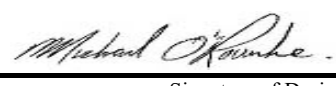


Schedule 1: Designer Information

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: 2011 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 21, 2021		 Signature of Designer	
Date			

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Application for a Permit Construct or Demolish – Effective January 1, 2015

SITE NAME: CENTREFIELD (WEST GORMLEY)										DATE: Apr-21		WINTER NATURAL AIR CHANGE RATE 0.236		HEAT LOSS ΔT °F. 78		CSA-F280-12	
BUILDER: ROYAL PINE HOMES										LO# 87544		SUMMER NATURAL AIR CHANGE RATE 0.071		HEAT GAIN ΔT °F. 13		SB-12 PERFORMANCE	
TYPE: 2011										GFA: 1792							

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

TYPE: 2011

DATE: Apr-21

GFA: 1792 LO# 87544

HEATING CFM 875 COOLING CFM 875
TOTAL HEAT LOSS 34,218 TOTAL HEAT GAIN 28,539
AIR FLOW RATE CFM 25.57 AIR FLOW RATE CFM 30.66

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35

****CARRIER**
59TN6A-060-14V
FAN SPEED 60
LOW 820
MEDLOW 875
MEDIUM 0
MEDIUM HIGH 0
HIGH 1520

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

DESIGN CFM = **875**
CFM @ .6" E.S.P.

TEMPERATURE RISE 61 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	8	7	4
R/A	0	0	4	2	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	11	12	13	14	15	18	19	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-3	BATH	MBR	DEN	DEN	GRT	KT/BR	KT/BR	PWD	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.48	1.18	1.02	1.02	2.21	2.21	0.82	1.48	1.67	1.67	2.14	1.93	1.93	0.42	2.72	2.58	2.58	2.58	2.58
CFM PER RUN HEAT	38	30	26	26	56	56	21	38	43	43	55	49	49	11	70	66	66	66	66
RM GAIN MBH.	1.99	0.74	1.59	1.59	2.79	2.79	0.56	1.99	2.13	2.13	1.88	2.82	2.82	0.07	1.06	0.40	0.40	0.40	0.40
CFM PER RUN COOLING	61	23	49	49	86	86	17	61	65	65	58	87	87	2	33	12	12	12	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	72	59	38	33	35	32	45	62	7	11	55	47	50	22	25	58	44	24	16
EQUIVALENT LENGTH	190	180	110	120	170	150	130	150	150	130	150	140	130	110	110	110	160	120	110
TOTAL EFFECTIVE LENGTH	262	239	148	153	205	182	175	212	157	141	205	187	180	132	135	168	204	144	126
ADJUSTED PRESSURE	0.07	0.07	0.12	0.11	0.08	0.09	0.1	0.08	0.11	0.12	0.08	0.09	0.09	0.13	0.13	0.1	0.08	0.12	0.14
ROUND DUCT SIZE	6	4	5	4	6	6	4	6	5	5	5	6	6	4	5	5	5	5	5
HEATING VELOCITY (ft/min)	194	344	191	298	286	286	241	194	316	316	404	250	250	126	514	485	485	485	485
COOLING VELOCITY (ft/min)	311	264	360	562	438	438	195	311	477	477	426	444	444	23	242	88	88	88	88
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	D	D	D	D	C	A	D	D	A	A	B	C	C	B	A	B	D

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	MBR	1.48	38	1.99	61	0.17	72	190	262	0.07	6	194	311	4X10	A
2	ENS	1.18	30	0.74	23	0.17	59	180	239	0.07	4	344	264	3X10	A
3	BED-2	1.02	26	1.59	49	0.17	38	110	148	0.12	5	191	360	3X10	D
4	BED-2	1.02	26	1.59	49	0.17	33	120	153	0.11	4	298	562	3X10	D
5	BED-3	2.21	56	2.79	86	0.16	35	170	205	0.08	6	286	438	4X10	D
6	BED-3	2.21	56	2.79	86	0.16	32	150	182	0.09	6	286	438	4X10	D
7	BATH	0.82	21	0.56	17	0.17	45	130	175	0.1	4	241	195	3X10	C
10	MBR	1.48	38	1.99	61	0.17	62	150	212	0.08	6	194	311	4X10	A
11	DEN	1.67	43	2.13	65	0.17	7	150	157	0.11	5	316	477	3X10	D
12	DEN	1.67	43	2.13	65	0.17	11	130	141	0.12	5	316	477	3X10	D
13	GRT	2.14	55	1.88	58	0.17	55	150	205	0.08	5	404	426	3X10	A
14	KT/BR	1.93	49	2.82	87	0.16	47	140	187	0.09	6	250	444	4X10	A
15	KT/BR	1.93	49	2.82	87	0.16	50	130	180	0.09	6	250	444	4X10	B
18	PWD	0.42	11	0.07	2	0.17	22	110	132	0.13	4	126	23	3X10	C
19	FOY	2.72	70	1.06	33	0.17	25	110	135	0.13	5	514	242	3X10	C
21	BAS	2.58	66	0.40	12	0.17	58	110	168	0.1	5	485	88	3X10	B
22	BAS	2.58	66	0.40	12	0.17	44	160	204	0.08	5	485	88	3X10	A
23	BAS	2.58	66	0.40	12	0.17	24	120	144	0.12	5	485	88	3X10	B
24	BAS	2.58	66	0.40	12	0.17	16	110	126	0.14	5	485	88	3X10	D

SUPPLY AIR TRUNK SIZE															RETURN AIR TRUNK SIZE														
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)						
TRUNK A	276	0.07	9	10	x	8	497	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0						
TRUNK B	181	0.09	7.2	8	x	8	407	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0						
TRUNK C	559	0.07	11.7	16	x	8	629	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0						
TRUNK D	875	0.07	13.8	22	x	8	716	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0						
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0						
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0						

RETURN AIR #	1	2	3	4	5	6													BR	TRUNK W00.0500x80 TRUNK X8750.051526x8606 TRUNK Y7150.0513.922x8585 TRUNK Z4300.0511.516x8484 DROP8750.051524x10525
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40				
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					
ACTUAL DUCT LGH.	68	45	45	52	37	20	1	1	1	1	1	1	1	1	14					
EQUIVALENT LENGTH	195	215	195	235	200	135	0	0	0	0	0	0	0	0	135					
TOTAL EFFECTIVE LH	263	260	240	287	237	155	1	1	1	1	1	1	1	1	149					
ADJUSTED PRESSURE	0.06	0.06	0.06	0.05	0.06	0.10	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10					
ROUND DUCT SIZE	6.8	6	6	7	9.7	6	0	0	0	0	0	0	0	0	4					
INLET GRILL SIZE	8	8	8	8	8	6	0	0	0	0	0	0	0	0	8					
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
INLET GRILL SIZE	14	14	14	14	30	10	0	0	0	0	0	0	0	0	14					

TYPE: 2011
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87544

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>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>3</u> @ 10.6 cfm	<u>31.8</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

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#: 87544	Model: 2011	Builder: ROYAL PINE HOMES	Date: 4/21/2021																																																									
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>782</td> <td>10</td> <td>7820</td> </tr> <tr> <td>First</td> <td>782</td> <td>10</td> <td>7820</td> </tr> <tr> <td>Second</td> <td>1010</td> <td>9</td> <td>9090</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="3" style="text-align: right;">Total:</td> <td>24,730.0 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>700.3 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	782	10	7820	First	782	10	7820	Second	1010	9	9090	Third	0	9	0	Fourth	0	9	0	Total:			24,730.0 ft³	Total:			700.3 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;">0.236</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.071</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	0.236	SUMMER NATURAL AIR CHANGE RATE	0.071	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)																																																									
Bsmt	782	10	7820																																																									
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.236 x 194.52 x 43 °C x 1.2 = 2376 W = 8108 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.071 x 194.52 x 7 °C x 1.2 = 119 W = 404 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	8,108	6,254	0.648																																																								
2	0.3		10,048	0.242																																																								
3	0.2		9,220	0.176																																																								
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: 2011	BUILDER: ROYAL PINE HOMES
SFQT: 1792	SITE: CENTREFIELD (WEST GORMLEY)
LO# 87544	

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):	24730.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.45	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 51.0 ft	WIDTH: 22.0 ft	EXPOSED PERIMETER:	125.0 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%	-

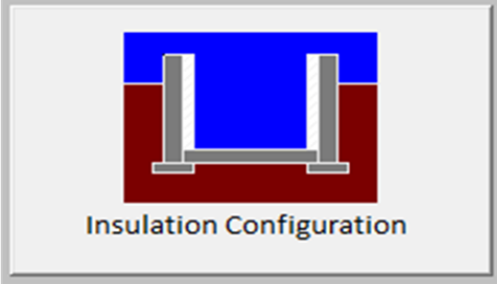
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

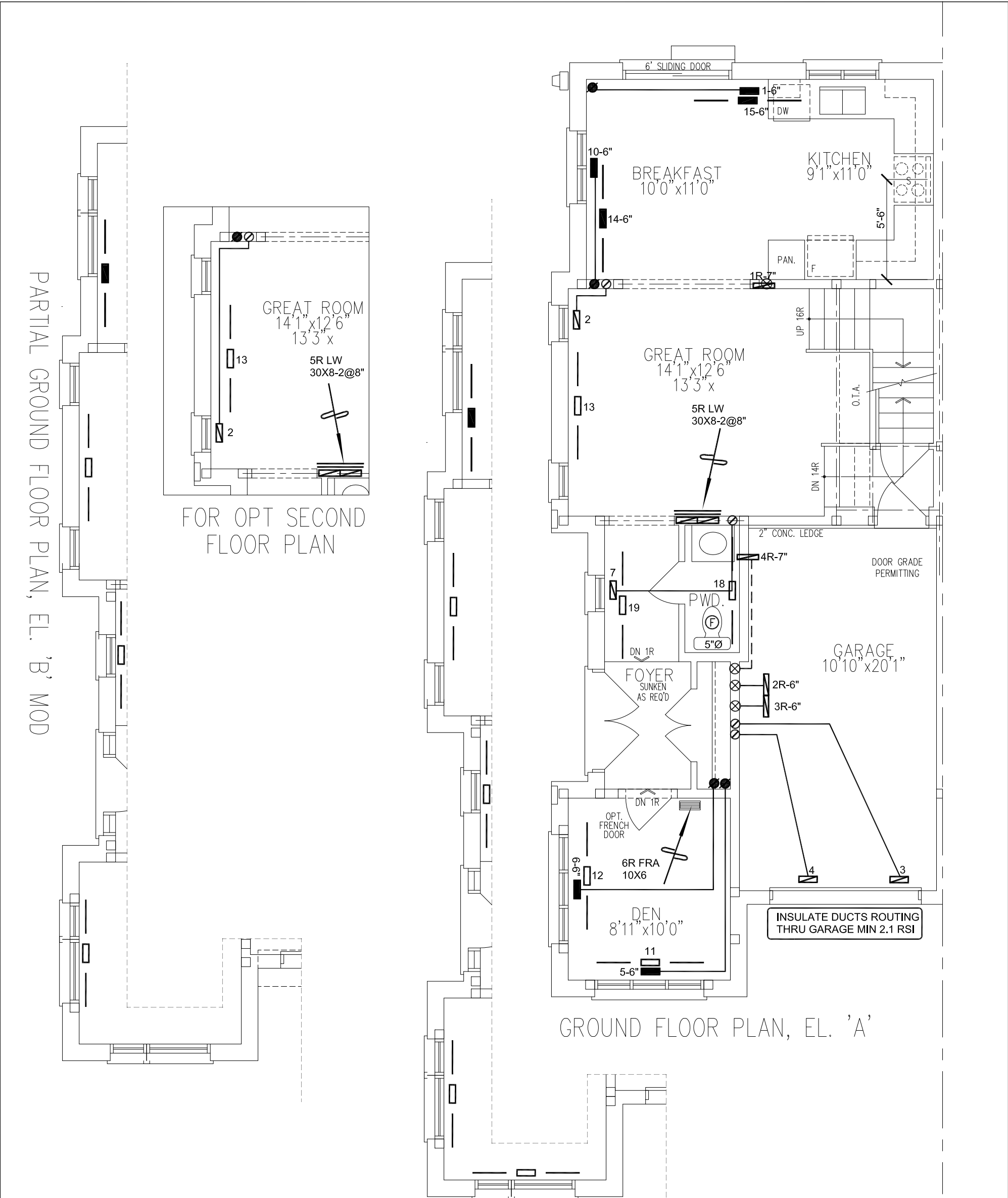
Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.5	 Insulation Configuration
Floor Width (m):	6.7	
Exposed Perimeter (m):	38.1	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.1	
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):		1200

TYPE: 2011
LO# 87544

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):	6.71			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	700.3			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	653.7 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):	0.071			



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.

GROUND FLOOR PLAN, EL. 'B'

GROUND FLOOR PLAN, EL. 'A'

CSA-F280-12

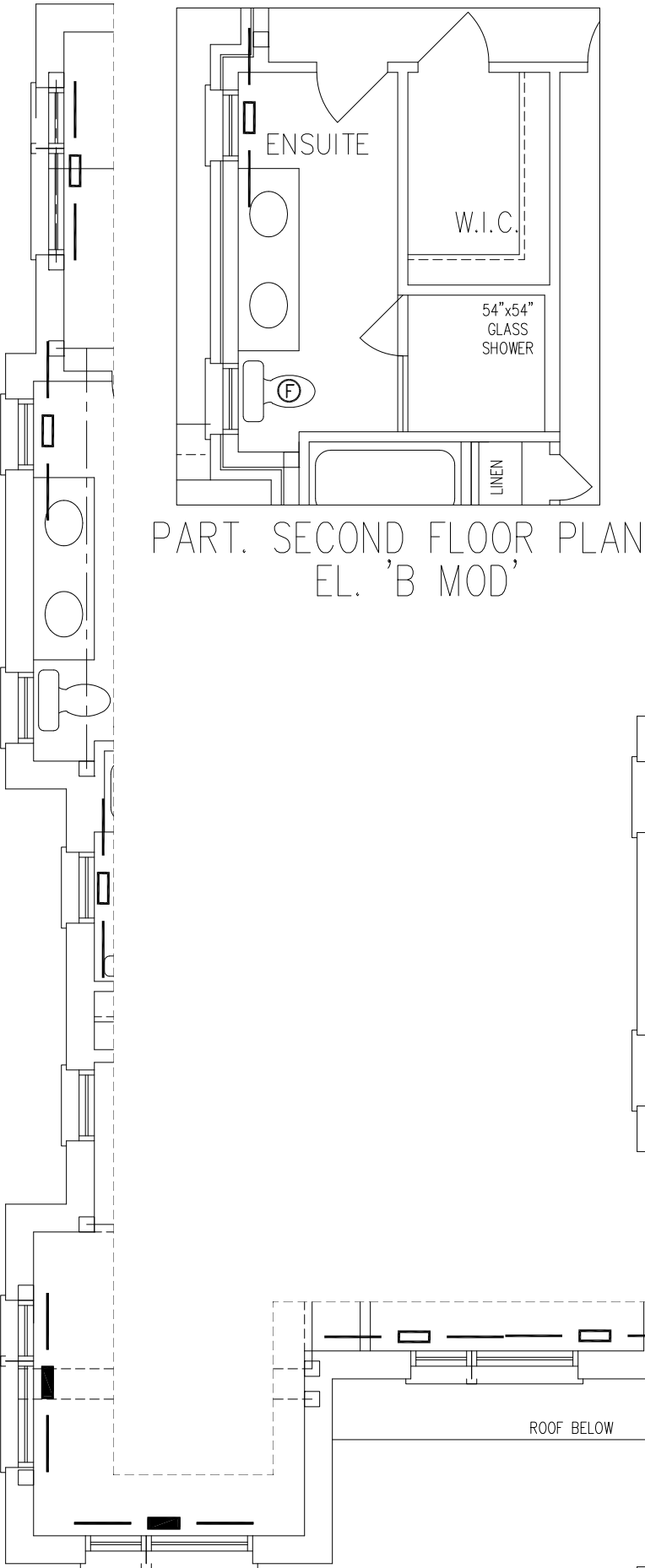
SB-12 PERFORMANCE

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		

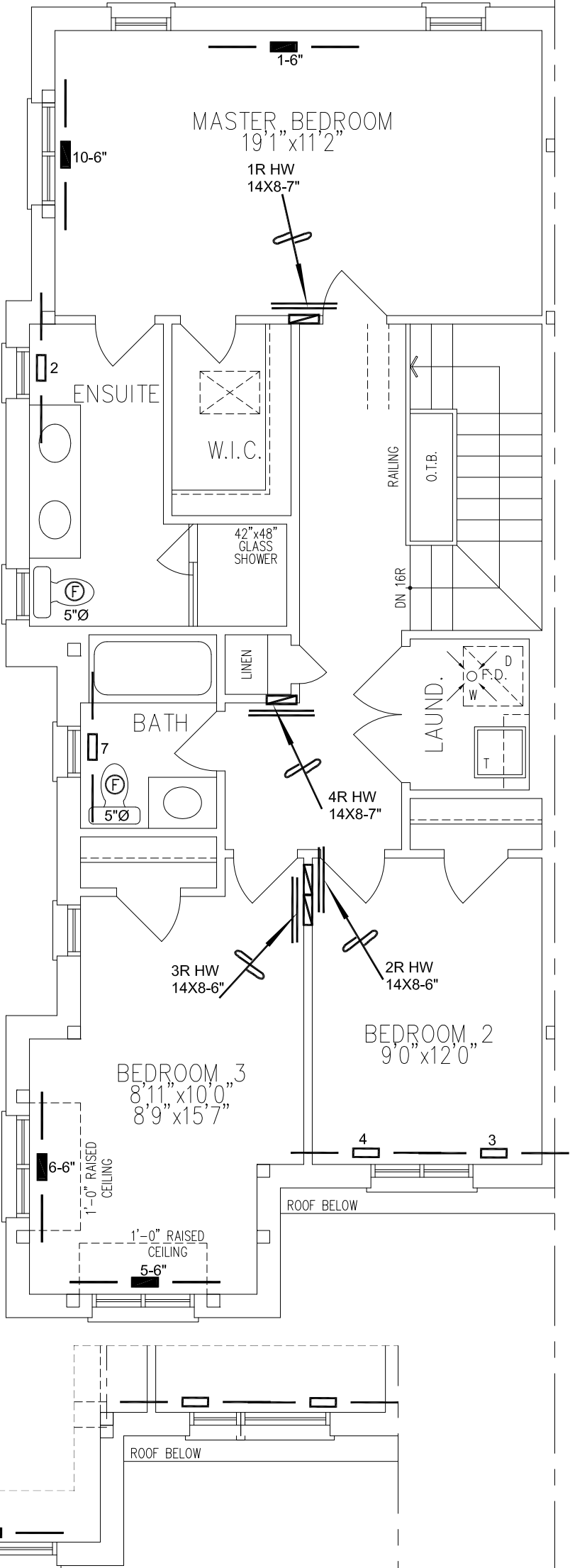
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Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest 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.	Sheet Title	
ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date	SEPT/2020
			Scale	3/16" = 1'-0"
		BCIN# 19669		
2011	1792 sqft	LO#	87544	

PARTIAL SECOND FLOOR PLAN, EL. 'B'-MOD.



SECOND FLOOR PLAN, EL. 'A'



SECOND FLOOR PLAN, EL. 'B'

I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.		
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
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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"
		BCIN# 19669		
2011	1792 sqft	LO#	87544	