


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: 2504 Project: SUMMER RIDGE ESTATES INC.	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
<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.			
April 25, 2022			
Date		Signature of Designer	

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

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

SITE NAME: SUMMER RIDGE ESTATES INC.

BUILDER: ROYAL PINE HOMES

TYPE: 2504

GFA: 2027

DATE: Apr-22

LO# 95321

WINTER NATURAL AIR CHANGE RATE 0.273

SUMMER NATURAL AIR CHANGE RATE 0.089

HEAT LOSS ΔT °F. 74

HEAT GAIN ΔT °F. 11

CSA-F280-12

SB-12 PERFORMANCE

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	MBR	ENS	BED-2	BED-3	BATH					
						43	25	23	30	0					
						9	9	9	9	9					
GRS.WALL AREA	GLAZING					387	225	207	270	0					
						LOSS	GAIN	LOSS	GAIN	LOSS	GAIN				
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0				
EAST	20.8	41.0	0	0	0	0	0	32	665	1314	35	727	1437		
SOUTH	20.8	24.4	0	0	0	0	0	0	0	0	0				
WEST	20.8	41.0	26	540	1067	17	353	0	0	0	0				
SKYLT.	34.1	100.3	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	361	1252	186	208	721	175	607	90	235	815	121		
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	391	490	218	132	165	155	194	86	110	138	61	115	144
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	50	134	60	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	120	299	44	0	0	0	100	249
BASEMENT/CRAWL HEAT LOSS			0			0		0			0			0	
SLAB ON GRADE HEAT LOSS			0			0		0			0			0	
SUBTOTAL HT LOSS			2282			1240		1765			1814			393	
SUB TOTAL HT GAIN				1471		878		1534			1678			101	
LEVEL FACTOR / MULTIPLIER			0.20	0.24		0.20	0.24	0.20	0.24		0.20	0.24		0.20	0.24
AIR CHANGE HEAT LOSS			537			292		416			427			93	
AIR CHANGE HEAT GAIN				77		46		81			88			5	
DUCT LOSS			0			0		218			0			49	
DUCT GAIN				0		0		239			0			11	
HEAT GAIN PEOPLE	240		2		480	0		1		240	1		240	0	
HEAT GAIN APPLIANCES/LIGHTS					534	0				534			534	0	
TOTAL HT LOSS BTU/H					2819	1532		2398			2241			534	
TOTAL HT GAIN x 1.3 BTU/H					3330	1202		3415			3302			152	

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	LV/DN	K/B/F	LAUN	PWD	FOY	MUD				BAS
						50	60	11	10	10	0				148
						10	10	9	10	10	10				9
GRS.WALL AREA	GLAZING					500	600	99	100	100	0				888
						LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN		LOSS
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	20.8	41.0	34	706	1396	0	0	0	0	0	0	0	0	0	0
SOUTH	20.8	24.4	21	436	512	0	0	28	582	683	7	145	171	0	0
WEST	20.8	41.0	0	0	0	73	1517	0	0	0	0	0	0	0	0
SKYLT.	34.1	100.3	0	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	0
NET EXPOSED WALL	3.5	0.5	445	1543	229	527	1827	71	246	36	73	253	38	100	347
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	80	100	45	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
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0		0			0			0	
SLAB ON GRADE HEAT LOSS			0			0		0			0			0	
SUBTOTAL HT LOSS			2686			3344		928			790			347	
SUB TOTAL HT GAIN				2137		3267		764		266		51		48	
LEVEL FACTOR / MULTIPLIER			0.30	0.40		0.30	0.40	0.20	0.24		0.30	0.40		0.30	0.40
AIR CHANGE HEAT LOSS			1067			1329		219			314			138	
AIR CHANGE HEAT GAIN				112		172		40			14			3	
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	
HEAT GAIN APPLIANCES/LIGHTS					534	534				534			534	0	
TOTAL HT LOSS BTU/H					3753	4673		1147		1104		484		450	
TOTAL HT GAIN x 1.3 BTU/H					3617	5164		1739		364		70		65	

TOTAL HEAT GAIN BTU/H:

23990

TONS: 2.00

LOSS DUE TO VENTILATION LOAD BTU/H: 1274

STRUCTURAL HEAT LOSS: 32874

TOTAL COMBINED HEAT LOSS BTU/H: 34148

SITE NAME: SUMMER RIDGE ESTATES INC.
BUILDER: ROYAL PINE HOMES

TYPE: 2504

DATE: Apr-22

GFA: 2027

LO# 95321

HEATING CFM 710 COOLING CFM 710
TOTAL HEAT LOSS 32,874 TOTAL HEAT GAIN 23,801
AIR FLOW RATE CFM 21.6 AIR FLOW RATE CFM 29.83

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35

#CARRIER

AFUE = 97 %

59SP5A-40-10

40

INPUT (BTU/H) = 40,000

FAN SPEED

OUTPUT (BTU/H) = 39,000

LOW 0

DESIGN CFM = 710

MEDLOW 0

CFM @ .6" E.S.P.

MEDIUM 0

MEDIUM HIGH 710

HIGH 875

TEMPERATURE RISE 51 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	7	3
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	12	13	14	15	17	18	19	20	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	BATH	MBR	LV/DN	LV/DN	K/B/F	K/B/F	LAUN	PWD	FOY	MUD	BAS	BAS	BAS
RM LOSS MBH.	1.41	1.53	1.20	1.20	1.12	1.12	0.53	1.41	1.88	1.88	2.34	2.34	1.15	1.10	0.48	0.45	3.91	3.91	3.91
CFM PER RUN HEAT	30	33	26	26	24	24	12	30	41	41	50	50	25	24	10	10	85	85	85
RM GAIN MBH.	1.66	1.20	1.71	1.71	1.65	1.65	0.15	1.66	1.81	1.81	2.58	2.58	1.74	0.36	0.07	0.07	0.46	0.46	0.46
CFM PER RUN COOLING	50	36	51	51	49	49	5	50	54	54	77	77	52	11	2	2	14	14	14
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	0.16	0.16	0.16
ACTUAL DUCT LGH.	50	44	48	45	66	62	27	44	41	45	32	22	48	20	38	12	27	16	34
EQUIVALENT LENGTH	170	190	140	120	210	210	140	200	120	120	100	100	190	120	110	150	110	100	130
TOTAL EFFECTIVE LENGTH	220	234	188	165	276	272	167	244	161	165	132	122	238	140	148	162	137	116	164
ADJUSTED PRESSURE	0.08	0.07	0.09	0.1	0.06	0.06	0.1	0.07	0.11	0.1	0.13	0.14	0.07	0.12	0.12	0.11	0.12	0.14	0.1
ROUND DUCT SIZE	5	4	5	5	5	5	4	5	5	5	5	5	5	4	4	4	6	6	6
HEATING VELOCITY (ft/min)	220	379	191	191	176	176	138	220	301	301	367	367	184	275	115	115	433	433	433
COOLING VELOCITY (ft/min)	367	413	374	374	360	360	57	367	396	396	565	565	382	126	23	23	71	71	71
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	A	C	C	C	B	B	C	C	B	B	A	A	B	C	B	C	A	A	B

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	

SUPPLY AIR TRUNK SIZE													RETURN AIR TRUNK SIZE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	TRUNK	STATIC	ROUND	RECT			VELOCITY							VELOCITY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</

RETURN AIR #	1	2	3	4	5	6											BR
AIR VOLUME	85	60	60	60	180	150	0	0	0	0	0	0	0	0	0	0	115
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	36	64	70	58	36	49	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	155	205	245	270	155	160	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	191	269	315	328	191	209	1	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.08	0.06	0.05	0.05	0.08	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	5.6	5.3	5.5	5.5	7.4	7.1	0	0	0	0	0	0	0	0	0	0	5.9
INLET GRILL SIZE	8	8	8	8	8	8	0	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	X
INLET GRILL SIZE	14	14	14	14	14	14	0	0	0	0	0	0	0	0	0	0	14

TYPE: 2504
SITE NAME: SUMMER RIDGE ESTATES INC.

LO # 95321

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>2</u> @ 10.6 cfm	<u>21.2</u> cfm
Table 9.32.3.A.	TOTAL	<u>127.2</u> cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL		63.6 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>127.2</u>	cfm
Less Principal Ventil. Capacity	<u>63.6</u>	cfm
Required Supplemental Capacity	<u>63.6</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
PWD	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 PINE 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:	April-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																													
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																													
LO#: 95321		Model: 2504		Builder: ROYAL PINE HOMES SUMMER RIDGE ESTATES INC.																																																									
				Date: 2022-04-25																																																									
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>914</td><td>9</td><td>8226</td></tr> <tr><td>First</td><td>914</td><td>10</td><td>9140</td></tr> <tr><td>Second</td><td>1113</td><td>9</td><td>10017</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>27,383.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>775.4 m³</td></tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	914	9	8226	First	914	10	9140	Second	1113	9	10017	Third	0	9	0	Fourth	0	9	0	Total:			27,383.0 ft³	Total:			775.4 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%;">0.273</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.089</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	0.273	SUMMER NATURAL AIR CHANGE RATE	0.089	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	914	9	8226																																																										
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Second	1113	9	10017																																																										
Third	0	9	0																																																										
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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																																																										
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.273 x 215.39 x 41 °C x 1.2 = 2907 W</p> <p>= 9918 Btu/h</p>			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>= 0.089 x 215.39 x 6 °C x 1.2 = 140 W</p> <p>= 478 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)																																																													
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clevel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.5</td><td rowspan="5" style="text-align: center; vertical-align: middle;">9,918</td><td>6,779</td><td>0.732</td></tr> <tr><td>2</td><td>0.3</td><td>7,489</td><td>0.397</td></tr> <tr><td>3</td><td>0.2</td><td>8,421</td><td>0.236</td></tr> <tr><td>4</td><td>0</td><td>0</td><td>0.000</td></tr> <tr><td>5</td><td>0</td><td>0</td><td>0.000</td></tr> </tbody> </table>						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	9,918	6,779	0.732	2	0.3	7,489	0.397	3	0.2	8,421	0.236	4	0	0	0.000	5	0	0	0.000																														
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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: 2504	BUILDER: ROYAL PINE HOMES
SFQT: 2027	SITE: SUMMER RIDGE ESTATES INC.
LO# 95321	

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	0.50

BUILDING DATA

ATTACHMENT:	DETACHED	# 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 (ft³):	27383.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 51.0 ft	WIDTH: 23.0 ft	EXPOSED PERIMETER:	148.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
SB-12 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	-

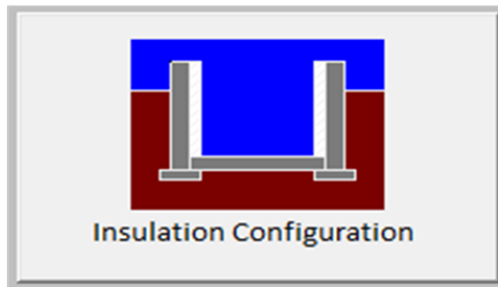
INDIVIDUAL BCIN: 19669

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):	7.0	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.8	
Door Area (m ²):	0.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1474

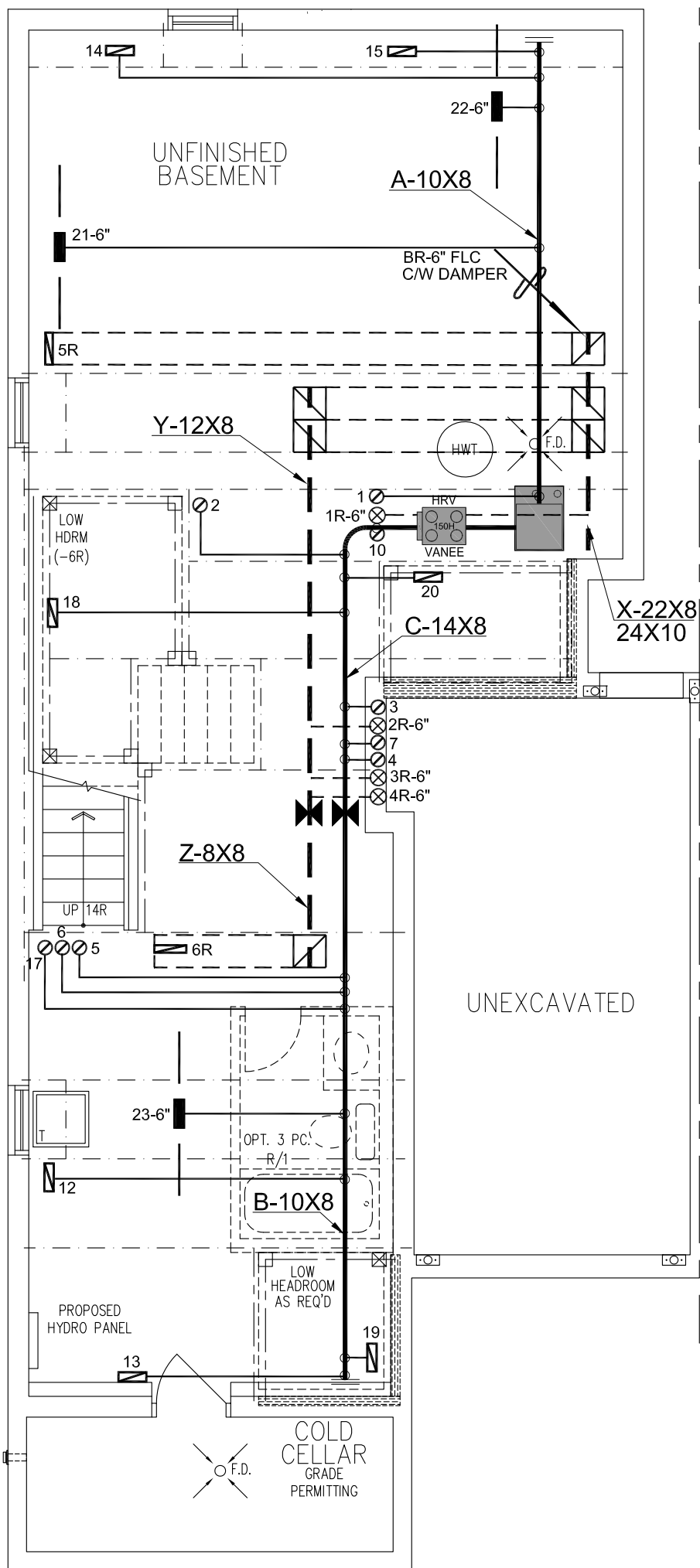
TYPE: 2504
LO# 95321

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):	775.4			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	868.6 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):	0.273			
Cooling Air Leakage Rate (ACH/H):	0.089			

TYPE: 2504
LO# 95321















I MICHAEL O'ROURKE HAVE REVIEW
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.

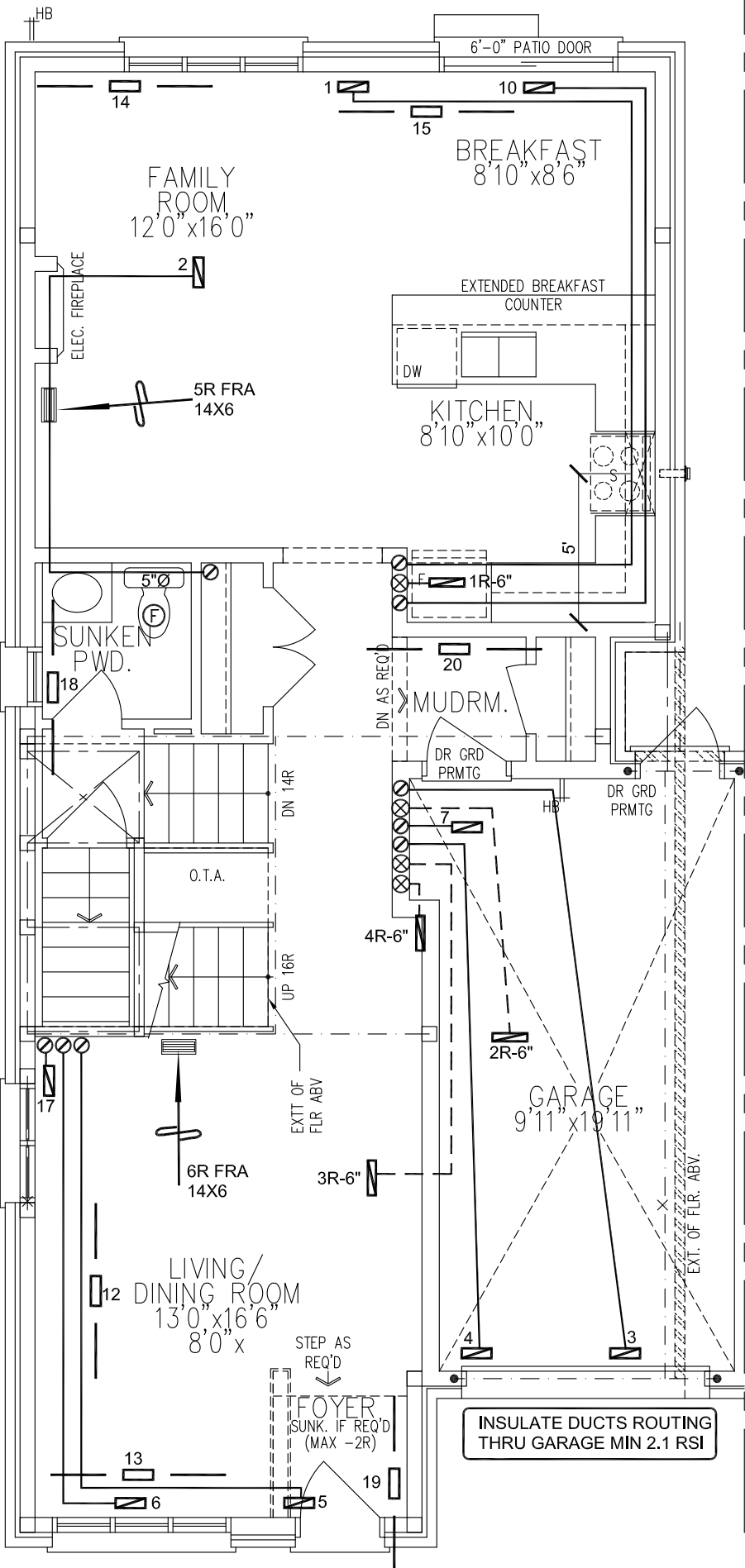
CSA-F280-12

SB-12 PERFORMANCE

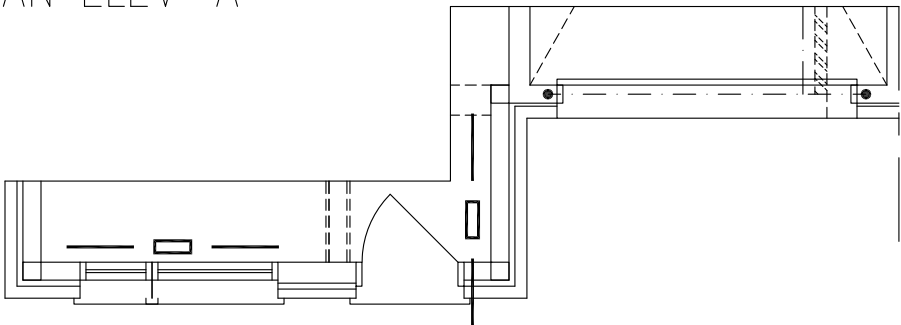
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE PATH	APR/2022
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Client		<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>	HEAT LOSS 34148 BTU/H		# OF RUNS S/A R/A FANS			Sheet Title	
ROYAL PINE HOMES			UNIT DATA		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name			MAKE CARRIER		2ND FLOOR 9 4 2				
SUMMER RIDGE ESTATES INC. BRAMPTON, ONTARIO			MODEL 59SP5A-40-10		1ST FLOOR 7 2 2				
2504			INPUT 40 MBTU/H		BASEMENT 3 1 0			Date	MAR/2022
2027 sqft			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			Scale	3/16" = 1'-0"
		COOLING 2.0 TONS		BCIN# 19669					
		FAN SPEED 710 cfm @ 0.6" w.c.							
							LO#	95321	



GROUND FLOOR PLAN ELEV 'A'



PARTIAL GROUND FLOOR PLAN,
ELEV 'B' (REV)

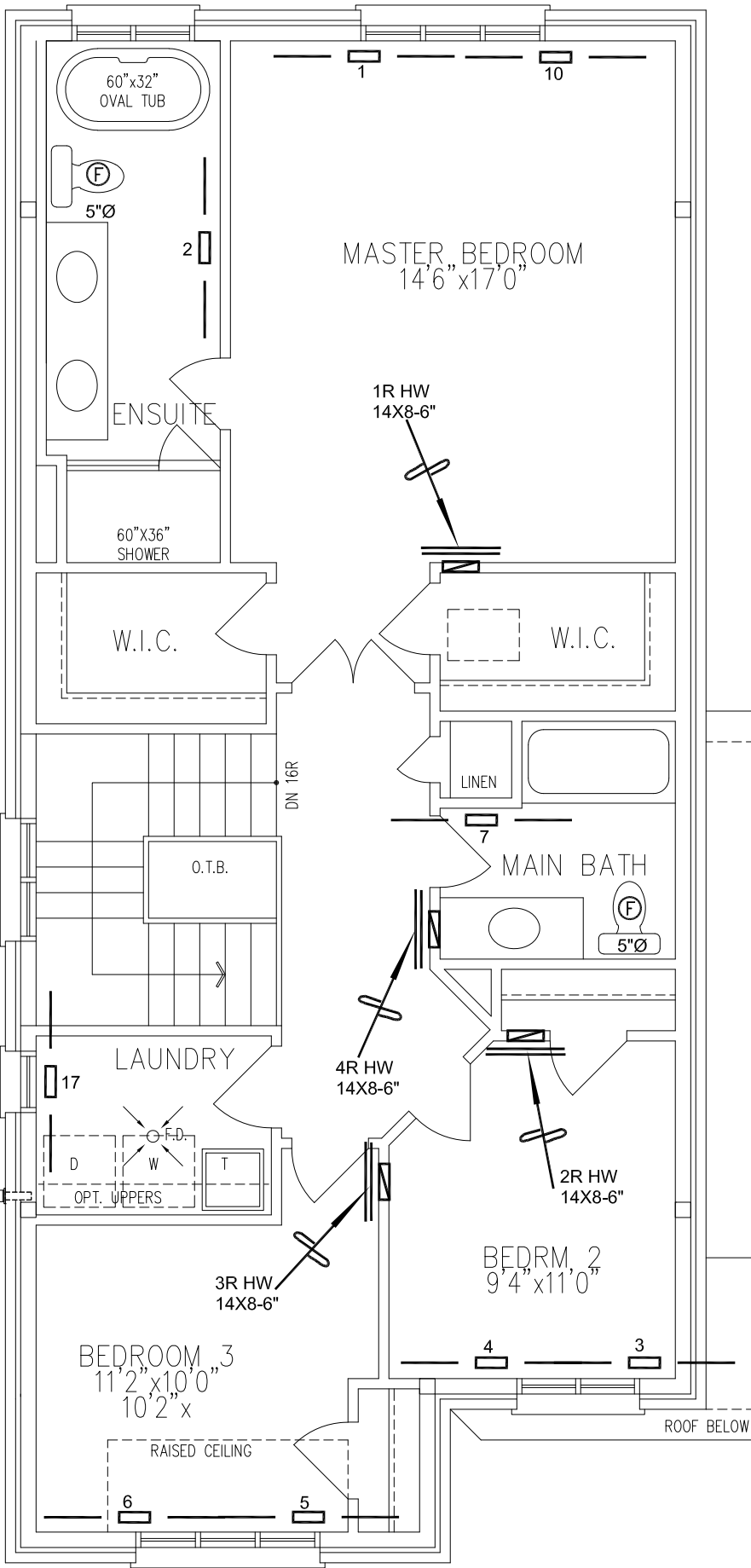
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DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
SB-12 PERFORMANCE

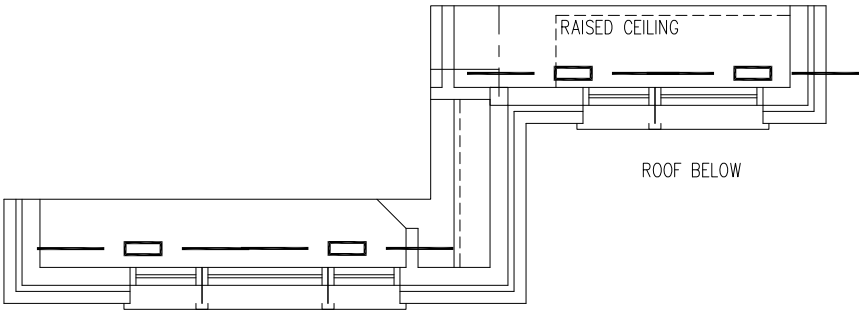
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ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	MAR/2022
SUMMER RIDGE ESTATES INC. BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
2504			BCIN# 19669	
2027 sqft			LO#	95321



SECOND FLR PLAN ELEV 'A1' (REV)



PALATIAL SECOND FLR PLAN, ELEV 'B'

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	MAR/2022
SUMMER RIDGE ESTATES INC. BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
2504			BCIN# 19669	
2027 sqft			LO#	95321