

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 263
TYPE: MOUNTAINASH 6

GFA: 3360

DATE: Nov-20
LO# 88165

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

HEAT LOSS AT °F. 71
HEAT GAIN AT °F. 13

CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	S-ENS	FLEX	WIC-3	ENS-2
FACTORS												
GRS.WALL AREA	34	9	306	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	16.0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.6	0	0	0	0	0	0	0	0	23	455
SOUTH	19.8	24.9	0	0	0	0	0	0	0	0	0	0
WEST	19.8	41.6	32	633	1330	14	277	582	0	0	0	0
SKYLT.	34.6	101.5	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
NET EXPOSED WALL	4.1	0.8	274	1136	206	233	966	175	72	298	54	267
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	285	340	167	204	243	120	130	166	76	272
NO ATTIC EXPOSED CLG	2.6	1.3	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
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			2108		1763		463		2860		2834	
SUB TOTAL HT GAIN				1703		1100		131		2184		3215
LEVEL FACTOR / MULTIPLIER	0.20	0.26							0.20	0.26		
AIR CHANGE HEAT LOSS			540		452		116		738		726	
AIR CHANGE HEAT GAIN				128		83		10		169		242
DUCT LOSS			0		0		0		352		358	
DUCT GAIN			0		0		0		0		0	
HEAT GAIN PEOPLE	240	2	480		0		0		1	240		1
HEAT GAIN APPLIANCES/LIGHTS			498		498		498		498		498	
TOTAL HT LOSS BTU/H			2848		2214		570		3979		3916	
TOTAL HT GAIN x 1.3 BTU/H			3653		2186		830		4291		6999	

ROOM USE	EXP. WALL	CLG. HT.	L/D	FAM	K/B	L/H	LND	FOY	WOD	BAG
FACTORS										
GRS.WALL AREA	50	10	600	350	440	100	63	308	46	192
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	19.8	16.0	0	0	0	0	0	0	0	0
EAST	19.8	41.6	0	0	0	0	0	0	0	0
SOUTH	19.8	24.9	36	712	896	0	0	0	0	0
WEST	19.8	41.6	0	0	0	0	0	0	0	0
SKYLT.	34.6	101.5	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	464	1924	349	304	1260	228	363	1505
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	29	35
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			2636		2170		3135		696	
SUB TOTAL HT GAIN				1245		2140		2272		349
LEVEL FACTOR / MULTIPLIER	0.30	0.44							0.30	0.44
AIR CHANGE HEAT LOSS			1165		960		1387		308	
AIR CHANGE HEAT GAIN				94		161		171		26
DUCT LOSS			0		0		0		0	
DUCT GAIN			0		0		0		0	
HEAT GAIN PEOPLE	240	0	0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS			498		498		498		498	
TOTAL HT LOSS BTU/H			3801		3130		4623		1004	
TOTAL HT GAIN x 1.3 BTU/H			2388		3639		3824		1136	

CITY OF MISSISSAUGA
Building Division
107143
THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW
These drawings and specifications have been reviewed by
DATE
FOR CHIEF BUILDING OFFICIAL

TOTAL HEAT GAIN BTU/H: 41551

TONS: 3.46

LOSS DUE TO VENTILATION LOAD BTU/H: 1516

STRUCTURAL HEAT LOSS: 55820

TOTAL COMBINED HEAT LOSS BTU/H: 67335

Michael O'Rourke

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BUILDER: GREENPARK HOMES

LOT 263
TYPE: MOUNTAINASH 6

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GFA: 3360 LO# 88165

HEATING CFM 1504 COOLING CFM 1504
TOTAL HEAT LOSS 55,820 TOTAL HEAT GAIN 41,276
AIR FLOW RATE CFM 26.94 AIR FLOW RATE CFM 36.44

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

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	FLEX	WIC-3	MBR	ENS-2	L/D	FAM	K/B	K/B	L/H	LND	FOY	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.32	1.11	0.57	1.99	1.31	1.70	0.30	1.04	1.20	1.32	0.57	1.90	1.56	2.26	2.26	1.00	0.65	1.79	1.79	2.14	3.71	3.71	3.71	3.71
CFM PER RUN HEAT	36	30	15	54	35	46	8	28	32	36	15	51	42	61	61	27	18	48	48	58	100	100	100	100
RM GAIN MBH	1.83	1.09	0.83	2.15	2.00	1.72	0.45	1.29	2.34	1.83	1.02	1.19	1.82	1.91	1.91	1.14	0.97	0.81	0.81	1.02	0.49	0.49	0.49	0.49
CFM PER RUN COOLING	67	40	30	78	73	63	16	47	85	67	37	44	66	70	70	41	35	29	29	37	18	18	18	18
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	37	35	22	65	67	49	44	34	56	26	45	35	26	31	24	19	49	53	46	23	15	22	33	33
EQUIVALENT LENGTH	120	150	160	150	200	190	170	150	160	140	180	120	110	140	130	100	180	140	130	120	140	120	120	180
TOTAL EFFECTIVE LENGTH	157	185	182	215	267	239	214	184	216	166	225	155	136	171	154	119	229	193	176	143	155	142	153	213
ADJUSTED PRESSURE	0.11	0.09	0.09	0.08	0.06	0.07	0.08	0.09	0.08	0.1	0.08	0.11	0.13	0.1	0.11	0.14	0.08	0.09	0.1	0.12	0.1	0.11	0.11	0.08
ROUND DUCT SIZE	5	4	4	6	6	6	4	5	6	5	4	4	5	5	5	4	5	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	264	344	172	275	178	235	92	206	163	264	172	585	308	448	448	310	207	352	551	426	510	510	510	510
COOLING VELOCITY (ft/min)	492	459	344	398	372	321	184	345	433	492	424	505	485	514	514	470	402	213	333	272	92	92	92	92
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	D	F	F	C	A	C	B	C	B	D	C	B	F	D	D	F	C	A	A	F	F	D	C	A

RUN #	25	26	27	28	29	30	31	32
ROOM NAME	BED-2	BED-3	ENS	S-ENS	FAM	L/D	BAS	BED-3
RM LOSS MBH	1.99	1.31	1.11	0.30	1.56	1.90	3.71	1.31
CFM PER RUN HEAT	54	35	30	8	42	51	100	35
RM GAIN MBH	2.15	2.00	1.09	0.45	1.82	1.19	0.49	2.00
CFM PER RUN COOLING	78	73	40	16	66	44	18	73
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17
ACTUAL DUCT LGH	60	74	30	40	14	49	46	70
EQUIVALENT LENGTH	180	200	120	180	150	170	160	200
TOTAL EFFECTIVE LENGTH	240	274	150	220	164	219	206	270
ADJUSTED PRESSURE	0.07	0.06	0.11	0.08	0.1	0.08	0.08	0.06
ROUND DUCT SIZE	6	6	4	4	5	5	6	6
HEATING VELOCITY (ft/min)	275	178	344	92	308	374	510	178
COOLING VELOCITY (ft/min)	398	372	459	184	485	323	92	372
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	B	A	F	B	F	A	A	A

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	452	0.06	11.2	14	581	TRUNK G	0	0.00	0	0	0
TRUNK B	605	0.06	12.5	18	605	TRUNK H	0	0.00	0	0	0
TRUNK C	866	0.06	14.3	24	650	TRUNK I	0	0.00	0	0	0
TRUNK D	294	0.10	8.4	8	662	TRUNK J	0	0.00	0	0	0
TRUNK E	1160	0.06	15.9	30	696	TRUNK K	0	0.00	0	0	0
TRUNK F	344	0.09	9.1	10	619	TRUNK L	0	0.00	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	BR
AIR VOLUME	75	75	135	115	75	75	185	400	135	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	68	68	57	74	67	69	21	23	38	1
EQUIVALENT LENGTH	245	235	215	235	220	215	155	160	285	0
TOTAL EFFECTIVE LH	313	303	272	309	287	284	176	183	323	1
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.05	14.80
ROUND DUCT SIZE	6	6	7.5	7	6	6	7.5	9.9	7.5	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	14	30	14	0

TYPE: MOUNTAINASH 6
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88165
LOT 283

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	9 @ 10.6 cfm	95.4 cfm
Table 9.32.3.A.	TOTAL	222.6 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	222.6	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	143.1	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 65H
Location:	BSMT
79.5 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	$\Delta T^{\circ}F$	FACTOR	% LOSS
79.5 CFM	X 71 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		PANASONIC	
Location	Model	cfm	HVI
ENS	FV-05-11VK1	50	☒
S-ENS	FV-05-11VK1	50	☒
ENS-2	FV-05-11VK1	50	☒

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:	November-20

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 18669

MICHAEL O'ROURKE

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 88165	Model: MOUNTAINASH 6	Builder: GREENPARK HOMES	Date: 09/11/2020																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1480</td> <td>8</td> <td>11840</td> </tr> <tr> <td>First</td> <td>1480</td> <td>10</td> <td>14800</td> </tr> <tr> <td>Second</td> <td>1880</td> <td>9</td> <td>16920</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>43,560.0 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>1233.5 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1480	8	11840	First	1480	10	14800	Second	1880	9	16920	Third	0	9	0	Fourth	0	9	0	Total:			43,560.0 ft³	Total:			1233.5 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%; text-align: center;">0.338</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.121</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>T_{in} °C</th> <th>T_{out} °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td style="text-align: center;">22</td> <td style="text-align: center;">-17</td> <td style="text-align: center;">39</td> <td style="text-align: center;">71</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">24</td> <td style="text-align: center;">31</td> <td style="text-align: center;">7</td> <td style="text-align: center;">13</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.338	SUMMER NATURAL AIR CHANGE RATE	0.121	Design Temperature Difference						T _{in} °C	T _{out} °C	ΔT °C	ΔT °F	Winter DTDh	22	-17	39	71	Summer DTDc	24	31	7	13
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.338 x 342.63 x 39 °C x 1.2 = 5448 W = 18590 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ 0.121 x 342.63 x 7 °C x 1.2 = 354 W = 1207 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)																																																												
$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HL _{airve} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{clevel})																																																								
1	0.5	18,590	9,235	1.007																																																								
2	0.3		12,603	0.442																																																								
3	0.2		14,510	0.256																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HL_{airbv} = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HL_{airve} = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: MOUNTAINASH 6	LOT 263	BUILDER: GREENPARK HOMES
SFQT: 3360	LO# 88165	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:	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):	43560.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	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

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	-

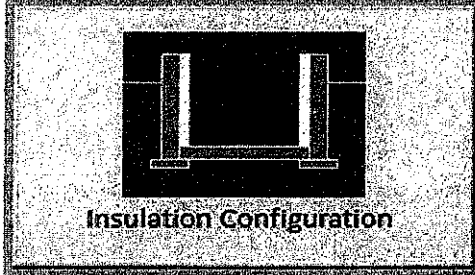
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

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):	16.8	 Insulation Configuration
Floor Width (m):	11.0	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m ²):	2.1	
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):		1778

TYPE: MOUNTAINASH 6
LO# 88165

LOT 263

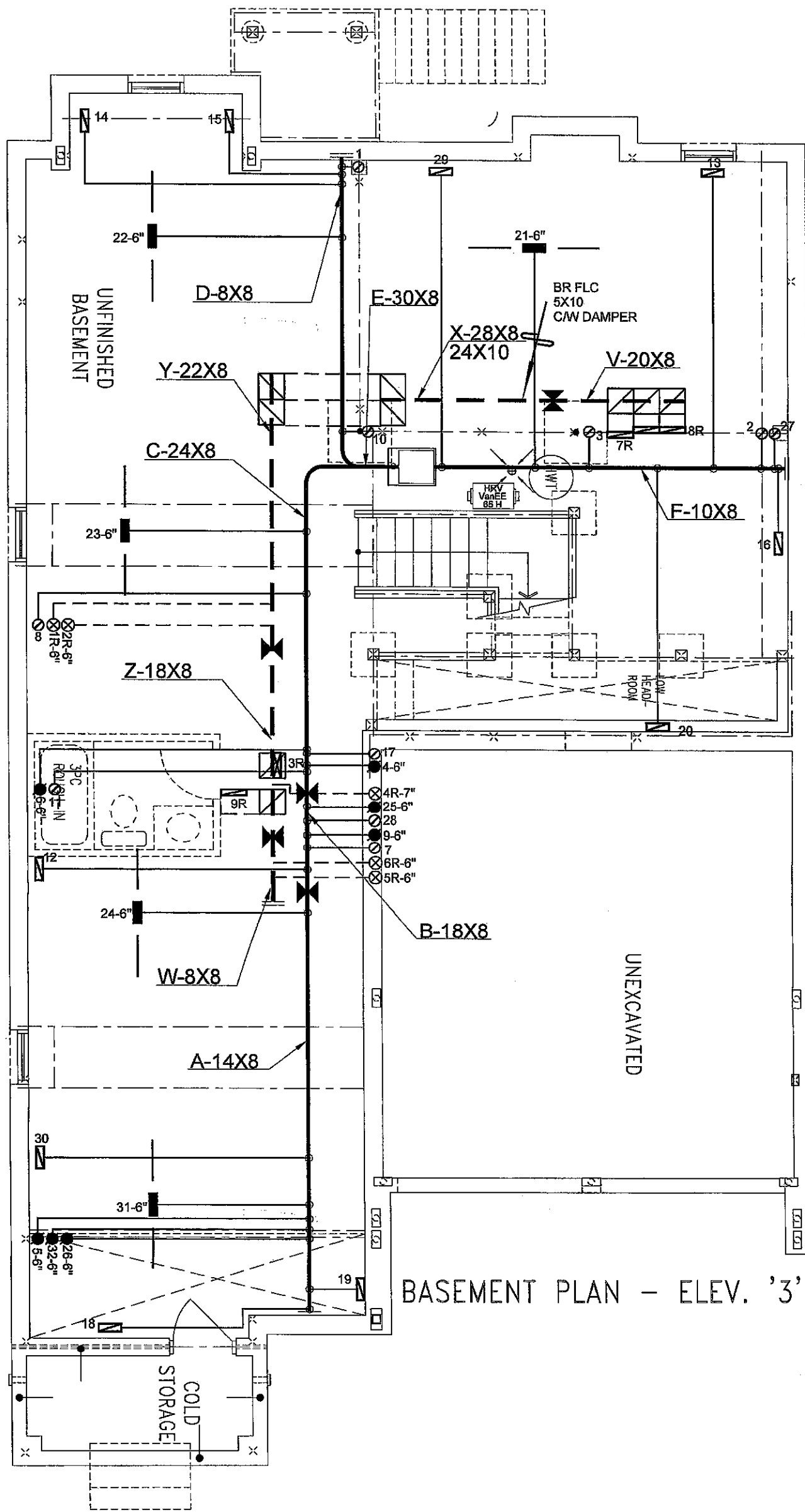
Air Infiltration Residential Load Calculator

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):	1233.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1644.3 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 6
LO# 88165

LOT 263



BASEMENT PLAN - ELEV. '3'

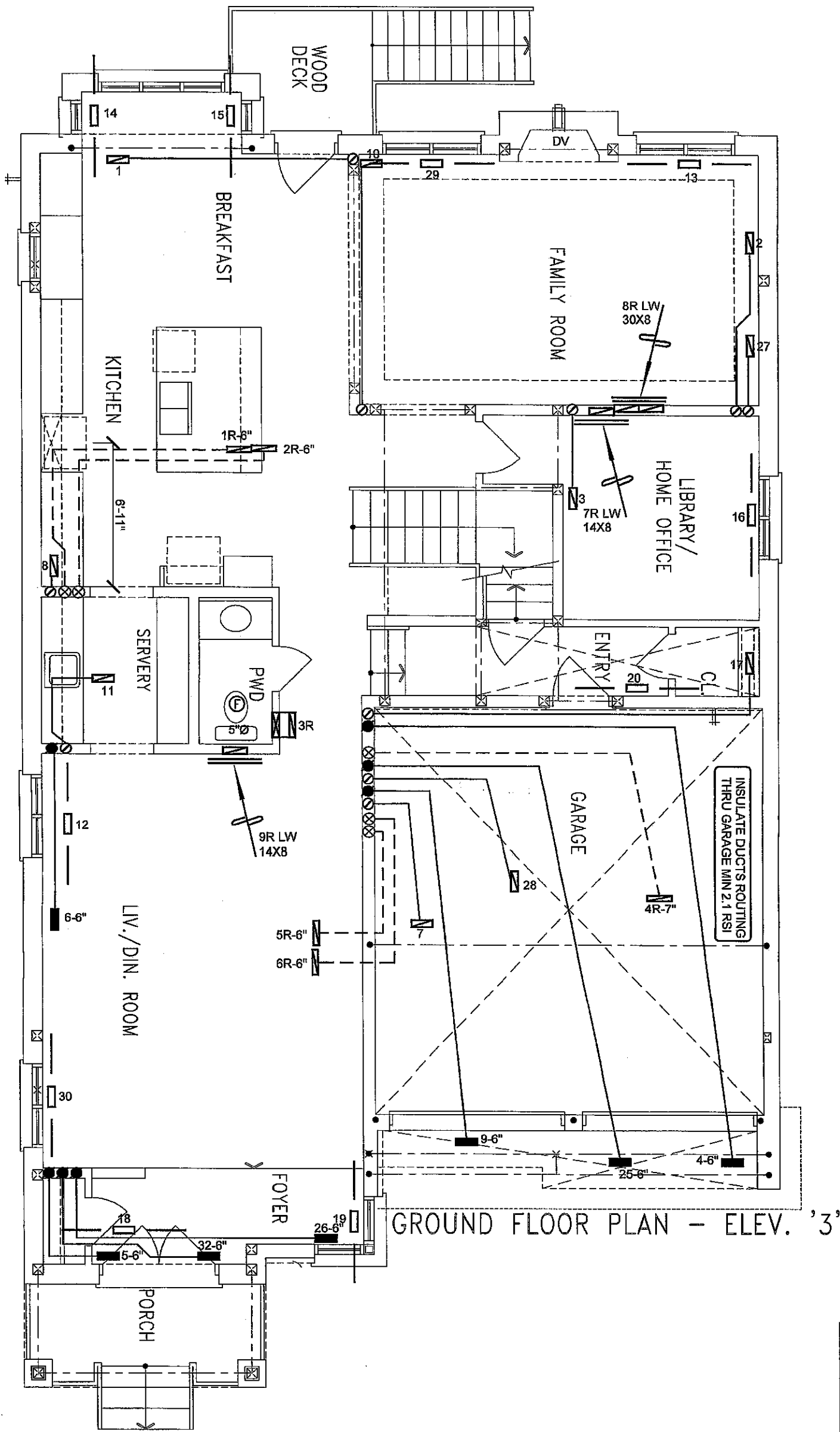
I MICHAEL GORRUCK HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.32.5 OF THE BUILDING CODE.
Michael Goruck
MICHAEL GORUCK, DESIGN 19669
HVAC DESIGNS LTD.

LOT 263
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.	HEAT LOSS 57335 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GREENPARK HOMES			MAKE GOODMAN		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name			MODEL GMEC960804CNA		2ND FLOOR	17	6	4	
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			INPUT 80	MBTU/H	1ST FLOOR	10	3	2	Date NOV/2020
LOT 263			OUTPUT 76.8	MBTU/H	BASEMENT	5	1	0	Scale 3/16" = 1'-0"
MOUNTAINASH 6 3360 sqft			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.						LO# 88165



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

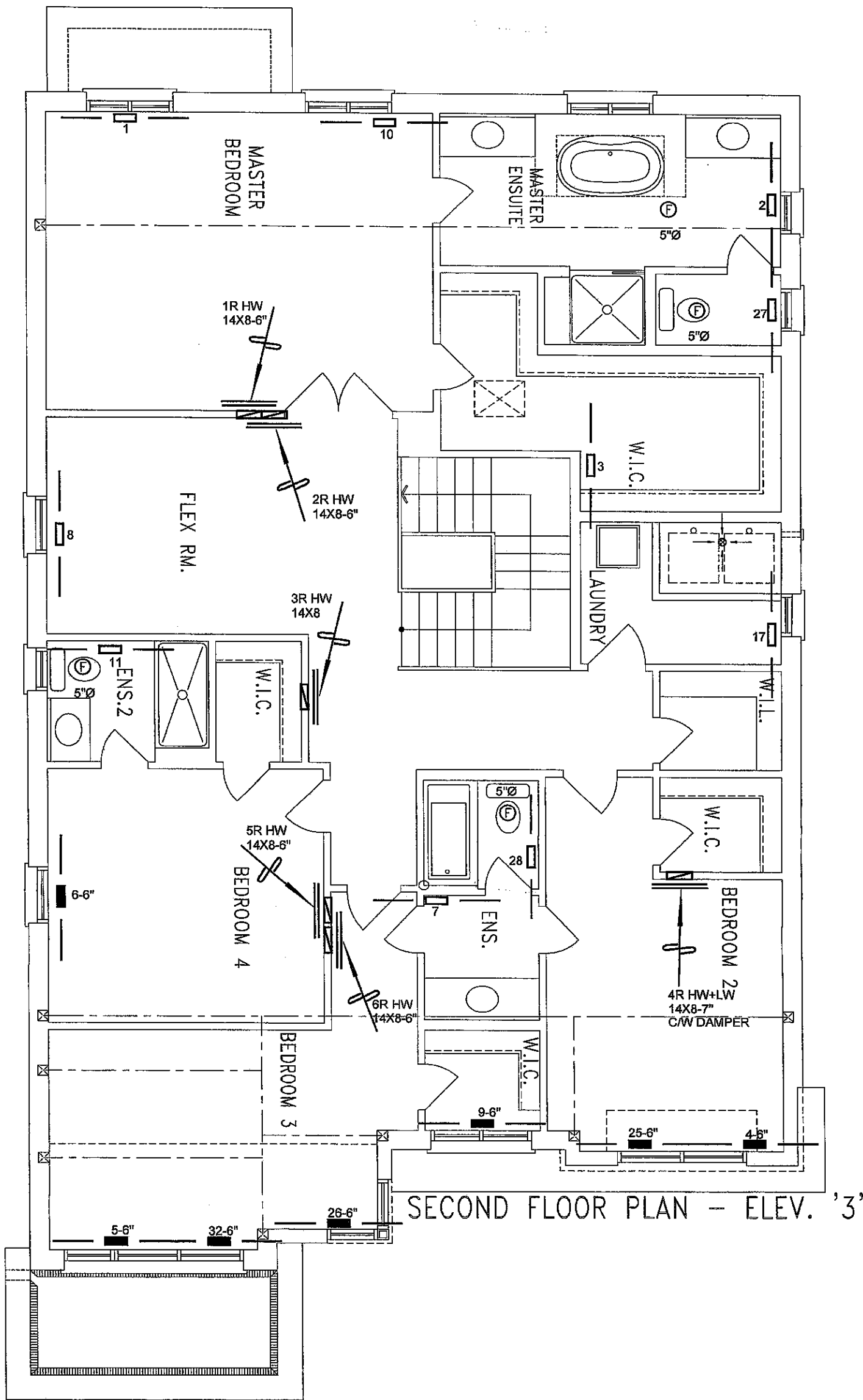
Michael O'Brourke
Michael O'Brourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 263
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 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 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 FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date NOV/2020	
LOT 263 MOUNTAINASH 6 3360 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	88165



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.

LOT 263
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 RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date NOV/2020	Scale 3/16" = 1'-0"
LOT 263 MOUNTAINASH 6 3360 sqft			BCIN# 19669	
			LO#	88165