

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 BRAMPTON	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: 3003 OPT 4 BED Project: SUMMER RIDGE ESTATES		
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.				
May 16, 2024		 Signature of Designer		
Date				

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.

Application for a Permit Construct or Demolish – Effective January 1, 2015

TOTAL COMBINED HEAT LOSS BTU/H: 37692

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

OPT 4 BED
TYPE: 3003

DATE: May-24

GFA: 2165 LO# 105062

HEATING CFM 925 COOLING CFM 925
TOTAL HEAT LOSS 36,099 TOTAL HEAT GAIN 28,993
AIR FLOW RATE CFM 25.62 AIR FLOW RATE CFM 31.9

furnace pressure 0.6
furnace filter 0.00
a/c coil pressure 0.26
available pressure for s/a & r/a 0.34

FACTORY INSTALLED

59SC6A040M14--10 CARRIER

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 39,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	7	4
R/A	0	0	4	2	1

plenium pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16
r/a pressure 0.16
r/a grille press. Loss 0.02
adjusted pressure r/a 0.14

FAN SPEED 40
LOW 0
MEDLOW 0
MEDIUM 0
MEDIUM HIGH 925
HIGH 0

DESIGN CFM = 925
CFM @ .6" E.S.P.

TEMPERATURE RISE 39 °F

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	9	10	11	12	13	14	15	17	18	19	20	21	22	23	24
ROOM NAME	PRI	ENS	WIC	BED-4	BED-3	BED-2	BED-4	BED-3	PRI	BATH	LV/DN	ENTRY	KT/FM	KT/FM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.46	1.47	0.34	1.19	1.60	1.21	1.19	1.60	1.46	0.51	2.78	0.41	2.57	2.57	0.42	0.74	1.76	0.94	2.97	2.97	2.97	2.97
CFM PER RUN HEAT	37	38	9	30	41	31	30	41	37	13	71	11	66	66	11	19	45	24	76	76	76	76
RM GAIN MBH.	2.01	1.04	0.10	2.06	2.32	2.15	2.06	2.32	2.01	0.12	2.50	0.06	2.54	2.54	1.19	0.29	1.61	0.14	0.48	0.48	0.48	0.48
CFM PER RUN COOLING	64	33	3	66	74	69	66	74	64	4	80	2	81	81	38	9	51	4	15	15	15	15
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	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	56	55	32	33	60	36	37	59	66	41	8	19	39	45	41	20	27	16	38	34	7	19
EQUIVALENT LENGTH	160	220	130	120	180	180	120	170	140	170	190	170	130	180	160	120	120	170	120	140	170	130
TOTAL EFFECTIVE LENGTH	216	275	162	153	240	216	157	229	206	211	198	189	169	225	201	140	147	186	158	174	177	149
ADJUSTED PRESSURE	0.08	0.06	0.1	0.11	0.07	0.08	0.11	0.07	0.08	0.08	0.08	0.09	0.09	0.07	0.08	0.12	0.11	0.09	0.11	0.1	0.09	0.11
ROUND DUCT SIZE	5	5	4	5	6	6	5	6	5	4	6	4	6	6	4	4	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	272	279	103	220	209	158	220	209	272	149	362	126	337	337	126	218	516	275	558	558	558	558
COOLING VELOCITY (ft/min)	470	242	34	485	377	352	485	377	470	46	408	23	413	413	436	103	585	46	110	110	110	110
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	B	C	B	C	C	B	A	B	B	B	A	A	B	C	C	B	A	A	B	C

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
1	PRI	1.46	37	2.01	64	0.17	56	160	216	0.08	5	272	470	3X10	A
2	ENS	1.47	38	1.04	33	0.17	55	220	275	0.06	5	279	242	3X10	A
3	WIC	0.34	9	0.10	3	0.17	32	130	162	0.1	4	103	34	3X10	B
4	BED-4	1.19	30	2.06	66	0.17	33	120	153	0.11	5	220	485	3X10	C
5	BED-3	1.60	41	2.32	74	0.17	60	180	240	0.07	6	209	377	4X10	B
6	BED-2	1.21	31	2.15	69	0.17	36	180	216	0.08	6	158	352	4X10	C
8	BED-4	1.19	30	2.06	66	0.17	37	120	157	0.11	5	220	485	3X10	C
9	BED-3	1.60	41	2.32	74	0.17	59	170	229	0.07	6	209	377	4X10	B
10	PRI	1.46	37	2.01	64	0.17	66	140	206	0.08	5	272	470	3X10	A
11	BATH	0.51	13	0.12	4	0.17	41	170	211	0.08	4	149	46	3X10	B
12	LV/DN	2.78	71	2.50	80	0.17	8	190	198	0.08	6	362	408	4X10	B
13	ENTRY	0.41	11	0.06	2	0.17	19	170	189	0.09	4	126	23	3X10	B
14	KT/FM	2.57	66	2.54	81	0.16	39	130	169	0.09	6	337	413	4X10	A
15	KT/FM	2.57	66	2.54	81	0.16	45	180	225	0.07	6	337	413	4X10	A
17	LAUN	0.42	11	1.19	38	0.17	41	120	201	0.08	4	126	436	3X10	B
18	W/R	0.74	19	0.29	9	0.17	20	120	140	0.12	4	218	103	3X10	C
19	FOY	1.76	45	1.61	51	0.17	27	120	147	0.11	4	516	585	3X10	C
20	MUD	0.94	24	0.14	4	0.17	16	170	186	0.09	4	275	46	3X10	B
21	BAS	2.97	76	0.48	15	0.17	38	140	158	0.11	5	558	110	3X10	A
22	BAS	2.97	76	0.48	15	0.17	34	170	174	0.1	5	558	110	3X10	A
23	BAS	2.97	76	0.48	15	0.17	7	170	177	0.09	5	558	110	3X10	B
24	BAS	2.97	76	0.48	15	0.17	19	130	149	0.11	5	558	110	3X10	C

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE													
	TRUNK	STATIC	ROUND	RECT			VELOCITY			TRUNK	STATIC	ROUND	RECT			VELOCITY							
	CFM	PRESS.	DUCT	DUCT			(ft/min)			CFM	PRESS.	DUCT	DUCT			(ft/min)							
TRUNK A	396	0.06	10.7	14	x	8	509	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	693	0.06	13.1	20	x	8	624	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	231	0.08	8.1	10	x	8	416	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0

RETURN AIR #	1	2	3	4	5	6	BR
FLOOR	2	2	2	2	1	1	B
AIR VOLUME	115	75	85	115	105	280	150
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ACTUAL DUCT LGH.	57	76	63	71	29	47	14
EQUIVALENT LENGTH	215	240	205	225	155	180	135
TOTAL EFFECTIVE LH	272	316	268	296	184	227	149
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.08	0.06	0.10
ROUND DUCT SIZE	7	6	6	7	6	9.4	6.5
INLET GRILL SIZE	8	8	8	8	8	8	8
	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	14

TYPE: 3003
SITE NAME: SUMMER RIDGE ESTATES

LO # 105062
OPT 4 BED

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>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>169.6</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		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>169.6</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>90.1</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	X 74 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR	
Location	Model	cfm	HVI
ENS	BY INSTALLING CONTRACTOR	50	☒
BATH	BY INSTALLING CONTRACTOR	50	☒
W/R	BY INSTALLING CONTRACTOR	50	☒

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 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:	
ROYAL PIE 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:	May-24

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

Michael O'Rourke

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 105062	Model: 3003	Builder: ROYAL PIE HOMES	Date: 2024-05-16																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>998</td> <td>9</td> <td>8582.8</td> </tr> <tr> <td>First</td> <td>998</td> <td>10</td> <td>9580.8</td> </tr> <tr> <td>Second</td> <td>1167</td> <td>9</td> <td>10503</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>28,666.6 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>811.7 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	998	9	8582.8	First	998	10	9580.8	Second	1167	9	10503	Third	0	9	0	Fourth	0	9	0	Total:			28,666.6 ft³	Total:			811.7 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%;">0.279</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.087</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-19</td> <td>41</td> <td>74</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.279	SUMMER NATURAL AIR CHANGE RATE	0.087	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-19	41	74	Summer DTDc	24	30	6	11
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
Bsmt	998	9	8582.8																																																									
First	998	10	9580.8																																																									
Second	1167	9	10503																																																									
Third	0	9	0																																																									
Fourth	0	9	0																																																									
Total:			28,666.6 ft³																																																									
Total:			811.7 m³																																																									
WINTER NATURAL AIR CHANGE RATE	0.279																																																											
SUMMER NATURAL AIR CHANGE RATE	0.087																																																											
Design Temperature Difference																																																												
	Tin °C	Tout °C	ΔT °C	ΔT °F																																																								
Winter DTDh	22	-19	41	74																																																								
Summer DTDc	24	30	6	11																																																								
5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.279 x 225.49 x 41 °C x 1.2 = 3111 W = 10614 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.087 x 225.49 x 6 °C x 1.2 = 144 W = 493 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																								
1	0.5	10,614	6,566	0.808																																																								
2	0.3		8,584	0.371																																																								
3	0.2		9,998	0.212																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																												
				Michael O'Rourke BCIN# 19669																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 3003	OPT 4 BED	BUILDER: ROYAL PIE HOMES
SFQT: 2165	LO# 105062	SITE: SUMMER RIDGE ESTATES

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.60

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.00	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft ³):	28666.6	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	2.10	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.6 ft
LENGTH: 53.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	133.0 ft

2012 OBC - COMPLIANCE PACKAGE

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

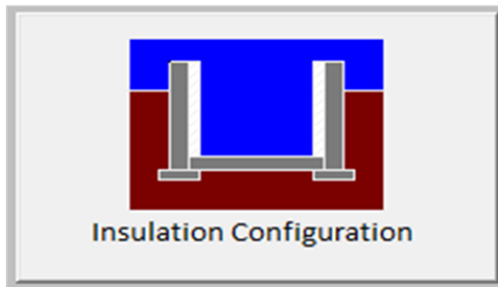
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.2	 Insulation Configuration
Floor Width (m):	7.9	
Exposed Perimeter (m):	40.5	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.71	
Window Area (m ²):	1.1	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1325

TYPE: 3003
LO# 105062

OPT 4 BED

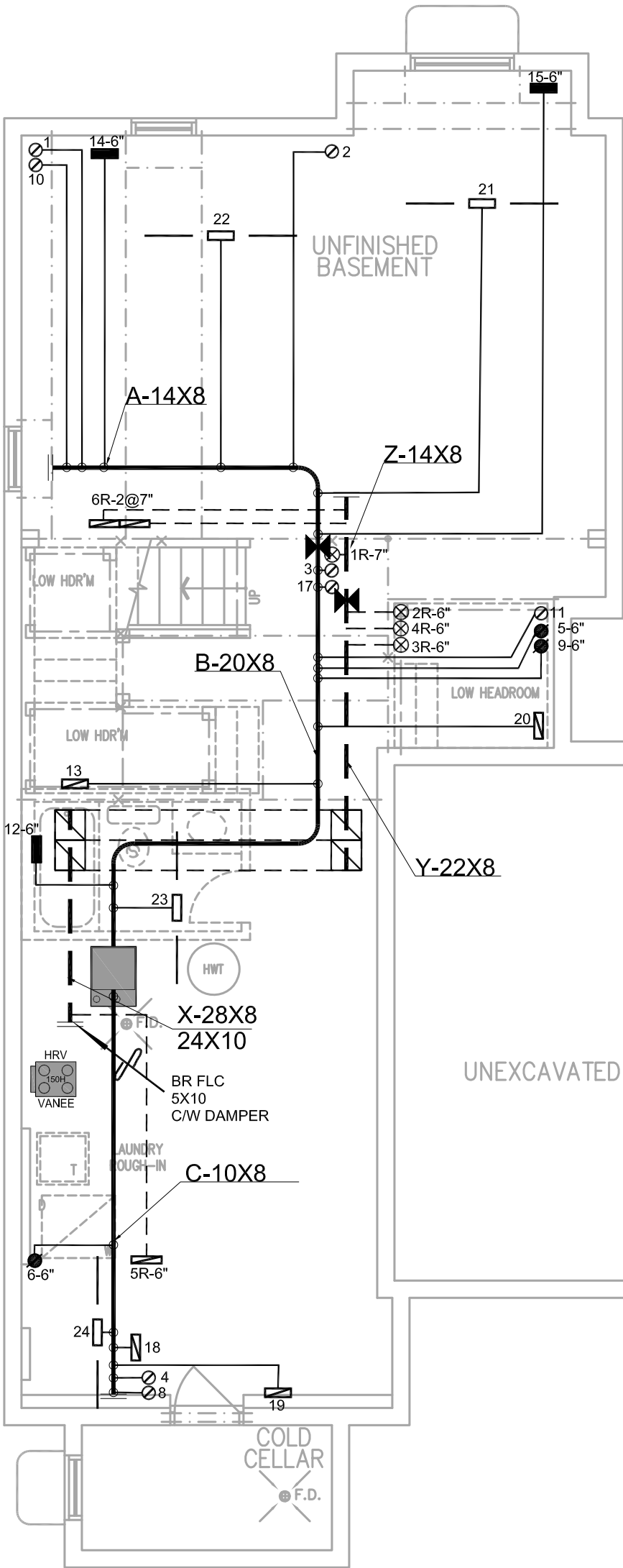
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.58			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	811.7			
Air Leakage/Ventilation				
Air Tightness Type:	Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	909.3 cm ²		
	3.00	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.279			
Cooling Air Leakage Rate (ACH/H):	0.087			

TYPE: 3003
LO# 105062

OPT 4 BED

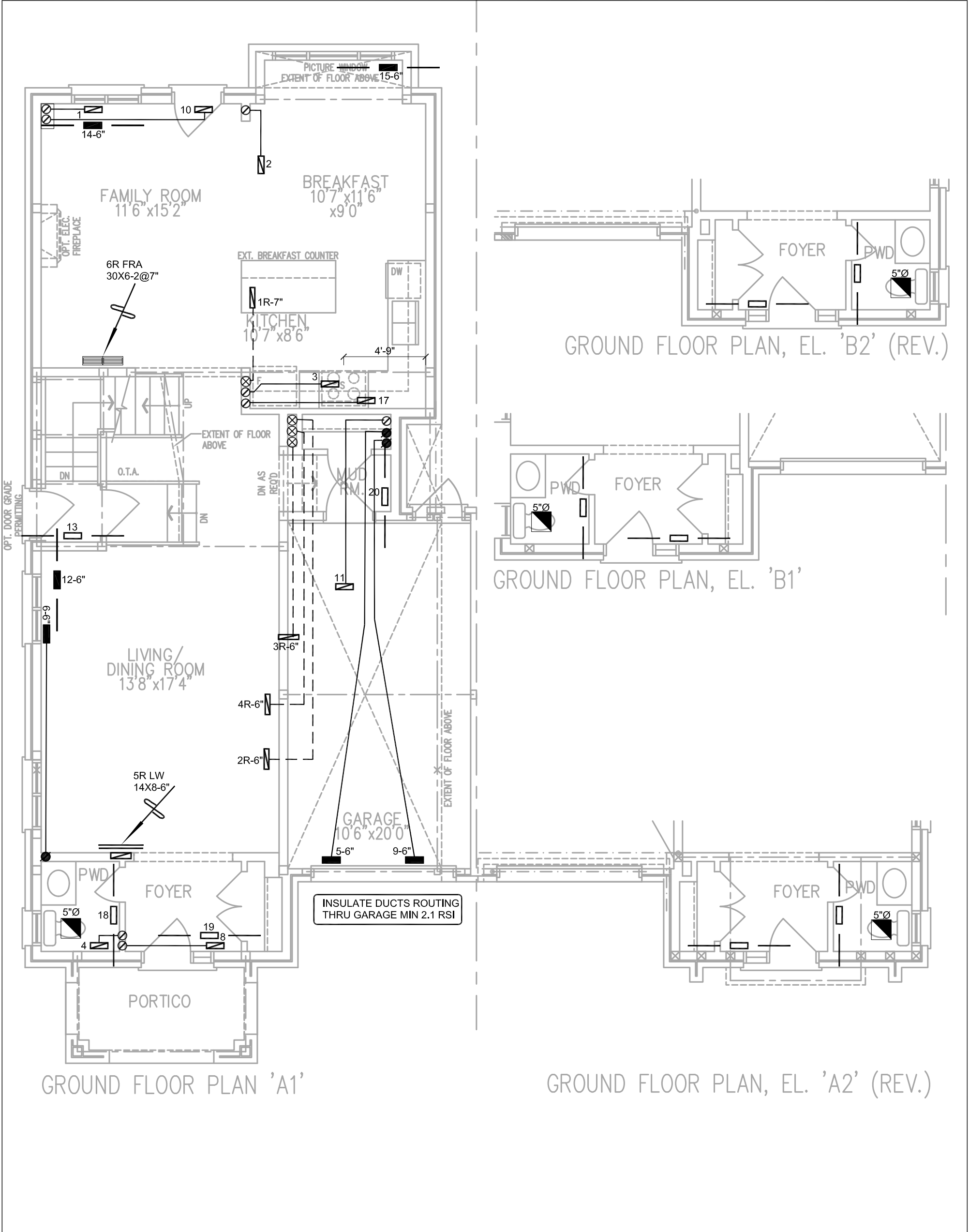


BASEMENT PLAN 'A1' & 'B1'

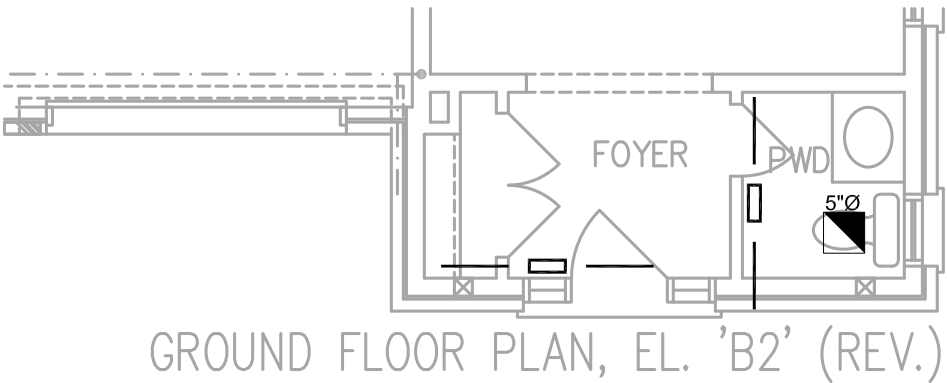


BASEMENT PLAN, EL. 'A2' & 'B2' (REV.)

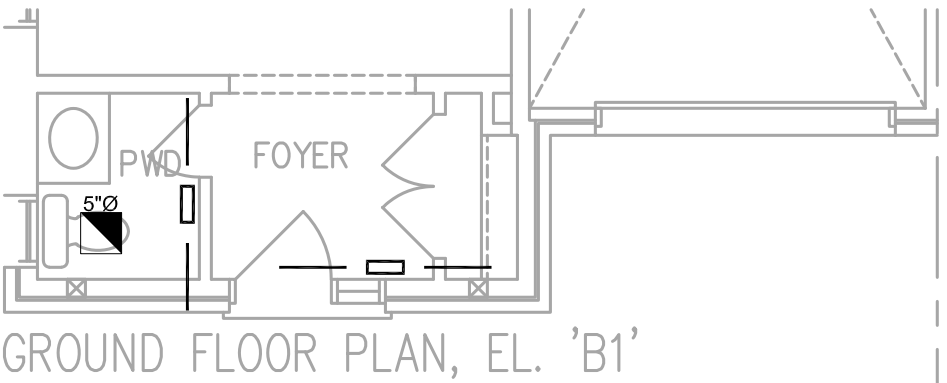
HVAC LEGEND								3.					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.					
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.					
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		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					
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.						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 BCIN # 19669 HVAC Designs Ltd.		PERFORMANCE					
Client		 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				HEAT LOSS 37692 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title			
Project Name SUMMER RIDGE ESTATES BRAMPTON, ONTARIO						MAKE	CARRIER	3RD FLOOR				BASEMENT HEATING LAYOUT	
						MODEL	59SC6A040M14--10	2ND FLOOR	11	4	3		
						INPUT	40 MBTU/H	1ST FLOOR	7	2	2		
OPT 4 BED 3003		2165 sqft		OUTPUT	39 MBTU/H	BASEMENT				Date	MAY/2024		
				COOLING	2.5 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	925 cfm @ 0.6" w.c.					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#		105062			



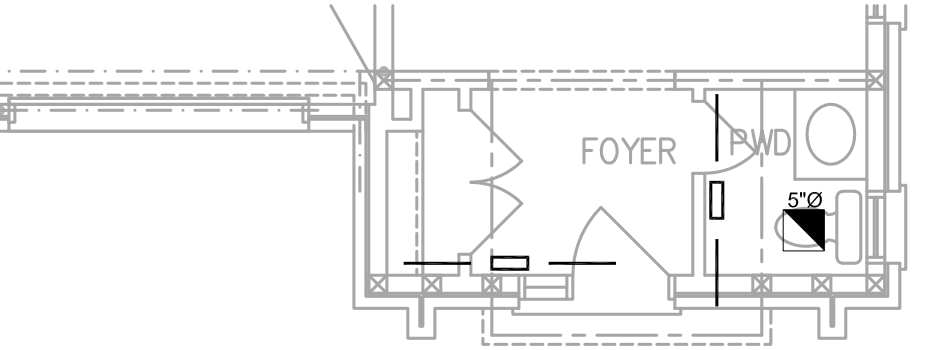
GROUND FLOOR PLAN 'A1'



GROUND FLOOR PLAN, EL. 'B2' (REV.)

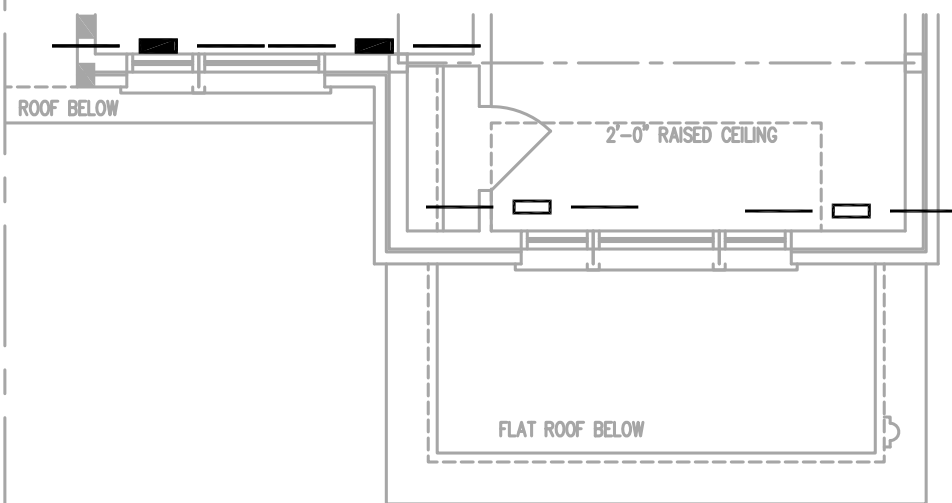


GROUND FLOOR PLAN, EL. 'B1'



GROUND FLOOR PLAN, EL. 'A2' (REV.)

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		
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.						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 BCIN # 19669 HVAC Designs Ltd.		PERFORMANCE
Client		 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				Sheet Title				
Project Name						FIRST FLOOR HEATING LAYOUT				
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO						Date MAY/2024				
OPT 4 BED 3003						Scale 3/16" = 1'-0"				
2165 sqft		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.				BCIN# 19669				
						LO# 105062				



Architectural section drawing of a building. The drawing shows a cross-section of a structure with a sloped roof. A label 'ROOF BELOW' is visible on the right side, indicating the roof structure beneath the main floor level. The drawing includes various structural elements like walls, floors, and roof trusses, along with some furniture or fixtures like a table and chairs.

Architectural floor plan showing a building section. The plan includes a central area labeled "1'-0" RAISED CEILING" and a lower area labeled "FLAT ROOF BELOW". The plan also shows a "ROOF BELOW" area on the left. The drawing uses solid lines for walls and dashed lines for the ceiling and roof boundaries. There are several rectangular features, possibly doors or windows, indicated by solid lines. The plan is oriented with a north arrow pointing towards the top right.

SECOND FLOOR PLAN EL. 'A2' (REV)

