CITY OF CEDAR RAPIDS
ImOn ICE ARENA REPAIR PROJECT - PHASE II

CEDAR RAPIDS, IOWA

PROJECT # #PUR0920-071

Utility & Emergency Numbers

Parks & Recreation Department	319–286–5750
Police Department	319–286–5491
Fire Department	319–286–5200
Emergency	911
Alliant Energy	319–786–1912
Mid American Energy	319–298–5155
Water Department	319–286–5910
Qwest Communications	319–399–7600

PROJECT LOCATION MAP

PROJECT LOCATION

Mayor: Bradley Hart

City Council

Tyler Olson
Susie Weinacht
Scott Overland
Scott Olson
Ann Poe
Martin Hoeger
Dale Todd
Ashley Vanorny

CEDAR RAPIDS
City Of Five Seasons

DRAWING INDEX

SHEET	REV	TITLE
		GENERAL
G00	0	COVER SHEET AND DRAWING INDEX
		ARCHITECTURAL
A101	0	FIRST FLOOR PLAN
A102	0	OLYMPIC ICE RINK FLOOR PLAN
A103	0	LOCKER ROOM FLOOR PLAN
A140	0	ROOF PLAN
A201	0	EXTERIOR ELEVATIONS
A201	0	INTERIOR ELEVATIONS
A501	0	DETAILS
A502	0	DETAILS
		STRUCTURAL
S-001	0	STRUCTURAL NOTES AND GENERAL INFORMATION
S-101	0	OVERALL ROOF PLAN - ROOF SHEETING
H00	0	MECHANICAL
		HVAC SYMBOLS & ABBREVIATIONS SCHEDULES & DETAILS
HD01	0	OLYMPIC ICE RINK - HVAC DEMO PLAN
HD02	0	HIGH ROOF HVAC DEMO PLAN
H01	0	ICE AND ENTRY LEVELMECHANICAL PLAN-SOUTH
H02	0	HIGH ROOF - HVAC PLAN
M00	0	PIPING GENERAL NOTES
MD01	0	OLYMPIC ICE RINKDEMOLITION PLAN
M01	0	BASE BID - PERMANENT SAND BASE RINK
M02	0	BASE BID - PERMANENT SAND BASE FLOOR ISOMETRIC
M03	0	BASE BID - PERMANENT SAND BASE FLOOR DETAILS
M04	0	BID ALTERNATE 1 - CONCRETE FLOOR
M05	0	CONCRETE RINK FLOOR ISOMETRIC
M06	0	BID ALTERNATE 1- CONCRETE FLOOR DETAILS
M07	0	BID ALTERNATE 2- SUBSOIL HEAT SYSTEM
		ELECTRICAL
E00	0	ELECTRICAL SYMBOLS & NOTES
E01	0	ICE AND ENTRY LEVEL- LIGHTING PLAN
E02	0	CONCOURSE LEVEL - LIGHTING PLAN
E03	0	ICE AND ENTRY LEVEL - PARTIAL POWER PLAN
E04	0	ICE AND ENTRY LEVEL - PARTIAL POWER PLAN
E05	0	ROOF - POWER PLAN
E06	0	SITE LIGHTING PLAN - BID ALTERNATE 4

COORDINATE PHASING/SEQUENCING WITH OWNER REPRESENTATIVE TO MINIMIZE SHUTDOWN TIME .

THOMAS A. MCINERNEY 05242 IOWA LICENSED ARCHITECT

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed architect under the laws of the state of Iowa.

THOMAS MCINERNEY 1/15/2021
Signature Date

Printed or typed name : Thomas A. McInerney
Licensed Number : 05242
My license renewal date is June 30, 2021

Pages or sheets covered by this seal : ARCHITECTURAL SHEETS

LICENSED PROFESSIONAL ENGINEER DAVID L. RASMUSSEN NO. 14227 IOWA
EXPIRES DEC. 31, 2021

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION.
I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE:
NAME: DAVID L. RASMUSSEN
DATE: 1/15/2021
LICENSE RENEWAL DATE: DEC. 31, 2021
PAGES OR DIVISIONS COVERED BY THIS CERTIFICATION: STRUCTURAL SHEETS

LICENSED PROFESSIONAL ENGINEER MOHAMMED N. ABUHASAN NO. 20081 IOWA
EXPIRES DEC. 31, 2021

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION.
I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE:
NAME: MOHAMMED N. ABU-HASAN
DATE: 1/15/2021
LICENSE RENEWAL DATE: DEC. 31, 2021
PAGES OR DIVISIONS COVERED BY THIS CERTIFICATION: MECHANICAL & ELECTRICAL SHEETS

CEDAR RAPIDS
City of Five Seasons®

OWNER:

CITY OF CEDAR RAPIDS
Facilities Maintenance Services
City of Cedar Rapids 500 15th Ave SW, Cedar Rapids, Iowa 52404

ENGINEER OF RECORD:

INNOVATIVE ENGINEERS, INC.
2871 Heinz Rd. Suite B, Iowa City, IA 52240
T 319.855.4115 | F 319.351.0070
www.InnovativeEngineersInc.com

CITY OF CEDAR RAPIDS
ImOn ICE ARENA REPAIR PROJECT - PHASE 2
CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:	MNA
DRAWN BY:	JJ
CHECKED BY:	MNA
DOCUMENT DATE:	11/2/2020
PROJECT NO.:	20-101254
CLIENT NO.:	

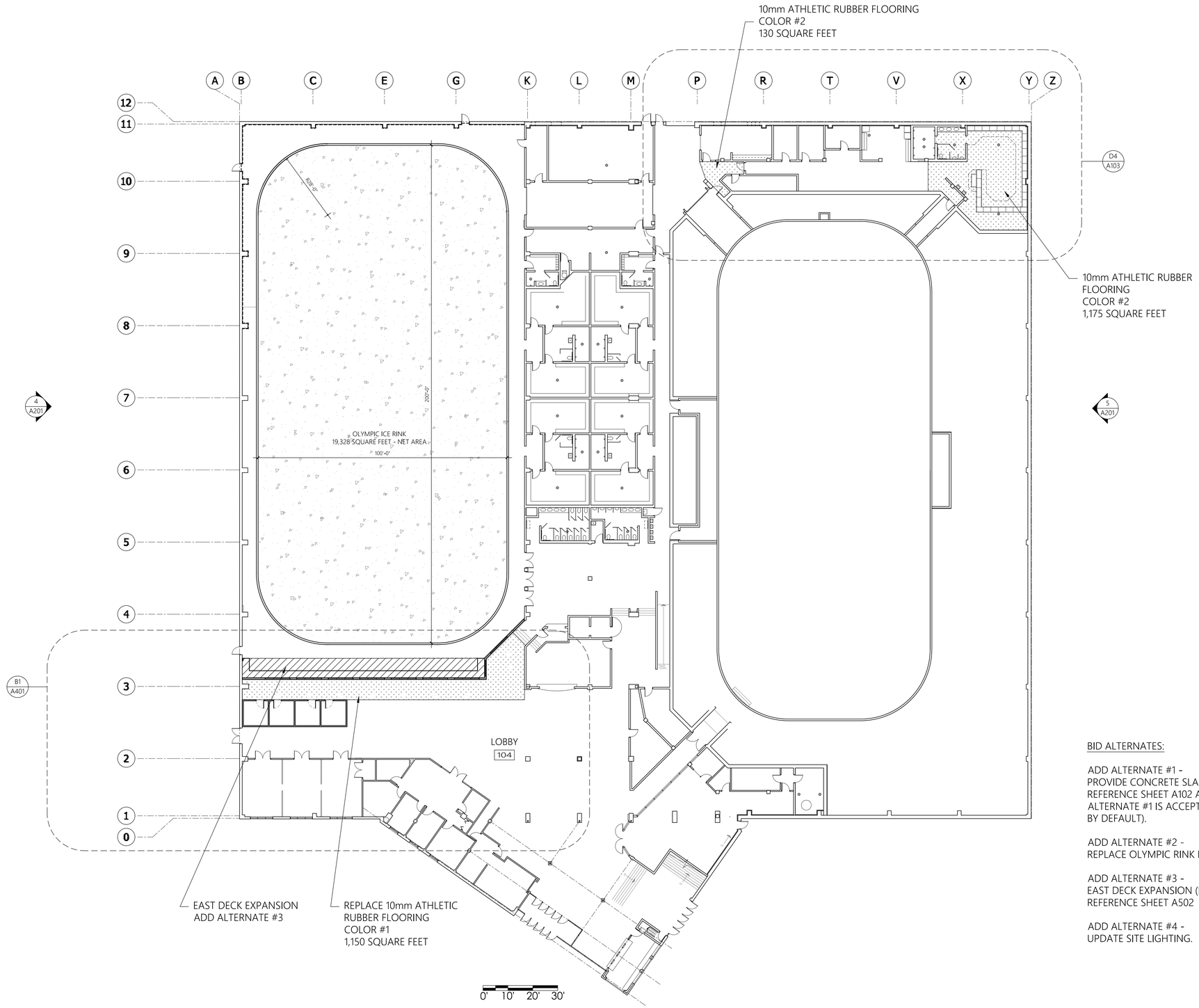
REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	1-15-2021	OUT FOR BID DRAWINGS	MNA	JJH

COVER SHEET AND DRAWING INDEX

SHEET: G00

REV: 0



FIRST FLOOR PLAN
SCALE: 1"=20'-0"

BID ALTERNATES:

ADD ALTERNATE #1 -
PROVIDE CONCRETE SLAB ICE RINK SYSTEM FOR THE OLYMPIC ICE RINK. REFERENCE SHEET A102 AND DETAIL C2 ON SHEET A501. (IF ADD ALTERNATE #1 IS ACCEPTED THEN ADD ALTERNATE #2 WILL BE REJECTED BY DEFAULT).

ADD ALTERNATE #2 -
REPLACE OLYMPIC RINK HEATING SYSTEM.

ADD ALTERNATE #3 -
EAST DECK EXPANSION (INCLUDES REMOVAL OF CONCRETE). REFERENCE SHEET A502

ADD ALTERNATE #4 -
UPDATE SITE LIGHTING.

CEDAR RAPIDS

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CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

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CHECKED BY:	MNA
DOCUMENT DATE:	01/15/2021
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CLIENT NO.:	

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FIRST FLOOR PLAN

SHEET: A101

REV:

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FLOOR SYSTEMS

CONCRETE FLOOR ICE SYSTEM	1" ICE 5" CONCRETE SLAB AND COOLING PIPES 3" INSULATION 6" REHEAT SAND AND PIPES	TSE 100.00	TOP OF ICE EL = 100.08
			BOTTOM ICE SYSTEM EL 98.83
SAND FLOOR ICE SYSTEM	1" ICE 2" SAND AND COOLING PIPES 3" INSULATION 6" REHEAT SAND AND PIPING	TSE 100.00	TOP OF ICE EL = 100.08
			BOTTOM ICE SYSTEM EL 99.08

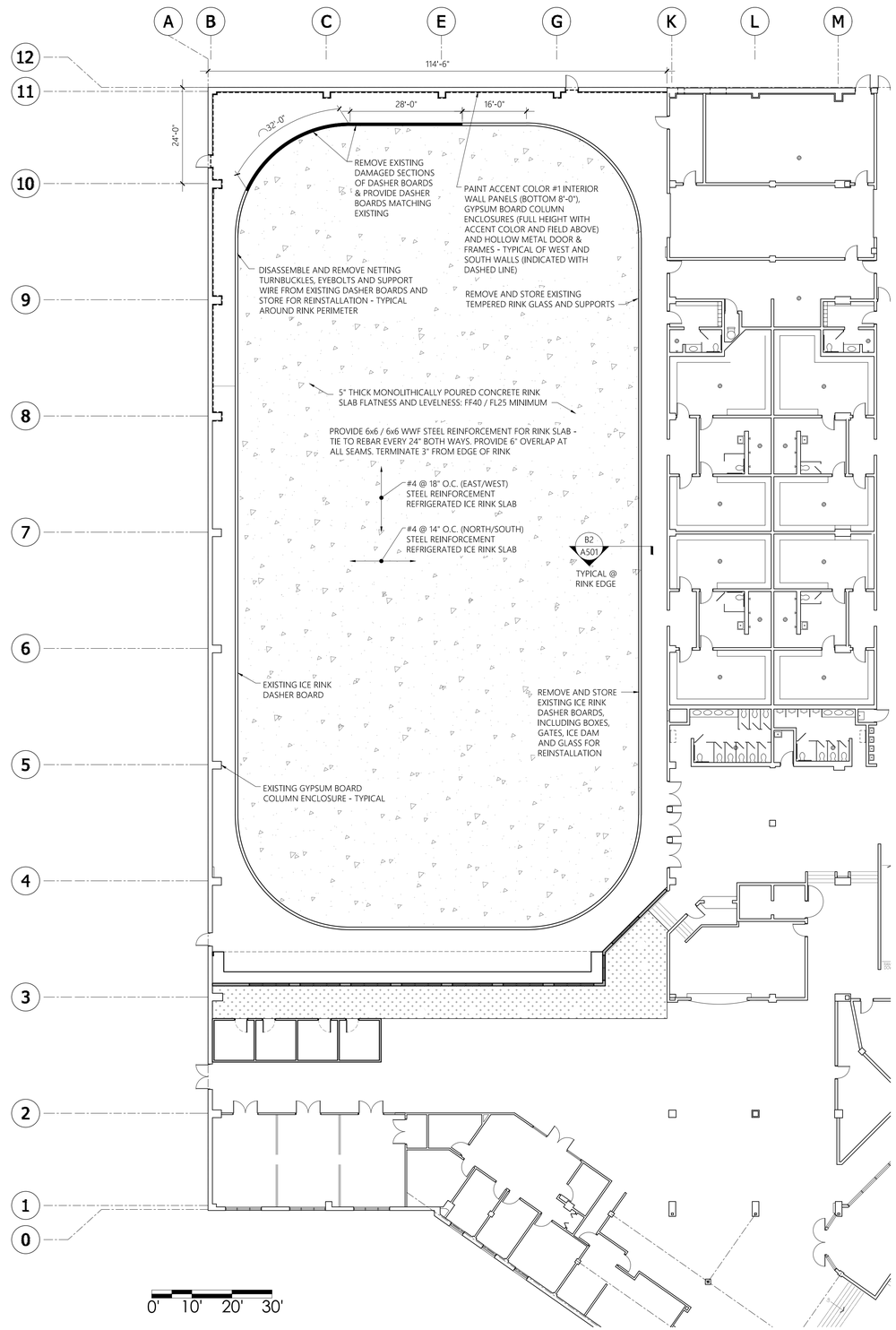
SLAB ON GRADE: SLAB ON GRADE

NOTES:

ICE RINK REFRIGERATED SLAB

1. Work shall be performed by a company regularly engaged in the installation of refrigerated concrete floor and the application of concrete materials. Provide proof that the contractor has successfully completed at least three (3) projects of similar size and complexity in the past.

2. Concrete slab work shall be performed by an established concrete floor finishing contractor with a proven track record of satisfactory, consistent quality workmanship for a period of a minimum five years related to refrigerated floor slab and other stringent floor tolerance specified concrete floor slabs. Floor finishing contractor must have successfully performed refrigerated slabs utilizing specialized mechanical laser-guided power screed equipment. Approved contractor must show proof of this requirement to the consultant in advance of issuing contract.



A1 FLOOR PLAN
SCALE: 1/16"=1'-0"

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CEDAR RAPIDS

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PROJECT # #PUR0920-071

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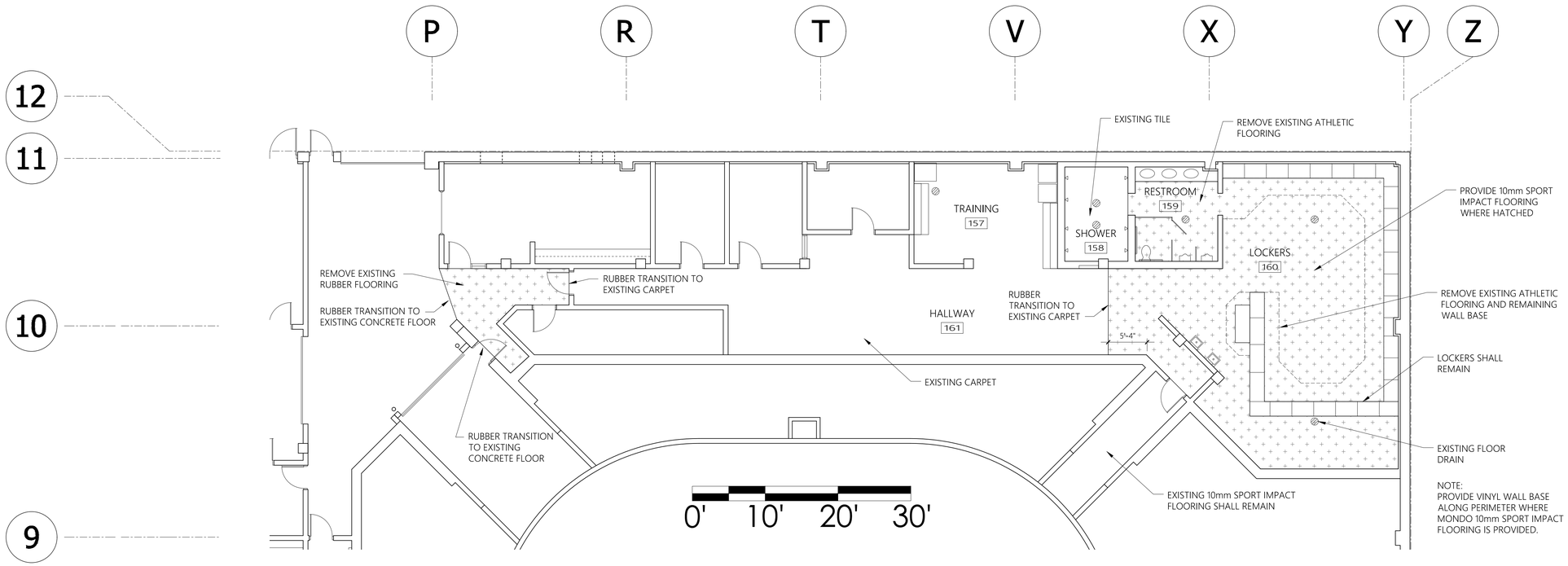
OLYMPIC ICE RINK
FLOOR PLAN

SHEET: A102

REV:



D4 FLOOR PLAN

SCALE: 1/8"=1'-0"

CEDAR RAPIDS

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CITY OF CEDAR RAPIDS ImOn ICE ARENA REPAIR PROJECT - PHASE 2

CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

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DRAWN BY:	JJ
CHECKED BY:	MNA
DOCUMENT DATE:	01/15/2021
PROJECT NO.:	20-101254
CLIENT NO.:	

REVISIONS

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LOCKER ROOM FLOOR PLAN

SHEET: A103

REV:

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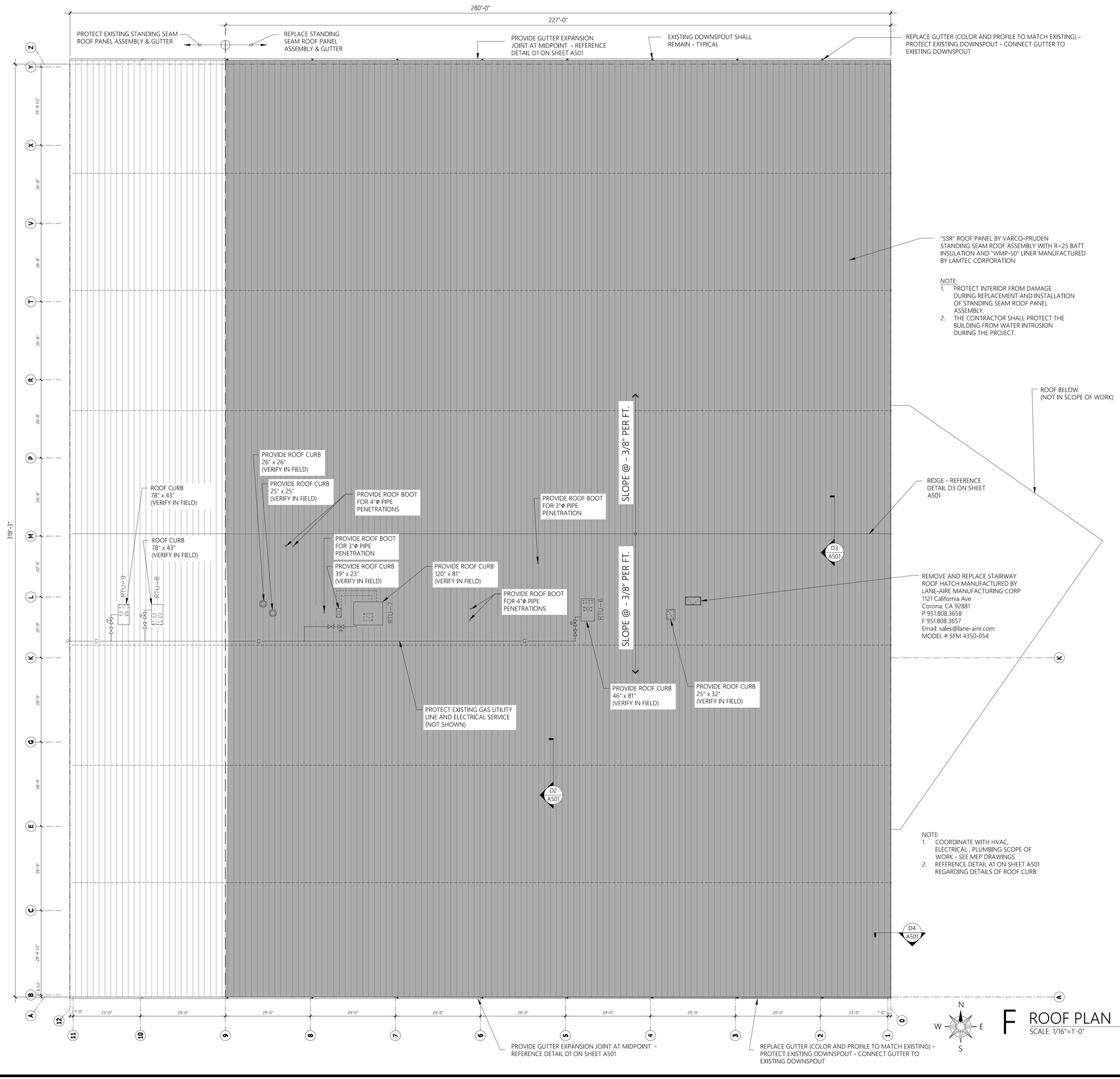

F ROOF PLAN
SCALE: 1/16"=1'-0"

CEDAR RAPIDS

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PROJECT # #PUR0920-071

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CHECKED BY:	MNA
DOCUMENT DATE:	01/15/2021
PROJECT NO.:	20-101254
CLIENT NO.:	

REVISIONS

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0	1-15-2021	OUT FOR BID DRAWINGS	TMA	TAM

ROOF PLAN

SHEET: A140

REV:

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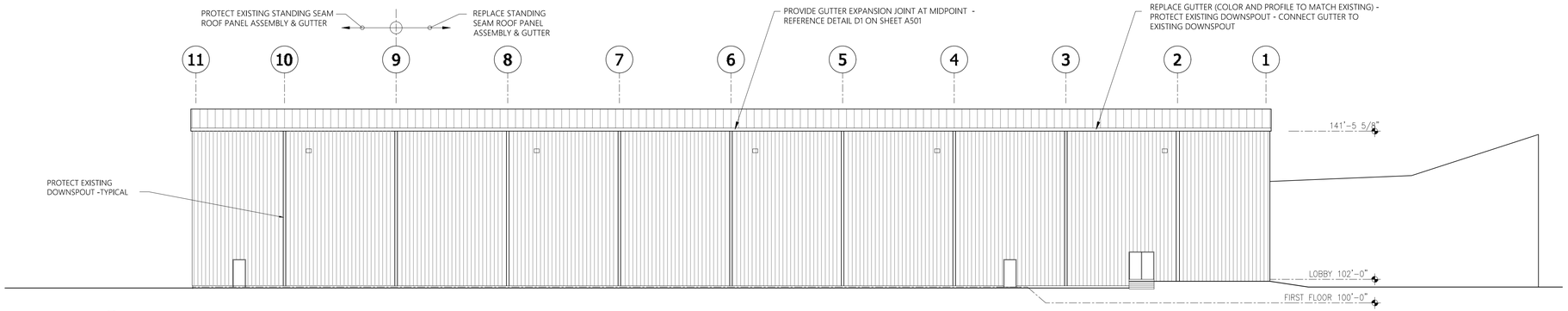
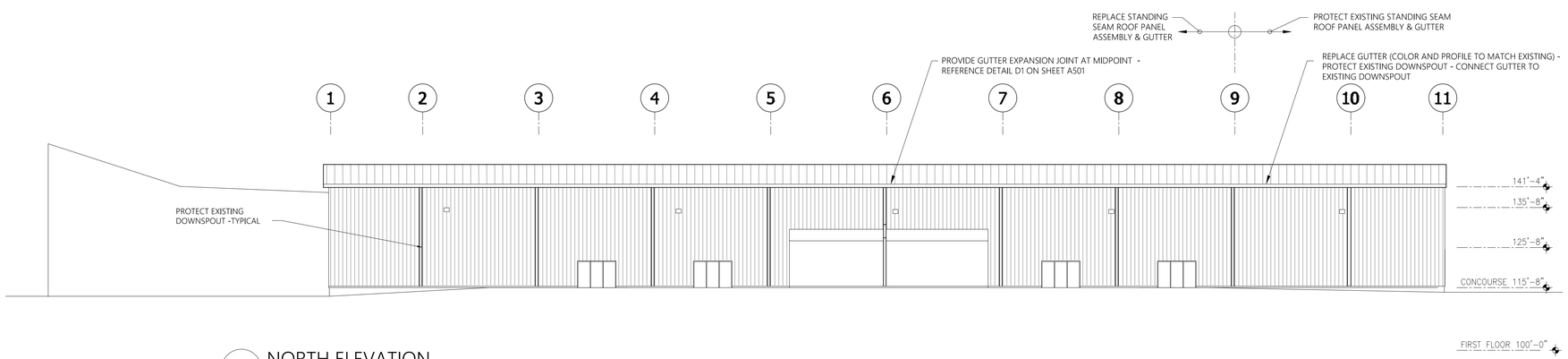


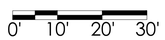
4 SOUTH ELEVATION

SCALE: 1/16"=1'-0"



5 NORTH ELEVATION

SCALE: 1/16"=1'-0"



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EXTERIOR ELEVATIONS

SHEET: A201

REV:

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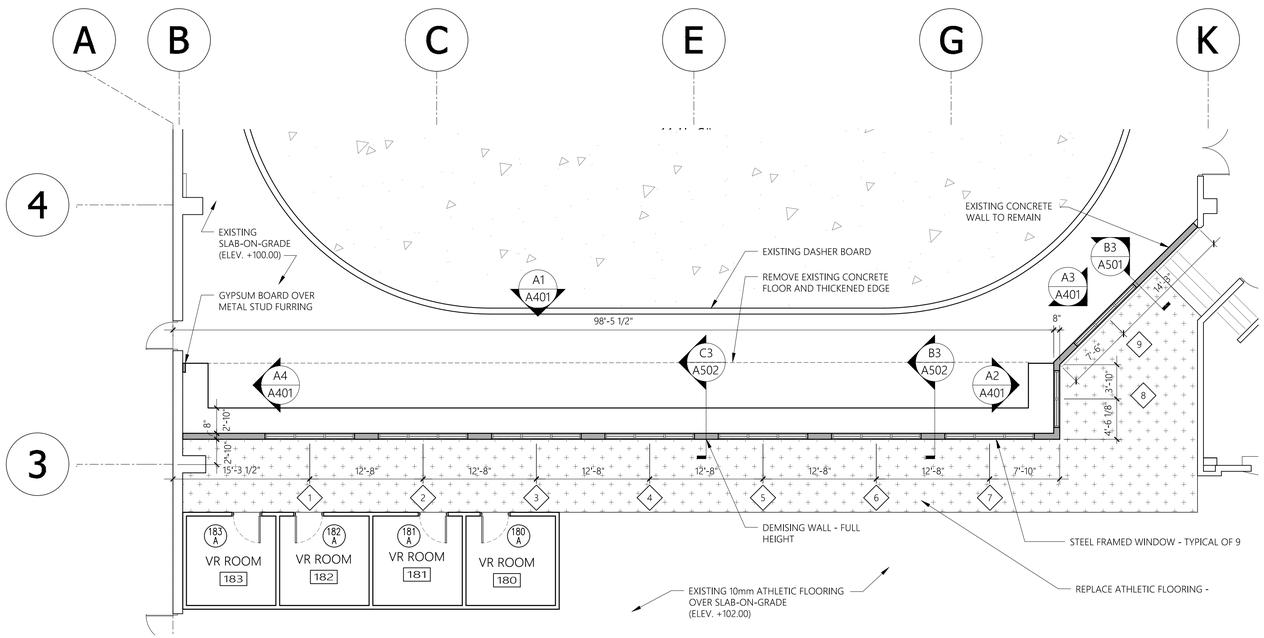


W S N E

B1 FLOOR PLAN

SCALE: 1/8"=1'-0"

DOOR AND FRAME SCHEDULE

NO.	ROOM	Style	SIZE-PR WxH	DOOR MAT.	DOOR FIN.	HARDWARE	NOTES
180A	VR ROOM	Hinged - Single	3'-0" x 6'-10"	HM	PNT	1	A
181A	VR ROOM	Hinged - Single	3'-0" x 6'-10"	HM	PNT	1	A
182A	VR ROOM	Hinged - Single	3'-0" x 6'-10"	HM	PNT	1	A
183A	VR ROOM	Hinged - Single	3'-0" x 6'-10"	HM	PNT	1	A

DOOR HARDWARE:

SET DESCRIPTION

1. LOCKSET: YALE 5300LN SERIES, PASSAGE FUNCTION (5301LN / F75), MONROE LEVER STYLE HINGES: MCKINNEY, 1-1/2 PAIRS, TA2714, 4.5x4.5

NOTES:

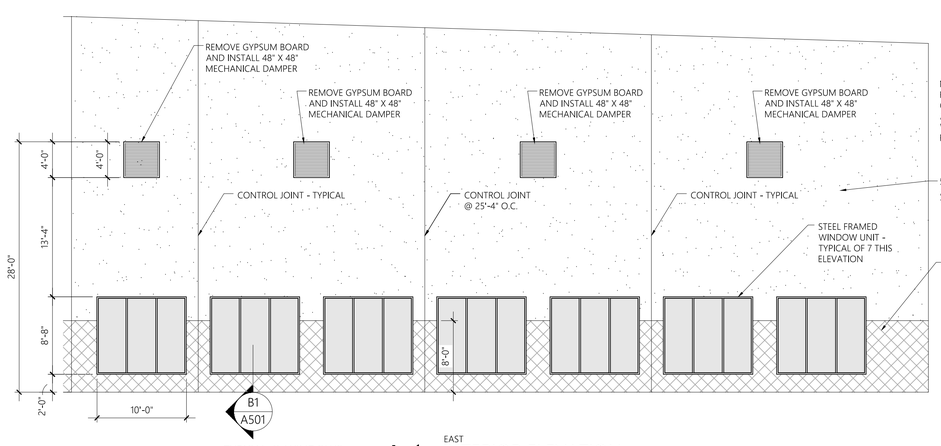
A. REFERENCE DETAIL A3 ON SHEET A501.

WINDOW SCHEDULE

MARK	SIZE WIDTH	SIZE HEIGHT	Sill Height	Header Height	NOTES
1	10'–0"	8'–8"	2'–0"	10'–8"	1,2
2	10'–0"	8'–8"	2'–0"	10'–8"	1,2
3	10'–0"	8'–8"	2'–0"	10'–8"	1,2
4	10'–0"	8'–8"	2'–0"	10'–8"	1,2
5	10'–0"	8'–8"	2'–0"	10'–8"	1,2
6	10'–0"	8'–8"	2'–0"	10'–8"	1,2
7	10'–0"	8'–8"	2'–0"	10'–8"	1,2
8	6'–4"	8'–8"	2'–0"	10'–8"	1,2
9	9'–4"	8'–8"	2'–0"	10'–8"	1,2

NOTES:

1. REFERENCE PROJECT MANUAL SPECIFICATION SECTION 08 1100 "STEEL DOORS AND FRAMES".
2. ALL WINDOWS SHALL BE GLAZED WITH 1/4" THICK CLEAR IMPACT SAFETY-RATED GLAZING COMPLYING WITH ANSI Z97.1 CLASS A AND CPSC 16CFR 1201 CATEGORY II.

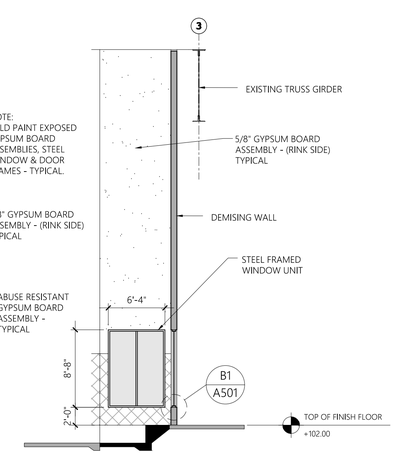


TYPICAL @ WINDOWS

A1 EAST INTERIOR ELEVATION

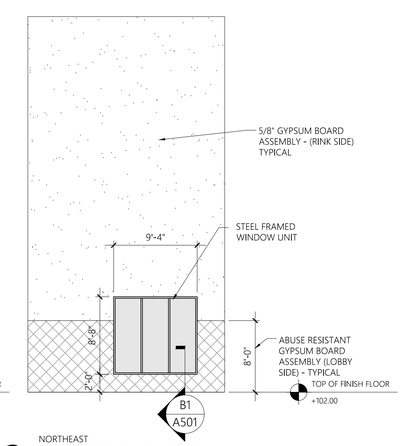
SCALE: 1/8"=1'-0"

NOTE:
FIELD PAINT EXPOSED GYPSUM BOARD ASSEMBLIES, STEEL WINDOW & DOOR FRAMES - TYPICAL.



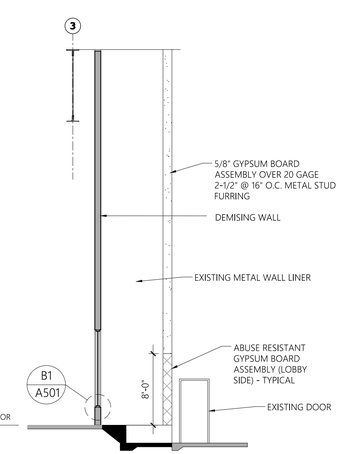
A2 NORTH INTERIOR ELEVATION

SCALE: 1/8"=1'-0"



A3 NORTHEAST INTERIOR ELEVATION

SCALE: 1/8"=1'-0"



A4 SOUTH INTERIOR ELEVATION

SCALE: 1/8"=1'-0"

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CEDAR RAPIDS

OWNER:

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Facilities Maintenance Services
City of Cedar Rapids 500 15th Ave SW, Cedar Rapids, Iowa 52404

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CITY OF CEDAR RAPIDS ImOn ICE ARENA REPAIR PROJECT - PHASE 2

CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:	MNA
DRAWN BY:	JJ
CHECKED BY:	MNA
DOCUMENT DATE:	01/15/2021
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CLIENT NO.:	

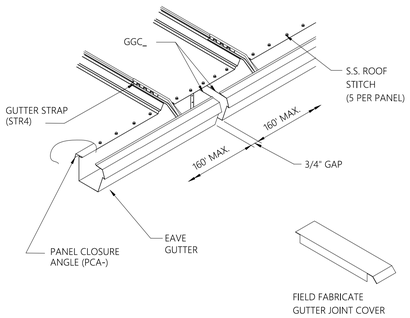
REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	1-15-2021	OUT FOR BID DRAWINGS	TMA	TAM

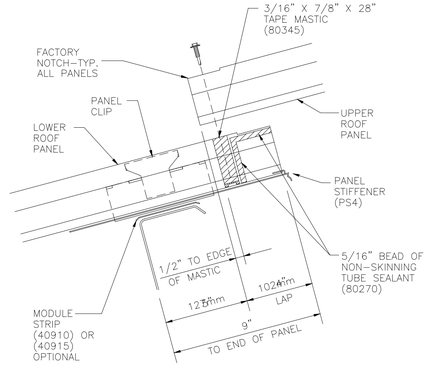
INTERIOR ELEVATIONS

SHEET: A401

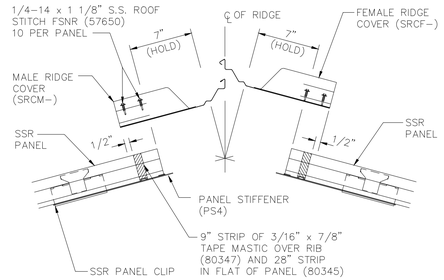
REV:



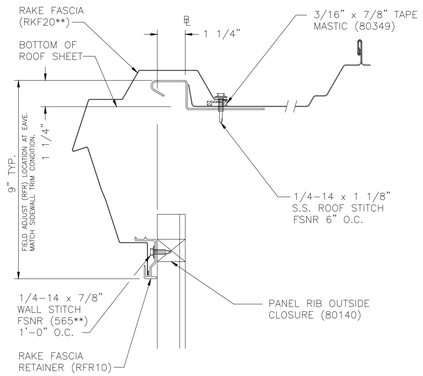
D1 DETAIL @ GUTTER EXPANSION JOINT
SCALE: 3"=1'-0"



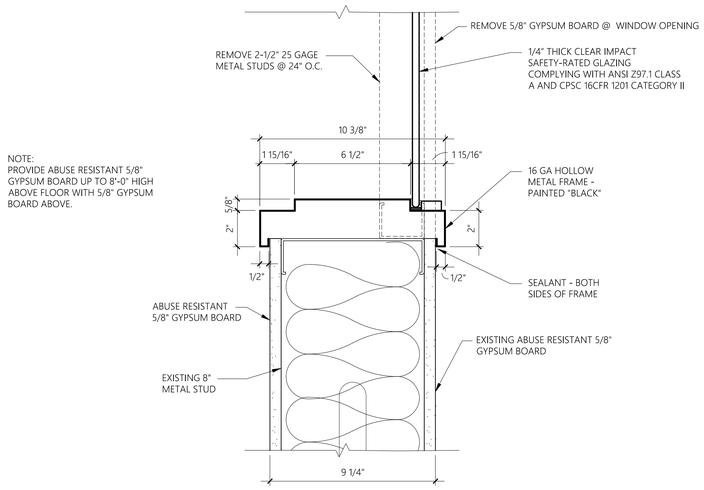
D2 DETAIL @ ROOF OVERLAP
SCALE: 3"=1'-0"



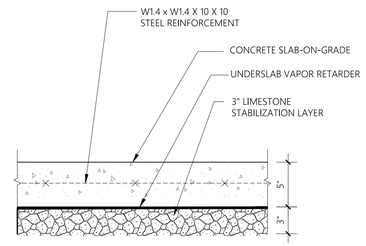
D3 DETAIL @ RIDGE
SCALE: 3"=1'-0"



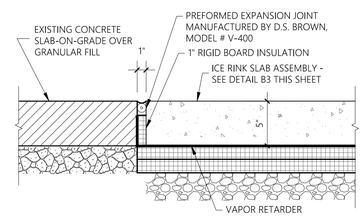
D4 DETAIL @ RAKE
SCALE: 3"=1'-0"



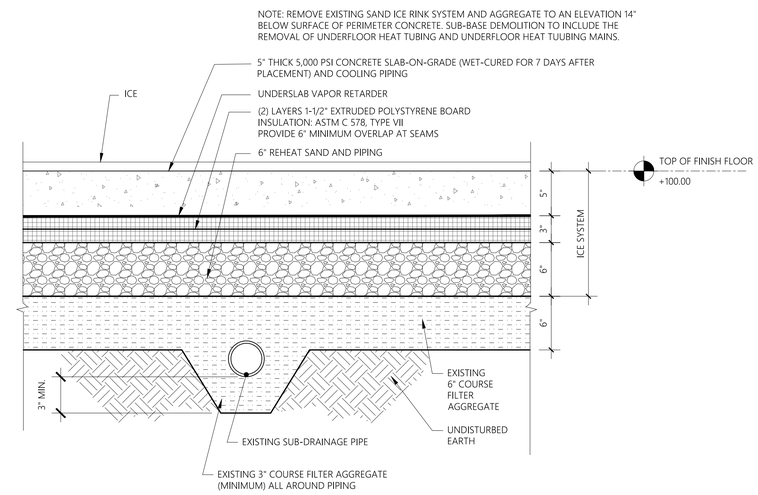
B1 DETAIL @ HOLLOW METAL FRAME
SCALE: 3"=1'-0"



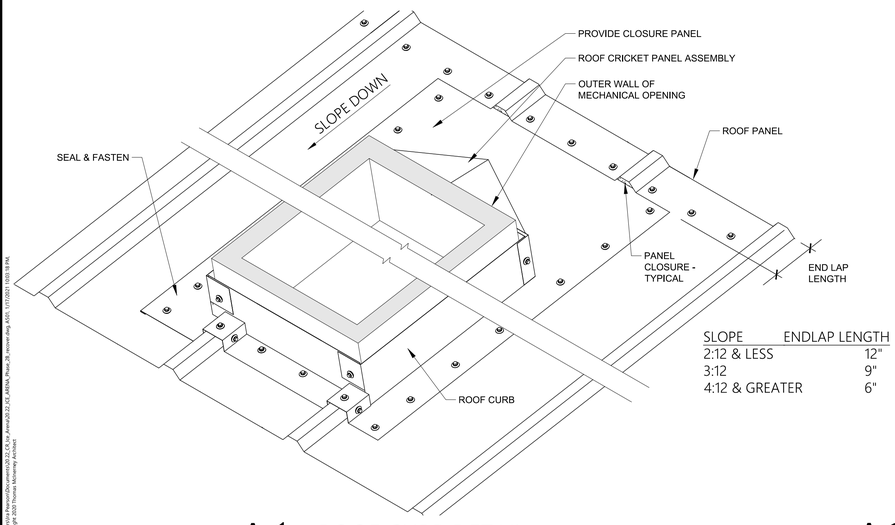
C2 SLAB-ON-GRADE
SCALE: 1-1/2"=1'-0"



B2 SLAB-ON-GRADE @ ICE RINK EDGE
SCALE: 1-1/2"=1'-0"

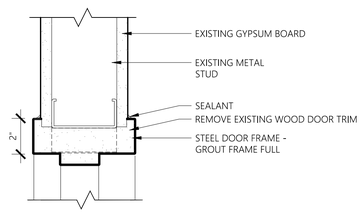


B3 ADD ALTERNATE #1 ICE RINK FLOOR ASSEMBLY
SCALE: 1-1/2"=1'-0"

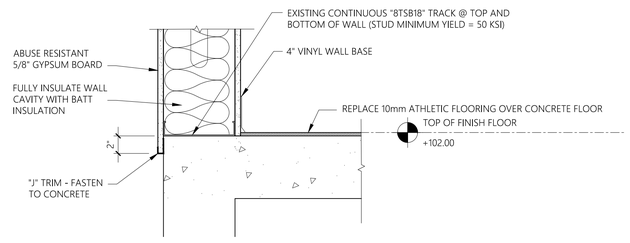


SLOPE	ENDLAP LENGTH
2:12 & LESS	12"
3:12	9"
4:12 & GREATER	6"

A1 ROOF CURB DETAIL
SCALE: NO SCALE



A2 DOOR FRAME @ HEAD/JAMB DETAIL
SCALE: 3"=1'-0"



A3 ICE RINK FLOOR ASSEMBLY
SCALE: 1-1/2"=1'-0"

C:\Users\tmcmahon\Documents\20-101254_Cedar Rapids\20-101254_ARENA_Phase_2b_revision.dwg, A501, 1/15/2021 10:03:18 PM,
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CEDAR RAPIDS

OWNER:
CITY OF CEDAR RAPIDS
Facilities Maintenance Services
City of Cedar Rapids 500 15th Ave SW, Cedar Rapids, Iowa 52404

ENGINEER OF RECORD:
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2871 Heinz Rd. Suite B, Iowa City, IA 52240
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www.InnovativeEngineersInc.com

CITY OF CEDAR RAPIDS ImOn ICE ARENA REPAIR PROJECT - PHASE 2
CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:	MNA
DRAWN BY:	JJ
CHECKED BY:	MNA
DOCUMENT DATE:	01/15/2021
PROJECT NO.:	20-101254
CLIENT NO.:	

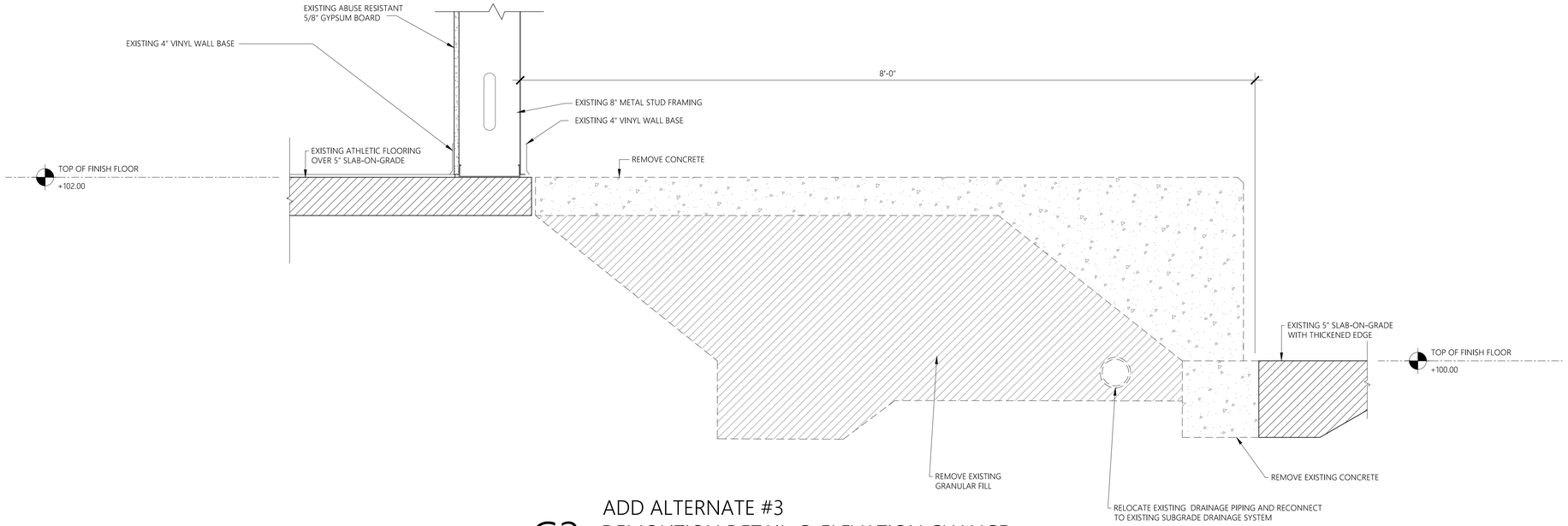
REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	1-15-2021	OUT FOR BID DRAWINGS	TMA	TAM

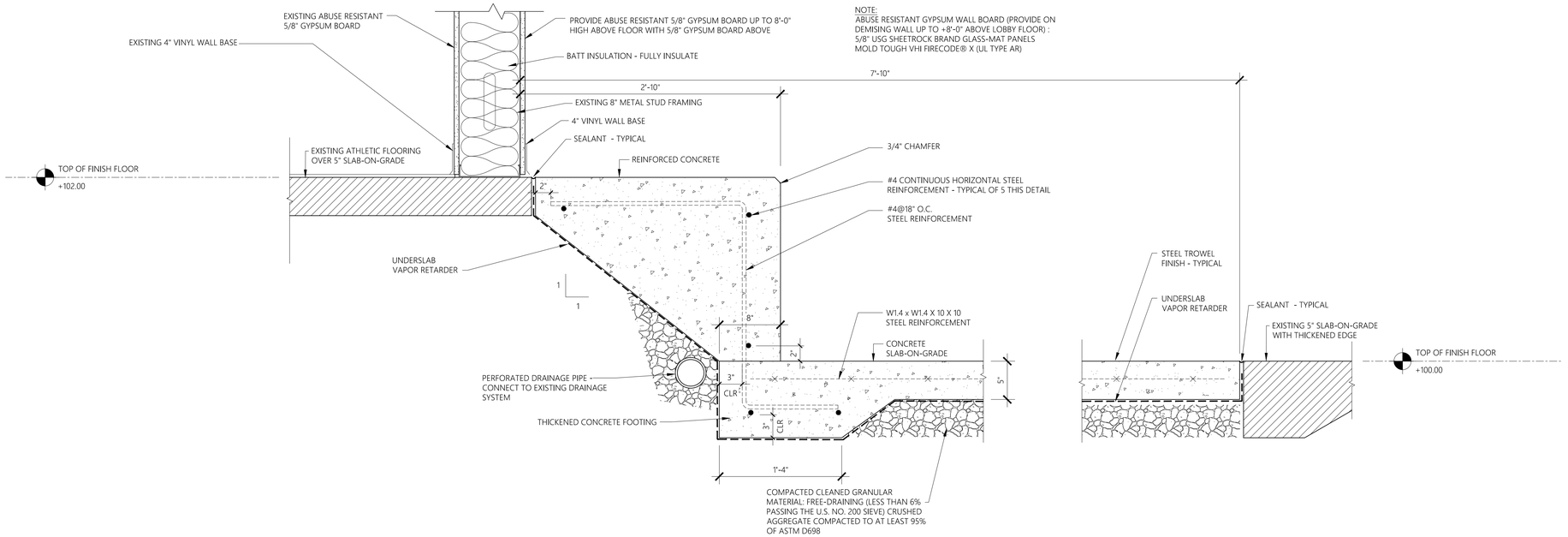
DETAILS

SHEET: A501

REV:



C3 ADD ALTERNATE #3
DEMOLITION DETAIL @ ELEVATION CHANGE
SCALE: 1-1/2"=1'-0"



B3 ADD ALTERNATE #3
DETAIL @ ELEVATION CHANGE
SCALE: 1-1/2"=1'-0"

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REVISIONS

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DETAILS

SHEET: A502

REV:

C:\Users\tmcnamey\Documents\20-22 CR Ice Arena\20-22 CR_ARENA_Phase 2R_revised.dwg, A502, 1/11/2021 10:03:37 PM,
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STRUCTURAL NOTES

GENERAL

1. THE CONTRACTOR SHALL PROCURE AND INSTALL ALL REPLACEMENT COMPONENTS AND INSULATION IN THE HIGHLIGHTED AREAS OF DRAWING S-101 AS REQUIRED BY VARCO-PRUDEN BUILDINGS, INC. FOR THE COMPLETE ENCLOSURE AND STRUCTURAL INTEGRITY OF THE BUILDING. THE DRAWING PROVIDED IS FOR GENERAL INFORMATION ONLY AND THE FINAL NUMBER OF COMPONENTS REQUIRED FOR INSTALLATION SHALL BE PER VARCO-PRUDEN'S DESIGN REQUIREMENTS. SEE PROJECT SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

2. ALL COMPONENTS SHALL BE AQUIRED FROM VARCO-PRUDEN BUILDINGS, INC. SUBSTITUTIONS WILL NOT BE ALLOWED.

3. THE STRUCTURAL DRAWINGS ARE BASED ON THE SHOP/ERECTION DRAWINGS FROM ORIGINAL BUILDING CONSTRUCTION AND SUBSEQUENT PARTS LIST REPORTS AND SHOP DRAWINGS OBTAINED FROM VARCO-PRUDEN FOLLOWING THE STORM. THEY ARE PROVIDED TO GIVE THE CONTRACTOR THE SCOPE OF REPLACEMENT FOR BIDDING PURPOSES. FINAL ERECTION DRAWINGS AND PART LIST REPORTS SHALL BE RECEIVED BY THE CONTRACTOR FROM VARCO-PRUDEN PRIOR TO INSTALLATION.

4. THE STRUCTURAL INTEGRITY OF THE BUILDING SHOWN ON THESE PLANS IS DEPENDENT UPON COMPONENT REPLACEMENT AND INSTALLATION PER VARCO-PRUDEN'S WRITTEN INSTRUCTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FURNISH ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS A RESULT OF CONSTRUCTION METHODS AND SEQUENCES.

5. THE CONTRACTOR SHALL WORK WITH THE PHASE 1 CONTRACTOR, COORDINATE EFFORTS AND VERIFY ALL EXISTING DIMENSIONS, MATERIALS AND CONDITIONS DIRECTLY WITH VARCO-PRUDEN TO ASSURE PROPER FITUP OF NEW WORK. ALL FIELD REWORK DUE TO IMPROPER FITUP SHALL BE AT CONTRACTOR'S EXPENSE.

6. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ENGINEER AND VARCO-PRUDEN.

7. REFER TO ARCHITECTURAL DRAWINGS AND/OR SPECIFICATIONS FOR ANY ADDITIONALLY REQUIRED VAPOR/MOISTURE PROTECTION AND FOR LOCATIONS OF WALLS, WINDOWS, SLAB RECESSES, FLOOR DRAINS, FLOOR SLOPES, AND OTHER DIMENSIONS NOT SHOWN.

8. COORDINATE PENETRATIONS THROUGH STRUCTURE WITH OTHER DISCIPLINES.

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CITY OF CEDAR RAPIDS
ImOn ICE ARENA REPAIR PROJECT - PHASE 2
CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:
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DOCUMENT DATE:
PROJECT NO.:
CLIENT NO.:

REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	01-15-2021	ISSUED FOR BID DRAWINGS	DR/GF	

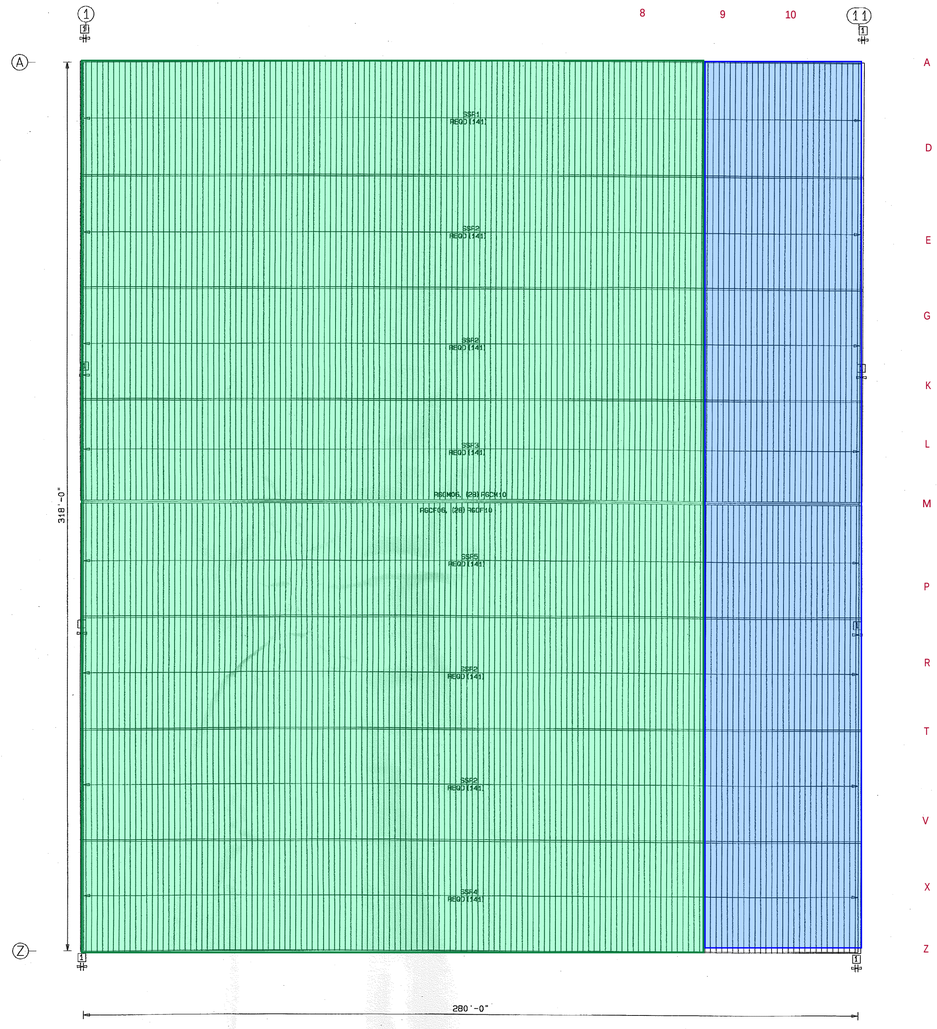
STRUCTURAL NOTES AND GENERAL INFORMATION

SHEET: S-001

REV:

SHEETING			
MARK	LENGTH	THK	COLOR (FINISH)
SSR1	41'-6 7/16"	24	Standard Color (GALVN)
SSR2	40'-7"	24	Standard Color (GALVN)
SSR3	36'-2"	24	Standard Color (GALVN)
SSR4	40'-0 7/16"	24	Standard Color (GALVN)
SSR5	41'-2"	24	Standard Color (GALVN)

SECONDARY			
MARK	LENGTH	THK	DEPTH
7BBW320	23'-11 1/2"	.120	8.5
7ZP1057	37'-2 1/2"	.105	8.5
7ZP1058	25'-7"	.092	8.5
BBW1050	28'-11 1/2"	.120	8.5
ZP1006	26'-7"	.092	8.5
ZP1007	34'-2 1/2"	12 .092	8.5
ZP1053	33'-1"	.120	8.5
7ZP1017	26'-7"	11 .105	8.5
7ZP1038	26'-7"	.092	8.5
7ZP799	26'-7"	.120	8.5
BBW1040	28'-11 1/2"	.120	8.5
BBW20000	27'-4"	.120	8.5
BBW20003	21'-4"	.120	8.5
BBW377	23'-11 1/2"	.120	8.5
EZW658	23'-11 1/2"	11 .082	8.5
EZW662	28'-11 1/2"	.120	8.5
FFW20014	27'-5 1/2"	.120	8.5
ZP1021	34'-2 1/2"	12 .092	8.5
ZP1022	34'-2 1/2"	.105	8.5
ZP1043	33'-1"	.120	8.5
ZP1047	37'-2 1/2"	.105	8.5
ZP1048	25'-7"	.092	8.5
ZP270	26'-7"	12 .092	8.5
ZP271	34'-2 1/2"	.082	8.5
ZP281	34'-2 1/2"	12 .092	8.5
ZP321	26'-7"	11 .105	8.5
ZP322	23'-5 1/2"	11 .105	8.5
ZP332	34'-2 1/2"	.105	8.5
ZP333	29'-5 1/2"	.105	8.5
ZP584	23'-5 1/2"	.120	8.5
ZP588	34'-2 1/2"	.120	8.5
ZP589	29'-5 1/2"	.120	8.5
ZP659	23'-5 1/2"	13 .082	8.5



[1] Start Panel Dim. 1'-0" (Cut Dim.= 1'-1")

On: filesrv Proj: 5710 Bldg: 12 Plane: 6 7

This Drawing is sealed only as to the Components furnished by VP Buildings.

I hereby certify that this plan, specification, or report was prepared by me or under my direct personal supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Iowa.

Date 7-26-99 Registration No. 7/23/99 [illegible]

1. Install Sheeting From Left to Right
2. PRE-DRILLING 1/8" DIAMETER HOLES FOR ROOF STRUCTURAL FASTENERS MAY BE REQUIRED AT 11 GAGE PURLINS, NESTED PURLINS, PURLIN LAP LOCATIONS, AND/OR SECONDARY STRUCTURAL BEAMS
3. ROOF SHEETS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM, REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.
4. SEE JOB DETAILS FOR SHEETING AND TRIM FASTENER SPECIFICATION.

Building Code:	97UBC
Live Ld(W/O Trib Red)	20.0 psf
Coll. Ld (gravity):	10.0 psf
Coll. Ld (uplift):	0.0 psf
Wind Speed:	81.0 mph
Wind Exp. Cat.:	B
Ground Snow:	37.3 psf
Roof Snow:	30.0 psf
Snow Exp. Cat.:	3
Seismic Zone:	1
Building Use Cat.:	3
Auxiliary Loads	NONE

This Drawing, including the information hereon, remains the property of VP Buildings.

It is provided for erecting the Building described in the applicable Purchase Order and shall not be modified, reproduced or used for any other purpose without prior Written Approval of VP Buildings.

The General Contractor and/or Erector is solely responsible for accurate, good Quality Workmanship in erecting this Building. Information and this Drawing, must be used in conjunction with all applicable VP Buildings Erection Details and all Industry Standards pertaining to proper erection, including the correct use of Temporary Bracing.

Roof Sheeting	
BUILDER	Paint Builders, Inc. #1
CUSTOMER	N/A
LOCATION	CEDAR RAPIDS, IA
PROJECT	CR ICE ARENA 2 - ORDER
BUILDING	318X280X40 FL-1 Sheet. & Trim
SCALE	NTS

REV.	DATE	BY	DESC.

QUOTE # OH99041643-020

VP BUILDINGS VARCO—PRUDEN

JOB # M09934083-01

DATE 07/17/99

TIME 07:02

DRAWN/CHECK GJS

PAGE 26 of 53

NORTH

TO BE COMPLETED WITH THIS PROJECT (PHASE 2)

CURRENTLY UNDER CONSTRUCTION FOR PHASE 1

CEDAR RAPIDS
City of Five Seasons®

OWNER:

CITY OF CEDAR RAPIDS
Facilities Maintenance Services
City of Cedar Rapids 500 15th Ave SW, Cedar Rapids, Iowa 52404

ENGINEER OF RECORD:

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2871 Heinz Rd. Suite B, Iowa City, IA 52240
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StructuralDesignGroupLLC.com

CITY OF CEDAR RAPIDS ImOn ICE ARENA REPAIR PROJECT - PHASE 2

CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DOCUMENT DATE:
PROJECT NO.:
CLIENT NO.:

REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	01-15-2021	ISSUED FOR BID DRAWINGS	DR/GF	

OVERALL ROOF PLAN - ROOF SHEETING

SHEET: S-101

REV:

MECHANICAL SYMBOLS	
SUPPLY DIFFUSER	S1-10"Ø 350 CFM GRD — TYPE-CONNECTION SIZE / AIR FLOW
RETURN DIFFUSER	
EXHAUST DIFFUSER	
10x10 RECTANGULAR DUCT - W×L	
10"Ø ROUND DUCT - SIZE	
FLEXIBLE DUCT CONNECTION	
BALANCING DAMPER	

ABBREVIATIONS:	
BTUH	BRITISH THERMAL UNIT PER HOUR
CFM	CUBIC FEET PER MINUTE
DIM.	DIMENSION
EAT	ENTERING AIR TEMPERATURE
EXT. SP.	EXTERNAL STATIC PRESSURE
GRD	GRILLES, REGISTERS, & DIFFUSERS
HP	HORSEPOWER
IN.	INCH
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
MBH	THOUSANDS OF BTU/HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MHP	MOTOR HORSEPOWER
MOCP	MAXIMUM OVERCURRENT PROTECTION
NC	NOISE CRITERIA
OCP	OVER-CURRENT PROTECTION
REQ'D	REQUIRED
SQ. FT.	SQUARE FEET
TEMP	TEMPERATURE
W	WIDTH

GRILLES REGISTERS & DIFFUSERS SCHEDULE

SYMBOL	MOUNTING TYPE	INLET SIZE (INCH. IN DIA.)	OVERALL SIZE (INCH)	MAX APD (INCH)	PATTERN	DAMPER	FINISH	MATERIAL	MANUFACTURER	MODEL	REMARKS
S-1	DUCT MOUNTED	SEE DWG.	SEE DWG.	-	0° DEF.	OBD	WHITE	STEEL	TITUS	CT 581	
R-1	DUCT MOUNTED	SEE DWG.	SEE DWG.	-	35° DEF	OBD	WHITE	STEEL	TITUS	350RL	

SMOKE DAMPER SCHEDULE

TAG	MANUFACTURER'S DESIGNATION	NOMINAL SIZE	LEAKAGE CLASS	MAX PRESSURE	TEMP RATING	MAX. VEL	BLADES	SLEEVE	ACTUATOR	REMARKS
SD-1	GREENHECK SMD-401EF	48"X48"	I	6 IN WC	250°	2000 FPM	AIRFOIL	RIGID	ELECTRICAL	1,2,3
SD-1	GREENHECK SMD-401EF	48"X48"	I	6 IN WC	250°	2000 FPM	AIRFOIL	RIGID	ELECTRICAL	1,2,3
SD-1	GREENHECK SMD-401EF	48"X48"	I	6 IN WC	250°	2000 FPM	AIRFOIL	RIGID	ELECTRICAL	1,2,3
SD-1	GREENHECK SMD-401EF	48"X48"	I	6 IN WC	250°	2000 FPM	AIRFOIL	RIGID	ELECTRICAL	1,2,3

NOTES:
1. 120V, 1 PHASE, 60 HZ ACTUATOR
2. FAIL CLOSED.
3. PROVIDE FACTORY INSTALLED END SWITCHES.

GENERAL HVAC NOTES

A. Install all ductwork and equipment per all applicable state and local codes.

B. HVAC Contractor to coordinate with all other trades.

C. HVAC Contractor is responsible for field verifying all existing conditions. Report any discrepancies to Owner.

D. HVAC Contractor is responsible for securing all required permits and fees necessary for construction of the project.

E. HVAC Contractor to inspect all existing ductwork and hanger systems for storm damage. Any storm damage not indicated on plans should be logged and reported to Engineer.

GENERAL PLUMBING NOTES

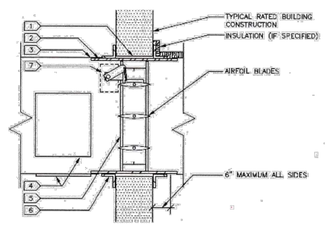
A. All new piping is to be installed per all applicable state and local codes.

B. Plumbing Contractor to coordinate with all other trades.

C. Plumbing Contractor is responsible for field verifying all existing conditions. Notify engineer of any discrepancies with plans.

D. Plumbing Contractor is responsible for securing all required permits and fees necessary for construction of the project.

E. Plumbing Contractor to inspect all existing plumbing systems and hangers for storm damage. Any storm damage not indicated on plans should be logged and reported to Engineer.

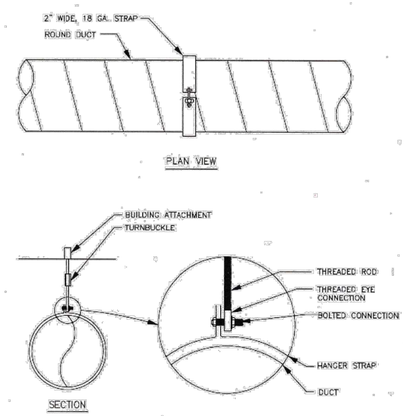


NOTES:
1. FILL VOID WITH CAULKING
2. DAMPER SLEEVE.
3. BREAKAWAY DUCT CONNECTION.
4. DUCT ACCESS PANEL.
5. U.L. LISTED SMOKE DAMPER
6. RETAINING ANGLES SECURED TO SLEEVE.
7. OPERATOR/ACTUATOR. COORDINATE LOCATION FOR PROPER OPERATION AND ACCESS.

GENERAL NOTES:
1. THIS DETAIL IS PROVIDED FOR REFERENCE ONLY TO INDICATE MINIMUM REQUIREMENTS.
2. DAMPER INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS PRINTED INSTRUCTIONS AND LOCAL FIRE ATHORITY.

1 / H00 **SMOKE SAMPER INSTALLATIONS**

NOT TO SCALE



2 / H00 **HANGERS FOR EXPOSED ROUND DUCTS**

NOT TO SCALE

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ImOn ICE ARENA REPAIR PROJECT - PHASE 2
CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:	MNA
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CHECKED BY:	MNA
DOCUMENT DATE:	11/2/2020
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CLIENT NO.:	

REVISIONS

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0	1-15-2021	OUT FOR BID DRAWINGS	MNA	JJH

HVAC SYMBOLS & ABBREVIATIONS, SCHEDULES & DETAILS

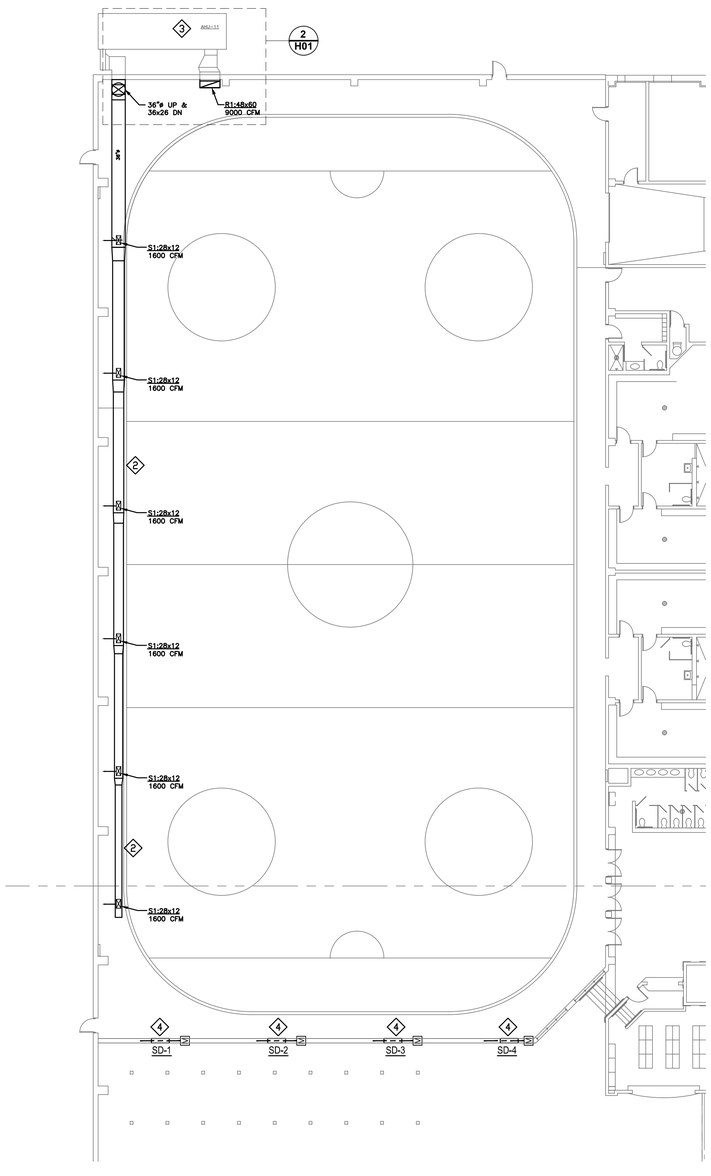
SHEET: **H00**

REV:

GENERAL NOTES:
MECHANICAL CONTRACTOR TO INSPECT ALL EXISTING DUCTWORK ABOVE CEILING. ALL DAMAGED DUCTWORK, DRIVES, DAMPERS, OR OTHER ACCESSORIES ARE TO BE CATALOGED AND REPAIRED OR REPLACED AS REQUIRED.

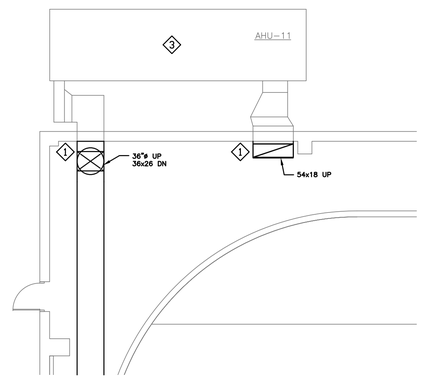
KEYED NOTES:

1. CONNECT NEW DUCTWORK TO SUPPLY AND RETURN PENETRATIONS AT WALL. COORDINATE DUCT CONNECTIONS WITH MECHANICAL CONTRACTOR ON INFRASTRUCTURE IMPROVEMENTS PROJECT.
2. MOUNT NEW DOUBLE WALL SPIRAL DUCT AT PREVIOUS ELEVATIONS. SEE DETAIL FOR DUCT HANGERS, DETAIL 2/H00.
3. AIR HANDLER AHU-11 INSTALLED ON SEPARATE PROJECT CONTRACT. COORDINATE DUCTWORK CONNECTIONS INSIDE BUILDING WITH M.C. FOR INFRASTRUCTURE IMPROVEMENT PROJECT. SEE ENLARGED DETAIL ON THIS SHEET 2/H01.
4. MOUNT SMOKE DAMPERS IN DEMISING WALL OPENINGS. SEE ARCHITECTURAL DRAWINGS.



1 H01 ICE AND ENTRY LEVEL - MECHANICAL PLAN - SOUTH

SCALE 1/16" = 1' - 0"



2 H01 ENLARGED HVAC PLAN

SCALE 1/8" = 1' - 0"

N

N

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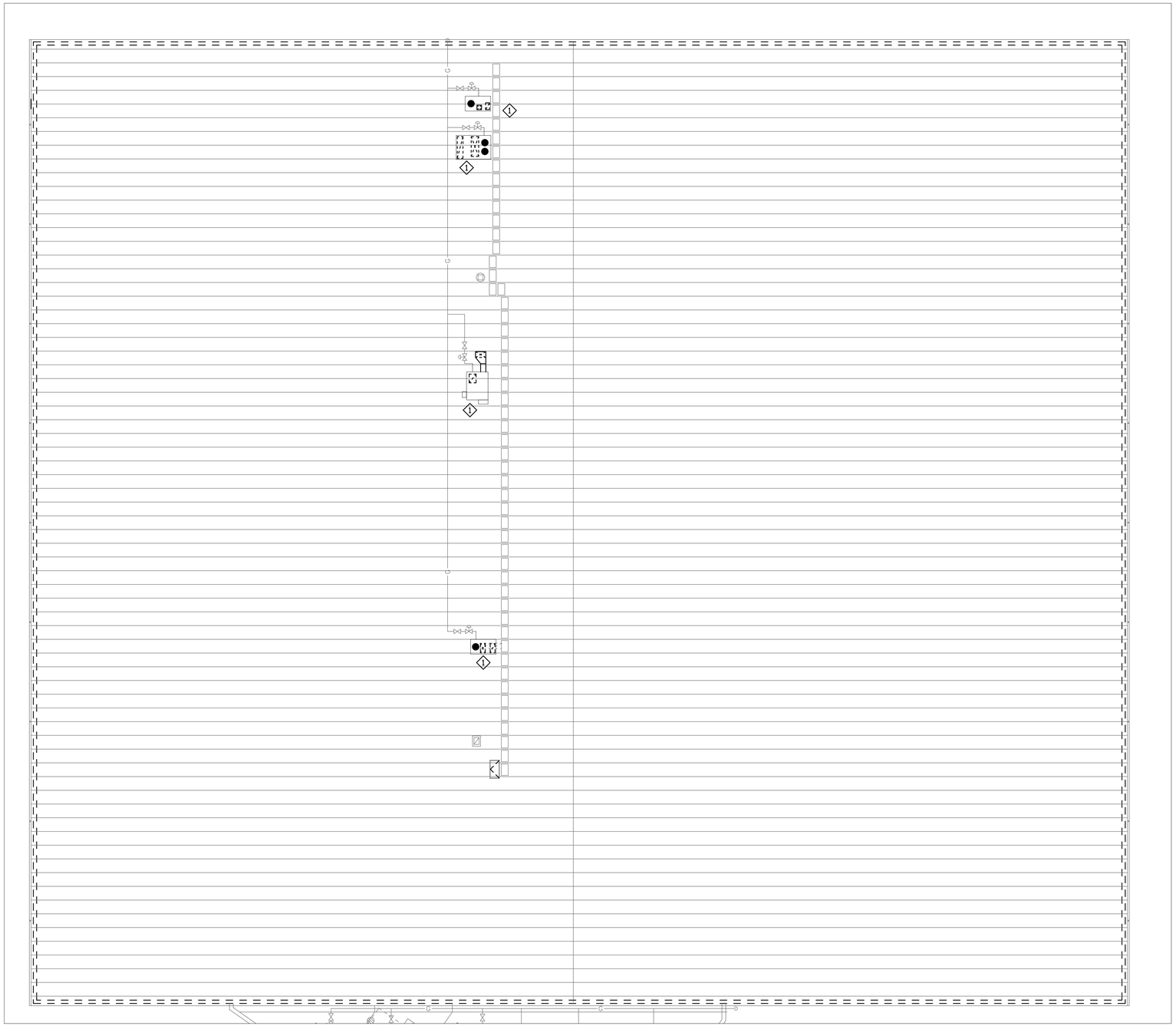
0	1-15-2021	OUT FOR BID DRAWINGS	MNA	JJH

ICE AND ENTRY LEVEL-
MECHANICAL PLAN-SOUTH

SHEET: H01

REV:



KEYED NOTES:

1. COORDINATE REINSTALLATION OF ROOF CURBS AND RTU'S WITH M.C. FOR INFRASTRUCTURE IMPROVEMENT PROJECT AND ROOFING CONTRACTOR. REINSTALLATION TO COINCIDE WITH INSTALLATIONS OF NEW ROOF.

1 / H02 HIGH ROOF - HVAC PLAN

SCALE 1/8" = 1' - 0"

N

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ENGINEER OF RECORD:

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2871 Heinz Rd. Suite B, Iowa City, IA 52240
T 319.855.4115 I F 319.351.0070
www.InnovativeEngineersInc.com

CITY OF CEDAR RAPIDS ImOn ICE ARENA REPAIR PROJECT - PHASE 2

CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:	MNA
DRAWN BY:	JJ
CHECKED BY:	MNA
DOCUMENT DATE:	11/2/2020
PROJECT NO.:	20-101254
CLIENT NO.:	

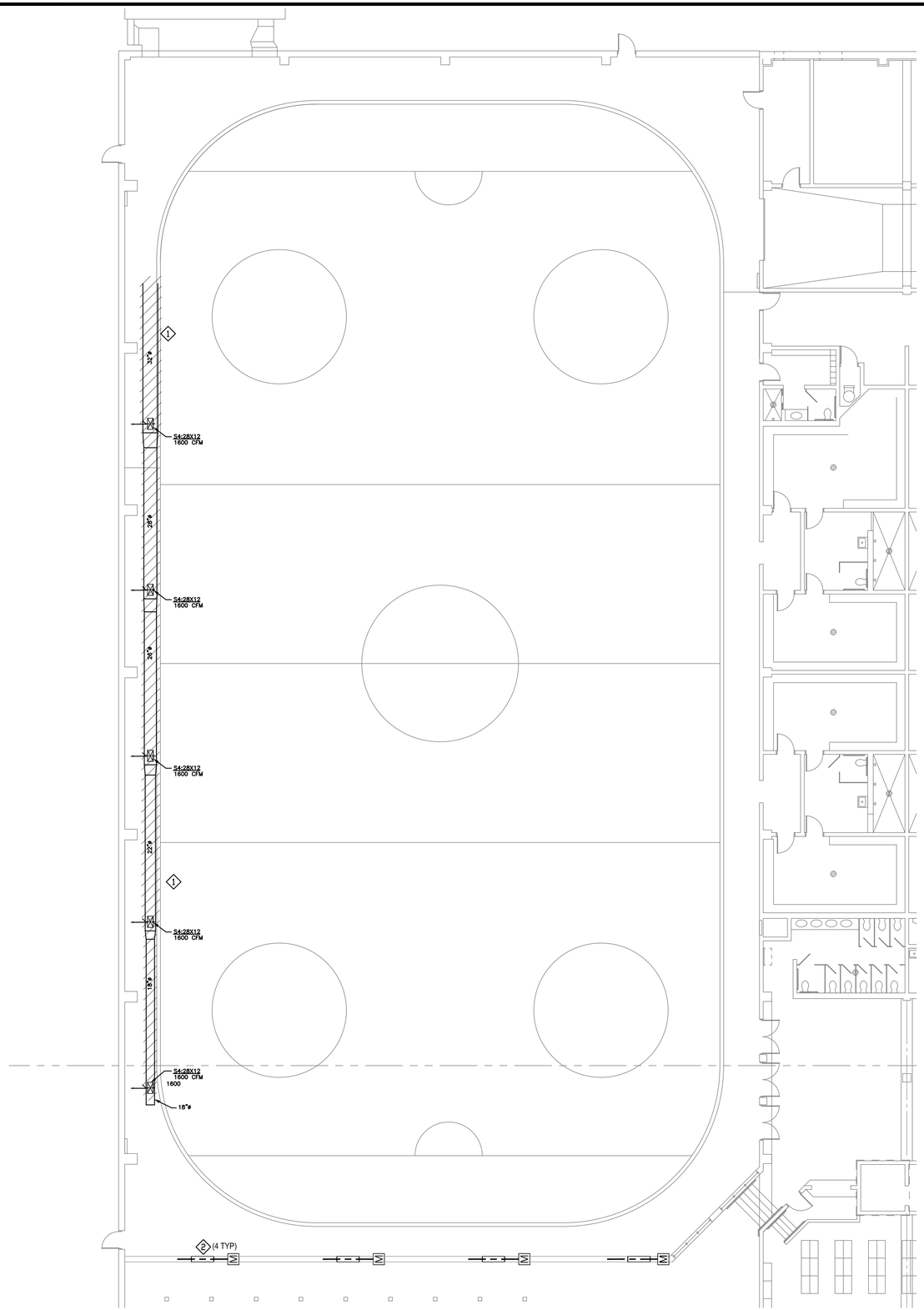
REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	1-15-2021	OUT FOR BID DRAWINGS	MNA	JJH

HIGH ROOF - HVAC PLAN

SHEET: H02

REV:



KEYED NOTES:

1. REMOVE EXISTING SPIRAL DUCTWORK AND HANGERS. PREPARE FOR REINSTALLATIN OF DUCTWORK.
2. PREPARE TRANSFER OPENINGS IN WALL FOR INSTALLATION OF NEW SMOKE TRANSFER DAMPERS.

A HD01 OLYMPIC ICE RINK - HVAC DEMO PLAN

SCALE 3/32 = 1' - 0"

N

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City of Five Seasons®

OWNER:

CITY OF CEDAR RAPIDS
Facilities Maintenance Services
City of Cedar Rapids 500 15th Ave SW, Cedar Rapids, Iowa 52404

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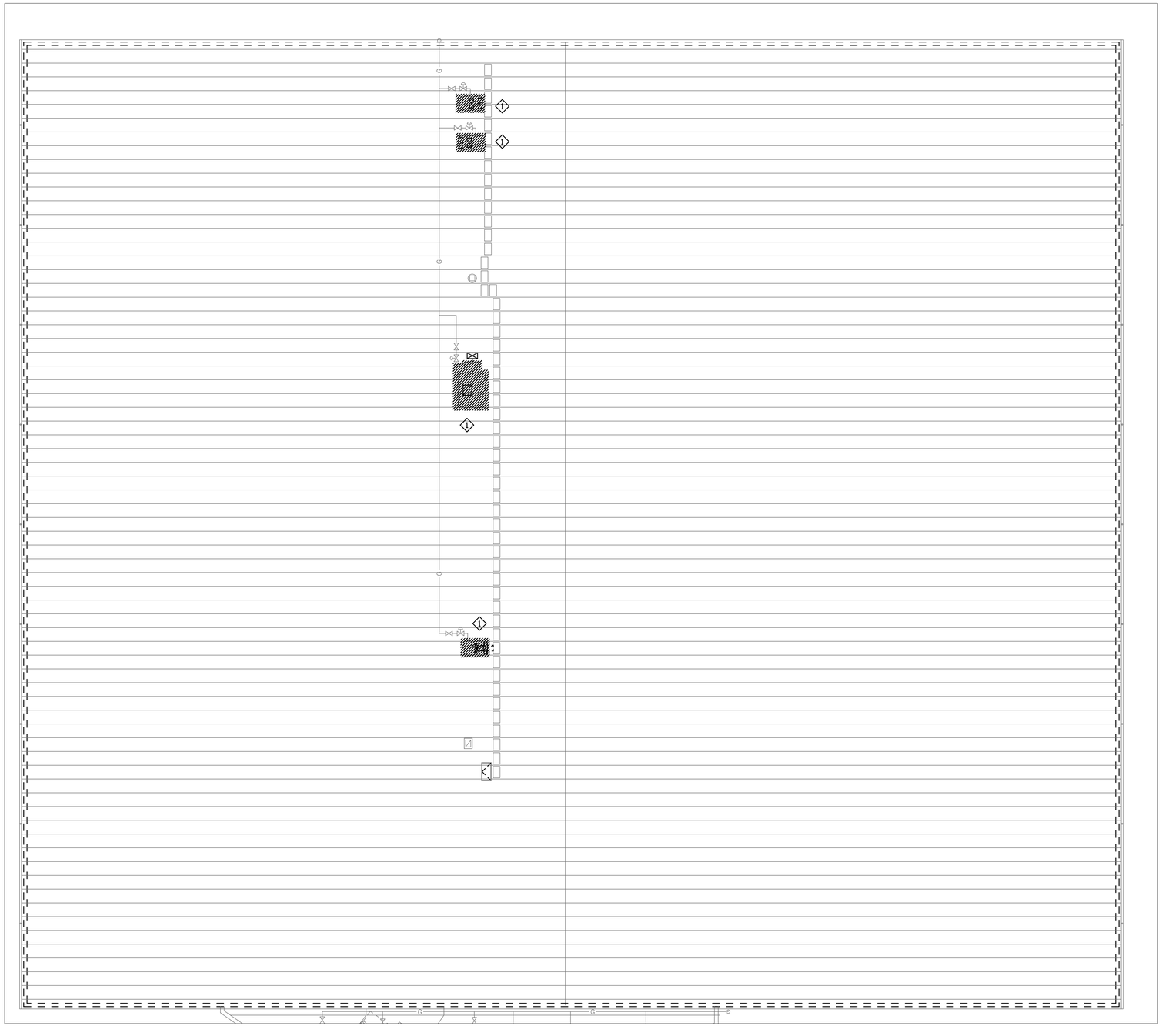
OLYMPIC ICE RINK - HVAC DEMO PLAN

SHEET: HD01

REV:



KEYED NOTES:

1. REMOVE NEW ROOFTOP UNITS AND MOUNTING CURBS. COORDINATE WITH ROOFING CONTRACTOR PRIOR TO FACILITY RE-ROOFING. COORDINATE WITH MECHANICAL CONTRACTOR FOR INFRASTRUCTURE IMPROVEMENT PROJECT. ROOFTOP UNITS, CURBS, AND CONNECTED DUCTWORK TO BE PROTECTED DURING REMOVAL AND PREPARED FOR REINSTALLATION FOLLOWING RE-ROOFING.

A
HD02

HIGH ROOF - HVAC DEMO PLAN

SCALE 3/32 = 1' - 0"

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HIGH ROOF
HVAC DEMO PLAN

SHEET: HD02

REV:

GENERAL NOTES

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SITE SAFETY. INCLUDING BARRICADING AND SIGNING OF WORK SPACES.

2. CONTRACTOR TO PROVIDE TEMPORARY VENTILATION SYSTEM TO MITIGATE MIGRATION OF FUMES AND DUST TO PHASE I RECOVERY AREAS OF THE ICE ARENA.

3. PRIOR TO ANY DUST GENERATING OPERATIONS. CLOSE OFF OPEN PHASE I RECOVERY AREAS WITH PLASTIC SHEETING OR SIMILAR BARRIERS. ERECT SUITABLE BARRIERS TO PREVENT DUST MIGRATION TO ANY ADDITIONAL PORTIONS OF THE ICE ARENA IN OPERATION.

4. CONTRACTOR TO FIELD VERIFY LOCATIONS OF ELECTRICAL, MECHANICAL AND PLUMBING LINES AND FIXTURES PRIOR TO START OF CONSTRUCTION.

5. PROTECT ALL EXISTING STRUCTURES FROM DAMAGE NOT SPECIFICALLY INCLUDED IN THIS PHASE II SCOPE. CONTRACTOR TO REPAIR ANY UNINTENTIONAL DAMAGE AT HIS OWN EXPENSE.

6. PROVIDE APPROPRIATE AND SAFE ACCESS FOR ICE ARENA STAFF TO CRITICAL AREAS WITHIN WORK SPACES DURING CONTRACTOR OPERATIONS.

7. INSPECTION AND CONTRACT ADMINISTRATION SHALL BE PROVIDED BY THE CITY OF CEDAR RAPIDS OR DESIGNATED REPRESENTATIVE. PROVIDE MINIMUM 72-HOURS NOTICE TO DESIGNATED PERSON PRIOR TO COMMENCING CONTRACTOR OPERATIONS.

8. ALL TESTING OF PIPING SYSTEMS, AND DELIVERED CONCRETE PRIOR TO PLACEMENT SHALL BE OBSERVED BY THE OWNER AND/OR DESIGNATED REPRESENTATIVE. PROVIDE 72-HOUR NOTICE.

9. PRIOR TO REMOVAL OF EXISTING ICE RINK FLOOR. ESTABLISH ELEVATION CONTROL TO VERIFY GRANULAR SUBBASE, INSULATION LAYERS AND CONCRETE FLOOR ARE CONSTRUCTED TO DESIGN ELEVATION AND DEPTH.

10. AFTER REMOVAL OF THE EXISTING ICE RINK FLOOR. INCLUDING UNDERLYING PIPING SYSTEMS, PERFORM CUTTING, FILLING, TRIMMING AND COMPACTION OF NATIVE SOIL BASE AS REQUIRED TO PROVIDE LEVEL BASE AT CORRECT ELEVATION FOR GRANULAR SUBBASE.

11. THE ENGINEER AND CONTRACTOR WILL INSPECT THE NATIVE SOIL BASE TO DETERMINE SUITABILITY FOR PLACING PROPOSED FLOOR AND ASSOCIATED COMPONENTS.

12. THE CONTRACTOR, ENGINEER AND ARENA STAFF WILL INSPECT THE ENTIRE PHASE II CONSTRUCTION AREA AFTER SUBSTANTIAL COMPLETION TO DETERMINE REQUIRED CLEANUP. THE CONTRACTOR IS RESPONSIBLE FOR ALL CLEAN-UP AND DEBRIS REMOVAL ASSOCIATED WITH THIS PROJECT.

13. PHASE II RECOVERY TO BE BID AS:
    - BASE BID - REMOVAL AND REPLACEMENT OF SAND FLOOR BASE, REFRIGERANT BRINE LOOP SYSTEM, FLOOR INSULATION AND VAPOR BARRIERS. SUBGRADE HEATING LOOP TO REMAIN.
    - BID ALTERNATE 1 - REMOVAL OF EXISTING SAND FLOOR BASE, REFRIGERANT BRINE LOOP SYSTEM, FLOOR INSULATION, VAPOR BARRIERS, AND SUBFLOOR HEATING LOOP. INSTALL NEW SUBGRADE HEATING LOOP, INSULATION, VAPOR BARRIER AND CONCRETE RINK FLOOR SYSTEM.
    - BID ALTERNATE 2 - REMOVE AND REPLACE EXISTING SUBGRADE HEATING LOOP SYSTEM.

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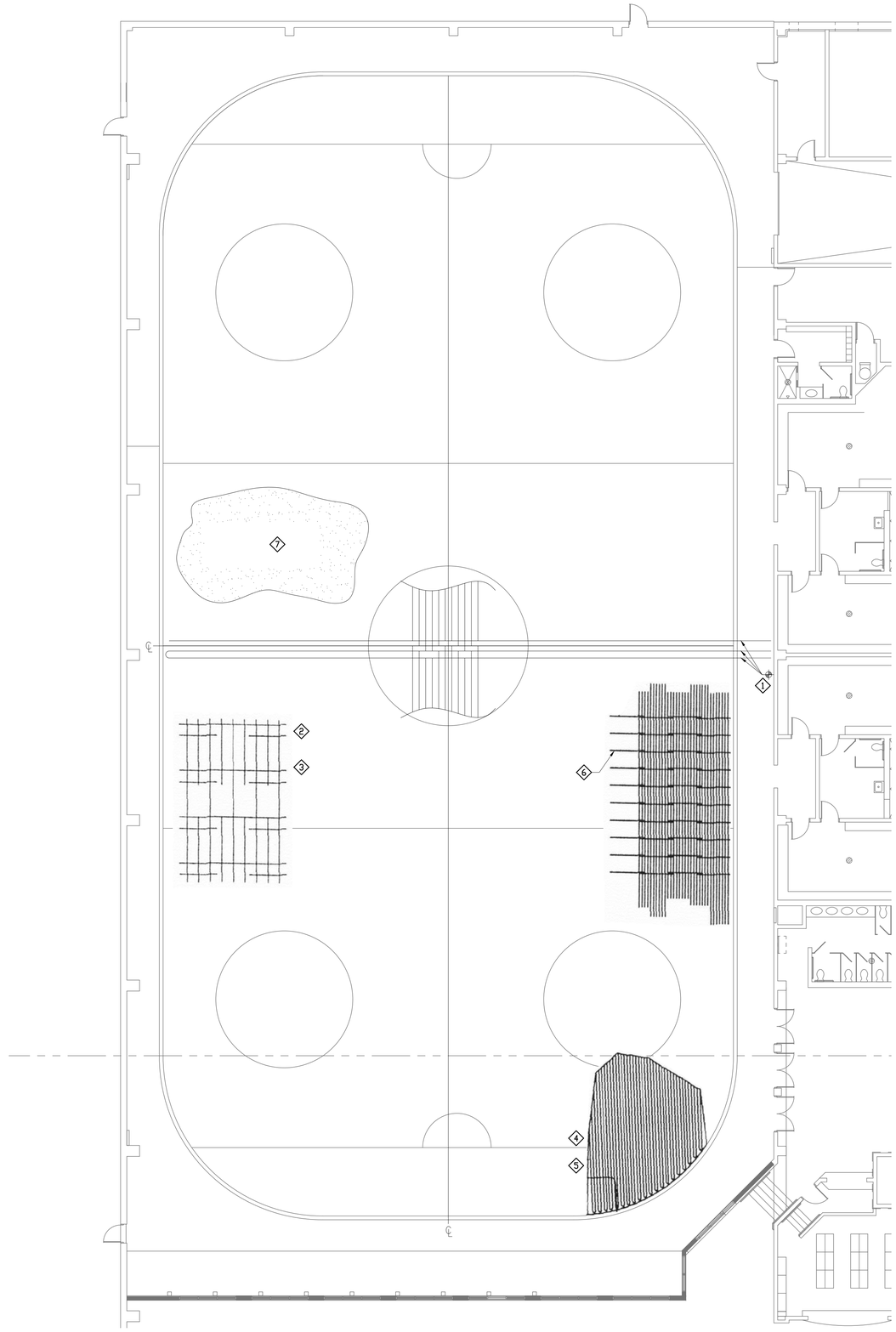
PIPING GENERAL NOTES

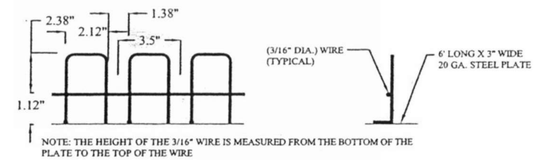
SHEET: **M00**

REV:



1 M01 **BASE BID - PERMANENT SAND BASE RINK**

SCALE 1/8" = 1' - 0"



NOTE: THE HEIGHT OF THE 3/16" WIRE IS MEASURED FROM THE BOTTOM OF THE PLATE TO THE TOP OF THE WIRE

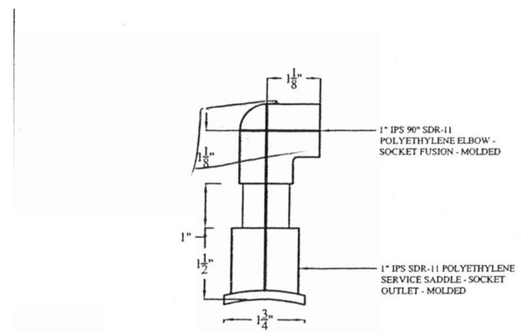
TUBING SPACER ELEVATION VIEW
SCALE: 3" = 1'-0"

TUBING SPACER END VIEW
SCALE: 3" = 1'-0"

NOTE: FOR USE WITH 1" SDR-11 (1.315" O.D.) POLY TUBE IN A 5" CONCRETE FLOOR WITH #4 (1/2") REBAR AND 6x6/6x6 WWF.

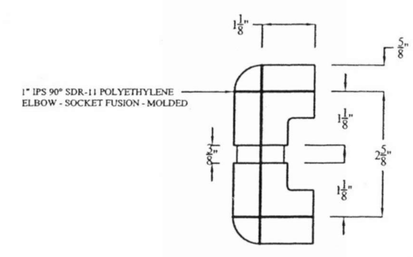
2 M04 **TUBING SPACER**

SCALE : NONE



3 M04 **SADDLE AND 90° ELBOW**

SCALE : NONE



4 M04 **180° RETURN BEND DETAIL**

SCALE : NONE

GENERAL NOTES:
MECHANICAL CONTRACTOR TO INSPECT ALL EXISTING DUCTWORK ABOVE CEILING. ALL DAMAGED DUCTWORK, DRIVES, DAMPERS, OR OTHER ACCESSORIES ARE TO BE CATALOGED AND REPAIRED OR REPLACED AS REQUIRED.

KEYED NOTES:

1. CONNECT NEW REFRIGERANT SUPPLY AND RETURN HEADERS TO EXISTING SUPPLY AND RETURN MAINS.
2. INSULATION: (2) LAYERS OF 4'x8'x1-2/2" OWENS CORNING FOAMULAR 250. WITH 6" MINIMUM OVERLAP BOTH WAYS.
3. VAPOR BARRIER: 6 MIL POLY SHEETS OVER INSULATION. TAPE ALL JOINTS.
4. RINK FLOOR TUBING SDR-11 ON 3-1/2" CENTERS
5. SEE HEADER/RETURN BEND DETAIL 4 ON THIS SHEET
6. TUBING SPACERS – 3'-0" ON CENTER CONTINUOUS ACROSS WIDTH OF RINK OVERLAPPING (2) TUBES. SEE DETAIL 2 ON THIS SHEET.
7. PERMANENT SAND BASE: 2" LAYER OF WASHED SAND MATERIAL COVERING NEW 1" REFRIGERANT LOOPS.

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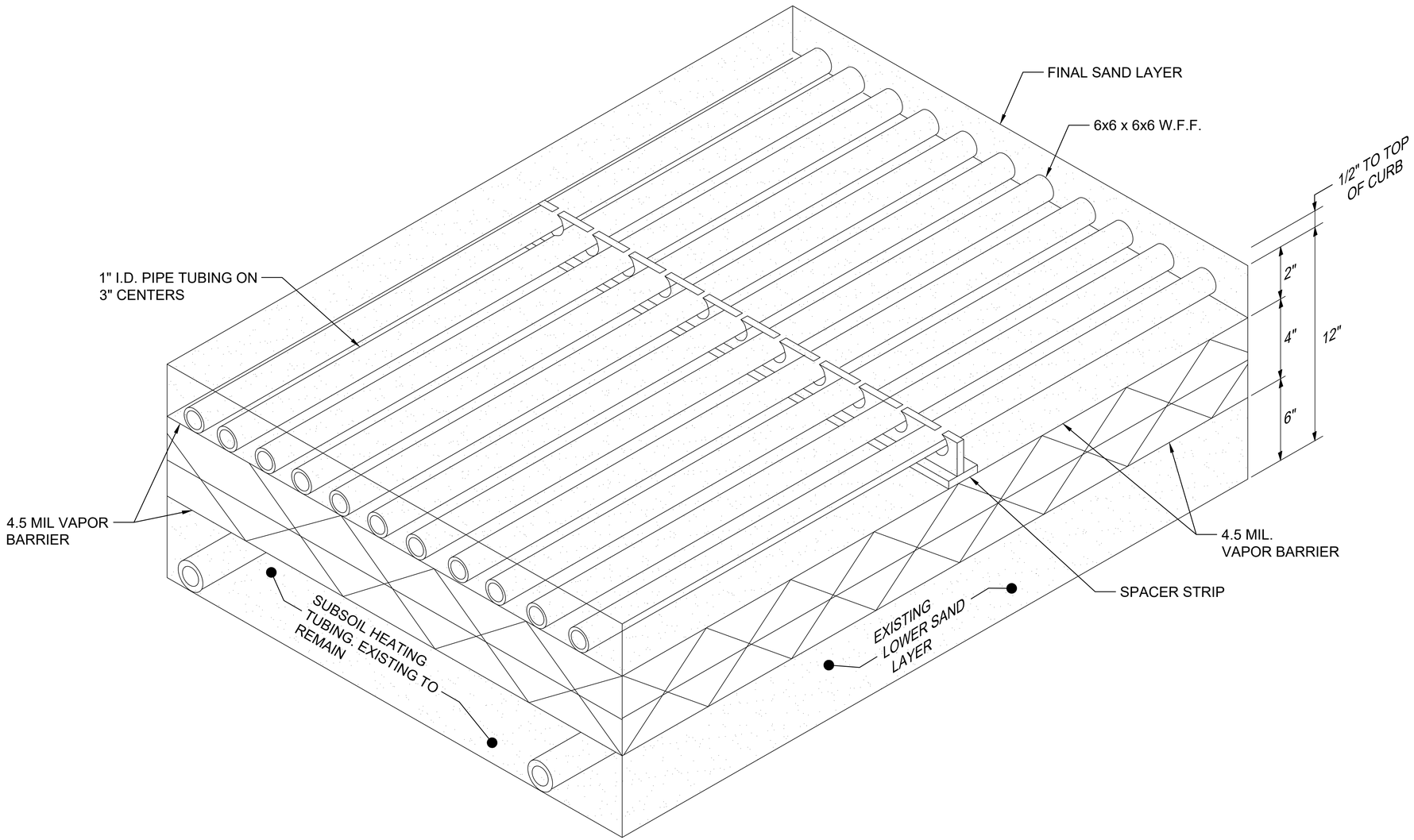
BASE BID - PERMANENT SAND BASE RINK

SHEET: **M01**

REV:



1 / M02 **BASE BID - PERMANENT SAND BASE FLOOR ISOMETRIC**

SCALE 1/8" = 1' - 0"

N

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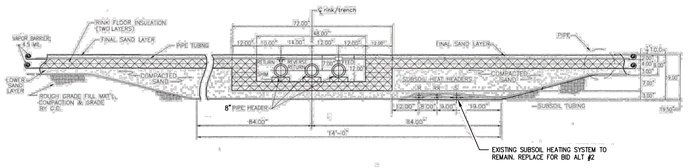
BASE BID - PERMANENT BASE SAND FLOOR ISO

SHEET: **M02**

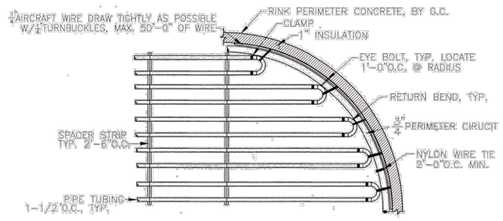
REV:

NOTE:
1) ALL ELEVATIONS MEASURED FROM LOWEST POINT IN TOP OF CURB(T.O.C.).
2) EXCAVATION OF MAIN HEADER TRENCH BY G.C.
3) RINK ROUGH GRADE (BY G.C.) TO BE FINISHED TO +0/-1" TOLERANCE.
4) ROUGH GRADE COMPACTION (BY G.C.) MINIMUM 98% BY MODIFIED PROCTOR.
5) EXCAVATION, BACKFILL AND CONCRETE OVER TRANSMISSION LINE TRENCH (BY G.C.)



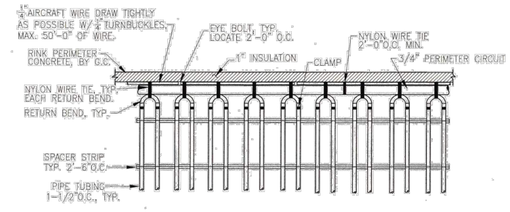
1 M03 HEADER TRENCH FLOOR CROSS SECTION

SCALE: NONE



2 M03 RADIUS CABLE AT RINK END

SCALE: NONE



3 M03 STRAIGHT SECTION PERIMETER CABLE

SCALE: NONE

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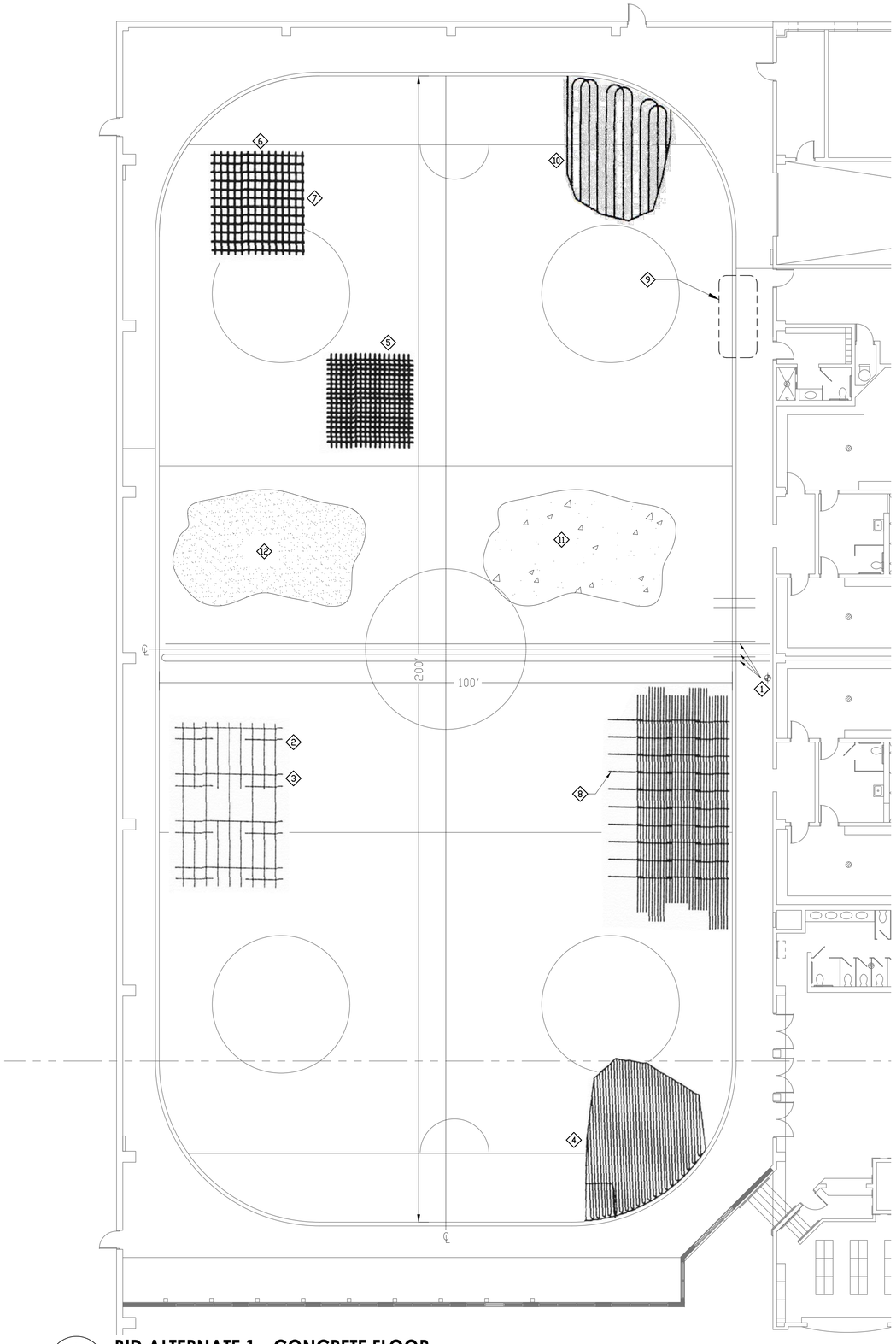
BASE BID - PERMANENT SAND BASE FLOOR DETAILS

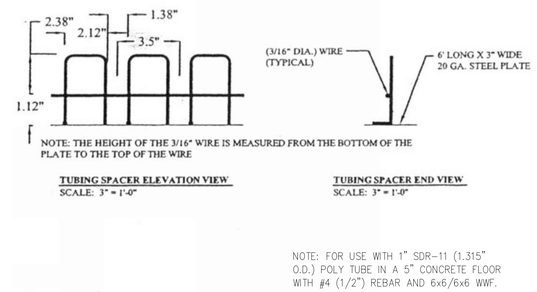
SHEET: M03

REV:



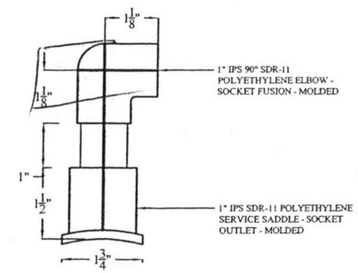
1 M04 **BID ALTERNATE 1 - CONCRETE FLOOR**

SCALE 3/32" = 1' - 0"



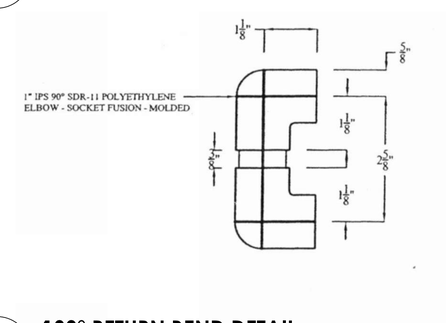
2 M04 **TUBING SPACER**

SCALE : NONE



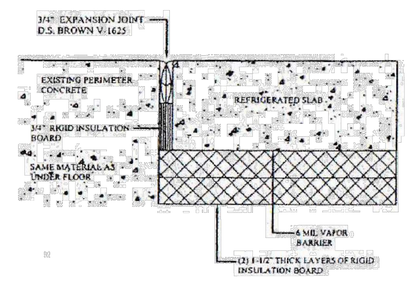
3 M04 **SADDLE AND 90° ELBOW**

SCALE : NONE



4 M04 **180° RETURN BEND DETAIL**

SCALE : NONE



5 M04 **RINK EXPANSION JOINT DETAIL**

SCALE : NONE

KEYED NOTES:

1. TIE NEW REFRIGERANT LOOP HEADER PIPING INTO EXISTING REFRIGERANT SUPPLY AND RETURN MAINS.
2. INSULATION: (2) LAYERS OF 4'x8'x1-2/2" OWENS CORNING FOAMULAR 250. WITH 6" MINIMUM OVERLAP BOTH WAYS.
3. VAPOR BARRIER: 6 MIL POLY SHEETS OVER INSULATION. TAPE ALL JOINTS.
4. RINK FLOOR TUBING SDR-11 ON 3-1/2" CENTERS
5. 6x6 / 6x6 WWF – TIE TO REBAR EVERY 24" BOTH WAYS. PROVIDE 6" OVERLAP AT ALL SEAMS. TERMINATE 3" FROM EDGE OF RINK.
6. #4 REBAR @ 14" ON CENTER
7. #4 REBAR @ 14" ON CENTER
8. TUBING SPACERS – 3'-0" ON CENTER CONTINUOUS ACROSS WIDTH OF RINK OVERLAPPING (2) TUBES. SEE DETAIL 2 ON THIS SHEET.
9. RINK EXPANSION JOINT. SEE DETAIL 5 ON THIS SHEET
10. UNDERFLOOR HEAT TUBING SDR-11 FUSION WELDED ON 18" CENTERS.
11. CONCRETE FLOOR: 3" OF MONOLITHICALLY POURED CONCRETE MINIMUM FF40/FL2.5
12. PERMANENT SAND BASE: 2" LAYER OF WASHED SAND MATERIAL COVERING NEW 1" REFRIGERANT LOOPS.

N

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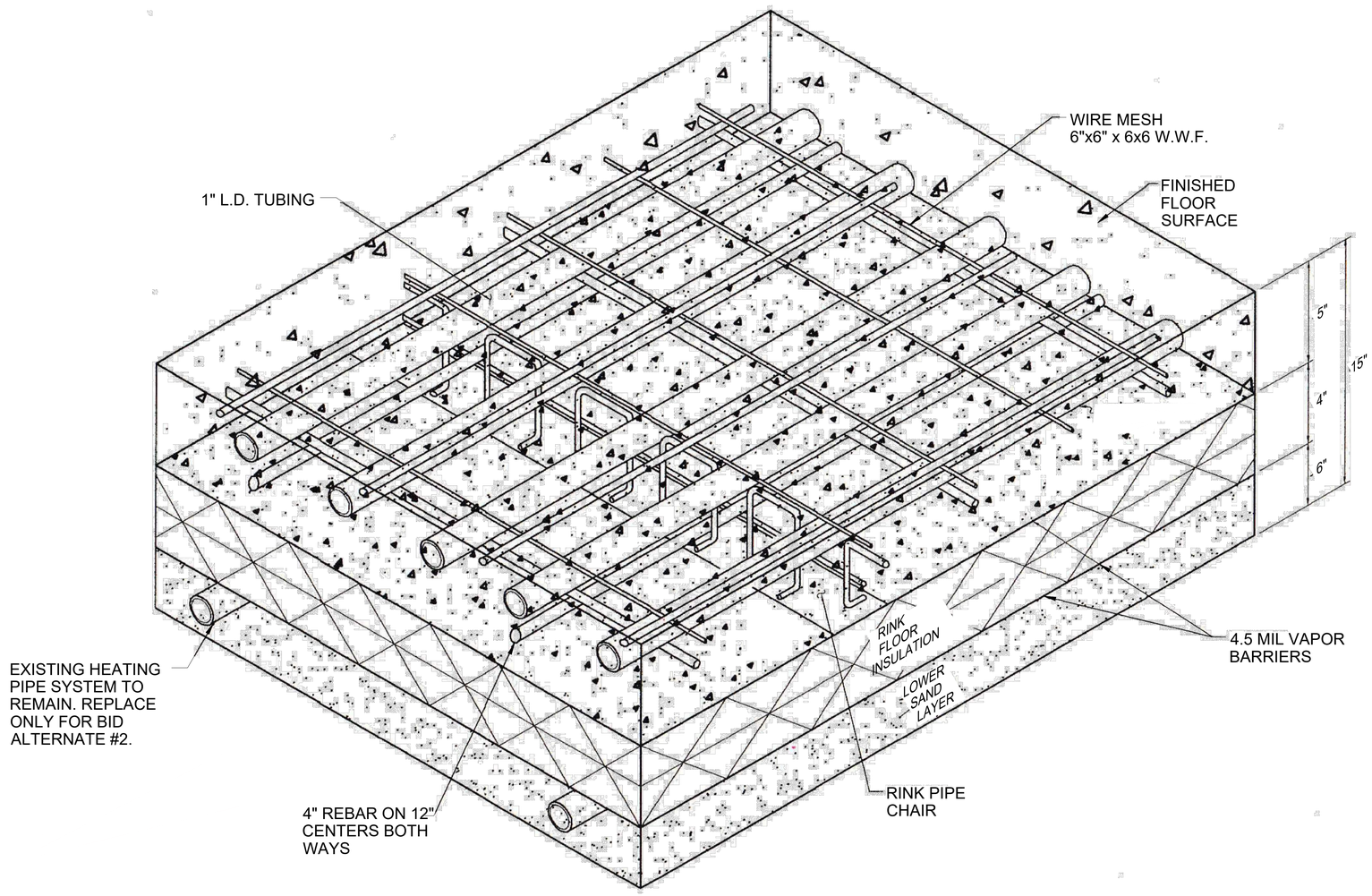
BID ALTERNATE 1 - CONCRETE FLOOR

SHEET: **M04**

REV:



1
M05

CONCRETE RINK FLOOR ISOMETRIC

SCALE 1/16" = 1' - 0"

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CONCRETE RINK FLOOR ISOMETRIC

SHEET: M05

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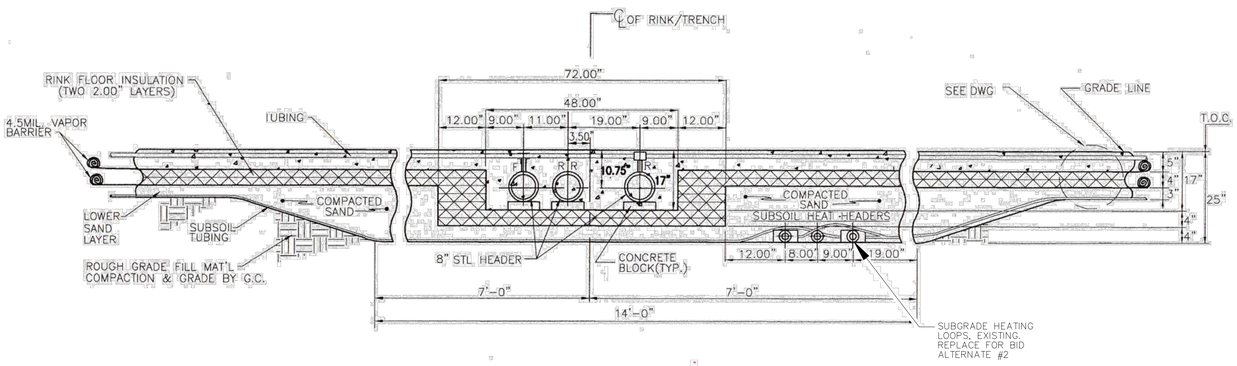
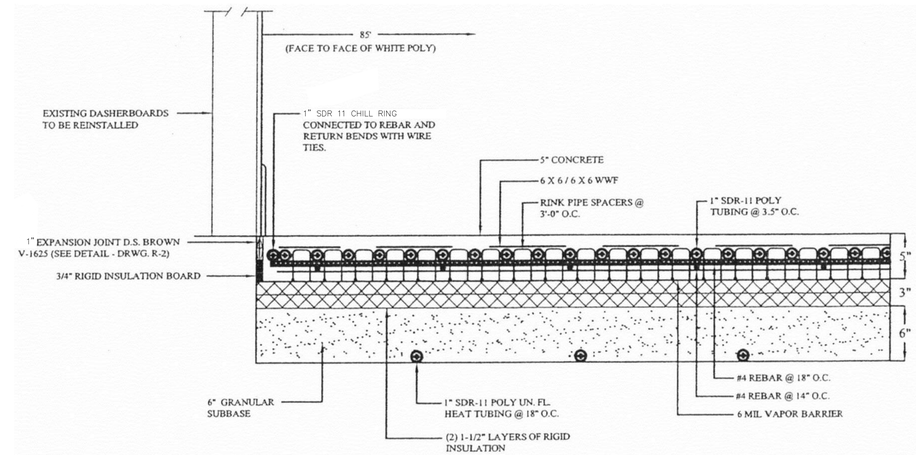


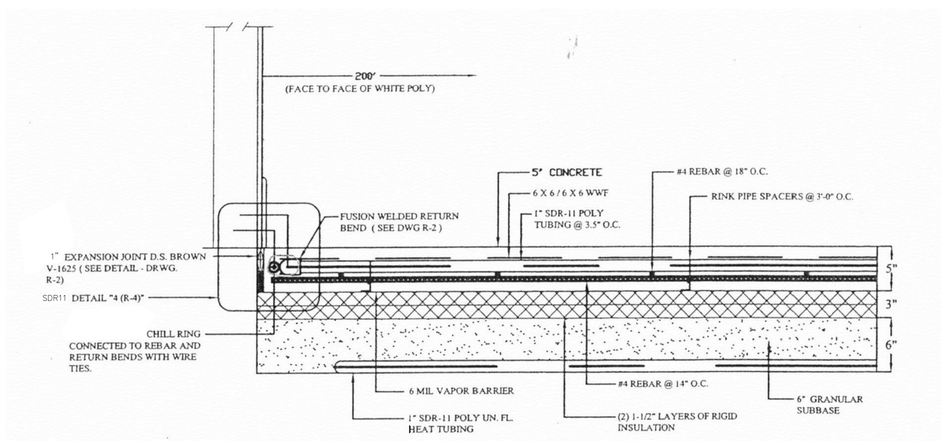
1 / M03 **HEADER TRENCH FLOOR CROSS SECTION**

SCALE: NONE



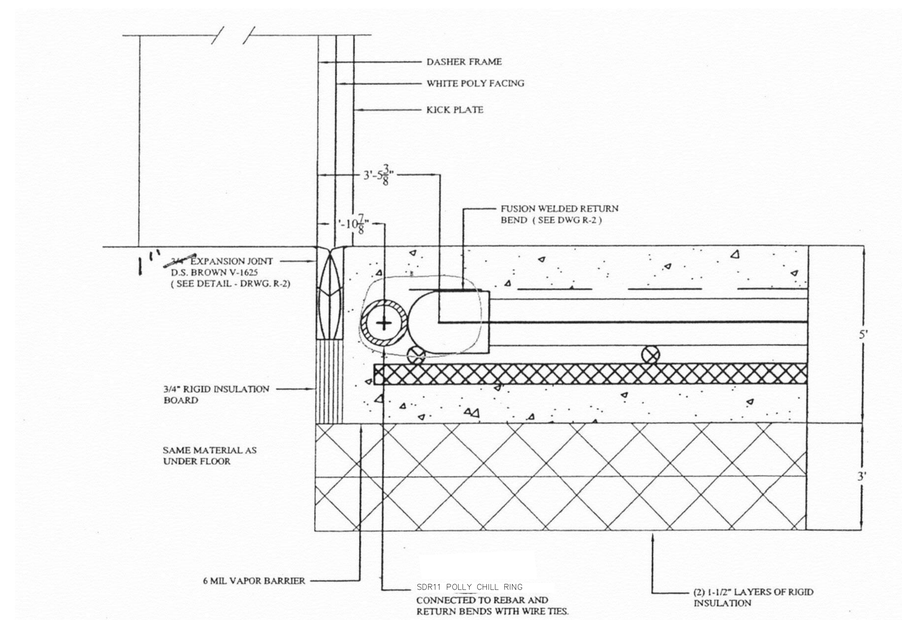
2 / M03 **SECTION AT RINK SIDE**

SCALE: NONE



3 / M03 **SECTION AT RINK END**

SCALE: NONE



4 / M03 **RETURN BEND EDGE DETAIL**

SCALE: NONE

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OWNER:
CITY OF CEDAR RAPIDS
Facilities Maintenance Services
City of Cedar Rapids 500 15th Ave SW, Cedar Rapids, Iowa 52404

ENGINEER OF RECORD:
INNOVATIVE ENGINEERS, INC.
2871 Heinz Rd. Suite B, Iowa City, IA 52240
T 319.855.4115 I F 319.351.0070
www.InnovativeEngineersInc.com

CITY OF CEDAR RAPIDS
ImOn ICE ARENA REPAIR PROJECT - PHASE 2
CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:	MNA
DRAWN BY:	JJ
CHECKED BY:	MNA
DOCUMENT DATE:	11/2/2020
PROJECT NO.:	20-101254
CLIENT NO.:	

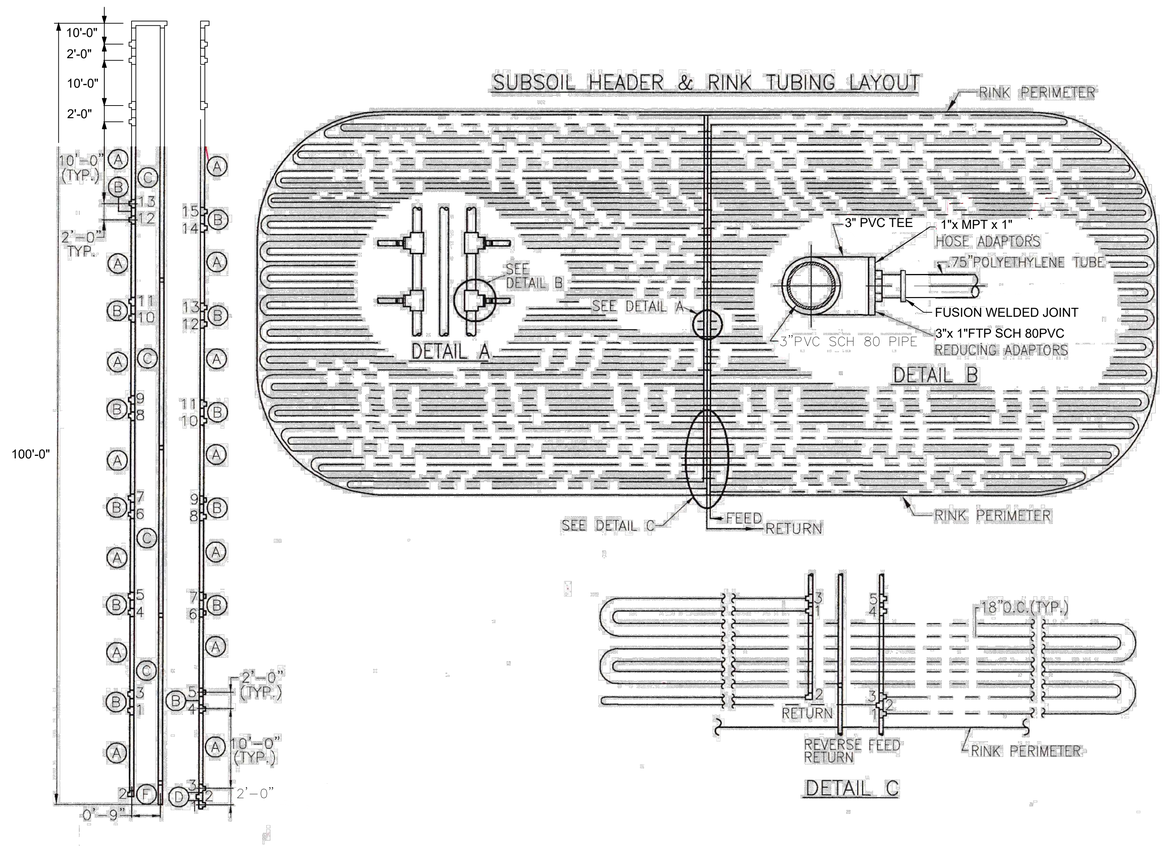
REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	1-15-2021	OUT FOR BID DRAWINGS	MNA	JJH

BID ALTERNATE 1 - CONCRETE FLOOR DETAILS

SHEET: **M06**

REV:



1
M03

BID ALTERNATE 2 - SUBSOIL HEAT SYSTEM

SCALE: NONE

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BID ALTERNATE 2 - SUBSOIL HEAT SYSTEM

SHEET: **M07**

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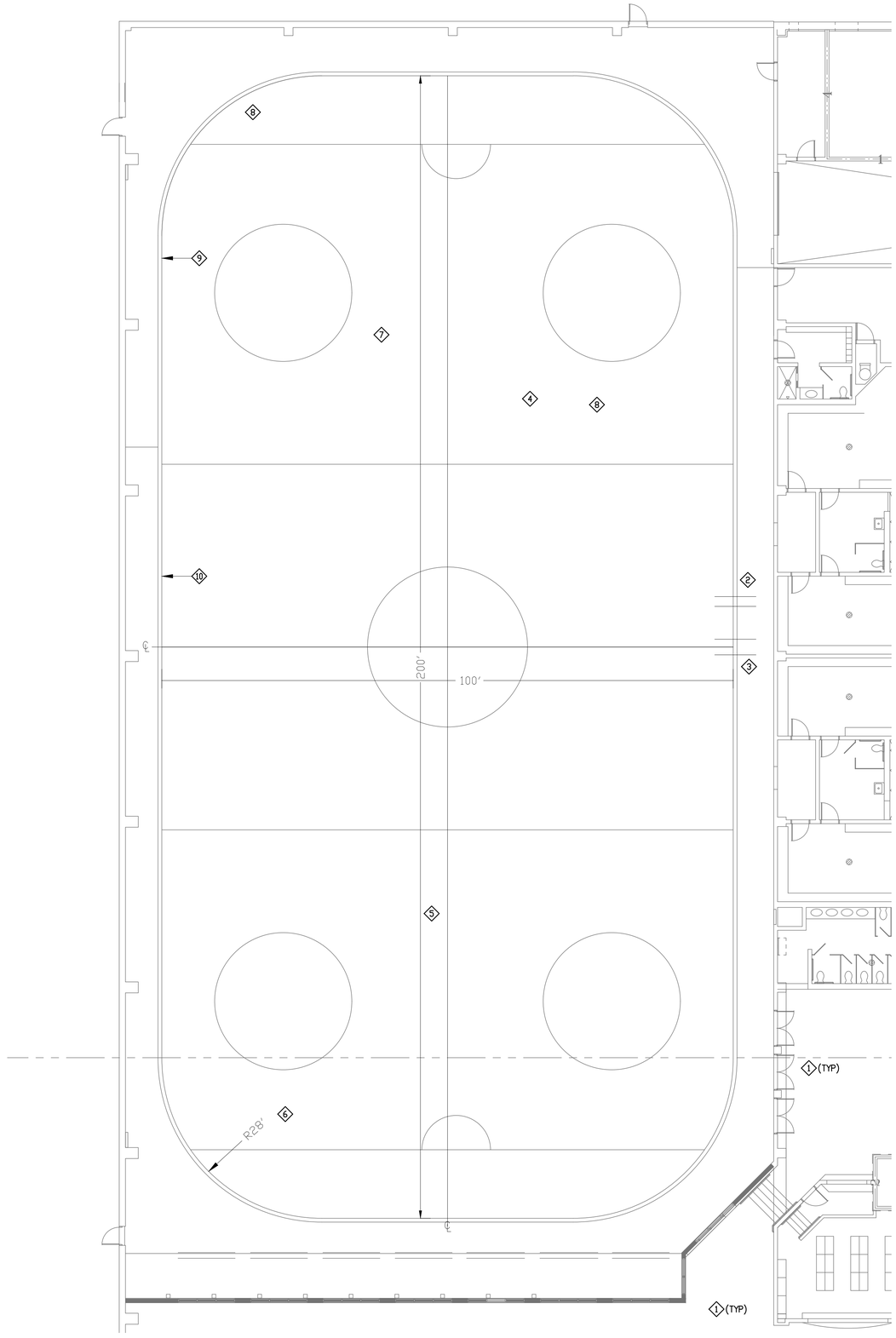

KEYED NOTES:

1. PROVIDE VISQUINE DUST BARRIER BETWEEN PHASE 11 CONSTRUCTION AREA AND COMPLETED PHASE I AREA.
2. FIELD VERIFY EXACT LOCATION OF SUBFLOOR HEATING MAIN SUPPLY AND RETURN PIPING (BID ALT. 2 ONLY). REMOVE EXISTING SUBFLOOR PIPING BACK TO MAINS.
3. FIELD VERIFY EXACT LOCATION OF EXISTING REFRIGERANT BRINE MAIN SUPPLY AND RETURN MAINS. (BASE BID AND BID ALT. 1.) REMOVE EXISTING BRINE LOOP PIPING BACK TO MAINS.
4. MAIN BID AND BID ALT 1, REMOVE EXISTING SAND FLOOR BASE BRINE REFRIGERANT PIPING, INSULATION, AND SUBGRADE HEATING PIPING.
5. BID ALT 2, REMOVE EXISTING SUBGRADE HEATING LOOP.
6. APPROXIMATE RINK DIMENSIONS 200' X 100' X 28' RADIUS FACE TO FACE OF PERIMETER CONCRETE. APPROXIMATELY 19,327 SQ FT.
7. CONTRACTOR TO CORDINATE ANY REQUIRED DRAINAGE OF SUBGRADE HEATING LOOPS WITH MECHANICAL CONTRACTOR FOR INFRASTRUCTURE UPGRADE PROJECT.
8. PROVIDE VENTILATION FOR DUST CONTROL DURING CONSTRUCTION. DO NOT USE AHU-11 FOR CONSTRUCTION VENTILATION.
9. REMOVE AND STORE EXISTING TEMPERED GLASS AND SUPPORTS
10. REMOVE AND STORE EXISTING ICE RINK DASHERBOARDS, INCLUDING BOXES, GATES, ICE DAM AND GLASS.

1 MD01 OLYMPIC ICE RINK - DEMOLITION PLAN

SCALE 3/32" = 1' - 0"

N

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OLYMPIC ICE RINK-
DEMOLITION PLAN

SHEET: MD01

REV:

SINGLE WIRE DIAGRAM SYMBOLS

AUTOMATIC TRANSFER SWITCH	ELECTRICAL EQUIPMENT WITH DESIGNATION (MDS-1)	FEEDER DESIGNATION (100-4)
	CIRCUIT BREAKER	CIRCUIT BREAKER DRAW-OUT POWER
TRANSFORMER	CONTACTOR NORMALLY OPEN (NO)	CONTACTOR NORMALLY CLOSED (NC)
	POTENTIAL TRANSFORMER	CURRENT TRANSFORMER
FUSE	SWITCH	FUSED SWITCH
INCOMING SERVICE	BUS BAR	METER
BATTERY	MOTOR	THERMAL OVERLOADS
DELTA	WYE	GROUND

POWER SYSTEM SYMBOLS

MECHANICAL EQUIPMENT CONNECTION WITH DESIGNATION (EF 3)	ELECTRICAL EQUIPMENT WITH DESIGNATION (MDS-1)	FEEDER DESIGNATION (100-4)
DISTRIBUTION PANEL WITH DESIGNATION	BRANCH PANEL WITH DESIGNATION	VARIABLE FREQUENCY DRIVE (VFD)
MOTOR WITH DESIGNATION	GENERATOR SYSTEM WITH DESIGNATION	TRANSFORMER WITH DESIGNATION
DISCONNECT SWITCH	MOTOR STARTER	COMBINATION MOTOR STARTER/ DISCONNECT SWITCH
JUNCTION BOX	FUME HOOD CONNECTION (FH)	MANUAL MOTOR STARTER THERMAL TRIP SWITCH (TT)

RECEPTACLE SYMBOLS

SIMPLEX RECEPTACLE	DUPLEX RECEPTACLE	QUADRUPLEX RECEPTACLE
WEATHER PROOF (W)	DUPLEX RECEPTACLE ABOVE COUNTER (AC)	DUPLEX RECEPTACLE CEILING MOUNTED
GROUND FAULT CIRCUIT INTERRUPTER (GF)	ISOLATED GROUND PROVIDE (2) SEPARATE GROUND WIRES (I)	TRANSIENT VOLTAGE SURGE SUPPRESSOR (S)
FLOOR BOX	ELECTRIC WATER COOLER (EWC)	RECEPTACLES IN SURFACE RACEWAY

FIRE ALARM

S	SMOKE DETECTOR	--
S—	DUCT SMOKE DETECTOR	--
B—	BEAM SMOKE DETECTOR	--
R—	BEAM SMOKE RECEIVER	--
Fs	SPRINKLER FLOW SWITCH	--
Ts	TAMPER SWITCH	--
H	MAGNETIC DOOR HOLDER	--
D	DAMPER OPERATOR WITH MONITOR MODULE	--
F	FIRE ALARM MANUAL STATION	48"
F▷	FIRE ALARM AUDIO–VISUAL SPEAKER UNIT	80"
F▶	FIRE ALARM VISUAL UNIT	80"
F◀	FIRE FIGHTER PHONE JACK	48"
A	HEAT DETECTOR	--
A_H	HEAT DETECTOR, HIGH TEMPERATURE	--

WIRING & RACEWAY SYMBOLS

PHASE CONDUCTOR, NEUTRAL CONDUCTOR, GROUND CONDUCTOR, DESIGNATION	CONDUIT ELBOW UP
EXPOSED CONDUIT OR CONDUCTOR	CONDUIT ELBOW DOWN
CONCEALED CONDUIT OR CONDUCTOR	LIGHTNING PROTECTION AIR TERMINAL
CONCEALED CONDUIT OR CONDUCTOR BELOW FLOOR	LIGHTNING PROTECTION DOWN CONDUCTOR TO GROUND
CONDUIT HOMERUN	LIGHTNING PROTECTION HORIZONTAL CONDUCTOR

LIGHT FIXTURE SYMBOLS

LIGHT FIXTURE DESIGNATIONS: F1 — FIXTURE TYPE; 2 — CIRCUIT; a — CONTROL DEVICE

LIGHT FIXTURE SURFACE OR PENDANT MOUNTED	NIGHT LIGHT/EMERGENCY FIXTURE SURFACE OR PENDANT MOUNTED
LIGHT FIXTURE RECESS MOUNTED	NIGHT LIGHT/EMERGENCY FIXTURE RECESS MOUNTED
LIGHT FIXTURE RECESS OR SURFACE MOUNTED	NIGHT LIGHT/EMERGENCY FIXTURE RECESS OR SURFACE MOUNTED
LIGHT FIXTURE SURFACE OR CHAIN MOUNTED	NIGHT LIGHT/EMERGENCY FIXTURE SURFACE OR CHAIN MOUNTED
LIGHTING FIXTURE LED	NIGHT LIGHT/EMERGENCY FIXTURE LED
TRACK LIGHTING HEADS AS SHOWN	SITE LIGHTING FLOOD LIGHT
EXIT SIGN FACES AND ARROWS AS SHOWN	EMERGENCY LIGHTING W/ BATTERY PACK
SITE LIGHTING POLE MOUNTED	SITE LIGHTING WALL OR BUILDING MOUNTED

LIGHTING CONTROLS SYMBOLS

SINGLE POLE (LOWER CASE LETTER INDICATES SWITCH LEG)	
3 THREE WAY	4 FOUR WAY
DIGITAL DIMMING WALL SWITCH	DIGITAL DUAL TECHNOLOGY CORNER MOUNT OCCUPANCY SENSOR
1-RELAY ROOM CONTROLLER WITH 0-10V DIMMING (ABOVE CEILING)	ISOLATED RELAY INTERFACE (ABOVE CEILING)
DIGITAL DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSOR	KEYED SWITCH
OCCUPANCY SENSOR	SENSOR TYPE; a — INDICATES SWITCH LEG. SENSOR DESIGNATION

ELECTRICAL ABBREVIATIONS

A, AMP	AMPERE	NEC	NATIONAL ELECTRICAL CODE
AIC	AMPERE INTERRUPTING CAPACITY	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
ATS	AUTOMATIC TRANSFER SWITCH	NFSS	NON-FUSED SAFETY SWITCH
AV	AUDIO - VISUAL	NL	NIGHT LIGHT
AP	ACCESS PANEL	OL	OVERLOADS
C	CONDUIT	P	POLE
CB	CIRCUIT BREAKER	PF	POWER FACTOR
C/T	CURRENT TRANSFORMER	PH	PHASE
DC	DIRECT CURRENT	PNL	PANEL
DISC	DISCONNECT	PP	POWER POLE
DIST	DISTRIBUTION	PR	PAIR PRI PRIMARY
ECB	ENCLOSED CIRCUIT BREAKER	P/T	POTENTIAL TRANSFORMER
EM	EMERGENCY	RGS	RIGID STEEL CONDUIT
EMT	ELECTRICAL METALLIC TUBING	S/N	SOLID NEUTRAL
EWC	ELECTRIC WATER COOLER	SPKR	SPEAKER
EXP	EXPLOSION PROOF	SP	SPARE
F	FUSE	SW	SWITCH
FA	FIRE ALARM	SWBD	SWITCHBOARD
MTR	MOTOR	SWGR	SWITCHGEAR
MV	MEDIUM VOLTAGE		
NC	NORMALLY CLOSED		
NO	NORMALLY OPEN		

GENERAL ABBREVIATIONS

AC	ABOVE COUNTER	FLR	FLOOR
AFF	ABOVE FINISHED FLOOR	INT	INTERIOR
AL	ALUMINUM	NC	NORMALLY CLOSED
BC	BELOW COUNTER	NO	NORMALLY OPEN
BTM	BOTTOM	NTS	NOT TO SCALE
CMU	CONCRETE MASONRY UNIT	OC	ON CENTER
CS	CARBON STEEL	PVC	POLYVINYL CHLORIDE
CTR	COUNTER	SF	SQUARE FOOT
CU	COPPER	SS	STAINLESS STEEL
DN	DOWN	TP	TIE POINT
EXT	EXTERIOR	UP	UP

GENERAL ELECTRICAL DEMOLITION NOTES:

1. E.C. IS RECOMMENDED TO VERIFY EXISTING CONDITIONS AT THE PROJECT SITE BEFORE SUBMITTING COST PROPOSAL.
2. THE E.C. SHALL VISIT THE SITE TO VERIFY DEVICES AND EQUIPMENT NOT SHOWN.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION REMOVAL, CAPPING, ABANDONING, DISCONNECTING OF EXISTING ELECTRICAL EQUIPMENT AND MATERIAL. ALL CUTTING, PATCHING, REPAIRING, REPLACEMENT AND REFINISHING, SHALL MATCH THE EXISTING CONSTRUCTION AS NEARLY AS POSSIBLE.
4. THE OWNER SHALL HAVE THE FIRST RIGHT OF REFUSAL TO ACCEPT EXISTING DEVICES AND EQUIPMENT BEING REMOVED AND NOT REUSED.

GENERAL POWER NOTES:

1. ALL BRANCH CIRCUITS SHALL HAVE GROUND CONDUCTORS.
2. PROVIDE SEPARATE NEUTRAL FOR EACH BRANCH CIRCUIT PHASE CONDUCTOR.
3. MAXIMUM OF THREE (3) CURRENT CARRYING CONDUCTORS TO CONDUIT.
4. HOMERUN CIRCUITS SHALL CONTAIN NO MORE THAN THREE (3) HOT CONDUCTORS PER CONDUIT.
5. PULL BOXES AND JUNCTION BOXES ARE GENERALLY NOT INDICATED ON DRAWINGS EXCEPT FOR SPECIAL REQUIREMENTS. CONTRACTOR SHALL INSTALL PULL BOXES OR JUNCTION BOXES AS REQUIRED TO FACILITATE WIRE PULLING. PULL BOXES AND JUNCTION BOXES SHALL BE GALVANIZED CODE GAUGE STEEL WITH REMOVABLE OR HINGED COVERS AND SHALL BE SIZED AS REQUIRED. PULL BOXES AND JUNCTION BOXES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS AND SHALL NOT BE INSTALLED IN FINISHED SPACES.

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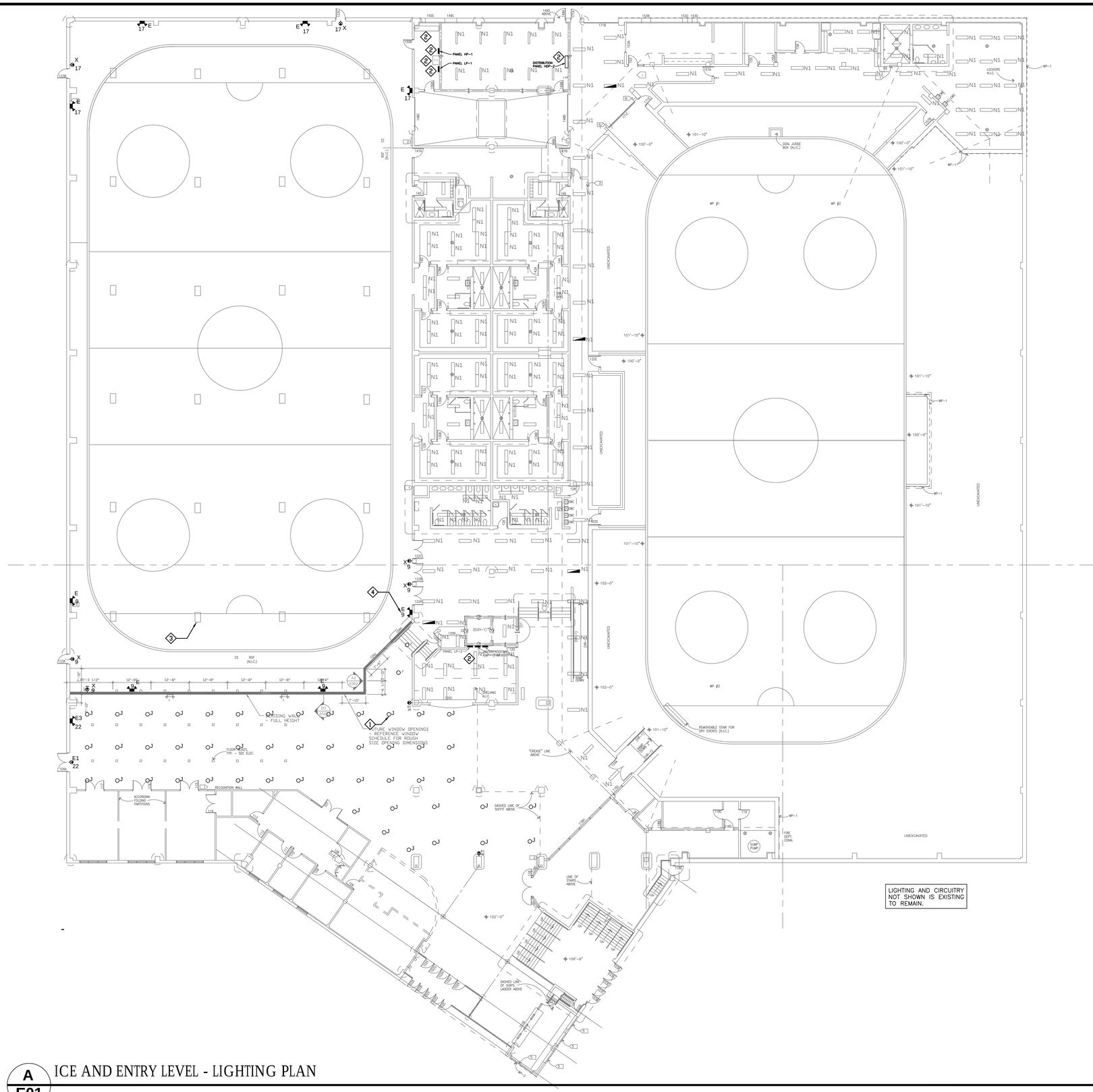
ELECTRICAL- SYMBOLS AND NOTES

SHEET: E00

REV:



LIGHTING AND CIRCUITRY NOT SHOWN IS EXISTING TO REMAIN.

SPECIFIC POWER NOTES – DETAIL A:

1. 1-FOR-1 REPLACEMENT OF EXISTING DAMAGED FIXTURES. PROVIDE NEW LED FIXTURES PER LIGHT FIXTURE SCHEDULE. RE-USE EXISTING CIRCUITRY. EXTEND CIRCUITS AS REQUIRED. TYPICAL OF ALL FIXTURES ON THIS FLOOR.
2. DISTRIBUTION EQUIPMENT IS EXISTING TO REMAIN
3. HIGH BAY FIXTURES ARE INSTALLED UNDER A SEPARATE CONTRACT. (TYPICAL).
4. CIRCUIT NUMBERS ARE DIAGRAMATIC AND ARE SHOWN FOR REFERENCE ONLY TO INDICATE HOW MANY FIXTURES ARE ON EACH CIRCUIT. VERIFY CIRCUIT NUMBERS AND THE SERVING PANELS IN THE FIELD. (TYPICAL).

GENERAL LIGHTING NOTES:

1. TYPICAL LIGHTING HOMERUN CIRCUITS SHALL BE #12 PHASE WIRE, #12 NEUTRAL WIRE, #12 GND, 3/4"C. FOR 120V, 20A HOMERUN CIRCUITS THAT EXCEED 75 FOOT FEEDER LENGTH, OVERSIZE CONDUCTOR TO #10 DUE TO VOLTAGE DROP. FOR 277V, 20A HOMERUN CIRCUITS THAT EXCEED 150 FOOT FEEDER LENGTH, OVERSIZE CONDUCTOR TO #10 DUE TO VOLTAGE DROP.
2. 120V LIGHTING HOMERUN CIRCUITS SHALL CONTAIN NO MORE THAN (3) HOT OR SWITCHED CONDUCTORS PER CONDUIT.
3. EXIT SIGNS THAT ARE NOT WALL MOUNTED SHALL BE PENDANT OR CEILING MOUNTED. CONTRACTOR SHALL SUPPLY WALL MOUNT, CEILING MOUNT, OR PENDANT MOUNT ACCESSORIES AS REQUIRED.
4. LIGHTING CIRCUITS SHALL HAVE DEDICATED NEUTRALS.
5. EXIT SIGNS SHALL BE CONNECTED TO UNSWITCHED LIGHTING CIRCUITS SERVING AREA.

A
E01

ICE AND ENTRY LEVEL - LIGHTING PLAN

SCALE 1/16" = 1' - 0"

N

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ICE AND ENTRY LEVEL-
LIGHTING PLAN

SHEET: E01

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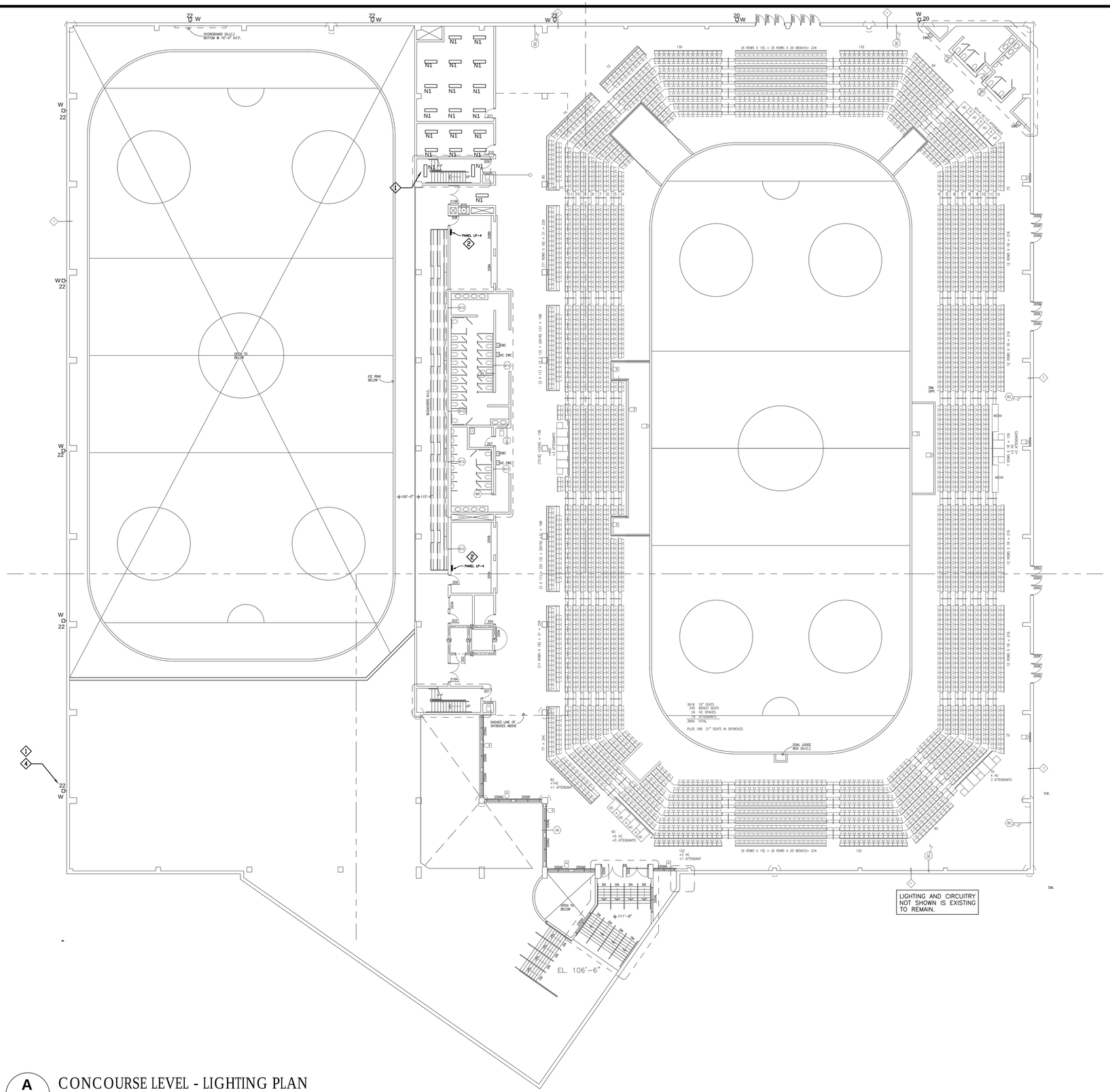

SPECIFIC POWER NOTES – DETAIL A:

1. 1-FOR-1 REPLACEMENT OF EXISTING FIXTURES. PROVIDE NEW LED FIXTURES PER LIGHT FIXTURE SCHEDULE. RE-USE EXISTING CIRCUITRY. EXTEND CIRCUITS AS REQUIRED. TYPICAL OF ALL FIXTURES ON THIS FLOOR.
2. DISTRIBUTION EQUIPMENT IS EXISTING TO REMAIN
3. NOT USED.
4. CIRCUIT NUMBERS ARE DIAGRAMATIC AND ARE SHOWN FOR REFERENCE ONLY TO INDICATE HOW MANY FIXTURES ARE ON EACH CIRCUIT. VERIFY CIRCUIT NUMBERS AND THE SERVING PANELS IN THE FIELD. (TYPICAL).

A
E02

CONCOURSE LEVEL - LIGHTING PLAN

SCALE 1/16" = 1' - 0"

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CONCOURSE LEVEL - LIGHTING PLAN

SHEET: E02

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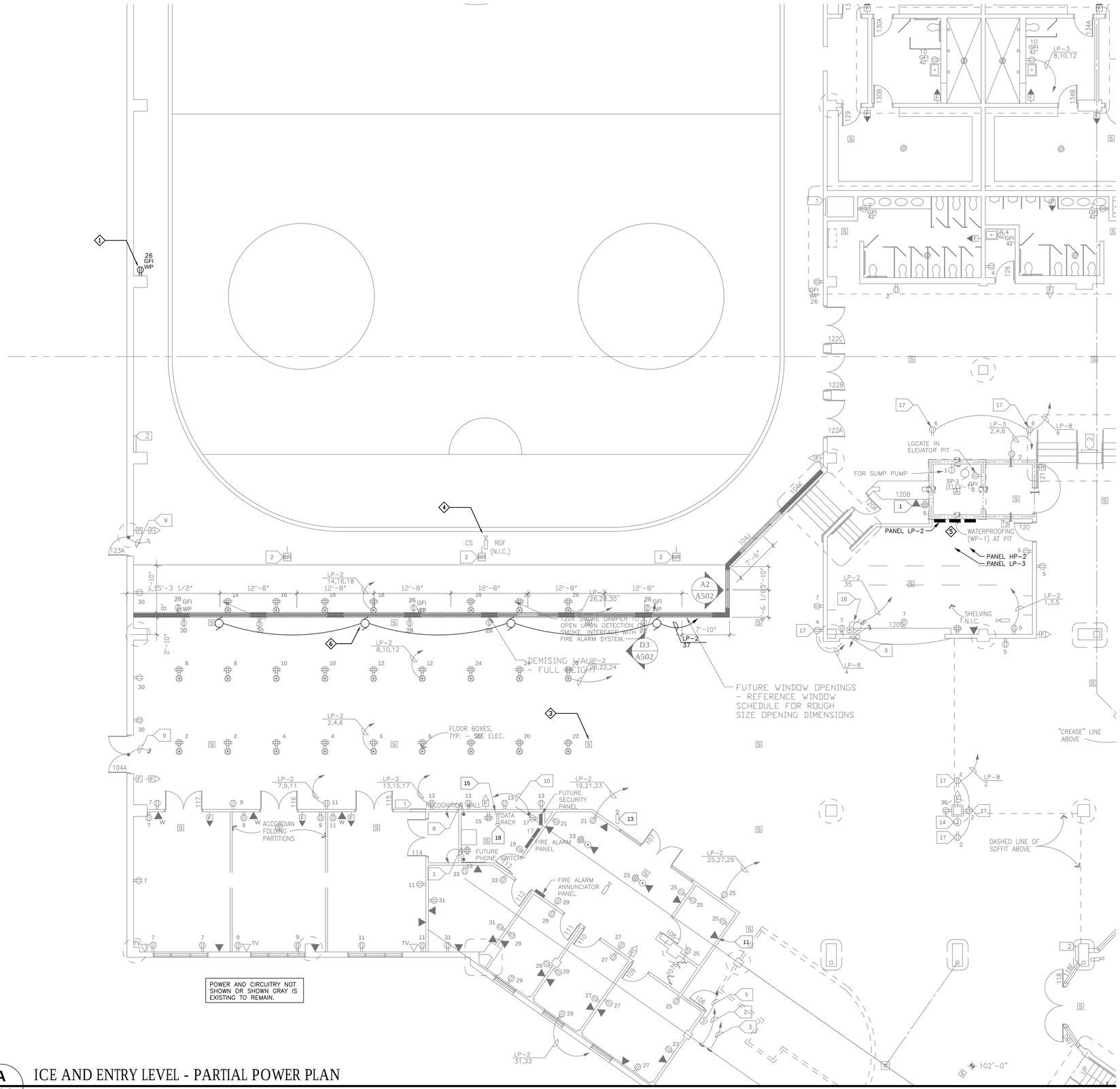

POWER AND CIRCUITRY NOT SHOWN OR SHOWN GRAY IS EXISTING TO REMAIN.

SPECIFIC POWER NOTES – DETAIL A:

1. NEW POWER RECEPTACLE. RE–USE EXISTING CIRCUITRY. EXTEND CIRCUITS AS REQUIRED. TYPICAL. CIRCUIT NUMBERS ARE DIAGRAMMATIC AND ARE SHOWN FOR REFERENCE ONLY TO INDICATE HOW MANY RECEPTACLES ARE ON EACH CIRCUIT. VERIFY CIRCUIT NUMBERS AND THE SERVING PANELS IN THE FIELD. (TYPICAL).
2. NOT USED.
3. FIRE ALARM DEVICES ARE SHOWN FOR REFERENCE ONLY. THEY ARE PROVIDED BY OTHERS UNDER A SEPARATE CONTRACT. COORDINATE WORK WITH FA CONTRACTOR.(TYPICAL).
4. SECURITY CAMERAS ARE SHOW FOR REFERENCE ONLY. THEY ARE PROVIDED BY OTHERS UNDER A SEPARATE CONTRACT. COORDINATE WORK WITH SECURITY SYSTEMS CONTRACTOR.(TYPICAL).
5. DISTRIBUTION EQUIPMENT IS EXISTING TO REMAIN
6. 120V SMOKE DAMPER TO OPEN UPON DETECTION OF SMOKE. INTERFACE WITH FIRE ALARM SYSTEM. COORDINATE WORK WITH FIRE ALARM CONTRACTOR. (TYP. OF 4 DAMPERS).

A
E03

ICE AND ENTRY LEVEL - PARTIAL POWER PLAN

SCALE 1/8" = 1'- 0"

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ICE AND ENTRY LEVEL - PARTIAL POWER PLAN

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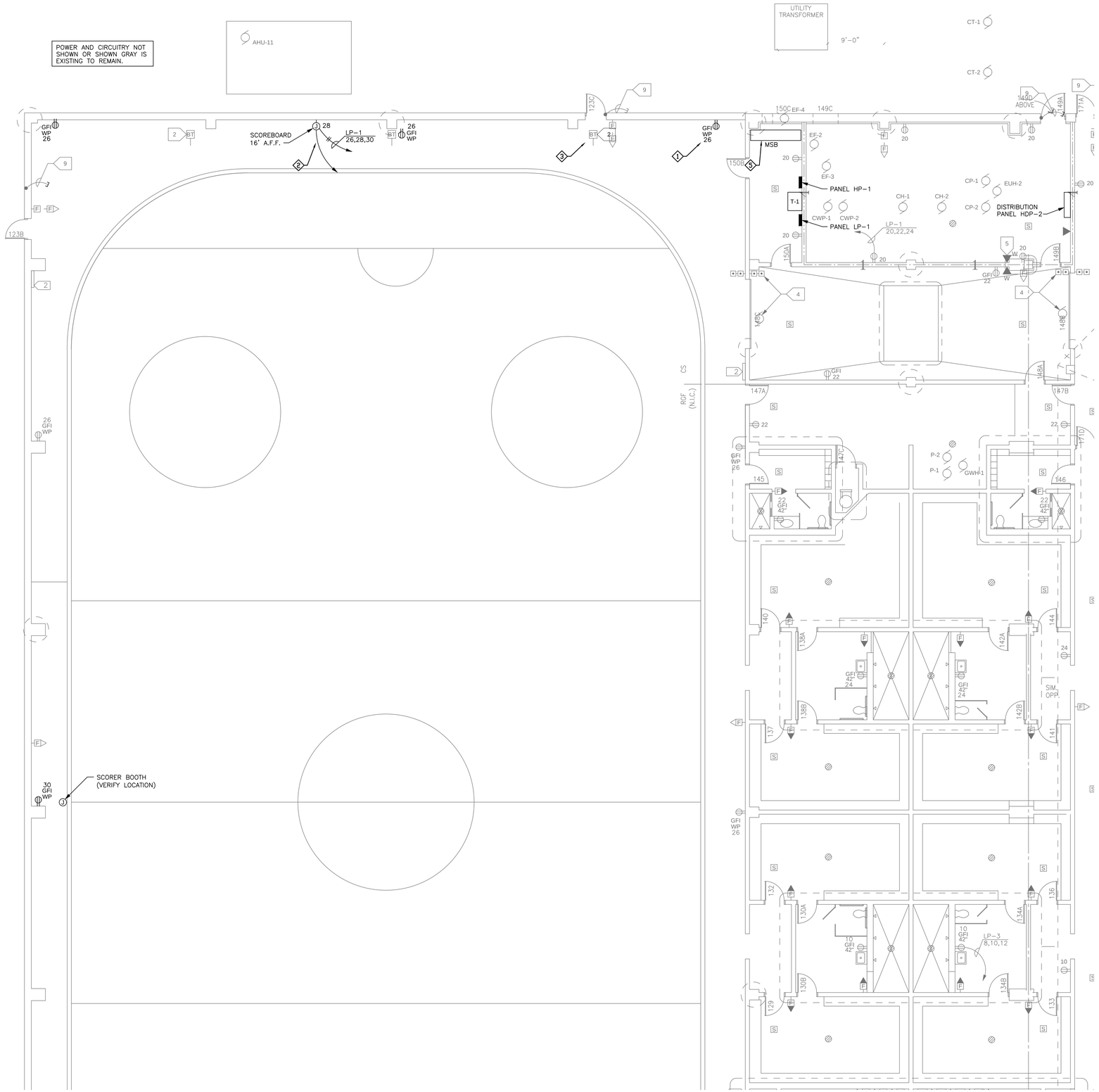
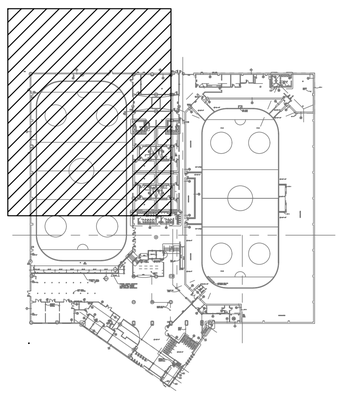


SPECIFIC POWER NOTES – DETAIL A:

1. NEW POWER RECEPTACLE. RE-USE EXISTING CIRCUITRY. EXTEND CIRCUITS AS REQUIRED. TYPICAL. CIRCUIT NUMBERS ARE DIAGRAMMATIC AND ARE SHOWN FOR REFERENCE ONLY TO INDICATE HOW MANY RECEPTACLES ARE ON EACH CIRCUIT. VERIFY CIRCUIT NUMBERS AND THE SERVING PANELS IN THE FIELD. (TYPICAL).
2. 3/4" CONDUIT TO SCORER'S BOOTH.
3. FIRE ALARM DEVICES ARE SHOWN FOR REFERENCE ONLY. THEY ARE PROVIDED BY OTHERS UNDER A SEPARATE CONTRACT. COORDINATE WORK WITH FA CONTRACTOR.(TYPICAL).
4. NOT USED
5. DISTRIBUTION EQUIPMENT IS EXISTING TO REMAIN (TYPICAL)



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ICE AND ENTRY LEVEL - PARTIAL POWER PLAN
SCALE 1/8" = 1' - 0"

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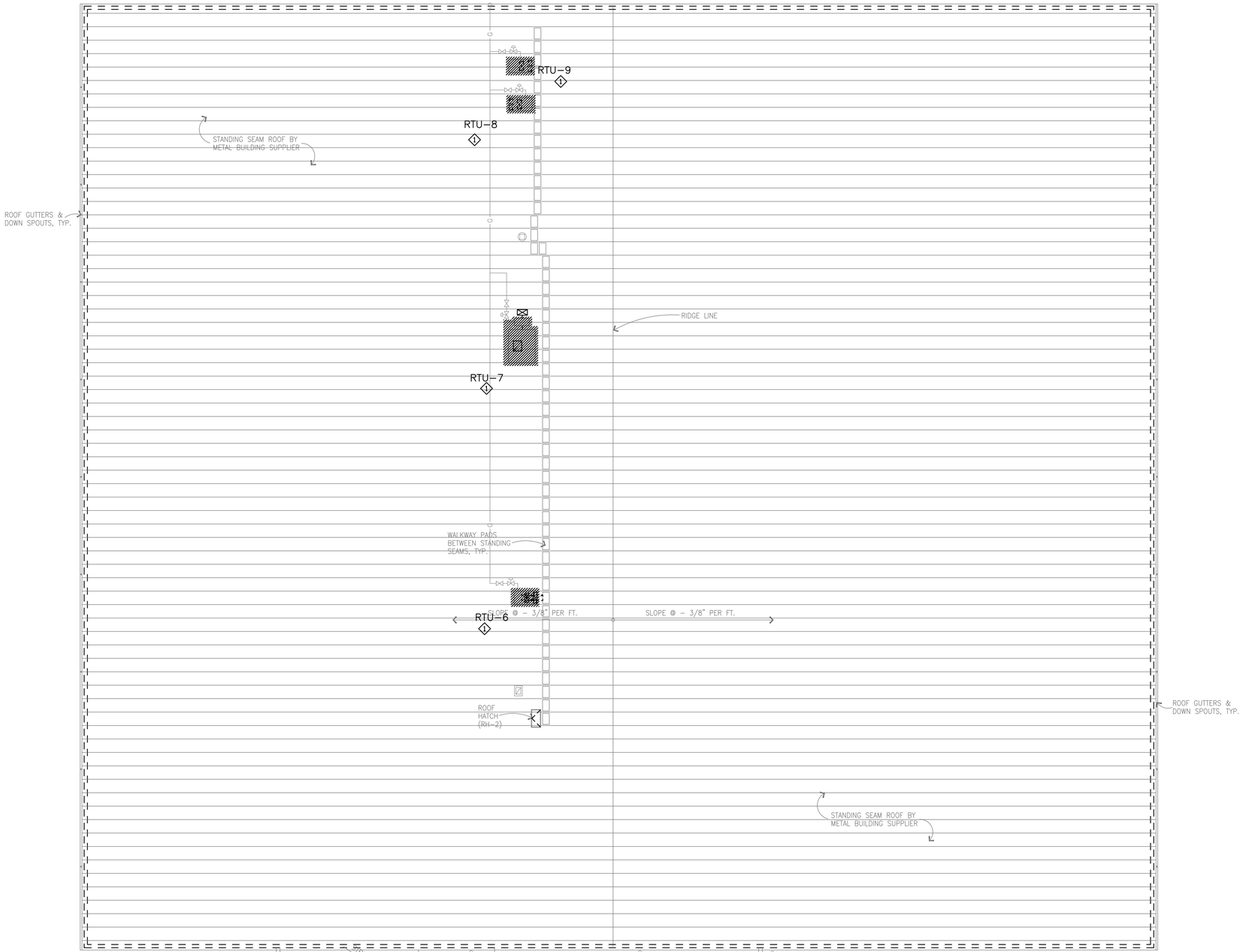

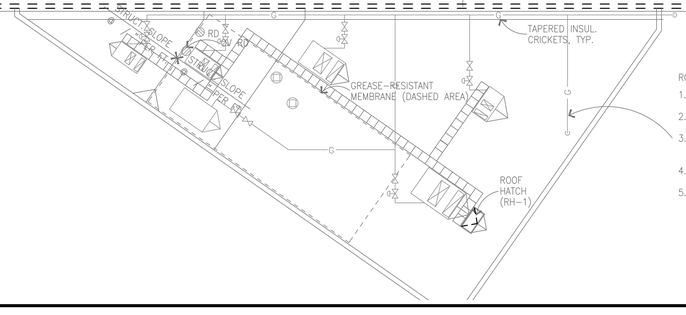

ROOF SYSTEM ABOVE METAL DECK: (SB-1)

1. THERMAL BARRIER
2. 6 MIL VAPOR RETARDER (VR-1)
3. 6" EXPANDED POLYSTYRENE (INSUL-10) CONFIRM DENSITY IN LAYERS W/ STAGGERED JOINTS
4. 40 MIL EPDM MEMBRANE (SP-2)
5. BALLAST - 10 P.S.F. MIN W/ ADDITIONAL AS REQUIRED TO MEET WIND LOADING CRITERIA

SPECIFIC KEY NOTES:

1. EXISTING ROOF TOP UNIT (RTU) TO BE REMOVED AND RE-INSTALLED AFTER THE INSTALLATION OF NEW ROOF AND ROOF CURB. MAINTAIN EXISTING CIRCUITRY TO FEED RTU AFTER THE INSTALLATION OF THE NEW ROOF. INTERCEPT AND EXTEND FEEDER AS REQUIRED.PROVIDE FINAL CONNECTIONS.

A
E05

ROOF - POWER PLAN

SCALE 1/16" = 1' - 0"

N

CEDAR RAPIDS
City of Five Seasons®

OWNER:

CITY OF CEDAR RAPIDS
Facilities Maintenance Services
City of Cedar Rapids 500 15th Ave SW, Cedar Rapids, Iowa 52404

ENGINEER OF RECORD:

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2871 Heinz Rd. Suite B, Iowa City, IA 52240
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CITY OF CEDAR RAPIDS
Im On ICE ARENA REPAIR PROJECT - PHASE 2
CEDAR RAPIDS, IOWA
PROJECT # #PUR0920-071

DESIGNED BY:	MNA
DRAWN BY:	JJ
CHECKED BY:	MNA
DOCUMENT DATE:	11/2/2020
PROJECT NO.:	20-101254
CLIENT NO.:	

REVISIONS

NO.	DATE	DESCRIPTION	BY	DWN
0	1-15-2021	OUT FOR BID DRAWINGS	MNA	JJH

ROOF - POWER PLAN

SHEET: E05

REV:

SPECIFIC POWER NOTES – DETAIL A:

1. BID ALTERNATE 4: 1-FOR-1 REPLACEMENT OF EXISTING FIXTURES. PROVIDE NEW LED FIXTURES PER LIGHT FIXTURE SCHEDULE. RE-USE EXISTING CIRCUITRY. TYPICAL OF ALL 13 SITE LIGHTING FIXTURES.

A / E06 SITE LIGHTING PLAN - ALTERNATE #4 (SITE LIGHTING UPGRADE)

SCALE 1/32" = 1' - 0"

N

LIGHTING FIXTURE SCHEDULE

MARK	FIXTURE		VOLT.	LAMP		MOUNTING		MANUFACTURER		REMARKS
	TYPE	DIFFUSER		# & WATTS	TYPE	TYPE	HT.	NAME	SERIES NO.	
J	2 X 2 PENDANT	SATINE LENS	277V	77W 7440 LM	LED 40K	PENDANT	20' AFF. 256" STEM	LUMINIS	SQ805	FINISH - SNOW WHITE 0-10V DIMMING STEM LENGTH 256" WITH SST STABILIZER CABLES
H1	PARKING LOT FIXTURE		UNIV	133W	LED 40K	POLE	25'	LITHONIA	RSX1	TYPE 4 WIDE DISTRIBUTION 0-10V DIMMING FINISH - DARK BRONZE,WITH PHOTO SENSOR
DD1	WALL PACK		UNIV	12,900 LM	LED 40K	WALL	MATCH EXISTING	LITHONIA	TWX3 LED	WITH PHOTO SENSOR 0-10V DIMMING FINISH: BLACK
E1	EMERGENCY LIGHT	N/A	UNIV	2-5W	LED	SURFACE	WALL	MULE LIGHT ALARMS DUAL LITE	EQUAL LCA-2LEDR EV2D	
X1	SINGLE FACE EXIT SIGN	N/A	UNIV	N/A	LED	SURFACE	WALL	MULE LIGHT ALARMS DUAL LITE	EQUAL QLX500 EVEURWE	RED PANEL COLOR, SINGLE FACE EMERGENCY (NICad Battery)

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR TRIM TYPES, COORDINATE WITH REFLECTED CEILING PLANS

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SITE LIGHTING PLAN-
ALTERNATE #4

SHEET: E06

REV: