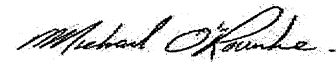


Schedule 1: Designer Information

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@hvacdesigns.ca	
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]				
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems				
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 2009 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.				
September 10, 2021		 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: CENTREFIELD (WEST GORMLEY)										DATE: Sep-21		WINTER NATURAL AIR CHANGE RATE 0.284		HEAT LOSS AT °F. 78		CSA-F280-12	
BUILDER: ROYAL PINE HOMES										LOF #7832		SUMMER NATURAL AIR CHANGE RATE 0.086		HEAT GAIN AT °F. 13		SB-12 PERFORMANCE	
TYPE: 2009										GFA: 1660							
ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	BED-2	BED-3	BATH	FOY	PWD	KIB/G	LOSSES	GAINS	LOSSES	GAINS	LOSSES	GAINS
GRS.WALL AREA	14	9	126	14	6	10	15	0	30	12	23	0	0	0	0	0	0
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH	21.8	16.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.8	24.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	21.8	41.6	28	610	1163	9	196	374	8	174	199	0	0	0	0	0	0
SKYLT.	35.8	101.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.8	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.2	0.7	98	412	68	45	189	31	0	0	0	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	382	502	225	78	103	46	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	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	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	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	1524			1524	488	1565	1386	1637	1726	163	2576	3580	3580	163	2706	3542	496
SUB TOTAL HT GAIN	0.20	0.34	1466	0.20	0.34	0.20	0.34	0.20	0.34	0.30	0.44	0.30	0.44	0.30	0.44	0.50	1.29
LEVEL FACTOR / MULTIPLIER	512			512	164	525	550	78	78	434	1126	434	1126	434	1182	4570	31
AIR CHANGE HEAT LOSS	0	0	92	0	0	209	87	109	31	0	0	0	0	0	0	0	0
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240			0	0	260	286	286	7	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	0			480	0	240	1	240	0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	2036			3791	652	2300	3722	2406	889	1427	3701	3580	3580	1427	3888	5112	889
TOTAL HT GAIN x 1.3 BTU/H					823			4233	101	226	6103				1927	1841	

Michael O'Rourke

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

TYPE: 2009

DATE: Sep-21

GFA: 1660 LO# 87532

HEATING CFM	820	COOLING CFM	820	furnace pressure	0.6	AFUE = 97 %
TOTAL HEAT LOSS	24,852	TOTAL HEAT GAIN	22,573	a/c coil pressure	0.05	INPUT (BTU/H) = 60,000
AIR FLOW RATE CFM	32.98	AIR FLOW RATE CFM	36.33	available pressure	0.35	OUTPUT (BTU/H) = 58,000
for s/a & r/a						
plenum pressure s/a	0.18	r/a pressure	0.17	r/a grille press. Loss	0.02	DESIGN CFM = 820
max s/a diff. press. loss	0.03	min adjusted pressure s/a	0.15	adjusted pressure r/a	0.15	CFM @ .5" E.S.P.
TEMPERATURE RISE 65 °F						

**CARRIER

59TNEA-060-14V 60

FAN SPEED

LOW 820

MEDIUM 0

HIGH 1520

MEDIUM HIGH 0

MEDIUM 0

MEDIUM LOW 0

MEDIUM 0

MEDIUM HIGH 0

MEDIUM LOW 0

MEDIUM 0

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ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
MBR	1.02	0.65	1.15	1.20	1.20	1.20	0.34	1.15	1.02	1.02	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
RM LOSS MBH	34	21	38	40	40	40	11	38	34	34	61	61	61	61	61	61	61	61	61	61	61	61	61	61
CFM PER RUN HEAT	1.90	0.62	1.86	2.12	2.12	2.12	0.10	1.86	1.90	1.90	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05
RM GAIN MBH	69	23	68	77	77	77	4	68	69	69	111	111	111	111	111	111	111	111	111	111	111	111	111	111
CFM PER RUN COOLING	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	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
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	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.	33	26	52	53	50	30	47	39	39	39	23	19	19	19	19	19	19	19	19	19	19	19	19	19
EQUIVALENT LENGTH	110	170	150	190	180	140	130	140	140	140	170	150	150	150	150	150	150	150	150	150	150	150	150	150
TOTAL EFFECTIVE LENGTH	143	196	202	243	230	170	177	177	179	179	193	169	169	169	169	169	169	169	169	169	169	169	169	169
ADJUSTED PRESSURE	0.12	0.09	0.09	0.07	0.07	0.07	0.1	0.1	0.1	0.1	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
ROUND DUCT SIZE	5	4	5	6	6	6	4	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6
HEATING VELOCITY (ft/min)	250	241	279	204	204	204	126	279	250	250	311	311	311	311	311	311	311	311	311	311	311	311	311	311
COOLING VELOCITY (ft/min)	507	264	499	393	393	393	46	499	507	507	566	566	566	566	566	566	566	566	566	566	566	566	566	566
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	C	C	A	A	A	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

All S/A diffusers 4"X10" unless noted otherwise on layout.

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

ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
RM LOSS MBH	1.02	0.65	1.15	1.20	1.20	1.20	0.34	1.15	1.02	1.02	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
CFM PER RUN HEAT	34	21	38	40	40	40	11	38	34	34	61	61	61	61	61	61	61	61	61	61	61	61	61	61
RM GAIN MBH	69	23	68	77	77	77	4	68	69	69	111	111	111	111	111	111	111	111	111	111	111	111	111	111
CFM PER RUN COOLING	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	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
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	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.	33	26	52	53	50	30	47	39	39	39	23	19	19	19	19	19	19	19	19	19	19	19	19	19
EQUIVALENT LENGTH	110	170	150	190	180	140	130	140	140	140	170	150	150	150	150	150	150	150	150	150	150	150	150	150
TOTAL EFFECTIVE LENGTH	143	196	202	243	230	170	177	177	179	179	193	169	169	169	169	169	169	169	169	169	169	169	169	169
ADJUSTED PRESSURE	0.12	0.09	0.09	0.07	0.07	0.07	0.1	0.1	0.1	0.1	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
ROUND DUCT SIZE	5	4	5	6	6	6	4	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6
HEATING VELOCITY (ft/min)	250	241	279	204	204	204	126	279	250	250	311	311	311	311	311	311	311	311	311	311	311	311	311	311
COOLING VELOCITY (ft/min)	507	264	499	393	393	393	46	499	507	507	566	566	566	566	566	566	566	566	566	566	566	566	566	566
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	C	C	A	A	A	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

SUPPLY AIR TRUNK SIZE													RETURN AIR TRUNK SIZE												
TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)						
TRUNK A	297	0.07	10	8	535	0.00	0	0	8	TRUNK O	0	0.05	0	0	TRUNK O	0	0.05	0	0	8					
TRUNK B	431	0.07	14	8	554	0.00	0	0	8	TRUNK P	0	0.05	0	0	TRUNK P	0	0.05	0	0	8					
TRUNK C	389	0.08	12	8	584	0.00	0	0	8	TRUNK Q	0	0.05	0	0	TRUNK Q	0	0.05	0	0	8					
TRUNK D	0	0.00	0	8	0	0.00	0	0	8	TRUNK R	0	0.05	0	0	TRUNK R	0	0.05	0	0	8					
TRUNK E	0	0.00	0	8	0	0.00	0	0	8	TRUNK S	0	0.05	0	0	TRUNK S	0	0.05	0	0	8					
TRUNK F	0	0.00	0	8	0	0.00	0	0	8	TRUNK T	0	0.05	0	0	TRUNK T	0	0.05	0	0	8					
										TRUNK U	0	0.05	0	0	TRUNK U	0	0.05	0	0	8					
										TRUNK V	0	0.05	0	0	TRUNK V	0	0.05	0	0	8					
										TRUNK W	0	0.05	0	0	TRUNK W	0	0.05	0	0	8					
										TRUNK X	820	0.05	14.6	24	TRUNK X	820	0.05	14.6	24	8					
										TRUNK Y	415	0.05	11.3	14	TRUNK Y	415	0.05	11.3	14	8					
										TRUNK Z	0	0.05	0	0	TRUNK Z	0	0.05	0	0	8					
										DROP	820	0.05	14.6	24	DROP	820	0.05	14.6	24	10					
RETURN AIR #																									
AIR VOLUME				BR																					
95	115	75	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120					
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	0.15	0.15	0.15	14					
69	47	56	55	21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	159					
205	165	245	175	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.2					
274	212	301	230	171	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8					
0.05	0.07	0.05	0.06	0.09	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09					
6.5	6.5	6	5.7	9.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.2					
8	8	8	8	6	0	0	0	0	0	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	X	X	X	X					
14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14					
INLET GRILL SIZE																									

TYPE: 2009
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87532

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	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	2 @ 10.6 cfm	21.2 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	2 @ 10.6 cfm	21.2 cfm
Table 9.32.3.A.	TOTAL	137.8 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	137.8	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	74.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
63.6 cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
63.6 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
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5
B-BATH	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency @ 32 deg F (0 deg C)	☒ 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:	September-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																													
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																													
LO#: 87532	Model: 2009																																																												
Builder: ROYAL PINE HOMES																																																													
Date: 9/10/2021																																																													
Air Change & Delta T Data																																																													
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6.2.6 Sensible Gain due to Air Leakage																																																													
$HG_{satb} = LR_{atrc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																													
0.284	x 182.17 x 7 °C x 1.2 = 134 W																																																												
= 0.086 x 182.17 x 7 °C x 1.2 = 456 Btu/h																																																													
6.2.7 Sensible heat Gain due to Ventilation																																																													
$HL_{natrb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																													
64 CFM	x 13 °F x 1.08 x 0.25 = 220 Btu/h																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																													
$HL_{airrr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{aglevel} + HL_{bglevel})\}$																																																													
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Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																										
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairrr = 0																																																													

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 2009**BUILDER:** ROYAL PINE HOMES**SFQT:** 1660**LO#** 87532**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

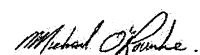
BUILDING DATA

ATTACHMENT:	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 (ft³):	23159.4	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.85	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 52.0 ft	WIDTH: 20.0 ft	EXPOSED PERIMETER:	66.0 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%	-

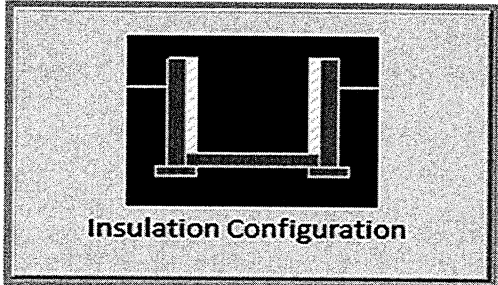
INDIVIDUAL BCIN: 19669

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):	15.8	 Insulation Configuration
Floor Width (m):	6.1	
Exposed Perimeter (m):	20.1	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	0.7	
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):	628	

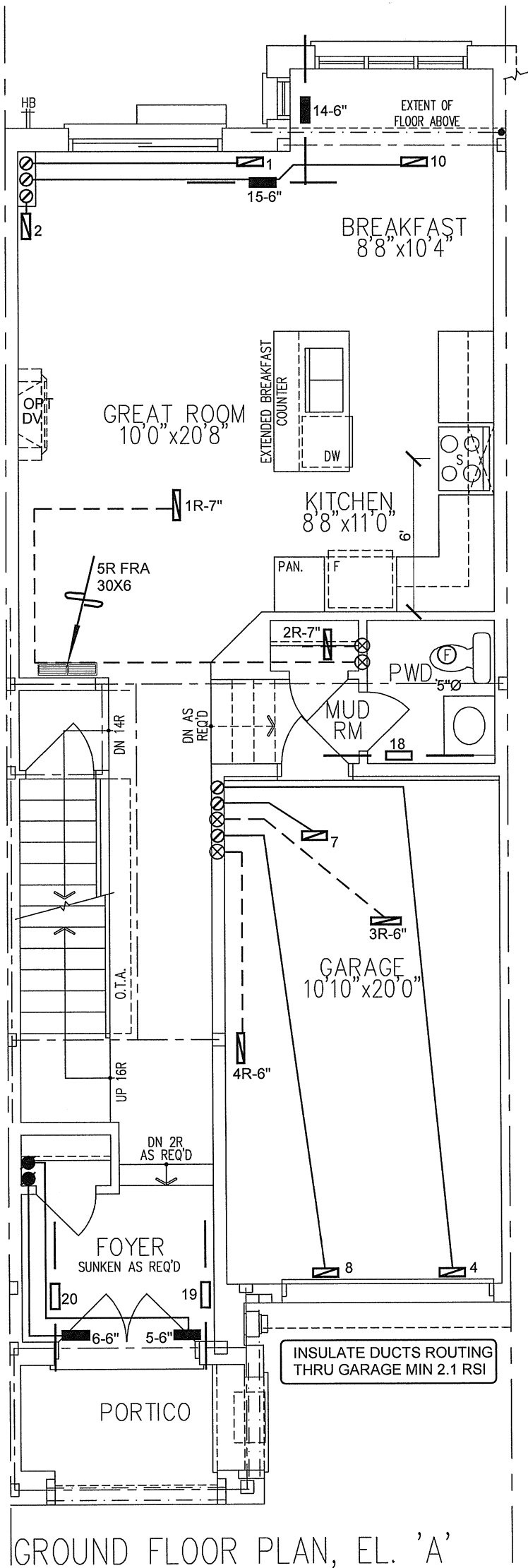
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

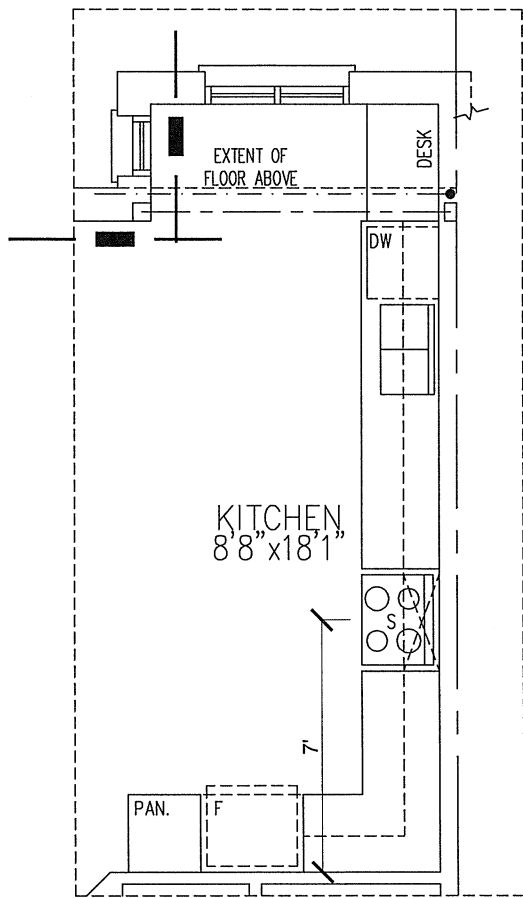
Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.74			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	655.8			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		734.6 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):	0.284			
Cooling Air Leakage Rate (ACH/H):	0.086			

TYPE: 2009

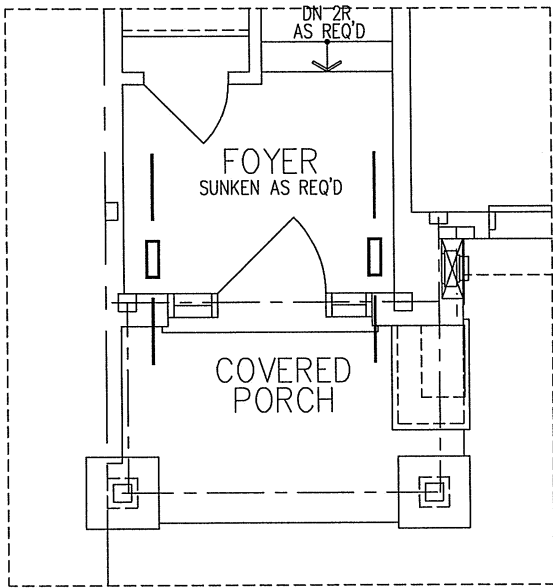
LO# 87532



GROUND FLOOR PLAN, EL. 'A'



PART. GROUND FLOOR PLAN
- OPT. KITCHEN LAYOUT



GROUND FLOOR PLAN, EL. '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.

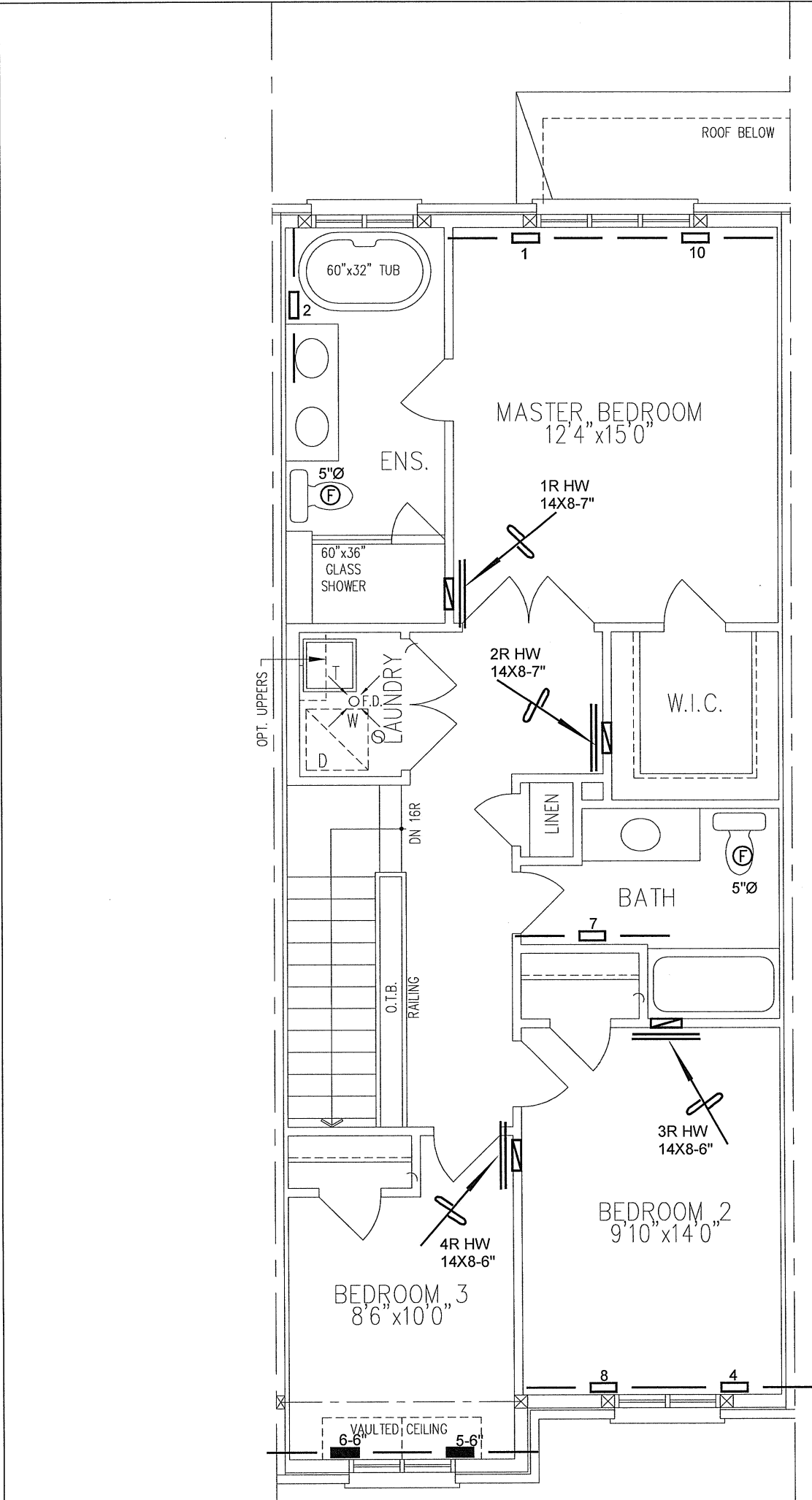
CSA-F280-12

SB-12 PERFORMANCE

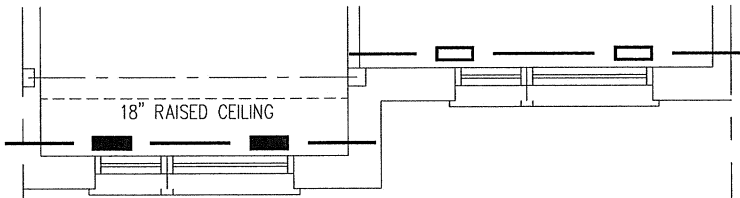
HVAC LEGEND								3.	REVISED ACH	SEPT/2021
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY 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.

Client		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services 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	
ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2020
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
20091660 sqft		BCIN# 19669		
		LO#	87532	



SECOND FLOOR PLAN, EL. 'A'



SECOND FLOOR PLAN, EL. 'B'

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.

CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.	REVISED ACH	SEPT/2021
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CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
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