

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: 4504 OPT. GROUND 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.				
June 7, 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 OPT. GROUND TYPE: 4604 DATE: Jun-21 LO# 87512 GFA: 3223 WINTER NATURAL AIR CHANGE RATE 0.219 SUMMER NATURAL AIR CHANGE RATE 0.068 HEAT LOSS AT °F. 78 HEAT GAIN AT °F. 13 CSA-F280-12 SB-12 PERFORMANCE

ROOM USE	EXP. WALL CLG. HT.	MBR	ENS	BED-2	BED-3	BED-4	BATH	ENS-2	HEAT LOSS AT °F. 78	HEAT GAIN AT °F. 13	CSA-F280-12 SB-12 PERFORMANCE
GRS.WALL AREA	21.8	16.0	208	280	384	136	56	72			
GLAZING	0	0	0	0	0	0	0	0			
NORTH	21.8	16.0	0	0	0	0	0	0			
EAST	21.8	16.0	0	0	0	0	0	0			
SOUTH	21.8	16.0	0	0	0	0	0	0			
WEST	21.8	16.0	0	0	0	0	0	0			
SKYL.T.	35.8	101.2	0	0	0	0	0	0			
DOORS	25.8	4.3	0	0	0	0	0	0			
NET EXPOSED WALL	4.2	0.7	342	1438	237	182	765	126			
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0			
NO ATTIC EXPOSED CLG	1.3	0.6	428	562	252	164	216	96			
EXPOSED FLOOR	2.8	1.3	0	0	0	0	0	0			
BASEMENT/CRAWL HEAT LOSS	2.6	0.4	0	0	0	0	0	0			
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0			
SUBTOTAL HT LOSS	2785	1984	1547	3454	3184	1294	485	573			
LEVEL FACTOR / MULTIPLIER	0.20	0.19	0.20	0.19	0.20	0.19	0.20	0.19			
AIR CHANGE HEAT LOSS	522	522	290	648	597	243	91	107			
AIR CHANGE HEAT GAIN	82	82	0	410	0	0	0	0			
DUCT LOSS	0	0	0	0	0	0	0	0			
DUCT GAIN	0	0	0	0	0	0	0	0			
HEAT GAIN PEOPLE	2	480	0	432	0	0	0	0			
HEAT GAIN APPLIANCES/LIGHTS	727	727	0	240	0	0	0	0			
TOTAL HT LOSS BTU/H	3307	4256	1838	4512	3782	1537	576	748			
TOTAL HT GAIN x 1.3 BTU/H			1553	6173	3782	2176	358	326			

ROOM USE	EXP. WALL CLG. HT.	DEN	DIN	KT/GT	LAUN	WIR	FOY	MUD	BAS	LOSS GAIN
GRS.WALL AREA	21.8	16.0	250	920	0	60	230	176	996	
GLAZING	0	0	0	0	0	0	0	0	0	
NORTH	21.8	16.0	0	0	0	0	0	0	0	
EAST	21.8	16.0	0	0	0	0	0	0	0	
SOUTH	21.8	16.0	0	0	0	0	0	0	0	
WEST	21.8	16.0	0	0	0	0	0	0	0	
SKYL.T.	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	210	883	145	222	934	154	20	
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	
EXPOSED FLOOR	2.8	1.3	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS	2.6	0.4	0	0	0	0	0	0	0	
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS	1754	1807	1544	6383	79	411	1875	1173	8378	
LEVEL FACTOR / MULTIPLIER	0.30	0.29	0.30	0.29	0.20	0.30	0.30	0.30	0.50	
AIR CHANGE HEAT LOSS	509	509	448	1853	45	119	544	341	6359	
AIR CHANGE HEAT GAIN	75	75	35	258	3	11	55	8	41	
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	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS	2264	2264	727	727	0	0	0	0	0	
TOTAL HT LOSS BTU/H	2264	3393	1992	8236	312	530	2419	1614	14737	
TOTAL HT GAIN x 1.3 BTU/H			2098	9358	1167	351	1806	261	2276	

TOTAL HEAT GAIN BTU/H: 41275 TONS: 3.44 LOSS DUE TO VENTILATION LOAD BTU/H: 1670 STRUCTURAL HEAT LOSS: 48302 TOTAL COMBINED HEAT LOSS BTU/H: 49972

Michael O'Rourke

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

TYPE: 4504
OPT. GROUND

DATE: Jun-21

GFA: 3223

LO# 87512

HEATING CFM 1370
TOTAL HEAT LOSS 48,302
AIR FLOW RATE CFM 28.36

COOLING CFM 1370
TOTAL HEAT GAIN 41,000
AIR FLOW RATE CFM 33.41

59TNGA-060-14V
FAN SPEED 60
LOW 820
MEDIUM 0
HIGH 1370
DESIGN CFM = 1370
CFM @ .6" E.S.P.

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	10	5
R/A	0	0	5	3	1

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

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

ROOM #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	ENS	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-2	DEN	DEN	KT/GT	KT/GT	KT/GT	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.65	0.92	0.92	2.26	1.89	1.54	0.58	2.26	1.89	1.65	0.75	1.13	1.13	2.06	2.06	2.06	0.31	0.53	2.42	1.51	2.95	2.95	2.95	2.95
CFM PER RUN HEAT	47	26	26	64	54	44	16	64	54	47	21	32	32	58	58	58	9	15	69	43	84	84	84	84
RM GAIN MBH	2.13	0.79	0.79	3.09	2.71	2.18	0.36	3.09	2.71	2.13	0.33	1.70	1.70	2.34	2.34	2.34	1.16	0.35	1.81	0.26	0.46	0.46	0.46	0.46
CFM PER RUN COOLING	71	26	26	103	91	73	12	103	91	71	11	57	57	78	78	78	39	12	60	9	15	15	15	15
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	47	69	69	54	81	76	66	72	76	70	66	71	65	43	30	38	55	59	59	51	30	16	27	48
TOTAL EFFECTIVE LENGTH	187	219	227	174	241	246	236	212	226	210	236	241	235	173	150	178	185	179	219	241	120	120	120	110
ADJUSTED PRESSURE	0.09	0.08	0.08	0.09	0.07	0.07	0.07	0.08	0.07	0.08	0.07	0.07	0.07	0.11	0.11	0.11	0.09	0.1	0.08	0.07	0.14	0.12	0.11	0.1
ROUND DUCT SIZE	6	4	4	6	6	6	4	6	6	6	4	5	5	5	5	5	4	4	6	5	6	6	6	6
HEATING VELOCITY (ft/min)	240	298	298	224	275	224	184	326	275	240	241	235	235	426	426	426	103	172	352	316	428	428	428	428
COOLING VELOCITY (ft/min)	362	298	298	372	464	372	138	525	464	362	126	419	419	573	573	573	447	138	306	66	76	76	76	76
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10

ROOM #	25	26	27
ROOM NAME	BAS	DIN	KT/GT
RM LOSS MBH	2.95	1.99	2.06
CFM PER RUN HEAT	84	56	58
RM GAIN MBH	0.46	2.10	2.34
CFM PER RUN COOLING	15	70	78
ADJUSTED PRESSURE	0.16	0.17	0.17
EQUIVALENT LENGTH	57	49	44
TOTAL EFFECTIVE LENGTH	207	189	194
ADJUSTED PRESSURE	0.08	0.09	0.09
ROUND DUCT SIZE	6	6	5
HEATING VELOCITY (ft/min)	428	286	426
COOLING VELOCITY (ft/min)	76	357	573
OUTLET GRILL SIZE	4X10	4X10	3X10

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	325	0.07	9.5	12	8	0	0.00	0	0	0	0	0.05	0	0	0
TRUNK B	540	0.07	11.5	16	8	0	0.00	0	0	0	0	0.05	0	0	0
TRUNK C	825	0.07	13.5	22	8	0	0.00	0	0	0	0	0.05	0	0	0
TRUNK D	279	0.09	8.4	10	8	0	0.00	0	0	0	0	0.05	0	0	0
TRUNK E	546	0.08	11.2	14	8	0	0.00	0	0	0	0	0.05	0	0	0
TRUNK F	1370	0.07	16.3	26	10	0	0.00	0	0	0	0	0.05	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	115	115	115	115	130	130	305	140	0	0	0	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	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	95	65	98	88	60	67	47	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	195	245	215	235	265	265	257	292	163	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL EFFECTIVE LH	290	310	313	323	323	323	323	323	323	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	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	0.05	0.05	0.05	0.05	0.05	0.05
ROUND DUCT SIZE	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
INLET GRILL SIZE	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

TYPE: 4504
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87512
OPT. GROUND

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>3</u> @ 10.6 cfm <u>31.8</u> cfm	
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm <u>53</u> cfm	
Other Rooms	<u>5</u> @ 10.6 cfm <u>53.0</u> cfm	
Table 9.32.3.A.	TOTAL <u>180.2</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	79.5 cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u> cfm	
Less Principal Ventil. Capacity	<u>79.5</u> cfm	
Required Supplemental Capacity	<u>100.7</u> cfm	

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 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
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
W/R	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:	June-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																												
LO#: 87512		Model: 4504		Builder: ROYAL PINE HOMES		Date: 6/7/2021																																																																						
Volume Calculation				Air Change & Delta T Data																																																																								
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6.2.6 Sensible Gain due to Air Leakage																																																																												
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																																												
$= 0.068 \times 328.53 \times 7 \times 1.2 = 191 \text{ W}$																																																																												
$= 12718 \text{ Btu/h}$																																																																												
6.2.7 Sensible heat Gain due to Ventilation																																																																												
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																												
$80 \text{ CFM} \times 13 \text{ °F} \times 1.08 \times 0.25 = 275 \text{ Btu/h}$																																																																												
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 HLairrr = 0																																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4504	OPT. GROUND	BUILDER: ROYAL PINE HOMES
SFQT: 3223	LO# 87512	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:	DETACHED	# 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):	41767.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.40	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 46.0 ft	WIDTH: 37.0 ft	EXPOSED PERIMETER:	166.0 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%	-

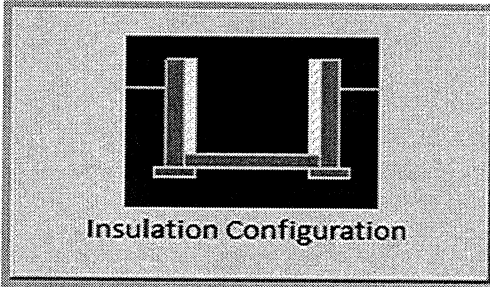
INDIVIDUAL BCIN: 19669

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):	14.0	 Insulation Configuration
Floor Width (m):	11.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.9	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	1638	

TYPE: 4504
LO# 87512

OPT. GROUND

Air Infiltration Residential Load Calculator

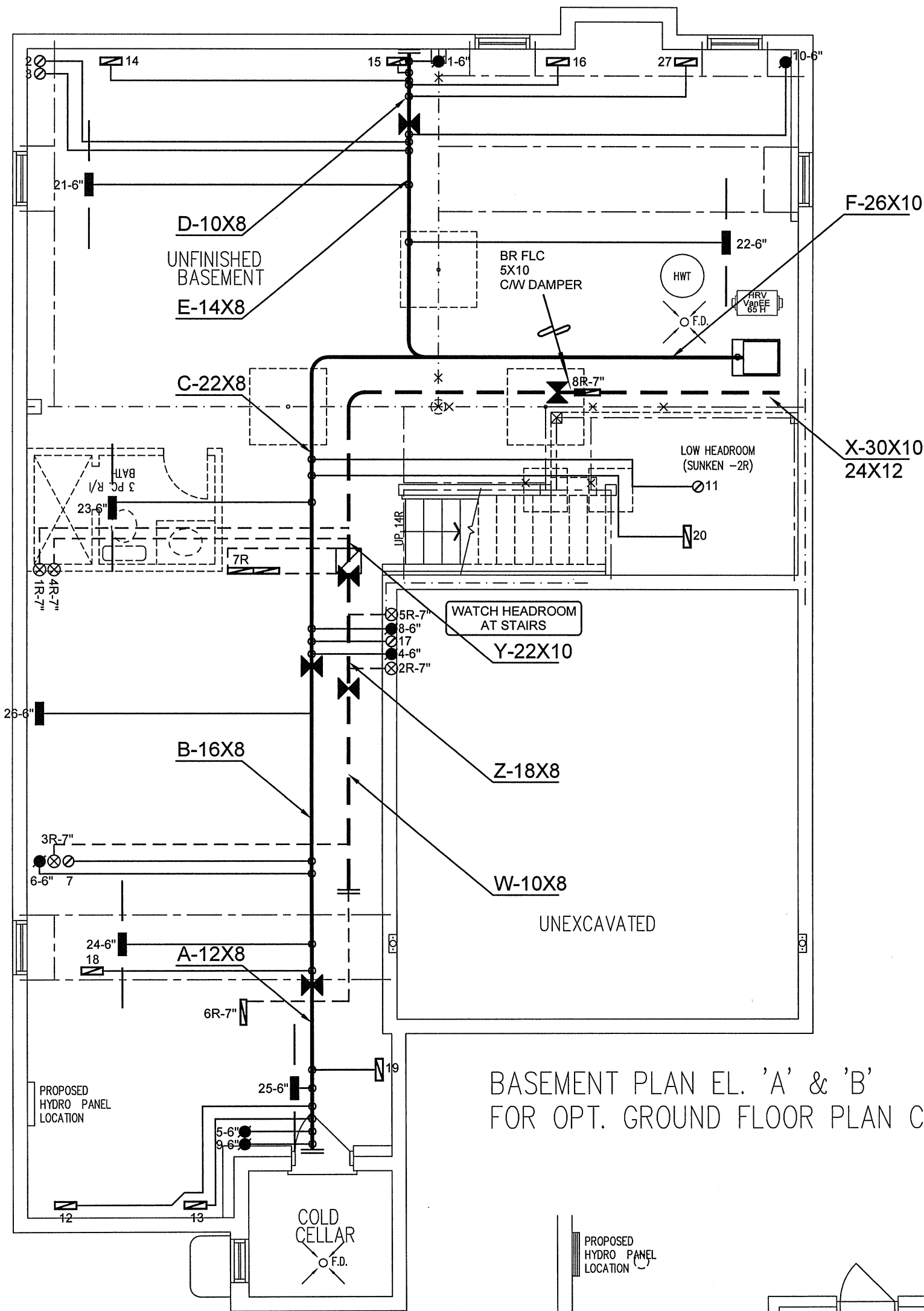
Supplemental tool for CAN/CSA-F280

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):	6.40			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1182.7			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1104.1 cm ²		
	2.50	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.219			
Cooling Air Leakage Rate (ACH/H):	0.068			

TYPE: 4504

LO# 87512

OPT. GROUND



BASEMENT PLAN EL. 'A' & 'B'
FOR OPT. GROUND FLOOR PLAN COND.

BASEMENT PLAN EL. 'C'

CSA-F280-12

SB-12 PERFORMANCE

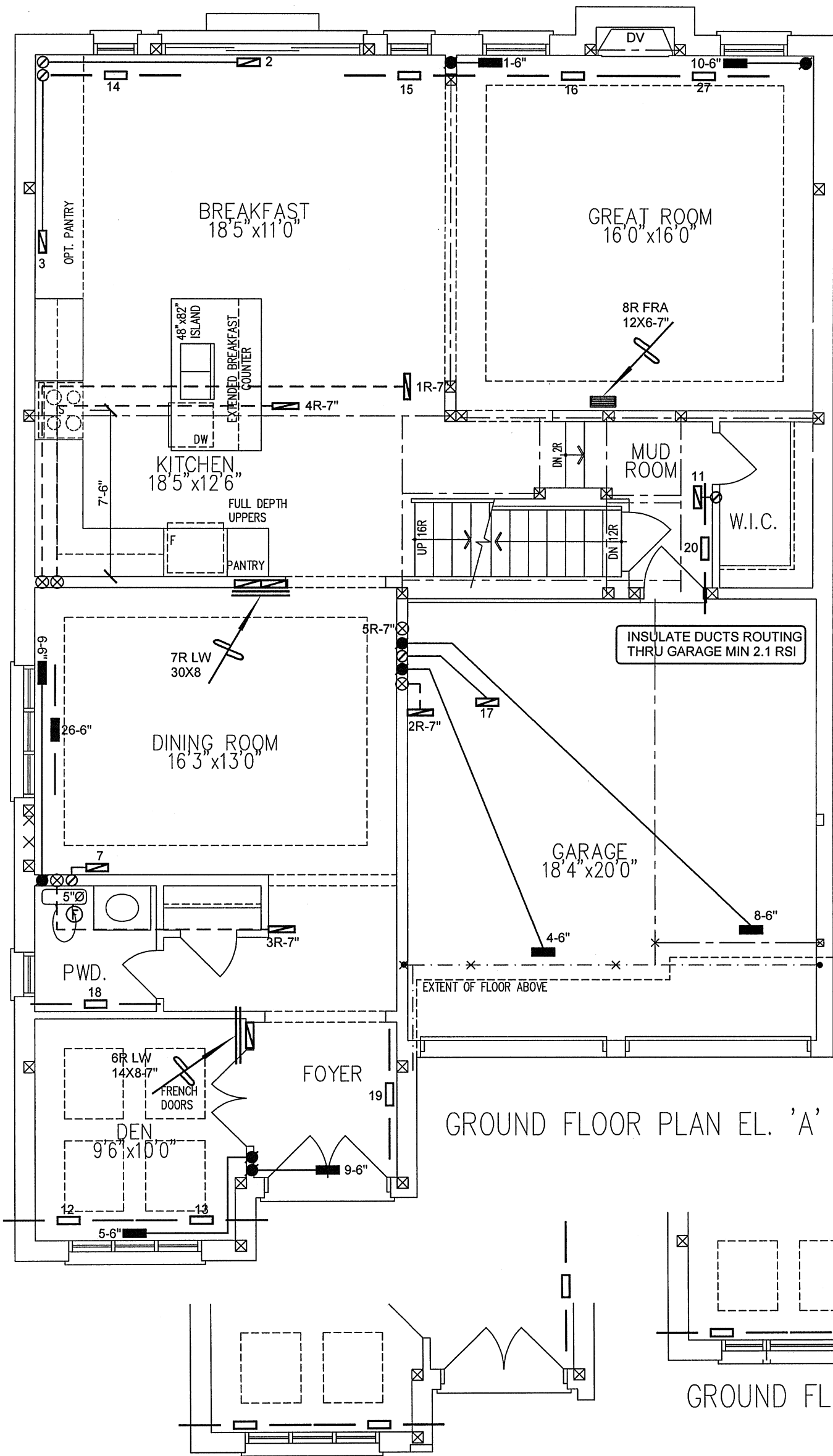
I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.

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

HVAC LEGEND								3.	REVISED AS PER CAD	JUNE/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	HEAT LOSS 49972 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				
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			INPUT	60 MBTU/H	1ST FLOOR				
OPT. GROUND 4504			OUTPUT	58 MBTU/H	BASEMENT			Date	
3223 sqft		COOLING	3.5 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			SEPT/2020		
		FAN SPEED	1370 cfm @ 0.6" w.c.				Scale		
								3/16" = 1'-0"	
								BCIN# 19669	
								LO#	87512



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.

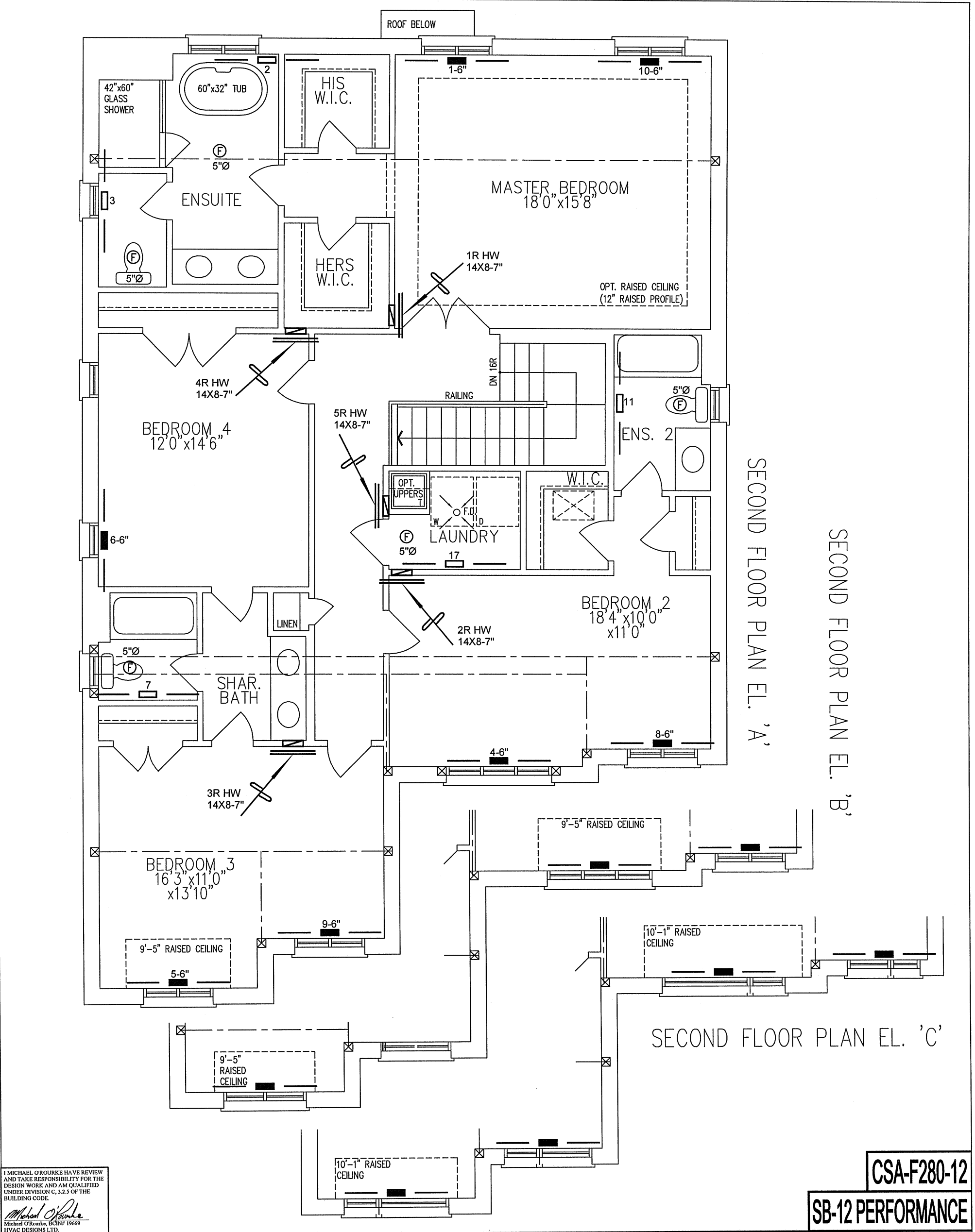
CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.	REVISED AS PER CAD	JUNE/2021
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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	
OPT. GROUND 4504			Scale 3/16" = 1'-0"	
3223 sqft			BCIN# 19669	
			LO#	87512



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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name		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.	Date	SEPT/2020
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
OPT. GROUND 4504			BCIN# 19669	
3223 sqft			LO#	87512