

31 Seabury Ave - Master

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SITE NAME: RUSSEL GARDENS PHASE 3			OPT 5 BED			DATE: May-20			WINTER NATURAL AIR CHANGE RATE 0.338			HEAT LOSS AT °F. 71		
BUILDER: GREENPARK HOMES			TYPE: MOUNTAINASH 3			GFA: 3072			SUMMER NATURAL AIR CHANGE RATE 0.121			HEAT GAIN AT °F. 13		
ROOM USE			MBR			ENS			BED-3			BED-4		
EXP. WALL			42			11			27			32		
CLG. HT.			9			9			9			9		
GRS.WALL AREA			378			99			63			243		
GLAZING			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN		
NORTH			19.8	14.7	0	0	0	0	0	0	0	0	0	0
EAST			19.8	37.8	0	0	0	0	18	356	680	44	870	1661
SOUTH			19.8	22.8	0	0	0	0	0	0	0	0	0	0
WEST			19.8	37.8	32	933	1208	0	0	0	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	346	1434	260	83	344	62	45	187	34	199
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	512	610	301	132	157	78	46	55	27	227
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														
SLAB ON GRADE HEAT LOSS														
SUBTOTAL HT LOSS					2677			818			697			2626
SUB TOTAL HT GAIN					1769			504			758			2084
LEVEL FACTOR / MULTIPLIER			0.20	0.26				0.20	0.26		0.20	0.26		0.20
AIR CHANGE HEAT LOSS					689			210			179			676
AIR CHANGE HEAT GAIN					134			38			58			158
DUCT LOSS					0			0			88			330
DUCT GAIN					0			0			82			300
HEAT GAIN PEOPLE			240		2			0			0			329
HEAT GAIN APPLIANCES/LIGHTS								0			0			240
TOTAL HT LOSS BTU/H					3366			1028			964			3632
TOTAL HT GAIN x 1.3 BTU/H					3766			705			1167			4284

ROOM USE			L/D			FM			K/B			L/H		
EXP. WALL			30			33			35			27		
CLG. HT.			10			10			10			11		
GRS.WALL AREA			300			330			350			297		
GLAZING			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN		
NORTH			19.8	14.7	0	0	0	0	0	0	0	0	0	0
EAST			19.8	37.8	0	0	0	0	0	0	0	0	0	0
SOUTH			19.8	22.8	36	712	820	0	0	0	7	138	159	0
WEST			19.8	37.8	0	0	0	34	672	1284	67	1324	2530	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	264	1094	198	296	1227	222	264	1094	198	257
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	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	0
EXPOSED FLOOR			2.4	0.4	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS														
SLAB ON GRADE HEAT LOSS														
SUBTOTAL HT LOSS					1806			1889			2839			1856
SUB TOTAL HT GAIN					1018			1506			2938			1703
LEVEL FACTOR / MULTIPLIER			0.30	0.40				0.30	0.40		0.30	0.40		0.30
AIR CHANGE HEAT LOSS					713			750			1121			733
AIR CHANGE HEAT GAIN					77			114			223			129
DUCT LOSS					0			0			0			32
DUCT GAIN					0			0			0			0
HEAT GAIN PEOPLE			240		0			0			0			0
HEAT GAIN APPLIANCES/LIGHTS								0			0			0
TOTAL HT LOSS BTU/H					2520			2649			3960			2689
TOTAL HT GAIN x 1.3 BTU/H					2882			2775			4778			3060

TOTAL HEAT GAIN BTU/H:

37020

TONS: 3.05

LOSS DUE TO VENTILATION LOAD BTU/H: 1819

STRUCTURAL HEAT LOSS: 52108

TOTAL COMBINED HEAT LOSS BTU/H: 53927

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.

Michael O'Rourke

INDIVIDUAL BCIN: 15669

MICHAEL O'ROURKE

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMESOPT 5 BED
TYPE: MOUNTAINASH 3

DATE: May-20

GFA: 3072 LO# 85966

HEATING CFM 1131
TOTAL HEAT LOSS 52,108
AIR FLOW RATE CFM 21.7
COOLING CFM 1131
TOTAL HEAT GAIN 36,690
AIR FLOW RATE CFM 30.83furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15#GOODMAN
GMCE960603BNA
FAN SPEED 60
LOW
MEDLOW 928
MEDIUM 1017
MEDIUM HIGH 1131AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600DESIGN CFM = 1131
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	8	4
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	BED-2	ENS	WIC-3	BED-3	BED-4	BED-5	ENS-1	BED-3	BED-4	MBR	S-ENS	L/D	FM	K/B	K/B	L/H	LND	W/R	FOY	MBR	BAS	BAS	BAS	BAS
RM LOSS MBH	1.72	1.03	0.96	1.82	1.74	1.57	1.26	1.82	1.74	1.68	0.53	2.52	2.65	1.98	1.98	2.59	2.51	1.63	2.25	1.68	4.11	4.11	4.11	4.11
CFM PER RUN HEAT	37	22	21	39	38	34	27	39	38	37	11	55	57	43	43	56	54	35	49	37	89	89	89	89
RM GAIN MBH	2.17	0.71	1.17	2.14	2.35	1.87	0.45	2.14	2.35	1.88	0.33	2.09	2.77	2.39	2.39	3.05	1.25	0.49	0.70	1.88	0.53	0.53	0.53	0.53
CFM PER RUN COOLING	67	22	36	66	73	58	14	66	73	58	10	64	86	74	74	94	38	15	21	58	16	16	16	16
ADJUSTED PRESSURE	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	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	57	19	43	51	48	32	61	56	47	46	30	17	47	23	33	37	47	16	35	22	44	19	4	22
EQUIVALENT LENGTH	140	150	110	120	150	180	130	130	160	160	190	120	120	140	100	150	110	150	100	140	140	110	130	130
TOTAL EFFECTIVE LENGTH	197	169	153	171	198	212	191	186	207	206	220	137	167	163	133	187	157	166	135	162	184	129	134	152
ADJUSTED PRESSURE	0.09	0.1	0.11	0.1	0.09	0.08	0.09	0.09	0.08	0.08	0.08	0.13	0.1	0.11	0.13	0.09	0.11	0.1	0.13	0.11	0.09	0.13	0.12	0.11
ROUND DUCT SIZE	5	4	4	5	5	5	4	5	5	5	4	5	6	6	6	6	5	4	4	5	6	6	6	6
HEATING VELOCITY (ft/min)	272	252	241	286	279	250	310	286	279	272	126	404	291	219	219	286	396	402	562	272	454	454	454	454
COOLING VELOCITY (ft/min)	492	252	413	485	536	426	161	485	536	426	115	470	438	377	377	479	279	172	241	426	82	82	82	82
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	B	D	D	C	B	A	D	A	C	D	A	B	B	C	A	C	C	B	A	B	D	C	C

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
1	BED-2	1.72	37	2.17	67	0.17	57	140	197	0.09	5	272	492	3X10	A
2	ENS	1.03	22	0.71	22	0.17	19	150	169	0.1	4	252	252	3X10	B
3	WIC-3	0.96	21	1.17	36	0.17	43	110	153	0.11	4	241	413	3X10	D
4	BED-3	1.82	39	2.14	66	0.17	51	120	171	0.1	5	286	485	3X10	D
5	BED-4	1.74	38	2.35	73	0.17	48	150	198	0.09	5	279	536	3X10	C
6	BED-5	1.57	34	1.87	58	0.17	32	180	212	0.08	5	250	426	3X10	B
7	ENS-1	1.26	27	0.45	14	0.17	61	130	191	0.09	4	310	161	3X10	A
8	BED-3	1.82	39	2.14	66	0.17	56	130	186	0.09	5	286	485	3X10	D
9	BED-4	1.74	38	2.35	73	0.17	47	160	207	0.08	5	272	536	3X10	A
10	MBR	1.68	37	1.88	58	0.17	46	160	206	0.08	5	272	426	3X10	C
11	S-ENS	0.53	11	0.33	10	0.17	30	190	220	0.08	4	126	115	3X10	C
12	L/D	2.52	55	2.09	64	0.17	17	120	137	0.13	5	404	470	3X10	D
13	FM	2.65	57	2.77	86	0.17	47	120	167	0.1	6	291	438	4X10	A
14	K/B	1.98	43	2.39	74	0.17	23	100	163	0.11	6	219	377	4X10	B
15	K/B	1.98	43	2.39	74	0.17	23	100	163	0.11	6	219	377	4X10	B
16	L/H	2.59	56	3.05	94	0.16	37	150	187	0.09	6	286	479	4X10	C
17	LND	2.51	54	1.25	38	0.17	47	110	157	0.11	5	396	279	3X10	A
18	W/R	1.63	35	0.49	15	0.17	16	100	140	0.1	4	402	172	3X10	C
19	FOY	2.25	49	0.70	21	0.17	35	100	140	0.13	5	562	241	3X10	C
20	MBR	1.68	37	1.88	58	0.17	48	140	162	0.11	5	272	426	3X10	B
21	BAS	4.11	89	0.53	16	0.16	22	110	184	0.09	6	454	82	4X10	A
22	BAS	4.11	89	0.53	16	0.16	22	110	184	0.09	6	454	82	4X10	B
23	BAS	4.11	89	0.53	16	0.16	22	110	184	0.09	6	454	82	4X10	D
24	BAS	4.11	89	0.53	16	0.16	22	110	184	0.09	6	454	82	4X10	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	301	0.08	8.9	10	X	8	542	TRUNK G	0	0.00	0	0	X	8	0	TRUNK O	0	0.05	0	0	X	8	0		
TRUNK B	569	0.08	11.4	16	X	8	640	TRUNK H	0	0.00	0	0	X	8	0	TRUNK P	0	0.05	0	0	X	8	0		
TRUNK C	316	0.08	9.1	10	X	8	569	TRUNK I	0	0.00	0	0	X	8	0	TRUNK Q	0	0.05	0	0	X	8	0		
TRUNK D	559	0.08	11.3	14	X	8	719	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	0	0.05	0	0	X	8	0		
																TRUNK X	846	0.05	14.8	26	X	8	586		
																TRUNK Y	585	0.05	12.9	20	X	8	527		
																TRUNK Z	205	0.05	8.7	10	X	8	369		
																DROP	1131	0.05	16.5	24	X	10	679		

RETURN AIR #	1	2	3	4	5	6	7	8								BR
AIR VOLUME	75	130	70	70	70	380	75	100	0	0	0	0	0	0	0	161
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
ACTUAL DUCT LGH.	56	58	52	56	51	31	33	60	1	1	1	1	1	1	1	15
EQUIVALENT LENGTH	215	235	195	165	255	195	220	240	0	0	0	0	0	0	0	175
TOTAL EFFECTIVE LH	271	293	247	221	306	226	253	300	1	1	1	1	1	1	1	190
ADJUSTED PRESSURE	0.05	0.05	0.06	0.07	0.05	0.07	0.06	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.08
ROUND DUCT SIZE	6	7.3	5.6	5.4	5.8	10.1	5.7	6.7	0	0	0	0	0	0	0	7.1
INLET GRILL SIZE	8	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	X
INLET GRILL SIZE	14	14	14	14	14	30	14	14	0	0	0	0	0	0	0	14

RETURN AIR #	1	2	3	4	5	6	7	8																	BR
AIR VOLUME	0	0	0	0	0	0	0	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.	56	58	52	56	51	31	33	60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
EQUIVALENT LENGTH	215	235	195	165	255	195	220	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL EFFECTIVE LH	271	293	247	221	306	226	253	300	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
ADJUSTED PRESSURE	0.05	0.05	0.06	0.07	0.05	0.07	0.06	0.05	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	7.3	5.6	5.4	5.8	10.1	5.7	6.7	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	14	14	14	14	30	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TYPE: MOUNTAINASH 3
SITE NAME: RUSSEL GARDENS PHASE 3

31 Sealey Ave.

LO # 85996
OPT 5 BED

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	4	@ 10.6 cfm	42.4	cfm
Kitchen & Bathrooms	5	@ 10.6 cfm	53	cfm
Other Rooms	7	@ 10.6 cfm	74.2	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	95.4	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	212	cfm
Less Principal Ventil. Capacity	95.4	cfm
Required Supplemental Capacity	116.6	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM		ΔT °F		FACTOR		% LOSS
95.4 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
ENS-1	FV-05-11VK1	50	☒	0.3
S-ENS	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.
Model: VANE 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: *Michael O'Rourke*
HRAI #: 001820
Date: May-20

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

LO#: 85966

Model: MOUNTAINASH 3

Builder: GREENPARK HOMES

Date: 07/05/2020

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1378	8	11024
First	1378	10	13780
Second	1694	9	15246
Third	0	9	0
Fourth	0	9	0
Total:			40,050.0 ft³
Total:			1134.1 m³

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
6.2.6 Sensible Gain due to Air Leakage

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

$$0.338 \times 315.02 \times 39^\circ\text{C} \times 1.2 = 5009 \text{ W}$$

$$= 17092 \text{ Btu/h}$$

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

$$= 0.121 \times 315.02 \times 7^\circ\text{C} \times 1.2 = 325 \text{ W}$$

$$= 1110 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

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

$$95 \text{ CFM} \times 71^\circ\text{F} \times 1.08 \times 0.25 = 1819 \text{ Btu/h}$$

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

$$95 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 330 \text{ Btu/h}$$

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

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

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	17,092	7,900	1.082
2	0.3		12,981	0.395
3	0.2		13,286	0.257
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 3	OPT 5 BED	BUILDER: GREENPARK HOMES
SFQT: 3072	LO# 85966	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):	40050.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 53.0 ft	WIDTH: 36.0 ft	EXPOSED PERIMETER:	178.0 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	-

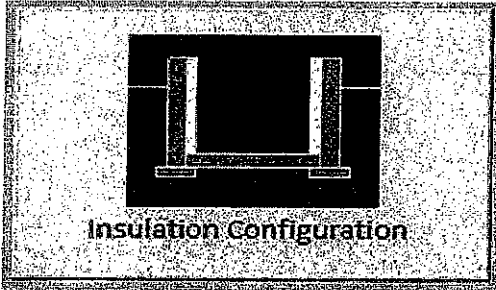
INDIVIDUAL BCIN: 19669

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):	16.2	 Insulation Configuration
Floor Width (m):	11.0	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.83	
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):	1538	

TYPE: MOUNTAINASH 3
LO# 85966

OPT 5 BED

Air Infiltration Residential Load Calculator

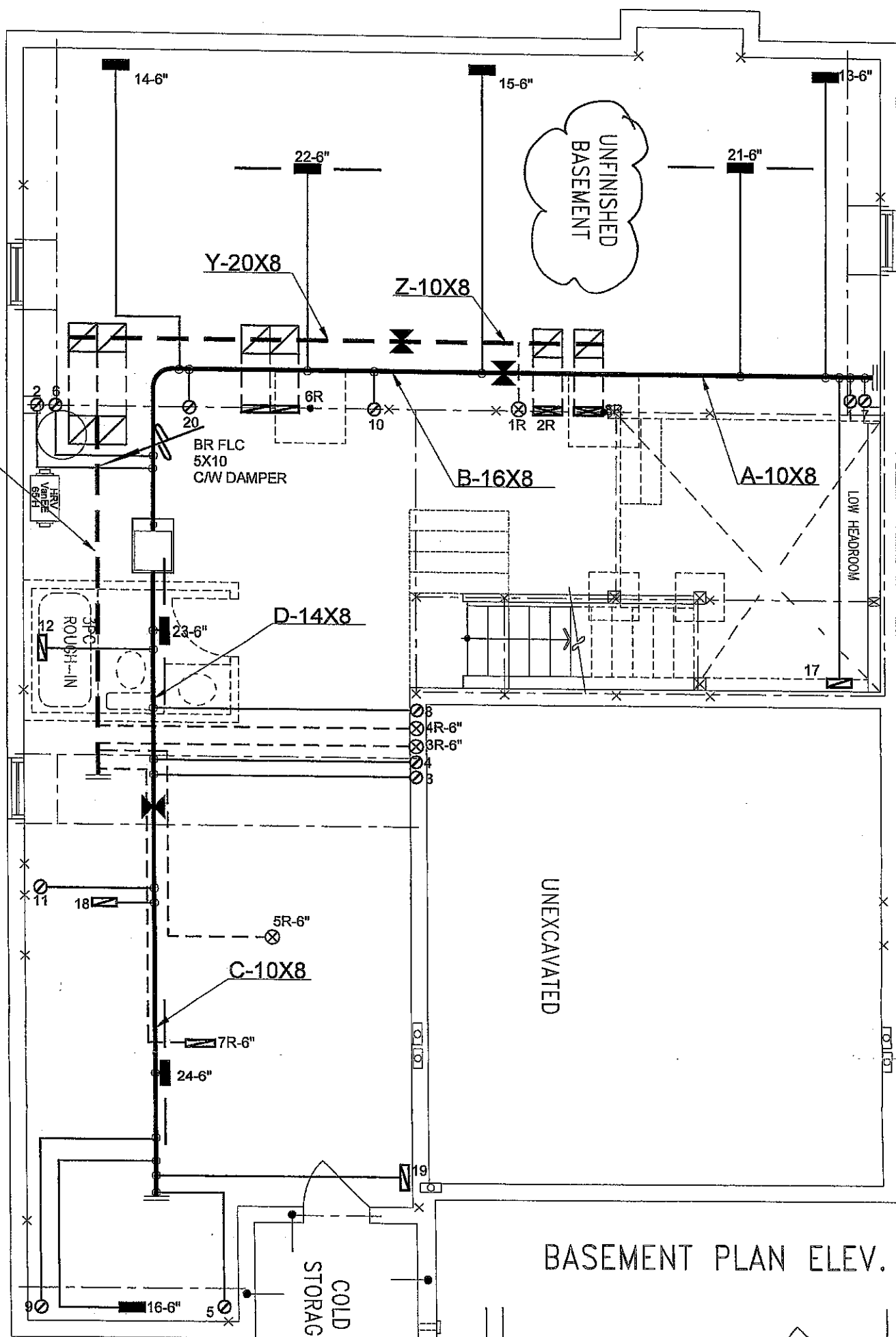
Supplemental tool for CAN/CSA-F280

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):	1134.1		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1511.8 cm ²	
	3.57	ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust	
	45.0	45.0	
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		

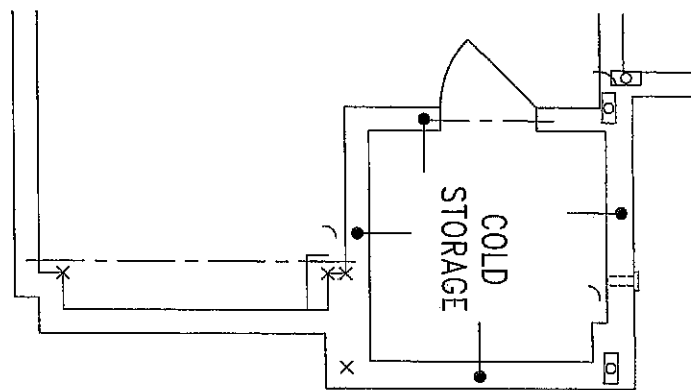
TYPE: MOUNTAINASH 3
LO# 85966

OPT 5 BED

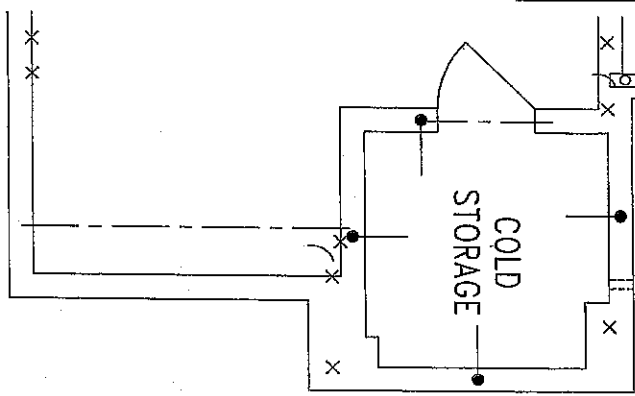
PART. BASEMENT PLAN
DECK CONDITION



BASEMENT PLAN ELEV. 1



BASEMENT PLAN ELEV. 2



BASEMENT. PLAN ELEV. 3

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 06 2020
REC BY _____ DATE _____
REF'D TO _____ DATE _____

CITY OF HAMILTON
Building Division

Permit No. 196110

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
DEC 15 2020

FOR CHIEF BUILDING OFFICIAL

DATE

I MICHAEL O'Rourke HAVE REVIEW
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, BCIN# 19669
HVAC DESIGNS LTD.

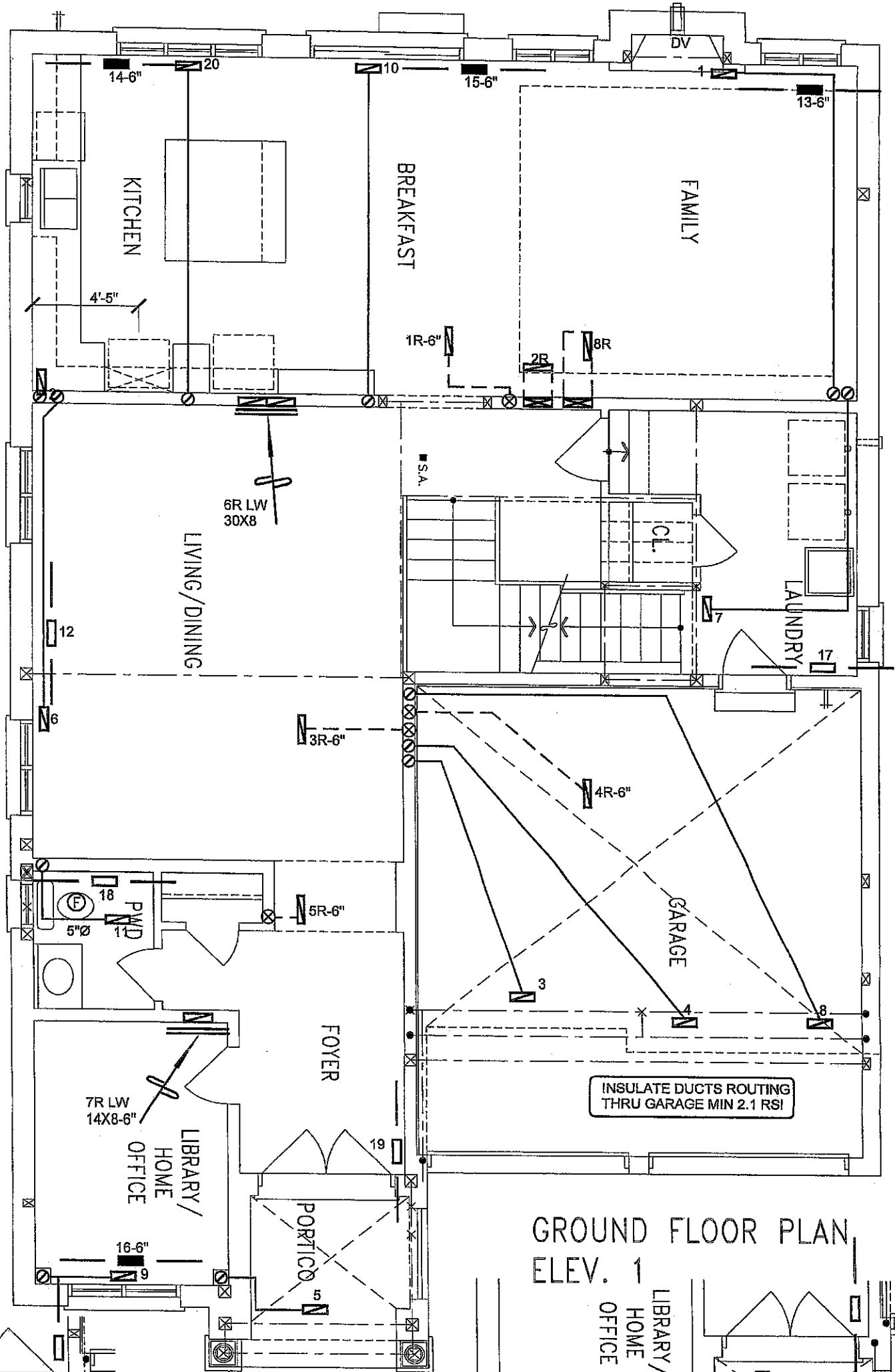
CSA-F280-12
PACKAGE A1

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	

REVISIONS

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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@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 53927 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			MAKE GOODMAN		3RD FLOOR				Date APRIL/2020	
			MODEL GMEC960603BNA		2ND FLOOR		12 6 3			
			INPUT 60 MBTU/H		1ST FLOOR		8 2 2			
			OUTPUT 57.6 MBTU/H		BASEMENT		4 1 0			
OPT 5 BED MOUNTAINASH 3 3072 sqft		COOLING 3.0 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		Scale 3/16" = 1'-0"		BCIN# 19669		
		FAN SPEED 1131 cfm @ 0.6" w.c.						LO# 85966		

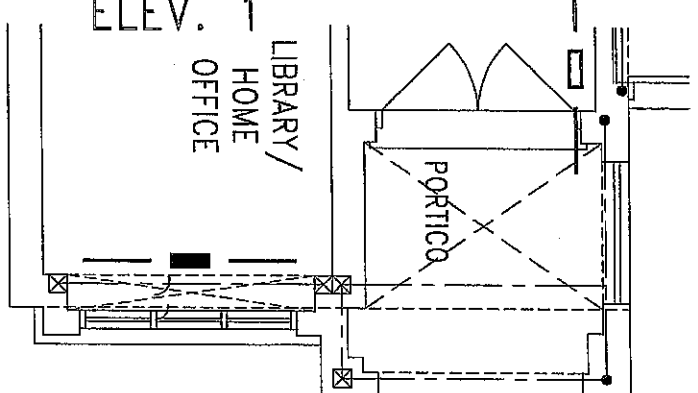


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Planning & Development Department

OCT 06 2020

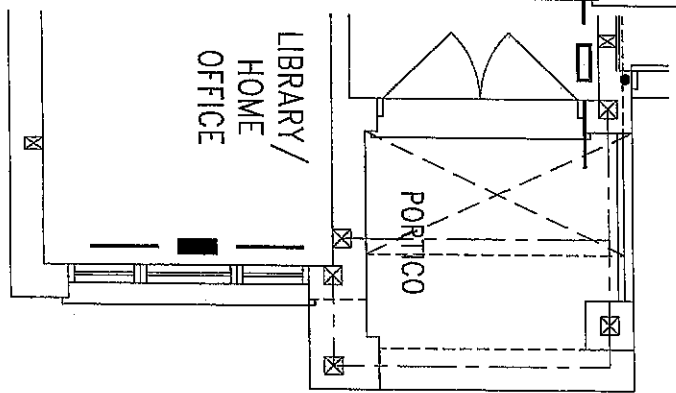
REC BY _____ DATE _____
REF'D TO _____ DATE _____

GROUND FLOOR PLAN
ELEV. 1



GROUND FLOOR PLAN
ELEV. 2

GROUND FLOOR PLAN
ELEV. 3



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Building Division

Permit No. 196110

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[Signature] **DEC 15 2020**
FOR CHIEF BUILDING OFFICIAL DATE

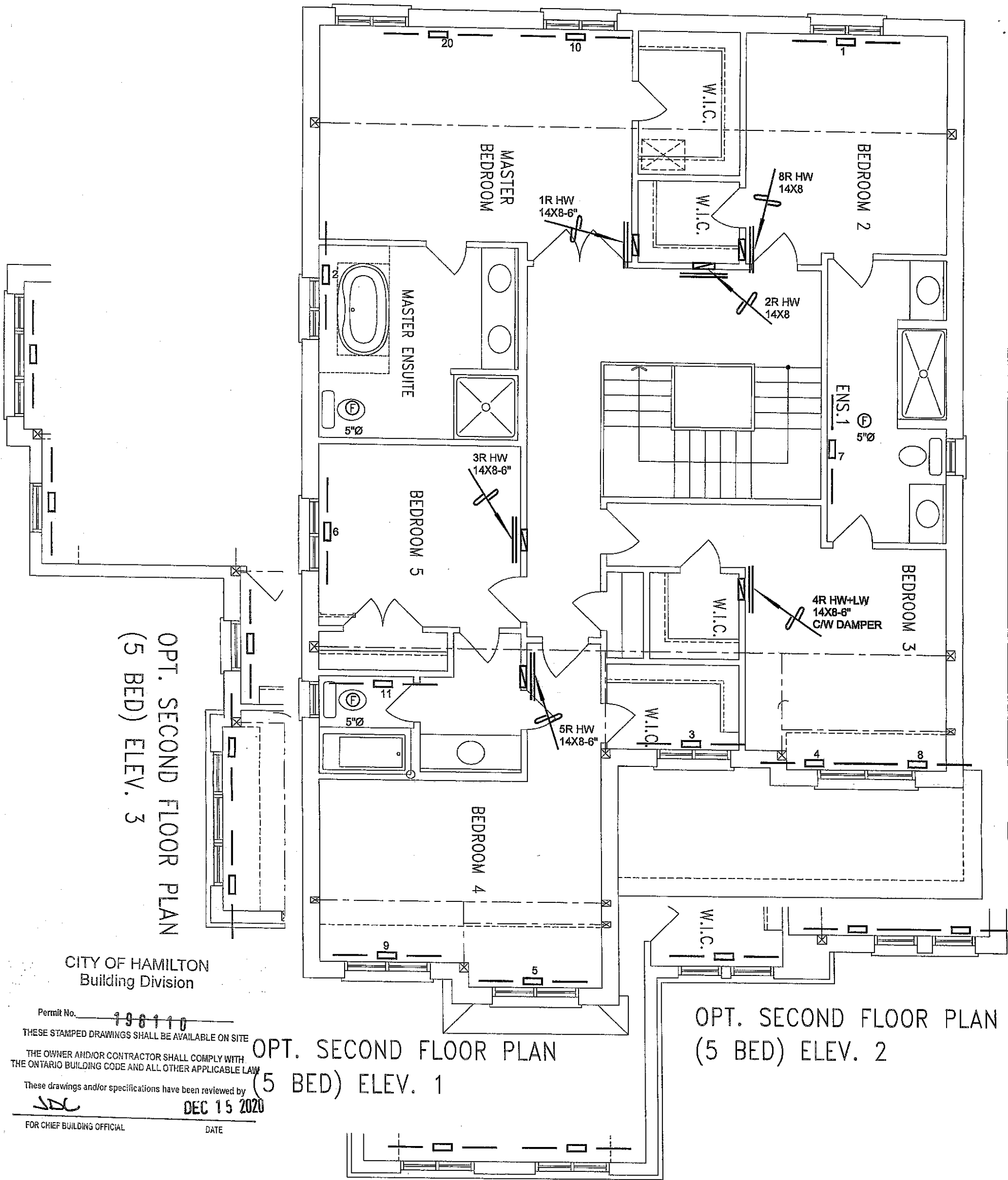
CSA-F280-12
PACKAGE A1

I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
[Signature]
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 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@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	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date APRIL/2020 Scale 3/16" = 1'-0" BCIN# 19669 LO# 85966	
OPT 5 BED MOUNTAINASH 3 3072 sqft				



CITY OF HAMILTON
Building Division

Permit No. 198110

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THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed by

[Signature]

DEC 15 2020

FOR CHIEF BUILDING OFFICIAL

DATE

OPT. SECOND FLOOR PLAN
(5 BED) ELEV. 1

OPT. SECOND FLOOR PLAN
(5 BED) ELEV. 2

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, JIC# 19669
HVAC DESIGNS LTD.

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

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ONTARIO BUILDING CODE.

Client

GREENPARK HOMES

Project Name

RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO

OPT 5 BED

MOUNTAINASH 3 3072 sqft

HVACDESIGNS LTD.

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375

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Installation to comply with the latest Ontario Building Code. All supply
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CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

OCT 6 2020

REC BY _____ DATE _____
REF'D TO _____ DATE _____

Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date APRIL/2020

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 85966