

SITE NAME: RUSSELL GARDENS PH 4				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# 91699				SUMMER NATURAL AIR CHANGE RATE 0.127				HEAT GAIN AT °F. 13				SB-12 PACKAGE A1																											
ROOM USE				MBR				ENS				BED-2				BED-3				BED-4				S-ENS				FLEX				WIC-3				ENS-3															
EXP. WALL				34				29				8				34				33				26				0				11				8				6											
CLG. HT.				9				9				9				9				9				9				9				9				9															
FACTORS																																																			
GRS.WALL AREA				LOSS				GAIN				306				281				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	14	277	221	0	0	0	0	0	0	14	277	221	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	45	890	1845	64	1265	2626	0	0	0	0	0	0	0	0	0	0	0	0	32	633	1312	0	0	0													
SOUTH				19.8	24.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	217	271	0	0	0	0	0	0	11	217	271	0	0	0	7	138	172													
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													
SKYLT.				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													
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													
NET EXPOSED WALL				4.1	0.8	274	1136	206	233	966	175	72	298	54	261	1082	196	219	908	165	223	924	168	0	0	0	88	365	66	40	165	30	47	195	35																
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													
EXPOSED CLG				1.2	0.6	285	340	167	204	243	120	130	155	76	272	324	160	198	236	116	180	215	108	123	147	72	209	249	123	45	56	27	102	122	60																
NO ATTIC EXPOSED CLG				2.6	1.3	0	0	0	0	0	0	0	0	0	0	0	0	30	77	38	0	0	0	0	0	0	0	0	0	0	10	26	13	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														
BASEMENT/CRAWL HEAT LOSS																																																			
SLAB ON GRADE HEAT LOSS																																																			
SUBTOTAL HT LOSS							2108			1763			453		2973		2834		1357		438						831			1011			455																		
SUB TOTAL HT GAIN								1686		1090		131		2324		3177		644		125							459			1406			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																			
AIR CHANGE HEAT LOSS							585			473			122		797		760		364		117					223			271			122																			
AIR CHANGE HEAT GAIN								114		74		9		158		216		37		8						31			96			18																			
DUCT LOSS							0			0				377		359		0		56						0			128			0																			
DUCT GAIN							0			0				309		400		0		50						0			187			0																			
HEAT GAIN PEOPLE				240		2	480	0	0	0	0	1	240	1	240	1	240	1	240	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																
TOTAL HT LOSS BTU/H							2674			2235			575		4148		3953		1720		611					1054			1411			577																			
TOTAL HT GAIN x 1.3 BTU/H							3439			1988			656		4414		6717		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
EXP. WALL				50	35	44	10	7	12	16	24	46	136
CLG. HT.				10	10	10	10	9	10	10	11	8	8
GRS.WALL AREA	LOSS	GAIN		500	360	440	100	63	120	160	264	368	680
GLAZING	LOSS	GAIN											
NORTH	19.8	15.8	0	0	0	8	158	126	18	368	284	7	138
EAST	19.8	41.0	0	0	0	0	0	0	15	297	615	20	396
SOUTH	19.8	24.6	36	712	885	0	0	0	0	0	0	0	0
WEST	19.8	41.0	0	0	0	46	909	1886	33	652	1353	0	0
SKYLT.	34.6	101.5	0	0	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	20	469	86	0	0	0	40	938
NET EXPOSED WALL	4.1	0.8	484	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	29	35	17	0	0	0	126	150
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													
SLAB ON GRADE HEAT LOSS													
SUBTOTAL HT LOSS				2635		2170		3135		896		521	
SUB TOTAL HT GAIN					1234		2115		227		694		227
LEVEL FACTOR / MULTIPLIER	0.30	0.46			0.30	0.46		0.30	0.46		0.30	0.46	
AIR CHANGE HEAT LOSS				1220		1004		1451		322		140	
AIR CHANGE HEAT GAIN					84		143		152		23		15
DUCT LOSS				0		0		0		0		0	
DUCT GAIN				0		0		0		0		0	
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				365		365		365		365		365	
TOTAL HT LOSS BTU/H				3855		3174		4587		1018		660	
TOTAL HT GAIN x 1.3 BTU/H				2188		3410		3595		955		789	

TOTAL HEAT GAIN BTU/H:

43042

TONS: 3.59

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 56212

TOTAL COMBINED HEAT LOSS BTU/H: 57728

Michael O'Rourke

GFA: 3401 LO# 91599

$$\text{DESIGN CFM} = \frac{1504}{\text{CFM @ .6" E.S.P.}}$$

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

RUN #	25	26	27	28	29	30	31	32	33
ROOM NAME	BED-2	BED-3	ENS	S-ENS	FAM	L/D	BAS	BED-3	BAS
RM LOSS MBH.	2.07	1.32	1.12	0.31	1.59	1.93	2.97	1.32	2.97
CFM PER RUN HEAT	55	35	30	8	42	52	80	35	80
RM GAIN MBH.	2.21	1.91	0.99	0.36	1.71	1.09	0.86	1.91	0.86
CFM PER RUN COOLING	78	67	35	13	60	38	30	67	30
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	60	74	30	40	14	49	46	70	30
EQUIVALENT LENGTH	180	200	120	180	150	170	160	200	160
TOTAL EFFECTIVE LENGTH	240	274	150	220	164	219	206	270	190
ADJUSTED PRESSURE	0.07	0.06	0.11	0.08	0.1	0.08	0.08	0.06	0.09
ROUND DUCT SIZE	6	6	4	4	5	5	6	6	5
HEATING VELOCITY (ft/min)	280	178	344	92	308	382	408	178	587
COOLING VELOCITY (ft/min)	398	342	402	149	441	279	153	342	220
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10
TRUNK	B	A	F	B	F	A	A	A	D

[illegible]

TYPE: MOUNTAINASH 6
SITE NAME: RUSSELL GARDENS PH 4

LO # 91599
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: *Michael O'Rourke*
HRAI # 001820
Date: July-21

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

LO#: 91599

Model: MOUNTAINASH 6

Builder: GREENPARK HOMES

Date: 7/8/2021

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1486	8	11888
First	1486	10	14860
Second	1915	9	17235
Third	0	9	0
Fourth	0	9	0
Total:			43,983.0 ft³
Total:			1245.5 m³

Air Change & Delta T Data

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

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

$$0.356 \times 345.96 \times 39^\circ\text{C} \times 1.2 = 5795 \text{ W}$$

$$= 19772 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$= 0.127 \times 345.96 \times 7^\circ\text{C} \times 1.2 = 376 \text{ W}$$

$$= 1283 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

$$80 \text{ CFM} \times 71^\circ\text{F} \times 1.08 \times 0.25 = 1515 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

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

$$80 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 275 \text{ Btu/h}$$

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) + (HL_{agclevel} + HL_{bgclevel})\}$$

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 / HLlevel)
1	0.5	19,772	7,960	1.242
2	0.3		12,815	0.463
3	0.2		14,744	0.268
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	WOB	BUILDER: GREENPARK HOMES
SFQT: 3401	LO# 91599	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:	136.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	46.0 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	-

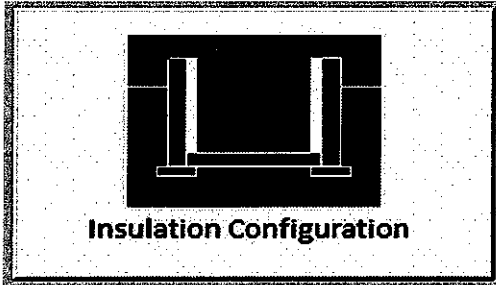
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

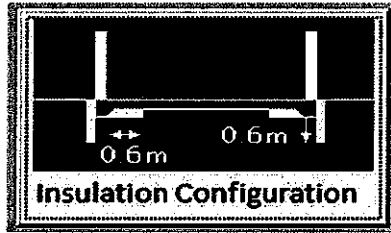
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	11.0	
Exposed Perimeter (m):	41.5	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.29	
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):		719

TYPE: MOUNTAINASH 6
LO# 91599

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):	1.5	 Insulation Configuration
Width (m):	11.0	
Exposed Perimeter (m):	14.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		180

TYPE: MOUNTAINASH 6
LO# 91599

WOB

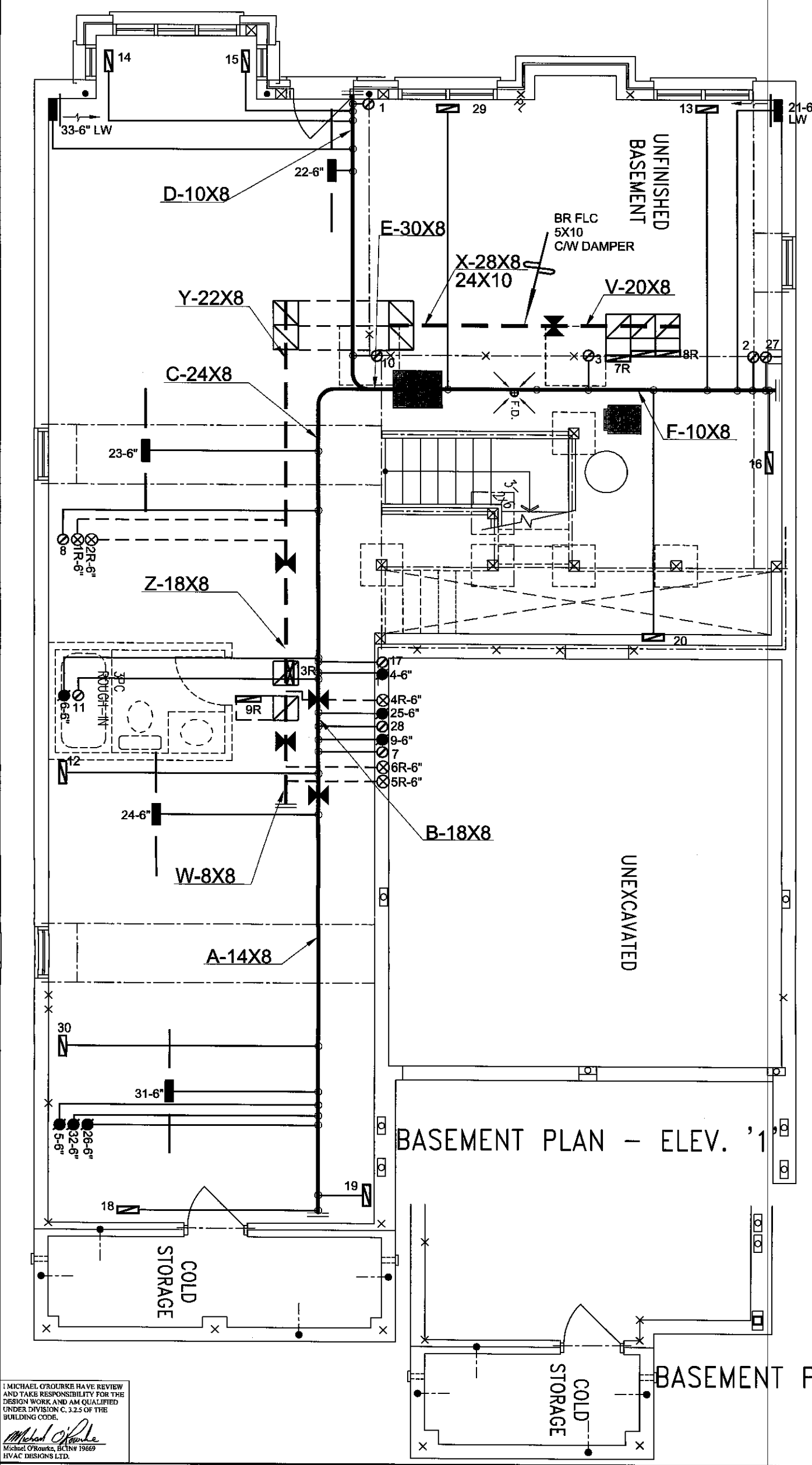
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

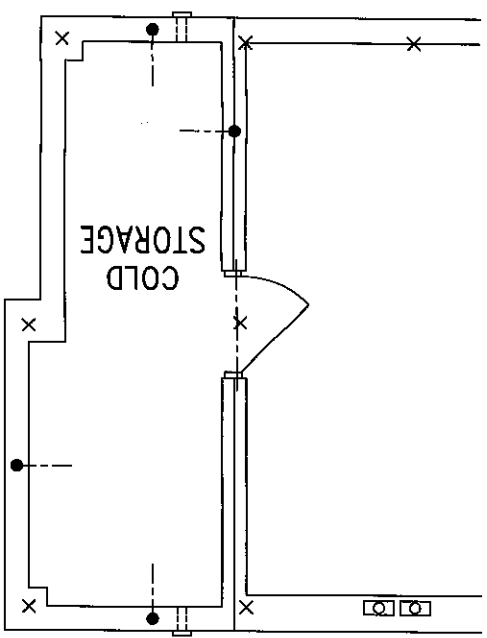
Weather Station Description			
Province:	Ontario		
Region:	Hamilton		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	8.23		
Building Configuration			
Type:	Detached		
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# 91599

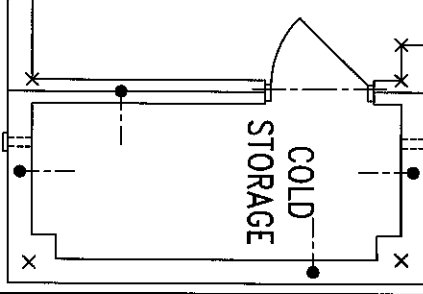
WOB



BASEMENT PLAN - ELEV. '2'



BASEMENT 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.

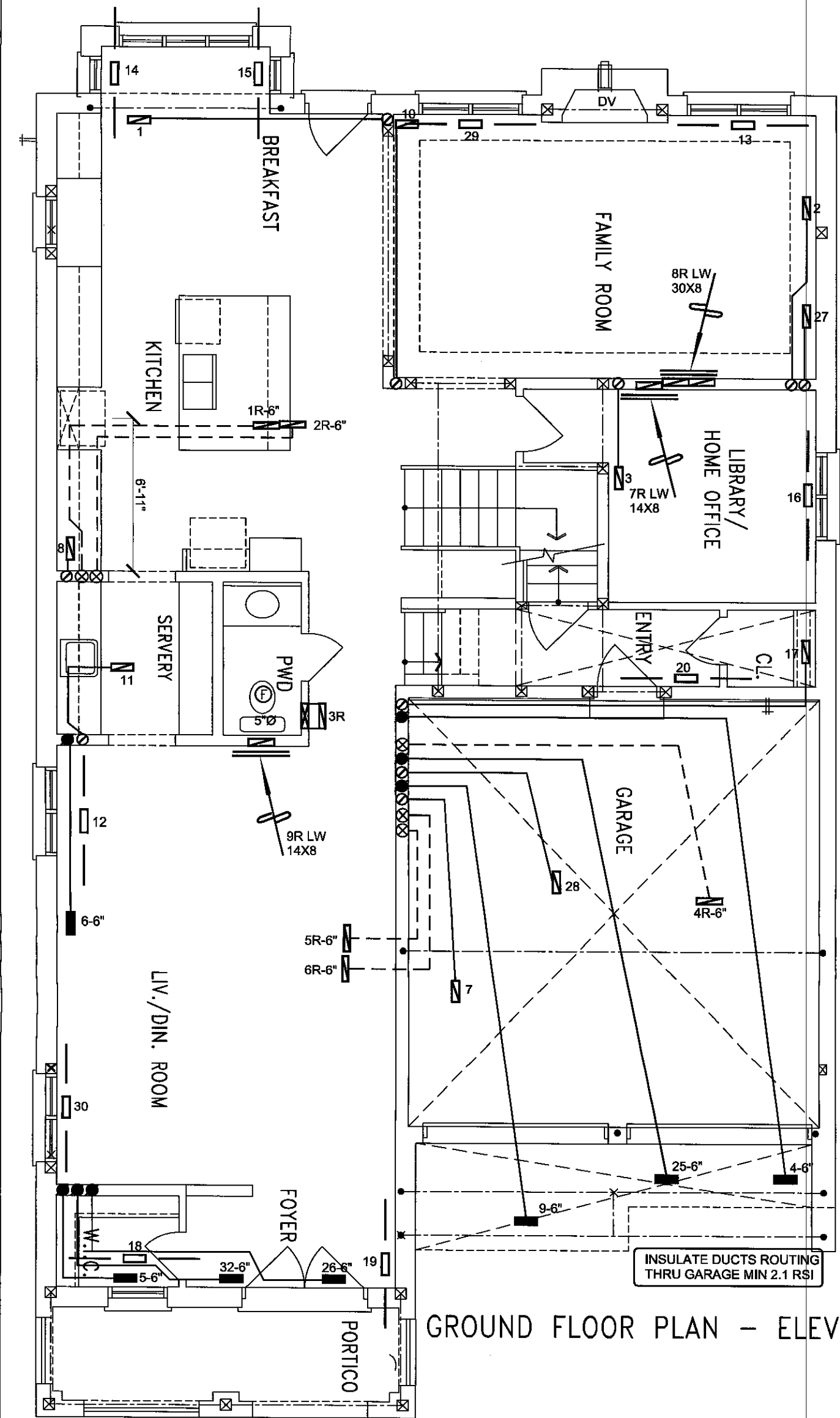
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOB
CSA-F280-12
PACKAGE A1

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

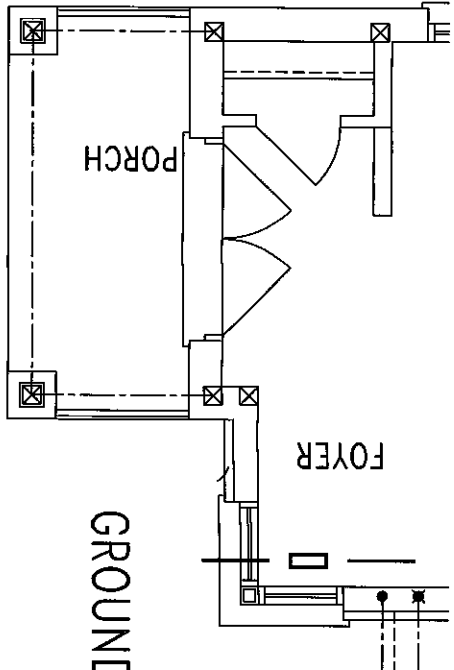
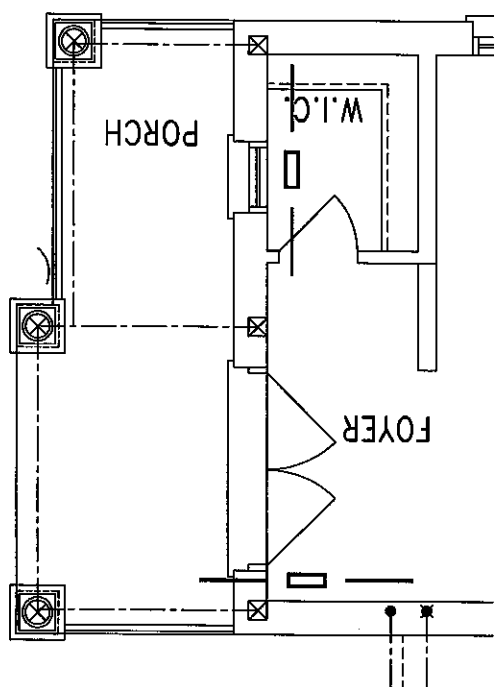
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Client GREENPARK HOMES		HVAC DESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 57728 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
Project Name RUSSELL GARDENS PH 4 HAMILTON, ONTARIO			MAKE GOODMAN		3RD FLOOR				BASEMENT HEATING LAYOUT	
WOB MOUNTAINASH 6 3401 sqft		MODEL GMEC960804CNA		2ND FLOOR 17 6 4				Date JULY/2021		
		INPUT 80 MBTU/H		1ST FLOOR 10 3 2				Scale 3/16" = 1'-0"		
		OUTPUT 76.8 MBTU/H		BASEMENT 6 1 0				BCIN# 19669		
		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				LO# 91599		
		FAN SPEED 1504 cfm @ 0.6" w.c.								



GROUND FLOOR PLAN - ELEV. '1'

GROUND FLOOR PLAN - ELEV. '2'



GROUND FLOOR PLAN - ELEV. '3'

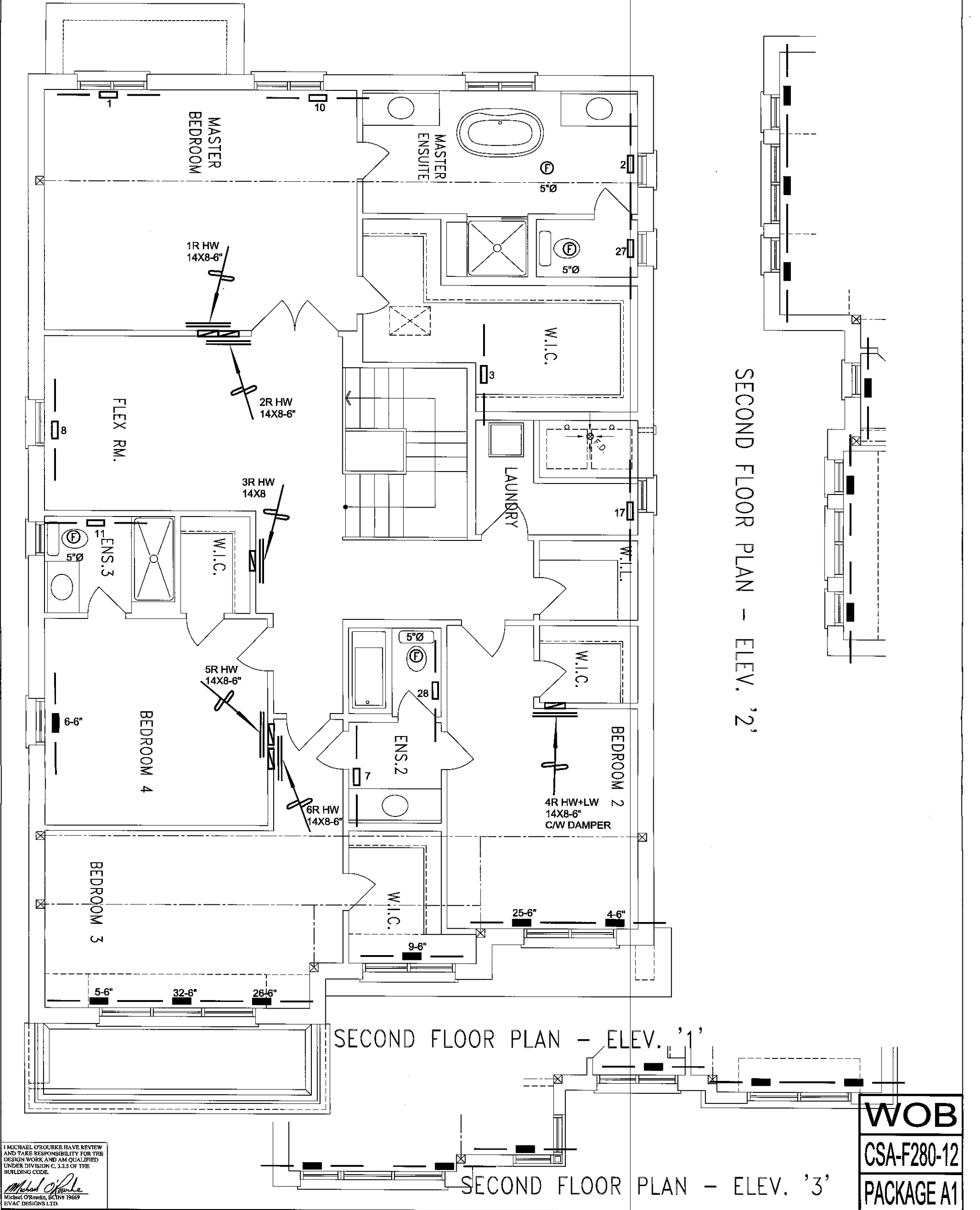
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.3 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOB
CSA-F280-12
PACKAGE A1

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

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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	
WOB MOUNTAINASH 6 3401 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#	91599



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							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	

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Project Name RUSSELL GARDENS PH 4 HAMILTON, ONTARIO		Date JULY/2021 Scale 3/16" = 1'-0" BCIN# 19669 LO# 91599
WOB MOUNTAINASH 6 3401 sqft		