

SITE NAME: RUSSEL GARDENS PHASE 3

BUILDER: GREENPARK HOMES

TYPE: MOUNTAINASH 3

GFA: 3072

DATE: May-20

LO# 86965

WINTER NATURAL AIR CHANGE RATE 0.338

HEAT LOSS AT °F. 71

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.121

HEAT GAIN AT °F. 13

SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC-3	BED-2	BED-3	BED-4	ENS-2	S-ENS
			42	29	7	27	32	18	8	6
			9	9	9	9	9	9	9	9
FACTORS										
GRS.WALL AREA	LOSS	GAIN	378	261	63	243	288	162	72	54
GLAZING	LOSS	GAIN								
NORTH	19.8	14.9	0	0	0	0	0	0	7	138
EAST	19.8	38.4	0	0	0	18	356	691	44	870
SOUTH	19.8	23.1	0	0	0	7	138	162	0	0
WEST	19.8	38.4	32	633	1228	14	277	537	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	346	1434	260	240	995	180	45	107
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	612	610	301	204	243	120	46	55
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	25	64
EXPOSED FLOOR	2.4	0.4	0	0	0	42	100	18	252	597
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			2677	1789	1000	697	2526	2522	1246	475
SUB TOTAL HT GAIN						770	2112	2390	540	186
LEVEL FACTOR / MULTIPLIER	0.20	0.28		0.20	0.28	0.20	0.28	0.20	0.28	0.20
AIR CHANGE HEAT LOSS	743			469		193	729	700	346	132
AIR CHANGE HEAT GAIN			132		74	57	166	176	47	14
DUCT LOSS			0	0	89	336	322	0	0	0
DUCT GAIN			0	0	83	307	337	0	0	0
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0
HEAT GAIN APPLIANCES/LIGHTS			565	0	0	565	565	565	565	0
TOTAL HT LOSS BTU/H			3421	2112	979	3691	3644	1592	606	535
TOTAL HT GAIN x 1.3 BTU/H			3856	1395	1182	4394	4821	1939	260	334

ROOM USE	EXP. WALL	CLG. HT.	L/D	FM	K/B	L/H	LND	W/R	FOY	WOD	BAS
			30	33	36	27	31	7	18	46	178
			10	10	10	11	10	10	10	8	8
FACTORS											
GRS.WALL AREA	LOSS	GAIN	300	330	350	297	310	70	180	388	1028
GLAZING	LOSS	GAIN									
NORTH	19.8	14.9	0	0	0	0	0	0	0	0	0
EAST	19.8	38.4	0	0	0	0	0	0	0	0	0
SOUTH	19.8	23.1	36	712	632	0	0	0	6	119	230
WEST	19.8	38.4	0	0	0	34	672	1306	67	1324	2572
SKYLT.	34.6	101.5	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	12	281	51	0	0	0
NET EXPOSED WALL	4.1	0.8	264	1094	198	296	1227	222	264	1094	198
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	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
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1806	1899	2839	1856	1796	1172	1612	0	5921
SUB TOTAL HT GAIN						2983	1723	417	349	1120	7892
LEVEL FACTOR / MULTIPLIER	0.30	0.40		0.30	0.40	0.30	0.40	0.30	0.40	0.30	0.40
AIR CHANGE HEAT LOSS	713			750	1121	733	710	463	637	0.50	0.95
AIR CHANGE HEAT GAIN			76		113	220	127	31	26	37	83
DUCT LOSS			0	0	0	0	0	0	0	0	0
DUCT GAIN			0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			565	565	565	565	565	565	565	0	565
TOTAL HT LOSS BTU/H			2620	2649	3950	2589	2506	1635	2249	1120	16438
TOTAL HT GAIN x 1.3 BTU/H			2174	2867	4899	3148	1316	487	699	897	1604

TOTAL HEAT GAIN BTU/H:

36357

TONS: 3.03

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 52146

TOTAL COMBINED HEAT LOSS BTU/H: 53661

Michael O'Rourke

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

TYPE: MOUNTAINASH 3

DATE: May-20

GFA: 3072 LO# 85965

HEATING CFM 1131
TOTAL HEAT LOSS 52,146
AIR FLOW RATE CFM 21.69
COOLING CFM 1131
TOTAL HEAT GAIN 36,083
AIR FLOW RATE CFM 31.34furnace 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 60
FAN SPEED 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	11	8	4
R/A	0	0	5	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	21	22	23	24
ROOM NAME	MBR	ENS	WIC-3	BED-2	BED-3	BED-4	ENS-2	BED-2	BED-3	MBR	S-ENS	L/D	FM	K/B	K/B	L/H	LND	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.71	2.11	0.98	1.85	1.77	1.59	0.61	1.85	1.77	1.71	0.54	2.52	2.65	1.98	1.98	2.59	2.51	1.63	2.25	4.39	4.39	4.39	4.39
CFM PER RUN HEAT	37	46	21	40	38	35	13	40	38	37	12	55	57	43	43	56	54	35	49	95	95	95	95
RM GAIN MBH.	1.93	1.40	1.18	2.20	2.41	1.94	0.26	2.20	2.41	1.93	0.33	2.17	2.87	2.45	2.45	3.15	1.32	0.49	0.70	0.58	0.58	0.58	0.58
CFM PER RUN COOLING	60	44	37	69	76	61	8	69	76	60	10	68	90	77	77	99	41	15	22	18	18	18	18
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	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	57	28	43	51	48	26	55	56	47	46	30	17	47	23	33	37	47	16	35	44	19	4	22
EQUIVALENT LENGTH	140	140	110	120	150	170	130	130	160	160	190	120	140	100	150	150	110	150	100	140	110	130	130
TOTAL EFFECTIVE LENGTH	197	168	153	171	198	198	185	186	207	206	220	137	167	163	133	187	157	166	135	184	129	134	152
ADJUSTED PRESSURE	0.09	0.1	0.11	0.1	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.13	0.1	0.11	0.13	0.09	0.11	0.1	0.13	0.09	0.13	0.12	0.11
ROUND DUCT SIZE	5	4	4	5	5	5	4	5	6	5	4	5	6	6	6	5	5	4	4	6	6	6	6
HEATING VELOCITY (f/min)	272	528	241	294	279	257	149	294	194	272	138	404	291	219	219	286	396	402	562	484	484	484	484
COOLING VELOCITY (f/min)	441	505	424	507	558	448	92	507	388	441	115	499	459	393	393	505	301	172	252	92	92	92	92
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	B	D	D	C	B	A	D	C	A	C	D	A	B	B	C	A	C	C	A	B	D	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 (f/min)	COOLING VELOCITY (f/min)	OUTLET GRILL SIZE	TRUNK
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SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (f/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (f/min)
TRUNK A	293	0.08	8.9	10	X 8 527	TRUNK G	0	0.00	0	0	X 8 0
TRUNK B	555	0.08	11.2	14	X 8 714	TRUNK H	0	0.00	0	0	X 8 0
TRUNK C	323	0.08	9.2	10	X 8 581	TRUNK I	0	0.00	0	0	X 8 0
TRUNK D	574	0.08	11.4	16	X 8 846	TRUNK J	0	0.00	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 F	0	0.00	0	0	X 8 0	TRUNK L	0	0.00	0	0	X 8 0

RETURN AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (f/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (f/min)
TRUNK O	0	0.05	0	0	X 8 0	TRUNK X	811	0.05	14.6	24	X 8 608
TRUNK P	0	0.05	0	0	X 8 0	TRUNK Y	650	0.05	13.4	20	X 8 585
TRUNK Q	0	0.05	0	0	X 8 0	TRUNK Z	270	0.05	9.7	12	X 8 405
TRUNK R	0	0.05	0	0	X 8 0	DROP	1131	0.05	16.5	24	X 10 679
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						

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24
AIR VOLUME	135	135	85	85	75	380	75	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
ACTUAL DUCT LGH.	56	58	52	56	51	31	33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	215	245	195	165	255	195	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	271	303	247	221	308	226	273	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	0.05	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	7.5	7.5	6	5.8	6	10.1	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	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
INLET GRILL SIZE	14	14	14	14	14	30	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 # 85965

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 8 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	7	@ 10.6 cfm	74.2	cfm
Table 9.32.3.A.	TOTAL		201.4	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	201.4	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	121.9	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANE 65H Location: BSMT

79.5 cfm 3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	71 F	1.08	0.25

SUPPLEMENTAL FANS

PANASONIC

Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
ENS-2	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

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#: 85965

Model: MOUNTAINASH 3

Builder: GREENPARK HOMES

Date: 05/05/2020

Volume Calculation
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

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 315.02 x 39 °C x 1.2 = 5009 W

= 17092 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 315.02 x 7 °C x 1.2 = 325 W

= 1110 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)

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

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 / HLlevel)
1	0.5	17,092	9,011	0.948
2	0.3		12,981	0.395
3	0.2		12,315	0.278
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**BUILDER:** GREENPARK HOMES**SFQT:** 3072**LO#** 85965**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 (ft ³):	40050.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 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	-

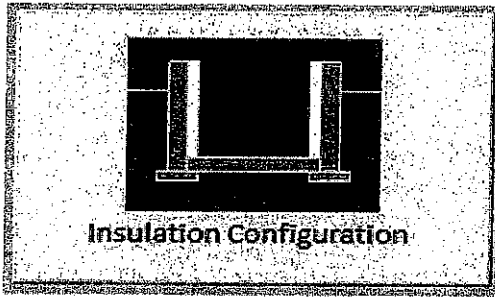
INDIVIDUAL BCIN: 19669

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):	1.52	
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):	1735	

TYPE: MOUNTAINASH 3
LO# 85965

Air Infiltration Residential Load Calculator

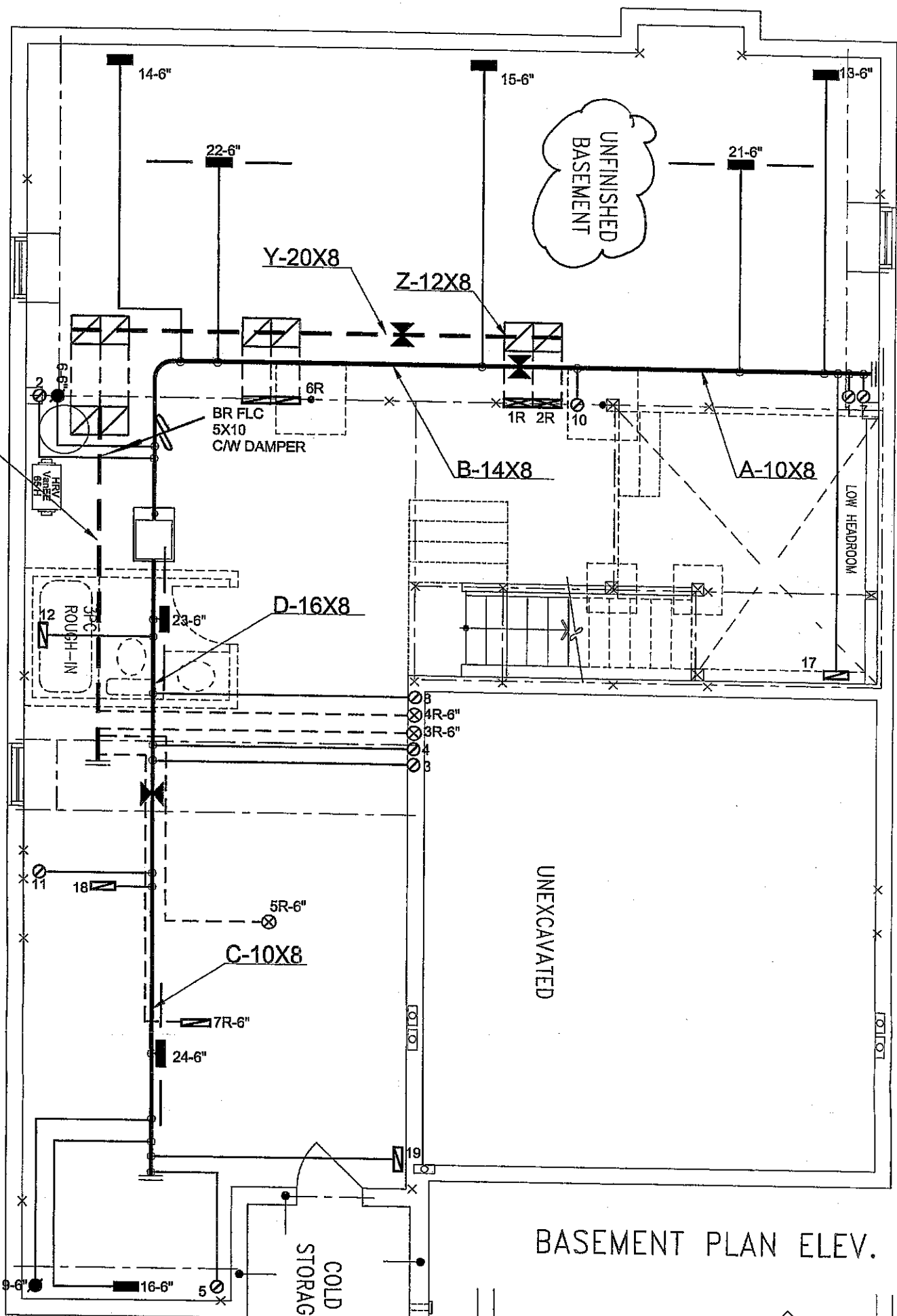
Supplemental tool for CAN/CSA-F280

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	
	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		

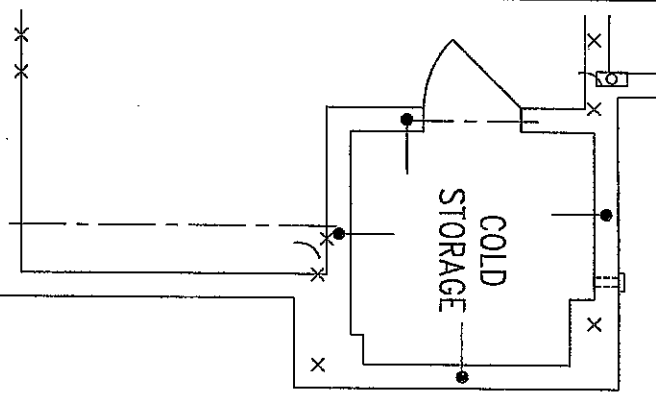
TYPE: MOUNTAINASH 3
LO# 85965

PART. BASEMENT PLAN
DECK CONDITION

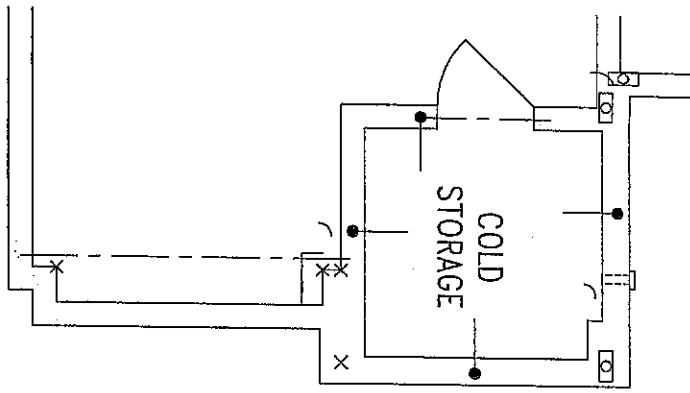
CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 06 2020
REC BY _____ DATE _____
REF'D TO _____ DATE _____



BASEMENT PLAN ELEV. 1



BASEMENT PLAN ELEV. 3



BASEMENT PLAN ELEV. 2

CSA-F280-12
PACKAGE A1

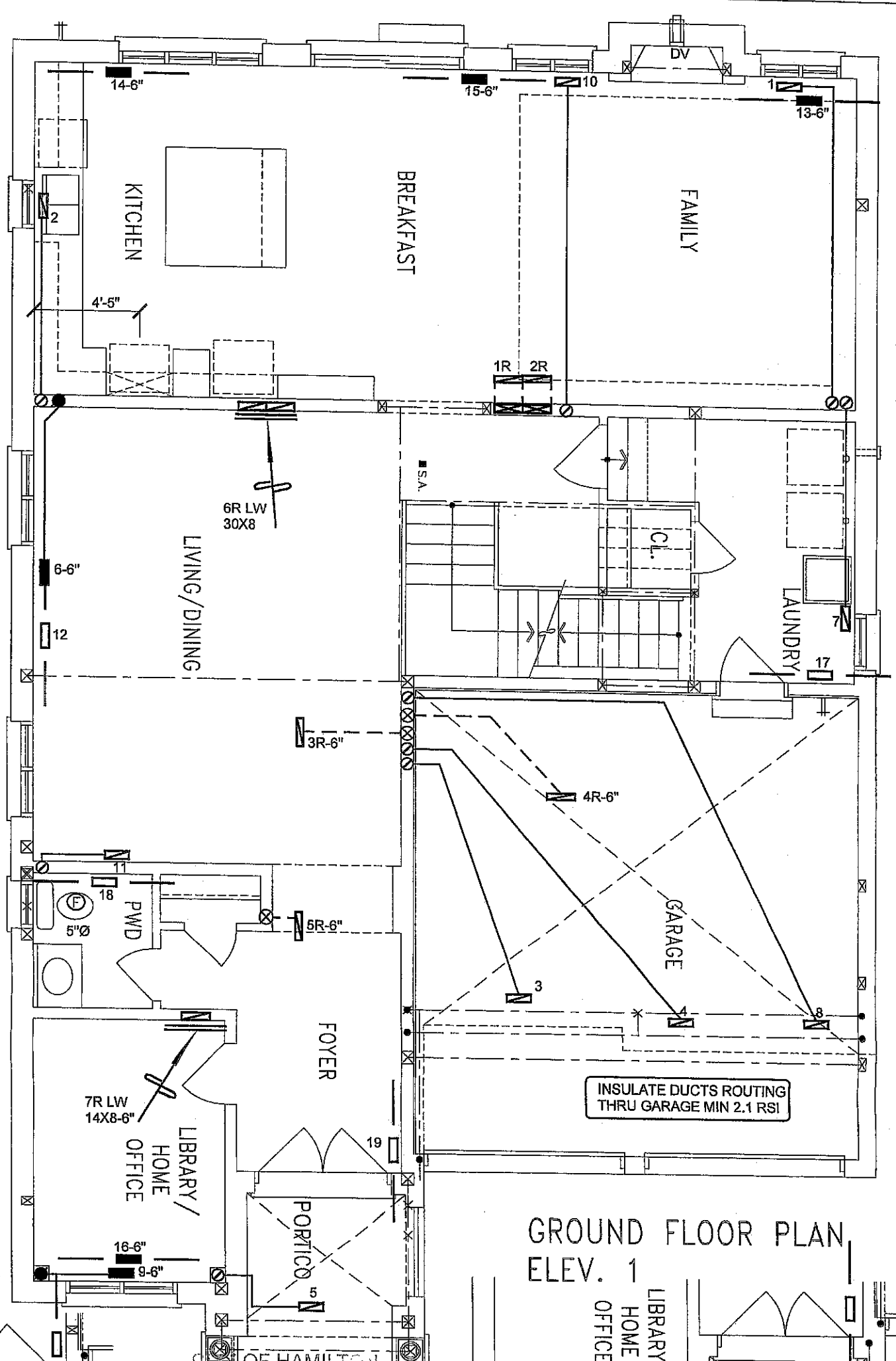
I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND						REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Description
	SUPPLY AIR GRILLE		8" 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		8" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE	1.	
					REDUCER	No.	Description

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Client GREENPARK HOMES Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO		HVAC DESIGNS LTD. 375 Finlay 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 53661 BTU/H UNIT DATA MAKE GOODMAN MODEL GMEC960603BNA INPUT 60 MBTU/H OUTPUT 57.6 MBTU/H COOLING 3.0 TONS FAN SPEED 1131 cfm @ 0.6" w.c.		# OF RUNS S/A R/A FANS 3RD FLOOR 2ND FLOOR 11 5 3 1ST FLOOR 8 2 2 BASEMENT 4 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# 85965
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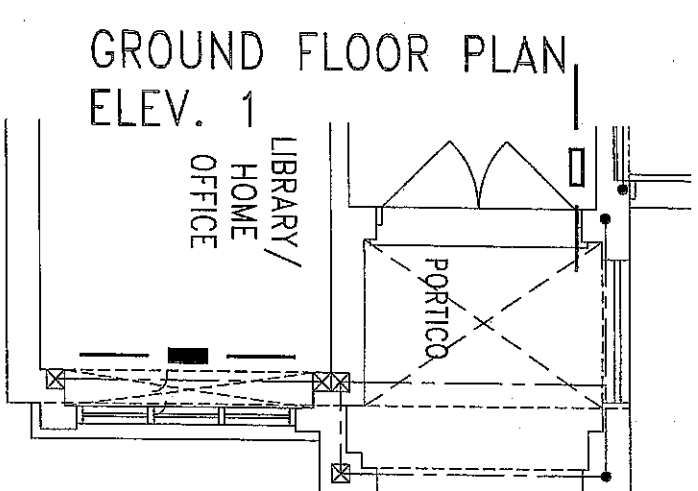
MOUNTAINASH 3 3072 sqft



CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

OCT 06 2020

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



GROUND FLOOR PLAN
ELEV. 1

GROUND FLOOR PLAN
ELEV. 2

CSA-F280-12
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GROUND FLOOR PLAN
ELEV. 3

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
[Signature] DEC 15 2020
FOR CHIEF BUILDING OFFICIAL DATE

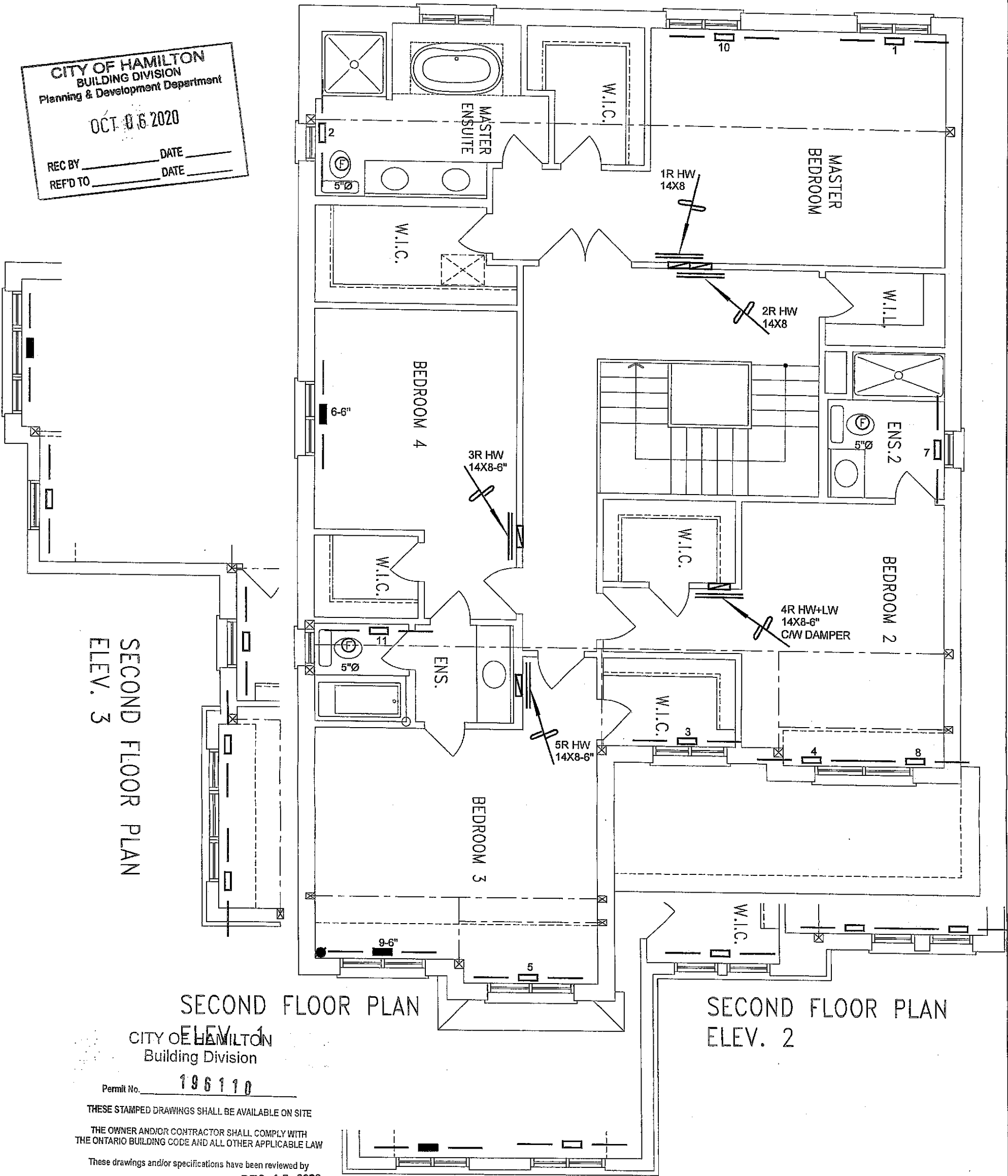
I MICHAEL O'ROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.3.2.5 OF THE
BUILDING CODE.
[Signature]
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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

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Client GREENPARK HOMES Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO MOUNTAINASH 3 3072 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.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# 85965
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CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 06 2020
REC BY _____ DATE _____
REF'D TO _____ DATE _____



SECOND FLOOR PLAN
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

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, BCIN# 19669
HVAC DESIGNS LTD.

CHIEF BUILDING OFFICIAL

DATE

SECOND FLOOR PLAN
ELEV. 2

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.

Description

Date

REVISIONS

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Client

GREENPARK HOMES

Project Name

RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO

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# 85965

MOUNTAINASH 3 3072 sqft