

SITE NAME: RUSSEL GARDENS PHASE 3										LOT 204				DATE: Dec-20		WINTER NATURAL AIR CHANGE RATE 0.338				HEAT LOSS AT °F. 71		CSA-F280-12			
BUILDER: GREENPARK HOMES										TYPE: MOUNTAINASH 6				GFA: 3370		LO# 88540		SUMMER NATURAL AIR CHANGE RATE 0.121				HEAT GAIN AT °F. 13		SB-12 PACKAGE A1	
ROOM USE		MBR		ENS		WIC		BED-2		BED-3		BED-4		S-ENS		FLEX		WIC-3		ENS-3		PWD			
EXP. WALL		34		29		8		34		33		26		0		11		8		6		7			
CLG. HT.		9		9		9		9		9		9		9		9		9		9		10			
FACTORS		306		261		72		306		297		234		0		99		72		54		70			
LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN			
GRS.WALL AREA		19.8	16.0	0	0	0	14	277	224	0	0	0	14	277	224	0	0	0	0	0	0	0	0		
GLAZING		19.8	41.6	0	0	0	0	0	0	36	712	1496	64	1266	2659	0	0	0	0	0	0	0	0		
NORTH		19.8	24.9	0	0	0	0	0	0	0	0	0	0	0	0	11	217	274	0	0	0	0	0		
EAST		19.8	41.6	32	633	1330	14	277	582	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SOUTH		19.8	41.6	32	633	1330	14	277	582	0	0	0	0	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	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		
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		
NET EXPOSED WALL		4.1	0.8	274	1136	206	233	966	175	72	298	54	270	1119	203	219	908	165	223	924	168	38	365	53	
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		
EXPOSED CLG		1.2	0.6	285	340	167	204	243	120	130	155	76	242	289	142	128	153	75	130	147	72	209	249	123	
NO ATTIC EXPOSED CLG		2.6	1.3	0	0	0	0	0	0	0	0	0	30	77	38	100	255	126	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	56	133	24	
BASEMENT/CRAWL HEAT LOSS				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	
SUBTOTAL HT LOSS				2106		1763		453		2874		2929		1357		438		831		873		455		290	
SUB TOTAL HT GAIN					1703		1100		131		2082		3262		547		125		463		1090		270	53	
LEVEL FACTOR / MULTIPLIER		0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.30	0.43		
AIR CHANGE HEAT LOSS		538				450		116		733		747		346		112		212		223		116		124	
AIR CHANGE HEAT GAIN					129		83		10		152		247		41		9		35		83		20	4	
DUCT LOSS		0		0		0		0		361		368		0		55		0		110		0		0	
DUCT GAIN				0		0		0		0		315		450		0		13		0		117		0	
HEAT GAIN PEOPLE		240		2		480		0		0		1		240		1		240		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS						762		0		0		762		762		762		762		0		0		0	
TOTAL HT LOSS BTU/H				2645		2212		569		3968		4044		1703		505		1044		1205		571		414	
TOTAL HT GAIN x 1.3 BTU/H				3983		1539		183		4497		6436		2055		192		1625		1677		377		74	

ROOM USE			L/D		FAM		K/B		L/H		LND				FOY		ENT				WOD		BAS		
EXP. WALL			50		35		44		10		7				28		24				46		182		
CLG. HT.			10		10		10		10		9				11		11				8		8		
FACTORS																									
GRS.WALL AREA	LOSS	GAIN	500		350		440		100		53		308		264		368		1048						
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	
NORTH	19.8	16.0	0	0	0	0	8	158	128	18	366	288	7	138	112	14	277	224	0	0	0	0	0	0	
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	22	435	914	0	0	0	0	0	0	
SOUTH	19.8	24.9	36	712	896	0	0	16	316	398	0	0	0	0	0	0	0	0	0	0	0	0	6	119	
WEST	19.8	41.6	0	0	0	46	905	1911	33	652	1371	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	
DOORS	23.5	4.3	0	0	0	0	0	20	469	85	0	0	0	0	0	40	938	170	20	469	85	0	0	0	
NET EXPOSED WALL	4.1	0.8	464	1924	349	304	1250	228	363	1505	273	82	340	62	56	232	42	232	962	174	244	1012	183	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	
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0	0	0	0	126	160	74	0	0	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	10	26	13	29	74	36	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	0	0	0	0	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS																									
SLAB ON GRADE HEAT LOSS																									
SUBTOTAL HT LOSS				2635			2195			3175			696			2612			1481			0			
SUB TOTAL HT GAIN					1245			2152			2292		349					1482		268					
LEVEL FACTOR / MULTIPLIER			0.30	0.43		0.30	0.43		0.30	0.43		0.30	0.43		0.20	0.26		0.30	0.43				0.50	1.02	
AIR CHANGE HEAT LOSS				1126			938			1356			297			133			632						
AIR CHANGE HEAT GAIN					94			163			174		26				17		112		20				
DUCT LOSS				0			0			0			0						0					62	
DUCT GAIN				0			0			0			0			0			0					0	
HEAT GAIN PEOPLE	240		0		0		0		0		0		0			0		0	0		0			0	
HEAT GAIN APPLIANCES/LIGHTS					752			752			752		752			752			0		0			0	
TOTAL HT LOSS BTU/H				3761			3133			4531			993			654			2113			972		17439	
TOTAL HT GAIN x 1.3 BTU/H					2719			3968			4182		1466			1296			375			377		769	

TOTAL HEAT GAIN BTU/H: 40167

TONS: 3.35

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 56303

TOTAL COMBINED HEAT LOSS BTU/H: 57818

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 204
TYPE: MOUNTAINASH 6

DATE: Dec-20

GFA: 3370

LO# 88540

HEATING CFM 1504 COOLING CFM 1504
TOTAL HEAT LOSS 56,303 TOTAL HEAT GAIN 39,883
AIR FLOW RATE CFM 26.71 AIR FLOW RATE CFM 37.71

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

#*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	17	11	5
R/A	0	0	6	3	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	FLEX	WIC-3	MBR	ENS-3	L/D	FAM	K/B	K/B	L/H	LND	FOY	FOY	ENT	BAS	BAS	BAS	BAS
RM LOSS MBH	1.32	1.11	0.57	1.98	1.35	1.70	0.30	1.04	1.21	1.32	0.57	1.88	1.57	2.27	2.27	0.99	0.65	1.86	1.86	2.11	3.68	3.68	3.68	3.68
CFM PER RUN HEAT	35	30	15	53	36	45	8	28	32	35	15	50	42	61	61	27	17	50	50	56	98	98	98	98
RM GAIN MBH	1.99	0.77	0.18	2.25	2.15	2.05	0.10	1.62	1.68	1.99	0.38	1.36	1.99	2.09	2.09	1.47	1.30	1.04	1.04	0.38	0.23	0.23	0.23	0.23
CFM PER RUN COOLING	75	29	7	85	81	77	4	61	63	75	14	51	75	79	79	55	49	39	39	14	9	9	9	9
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	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	6	5	5	4	5	5	5	5	5	5	5	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	257	344	172	270	184	229	92	143	235	257	172	367	308	448	448	198	125	367	367	411	500	500	500	500
COOLING VELOCITY (ft/min)	551	333	80	433	413	393	46	311	463	551	161	374	551	580	580	404	360	286	286	103	46	46	46	46
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	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	33
ROOM NAME	BED-2	BED-3	ENS	S-ENS	FAM	L/D	BAS	BED-3	PWD
RM LOSS MBH	1.98	1.35	1.11	0.30	1.57	1.88	3.68	1.35	0.41
CFM PER RUN HEAT	53	36	30	8	42	50	98	36	11
RM GAIN MBH	2.25	2.15	0.77	0.10	1.99	1.36	0.23	2.15	0.07
CFM PER RUN COOLING	85	81	29	4	75	51	9	81	3
ADJUSTED PRESSURE	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.17
ACTUAL DUCT LGH	60	74	30	40	14	49	46	70	29
EQUIVALENT LENGTH	180	200	120	180	150	170	160	200	150
TOTAL EFFECTIVE LENGTH	240	274	150	220	164	219	206	270	179
ADJUSTED PRESSURE	0.07	0.06	0.11	0.08	0.1	0.08	0.08	0.06	0.1
ROUND DUCT SIZE	6	6	4	4	5	5	6	6	4
HEATING VELOCITY (ft/min)	270	184	344	92	308	367	500	184	126
COOLING VELOCITY (ft/min)	433	413	333	46	551	374	46	413	34
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10
TRUNK	B	A	F	B	F	A	A	A	C

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK	STATIC	ROUND	RECT	VELOCITY						TRUNK	STATIC	ROUND	RECT	VELOCITY					
CFM	PRESS.	DUCT	DUCT	(ft/min)						CFM	PRESS.	DUCT	DUCT	(ft/min)					
TRUNK A	454	0.06	11.2	14	x	8	584			TRUNK G	0	0.00	0	0	x	8	0		
TRUNK B	605	0.06	12.5	18	x	8	605			TRUNK H	0	0.00	0	0	x	8	0		
TRUNK C	872	0.06	14.3	24	x	8	654			TRUNK I	0	0.00	0	0	x	8	0		
TRUNK D	290	0.10	8.3	8	x	8	653			TRUNK J	0	0.00	0	0	x	8	0		
TRUNK E	1162	0.06	15.9	30	x	8	697			TRUNK K	0	0.00	0	0	x	8	0		
TRUNK F	340	0.09	9.1	10	x	8	612			TRUNK L	0	0.00	0	0	x	8	0		

RETURN AIR #	1	2	3	4	5	6	7	8	9											BR						TRUNK V	585	0.05	12.9	20	x	8	527																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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TYPE: MOUNTAINASH 6
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88540
LOT 204

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	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	212.0 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	212	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	132.5	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	AT °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-3	FV-05-11VK1	50	☒

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency @ 32 deg F (0 deg C)	☒ HVI Approved	

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:	December-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: 19869 *Michael O'Rourke* MICHAEL O'ROURKE

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

LO#: 88540

Model: MOUNTAINASH 6

Builder: GREENPARK HOMES

Date: 07/12/2020

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1480	8	11840
First	1480	10	14800
Second	1890	9	17010
Third	0	9	0
Fourth	0	9	0
Total:			43,650.0 ft ³
Total:			1236.0 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 343.34 x 39 °C x 1.2 = 5460 W

= 18628 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.121 x 343.34 x 7 °C x 1.2 = 355 W

= 1210 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

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

6.2.7 Sensible heat Gain due to Ventilation

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

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)	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	18,628	9,097	1.024
2	0.3		13,083	0.427
3	0.2		14,601	0.255
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

CITY OF HAMILTON
Building Division

Permit No. 21-105988

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/or specifications have been reviewed by

FEB 17 2021

FOR CHIEF BUILDING OFFICIAL

DATE

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL:	MOUNTAINASH 6	LOT 204	BUILDER:	GREENPARK HOMES
SFQT:	3370	LO#	88540	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):	43650.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.55	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	-

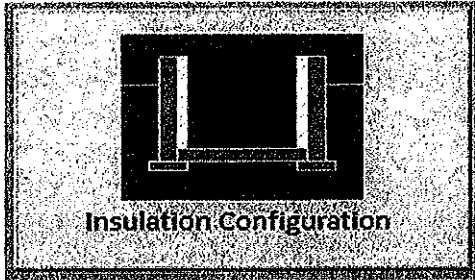
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



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):	1.1	
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):		1792

TYPE: MOUNTAINASH 6
LO# 88540

LOT 204

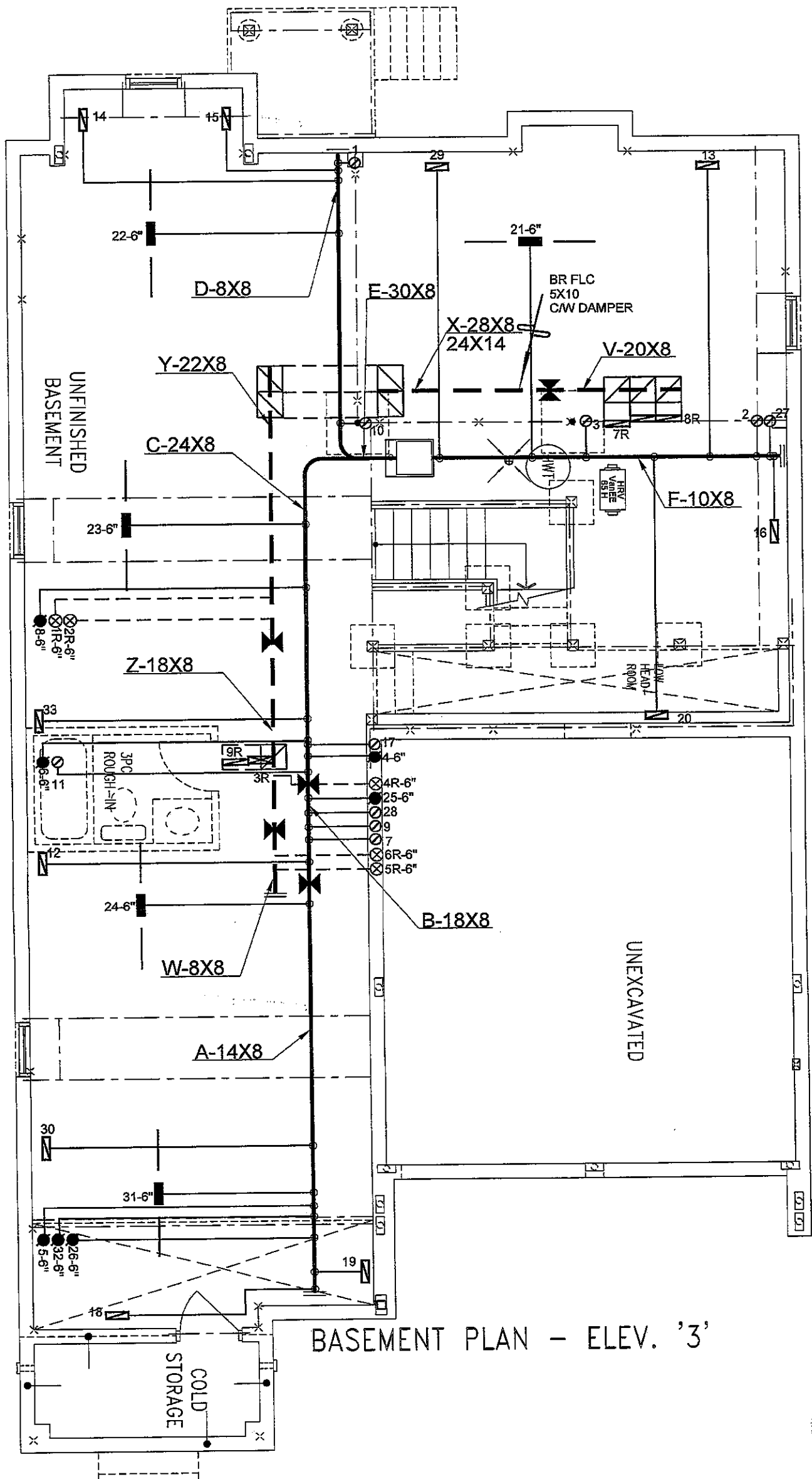
Air Infiltration Residential Load Calculator

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):	1236.0		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1647.7 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
Diameter (mm):	0	0	0
	#4	0	
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.338		
Cooling Air Leakage Rate (ACH/H):	0.121		

TYPE: MOUNTAINASH 6
LO# 88540

LOT 204



BASEMENT PLAN - ELEV. '3'

LOT 204
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.32.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, IBC 19669
HVAC DESIGNS LTD.

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
	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

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Client
GREENPARK HOMES

Project Name
**RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO**

**LOT 204
MOUNTAINASH 6 3370 sqft**

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@hvacdsgns.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 57818 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 @ 0.5" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	17	6	4
1ST FLOOR	11	3	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

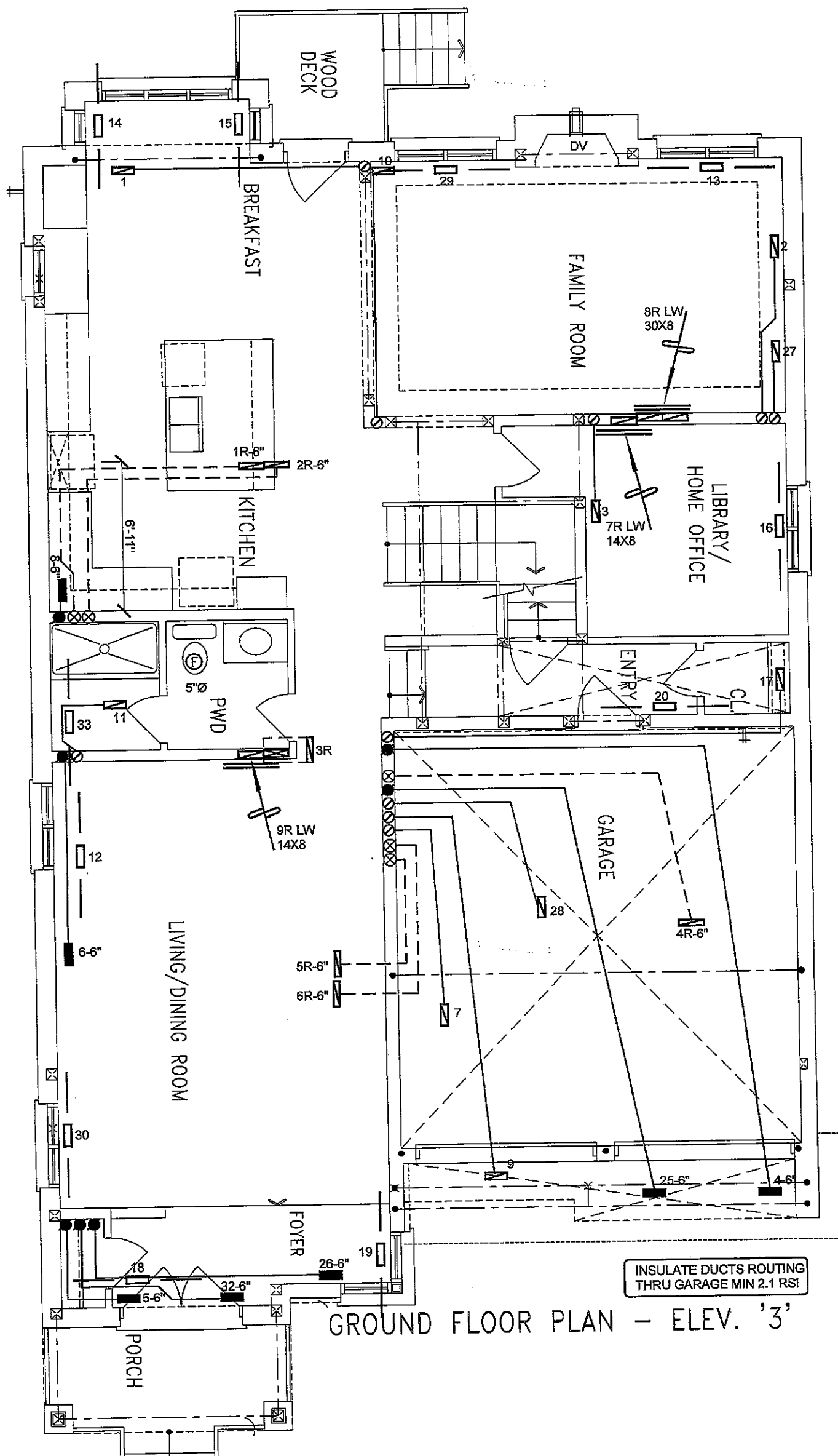
Sheet Title
**BASEMENT
HEATING
LAYOUT**

Date
DEC/2020

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 88540



GROUND FLOOR PLAN - ELEV. '3'

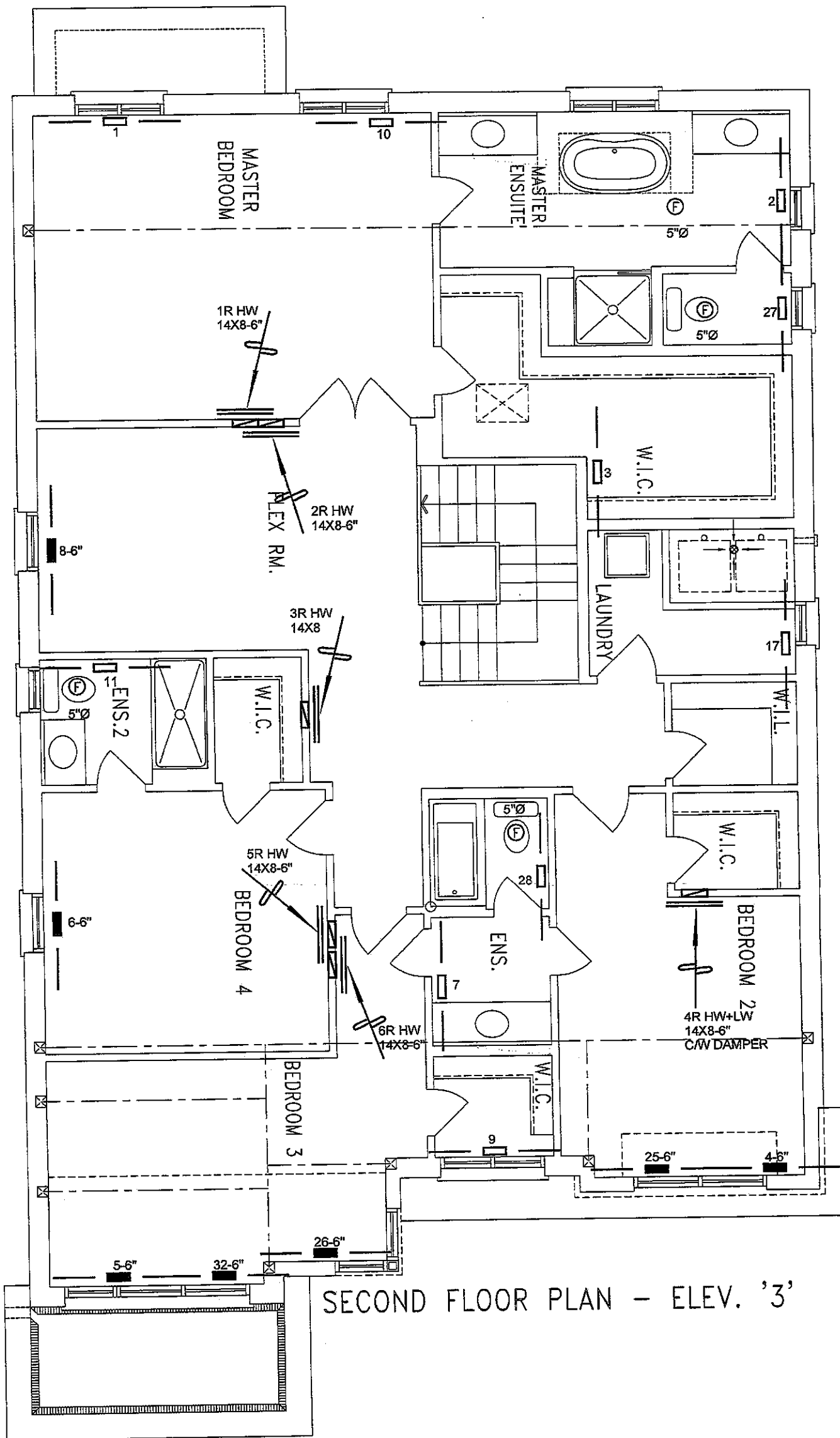
LOT 204
CSA-F280-12
PACKAGE A1

I MICHAEL O'Rourke HAVE REVIEW
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							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
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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ONTARIO BUILDING CODE.		Sheet Title	
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.	FIRST FLOOR HEATING LAYOUT	
GREENPARK HOMES		Date DEC/2020	
Project Name		Scale 3/16" = 1'-0"	BCIN# 19669
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO		LO# 88540	
LOT 204 MOUNTAINASH 6 3370 sqft			



SECOND FLOOR PLAN - ELEV. '3'

LOT 204
CSA-F280-12
PACKAGE A1

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.

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

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