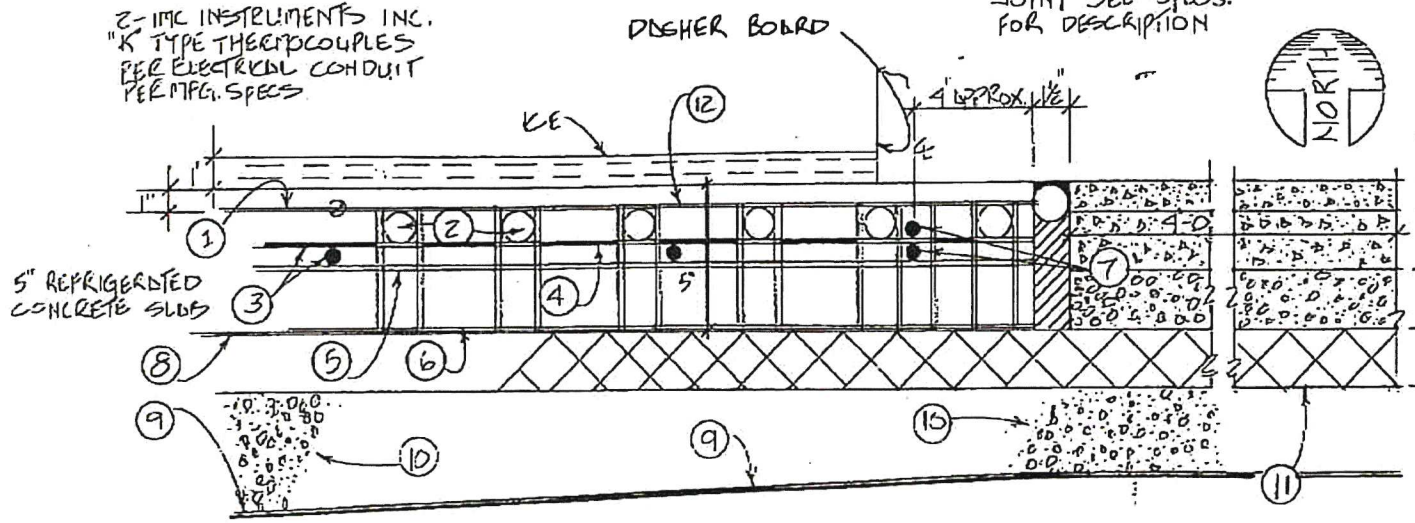


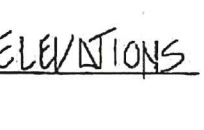
ICE RINK PLAN
1/16" = 1'-0"

BASE PLATE

4







EXISTING ELEVATIONS

SCALE ⅛"=1'-0"

REFRIGERATED SLAB DETAIL

SCALE ¼"=1"

NOTES:

1. 6 x 6 9/9 FLAT WWM
2. 1.049 I.D. POLY PIPE
3. #4 REBAR 12" O.C. ST'L
4. #4 REBAR 12" O.C. ST'L
5. SLAB PIPE = SPACER BA
6. 4½" WIDE x 1 GA. x 60" LG SUPPORT 4' ON CENTER
7. 4" REBAR CONT. AROUND
8. 2- 6MIL. POLY. SLIP SH
9. 1- 4MIL. POLY SLIP SH
10. 3" MIN. COMPACTED SUBB
11. 2" — THICK INSULATIO
12. 5" MIN. CONC. REFRG. SL

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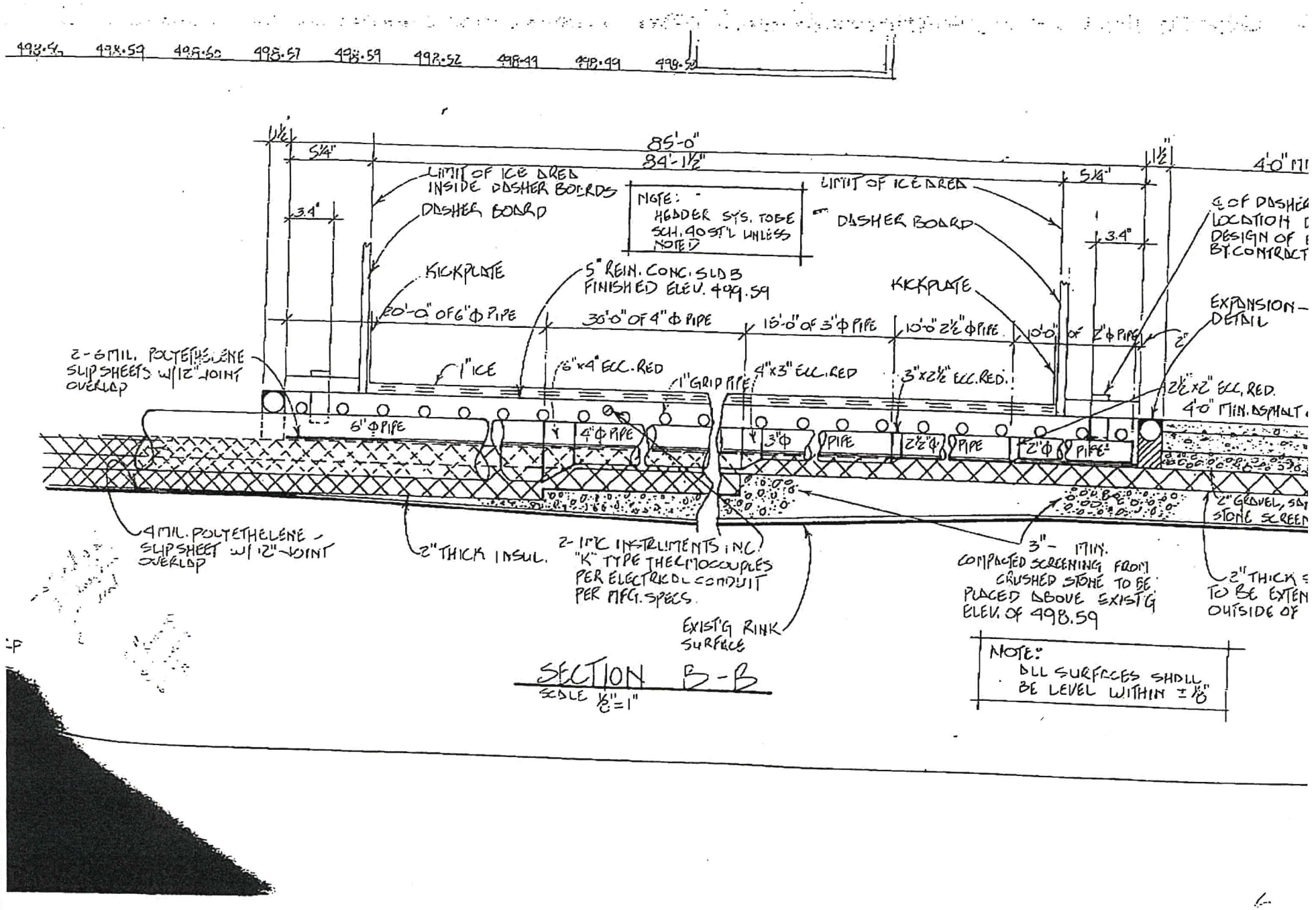

SECTION B-B
SCALE ½" = 1"

BARCLAY
BETTER WORKING WATER.

LABORATORY REPORT

CLIENT: **PREFERRED MECHANICAL SERVICES**
ADDRESS: 223 Center Street
Pembroke, MA 2359

REPORT NO. **181011**
SAMPLE DATE: 3/28/2018
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ATTENTION: Alex Meade

FIELD ENGINEER: Alex Jarvis

REFERENCE: BARWOOD

CONSTITUENTS	CALCIUM CHLORIDE BRINE				
pH, Units	5.3				
Iron, Dissolved, mg/L	295				
Iron, Total, mg/L	1450				
Copper, Dissolved, mg/L	2.39				
Copper, Total, mg/L	14.5				
Zinc, Dissolved, mg/L	26.5				
Zinc, Total, mg/L	40.7				
Aluminum, Dissolved, mg/L	0.44				
Manganese, Dissolved, mg/L	13.1				
Total Phosphorus as PO_4, mg/L	35				
Ortho Phosphate as PO_4, mg/L	35				
Phosphonate, mg/L	<0.5				
Molybdenum as Mo, mg/L	<0.5				
Anhydrous $CaCl_2$, %	20.3				
Freezing Point, °F	-2				
Sediment	Very Heavy				

Yours truly,

Mark Payton

Mark Payton, Chemist

Becker Arena Products, Inc.

Sports Facility Supplies & Equipment

Town of Hartford April 11, 2018
Attn: Scott Hausler; Director of Parks and Recreation
171 Bridge Street
White River Junction, VT 05001

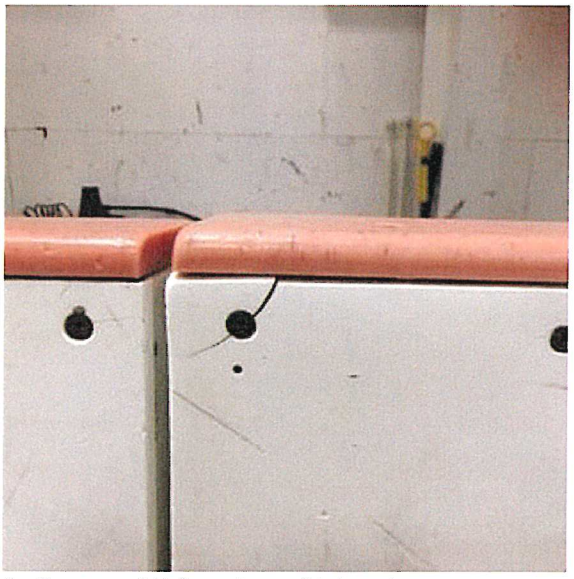
RE: Inspection of dasher board system at **Wendell A. Barwood Arena**

At the request of Scott Hausler, Director of Parks and Recreation in the Town of Hartford, VT, I was on-site to perform a physical inspection of the Town's dasher board system (boards) at the Wendell A. Barwood Arena (arena) on March 26, 2018.

The manufacturer of this system was Holmsten Ice Rinks, Inc. Submittal drawings for the in-place system are dated July 17, 1990. This manufacturer is no longer in business. These boards are now approaching 28 years of service at the arena. A combination of the substrate beneath the boards and the narrow, 3" frames, the boards are constructed of are bringing the service life of this system to its end. Several safety concerns were also found with the boards throughout the arena.

There are several areas throughout the arena where adjoining panels are not flush and even. This inconsistency is visible based upon the cap rail joints being uneven, up to a ½" off. For competitive hockey at any level, where there is constant, forceful, contact in these areas, this is a player safety hazard. The result appears to be caused by an uneven substrate below the dasher frames.

Typical condition. Broken HDPE facing and gaps in facing.



Another area quickly becoming a safety hazard.

1498 Main St. Reading, MA 01867 ph. 781-759-9380 mike.upton@beckerarena.com

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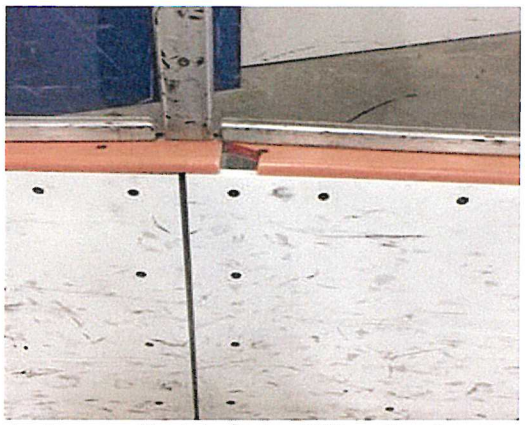
Uneven cap rail, resulting effect of an uneven substrate.



Another area with missing/broken HDPE creating a hazard.

Another condition that is present is how the boards appear to be leaning away from the ice surface. Cross ice measurements taken at each goal line, blue line, and center ice line show the rink to be approximately 2" wider than originally constructed. This condition appears to be a result of years of the ice resurfacer touching the boards while making a sheet of ice. Empty, most ice resurfacer machines (Zamboni or Olympia) weigh approximately 9,000lbs. Filled with water, they can weigh over 10,000lbs. Given the narrow 3" frame, and lack of any external support posts, the frames over the years have been forced into this position.

Boards leaning back. Visible line on white facing from where the resurfacer makes contact in the corner. This is a typical condition throughout the arena.

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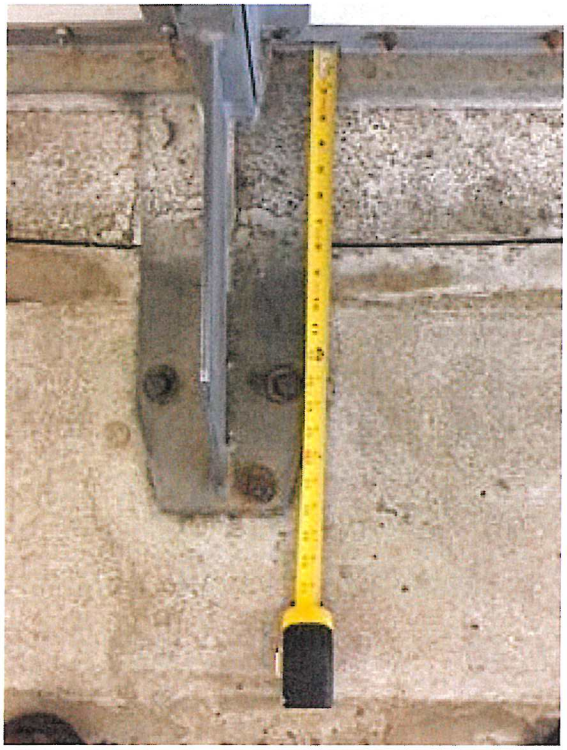
The boards are currently sitting on the cold floor, and anchored on the warm floor. By design, this type of system was intended to be a retrofit for a concrete floor to avoid drilling into the refrigerated floor, or for use with rinks that had a sand floor and concrete curb or perimeter. Extending from the frames is a 15 inch, ¼" thick footplate, with a reinforcing gusset. Through the footplate, approximately 5" away from the refrigerated floor are two ½" drilled in epoxy anchors, and approximately 9" away from the refrigerated floor is one ½" drilled in expanding anchor.



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The original, as built, measurements for these boards are 198' 5" * 83' 5 ½" * 28'R (radius corner). These are all inside (facing to facing) dimensions. The facing material is ½" White HDPE (High Density Polyethylene). There is a ¾" Red HDPE cap rail, and a 1/4" HDPE Yellow Kickplate.

Because plastics expand and contract with temperature change, the 1/4" HDPE used as kickplate material is no longer flush against the facing material. Over time, this has begun to tear itself away from the facing. Typically, the kickplate material would be the same as the facing, ½" HDPE. There was no backer attached to these boards at the arena. Backer is typically 3/8", and covers the backside (outside) of the frames. Its purpose is to create a clean look. It's an area trash and dirt will collect.

Typical condition/No Backer.

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All of the gates at the player/penalty boxes, as well as the access gates are worn and beginning to fail. The Equipment Gate is opened and closed along an uneven surface. It is beginning to sag as a result. When closed there is a very wide gap at glass height. The sagging of these gates is caused by both 28 years of service, and the weight of the gates. Since it is only supported by 2 hinges on either side attached to the narrow 3" frames, this condition will only worsen. A couple of the player gates can no longer just be pushed shut, requiring a player or coach, or other user, to manually work the latch to close the gate.

Weight of equipment gate is causing gate to sag, and difficult to close properly.

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Over the years, based on the amount of play, resurfacing the ice, or possibly having the boards taken out and re-installed (unknown), there are several anchors missing, as well as several anchors that have backed out. This is a potential safety concern, as in several areas the boards are improperly anchored which allows for unnecessary movement.

Anchors backing out, and footplate bent. This condition is evident in several locations.

Throughout the rink, the facing is either cracked, or it missing large pieces, typically the corners of particular sections. There are also several fasteners throughout the rink that have backed out, and are exposed. These both are potential hazards to anyone using the rink. These conditions can grab equipment or a non-equipped user, and create an avoidable safety issue.

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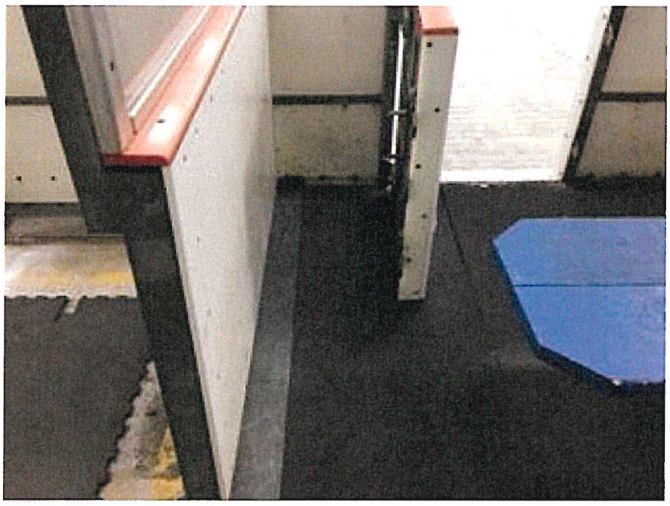
The player and penalty boxes have panels used as dividers. These boxes have elevated floors, typical in hockey rinks. The framing for the elevated boxes is made of wood. The divider panels were attached to the elevated wood floors, and each one of them was easily moved with little effort. This is a potential safety hazard. Typically, these dividers would be attached directly to the perimeter concrete. The manufacturing of these panels was designed to sit on the raised floor so the divider cap rail would be at the same elevation as the main rink cap rail.



Divider panels anchored to wood, creating a safety hazard to any user.

The elevated flooring, in several areas, felt rotted or weak. There was considerable deflection under my foot during the inspection. It is likely this will lead to an eventual failure of the elevated floors in the box area.

The benches in the boxes were nothing more than free standing, wood construction.

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The shielding throughout the arena is acrylic. This material is a plastic, poly (methyl methacrylate), and often referred by the trade name Plexiglass. As a resin, this material is easily scratched. Currently, viewing at the arena is impaired as a result of this condition. The advantage to using this shielding material is it is lighter than tempered glass. It is not, however, stronger than tempered glass, and it is more expensive.

Acrylic shielding marked and scratched up. This cannot be corrected.

The arena currently has 5' glass at the ends and radius corners that is 5/8" thick. The sides and box areas have 3' glass that is ½" thick. These thicknesses are typical for any rink. The height, however, isn't standard. Technology, sticks in particular, and the way the game is played today, have caused a standard height throughout a rink to be 5' to 6' throughout the rink. This keeps the number of out of play whistles down, etc. The current rink is a posted system. Shield supports are located between every piece of glass.

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There is both black and monofilament netting on site. The monofilament netting appears to be loosely hung and insufficient. Depending on glass heights, the netting should extend to the structural beams overhead, which is 20' above the top of the cap rail. This is the same throughout, except the box side of the rink, which has the structural beams at 15' above the top of the cap rail.

There is padding at the termination posts in the box areas. These are the areas where the glass around the oval ends, and the boxes are open. These pads are only 3' high, meeting the glass height. The safety concern in these areas is that the divider panels are installed to an insecure, elevated wood floor, structure.

The Wendell A. Barwood Arena has had a successful run of 28 years with this dasher board system. However, numerous safety hazards that are present should be a concern. We highly recommend the Town of Hartford consider replacement of these boards in the very near future. Attempting to repair would be a waste in valuable resource, based on the current condition.

Replacement cost of the dasher system, at this time, would be approximately $162,925. This cost includes the boxes and dividers, elevated floors and coach's walkways with protective flooring, 6' tempered glass with aluminum support posts, and protective netting at each end. To include the option for full height backer, the additional cost would be $6,840. To include the option for blue powder coated glass supports, the additional cost would be $5,200. These figures are inclusive of all freight and installation costs (non-union / non-prevailing wage rate).

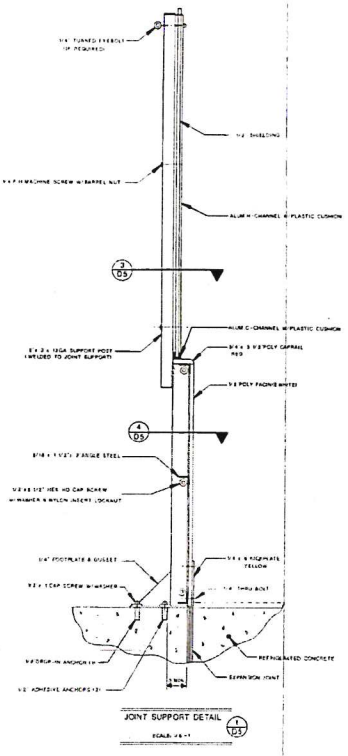
Respectfully Submitted,

Mike Upton
Northeast Regional Representative

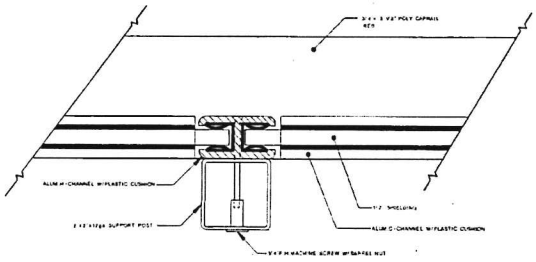
Drawings of existing dasher board system attached for reference.

1498 Main St. Reading, MA 01867 ph. 781-759-9380 mike.upton@beckerarena.com

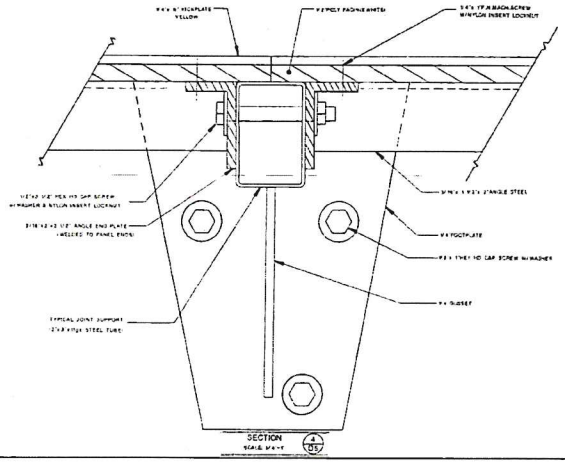
EXISTING ICE ARENA DASHER BOARDS



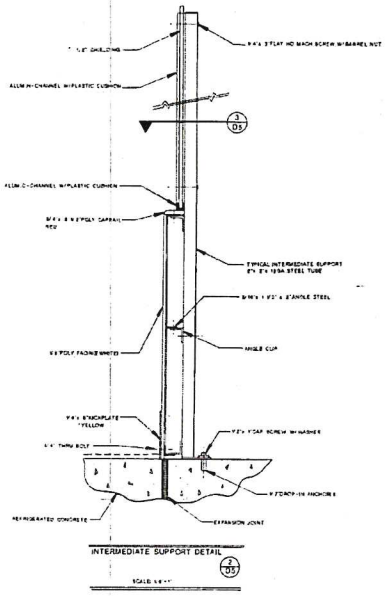
JOINT SUPPORT DETAIL



SECTION



SECTION



INTERMEDIATE SUPPORT DETAIL

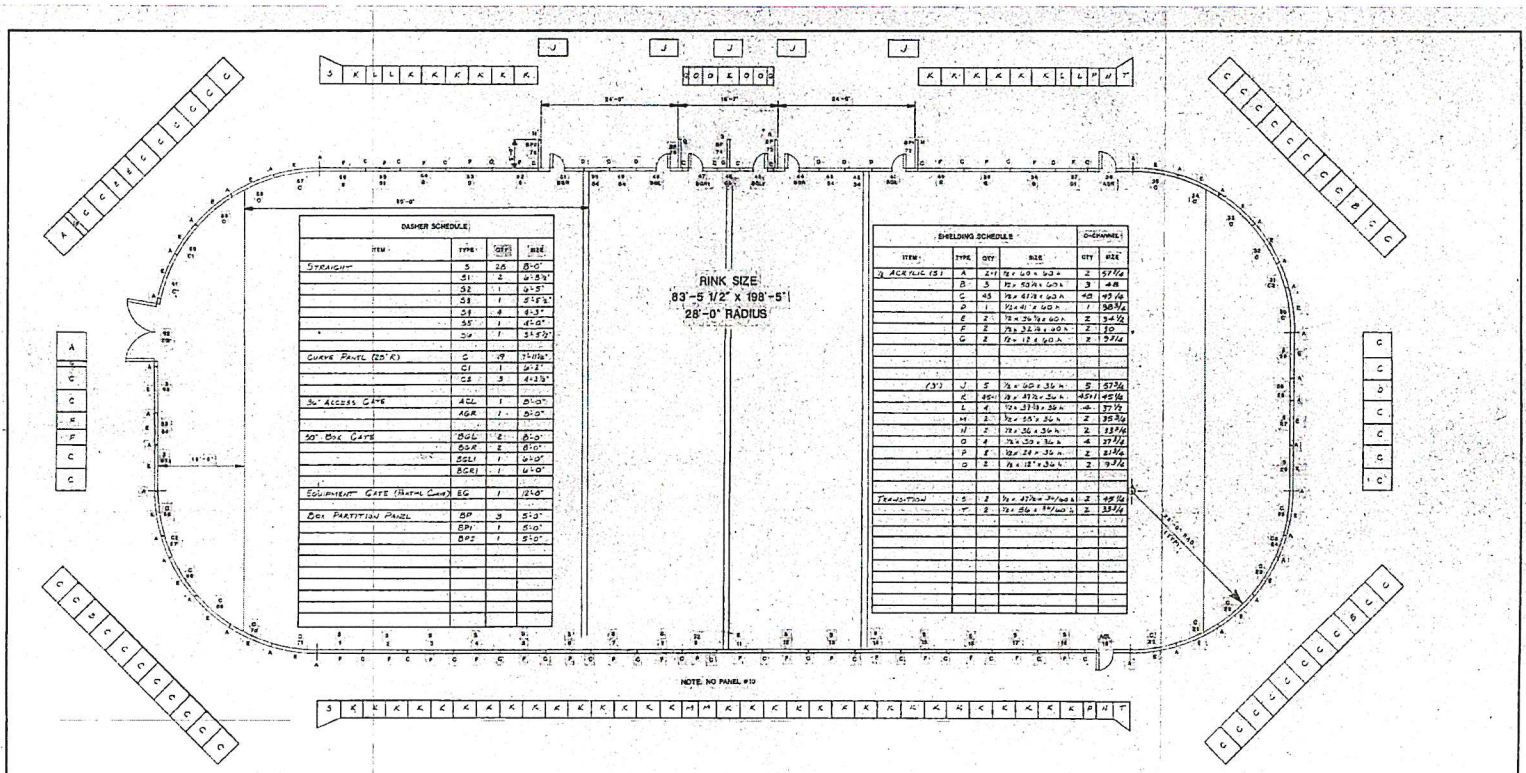
SYMBOL	REV.	DATE

HOLMSTEN ICE RINKS, INC.

1902 COMO
ST. PAUL, MINNESOTA 55108
PHONE (612) 646 8626

TOWN OF HARTFORD

SUBJECT	STEEL FRAME DASHER DETAILS (1/2" POLY DESIGN)
DRAWN F.S.P.	SCALE NOTED
DWG. NO. D2 - P	DATE 8/29/03
	REV.



DASHER SCHEDULE

ITEM	TYPE	QTY	SIZE
STRAIGHT	S	28	8'-0"
	S1	2	6'-3¾"
	S2	1	4'-5"
	S3	1	5'-5⅜"
	S4	4	8'-3"
	S5	1	4'-0"
	S6	1	3'-5⅞"
CURVE PANEL (25'R)	C	19	7'-11⅛"
	C1	1	6'-2"
	C2	3	4'-2⅜"
36" ACCESS GATE	AGL	1	8'-0"
	AGR	1	8'-0"
50" BOX GATE	BGL	2	8'-0"
	BGR	2	8'-0"
	BGL1	1	6'-0"
	BGR1	1	6'-0"
EQUIPMENT GATE (METAL CLAD)	EG	1	12'-0"
BOX PARTITION PANEL	BP	3	5'-3"
	BP1	1	5'-0"
	BP2	1	5'-0"

SHIELDING SCHEDULE

ITEM	TYPE	QTY	SIZE	C-CHANNEL QTY	C-CHANNEL SIZE
¼ ACRYLIC (S)	A	24	72 x 60 x ¼ A	2	57 1/16
	B	3	72 x 50¾ x ¼ A	3	48
	C	45	72 x 41¾ x ¼ A	45	39 1/16
	D	1	72 x 41 x ¼ A	1	38 13/16
	E	21	72 x 34½ x ¼ A	2	32 1/2
	F	2	72 x 32¼ x ¼ A	2	30
	G	2	72 x 12 x ¼ A	2	9 7/16
(¾")	J	5	¾ x 60 x 36 H	5	57 3/16
	K	85	¾ x 47¾ x 36 H	85	45 1/16
	L	4	¾ x 33⅛ x 36 H	4	31 1/2
	M	2	¾ x 28 x 36 H	2	26 3/4
	N	2	¾ x 26 x 36 H	2	24 3/4
	O	4	¾ x 20 x 36 H	4	18 7/8
	P	8	¾ x 12 x 36 H	2	8 13/16
	Q	2	¾ x 12 x 36 H	2	9 3/16
TRANSITION	S	2	¾ x 47¾ x 3"/60 S	2	45 1/16
	T	2	¾ x 36 x 3"/60 S	2	33 3/4

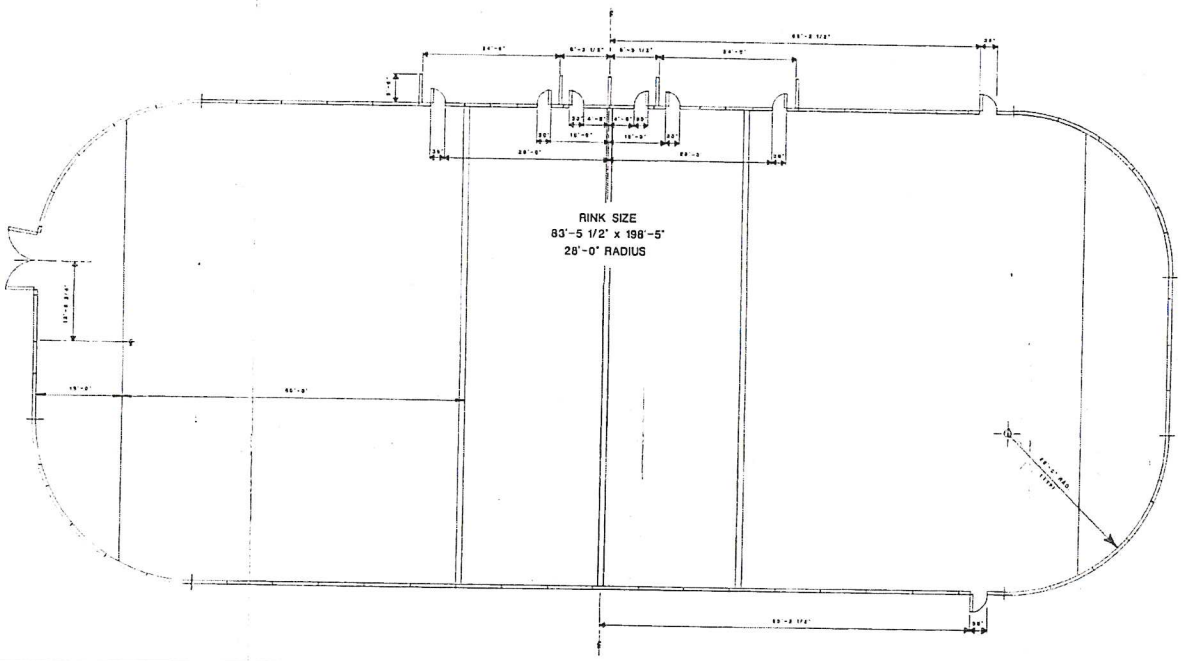
NOTES:
- ALL STEEL FRAMING & SUPPORTS SHALL BE HOT DIPPED GALVANIZED
- BOARDS INCLUDE RAISED PLYWOOD FLOORS & ¼" RUBBER MAT ONLY
- 48"x96"-¼" THICK ACRYLIC IS CLEAR
- 96"x12'-0" ACRYLIC IS GLASS (NOT INCLUDED IN FRONT OF TEAM BOXES)
- ACRYLIC PNL SHALL HAVE 3 SIDES BEVELED & TOP 2 CORNERS ROUNDED
- 1/8" HOLY LINE KIT SHALL BE OVERLAID ON 1/2" POLE
- THRESHOLD HEIGHTS:
  EQUIPMENT GATE - 1 3/4"
  ACCESS GATE - 8"
  BOX GATE - 8 1/4"

SYMBOL	REV.	DATE

HOLMSTEN ICE RINKS, INC.
1953 COMO
ST. PAUL, MINNESOTA 55108
PHONE (612) 646-6825

TOWN OF HARTFORD
WHITE RIVER JUNCTION

SUBJECT: STEEL FRAME DASHER LAYOUT
DRAWN: D.J.E. | SCALE: 1/8" = 1'-0" | DATE: 7/17/89
DWG. NO.: 90359-01 | REV.



NOTES:

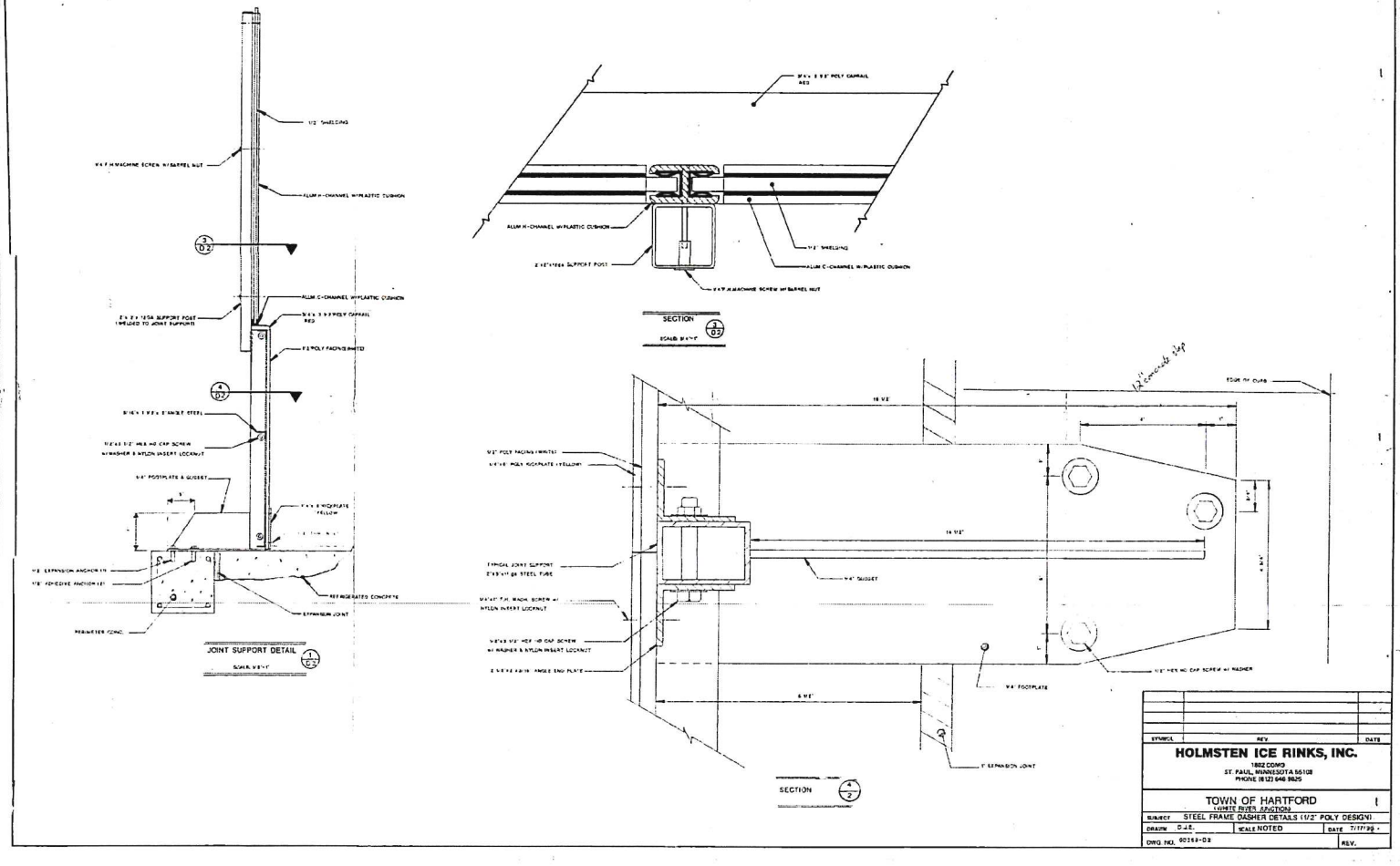
- ALL STEEL FRAMING & SUPPORTS SHALL BE HOT DIPPED GALVANIZED
- BOXES INCLUDE RAISED PLYWOOD FLOORS & 1/4" RUBBER MAT ONLY
- 72"x 8'-0" HIGH ACRYLIC @ ENDS
- 1/4"x 8'-0" ACRYLIC @ SIDES (NOT INCLUDED @ FRONT OF TEAM BOXES)
- ACRYLIC TAB SHALL HAVE 2 SIDES BEVELED & TOP 2 CORNERS ROUNDED
- 1/2" POLY LINK KIT SHALL BE OVERLAID ON 1/2" POLY
- THRESHOLD HEIGHTS:
  - EQUIPMENT GATE = 1 3/4"
  - ACCESS GATE = 0"
  - BOX GATE = 3 1/4"

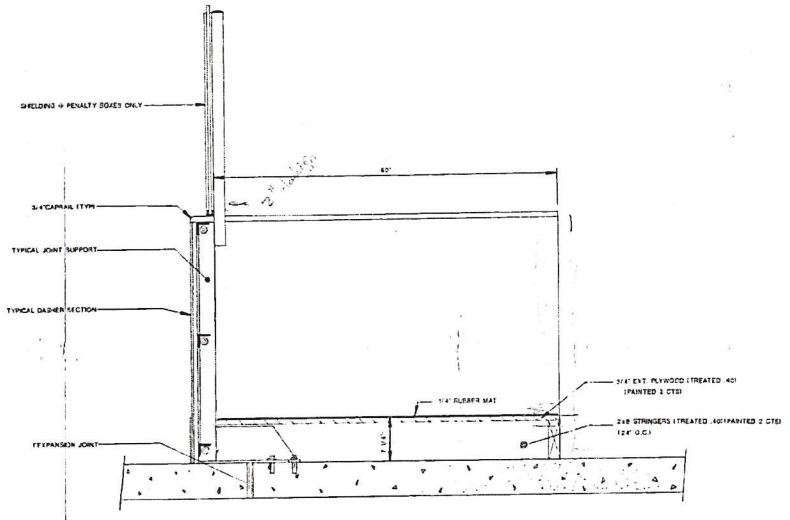
SYMBOL	REV.	DATE

HOLMSTEN ICE RINKS, INC.
1852 COMO
ST. PAUL, MINNESOTA 55108
PHONE (612) 646-8825

TOWN OF HARTFORD
WHITE RIVER JUNCTION

SUBJECT	STEEL FRAME DASHER LAYOUT		
DRAWN	D.J.E.	SCALE 1/8" = 1'-0"	DATE 7/17/90
DWG. NO.	90355-01		REV.


JOINT SUPPORT DETAIL
SECTION
SECTION
HOLMSTEN ICE RINKS, INC.
1882 COMO
ST. PAUL, MINNESOTA 55108
PHONE (612) 646 9625
TOWN OF HARTFORD
WHITE RIVER JUNCTION
STEEL FRAME DASHER DETAILS (1/2" POLY DESIGN)
SCALE NOTED
DWG. NO. 90259-03



PENALTY / TEAM BOX DETAIL

SYMBOL	REV.	DATE

HOLMSTEN ICE RINKS, INC.
1902 CONDO
ST. PAUL, MINNESOTA 55108
PHONE (612) 646-8625

TOWN OF HARTFORD
(WHITE RIVER JUNCTION)

SUBJECT: STEEL FRAME TEAM BOX DETAILS

DRAWN: D.J.E. | SCALE: NOTED | DATE: 7/17/90

DWG. NO. 90358-D3 | REV.