

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: 2008 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.			
April 21, 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) BUILDER: ROYAL PINE HOMES										DATE: Apr-21 LO# 87523	WINTER NATURAL AIR CHANGE RATE 0.236	HEAT LOSS AT °F. 78	CSA-F280-12 SB-12 PERFORMANCE
TYPE: 2008										GFA: 1672	SUMMER NATURAL AIR CHANGE RATE 0.072	HEAT GAIN AT °F. 13	
ROOM USE	EXP. WALL CLG. HT.	ENR	ENS	BED-2	BED-3	K/B/G	FOY	MUD	BAS				
GRS.WALL AREA	14	6	54	81	200	202	289	242	469				
GLAZING	9	9	54	81	200	202	289	242	469				
NORTH	21.8	16.0	0	0	0	0	0	0	0				
EAST	21.8	41.6	0	0	0	0	0	0	0				
SOUTH	21.8	24.9	0	0	0	0	0	0	0				
WEST	21.8	41.6	28	610	1163	36	784	1496	12				
SKYLT.	35.8	101.2	0	0	0	0	0	0	0				
DOORS	25.8	4.3	0	0	0	0	0	0	0				
NET EXPOSED WALL	4.2	0.7	98	412	68	193	32	0	0				
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0				
EXPOSED CLG	1.3	0.6	332	436	195	108	142	63	58				
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0				
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0				
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0				
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0				
SUBTOTAL HT LOSS	1458		510	1308	1323	0.20	0.27	0.20	0.27				
SUB TOTAL HT GAIN	0.20	0.27	1426	428	0.20	0.27	541	101	306				
LEVEL FACTOR / MULTIPLIER	394		138	354	73	166	254	894	894				
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0				
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0				
DUCT LOSS	0	0	0	0	0	0	0	0	0				
DUCT GAIN	0	0	0	0	0	0	0	0	0				
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0				
HEAT GAIN APPLIANCES/LIGHTS	2	480	0	1	253	0.30	0.37	0.30	0.37				
TOTAL HT LOSS BTU/H	1853		647	1827	2796	0	0	0	0				
TOTAL HT GAIN x 1.3 BTU/H	3743		587	3618	4373	0	0	0	0				
ROOM USE	EXP. WALL CLG. HT.	ENR	ENS	BED-2	BED-3	K/B/G	FOY	MUD	BAS				
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DUCT LOSS	0	0	0	0	0	0	0	0	0				
DUCT GAIN	0	0	0	0	0	0	0	0	0				
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TOTAL HT LOSS BTU/H	1853		647	1827	2796	0	0	0	0				
TOTAL HT GAIN x 1.3 BTU/H	3743		587	3618	4373	0	0	0	0				

TOTAL HEAT GAIN BTU/H: 22915 TONS: 1.91 LOSS DUE TO VENTILATION LOAD BTU/H: 1336 STRUCTURAL HEAT LOSS: 23927 TOTAL COMBINED HEAT LOSS BTU/H: 25283

Michael O'Rourke

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

TYPE: 2008
DATE: Apr-21
GFA: 1672
LO# 87528

HEATING CFM	820	COOLING CFM	820
TOTAL HEAT LOSS	23,927	TOTAL HEAT GAIN	22,695
AIR FLOW RATE CFM	34.27	AIR FLOW RATE CFM	36.13

****CARRIER**

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

$$\text{DESIGN CFM} = \frac{820}{\text{CFM @ .6" E.S.P.}}$$

TEMPERATURE RISE 65

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	8	5	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	10	14	15	18	19	20	21	23	24
ROOM NAME	MBR	MBR	BED-2	BED-2	BED-3	BED-3	BATH	ENS	K/B/G	K/B/G	FOY	FOY	MUD	BAS	BAS	BAS
RM LOSS MBH	0.93	0.93	0.91	0.91	1.40	1.40	0.54	0.65	1.52	1.52	1.75	1.75	1.99	2.58	2.58	2.58
CFM PER RUN HEAT	32	32	31	31	48	48	18	22	52	52	60	60	68	88	88	88
RM GAIN MBH	1.87	1.87	1.81	1.81	2.19	2.19	0.15	0.59	2.86	2.86	0.99	0.99	0.33	0.73	0.73	0.73
CFM PER RUN COOLING	68	68	65	65	79	79	5	21	103	103	36	36	12	26	26	26
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16
ACTUAL DUCT LGH	35	27	64	63	76	72	51	29	8	7	56	62	40	12	26	57
EQUIVALENT LENGTH	140	130	150	140	190	210	190	170	110	180	130	130	150	130	130	140
TOTAL EFFECTIVE LENGTH	175	157	214	203	266	282	241	199	118	187	186	192	190	142	146	197
ADJUSTED PRESSURE	0.1	0.11	0.08	0.08	0.06	0.06	0.07	0.09	0.14	0.09	0.09	0.09	0.09	0.11	0.11	0.08
ROUND DUCT SIZE	5	5	5	5	6	6	4	4	6	6	5	5	5	6	6	6
HEATING VELOCITY (ft/min)	235	235	228	228	245	245	207	252	265	265	441	441	499	449	449	449
COOLING VELOCITY (ft/min)	499	499	477	477	403	403	57	241	525	525	264	264	88	133	133	133
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	C	B	B	A	A	B	C	C	C	A	A	B	C	C	A

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

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 A	304	9.6	10	8	TRUNK O	0	0	0	8
TRUNK B	452	11.2	14	8	TRUNK G	0	0	0	0
TRUNK C	820	0.06	14	8	TRUNK H	0	0	0	8
TRUNK D	0	0.00	0	8	TRUNK I	0	0	0	0
TRUNK E	0	0.00	0	8	TRUNK J	0	0	0	8
TRUNK F	0	0.00	0	8	TRUNK K	0	0	0	8
TRUNK G	0	0.00	0	8	TRUNK L	0	0	0	8
TRUNK H	0	0.00	0	8	TRUNK M	0	0	0	8
TRUNK I	0	0.00	0	8	TRUNK N	0	0	0	8
TRUNK J	0	0.00	0	8	TRUNK P	0	0	0	8
TRUNK K	0	0.00	0	8	TRUNK Q	0	0	0	8
TRUNK L	0	0.00	0	8	TRUNK R	0	0	0	8
TRUNK M	0	0.00	0	8	TRUNK S	0	0	0	8
TRUNK N	0	0.00	0	8	TRUNK T	0	0	0	8
TRUNK O	0	0.00	0	8	TRUNK U	0	0	0	8
TRUNK P	0	0.00	0	8	TRUNK V	0	0	0	8
TRUNK Q	0	0.00	0	8	TRUNK W	0	0	0	8
TRUNK R	0	0.00	0	8	TRUNK X	0	0	0	8
TRUNK S	0	0.00	0	8	TRUNK Y	0	0	0	8
TRUNK T	0	0.00	0	8	TRUNK Z	0	0	0	8
TRUNK U	0	0.00	0	8	TRUNK AA	0	0	0	8
TRUNK V	0	0.00	0	8	TRUNK AB	0	0	0	8
TRUNK W	0	0.00	0	8	TRUNK AC	0	0	0	8
TRUNK X	0	0.00	0	8	TRUNK AD	0	0	0	8
TRUNK Y	0	0.00	0	8	TRUNK AE	0	0	0	8
TRUNK Z	0	0.00	0	8	TRUNK AF	0	0	0	8
TRUNK AA	0	0.00	0	8	TRUNK AG	0	0	0	8
TRUNK AB	0	0.00	0	8	TRUNK AH	0	0	0	8
TRUNK AC	0	0.00	0	8	TRUNK AI	0	0	0	8
TRUNK AD	0	0.00	0	8	TRUNK AJ	0	0	0	8
TRUNK AE	0	0.00	0	8	TRUNK AK	0	0	0	8
TRUNK AF	0	0.00	0	8	TRUNK AL	0	0	0	8
TRUNK AG	0	0.00	0	8	TRUNK AM	0	0	0	8
TRUNK AH	0	0.00	0	8	TRUNK AN	0	0	0	8
TRUNK AI	0	0.00	0	8	TRUNK AO	0	0	0	8
TRUNK AJ	0	0.00	0	8	TRUNK AP	0	0	0	8
TRUNK AK	0	0.00	0	8	TRUNK AQ	0	0	0	8
TRUNK AL	0	0.00	0	8	TRUNK AR	0	0	0	8
TRUNK AM	0	0.00	0	8	TRUNK AS	0	0	0	8
TRUNK AN	0	0.00	0	8	TRUNK AT	0	0	0	8
TRUNK AO	0	0.00	0	8	TRUNK AU	0	0	0	8
TRUNK AP	0	0.00	0	8	TRUNK AV	0	0	0	8
TRUNK AQ	0	0.00	0	8	TRUNK AW	0	0	0	8
TRUNK AR	0	0.00	0	8	TRUNK AX	0	0	0	8
TRUNK AS	0	0.00	0	8	TRUNK AY	0	0	0	8
TRUNK AT	0	0.00	0	8	TRUNK AZ	0	0	0	8
TRUNK AU	0	0.00	0	8	TRUNK BA	0	0	0	8
TRUNK AV	0	0.00	0	8	TRUNK BB	0	0	0	8
TRUNK AW	0	0.00	0	8	TRUNK BC	0	0	0	8
TRUNK AX	0	0.00	0	8	TRUNK BD	0	0	0	8
TRUNK AY	0	0.00	0	8	TRUNK BE	0	0	0	8
TRUNK AZ	0	0.00	0	8	TRUNK BF	0	0	0	8
TRUNK BA	0	0.00	0	8	TRUNK BG	0	0	0	8
TRUNK BB	0	0.00	0	8	TRUNK BH	0	0	0	8
TRUNK BC	0	0.00	0	8	TRUNK BI	0	0	0	8
TRUNK BD	0	0.00	0	8	TRUNK BJ	0	0	0	8
TRUNK BE	0	0.00	0	8	TRUNK BK	0	0	0	8
TRUNK BF	0	0.00	0	8	TRUNK BL	0	0	0	8
TRUNK BG	0	0.00	0	8	TRUNK BM	0	0	0	8
TRUNK BH	0	0.00	0	8	TRUNK BN	0	0	0	8
TRUNK BI	0	0.00	0	8	TRUNK BO	0	0	0	8
TRUNK BJ	0	0.00	0	8	TRUNK BP	0	0	0	8
TRUNK BK	0	0.00	0	8	TRUNK BQ	0	0	0	8
TRUNK BL	0	0.00	0	8	TRUNK BR	0	0	0	8
TRUNK BM	0	0.00	0	8	TRUNK BS	0	0	0	8
TRUNK BN	0	0.00	0	8	TRUNK BT	0	0	0	8
TRUNK BO	0	0.00	0	8	TRUNK BU	0	0	0	8
TRUNK BP	0	0.00	0	8	TRUNK BV	0	0	0	8
TRUNK BQ	0	0.00	0	8	TRUNK BW	0	0	0	8
TRUNK BR	0	0.00	0	8	TRUNK BX	0	0	0	8
TRUNK BS	0	0.00	0	8	TRUNK BY	0	0	0	8
TRUNK BT	0	0.00	0	8	TRUNK BZ	0	0	0	8
TRUNK BU	0	0.00	0	8	TRUNK CA	0	0	0	8
TRUNK BV	0	0.00	0	8	TRUNK CB	0	0	0	8
TRUNK BW	0	0.00	0	8	TRUNK CC	0	0	0	8
TRUNK BX	0	0.00	0	8	TRUNK CD	0	0	0	8
TRUNK BY	0	0.00	0	8	TRUNK CE	0	0	0	8
TRUNK BZ	0	0.00	0	8	TRUNK CF	0	0	0	8
TRUNK CA	0	0.00	0	8	TRUNK CG	0	0	0	8
TRUNK CB	0	0.00	0	8	TRUNK CH	0	0	0	8
TRUNK CC	0	0.00	0	8	TRUNK CI	0	0	0	8
TRUNK CD	0	0.00	0	8	TRUNK CJ	0	0	0	8
TRUNK CE	0	0.00	0	8	TRUNK CK	0	0	0	8
TRUNK CF	0	0.00	0	8	TRUNK CL	0	0	0	8
TRUNK CG	0	0.00	0	8	TRUNK CM	0	0	0	8
TRUNK CH	0	0.00	0	8	TRUNK CN	0	0	0	8
TRUNK CI	0	0.00	0	8	TRUNK CO	0	0	0	8
TRUNK CJ	0	0.00	0	8	TRUNK CP	0	0	0	8
TRUNK CK	0	0.00	0	8	TRUNK CQ	0	0	0	8
TRUNK CL	0	0.00	0	8	TRUNK CR	0	0	0	8
TRUNK CM	0	0.00	0	8	TRUNK CS	0	0	0	8
TRUNK CN	0	0.00	0	8	TRUNK CT	0	0	0	8
TRUNK CO	0	0.00	0	8	TRUNK CU	0	0	0	8
TRUNK CP	0	0.00	0	8	TRUNK CV	0	0	0	8
TRUNK CQ	0	0.00	0	8	TRUNK CW	0	0	0	8
TRUNK CR	0	0.00	0	8	TRUNK CX	0	0	0	8
TRUNK CS	0	0.00	0	8	TRUNK CY	0	0	0	8
TRUNK CT	0	0.00	0	8	TRUNK CZ	0	0	0	8
TRUNK CU	0	0.00	0	8	TRUNK DA	0	0	0	8
TRUNK CV	0	0.00	0	8	TRUNK DB	0	0	0	8
TRUNK CW	0	0.00	0	8	TRUNK DC	0	0	0	8
TRUNK CX	0	0.00	0	8	TRUNK DD	0	0	0	8
TRUNK CY	0	0.00	0	8	TRUNK DE	0	0	0	8
TRUNK CZ	0	0.00	0	8	TRUNK DF	0	0	0	8
TRUNK DA	0	0.00	0	8	TRUNK DG	0	0	0	8
TRUNK DB	0	0.00	0	8	TRUNK DH	0	0	0	8
TRUNK DC	0	0.00	0	8	TRUNK DI	0	0	0	8
TRUNK DD	0	0.00	0	8	TRUNK DJ	0	0	0	8
TRUNK DE	0	0.00	0	8	TRUNK DK	0	0	0	8
TRUNK DF	0	0.00	0	8	TRUNK DL	0	0	0	8
TRUNK DG	0	0.00	0	8	TRUNK DM	0	0	0	8
TRUNK DH	0	0.00	0	8	TRUNK DN	0	0	0	8
TRUNK DI	0	0.00	0	8	TRUNK DO	0	0	0	8
TRUNK DJ	0	0.00	0	8	TRUNK DP	0	0	0	8
TRUNK DK	0	0.00	0	8	TRUNK DQ	0	0	0	8
TRUNK DL	0	0.00	0	8	TRUNK DR	0	0	0	8
TRUNK DM	0	0.00	0	8	TRUNK DS	0	0	0	8
TRUNK DN	0	0.00	0	8	TRUNK DT	0	0	0	8
TRUNK DO	0	0.00	0	8	TRUNK DU	0	0	0	8
TRUNK DP	0	0.00	0	8	TRUNK DV	0	0	0	8
TRUNK DQ	0	0.00	0	8	TRUNK DW	0	0	0	8
TRUNK DR	0	0.00	0	8	TRUNK DX	0	0	0	8
TRUNK DS	0	0.00	0	8	TRUNK DY	0	0	0	8
TRUNK DT	0	0.00	0	8	TRUNK DZ	0	0	0	8
TRUNK DU	0	0.00	0	8	TRUNK EA	0	0	0	8
TRUNK DV	0	0.00	0	8	TRUNK EB	0	0	0	8
TRUNK DW	0	0.00	0	8	TRUNK EC	0	0	0	8
TRUNK DX	0	0.00	0	8	TRUNK ED	0	0	0	8
TRUNK DY	0	0.00	0	8	TRUNK EE	0	0	0	8
TRUNK DZ	0	0.00	0	8	TRUNK EF	0	0	0	8
TRUNK EA	0	0.00	0	8	TRUNK EG	0	0	0	8
TRUNK EB	0	0.00	0	8	TRUNK EH	0	0	0	8
TRUNK EC	0	0.00	0	8	TRUNK EI	0	0	0	8
TRUNK ED	0	0.00	0	8	TRUNK EJ	0	0	0	8
TRUNK EE	0	0.00	0	8	TRUNK EK	0	0	0	8
TRUNK EF	0	0.00	0	8	TRUNK EL	0	0	0	8
TRUNK EG	0	0.00	0	8	TRUNK EM	0	0	0	8
TRUNK EH	0	0.00	0	8	TRUNK EN	0	0	0	8
TRUNK EI	0	0.00	0	8	TRUNK EO	0	0	0	8
TRUNK EJ	0	0.00	0	8	TRUNK EP	0	0	0	8
TRUNK EK	0	0.00	0	8	TRUNK EQ	0	0	0	8
TRUNK EL	0	0.00	0	8	TRUNK ER	0	0	0	8
TRUNK EM	0	0.00	0	8	TRUNK ES	0	0	0	8
TRUNK EN	0	0.00	0	8	TRUNK ET	0	0	0	8
TRUNK EO	0	0.00	0	8	TRUNK EU	0	0	0	8
TRUNK EP	0	0.00	0	8	TRUNK EV	0	0	0	8
TRUNK EQ	0	0.00	0	8	TRUNK EW	0	0	0	8
TRUNK ER	0	0.00	0	8	TRUNK EX	0	0	0	8
TRUNK ES	0	0.00	0	8	TRUNK EY	0	0	0	8
TRUNK ET	0	0.00	0	8	TRUNK EZ	0	0	0	8
TRUNK EU	0	0.00	0	8	TRUNK FA	0	0	0	8
TRUNK EV	0	0.00	0	8	TRUNK FB	0	0	0	8
TRUNK EW	0	0.00	0	8	TRUNK FC	0	0	0	8
TRUNK EX	0	0.00	0	8	TRUNK FD	0	0	0	8
TRUNK EY	0	0.00	0	8	TRUNK FE	0	0	0	8
TRUNK EZ	0	0.00	0	8	TRUNK FF	0	0	0	8
TRUNK FA	0	0.00	0	8	TRUNK FG	0	0	0	8
TRUNK FB	0	0.00	0	8	TRUNK FH	0	0	0	8
TRUNK FC	0	0.00	0	8	TRUNK FI	0	0	0	8
TRUNK FD	0	0.00	0	8	TRUNK FJ	0	0	0	8
TRUNK FE	0	0.00	0	8	TRUNK FK	0	0	0	8
TRUNK FF	0	0.00	0	8	TRUNK FL	0	0	0	8
TRUNK FG	0	0.00	0	8	TRUNK FM	0	0	0	8
TRUNK FH	0	0.00	0	8	TRUNK FN	0	0	0	8
TRUNK FI	0	0.00	0	8	TRUNK FO	0	0	0	8
TRUNK FJ	0	0.00	0	8	TRUNK FP	0	0	0	8
TRUNK FK	0	0.00	0	8	TRUNK FQ	0	0	0	8
TRUNK FL	0	0.00	0	8	TRUNK FR	0	0	0	8
TRUNK FM	0	0.00	0	8	TRUNK FS	0	0	0	8
TRUNK FN	0	0.00	0	8	TRUNK FT	0	0	0	8
TRUNK FO	0	0.00	0	8	TRUNK FU	0	0	0	8
TRUNK FP	0	0.00	0	8	TRUNK FV	0	0	0	8
TRUNK FQ									

[illegible]

TYPE: 2008
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87528

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	4 @ 10.6 cfm	42.4 cfm
Other Rooms	2 @ 10.6 cfm	21.2 cfm
Table 9.32.3.A.	TOTAL	127.2 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	127.2	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	63.6	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 @ 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:	April-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																											
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																											
LO#: 87528	Model: 2008	Builder: ROYAL PINE HOMES	Date: 4/21/2021																																																																								
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$HG_{satb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																																											
$= 0.072 \times 182.99 \times 7 \times 1.2 = 112 \text{ W}$																																																																											
$= 7651 \text{ Btu/h}$																																																																											
6.2.7 Sensible heat Gain due to Ventilation																																																																											
$HL_{yairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																											
$64 \text{ CFM} \times 13 \text{ °F} \times 1.08 \times 0.25 = 220 \text{ Btu/h}$																																																																											
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																																																																											

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 2008**BUILDER:** ROYAL PINE HOMES**SFQT:** 1672**LO#** 87528**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:	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):	23263.8	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	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:	67.0 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%	-

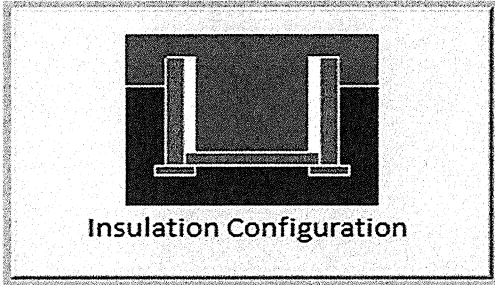
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

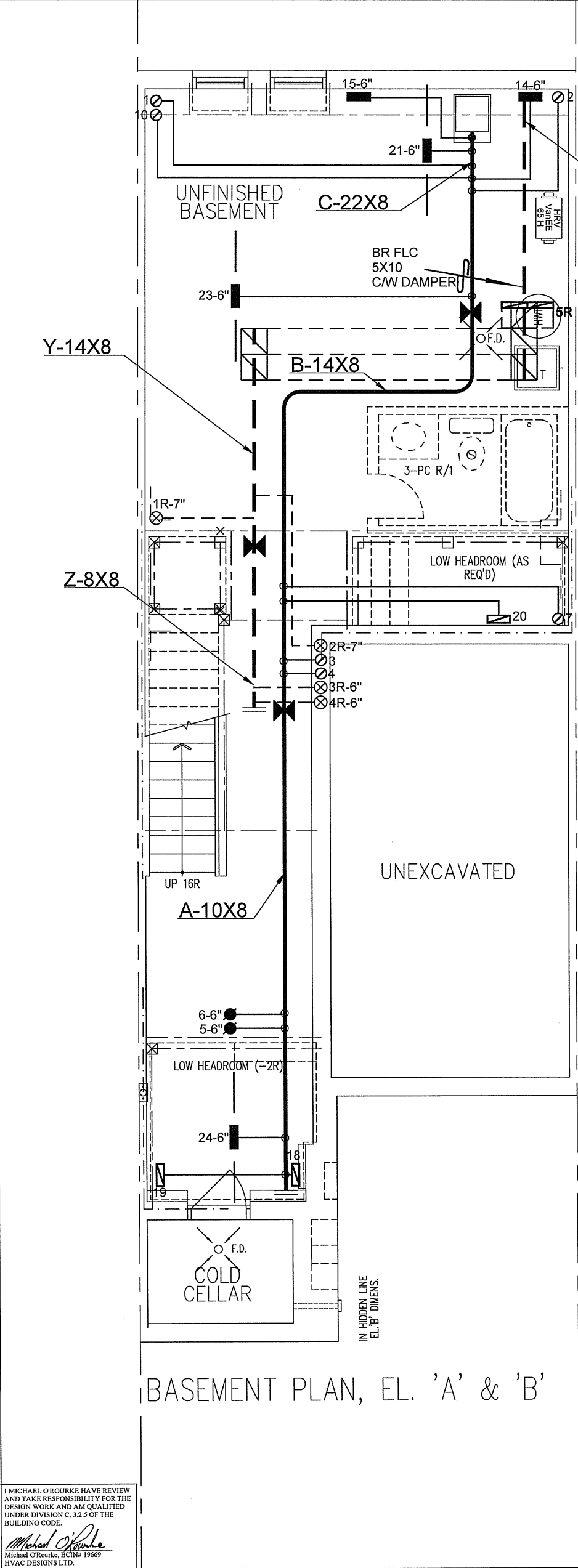
Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.8	 Insulation Configuration
Floor Width (m):	6.1	
Exposed Perimeter (m):	20.4	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.1	
Door Area (m ²):	2.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		628

TYPE: 2008
LO# 87528

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):	658.8			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	614.9 cm ²		
	2.50	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):	0.236			
Cooling Air Leakage Rate (ACH/H):	0.072			



BASEMENT PLAN, EL. 'A' & '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.

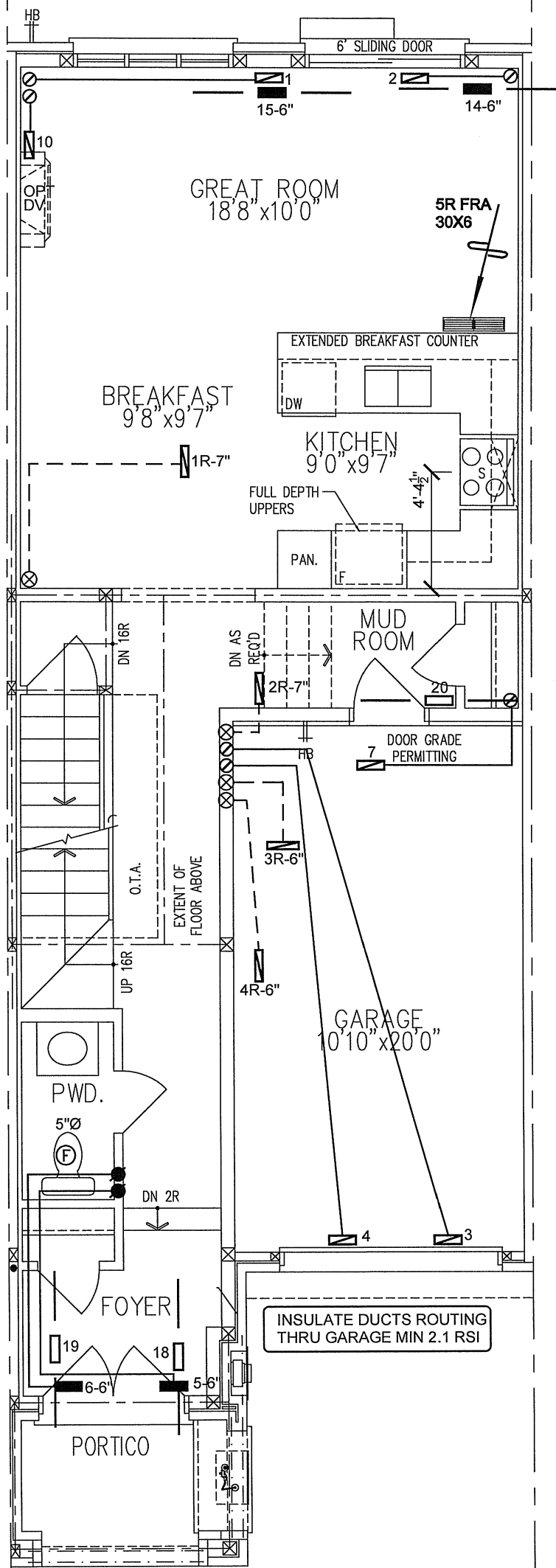
CSA-F280-12

SB-12 PERFORMANCE

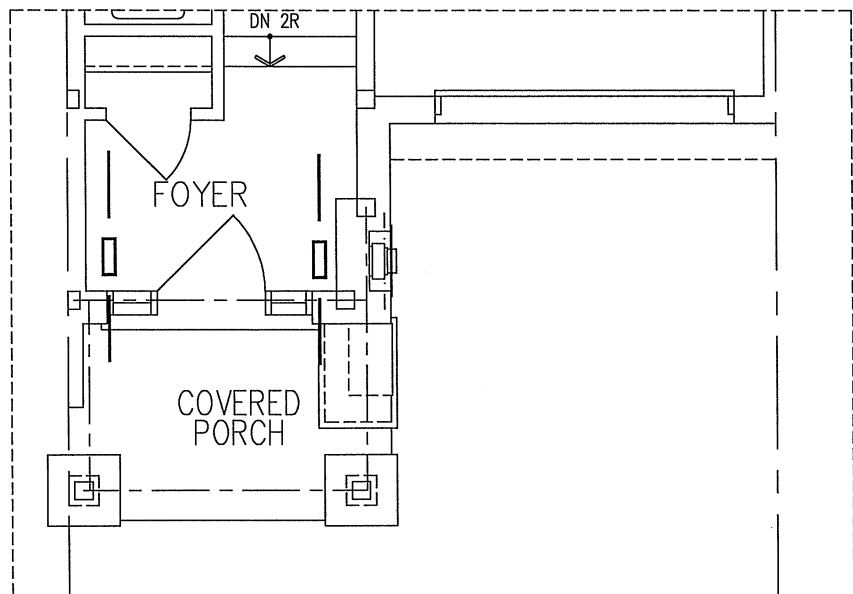
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT		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 ROYAL PINE HOMES		 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	HEAT LOSS 24995 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			MAKE CARRIER		3RD FLOOR				BASEMENT HEATING LAYOUT	
			MODEL 59TN6A-060-14V		2ND FLOOR					
			INPUT 60 MBTU/H		1ST FLOOR					
			OUTPUT 58 MBTU/H		BASEMENT					
2008		1672 sqft	COOLING 2.0 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				Date SEPT/2020	
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.			FAN SPEED 820 cfm @ 0.6" w.c.		Scale 3/16" = 1'-0"					
			BCIN# 19669							
					LO#				87528	



GROUND FLOOR PLAN, EL. 'A'



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.

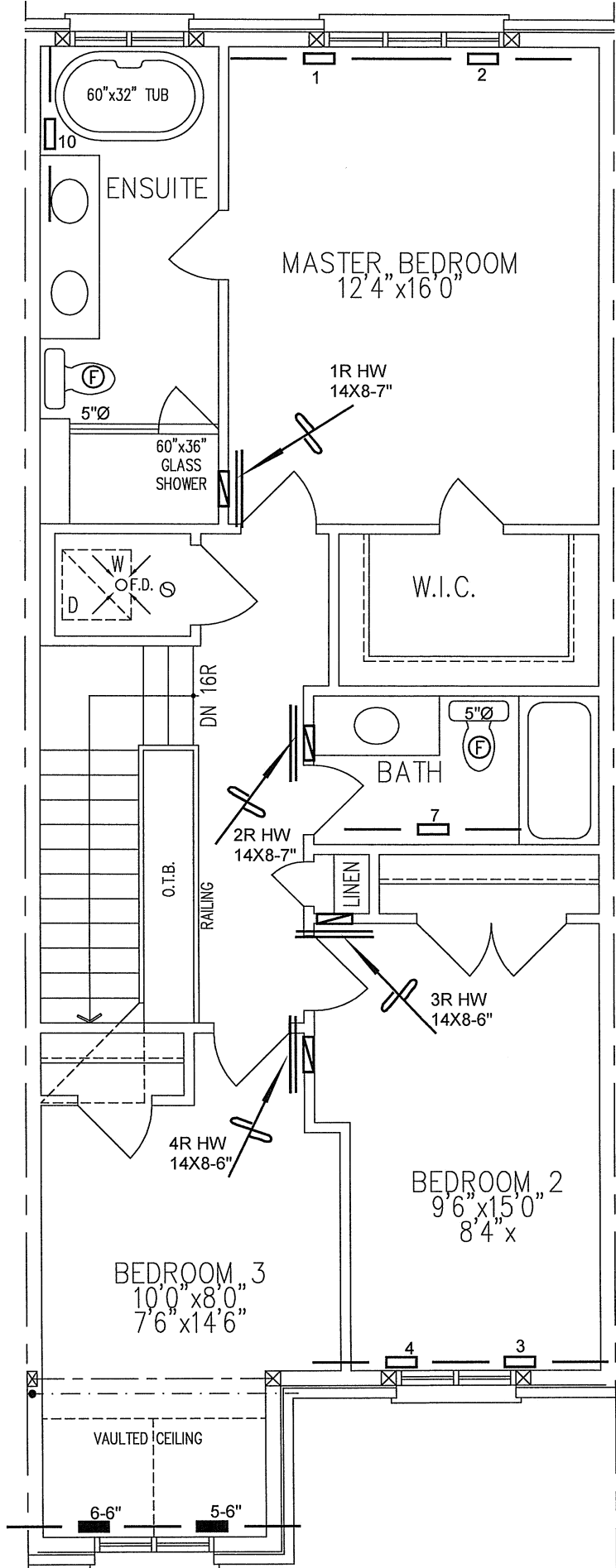
CSA-F280-12

SB-12 PERFORMANCE

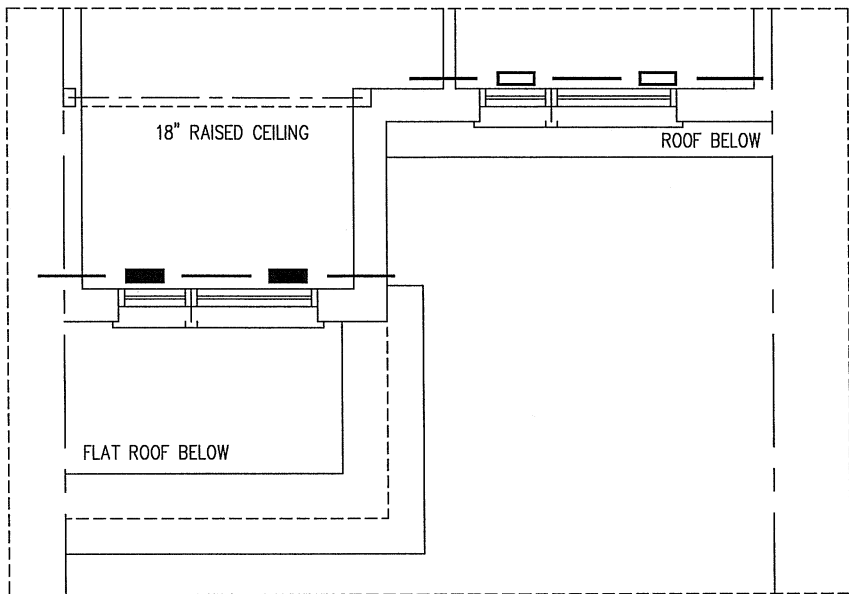
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT	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

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Client ROYAL PINE HOMES		 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	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date SEPT/2020	Scale 3/16" = 1'-0"
2008		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.	BCIN# 19669	
1672 sqft			LO# 87528	



SECOND FLOOR PLAN,
EL. 'A1/A2'



SECOND FLOOR PLAN, EL. 'B'

I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.3 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12

SB-12 PERFORMANCE

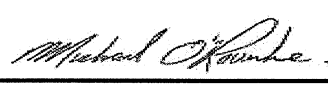
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT	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

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Client ROYAL PINE HOMES		 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 SECOND FLOOR HEATING LAYOUT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date SEPT/2020	
			Scale 3/16" = 1'-0"	
			BCIN# 19669	
2008	1672 sqft	LO# 87528		

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: 2008 FIN BSMT Project: CENTREFIELD (WEST GORMLEY)	
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.			
April 22, 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)				FIN BSMT	DATE: Apr-21		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F. 78		CSA-F280-12	
BUILDER: ROYAL PINE HOMES				TYPE: 2008	LO# 87529		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN AT °F. 13		SB-12 PERFORMANCE	
ROOM USE	EXP. WALL CLG. HT.	MBR	ENS	ENS	ENS	ENS	ENS	ENS	ENS	ENS	ENS	ENS
GRS.WALL AREA	14	126	54	54	54	54	54	54	54	54	54	54
GLAZING	9	9	9	9	9	9	9	9	9	9	9	9
FACTORS												
NORTH	21.8	16.0	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
SOUTH	21.8	24.9	0	0	0	0	0	0	0	0	0	0
WEST	21.8	41.6	28	610	1163	8	174	332	0	0	0	0
SKYLT.	35.8	101.2	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
NET EXPOSED WALL	4.2	98	412	68	193	32	53	223	37	164	690	113
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	332	436	195	108	142	63	121	159	71	262
EXPOSED FLOOR	2.8	1.3	0	0	0	0	0	0	0	0	0	0
EXPOSED CRAWL	2.6	0.4	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS									98	129	58	
SLAB ON GRADE HEAT LOSS									98	256	42	
SUBTOTAL HT LOSS		1458		510					0	0		
SUB TOTAL HT GAIN		1426		428					0.20	0.27	100	
LEVEL FACTOR / MULTIPLIER		394		138					0.20	0.27	104	
AIR CHANGE HEAT LOSS		79		24					0.20	0.27	104	
AIR CHANGE HEAT GAIN		0		0					0.20	0.27	104	
DUCT LOSS		0		0					0.20	0.27	104	
DUCT GAIN		0		0					0.20	0.27	104	
HEAT GAIN PEOPLE	240	2	480	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		894		0					0	0	0	0
TOTAL HT LOSS BTU/H		1853		647					0	0	0	0
TOTAL HT GAIN x 1.3 BTU/H		3743		587					537	150		

ROOM USE	EXP. WALL CLG. HT.	FOY	B-BATH	BATH	FOY	B-BATH	BATH	FOY	B-BATH	BATH	FOY	B-BATH
GRS.WALL AREA	20	20	20	20	20	20	20	20	20	20	20	20
GLAZING	10	10	10	10	10	10	10	10	10	10	10	10
FACTORS												
NORTH	202	202	202	202	202	202	202	202	202	202	202	202
EAST	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	78	1699	3241	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.2	521	86	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
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.8	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CRAWL	2.6	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS												
SLAB ON GRADE HEAT LOSS												
SUBTOTAL HT LOSS		2221		177								
SUB TOTAL HT GAIN		3327		0								
LEVEL FACTOR / MULTIPLIER		0.30	0.37	0.50								
AIR CHANGE HEAT LOSS		819		172								
AIR CHANGE HEAT GAIN		0		0								
DUCT LOSS		0		0								
DUCT GAIN		0		0								
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		894		0								
TOTAL HT LOSS BTU/H		3039		349								
TOTAL HT GAIN x 1.3 BTU/H		5726		0								

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

FIN BSMT
TYPE: 2008

DATE: Apr-21 GFA: 1672 LO# 87529

HEATING CFM 820 COOLING CFM 820
TOTAL HEAT LOSS 23,927 TOTAL HEAT GAIN 22,695
AIR FLOW RATE CFM 34.27 AIR FLOW RATE CFM 36.13

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

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

59TNA-060-14V **CARRIER
FAN SPEED 60
LOW 820
MEDIUM 0
HIGH 1520
DESIGN CFM = 820
CFM @ .5" E.S.P.
TEMPERATURE RISE 65 °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	10	14	15	18	19	20	21	22	23	24
ROOM NAME	MBR	MBR	BED-2	BED-2	BED-3	BED-3	BATH	ENS	K/B/G	K/B/G	FOY	FOY	MUD	BAS	B-BATH	BAS	BAS
RM LOSS MBH	0.93	0.93	0.91	0.91	1.40	1.40	0.54	0.65	1.52	1.52	1.75	1.75	1.99	2.47	0.35	2.47	2.47
CFM PER RUN HEAT	32	32	31	31	48	48	18	22	52	52	60	60	68	84	12	84	84
RM GAIN MBH	1.87	1.87	1.81	1.81	2.19	2.19	0.15	0.59	2.86	2.86	0.99	0.99	0.33	0.73	0.00	0.73	0.73
CFM PER RUN COOLING	68	68	65	65	79	79	5	21	103	103	36	36	12	26	0	26	26
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.16	0.17	0.16	0.16
EQUIVALENT LENGTH	140	130	150	140	190	210	190	170	110	180	130	130	150	130	160	120	140
TOTAL EFFECTIVE LENGTH	175	157	214	203	266	282	241	190	118	187	186	192	190	142	191	146	197
ADJUSTED PRESSURE	0.1	0.11	0.08	0.08	0.06	0.06	0.07	0.09	0.14	0.09	0.09	0.09	0.09	0.11	0.09	0.11	0.08
ROUND DUCT SIZE	5	5	5	5	6	6	4	4	6	6	5	5	5	6	4	6	6
HEATING VELOCITY (ft/min)	235	235	228	228	245	245	207	252	265	265	441	441	499	428	138	428	428
COOLING VELOCITY (ft/min)	499	499	477	477	403	403	57	241	525	525	264	264	88	133	0	133	133
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10
TRUNK	C	C	B	B	A	A	B	C	C	C	A	A	B	C	B	C	A

ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME	ROOM NAME
RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH	RM LOSS MBH
CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT	CFM PER RUN HEAT
RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH	RM GAIN MBH
CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING	CFM PER RUN COOLING
ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE
EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH	EQUIVALENT LENGTH
TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH	TOTAL EFFECTIVE LENGTH
ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE	ADJUSTED PRESSURE
ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE	ROUND DUCT SIZE
HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)
COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)
OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE	OUTLET GRILL SIZE
TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK	TRUNK

SUPPLY AIR TRUNK SIZE	TRUNK	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	300	0.06	9.6	10	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK B	460	0.06	11.3	14	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK C	818	0.06	14	22	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK D	0	0.00	0	0	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK E	0	0.00	0	0	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK F	0	0.00	0	0	8	0	0.00	0	0	8	0	0.00	0	0	8

RETURN AIR #	1	2	3	4	5	6	7	10	14	15	18	19	20	21	22	23	24
AIR VOLUME	95	115	75	75	340	0	0	0	0	0	820	820	14.6	24	24	8	615
PLENUM PRESSURE	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
ACTUAL DUCT LGH.	64	67	72	76	21	1	1	1	1	1	360	360	10.8	14	14	8	463
EQUIVALENT LENGTH	215	255	225	230	175	0	0	0	0	0	150	150	7.8	8	8	10	338
TOTAL EFFECTIVE LENGTH	279	322	297	306	196	1	1	1	1	1	820	820	14.6	24	24	10	492
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.08	0.08	0.08	0.08	0.08	0.08	0.05	0.05	0.05	0.05	0.05	0.05	0.05
ROUND DUCT SIZE	6.5	7	6	6	9.4	0	0	0	0	0	820	820	14.6	24	24	10	492
INLET GRILL SIZE	8	8	8	8	6	0	0	0	0	0	820	820	14.6	24	24	10	492
INLET GRILL SIZE	14	14	14	14	30	0	0	0	0	0	820	820	14.6	24	24	10	492

TYPE: 2008
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87529
FIN BSMT

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>2</u> @ 10.6 cfm	<u>21.2</u> cfm
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>2</u> @ 10.6 cfm	<u>21.2</u> cfm
Table 9.32.3.A.	TOTAL	<u>137.8</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>63.6</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>137.8</u>	cfm
Less Principal Ventil. Capacity	<u>63.6</u>	cfm
Required Supplemental Capacity	<u>74.2</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 65H
Location:	BSMT
<u>63.6</u> 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

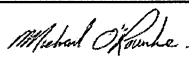
SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5
B-BATH	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
<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:	April-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																					
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																					
LO#: 87529	Model: 2008	Builder: ROYAL PINE HOMES	Date: 4/22/2021																																																																		
Volume Calculation		Air Change & Delta T Data																																																																			
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5.2.3.1 Heat Loss due to Air Leakage																																																																					
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0.236	x	182.99	x																																																																		
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			2242 W																																																																		
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			7651 Btu/h																																																																		
5.2.3.2 Heat Loss due to Mechanical Ventilation																																																																					
$HL_{vair-b} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																					
64 CFM	x	78 °F	x																																																																		
		1.08	x																																																																		
		0.25	=																																																																		
			1336 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																																																																					

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 2008	FIN BSMT	BUILDER: ROYAL PINE HOMES
SFQT: 1672	LO# 87529	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:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	23263.8	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:	67.0 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%	-

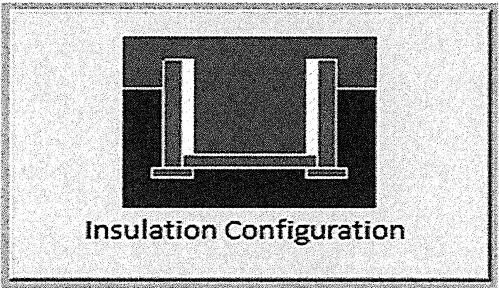
INDIVIDUAL BCIN: 19669

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):	20.4	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.1	
Door Area (m ²):	2.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		628

TYPE: 2008
LO# 87529

FIN BSMT

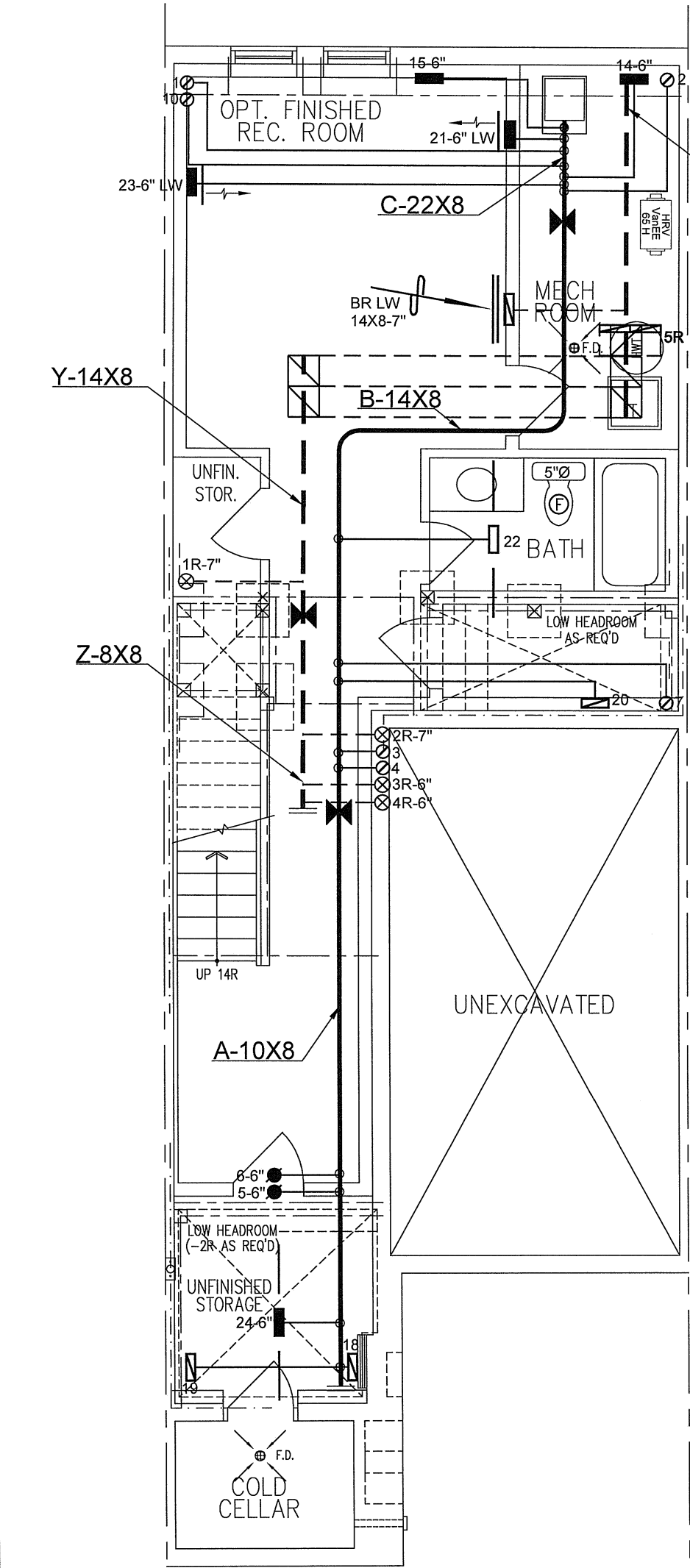
Air Infiltration Residential Load Calculator

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):	658.8			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	614.9 cm ²		
	2.50	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):	0.236			
Cooling Air Leakage Rate (ACH/H):	0.072			

TYPE: 2008
LO# 87529

FIN BSMT



OPT. FINISHED BASEMENT PLAN,
EL. 'A' & '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.

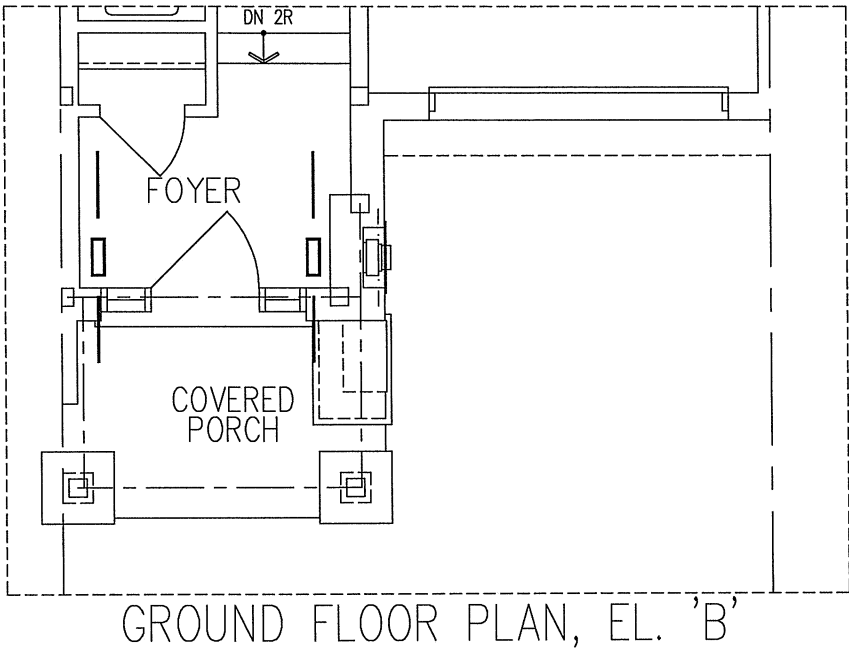
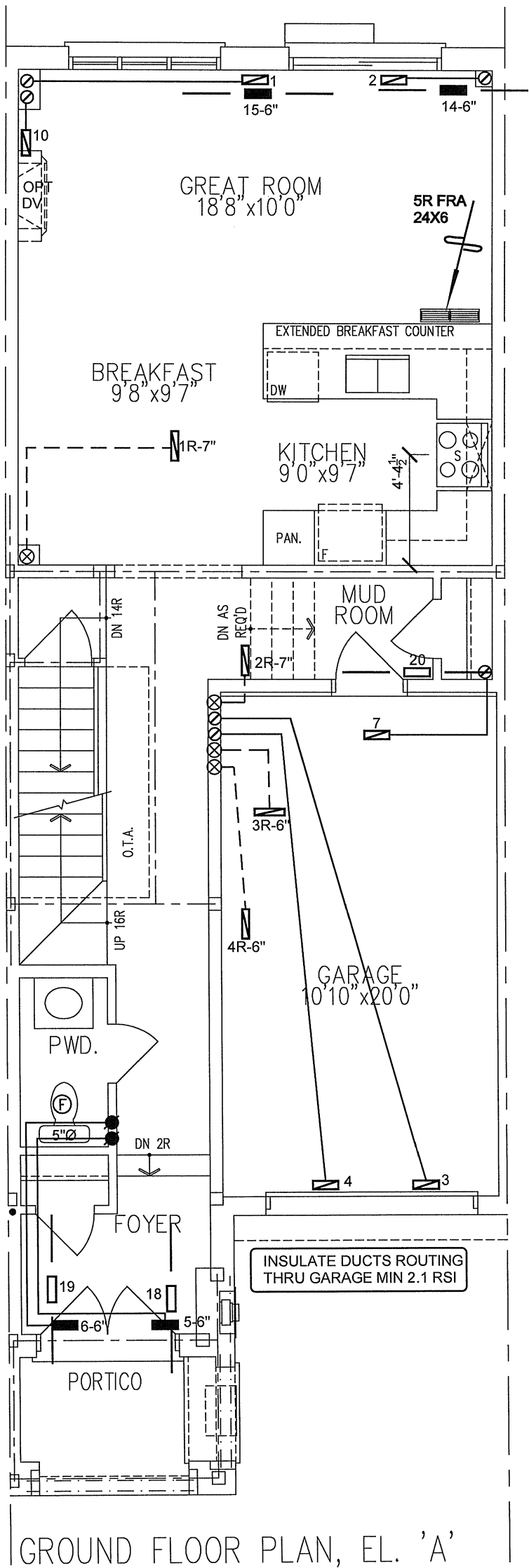
CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.		
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		

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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	HEAT LOSS 25263 BTU/H		# OF RUNS S/A R/A FANS			Sheet Title	
ROYAL PINE HOMES			UNIT DATA		3RD FLOOR			BASEMENT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			MAKE CARRIER		2ND FLOOR			8 4 2	
			MODEL 59TN6A-060-14V		1ST FLOOR			5 1 2	
			INPUT 60 MBTU/H		BASEMENT			4 1 1	
FIN BSMT		OUTPUT 58 MBTU/H		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			Date SEPT/2020		
2008		COOLING 2.0 TONS					Scale 3/16" = 1'-0"		
1672 sqft		FAN SPEED 820 cfm @ 0.6" w.c.					BCIN# 19669		
							LO# 87529		



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.

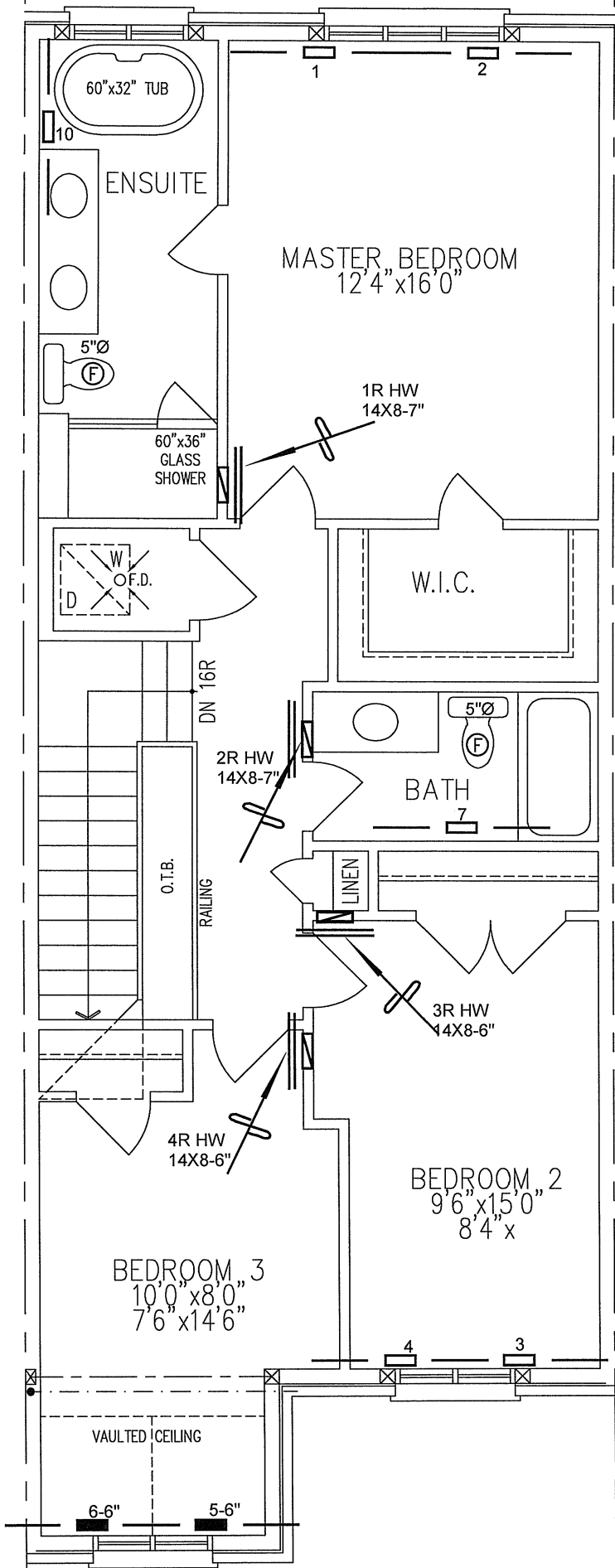
CSA-F280-12

SB-12 PERFORMANCE

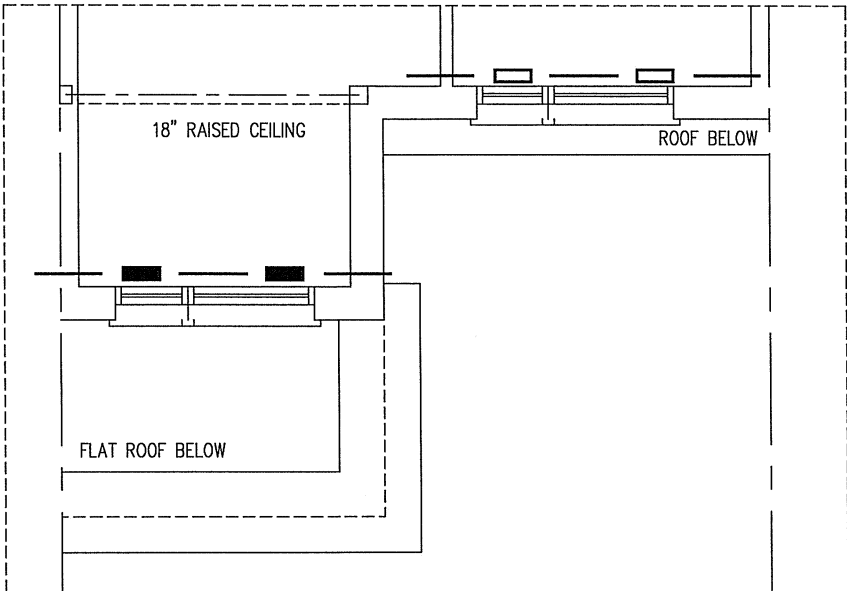
HVAC LEGEND								3.		
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Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation 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"
FIN BSMT 2008			BCIN# 19669	
1672 sqft			LO#	87529



SECOND FLOOR PLAN,
EL. 'A1/A2'



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.		
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Client ROYAL PINE HOMES		 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	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date SEPT/2020	
FIN BSMT 2008			Scale 3/16" = 1'-0"	
1672 sqft			BCIN# 19669	
			LO#	87529
		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.		