

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: 3001 OPT 4 BED 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 4 BED				DATE: May-24				WINTER NATURAL AIR CHANGE RATE 0.275				HEAT LOSS AT °F. 74				CSA-F280-12			
BUILDER: ROYAL PIE HOMES				TYPE: 3001				GFA: 2277				LO# 105057				SUMMER NATURAL AIR CHANGE RATE 0.086				HEAT GAIN AT °F. 11			
ROOM USE		FACTORS		PRI		ENS		BED-4		BED-3		BED-2		BATH									
EXP. WALL				32		21		21		40		18		9									
CLG. HT.				9		9		9		9		9		9									
GRS.WALL AREA		LOSS GAIN		275		181		181		344		155		77									
GLAZING				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	50	1039	1646	52	1080	1711	0	0								
SOUTH		20.8	19.8	0	0	0	0	0	0	0	8	166	159	25	519								
WEST		20.8	32.9	36	748	1185	18	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								
DOORS		19.6	2.9	0	0	0	0	0	0	0	0	0	0	0	0								
NET EXPOSED WALL		3.5	0.5	239	829	123	163	131	453	67	284	985	146	130	450								
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	250	313	139	115	179	224	100	245	307	137	160	200								
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	140	349	52	0	0	0	0	0								
BASEMENT/CRAWL HEAT LOSS				0		0		0		0		0		0									
SLAB ON GRADE HEAT LOSS				0		0		0		0		0		0									
SUBTOTAL HT LOSS				1891		1082		2064		2538		1170		568									
SUB TOTAL HT GAIN				1447		740		1864		2153		652		114									
LEVEL FACTOR / MULTIPLIER		0.20	0.22			0.20	0.22	0.20	0.22	0.20	0.22	0.20	0.22	0.20	0.22								
AIR CHANGE HEAT LOSS				416		238		454		558		257		125									
AIR CHANGE HEAT GAIN				81		41		104		120		36		6									
DUCT LOSS				0		0		252		0		0		69									
DUCT GAIN				0		0		312		0		0		12									
HEAT GAIN PEOPLE		240	2	480		0		1		240		1		240									
HEAT GAIN APPLIANCES/LIGHTS				907		0		907		907		907		907									
TOTAL HT LOSS BTU/H				2306		1320		2771		3097		1427		762									
TOTAL HT GAIN x 1.3 BTU/H				3789		1016		4455		4445		2385		172									

ROOM USE			DEN			KT/FM			ENTRY			LAUN			W/R			FOY			MUD									BAS		
EXP. WALL			18			50			16			12			13			20			11									128		
CLG. HT.			10			10			10			9			10			10			10									9		
GRS.WALL AREA			FACTORS			480			154			103			125			192			106						717					
GLAZING			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN								
NORTH			20.8	12.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
EAST			20.8	32.9	0	0	0	0	0	0	0	0	0	0	0	0	0	34	706	1119	0	0	0	0	0	0	0	0	0			
SOUTH			20.8	19.8	20	416	397	20	416	397	0	0	0	0	0	0	10	208	198	0	0	0	0	0	0	0	0	8	166	159		
WEST			20.8	32.9	0	0	0	83	1724	2732	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	83	132		
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		
DOORS			19.6	2.9	0	0	0	10	196	29	20	392	58	0	0	0	0	0	0	21	411	61	20	392	58	20	392	58	20	392	58	
NET EXPOSED WALL			3.5	0.5	153	530	79	367	1272	189	134	463	69	103	358	53	115	398	59	137	475	70	86	297	44	0	0	0	0	0	0	
NET EXPOSED BSMT WALL ABOVE GR			3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	384	1349	200		
EXPOSED CLG			1.3	0.6	0	0	0	0	0	0	0	0	0	75	94	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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	
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	
BASEMENT/CRAWL HEAT LOSS																														4340		
SLAB ON GRADE HEAT LOSS																																
SUBTOTAL HT LOSS			945			3608			855			452			606			1593			688						6330					
SUB TOTAL HT GAIN			475			3346			127			95			257			1250			102						548					
LEVEL FACTOR / MULTIPLIER			0.30	0.39				0.30	0.39	0.30			0.39	0.20	0.22	0.30			0.39	0.30	0.39	0.30			0.39	0.50			0.85			
AIR CHANGE HEAT LOSS			367			1402			332			99			235			619			267						5370					
AIR CHANGE HEAT GAIN			26			187			7			5			14			70			6						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	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS			907			907			0			907			0			0			0						907					
TOTAL HT LOSS BTU/H			1313			5010			1187			551			841			2211			956						11700					
TOTAL HT GAIN x 1.3 BTU/H			1831			5771			174			1309			353			1716			140						193					

SITE NAME: SUMMER RIDGE ESTATES
BUILDER: ROYAL PIE HOMES

OPT 4 BED
TYPE: 3001

DATE: May-24

GFA: 2277

LO# 105057

HEATING CFM 925 COOLING CFM 925
TOTAL HEAT LOSS 35,451 TOTAL HEAT GAIN 29,489
AIR FLOW RATE CFM 26.09 AIR FLOW RATE CFM 31.37

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	10	8	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.

plenum pressure s/a 0.18
max s/a dif press. loss 0.01
min adjusted pressure s/a 0.17
r/a pressure 0.16
r/a grille press. Loss 0.02
adjusted pressure r/a 0.14

FAN SPEED 40
LOW 0
MEDLOW 0
MEDIUM 0
MEDIUM HIGH 925
HIGH 0

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

TEMPERATURE RISE 39 °F

RUN #	1	2	4	5	6	7	8	9	10	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	PRI	ENS	BED-4	BED-3	BED-2	BATH	BED-4	BED-3	PRI	DEN	KT/FM	KT/FM	KT/FM	ENTRY	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.15	1.32	1.39	1.55	1.43	0.76	1.39	1.55	1.15	1.31	1.67	1.67	1.67	1.19	0.55	0.84	2.21	0.96	2.92	2.92	2.92	2.92
CFM PER RUN HEAT	30	34	36	40	37	20	36	40	30	34	44	44	44	31	14	22	58	25	76	76	76	76
RM GAIN MBH.	1.89	1.02	2.23	2.22	2.39	0.17	2.23	2.22	1.89	1.83	1.92	1.92	1.92	0.17	1.31	0.35	1.72	0.14	0.48	0.48	0.48	0.48
CFM PER RUN COOLING	59	32	70	70	75	5	70	70	59	57	60	60	60	5	41	11	54	4	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.	70	70	31	25	48	50	34	29	62	6	41	56	47	24	54	14	22	29	41	24	10	15
EQUIVALENT LENGTH	160	210	160	120	190	170	170	150	180	180	200	170	140	160	160	120	110	110	160	100	140	110
TOTAL EFFECTIVE LENGTH	230	280	191	145	238	220	204	179	242	186	241	226	187	184	214	134	132	139	201	124	150	125
ADJUSTED PRESSURE	0.07	0.06	0.09	0.12	0.07	0.08	0.08	0.09	0.07	0.09	0.07	0.07	0.09	0.09	0.08	0.12	0.13	0.12	0.08	0.13	0.11	0.13
ROUND DUCT SIZE	5	5	5	5	6	4	5	5	5	5	5	5	5	4	5	4	5	4	6	5	5	5
HEATING VELOCITY (ft/min)	220	250	264	294	189	229	264	294	220	250	323	323	323	356	103	252	426	287	388	558	558	558
COOLING VELOCITY (ft/min)	433	235	514	514	382	57	514	514	433	419	441	441	441	57	301	126	396	46	76	110	110	110
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10
TRUNK	A	A	C	C	B	B	C	C	A	B	A	A	A	B	B	C	C	B	A	B	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	1.15	30	1.89	59	0.17	70	160	230	0.07	5	220	433	3X10	A
2	ENS	1.32	34	1.02	32	0.17	70	210	280	0.06	5	250	235	3X10	A
4	BED-4	1.39	36	2.23	70	0.17	31	160	191	0.09	5	264	514	3X10	C
5	BED-3	1.55	40	2.22	70	0.17	25	120	145	0.12	5	294	514	3X10	C
6	BED-2	1.43	37	2.39	75	0.17	48	190	238	0.07	6	189	382	4X10	B
7	BATH	0.76	20	0.17	5	0.17	50	170	220	0.08	4	229	57	3X10	B
8	BED-4	1.39	36	2.23	70	0.17	34	170	204	0.09	5	264	514	3X10	C
9	BED-3	1.55	40	2.22	70	0.17	29	150	179	0.09	5	294	514	3X10	C
10	PRI	1.15	30	1.89	59	0.17	62	180	242	0.07	5	220	433	3X10	A
12	DEN	1.31	34	1.83	57	0.17	41	200	186	0.09	5	323	419	3X10	B
13	KT/FM	1.67	44	1.92	60	0.17	56	170	241	0.07	5	323	441	3X10	A
14	KT/FM	1.67	44	1.92	60	0.17	47	140	226	0.09	5	323	441	3X10	A
15	KT/FM	1.67	44	1.92	60	0.17	24	160	184	0.09	5	356	57	3X10	B
16	ENTRY	1.19	31	0.17	5	0.17	54	120	214	0.08	4	103	301	3X10	B
17	LAUN	0.55	14	0.35	41	0.17	14	110	134	0.12	5	252	126	3X10	C
18	W/R	0.84	22	0.72	11	0.17	22	110	132	0.13	4	426	396	3X10	C
19	FOY	2.21	58	1.72	54	0.17	29	110	139	0.12	5	287	46	3X10	B
20	MUD	0.96	25	0.48	4	0.17	41	160	201	0.08	6	388	76	4X10	A
21	BAS	2.92	76	0.48	15	0.17	24	100	124	0.13	5	558	110	3X10	B
22	BAS	2.92	76	0.48	15	0.17	10	140	150	0.11	5	558	110	3X10	B
23	BAS	2.92	76	0.48	15	0.17	15	140	150	0.11	5	558	110	3X10	B
24	BAS	2.92	76	0.48	15	0.17	15	140	150	0.13	5	558	110	3X10	C

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY	TRUNK	STATIC	ROUND	RECT	VELOCITY	RETURN AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)		CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	302	0.06	9.6	10	x 8	544	0	0.00	0	0	8	0	0.05	0	0	x 8
TRUNK B	615	0.06	12.6	18	x 8	615	0	0.00	0	0	8	0	0.05	0	0	x 8
TRUNK C	308	0.08	9	10	x 8	554	0	0.00	0	0	8	0	0.05	0	0	x 8
TRUNK D	0	0.00	0	0	x 8	0	0	0.00	0	0	8	0	0.05	0	0	x 8
TRUNK E	0	0.00	0	0	x 8	0	0	0.00	0	0	8	0	0.05	0	0	x 8
TRUNK F	0	0.00	0	0	x 8	0	0	0.00	0	0	8	0	0.05	0	0	x 8

RETURN AIR #	1	2	3	4	5	6	BR
FLOOR	2	2	2	2	1	1	B
AIR VOLUME	115	75	95	100	105	284	0
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ACTUAL DUCT LGH.	65	61	44	73	17	18	1
EQUIVALENT LENGTH	215	215	155	220	155	210	0
TOTAL EFFECTIVE LH	280	276	199	293	172	228	1
ADJUSTED PRESSURE	0.05	0.05	0.07	0.05	0.08	0.06	14.32
ROUND DUCT SIZE	7	6	6	6.7	6	9.4	0
INLET GRILL SIZE	8	8	8	8	8	8	0
INLET GRILL SIZE	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	0

TYPE: 3001
SITE NAME: SUMMER RIDGE ESTATES

LO # 105057
OPT 4 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>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Table 9.32.3.A.	TOTAL	<u>159.0</u> cfm

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

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>159</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>79.5</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 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	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

Michael O'Rourke

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
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5.2.3.1 Heat Loss due to Air Leakage					6.2.6 Sensible Gain due to Air Leakage																																																												
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.275 x 231.13 x 41 °C x 1.2 = 3148 W = 10740 Btu/h					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ 0.086 x 231.13 x 6 °C x 1.2 = 146 W = 498 Btu/h																																																												
5.2.3.2 Heat Loss due to Mechanical Ventilation					6.2.7 Sensible heat Gain due to Ventilation																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h					$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 11 °F x 1.08 x 0.25 = 236 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																																																																	
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 3001	OPT 4 BED	BUILDER: ROYAL PIE HOMES
SFQT: 2277	LO# 105057	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):	29383.8	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	2.20	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.6 ft
LENGTH: 51.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	128.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
PERFORMANCE****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22+1.5	21.40
Basement Walls Minimum RSI (R)-Value	20	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	1.6	-
Skylights Maximum U-Value	2.6	-
Space Heating Equipment Minimum AFUE	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.9	-

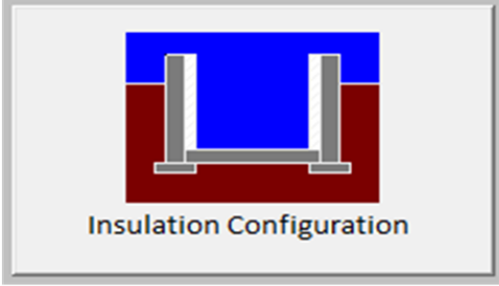
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.5	 Insulation Configuration
Floor Width (m):	7.9	
Exposed Perimeter (m):	39.0	
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):		1272

TYPE: 3001
LO# 105057

OPT 4 BED

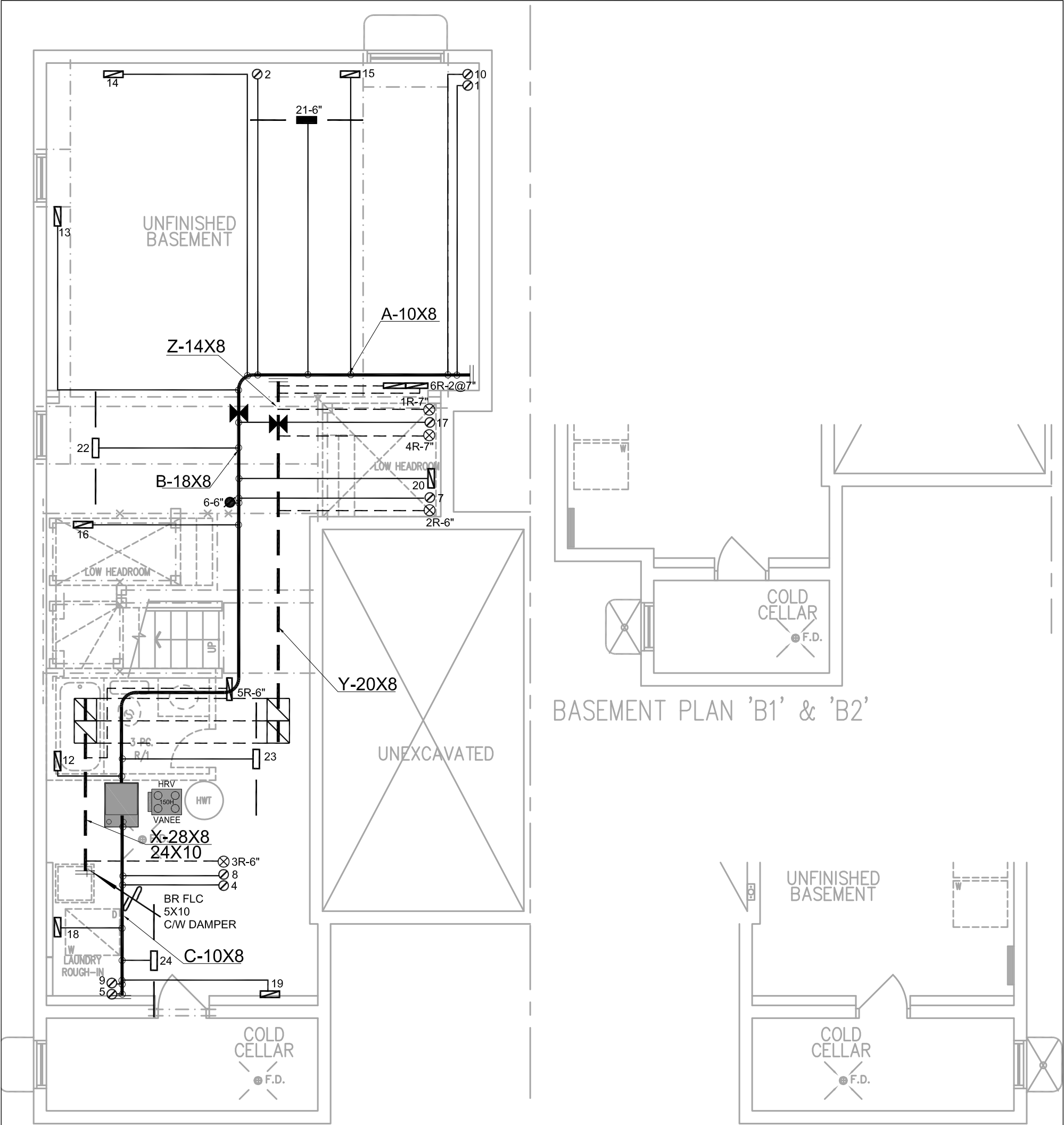
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

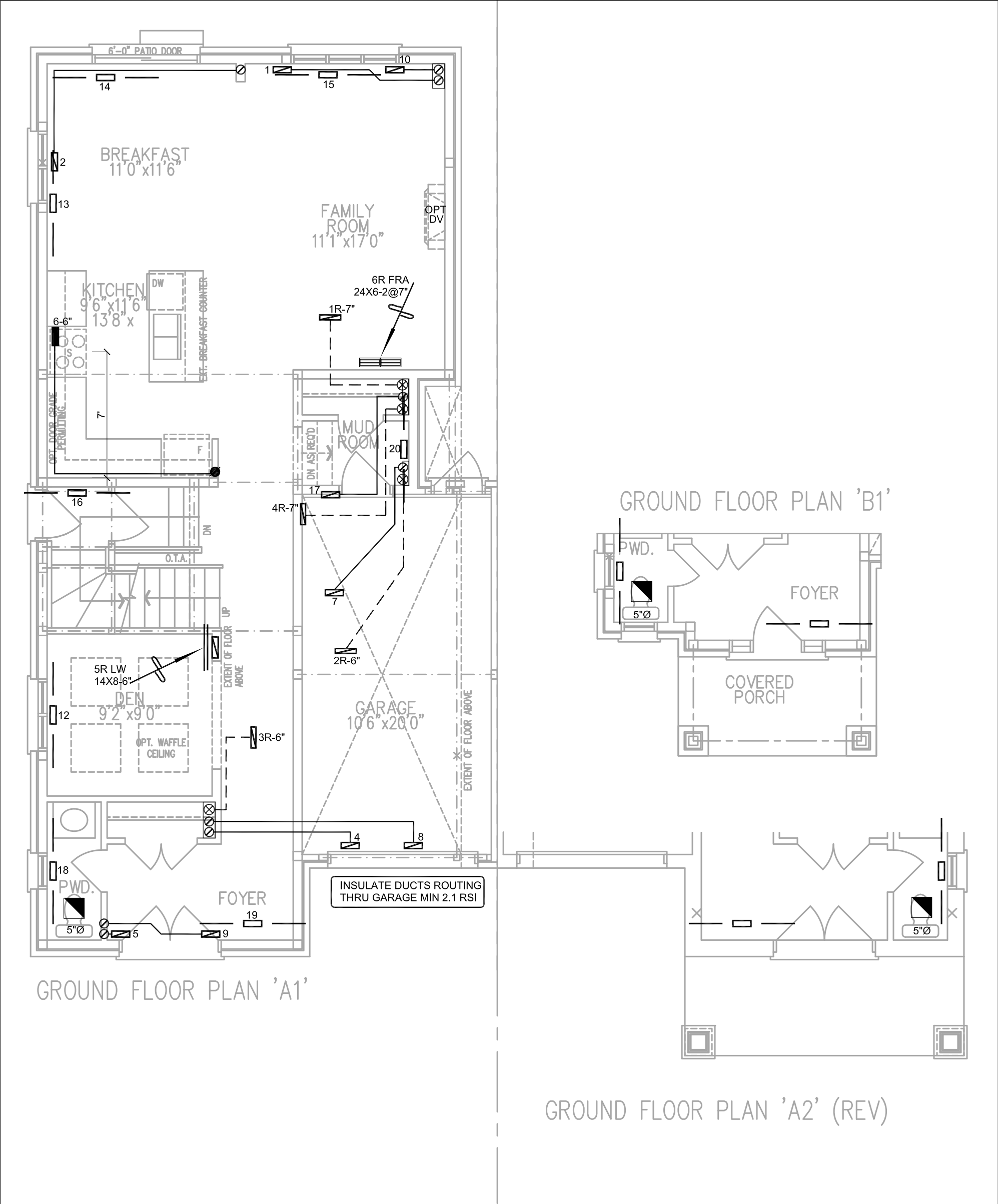
Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.46			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	832.1			
Air Leakage/Ventilation				
Air Tightness Type:	Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	932.1 cm ²		
	3.00	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.275			
Cooling Air Leakage Rate (ACH/H):	0.086			

TYPE: 3001
LO# 105057

OPT 4 BED



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.			HEAT LOSS 37044 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	10	4	3		
					INPUT	40 MBTU/H	1ST FLOOR	8	2	2		
					OUTPUT	39 MBTU/H	BASEMENT	4	1	0	Date	MAY/2024
					COOLING	2.5 TONS	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"
					FAN SPEED	925 cfm @ 0.6" w.c.					BCIN# 19669	
Project Name		SUMMER RIDGE ESTATES BRAMPTON, ONTARIO		OPT 4 BED 3001		2277 sqft		LO#	105057			



HVAC LEGEND								3.		
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OPT 4 BED 3001										
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						Scale 3/16" = 1'-0"				
						BCIN# 19669				
						LO#		105057		

