

SITE NAME: RUSSELL GARDENS PH 4				OPT 5 BED WOB				DATE: Jul-21				WINTER NATURAL AIR CHANGE RATE 0.356				HEAT LOSS AT °F. 71				CSA-F280-12																															
BUILDER: GREENPARK HOMES				TYPE: MOUNTAINASH 6				GFA: 3401				LO# 91600				SUMMER NATURAL AIR CHANGE RATE 0.127				HEAT GAIN AT °F. 13				SB-12 PACKAGE A1																											
ROOM USE				MBR				ENS				WIC				BED-2				BED-3				BED-4				S-ENS				BED-5				WIC-3				ENS-3											
EXP. WALL				33				29				8				34				33				26				0				11				8				6											
CLG. HT.				9				9				9				9				9				9				9				9				9				9											
FACTORS																																																			
GRS.WALL AREA				LOSS				GAIN				297				261				72				306				297				234				0				99				72				54			
GLAZING				LOSS				GAIN				LOSS				GAIN				LOSS				GAIN				LOSS				GAIN				LOSS				GAIN				LOSS				GAIN			
NORTH				19.8	15.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0													
EAST				19.8	41.0	0	0	0	0	0	0	0	0	0	0	45	890	1845	54	1265	2626	0	0	0	0	0	0	0	0	0	0	0	0	0	32	633	1312	0	0	0											
SOUTH				19.8	24.8	0	0	0	0	7	138	172	0	0	0	0	0	0	0	0	0	11	217	271	0	0	0	11	217	271	0	0	0	0	0	0	7	138	172	0	0	0									
WEST				19.8	41.0	32	633	1312	14	277	574	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
SKYL.T.				34.6	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
DOORS				23.5	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
NET EXPOSED WALL				4.1	0.8	265	1099	199	240	995	180	72	298	54	261	1082	195	219	908	165	223	924	168	0	0	0	88	365	66	40	166	30	47	195	35	0	0	0	0	0	0										
NET EXPOSED BSMT WALL ABOVE GR				3.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
EXPOSED CLG				1.2	0.6	285	340	167	204	243	120	130	155	76	272	324	160	198	236	116	180	215	106	123	147	72	209	249	123	48	55	27	102	122	60	0	0	0	0	0	0										
NO ATTIC EXPOSED CLG				2.6	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
EXPOSED FLOOR				2.4	0.4	0	0	0	0	0	0	0	0	0	286	678	123	30	71	13	0	0	0	123	291	53	0	0	0	56	133	24	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			0			0										
SLAB ON GRADE HEAT LOSS						0			0			0			0			0		0			0			0			0			0			0			0			0										
SUBTOTAL HT LOSS						2071			1653			453			2973			2834			1357			438			831			1011			455																		
SUB TOTAL HT GAIN							1679		1047			131			2324			3177			644			125			459			1405			267																		
LEVEL FACTOR / MULTIPLIER				0.20	0.27			0.20	0.27			0.20	0.27		0.20	0.27		0.20	0.27		0.20	0.27		0.20	0.27		0.20	0.27		0.20	0.27		0.20	0.27																	
AIR CHANGE HEAT LOSS						561			448			123			805			768			367			119			225			274			123																		
AIR CHANGE HEAT GAIN							114		71			9			157			215			37			8			31			95			18																		
DUCT LOSS						0			0			0			378			360			0			56			0			129			0																		
DUCT GAIN						0			0			0			309			400			0			50			0			187			0																		
HEAT GAIN PEOPLE				240		2		480	0		0	0	1	240	1	240	1	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
HEAT GAIN APPLIANCES/LIGHTS							365		365			365			365			365			365			365			365			365			365			365			365												
TOTAL HT LOSS BTU/H						2632			2101			576			4157			3951			1724			612			1057			1414			578																		
TOTAL HT GAIN x 1.3 BTU/H							3429		1827			655			4414			5716			1542			713			1112			2669			846																		

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	L/D	FAM	K/B	L/H	LND	F-WIC	FOY	MUD	WOB	BAS
LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	19.8	15.8	0	0	0	0	0	0	0	0	0	0	0
GLAZING	19.8	41.0	0	0	0	0	0	0	0	0	0	0	0
NORTH	19.8	41.0	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	19.8	24.8	36	712	985	0	0	0	0	0	0	0	0
WEST	19.8	41.0	0	0	0	46	909	1886	33	652	1353	0	0
SKYL.T.	34.6	101.5	0	0	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	464	1924	349	304	1260	228	363	1505	273	82	340
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	29	35	17	0	0
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0			0			0	
SLAB ON GRADE HEAT LOSS			0			0			0			0	
SUBTOTAL HT LOSS			2635			2170			3135			696	
SUB TOTAL HT GAIN				1234		2115			2248			346	
LEVEL FACTOR / MULTIPLIER	0.30	0.46			0.30	0.46			0.30	0.46		0.20	0.27
AIR CHANGE HEAT LOSS			1220			1004			1451			322	
AIR CHANGE HEAT GAIN				84		143			152			23	
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					365			365	365			365	
TOTAL HT LOSS BTU/H			3855			3174			4687			1018	
TOTAL HT GAIN x 1.3 BTU/H				2188		3410			3695			955	

TOTAL HEAT GAIN BTU/H:

43085

TONS: 3.59

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 58834

TOTAL COMBINED HEAT LOSS BTU/H: 58349



TYPE: MOUNTAINASH 6
SITE NAME: RUSSELL GARDENS PH 4

LO # 91600
OPT 5 BED WOB

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	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	6 @ 10.6 cfm	63.6 cfm
Other Rooms	9 @ 10.6 cfm	95.4 cfm
Table 9.32.3.A.	TOTAL	233.2 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	233.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	153.7	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
79.5 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	X 71 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
S-ENS	FV-05-11VK1	50	☒	0.3
ENS-3	FV-05-11VK1	50	☒	0.3
F-WIC	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE V150H	
150 cfm high	35 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER: GREENPARK 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:	July-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations
Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 91600

Model: MOUNTAINASH 6

Builder: GREENPARK HOMES

Date: 7/8/2021

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1486	8	11888
First	1486	10	14860
Second	1915	9	17235
Third	0	9	0
Fourth	0	9	0
Total:			43,983.0 ft ³
Total:			1245.5 m ³

WINTER NATURAL AIR CHANGE RATE	0.356
SUMMER NATURAL AIR CHANGE RATE	0.127

Design Temperature Difference				
	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-17	39	71
Summer DTDc	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage
6.2.6 Sensible Gain due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

0.356 x 345.96 x 39 °C x 1.2 = 5795 W

= 19772 Btu/h

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

= 0.127 x 345.96 x 7 °C x 1.2 = 376 W

= 1283 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

80 CFM x 71 °F x 1.08 x 0.25 = 1515 Btu/h

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

80 CFM x 13 °F x 1.08 x 0.25 = 275 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 _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{level})
1	0.5	19,772	8,727	1.133
2	0.3		12,815	0.463
3	0.2		14,598	0.271
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: MOUNTAINASH 6	OPT 5 BED WOB	BUILDER: GREENPARK HOMES
SFQT: 3401	LO# 91600	SITE: RUSSELL GARDENS PH 4

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	1	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:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	43983.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 55.0 ft	WIDTH: 36.0 ft	EXPOSED PERIMETER:	182.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	0.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
A1****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	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	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

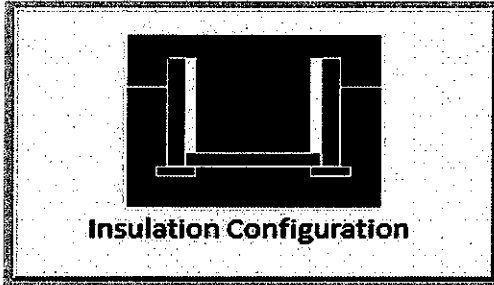
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

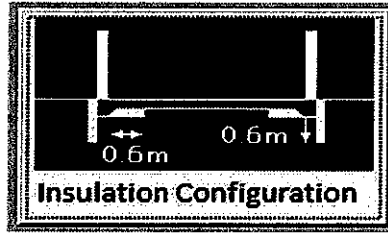
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	3.0	 Insulation Configuration
Floor Width (m):	11.0	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	0.76	
Window Area (m ²):	0.8	
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):		989

TYPE: MOUNTAINASH 6
LO# 91600

OPT 5 BED WOB

Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	0.0	 Insulation Configuration
Width (m):	0.0	
Exposed Perimeter (m):	0.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		0

TYPE: MOUNTAINASH 6
LO# 91600

OPT 5 BED WOB

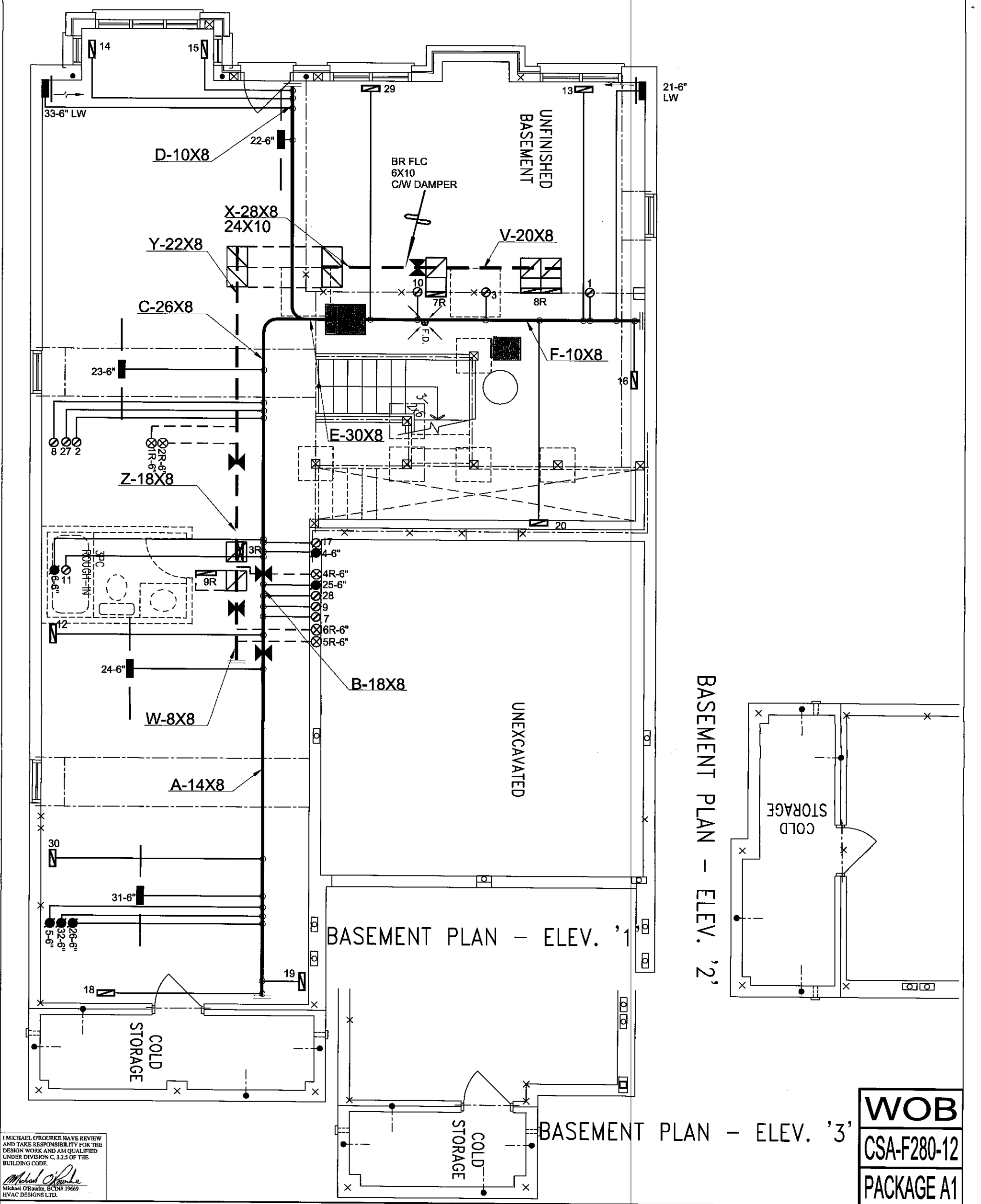
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Hamilton			
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):	8.23			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1245.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1660.2 cm ²		
	3.57	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):	0.356			
Cooling Air Leakage Rate (ACH/H):	0.127			

TYPE: MOUNTAINASH 6
LO# 91600

OPT 5 BED WOB



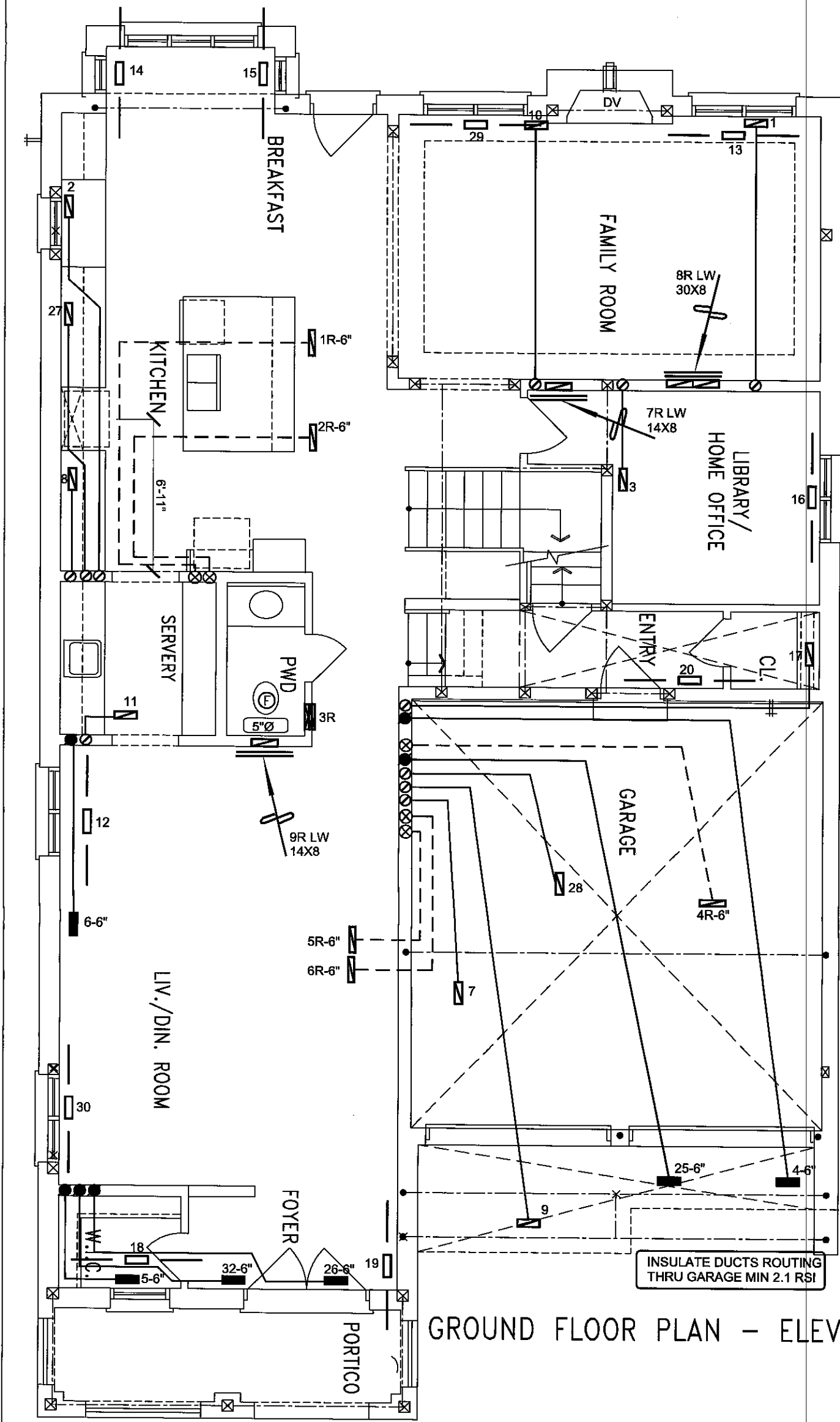
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.5 OF THE BUILDING CODE.

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

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

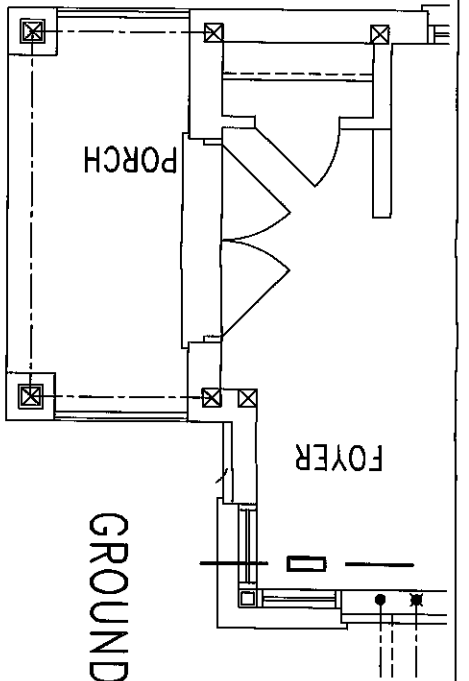
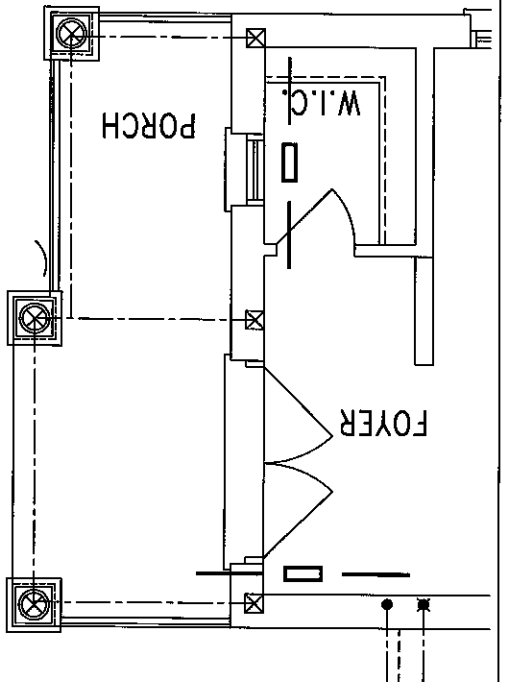
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Client GREENPARK HOMES		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation 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 58349 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT	
Project Name RUSSELL GARDENS PH 4 HAMILTON, ONTARIO			MAKE GOODMAN		3RD FLOOR				Date JULY/2021	
OPT 5 BED WOB MOUNTAINASH 6 3401 sqft			MODEL GMEC960804CNA		2ND FLOOR 17 6 4				Scale 3/16" = 1'-0"	
			INPUT 80 MBTU/H		1ST FLOOR 10 3 2				BCIN# 19669	
			OUTPUT 76.8 MBTU/H		BASEMENT 6 1 0				LO# 91600	
		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						
		FAN SPEED 1504 cfm @ 0.6" w.c.								



GROUND FLOOR PLAN - ELEV. '1'

GROUND FLOOR PLAN - ELEV. '2'



GROUND FLOOR PLAN - ELEV. '3'

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.

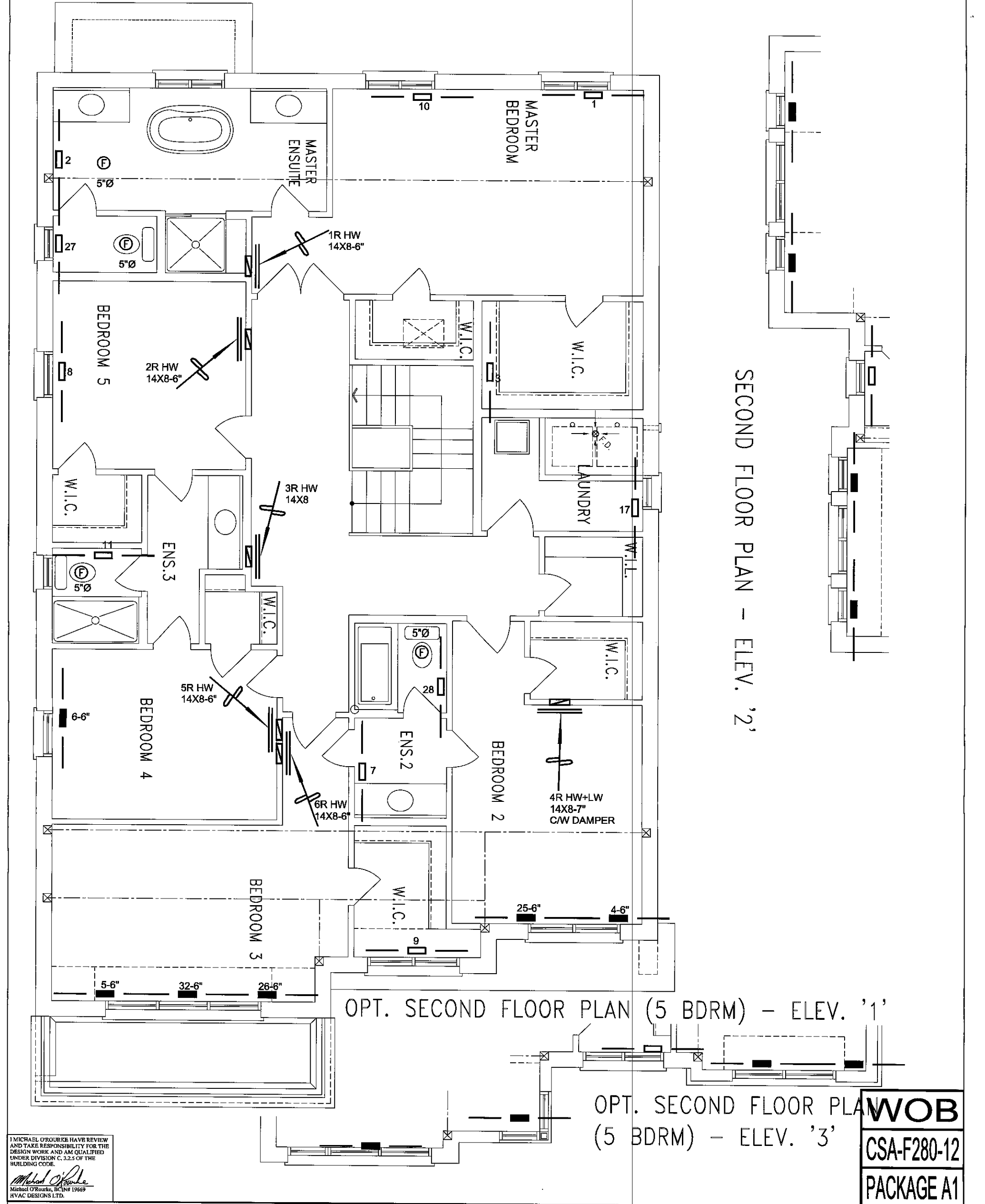
WOB
CSA-F280-12
PACKAGE A1

HVAC LEGEND							
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
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	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 GREENPARK 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 RUSSELL GARDENS PH 4 HAMILTON, ONTARIO			Date JULY/2021	
OPT 5 BED WOB MOUNTAINASH 6 3401 sqft		Scale 3/16" = 1'-0"		
		BCIN# 19669		
		LO#	91600	



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CSA-F280-12
PACKAGE A1

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	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		
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.										
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	
Project Name									SECOND FLOOR HEATING LAYOUT	
GREENPARK HOMES RUSSELL GARDENS PH 4 HAMILTON, ONTARIO OPT 5 BED WOB MOUNTAINASH 6 3401 sqft									Date JULY/2021	
									Scale 3/16" = 1'-0"	
									BCIN# 19669	
		LO# 91600								