

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 END OPT 2ND 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 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: CENTREFIELD (WEST GORMLEY)										DATE: Sep-21		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F.		CSA-F280-12	
BUILDING: ROYAL PINE HOMES										LO# 87538		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN AT °F.		SB-12 PERFORMANCE	
ROOM USE		EXP. WALL		CLG. HT.		FACTORS		MBR		ENS		TYPE: 2009 END		OPT 2ND			
GRS.WALL AREA		GLAZING		LOSS		GAIN		LOSS		GAIN		BED-2		BED-3		BATH	
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	7	152	174	0	0	0	13	283	324	0	0	0
WEST	21.8	41.6	28	610	1163	9	196	374	0	0	0	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	84	353	58	208	875	144	52	219	36	365	1535	253	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	177	233	104	200	263	118	77	101	45
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0	0	0	20	56	26	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	177	482	76	21	55	9	50	131	21
BASEMENT/CRAWL HEAT LOSS			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	1523						232		67
SUBTOTAL HT LOSS			1465			1326	738		0.20	0.22	0.20	0.22	2224		0.20	0.22	67
SUB TOTAL HT GAIN								1446									
LEVEL FACTOR / MULTIPLIER			0.20	0.22		297	36		341		68		667		52		3
AIR CHANGE HEAT LOSS								71			186		364		28		7
AIR CHANGE HEAT GAIN								0			1		261		0		0
DUCT LOSS								0			2051		923		0		0
DUCT GAIN								480					360				
HEAT GAIN PEOPLE	240		2			0		0				1	240				
HEAT GAIN APPLIANCES/LIGHTS						923		0					923				
TOTAL HT LOSS BTU/H			1793			1623		0					4007				
TOTAL HT GAIN x 1.3 BTU/H						1007							5000				100

ROOM USE		EXP. WALL		CLG. HT.		FACTORS		K/B/G		PWD		FOY		BAS	
GRS.WALL AREA		GLAZING		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN	
NORTH	21.8	16.0	0	0	0	0	0	545	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
SOUTH	21.8	24.9	49	1067	1220	78	1699	3241	0	0	0	25	545	1039	3
WEST	21.8	41.6	78	1699	3241	0	0	0	0	0	0	0	0	0	7
SKYLT.	35.8	101.2	0	0	0	0	0	0	0	0	0	0	0	0	152
DOORS	25.8	4.3	0	0	0	0	0	0	0	0	0	0	0	0	291
NET EXPOSED WALL	4.2	0.7	418	1760	289	418	1760	289	20	517	85	40	1034	170	20
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	113	476	78	446	1874	308	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.8	1.3	31	87	39	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
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	993			3452			3584
SUBTOTAL HT LOSS			4613			4790			0.30	0.28	163	0.30	0.28	1517	5556
SUB TOTAL HT GAIN															654
LEVEL FACTOR / MULTIPLIER			0.30	0.28		1237			277		8	963		75	0.50
AIR CHANGE HEAT LOSS									0		0	0		0	0
AIR CHANGE HEAT GAIN									0		0	0		0	0
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
HEAT GAIN APPLIANCES/LIGHTS			923			0			1270		223	4416		0	0
TOTAL HT LOSS BTU/H			5900			7734									9768
TOTAL HT GAIN x 1.3 BTU/H															892

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

TYPE: 2009 END
OPT 2ND

DATE: Sep-21

GFA: 1700 LO# 87538

HEATING CFM 820 COOLING CFM 820
TOTAL HEAT LOSS 31,141 TOTAL HEAT GAIN 24,556
AIR FLOW RATE CFM 26.33 AIR FLOW RATE CFM 33.39

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

DESIGN CFM = 820
CFM @ 6" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	8	6	3
R/A	0	0	4	1	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	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-3	BED-3	BATH	BED-2	MBR	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	PWD	FOY	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	0.90	1.62	1.03	2.00	2.00	2.00	0.31	1.03	0.90	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.27	2.21	2.21	3.26	3.26	3.26	3.26
CFM PER RUN HEAT	24	43	27	53	53	53	8	27	24	52	52	52	52	52	52	52	52	33	58	58	86	86	86	86
RM GAIN MBH	1.90	1.01	1.87	2.50	2.50	2.50	0.10	1.87	1.90	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	0.22	1.03	1.03	0.30	0.30	0.30	0.30
CFM PER RUN COOLING	63	34	62	83	83	83	3	62	63	86	86	86	86	86	86	86	86	7	35	35	10	10	10	10
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	33	30	52	53	53	53	30	47	39	4	23	19	19	19	19	19	19	22	36	39	25	15	15	33
EQUIVALENT LENGTH	110	170	150	190	190	180	140	130	140	150	170	170	170	170	170	170	170	160	110	110	160	180	180	120
TOTAL EFFECTIVE LENGTH	143	200	202	243	243	230	170	177	179	154	193	169	169	169	169	169	169	182	146	149	185	195	153	153
ADJUSTED PRESSURE	0.12	0.09	0.09	0.07	0.07	0.07	0.1	0.1	0.1	0.11	0.08	0.1	0.1	0.1	0.1	0.1	0.1	0.09	0.12	0.12	0.09	0.08	0.11	0.11
ROUND DUCT SIZE	5	4	5	6	6	6	4	5	5	6	6	6	6	6	6	6	6	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	176	493	198	270	270	270	92	198	176	265	265	265	265	265	265	265	265	379	426	426	426	438	438	438
COOLING VELOCITY (ft/min)	463	390	455	423	423	423	34	455	463	438	438	438	438	438	438	438	438	80	257	257	257	51	51	51
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	C	B	A	A	A	B	B	C	C	C	C	C	C	C	C	C	B	A	A	C	C	C	A

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-2	BED-3	BED-3	BED-3	BATH	BED-2	MBR	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	PWD	FOY	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	0.90	1.62	1.03	2.00	2.00	2.00	0.31	1.03	0.90	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.27	2.21	2.21	3.26	3.26	3.26	3.26
CFM PER RUN HEAT	24	43	27	53	53	53	8	27	24	52	52	52	52	52	52	52	52	33	58	58	86	86	86	86
RM GAIN MBH	1.90	1.01	1.87	2.50	2.50	2.50	0.10	1.87	1.90	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	0.22	1.03	1.03	0.30	0.30	0.30	0.30
CFM PER RUN COOLING	63	34	62	83	83	83	3	62	63	86	86	86	86	86	86	86	86	7	35	35	10	10	10	10
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	33	30	52	53	53	53	30	47	39	4	23	19	19	19	19	19	19	22	36	39	25	15	15	33
EQUIVALENT LENGTH	110	170	150	190	190	180	140	130	140	150	170	170	170	170	170	170	170	160	110	110	160	180	180	120
TOTAL EFFECTIVE LENGTH	143	200	202	243	243	230	170	177	179	154	193	169	169	169	169	169	169	182	146	149	185	195	153	153
ADJUSTED PRESSURE	0.12	0.09	0.09	0.07	0.07	0.07	0.1	0.1	0.1	0.11	0.08	0.1	0.1	0.1	0.1	0.1	0.1	0.09	0.12	0.12	0.09	0.08	0.11	0.11
ROUND DUCT SIZE	5	4	5	6	6	6	4	5	5	6	6	6	6	6	6	6	6	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	176	493	198	270	270	270	92	198	176	265	265	265	265	265	265	265	265	379	426	426	426	438	438	438
COOLING VELOCITY (ft/min)	463	390	455	423	423	423	34	455	463	438	438	438	438	438	438	438	438	80	257	257	257	51	51	51
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	C	B	A	A	A	B	B	C	C	C	C	C	C	C	C	C	B	A	A	C	C	C	A

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-2	BED-3	BED-3	BED-3	BATH	BED-2	MBR	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	K/B/G	PWD	FOY	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	0.90	1.62	1.03	2.00	2.00	2.00	0.31	1.03	0.90	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.27	2.21	2.21	3.26	3.26	3.26	3.26
CFM PER RUN HEAT	24	43	27	53	53	53	8	27	24	52	52	52	52	52	52	52	52	33	58	58	86	86	86	86
RM GAIN MBH	1.90	1.01	1.87	2.50	2.50	2.50	0.10	1.87	1.90	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	0.22	1.03	1.03	0.30	0.30	0.30	0.30
CFM PER RUN COOLING	63	34	62	83	83	83	3	62	63	86	86	86	86	86	86	86	86	7	35	35	10	10	10	10
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	33	30	52	53	53	53	30	47	39	4	23	19	19	19	19	19	19	22	36	39	25	15	15	33
EQUIVALENT LENGTH	110	170	150	190	190	180	140	130	140	150	170	170	170	170	170	170	170	160	110	110	160	180	180	120
TOTAL EFFECTIVE LENGTH	143	200	202	243	243	230	170	177	179	154	193	169	169	169	169	169	169	182	146	149	185	195	153	153
ADJUSTED PRESSURE	0.12	0.09	0.09	0.07	0.07	0.07	0.1	0.1	0.1	0.11	0.08	0.1	0.1	0.1	0.1	0.1	0.1	0.09	0.12	0.12	0.09	0.08	0.11	0.11
ROUND DUCT SIZE	5	4	5	6	6	6	4	5	5	6	6	6	6	6	6	6	6	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	176	493	198	270	270	270	92	198	176	265	265	265	265	265	265	265	265	379	426	426	426	438	438	438
COOLING VELOCITY (ft/min)	463	390	455	423	423	423	34	455	463	438	438	438	438	438	438	438	438	80	257	257	257	51	51	51
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	C	B	A	A	A	B	B	C	C	C	C	C	C	C	C	C	B	A	A	C	C	C	A

Michael O'Rourke

TYPE: 2009 END
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87538
OPT 2ND

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

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % 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:	<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#: 87538	Model: 2009 END	Builder: ROYAL PINE HOMES	Date: 9/10/2021																																																												
Volume Calculation		Air Change & Delta T Data																																																													
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6.2.6 Sensible Gain due to Air Leakage																																																															
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																															
0.275	x	173.31	x																																																												
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			123 W																																																												
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6.2.7 Sensible heat Gain due to Ventilation																																																															
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																															
64 CFM	x	13 °F	x																																																												
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		0.25	=																																																												
			220 Btu/h																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																															
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{aglevel} + HL_{bglevel})\}$																																																															
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																															

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 2009 END	OPT 2ND	BUILDER: ROYAL PINE HOMES
SFQT: 1700	LO# 87538	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):	22033.4	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 52.0 ft	WIDTH: 20.0 ft	EXPOSED PERIMETER:	112.0 ft

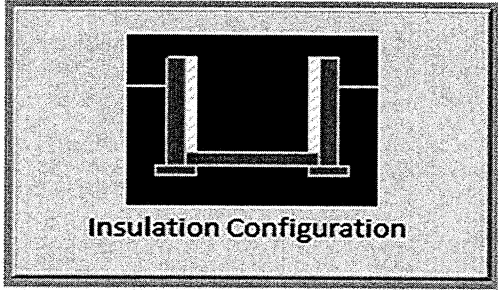
2012 OBC - COMPLIANCE PACKAGE		
Component	Compliance Package	
	SB-12 PERFORMANCE	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	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

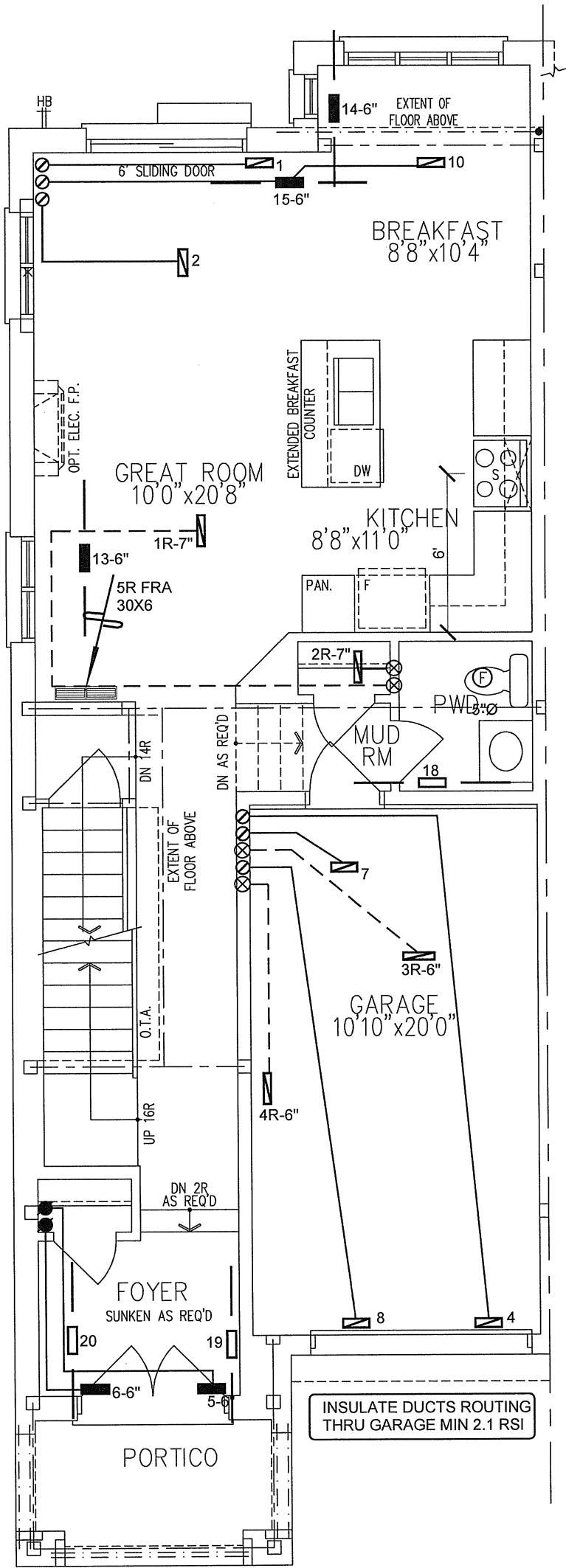
Supplemental tool for CAN/CSA-F280

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	
Floor Width (m):	6.1	
Exposed Perimeter (m):	34.1	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.9	
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):	1050	

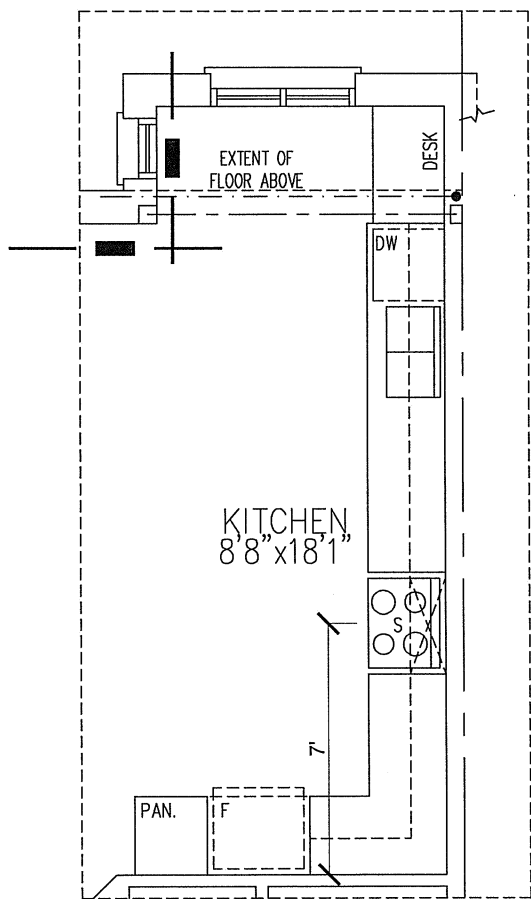
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

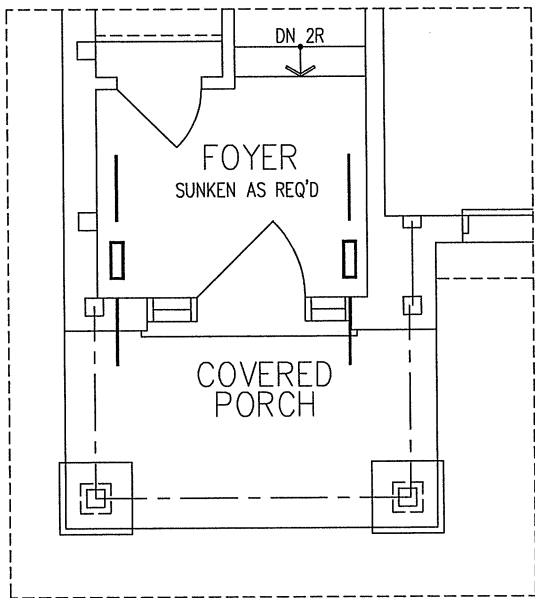
Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.43			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	623.9			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		698.9 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):	0.275			
Cooling Air Leakage Rate (ACH/H):	0.083			



GROUND FLOOR PLAN,
EL. 'A' – END



PART. GROUND FLOOR PLAN
– OPT. KITCHEN LAYOUT



GROUND FLOOR PLAN, EL.
'B' – END

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.

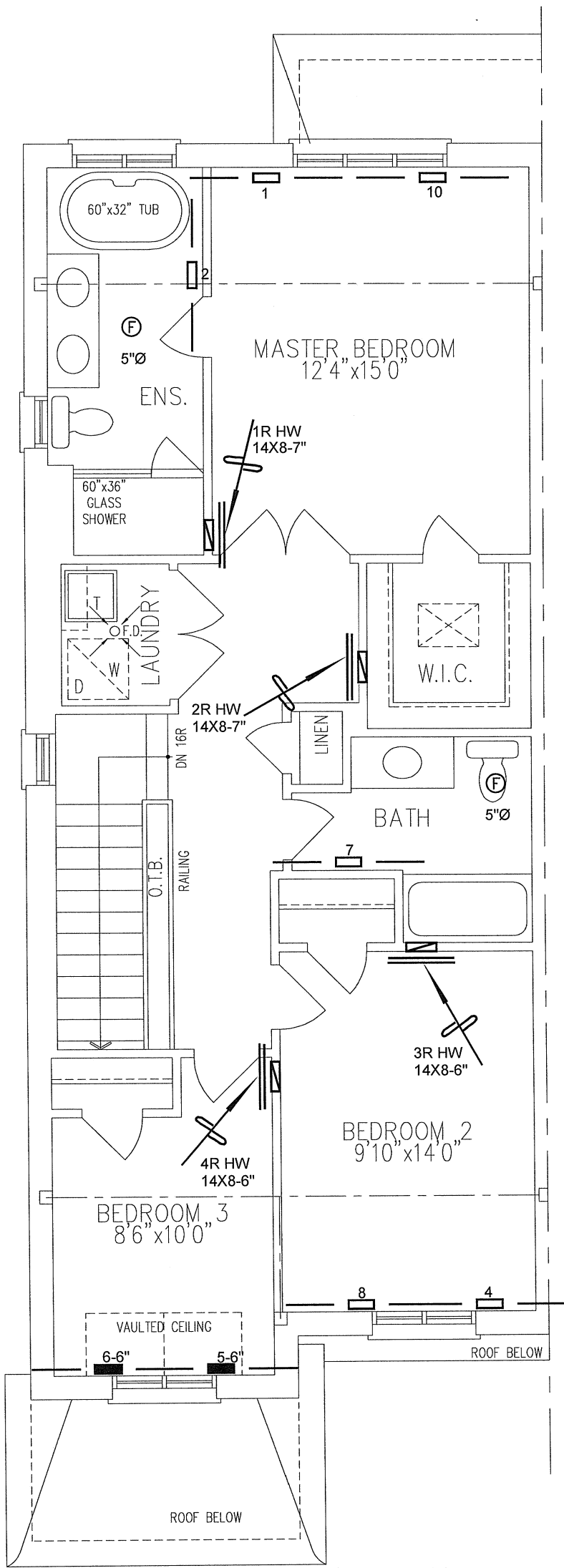
CSA-F280-12

SB-12 PERFORMANCE

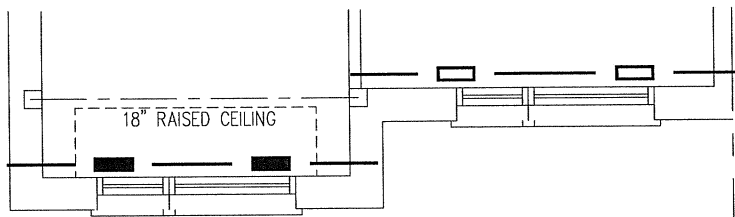
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED ACH	SEPT/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK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

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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.	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"
OPT 2ND 2009 END		BCIN# 19669		
1700 sqft		LO#	87538	



OPT. SECOND FLOOR PLAN,
EL. 'A1/A2' - END



SECOND FLOOR PLAN, EL.
'B' - END

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

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Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date SEPT/2020	Scale 3/16" = 1'-0"
OPT 2ND 2009 END		1700 sqft	BCIN# 19669	
			LO#	87538