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-5E BLK 3 **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.

July 8, 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.

HVAC DESIGNS LTD.

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

SITE NAME: ALCONA BLK 3 DATE: Jul-22 WINTER NATURAL AIR CHANGE RATE 0.422 HEAT LOSS ΔT °F. 83 CSA-F280-12
BUILDER: BAYVIEW WELLINGTON HOMES TYPE: RL-5E GFA: 1941 LO# 97835 SUMMER NATURAL AIR CHANGE RATE 0.093 HEAT GAIN ΔT °F. 9 SB-12 PACKAGE A1

ROOM USE			MBR			ENS				BED-2			BED-3						ENS3				
EXP. WALL			59			34				36			25						8				
CLG. HT.			9			9				9			9						9				
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN	531			306				310			215						69				
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	33	769	1338	0	0	0		33	769	1338	0	0	0				0	0	0		
SOUTH	23.3	23.9	9	210	215	0	0	0		9	210	215	9	210	215				0	0	0		
WEST	23.3	40.5	0	0	0	27	629	1095		0	0	0	19	443	770				9	210	365		
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	20	439	49	0	0	0		20	439	49	0	0	0				0	0	0		
NET EXPOSED WALL	4.9	0.5	469	2291	253	279	1363	151		248	1210	134	187	914	101				60	292	32		
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		
EXPOSED CLG	1.4	0.5	492	691	259	143	201	75		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				96	289	108		
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			0						0				
SLAB ON GRADE HEAT LOSS			0			0				0			0						0				
SUBTOTAL HT LOSS			4400			2193				2627			1566						791				
SUB TOTAL HT GAIN				2114			1321				1735			1086						506			
LEVEL FACTOR / MULTIPLIER			0.10	0.22		0.10	0.22			0.20	0.53		0.20	0.53					0.20	0.53			
AIR CHANGE HEAT LOSS			981			489				1387			827						417				
AIR CHANGE HEAT GAIN				89			56				73			46						21			
DUCT LOSS			0			0				0			0						0				
DUCT GAIN				0			0				0			0						0			
HEAT GAIN PEOPLE	240		2		480	0		0		1		240	1		240				0		0		
HEAT GAIN APPLIANCES/LIGHTS					369			0				369			369						369		
TOTAL HT LOSS BTU/H			5381			2682				4014			2393						1208				
TOTAL HT GAIN x 1.3 BTU/H				3968			1789				3143			2264						1165			

ROOM USE			KT/BR			GRT			LAUN				FOY			MUD				BAS		
EXP. WALL			15			36			10				9			14				77		
CLG. HT.			10			10			9				10			10				9		
	FACTORS																					
GRS.WALL AREA	LOSS	GAIN	144			346			86				86			134				508		
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	0	0	0	35	815	1419	0	0	0		20	466	811	0	0	0		4	93	162
SOUTH	23.3	23.9	0	0	0	31	722	741	9	210	215		0	0	0	0	0	0		4	93	96
WEST	23.3	40.5	40	932	1622	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0
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	0	0	0	0	0	0	0	0	0		10	220	24	20	439	49		0	0	0
NET EXPOSED WALL	4.9	0.5	104	508	56	280	1366	151	77	376	42		56	276	30	114	559	62		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	0	0	0		0	0	0
EXPOSED CLG	1.4	0.5	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0		154	607	67
NO ATTIC EXPOSED CLG	3.0	1.1	0	0	0	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		0	0	0
BASEMENT/CRAWL HEAT LOSS				0			0			0				0			0				2308	
SLAB ON GRADE HEAT LOSS				0			0			0				0			0				3102	
SUBTOTAL HT LOSS				1440			2904			586				961			998					
SUB TOTAL HT GAIN					1678			2311			257				866			110				325
LEVEL FACTOR / MULTIPLIER			0.30	0.70		0.30	0.70		0.20	0.53			0.30	0.70		0.30	0.70			0.40	1.90	
AIR CHANGE HEAT LOSS				1008			2032			309				673			698				5882	
AIR CHANGE HEAT GAIN					71			97			11				36			5				14
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					369			369			369				369			0				369
TOTAL HT LOSS BTU/H				2448			4936			895				1634			1696				8983	
TOTAL HT GAIN x 1.3 BTU/H					2753			3610			828				1653			149				920

TOTAL HEAT GAIN BTU/H: 22401 TONS: 1.87 LOSS DUE TO VENTILATION LOAD BTU/H: 1429 STRUCTURAL HEAT LOSS: 36270 TOTAL COMBINED HEAT LOSS BTU/H: 37699

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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SITE NAME: ALCONA
BUILDER: BAYVIEW WELLINGTON HOMES

BLK 3
TYPE: RL-5E

DATE: Jul-22

GFA: 1941 LO# 97835

HEATING CFM	980	COOLING CFM	980
TOTAL HEAT LOSS	36,270	TOTAL HEAT GAIN	22,243
AIR FLOW RATE CFM	27.02	AIR FLOW RATE CFM	44.06

furnace pressure	0.6
furnace filter	0.05
a/c coil pressure	0.2
available pressure for s/a & r/a	0.35
plenum pressure s/a	0.18
max s/a dif press. loss	0.02
min adjusted pressure s/a	0.16
r/a pressure	0.17
r/a grille press. Loss	0.02
adjusted pressure r/a	0.15

$LENNOX
ML196UH045XE36B 45

FAN SPEED	
LOW	620
MEDLOW	685
MEDIUM	980
MEDIUM HIGH	1110
HIGH	0

AFUE = 96 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = 42,800

DESIGN CFM = 980
CFM @ .6 " E.S.P.

TEMPERATURE RISE 40 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	3	5	6	3
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	4	5	6	10	11	12	13	14	15	16	17	19	21	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-2	MBR	ENS3	KT/BR	GRT	MUD	KT/BR	GRT	LAUN	FOY	BAS	BAS	BAS
RM LOSS MBH.	2.69	2.68	2.01	2.39	2.01	2.69	1.21	1.22	2.47	1.70	1.22	2.47	0.90	1.63	2.99	2.99	2.99
CFM PER RUN HEAT	73	72	54	65	54	73	33	33	67	46	33	67	24	44	81	81	81
RM GAIN MBH.	1.98	1.79	1.57	2.26	1.57	1.98	1.17	1.38	1.81	0.15	1.38	1.81	0.83	1.65	0.31	0.31	0.31
CFM PER RUN COOLING	87	79	69	100	69	87	51	61	80	7	61	80	36	73	14	14	14
ADJUSTED PRESSURE	0.16	0.17	0.17	0.16	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16
ACTUAL DUCT LGH.	88	51	58	41	51	73	50	13	31	29	17	21	31	30	23	18	24
EQUIVALENT LENGTH	190	210	160	140	160	200	130	90	100	100	110	130	160	110	110	140	110
TOTAL EFFECTIVE LENGTH	278	261	218	181	211	273	180	103	131	129	127	151	191	140	133	158	134
ADJUSTED PRESSURE	0.06	0.07	0.08	0.09	0.08	0.06	0.1	0.17	0.13	0.13	0.14	0.11	0.09	0.12	0.12	0.1	0.12
ROUND DUCT SIZE	6	6	6	6	6	6	5	5	5	4	5	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	372	367	275	331	275	372	242	242	492	528	242	492	275	323	595	595	595
COOLING VELOCITY (ft/min)	444	403	352	510	352	444	374	448	587	80	448	587	413	536	103	103	103
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	B	B	A	B	B	A	F	E	D	D	E	B	E	D	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 A	98	0.09	5.7	8	x	8	221
TRUNK B	350	0.06	10.2	12	x	8	525
TRUNK C	448	0.06	11.2	16	x	8	504
TRUNK D	160	0.12	6.4	8	x	8	360
TRUNK E	340	0.10	8.9	10	x	8	612
TRUNK F	533	0.10	10.5	14	x	8	685
TRUNK G	0	0.00	0	0	x	8	0
TRUNK H	0	0.00	0	0	x	8	0
TRUNK I	0	0.00	0	0	x	8	0
TRUNK J	0	0.00	0	0	x	8	0
TRUNK K	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	0.06	0	0	x	8	0
TRUNK P	0	0.06	0	0	x	8	0
TRUNK Q	0	0.06	0	0	x	8	0
TRUNK R	0	0.06	0	0	x	8	0
TRUNK S	0	0.06	0	0	x	8	0
TRUNK T	0	0.06	0	0	x	8	0
TRUNK U	0	0.06	0	0	x	8	0
TRUNK V	0	0.06	0	0	x	8	0
TRUNK W	0	0.06	0	0	x	8	0
TRUNK X	980	0.06	15	26	x	8	678
TRUNK Y	620	0.06	12.6	18	x	8	620
TRUNK Z	0	0.06	0	0	x	8	0
DROP	980	0.06	15	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	240	130	130	360	0	0	0	0	0	0	0	0	0	0	0	120
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.	58	45	51	25	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	175	210	205	145	0	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	233	255	256	170	1	1	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.06	0.06	0.06	0.09	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	8.8	7	7	9.3	0	0	0	0	0	0	0	0	0	0	0	6
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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Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

TYPE: RL-5E
SITE NAME: ALCONA

LO # 97835
BLK 3

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	3	@ 10.6 cfm	31.8	cfm
Table 9.32.3.A.		TOTAL	148.4	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	148.4	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	84.8	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: July-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#: 97835 Model: RL-5E Builder: BAYVIEW WELLINGTON HOMES Date: 2022-07-08

Volume Calculation

House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	677	9	5822.2
First	677	10	6499.2
Second	677	9	5822.2
Third	587	9	5283
Fourth	0	9	0
		Total:	23,426.6 ft³
		Total:	663.4 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.422
SUMMER NATURAL AIR CHANGE RATE	0.093

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

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

0.422 x 184.27 x 46 °C x 1.2 = 4309 W

= **14704 Btu/h**

6.2.6 Sensible Gain due to Air Leakage

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

= 0.093 x 184.27 x 5 °C x 1.2 = 105 W

= **359 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	14,704	3,102	1.896
2	0.3		6,302	0.700
3	0.2		5,570	0.528
4	0.1		6,593	0.223
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-5E BLK 3 **BUILDER:** BAYVIEW WELLINGTON HOMES
SFQT: 1941 **LO#** 97835 **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):	23426.6	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:	6.6 ft
LENGTH: 33.0 ft	WIDTH: 21.0 ft	EXPOSED PERIMETER:	77.0 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

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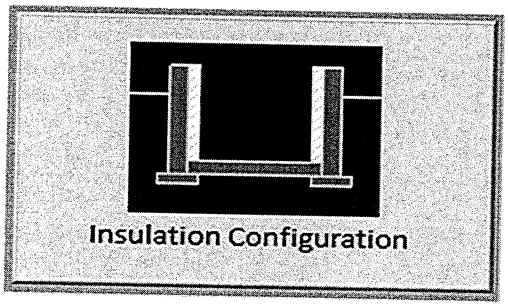
Residential Foundation Thermal Load Calculator

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):	10.1
Floor Width (m):	6.4
Exposed Perimeter (m):	23.5
Wall Height (m):	2.6
Depth Below Grade (m):	2.01
Window Area (m^2):	0.7
Door Area (m^2):	0.0
Radiant Slab	
Heated Fraction of the Slab:	0
Fluid Temperature (°C):	33
Design Months	
Heating Month	1
Foundation Loads	
Heating Load (Watts):	**676**



TYPE: RL-5E
LO# 97835

BLK 3

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:	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):	8.90
Building Configuration	
Type:	Semi
Number of Stories:	Three
Foundation:	Full
House Volume (m^3):	663.4
Air Leakage/Ventilation	
Air Tightness Type:	Present (1961-) (3.57 ACH)
Custom BDT Data:	ELA @ 10 Pa. 884.3 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):	**0.422**
Cooling Air Leakage Rate (ACH/H):	**0.093**

TYPE: RL-5E BLK 3
LO# 97835

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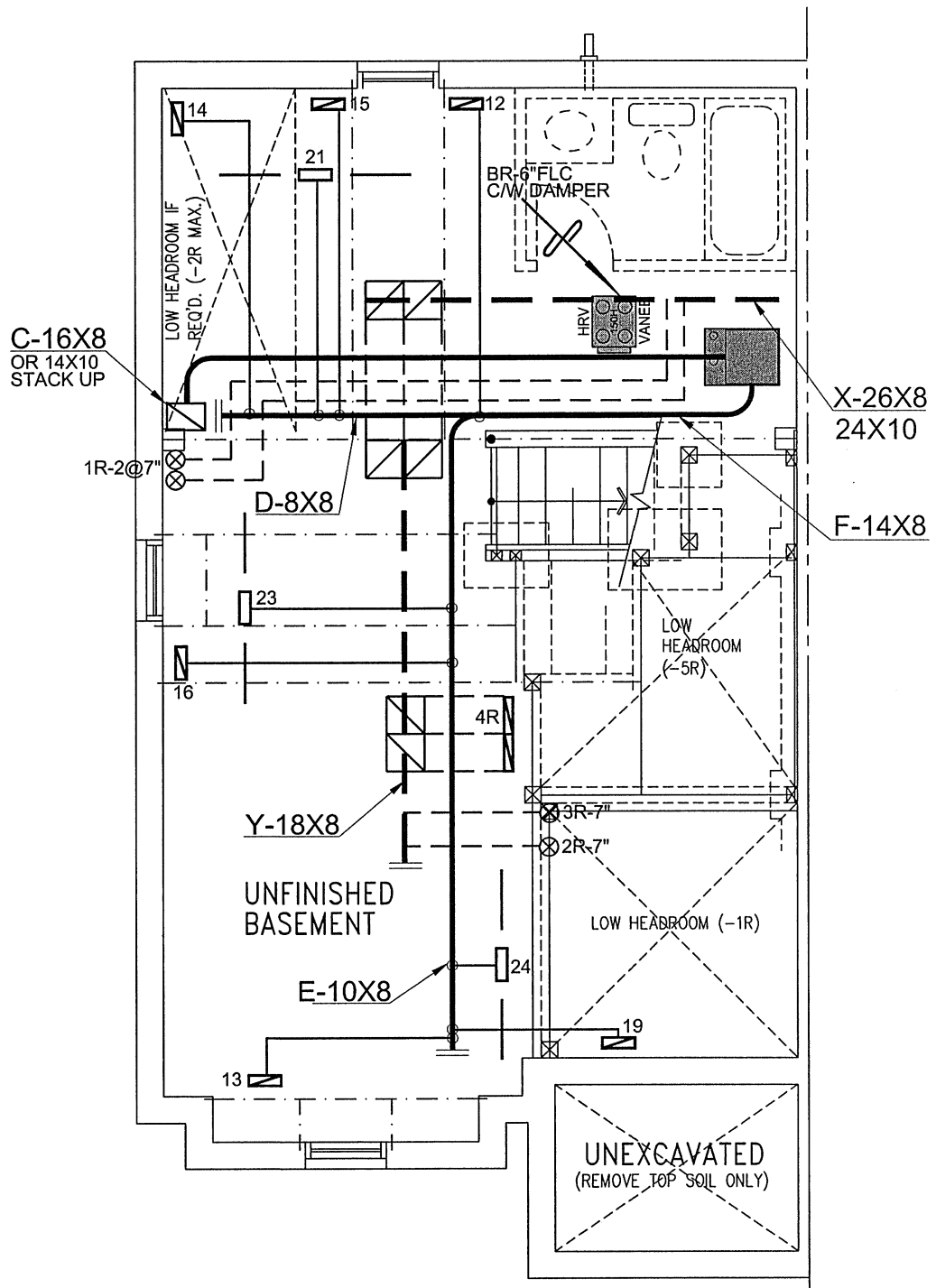

BASEMENT PLAN ELEV. 'B'
(BLOCKS ON SOUTH SIDE)

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

BLK 3
RL-5E 1941 sqft

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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.

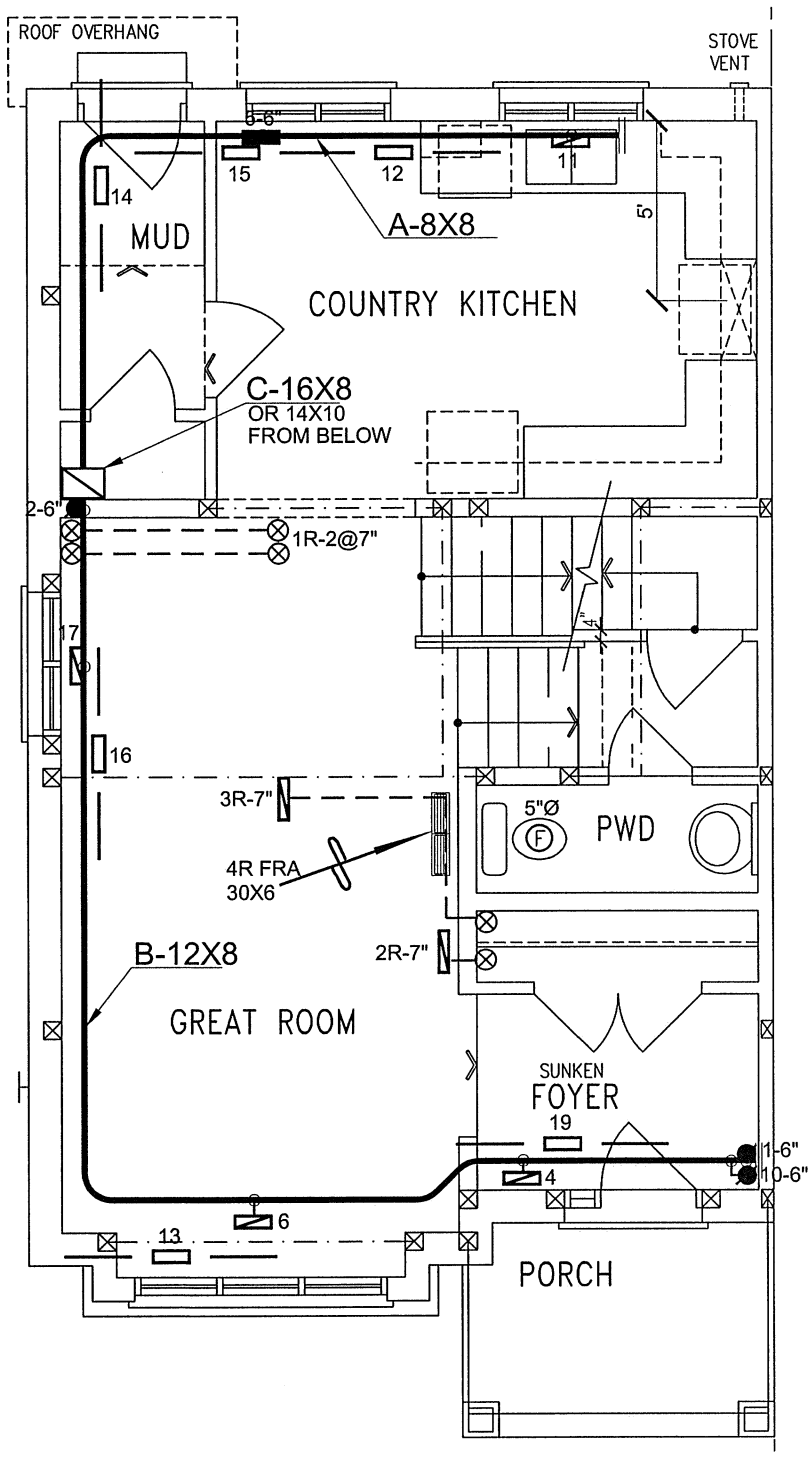
HEAT LOSS 37699 BTU/H	
UNIT DATA	
MAKE	LENNOX
MODEL	ML196UH045XE36B
INPUT	44 MBTU/H
OUTPUT	42.8 MBTU/H
COOLING	2.0 TONS
FAN SPEED	980 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR	3	1	0
2ND FLOOR	5	2	2
1ST FLOOR	6	1	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 JUNE/2022
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 97835



GROUND FLOOR PLAN ELEV. 'B'
(BLOCKS ON SOUTH SIDE)

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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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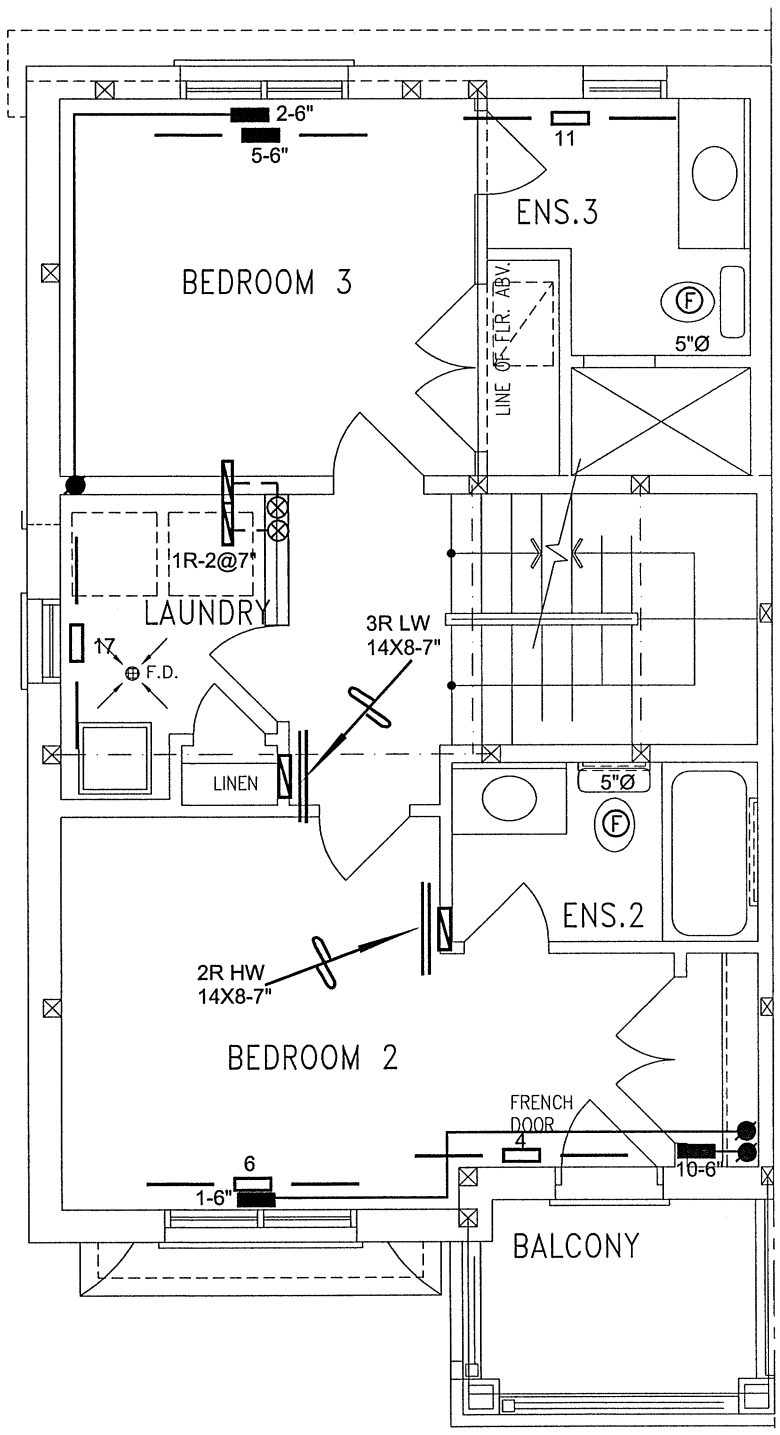
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date JUNE/2022
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 97835



SECOND FLOOR ELEV. PLAN 'B'
(BLOCKS ON SOUTH SIDE)

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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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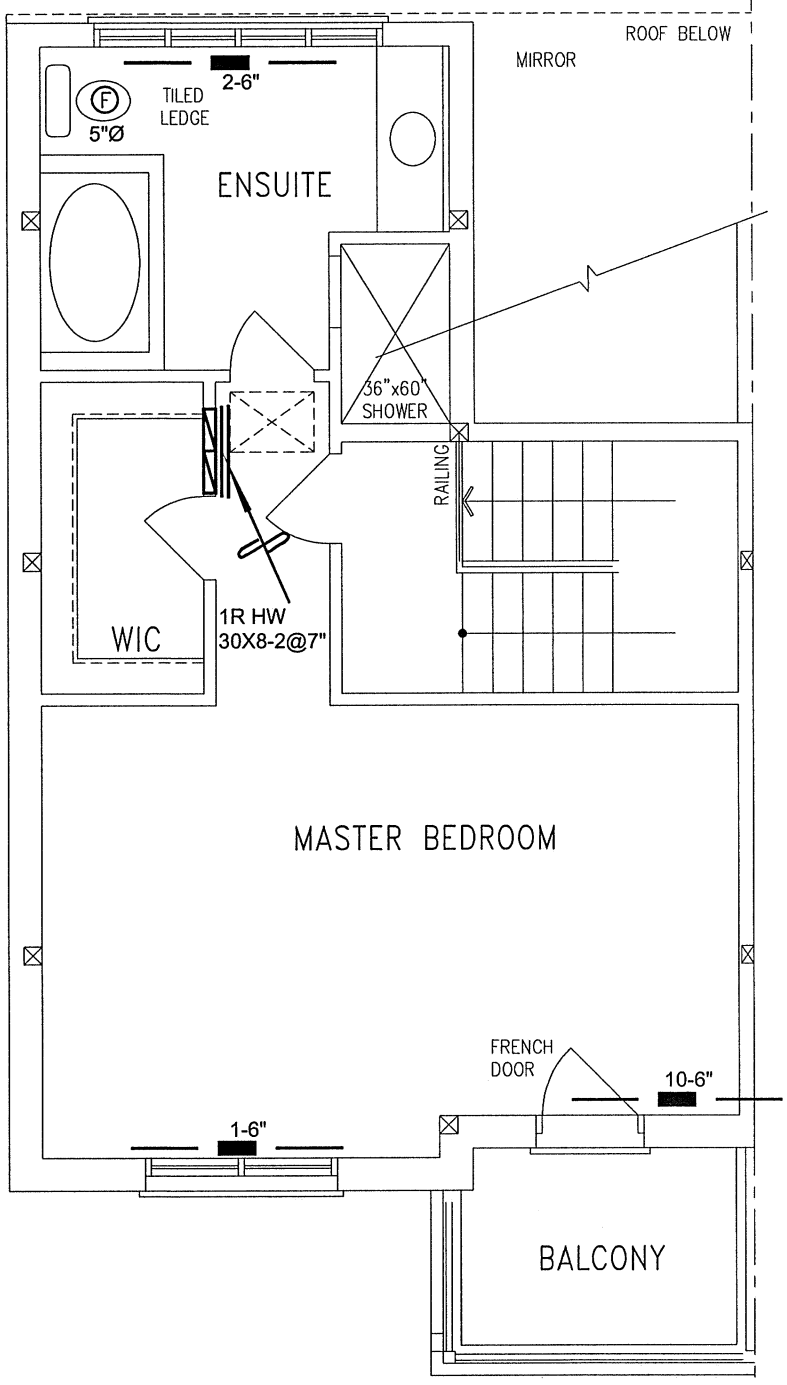
Sheet Title
SECOND FLOOR HEATING LAYOUT

Date JUNE/2022
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 97835



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PACKAGE A1

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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

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Sheet Title
THIRD FLOOR HEATING LAYOUT

Date JUNE/2022
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 97835