


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@hvacdesigns.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: 3002 Project: SUMMER RIDGE ESTATES		
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.				
May 15, 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

SITE NAME: SUMMER RIDGE ESTATES				DATE: May-24				WINTER NATURAL AIR CHANGE RATE 0.279				HEAT LOSS AT °F. 74				CSA-F280-12			
BUILDER: ROYAL PIE HOMES				TYPE: 3002				GFA: 2285				LO# 105058				SUMMER NATURAL AIR CHANGE RATE 0.087			
ROOM USE				MBR				ENS				BED-2				BED-3			
EXP. WALL				37				28				11				44			
CLG. HT.				9				9				9				9			
FACTORS																			
GRS.WALL AREA				333				252				99				396			
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
NORTH				20.8 12.8				0 0 0				0 0 0				0 0 0			
EAST				20.8 32.9				0 0 0				33 686 1086				68 1413 2238			
SOUTH				20.8 19.8				23 478 456				0 0 0				0 0 0			
WEST				20.8 32.9				35 727 1152				0 0 0				0 0 0			
SKYLT.				34.1 132.1				0 0 0				0 0 0				0 0 0			
DOORS				19.6 2.9				0 0 0				0 0 0				0 0 0			
NET EXPOSED WALL				3.5 0.5				275 954 141				66 229 34				328 1137 169			
NET EXPOSED BSMT WALL ABOVE GR				3.5 0.5				0 0 0				0 0 0				0 0 0			
EXPOSED CLG				1.3 0.6				410 514 228				231 289 129				318 398 177			
NO ATTIC EXPOSED CLG				2.7 1.2				0 0 0				0 0 0				0 0 0			
EXPOSED FLOOR				2.5 0.4				0 0 0				191 476 71				8 20 3			
BASEMENT/CRAWL HEAT LOSS																			
SLAB ON GRADE HEAT LOSS																			
SUBTOTAL HT LOSS																			
SUB TOTAL HT GAIN																			
LEVEL FACTOR / MULTIPLIER																			
AIR CHANGE HEAT LOSS																			
AIR CHANGE HEAT GAIN																			
DUCT LOSS																			
DUCT GAIN																			
HEAT GAIN PEOPLE																			
HEAT GAIN APPLIANCES/LIGHTS																			
TOTAL HT LOSS BTU/H																			
TOTAL HT GAIN x 1.3 BTU/H																			

ROOM USE			LV/DN			ENTRY			KT/FM			LAUN			W/R			FOY			MUD												BAS		
EXP. WALL			34			9			62			6			13			23			12												129		
CLG. HT.			10			10			10			9			10			10			10												9		
GRS.WALL AREA			326			86			595			54			125			221			115									722					
GLAZING			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN									LOSS GAIN					
NORTH			20.8	12.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
EAST			20.8	32.9	0	0	0	0	0	0	0	0	0	0	0	13	270	428	33	686	1086	0	0	0	0	0	0	0	0	0	0	0	0		
SOUTH			20.8	19.8	44	914	872	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
WEST			20.8	32.9	0	0	0	0	0	0	0	65	1350	2139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SKYLT.			34.1	132.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
DOORS			19.6	2.9	0	0	0	21	411	61	10	196	29	0	0	0	0	0	9	176	26	20	392	58	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL			3.5	0.5	282	979	145	65	227	34	520	1804	267	54	187	28	112	388	57	179	620	92	95	330	49	0	0	0	0	0	0	0	0	0	
NET EXPOSED BSMT WALL ABOVE GR			3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EXPOSED CLG			1.3	0.6	0	0	0	0	0	0	0	0	0	75	94	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
NO ATTIC EXPOSED CLG			2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EXPOSED FLOOR			2.5	0.4	0	0	0	0	0	0	0	0	0	0	0	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											
SLAB ON GRADE HEAT LOSS					0			0			0		0					0			0			0											
SUBTOTAL HT LOSS					1893			638			3350		281			658		1482		722															
SUB TOTAL HT GAIN						1018			95		2436			70		485		1204		107															
LEVEL FACTOR / MULTIPLIER			0.30	0.38			0.30	0.38		0.30	0.38		0.20	0.24		0.30	0.38		0.30	0.38		0.30	0.38								0.50	0.87			
AIR CHANGE HEAT LOSS					721			243			1275			68		250		564		275															
AIR CHANGE HEAT GAIN						56		5			135			4		27		67		6															
DUCT LOSS					0			0			0		0			0		0		0															
DUCT GAIN						0		0			0		0			0		0		0															
HEAT GAIN PEOPLE			240		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS						1015			0		1015			1015		0		0		0															
TOTAL HT LOSS BTU/H					2614			881			4625		350		908		2046		996																
TOTAL HT GAIN x1.3 BTU/H						2716		130			4661			1415		666		1652		147															

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

TYPE: 3002

DATE: May-24

GFA: 2285

LO# 105058

HEATING CFM 925 COOLING CFM 925
TOTAL HEAT LOSS 35,941 TOTAL HEAT GAIN 28,822
AIR FLOW RATE CFM 25.74 AIR FLOW RATE CFM 32.09

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	9	7	4
R/A	0	0	4	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

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

RUN #	1	2	4	5	7	8	9	10	12	13	14	15	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BATH	BED-2	BED-3	MBR	LV/DN	ENTRY	KT/FM	KT/FM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.66	1.65	1.15	2.03	0.27	1.15	2.03	1.66	2.61	0.88	2.31	2.31	0.35	0.91	2.05	1.00	2.98	2.98	2.98	2.98
CFM PER RUN HEAT	43	43	30	52	7	30	52	43	67	23	60	60	9	23	53	26	77	77	77	77
RM GAIN MBH.	2.33	1.07	1.89	2.85	0.08	1.89	2.85	2.33	2.72	0.13	2.33	2.33	1.42	0.67	1.65	0.15	0.54	0.54	0.54	0.54
CFM PER RUN COOLING	75	34	61	91	3	61	91	75	87	4	75	75	45	21	53	5	17	17	17	17
ADJUSTED PRESSURE	0.17	0.17	0.17	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	0.17	0.17	0.17
ACTUAL DUCT LGH.	58	50	36	48	42	45	43	62	7	26	39	51	41	19	22	18	39	39	7	17
EQUIVALENT LENGTH	170	190	180	160	170	170	150	170	200	120	140	180	200	90	100	160	100	130	160	140
TOTAL EFFECTIVE LENGTH	228	240	216	208	212	215	193	232	207	146	179	231	241	109	122	178	139	169	167	157
ADJUSTED PRESSURE	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.07	0.08	0.11	0.09	0.07	0.07	0.15	0.14	0.09	0.12	0.1	0.1	0.11
ROUND DUCT SIZE	6	5	5	6	4	5	6	6	6	4	5	6	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	219	316	220	265	80	220	265	219	342	264	441	306	66	264	389	298	565	565	565	565
COOLING VELOCITY (ft/min)	382	250	448	464	34	448	464	382	444	46	551	382	330	241	389	57	125	125	125	125
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	C	C	B	C	C	A	B	B	A	A	B	C	C	B	B	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	MBR	1.66	43	2.33	75	0.17	58	170	228	0.07	6	219	382	4X10	A
2	ENS	1.65	43	1.07	34	0.17	50	190	240	0.07	5	316	250	3X10	B
4	BED-2	1.15	30	1.89	61	0.17	36	180	216	0.08	5	220	448	3X10	C
5	BED-3	2.03	52	2.85	91	0.16	48	160	208	0.08	6	265	464	4X10	C
7	BATH	0.27	7	0.08	3	0.17	42	170	212	0.08	4	80	34	3X10	B
8	BED-2	1.15	30	1.89	61	0.17	45	170	215	0.08	5	220	448	3X10	C
9	BED-3	2.03	52	2.85	91	0.16	43	150	193	0.08	6	265	464	4X10	C
10	MBR	1.66	43	2.33	75	0.17	62	170	232	0.07	6	219	382	4X10	A
12	LV/DN	2.61	67	2.72	87	0.16	7	200	207	0.08	6	342	444	4X10	B
13	ENTRY	0.88	23	0.13	4	0.17	26	120	146	0.11	4	264	46	3X10	B
14	KT/FM	2.31	60	2.33	75	0.17	39	140	179	0.09	5	441	551	3X10	A
15	KT/FM	2.31	60	2.33	75	0.17	51	180	231	0.07	6	306	382	4X10	A
17	LAUN	0.35	9	1.42	45	0.17	41	200	241	0.07	5	66	330	3X10	B
18	W/R	0.91	23	0.67	21	0.17	19	90	109	0.15	4	264	241	3X10	C
19	FOY	2.05	53	1.65	53	0.17	22	100	122	0.14	5	389	389	3X10	C
20	MUD	1.00	26	0.15	5	0.17	18	160	178	0.09	4	298	57	3X10	B
21	BAS	2.98	77	0.54	17	0.17	39	100	139	0.12	5	565	125	3X10	B
22	BAS	2.98	77	0.54	17	0.17	39	130	169	0.1	5	565	125	3X10	A
23	BAS	2.98	77	0.54	17	0.17	7	160	167	0.1	5	565	125	3X10	B
24	BAS	2.98	77	0.54	17	0.17	17	140	157	0.11	5	565	125	3X10	C

SUPPLY AIR TRUNK SIZE												RETURN AIR TRUNK SIZE											
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK A	283	0.07	9	10	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	612	0.07	12.1	18	x	8	612	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	317	0.08	9.1	10	x	8	571	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	80	80	75	115	105	318	152
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ACTUAL DUCT LGH.	51	62	69	56	25	44	14
EQUIVALENT LENGTH	230	255	245	215	155	205	135
TOTAL EFFECTIVE LH	281	317	314	271	180	249	149
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.08	0.06	0.10
ROUND DUCT SIZE	6	6	6	7	6	9.8	6.5
INLET GRILL SIZE	8	8	8	8	8	0	8
INLET GRILL SIZE	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	14

TYPE: 3002
SITE NAME: SUMMER RIDGE ESTATES

LO # 105058

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	<input checked="" type="checkbox"/> Direct vent (sealed combustion) only	
b)	<input type="checkbox"/> Positive venting induced draft (except fireplaces)	
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft gas fireplace	
d)	<input type="checkbox"/> Solid Fuel (including fireplaces)	
e)	<input type="checkbox"/> No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/> Forced Air	<input type="checkbox"/> Non Forced Air
<input type="checkbox"/> Electric Space Heat	

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/> I	Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/> II	Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/> III	Any Type c) appliance	
<input type="checkbox"/> IV	Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/> 1	Exhaust only/Forced Air System	
<input type="checkbox"/> 2	HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/> 3	HRV Simplified/connected to forced air system	
<input type="checkbox"/> 4	HRV with Ducting/non forced air system	
<input type="checkbox"/>	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>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>159.0</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>63.6</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>159</u>	cfm
Less Principal Ventil. Capacity	<u>63.6</u>	cfm
Required Supplemental Capacity	<u>95.4</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
<u>63.6</u> cfm	<input checked="" type="checkbox"/> HVI Approved

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

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	3.5
BATH	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	3.5
W/R	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>	3.5

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 @ 32 deg F (0 deg C)	<input checked="" type="checkbox"/> HVI Approved	

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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 105058		Model: 3002		Builder: ROYAL PIE HOMES			Date: 2024-05-15																																																										
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																																																												
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.279 x 235.64 x 41 °C x 1.2 = 3251 W</p> <p style="text-align: right;">= 11092 Btu/h</p>					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>0.087 x 235.64 x 6 °C x 1.2 = 151 W</p> <p style="text-align: right;">= 515 Btu/h</p>																																																												
5.2.3.2 Heat Loss due to Mechanical Ventilation					6.2.7 Sensible heat Gain due to Ventilation																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 74 °F x 1.08 x 0.25 = 1274 Btu/h</p>					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>64 CFM x 11 °F x 1.08 x 0.25 = 189 Btu/h</p>																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																	
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<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>																																																																	
								<div style="border: 1px solid black; padding: 5px;"> Michael O'Rourke BCIN# 19669 </div>																																																									

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 3002	BUILDER: ROYAL PIE HOMES
SFQT: 2285	SITE: SUMMER RIDGE ESTATES
LO# 105058	

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):	29958.2	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	2.15	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.6 ft
LENGTH: 51.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	129.0 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	-

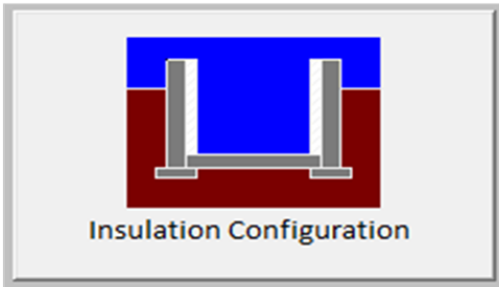
INDIVIDUAL BCIN: 19669

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):	15.5	 Insulation Configuration
Floor Width (m):	7.9	
Exposed Perimeter (m):	39.3	
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):		1281

TYPE: 3002
LO# 105058

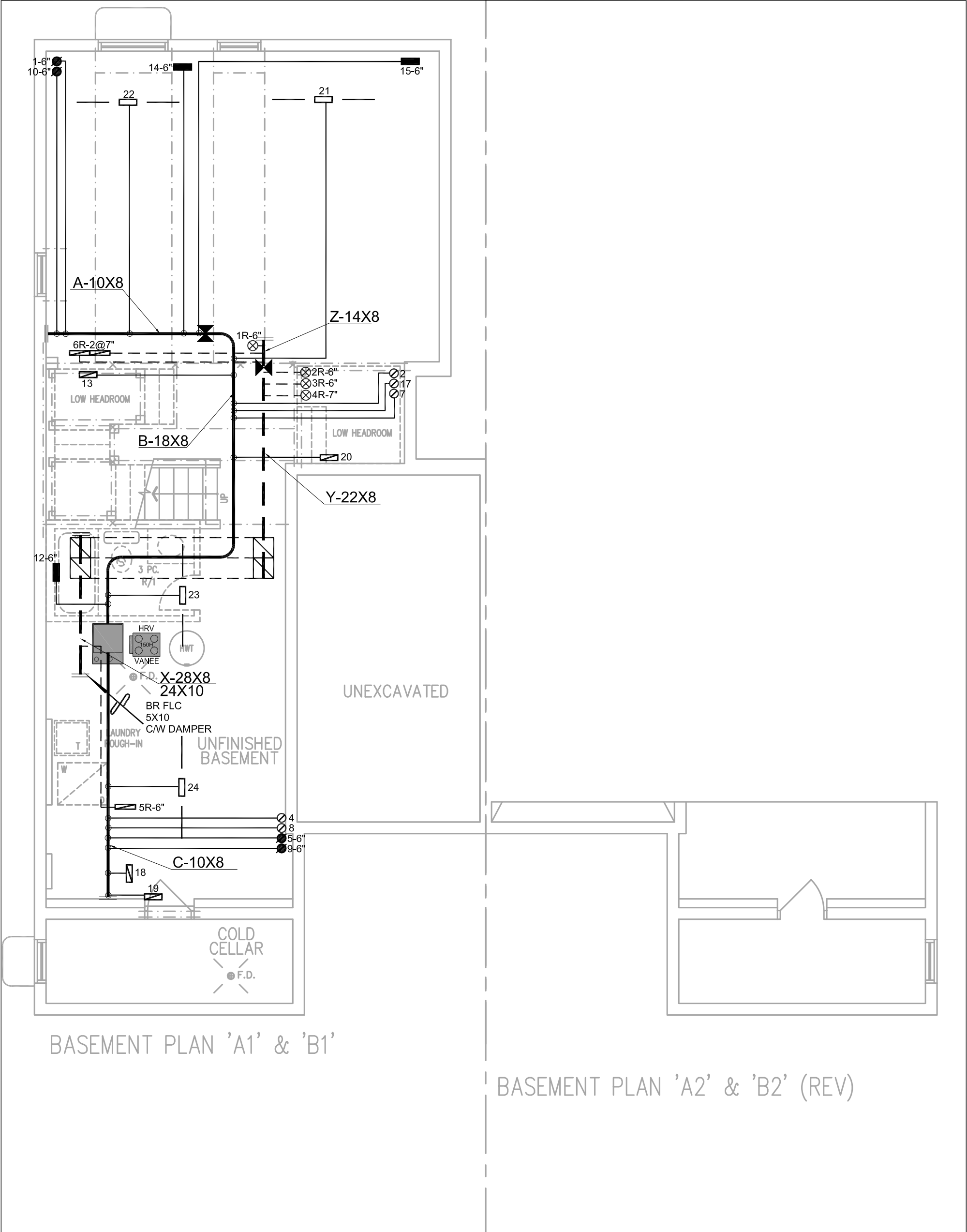
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

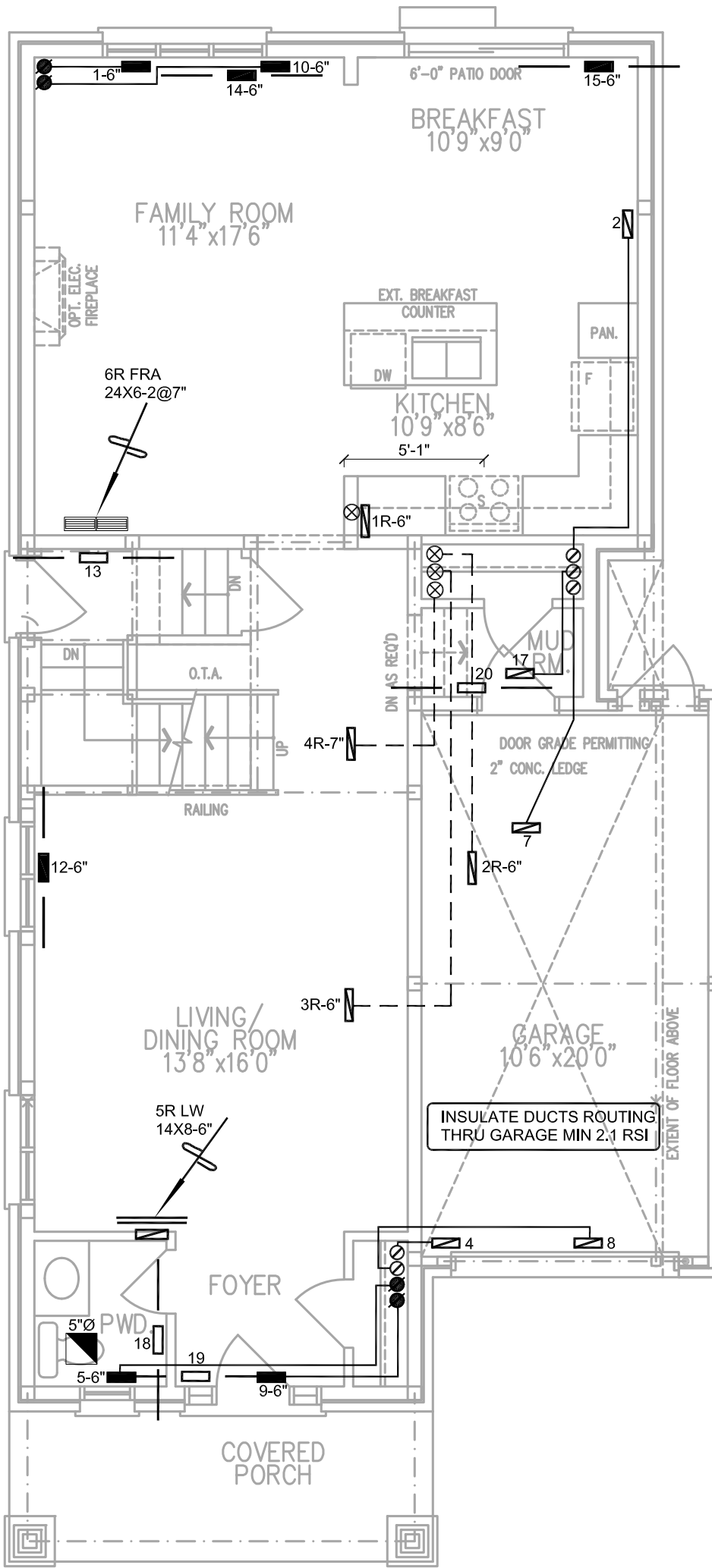
Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.58			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	848.3			
Air Leakage/Ventilation				
Air Tightness Type:	Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	950.3 cm ²		
	3.00	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):	0.279			
Cooling Air Leakage Rate (ACH/H):	0.087			

TYPE: 3002

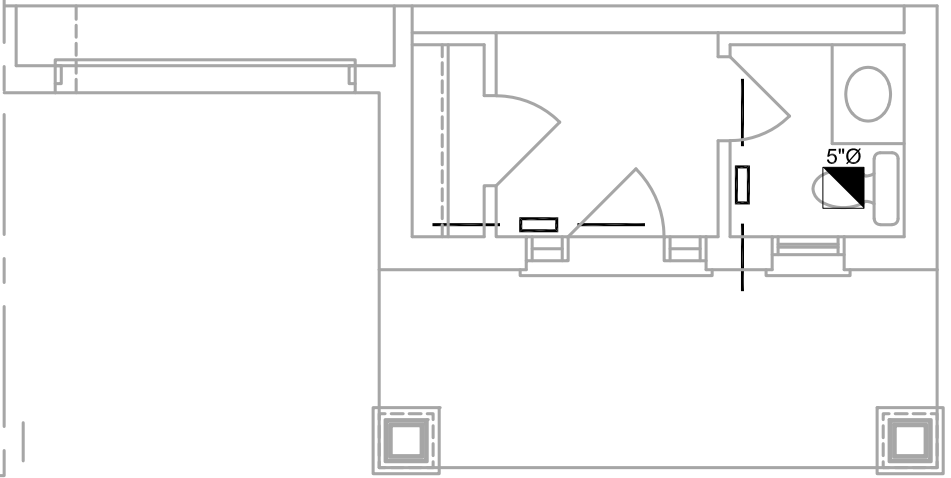
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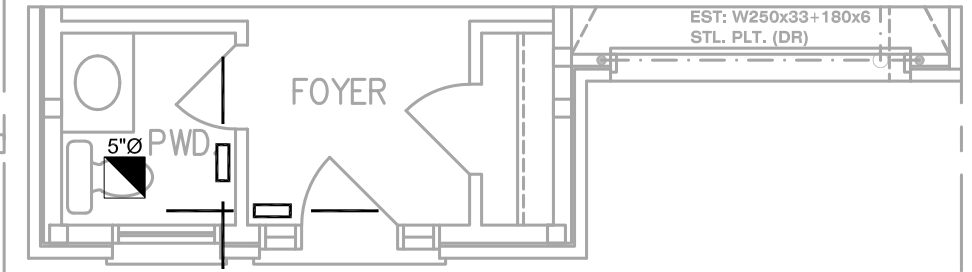
HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN 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 ROYAL PINE 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		HEAT LOSS 37215 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title			
				UNIT DATA		3RD FLOOR		BASEMENT HEATING LAYOUT			
Project Name SUMMER RIDGE ESTATES BRAMPTON, ONTARIO				MAKE CARRIER		2ND FLOOR		9	4		3
				MODEL 59SC6A040M14--10		1ST FLOOR		7	2		2
3002		2285 sqft		INPUT 40 MBTU/H		BASEMENT		4	1		0
				OUTPUT 39 MBTU/H		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		Date MAY/2024			
				COOLING 2.5 TONS				Scale 3/16" = 1'-0"			
				FAN SPEED 925 cfm @ 0.6" w.c.				BCIN# 19669			
								LO# 105058			



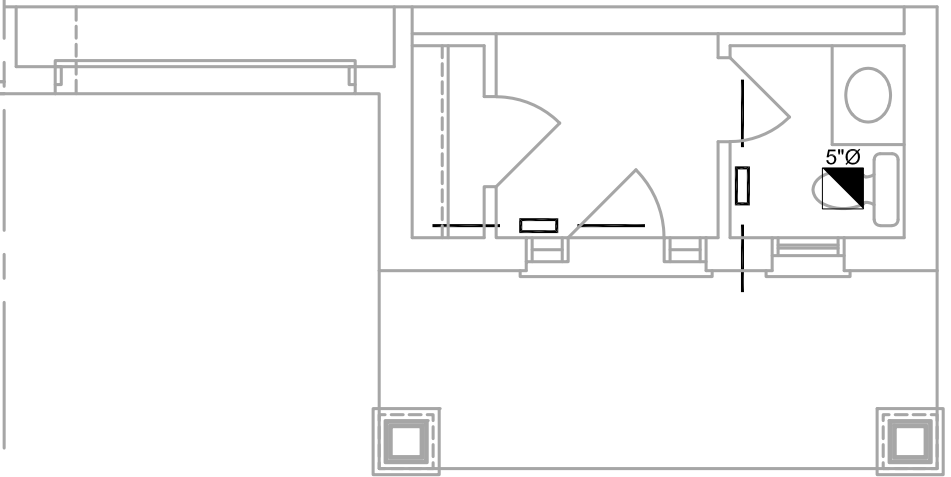
GROUND FLOOR PLAN 'A1'
(W/ SIDE DOOR)



GROUND FLOOR PLAN 'B2' (REV)

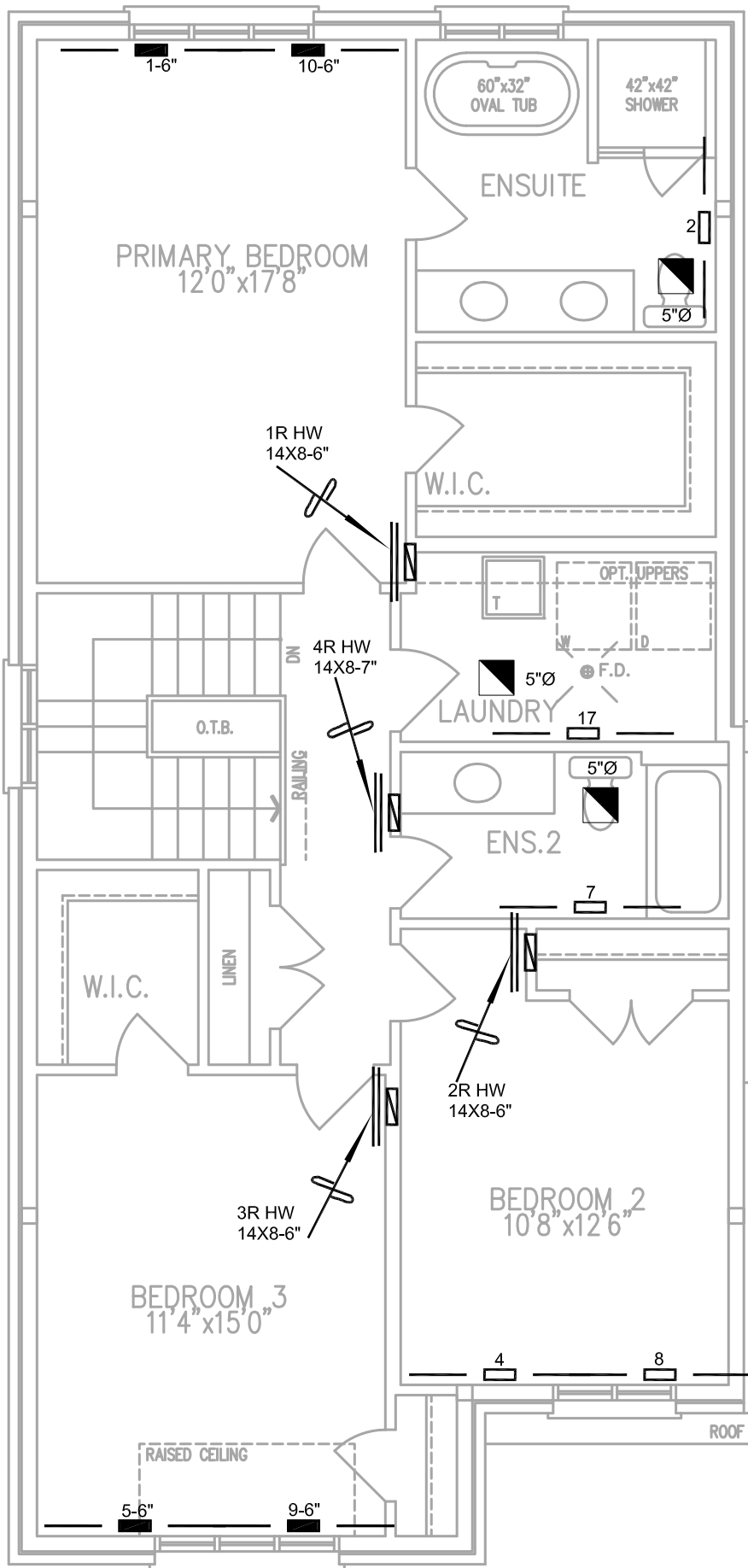


GROUND FLOOR PLAN 'B1'

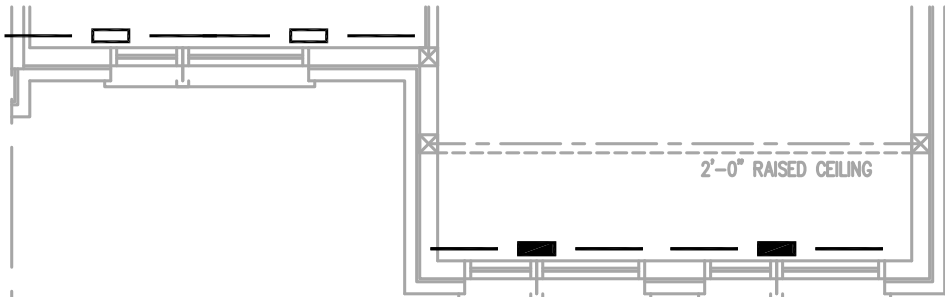


GROUND FLOOR PLAN 'A2' (REV)

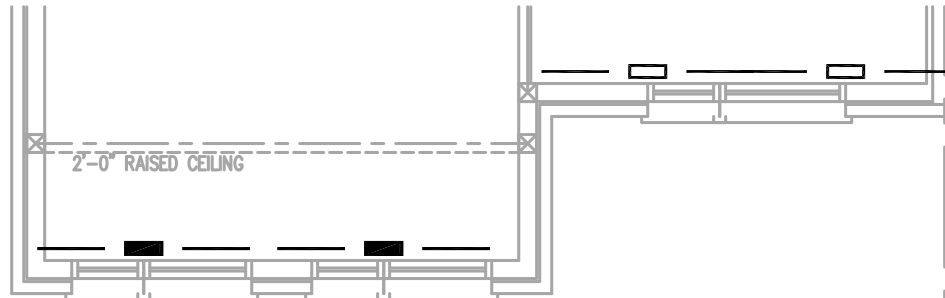
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS				
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Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 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	
Project Name											FIRST FLOOR HEATING LAYOUT	
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO											Date MAY/2024	
											Scale 3/16" = 1'-0"	
						BCIN# 19669						
3002		2285 sqft						LO# 105058				



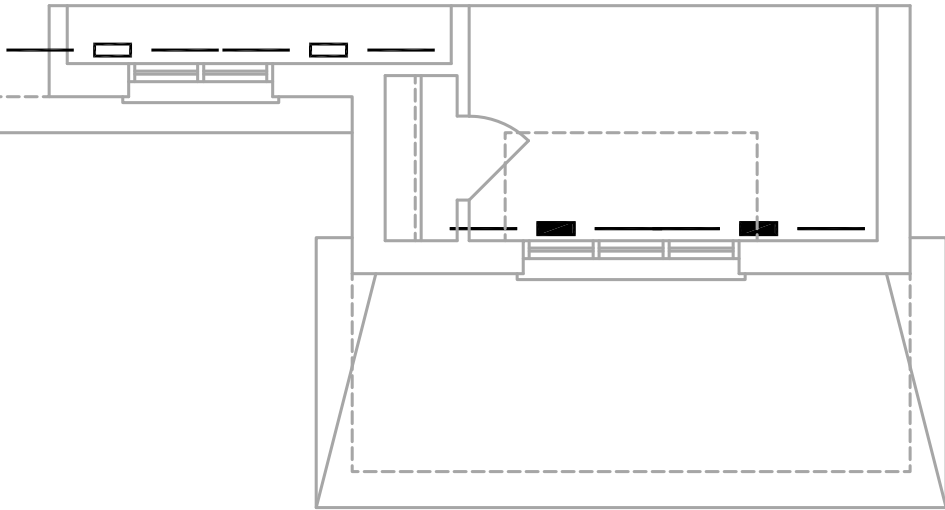
SECOND FLOOR PLAN EL. 'A1'



SECOND FLOOR PLAN 'B2' (REV)



SECOND FLOOR PLAN 'B1'



SECOND FLOOR PLAN EL. 'A2' (REV)

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Client		ROYAL PINE HOMES		Project Name		SUMMER RIDGE ESTATES BRAMPTON, ONTARIO		PERFORMANCE		
3002		2285 sqft		HVADESIGNS LTD.		375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services		Sheet Title		
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