

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 3 BATH 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

SITE NAME: SUMMER RIDGE ESTATES				OPT 3 BATH				DATE: May-24				WINTER NATURAL AIR CHANGE RATE 0.279				HEAT LOSS AT °F. 74				CSA-F280-12			
BUILDER: ROYAL PIE HOMES				TYPE: 3003				GFA: 2165				LO# 105061				SUMMER NATURAL AIR CHANGE RATE 0.087				HEAT GAIN AT °F. 11			
ROOM USE				PRI				ENS				WIC				BED-2				BED-3			
EXP. WALL				39				24				6				26				24			
CLG. HT.				9				9				9				9				9			
FACTORS																							
GRS.WALL AREA				351				216				54				234				216			
GLAZING				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			
EAST				20.8 32.9				0 0 0				0 0 0				55 1143 1810				55 1143 1810			
SOUTH				20.8 19.8				11 229 218				0 0 0				0 0 0				0 0 0			
WEST				20.8 32.9				36 748 1185				18 374 592				0 0 0				0 0 0			
SKYLT.				34.1 132.1				0 0 0				0 0 0				0 0 0				0 0 0			
DOORS				19.6 2.9				0 0 0				0 0 0				0 0 0				0 0 0			
NET EXPOSED WALL				3.5 0.5				304 1054 156				198 687 102				54 187 28				179 621 92			
NET EXPOSED BSMT WALL ABOVE GR				3.5 0.5				0 0 0				0 0 0				0 0 0				0 0 0			
EXPOSED CLG				1.3 0.6				347 435 193				120 150 67				76 95 42				159 199 89			
NO ATTIC EXPOSED CLG				2.7 1.2				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				188 468 69			
BASEMENT/CRAWL HEAT LOSS								0				0				0				0			
SLAB ON GRADE HEAT LOSS								0				0				0				0			
SUBTOTAL HT LOSS								2465				1211				282				1963			
SUB TOTAL HT GAIN								1753				761				70				1991			
LEVEL FACTOR / MULTIPLIER				0.20 0.21				0.20 0.21				0.20 0.21				0.20 0.21				0.20 0.21			
AIR CHANGE HEAT LOSS								527				259				60				420			
AIR CHANGE HEAT GAIN								89				38				4				101			
DUCT LOSS								0				0				0				292			
DUCT GAIN								0				0				0				336			
HEAT GAIN PEOPLE				240				2				480				0				1			
HEAT GAIN APPLIANCES/LIGHTS								949				0				0				240			
TOTAL HT LOSS BTU/H								2993				1470				343				2382			
TOTAL HT GAIN x 1.3 BTU/H								4251				1039				96				4264			

ROOM USE			LV/DN			ENTRY			KT/FM			LAUN			W/R			FOY			MUD			BAS		
EXP. WALL			38			9			66			11			12			17			11			133		
CLG. HT.			10			10			10			9			10			10			10			9		
FACTORS																										
GRS.WALL AREA			365			86			634			99			115			163			106			745		
GLAZING			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		
EAST	20.8	32.9	0	0	0	0	0	0	0	0	0	0	0	0	0	33	686	1086	0	0	0	0	0	0		
SOUTH	20.8	19.8	44	914	872	0	0	0	0	0	0	16	332	317	8	166	159	0	0	0	0	0	0	0		
WEST	20.8	32.9	0	0	0	0	0	0	79	1641	2600	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		
DOORS	19.6	2.9	0	0	0	0	0	0	10	196	29	0	0	0	0	9	176	26	20	392	58	20	392	58		
NET EXPOSED WALL			3.5	0.5	321	1112	165	86	300	44	545	1888	280	83	288	43	107	372	55	121	420	62	86	297	44	
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	
EXPOSED CLG			1.3	0.6	0	0	0	0	0	0	19	24	11	160	200	89	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	
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	
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0			4523		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0		
SUBTOTAL HT LOSS			2026			300			3749			821			538			1282			688			6566		
SUB TOTAL HT GAIN						1037			44			2920			449			214			1175			102		
LEVEL FACTOR / MULTIPLIER			0.30	0.37		0.30	0.37		0.30	0.37		0.20	0.21		0.30	0.37		0.30	0.37		0.30	0.37		0.50	0.81	
AIR CHANGE HEAT LOSS			752			111			1391			176			200			476			255			5307		
AIR CHANGE HEAT GAIN			52			2			148			23			11			59			5			31		
DUCT LOSS			0			0			0			0			0			0			0			0		
DUCT GAIN			0			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	
HEAT GAIN APPLIANCES/LIGHTS			949			0			949			949			0			0			0			949		
TOTAL HT LOSS BTU/H			2778			411			5140			996			737			1758			944			11873		
TOTAL HT GAIN x 1.3 BTU/H			2650			61			5221			1847			292			1604			139			2065		

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

OPT 3 BATH
TYPE: 3003

DATE: May-24

GFA: 2165 LO# 105061

HEATING CFM 925 COOLING CFM 925
TOTAL HEAT LOSS 36,027 TOTAL HEAT GAIN 28,745
AIR FLOW RATE CFM 25.68 AIR FLOW RATE CFM 32.18

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

plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16
r/a pressure 0.16
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	7	8	9	10	11	12	13	14	15	17	18	19	20	21	22	23	24
ROOM NAME	PRI	ENS	WIC	BED-2	BED-3	ENS-2	BED-2	BED-3	PRI	BATH	LV/DN	ENTRY	KT/FM	KT/FM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.50	1.47	0.34	1.19	1.61	0.48	1.19	1.61	1.50	0.51	2.78	0.41	2.57	2.57	1.00	0.74	1.76	0.94	2.97	2.97	2.97	2.97
CFM PER RUN HEAT	38	38	9	31	41	12	31	41	38	13	71	11	66	66	26	19	45	24	76	76	76	76
RM GAIN MBH.	2.13	1.04	0.10	2.13	2.40	0.29	2.13	2.40	2.13	0.12	2.65	0.06	2.61	2.61	1.85	0.29	1.60	0.14	0.52	0.52	0.52	0.52
CFM PER RUN COOLING	68	33	3	69	77	9	69	77	68	4	85	2	84	84	59	9	52	4	17	17	17	17
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	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	44	32	33	60	36	37	59	66	41	8	19	39	45	41	20	27	16	38	34	7	19
EQUIVALENT LENGTH	160	130	130	120	160	180	120	170	140	170	190	170	130	110	170	120	120	170	120	140	170	130
TOTAL EFFECTIVE LENGTH	216	174	162	153	220	216	157	229	206	211	198	189	169	155	211	140	147	186	158	174	177	149
ADJUSTED PRESSURE	0.08	0.1	0.1	0.11	0.08	0.08	0.11	0.07	0.08	0.08	0.08	0.09	0.09	0.1	0.08	0.12	0.11	0.09	0.11	0.1	0.09	0.11
ROUND DUCT SIZE	6	4	4	5	6	4	5	6	6	4	6	4	6	6	5	4	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	194	436	103	228	209	138	228	209	194	149	362	126	337	337	191	218	516	275	558	558	558	558
COOLING VELOCITY (ft/min)	347	379	34	507	393	103	507	393	347	46	433	23	428	428	433	103	597	46	125	125	125	125
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	B	C	C	C	C	B	A	B	B	B	A	B	C	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	1.50	38	2.13	68	0.17	56	160	216	0.08	6	194	347	4X10	A
2	ENS	1.47	38	1.04	33	0.17	44	130	174	0.1	4	436	379	3X10	B
3	WIC	0.34	9	0.10	3	0.17	32	130	162	0.1	4	103	34	3X10	B
4	BED-2	1.19	31	2.13	69	0.17	33	120	153	0.11	5	228	507	3X10	C
5	BED-3	1.61	41	2.40	77	0.17	60	160	220	0.08	6	209	393	4X10	C
7	ENS-2	0.48	12	0.29	9	0.17	36	180	216	0.08	4	138	103	3X10	C
8	BED-2	1.19	31	2.13	69	0.17	37	120	157	0.11	5	228	507	3X10	C
9	BED-3	1.61	41	2.40	77	0.17	59	170	229	0.07	6	209	393	4X10	B
10	PRI	1.50	38	2.13	68	0.17	66	140	206	0.08	6	194	347	4X10	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	2.65	85	0.16	8	190	198	0.08	6	362	433	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	2.61	84	0.16	39	130	169	0.09	6	337	428	4X10	A
15	KT/FM	2.57	66	2.61	84	0.16	45	110	155	0.1	6	337	428	4X10	B
17	LAUN	1.00	26	1.85	59	0.17	41	170	211	0.08	5	191	433	3X10	C
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	1.60	52	0.17	27	120	147	0.11	4	516	597	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	0.52	17	0.17	38	120	158	0.11	5	558	125	3X10	A
22	BAS	2.97	76	0.52	17	0.17	34	140	174	0.1	5	558	125	3X10	A
23	BAS	2.97	76	0.52	17	0.17	7	170	177	0.09	5	558	125	3X10	B
24	BAS	2.97	76	0.52	17	0.17	19	130	149	0.11	5	558	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	294	0.08	8.9	10	x	8	529	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	643	0.07	12.3	18	x	8	643	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	281	0.08	8.7	10	x	8	506	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
INLET GRILL SIZE	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 # 105061
OPT 3 BATH

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>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>63.6</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>169.6</u>	cfm
Less Principal Ventil. Capacity	<u>63.6</u>	cfm
Required Supplemental Capacity	<u>106.0</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>63.6</u> cfm	☒ 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	☒	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
W/R	BY INSTALLING CONTRACTOR	50	☒	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	☒ 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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 105061		Model: 3003		Builder: ROYAL PIE HOMES				Date: 2024-05-16																																																									
Volume Calculation					Air Change & Delta T Data																																																												
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$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 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																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 74 °F x 1.08 x 0.25 = 1274 Btu/h					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 11 °F x 1.08 x 0.25 = 189 Btu/h																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																	
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*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 3 BATH	BUILDER: ROYAL PIE HOMES
SFQT: 2165	LO# 105061	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:	4
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

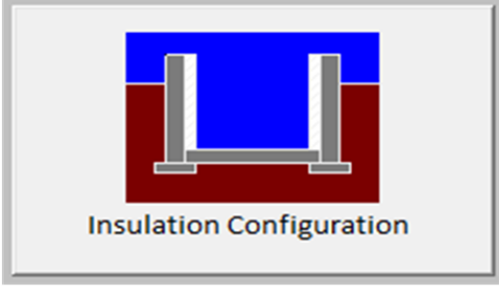
2012 OBC - COMPLIANCE PACKAGE		Compliance Package PERFORMANCE	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22+1.5	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# 105061

OPT 3 BATH

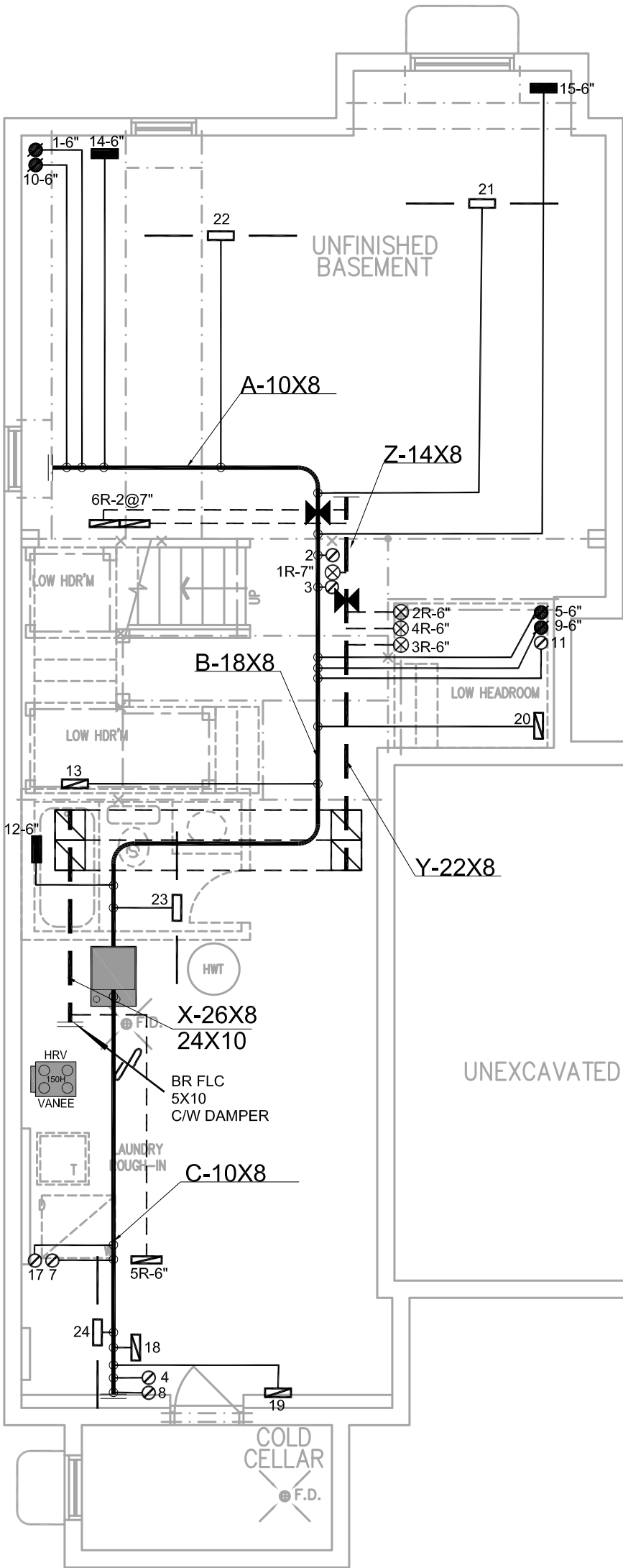
Air Infiltration Residential Load Calculator

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		
	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: 3003
LO# 105061

OPT 3 BATH

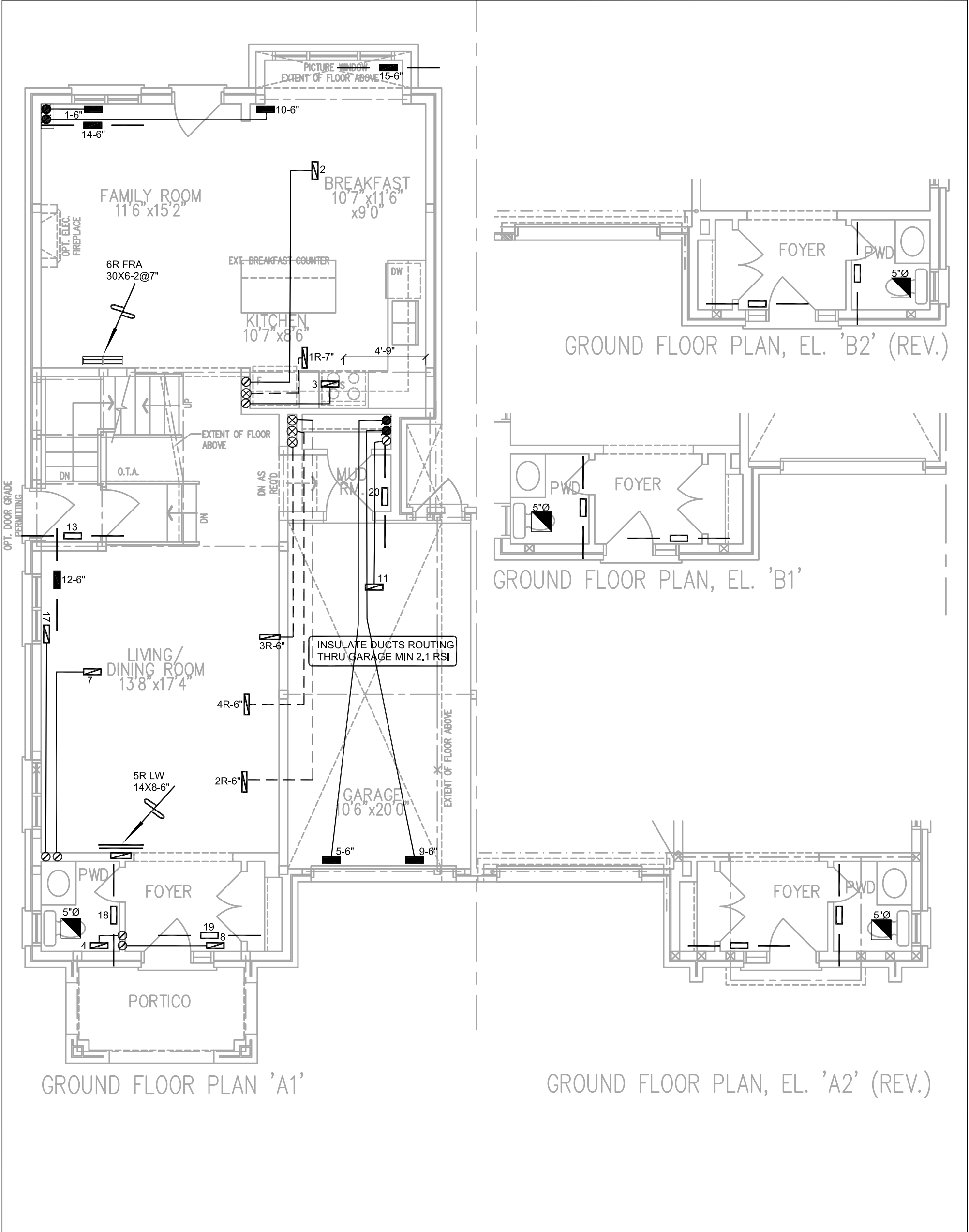


BASEMENT PLAN 'A1' & 'B1'

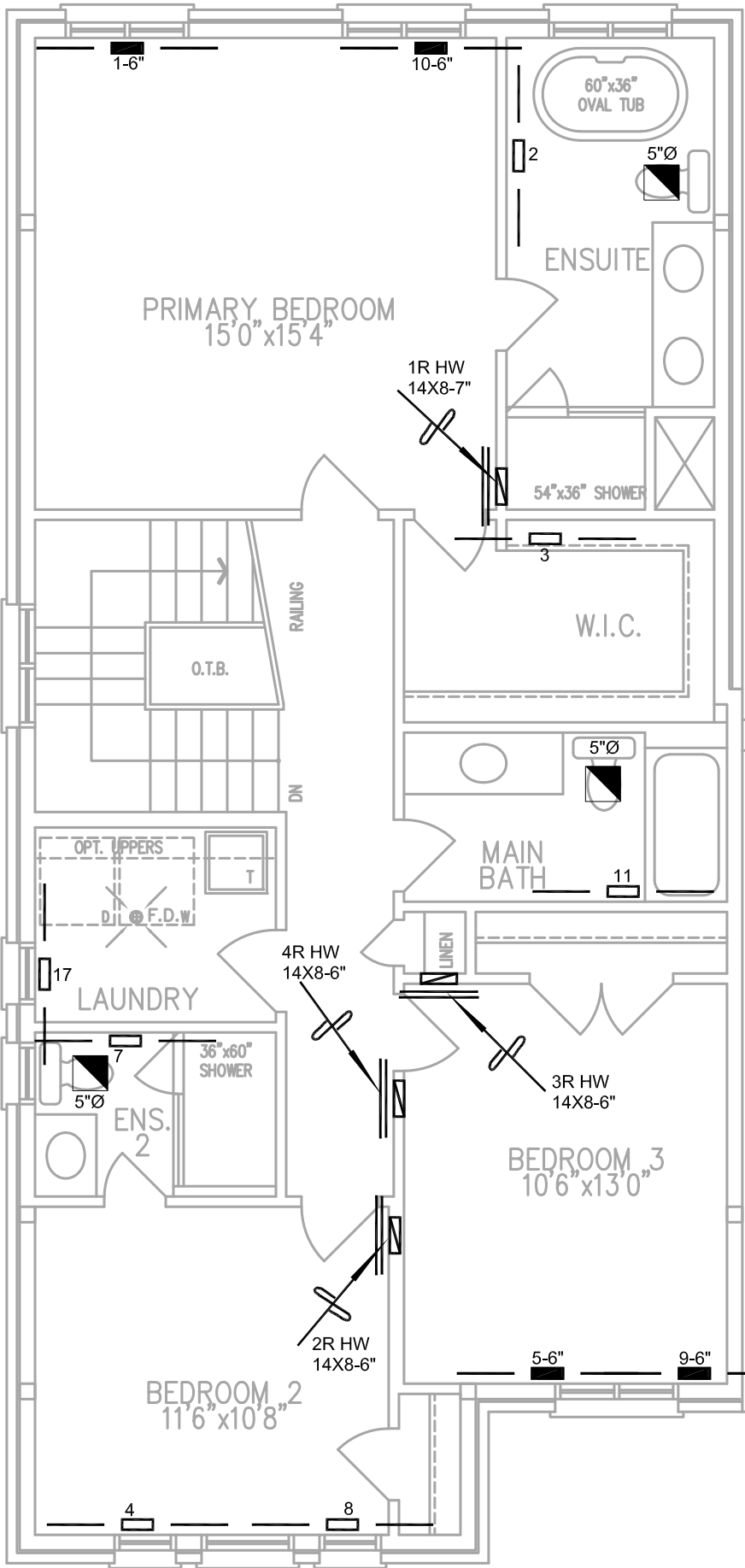


BASEMENT PLAN, EL. 'A2' & 'B2' (REV.)

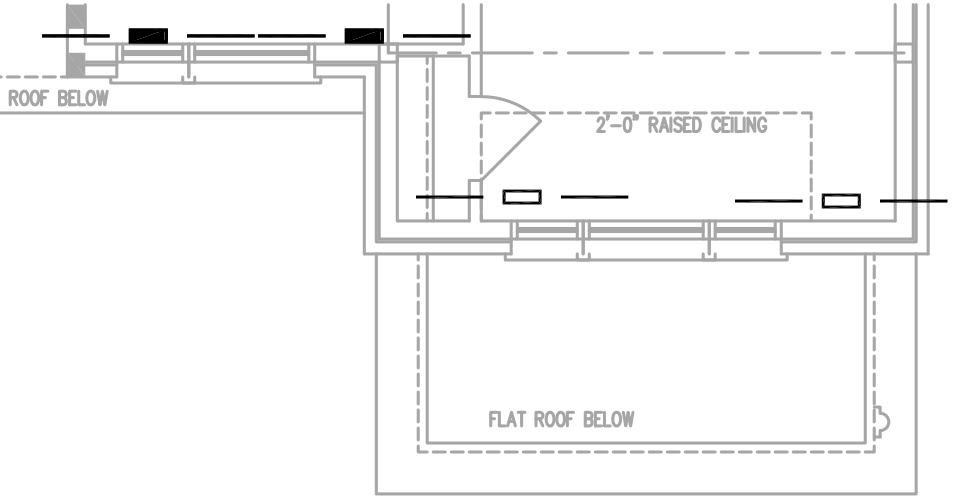
HVAC LEGEND								3.				
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.				
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.				
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN 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 37301 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title		
ROYAL PINE HOMES						MAKE	CARRIER	3RD FLOOR				BASEMENT HEATING LAYOUT
						MODEL	59SC6A040M14--10	2ND FLOOR	11	4	3	
						INPUT	40 MBTU/H	1ST FLOOR	7	2	2	
						OUTPUT	39 MBTU/H	BASEMENT	4	1	0	
Project Name		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.				COOLING		2.5 TONS		Date MAY/2024		
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO						FAN SPEED		925 cfm @ 0.6" w.c.		Scale 3/16" = 1'-0"		
										BCIN# 19669		
OPT 3 BATH 3003								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		LO# 105061		
2165 sqft												



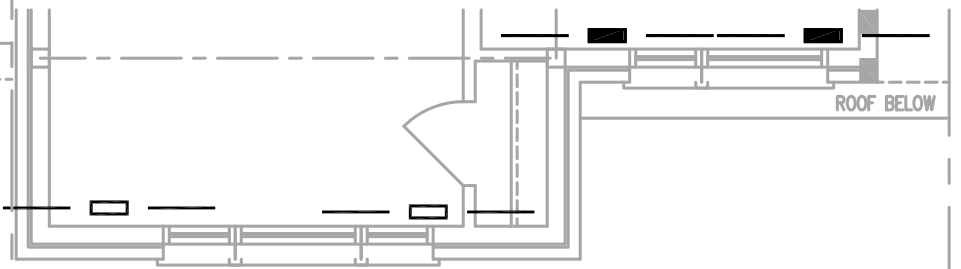
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FIRST FLOOR HEATING LAYOUT										
Date	MAY/2024									
Scale	3/16" = 1'-0"									
BCIN# 19669										
LO#	105061									
Project Name		SUMMER RIDGE ESTATES BRAMPTON, ONTARIO								
OPT 3 BATH 3003		2165 sqft								



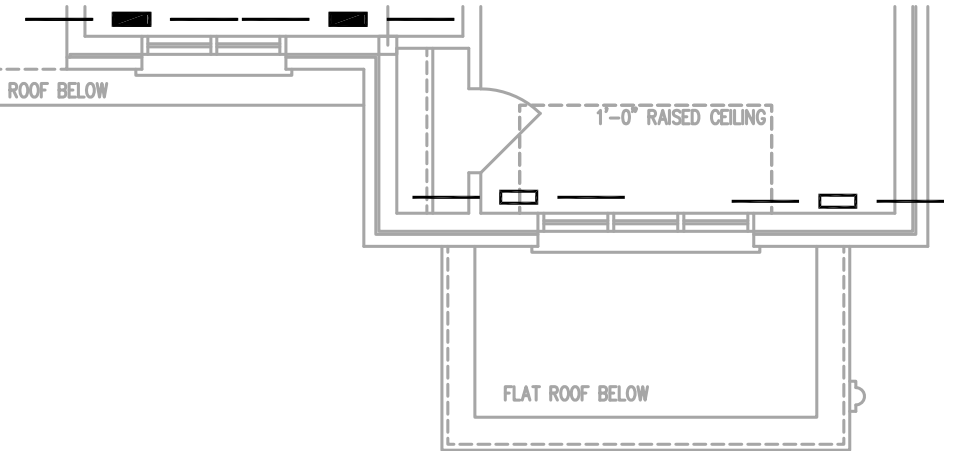
PART. SECOND FLOOR PLAN EL. 'A1'
OPT. 3 BATH COND
(EL. 'A2', 'B1' & 'B2' SIMILAR)



SECOND FLOOR PLAN EL. 'B2' (REV)



SECOND FLOOR PLAN EL. 'B1'



SECOND FLOOR PLAN EL. 'A2' (REV)

HVAC LEGEND								3.		
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Project Name SUMMER RIDGE ESTATES BRAMPTON, ONTARIO								Date MAY/2024		
OPT 3 BATH 3003								Scale 3/16" = 1'-0"		
2165 sqft								BCIN# 19669		
								LO#	105061	