

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.			
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)										TYPE: 2008		DATE: Sep-21		WINTER NATURAL AIR CHANGE RATE 0.284		HEAT LOSS AT °F. 78		CSA-F280-12	
BUILDER: ROYAL PINE HOMES										GFA: 1672		LO# 87528		SUMMER NATURAL AIR CHANGE RATE 0.086		HEAT GAIN AT °F. 13		SB-12 PERFORMANCE	
ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	BED-2	BED-3	BATH											
GRS.WALL AREA	14	9		126	54	81	200	0											
GLAZING			LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN											
NORTH			21.8 16.0	0	0	0	0	0											
EAST			21.8 41.6	0	0	0	0	0											
SOUTH			21.8 24.9	0	0	0	0	0											
WEST			21.8 41.6	28	8	0	0	0											
SKYLT.			35.8 101.2	0	0	0	0	0											
DOORS			25.8 4.3	0	0	0	0	0											
NET EXPOSED WALL			4.2 0.7	98	46	53	164	690											
NET EXPOSED BSMT WALL ABOVE GR			3.7 0.6	0	0	0	0	0											
EXPOSED CLG			1.3 0.6	332	108	121	159	71											
NO ATTIC EXPOSED CLG			2.8 1.3	0	0	0	0	38											
EXPOSED FLOOR			2.6 0.4	0	0	121	316	52											
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0											
SLAB ON GRADE HEAT LOSS				0	0	0	0	0											
SUBTOTAL HT LOSS				1458	510	1308	1323	2001											
SUB TOTAL HT GAIN				1426	428	0.20	0.32	0.20											
LEVEL FACTOR / MULTIPLIER				473	165	424	83	265											
AIR CHANGE HEAT LOSS				89	27	173	254	307											
AIR CHANGE HEAT GAIN				0	0	0	240	1											
DUCT LOSS				0	0	0	894	894											
DUCT GAIN				0	0	0	0	0											
HEAT GAIN PEOPLE			240	2	480	1	240	240											
HEAT GAIN APPLIANCES/LIGHTS				894	0	0	0	894											
TOTAL HT LOSS BTU/H				1931	675	1905	2915	4391											
TOTAL HT GAIN x 1.3 BTU/H				3756	591	3631	2915	4391											

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	BED-2	BED-3	BATH											
GRS.WALL AREA			LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN											
GLAZING			202	0	0	0	0	0											
NORTH			21.8 16.0	0	0	0	0	0											
EAST			21.8 41.6	0	0	0	0	0											
SOUTH			21.8 24.9	0	0	0	0	0											
WEST			21.8 41.6	78	1699	0	0	0											
SKYLT.			35.8 101.2	0	0	0	0	0											
DOORS			25.8 4.3	0	0	0	0	0											
NET EXPOSED WALL			4.2 0.7	124	521	0	0	0											
NET EXPOSED BSMT WALL ABOVE GR			3.7 0.6	0	0	0	0	0											
EXPOSED CLG			1.3 0.6	0	0	0	0	0											
NO ATTIC EXPOSED CLG			2.8 1.3	0	0	0	0	0											
EXPOSED FLOOR			2.6 0.4	0	0	0	0	0											
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0											
SLAB ON GRADE HEAT LOSS				0	0	0	0	0											
SUBTOTAL HT LOSS				2221	3327	0.30	0.44	0.30											
SUB TOTAL HT GAIN				0.30	0.44	983	208	0											
LEVEL FACTOR / MULTIPLIER				0	0	0	0	0											
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	2	480	1	240	240											
HEAT GAIN APPLIANCES/LIGHTS				894	0	0	0	894											
TOTAL HT LOSS BTU/H				3203	5756	3203	5756	5756											
TOTAL HT GAIN x 1.3 BTU/H				3203	5756	3203	5756	5756											

TOTAL HEAT GAIN BTU/H: 23017 TONS: 1.92 LOSS DUE TO VENTILATION LOAD BTU/H: 1336 STRUCTURAL HEAT LOSS: 26477 TOTAL COMBINED HEAT LOSS BTU/H: 26813

Michael O'Rourke

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

TYPE: 2008

DATE: Sep-21

GFA: 1672 LO# 87528

HEATING CFM 820 COOLING CFM 820
TOTAL HEAT LOSS 25,477 TOTAL HEAT GAIN 22,798
AIR FLOW RATE CFM 32.19 AIR FLOW RATE CFM 35.97

furnace pressure 0.6
a/c coil pressure 0.05
available pressure 0.35
for s/a & r/a

plenum pressure s/a 0.18
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.16

****CARRIER**
59TNEA-060-14V
FAN SPEED 60
LOW 820
MEDLOW 0
MEDIUM 0
MEDIUM HIGH 0
HIGH 1520

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	5	3
R/A	0	0	4	1	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5'0" 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	0.97	0.97	0.95	0.95	1.46	1.46	0.56	0.67	1.60	1.60	1.84	1.84	2.09	2.84	2.84	2.84
CFM PER RUN HEAT	31	31	31	31	47	47	18	22	52	52	59	59	67	91	91	91
RM GAIN MBH	1.88	1.88	1.82	1.82	2.20	2.20	0.15	0.59	2.88	2.88	1.00	1.00	0.33	0.73	0.73	0.73
CFM PER RUN COOLING	68	68	65	65	79	79	5	21	104	104	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
EQUIVALENT LENGTH	140	130	150	140	190	210	190	170	110	180	130	130	150	130	120	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)	228	228	228	228	240	240	207	252	265	265	433	433	492	464	464	464
COOLING VELOCITY (ft/min)	499	499	477	477	403	403	57	241	530	530	264	264	88	133	133	133
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	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
1	TRUNK A	303	10	10	10	0	0	0	0	0	0	0	0	0	0
2	TRUNK B	450	11.2	14	22	0	0	0	0	0	0	0	0	0	0
3	TRUNK C	820	0.06	14	22	0	0	0	0	0	0	0	0	0	0
4	TRUNK D	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0
5	TRUNK E	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0
6	TRUNK F	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0

SUPPLY 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 A	303	10	0.06	9.6	10	545	TRUNK G	0	0.00	0	0	0	TRUNK O	0	0.05	0	0	8
TRUNK B	450	11.2	0.06	11.2	14	579	TRUNK H	0	0.00	0	0	0	TRUNK P	0	0.05	0	0	8
TRUNK C	820	0.06	14	14	22	671	TRUNK I	0	0.00	0	0	0	TRUNK Q	0	0.05	0	0	8
TRUNK D	0	0.00	0	0	0	0	TRUNK J	0	0.00	0	0	0	TRUNK R	0	0.05	0	0	8
TRUNK E	0	0.00	0	0	0	0	TRUNK K	0	0.00	0	0	0	TRUNK S	0	0.05	0	0	8
TRUNK F	0	0.00	0	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK T	0	0.05	0	0	8
RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
AIR VOLUME	95	115	75	75	340	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0.15
ACTUAL DUCT LGH.	69	64	72	76	21	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	215	255	225	230	196	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL EFFECTIVE LH	284	319	297	306	008	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
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	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	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	6	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	0

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	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#: 87528		Model: 2008		Builder: ROYAL PINE HOMES		Date: 9/10/2021				
Volume Calculation				Air Change & Delta T Data						
House Volume										
Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)							
Bsmt	728	10	7280							
First	728	10	7352.8							
Second	959	9	8631							
Third	0	9	0							
Fourth	0	9	0							
		Total:	23,263.8 ft ³							
		Total:	658.8 m ³							
5.2.3.1 Heat Loss due to Air Leakage										
$HL_{air-b} = LR_{air-b} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$										
0.284	x	182.99	x	43 °C	x	1.2	=	2691 W		
								=	9182 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		
								=	220 Btu/h	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)										
$HL_{air-r} = Level Factor \times HL_{air-bv} \times \{(HL_{ag-cr} + HL_{bg-cr}) \div (HL_{ag-level} + HL_{bg-level})\}$										
Level			Level Factor (LF)		HLairv Air Leakage + Ventilation Heat Loss (Btu/h)		Level Conductive Heat Loss: (HL _{level})		Air Leakage Heat Loss Multiplier (LF x HLairv / HLlevel)	
1			0.5		9,182		3,920		1.171	
2			0.3				6,225		0.442	
3			0.2				5,661		0.324	
4			0				0		0.000	
5			0				0		0.000	
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairv = 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:	3.00	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft ³):	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%	-

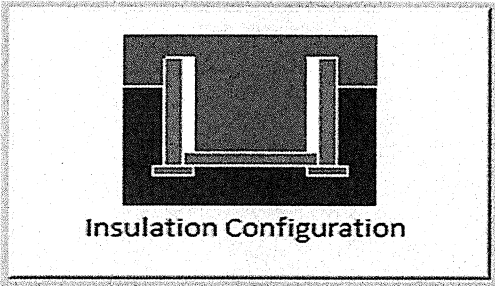
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

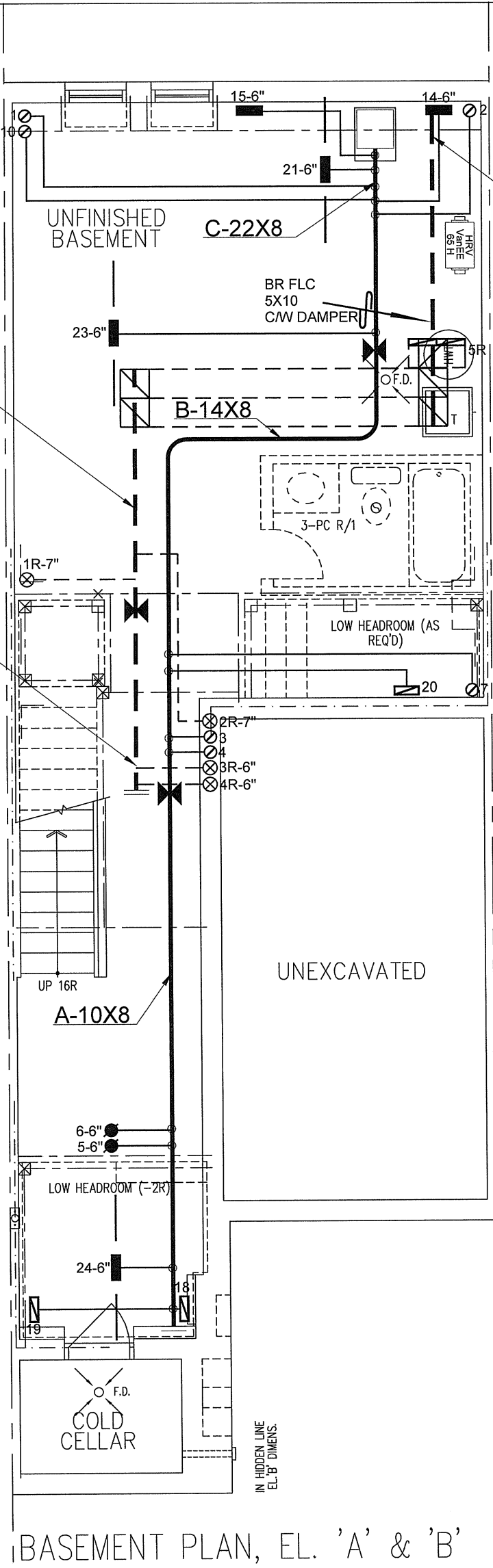
Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.8	 Insulation Configuration
Floor Width (m):	6.1	
Exposed Perimeter (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 Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	737.9 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):	0.284			
Cooling Air Leakage Rate (ACH/H):	0.086			



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.

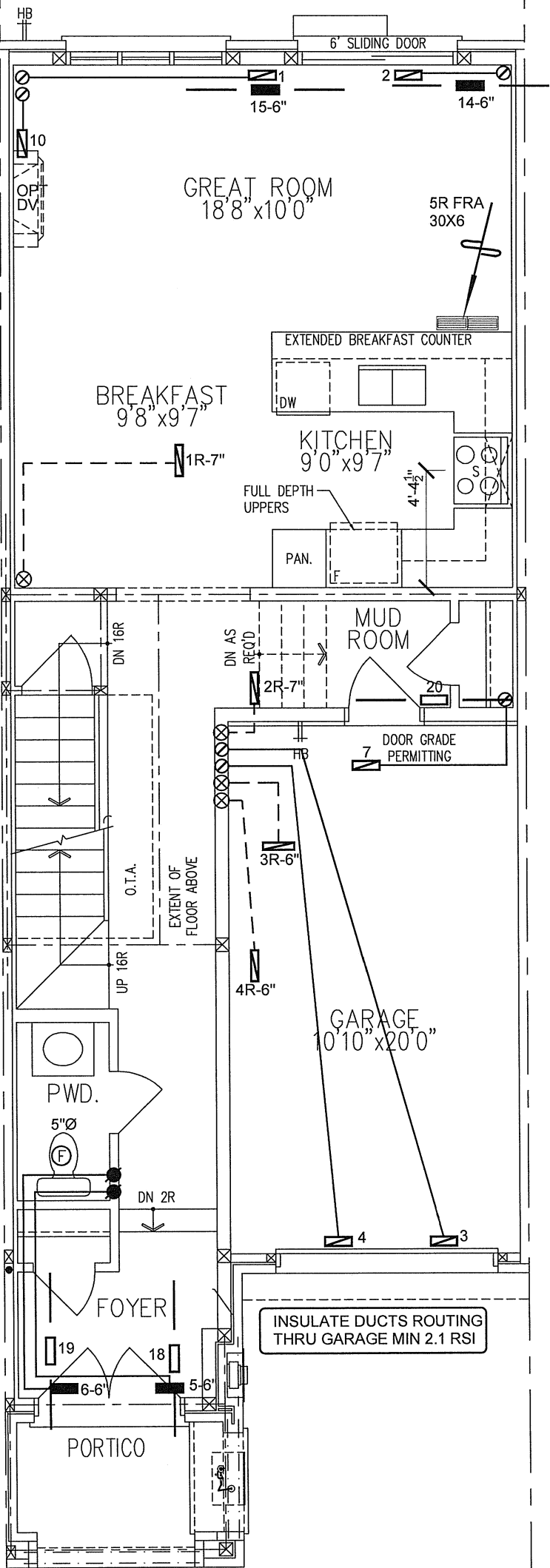
CSA-F280-12

SB-12 PERFORMANCE

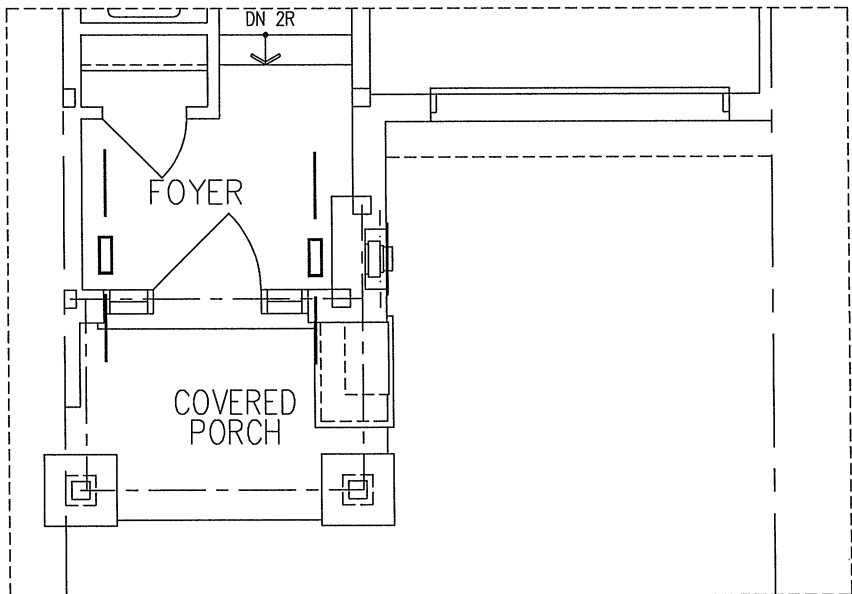
HVAC LEGEND								3.	REVISED ACH	SEPT/2021
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY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

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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.	HEAT LOSS 26813 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
ROYAL PINE HOMES			MAKE	CARRIER	3RD FLOOR				
Project Name			MODEL	59TN6A-060-14V	2ND FLOOR	8	4		
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			INPUT	60 MBTU/H	1ST FLOOR	5	1		
2008		1672 sqft	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
			COOLING	2.0 TONS				Scale	3/16" = 1'-0"
			FAN SPEED	820 cfm @ 0.6" w.c.				BCIN# 19669	
						LO#			87528



GROUND FLOOR PLAN, EL. 'A'



GROUND FLOOR PLAN, EL. 'B'

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AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
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BUILDING CODE.

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

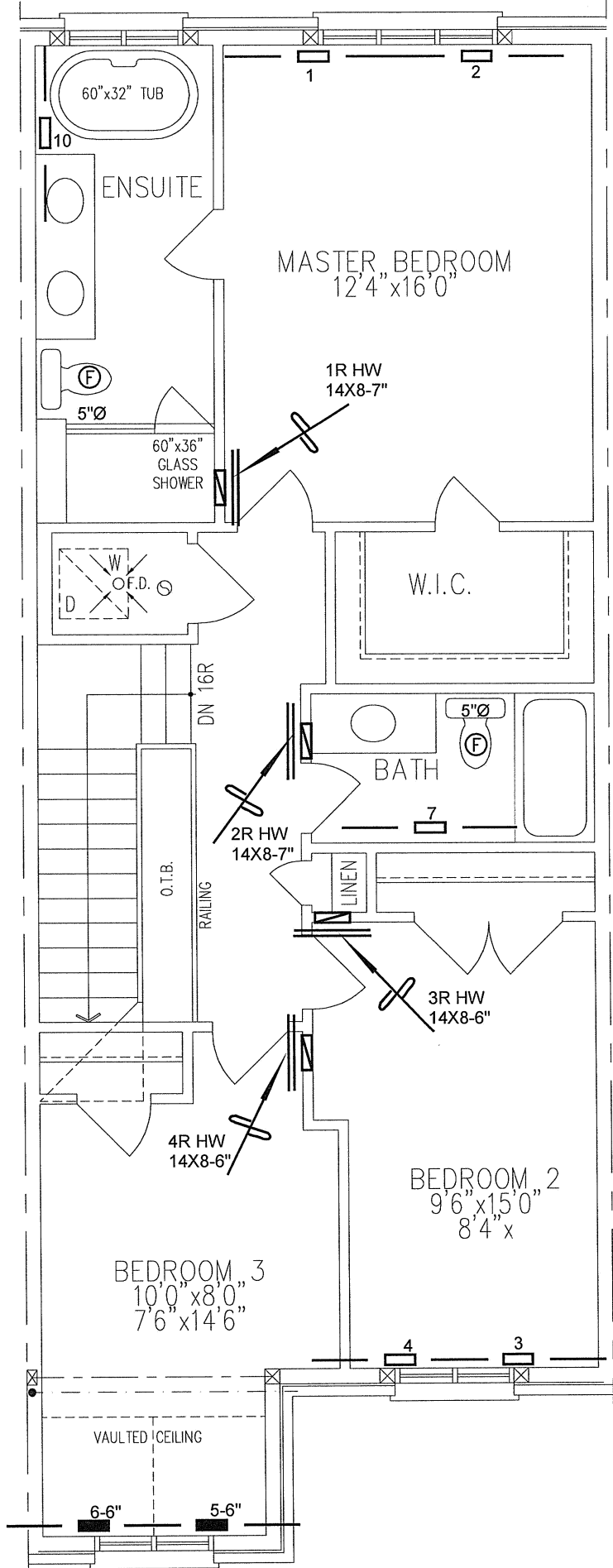
CSA-F280-12

SB-12 PERFORMANCE

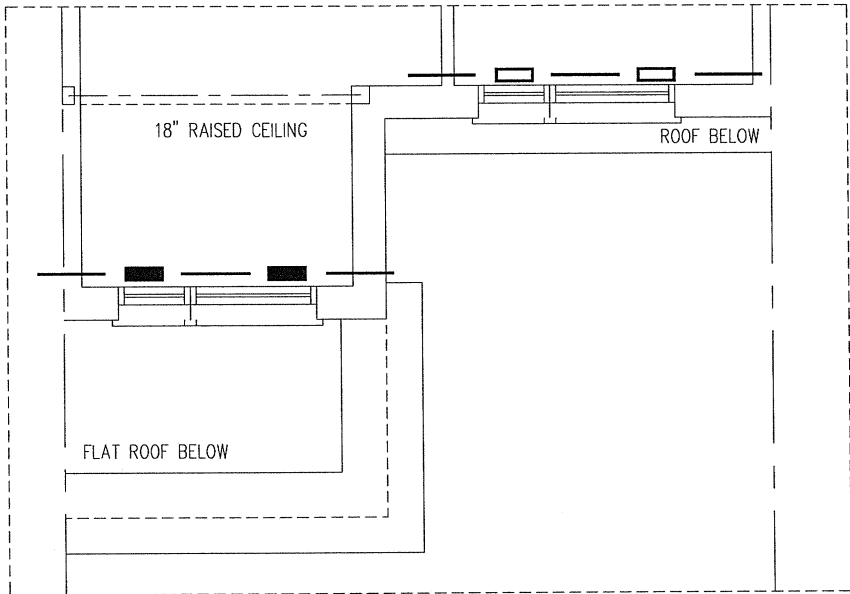
HVAC LEGEND								3.	REVISED ACH	SEPT/2021
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY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

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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 FIRST FLOOR HEATING LAYOUT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date SEPT/2020	
2008			Scale 3/16" = 1'-0"	
1672 sqft			BCIN# 19669	
		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, 3.2.5 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		

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ROYAL PINE HOMES			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	