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

Shop Drawings Transmittal No:	23 57 00-01R0

Project Name:	Construction of Victoria Park Arena and Brampton Sports Hall of Fame	**Project No.**	NRFP2024-232
		DATE:	25 Feb 2025
		Submittal Required Return Date:	11 Mar 2025
Submittal No:	42		

Title:	SD-Heat Exchangers

To:	Mark Falkenburger

Checked by:	**Abdullah Hissamuddin**	**To Be Reviewed By the Following Consutlants**	Architecture49 & WSP

Submitted for:	Review and Approval
Consultants Response	

wsp

☑ REVIEWED
☐ REVIEWED AS NOTED
☐ REVISE & RESUBMIT

BY Jerry Nweisser
DIVISION Buildings - Sustainability
DATE 3/11/2025
SUBMITTAL# 21-12
PROJECT CA-WSP-221-05263-00

THE REVIEW OF THIS DRAWING DOES NOT IN ANY WAY RELIEVE THE VENDOR OR CONTRACTOR OF RESPONSIBILITY FOR ITS ACCURACY OR FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.

RAFAT

SUBMITTAL REVIEW
For general compliance with the design concept and contract documents. Subcontractor is solely responsible for jobsite correlation and correctness of all ratings, sizings, type, style, dimensions, finish, quantities and satisfactory fitting to other work and equipment. This review does not change the intent of the contract document.

REVIEWED
RESUBMIT
REJECTED

SHOP DRAWING REVIEW

Project Name: Victoria Park Arena

Project No. CA-WSP-221-05263-00
Date Received: 2025-03-11

Shop Drawing:
Title: Heat Exchanger
Revision: 00
Submission No.: 21-12

This review by consultant is for sole purpose of ascertaining conformance with general design concept. This review does not mean that consultant approves detail design inherent in shop drawings, responsibility for which remains with contractor, and such review does not relieve contractor of responsibility for errors or omissions in shop drawings or of contractor's responsibility for meeting all requirements of contract documents. Be responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication process or to techniques of construction and installation, and for coordination of the work of subtrades.

☒ **Reviewed**		**Mechanical Review Required** ☒		**Electrical Review Required** ☐	
☐ **Reviewed as Noted**		**Reviewed by:**	Jerry Nweisser	**Reviewed by:**	
☐ **Revise & Resubmit**		**Review Date:**	2025-03-11	**Review Date:**	

Item	Comments
1.	
2.	

End of Review

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

Submittal 24-280-009

PROJECT NAME	PROJECT ADDRESS	DATE SUBMITTED
VICTORIA PARK ARENA 24-280	20 Victoria Crescent, Brampton, ON L6T 1E4	Feb 19, 2025

TO
Abdullah Hissamuddin
COMPANY
RAFAT GENERAL CONTRACTOR INC.
EMAIL
abdullah.hissam@rafat.ca
ADDRESS
8850 GEORGE BOLTON PKWY BOLTON, ON L7E 2Y4

FROM
PAUL LEDDY
COMPANY
Consult Mechanical Inc.
EMAIL
paul.l@consultmechanical.com
ADDRESS
54 Audia Court, Unit 2
Concord, ON L4K 3N5

Title

Consult Submittal for Heat Exchangers

Description

Bell and Gossett GPX Heat Exchangers

Package Items

SPEC	SUBSECTION	ITEM	TYPE
23 57 00	20 57 00		Shop Drawings

Submittal # 85623 **APPROVAL REQUIRED**

Project	22104386-MECH-1- Brampton Victoria Park Arena
Leader	Nevin Wong
Job Site	Brampton Victoria Park Arena
Submission Date	2025-02-19
Sold To	CONSULT MECH
Submitted By	Chukwuebuka Eleagu

Contacts

Role	Customer	Our Rep
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
General Contractor	Rafat General Contracing Inc	
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
Designer	WSP MMM Group	Alex Forsea

Deliverables

Track #	**289007**		
Tag	HEX-1		
Description	GPX-P Plate & Frame Heat Exch		
Quantity	1		
Production Lead Time	14 - 18 Weeks		
Revision #	0		

Attention:

1) HTS will provide equipment in accordance with the attached shop drawings.
2) Upon approved submittal and customer release, HTS will release equipment to fabrication per the published lead times. Any storage fees associated with project schedule changes will be the responsibility of the purchaser.
3) HTS can provide freight and logistics to the purchaser as an added benefit of doing business with HTS. When freight is received by the purchaser, any noticeable damage must be recorded. Otherwise, HTS is not responsible for subsequent damage claims.

Approval Stamps

SCHEDULE OF PLATE HEAT EXCHANGERS

TAG	MANUFACTURER	MODEL NO.	NO. REQ'D	SURFACE AREA (m^2)	COLD SIDE					HOT SIDE					REMARKS
					MEDIUM	CAPACITY (L/s)	E.W.T. (°C)	L.W.T. (°C)	P.D. (kPa)	MEDIUM	CAPACITY (L/s)	E.W.T. (°C)	L.W.T. (°C)	P.D. (kPa)	
HEX-1	BELL & GOSSETT	AP31	1	22.8	WATER	6.55	43.3	54.4	34.5	42%PG	14.02	57.2	51.67	34.5	

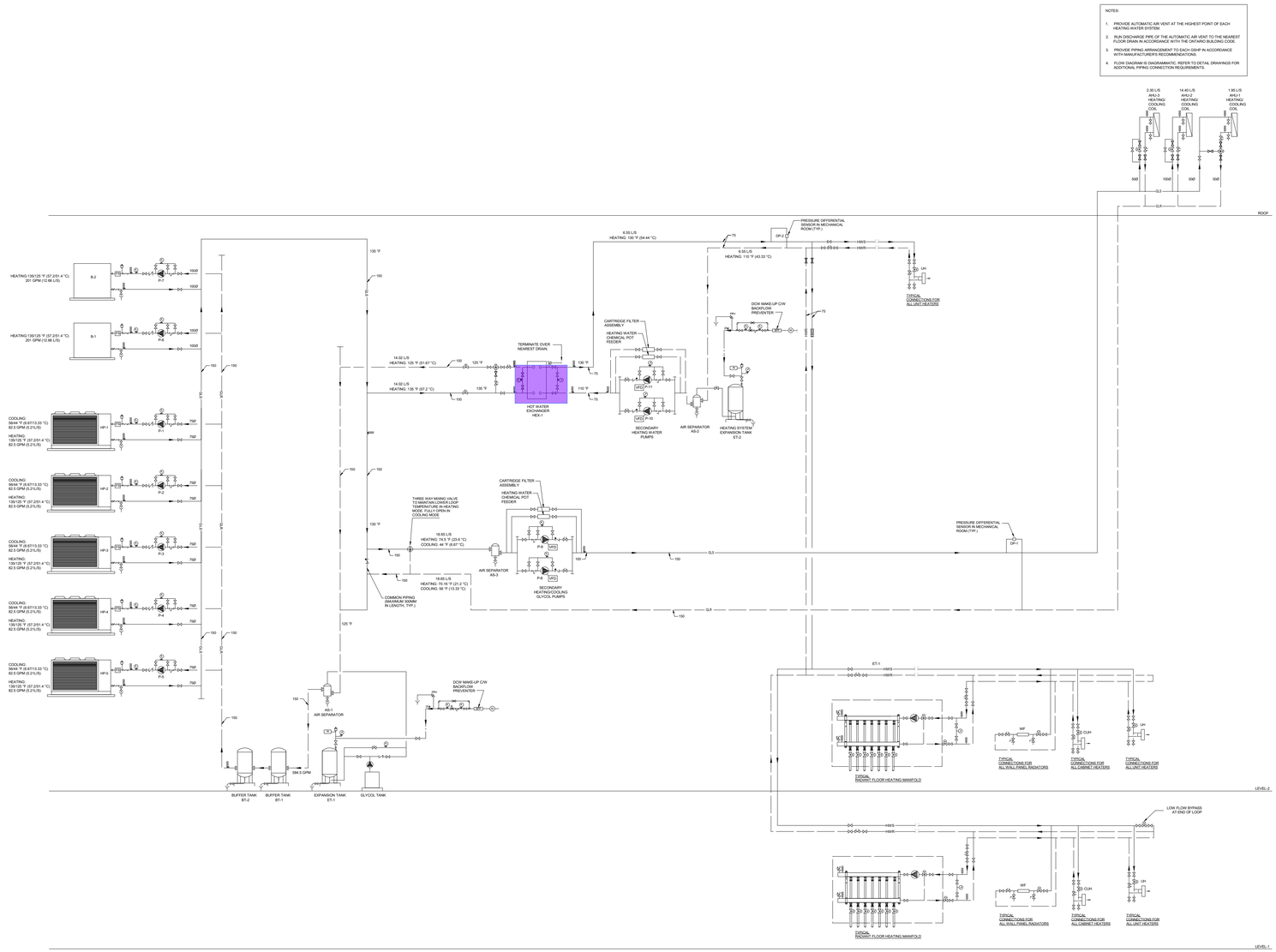
ISSUED FOR - REVISION:

REV	DATE	DESCRIPTION
8	2024/05/29	ISSUED FOR TENDER
7	2023/10/27	ISSUED FOR TENDER
6	2023/09/22	ISSUED FOR TENDER
5	2022/08/15	ISSUED FOR BUILDING PERMIT
4	2022/08/05	ISSUED FOR TENDER - FINAL
3	2022/04/13	ISSUED FOR TENDER
2	2022/03/25	ISSUED FOR BUILDING PERMIT
1	2022/03/02	ISSUED FOR TENDER REVIEW

PROJECT NO: 209-00238-00
DATE: 2024/05/29
ORIGINAL SCALE:
IF THIS BAR IS NOT 1" LONG, ADJUST YOUR PLOTTING SCALE. 1"
DESIGNED BY: MK
DRAWN BY: SG/VO
CHECKED BY: MK
DISCIPLINE:
TITLE: MECHANICAL EQUIPMENT SCHEDULES #2
SHEET NUMBER: M-901
SHEET #: OF
ISSUE: ISSUED FOR TENDER
REV # 8
DATE OF: 2024/05/29

NOTES:

1. PROVIDE AUTOMATIC AIR VENT AT THE HIGHEST POINT OF EACH HEATING WATER SYSTEM.
2. RUN DISCHARGE PIPE OF THE AUTOMATIC AIR VENT TO THE NEAREST FLOOR DRAIN IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.
3. PROVIDE PIPING ARRANGEMENT TO EACH GSHP IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. FLOW DIAGRAM IS DIAGRAMMATIC. REFER TO DETAIL DRAWINGS FOR ADDITIONAL PIPING CONNECTION REQUIREMENTS.



ARCHITECTURE 49

CONSULTANT - SUB CONSULTANT:

wsp

SEAL:

CLIENT:

BRAMPTON
CITY OF BRAMPTON

CLIENT REF. #:

PROJECT:

Victoria Park Arena

20 Victoria Crescent, Brampton, ON L6T 1E4

KEY PLAN:

ISSUED FOR - REVISION:

REV	DATE	DESCRIPTION
11	2024/05/29	ISSUED FOR TENDER
10	2023/10/27	ISSUED FOR TENDER
9	2023/09/22	ISSUED FOR TENDER
8	2022/08/05	ISSUED FOR TENDER - FINAL
7	2022/04/13	ISSUED FOR TENDER
6	2022/03/25	ISSUED FOR BUILDING PERMIT
5	2022/03/02	ISSUED FOR TENDER REVIEW
4	2021/11/26	REISSUED FOR 90% REVIEW
3	2021/11/19	ISSUED FOR TENDER REVIEW
2	2021/09/27	ISSUED FOR PROGRESS REVIEW
1	2021/08/30	ISSUED FOR 60%DD

PROJECT NO: 209-00238-00

DATE: 2024/05/29

ORIGINAL SCALE: 1 : 2

IF THIS BAR IS NOT 1" LONG, ADJUST YOUR PLOTTING SCALE.

1"

DESIGNED BY: MK

DRAWN BY: SG/VO

CHECKED BY: MK

DISCIPLINE:

TITLE:

HEATING AND COOLING FLOW DIAGRAM

SHEET NUMBER:

M-600

SHEET #: OF

ISSUE: ISSUED FOR TENDER

REV # 11

DATE OF: 2024/05/29

HEX-1

Bell & Gossett GPX™

Gasketed Plate Heat Exchanger Specification Sheet

175 Standard Parkway
Cheektowaga, New York 14227
1-800-447-7700
www.xylem.com/bellgossett

Customer | Date: Thursday, November 18, 2021
Inquiry Number: 2021-7-21-17:08 | Item Number

Performance of One Unit: AP31 **Units Connected in Parallel:** 1

Fluid Name	Propylene Glycol	40.0%		Water	
Total Flow	222.14	GPM (14.05l/s)		103.52	GPM (6.53l/s)
Inlet Temperature	135.00	°F (57.22°C)		110.00	°F (43.33°C)
Outlet Temperature	125.00	°F (51.67°C)		130.00	°F (54.44°C)
Operating Pressure	0.00	PSIG		0.00	PSIG
Pressure Drop, Allow./Calc	5.00/4.96	PSIG (34.5 kPa)		5.00/1.03	PSIG (34.5 kPa)
Density	63.07	lb/ft3		61.66	lb/ft3
Viscosity	1.46	cp		0.58	cp
Specific Heat	0.91	Btu/lbm,°F		1.00	Btu/lbm,°F
Thermal Conductivity	0.24	Btu/ft,h,°F		0.37	Btu/ft,h,°F
Specified Fouling Factor	0.00000	hr,ft2,°F/Btu		0.00000	hr,ft2,°F/Btu

Total Heat Exchanged	1,025,000.00	Btu/h (300.39 kW)
LMTD	9.10	°F
Overall Heat Transfer Coefficient, Clean/Dirty	537.14/537.14	Btu/hr,ft2,°F
Overall Heat Transfer Coefficient, Service	459.23	Btu/hr,ft2,°F
Effective Surface Area	245.09	ft2 (22.77 m2)
Excess Surface	16.96	%

Construction

Number of Passes * Channels	1*35		1*35
Total Number of Plates		71	
Pressure, Design/Test	150/195(PSIG) (1034 kPa)		150/195(PSIG) (1034 kPa)
Design Temperature, min/max	32/284(°F)		32/284(°F)
Internal Volume	1.42(ft3)		1.42(ft3)
Inlet Connection(Location)	F1, steel female npt 2.50 "		F3, steel female npt 2.50 "
Outlet Connection(Location)	F4, steel female npt 2.50 "		F2, steel female npt 2.50 "

Plate Material	304
Plate Thickness	0.40 mm
Plate Mix	TK
Gasket Material	NITRILE HT
Empty/Flooded Weight	828 / 1,005 lb
Frame Size / Max. Frame Capacity	19.69 inch / 84 plates
Approvals	ASME Sect VIII Div 1 w/U stamp.
Notes	This heat exchanger is certified by the AHRI Liquid to Liquid heat exchangers certification program based on AHRI Standard 400. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third party verified. Certified units may be found in the AHRI directory at www.ahridirectory.org.

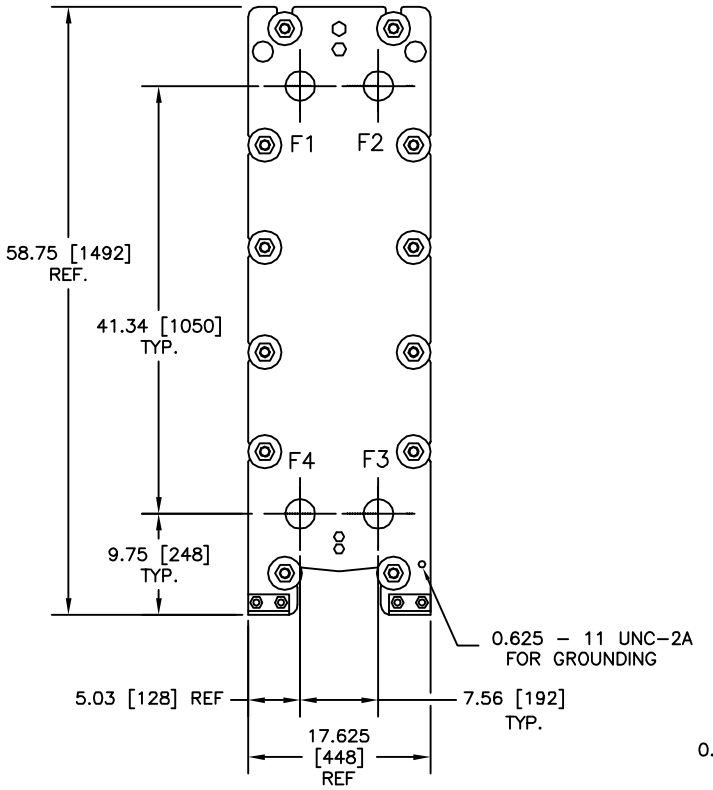
Note: Customer to verify fluid/material compatibility.

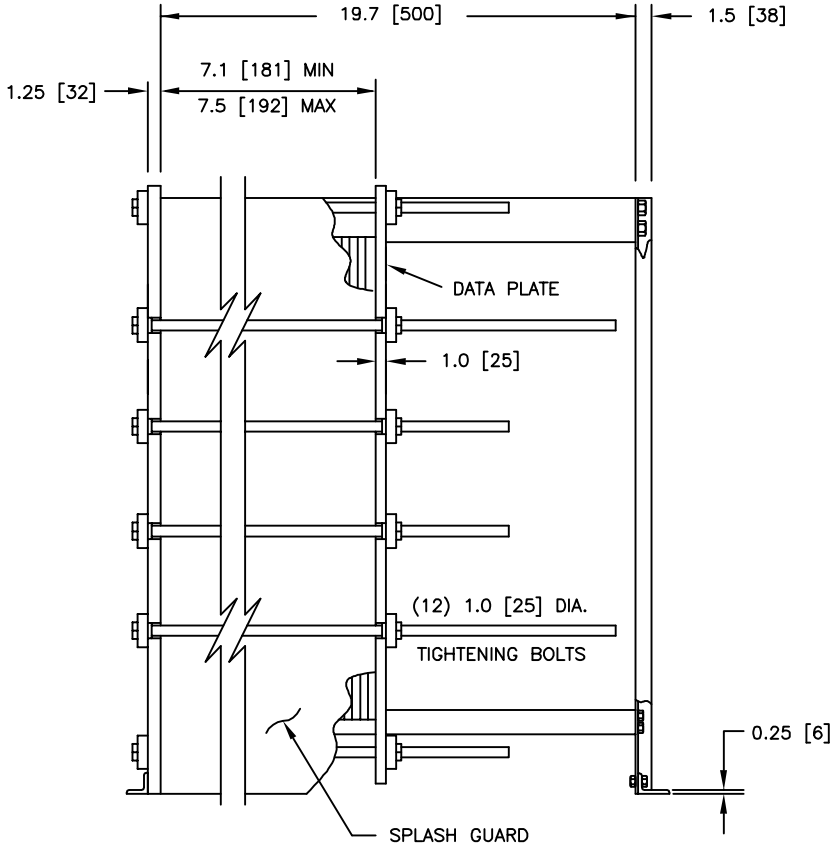
Performance evaluation is dependent on customers' ability to provide sufficiently accurate measurements.

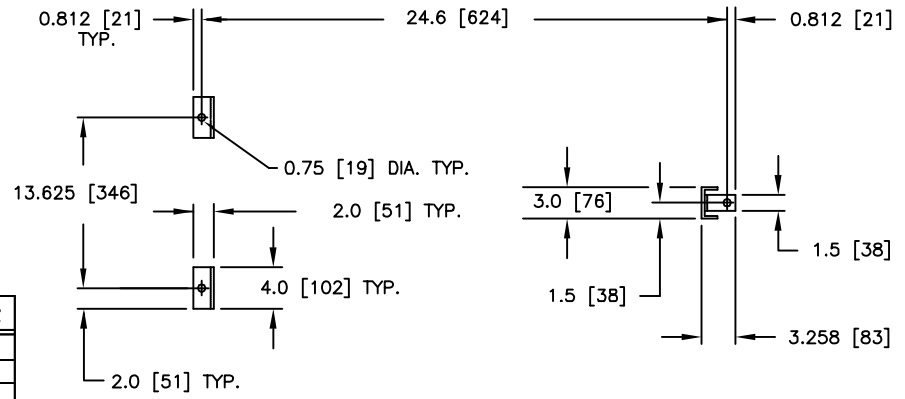
REV NO.	REVISION NOTE	REV BY	REV DATE

NOTE(s): 1. Dimensions shown in inches (in.)

HEX-1







EST. WEIGHT (LBS): 828 DRY / 1005 WET

UNIT CONSTRUCTION – ASME CODE		DESIGN CONDITIONS:	SIDE–1	SIDE–2
THERMAL PLATES:	0.4mm / AISI304	DSGN PRESS. (PSIG)	150	150
GASKET TYPE:	NITRILE HT	TEST PRESS. (PSIG)	195	195
PLATE MIXTURE:	TK	DSGN TEMP. (°F)	284	284
MIX (SIDE 1):	1 x 35	MIN. TEMP. (°F)	32	32
MIX (SIDE 2):	1 x 35			
PLATE QUANTITY:	71 / 84 MAX			
CARRY BAR LGTH:	500mm			
CARRY BAR MTL:	ALUM, S/S PROFILE			
TIE BOLTS:	STEEL (ZINC PLATED)			
SPLASH GUARD:	ALUMINUM			

PORT IDENTIFICATION		CONNECTION – TYPE AND DESCRIPTION
F1	SIDE–1 IN	2.5" NPT (INTERNAL) STEEL
F4	SIDE–1 OUT	2.5" NPT (INTERNAL) STEEL
F3	SIDE–2 IN	2.5" NPT (INTERNAL) STEEL
F2	SIDE–2 OUT	2.5" NPT (INTERNAL) STEEL

	MADE: ITT	11/18/21
NA	CHK: HT	11/18/21

ORDER NO. REV.

Bell & Gossett
Buffalo, NY 14227 USA

MODEL AP31

2021–7–21–17:08 –00