

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: 2007 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 20, 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: Apr-21										WINTER NATURAL AIR CHANGE RATE 0.229										HEAT LOSS ΔT °F. 78										CSA-F280-12																													
BUILDER: ROYAL PINE HOMES										TYPE: 2007										GFA: 1662										LO# 87524										SUMMER NATURAL AIR CHANGE RATE 0.069										HEAT GAIN ΔT °F. 13										SB-12 PERFORMANCE									
ROOM USE				MBR				ENS				BED-2				BED-3				BATH																																																	
EXP. WALL				14				6				10				16				0																																																	
CLG. HT.				8				8				8				9				8																																																	
FACTORS																																																																					
GRS.WALL AREA		LOSS GAIN		112				48				80				144				0																																																	
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN																																																	
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		29	632	1205		36	784	1496		0	0	0																																															
SOUTH		21.8	24.9	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0																																															
WEST		21.8	41.6	28	610	1163		8	174	332		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		40	168	28		51	214	35		108	454	75		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	295	388	173		138	181	81		245	322	144		166	218	98		63	83	37																																															
NO ATTIC EXPOSED CLG		2.8	1.3	0	0	0		0	0	0		0	0	0		26	73	33		0	0	0																																															
EXPOSED FLOOR		2.6	0.4	0	0	0		0	0	0		203	530	87		25	65	11		36	94	15																																															
BASEMENT/CRAWL HEAT LOSS				0				0				0				0				0																																																	
SLAB ON GRADE HEAT LOSS				0				0				0				0				0																																																	
SUBTOTAL HT LOSS				1351				524				1698				1595				177																																																	
SUB TOTAL HT GAIN				1395				441				1472				1712				52																																																	
LEVEL FACTOR / MULTIPLIER				0.20	0.26			0.20	0.26			0.20	0.26			0.20	0.26			0.20	0.26																																																
AIR CHANGE HEAT LOSS				357				138				448				421				47																																																	
AIR CHANGE HEAT GAIN				73				23				77				90				3																																																	
DUCT LOSS				0				0				215				202				22																																																	
DUCT GAIN				0				0				287				312				6																																																	
HEAT GAIN PEOPLE		240		2		480		0				1		240		1		240		0		0																																															
HEAT GAIN APPLIANCES/LIGHTS				1077				0				1077				1077				0																																																	
TOTAL HT LOSS BTU/H				1708				662				2361				2218				246																																																	
TOTAL HT GAIN x 1.3 BTU/H				3932				604				4098				4459				79																																																	

ROOM USE			K/G/B			FOY			MUD			BAS			
EXP. WALL			23			32			12			68			
CLG. HT.			10			11			11			10			
FACTORS															
GRS.WALL AREA	LOSS	GAIN													
GLAZING			232			355			133			476			
			LOSS	GAIN			LOSS	GAIN			LOSS	GAIN			
NORTH	21.8	16.0	0	0	0	0	0	0	0	0	0	0	0	0	
EAST	21.8	41.6	0	0	0	30	654	1247	0	0	0	0	0	0	
SOUTH	21.8	24.9	8	174	199	0	0	0	0	0	0	0	0	0	
WEST	21.8	41.6	78	1699	3241	0	0	0	0	0	0	7	152	291	
SKYLT.	35.8	101.2	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS	25.8	4.3	0	0	0	35	905	149	20	517	85	20	517	85	
NET EXPOSED WALL	4.2	0.7	146	615	101	290	1220	201	113	476	78	0	0	0	
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	0	204	751	124	
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG	2.8	1.3	30	84	38	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	
BASEMENT/CRAWL HEAT LOSS			0			0			0			2208			
SLAB ON GRADE HEAT LOSS			0			0			0						
SUBTOTAL HT LOSS			2573			2779			993			3629			
SUB TOTAL HT GAIN			3579				1596		163		500				
LEVEL FACTOR / MULTIPLIER			0.30	0.33			0.30	0.33	0.30	0.33	0.50		0.97		
AIR CHANGE HEAT LOSS			858				927		331		3527				
AIR CHANGE HEAT GAIN					187			84	9				26		
DUCT LOSS			0				0		0		0				
DUCT GAIN			0				0		0		0				
HEAT GAIN PEOPLE	240		0	0			0	0	0	0	0				
HEAT GAIN APPLIANCES/LIGHTS			1077				0		0		0				
TOTAL HT LOSS BTU/H			3431				3706		1324		7156				
TOTAL HT GAIN x 1.3 BTU/H			6297				2184		224		683				

GFA: 1662 LO# 87524

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

TEMPERATURE RISE 65 °F

plenum pressure s/a	0.18	r/a pressure	0.17
max s/a dif press. loss	0.03	r/a grille press. Loss	0.02
min adjusted pressure s/a	0.15	adjusted pressure r/a	0.15

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

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

RETURN AIR #	1	2	3	4	5												BR	TRUNK W	0	0.05	0	0	x	8	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	TRUNK X	820	0.05	14.6	24	x	8	615
AIR VOLUME	95	105	75	95	330	0	0	0	0	0	0	0	0	0	0	0		TRUNK Y	0	0.05	0	0	x	8	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	TRUNK Z	0	0.05	0	0	x	8	0
ACTUAL DUCT LGH.	48	34	36	40	22	1	1	1	1	1	1	1	1	1	1	1	17	DROP	820	0.05	14.6	24	x	10	492
EQUIVALENT LENGTH	160	205	245	165	155	0	0	0	0	0	0	0	0	0	0	0	265								
TOTAL EFFECTIVE LH	208	239	281	205	177	1	1	1	1	1	1	1	1	1	1	1	282								
ADJUSTED PRESSURE	0.07	0.06	0.05	0.07	0.08	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.05								
ROUND DUCT SIZE	6	6.5	6	6	9.3	0	0	0	0	0	0	0	0	0	0	0	7.1								
INLET GRILL SIZE	8	8	8	8	6	0	0	0	0	0	0	0	0	0	0	0	8								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
INLET GRILL SIZE	14	14	14	14	24	0	0	0	0	0	0	0	0	0	0	0	14								

TYPE: 2007
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87524

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	63.6 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

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 @ 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

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 87524	Model: 2007	Builder: ROYAL PINE HOMES	Date: 4/20/2021																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>731</td> <td>10</td> <td>7310</td> </tr> <tr> <td>First</td> <td>731</td> <td>10</td> <td>7383.1</td> </tr> <tr> <td>Second</td> <td>931</td> <td>8</td> <td>7448</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>22,141.1 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>627.0 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	731	10	7310	First	731	10	7383.1	Second	931	8	7448	Third	0	9	0	Fourth	0	9	0	Total:			22,141.1 ft³	Total:			627.0 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%; text-align: center;">0.229</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.069</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td style="text-align: center;">22</td> <td style="text-align: center;">-21</td> <td style="text-align: center;">43</td> <td style="text-align: center;">78</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">24</td> <td style="text-align: center;">31</td> <td style="text-align: center;">7</td> <td style="text-align: center;">13</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.229	SUMMER NATURAL AIR CHANGE RATE	0.069	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-21	43	78	Summer DTDc	24	31	7	13
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.229 x 174.16 x 43 °C x 1.2 = 2068 W = 7055 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.069 x 174.16 x 7 °C x 1.2 = 103 W = 352 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 78 °F x 1.08 x 0.25 = 1336 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 64 CFM x 13 °F x 1.08 x 0.25 = 220 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																								
1	0.5	7,055	3,629	0.972																																																								
2	0.3		6,345	0.334																																																								
3	0.2		5,345	0.264																																																								
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 HLairve = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 2007	BUILDER: ROYAL PINE HOMES
SFQT: 1662	SITE: CENTREFIELD (WEST GORMLEY)
LO# 87524	

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):	22141.1	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.80	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:	68.0 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%	-

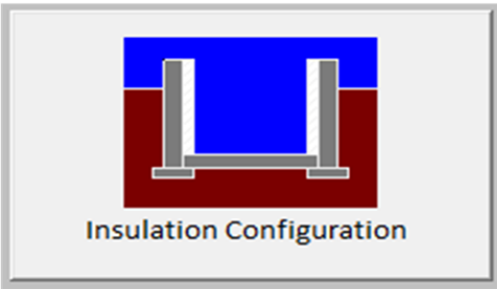
INDIVIDUAL BCIN: 19669

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):	20.7	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	0.7	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		647

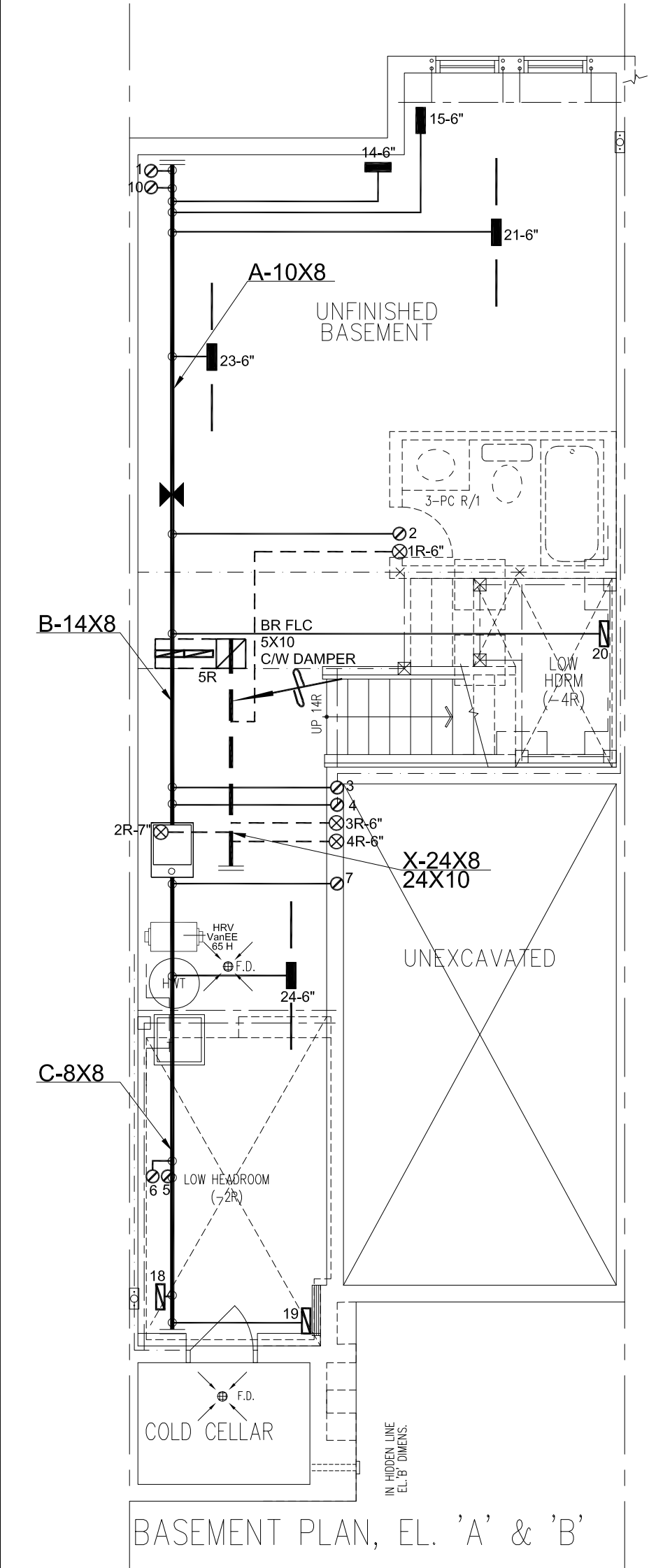
TYPE: 2007
LO# 87524

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):	627.0			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	585.3 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):	0.229			
Cooling Air Leakage Rate (ACH/H):	0.069			

TYPE: 2007
LO# 87524



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.

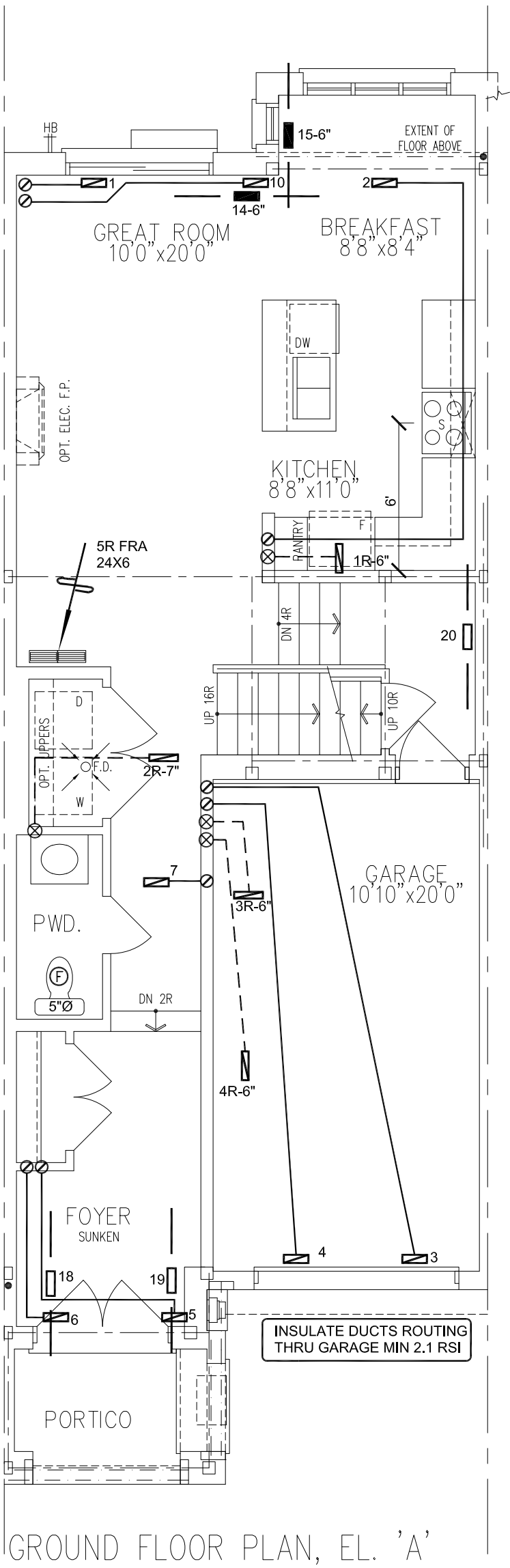
CSA-F280-12

SB-12 PERFORMANCE

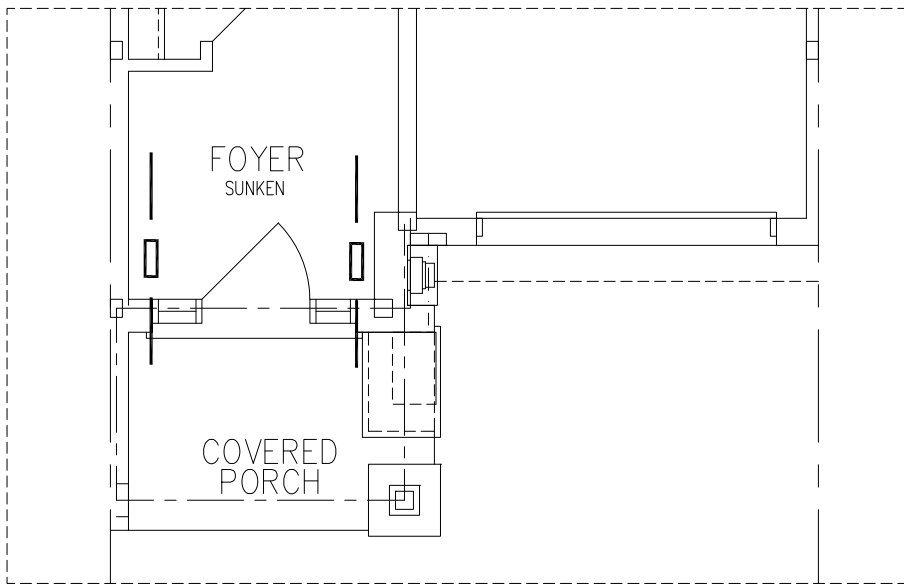
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT		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 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 24147 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
ROYAL PINE HOMES			MAKE	CARRIER	3RD FLOOR				BASEMENT HEATING LAYOUT	
Project Name			MODEL	59TN6A-060-14V	2ND FLOOR	8	4	2		
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			INPUT	60 MBTU/H	1ST FLOOR	5	1	2		
2007			OUTPUT	58 MBTU/H	BASEMENT	3	1	0	Date	SEPT/2020
1662 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				Scale	3/16" = 1'-0"
			FAN SPEED	820 cfm @ 0.6" w.c.					BCIN#	19669
					LO#	87524				



GROUND FLOOR PLAN, EL. 'A'



GROUND FLOOR PLAN, EL. 'B'

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HVAC DESIGNS LTD.

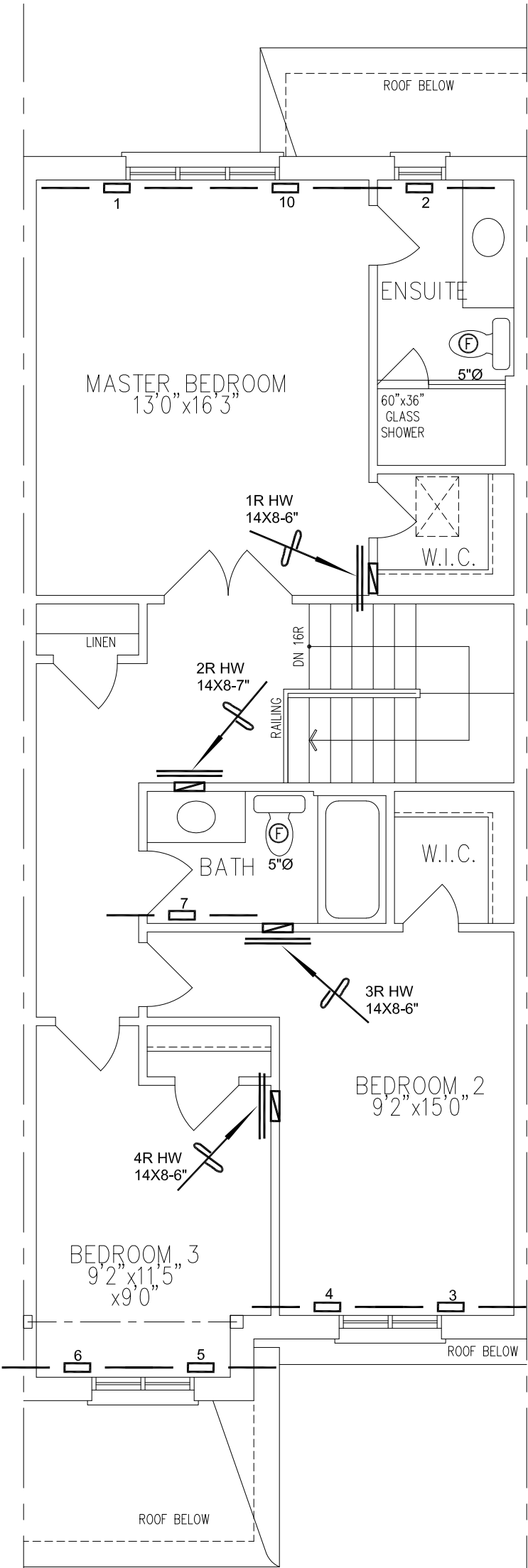
CSA-F280-12

SB-12 PERFORMANCE

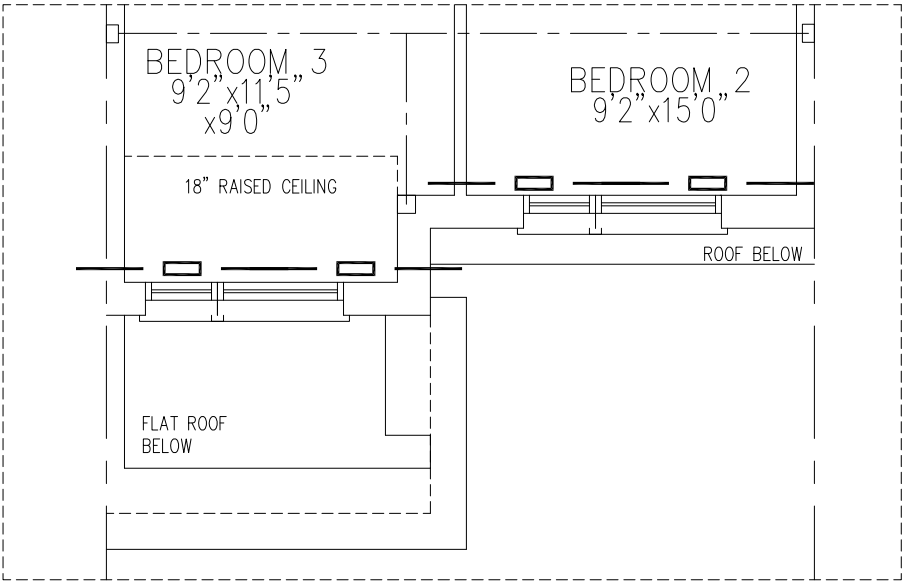
HVAC LEGEND								3.		
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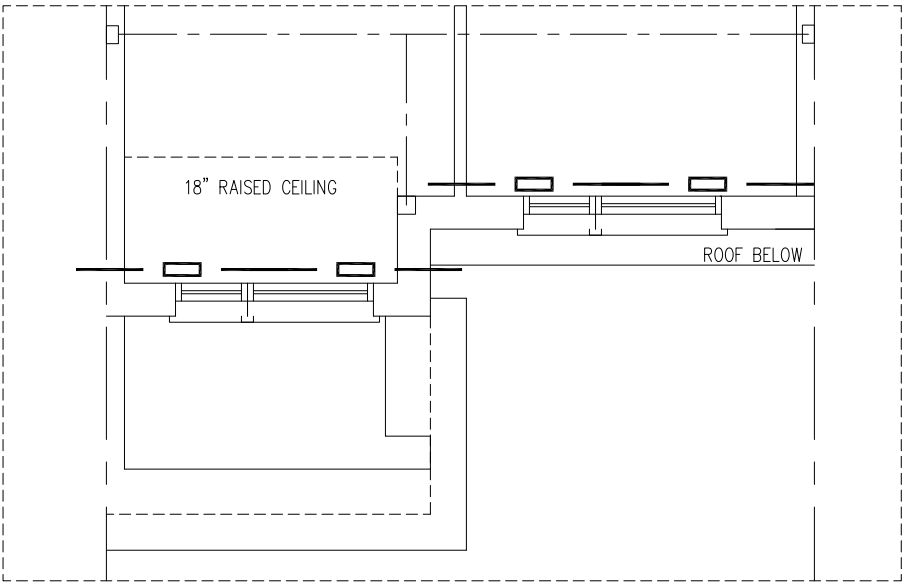
Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets 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"
2007			BCIN# 19669	
1662 sqft			LO#	87524



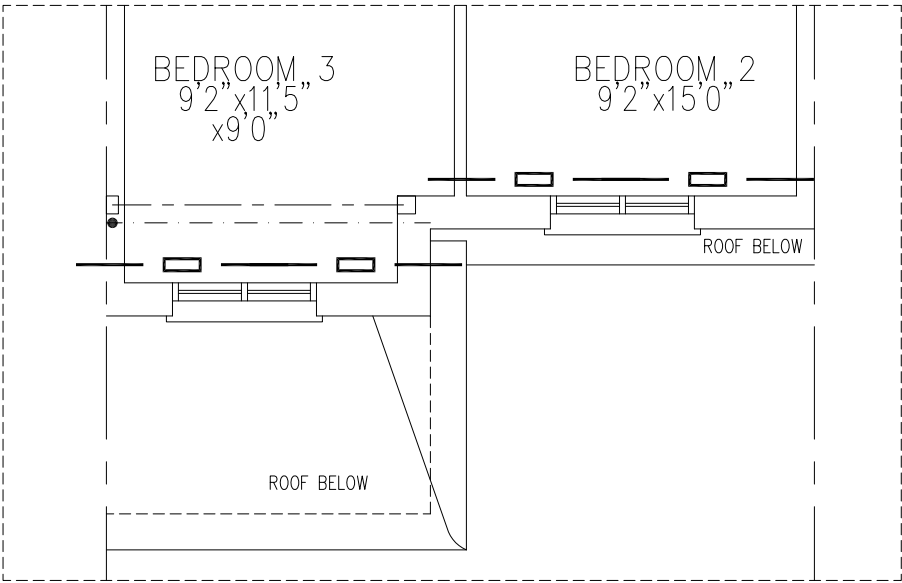
SECOND FLOOR PLAN, EL. 'A1'



PART. SECOND FLOOR PLAN,
EL. 'B2'



SECOND FLOOR PLAN, EL. 'B1'



PART. SECOND FLOOR PLAN,
EL. 'A2'

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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
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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2020
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
2007			BCIN# 19669	
1662 sqft			LO#	87524