RAFAT
8850 GEORGE BOLTON PARKWAY, CALEDON, ONTARIO L7E 2Y4

RFI Transmittal No:	183

Project Name:	Renovation of Chris Gibson Recreation Centre Drive	Project No.	T2023-125
		DATE:	16-Apr-2025

RFI No:	183

Title:	SD 144 R1 - BAS Clarification

To:	Patrick Johnson - Contract Administrator (DSA) Vincent Goetz - Senior Assoicate (DSA)

Requested by	Rafat	Sketch Attached	Y	Total # Pages	6

Description of RFI	See attached RFI
Response Required By	21 Apr 2025

Date Responded	April 24, 2025	Sketch Attached		Total # Pages	

Consultants Response	Please see comments below.

Approved/Responed by:	Logan Bakker

DSA: see Accent Refrigeration comments above and throughout review.
Introba has reviewed this RFI and has no comments.

Patrick Johnson / DSA
April 25, 2025

54 Audia Court, Unit 2
Concord, ON L4K 3N5
(905)-738-1400

Request For Information 23-214-023

Apr 9, 2025

Project Name
CHRIS GIBSON REC CENTRE

Project Address
125 McLaughlin Rd N, Brampton, ON, L6X 1N9

To

Name
Ashish Singla
Company
RAFAT GENERAL CONTRACTOR INC.
Email
asingla@corebuildconstruction.com
Address
8850 GEORGE BOLTON PKWY BOLTON, ON L7E 2Y4

From

Name
MOHAMMED LODHI
Company
Consult Mechanical Inc.
Email
mohammed.l@consultmechanical.com
Address
54 Audia Court, Unit 2 Concord, ON L4K 3N5

Title	SCHEDULE IMPACT	COST IMPACT
Chris Gibson IFC_s Refrigeration drawing.pdf , sheet 4 Comments on SD-144R1 DSA page 53 of 59	Probable	Probable

RETURN BY

Apr 16, 2025

Information Requested

Please find attached BAS RFI010 for engineer's review and response, thanks.

Attachments

1. RFI-010-Mech-Rm140-REF-01-Control.pdf

RFI 010 Request For Information – Ainsworth

To: Paul Leddy
Mohammed Lodhi
Project Manager, Consult Mechanical

Re: City of Brampton-Chris Gibson Rec Centre - Addition

Subject: REF-10 – Sequence of Operations

Date: Apr 8, 2025

Ref: Chris Gibson IFC M-801,
Chris Gibson IFC_s Refrigeration drawing.pdf , sheet 4
Comments on SD-144R1 DSA page 53 of 59

ACCENT: I think the inlet damper conditions here are correct, but we should probably run at high speed if an ammonia leak is detected. I think the simplest method to provide the ventilation rates required by code would be to run the ventilation fan at low speed all the time (25% speed) and then ramp up to 100% speed if ammonia is detected or if the plant room gets more than 10°C above the outdoor ambient temperature. The outdoor ambient temperature can be read to the BAS through the dehumidifier sensors via BACnet. The BAS would close a relay on the VFD digital inputs to go to high speed in the event the temperature threshold is exceeded.

Description/ Question:

1. Sequence of Operations – REF-01 & REF-02:
   Please provide a detailed and finalized revision of the sequence of operations for REF-01 and REF-02. We have identified discrepancies in the follow items 2, 3, and 4. Clarification is required to ensure proper coordination and implementation.
2. IFC mechanical drawing M-801 – Notes 20, 21:
   - Note 20: "Provide high level and low level inlets complete with bird screen and motorized damper at ductwork below fan, to be coordinated on site with location of refrigerant leak."
   - Note 21: "Fan to be interlocked to refrigerant detection panel. Fan to run at high speed at all times with upper inlet under normal operation. On refrigerant leak detection, upper inlet to close, lower inlet to open, and fan to switch to low speed."
3. Chris Gibson IFC_s Refrigeration drawing.pdf – sheet 4,
   Based on our review, the following components are not within our scope of work. BAS responsibilities are limited to monitoring the related gas alarms via BACnet MS/TP/IP or hardwired connections. Additionally, Ainsworth has not received any datasheets for these devices despite several inquiries:
   - 1 - Ammonia Gas Detector Hung on Wall 10' [3 m] above the Floor Elevation (Tied to Refrigeration Controls and Machinery Room Alarm)
   - 2 - Ammonia Audible Alarm and Warning Light(Tied to Ammonia Gas Detector)
   - 3 - CO2/CO/NOx Gas Detectors with Audible Alarm and Warning Light (Tied to BMS Alarm System and Dehumidifier Process Fan Override)

ACCENT: That is correct. The ammonia gas detector, ammonia alarms/warning lights and the IAQ detectors in the ice arena (for the dehumidifier) are not within Ainsworth's scope of work.

The ammonia items are in CIMCO's scope of work because they are supplying and installing the ammonia detection system. The IAQ sensors in the ice arena would be in Consult Mechanical's scope because they are supplying and installing the dehumidifier

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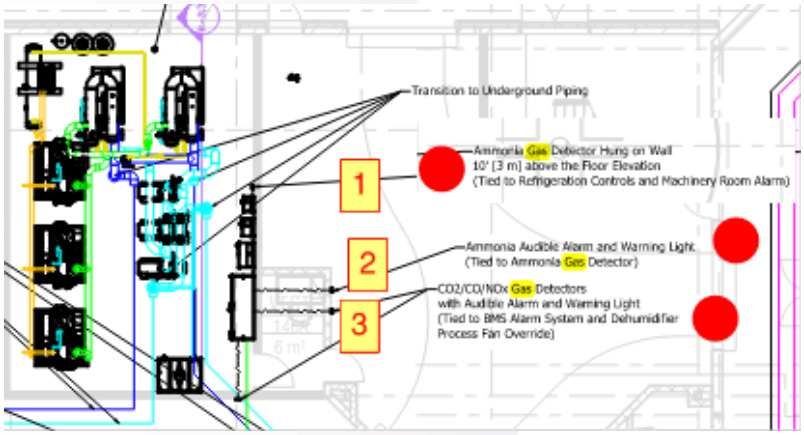
Toronto, ON, Canada M9C 5K5
ainsworth.com



4. SD-144R1 DSA - page 53 of 59:
    a. Drawing is attached.
    b. Reviewed comments from Logan Bakker as below,

- Refrigeration gas detection system only monitors airborne ammonia concentration and not any other chemical species.
- Only REF-02 in the Plant room (146B) will have an interlock with the refrigeration gas detection system.

ACCENT: Correct.

Regards,
Jingli An

Cc:
Noel Santana, Jordan Hoyle

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100, 5525 Eglinton Avenue W.,
Toronto, ON, Canada M9C 5K5
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DOOR AIR CURTAIN SCHEDULE

							ELECTRICAL				
Tag. No.	Level	Room No.	Qty.	Model	Max. Door Width (m)	Weight (kg)	Rated Power Input (kW)	Voltage [V]	Phase	Frequency [HZ]	NOTES
AC-1	Ground	Vestibule	3	BIDDLE SENSAIR SR M-200-E-F	2.032	108	14	230	3	60	1, 2, 3

Notes:

1 C/W integral chips control system.
2 Free Hung
3 Electic door heater

HW BOILER SCHEDULE

MARK	MFR.	MODEL	LOCATION	SERVICE	OUTPUT (MBH)	ELECTRIC (kW)	RV SETTING (PSIG)	V/Ph	OPER. WEIGHT (LBS)	NOTES
EB-01	CLEAVER BROOKS	WB-201	MECHANICAL ROOM	BACK UP	1105	324	80	575/3/60	2250	

1. INDOOR TYPE UNIT.
2. PROVIDE MCC CONTROLLER FOR WATER TEMPERATURE ADJUSTMENT.
3. PROVIDE WATER FLOW CONTROL AND SAFETY DEVICES.
4. NATURAL GAS, CONDENSING, MODULATING, STAINLESS STEEL BOILER.
5. INSTALL WITH STANDARD INTAKE SILENCER AND EXHAUST MUFFLER.
6. CONCRETE PAD WITH SPRING ISOLATORS.
7. PROVIDE AND INSTALL CONCENTRIC VENT KIT.
8. PROVIDE AND INSTALL CONDENSATE NEUTRALIZATION KIT. DRAIN BY PLUMBING.
9. PROVIDE SIDEWALL VENT AND INTAKE AIR PIPE.
10. XXXXXXX CONTROLLER.

FAN SCHEDULE

					FAN							MOTOR				
MARK	MFR.	MODEL	LOCATION	SERVICE	CFM	TYPE	DIA. (IN.)	ESP...	RPM	BHP	MIN. STATIC...	DRIVE	HP	V/Ph/Hz	OPER. WEIGHT (LBS)	NOTES
EF-01A	COOK	EWB - 36EW614B	ARENA ROOF	ARENA	4000	PROPELLER	42	0.5	725	0.677	0.5	VFD	0.75	575/3/60	200	12
EF-01B	COOK	EWB - 36EW614B	ARENA ROOF	ARENA	4000	PROPELLER	42	0.5	725	0.677	0.5	VFD	0.75	575/3/60	200	12
EF-02	COOK	120SQN17DO71VF	CHILDCARE WASHROOM	CHILDCARE WASHROOM	200	INLINE	16	0.5	1303	0.086	0.5	-	0.125	120/1/60	125	16
EF-03	COOK	120SQN28DO81VF	REF 2/A	REFEREE ROOM	500	INLINE	16	0.5	1432	0.144	0.5	-	0.333	120/1/60	125	16
EF-04	COOK	120SQN17DO71VF	L02 WASHROOM	L02 WASHROOM	200	INLINE	16	0.5	1303	0.086	0.5	-	0.125	120/1/60	125	16
EF-05	COOK	120SQN17DO71VF	L02 WASHROOM	L02 WASHROOM	200	INLINE	16	0.5	1303	0.086	0.5	-	0.125	120/1/60	125	16
EF-06	COOK	120SQN28DO81VF	ADMIN CHANGEROOM	ADMIN CHANGEROOM	400	INLINE	16	0.5	1476	0.154	0.5	-	0.333	120/1/60	125	16
EF-07	COOK	GN-188	L01 JANITOR ROOM	L01 JANITOR ROOM	200	INLINE	16	0.25	1228	0.063	0.25	-	0.122	120/1/61	19	3, 16
EF-08	COOK	GN-189	L02 JANITOR ROOM	L02 JANITOR ROOM	200	INLINE	16	0.25	1228	0.063	0.25	-	0.122	120/1/62	19	3, 16
REF-01	COOK	ACRU-B 180R8B	PLANT ROOM ROOF	PLANT ROOM	1950-4320	UPBLAST	-	0.5	1247	1.24	0.5	VFD	1.5	575/3/60	110	20, 21
REF-02	COOK	ACRU-B 210R9B	ICE RINK MECH ROOF	ICE RINK MECH	1975-5950	UPBLAST	-	0.5	1122	1.63	0.5	VFD	2	575/3/60	188	20, 21

1. PAINTED WHITE ENAMEL STEEL GRILLE.
2. FAN INTERNALLY ISOLATED.
3. BACKDRAFT DAMPER INTEGRATED.
4. FAN INTERLOCK WITH LIGHTING. POWER AND WIRING BY ELECTRICAL.
5. FAN CONTROLLED BY WALL ON/OFF SWITCH WITH LIGHT INDICATOR. BROAN MODEL 69WL (WHITE) OR EQUAL.
6. PROVIDE WITH AND CONTROL BY LINE VOLTAGE THERMOSTAT SET TO 85 °F.
7. FAN INTERLOCK WITH DISHWASHER.
8. CONTINUOUS OPERATION PER CODE.
9. PROVIDE LAY-IN FRAMING FOR GYPSUM INSTALLATION TO ALLOW UNIT ACCESS THROUGH CEILING.
10. MOTOR WITH RESILIENT CRADLE MOUNT.
11. CONTINUOUS OPERATION DURING OCCUPIED HOURS.
12. PROVIDE VFD WITH VFD RATED MOTOR.
13. 1/2" INTERNAL ACOUSTICAL INSULATION.
14. ENERGY STAR RATED FAN.
15. REFER TO SPEC. SECTION 139.36 FOR FM200 PURGE/EXHAUST FAN REQ'TS.
16. FAN INTERLOCK WITH LIGHTING, POWER & WIRING BY ELECTRICIAN.
17. PROVIDE FM200 PURGE/EXHAUST SWITCH INSIDE KNOX BOX.
18. CONNECT TO EMERGENCY POWER.
19. CONNECT TO DDC SYSTEM TO OPERATE BASED ON OCCUPANCY SENSOR.
20. PROVIDE HIGH LEVEL AND LOW LEVEL INLETS COMPLETE WITH BIRD SCREEN AND MOTORIZED DAMPER AT DUCTWORK BELOW FAN, TO BE COORDINATED ON SITE WITH LOCATION OF REFRIGERANT LEAK.
21. FAN TO BE INTERLOCKED TO REFRIGERANT DETECTION PANEL, FAN TO RUN AT HIGH SPEED AT ALL TIMES WITH UPPER INLET UNDER NORMAL OPERATION. ON REFIREGERANT LEAK DETECTION, UPP ER INLET TO CLOSE, LOWER INLET TO OPEN, AND FAN TO SWITCH TO LOW SPEED.

AIR COOLED CONDENSING UNIT SCHEDULE

										ELECTRICAL					
MARK	MANUFACTURER	MODEL	TYPE	LOCATION	SERVICE	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	SEER	REFRIGERANT	COMP KW	MCA	MOCP	V/Ph/Hz	WEIGHT (LBS)	NOTES
CND-1	DAIKIN	RXTQ36TAVJ9A	HEAT PUMP	EXISTING CHANGEROOM ROOF	EVP-1 & EVP-2	31	-	18	R-410a	3.13	16.5	20	208/1/60	200	1, 3, 4, 5
CND-2	DAIKIN	RXL12QMVJU9	HEAT PUMP	ROOF	EVP-3	10	13.6	20	R-410a	1.5	13	15	208/1/60	200	1, 2, 4, 5, 6

1. R-401C OR R-410A REFRIGERANT ONLY.
2. HIGH EFFICIENCY, VARIABLE REFRIGERANT (VRV) UNIT ONLY.
3.PROVIDE ALL REQUIRED OPTIONS TO MOUNT ON WALL, UNIT TO BE MOUNTED ON WALL 2m ABOVE ROOF LEVEL
4. CONTRACTOR SHALL PROVIDE OPTIONAL BACNET GATEWAY INTERFACE UNIT TO ALLOW COMMUNICATIONS BETWEEN VRV AND BMS THROUGH BACNET COMMUNICATIONS
5. RATED FOR OUTDOOR CONDITIONS OF 95F DB.
6. PROVIDE COMPLETE WITH HEATED DRAIN PAN

SPLIT SYSTEM FAN COIL UNIT SCHEDULE

						FAN		HEATING	DX COIL					ELECTRICAL			
MARK	MFR	MODEL	TYPE	LOCATION	SERVICE	CFM	HP (W)	CAPACITY...	SC (MBH)	TC (MBH)	EAT DB (°F)	LAT DB (°F)	REFRIGERANT	V/Ph/Hz	FAN MCA	OPER. WEIGHT (LBS)	NOTES
EVP-1	DAIKIN	FXAQ12PVJU	WALL HUNG	FOOD	FOOD	290	40	-	8.9	12	80	52	R-410a	208/1/60	0.4	125	1, 2, 3, 4
EVP-2	DAIKIN	FXAQ12PVJU	WALL HUNG	FOOD STORAGE	FOOD STORAGE	290	40	-	8.9	12	80	52	R-410a	208/1/60	0.4	125	1, 2, 3, 4
EVP-3	DAIKIN	FXAQ12PVJU	WALL HUNG	SOUTHWEST STORAGE	SOUTHWEST STORAGE	290	40	13-Jan	8.9	12	80	52	R-410a	208/1/60	0.4	125	1, 2, 3, 4

1. UNIT SELECTED FOR MAX 50dBA AT 5FT BELOW DUCTED UNIT.
2. R-410A OR 407C REFRIGERANT ONLY.
3. HIGH EFFICIENCY, MODULATING VRV UNIT.
4. TO CONNECT TO CND-1

Unit Heaters Schedule

Unit Heater Tag No.	Location	Manufacturer	Model	Airflow (L/s)	Capacity (kW)	FLUID TYPE	E.A.T. (°C)	L.A.T. (°C)	E.W.T. (°C)	L.W.T. (°C)	Flow (L/s)	WPD (ft w.g.)	Dimensions: Width (in)	Dimensions: Height (in)	Dimensions: Depth (in)	Dimensions: Weight (lb)	Electrical Data: Voltage	Notes
UH-1	Ice Resurfacer Room	Lennox	UHSB-108	1800	23	35% PG	12.5	24	49	38	0.49	0.36	18	15	8	75	120/1/60	1,2,3
UH-2	Various	Oullet	OAC	151	8								32	22	6	50	600/3/60	1, 4
BBH-1	Multi-Purpose Room	Ouellet	ODBA	-	0.4	-							49	6.1	2.5	15	120/1/60	1, 2, 4

Notes:

1. Unit heaters to come complete with integrated thermostat
2. Unit heaters to come with standard OSHA fan guard
3. Hydronic Unit Heater
4. Electric Heater

STORAGE TANK SCHEDULE

Tag No.		BT-01	BT-02	ST-01	ST-02
Heater Information					
Location		MECH ROOM	MECH ROOM	MECH ROOM	MECH ROOM
Manufacturer		STEELCRAFT	STEELCRAFT	STEELCRAFT	STEELCRAFT
Model		SCDHWT48X096	SCDHWT48X096	SCDHWT78X120	SCDHWT78X120
Type		Storage Tank	Storage Tank	Storage Tank	Storage Tank
Design Information					
Storage Volume	(L)	2405.0	2405.0	6796.0	6796.0
Water Inlet/Outlet Connections NPT	(mm)	50	50	150	150
Height x dia	(mm)	2400 x 1200ø	2400 x 1200ø	3048 x 1800ø	3048 x 1800ø
Operating Weight	(kg)	3000.0	3000.0	14000.0	14000.0

Notes

1) Tank Thermostat with 3/4" well
2) Relief Valve Kit 1-inch 120psi
3) Provide installation kit

EXPANSION TANK SCHEDULE

													SIZE				
MARK	MFR.	MODEL	LOCATION	SERVICE	TYPE	SYSTEM VOLUME (GAL.)	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	MAX. TEMP. (°F)	MIN. TEMP. (°F)	WORKING PRESSURE (PSIG)	MAX. PRESSURE (PSIG)	MIN. PRESSURE (PSIG)	DIA. (IN.)	L (IN.)	SHIP. WEIGHT (LBS)	OPER. WEIGHT (LBS)	NOTES
ET-01	BELL & GOSSETT	B-1000	MECHANICAL ROOM	CHWS	HORIZONTAL BLADDER	5000	264	264	70	40	40	80	30	36	76	800	3500	3,5
ET-02	BELL & GOSSETT	B-1000	MECHANICAL ROOM	HWS	HORIZONTAL BLADDER	5000	264	264	100	40	40	80	30	36	76	800	3500	3,5
ET-03	BELL & GOSSETT	PTA-450	MECHANICAL ROOM	DHW	HORIZONTAL BLADDER	4500	132	132	140	40	35	80	25	30	57	400	1500	1,3

1. ASME REPLACEABLE HEAVY DUTY BUTYL (FDA APPROVED) BLADDER TYPE.
2. FABRICATED STEEL SHELL.
3. PRE-CHARGE PRESSURE SHALL BE EQUAL TO SYSTEM FILL PRESSURE AT TANK LOCATION.
4. CONTRACTOR TO SET PRE-CHARGE PRESSURE.
5. HEAVY DUTY BUYTL. RUBBER DIAPHRAGM.
6. DIAPHRAGM TYPE, CORROSION RESISITENT CONSTRUCTION, CONTRACTOR TO SET PRE-CHARGE PRESSURE.

diamond schmitt

ISSUED

No.	Date	Description
1	2021-11-01	ISSUED FOR REVIEW
2	2021-11-10	ISSUED FOR 100% CD
3	2022-02-18	ISSUED FOR TENDER
4	2022-06-03	ISSUED FOR BUILDING PERMIT
5	2022-07-20	REISSUED FOR PERMIT
6	2023-03-31	ISSUED FOR TENDER
7	2023-09-08	ISSUED FOR CONSTRUCTION

INTEGRAL
Toronto Design Studio
380 Wellington Street West,
Toronto, ON Canada M5V 1E3

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Registered: Integral Group Consulting (BC) LLP

Project North True North

Chris Gibson Recreation Centre
Renovation and Addition

125 McLaughlin Road North
Brampton, ON
L6X 1Y7

MECHANICAL EQUIPMENT SCHEDULES

Scale:
Project No: 210305
Date: 2022-04-06

M801

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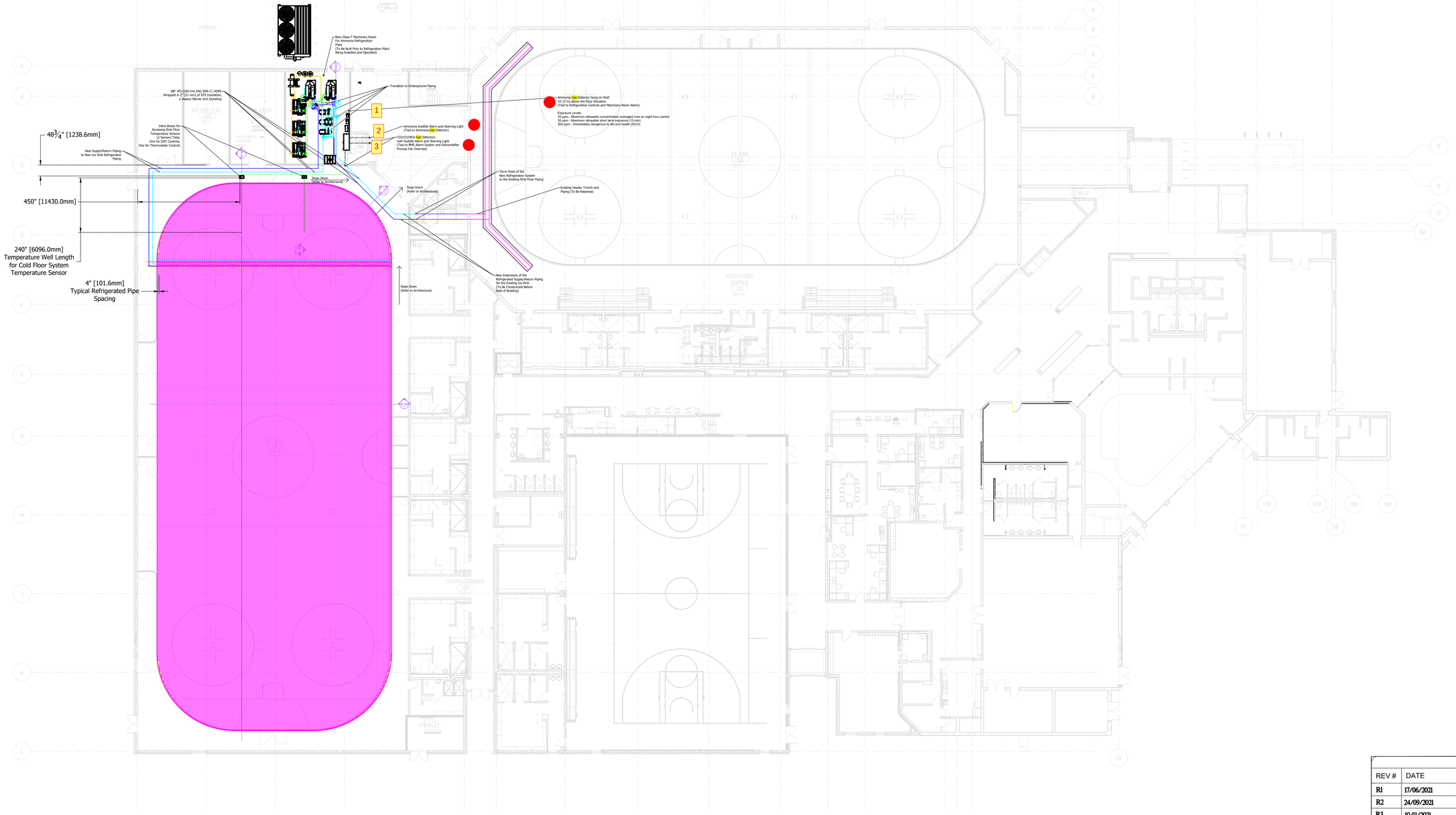


ENERGY ON THE MOVE

ACCENT REFRIGERATION SYSTEMS

(250) 478 8885
206 - 1097 LANGFORD PARKWAY.
VICTORIA BC, CANADA V9B 0A5

diamond schmitt

416-862-8800
SUITE 100, 384 ADELAIDE ST W
TORONTO, ON M5V 1R7

DESIGN STANDARDS

CSA B52:18 MECHANICAL REFRIGERATION CODE

CSA B51:19 BOILER AND PRESSURE VESSEL CODE

CANADIAN ELECTRICAL CODE

ASME B31.5 REFRIGERATION PIPING AND HEAT TRANSFER COMPONENTS

DRAWN BY L. BAKKER	DATE 01/06/2021
APPROVED BY A. SUTHERLAND	DATE 08/06/2021

PROJECT TITLE

Chris Gibson Recreation Centre

SHEET TITLE

Ice Rink Refrigeration System Plan View

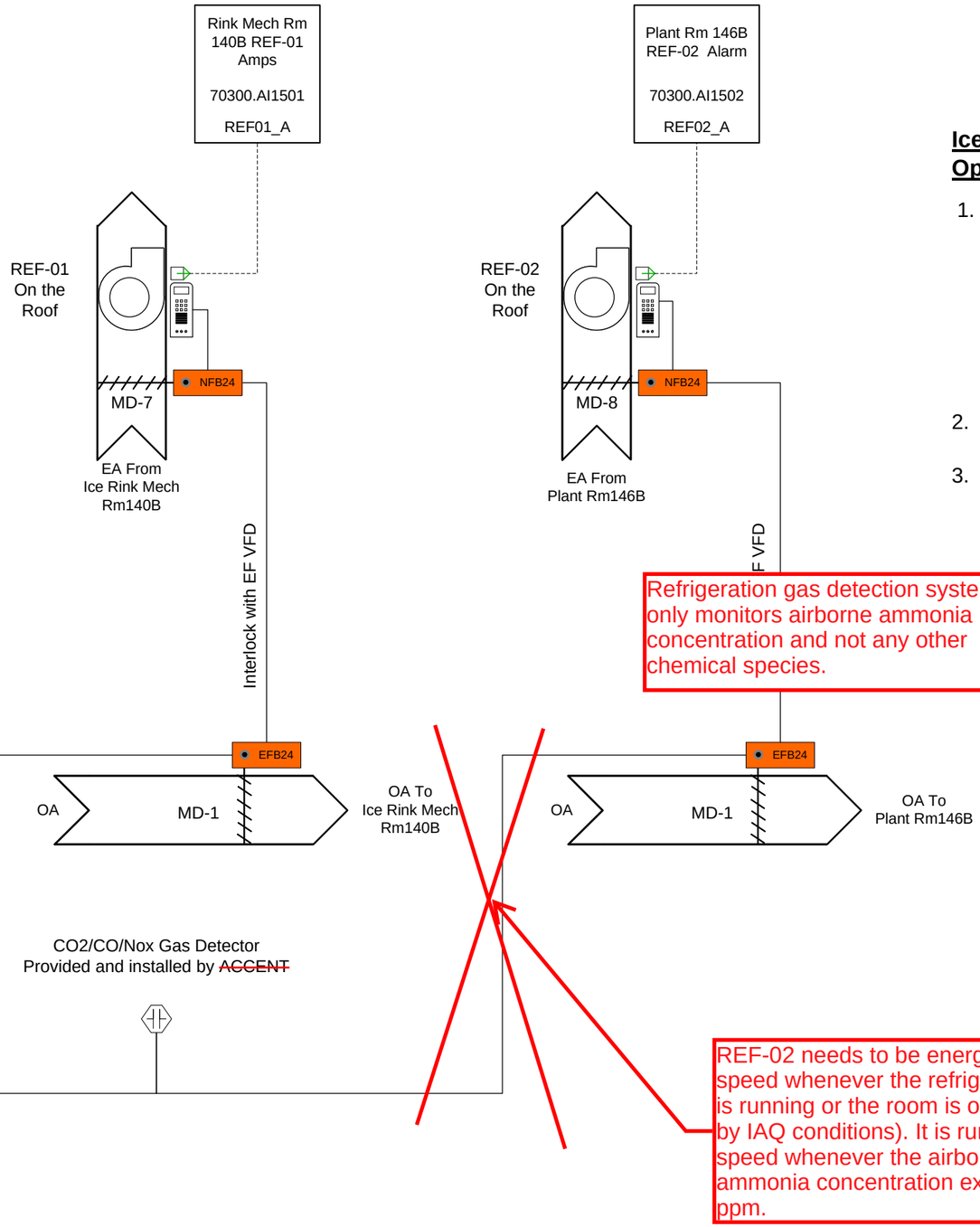
REVISIONS

REV #	DATE	DESCRIPTION
R1	17/06/2021	ISSUED FOR 50 PERCENT CONSTRUCTION DOCUMENTS
R2	24/09/2021	ISSUED FOR 90 PERCENT CONSTRUCTION DOCUMENTS
R3	10/11/2021	ISSUED FOR 100 PERCENT CONSTRUCTION DOCUMENTS
R4	18/02/2022	ISSUED FOR TENDER
R5	03/06/2022	ISSUED FOR BUILDING PERMIT
R6	03/06/2022	ADDED DETAIL FOR ZAMBONI GATE
R7	31/03/2023	RE-ISSUED FOR TENDER
R8	08/09/2023	ISSUED FOR CONSTRUCTION
R9	-	-

SHEET SIZE	DRAWING #	DRAWING REV #	SHEET #
D	R-2.0	R8	4

REF-01 & REF-02

BOM		
QTY	Part Number	Description
2	CS-650-R1	Current sensor, 0-5 Vdc, 0-10 / 20 / 50 amp, selectable



Ice Rink Mech Rm & Plant Rm Exhaust Fans - Sequence of Operations

1. Run Conditions – REF01, REF02 and associated exhaust air damper and intake fresh air are hardwire interlocked by the refrigeration gas detection system provided and installed by ~~ACCENT~~:
   1.1. Exhaust fans shall energize by Gas detection system when,
   - ~~When low CO, low O2, low NO2 and low LEL alarms occur.~~
   - ~~When high CO, sub-normal O2, high NO2, and high LEL alarms occur~~.
   - ~~ACCENT~~ shall provide BAS details and coordinate onsite for above mentioned alarms.
2. Fan Status:
   - The fan status is monitored by BAS.
3. Alarms shall be provided as follows:
   - All alarms from Gas Detection system provided and installed by ~~ACCENT~~

CIMCO

Refrigeration gas detection system only monitors airborne ammonia concentration and not any other chemical species.

Only REF-02 in the Plant room (146B) will have an interlock with the refrigeration gas detection system.

REF-02 needs to be energized at low speed whenever the refrigeration plant is running or the room is occupied (not by IAQ conditions). It is run at full speed whenever the airborne ammonia concentration exceeds 25 ppm.

Notes

1.

PROJECT

City of Brampton-Chris Gibson Rec Centre - Addition

AINSWORTH

5525 Eglinton Ave. West, Suite 100, Toronto, Ontario, M9C 5K5

DRAWING TITLE:

REF-01 & REF-02

PROJECT MANAGER	PROJECT DESIGNER
Noel Santana	Jingli An
PROJECT NO. P444D57	DATE Feb. 25, 2025
VERSION 1.1	DRAWING NO. DWG-47