

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 IN LAW - 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) BUILDING: ROYAL PINE HOMES TYPE: 4504 OPT IN LAW - 5 BED 4 BATH DATE: Jun-21 Lof# 91147 GFA: 3223

HEAT LOSS AT °F. 78 HEAT GAIN AT °F. 13 WINTER NATURAL AIR CHANGE RATE 0.219 SUMMER NATURAL AIR CHANGE RATE 0.068 CSA-F280-12 SB-12 PERFORMANCE

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-4/5	BED-5	ENS-IL	ENS-3	WIC-3	ENS-2
GRS.WALL AREA	256		32	80	40	216	104	380	48	96	60	72	128	80
GLAZING														
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	0	0	0	0	0	0	0	0	0
SOUTH	21.8	24.9	0	15	327	373	47	1024	1953	64	1394	2659	0	0
WEST	21.8	41.6	36	784	1496	0	0	0	0	0	0	0	0	0
SKYL.T.	35.3	101.2	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
NET EXPOSED WALL	4.2	0.7	220	925	162	65	273	45	40	188	28	190	799	131
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	1.3	0.6	289	380	170	124	163	73	68	89	40	262	344	154
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	2.6	0.4	0	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	0
SUB TOTAL HT LOSS	2089		1818	763	268	1710	2042	3034	434	964	393	779	1137	551
SUB TOTAL HT GAIN														
LEVEL FACTOR / MULTIPLIER	0.20	0.18		0.20	0.18		0.20	0.18	0.20	0.18	0.30	0.29	0.20	0.18
AIR CHANGE HEAT LOSS	380		380	139	47	311	371	551	79	175	113	142	207	100
AIR CHANGE HEAT GAIN	92		25	0	0	0	112	165	13	29	8	92	134	10
DUCT LOSS	0		0	0	0	0	241	0	0	0	0	0	0	0
DUCT GAIN	0		0	0	0	0	309	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	2		480	0	0	1	240	240	0	1	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	540		540	0	0	540	540	540	540	540	506	1013	1478	652
TOTAL HT LOSS BTU/H	2469		902	671	304	2020	2655	3555	513	1139	506	1013	1478	652
TOTAL HT GAIN x 1.3 BTU/H	3809				92	2880	4425	5168	344	1804	224	373	1457	278

ROOM USE	EXP. WALL	CLG. HT.	LIV	DIN	KT/GT	INLAW	LAUN	WIR	FOY	MUD	BAS
GRS.WALL AREA	250		250	250	630	230	0	60	230	176	996
GLAZING											
NORTH	21.8	16.0	0	0	0	0	0	0	0	0	4
EAST	21.8	41.6	40	871	1682	0	0	0	0	0	87
SOUTH	21.8	24.9	0	0	0	0	0	0	0	0	0
WEST	21.8	41.6	0	0	0	0	0	0	0	0	8
SKYL.T.	35.3	101.2	0	0	0	0	0	0	0	0	8
DOORS	25.8	4.3	0	0	0	0	0	0	0	0	174
NET EXPOSED WALL	4.2	0.7	210	883	145	207	871	143	0	20	517
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	85
NO ATTIC EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	20
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0	0	498
BASEMENT/CRAWL HEAT LOSS	2.6	0.4	0	0	0	0	0	0	0	0	1834
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	302
SUB TOTAL HT LOSS	1754		1544	851	4741	1372	80	411	1840	1173	5591
SUB TOTAL HT GAIN											8378
LEVEL FACTOR / MULTIPLIER	0.30	0.29	0.30	0.29	0.30	0.29	0.20	0.30	0.30	0.30	0.50
AIR CHANGE HEAT LOSS	506		445	445	1368	386	43	118	531	338	6369
AIR CHANGE HEAT GAIN	92		43	43	256	56	4	13	64	10	50
DUCT LOSS	0		0	0	0	0	28	0	0	0	0
DUCT GAIN	0		0	0	0	0	62	0	0	0	0
HEAT GAIN PEOPLE	0		0	0	0	1	240	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	2261		540	540	540	540	540	540	540	540	540
TOTAL HT LOSS BTU/H	2261		1989	1864	6109	1767	310	529	2370	1611	14737
TOTAL HT GAIN x 1.3 BTU/H	3171				7576	2515	892	354	1710	284	2044

TOTAL HEAT GAIN BTU/H: 42432 TONS: 3.64 LOSS DUE TO VENTILATION LOAD BTU/H: 3134 STRUCTURAL HEAT LOSS: 48818 TOTAL COMBINED HEAT LOSS BTU/H: 51952

Michael O'Rourke

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

OPT IN LAW - 5 BED 4 BATH
TYPE: 4504

DATE: Jun-21

GFA: 3223 LO# 91147

HEATING CFM	1370	COOLING CFM	1370	0.05	furnace pressure
TOTAL HEAT LOSS	48,818	TOTAL HEAT GAIN	41,916	0.05	furnace filter
AIR FLOW RATE CFM	28.06	AIR FLOW RATE CFM	32.68	0.2	a/c coil pressure
					available pressure

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	16	11	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.

[illegible]

RUN #	25	26	27	28	29	30	31	32
ROOM NAME	BAS	DIN	INLAW	ENS	BED-3	ENS-IL	ENS-2	ENS-3
RM LOSS MBH.	2.95	1.99	1.77	0.90	1.33	0.51	0.65	1.01
CFM PER RUN HEAT	83	56	50	25	37	14	18	28
RM GAIN MBH.	0.41	1.86	2.52	0.67	2.21	0.22	0.28	0.37
CFM PER RUN COOLING	13	61	82	22	72	7	9	12
ADJUSTED PRESSURE	0.16	0.17	0.16	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	57	49	44	26	43	44	60	40
EQUIVALENT LENGTH	150	140	150	180	180	110	150	170
TOTAL EFFECTIVE LENGTH	207	189	194	206	223	154	210	210
ADJUSTED PRESSURE	0.08	0.09	0.08	0.08	0.08	0.11	0.08	0.08
ROUND DUCT SIZE	6	6	6	4	5	4	4	4
HEATING VELOCITY (ft/min)	423	286	255	287	272	161	207	321
COOLING VELOCITY (ft/min)	66	311	418	252	529	80	103	138
OUTLET GRILL SIZE	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	D	C	C	E	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 A	0.07	9.4	10	8	0	0.00	0	0	8
TRUNK B	0.07	11.3	14	8	TRUNK G	0.00	0	0	0
TRUNK C	0.07	13.4	20	8	TRUNK H	0.00	0	0	0
TRUNK D	0.08	7.5	10	8	TRUNK I	0.00	0	0	0
TRUNK E	0.07	11.7	16	8	TRUNK J	0.00	0	0	0
TRUNK F	0.07	14.0	20	8	TRUNK K	0.00	0	0	0
					TRUNK L	0.00	0	0	0
					TRUNK M	0.00	0	0	0
					TRUNK N	0.00	0	0	0
					TRUNK O	0.05	0	0	0
					TRUNK P	0.05	0	0	0
					TRUNK Q	0.05	0	0	0
					TRUNK R	0.05	0	0	0
					TRUNK S	0.05	0	0	0
					TRUNK T	0.05	0	0	0
					TRUNK U	0.05	0	0	0
					TRUNK V	0.05	0	0	0
					TRUNK W	0.05	0	0	0
					TRUNK X	0.05	0	0	0
					TRUNK Y	0.05	0	0	0
					TRUNK Z	0.05	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8		BR		TRUNK V	0	0.05	0	X	X	8	0
AIR VOLUME	115	115	115	115	130	130	305	140	0	0	0	TRUNK W	245	0.05	9.3	10	X	8	441
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0	0	0	TRUNK X	1370	0.05	17.7	30	X	10	658
ACTUAL DUCT LGH.	85	55	88	78	50	57	37	15	1	0.15	0.15	TRUNK Y	1025	0.05	15.9	22	X	10	671
EQUIVALENT LENGTH	195	245	215	235	205	190	245	145	0	1	1	TRUNK Z	490	0.05	12.1	18	X	8	490
TOTAL EFFECTIVE LH	280	300	303	313	255	247	282	160	1	1	1	DROP	1370	0.05	17.7	24	X	12	685
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.06	0.06	0.05	0.09	14.80	14.80	14.80								
ROUND DUCT SIZE	7	7	7	7	7	7	10.1	6.5	0	0	0								
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0								
	X	X	X	X	X	X	X	X	X	X	X								
INLET GRILL SIZE	14	14	14	14	14	14	30	14	0	0	0								

RESIDENTIAL MECHANICAL VENTILATION RECORD

For Certification of Design and Performance of Residential Ventilation Systems

W2

A	HEATING SYSTEM/ COMBUSTION APPLIANCES	☒ Forced Air	☐ Non Forced air	Roll #:	Permit #:	LOCATION H
		☐ Electric	☐ Gas ☐ Oil ☐ Other	Lot & Plan:	Civic address:	
B	EXHAUST EQUIPMENT	☐ No Combustion Appliances	No Depressurization limit	Name: ROYAL PINE HOMES	House ID#:	DESIGNER J
		☒ Solid Fuel (including Fireplaces)	5 pa Depress limit	Address:	City:	
C	TOTAL VENTILATION CAPACITY (TVC)	☒ Direct Vent (sealed combustion)	No Dep Limit	Phone:	Fax:	INSTALLATION CHECKLIST K
		☐ Positive Venting Induced Draft	☐ Pascals limit	Email Address:	Name: HVAC DESIGNS LTD.	
D	EXHAUST CAPACITY	☐ Natural Draft or B-Vent Atmospheric	5 pa depress limit	Address: 375 FINLEY AVENUE, UNIT 202	City: AJAX	DESIGNER J
		Lowest Depressurization Limit Pa.		Phone: (905) - 619 - 2300	Fax: (905) - 619 - 2375	
E	EXHAUST CAPACITY	☒ Clothes Dryer(s)	(150 cfm default)	Email Address: info@hvacdsgns.ca	Other #	DESIGNER J
		☐ Downdraft Cook Top	(220 cfm default)	I certify this ventilation system design to be in accordance with:		
F	TVC SYSTEM	☐ Other (exhaust)	(over 150 cfm)	☒ CSA F326 M-91	☐ R-2000	MEASURED TVC SYSTEMS L
		Depressurization test/Calc. Required? ☐ Yes ☐ No		Signature:	Date: 6/10/2021	
G	ADDITIONAL (exhaust) EQUIPMENT	Bsmt & Master Bedroom	2 @ 20 cfm 40 cfm	Controls Functioning ☐		INSTALLER M
		Other Bedrooms	5 @ 10 cfm 50 cfm	Filters Clean ☐		
H	EXHAUST CAPACITY	Bathrooms & Kitchens	6 @ 10 cfm 60 cfm	Fans operating and clean ☐		INSTALLER M
		Other Hab. Rooms	5 @ 10 cfm 50 cfm	Flow measuring stations ☐		
I	EXHAUST CAPACITY	Total Ventilation Capacity (TVC)	200 cfm	Dampers Accessible ☐		INSTALLER M
				Insulated ducts sealed ☐		
J	EXHAUST CAPACITY			Drain loop and connection ☐		INSTALLER M
				Label supply/exhaust hood ☐		
K	EXHAUST CAPACITY			Distribution to all habitable rooms (non forced air) ☐		INSTALLER M
				Forced air system ☐ Continuous mode ☐ Interlocked ☐		
L	EXHAUST CAPACITY			Kitchen intake grease filter ☐ Kitchen exh. 40" to range ☐		INSTALLER M
				Exhaust 4" above grade ☐ Supply 18" above grade ☐		
M	EXHAUST CAPACITY			Supply intake 6' from exhaust (recommended) ☐		INSTALLER M
				Supply intake 3' from other exhaust ☐		
N	EXHAUST CAPACITY			TVC system SUPPLY airflow measured		INSTALLER M
				cfm High cfm Low		
O	EXHAUST CAPACITY			TVC system EXHAUST airflow measured		INSTALLER M
				cfm High cfm Low		
P	EXHAUST CAPACITY			Name:		INSTALLER M
				HRAI #:		
Q	EXHAUST CAPACITY			Address:		INSTALLER M
				City:		
R	EXHAUST CAPACITY			Phone:		INSTALLER M
				Fax:		
S	EXHAUST CAPACITY			Email Address:		INSTALLER M
				I certify this ventilation system install to be in accordance with:		
T	EXHAUST CAPACITY			CSA F326 M-91		INSTALLER M
				R-2000		
U	EXHAUST CAPACITY			Signature:		INSTALLER M
				Date:		

Prepared By:	HVAC DESIGNS LTD.	HRAI #:	001820	Job Name:	
Signature:		Date:	6/10/2021	Job #:	91147
				Official Use:	



CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																																	
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6.2.6 Sensible Gain due to Air Leakage																																																																																	
$HG_{satb} = LR_{atrc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.068 x 328.53 x 7 °C x 1.2 = 191 W = 652 Btu/h																																																																																	
6.2.7 Sensible heat Gain due to Ventilation																																																																																	
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 149 CFM x 78 °F x 1.08 x 0.25 = 516 Btu/h																																																																																	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																																	
$HL_{airrr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{level})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="5">12,718</td> <td>8,378</td> <td>0.759</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>13,227</td> <td>0.288</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>14,000</td> <td>0.182</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </table> *HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0										Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	12,718	8,378	0.759	2	0.3	13,227	0.288	3	0.2	14,000	0.182	4	0	0	0.000	5	0	0	0.000																																														
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																																													
1	0.5	12,718	8,378	0.759																																																																													
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5	0		0	0.000																																																																													

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4504	OPT IN LAW - 5 BED 4 BATH	BUILDER: ROYAL PINE HOMES
SFQT: 3223	LO# 91147	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:	7
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	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%	-

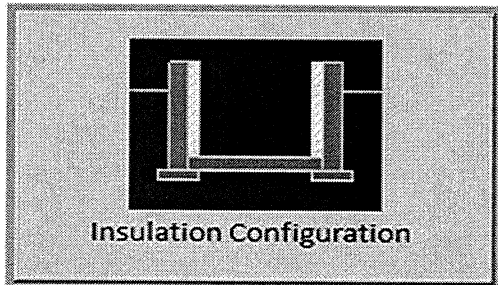
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

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# 91147

OPT IN LAW - 5 BED 4 BATH

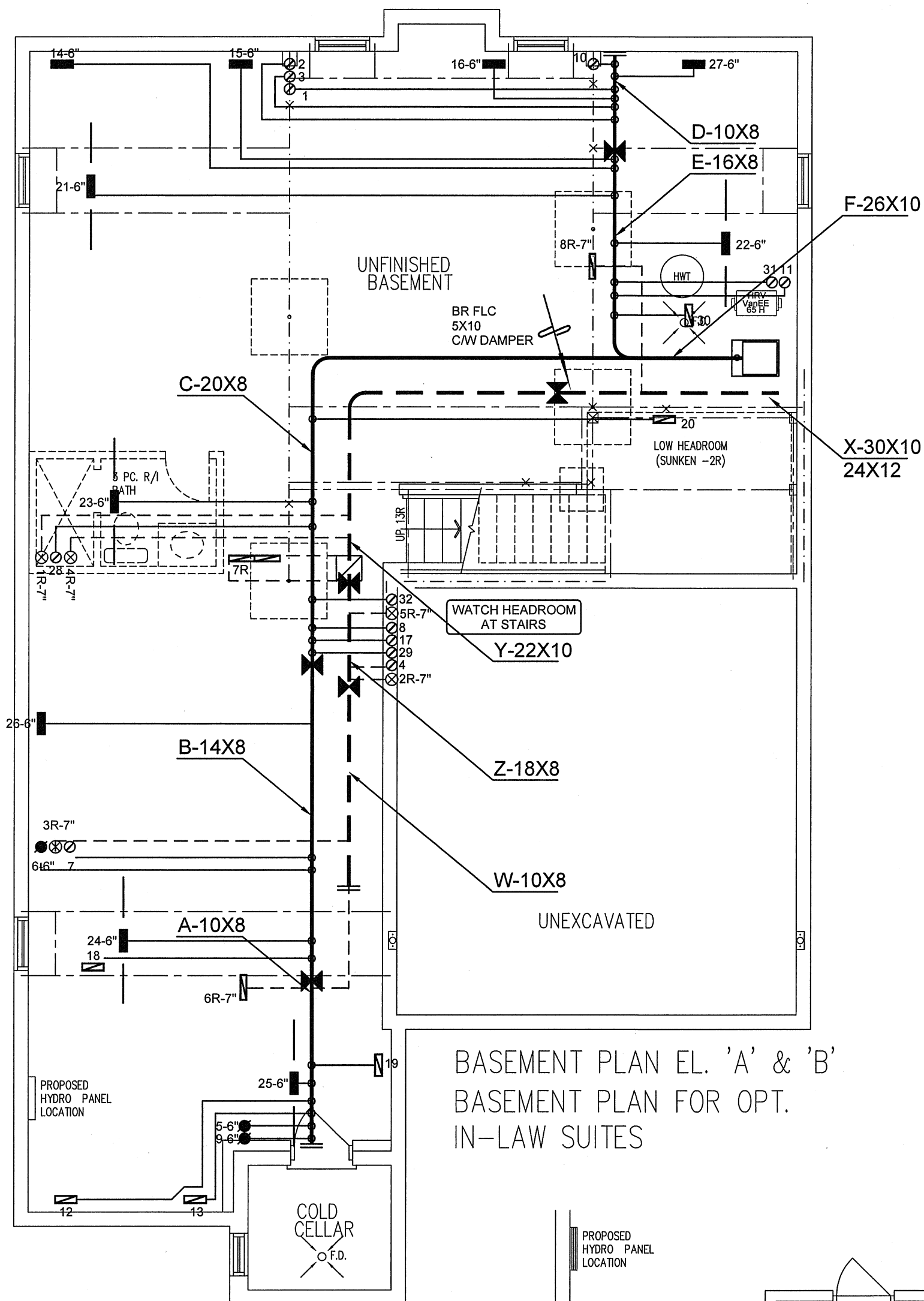
Air Infiltration Residential Load Calculator

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.	1104.1 cm ²		
	2.50	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	70.4	70.4		
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# 91147

OPT IN LAW - 5 BED 4 BATH



BASEMENT PLAN EL. 'A' & 'B'
BASEMENT PLAN FOR OPT.
IN-LAW SUITES

CSA-F280-12

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	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		

Client

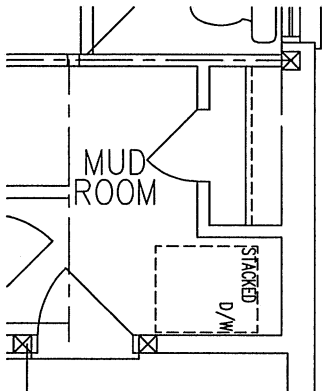
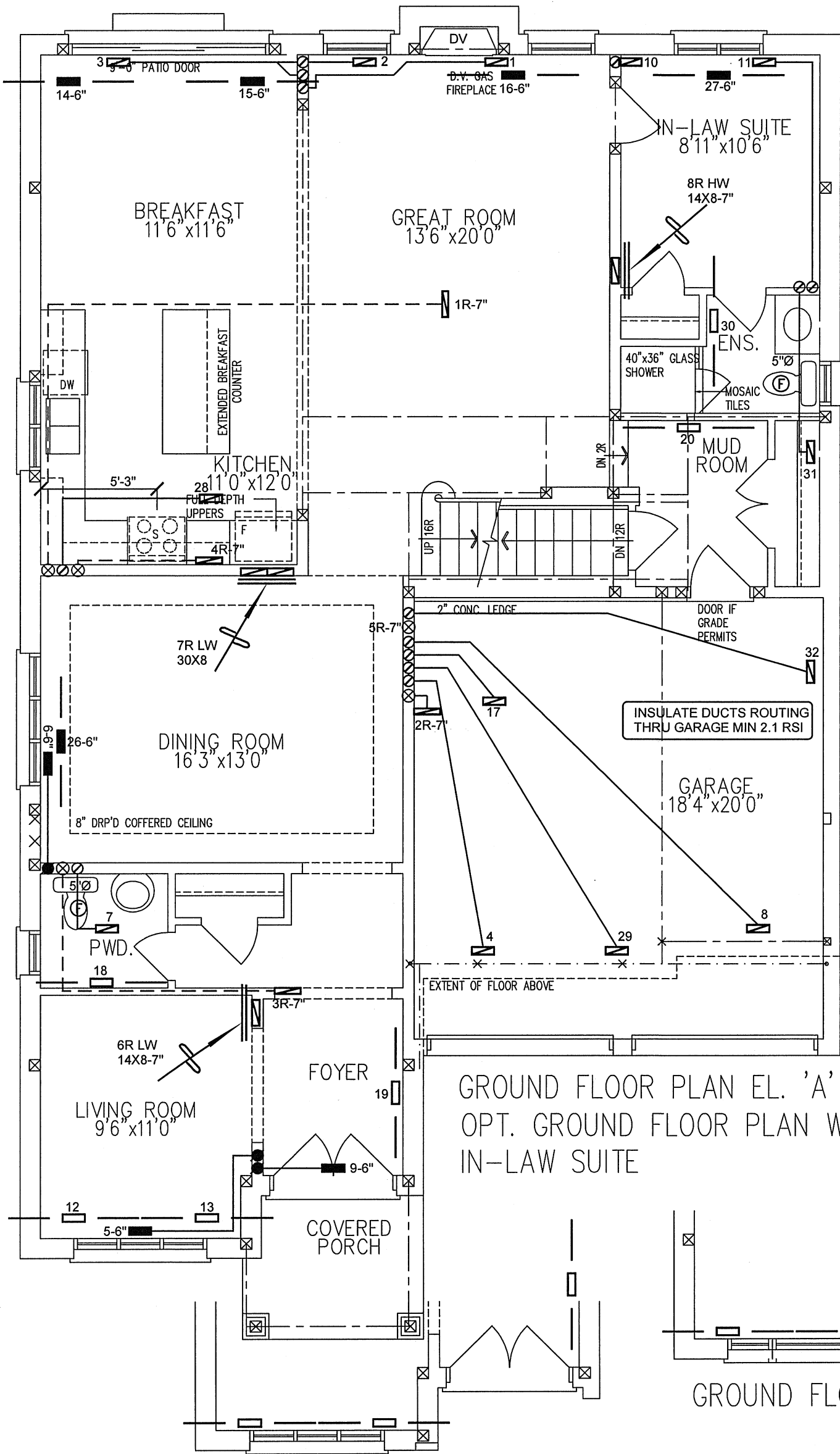
ROYAL PINE HOMES

Project Name

CENTREFIELD (WEST GORMLEY)
RICHMOND HILL, ONTARIO

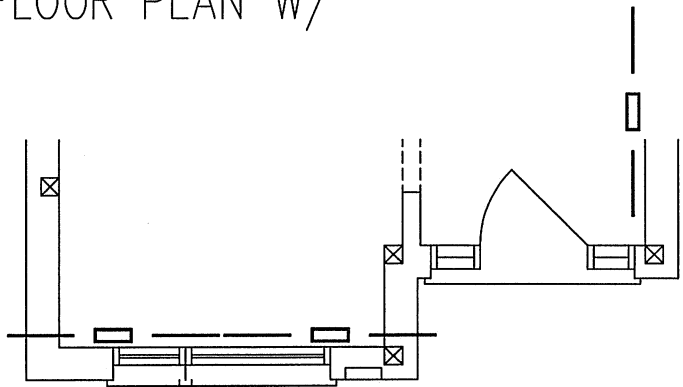
OPT IN LAW - 5 BED 4 BATH
4504 3223 sqft

HEAT LOSS 51952 BTU/H		# OF RUNS	S/A	R/A	FANS	Sheet Title	
UNIT DATA		3RD FLOOR				BASEMENT HEATING LAYOUT	
MAKE	CARRIER	2ND FLOOR	16	5	5		
MODEL	59TN6A-060-14V	1ST FLOOR	11	3	3		
INPUT	60 MBTU/H	BASEMENT	5	1	0	Date	JUNE/2021
OUTPUT	58 MBTU/H	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5'Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				Scale	3/16" = 1'-0"
COOLING	3.5 TONS					BCIN# 19669	
FAN SPEED	1370 cfm @ 0.6" w.c.					LO#	91147



OPT. IN-LAW SUITE
W/ OPT. LAUNDRY

GROUND FLOOR PLAN EL. 'A'
OPT. GROUND FLOOR PLAN W/
IN-LAW SUITE



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, 3.2.5 OF THE BUILDING CODE.

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

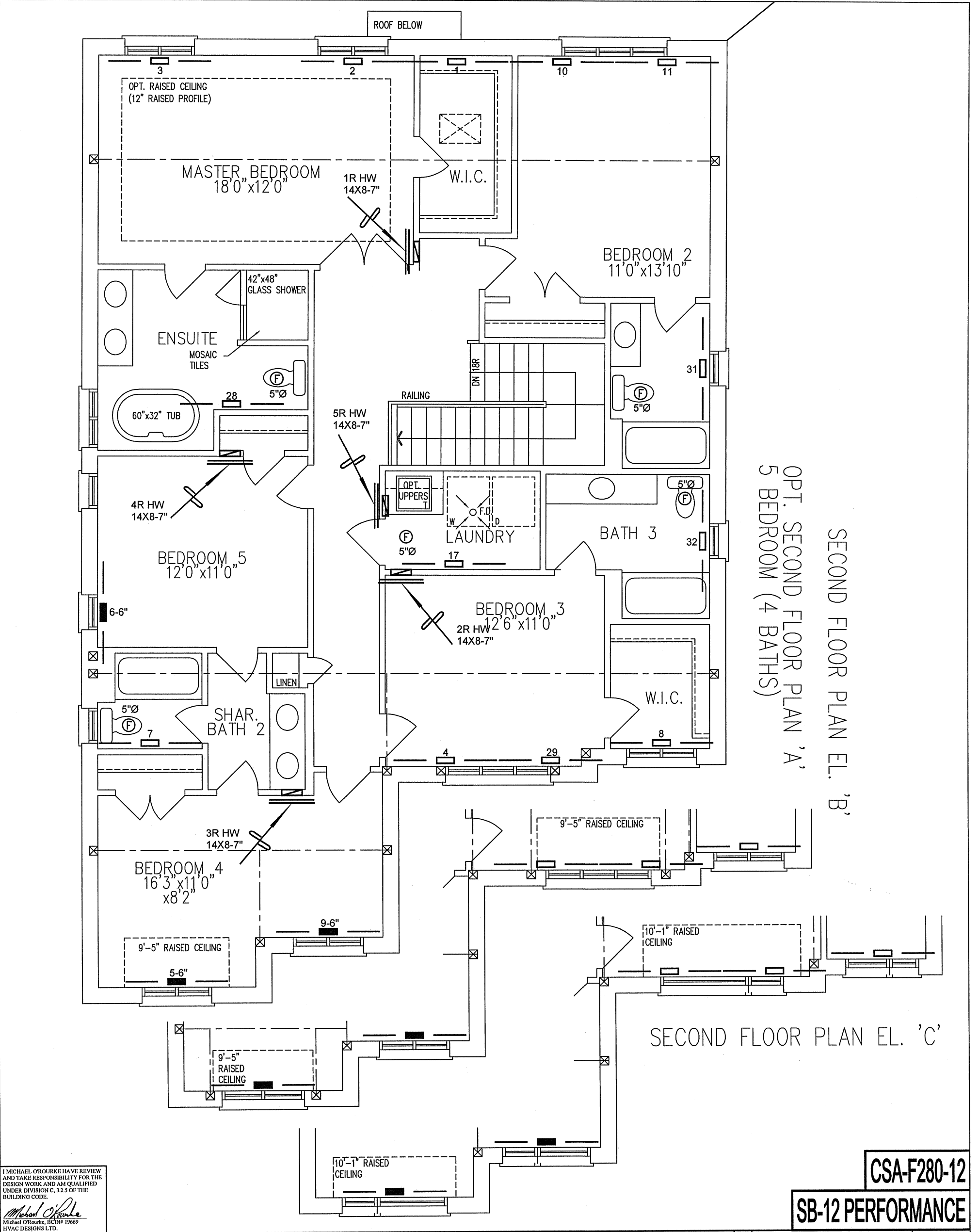
CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
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	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	Scale 3/16" = 1'-0"
OPT IN LAW - 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.	BCIN# 19669	
			LO# 91147	



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

CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.		
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Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Date JUNE/2021	
OPT IN LAW - 5 BED 4 BATH 4504 3223 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 91147	