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
INNINFILL		

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:** RL-2 BLKS 4 & 5 **Project:** ALCONA

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.

June 29, 2022
Date

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: ALCONA BLKS 4 & 5 DATE: Jun-22 WINTER NATURAL AIR CHANGE RATE 0.495 HEAT LOSS ΔT °F. 83 CSA-F280-12

BUILDER: BAYVIEW WELLINGTON HOMES TYPE: RL-2 GFA: 1925 LO# 97830 SUMMER NATURAL AIR CHANGE RATE 0.109 HEAT GAIN ΔT °F. 9 SB-12 PACKAGE A1

ROOM USE			MBR			ENS				BED-2			BED-3				WIC2				ENS3					
EXP. WALL			22			25				16			10				6				11					
CLG. HT.			9			9				9			9				9				9					
	FACTORS																									
GRS.WALL AREA	LOSS	GAIN	198			225				144			90				54				99					
GLAZING				LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN			LOSS	GAIN			LOSS	GAIN			
NORTH	23.3	15.0	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0		0	0	0			
EAST	23.3	40.5	33	769	1338	0	0	0		22	513	892	0	0	0		11	256	446		0	0	0			
SOUTH	23.3	23.9	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0		0	0	0			
WEST	23.3	40.5	0	0	0	27	629	1095		0	0	0	24	559	973		0	0	0		24	559	973			
SKYLT.	40.8	99.8	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0		0	0	0			
DOORS	22.0	2.4	20	439	49	0	0	0		20	439	49	0	0	0		0	0	0		0	0	0			
NET EXPOSED WALL	4.9	0.5	145	708	78	198	967	107		102	498	55	66	322	36		43	210	23		75	366	41			
NET EXPOSED BSMT WALL ABOVE GR	3.9	0.4	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0		0	0	0			
EXPOSED CLG	1.4	0.5	375	527	198	156	219	82		0	0	0	0	0	0		0	0	0		0	0	0			
NO ATTIC EXPOSED CLG	3.0	1.1	0	0	0	0	0	0		0	0	0	130	391	147		0	0	0		0	0	0			
EXPOSED FLOOR	2.8	0.3	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				0				
SLAB ON GRADE HEAT LOSS				0			0				0			0				0				0				
SUBTOTAL HT LOSS				2443			1815				1450			1273				466				926				
SUB TOTAL HT GAIN					1662			1284				996			1155				469				1014			
LEVEL FACTOR / MULTIPLIER			0.10	0.40		0.10	0.40			0.20	0.83		0.20	0.83			0.20	0.83			0.20	0.83				
AIR CHANGE HEAT LOSS				985			732				1210			1062				389				773				
AIR CHANGE HEAT GAIN					79			61				47			55				22				48			
DUCT LOSS				0			0				0			0				0				0				
DUCT GAIN					0			0				0			0				0				0			
HEAT GAIN PEOPLE	240		2		480	0		0		1		240	1		240		0		0		0		0			
HEAT GAIN APPLIANCES/LIGHTS					540			0				540			540				540				0			
TOTAL HT LOSS BTU/H				3428			2548				2660			2335				856				1698				
TOTAL HT GAIN x 1.3 BTU/H					3589			1748				2369			2587				1340				1380			

ROOM USE			GRT				KT/BR				FOY				WOB			BAS		
EXP. WALL			13				22				9				22			44		
CLG. HT.			10				10				10				9			9		
	FACTORS																			
GRS.WALL AREA	LOSS	GAIN	130				220				90				198			264		
GLAZING				LOSS	GAIN			LOSS	GAIN			LOSS	GAIN			LOSS	GAIN		LOSS	GAIN
NORTH	23.3	15.0	0	0	0		0	0	0		0	0	0		0	0	0	0	0	0
EAST	23.3	40.5	39	909	1581		0	0	0		20	466	811		0	0	0	4	93	162
SOUTH	23.3	23.9	0	0	0		0	0	0		0	0	0		0	0	0	0	0	0
WEST	23.3	40.5	0	0	0		43	1002	1743		0	0	0		20	466	811	0	0	0
SKYLT.	40.8	99.8	0	0	0		0	0	0		0	0	0		0	0	0	0	0	0
DOORS	22.0	2.4	0	0	0		20	439	49		10	220	24		20	439	49	20	439	49
NET EXPOSED WALL	4.9	0.5	91	445	49		157	767	85		60	293	32		158	772	85	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.9	0.4	0	0	0		0	0	0		0	0	0		0	0	0	132	520	58
EXPOSED CLG	1.4	0.5	0	0	0		0	0	0		0	0	0		0	0	0	0	0	0
NO ATTIC EXPOSED CLG	3.0	1.1	0	0	0		0	0	0		0	0	0		0	0	0	0	0	0
EXPOSED FLOOR	2.8	0.3	0	0	0		0	0	0		0	0	0		0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0				0				0							1085	
SLAB ON GRADE HEAT LOSS				0				0				0				246				
SUBTOTAL HT LOSS				1353				2208				979				1923			2138	
SUB TOTAL HT GAIN					1630				1877				868				945			268
LEVEL FACTOR / MULTIPLIER			0.30	1.13			0.30	1.13			0.30	1.13						0.40	1.69	
AIR CHANGE HEAT LOSS				1536				2506				1111							6869	
AIR CHANGE HEAT GAIN					77				89				41							57
DUCT LOSS				0				0				0							0	
DUCT GAIN					0				0				0							0
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS					540				540				0				0			540
TOTAL HT LOSS BTU/H				2889				4713				2089				1923			9007	
TOTAL HT GAIN x 1.3 BTU/H					2921				3267				1181				1228			1125

TOTAL HEAT GAIN BTU/H: 22883 TONS: 1.91 LOSS DUE TO VENTILATION LOAD BTU/H: 1429 STRUCTURAL HEAT LOSS: 34146 TOTAL COMBINED HEAT LOSS BTU/H: 35575

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.

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

HVAC DESIGNS LTD.

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SITE NAME: ALCONA — BLKS 4 & 5
BUILDER: BAYVIEW WELLINGTON HOMES — TYPE: RL-2 — DATE: Jun-22 — GFA: 1925 — LO# 97830

HEATING CFM	980	COOLING CFM	980	furnace pressure	0.6	
TOTAL HEAT LOSS	34,146	TOTAL HEAT GAIN	22,725	furnace filter	0.05	
AIR FLOW RATE CFM	28.7	AIR FLOW RATE CFM	43.12	a/c coil pressure	0.2	
				available pressure for s/a & r/a	0.35	
				plenum pressure s/a	0.18	r/a pressure 0.17
				max s/a dif press. loss	0.01	r/a grille press. Loss 0.02
				min adjusted pressure s/a	0.17	adjusted pressure r/a 0.15

$LENNOX — AFUE = 96 %
ML196UH045XE36B 45 — INPUT (BTU/H) = 44,000
FAN SPEED — OUTPUT (BTU/H) = 42,800
LOW 620
MEDLOW 685 — DESIGN CFM = 980
MEDIUM 980 — CFM @ .6 " E.S.P.
MEDIUM HIGH 1110
HIGH 0 — TEMPERATURE RISE 40 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	3	6	5	4
R/A	0	1	2	1	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	8	10	11	12	13	14	15	19	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	WIC2	MBR	ENS3	GRT	GRT	KT/BR	KT/BR	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.71	2.55	1.33	1.33	1.17	1.17	0.86	1.71	1.70	1.44	1.44	2.36	2.36	2.09	2.73	2.73	2.73	2.73
CFM PER RUN HEAT	49	73	38	38	34	34	25	49	49	41	41	68	68	60	78	78	78	78
RM GAIN MBH.	1.79	1.75	1.18	1.18	1.29	1.29	1.34	1.79	1.38	1.46	1.46	1.63	1.63	1.18	0.59	0.59	0.59	0.59
CFM PER RUN COOLING	77	75	51	51	56	56	58	77	60	63	63	70	70	51	25	25	25	25
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	57	60	51	55	58	52	47	67	42	24	30	24	17	27	21	19	13	24
EQUIVALENT LENGTH	210	190	140	130	130	140	150	220	160	120	120	120	100	120	110	130	130	120
TOTAL EFFECTIVE LENGTH	267	250	191	185	188	192	197	287	202	144	150	144	117	147	131	149	143	144
ADJUSTED PRESSURE	0.06	0.07	0.09	0.09	0.09	0.09	0.09	0.06	0.09	0.12	0.11	0.12	0.15	0.12	0.13	0.12	0.12	0.12
ROUND DUCT SIZE	6	6	5	5	5	5	5	6	5	5	5	5	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	250	372	279	279	250	250	184	250	360	301	301	499	499	441	573	573	573	573
COOLING VELOCITY (ft/min)	393	382	374	374	411	411	426	393	441	463	463	514	514	374	184	184	184	184
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	A	A	A	B	B	B	B	A	E	E	D	D	E	F	F	E	E

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	198	0.07	7.9	8	x	8	446	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	191	0.06	8.1	8	x	8	430	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	389	0.06	10.6	14	x	8	500	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	136	0.12	6	8	x	8	306	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	298	0.11	8.2	8	x	8	671	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	590	0.11	10.6	14	x	8	759	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	980	0.05	15.7	28	x	8	630
TRUNK Y	465	0.05	11.8	16	x	8	523
TRUNK Z	0	0.05	0	0	x	8	0
DROP	980	0.05	15.7	24	x	10	588

RETURN AIR #	1	2	3	4												BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	230	135	105	360	0	0	0	0	0	0	0	0	0	0	0	150
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.	66	51	75	24	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	220	175	205	160	0	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	286	226	280	184	1	1	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.05	0.07	0.05	0.08	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	9.1	6.8	6.8	9.6	0	0	0	0	0	0	0	0	0	0	0	6.5
INLET GRILL SIZE	8	8	8	8	0	0	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	30	14	14	30	0	0	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.

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

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TYPE: RL-2 LO # 97830
SITE NAME: ALCONA BLKS 4 & 5

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	5	@ 10.6 cfm	53	cfm
Other Rooms	4	@ 10.6 cfm	42.4	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	83 F	X	1.08	X	0.25

SUPPLEMENTAL FANS BY INSTALLING CONTRACTOR

Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	✓	3.5
ENS3	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: BAYVIEW WELLINGTON 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: June-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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CSA F280-12 Residential Heat Loss and Heat Gain Calculations

Formula Sheet (For Air Leakage / Ventiliation Calculation)

LO#: 97830 Model: RL-2 Builder: BAYVIEW WELLINGTON HOMES Date: 2022-06-29

Volume Calculation

House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	661	9	5949
First	661	10	6610
Second	661	9	5949
Third	535	9	4815
Fourth	0	9	0
		Total:	23,323.0 ft³
		Total:	660.4 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.495
SUMMER NATURAL AIR CHANGE RATE	0.109

Design Temperature Difference

	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-24	46	83
Summer DTDc	24	29	5	9

5.2.3.1 Heat Loss due to Air Leakage

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

0.495 x 183.45 x 46 °C x 1.2 = 5033 W

= **17172 Btu/h**

6.2.6 Sensible Gain due to Air Leakage

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

= 0.109 x 183.45 x 5 °C x 1.2 = 122 W

= **418 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 83 °F x 1.08 x 0.25 = **1429 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 9 °F x 1.08 x 0.25 = **158 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	0.4	17,172	4,061	1.692
2	0.3		4,540	1.135
3	0.2		4,114	0.835
4	0.1		4,259	0.403
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: RL-2 BLKS 4 & 5 **BUILDER:** BAYVIEW WELLINGTON HOMES
SFQT: 1925 **LO#** 97830 **SITE:** ALCONA

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-11	OUTDOOR DESIGN TEMP.	84
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.50

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	4
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft^3):	23323.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft^2):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 31.0 ft	WIDTH: 22.0 ft	EXPOSED PERIMETER:	44.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	22.0 ft

2012 OBC - COMPLIANCE PACKAGE **Component**	**Compliance Package A1**	
	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	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	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	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Michael O'Rourke

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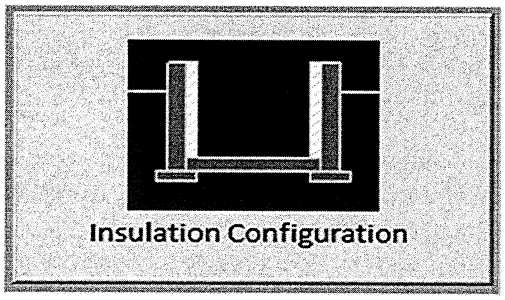
Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

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

Foundation Dimensions		
Floor Length (m):	4.6	
Floor Width (m):	6.7	
Exposed Perimeter (m):	13.4	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.48	
Window Area (m^2):	0.4	
Door Area (m^2):	1.9	


Insulation Configuration

Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	**318**	

TYPE: RL-2
LO# 97830

BLKS 4 & 5

Michael O'Rourke BCIN #19669

HVAC Designs Ltd.
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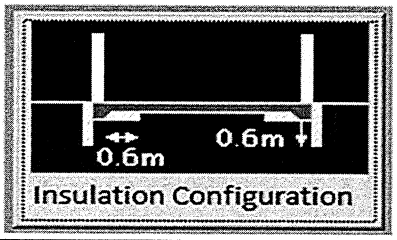
905-619-2300

Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Barrie	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	1.5	
Width (m):	6.7	
Exposed Perimeter (m):	6.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	**72**	

TYPE: RL-2
LO# 97830

BLKS 4 & 5

Michael O'Rourke BCIN# 19669

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Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

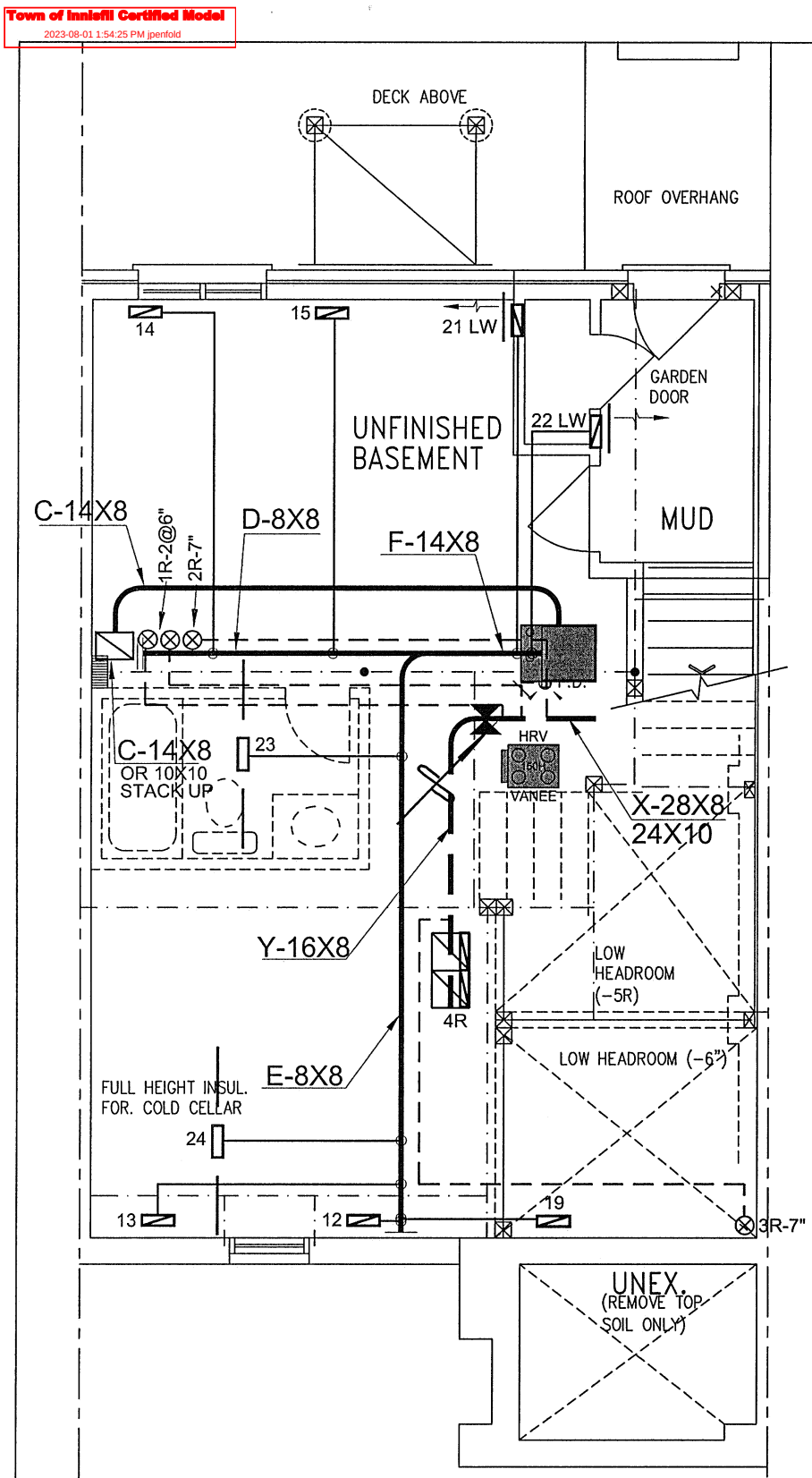
Weather Station Description	
Province:	Ontario
Region:	Barrie
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10
Local Shielding	
Building Site:	Suburban, forest
Walls:	Heavy
Flue:	Heavy
Highest Ceiling Height (m):	11.28
Building Configuration	
Type:	Semi
Number of Stories:	Three
Foundation:	Full
House Volume (m^3):	660.4
Air Leakage/Ventilation	
Air Tightness Type:	Present (1961-) (3.57 ACH)
Custom BDT Data:	ELA @ 10 Pa. 880.4 cm^2
	3.57 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

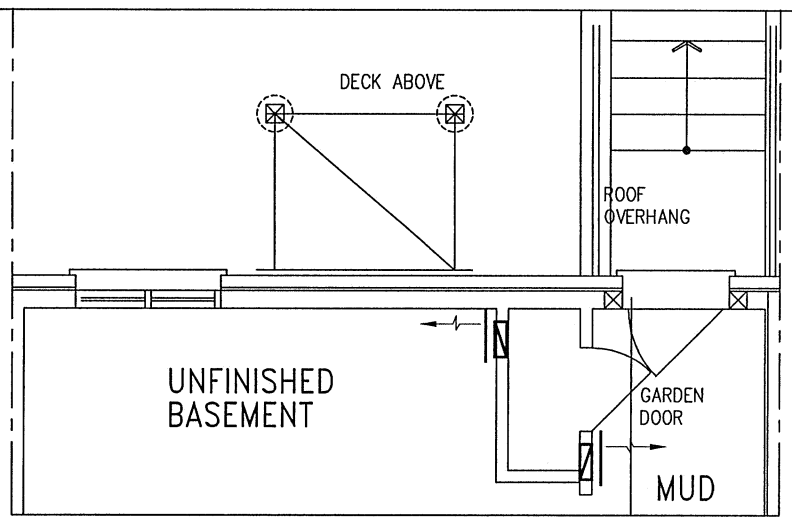
Natural Infiltration Rates	
Heating Air Leakage Rate (ACH/H):	**0.495**
Cooling Air Leakage Rate (ACH/H):	**0.109**

TYPE: RL-2 BLKS 4 & 5
LO# 97830

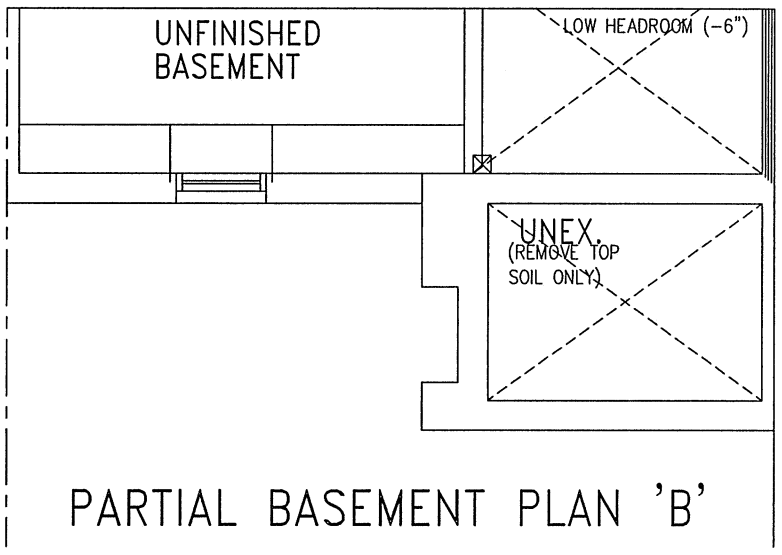
Michael O'Rourke BCIN# 19669



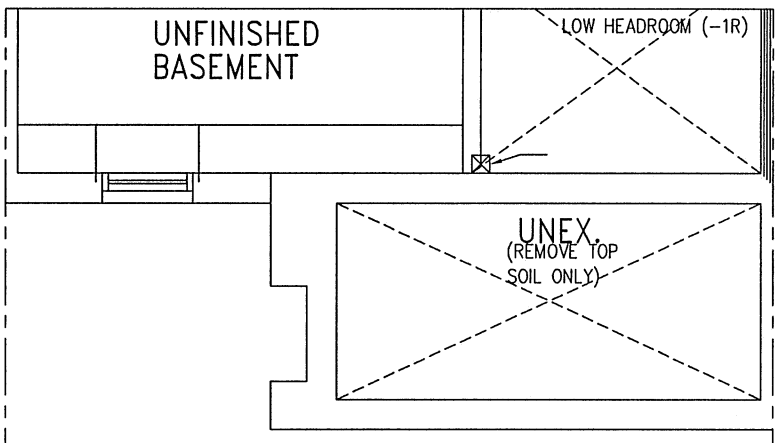
BASEMENT PLAN 'A' W.O.B.
(BLOCKS ON NORTH SIDE)



PARTIAL BASEMENT PLAN 'B' & 'B2'
FOR WALK-UP CONDITION



PARTIAL BASEMENT PLAN 'B'



PARTIAL BASEMENT PLAN 'B2'

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

PACKAGE A1

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.		

REVISIONS

Client
BAYVIEW WELLINGTON HOMES

Project Name
ALCONA
INNISFIL, ONTARIO

BLKS 4 & 5
RL-2 1925 sqft

HVAC DESIGNS LTD.
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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.

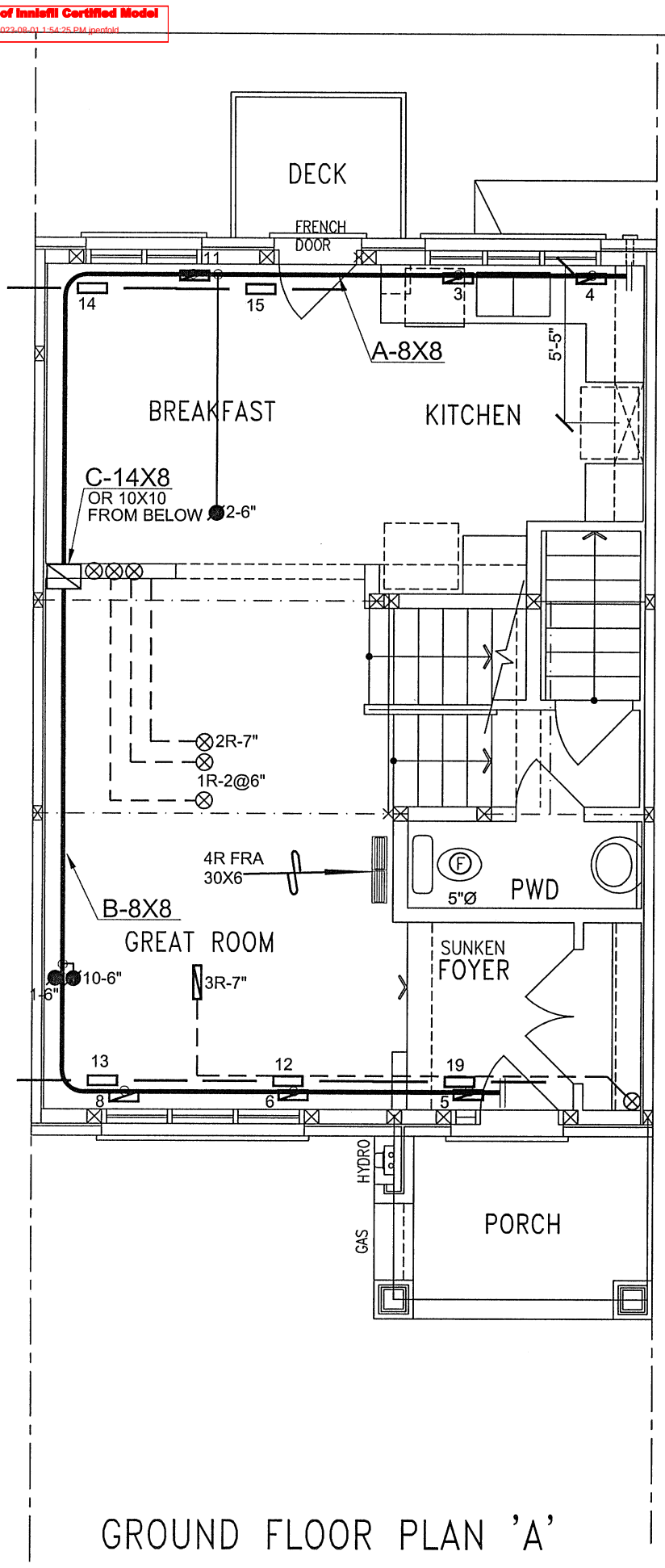
HEAT LOSS 35575 BTU/H	
UNIT DATA	
MAKE	LENNOX
MODEL	ML196UH045XE36B
INPUT	44 MBTU/H
OUTPUT	42.8 MBTU/H
COOLING	2.0 TONS
FAN SPEED	980 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR	3	1	1
2ND FLOOR	6	2	3
1ST FLOOR	5	1	2
BASEMENT	4	1	0

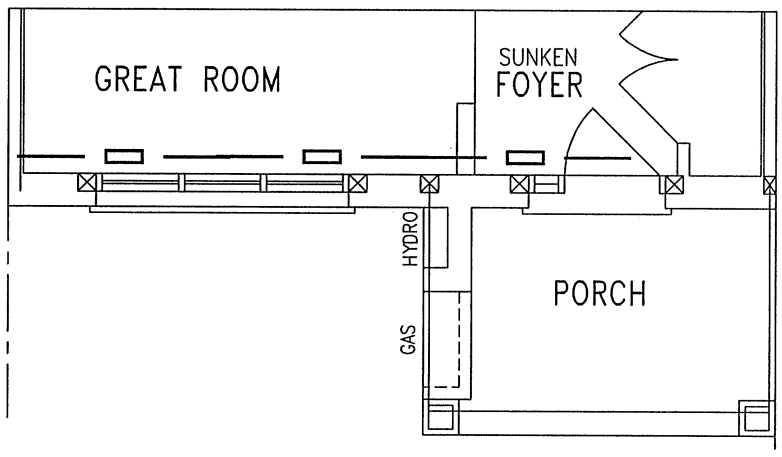
ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

Sheet Title
BASEMENT HEATING LAYOUT

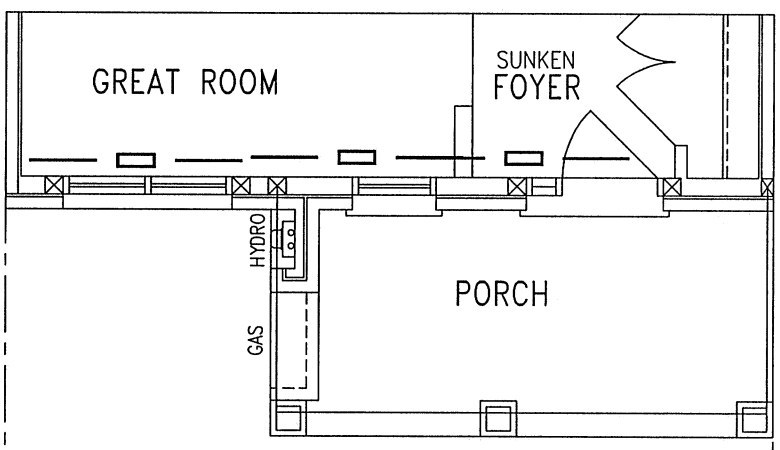
Date JUNE/2022
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 97830



GROUND FLOOR PLAN 'A'
(BLOCKS ON NORTH SIDE)



PARTIAL GROUND FLOOR PLAN 'B'



PARTIAL GROUND FLOOR PLAN 'B2'

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CSA-F280-12
PACKAGE A1

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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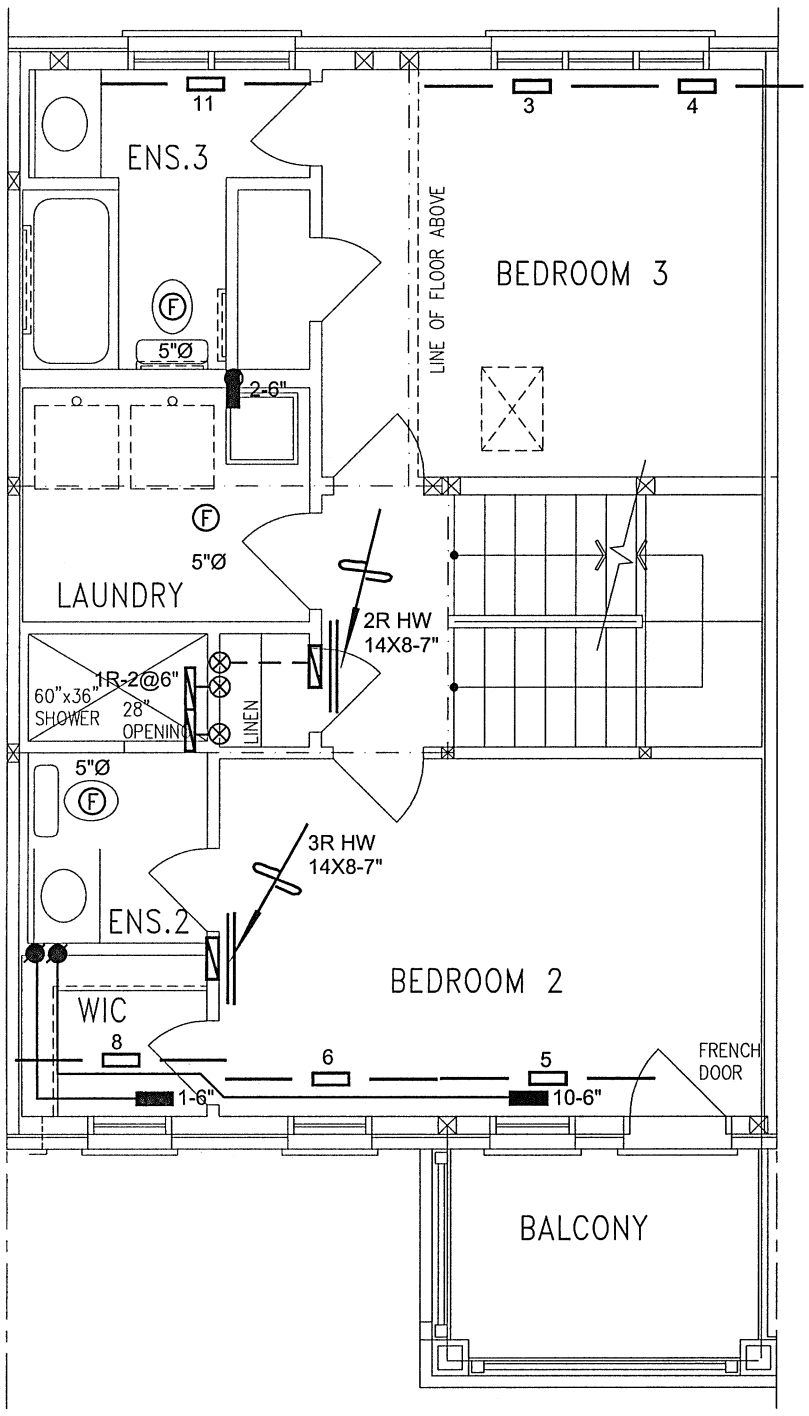
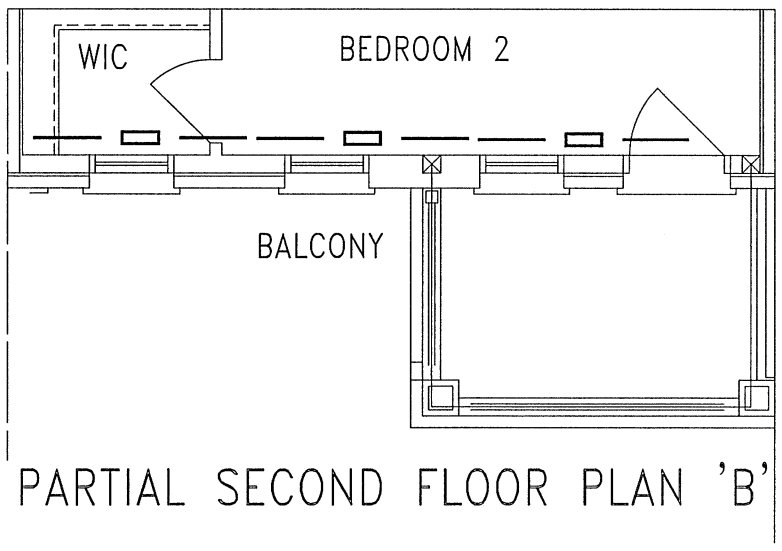
Sheet Title
FIRST FLOOR HEATING LAYOUT

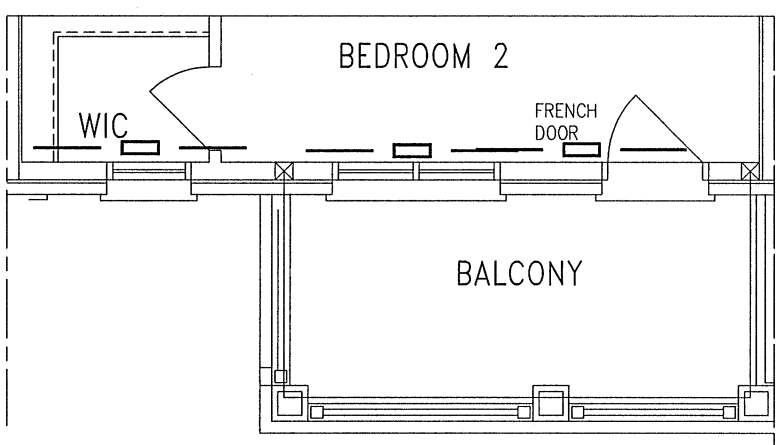
Date JUNE/2022
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 97830



SECOND FLOOR PLAN 'A'
(BLOCKS ON NORTH SIDE)



PARTIAL SECOND FLOOR PLAN 'B'



PARTIAL SECOND FLOOR PLAN 'B2'

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
PACKAGE A1

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

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REVISIONS

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BAYVIEW WELLINGTON HOMES

Project Name
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INNISFIL, ONTARIO

BLKS 4 & 5
RL-2 1925 sqft

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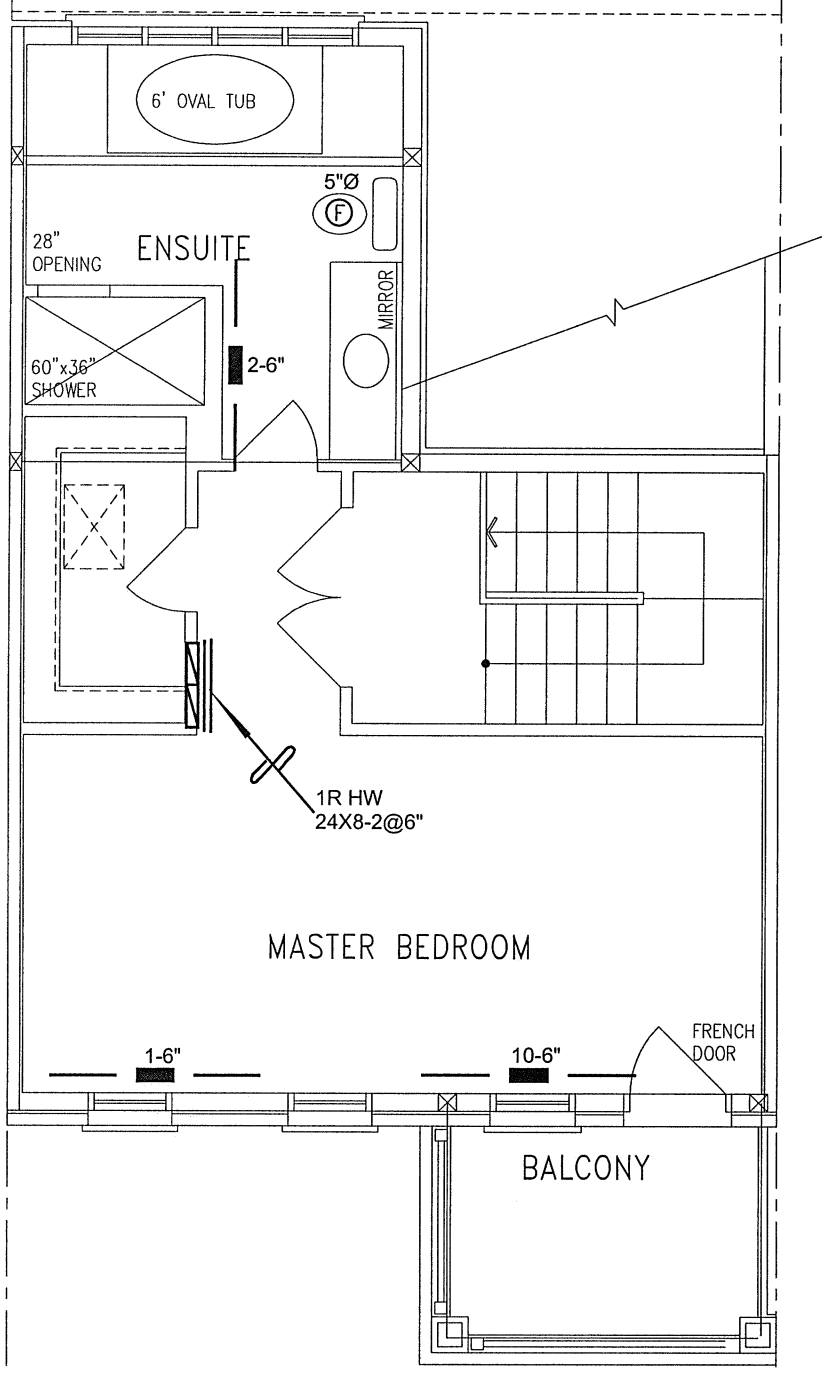
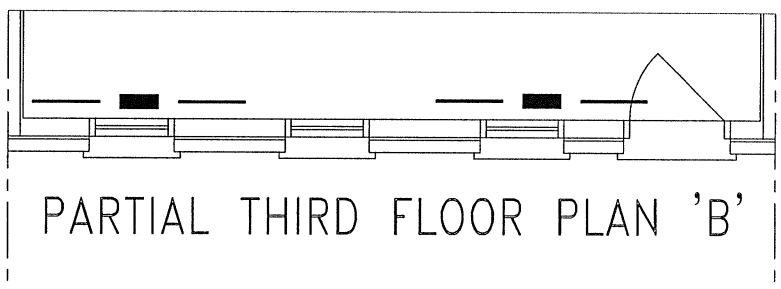
Sheet Title
SECOND FLOOR HEATING LAYOUT

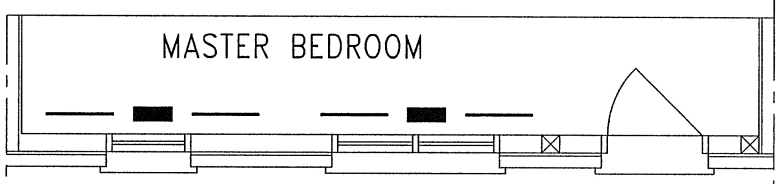
Date JUNE/2022
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 97830



THIRD FLOOR PLAN 'A'
(BLOCKS ON NORTH SIDE)



PARTIAL THIRD FLOOR PLAN 'B'



PARTIAL THIRD FLOOR PLAN 'B2'

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

CSA-F280-12
PACKAGE A1

HVAC LEGEND

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— ▬ —	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
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1.		

REVISIONS

Client
BAYVIEW WELLINGTON HOMES

Project Name
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INNISFIL, ONTARIO

BLKS 4 & 5
RL-2 1925 sqft

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Sheet Title
THIRD FLOOR HEATING LAYOUT

Date JUNE/2022
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BCIN# 19669
LO# 97830