


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 INNINFILL	Postal code	Plan number/ other description			
B. Individual who reviews and takes responsibility for design activities					
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.			
Street address 375 FINLEY AVE			Unit no. 202	Lot/con. N/A	
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdsgns.ca		
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()			
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]					
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings		<input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection		<input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> 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-3 Project: ALCONA		
D. Declaration of Designer					
I, <u>MICHAEL O'ROURKE</u> (print name) declare that (choose one as appropriate):					
<input type="checkbox"/> 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: _____					
<input checked="" type="checkbox"/> 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 Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>					
<input type="checkbox"/> 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 6, 2022 Date			 Signature of Designer		

NOTE:

- 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.
- 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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SITE NAME: ALCONA										DATE: Jul-22		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F.		HEAT GAIN AT °F.		CSA-F280-12	
BUILDING: BAYVIEW WELLINGTON HOMES										TYPE: RL-3		GFA: 2096		SUMMER NATURAL AIR CHANGE RATE		0.039		SB-12 PACKAGE AT	
ROOM USE		MBR		ENS		BED-3		BED-2		BED-3		ENS-3		ENS2					
EXP. WALL CLG. HT.		32 9		39 9		14 9		19 9		14 9		8 9		6 9					
FACTORS		288		351		126		171		126		72		54					
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN					
GLAZING		0 0		0 0		0 0		0 0		0 0		0 0		0 0					
NORTH		23.3 15.0		0 0		0 0		0 0		0 0		0 0		0 0					
EAST		23.3 40.5		36 839 1460		0 0 0		33 769 1338		0 0 0		0 0 0		11 256 446					
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 23 536 933		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		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		232 1133 126 328 1602 177		118 576 64 98 479 53		118 576 64 98 479 53		64 313 35		43 210 23		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		428 601 226 320 120		0 0 0		0 0 0		0 82 247 93		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		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 0		0 0		0 0		0 0					
SLAB ON GRADE HEAT LOSS		0		0 0		0 0		0 0		0 0		0 0		0 0					
SUBTOTAL HT LOSS		3012		2459		1378		1784		1378		499		466					
SUB TOTAL HT GAIN		1859		1230		1281		1450		1281		359		469					
LEVEL FACTOR / MULTIPLIER		0.10 0.31		0.10 0.31		0.20 0.83		0.20 0.83		0.20 0.83		0.20 0.83		0.20 0.83					
AIR CHANGE HEAT LOSS		946		772		1147		1486		1147		416		388					
AIR CHANGE HEAT GAIN		0		65		68		77		68		19		25					
DUCT LOSS		0		0		0		0		0		0		0					
DUCT GAIN		0		0		0		0		0		0		0					
HEAT GAIN PEOPLE		240		2 480 0		240 497		1 240 1		240 497		0 497		0 497					
HEAT GAIN APPLANCES/LIGHTS		497		497		497		497		497		497		497					
TOTAL HT LOSS BTU/H		3569		3231		2525		3270		2525		915		855					
TOTAL HT GAIN x 1.3 BTU/H		3815		1683		2711		2943		2711		1137		1288					

ROOM USE		GRT		KIT		MUD		FOY		BAS	
EXP. WALL CLG. HT.		15 10		22 10		4 10		9 10		294 LOSS GAIN	
FACTORS		150		220		40		90		0 0 0	
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
GLAZING		0 0 0		0 0 0		0 0 0		0 0 0		0 0 0	
NORTH		0 0 0		0 0 0		0 0 0		0 0 0		0 0 0	
EAST		36 885 1541		0 0 0		0 0 0		10 233 405		4 93 162	
SOUTH		0 0 0		0 0 0		0 0 0		0 0 0		0 0 0	
WEST		0 0 0		40 932 1622		0 0 0		0 0 0		4 93 162	
SKYLT.		40.8 99.8		0 0 0		0 0 0		0 0 0		0 0 0	
DOORS		22.0 2.4		0 0 0		20 439 49		20 439 49		0 0 0	
NET EXPOSED WALL		4.9 0.5		112 547 61		20 98 11		60 293 32		0 0 0	
NET EXPOSED BSMT WALL ABOVE GR		3.9 0.4		0 0 0		0 0 0		0 0 0		147 579 64	
EXPOSED CLG		1.4 0.5		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	
EXPOSED FLOOR		2.8 0.3		0 0 0		0 0 0		0 0 0		0 0 0	
BASEMENT/CRAWL HEAT LOSS		0		0		0		0		1683	
SLAB ON GRADE HEAT LOSS		0		0		0		0		2449 388	
SUBTOTAL HT LOSS		1432		1811		537		965		0.40 2.81	
SUB TOTAL HT GAIN		1601		1719		59		486		6874 21	
LEVEL FACTOR / MULTIPLIER		0.30 1.09		0.30 1.09		0.30 1.09		0.30 1.09		0 0 0	
AIR CHANGE HEAT LOSS		1556		1968		583		1049		0 497	
AIR CHANGE HEAT GAIN		85		91		3		25		0 0 0	
DUCT LOSS		0		0		0		0		0 0 0	
DUCT GAIN		0		0		0		0		0 0 0	
HEAT GAIN PEOPLE		240		2 480 0		240 497		0 497		0 0 0	
HEAT GAIN APPLANCES/LIGHTS		497		497		497		497		0 497	
TOTAL HT LOSS BTU/H		2989		3779		1120		2014		9323	
TOTAL HT GAIN x 1.3 BTU/H		2838		2999		727		1312		1178	

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.

Richard P. Lunde.

INDIVIDUAL BCIN: 19669

SITE NAME: ALCONA
BUILDER: BAYVIEW WELLINGTON HOMES

TYPE: RL-3

DATE: Jul-22

GFA: 2096 LQ# 97832

HEATING CFM 980 COOLING CFM 980
TOTAL HEAT LOSS 33,978 TOTAL HEAT GAIN 22,630
AIR FLOW RATE CFM 28.84 AIR FLOW RATE CFM 43.3ML196UH045XE36B \$LENNOX 45
FAN SPEED
AFUE = 96 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = 42,800

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	3	6	6	3
R/A	0	1	3	1	1

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 diff 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

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	11	12	13	14	15	17	19	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	ENS-3	MBR	ENS2	GRT	GRT	KIT	KIT	MUD	FOY	BAS	BAS	BAS
RM LOSS MBH	1.98	3.23	1.64	1.64	1.26	1.26	0.91	1.98	0.85	1.49	1.49	1.89	1.89	1.12	2.01	3.11	3.11	3.11
CFM PER RUN HEAT	57	93	47	47	36	36	26	57	25	43	43	54	54	32	58	90	90	90
RM GAIN MBH	1.91	1.68	1.47	1.47	1.36	1.36	1.14	1.91	1.29	1.42	1.42	1.50	1.50	0.73	1.31	0.39	0.39	0.39
CFM PER RUN COOLING	83	73	64	64	59	59	49	83	56	61	61	65	65	31	57	17	17	17
ADJUSTED PRESSURE	0.16	0.16	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	0.16	0.16	0.16
ACTUAL DUCT LGH.	64	50	56	51	51	56	38	77	65	33	38	22	17	33	37	29	18	34
EQUIVALENT LENGTH	210	190	150	160	140	130	140	190	150	130	110	90	110	110	170	110	100	120
TOTAL EFFECTIVE LENGTH	274	240	206	211	191	186	178	267	215	163	148	112	127	143	207	139	118	154
ADJUSTED PRESSURE	0.06	0.07	0.08	0.08	0.09	0.09	0.1	0.06	0.08	0.11	0.12	0.15	0.14	0.12	0.08	0.12	0.14	0.11
ROUND DUCT SIZE	6	6	5	5	5	5	4	6	5	5	5	5	5	4	5	6	6	6
HEATING VELOCITY (ft/min)	291	474	345	345	264	298	248	291	184	316	316	396	396	367	426	459	459	459
COOLING VELOCITY (ft/min)	423	372	470	470	433	433	562	423	411	448	448	477	477	356	419	87	87	87
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	B	B	B	B	A	A	A	B	B	E	E	F	F	D	E	D	F	E

RUN #	1	2	3	4	5	6	7	10	11	12	13	14	15	17	19	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	ENS-3	MBR	ENS2	GRT	GRT	KIT	KIT	MUD	FOY	BAS	BAS	BAS
RM LOSS MBH	1.98	3.23	1.64	1.64	1.26	1.26	0.91	1.98	0.85	1.49	1.49	1.89	1.89	1.12	2.01	3.11	3.11	3.11
CFM PER RUN HEAT	57	93	47	47	36	36	26	57	25	43	43	54	54	32	58	90	90	90
RM GAIN MBH	1.91	1.68	1.47	1.47	1.36	1.36	1.14	1.91	1.29	1.42	1.42	1.50	1.50	0.73	1.31	0.39	0.39	0.39
CFM PER RUN COOLING	83	73	64	64	59	59	49	83	56	61	61	65	65	31	57	17	17	17
ADJUSTED PRESSURE	0.16	0.16	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	0.16	0.16	0.16
ACTUAL DUCT LGH.	64	50	56	51	51	56	38	77	65	33	38	22	17	33	37	29	18	34
EQUIVALENT LENGTH	210	190	150	160	140	130	140	190	150	130	110	90	110	110	170	110	100	120
TOTAL EFFECTIVE LENGTH	274	240	206	211	191	186	178	267	215	163	148	112	127	143	207	139	118	154
ADJUSTED PRESSURE	0.06	0.07	0.08	0.08	0.09	0.09	0.1	0.06	0.08	0.11	0.12	0.15	0.14	0.12	0.08	0.12	0.14	0.11
ROUND DUCT SIZE	6	6	5	5	5	5	4	6	5	5	5	5	5	4	5	6	6	6
HEATING VELOCITY (ft/min)	291	474	345	345	264	298	248	291	184	316	316	396	396	367	426	459	459	459
COOLING VELOCITY (ft/min)	423	372	470	470	433	433	562	423	411	448	448	477	477	356	419	87	87	87
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	B	B	B	B	A	A	A	B	B	E	E	F	F	D	E	D	F	E

RUN #	1	2	3	4	5	6	7	10	11	12	13	14	15	17	19	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	ENS-3	MBR	ENS2	GRT	GRT	KIT	KIT	MUD	FOY	BAS	BAS	BAS
RM LOSS MBH	1.98	3.23	1.64	1.64	1.26	1.26	0.91	1.98	0.85	1.49	1.49	1.89	1.89	1.12	2.01	3.11	3.11	3.11
CFM PER RUN HEAT	57	93	47	47	36	36	26	57	25	43	43	54	54	32	58	90	90	90
RM GAIN MBH	1.91	1.68	1.47	1.47	1.36	1.36	1.14	1.91	1.29	1.42	1.42	1.50	1.50	0.73	1.31	0.39	0.39	0.39
CFM PER RUN COOLING	83	73	64	64	59	59	49	83	56	61	61	65	65	31	57	17	17	17
ADJUSTED PRESSURE	0.16	0.16	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	0.16	0.16	0.16
ACTUAL DUCT LGH.	64	50	56	51	51	56	38	77	65	33	38	22	17	33	37	29	18	34
EQUIVALENT LENGTH	210	190	150	160	140	130	140	190	150	130	110	90	110	110	170	110	100	120
TOTAL EFFECTIVE LENGTH	274	240	206	211	191	186	178	267	215	163	148	112	127	143	207	139	118	154
ADJUSTED PRESSURE	0.06	0.07	0.08	0.08	0.09	0.09	0.1	0.06	0.08	0.11	0.12	0.15	0.14	0.12	0.08	0.12	0.14	0.11
ROUND DUCT SIZE	6	6	5	5	5	5	4	6	5	5	5	5	5	4	5	6	6	6
HEATING VELOCITY (ft/min)	291	474	345	345	264	298	248	291	184	316	316	396	396	367	426	459	459	459
COOLING VELOCITY (ft/min)	423	372	470	470	433	433	562	423	411	448	448	477	477	356	419	87	87	87
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	B	B	B	B	A	A	A	B	B	E	E	F	F	D	E	D	F	E

RUN #	1	2	3	4	5	6	7	10	11	12	13	14	15	17	19	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	ENS-3	MBR	ENS2	GRT	GRT	KIT	KIT	MUD	FOY	BAS	BAS	BAS
RM LOSS MBH	1.98	3.23	1.64	1.64	1.26	1.26	0.91	1.98	0.85	1.49	1.49	1.89	1.89	1.12	2.01	3.11	3.11	3.11
CFM PER RUN HEAT	57	93	47	47	36	36	26	57	25	43	43	54	54	32	58	90	90	90
RM GAIN MBH	1.91	1.68	1.47	1.47	1.36	1.36	1.14	1.91	1.29	1.42	1.42	1.50	1.50	0.73	1.31	0.39	0.39	0.39
CFM PER RUN COOLING	83	73	64	64	59	59	49	83	56	61	61	65	65	31	57	17	17	17
ADJUSTED PRESSURE	0.16	0.16	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	0.16	0.16	0.16
ACTUAL DUCT LGH.	64	50	56	51	51	56	38	77	65	33	38	22	17	33	37	29	18	34
EQUIVALENT LENGTH	210	190	150	160	140	130	140	190	150	130	110	90	110	110	170	110	100	120
TOTAL EFFECTIVE LENGTH	274	240	206	211	191	186	178	267	215	163	148	112	127	143	207	139	118	154
ADJUSTED PRESSURE	0.06	0.07	0.08	0.08	0.09	0.09	0.1	0.06	0.08	0.11	0.12	0.15	0.14	0.12	0.08	0.12	0.14	0.11
ROUND DUCT SIZE	6	6	5	5	5	5	4	6	5	5	5	5	5	4	5	6	6	6
HEATING VELOCITY (ft/min)	291	474	345	345	264	298	248	291	184	316	316	396	396	367	426	459	459	459
COOLING VELOCITY (ft/min)	423	372	470	470	433	433	562	423	411	448	448	477	477	356	419	87	87	87
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	B	B	B	B	A	A	A	B	B	E	E	F	F	D	E	D	F	E

TYPE: RL-3
SITE NAME: ALCONA

LO # 97832

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	2	@ 10.6 cfm	21.2	cfm
Table 9.32.3.A.		TOTAL	137.8	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	137.8	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	74.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANE V150H Location: BSMT

63.6 cfm ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
63.6 CFM	83 F	1.08	0.25

SUPPLEMENTAL FANS BY INSTALLING CONTRACTOR

Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	✓	3.5
ENS-3	BY INSTALLING CONTRACTOR	50	✓	3.5
ENS2	BY INSTALLING CONTRACTOR	50	✓	3.5

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANE 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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																											
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																											
LO#: 97832	Model: RL-3	Builder: BAYVIEW WELLINGTON HOMES	Date: 2022-07-06																																																								
Volume Calculation		Air Change & Delta T Data																																																									
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5.2.3.1 Heat Loss due to Air Leakage		6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$		$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																									
0.439	x 206.83 x 46°C x 1.2 = 5037 W	= 0.097 x 206.83 x 5°C x 1.2 = 123 W																																																									
	= 17185 Btu/h	= 420 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation		6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$		$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																									
64 CFM	x 83°F x 1.08 x 0.25 = 1429 Btu/h	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)																																																											
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																											
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HLclevel)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.4</td> <td rowspan="4">17,185</td> <td>2,449</td> <td>2.807</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>4,746</td> <td>1.086</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>4,127</td> <td>0.833</td> </tr> <tr> <td>4</td> <td>0.1</td> <td>5,471</td> <td>0.314</td> </tr> <tr> <td>5</td> <td>0</td> <td></td> <td>0</td> <td>0.000</td> </tr> </table>		Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLclevel)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.4	17,185	2,449	2.807	2	0.3	4,746	1.086	3	0.2	4,127	0.833	4	0.1	5,471	0.314	5	0		0	0.000	<p>*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0</p>																														
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375 Finley Ave. Suite 202 Ajax, ON L1S 2E2

Tel: 905.619.2300 Fax: 905.619.2375

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

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: RL-3	BUILDER: BAYVIEW WELLINGTON HOMES
SFQT: 2096	SITE: ALCONA
LO# 97832	

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 (ft³):	26295.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 36.0 ft	WIDTH: 22.0 ft	EXPOSED PERIMETER:	49.0 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	-

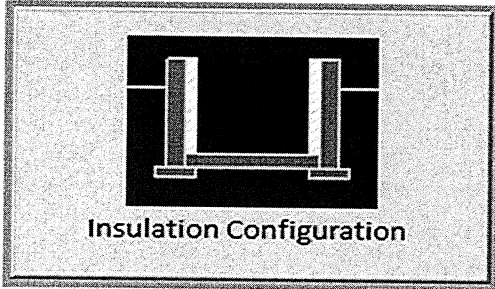
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

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):	11.0	 Insulation Configuration
Floor Width (m):	6.7	
Exposed Perimeter (m):	14.9	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
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):		493

TYPE: RL-3
LO# 97832



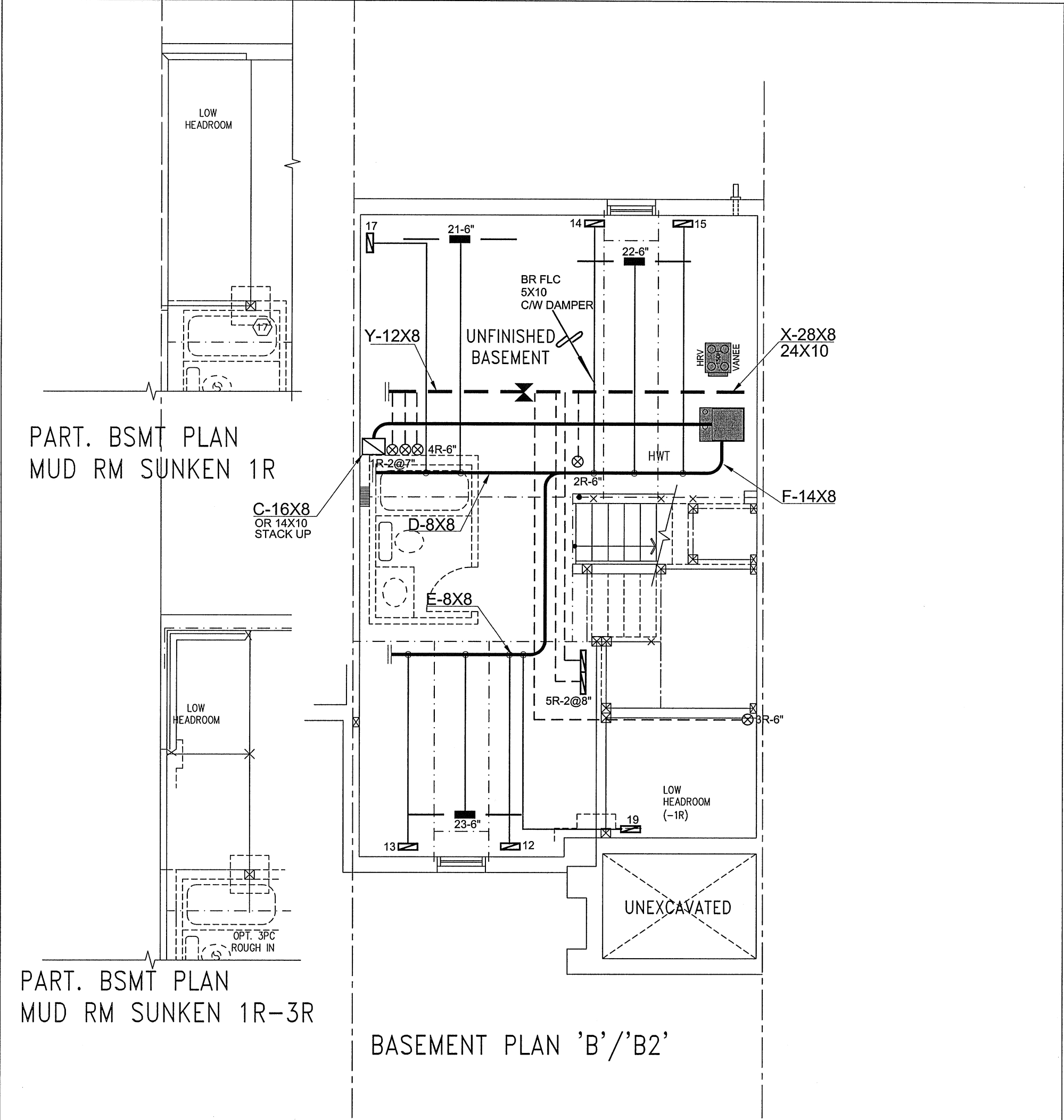
HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

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):	9.45			
Building Configuration				
Type:	Semi			
Number of Stories:	Three			
Foundation:	Full			
House Volume (m ³):	744.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	992.6 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	30.0	30.0		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.439			
Cooling Air Leakage Rate (ACH/H):	0.097			

TYPE: RL-3
LO# 97832



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

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		









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Client		<div><div>HVACDESIGNS LTD.</div><div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div><div>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.</div></div>	HEAT LOSS 35407 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
BAYVIEW WELLINGTON HOMES			MAKE	LENNOX	3RD FLOOR	3	1	1	BASEMENT HEATING LAYOUT	
			MODEL	ML196UH045XE36B	2ND FLOOR	6	3	3		
			INPUT	44 MBTU/H	1ST FLOOR	6	1	2		
			OUTPUT	42.8 MBTU/H	BASEMENT	3	1	0	Date	JUNE/2022
Project Name		ALCONA INNISFIL, ONTARIO	COOLING	2.0 TONS	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			Scale	3/16" = 1'-0"	
RL-3			FAN SPEED	980 cfm @ 0.6" w.c.				BCIN# 19669		
2096 sqft						LO#	97832			



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

PACKAGE A1

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
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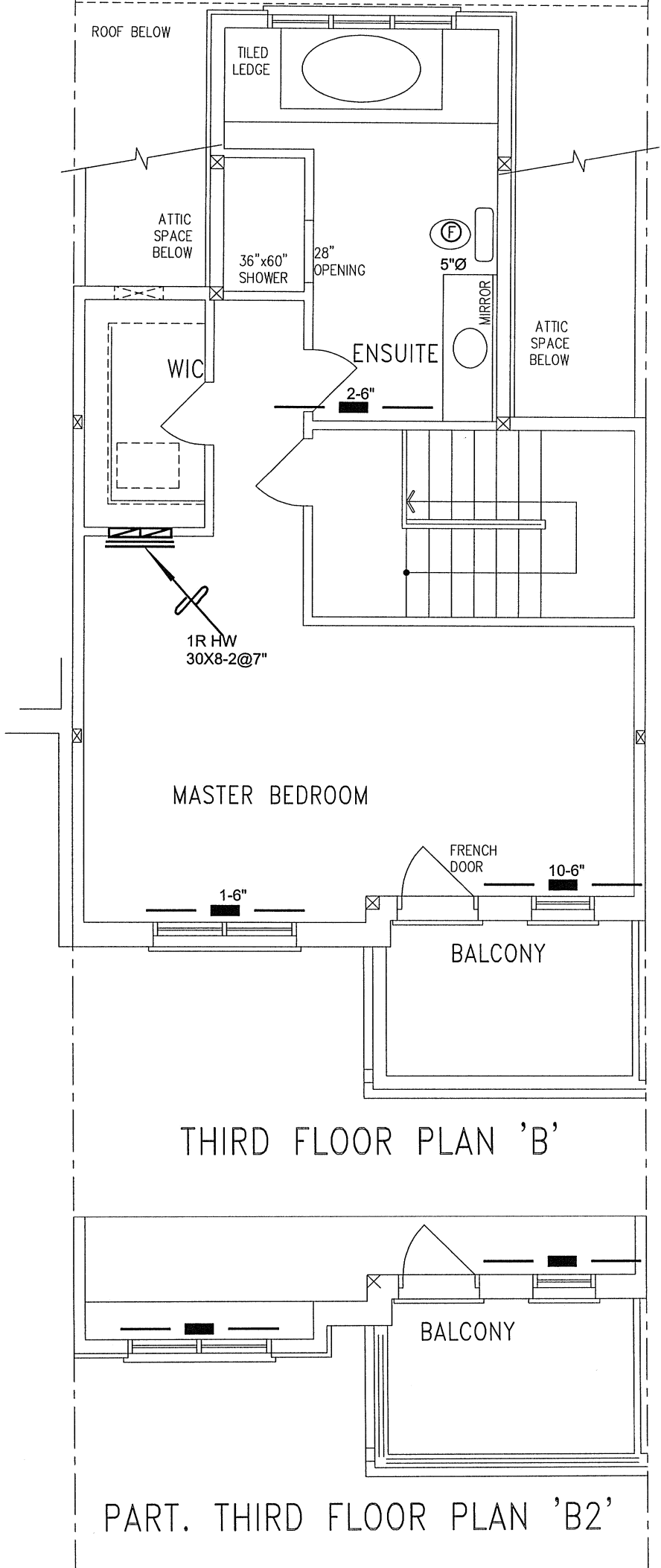
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Client	 <p>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</p>	Sheet Title	
BAYVIEW WELLINGTON HOMES		FIRST FLOOR HEATING LAYOUT	
Project Name		Date	JUNE/2022
ALCONA		Scale	3/16" = 1'-0"
INNISFIL, ONTARIO		BCIN# 19669	
RL-3	2096 sqft	LO# 97832	



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Client BAYVIEW WELLINGTON HOMES		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div>	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name ALCONA INNISFIL, ONTARIO			Date JUNE/2022	
RL-32096 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
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.		LO#	97832	



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

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

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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Client BAYVIEW WELLINGTON HOMES		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>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.</div>	Sheet Title THIRD FLOOR HEATING LAYOUT	
Project Name ALCONA INNISFIL, ONTARIO			Date JUNE/2022	
RL-3			Scale 3/16" = 1'-0"	
2096 sqft			BCIN# 19669	
			LO#	97832