

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]				
☐ 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: 3202 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 17, 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

BUILDER: ROYAL PIE HOMES

TYPE: 3202

GFA: 2275

DATE: May-24

LO# 105069

WINTER NATURAL AIR CHANGE RATE 0.227

SUMMER NATURAL AIR CHANGE RATE 0.074

HEAT LOSS AT °F. 74

HEAT GAIN AT °F. 11

CSA-F280-12

PERFORMANCE

BOLDEN										TOTAL FETITUMS										TYPE: 3202										GFA: 2273										LWF: 10000										SUMMER NATURAL AIR CHANGE RATE: 0.074										HEAT GAIN LT: 1										PER: 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ROOM USE										EXP. WALL										CLG. HT.										FACTORS										LOSS										GAIN										MBR										ENS										BED-2										BED-3										ENS-2										ENS-3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	FAM	LV/DN	KT/BF	LAND	LND	W/R	FOY	MUD	BAS
GRS.WALL AREA	LOSS	GAIN	320	360	310	80	72	130	170	187				924
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
EAST	20.8	32.9	0	0	0	0	0	0	0	0	30	623	987	5
SOUTH	20.8	19.8	0	0	0	34	706	674	0	0	0	0	0	0
WEST	20.8	32.9	45	935	1481	0	0	0	47	976	1547	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	275	954	141	326	1130	168	263	912	135	80	277	41
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	0	0	0	0	0	0	0	0	88	110	49	0
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	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1888		1837	1888		277	360	970	1320	971		
SUB TOTAL HT GAIN				1622		842		1682	41	86	1039	345	144	
LEVEL FACTOR / MULTIPLIER	0.30	0.30			0.30	0.30			0.30	0.19		0.30	0.30	
AIR CHANGE HEAT LOSS			575		560			575	85	67	296	402	296	
AIR CHANGE HEAT GAIN				80		41		83	2	4	51	17	7	
DUCT LOSS			0		0			0		0		0		
DUCT GAIN				0		0		0		0		0		
HEAT GAIN PEOPLE	240		0		0	0		0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS					909			909		909		0		
TOTAL HT LOSS BTU/H			2464		2396	2464		362	427	1266	1723	1266		
TOTAL HT GAIN x 1.3 BTU/H			3395		2330	3477		56	1300	1417	470	196		

TOTAL HEAT GAIN BTU/H:

28867

TONS: 2.41

LOSS DUE TO VENTILATION LOAD BTU/H: 1274

STRUCTURAL HEAT LOSS: 36178

TOTAL COMBINED HEAT LOSS BTU/H: 37452

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

TYPE: 3202

DATE: May-24

GFA: 2275

LO# 105069

HEATING CFM 925 COOLING CFM 925
TOTAL HEAT LOSS 36,178 TOTAL HEAT GAIN 28,678
AIR FLOW RATE CFM 25.57 AIR FLOW RATE CFM 32.25

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

FAN SPEED

LOW 0

MEDLOW 0

MEDIUM 0

MEDIUM HIGH 925

HIGH 0

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

TEMPERATURE RISE 39 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	9	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.

RUN #	1	2	3	4	5	6	7	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	ENS-2	MBR	ENS-3	FAM	LV/DN	KT/BF	KT/BF	LAND	LND	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.64	1.70	1.21	1.21	1.55	1.55	0.73	1.64	0.48	1.23	2.40	1.23	1.23	0.36	0.43	1.27	1.72	1.27	3.03	3.03	3.03	3.03
CFM PER RUN HEAT	42	44	31	31	40	40	19	42	12	31	61	31	31	9	11	32	44	32	77	77	77	77
RM GAIN MBH.	2.29	1.16	1.72	1.72	2.24	2.24	0.17	2.29	0.30	1.70	2.33	1.74	1.74	0.06	1.30	1.42	0.47	0.20	0.48	0.48	0.48	0.48
CFM PER RUN COOLING	74	37	56	56	72	72	6	74	10	55	75	56	56	2	42	46	15	6	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	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	48	33	51	56	74	65	38	53	47	34	41	23	16	24	18	53	44	22	28	13	35	47
EQUIVALENT LENGTH	170	230	130	160	200	200	140	200	110	120	160	100	100	180	170	140	110	0	140	150	170	130
TOTAL EFFECTIVE LENGTH	218	263	181	216	274	265	178	253	157	154	201	123	116	204	188	193	154	22	168	163	205	177
ADJUSTED PRESSURE	0.08	0.06	0.09	0.08	0.06	0.06	0.09	0.07	0.11	0.11	0.08	0.14	0.14	0.08	0.09	0.09	0.11	0.76	0.1	0.1	0.08	0.09
ROUND DUCT SIZE	6	5	5	5	6	6	4	6	4	5	6	5	5	4	4	5	4	4	5	5	6	6
HEATING VELOCITY (ft/min)	214	323	228	228	204	204	218	214	138	228	311	228	228	103	126	235	505	367	565	565	393	393
COOLING VELOCITY (ft/min)	377	272	411	411	367	367	69	377	115	404	382	411	411	23	482	338	172	69	110	110	76	76
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	C	B	B	B	A	A	B	C	B	C	A	C	C	B	B	A	A	B	C	C	A	A

RUN #	25
ROOM NAME	FAM
RM LOSS MBH.	1.23
CFM PER RUN HEAT	31
RM GAIN MBH.	1.70
CFM PER RUN COOLING	55
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	27
EQUIVALENT LENGTH	110
TOTAL EFFECTIVE LENGTH	137
ADJUSTED PRESSURE	0.12
ROUND DUCT SIZE	4
HEATING VELOCITY (ft/min)	356
COOLING VELOCITY (ft/min)	631
OUTLET GRILL SIZE	3X10
TRUNK	C

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK	STATIC	ROUND	RECT	VELOCITY		TRUNK	STATIC	ROUND	RECT	VELOCITY		TRUNK	STATIC	ROUND	RECT	VELOCITY		TRUNK	STATIC
CFM	PRESS.	DUCT	DUCT	(ft/min)		CFM	PRESS.	DUCT	DUCT	(ft/min)		CFM	PRESS.	DUCT	DUCT	(ft/min)		CFM	PRESS.
TRUNK A	371	0.06	10.4	12	x 8	557	0	0.00	0	0	x 8	0	0	0.05	0	0	x 8	0	0.05
TRUNK B	560	0.06	12.1	18	x 8	560	0	0.00	0	0	x 8	0	0	0.05	0	0	x 8	0	0.05
TRUNK C	362	0.07	9.9	12	x 8	543	0	0.00	0	0	x 8	0	0	0.05	0	0	x 8	0	0.05
TRUNK D	0	0.00	0	0	x 8	0	0	0.00	0	0	x 8	0	0	0.05	0	0	x 8	0	0.05
TRUNK E	0	0.00	0	0	x 8	0	0	0.00	0	0	x 8	0	0	0.05	0	0	x 8	0	0.05
TRUNK F	0	0.00	0	0	x 8	0	0	0.00	0	0	x 8	0	0	0.05	0	0	x 8	0	0.05

RETURN AIR #	1	2	3	4	5	6	BR									
FLOOR	2	2	2	2	1	1	B									
AIR VOLUME	115	115	75	85	260	130	0	0	0	0	0	0	0	0	0	145
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ACTUAL DUCT LGH.	47	55	61	64	40	26	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	225	215	245	205	220	165	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	272	270	306	269	260	191	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.06	0.07	14.32	14.32	14.32	14.32	14.32	14.32	14.32	14.32	14.32	0.10
ROUND DUCT SIZE	7	7	6	6	9.1	6.8	0	0	0	0	0	0	0	0	0	6.4
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	14

TYPE: 3202
SITE NAME: SUMMER RIDGE ESTATES

LO # 105069

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
ENS-3	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#: 105069	Model: 3202	Builder: ROYAL PIE HOMES	Date: 2024-05-17																																																									
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>1028</td><td>9</td><td>9252</td></tr> <tr><td>First</td><td>1028</td><td>10</td><td>10280</td></tr> <tr><td>Second</td><td>1251</td><td>9</td><td>11259</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="3" style="text-align: right;">Total:</td><td>30,791.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>871.9 m³</td></tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1028	9	9252	First	1028	10	10280	Second	1251	9	11259	Third	0	9	0	Fourth	0	9	0	Total:			30,791.0 ft³	Total:			871.9 m³	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width:20%; text-align: center;">0.227</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.074</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 style="text-align: center;">22</td> <td style="text-align: center;">-19</td> <td style="text-align: center;">41</td> <td style="text-align: center;">74</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">24</td> <td style="text-align: center;">30</td> <td style="text-align: center;">6</td> <td style="text-align: center;">11</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.227	SUMMER NATURAL AIR CHANGE RATE	0.074	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-19	41	74	Summer DTDc	24	30	6	11
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.227 x 242.20 x 41 °C x 1.2 = 2724 W = 9294 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ 0.074 x 242.20 x 6 °C x 1.2 = 131 W = 448 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)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
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	9,294	7,457	0.623																																																								
2	0.3		9,152	0.305																																																								
3	0.2		9,990	0.186																																																								
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: 3202	BUILDER: ROYAL PIE HOMES
SFQT: 2275	SITE: SUMMER RIDGE ESTATES
LO# 105069	

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:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	30791.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	2.20	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 51.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	154.0 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	-

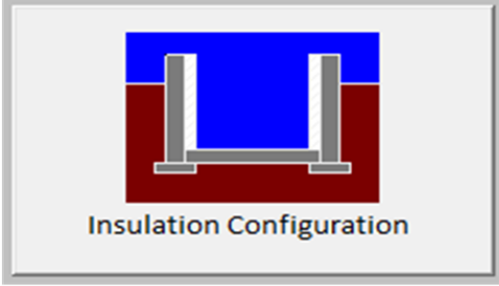
INDIVIDUAL BCIN: 19669

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):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.9	
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):		1534

TYPE: 3202
LO# 105069

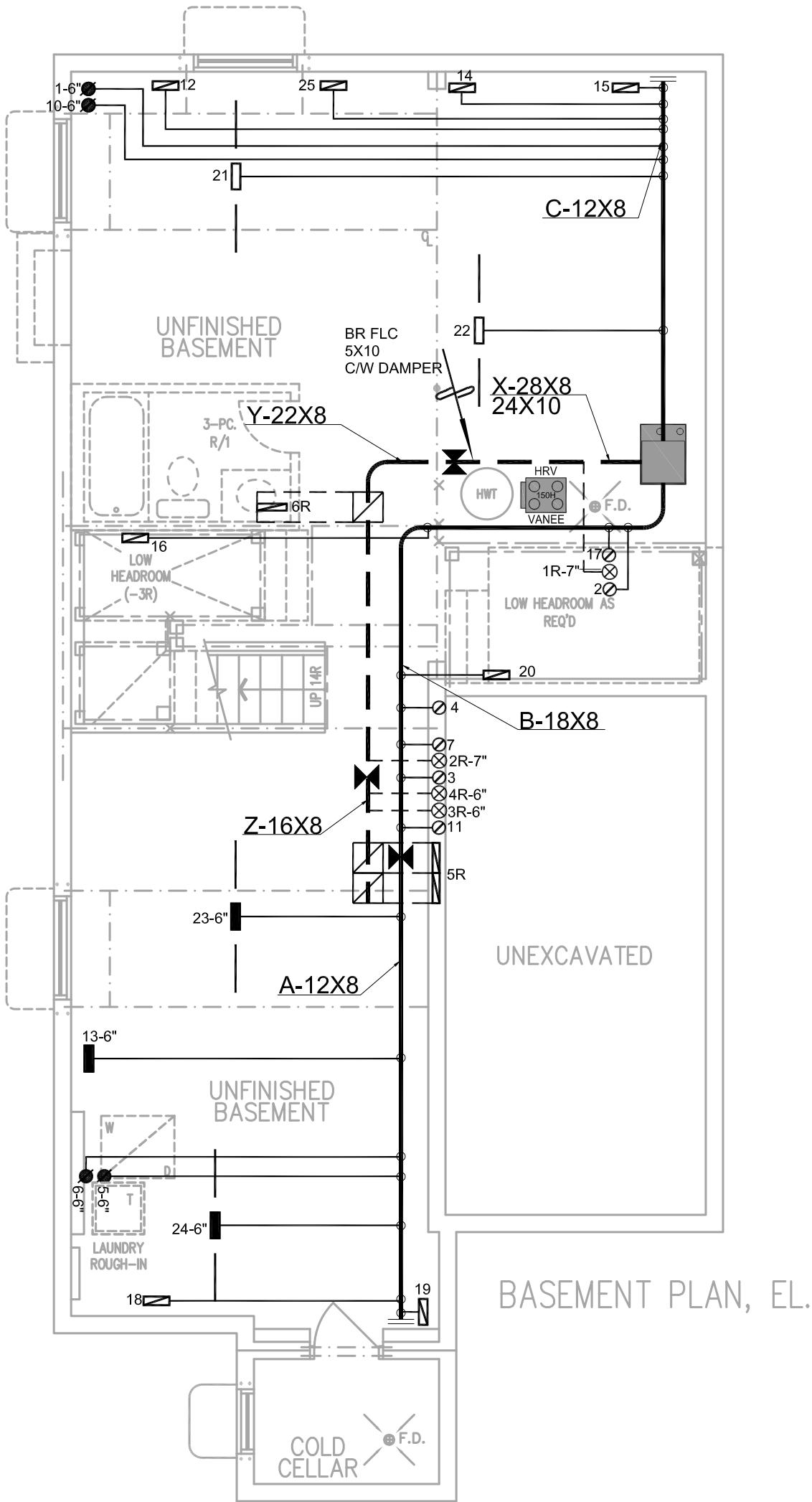
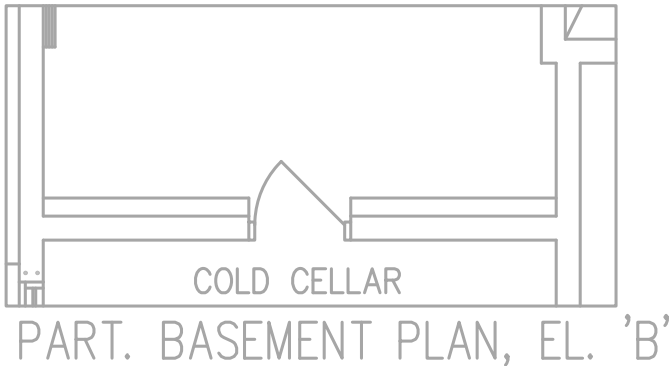
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

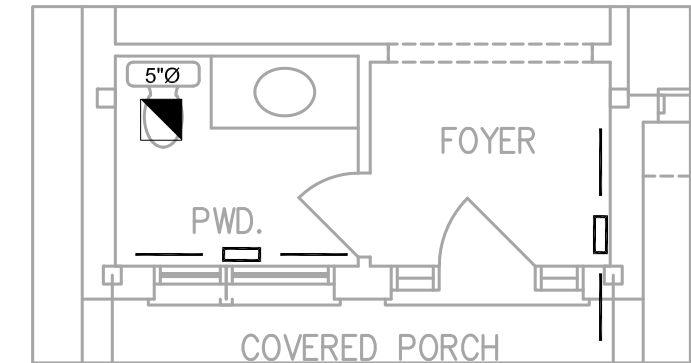
Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	871.9			
Air Leakage/Ventilation				
Air Tightness Type:	Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	813.9 cm ²		
	2.50	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):	0.227			
Cooling Air Leakage Rate (ACH/H):	0.074			

TYPE: 3202

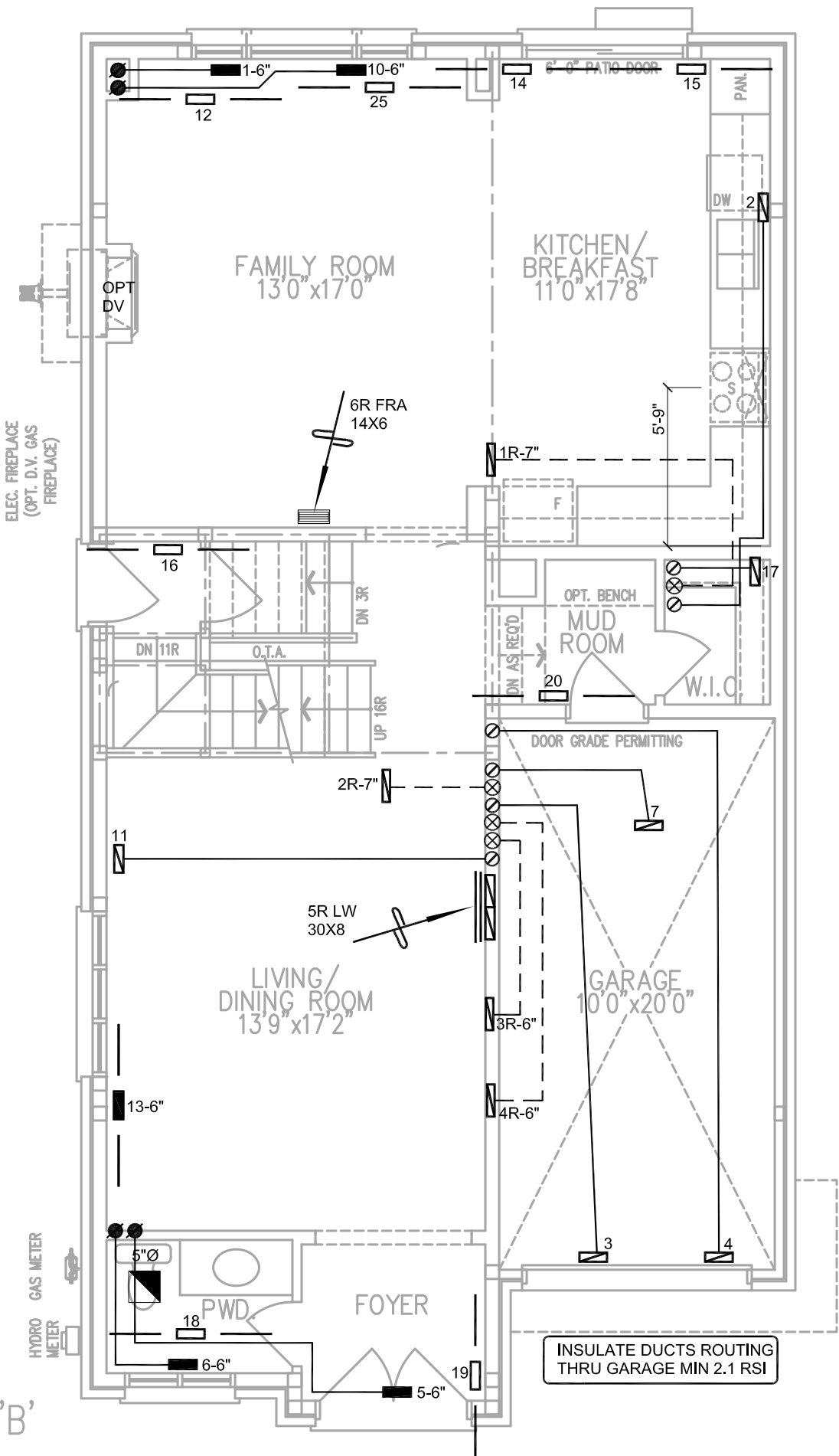
LO# 105069



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 37452 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title	
ROYAL PINE HOMES						UNIT DATA		3RD FLOOR		BASEMENT HEATING LAYOUT	
Project Name						CARRIER		2ND FLOOR		10 4 4	
SUMMER RIDGE ESTATES						MODEL		1ST FLOOR		9 2 2	
BRAMPTON, ONTARIO						59SC6A040M14--10		BASEMENT		4 1 0	
3202		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.				INPUT		Date			
2275 sqft						40 MBTU/H		MAY/2024			
						OUTPUT		Scale			
						39 MBTU/H		3/16" = 1'-0"			
						COOLING		BCIN# 19669			
						2.5 TONS		LO# 105069			
						FAN SPEED					
						925 cfm @ 0.6" w.c.					



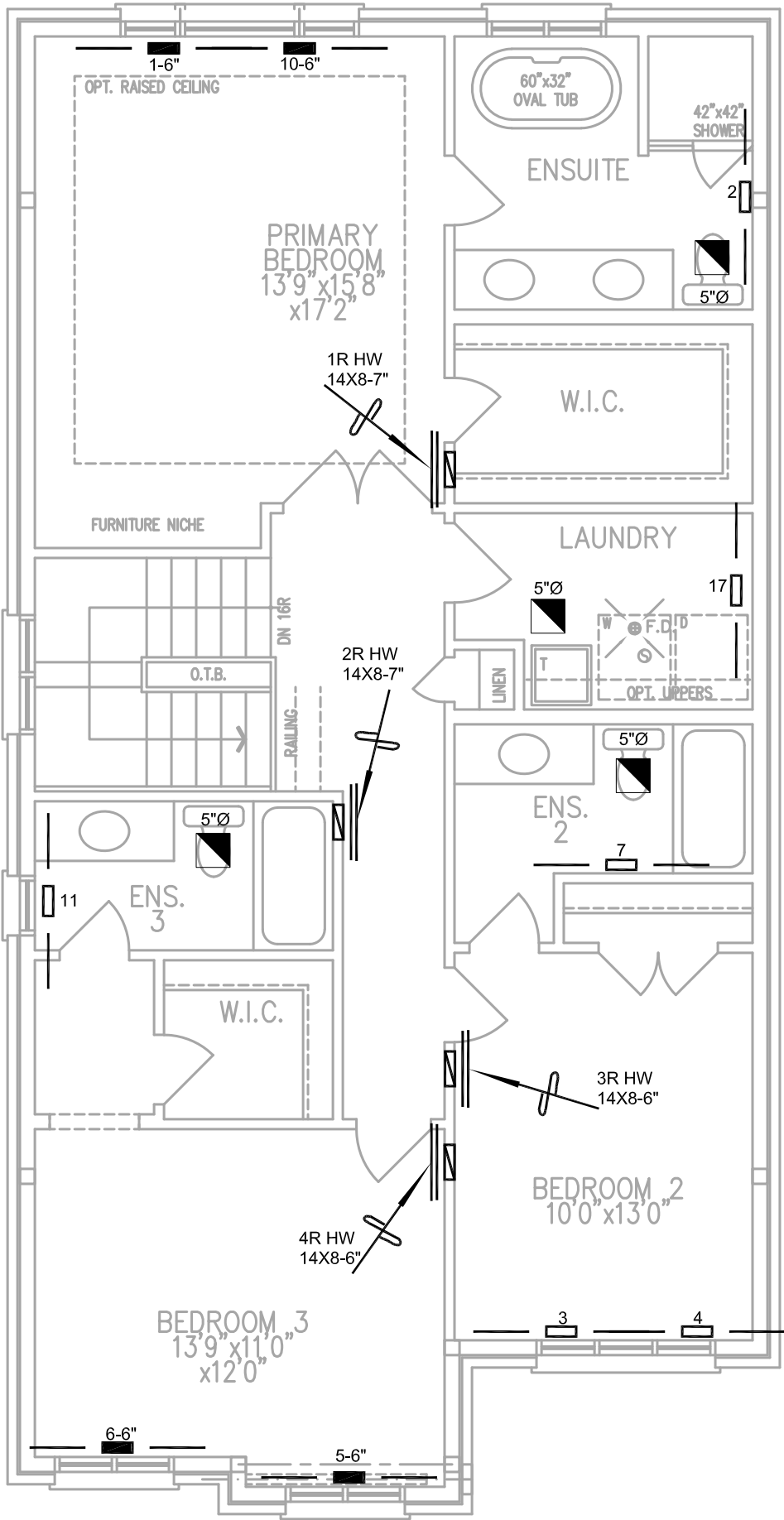
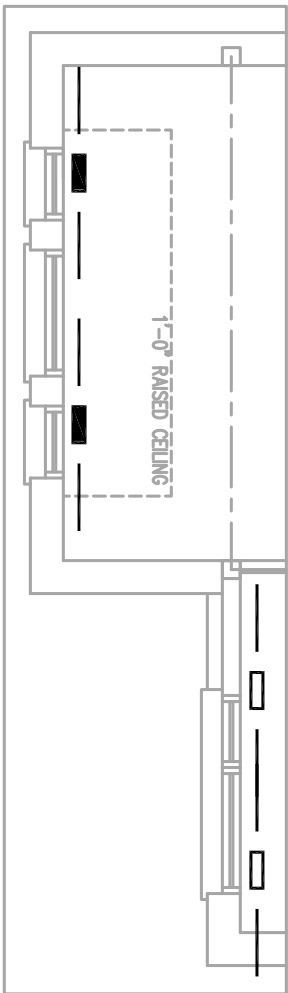
PART. GROUND FLOOR PLAN, EL. 'B'



GROUND FLOOR PLAN, EL. 'A'

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.	DescriptionDate
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	
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Client		ROYAL PINE HOMES		Project Name		SUMMER RIDGE ESTATES BRAMPTON, ONTARIO		Sheet Title	
3202		2275 sqft		HVAACDESIGNS 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		PERFORMANCE	
								FIRST FLOOR HEATING LAYOUT	
								Date MAY/2024	
								Scale 3/16" = 1'-0"	
								BCIN# 19669	
								LO# 105069	

PART. SECOND FLOOR PLAN, EL. 'B'



SECOND FLOOR PLAN, EL. 'A'

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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ROYAL PINE HOMES									SECOND FLOOR HEATING LAYOUT	
Project Name									Date MAY/2024	
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO									Scale 3/16" = 1'-0"	
									BCIN# 19669	
3202		2275 sqft						LO#	105069	