

8850 GEORGE BOLTON PARKWAY, CALEDON, ONTARIO L7E 2Y4

Shop Drawings	23-82-39-02R0
Transmittal No:	

Project Name:	Construction of Victoria Park Arena and Brampton Sports Hall	Project No.	NRFP2024-232
	of Fame	DATE:	10 Jul 2025
		Submittal Required	24 Jul 2025
		Return Date:	
Submittal No:	94		
Title:	Hydronic Unit Heaters #1-7		
То:	Mark Falkenburger		
	1		
Checked by:	Veronica Soulaka	To Be Reviewed By the	Architecture49 & WSP
-	Volonica Godiaka	Following Consutlants	
Submitted for:	Review and Approval		
Consultants Response			

wsp										
REVIEWED	BY Jerry Nweisser									
	DIVISION Buildings - Sustainability									
REVIEWED AS NOTED	DATE 7/28/2025									
REVISE & RESUBMIT	SUBMITTAL# 21-20									
1	PROJECT CA-WSP-221-05263-00									
	VING DOES NOT IN ANY WAY CONTRACTOR OF RESPONSIBILITY R COMPLIANCE WITH THE									





SHOP DRAWING REVIEW

Project Name: Victoria Park Arena Project No. CA-WSP-221-05263-00

Date 2025-07-25

Received:

Shop Drawing: Title: Hydronic Unit

Revision: 00 Submission No.: 21-20

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.

⊠ Revie	wed	Mechanical Rev	view Required ⊠	Electrical Review Required			
☐ Revie	wed as Noted	Reviewed by:	Jerry Nweisser	Reviewed by:	Peter Zhang		
☐ Revis	e & Resubmit	Review Date:	2025-07-25	Review Date:	2025-07-28		
Item	Comments						
1.							
2.							
3.							

End of Review



Submittal 24-280-021

PROJECT NAME PROJECT ADDRESS DATE SUBMITTED

VICTORIA PARK ARENA 24-280 20 Victoria Crescent, Brampton, ON L6T 1E4 Jul 9, 2025

TO

Abdullah Hissamuddin PAUL LEDDY

COMPANY

RAFAT GENERAL CONTRACTOR INC. Consult Mechanical Inc.

EMAIL

abdullah.hissam@rafat.ca paul.l@consultmechanical.com

ADDRESS ADDRESS

8850 GEORGE BOLTON PKWY BOLTON, ON L7E 2Y4 54 Audia Court, Unit 2

Concord, ON L4K 3N5

Title

Unit Heaters

Description

Unit Heaters #1-7 Manufacturer : Sigma

Model #'s 040H, 084H, and 105H

Package Items

SPEC SUBSECTION ITEM TYPE



Submittal # 90372

APPROVAL REQUIRED

Project 22104386-MECH-1- Brampton Victoria Park Arena

Leader Nevin Wong

Job Site Brampton Victoria Park Arena

Submission Date2025-07-09Sold ToCONSULT MECHSubmitted ByEmil Sebastiampillai

Contacts

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

Notes:

- Piping connection on unit heater is 1/2" Cu tubing sweat connection (Models 040-H); 1-1/4" NPT male thread (models 084-H and 105-H)
- Finish is a grey baked enamel
- Louvre fin diffuser kit shipped loose and field installed

Deliverables

Track #	288999	
Tag	UH-1-7	
Description	Hydronic Unit Heaters	
Quantity	7	
Manufacturer	Sigma	
Model #	040H, 084H, 105H	
Specification	23 82 39 2.01	
Production Lead Time	5-7 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.



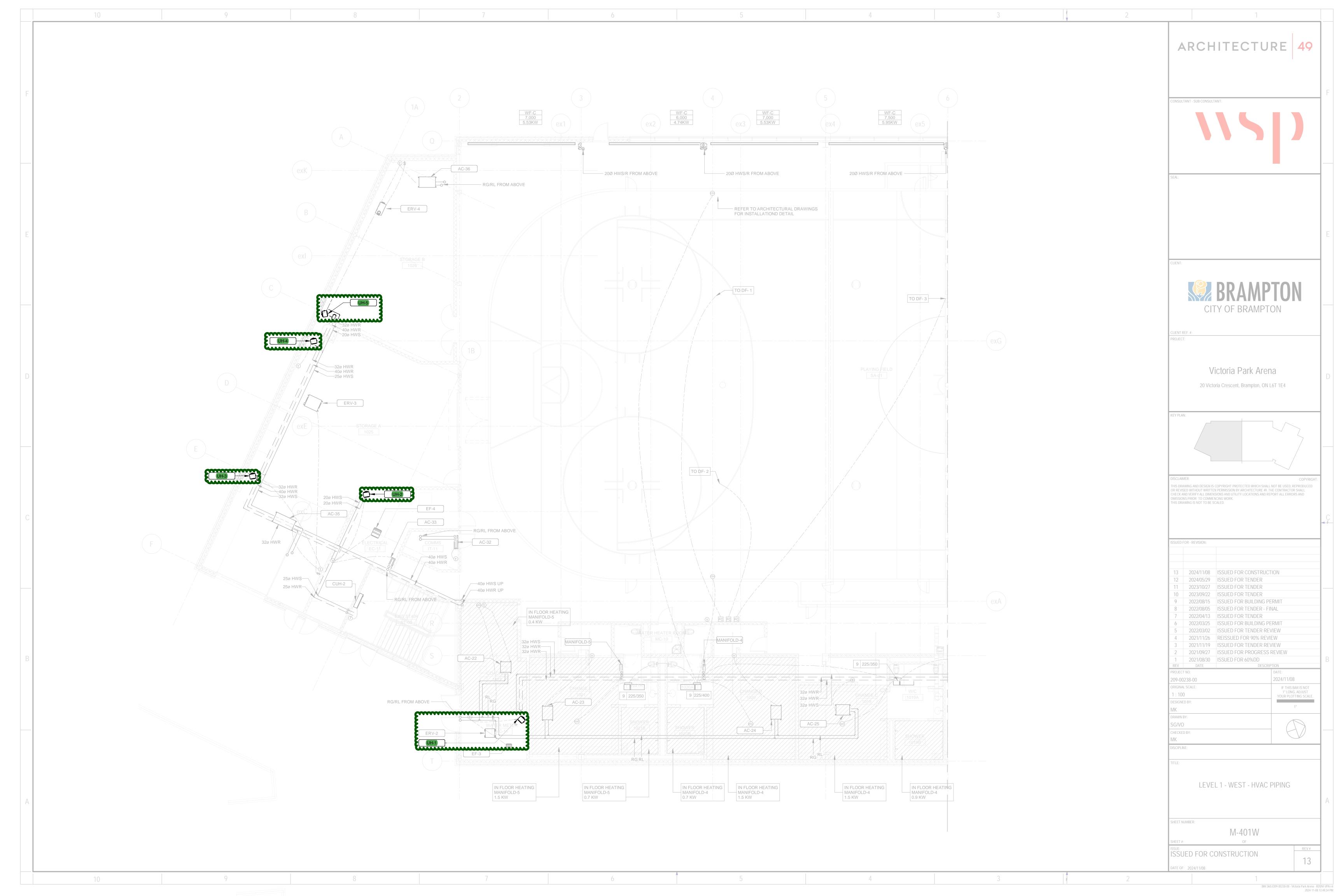
HTS Toronto

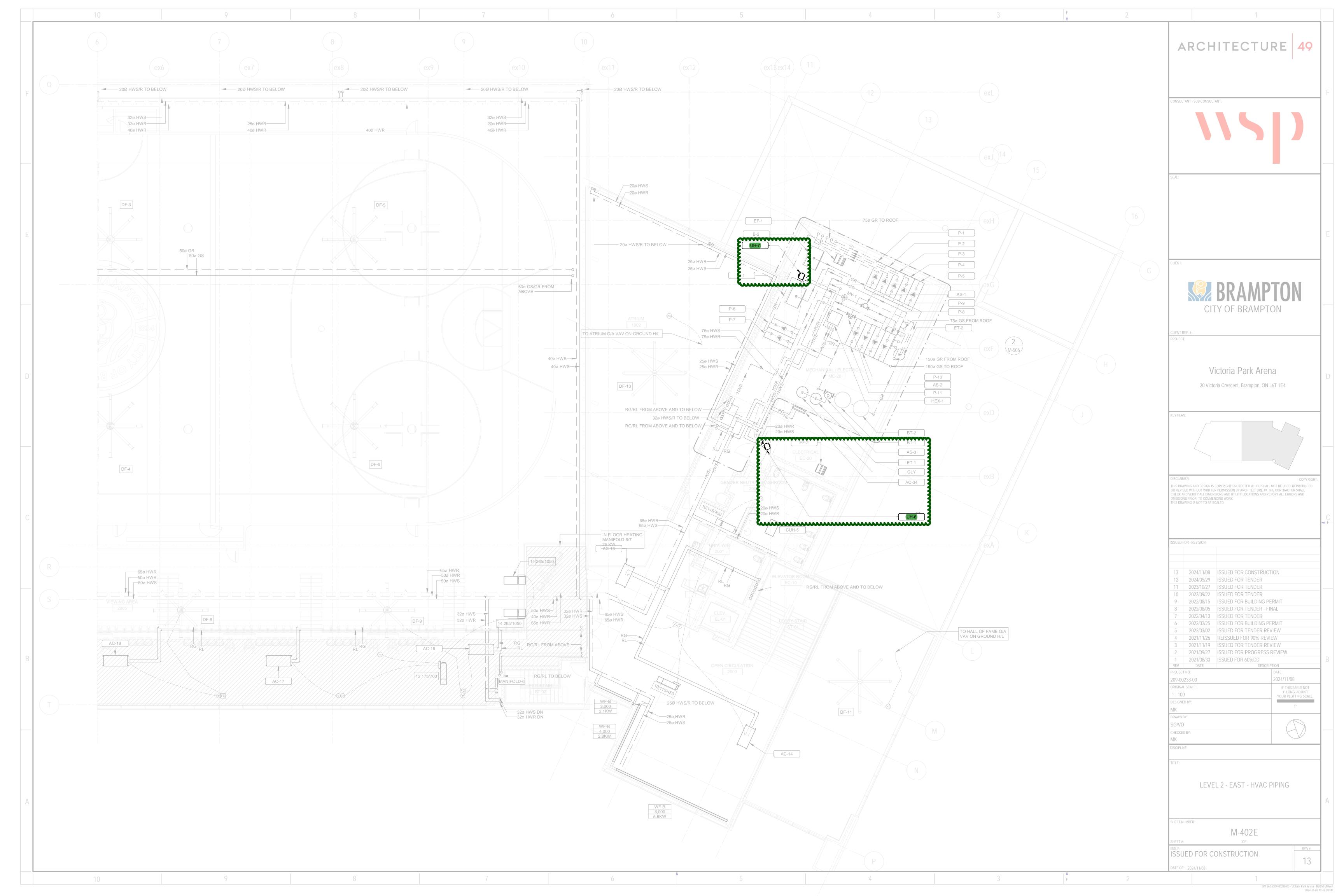
115 Norfinch Drive Toronto, ON M3N 1W8 T 1.800.850.0567 F 416.661.0100

hts.com/ontario

COMPLIANCE - MECHANICAL DRAWINGS & SPECIFICATIONS







	SILENCER SCHEDULE (VIBRO-ACOUSTICS)																		
				DIMENSION	IS			IDEAL	MAX.DP	MININ	MINIMUM DYNAMIC INSERTION LOSS, dB (NOTE					, dB (N	OTE	BASIS OF DESIGN	
TAG	SYSTEM	TYPE	DUCT	DUCT	LENGTH	AIRFLOW,	VELOCITY,	DP	W/SYS EFF									VIBRO-ACOUSTICS	
			WIDTH,	HEIGHT,	IN.	CFM	FPM	IN.W.G.	IN.W.G.	0	OCTAVE BAND CENTER FREQUENCY, HZ					NCY, H	Z	MODEL NUMBER	NOTES
		(NOTE 1)	IN.	IN.	(NOTE 2)		(NOTE 3)	(NOTE 4)	(NOTE 5)	63	125	250	500	1000	2000	4000	8000		
RA-1	AHU1-Return	RED	28	20	60	4238	-1090	0.11	0.23	6	8	14	19	31	27	24	19	RED-UHV-27965	2, 7, 8, 9, 10
RA-2	AHU2-Return	RD	88	32	60	21190	-1096	0.12	0.14	3	8	19	33	34	26	16	11	RD-MHV-27965	7, 8, 9, 10
RA-3	AHU3-Return	RD	62	12	60	5403	-1099	0.11	0.14	3	9	15	27	33	24	15	10	RD-MHV-27965	7, 8, 9, 10
RA-ERV1	ERV1-Return	RD	64	24	60	11866	-1531	0.08	0.16	3	8	13	19	17	17	14	11	RD-UHV-27965	7, 8, 9, 10
SA-1	AHU1-Supply	RD	28	20	36	4238	+1090	0.09	0.14	3	6	11	14	15	13	11	9	RD-MHV-27965	7, 8, 9, 10
SA-2	AHU2-Supply	RD	56	40	36	21190	+1387	0.14	0.18	3	6	11	14	15	13	11	9	RD-MHV-27965	7, 8, 9, 10
SA-3	AHU3-Supply	RD	62	12	36	5403	+1099	0.09	0.16	3	7	11	13	14	13	12	10	RD-MHV-27965	7, 8, 9, 10
SA-ERV1	ERV1-Supply	RD	84	22	36	11866	+614	0.03	0.06	3	7	11	13	14	13	12	10	RD-MHV-27965	7, 8, 9, 10

1. TYPE R - RECTANGULAR D - DISSIPATIVE

> RE - RECTANGULAR ELBOW

2. LENGTH SHOWN FOR ELBOW SILENCERS IS CENTERLINE LENGTH.

3. VELOCITY SHOWN IS + (FORWARD FLOW) OR - (REVERSE FLOW) AS DEFINED BY ASTM E477-13.

4. IDEAL PRESSURE DROP AS DETERMINED PER ASTM E477-13 IN A NVLAP-ACCREDITED ACOUSTICAL LABORATORY.

5. PRESSURE DROP PER ASTM E477-13 PLUS SYSTEM EFFECTS FOR NEARBY DUCT ELEMENTS.

6. MINIMUM DYNAMIC INSERTION LOSS DETERMINED PER ASTM E477-13 IN A NVLAP-ACCREDITED ACOUSTICAL LABORATORY.

7. NON-BASIS OF DESIGN SILENCER MANUFACTURER SHALL PROVIDE, FOR APPROVAL, PROFESSIONAL ENGINEER STAMPED ACOUSTICAL CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT DUCTBORNE FAN SOUND LEVELS, INCLUDING AIRBORNE AND BREAKOUT NOISE, MEET THE REQUIRED CRITERIA.

8. NON-BASIS OF DESIGN SILENCER MANUFACTURER SHALL PROVIDE, FOR APPROVAL, PROFESSIONAL ENGINEER STAMPED PRESSURE DROP CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT INSTALLED PRESSURE DROP WITH SYSTEM EFFECTS DOES NOT EXCEED SCHEDULED VALUES.

9. FOR NON-BASIS OF DESIGN PRODUCT SUPPLIED, CONTRACTOR IS FINANCIALLY RESPONSIBLE TO ENSURE NOISE CONTROL SOLUTION IS DELIVERED TO ACHIEVE SPECIFIED NC LEVEL IN SPACES.

10. SILENCER MEETS NC40 in the viewing area and change room / NC35 in the admin and multi purpose room

	GRILLES AND DIFFUSER SCHEDULE													
		BASI	S OF DESIGN						APPLICATION					
UNIT TAG	MANUFACTURER	MODEL	INLET SIZE (mm)	SIZE (mm x mm)	TYPE	VOLUME CONTROL	MATERIAL	FINISH						
А	PRICE	SPD	REFER TO FLOOR PLAN	600 x 600	CEILING SUPPLY DIFFUSER	YES	STEEL	MATCH ARCH.						
В	PRICE	510	REFER TO FLOOR PLA	AN	LOUVERED SUPPLY GRILLE - DOUBLE DEFFLECTION	YES	STEEL	MATCH ARCH.						
С	PRICE	635	REFER TO FLOOR PLAN		LOUVERED RETURN/EXHAUST GRILLE	YES	ALUMINIUM	MATCH ARCH.						
D	PRICE	RCDA	REFER TO FLOOR PLA	AN	ROUND CONE DIFFUSER - FULLY ADJUSTABLE	YES	STEEL	MATCH ARCH.						
Е	PRICE	96	REFER TO FLOOR PLA	AN	HEAVY DUTY RETURN GRILLE	-	STEEL	MATCH ARCH.						
F	PRICE	ATGH	REFER TO FLOOR PLA	AN	HEAVY DUTY SIGHT-PROOF DOOR GRILLE	-	ALUMINIUM	MATCH ARCH.	TO BE WITH FIRE DAMPER WHERE INDICATED ON DRAWING					
G	PRICE	CF	1" TWO SLOTS, 8" INLET, 60"	LENGTH	SUPPLY SLOT DIFFUSER C/W ENGINEERED PLENUM BOX	YES	ALUMINIUM	MATCH ARCH.	TO BE COORDINATED WITH CEILING SUPPLIER					

GENERAL NOTES:

1. All diffusers and grilles shall suit the ceiling construction, coordinate with architectural ceiling plan. diffusers in drywall ceiling to be c/w adaptor frame to accommodate installation, diffuser adaptor frame shall be of the same material as the diffuser.

2. All dampers shall be of the same material as the diffuser or grille unless otherwise noted.

3. Grille and diffuser colour to be approved by architect. where diffuser plenums are exposed, contractor to paint plenum to suit architect;

	FAN SCHEDULE												
			BASIS	BASIS OF DESIGN		E.S.P.		MOTOR		EL ECTRICAL			
UNIT TAG	NIT TAG AREA SERVED	LOCATION	MANUFACTURER	MODEL NO.	L/S	Pa	RPM	Watts	HP	FLA (AMPS)	ELECTRICAL V/Φ/Hz	REMARKS	
EF-1	MECHANICAL ROOM MC-20	MECHANICAL ROOM MC-20	COOK	165SQN17D (VF)	1,250	100	1725	-	5/8	-	208/1/60	1,2,3,4,5	
EF-2	ELECTRICAL ROOM EC-20	ELECTRICAL ROOM EC-20	COOK	150SQN17D (VF)	1,000	100	1725	-	1/2	-	208/1/60	1,2,3,4,5	
EF-3	WATER METER 1024	WATER METER 1024	COOK	90SQN17DEC	150	100	1725	-	1/6	-	115/1/60	1,2,3,4,5	
EF-4	ELECTRICAL EC-10	ELECTRICAL EC-10	COOK	135SQN17DEC	700	100	1725	-	1/2	-	208/1/60	1,2,3,4,5	

1. C/W CEILING VIBRATION HANGER/SPRING ISOLATORS

2. C/W BACKDRAFT DAMPER 3. ECM MOTOR

4. FAN MOUNTED SPEED CONTROLLER

5. LOCAL SWITCH 6. C/W MOTORIZED DAMPER AS INDICATED ON DRAWING

	SCHEDULE OF DESTRATIFICATION FANS													
			BASIS OF DESIGN	- DIAMETER			MOTOR		OPERATING WEIGHT (KGS)					
UNIT TAG	LOCATION	MANUFACTURER	MODEL	DIAMETER	V/PH/HZ	MCA	MOTOR	VFD		REMARKS				
		MANOI AOTOICEIX	INIODEL	METER			HP							
DF-1	PLAY FIELD	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	4.3	208-230/3/60	20	1.5	YES	115					
DF-2	PLAY FIELD	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	4.3	208-230/3/60	20	1.5	YES	115					
DF-3	PLAY FIELD	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	4.3	208-230/3/60	20	1.5	YES	115					
DF-4	PLAY FIELD	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	4.3	208-230/3/60	20	1.5	YES	115					
DF-5	PLAY FIELD	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	4.3	208-230/3/60	20	1.5	YES	115					
DF-6	PLAY FIELD	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	4.3	208-230/3/60	20	1.5	YES	115					
DF-7	VIEWING AREA	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	3.6	208-230/3/60	20	1.5	YES	115					
DF-8	VIEWING AREA	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	3.6	208-230/3/60	20	1.5	YES	115					
DF-9	VIEWING AREA	BIG ASS FANS	POWERFOILD X3.0 - PFX3-14	3.6	208-230/3/60	20	1.5	YES	115					
DF-10	ATRIUM	BIG ASS FANS	ESSENCE	4.3	208-230/1/60	10	1.5	YES	44					
DF-11	HALL OF FAME	BIG ASS FANS	ESSENCE	4.3	208-230/1/60	10	1.5	YES	44					

1. C/W PRE-WIRED ONBOARD VFD, MOUNTING KIT, EXTENSION TUBE AND BAFCON CONTROLLER, CONNECT TO BAS.

2. C/W OCCUPANCY SENSOR.

3. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS. 4. INTEGRATE TO FIRE CONTROL PANEL. 4. REFER TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

	SCHEDULE OF GLYCOL TANK													
TAG	LOCATION	MANUFACTURE	MODEL	CAPACITY (L/MIN @ kPa)	PRESSURE RANGE (kPA)	DIMENSION D(MM) X H(MM)	WEIGHT (kG)	MOTOR (kW)	ELECTRICAL V/Φ/Hz	REMARKS				
GLY	MECHANICAL ROOM	GMP	GMP13050	6.8@482	69-482	710 x1070	41	0.2	120/1/60	1				

1. C/W MANIFOLD.

SCHEDULE OF AUTOMATIC CONTROL VALVES									
SYSTEM	050/405	TYPE	ELOW (L/a)	D.D. (kDa)	VALVE	REMARKS			
SYSTEM	SERVICE	TYPE	FLOW (L/s)	P.D. (kPa)	C.V.	REMARKS			
AHU-1	CENTRAL COOLING / HEATING	3-WAY	SEE NOTE 1	SEE NOTE 2	SEE NOTE 2				
AHU-2 & 3	CENTRAL COOLING / HEATING	2-WAY	SEE NOTE 1	SEE NOTE 2	SEE NOTE 2				
HEAT EXCHANGER	CENTRAL HEATING	3-WAY	SEE NOTE 1	SEE NOTE 2	SEE NOTE 2				
WALL FINS RADIATORS	PERIMETER HEATING	2-WAY	SEE NOTE 1	SEE NOTE 2	SEE NOTE 2				
INFLOOR RADIANT HEATING MANIFOLDS	PERIMETER HEATING	3-WAY MIXING	SEE NOTE 1	SEE NOTE 2	SEE NOTE 2	REFER TO MANIFOLD DETAIL DRAWING AND SPECIFICATION			
CABINET UNIT HEATERS	PERIMETER HEATING	2-WAY	SEE NOTE 1	SEE NOTE 2	SEE NOTE 2				
UNIT HEATERS	PERIMETER HEATING	2-WAY	SEE NOTE 1	SEE NOTE 2	SEE NOTE 2				

1. FLUID FLOW TO BE DETERMINED BASED ON REQUIRED HEATING CAPACITY AS PER FLOOR PLANS AND SCHEDULES. 2. CONTROLS CONTRACTOR SHALL SELECT PROPER C.V. TO ENSURE MINIMUM OF 6.9 kPa PRESSURE DROP AT CONTROL VALVE.

								SCH	HEDULE (OF MOTOR	IZED HEATE	RS				
		BASIS OF DES	SIGN		CAPACITY	AIR	FLOW			FL	UID			MOTOR		
JNIT FAG	LOCATION	MANUFACTURER	MODEL NO.	ARRANGEMENT	kW	L/S	E.A.T.	TYPE	FLOW	E.F.T.	L.F.T	PRESS. DROP	RPM	НР	ELECTRICAL V/Φ/Hz	REMARKS
							°C		L/S	°C	°C	kPa				
JH-1	WATER METER ROOM	ENGINEERED AIR	H-1	HORIZONTAL	4.4	260	15.0	WATE R	0.10	54.4	43.3	1.94.2	1500	1/8 1/20	120 115/ 1/60	1
JH-2	ELECTRICAL	ENGINEERED AIR	H-1	HORIZONTAL	4.4	260	15.0	WAT	0.10	54.4	43.3	1.94.2	1500	1/84/20	120 115 /1/60	1
JH-3	STORAGE A	ENGINEERED AIR	H-6	HORIZONTAL	11.8	698	15.0	WAT0	. 28 0.26	54.4	43.3	0.64.2	1500	1/6	120 115 /1/60	1
JH-4	STORAGE A	ENGINEERED AIR	H-6	HORIZONTAL	11.8	698	15.0	Q.TAW	. 28 0.2 6	54.4	43.3	0.64.2	1500	1/6	120 115 /1/60	1
JH-5	STORAGE B	ENGINEERED AIR	H-4	HORIZONTAL	8.5	472	15.0	QTAW	. 22 0.19	54.4	43.3	2.5 4.2	1500	1/64/42	120 115 /1/60	1
JH-6	ELECTRICAL	ENGINEERED AIR	H-1	HORIZONTAL	4.4	260	15.0	WAT	0.10	54.4	43.3	1.94.2	1500	1/8 1/20	120 115 /1/60	1
JH-7	MECHANICAL	ENGINEERED AIR	H-4	HORIZONTAL	8.5	472	15.0	QTAW	. 22 0.19	54.4	43.3	2.5 4.2	1500	1/6 1/12	120 115 /1/60	1
JH-1	ENTRY	ENGINEERED AIR	CUH-12	ARRANGEMEN	12.0	708	15.0	WAT	0.27	54.4	43.3	10	1075	1/4	115/1/60	1
JH-2	ARENA STAIR L-1	ENGINEERED AIR	CUH-9	ARRANGEMEN	7.5	448	15.0	WAT	0.17	54.4	43.3	4.9	1075	1/10	115/1/60	1
JH-3	ARENA STAIR L-2	ENGINEERED AIR	CUH-9	ARRANGEMEN	7.5	448	15.0	WAT	0.17	54.4	43.3	4.9	1075	1/10	115/1/60	1
JH-4	VIEWING AREA	ENGINEERED AIR	CUH-4	ARRANGEMEN	3.7	175	15.0	WAT	0.08	54.4	43.3	4.9	1075	1/10	115/1/60	1
JH-5	WASHROOM L-2	ENGINEERED AIR	CUH-3	ARRANGEMEN	2.7	141	15.0	WAT	0.06	54.4	43.3	4.9	1075	1/10	115/1/60	1
TES:				COMPLY	COMPLY		CON		COMPLY AS NOTED	COMPLY	COMPLY	COMPLY AS NOTED		COMPLY AS NOTE	COMPLY D AS NOTED	COMPLY

	SCHEDULE OF ELECTRIC BOOSTER COIL									
TAG	AREA SERVED	TYPE	AIRLFOW (L/S)	CAPACITY (KW)	DUCT INLET SIZE (MM)	E.A.T. (°C)	L.A.T. (°C)	ELECTRICAL V/Φ/Hz	REMARKS	
EBC-1	ERV-2	ELECTRIC	40	1.0	150x150	-21.0	-1.0	120/1/60	1	
EBC-2	ERV-3	ELECTRIC	140	3.4	250x250	-21.0	-1.0	120/1/60	1	
EDO O	EDV 4	EL FOTBIO	0.0	0.0	000 000	04.0	4.0	4.00 /4 /00	4	

1. C/W THE REQUIRED CONTROL COMPONENT FOR FROST CONTROL. CONNECT TO ERV CONTROLLER.

	SCHEDULE OF WALL PANEL RADIATORS									
UNIT TAG	DESIGN			PACITY FLUID TYPE		E.W.T.	L.W.T.	E.A.T.	REMARKS	
	MANUFACTURER	MODEL	MM	kW/M	BTU/HR/FT	TTPE	°C	°C	°C	
WF-A	RESERVED/NOT USED									
WF-B	RUNTAL	R2F-5	365	365 0.70 733 HEATING WATER 54.44 43.33 21.1						1,3,4,5,6,7
WF-C	RUNTAL	R2F-7	514	0.79	822	HEATING WATER	54.44	43.33	21.1	1,2,4,5,6
WF-D	RESERVED/NOT USED									
WF-E	RESERVED/NOT USED									
WF-F	RUNTAL	R3F-10	737	737 1.30 1348 HEATING WATER 54.44 43.33 21.1						

1. REFER TO FLOORPLANS FOR RADIATOR TYPE, LOCATION, CAPCITY (KW), AND LENGTH (MM).

2. WALL MOUNTED RADIATOR C/W MOUNTING KIT. 3. FLOOR STANDING C/W PEDESTAL KIT.

4. C/W RIBBED PIPE COVER TRIMS, FINISHED TO MATCH THE RADIATORS. 5. C/W SHUT-OFF VALVE/UNION

6. C/W RUNTAL FLEX CONNECTORS, WHICH SHALL BE USED TO PROVIDE EXPANSION COMPENSATION FOR RADIATORS. . C/W FINISHED PANEL ON THE BACK SIDE.

SCH	EDULE OF VIBRATION ISOLATION		
SYSTEM	ISOLATOR TYPE	MINIMUM STATIC DEFLECTION	STATUS
CENTRIFUGALS FANS, FIXED FREQUENCY DRIVE	SPRING MOUNT OR HANGER	1800 RPM OR GREATER: 25mm (1"). 1400 to 1800 RPM: 50mm (2"). LESS THAN 1400 RPM: 75mm (3")	1, 2, 3, 4, 5, 6, 7, 8, 9
CENTRIFUGALS FANS, VARIABLE FREQUENCY DRIVE	SPRING HANGER	75mm (3")	
BASE MOUNTED PUMP	SPRING MOUNT	50mm (2")	
FLOOR MOUNTED VERTICAL INLINE PUMP	SPRING MOUNT	50mm (2")	
CEILING MOUNTED FAN COIL UNITS, ERV OR HEAT PUMP AIR CONDITIONING UNIT	SPRING HANGER	25mm (1")	

1. PIPING GREATER THAN 50MM (2") SHALL BE ATTACHED TO VIBRATING OR ROTATING EQUIPMENT USING FLEXIBLE CONNECTIONS.

2. ALL DUCTWORK SHALL BE ATTACHED TO FANS AND AIR HANDLING UNITS USING FLEXIBLE CONNECTORS. 3. ALL CONDUIT SHALL BE ATTACHED TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS) WITH A SLACK SECTION FORMING A LOOP OR 'U' SHAPE. CONDUIT SHOULD NOT BE RIGIDLY CONNECTED TO BUILDING STRUCTURE. DISTRIBUTION PANELS SHOULD NOT 4. PIPING SHALL BE SUPPORTED WITH VIBRATION ISOLATION HANGERS OR SUPPORTS HAVING THE EQUIPMENT FOR THE FIRST THREE SUPPORTS, UP TO 50MM. SUBSEQUENT SUPPORTS WITHIN THE EQUIPMENT ROOM TO HAVE

A MINIMUM 20MM STATIC DEFLECTION. 5. ALL DUCTS TO BE ISOLATED FROM TRAPEZE WITH NEOPRENE OR MINERAL FIBRE SLEEVE

6. PIPES OUTSIDE THE MECHANICAL ROOM GERATER THAN 50MM DIAMETER TO BE SUPPORTED ON SPRING AND NEOPRENE HANGERS WITH MINIMUM 20MM STATIC DEFLECTION 7. PIPES OUTSIDE THE MECHANICAL ROOM LESS THAN OR EQUAL TO 50MM DIAMETER TO BE ISOLATED FROM CLAMP WITH NEOPRENE OR MINERAL WOOL SLEEVE

8. PIPE RISER SUPPORTS TO BE ISOLATED FROM BUILDING STRUCTURE WITH NEOPRENE PADS 9. SPRING ISOLATORS SHALL BE COMPLETE WITH INLINE NEOPRENE PADS

DNSULTANT - SUB CONSULTANT:





Victoria Park Arena

20 Victoria Crescent, Brampton, ON L6T 1E4

HECK AND VERIFY ALL DIMENSIONS AND UTILITY LOCATIONS AND REPORT ALL ERRORS AND

SUED FOR - REVISION:

HIS DRAWING IS NOT TO BE SCALED.

2024/11/08 ISSUED FOR CONSTRUCTION

2024/07/15 ISSUED FOR ADDENDUM #4 2024/05/29 ISSUED FOR TENDER

2023/10/27 ISSUED FOR TENDER 2023/09/22 ISSUED FOR TENDER 2022/08/15 ISSUED FOR BUILDING PERMIT

2022/08/05 ISSUED FOR TENDER - FINAL 2022/04/13 ISSUED FOR TENDER 2022/03/25 ISSUED FOR BUILDING PERMIT

2022/03/02 ISSUED FOR TENDER REVIEW ROJECT NO:

2024/11/08 09-00238-00 RIGINAL SCALE: IF THIS BAR IS NOT 1" LONG, ADJUST ESIGNED BY: HECKED BY:

MECHANICAL EQUIPMENT SCHEDULES #3

M-902

SSUED FOR CONSTRUCTION

ATE OF: 2024/11/08

BIM 360://209-00238-00 - Victoria Park Arena - R20/M-VPA.rvt

2024-11-08 12:49:35 PM

2 PRODUCTS

2.01 UNIT HEATERS

- .1 CSA certified hot water unit heaters in accordance with drawing schedule, each complete with:
- COMPLY.1 for vertical unit casing, top and bottom heavy-gauge circular steel plates, top plate equipped with a depression for motor and an opening for motor cooling air as well as threaded hanger rod connections, bottom plate equipped with a die-formed fan venturi and a bolt-on adjustable air deflector, both plates bolted together with a circular heating coil in between;
- COMPLY.2 for horizontal unit casing, minimum #20 gauge die-formed steel front and back casing halves with formed ribs and rounded corners, both halves secured together top and bottom with screws and equipped with threaded hanger rod connections in the top, a formed fan venturi with bolt-on wire grid guard in the back, and a rectangular formed discharge opening with adjustable horizontal and vertical air deflectors in the front;
- COMPLY.3 factory applied casing finish, consisting of electrostatically applied baked powder epoxy on cleaned and primed casing surfaces;
- COMPLY.4 factory leak tested heating coil, consisting of minimum 16 mm (5/8") OD seamless copper tubing mechanically expanded into and permanently bonded to continuous plate type aluminum fins, and equipped with screwed steel supply and return piping connections and silver braced tube joints;

TEAO

- COMPLY.5 continuous duty TEFC motor conforming to requirements specified in Section entitled Basic Mechanical Materials and Methods, direct connected to a balanced propeller type fan wheel with aluminum blades secured to a steel hub;
 - .2 Acceptable manufacturers are: PROVIDING SIGMA UH
 - .1 Modine Manufacturing Co.;
 - .2 Rosemex Inc.;
 - .3 Armstrong-Hunt Inc.;
 - .4 Daikin;
 - .5 Engineered Air.

WSP No.: 209-00238-00



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MANUFACTURER'S PRODUCT PERFORMANCE



CONFIGURATION

TAG	UH-1	UH-2	UH-3	UH-4
Model	040H	040H	105H	105H
Quantity	1	1	1	1
Low Temp Output	Standard	Standard	Standard	Standard
Voltage	120V/1Ph/60Hz	120V/1Ph/60Hz	120V/1Ph/60Hz	120V/1Ph/60Hz
Motor Style	Totally Enclosed	Totally Enclosed	Totally Enclosed	Totally Enclosed
Speed Controller	NO	NO	NO	NO
Thermostat	Factory Mounted	Factory Mounted	Factory Mounted	Factory Mounted
Aquastat	NO	NO	NO	NO
Manual Starter	NO	NO	NO	NO
Motor Guard	OSHA Fan Guard	OSHA Fan Guard	OSHA Fan Guard	OSHA Fan Guard
Discharge Louvers	Field Mounted	Field Mounted	Field Mounted	Field Mounted
PERFORMANCE				
Solution	Water	Water	Water	Water
Solution Percentile	100%	100%	100%	100%
Airflow (I/s)	396.48	396.48	1038.40	1038.40
Motor (HP)	1/8 HP	1/8 HP	1/6 HP	1/6 HP
RPM	1550	1550	1625	1625
Voltage	120V/1Ph/60Hz	120V/1Ph/60Hz	120V/1Ph/60Hz	120V/1Ph/60Hz
Amps	1.35A	1.35A	1.8A	1.8A
Capacity (KW)	4.9	4.9	12.9	12.9
EAT (°C)	15.0	15.0	15.0	15.0
LAT (°C)	25.20	25.20	25.25	25.25
EWT (°C)	54.4	54.4	54.4	54.4
LWT (°C)	43.34	43.34	43.34	43.34
Flow (I/s)	0.109	0.109	0.287	0.287
Water Pressure Drop (kPa)	1.900	1.900	0.600	0.600
	558.8	558.8	800.1	800.1
Width (mm)	558.8 342.9	342.9	495.3	495.3
Height (mm)	342.9 393.7	342.9 393.7	495.3 495.3	495.3 495.3
Depth (mm)			495.3 32.2	
Weight (kg)	18.2	18.2	32.2	32.2
Notes				

CONFIGURATION

TAG Model Quantity	UH-5 084H 1	UH-6 040H 1	UH-7 084H 1
Low Temp Output Voltage	Standard 120V/1Ph/60Hz	Standard 120V/1Ph/60Hz	Standard 120V/1Ph/60Hz
Motor Style	Totally Enclosed	Totally Enclosed	Totally Enclosed
Speed Controller Thermostat	NO Factory Mounted	NO Factory Mounted	NO Factory Mounted
Aquastat	NO	NO	NO
Manual Starter	NO	NO	NO
Motor Guard	OSHA Fan Guard	OSHA Fan Guard	OSHA Fan Guard
Discharge Louvers	Field Mounted	Field Mounted	Field Mounted
PERFORMANCE			
Solution	Water	Water	Water
Solution Percentile	100%	100%	100%
Airflow (I/s)	759.92	396.48	759.92
Motor (HP)	1/6 HP	1/8 HP	1/6 HP
RPM	1625	1550	1625
Voltage	120V/1Ph/60Hz	120V/1Ph/60Hz	120V/1Ph/60Hz
Amps	1.8A	1.35A	1.8A
Capacity (KW)	10.3	4.9	10.3
EAT (°C)	15.0	15.0	15.0
LAT (°C)	26.21	25.20	26.21
EWT (°C)	54.4	54.4	54.4
LWT (°C)	43.34	43.34	43.34
Flow (I/s)	0.229	0.109	0.229
Water Pressure Drop (kPa)	2.500	1.900	2.500
Width (mm)	800.1	558.8	800.1
Height (mm)	495.3	342.9	495.3
Depth (mm)	444.5	393.7	444.5
Weight (kg)	34.5	18.2	34.5
Notes			

Unit Heaters

Horizontal Unit Specifications

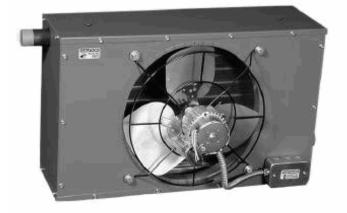


CABINETS

Cabinets are constructed from heavy duty cold-rolled corrosion-resistant steel finished in grey baked enamel. Fronts have integral double-folded discharge frame for additional cabinet rigidity. Back panels have integral inlet collars for superior stiffness. Suspension tappings securely fastened to top panel.

FANS

Fans are designed and selected for high efficiency. Fans are statically and dynamically balanced for quiet, low vibration operation.



COILS

Standard coils are constructed from heavy wall 5/8" outside diameter copper tube with mechanically bonded aluminum fins. Coils are pressure tested at 350 psig. Coils with 0.035" copper tubes are suitable for steam applications up to 100 psig.

MOTORS

Standard motors are 115/60/1, totally enclosed, with automatic thermal overload protection. Standard motors shall be resilient mounted onto fan guards for quiet, low-vibration operation.

DIFFUSERS

Model H units are equipped with horizontal louvres with individually adjustable blades. The optional louvre fin diffuser consists of vertically arranged, individually adjustable blades for maximum air distribution adaptibility.

Unit Heaters

Horizontal Unit Dimensions



FIGURE 1

DIMENSION DIAGRAM FOR HORIZONTAL UNIT HEATER WITH SERPENTINE COIL (030H & 040H)

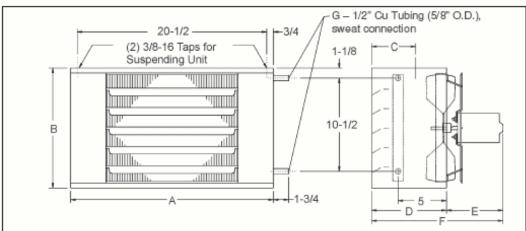


FIGURE 2

DIMENSION DIAGRAM FOR HORIZONTAL UNIT HEATER WITH MULTI-CIRCUITED COIL (047H TO 325H)

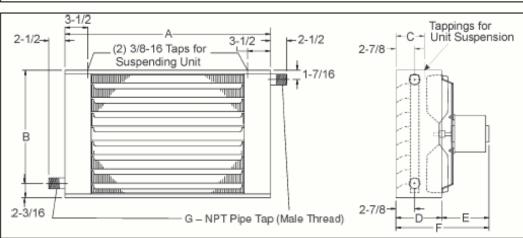


TABLE 1 HORIZONTAL UNIT HEATER SPECIFICATIONS

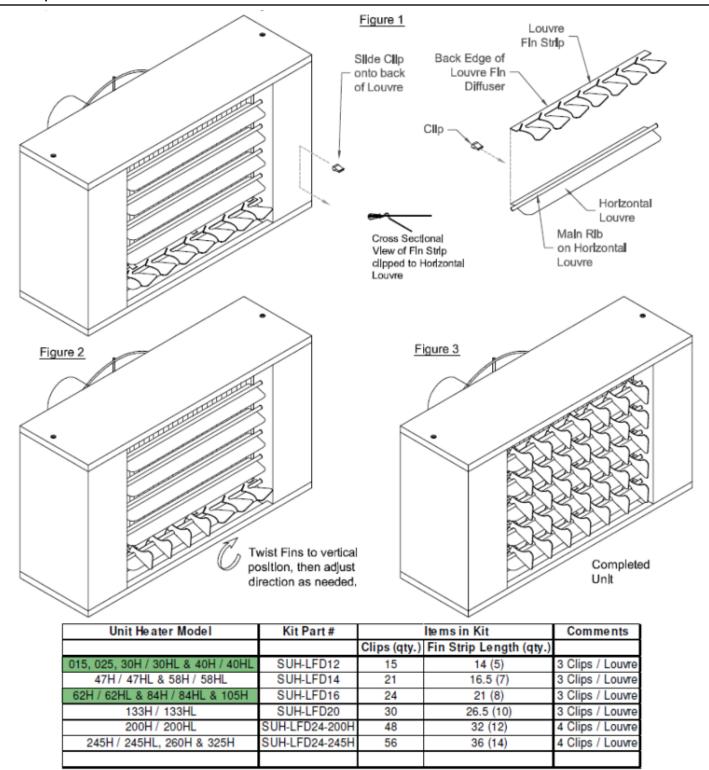
	FIGURE			Diw	MENSIONS	(IN)			Wτ	Max.	Max Th	ROW (FT)
MODEL	REF.	Α	В	С	D	Е	F	G	(LB)	MTG. HT (FT)	w/ Horiz. Louvers	w/ VERT. Louvers
015-H	1	20	13.5	5	8	7.5	15.5	FIG. 1	27	9	16	19
025-H	1	22	13.5	4.75	8	7.50	15.5	FIG. 1	36	9	19	24
030-H	1	22	13.5	4.75	8	7.50	15.5	FIG. 1	40	9	18	23
040-H	1	22	13.5	4.75	8	7.50	15.5	FIG. 1	40	10	23	29
047-H	2	27	16.5	5.00	8.5	7.75	16.25	1.25	48	10	23	29
058-H	2	27	16.5	5.00	8.5	9.50	18.0	1.25	48	10	28	35
062-H	2	31.5	19.5	5.625	10	9.50	19.5	1.25	71	10	25	30
084-H	2	31.5	19.5	5.625	10	7.50	17.5	1.25	76	12	32	40
105-H	2	31.5	24	5.625	10	7.50	17.5	1.25	96	12	38	48
133-H	2	37.0	24.0	5.875	10	7.75	17.75	1.50	108	13	40	50
200-H	2	42.5	28.5	5.50	10	9.50	19.5	1.50	148	15	50	64
245-H	2	46.5	31.5	5.50	10	9.50	19.5	1.50	172	16	54	68
260-H	2	46.5	31.5	5.50	10	9.50	19.5	1.50	190	16	56	70
325-H	2	46.5	31.5	5.50	10	9.50	19.5	1.50	230	16	60	75

Note: Model 325H motor mount differs from detail shown above in Fig.2.

Accessories for Propellorized Unit Heaters

Sigma Model : SUH-LFDxx Model : SUH-LFD

Description: Louver Fin Diffusers



Applies To: UH-3, UH-4, UH-5, UH-7, UH-1, UH-2, UH-6

Accessories for Propellorized Unit Heaters

Sigma Model :EL-300 (Unit Mounted)Model :TPI ET5SS ThermostatDescription :- Single Pole 22amp

120-277v, Heat OnlyAnticipated modelsOptional wire leads

- 50°F to 90°F Temperature Range - Dimension 2.8"x4.75"x1.5"

- UL, CSA



Applies To: UH-3, UH-4, UH-5, UH-7, UH-1, UH-2, UH-6



Unit Heaters Sound Class Ratings

Туре	Model	Sound Class
	015H	I
	025H	II
	030H	II
	040H	III
	047H	III
tal	058H	III
Horizontal	062H	III
riz	084H	III
물	105H	III
	133H	IV
	200H	V
	245H	V
	260H	V
	325H	V
	039V (040V)	=
	050V	=
	054V	II
	067V	II
g	078V	II
Vertical	100V	II
\ Ke	145V	III
	210V	IV
	300V	V
	370V	V
	480V	VI

Sound Class Ratting	Location Description
I	Hospitals, Museums, Schools, Offices, Foyers, Restrooms
II	Department Stores, Showrooms, Commercial Dining Facilities
III	Gymnasiums, Bars, Warehouse Storage, Grocery Stores
II-VI	Garages, Factories, Stadium Common Areas



TECHNICAL BULLETIN TB-SUH-SFF-Coils-08-02C

To whom it may concern:

Subject: Working Pressures for Standard Copper Tube / Aluminum

Fin Coils for Unit Heaters and Force Flow Cabinet Heaters

Products Covered: SUH Horizontal and Vertical Prop Fan Unit

SFF Force Flow Cabinet Heaters

Testing: All coils are factory tested for leaks at 450 psi,

air under water.

Working Pressures (Hot Water Applications):

All unit heater and force flow coils are rated for 360 psi.

All unit construction and test procedures comply with UL1995.



HTS Toronto

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MANUFACTURER'S INSTALLATION AND OPERATION MANUAL

PLEASE CLICK BOX ABOVE FOR THE LINK TO ACCESS THE INSTALLION AND OPERATION MANUALS

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