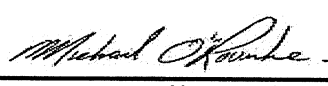


Schedule 1: Designer Information

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]			
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ 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 BLK4 & 5 LOT 7 Project: ALCONA	
D. Declaration of Designer			
I <u>MICHAEL O'ROURKE</u> (print name)		declare that (choose one as appropriate):	
☐ 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 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>			
☐ 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.

SITE NAME: ALCONA
BUILDER: BAYVIEW WELLINGTON HOMES

BLK4 & 5 LOT 7
TYPE: RL-SE

DATE: Jul-22

GFA: 1941

LO# 97834

HEATING CFM 980 COOLING CFM 980
TOTAL HEAT LOSS 40,107 TOTAL HEAT GAIN 23,955
AIR FLOW RATE CFM 24.43 AIR FLOW RATE CFM 40.91

ML196UH045XE36B

\$LENNOX

AFUE = 96 %

INPUT (BTU/H) = 44,000

OUTPUT (BTU/H) = 42,800

FAN SPEED

LOW 620

MEDIUM 685

HIGH 1110

DESIGN CFM = 980

CFM @ .6" E.S.P.

TEMPERATURE RISE 40 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	3	5	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
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-2	BED-2
RM LOSS MBH	2.76	2.75	2.11	2.51	2.11	2.11
CFM PER RUN HEAT	67	67	52	61	52	52
RM GAIN MBH	2.05	1.79	1.64	2.40	1.64	1.64
CFM PER RUN COOLING	84	73	67	98	67	67
ADJUSTED PRESSURE	0.16	0.17	0.17	0.16	0.17	0.17
ACTUAL DUCT LGH	88	51	58	41	51	51
EQUIVALENT LENGTH	190	210	160	140	160	160
TOTAL EFFECTIVE LENGTH	278	261	218	181	211	211
ADJUSTED PRESSURE	0.06	0.07	0.08	0.09	0.08	0.08
ROUND DUCT SIZE	6	6	5	6	5	5
HEATING VELOCITY (ft/min)	342	342	382	311	382	342
COOLING VELOCITY (ft/min)	428	372	492	500	492	492
OUTLET GRILL SIZE	4X10	4X10	3X10	4X10	3X10	3X10
TRUNK	B	B	B	A	B	B
ROOM NAME	LAUN	FOY	GRT	GRT	GRT	GRT
RM LOSS MBH	0.94	1.73	2.61	2.61	2.23	2.23
CFM PER RUN HEAT	23	42	64	64	55	55
RM GAIN MBH	0.97	1.17	1.87	1.70	1.70	1.70
CFM PER RUN COOLING	39	48	77	70	70	70
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	31	30	21	21	17	21
EQUIVALENT LENGTH	160	110	100	100	110	130
TOTAL EFFECTIVE LENGTH	191	140	131	121	127	151
ADJUSTED PRESSURE	0.12	0.12	0.14	0.14	0.14	0.14
ROUND DUCT SIZE	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	264	482	470	404	404	404
COOLING VELOCITY (ft/min)	551	514	565	514	514	514
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	E	E	D	D	E
ROOM NAME	LAUN	FOY	GRT	GRT	GRT	GRT
RM LOSS MBH	0.94	1.73	2.61	2.61	2.23	2.23
CFM PER RUN HEAT	23	42	64	64	55	55
RM GAIN MBH	0.97	1.17	1.87	1.70	1.70	1.70
CFM PER RUN COOLING	39	48	77	70	70	70
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	31	30	21	21	17	21
EQUIVALENT LENGTH	160	110	100	100	110	130
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ROOM NAME	MBR	ENS	BED-2	BED-3	BED-2	BED-2
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TRUNK	B	B	B	A	B	B

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ROOM NAME	MBR	ENS	BED-2	BED-3	BED-2	BED-2
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TRUNK	B	B	B	A	B	B

TYPE: RL-5E
SITE NAME: ALCONALO # 97834
BLK4 & 5 LOT 7**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	<u>2</u> @ 21.2 cfm <u>42.4</u> cfm	
Other Bedrooms	<u>2</u> @ 10.6 cfm <u>21.2</u> cfm	
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm <u>53</u> cfm	
Other Rooms	<u>3</u> @ 10.6 cfm <u>31.8</u> cfm	
Table 9.32.3.A.	TOTAL <u>148.4</u> 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	<u>148.4</u> cfm	
Less Principal Ventil. Capacity	<u>63.6</u> cfm	
Required Supplemental Capacity	<u>84.8</u> cfm	

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEV V150H	Location: BSMT
<u>63.6</u> 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: VANEV V150H		
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	July-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																															
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																															
LO#: 97834		Model: RL-5E		Builder: BAYVIEW WELLINGTON HOMES		Date: 2022-07-06																																																									
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6.2.6 Sensible Gain due to Air Leakage																																																															
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																															
$= 0.107 \times 184.27 \times 5^\circ\text{C} \times 1.2 = 120 \text{ W}$																																																															
$= 16870 \text{ Btu/h}$																																																															
6.2.7 Sensible heat Gain due to Ventilation																																																															
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																															
$64 \text{ CFM} \times 9^\circ\text{F} \times 1.08 \times 0.25 = 158 \text{ Btu/h}$																																																															
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																															
$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																															
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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-5E	BLK4 & 5 LOT 7	BUILDER:	BAYVIEW WELLINGTON HOMES
SFQT:	1941	LO# 97834	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 (ft³):	23426.6	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	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
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	31.0 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	-

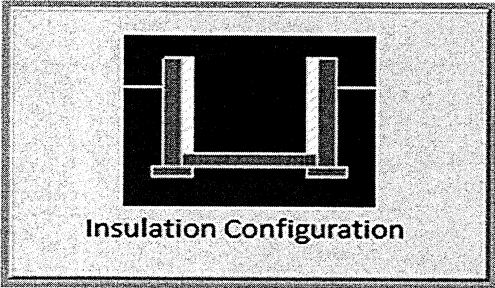
INDIVIDUAL BCIN: 19669

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):	4.6	 Insulation Configuration
Floor Width (m):	6.4	
Exposed Perimeter (m):	23.5	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.62	
Window Area (m ²):	0.8	
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

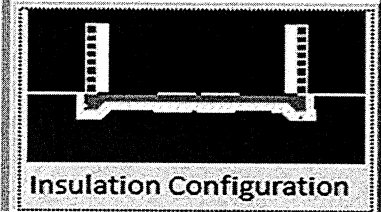
TYPE: RL-5E
LO# 97834

BLK4 & 5 LOT 7



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	 Insulation Configuration
Width (m):	6.4	
Exposed Perimeter (m):	9.4	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		99

TYPE: RL-5E
LO# 97834

BLK4 & 5 LOT 7





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

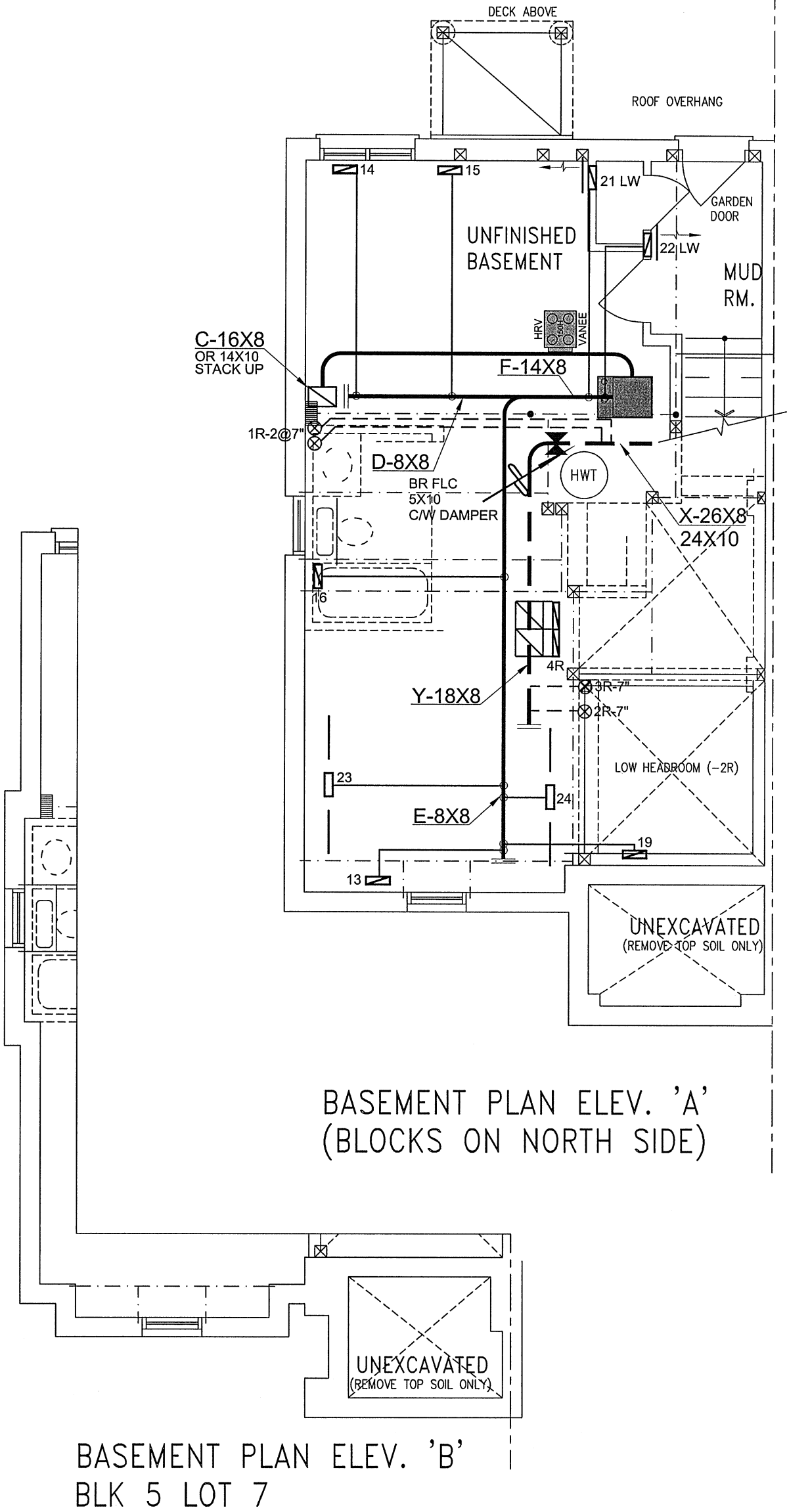
Air Infiltration Residential Load Calculator

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):	10.91			
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	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):	0.484			
Cooling Air Leakage Rate (ACH/H):	0.107			

TYPE: RL-5E
LO# 97834

BLK4 & 5 LOT 7



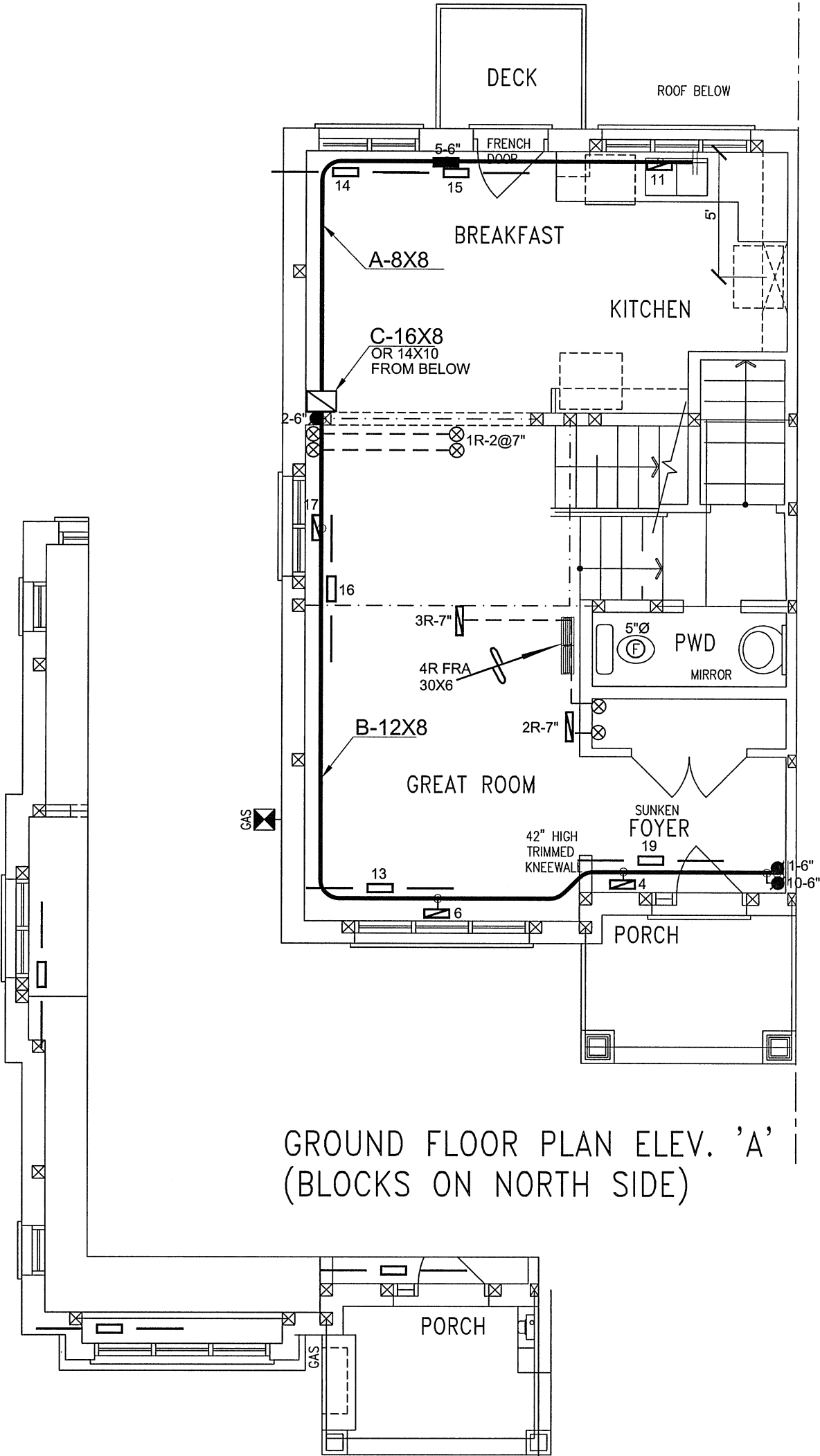
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	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		HVACDESIGNS LTD. 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 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 41536 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title		
Project Name ALCONA INNISFIL, ONTARIO			MAKE LENNOX	3RD FLOOR		3	1	0	BASEMENT HEATING LAYOUT		
			MODEL ML196UH045XE36B	2ND FLOOR		5	2	2			
			INPUT 44 MBTU/H	1ST FLOOR		5	1	2			
			OUTPUT 42.8 MBTU/H	BASEMENT		4	1	0	Date	JUNE/2022	
BLK 4 & BLK 5 LOT 7 RL-5E 1941 sqft			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"
			FAN SPEED 980 cfm @ 0.6" w.c.							BCIN# 19669	
											LO#



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

GROUND FLOOR PLAN ELEV. 'B'
BLK 5 LOT 7

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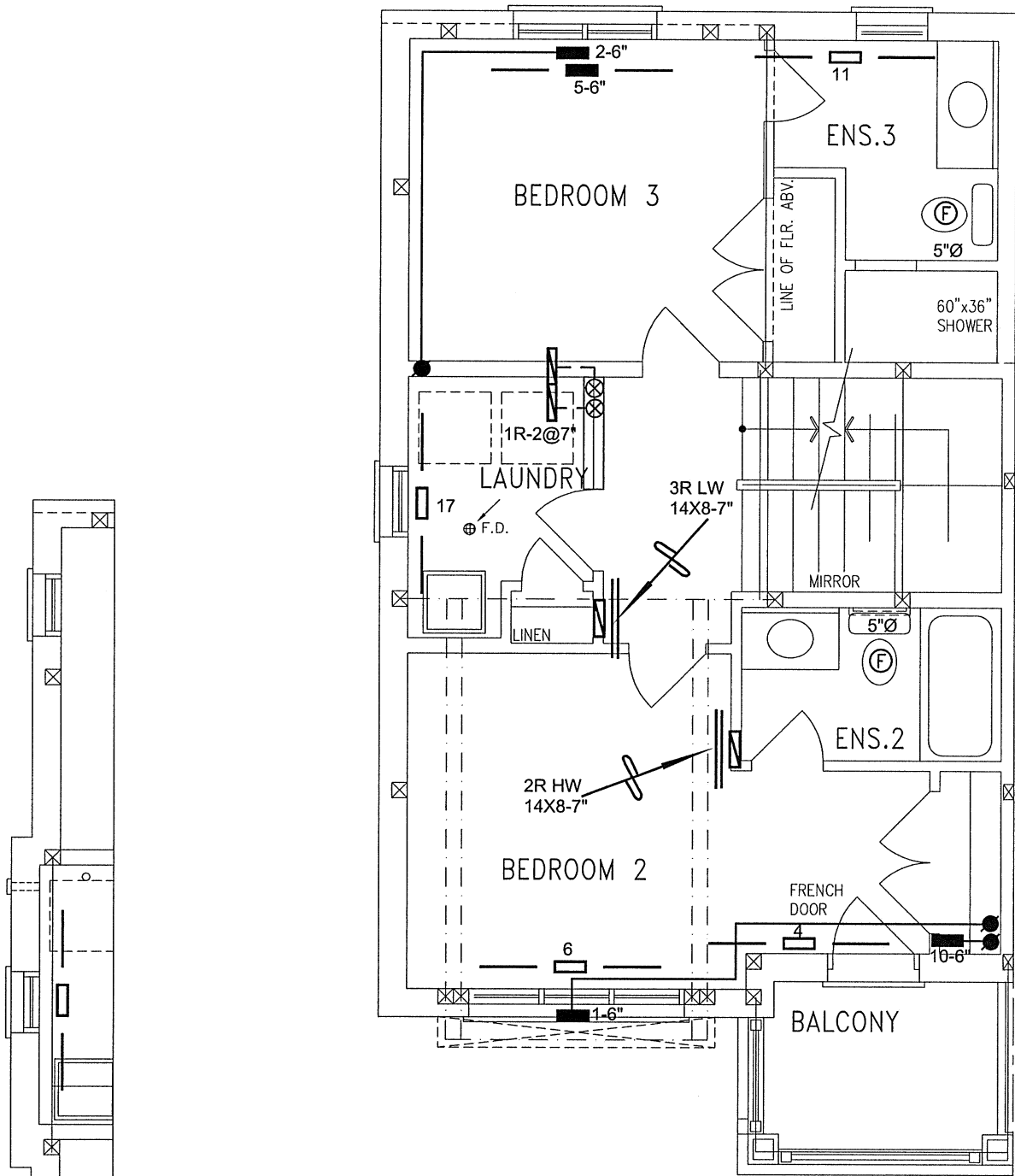
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
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	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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BAYVIEW WELLINGTON HOMES			FIRST FLOOR HEATING LAYOUT		
Project Name			Date	JUNE/2022	
ALCONA INNISFIL, ONTARIO			Scale	3/16" = 1'-0"	
BLK 4 & BLK 5 LOT 7 RL-5E			BCIN# 19669		
1941 sqft		LO#	97834		



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

SECOND FLOOR ELEV. PLAN 'B'
BLK 5 LOT 7

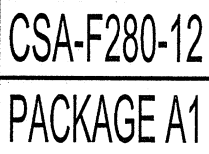
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Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
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Client BAYVIEW WELLINGTON HOMES		 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 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.	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name ALCONA INNISFIL, ONTARIO			Date JUNE/2022	
BLK 4 & BLK 5 LOT 7 RL-5E			Scale 3/16" = 1'-0"	
1941 sqft			BCIN# 19669	
			LO#	97834



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BAYVIEW WELLINGTON HOMES			THIRD FLOOR HEATING LAYOUT	
Project Name ALCONA INNISFIL, ONTARIO			Date	JUNE/2022
BLK 4 & BLK 5 LOT 7 RL-5E1941 sqft			Scale	3/16" = 1'-0"
			BCIN# 19669	
		LO#	97834	