

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: 4504 OPT 5 BED 4 BATH 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.

SITE NAME: CENTREFIELD (WEST GORMLEY)

ROOM USE EXP. WALL CLG. HT.	MBR LOSS GAIN	ENS LOSS GAIN	WIC LOSS GAIN	BED-2 LOSS GAIN	BED-3 LOSS GAIN	BED-4 LOSS GAIN	ENS-4/5 LOSS GAIN	BED-5 LOSS GAIN	ENS-2 LOSS GAIN	ENS-3 LOSS GAIN	WIC-3 LOSS GAIN	DATE: Jun-21 LO# 91146	GFA: 3223	TYPE: 4604	OPT 5 BED 4 BATH	WINTER NATURAL AIR CHANGE RATE 0.219			HEAT LOSS AT °F. 78			CSA-F280-12		
																SUMMER NATURAL AIR CHANGE RATE 0.088			HEAT GAIN AT °F. 13			SB-12 PERFORMANCE		
GRS.WALL AREA	288	80	40	216	104	360	48	96	80	72	128													
GLAZING NORTH	0	0	0	0	0	0	0	0	0	0	0													
EAST	0	0	0	0	0	0	0	0	0	0	0													
SOUTH	0	0	0	0	0	0	0	0	0	0	0													
WEST	0	0	0	0	0	0	0	0	0	0	0													
SKYL.T.	0	0	0	0	0	0	0	0	0	0	0													
DOORS	0	0	0	0	0	0	0	0	0	0	0													
NET EXPOSED WALL	4.2	65	40	168	28	190	799	131	57	240	39													
NET EXPOSED BSMT WALL ABOVE GR	3.7	0	0	0	0	0	0	0	0	0	0													
NO ATTIC EXPOSED CLG	2.8	289	380	170	124	163	73	68	89	40	262													
EXPOSED FLOOR	2.6	0	0	0	0	0	0	0	0	0	0													
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0													
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0													
SUBTOTAL HT LOSS	2224	763	258	1770	2042	3034	434	964	551	701	1137													
LEVEL FACTOR / MULTIPLIER	0.20	0.18	0.20	0.18	0.20	0.18	0.20	0.18	0.20	0.18	0.20													
AIR CHANGE HEAT LOSS	402	138	47	309	370	549	79	174	100	127	206													
AIR CHANGE HEAT GAIN	79	21	0	0	241	0	0	0	0	83	134													
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0													
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	0													
HEAT GAIN PEOPLE	2	480	0	1	313	0	0	0	0	25	101													
HEAT GAIN APPLIANCES/LIGHTS	595	0	0	595	595	595	0	0	0	0	0													
TOTAL HT LOSS BTU/H	2626	901	304	2019	2653	3583	513	1138	651	910	1477													
TOTAL HT GAIN x 1.3 BTU/H	3892	666	92	2937	4479	5208	344	1870	276	351	1446													

ROOM USE EXP. WALL CLG. HT.	LIV LOSS GAIN	DIN LOSS GAIN	KIT/GT LOSS GAIN	DEN LOSS GAIN	LAUN LOSS GAIN	WIR LOSS GAIN	FOY LOSS GAIN	MUD LOSS GAIN	BAS LOSS GAIN	TOTAL COMBINED HEAT LOSS BTU/H: 50789	TOTAL COMBINED HEAT LOSS BTU/H: 50789
GRS.WALL AREA	250	250	630	230	0	60	230	242	996		
GLAZING NORTH	0	0	0	0	0	0	0	0	4		
EAST	0	0	0	0	0	0	0	0	87		
SOUTH	0	0	0	0	0	0	0	0	0		
WEST	0	0	0	0	0	0	0	0	8		
SKYL.T.	0	0	0	0	0	0	0	0	8		
DOORS	0	0	0	0	0	0	0	0	174		
NET EXPOSED WALL	4.2	210	511	2149	511	214	103	20	517		
NET EXPOSED BSMT WALL ABOVE GR	3.7	0	0	0	0	0	0	0	0		
NO ATTIC EXPOSED CLG	1.3	0	0	0	0	0	0	0	0		
EXPOSED FLOOR	2.8	0	0	0	0	0	0	0	0		
BASEMENT/CRAWL HEAT LOSS	2.6	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	1754	1544	4741	1372	239	411	1875	1451	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	448	1376	398	43	119	544	421	0.76		
AIR CHANGE HEAT GAIN	77	36	215	47	3	11	57	10	6359		
DUCT LOSS	0	0	0	0	28	0	0	0	0		
DUCT GAIN	0	0	0	0	68	0	0	0	0		
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS	595	595	595	595	595	595	0	0	0		
TOTAL HT LOSS BTU/H	2264	1992	6117	1770	310	530	2419	1872	14737		
TOTAL HT GAIN x 1.3 BTU/H	3224	1927	7595	2263	971	352	1808	324	2105		

TOTAL HEAT GAIN BTU/H: 42456

TONS: 3.54

LOSS DUE TO VENTILATION LOAD BTU/H: 2004

STRUCTURAL HEAT LOSS: 48785

TOTAL COMBINED HEAT LOSS BTU/H: 50789

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

OPT 5 BED 4 BATH

TYPE: 4504

DATE: Jun-21

GFA: 3223 LO# 91146

HEATING CFM 1370
TOTAL HEAT LOSS 48,785
AIR FLOW RATE CFM 28.08furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35**CARRIER
59TNA6-060-14V
FAN SPEED 60AFUE = 97 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 58,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	16	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	WIC	MBR	MBR	BED-3	BED-4	BED-5	ENS-4/5	WIC-3	BED-4	BED-2	LIV	LIV	LIV	KT/GT	KT/GT	KT/GT	LAUN	WIR	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	0.30	1.31	1.31	1.33	1.79	1.14	0.51	1.48	1.79	1.01	1.13	1.13	1.01	2.04	2.04	2.04	0.31	0.53	2.42	1.87	2.95	2.95	2.95	2.95
CFM PER RUN HEAT	9	37	37	37	50	32	14	41	50	28	32	32	28	57	57	57	9	15	68	53	83	83	83	83
RM GAIN MBH	0.09	1.95	1.95	2.24	2.60	1.87	0.34	1.45	2.60	1.47	1.61	1.61	1.47	2.53	2.53	2.53	0.97	0.35	1.81	0.32	0.42	0.42	0.42	0.42
CFM PER RUN COOLING	3	63	63	73	85	61	11	47	85	48	52	52	48	82	82	82	32	11	59	11	14	14	14	14
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	45	42	49	54	71	66	56	62	66	34	56	61	55	34	26	14	45	49	41	30	16	17	17	38
EQUIVALENT LENGTH	150	180	180	120	170	170	170	140	150	160	170	170	170	120	140	110	130	120	160	190	120	120	120	110
TOTAL EFFECTIVE LENGTH	195	222	229	174	241	236	226	202	216	194	226	231	225	154	166	124	175	169	209	231	120	136	137	148
ADJUSTED PRESSURE	0.09	0.08	0.08	0.1	0.07	0.07	0.08	0.09	0.08	0.09	0.08	0.07	0.08	0.11	0.1	0.13	0.1	0.1	0.08	0.07	0.14	0.12	0.12	0.11
ROUND DUCT SIZE	4	5	5	5	6	6	4	5	6	5	5	5	5	6	6	6	4	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	103	272	272	272	255	163	161	301	255	206	235	235	291	291	291	291	103	172	499	389	423	423	423	423
COOLING VELOCITY (ft/min)	34	463	463	536	433	311	126	345	433	352	382	382	418	418	418	418	367	126	433	81	71	71	71	71
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	D	D	D	C	A	B	B	C	A	E	A	A	A	E	D	D	C	B	A	C	E	E	C	B

ROOM #	25	26	27	28	29	30	31
ROOM NAME	BAS	DIN	DEN	ENS	BED-3	ENS-2	ENS-3
RM LOSS MBH	2.95	1.99	1.77	0.90	1.33	0.65	0.91
CFM PER RUN HEAT	83	56	50	25	37	18	26
RM GAIN MBH	0.42	1.93	2.26	0.67	2.24	0.28	0.35
CFM PER RUN COOLING	14	63	74	22	73	9	11
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	47	39	22	26	43	60	40
EQUIVALENT LENGTH	150	140	150	180	180	150	170
TOTAL EFFECTIVE LENGTH	197	179	172	206	223	210	210
ADJUSTED PRESSURE	0.08	0.1	0.1	0.08	0.08	0.08	0.08
ROUND DUCT SIZE	6	6	5	4	5	4	4
HEATING VELOCITY (ft/min)	423	286	367	287	272	207	298
COOLING VELOCITY (ft/min)	71	321	543	252	536	103	126
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	E	C	C	C	E

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	315	0.07	9.4	10	X	8	567	0	0	TRUNK O	0	0.05	0	8					
TRUNK B	515	0.07	11.3	14	X	8	662	0	0	TRUNK P	0	0.05	0	8					
TRUNK C	818	0.07	13.4	18	X	10	654	0	0	TRUNK Q	0	0.05	0	8					
TRUNK D	197	0.08	7.6	10	X	8	355	0	0	TRUNK R	0	0.05	0	8					
TRUNK E	552	0.08	11.2	16	X	8	621	0	0	TRUNK S	0	0.05	0	8					
TRUNK F	0	0.00	0	0	X	8	0	0	0	TRUNK T	0	0.05	0	8					
										TRUNK U	0	0.05	0	8					
										TRUNK V	0	0.05	0	8					
										TRUNK W	245	0.05	9.3	8					
										TRUNK X	1230	0.05	17	10					
										TRUNK Y	1025	0.05	22	671					
										TRUNK Z	490	0.05	18	8					
										DROP	1370	0.05	24	685					

TYPE: 4504
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 91146
OPT 5 BED 4 BATH

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>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Kitchen & Bathrooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Other Rooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Table 9.32.3.A.	TOTAL	<u>212.0</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>95.4</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>212</u>	cfm
Less Principal Ventil. Capacity	<u>95.4</u>	cfm
Required Supplemental Capacity	<u>116.6</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANEE 65H	Location: BSMT		
<u>95.4</u> cfm	☒ HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
95.4 CFM	X 78 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR	
Location	Model	cfm	HVI
ENS	BY INSTALLING CONTRACTOR	50	☒
ENS-4/5	BY INSTALLING CONTRACTOR	50	☒
ENS-3	BY INSTALLING CONTRACTOR	50	☒
W/R	BY INSTALLING CONTRACTOR	50	☒

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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	June-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																										
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																										
LO#: 91146	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																																																																										
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																																										
0.219	x	328.53	x																																																																							
		7 °C	x																																																																							
		1.2	=																																																																							
			191 W																																																																							
			=																																																																							
			652 Btu/h																																																																							
6.2.7 Sensible heat Gain due to Ventilation																																																																										
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																										
95 CFM	x	13 °F	x																																																																							
		1.08	x																																																																							
		0.25	=																																																																							
			330 Btu/h																																																																							
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																										
$HL_{airrr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{aglevel} + HL_{bglevel})\}$																																																																										
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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 5 BED 4 BATH	BUILDER: ROYAL PINE HOMES
SFQT: 3223	LO# 91146	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:	6
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%	-

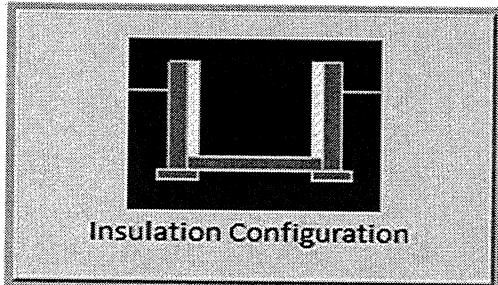
INDIVIDUAL BCIN: 19669

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# 91146

OPT 5 BED 4 BATH

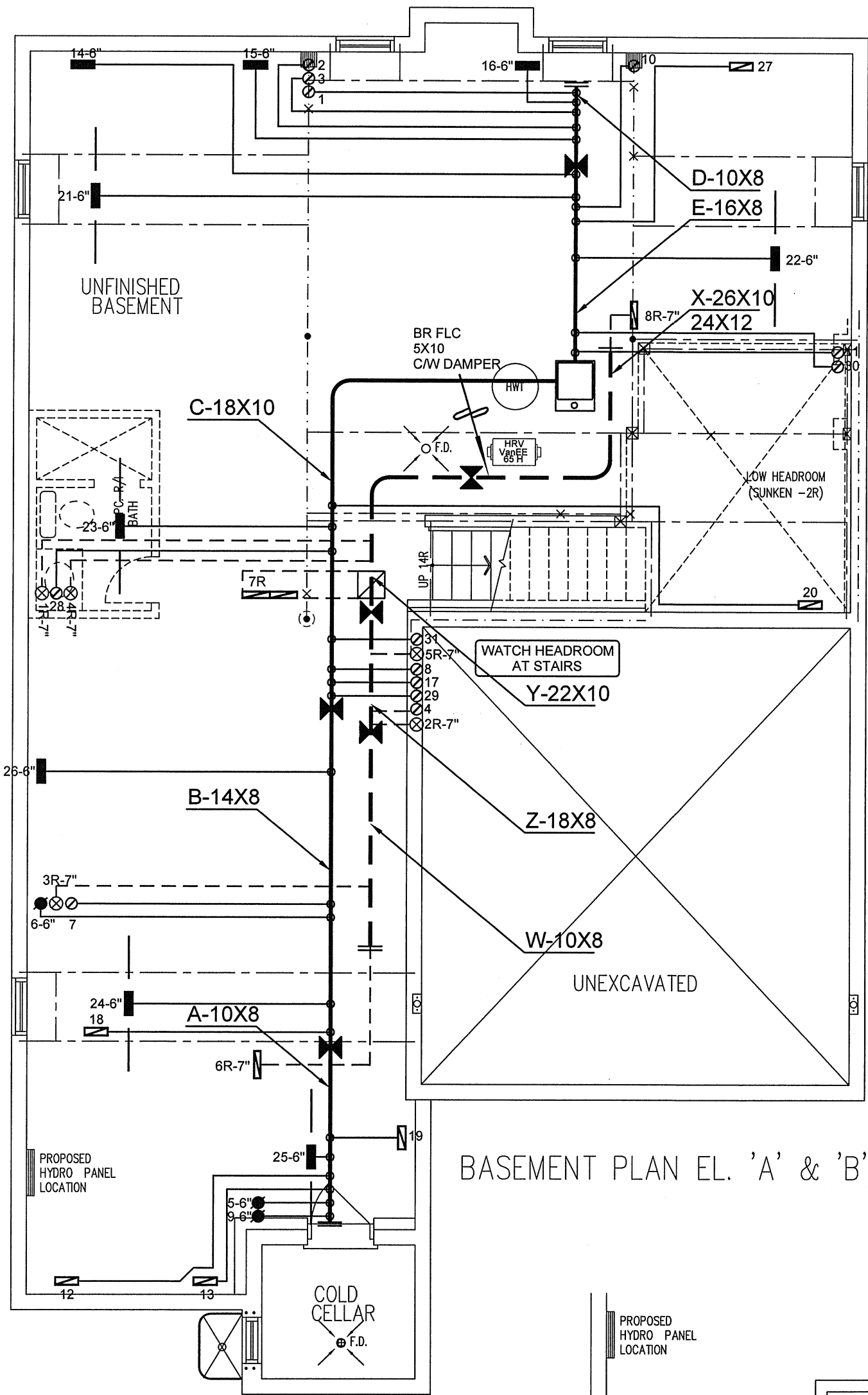
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

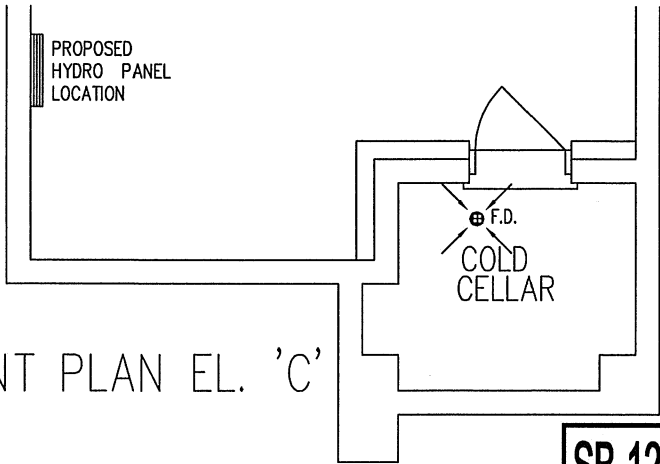
Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.40			
Building Configuration				
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. 2.50	1104.1 cm ² ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply 45.0	Total Exhaust 45.0		
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# 91146

OPT 5 BED 4 BATH



BASEMENT PLAN EL. 'A' & 'B'



BASEMENT PLAN EL. 'C'

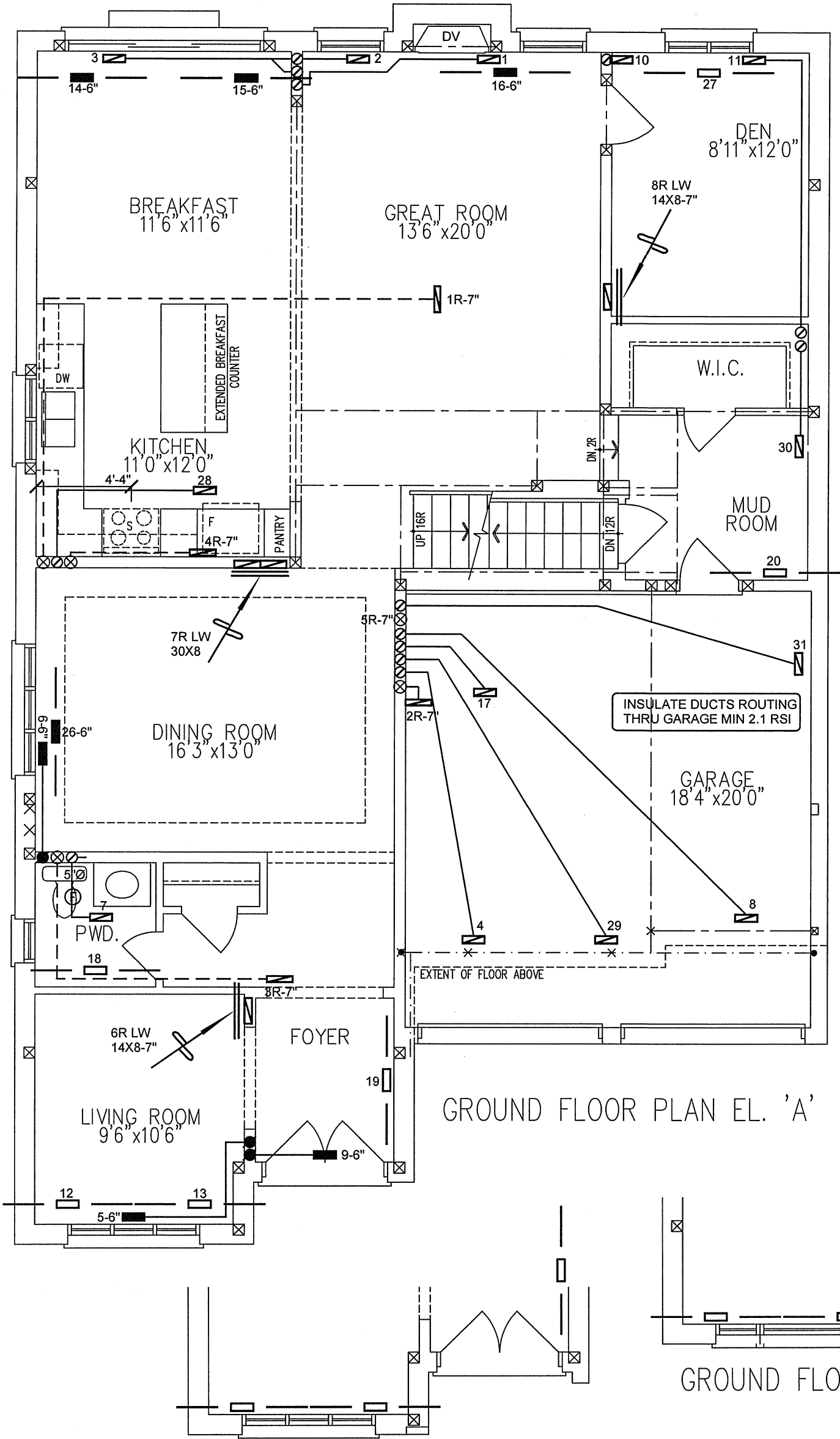
CSA-F280-12
SB-12 PERFORMANCE

I MICHAEL O'ROURKE HAVE REVIEWED 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.

HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No. Description Date

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Client ROYAL PINE HOMES	HVACDESIGNS LTD. 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 50789 BTU/H UNIT DATA	# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
		MAKE CARRIER	3RD FLOOR				
MODEL 59TN6A-060-14V	2ND FLOOR	16	5	5			
INPUT 60 MBTU/H	1ST FLOOR	10	3	2			
OUTPUT 58 MBTU/H	BASEMENT	5	1	0	Date	JUNE/2021	
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					Scale	3/16" = 1'-0"
FAN SPEED 1370 cfm @ 0.6" w.c.						BCIN# 19669	
					LO#	91146	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO							
OPT. 5 BED 4 BATH 4504 3223 sqft							



GROUND FLOOR PLAN EL. 'A'

GROUND FLOOR PLAN EL. 'C'

GROUND FLOOR PLAN EL. 'B'

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.

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

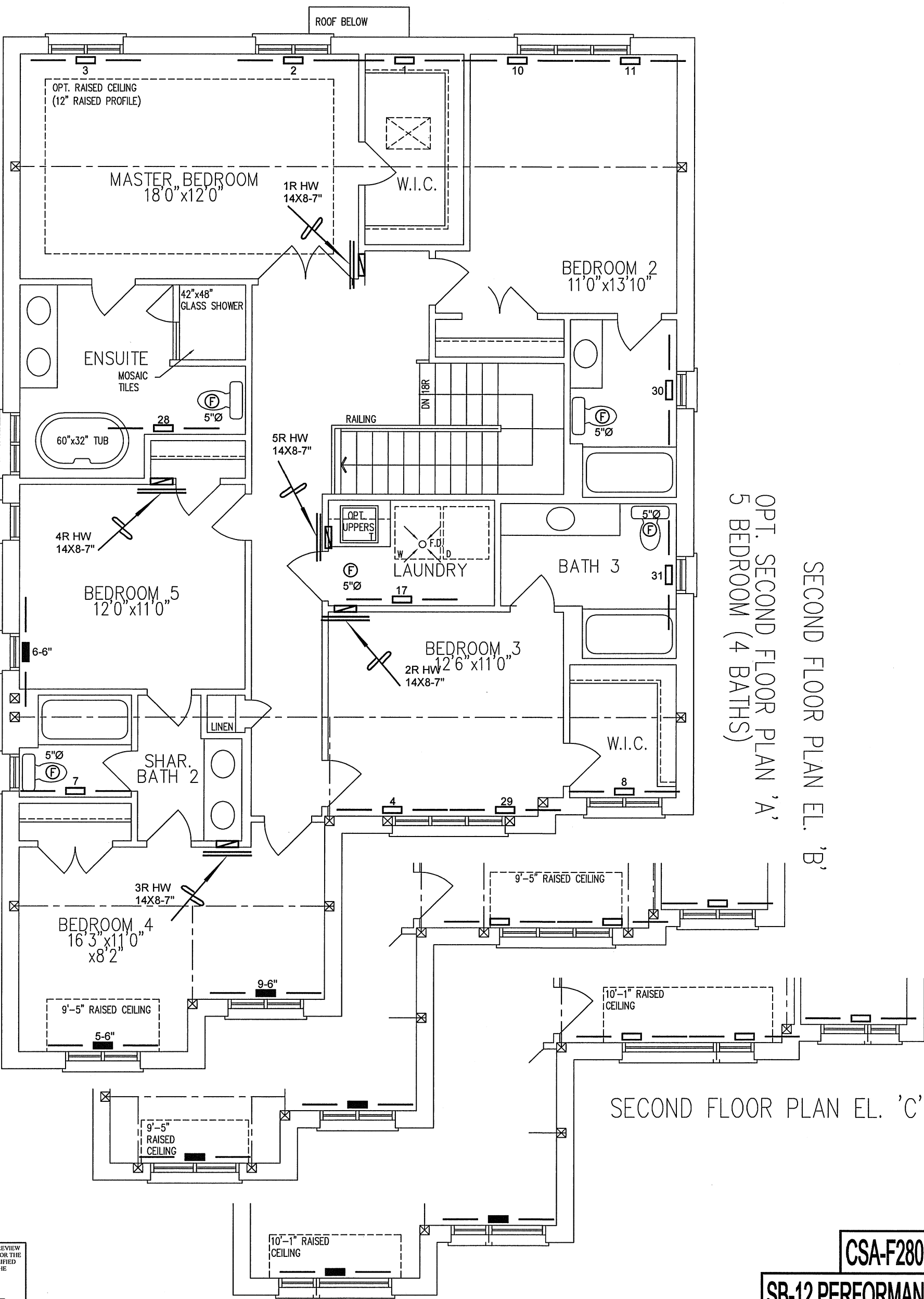
CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No. Description Date
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 JUNE/2021	
OPT. 5 BED 4 BATH 4504 3223 sqft		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.	Scale 3/16" = 1'-0"	
			BCIN# 19669	
		LO# 91146		



SECOND FLOOR PLAN EL. 'B'
OPT. SECOND FLOOR PLAN 'A'
5 BEDROOM (4 BATHS)

SECOND FLOOR PLAN EL. 'C'

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.	
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date JUNE/2021	
OPT. 5 BED 4 BATH 4504			Scale 3/16" = 1'-0"	
3223 sqft			BCIN# 19669	
		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.	LO#	91146