Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information

Building number, street name			Unit no.	Lot/con.
Municipality	**Postal code**	**Plan number/ other description**		
BRAMPTON				

B. Individual who reviews and takes responsibility for design activities

Name		Firm		
MICHAEL O'ROURKE		**HVAC DESIGNS LTD.**		
Street address			Unit no.	Lot/con.
375 FINLEY AVE			**202**	**N/A**
Municipality	Postal code	Province	E-mail	
AJAX	**L1S 2E2**	**ONTARIO**	**info@hvacdesigns.ca**	
Telephone number	Fax number		Cell number	
(**905**) **619-2300**	(**905**) **619-2375**		( )	

C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]

❑ House	☒ HVAC – House	❑ Building Structural
❑ Small Buildings	❑ Building Services	❑ Plumbing – House
❑ Large Buildings	❑ Detection, Lighting and Power	❑ Plumbing – All Buildings
❑ Complex Buildings	❑ Fire Protection	❑ On-site Sewage Systems

Description of designer's work	
HEAT LOSS / GAIN CALCULATIONS **DUCT SIZING** **RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY** **RESIDENTIAL SYSTEM DESIGN per CSA-F280-12**	**Model:** 2501 **Project:** SUMMER RIDGE ESTATES INC.

D. Declaration of Designer

I **MICHAEL O'ROURKE** declare that (choose one as appropriate):
(print name)

❑ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4.of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.

Individual BCIN: _____
Firm BCIN: _____

☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5.of Di vision C, of the Building Code.

Individual BCIN: 19669
Basis for exemption from registration and qualification: O.B.C SENTENCE 3.2.4.1 (4)

❑ The design work is exempt from the registration and qualification requirements of the Building Code.
Basis for exemption from registration and qualification: _____

I certify that:

1. The information contained in this schedule is true to the best of my knowledge.
2. I have submitted this application with the knowledge and consent of the firm.

April 25, 2022
Date

Michael O'Rourke
Signature of Designer

NOTE:

1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d).of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
2. Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

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Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: SUMMER RIDGE ESTATES INC. | DATE: Apr-22 | WINTER NATURAL AIR CHANGE RATE 0.282 | HEAT LOSS ΔT °F. 74 | CSA-F280-12
BUILDER: ROYAL PINE HOMES | TYPE: 2501 | GFA: 1905 | LO# 95317 | SUMMER NATURAL AIR CHANGE RATE 0.088 | HEAT GAIN ΔT °F. 11 | SB-12 PERFORMANCE

ROOM USE			MBR			ENS				BED-2			BED-3				BATH								
EXP. WALL			31			7				29			10				8								
CLG. HT.			9			9				9			9				9								
	FACTORS																								
GRS.WALL AREA	LOSS	GAIN	279			63				261			90				72								
GLAZING				LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN			LOSS	GAIN						
NORTH	20.8	15.5	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0						
EAST	20.8	41.0	0	0	0	0	0	0		44	914	1806	70	1454	2873		0	0	0						
SOUTH	20.8	24.4	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0						
WEST	20.8	41.0	26	540	1067	17	353	698		0	0	0	0	0	0		0	0	0						
SKYLT.	34.1	100.3	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0						
DOORS	19.6	2.9	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0						
NET EXPOSED WALL	3.5	0.5	253	877	130	46	159	24		217	752	112	20	69	10		72	250	37						
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0						
EXPOSED CLG	1.3	0.6	326	408	182	107	134	60		175	219	98	136	170	76		80	100	45						
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0		45	121	54	45	121	54		0	0	0						
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0		105	261	39	0	0	0		70	174	26						
BASEMENT/CRAWL HEAT LOSS				0			0				0			0				0							
SLAB ON GRADE HEAT LOSS				0			0				0			0				0							
SUBTOTAL HT LOSS				1826			647				2268			1815				524							
SUB TOTAL HT GAIN					1379			781				2108			3013				107						
LEVEL FACTOR / MULTIPLIER			0.20	0.26		0.20	0.26			0.20	0.26		0.20	0.26			0.20	0.26							
AIR CHANGE HEAT LOSS				476			169				592			474				137							
AIR CHANGE HEAT GAIN					68			39				105			150				5						
DUCT LOSS				0			0				286			0				66							
DUCT GAIN					0			0				295			0				11						
HEAT GAIN PEOPLE	240		2		480	0		0		1		240	1		240		0		0						
HEAT GAIN APPLIANCES/LIGHTS					501			0				501			501				0						
TOTAL HT LOSS BTU/H				2302			816				3146			2288				727							
TOTAL HT GAIN x 1.3 BTU/H					3157			1066				4224			5075				161						

ROOM USE				LV/DN			K/B/F				LAUN			PWD			FOY						BAS		
EXP. WALL				35			38				7			4			10						92		
CLG. HT.				10			10				9			11			11						9		
	FACTORS																								
GRS.WALL AREA	LOSS	GAIN		350			380				63			44			110						552		
GLAZING					LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN					LOSS	GAIN
NORTH	20.8	15.5		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0				0	0	0
EAST	20.8	41.0		34	706	1396	0	0	0		0	0	0	0	0	0	0	0	0				0	0	0
SOUTH	20.8	24.4		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0				0	0	0
WEST	20.8	41.0		0	0	0	73	1517	2997		0	0	0	0	0	0	0	0	0				6	125	246
SKYLT.	34.1	100.3		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0				0	0	0
DOORS	19.6	2.9		20	392	58	0	0	0		0	0	0	0	0	0	20	392	58				20	392	58
NET EXPOSED WALL	3.5	0.5		296	1026	152	307	1064	158		63	218	32	44	153	23	90	312	46				0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0				276	970	144
EXPOSED CLG	1.3	0.6		0	0	0	42	53	23		75	94	42	0	0	0	0	0	0				0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0				0	0	0
EXPOSED FLOOR	2.5	0.4		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0				0	0	0
BASEMENT/CRAWL HEAT LOSS					0			0				0			0			0						3062	
SLAB ON GRADE HEAT LOSS					0			0				0			0			0							
SUBTOTAL HT LOSS					2124			2634				312			153			704						4548	
SUB TOTAL HT GAIN						1606			3178				74			23			104						448
LEVEL FACTOR / MULTIPLIER				0.30	0.52		0.30	0.52			0.20	0.26		0.30	0.52		0.30	0.52					0.50	1.06	
AIR CHANGE HEAT LOSS					1095			1357				82			79			363						4823	
AIR CHANGE HEAT GAIN						80			158				4			1			5						22
DUCT LOSS					0			0				0			0			0						0	
DUCT GAIN						0			0				0			0			0						0
HEAT GAIN PEOPLE	240			0		0	0		0		0		0	0		0	0		0				0		0
HEAT GAIN APPLIANCES/LIGHTS						501			501				501			0			0						501
TOTAL HT LOSS BTU/H					3219			3991				394			231			1066						9371	
TOTAL HT GAIN x 1.3 BTU/H						2843			4988				753			31			142						1263

TOTAL HEAT GAIN BTU/H: 23892 | TONS: 1.99 | LOSS DUE TO VENTILATION LOAD BTU/H: 1274 | STRUCTURAL HEAT LOSS: 27552 | TOTAL COMBINED HEAT LOSS BTU/H: 28826

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

HVAC DESIGNS LTD.

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SITE NAME: SUMMER RIDGE ESTATES INC.
BUILDER: ROYAL PINE HOMES | TYPE: 2501 | DATE: Apr-22 | GFA: 1905 | LO# 95317

				furnace pressure	0.6		
HEATING CFM	710	COOLING CFM	710	furnace filter	0.05	**#CARRIER**	AFUE = 97 %
TOTAL HEAT LOSS	27,552	TOTAL HEAT GAIN	23,703	a/c coil pressure	0.2	**59SP5A-40-10 40**	INPUT (BTU/H) = 40,000
AIR FLOW RATE CFM	25.77	AIR FLOW RATE CFM	29.95	available pressure for s/a & r/a	0.35	FAN SPEED	OUTPUT (BTU/H) = **39,000**
						LOW 0	
						MEDLOW 0	DESIGN CFM = **710**
				plenum pressure s/a	0.18	r/a pressure 0.17 / MEDIUM 0	CFM @ .6 " E.S.P.
				max s/a dif press. loss	0.02	r/a grille press. Loss 0.02 / MEDIUM HIGH 710	
				min adjusted pressure s/a	0.16	adjusted pressure r/a 0.15 / HIGH 875	TEMPERATURE RISE 51 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	5	3
R/A	0	0	4	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5"Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	10	13	14	15	17	18	19	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	BATH	MBR	LV/DN	K/B/F	K/B/F	LAUN	PWD	FOY	BAS	BAS	BAS
RM LOSS MBH.	1.15	0.82	1.57	1.57	1.14	1.14	0.73	1.15	3.22	2.00	2.00	0.39	0.23	1.07	3.12	3.12	3.12
CFM PER RUN HEAT	30	21	41	41	29	29	19	30	83	51	51	10	6	27	80	80	80
RM GAIN MBH.	1.58	1.07	2.11	2.11	2.54	2.54	0.16	1.58	2.84	2.49	2.49	0.75	0.03	0.14	0.42	0.42	0.42
CFM PER RUN COOLING	47	32	63	63	76	76	5	47	85	75	75	23	1	4	13	13	13
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	31	35	48	52	63	55	37	37	48	15	28	21	7	37	22	7	32
EQUIVALENT LENGTH	200	160	130	140	190	170	140	180	140	100	110	160	140	130	100	110	150
TOTAL EFFECTIVE LENGTH	231	195	178	192	253	225	177	217	188	115	138	181	147	167	122	117	182
ADJUSTED PRESSURE	0.07	0.09	0.1	0.09	0.07	0.08	0.1	0.08	0.09	0.15	0.12	0.1	0.12	0.1	0.14	0.15	0.09
ROUND DUCT SIZE	5	4	5	5	**6**	**6**	4	5	**6**	5	5	4	4	4	5	5	5
HEATING VELOCITY (ft/min)	220	241	301	301	148	148	218	220	423	374	374	115	69	310	587	587	587
COOLING VELOCITY (ft/min)	345	367	463	463	388	388	57	345	433	551	551	264	11	46	95	95	95
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	C	C	C	C	B	B	C	C	B	A	A	C	C	B	A	A	B

RUN #	
ROOM NAME	
RM LOSS MBH.	
CFM PER RUN HEAT	
RM GAIN MBH.	
CFM PER RUN COOLING	
ADJUSTED PRESSURE	
ACTUAL DUCT LGH.	
EQUIVALENT LENGTH	
TOTAL EFFECTIVE LENGTH	
ADJUSTED PRESSURE	
ROUND DUCT SIZE	
HEATING VELOCITY (ft/min)	
COOLING VELOCITY (ft/min)	
OUTLET GRILL SIZE	
TRUNK	

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK A	262	0.12	7.7	8	x	8	590	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	248	0.07	8.6	8	x	8	558	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	446	0.07	10.7	14	x	8	573	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	710	0.05	13.9	22	x	8	581
TRUNK Y	420	0.05	11.4	16	x	8	473
TRUNK Z	0	0.05	0	0	x	8	0
DROP	710	0.05	13.9	24	x	10	426

RETURN AIR #	1	2	3	4	5	6										**BR**
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	85	75	75	85	205	75	0	0	0	0	0	0	0	0	0	110
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	39	64	57	47	21	40	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	195	260	245	215	135	270	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	234	324	302	262	156	310	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.06	0.05	0.05	0.06	0.09	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	6	6	6	6	7.5	6	0	0	0	0	0	0	0	0	0	5.8
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	0	0	0	0	0	0	0	0	0	14

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE. [signature] INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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TYPE: 2501 LO # 95317
SITE NAME: SUMMER RIDGE ESTATES INC.

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES 9.32.3.1(1)

- a) [✓] Direct vent (sealed combustion) only
- b) [ ] Positive venting induced draft (except fireplaces)
- c) [ ] Natural draft, B-vent or induced draft gas fireplace
- d) [ ] Solid Fuel (including fireplaces)
- e) [ ] No Combustion Appliances

HEATING SYSTEM

[✓] Forced Air [ ] Non Forced Air

[ ] Electric Space Heat

HOUSE TYPE 9.32.1(2)

- [✓] I Type a) or b) appliance only, no solid fuel
- [ ] II Type I except with solid fuel (including fireplaces)
- [ ] III Any Type c) appliance
- [ ] IV Type I, or II with electric space heat
- [ ] Other: Type I, II or IV no forced air

SYSTEM DESIGN OPTIONS O.N.H.W.P.

- [ ] 1 Exhaust only/Forced Air System
- [ ] 2 HRV with Ducting/Forced Air System
- [✓] 3 HRV Simplified/connected to forced air system
- [ ] 4 HRV with Ducting/non forced air system
- [ ] Part 6 Design

TOTAL VENTILATION CAPACITY 9.32.3.3(1)

Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	2	@ 10.6 cfm	21.2	cfm
Kitchen & Bathrooms	4	@ 10.6 cfm	42.4	cfm
Other Rooms	5	@ 10.6 cfm	53.0	cfm
Table 9.32.3.A.		TOTAL	159.0	cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED 9.32.3.4.(1)

1	Bedroom	31.8	cfm
2	Bedroom	47.7	cfm
3	Bedroom	63.6	cfm
4	Bedroom	79.5	cfm
5	Bedroom	95.4	cfm
	TOTAL	**63.6**	**cfm**

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	159	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	95.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE V150H Location: BSMT

63.6 cfm [✓] HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM		ΔT °F		FACTOR		% LOSS
63.6 CFM	X	74 F	X	1.08	X	0.25

SUPPLEMENTAL FANS BY INSTALLING CONTRACTOR

Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	✓	3.5
BATH	BY INSTALLING CONTRACTOR	50	✓	3.5
PWD	BY INSTALLING CONTRACTOR	50	✓	3.5

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE V150H

150 cfm high 35 cfm low

75 % Sensible Efficiency @ 32 deg F (0 deg C) [✓] HVI Approved

LOCATION OF INSTALLATION

Lot: Concession

Township Plan:

Address

Roll # Building Permit #

BUILDER: ROYAL PINE HOMES

Name:

Address:

City:

Telephone #: Fax #:

INSTALLING CONTRACTOR

Name:

Address:

City:

Telephone #: Fax #:

DESIGNER CERTIFICATION

I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.

Name: HVAC Designs Ltd.

Signature: Michael O'Rourke.

HRAI # 001820

Date: April-22

I REVIEW AND TAKE RESPONIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669 Michael O'Rourke. MICHAEL O'ROURKE

HVAC DESIGNS LTD.

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Tel: 905.619.2300 Fax: 905.619.2375
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CSA F280-12 Residential Heat Loss and Heat Gain Calculations

Formula Sheet (For Air Leakage / Ventiliation Calculation)

LO#: 95317 Model: 2501 Builder: ROYAL PINE HOMES SUMMER RIDGE ESTATES INC. Date: 2022-04-25

Volume Calculation

House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	858	9	7722
First	858	10	8580
Second	1047	9	9423
Third	0	9	0
Fourth	0	9	0
		Total:	25,725.0 ft³
		Total:	728.5 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.282
SUMMER NATURAL AIR CHANGE RATE	0.088

Design Temperature Difference

	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-19	41	74
Summer DTDc	24	30	6	11

5.2.3.1 Heat Loss due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

0.282 x 202.35 x 41 °C x 1.2 = 2827 W

= **9645 Btu/h**

6.2.6 Sensible Gain due to Air Leakage

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

= 0.088 x 202.35 x 6 °C x 1.2 = 131 W

= **448 Btu/h**

5.2.3.2 Heat Loss due to Mechanical Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

64 CFM x 74 °F x 1.08 x 0.25 = **1274 Btu/h**

6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

64 CFM x 11 °F x 1.08 x 0.25 = **189 Btu/h**

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$$

Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL_{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	9,645	4,548	1.060
2	0.3		5,614	0.515
3	0.2		7,392	0.261
4	0		0	0.000
5	0		0	0.000

*HLairbv = Air leakage heat loss + ventilation heat loss
*For a balanced or supply only ventilation system HLairve = 0

Michael O'Rourke
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 2501 **BUILDER:** ROYAL PINE HOMES
SFQT: 1905 **LO#** 95317 **SITE:** SUMMER RIDGE ESTATES INC.

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.50

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.00	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft^3):	25725.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft^2):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 47.0 ft	WIDTH: 23.0 ft	EXPOSED PERIMETER:	92.0 ft

2012 OBC - COMPLIANCE PACKAGE **Component**	**Compliance Package** **SB-12 PERFORMANCE**	
	Nominal	**Min. Eff.**
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22+1.5	21.40
Basement Walls Minimum RSI (R)-Value	20	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	1.6	-
Skylights Maximum U-Value	2.6	-
Space Heating Equipment Minimum AFUE	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.9	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Michael O'Rourke

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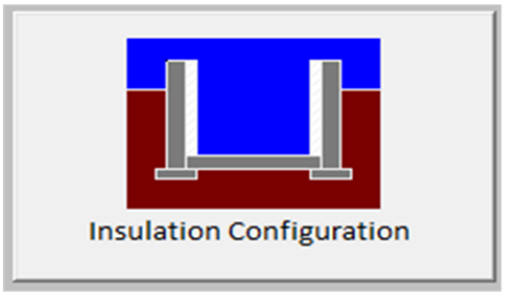
Ajax ON, L1S 2E2
905-619-2300

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Ontario
Region:	Brampton
Site Description	
Soil Conductivity:	Normal conductivity: dry sand, loam, clay
Water Table:	Normal (7-10 m, 23-33 ft)

Foundation Dimensions		
Floor Length (m):	**14.3**	 Insulation Configuration
Floor Width (m):	**7.0**	
Exposed Perimeter (m):	**28.0**	
Wall Height (m):	**2.7**	
Depth Below Grade (m):	**1.83**	
Window Area (m^2):	**0.6**	
Door Area (m^2):	**1.9**	
Radiant Slab		
Heated Fraction of the Slab:	**0**	
Fluid Temperature (°C):	**33**	
Design Months		
Heating Month	**1**	
Foundation Loads		
Heating Load (Watts):	**897**	

TYPE: 2501
LO# 95317

Michael O'Rourke BCIN #19669

HVAC Designs Ltd.
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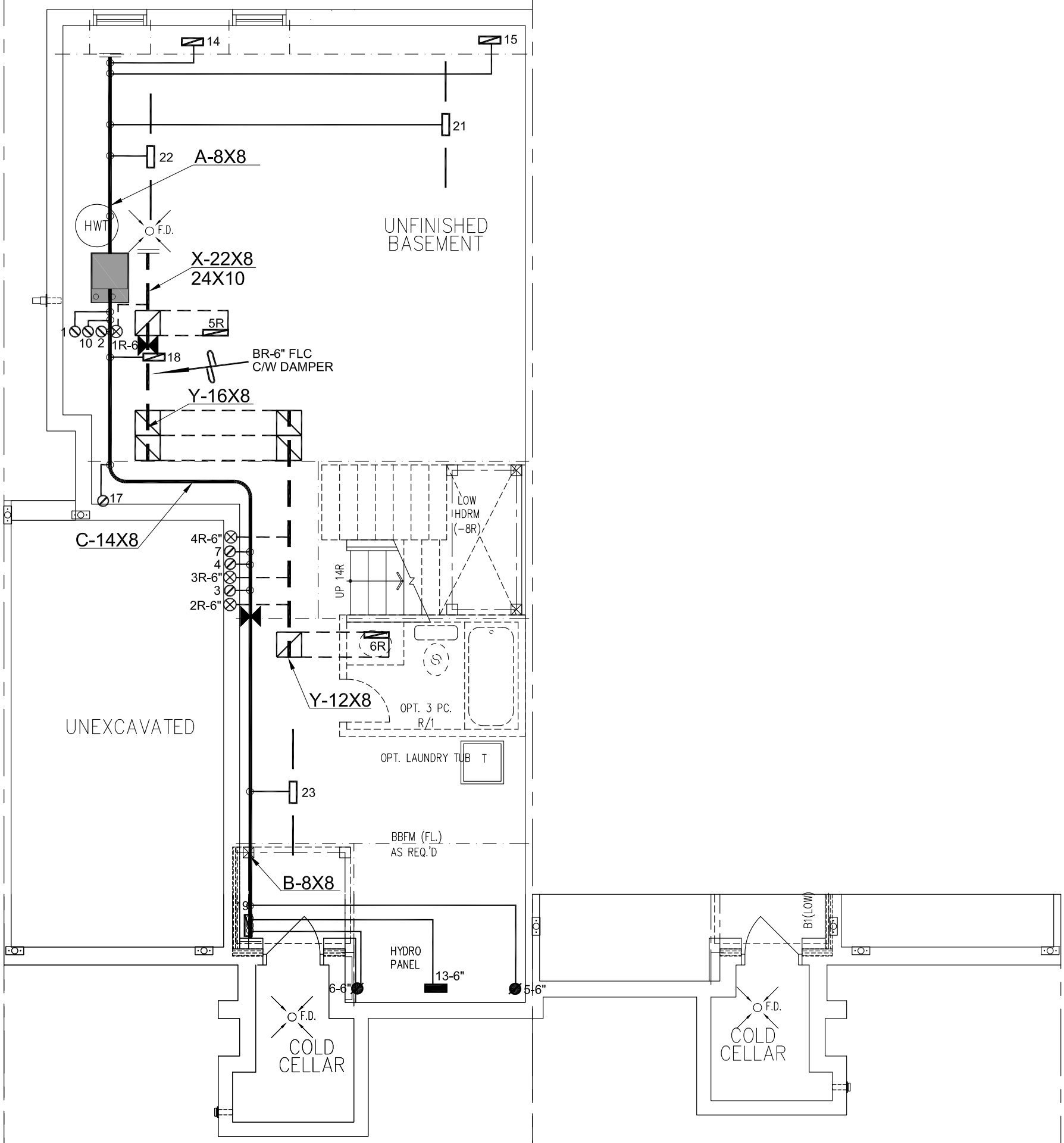
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Ontario
Region:	Brampton
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10
Local Shielding	
Building Site:	Suburban, forest
Walls:	Heavy
Flue:	Heavy
Highest Ceiling Height (m):	6.71
Building Configuration	
Type:	Semi
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	728.5
Air Leakage/Ventilation	
Air Tightness Type:	Energy Star Attached (3.0 ACH)
Custom BDT Data:	ELA @ 10 Pa. 816.0 cm^2
	3.00 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply 30.0 / Total Exhaust 30.0
Flue Size	
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Natural Infiltration Rates	
Heating Air Leakage Rate (ACH/H):	**0.282**
Cooling Air Leakage Rate (ACH/H):	**0.088**

TYPE: 2501
LO# 95317

Michael O'Rourke BCIN# 19669



BASEMENT PLAN ELEV 'A1' (REV)

PARTIAL BASEMENT PLAN ELEV 'A2'

I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

No.	Description	Date
3.		
2.		
1.	REVISED TO PERFORMANCE PATH	APR/2022

REVISIONS

Client

ROYAL PINE HOMES

Project Name

SUMMER RIDGE ESTATES INC.
BRAMPTON, ONTARIO

2501 1905 sqft

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

HEAT LOSS 28826 BTU/H	
UNIT DATA	
MAKE	CARRIER
MODEL	59SP5A-40-10
INPUT	40 MBTU/H
OUTPUT	39 MBTU/H
COOLING	2.0 TONS
FAN SPEED	710 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	4	3
1ST FLOOR	5	2	2
BASEMENT	3	1	0

ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

Sheet Title

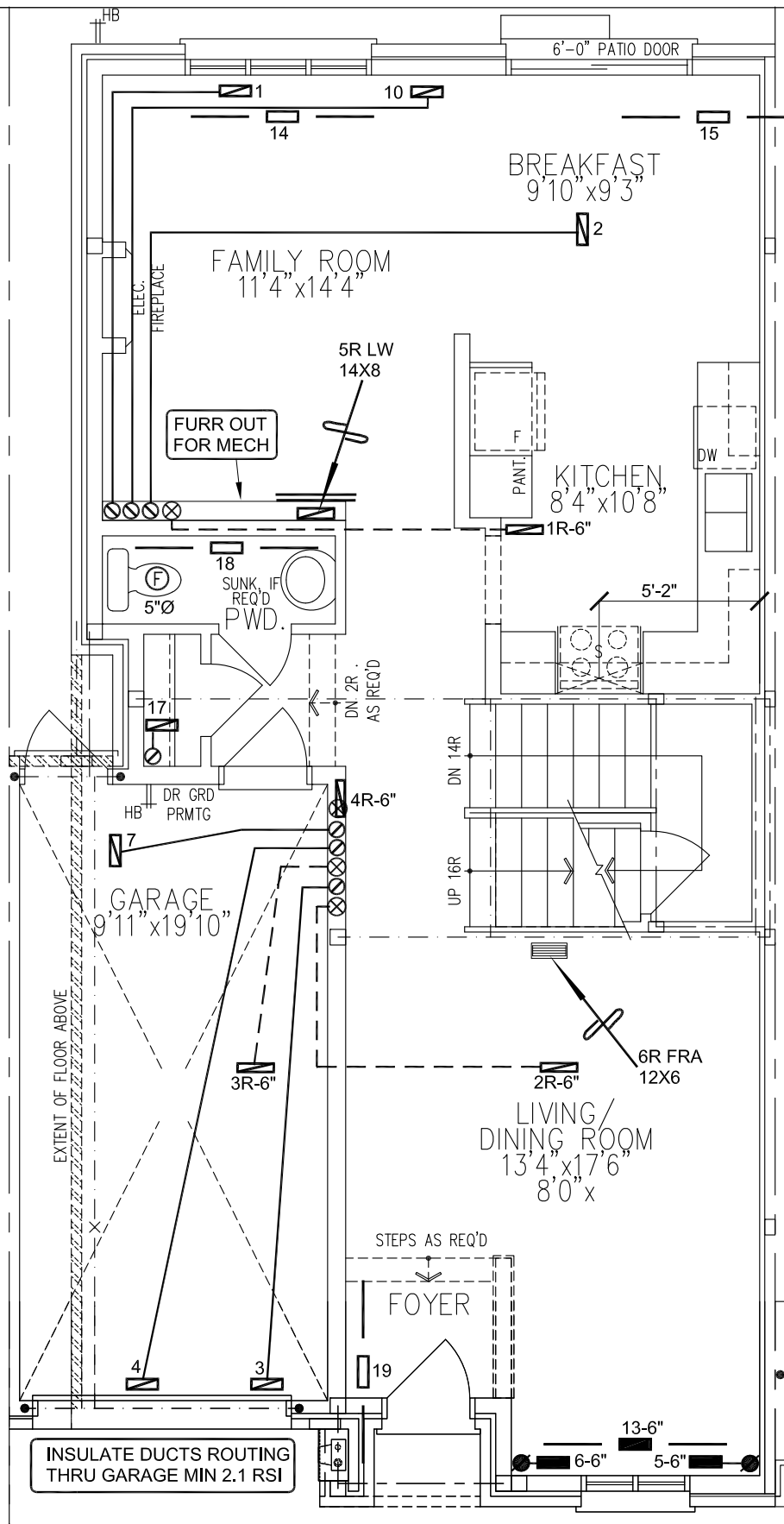
BASEMENT HEATING LAYOUT

Date MAR/2022

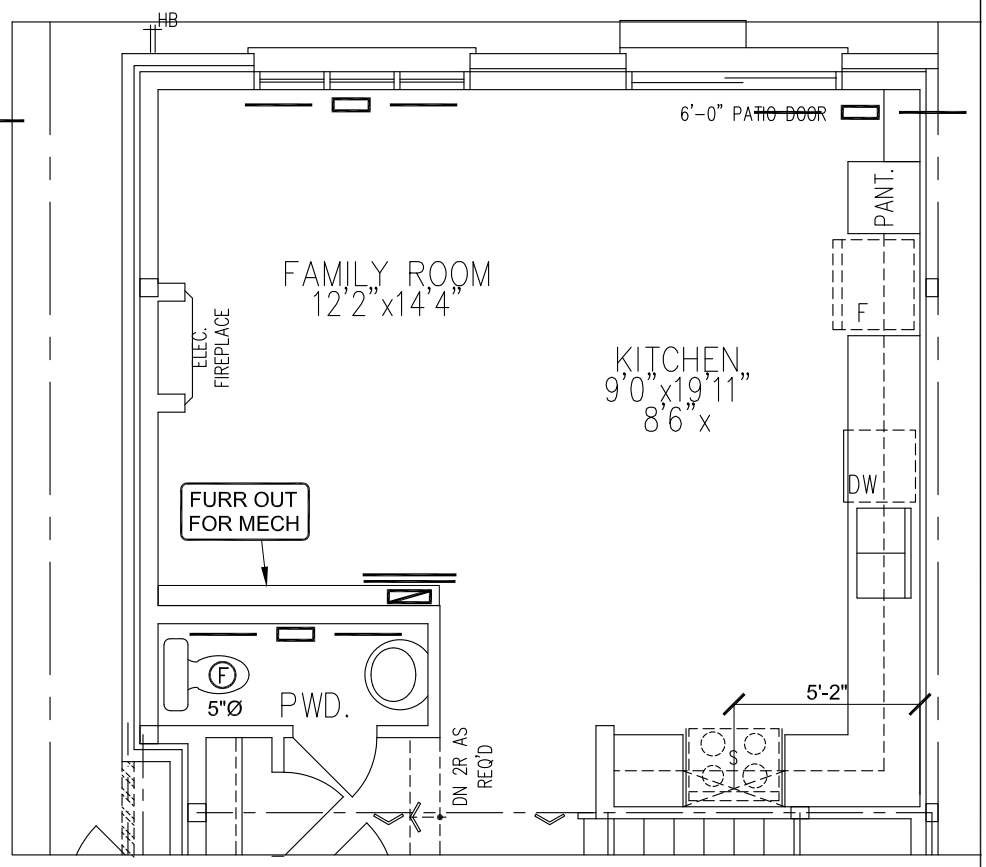
Scale 3/16" = 1'-0"

BCIN# 19669

LO# 95317

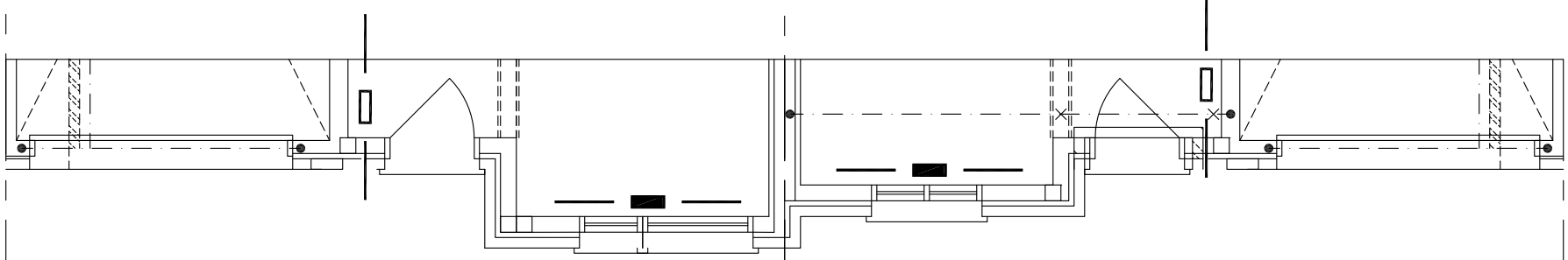


GROUND FLOOR PLAN ELEV 'A1' (REV)



PARTIAL GROUND FLOOR PLAN, ELEV 'A1' (REV) (W/ OPT. KITCHEN LAYOUT)
(ELEV. 'B1' REV. & 'B2' SIMILAR)

PART. GROUND FLOOR PLAN ELEV 'A2'



PART. GRND FLR PLAN ELEV 'B1' (REV)

PART. GROUND FLOOR PLAN ELEV 'B2'

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CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND

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▱	SUPPLY AIR BOOT ABOVE	⊘	6" SUPPLY AIR STACK 2nd FLOOR	▤	FRA- FLOOR RETURN AIR GRILLE	⧗	REDUCER

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Sheet Title

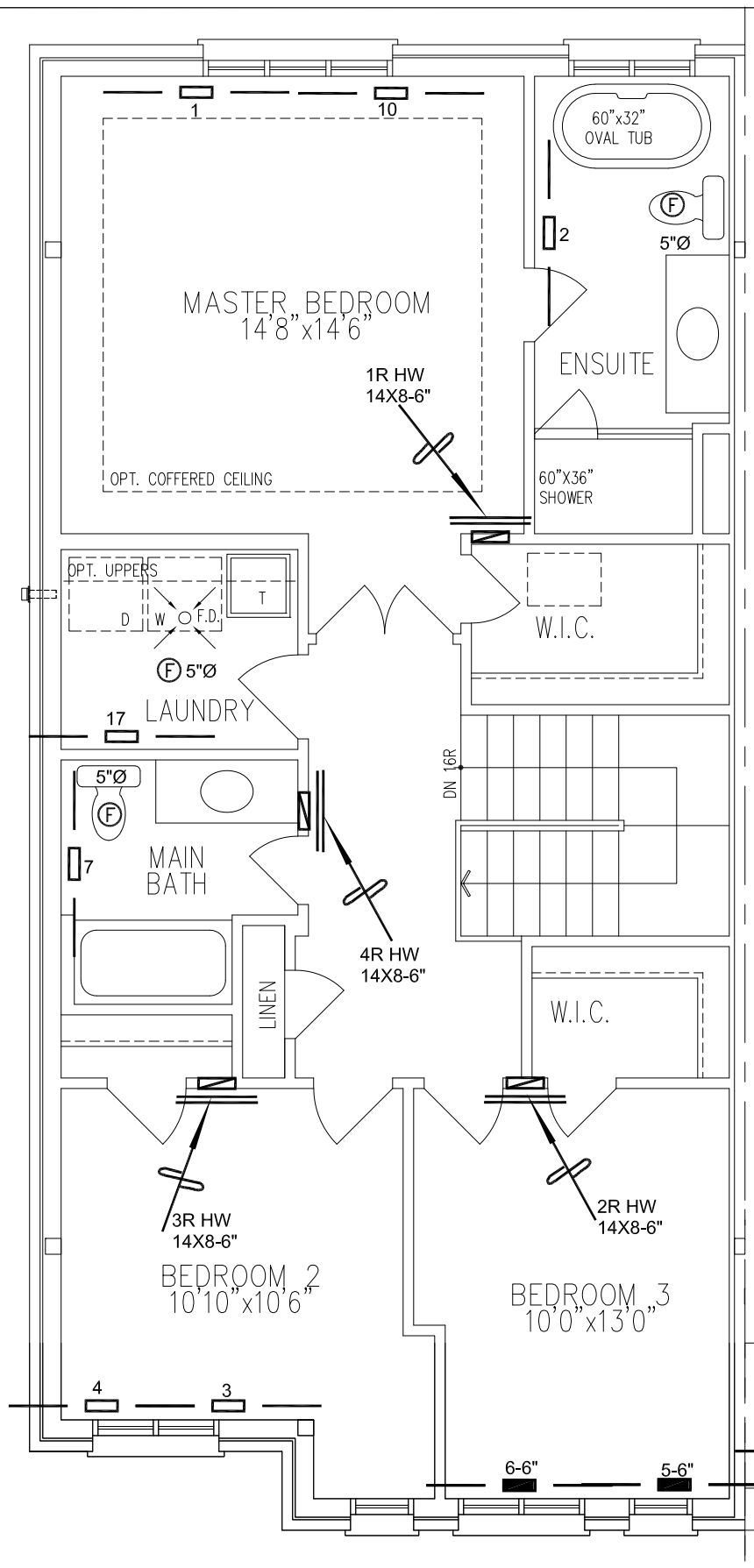
FIRST FLOOR HEATING LAYOUT

Date MAR/2022

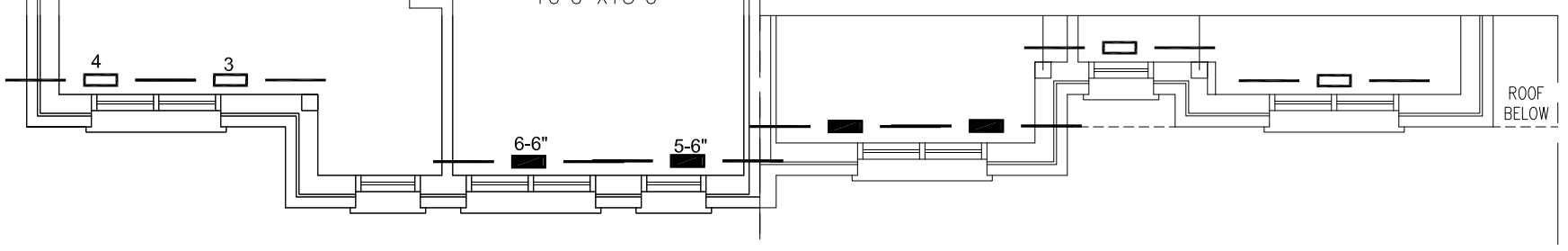
Scale 3/16" = 1'-0"

BCIN# 19669

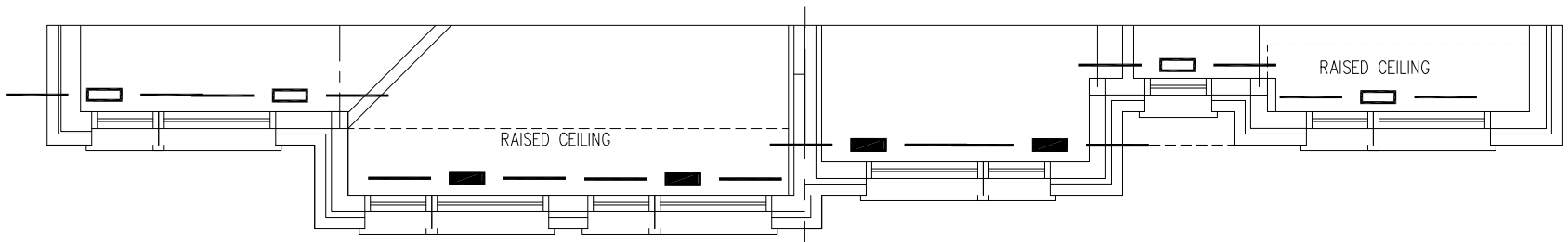
LO# 95317



SECOND FLR PLAN ELEV 'A1' (REV)



PART. SECOND FLR PLAN ELEV 'A2'



PARTIAL SECOND FLR PLAN ELEV 'B1' (REV)

PART. SCND. FLR PLAN ELEV 'B2'

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SECOND FLOOR HEATING LAYOUT

Date MAR/2022

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 95317