

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

TYPE: MOUNTAINASH 7

GFA: 3157

DATE: May-20
LO# 85973

WINTER NATURAL AIR CHANGE RATE 0.336
SUMMER NATURAL AIR CHANGE RATE 0.121

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

CSA-F260-12
SE-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	BED-2	BED-3	BED-4	ENS-2	ENS-3
EXP. WALL				51	28	33	48	13	6	6
CLG. HT.				9	9	9	9	9	9	9
GRS.WALL AREA	LOSS	GAIN		459	252	297	432	117	54	54
GLAZING	LOSS	GAIN								
NORTH	19.8	15.2	16	316	252	0	0	0	7	138
EAST	19.8	40.9	0	0	0	44	870	1800	76	1502
SOUTH	19.8	24.5	0	0	0	0	0	0	16	316
WEST	19.8	40.9	32	633	1309	14	277	573	0	0
SKYL.T.	34.6	101.6	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	411	1704	309	231	958	174	47	195
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	525	626	309	192	229	113	90	107
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
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0
SUBTOTAL HT LOSS				3279	1602	2881	3855	1050	654	419
SUB TOTAL HT GAIN					2179		2208	3763	629	237
LEVEL FACTOR / MULTIPLIER			0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25
AIR CHANGE HEAT LOSS				818	389	659	911	264	163	105
AIR CHANGE HEAT GAIN				181	76	163	278	47	18	18
DUCT LOSS				0	0	335	457	0	82	0
DUCT GAIN				0	0	302	469	0	67	0
HEAT GAIN PEOPLE	240		2	480	0	1	240	1	240	0
HEAT GAIN APPLIANCES/LIGHTS				411	411	411	411	411	411	411
TOTAL HT LOSS BTUH				4086	2001	3664	5023	1325	898	524
TOTAL HT GAIN x 1.3 BTUH				4201	1974	4322	6710	1725	952	853

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	FAM	L/D	K/B	L/H	LND	W/R	FOY	MUD	WOD	BAS
EXP. WALL				33	34	40	23	8	6	23	27	47	185
CLG. HT.				10	10	10	10	9	10	10	11	8	8
GRS.WALL AREA	LOSS	GAIN		330	340	400	230	72	60	230	297	376	1071
GLAZING	LOSS	GAIN											
NORTH	19.8	15.2	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	40.9	0	0	0	0	0	0	0	5	99	205	0
SOUTH	19.8	24.5	0	0	0	0	0	0	0	0	0	0	0
WEST	19.8	40.9	40	791	1637	0	0	0	0	0	0	0	0
SKYL.T.	34.6	101.6	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	290	1202	218	307	1273	231	340	1410	256	204	846
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	0	168	200	99	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	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS				1993	1925	2640	1360	608	358	1804	1617	1149	3281
SUB TOTAL HT GAIN					1855	1041	2271	1004	319	212	514	655	532
LEVEL FACTOR / MULTIPLIER			0.30	0.45	0.30	0.45	0.30	0.45	0.30	0.45	0.30	0.45	0.50
AIR CHANGE HEAT LOSS				890	869	1178	607	152	160	305	722	88	8701
AIR CHANGE HEAT GAIN				137	77	168	74	24	16	38	0	0	0
DUCT LOSS				0	0	0	0	0	0	0	0	0	0
DUCT GAIN				0	0	0	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				411	411	411	411	411	411	411	411	411	411
TOTAL HT LOSS BTUH				2882	2784	3818	1957	760	518	2609	2339	1140	16982
TOTAL HT GAIN x 1.3 BTUH				3124	1987	3705	1937	980	830	717	469	851	1341

TOTAL HEAT GAIN BTUH:

36922

TONS: 3.08

LOSS DUE TO VENTILATION LOAD BTUH: 1615

STRUCTURAL HEAT LOSS: 53361

TOTAL COMBINED HEAT LOSS BTUH: 54866

Michael O'Rourke

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BUILDER: GREENPARK HOMES

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HEATING CFM	1131	COOLING CFM	1131
TOTAL HEAT LOSS	53,351	TOTAL HEAT GAIN	36,647
AIR FLOW RATE CFM	21.2	AIR FLOW RATE CFM	30.86

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

#GOODMAN
GMEC960603BNA 60
FAN SPEED LOW

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	8	4
R/A	0	0	5	2	1

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

MEDLOW 928
MEDIUM 1017
MEDIUM HIGH 1017
HIGH 1131

DESIGN CFM = 1131
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"x8" 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	ENS	BED-2	BED-3	BED-4	ENS-2	BED-3	BED-2	MBR	ENS-3	FAM	L/D	K/B	K/B	L/H	LND	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	2.05	1.00	1.00	1.84	2.51	1.32	0.90	2.51	1.84	2.05	0.52	2.88	2.78	1.91	1.91	1.97	0.76	0.52	2.61	2.34	4.53	4.53	4.53	4.53
CFM PER RUN HEAT	43	21	21	39	53	28	19	53	39	43	11	61	59	40	40	42	16	11	55	50	96	96	96	96
RM GAIN MBH.	2.10	0.99	0.99	2.16	3.36	1.72	0.95	3.36	2.16	2.10	0.88	3.12	1.99	1.85	1.85	1.94	0.98	0.83	0.72	0.41	0.55	0.55	0.55	0.55
CFM PER RUN COOLING	65	30	30	67	104	53	29	104	67	65	27	96	61	57	57	60	30	26	22	13	17	17	17	17
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	56	29	18	62	53	23	54	59	67	47	41	14	18	37	29	34	14	8	49	35	36	19	23	40
EQUIVALENT LENGTH	90	160	180	110	120	160	130	155	120	130	180	160	160	110	150	110	190	130	140	90	100	140	150	130
TOTAL EFFECTIVE LENGTH	146	189	198	172	173	183	184	214	187	177	221	174	178	147	179	144	204	138	189	125	136	159	173	170
ADJUSTED PRESSURE	0.12	0.09	0.09	0.1	0.09	0.09	0.09	0.08	0.09	0.1	0.08	0.09	0.1	0.12	0.1	0.12	0.08	0.12	0.09	0.14	0.12	0.1	0.09	0.1
ROUND DUCT SIZE	5	4	4	5	6	6	4	6	5	5	4	6	5	5	5	5	4	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	316	241	241	286	270	143	218	270	286	316	126	311	433	294	308	184	126	126	404	574	489	489	489	489
COOLING VELOCITY (ft/min)	477	344	344	492	530	270	333	530	492	477	310	489	448	419	419	441	344	298	162	162	87	87	87	87
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	C	B	B	A	B	B	A	B	C	A	C	A	C	C	A	B	B	B	B	C	A	A	A

RUN #
ROOM NAME
RM LOSS MBH.
CFM PER RUN HEAT
RM GAIN MBH.
CFM PER RUN COOLING
ADJUSTED PRESSURE
ACTUAL DUCT LGH.
EQUIVALENT LENGTH
TOTAL EFFECTIVE LENGTH
ADJUSTED PRESSURE
ROUND DUCT SIZE
HEATING VELOCITY (ft/min)
COOLING VELOCITY (ft/min)
OUTLET GRILL SIZE
TRUNK

CITY OF HAMILTON
Building Division
Permit No. 20187709
STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
DRAWINGS AND/OR CONTRACTOR SHALL COMPLY WITH THE CITY OF HAMILTON BUILDING CODE AND ALL OTHER APPLICABLE LAW

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	465	0.08	10.5	14	x	8	598	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	638	0.08	11.8	18	x	8	638	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	490	0.09	10.4	12	x	8	735	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	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	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	265	0.05	9.6	10	x	8	477	
															TRUNK X	1131	0.05	16.5	32	x	8	636	
															TRUNK Y	265	0.05	9.6	10	x	8	477	
															TRUNK Z	625	0.05	13.2	20	x	8	563	
															DROP	1131	0.05	16.5	24	x	10	679	

RETURN AIR #	1	2	3	4	5	6	7								BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	85	75	115	75	75	180	360	0	0	0	0	0	0	0	166
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
ACTUAL DUCT LGH.	47	53	55	67	68	20	26	1	1	1	1	1	1	1	16
EQUIVALENT LENGTH	190	225	215	235	240	165	235	0	0	0	0	0	0	0	155
TOTAL EFFECTIVE LH	237	278	270	302	308	185	261	1	1	1	1	1	1	1	171
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.05	0.08	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
ROUND DUCT SIZE	6	6	7	6	6	7.4	10.3	0	0	0	0	0	0	0	6.9
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	30	0	0	0	0	0	0	0	14

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	85	75	115	75	75	180	360	0	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.	47	53	55	67	68	20	26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	190	225	215	235	240	165	235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	237	278	270	302	308	185	261	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.05	0.08	0.06	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	14.80
ROUND DUCT SIZE	6	6	7	6	6	7.4	10.3	0	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	0	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	14	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Michael O'Rourke

TYPE: MOUNTAINASH 7
 SITE NAME: RUSSEL GARDENS PHASE 3

LO # 85973

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	4	@ 10.6 cfm	42.4	cfm
Other Rooms	7	@ 10.6 cfm	74.2	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	AT °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
ENG-2	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:	CITY OF HAMILTON
Telephone #:	Building Division

INSTALLING CONTRACTOR	
Permit No.	20187709
Name:	THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
Address:	THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
City:	THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW
Telephone #:	These drawings and/or specifications have been reviewed by

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:	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, 3.2.5 OF THE BUILDING CODE.
 INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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

LO#: 85973

Model: MOUNTAINASH 7

Builder: GREENPARK HOMES

Date: 11/05/2020

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1374	8	10992
First	1374	10	13740
Second	1783	9	16047
Third	0	9	0
Fourth	0	9	0
Total:			40,779.0 ft ³
Total:			1154.7 m ³

Air Change & Delta T Data

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 DTD _h	22	-17	39	71
Summer DTD _c	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage

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

$$0.338 \times 320.76 \times 39^\circ\text{C} \times 1.2 = 5100 \text{ W}$$

$$= 17403 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.121 \times 320.76 \times 7^\circ\text{C} \times 1.2 = 331 \text{ W}$$

$$= 1130 \text{ Btu/h}$$

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)

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

Level	Level Factor (LF)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{level})
1	0.5	17,403	9,420	0.924
2	0.3		11,697	0.446
3	0.2		13,957	0.249
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_{airv} = 0

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** MOUNTAINASH 7**BUILDER:** GREENPARK HOMES**SFQT:** 3157**LO#** 85973**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):	40779.0	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: 56.0 ft	WIDTH: 37.0 ft	EXPOSED PERIMETER:	186.0 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	-

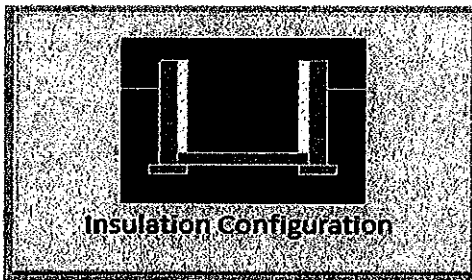
INDIVIDUAL BCIN: 19669

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):	17.1	 Insulation Configuration
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):	2.0	
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):		1828

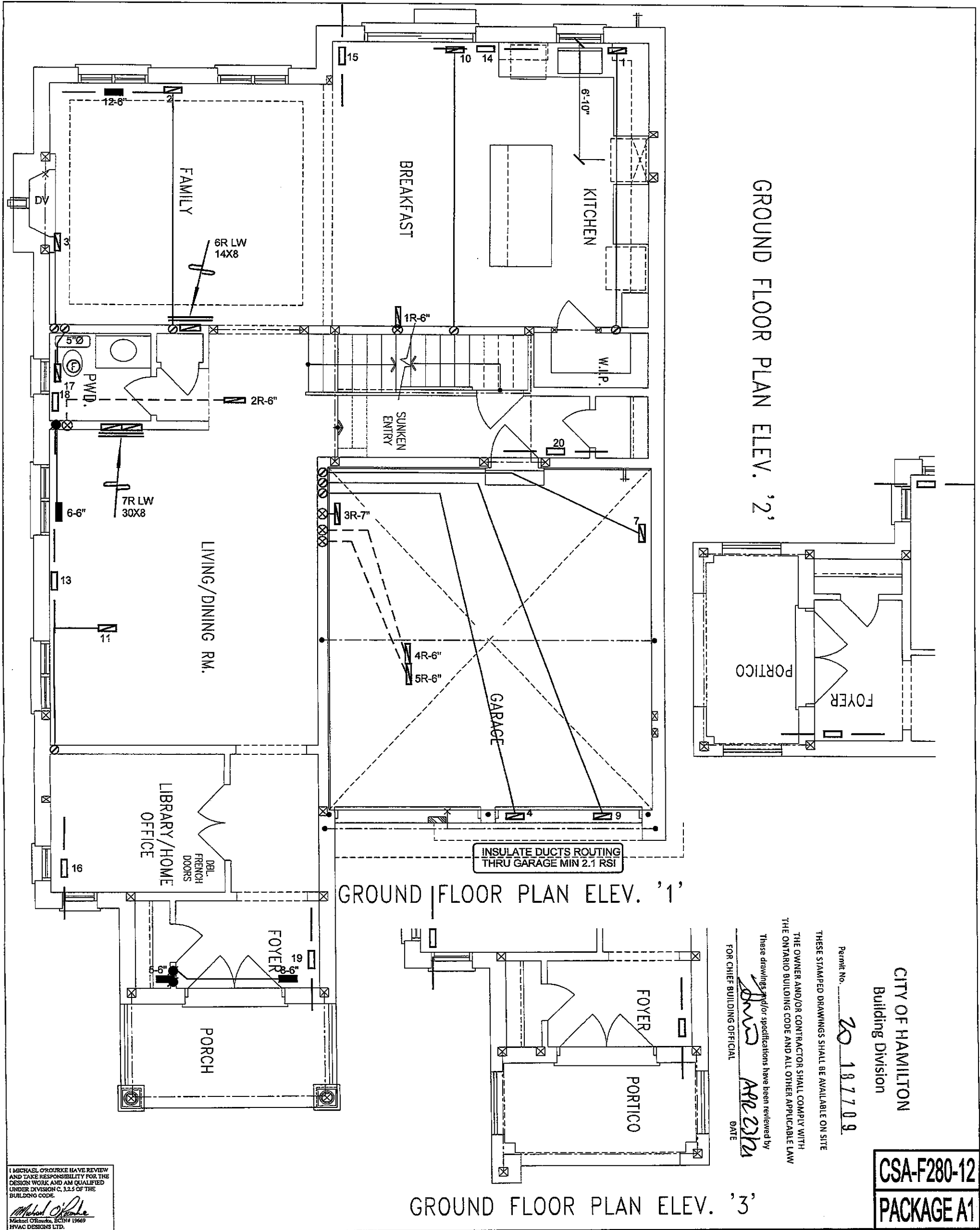
TYPE: MOUNTAINASH 7
LO# 85973

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):	1154.7			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1539.3 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 7
LO# 85973



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

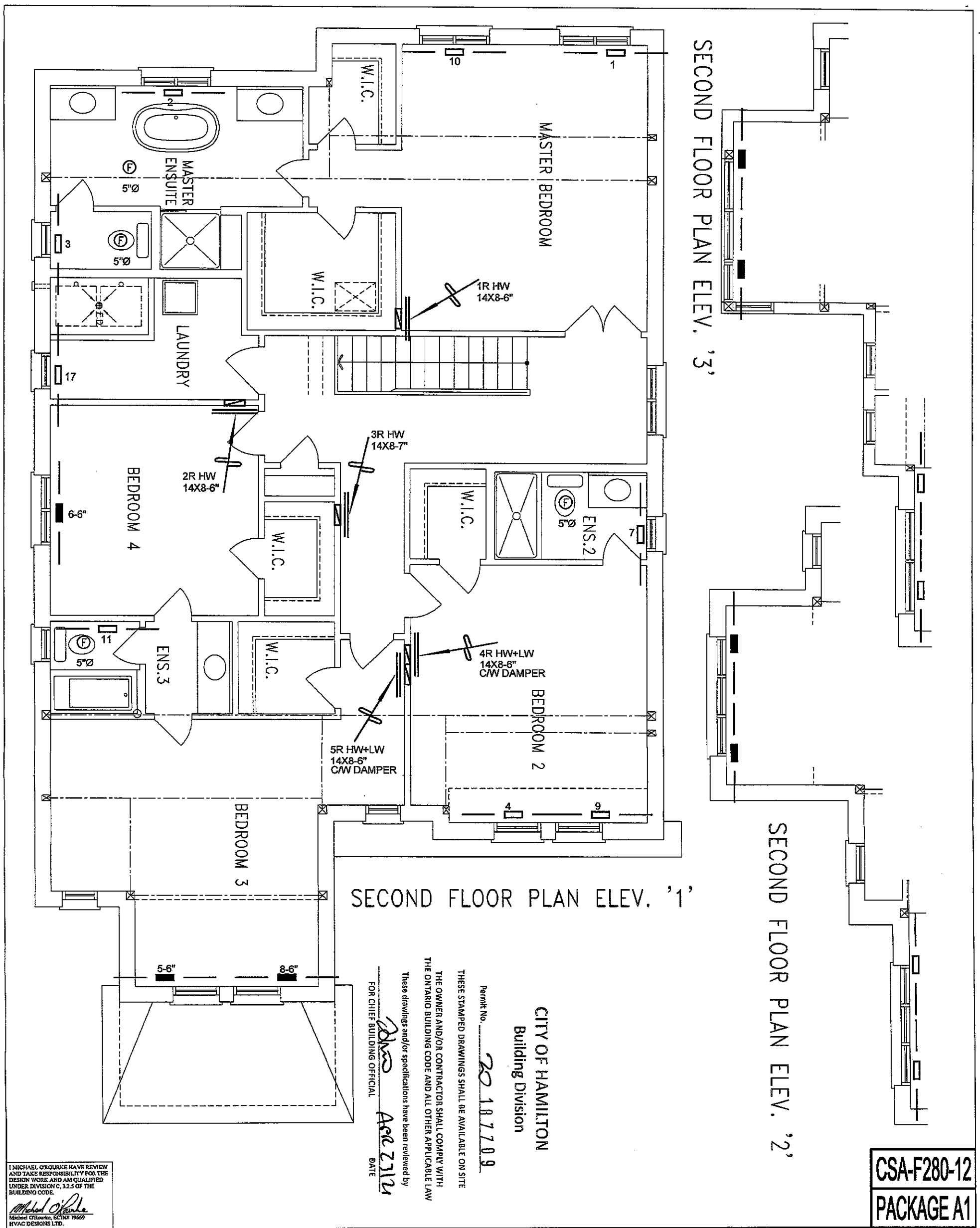
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Client GREENPARK HOMES	HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services Installation 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 Date APRIL/2020 Scale 3/16" = 1'-0" BCIN# 19669 LO# 85973
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO		
MOUNTAINASH 7 3157 sqft		

SECOND FLOOR PLAN ELEV. '3'

SECOND FLOOR PLAN ELEV. '2'

SECOND FLOOR PLAN ELEV. '1'



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

CITY OF HAMILTON
Building Division
Permit No. 20187709
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
FOR CHIEF BUILDING OFFICIAL
APC 2/12
DATE

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"x6" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x6" 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 APRIL/2020			
MOUNTAINASH 7 3157 sqft						Scale 3/16" = 1'-0"			
						BCIN# 19669			
						LO#		85973	