

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: 3802 OPT 5 BED Project: SUMMER RIDGE ESTATES		
D. Declaration of Designer				
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)				
☐ 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 5 BED				DATE: May-24				WINTER NATURAL AIR CHANGE RATE 0.227				HEAT LOSS AT °F. 74				CSA-F280-12			
BUILDER: ROYAL PIE HOMES				TYPE: 3802				GFA: 3319				LO# 105074				SUMMER NATURAL AIR CHANGE RATE 0.074				HEAT GAIN AT °F. 11			
ROOM USE				MBR				ENS				WIC				BED-2				BED-3			
EXP. WALL				32				23				7				15				30			
CLG. HT.				9				9				9				9				9			
FACTORS																							
GRS.WALL AREA				288				207				63				135				270			
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
NORTH				20.8 12.8				0 0 0				0 0 0				17 353 218				0 0 0			
EAST				20.8 32.9				0 0 0				0 0 0				40 831 1316				0 0 0			
SOUTH				20.8 19.8				0 0 0				12 249 238				0 0 0				17 353 337			
WEST				20.8 32.9				38 789 1251				8 166 263				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				250 867 129				187 648 96				63 218 32				118 409 61			
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				254 318 142				122 153 68				113 142 63				178 223 99			
NO ATTIC EXPOSED CLG				2.7 1.2				0 0 0				0 0 0				0 0 0				15 40 18			
EXPOSED FLOOR				2.5 0.4				0 0 0				0 0 0				0 0 0				249 620 92			
BASEMENT/CRAWL HEAT LOSS								0				0				0				0			
SLAB ON GRADE HEAT LOSS								0				0				0				0			
SUBTOTAL HT LOSS				1975				1217				360				985				2543			
SUB TOTAL HT GAIN				1521				665				95				378				1658			
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				411				253				75				205				530			
AIR CHANGE HEAT GAIN				99				43				6				25				108			
DUCT LOSS				0				0				0				0				307			
DUCT GAIN				0				0				0				0				252			
HEAT GAIN PEOPLE				240				2				480				0				1			
HEAT GAIN APPLIANCES/LIGHTS				512				0				0				512				512			
TOTAL HT LOSS BTU/H				2386				1470				435				1191				3380			
TOTAL HT GAIN x 1.3 BTU/H				3396				921				132				1501				3601			

ROOM USE			FAM			LV/DN			KT/BF			DEN			LND			W/R			FOY			MUD									BAS			
EXP. WALL			39			19			37			11			16			6			49			10									186			
CLG. HT.			10			10			10			10			10			11			11			11									9			
FACTORS																																				
GRS.WALL AREA			390			190			370			110			160			66			539			110									1116			
GLAZING			LOSS GAIN			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	21	436	269	8	166	103	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	0	0	0	0	13	270	428	0	0	0	0	0	0	0	0	0	0		
SOUTH			20.8	19.8	0	0	0	34	706	674	0	0	0	0	0	0	0	0	0	7	145	139	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEST			20.8	32.9	34	706	1119	0	0	0	47	976	1547	0	0	0	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	0	0	
DOORS			19.6	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	1175	174	20	392	58									
NET EXPOSED WALL			3.5	0.5	356	1234	183	156	541	80	323	1120	166	89	309	46	152	527	78	59	205	30	466	1616	240	90	312	46								
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									
EXPOSED CLG			1.3	0.6	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	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	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	0	0	
BASEMENT/CRAWL HEAT LOSS					0			0			0			0			0			0			0			0										
SLAB ON GRADE HEAT LOSS					0			0			0			0			0			0			0			0										
SUBTOTAL HT LOSS					1941			1247			2096			745			693			350			3061			704										
SUB TOTAL HT GAIN													315			181			169			842			104											
LEVEL FACTOR / MULTIPLIER			0.30	0.38			0.30	0.38		0.30	0.38		0.30	0.38		0.30	0.38		0.30	0.38		0.30	0.38		0.30	0.38										
AIR CHANGE HEAT LOSS					731			470			790			281			261			132			1153			265										
AIR CHANGE HEAT GAIN						85			49			112		21		12		11				55			7											
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										
HEAT GAIN APPLIANCES/LIGHTS							512			512			512			512			0			0			0											
TOTAL HT LOSS BTU/H					2672			1717			2886			1026			954			482			4214			969										
TOTAL HT GAIN x1.3 BTU/H							2469			1711			3038			1102			916			234			1165			144								

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

OPT 5 BED
TYPE: 3802

DATE: May-24

GFA: 3319

LO# 105074

HEATING CFM 975 COOLING CFM 975
TOTAL HEAT LOSS 47,362 TOTAL HEAT GAIN 30,512
AIR FLOW RATE CFM 20.59 AIR FLOW RATE CFM 31.95

furnace pressure 0.6
furnace filter 0.00
a/c coil pressure 0.21
available pressure
for s/a & r/a 0.39

FACTORY INSTALLED

59SC6A060M17--16
FAN SPEED

CARRIER

AFUE = 97 %

INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 58,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	11	4
R/A	0	0	6	2	1

plenium pressure s/a 0.20
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.18
r/a pressure 0.19
r/a grille press. Loss 0.02
adjusted pressure r/a 0.17

LOW 0
MEDLOW 790
MEDIUM 975
MEDIUM HIGH 1140
HIGH 1300

DESIGN CFM = 975
CFM @ .6" E.S.P.

TEMPERATURE RISE 55 °F

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

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

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-3	BED-2	BED-3	BED-4	BATH-2	WIC-2	MEDIA	MBR	BATH	FAM	LV/DN	KT/BF	KT/BF	DEN	LND	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.19	1.47	1.69	1.19	1.69	1.18	0.62	0.45	1.75	1.19	0.70	1.34	1.72	1.44	1.44	1.03	0.95	0.48	2.11	0.97	3.99	3.99	3.99	3.99
CFM PER RUN HEAT	25	30	35	25	35	24	13	9	36	25	14	28	35	30	30	21	20	10	43	20	82	82	82	82
RM GAIN MBH.	1.70	0.92	1.80	1.50	1.80	1.68	0.37	0.49	2.01	1.70	0.29	1.23	1.71	1.52	1.52	1.10	0.92	0.23	0.58	0.14	0.42	0.42	0.42	0.42
CFM PER RUN COOLING	54	29	58	48	58	54	12	16	64	54	9	39	55	49	49	35	29	7	19	5	13	13	13	13
ADJUSTED PRESSURE	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18
ACTUAL DUCT LGH.	61	65	55	42	45	36	41	43	53	52	30	53	30	44	51	24	8	27	34	4	46	33	18	30
EQUIVALENT LENGTH	150	170	140	160	130	160	180	180	180	130	170	160	150	130	150	130	120	120	140	80	170	170	160	140
TOTAL EFFECTIVE LENGTH	211	235	195	202	175	196	221	223	233	182	200	213	180	174	201	154	128	147	174	84	216	203	178	170
ADJUSTED PRESSURE	0.09	0.08	0.1	0.1	0.11	0.1	0.09	0.09	0.08	0.11	0.1	0.09	0.11	0.11	0.1	0.13	0.15	0.13	0.11	0.23	0.08	0.09	0.1	0.11
ROUND DUCT SIZE	5	4	5	4	5	6	4	4	5	5	4	4	5	4	5	4	4	4	4	4	6	6	6	6
HEATING VELOCITY (ft/min)	184	344	257	287	257	122	149	103	264	184	161	321	257	344	220	241	229	115	493	229	418	418	418	418
COOLING VELOCITY (ft/min)	396	333	426	551	426	275	138	184	470	396	103	447	404	562	360	402	333	80	218	57	66	66	66	66
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	B	D	B	D	B	B	C	D	A	B	A	B	A	A	B	E	D	C	E	A	A	B	C

RUN #	25	26	27	28	29
ROOM NAME	FOY	FAM	MEDIA	BED-5	WIC
RM LOSS MBH.	2.11	1.34	1.75	1.14	0.44
CFM PER RUN HEAT	43	28	36	24	9
RM GAIN MBH.	0.58	1.23	2.01	1.68	0.13
CFM PER RUN COOLING	19	39	64	54	4
ADJUSTED PRESSURE	0.19	0.19	0.19	0.19	0.19
ACTUAL DUCT LGH.	27	47	46	53	51
EQUIVALENT LENGTH	170	140	210	230	130
TOTAL EFFECTIVE LENGTH	197	187	256	283	181
ADJUSTED PRESSURE	0.1	0.1	0.08	0.07	0.11
ROUND DUCT SIZE	4	4	5	6	4
HEATING VELOCITY (ft/min)	493	321	264	122	103
COOLING VELOCITY (ft/min)	218	447	470	275	46
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10
TRUNK	C	A	C	A	B

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT		VELOCITY		TRUNK	STATIC	ROUND	RECT		VELOCITY
	CFM	PRESS.	DUCT	DUCT		(ft/min)		CFM	PRESS.	DUCT	DUCT		(ft/min)
TRUNK A	354	0.07	9.8	12	x	8	531	TRUNK G	0	0.00	0	0	8
TRUNK B	607	0.07	12	18	x	8	607	TRUNK H	0	0.00	0	0	8
TRUNK C	213	0.08	7.9	8	x	8	479	TRUNK I	0	0.00	0	0	8
TRUNK D	329	0.08	9.2	12	x	8	494	TRUNK J	0	0.00	0	0	8
TRUNK E	976	0.07	14.4	24	x	8	732	TRUNK K	0	0.00	0	0	8
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	8

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT		VELOCITY
	CFM	PRESS.	DUCT	DUCT		(ft/min)
TRUNK O	0	0.06	0	0	x	8
TRUNK P	0	0.06	0	0	x	8
TRUNK Q	0	0.06	0	0	x	8
TRUNK R	0	0.06	0	0	x	8
TRUNK S	0	0.06	0	0	x	8
TRUNK T	0	0.06	0	0	x	8
TRUNK U	0	0.06	0	0	x	8
TRUNK V	0	0.06	0	0	x	8
TRUNK W	0	0.06	0	0	x	8
TRUNK X	975	0.06	14.9	26	x	8
TRUNK Y	566	0.06	12.2	18	x	8
TRUNK Z	404	0.06	10.7	14	x	8
DROP	975	0.06	14.9	24	x	10

RUN #	1	2	3	4	5	6	7	8		BR
FLOOR	2	2	2	2	2	1	1	2		B
AIR VOLUME	80	80	80	80	82	239	85	85	0	164
PLENUM PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	59	54	54	48	53	45	33	40	1	18
EQUIVALENT LENGTH	195	175	195	170	165	200	175	215	0	265
TOTAL EFFECTIVE LH	254	229	249	218	218	245	208	255	1	283
ADJUSTED PRESSURE	0.07	0.07	0.07	0.08	0.08	0.07	0.08	0.07	16.72	0.06
ROUND DUCT SIZE	5.6	5.6	5.6	5.4	5.5	8.5	5.6	5.8	0	7.7
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	8
	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	24	14	14	0	24

TYPE: 3802
SITE NAME: SUMMER RIDGE ESTATES

LO # 105074
OPT 5 BED

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	☒ Direct vent (sealed combustion) only	
b)	☐ Positive venting induced draft (except fireplaces)	
c)	☐ Natural draft, B-vent or induced draft gas fireplace	
d)	☐ Solid Fuel (including fireplaces)	
e)	☐ No Combustion Appliances	

HEATING SYSTEM	
☒ Forced Air	☐ Non Forced Air
☐ Electric Space Heat	

HOUSE TYPE		9.32.1(2)
☒ I	Type a) or b) appliance only, no solid fuel	
☐ II	Type I except with solid fuel (including fireplaces)	
☐ III	Any Type c) appliance	
☐ IV	Type I, or II with electric space heat	
☐	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐ 1	Exhaust only/Forced Air System	
☐ 2	HRV with Ducting/Forced Air System	
☒ 3	HRV Simplified/connected to forced air system	
☐ 4	HRV with Ducting/non forced air system	
☐	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>7</u> @ 10.6 cfm	<u>74.2</u> cfm
Table 9.32.3.A.	TOTAL	<u>212.0</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>95.4</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>212</u>	cfm
Less Principal Ventil. Capacity	<u>95.4</u>	cfm
Required Supplemental Capacity	<u>116.6</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
<u>95.4</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
95.4 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
BATH-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 @ 32 deg F (0 deg C)	☒ 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

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#: 105074		Model: 3802		Builder: ROYAL PIE HOMES																																																									
				Date: 5/16/2024																																																									
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																																																										
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.227 x 354.66 x 41 °C x 1.2 = 3989 W = 13610 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.074 x 354.66 x 6 °C x 1.2 = 192 W = 656 Btu/h																																																										
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																										
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 95 CFM x 74 °F x 1.08 x 0.25 = 1911 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 95 CFM x 11 °F x 1.08 x 0.25 = 283 Btu/h																																																										
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																													
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					Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 3802	OPT 5 BED	BUILDER: ROYAL PIE HOMES
SFQT: 3319	LO# 105074	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:	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 (ft ³):	45089.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 61.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	186.0 ft

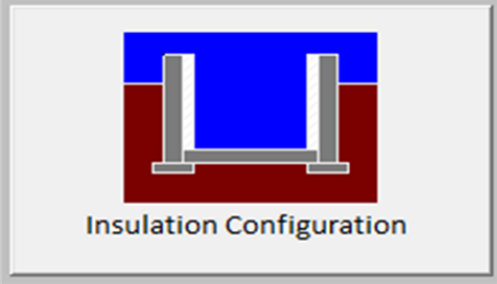
2012 OBC - COMPLIANCE PACKAGE Component	Compliance Package PERFORMANCE	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22+1.5	21.40
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):	18.6	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.3	
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):		1912

TYPE: 3802
LO# 105074

OPT 5 BED

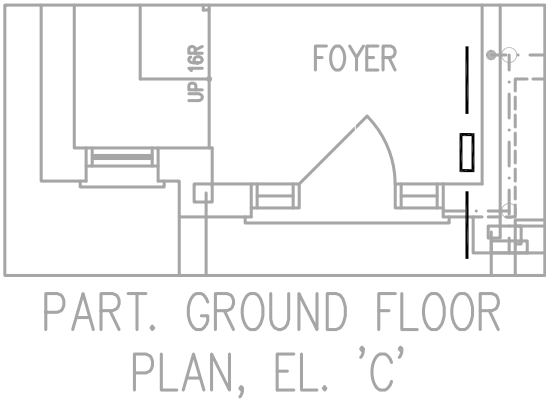
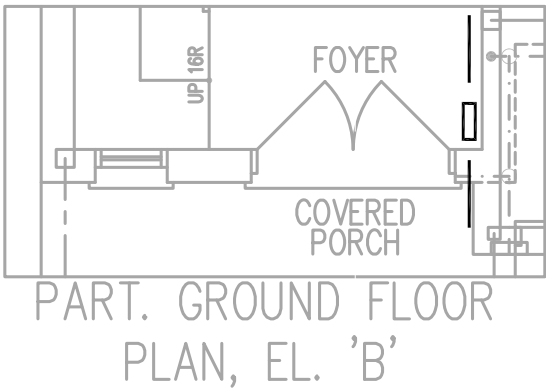
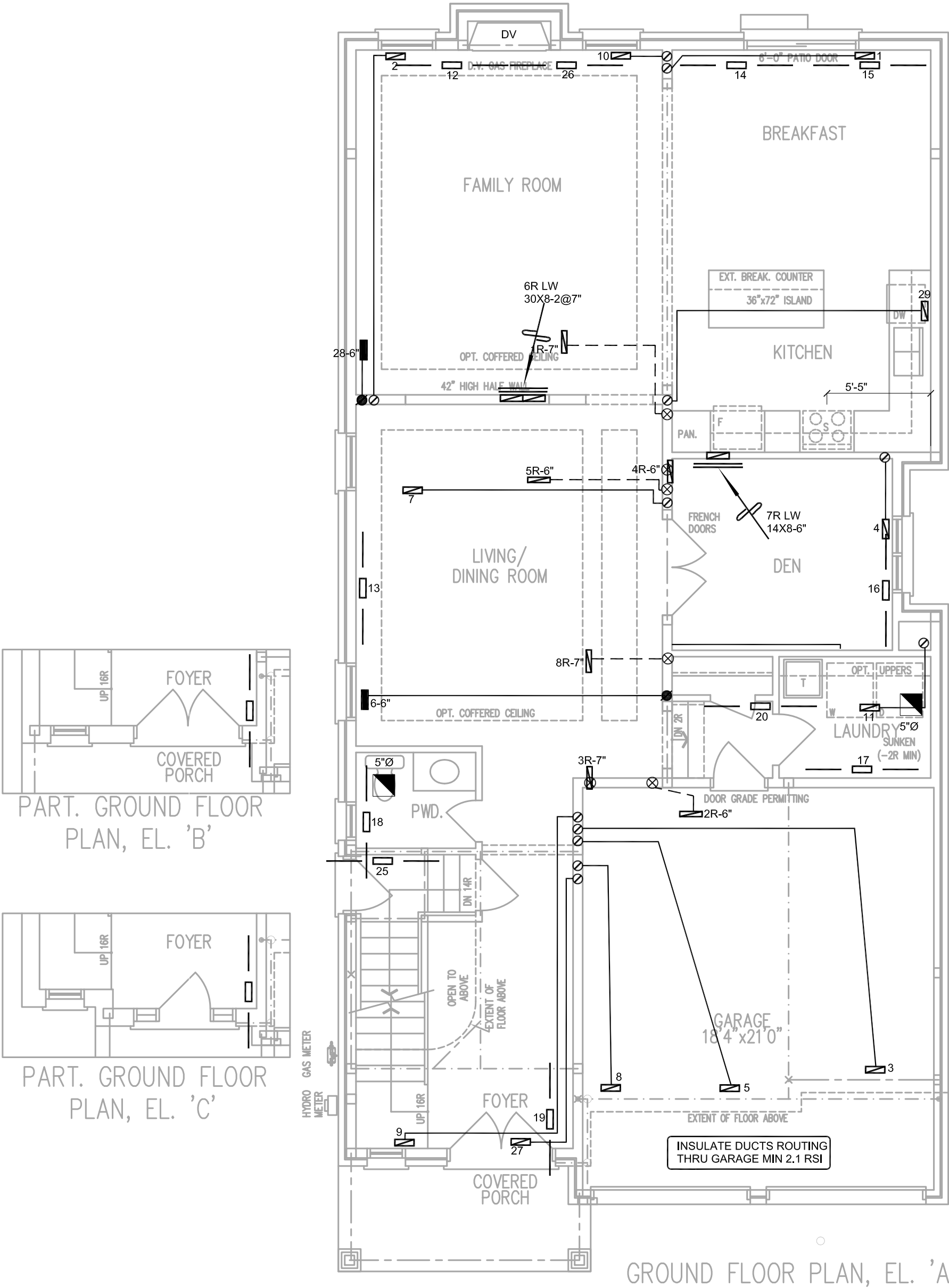
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1276.8			
Air Leakage/Ventilation				
Air Tightness Type:	Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1191.9 cm ²		
	2.50	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	45.0	45.0		
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			

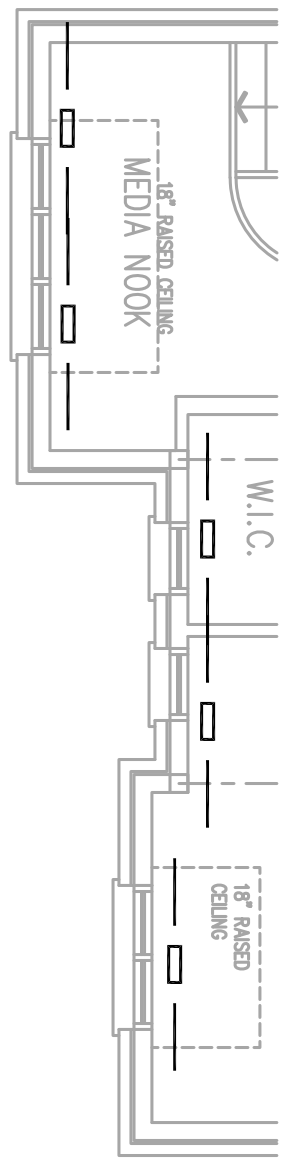
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LO# 105074

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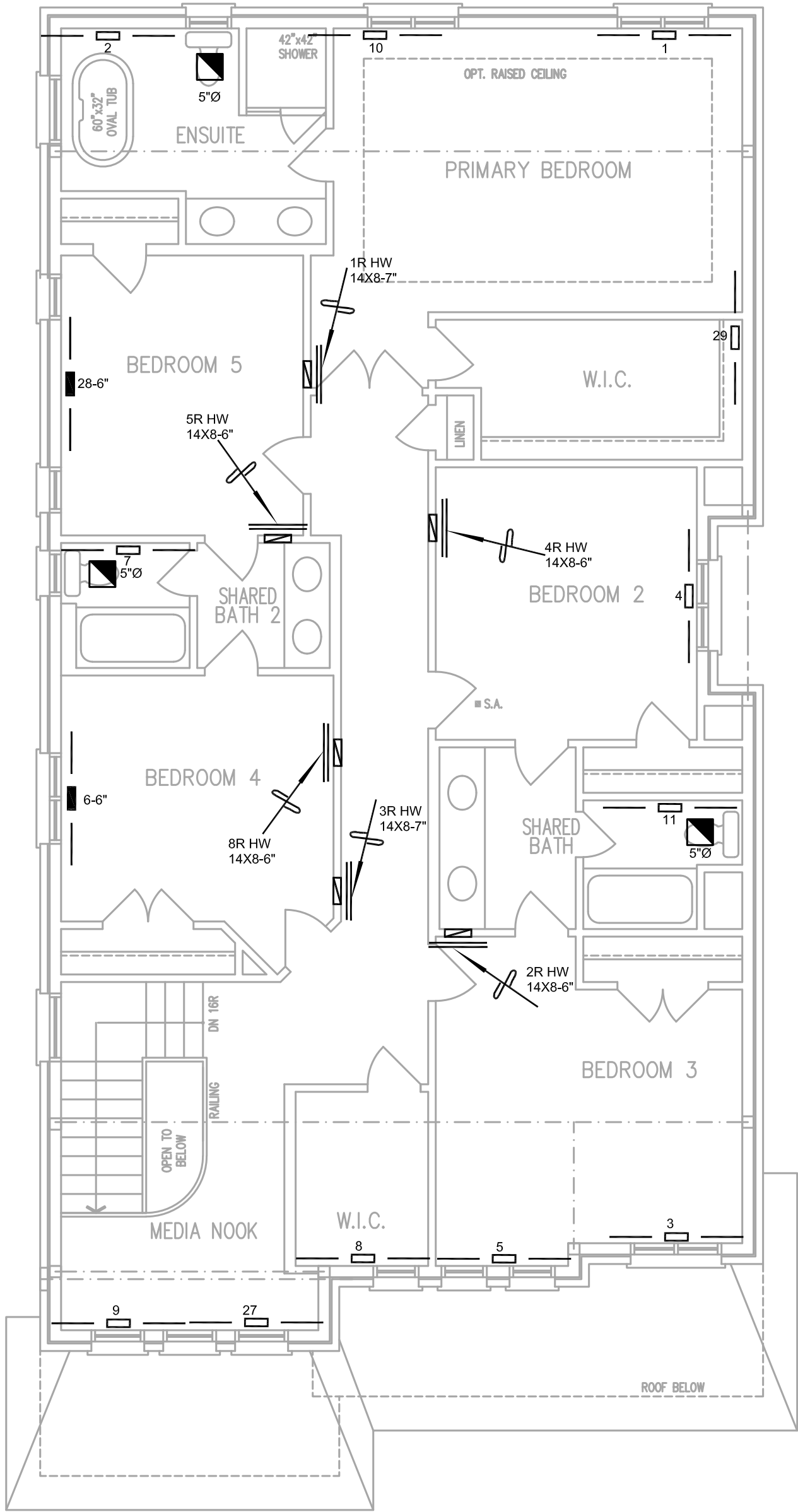
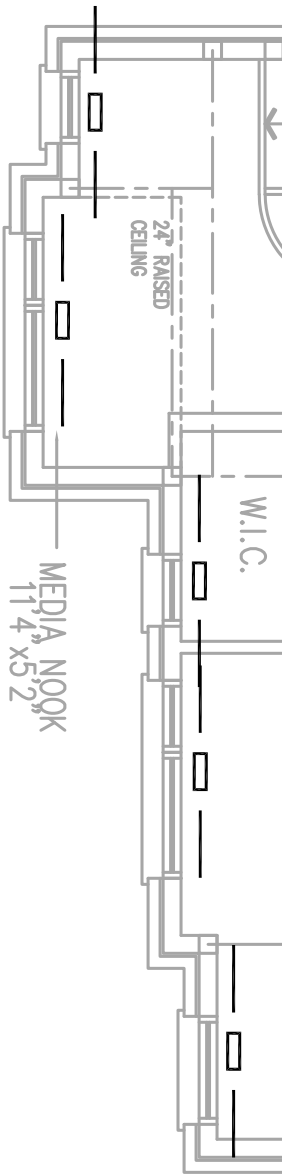


HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN 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		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 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.				Michael O'Rourke BCIN # 19669 HVAC Designs Ltd.				Sheet Title	
Project Name										FIRST FLOOR HEATING LAYOUT	
ROYAL PINE HOMES										Date MAY/2024	
SUMMER RIDGE ESTATES BRAMPTON, ONTARIO										Scale 3/16" = 1'-0"	
3802 - OPT 5 BED 3319 sqft						BCIN# 19669		LO# 105074			

PART. OPT. SECOND FLOOR PLAN W/ 5 BEDROOMS, EL. 'B'



PART. OPT. SECOND FLOOR PLAN W/ 5 BEDROOMS, EL. 'C'



OPT. SECOND FLOOR PLAN W/ 5 BEDROOMS, EL. 'A'

HVAC LEGEND								3.				
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Project Name										SECOND FLOOR HEATING LAYOUT		
3802 - OPT 5 BED 3319 sqft										Date	MAY/2024	
										Scale	3/16" = 1'-0"	
						BCIN# 19669						
						LO#	105074					