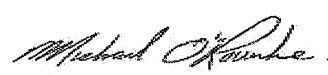


Schedule 1: Designer Information

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 RICHMOND HILL	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: 4505 OPT 5 BED 4 BATH Project: CENTREFIELD (WEST GORMLEY)	
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.			
June 4, 2021 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.

SITE NAME: CENTREFIELD (WEST GORMLEY) OPT 5 BED 4 BATH TYPE: 4605 DATE: Jun-21 WINTER NATURAL AIR CHANGE RATE 0.219 HEAT LOSS AT °F. 78 CSA-F280-12
BUILDER: ROYAL PINE HOMES GFA: 3289 LO# 91154 SUMMER NATURAL AIR CHANGE RATE 0.068 HEAT GAIN AT °F. 13 SB-12 PERFORMANCE

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	BED-5	ENS-3	ENS-4/5	
EXP. WALL CLG. HT.	35 9	26 8	8 8	29 8	42 9	13 8	6 8	14 8	6 8	6 8	
GRS.WALL AREA	315	208	64	232	357	104	48	112	48	48	
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	
NORTH	0	0	0	0	0	0	0	0	0	0	
EAST	0	0	0	0	0	0	0	0	0	0	
SOUTH	0	0	0	0	0	0	0	0	0	0	
WEST	0	0	0	0	0	0	0	0	0	0	
SKYLT.	18	392	728	0	0	0	0	0	0	0	
DOORS	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	289	1215	200	190	799	131	48	202	33	96	404
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	172
EXPOSED CLG	1.3	0.6	348	457	205	164	216	96	72	95	42
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	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
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2239	1407	364	3016	3157	995	377	1061	758	463	260
LEVEL FACTOR / MULTIPLIER	0.20	0.19	0.20	0.19	0.20	0.19	0.20	0.19	0.20	0.19	0.20
AIR CHANGE HEAT LOSS	418	263	88	563	589	186	70	198	141	86	14
AIR CHANGE HEAT GAIN	79	0	0	358	0	0	45	0	90	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	2	480	0	1	240	1	0	1	240	0	0
HEAT GAIN APPLIANCES/LIGHTS	601	0	0	601	601	601	0	601	0	0	0
TOTAL HT LOSS BTU/H	2657	1669	432	3936	3746	1180	492	1259	989	549	356
TOTAL HT GAIN x 1.3 BTU/H	3401	1310	5672	4524	5288	1878	1030	1906	1117	356	

ROOM USE	LIV	K/B/G	DIN	LAUN	WIR	FOY	ENS-2	BED-5	ENS-3	ENS-4/5	
EXP. WALL CLG. HT.	35 10	72 10	23 10	28 11	7 10	24 10	6 8	14 8	6 8	6 8	
GRS.WALL AREA	354	727	232	311	71	242	48	112	48	48	
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	
NORTH	0	0	0	0	0	0	0	0	0	0	
EAST	0	0	0	0	0	0	0	0	0	0	
SOUTH	0	0	0	0	0	0	0	0	0	0	
WEST	0	0	0	0	0	0	0	0	0	0	
SKYLT.	0	0	0	0	0	0	0	0	0	0	
DOORS	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	317	1331	201	847	62	259	43	200	843	139	128
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	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
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2137	4837	1522	1881	456	1880	752	1259	989	549	356
LEVEL FACTOR / MULTIPLIER	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
AIR CHANGE HEAT LOSS	651	1474	464	573	139	573	441	1259	989	549	356
AIR CHANGE HEAT GAIN	93	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	601	601	601	601	601	601	0	601	0	0	0
TOTAL HT LOSS BTU/H	2788	6312	1986	2454	594	2452	1030	1906	1117	356	
TOTAL HT GAIN x 1.3 BTU/H	3132	5672	2003	1337	358	1030					

TOTAL HEAT GAIN BTU/H: 35720 TONS: 2.98 LOSS DUE TO VENTILATION LOAD BTU/H: 2004 STRUCTURAL HEAT LOSS: 49163 TOTAL COMBINED HEAT LOSS BTU/H: 51167

Michael O'Rourke

SITE NAME: CENTREFIELD (WEST GORMLEY)
BUILDER: ROYAL PINE HOMES

TYPE: 4505
OPT 5 BED 4 BATH

GFA: 3289 LO# 91154

DATE: Jun-21

HEATING CFM 1200 COOLING CFM 1200
TOTAL HEAT LOSS 49,163
AIR FLOW RATE CFM 33.91

AFUE = 97 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 58,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	16	8	4
R/A	0	0	5	3	1

59T6A-060-14V 60
FAN SPEED
LOW 820
MEDLOW 0
MEDIUM 1200
HIGH 1520

DESIGN CFM = 1200
CFM @ .5" E.S.P.

TEMPERATURE RISE 45 °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	ENS	MBR	BED-2	BED-3	BED-3	BED-4	ENS-2	BED-3	ENS-3	MBR	ENS-4/5	LIV	K/B/G	K/B/G	K/B/G	DIN	LAUN	W/R	FOY	ENS	BAS	BAS	BAS	BAS
RM LOSS MBH.	0.56	1.33	1.97	1.97	1.87	1.18	0.49	1.87	0.49	1.33	0.55	2.79	2.10	2.10	2.10	1.99	2.45	0.59	2.45	0.56	3.92	3.92	3.92	3.92
CFM PER RUN HEAT	14	32	48	48	46	29	12	46	12	32	13	68	51	51	51	48	60	15	60	14	96	96	96	96
RM GAIN MBH.	0.44	1.70	2.27	2.27	2.64	1.88	0.12	2.64	0.56	1.70	0.36	3.13	1.89	1.89	1.89	2.00	1.34	0.36	1.03	0.44	0.46	0.46	0.46	
CFM PER RUN COOLING	15	58	77	77	90	64	4	90	19	58	12	106	64	64	64	68	45	12	35	15	16	16	16	
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	
ACTUAL DUCT LGH.	32	58	58	51	49	29	37	44	49	27	31	28	39	39	51	6	43	17	36	46	45	26	8	
EQUIVALENT LENGTH	150	150	130	120	180	130	140	170	130	150	140	90	130	130	100	140	120	150	100	160	110	120	150	
TOTAL EFFECTIVE LENGTH	182	208	188	171	229	159	177	217	174	199	167	121	158	169	151	146	163	167	136	206	155	146	158	
ADJUSTED PRESSURE	0.09	0.08	0.09	0.1	0.07	0.11	0.1	0.07	0.1	0.09	0.1	0.13	0.11	0.11	0.11	0.12	0.11	0.1	0.13	0.08	0.1	0.11	0.1	
ROUND DUCT SIZE	4	5	6	6	6	6	4	6	4	5	4	6	5	5	5	6	5	4	5	4	6	6	6	
HEATING VELOCITY (ft/min)	161	235	245	245	235	148	138	235	138	235	149	347	374	374	374	245	441	172	441	161	489	489	489	
COOLING VELOCITY (ft/min)	172	426	393	393	459	326	46	459	218	426	138	540	470	470	470	347	330	138	257	172	82	82	82	
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	
TRUNK	D	D	B	B	A	B	B	A	B	D	B	A	D	C	C	B	C	A	A	C	C	D	B	

RUN #	25	26	27	28
ROOM NAME	ENS	WIC	ENS-3	BED-5
RM LOSS MBH	0.56	0.43	0.49	1.26
CFM PER RUN HEAT	14	11	12	31
RM GAIN MBH	0.44	0.12	0.56	1.91
CFM PER RUN COOLING	15	4	19	65
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	160	170	140	190
TOTAL EFFECTIVE LENGTH	195	215	181	212
ADJUSTED PRESSURE	0.09	0.08	0.1	0.08
ROUND DUCT SIZE	4	4	4	6
HEATING VELOCITY (ft/min)	161	126	138	158
COOLING VELOCITY (ft/min)	172	46	218	331
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10
TRUNK	D	C	B	D

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	TRUNK PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	331	0.07	9.6	12	497	TRUNK G	0	0.00	0	0	0	TRUNK O	0	0.05	0	0	8
TRUNK B	649	0.07	12.3	20	584	TRUNK H	0	0.00	0	0	0	TRUNK P	0	0.05	0	0	8
TRUNK C	283	0.08	8.7	10	509	TRUNK I	0	0.00	0	0	0	TRUNK Q	0	0.05	0	0	8
TRUNK D	553	0.08	11.2	14	711	TRUNK J	0	0.00	0	0	0	TRUNK R	0	0.05	0	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	0	TRUNK S	0	0.05	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK T	0	0.05	0	0	8
												TRUNK U	0	0.05	0	0	8
												TRUNK V	0	0.05	0	0	8
												TRUNK W	0	0.05	0	0	8
												TRUNK X	915	0.05	15.3	28	588
												TRUNK Y	480	0.05	12	16	540
												TRUNK Z	285	0.05	9.9	12	428
												DROP	1200	0.05	16.9	24	600

RETURN AIR #	1	2	3	4	5	6	7	8
AIR VOLUME	130	85	75	95	130	155	175	175
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	54	50	53	52	58	35	23	30
EQUIVALENT LENGTH	215	205	245	165	175	200	185	190
TOTAL EFFECTIVE LH	269	255	298	217	233	235	208	220
ADJUSTED PRESSURE	0.06	0.06	0.05	0.07	0.06	0.06	0.07	0.07
ROUND DUCT SIZE	7	6	6	6	7	7.5	7.5	7.5
INLET GRILL SIZE	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	14	14

TYPE: 4505 LO # 91154
SITE NAME: CENTREFIELD (WEST GORMLEY) OPT 5 BED 4 BATH

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

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

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

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

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

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm <u>42.4</u> cfm	
Other Bedrooms	<u>4</u> @ 10.6 cfm <u>42.4</u> cfm	
Kitchen & Bathrooms	<u>6</u> @ 10.6 cfm <u>63.6</u> cfm	
Other Rooms	<u>5</u> @ 10.6 cfm <u>53.0</u> cfm	
Table 9.32.3.A.	TOTAL <u>201.4</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>201.4</u> cfm	
Less Principal Ventil. Capacity	<u>95.4</u> cfm	
Required Supplemental Capacity	<u>106.0</u> cfm	

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANEE 65H	Location: BSMT		
<u>95.4</u> cfm	☒ HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
95.4 CFM	X 78 F	X 1.08	X 0.25

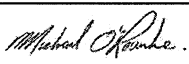
SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-4/5	BY INSTALLING CONTRACTOR	50	☒	3.5
W/R	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
<u>155</u> cfm high	<u>64</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 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:	
HRAI #	001820
Date:	June-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																								
Formula Sheet (For Air Leakage / Ventilation Calculation)																																								
LO#: 91154	Model: 4505	Builder: ROYAL PINE HOMES	Date: 2021-06-04																																					
Volume Calculation		Air Change & Delta T Data																																						
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6.2.6 Sensible Gain due to Air Leakage																																								
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																								
0.219	x	332.55	x																																					
		7 °C	x																																					
		1.2	=																																					
			194 W																																					
			=																																					
			662 Btu/h																																					
6.2.7 Sensible heat Gain due to Ventilation																																								
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																								
95 CFM	x	13 °F	x																																					
		1.08	x																																					
		0.25	=																																					
			330 Btu/h																																					
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																								
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclvl} + HL_{bgclvl})\}$																																								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HLclvl)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLclvl)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="4" style="text-align: center;">12,916</td> <td>9,207</td> <td>0.701</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>12,712</td> <td>0.305</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>13,836</td> <td>0.187</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></td> <td>0</td> <td>0.000</td> </tr> </table>				Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLclvl)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLclvl)	1	0.5	12,916	9,207	0.701	2	0.3	12,712	0.305	3	0.2	13,836	0.187	4	0	0	0.000	5	0		0	0.000										
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairbv = 0																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4505	OPT 5 BED 4 BATH	BUILDER: ROYAL PINE HOMES
SFQT: 3289	LO# 91154	SITE: CENTREFIELD (WEST GORMLEY)

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-6	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

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):	42277.4	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
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: 38.0 ft	WIDTH: 56.0 ft	EXPOSED PERIMETER:	188.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
SB-12 PERFORMANCE****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22+1.5	18.50
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	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	TE=94%	-

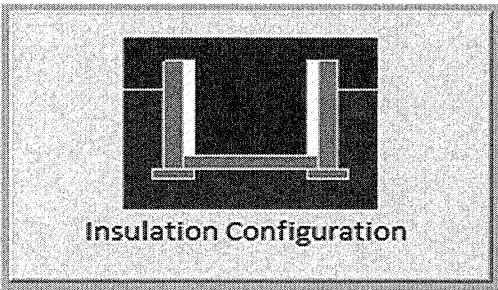
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	11.6	 Insulation Configuration
Floor Width (m):	17.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.2	
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):		1855

TYPE: 4505
LO# 91154

OPT 5 BED 4 BATH

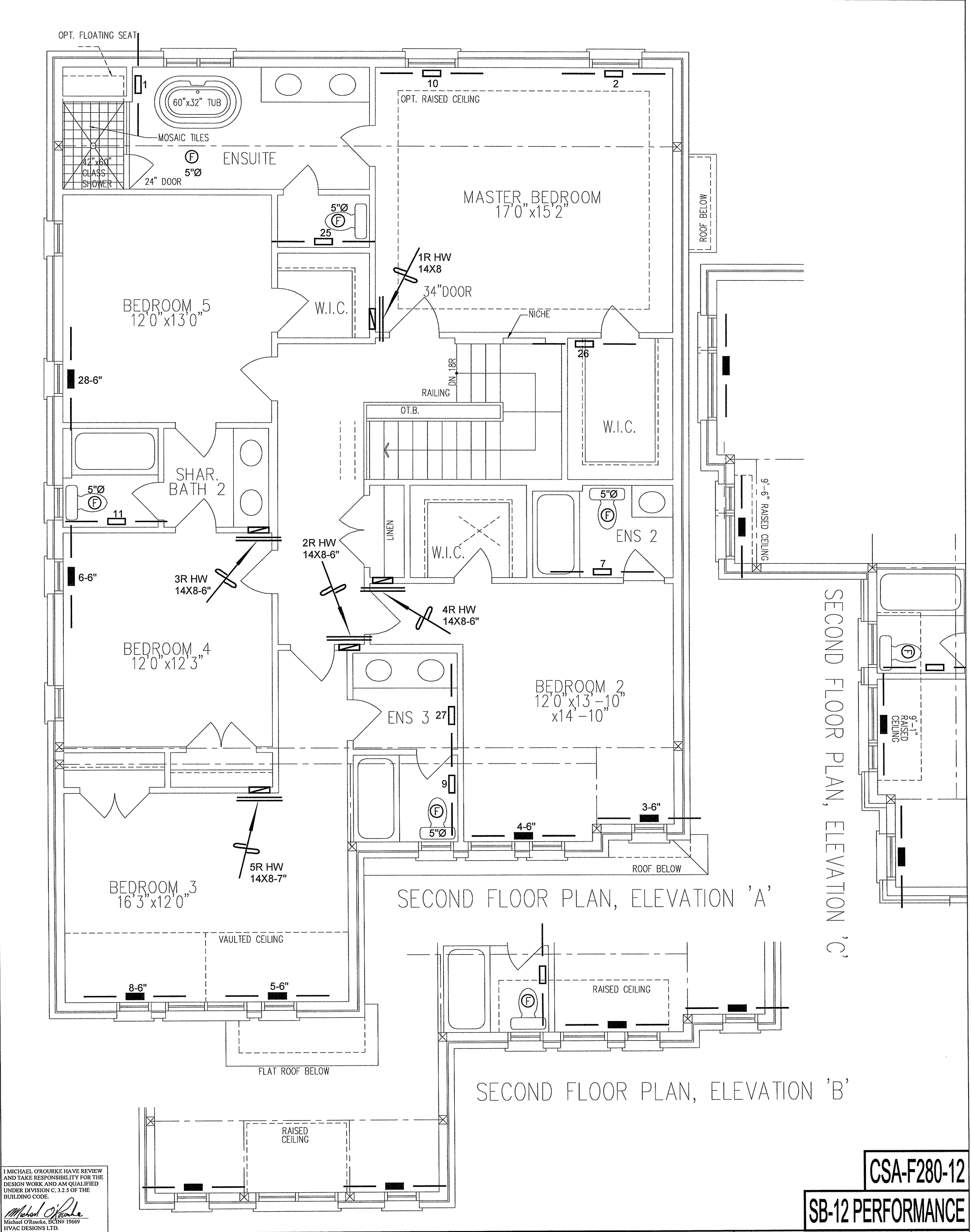
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
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):	6.43			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1197.2			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1117.5 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):	0.219			
Cooling Air Leakage Rate (ACH/H):	0.068			

TYPE: 4505
LO# 91154

OPT 5 BED 4 BATH



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

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		

Client

ROYAL PINE HOMES

Project Name

CENTREFIELD (WEST GORMLEY)
RICHMOND HILL, ONTARIO

OPT 5 BED 4 BATH
4505

3289 sqft

HVACDESIGNS LTD.

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdsgns.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.

Sheet Title	
SECOND FLOOR HEATING LAYOUT	
Date	JUNE/2021
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	91154