

ROOM USE	FAM		DIN		K/D		L/H		LND		W/R		FOY										WOD		BAS	
EXP. WALL	38		19		37		28		0		40		21										47		176	
CLG. HT.	10		10		10		10		9		11		10										8		8	
GRS.WALL AREA	380		190		370		280		0		440		210										376		1021	
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	19.8	16.0	0	0	0	0	0	0	0	0	0	0	7	138	112	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	59	48
SOUTH	19.8	24.9	32	633	797	58	1147	1444	0	0	0	36	712	1486	0	0	0	0	0	0	0	0	3	59	125	
WEST	19.8	41.6	28	554	1163	0	0	0	73	1443	3033	0	0	0	0	0	0	0	0	0	0	0	0	6	119	149
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
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
NET EXPOSED WALL	4.1	0.8	300	1244	225	132	547	99	287	1231	223	208	862	156	0	0	0	413	1712	310	164	880	123	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
EXPOSED CLG	1.2	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
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0	0	24	51	30	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0		0				0			0			0			0			0					
SLAB ON GRADE HEAT LOSS			0		0				0			0			0			0			0					
SUBTOTAL HT LOSS									0			0			0			0			0					5836
SUB TOTAL HT GAIN			2430		1694		2674		1952		87		2320		1737											
LEVEL FACTOR / MULTIPLIER				2188		1643		3257		2081		43		507		443										
AIR CHANGE HEAT LOSS		0.30	0.41		0.30	0.41		0.30	0.41		0.20	0.25		0.30	0.41		0.30	0.41					662			842
AIR CHANGE HEAT GAIN			889		689		1089		784		22		844		707										0.50	0.97
DUCT LOSS				136		96		203		129		3		32		28										8688
DUCT GAIN			0		0		0		0		0		0		0											81
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0		0		0		0		0			0
HEAT GAIN APPLIANCES/LIGHTS			622		522		622		522		622		622		622		622		622		622		622		0	0
TOTAL HT LOSS BTU/H			3419		2383		3763		2746		109		3264		2444											522
TOTAL HT GAIN x 1.3 BTU/H			3697		2810		5176		3652		738		700		611									1140		18524
TOTAL NET HEAT LOSS																							861			1618

TOTAL COMBINED HEAT LOSS BTU/H: 55064

SITE NAME: RUSSEL GARDENS PHASE 3
 BUILDER: GREENPARK HOMES

TYPE: MOUNTAINASH 12

DATE: May-20

GFA: 3135

LOW 85977

 HEATING CFM 1504 COOLING CFM 1504
 TOTAL HEAT LOSS 53,538 TOTAL HEAT GAIN 40,848
 AIR FLOW RATE CFM 28.09 AIR FLOW RATE CFM 36.82

 furnace pressure 0.6
 furnace filter 0.05
 a/c coil pressure 0.2
 available pressure for s/a & r/a 0.35

 plenum pressure s/a 0.18
 max s/a dif press. loss 0.02
 min adjusted pressure s/a 0.16

 r/a pressure 0.17
 r/a grille press. Loss 0.02
 adjusted pressure r/a 0.15

 #GOODMAN
 GMEC960804CNA 80
 FAN SPEED
 LOW 868
 MEDLOW 978
 MEDIUM 1112
 MEDIUM HIGH 1504
 HIGH 1615

 AFUE = 96 %
 INPUT (BTU/H) = 80,000
 OUTPUT (BTU/H) = 76,800
 DESIGN CFM = 1504
 CFM @ 6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	15	9	5
R/A	0	0	6	2	1

 All S/A diffusers 4"x10" unless noted otherwise on layout.
 All S/A runs 5"Ø unless noted otherwise on layout.

RUN #	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	WIC	BED-2	BED-3	BED-4	S-ENS	WIC-3	FLEX	MBR	ENS-3	FAM	DIN	K/D	K/D	L/H	LND	W/R	FOY	L/H	BAS	BAS	BAS	BAS
RM LOSS MBH	1.65	2.39	0.53	1.50	1.59	1.28	0.50	0.70	2.03	1.65	0.56	1.71	2.38	1.88	1.88	1.37	0.11	3.26	2.44	1.37	3.53	3.53	3.53	3.53
CFM PER RUN HEAT	46	67	15	42	45	36	14	20	57	46	16	48	67	53	53	39	3	92	69	39	99	99	99	99
RM GAIN MBH	2.17	2.61	0.16	1.85	2.21	1.79	0.20	0.74	2.48	2.17	0.50	1.85	2.81	2.59	2.59	1.78	0.74	0.70	0.61	1.78	0.50	0.50	0.50	0.50
CFM PER RUN COOLING	80	96	6	68	81	66	7	27	91	80	18	68	103	95	95	65	27	26	23	65	18	18	18	18
ADJUSTED PRESSURE	0.17	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	37	41	31	31	54	57	46	48	41	28	57	32	30	23	16	49	19	19	42	35	20	24	31	35
EQUIVALENT LENGTH	170	120	190	190	140	180	170	130	150	120	210	140	130	120	110	130	110	160	180	130	130	150	150	180
TOTAL EFFECTIVE LENGTH	207	161	221	221	194	237	216	178	181	148	267	172	160	143	126	179	129	179	222	165	150	174	181	215
ADJUSTED PRESSURE	0.08	0.1	0.08	0.08	0.08	0.07	0.08	0.1	0.08	0.12	0.06	0.1	0.1	0.11	0.13	0.1	0.13	0.09	0.08	0.1	0.11	0.09	0.09	0.08
ROUND DUCT SIZE	6	6	4	5	6	6	4	4	8	5	4	5	6	6	6	5	4	6	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	235	342	172	308	229	184	161	229	291	338	184	352	342	270	270	286	34	469	507	286	505	505	505	505
COOLING VELOCITY (ft/min)	408	489	69	499	413	337	80	310	484	587	207	499	525	484	484	477	310	133	169	477	92	92	92	92
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	D	C	C	B	B	A	B	B	C	D	A	C	C	D	D	A	E	B	A	A	D	C	C	A

RUN #	25	26	27	28	29
ROOM NAME	BAS	BED-3	BED-4	S-ENS	FAM
RM LOSS MBH	3.53	1.59	1.28	0.50	1.71
CFM PER RUN HEAT	99	45	36	14	48
RM GAIN MBH	0.50	2.21	1.79	0.20	1.85
CFM PER RUN COOLING	18	81	66	7	68
ADJUSTED PRESSURE	0.16	0.16	0.17	0.17	0.17
ACTUAL DUCT LGH.	45	49	55	46	29
EQUIVALENT LENGTH	120	170	200	110	150
TOTAL EFFECTIVE LENGTH	165	219	255	156	179
ADJUSTED PRESSURE	0.1	0.07	0.07	0.11	0.1
ROUND DUCT SIZE	6	6	6	4	5
HEATING VELOCITY (ft/min)	505	229	184	161	352
COOLING VELOCITY (ft/min)	92	413	337	80	499
OUTLET GRILL SIZE	4X10	4X10	4X10	3X10	3X10
TRUNK	A	B	A	B	C

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	433	0.06	11	14	x	8	557	TRUNK G	0	0.00	0	0	x	8	0	0.05	0	0	x	8	0
TRUNK B	705	0.06	13.2	20	x	8	635	TRUNK H	0	0.00	0	0	x	8	0	0.05	0	0	x	8	0
TRUNK C	500	0.08	10.8	14	x	8	643	TRUNK I	0	0.00	0	0	x	8	0	0.05	0	0	x	8	0
TRUNK D	297	0.08	8.9	10	x	8	535	TRUNK J	0	0.00	0	0	x	8	0	0.05	0	0	x	8	0
TRUNK E	800	0.08	12.9	20	x	8	720	TRUNK K	0	0.00	0	0	x	8	0	0.05	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	0.05	0	0	x	8	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	95	260	85	75	75	85	155	435	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.	34	49	56	57	63	64	33	31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	155	225	175	220	215	195	200	195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	189	274	231	277	278	259	233	226	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.05	0.06	0.05	0.05	0.06	0.06	0.07	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	14.80
ROUND DUCT SIZE	5.8	9.5	6	6	6	6	7.5	10.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	30	14	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RETURN AIR TRUNK SIZE							
	TRUNK	STATIC	ROUND	RECT	VELOCITY		
	CFM	PRESS.	DUCT	DUCT	(ft/min)		
TRUNK O	0	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	1504	0.05	18.4	32	x	10	677
TRUNK Y	935	0.05	15.4	28	x	8	601
TRUNK Z	590	0.05	12.9	20	x	8	531
DROP	1504	0.05	18.4	24	x	14	645

TYPE: MOUNTAINASH 12
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 85977

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	5 @ 10.6 cfm	53 cfm
Other Rooms	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A.	TOTAL	190.8 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	190.8	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 65H
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
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
155 cfm high	64 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:	May-20

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.6 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19569 *Michael O'Rourke* MICHAEL O'ROURKE

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

LO#: 85977

Model: MOUNTAINASH 12

Builder: GREENPARK HOMES

Date: 07/05/2020

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1390	8	11120
First	1390	10	13900
Second	1744	9	15696
Third	0	9	0
Fourth	0	9	0
Total:			40,716.0 ft ³
Total:			1152.9 m ³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.338
SUMMER NATURAL AIR CHANGE RATE	0.121

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

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

0.338 x 320.26 x 39 °C x 1.2 = 5093 W

= 17376 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.121 x 320.26 x 7 °C x 1.2 = 331 W

= 1128 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 CFM x 71 °F x 1.08 x 0.25 = 1515 Btu/h

6.2.7 Sensible heat Gain due to Ventilation

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

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)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve} + HL_{bgcleve})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{cleve})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	17,376	8,976	0.968
2	0.3		12,806	0.407
3	0.2		13,801	0.252
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 12**BUILDER:** GREENPARK HOMES**SFQT:** 3135**LO#** 85977**SITE:** RUSSEL GARDENS PHASE 3**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:	SOUTH	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):	40716.0	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: 51.0 ft	WIDTH: 37.0 ft	EXPOSED PERIMETER:	176.0 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	-

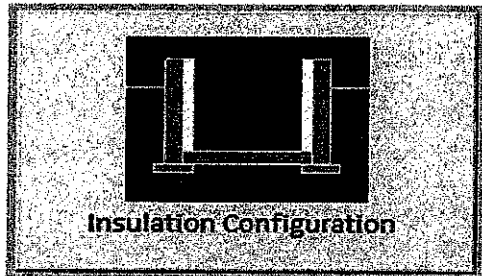
INDIVIDUAL BCIN: 19669

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):	15.5	
Floor Width (m):	11.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m ²):	2.2	
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):	1710	

TYPE: MOUNTAINASH 12
LO# 85977

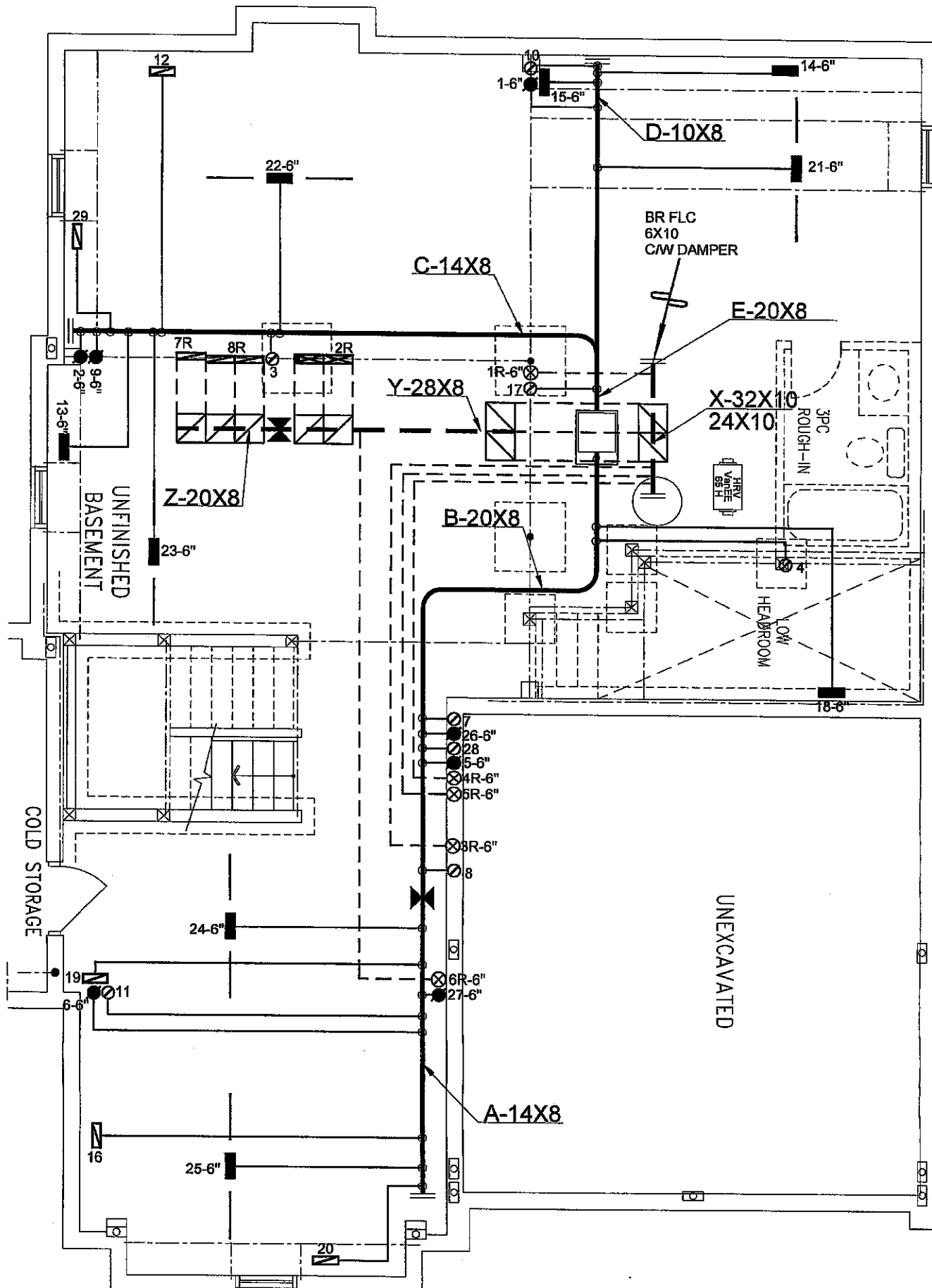
Air Infiltration Residential Load Calculator

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):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1152.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1536.9 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):	0.338			
Cooling Air Leakage Rate (ACH/H):	0.121			

TYPE: MOUNTAINASH 12
LO# 85977

PARTIAL
BASEMENT PLAN
DECK CONDITION



BASEMENT PLAN - ELEV. 1

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

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 06 2020
DATE
DATE

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

3.

2.

1.

No.

REVISIONS

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Client

GREENPARK HOMES

Project Name

RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO

MOUNTAINASH 12 3135 sqft

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 55054 BTU/H
UNIT DATA

MAKE GOODMAN

MODEL GMEC960804CNA

INPUT 80 MBTU/H

OUTPUT 76.8 MBTU/H

COOLING 3.5 TONS

FAN SPEED 1504 cfm @ 0.8" w.c.

OF RUNS S/A R/A FANS

3RD FLOOR

2ND FLOOR 15 6 4

1ST FLOOR 9 2 2

BASEMENT 5 1 0

ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

Sheet Title

BASEMENT
HEATING
LAYOUT

Date

APRIL/2020

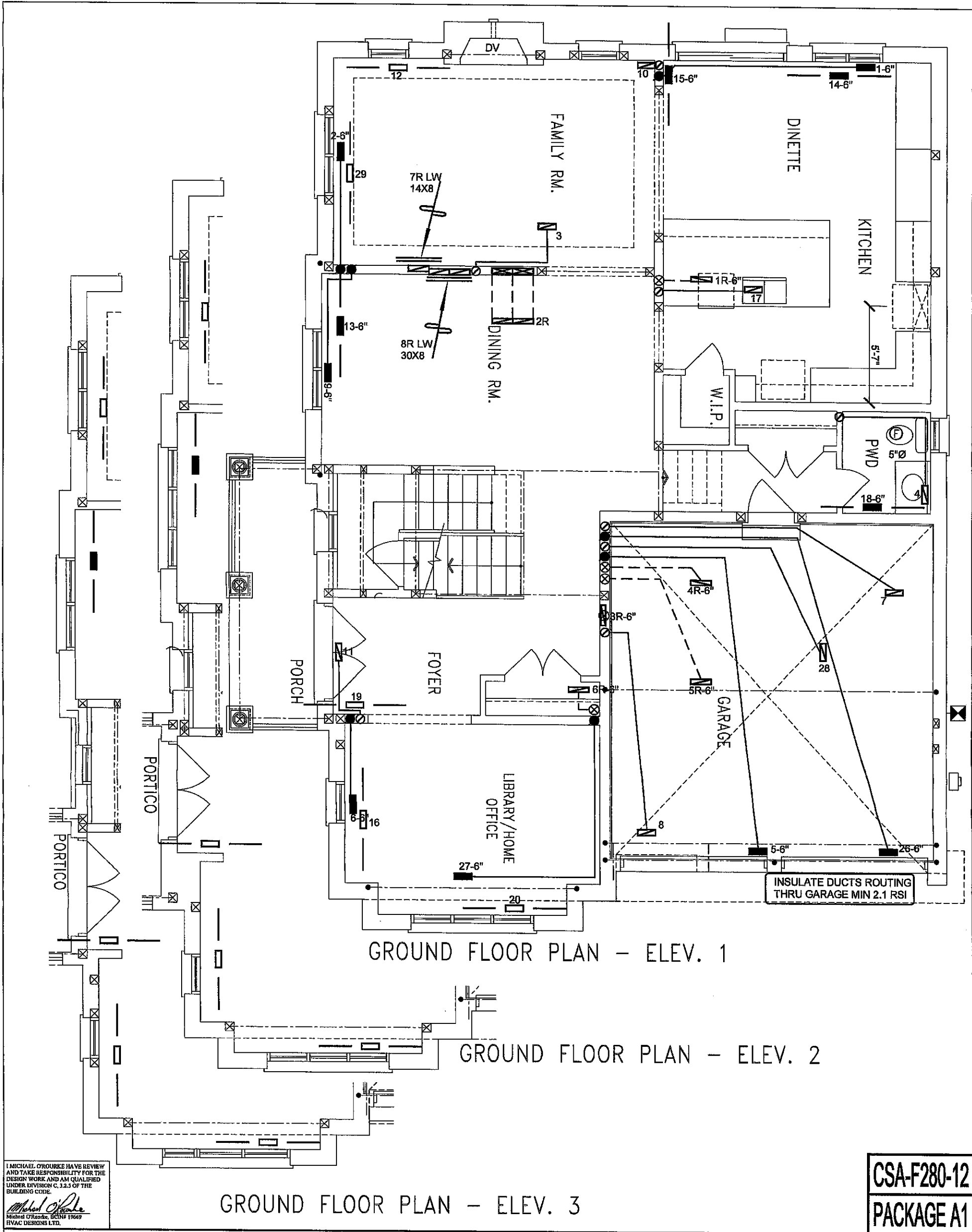
Scale

3/16" = 1'-0"

BCIN# 19669

LO#

85977



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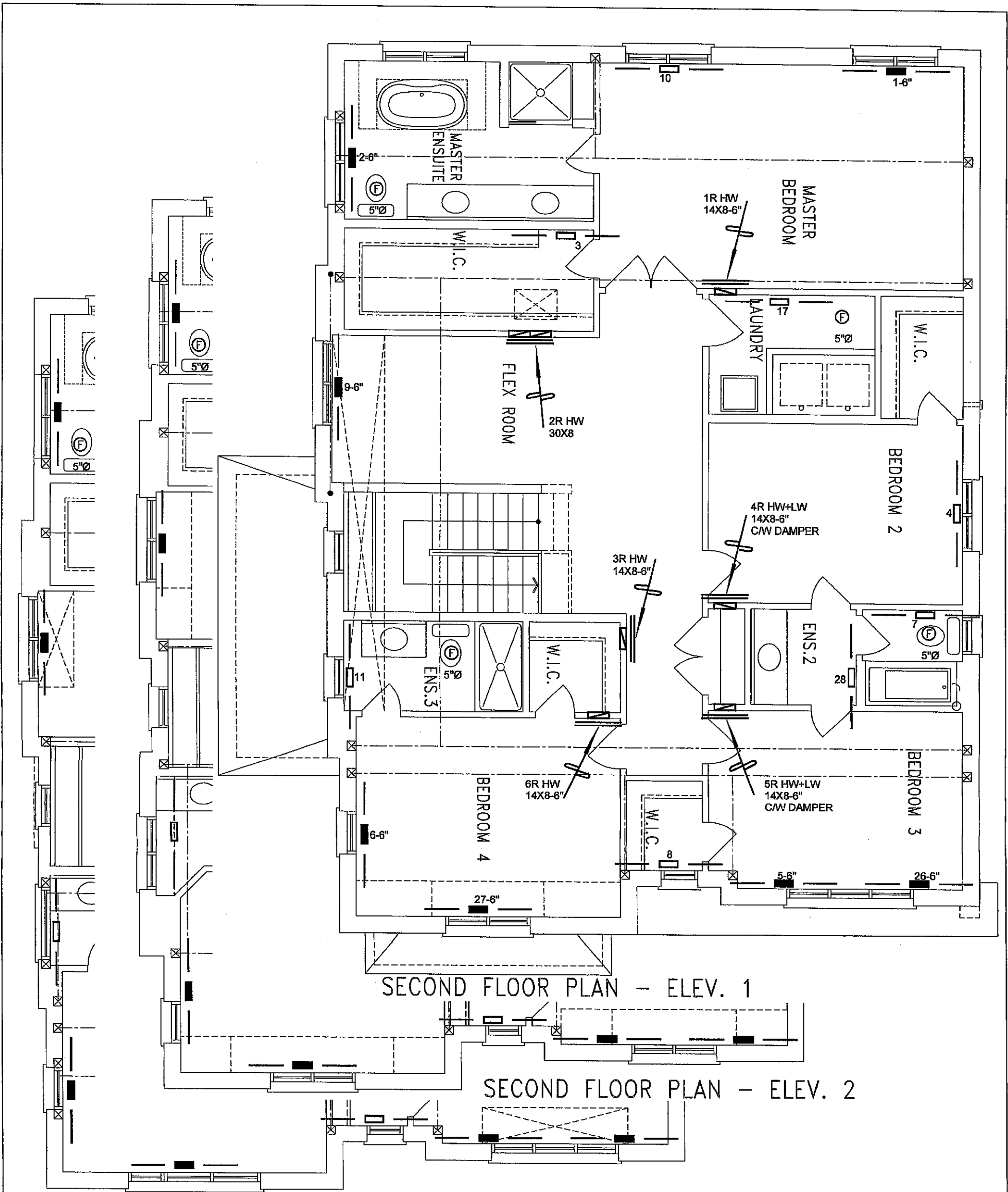
Michael O'Rourke
MICHAEL O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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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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	
GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			APRIL/2020	
MOUNTAINASH 12 3135 sqft			Scale	
			3/16" = 1'-0"	
			BCIN# 19669	
			LO#	85977



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

SECOND FLOOR PLAN - ELEV. 3

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 8" 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 GREENPARK HOMES Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO MOUNTAINASH 12 3135 sqft	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.	Sheet Title SECOND FLOOR HEATING LAYOUT Date APRIL/2020 Scale 3/16" = 1'-0" BCIN# 19669 LO# 85977
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