



200 Tesma Way,  
Concord, ON, L4K 5C2  
(905) 738-1400

# Submittal Package 23-214 - 012

Feb 6, 2024

PROJECT NAME	PROJECT NUMBER	PROJECT ADDRESS	DUE DATE
CHRIS GIBSON REC CENTRE	23-214	125 McLaughlin Rd N, Brampton, ON, L6X 1N9	Dec 19, 2023

## To

NAME	EMAIL
Hassan Zaid	hzaidi@corebuildconstruction.com
COMPANY	ADDRESS
RAFAT GENERAL CON-TRACTOR INC.	8850 GEORGE BOLTON PKWY, BOLTON, ON, L7E 2Y4

## From

NAME	EMAIL
JOSHUA SANCLIMENTI	joshuasanclementi@hotmail.com
COMPANY	ADDRESS
Consult Mechanical	200 Tesma Way, Vaughan, ON, L4K 5C2

## Subject

Plate and Frame Heat Exchanger

## Notes

HX-01

## Package Items

Spec	Subsection	Description	Type
Mechanical	HVAC	Heat Exchanger HX-01	Shop Drawings

384 Adelaide Street West, Suite 100  
Toronto, ON M5V 1R7

t: 416 862 8800

1050 West Pender Street, Suite 2010  
Vancouver, BC V6E 3S7

t: 604 674 0866

1776 Broadway, Suite 2200  
New York, NY 10019

t: 212 710 4329

www.dsai.ca  
info@dsai.ca

<b>To:</b>	<b>Rafat General Contractor Inc.</b>	<b>Submittal No:</b>	<b>031</b>
	<b>8850 George Bolton Parkway</b>	<b>Project No:</b>	<b>201014</b>
	<b>Caledon, ON L7E 2Y4</b>	<b>File No:</b>	<b>4-6-23</b>
<b>Attention:</b>	<b>Pino Antelope, Bashar Mikha</b>	<b>Date:</b>	<b>December 20,</b>
			<b>2023December-20-</b>
			<b>23</b>

**Project:** **Chris Gibson Recreation Centre**

The Architect's review is for the sole purpose of ascertaining conformance with the general design concept and for general arrangement. This review shall not mean approval of the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for all dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes, quantities or to techniques of construction and installation and for co-ordination with related work.

Contractor Package #	Spec Section	Description	Reviewed by	Status
031	23 00 00	031 23 00 00 Heat Exchanger	DSA	<b>RN</b>

Status Legend: **R** – Reviewed **RN** – Reviewed As Noted **RR** – Revise and Resubmit **N** – Not Reviewed

Comments: Reviewed for Architectural intent only. Refer to Mechanical Consultant's review comments throughout Submittal.

Per: Patrick Johnson



# RAFAT

8850 GEORGE BOLTON PARKWAY, CALEDON, ONTARIO L7E 2Y4

**Shop Drawings  
Transmittal No:**

<b>Project Name:</b>	Renovation of Chris Gibson Recreation Centre Drive	<b>Project No.</b>	T2023-125
		<b>DATE:</b>	
		<b>Submittal Required Return Date:</b>	
<b>Submittal No:</b>			

<b>Title:</b>	
---------------	--

<b>To:</b>	Patrick Johnson Contract Administrator Halima Namugga Admin Project Coordinator 384 Adelaide Street West, Suite 100 Toronto, Ontario, Canada M5V 1R7 PJohnson@dsai.ca
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<b>Checked by:</b>	<b>Hasan Zaidi (Rafat General Contractor Inc/Corebuild)</b>	<b>To Be Reviewed By the Following Consultants</b>	1. RJC 2. DSI 3. IG
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<b>Submitted for:</b>	REVIEW
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<b>Consultants Response</b>	
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The receipt/review of this submission is for the sole purpose of reviewing general conformance with the construction and/or design concepts only. The review of this submission does not, in any way, relieve the contractor of the complete responsibility for errors or omissions, or for non-compliance with the contract documents. It also does not constitute authority to vary the requirements of the contract documents as they relate to this submission.

RESPONSE: No comment

REVIEWED BY: Kevin Pellerin

DATE REVIEWED: December 13, 2023



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Dec 6, 2023

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23-214 CHRIS GIBSON REC CENTRE	23-214	125 McLaughlin Rd N, Brampton, ON, L6X 1N9	Dec 19, 2023

## To

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COMPANY	ADDRESS
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Spec	Subsection	Description	Type
Mechanical	HVAC	Heat Exchanger HX-01	Shop Drawings



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# Submittal Item Information

Dec 6, 2023

## Spec Section

Mechanical

## Sub Section

HVAC

## Type

Shop Drawings

## Description

Heat Exchanger HX-01

**Submittal # 72837****APPROVAL REQUIRED**

**Project** 22006063-MECH-4- Chris Gibson Recreation Centre  
**Leader** Nevin Wong  
**Job Site** Chris Gipson Recreation Centre  
**Submission Date** 2023-12-05  
**Sold To** CONSULT MECH  
**Submitted By** Boran Dal

**Contacts**

Role	Customer	Our Rep
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
Designer	Integral Group	Graham Coote


**Deliverables**

Track #	243767		
Tag	HX-01		
Description	Brazed Plate Heat Exchanger		
Quantity	1		
Production Lead Time	28 - 32 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

<h2 style="text-align: center;">SUBMITTAL REVIEW</h2>	
<p>INTROBA          380 Wellington Street West          Toronto, ON          M5V 1E3</p>	
 <b>Introba</b>	
<hr/>	
<input type="checkbox"/> REVIEWED	
<input checked="" type="checkbox"/> REJECTED AS NOTED	
<input type="checkbox"/> REJECTED - REVISE AND RESUBMIT	
<input type="checkbox"/> NOT REVIEWED	
<hr/>	
<p><b>CHECKED BY:</b> ILITTLE</p>	
<p><b>DISCIPLINE:</b> Mechanical\</p>	
<p><b>DATE:</b> 12/14/2023</p>	
<p>REVIEWED FOR GENERAL DESIGN AND COMPLIANCE WITH THE          CONTRACT DOCUMENTS, DIMENSIONS AND SUITABILITY          FOR SITE CONDITIONS ARE THE RESPONSIBILITY OF THE          CONTRACTOR. THIS REVIEW OF THE DRAWING SHALL NOT          RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE          CONDITIONS OF THE CONTRACT DOCUMENTS.</p>	

**IRB Comments:**  
Ensure that all connections and any required site assembly is completed as per manufacturer's requirements, including all required pressure testing

# HX-01

## Bell & Gossett BPX™

### Brazed Plate Heat Exchanger Specification Sheet

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

Customer  
Inquiry Number 2023-11-20-16:24

Date Thursday, November 23, 2023  
Item Number

**Performance of One Unit:** BPDW422 - 46

**Units Connected in Parallel:** 1

Fluid Name	Propylene Glycol 35.0%	Water
Total Flow	37.84 GPM	35.00 GPM
Inlet Temperature	60.00 °F	40.00 °F
Outlet Temperature	50.00 °F	50.00 °F
Operating Pressure	0.00 PSI	0.00 PSI
Pressure Drop, Allow./Calc	3.72/3.71 PSI	2.12/2.11 PSI
Density	64.41 lb/ft3	62.46 lb/ft3
Viscosity	4.92 cp	1.40 cp
Specific Heat	0.8997 Btu/lbm, °F	1.0030 Btu/lbm, °F
Thermal Conductivity	0.2408 Btu/ft, h, °F	0.3312 Btu/ft, h, °F
Specified Fouling Factor	0.0000 hr, ft2, °F/Btu	0.0000 hr, ft2, °F/Btu
Total Heat Exchanged	175,863.46 Btu/h	
LMTD	10.00 °F	
Overall Heat Transfer Coefficient, Clean/Dirty	403.97 Btu/hr, ft2, °F	
Overall Heat Transfer Coefficient, Service	403.95 Btu/hr, ft2, °F	
Effective Surface Area	43.52 ft2	
Excess Surface	0.01 %	

#### Construction

Number of Passes * Channels	1*22	1*23
Total Number of Plates	46	
Pressure, Design/Test	435/524(PSI)	435/524(PSI)
Design Temperature, min/max	-310/450(°F)	-310/450(°F)
Internal Volume	0.20704(ft3)	0.21645(ft3)
Inlet Connection(Location)	2" NPT Male Thread (Front, F1)	2" NPT Male Thread (Front, F3)
Outlet Connection(Location)	2" NPT Male Thread (Front, F4)	2" NPT Male Thread (Front, F2)

#### Estimated Weight, Empty/Operating

Overall Dimensions, H x W x D  
Plate Material  
Brazing Material  
Approvals

107.00/133.44 (lb)

24.49 x 7.52 x 8.38 (in)  
316L SS  
Copper

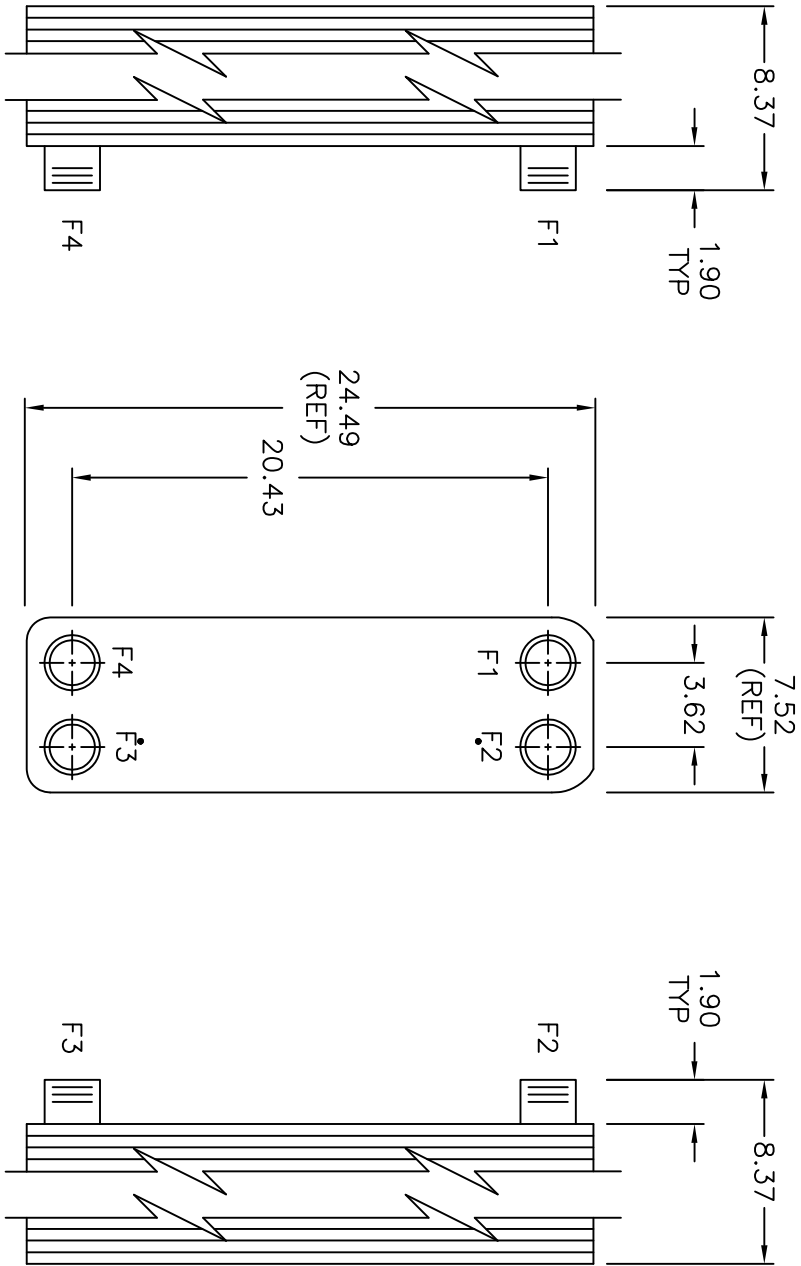
**DSA: no Structural concern**

**Note:** Customer to verify fluid/material compatibility.

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

ORDER NO (REF): 2023-11-20-16:24 -10

HX-01



(SIDE-1 CONN VIEW)

(SIDE-2 CONN VIEW)

NOTES:

1. Dimensions shown in inches (in.)
- 2.
- 3.

PORT / LOCATION		CONNECTION TYPE	UNIT RATINGS		UNIT CONSTRUCTION	<div><div>Bell &amp; Gossett</div><div>Buffalo, NY 14227 USA</div><div>MADE PC 11/23/23</div><div>CHECK DS 11/23/23</div><div>TITLE Model BPDW 422-46</div><div>DRAWING NUMBER 2023-11-20-16:24 -102</div><div>REV. 02</div></div>
F1	SIDE-1	2" MPT, 316L SS	DSGN PRES.	435 PSI		
F4	SIDE-1	2" MPT, 316L SS	TEST PRES.	524 PSI	PLATE MTL: 316L SS (DBL WALL)	
F2	SIDE-2	2" MPT, 316L SS	MAX TEMP.	450 °F	BRAZE MTL: COPPER	
F3	SIDE-2	2" MPT, 316L SS	MIN TEMP.	-310 °F		
					EST SHIP WT: 107 LBS	



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# Submittal Item Information

Feb 6, 2024

## Spec Section

Mechanical

## Sub Section

HVAC

## Type

Shop Drawings

## Description

Heat Exchanger HX-01

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**Leader** Nevin Wong  
**Job Site** Chris Gipson Recreation Centre  
**Submission Date** 2023-12-05  
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**Deliverables**

Track #	243767		
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Revision #	0		

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**Approval Stamps**

# HX-01

## Bell & Gossett BPX™

### Brazed Plate Heat Exchanger Specification Sheet

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

Customer  
Inquiry Number 2023-11-20-16:24

Date Thursday, November 23, 2023  
Item Number

**Performance of One Unit:** BPDW422 - 46

**Units Connected in Parallel:** 1

Fluid Name	Propylene Glycol 35.0%	Water
Total Flow	37.84 GPM	35.00 GPM
Inlet Temperature	60.00 °F	40.00 °F
Outlet Temperature	50.00 °F	50.00 °F
Operating Pressure	0.00 PSI	0.00 PSI
Pressure Drop, Allow./Calc	3.72/3.71 PSI	2.12/2.11 PSI
Density	64.41 lb/ft3	62.46 lb/ft3
Viscosity	4.92 cp	1.40 cp
Specific Heat	0.8997 Btu/lbm, °F	1.0030 Btu/lbm, °F
Thermal Conductivity	0.2408 Btu/ft, h, °F	0.3312 Btu/ft, h, °F
Specified Fouling Factor	0.0000 hr, ft2, °F/Btu	0.0000 hr, ft2, °F/Btu
Total Heat Exchanged	175,863.46 Btu/h	
LMTD	10.00 °F	
Overall Heat Transfer Coefficient, Clean/Dirty	403.97 Btu/hr, ft2, °F	
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Effective Surface Area	43.52 ft2	
Excess Surface	0.01 %	

#### Construction

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Estimated Weight, Empty/Operating	107.00/133.44 (lb)
Overall Dimensions, H x W x D	24.49 x 7.52 x 8.38 (in)
Plate Material	316L SS
Brazing Material	Copper
Approvals	

**Note:** Customer to verify fluid/material compatibility.

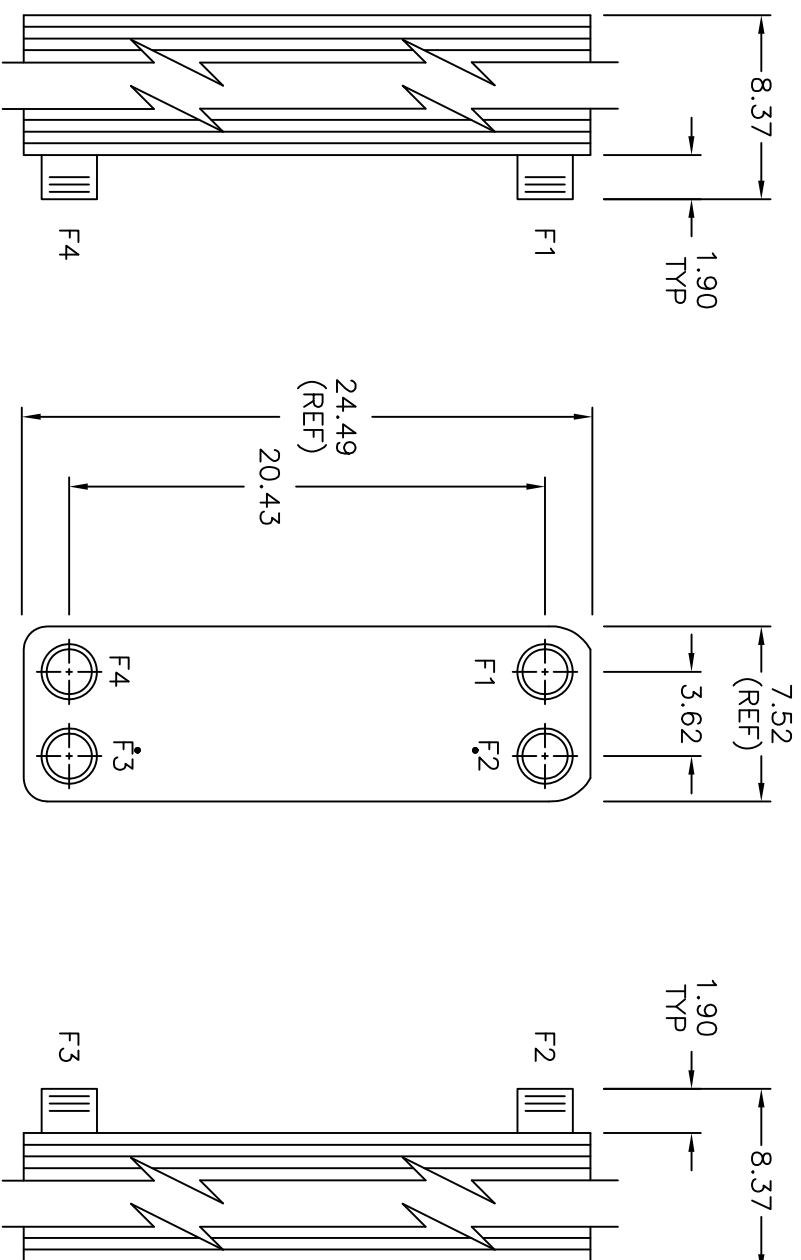
Performance evaluation is dependent on customers' ability to provide sufficiently accurate measurements.

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REV#	REVISION NOTES	MADE BY	DATE
2	UPDATED PER PROJECT NO. P-703	DS	11/23/23

ORDER NO (REF): 2023-11-20-16:24 -10

HX-01



(SIDE-1 CONN VIEW)

(SIDE--2 CONN VIEW)

NOTES:

1. Dimensions shown in inches (in.)
- 2.
- 3.

PORT / LOCATION		CONNECTION TYPE	UNIT RATINGS		UNIT CONSTRUCTION	Bell & Gossett Buffalo, NY 14227 USA  MADE IN PC 11/23/23 CHECKED DS 11/23/23  TITLE Model BPDW 422-46  DRAWING NUMBER 2023-11-20-16:24 REV. 102
F1	SIDE-1	2" MPT, 316L SS	DSGN PRES.	435 PSI		
F4	SIDE-1	2" MPT, 316L SS	TEST PRES.	524 PSI	PLATE MTL: 316L SS (DBL WALL)	
F2	SIDE-2	2" MPT, 316L SS	MAX TEMP.	450 °F	BRAZE MTL: COPPER	
F3	SIDE-2	2" MPT, 316L SS	MIN TEMP.	-310 °F		
					EST SHIP WT: 107 LBS	