

SITE NAME: RUSSELL GARDENS PH 4

BUILDER: GREENPARK HOMES

TYPE: MOUNTAINASH 3

OFA: 3072

DATE: Mar-21

LO# 90125

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-3	BED-2	BED-3	BED-4	ENS-2	S-ENS
	42		9	9	9	9	9	18	8	6
										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	10	386	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	167
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	262	697
BASEMENT/CRAWL HEAT LOSS									51	121
SLAB ON GRADE HEAT LOSS									22	0
SUBTOTAL HT LOSS			2677	1653	697	2626	2622	1246	475	419
SUB TOTAL HT GAIN			1799	1000	770	2112	2390	640	188	239
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	489	193	729	700	346	132	116
AIR CHANGE HEAT GAIN			132	74	57	156	176	47	14	18
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	3544	1582	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	WR	FOY	WOD	BAS
	30		10	10	10	11	10	10	10	46	178
										8	8
FACTORS											
GRS.WALL AREA	LOSS	GAIN	300	330	350	297	310	70	180	368	1026
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	832	0	0	0	0	0	0
WEST	19.8	38.4	0	0	0	34	672	1395	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	264	1094	198	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											
SLAB ON GRADE HEAT LOSS											
SUBTOTAL HT LOSS			1806	1899	2839	1866	1786	1172	1612	264	883
SUB TOTAL HT GAIN			1031	1528	2983	1729	417	349	501	1120	621
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	758	1121	733	710	463	637	0	0
AIR CHANGE HEAT GAIN			76	113	220	127	31	28	37	0	0
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	565	565
TOTAL HT LOSS BTU/H			2520	2849	3960	2589	2506	1635	2249	1120	16438
TOTAL HT GAIN x 1.3 BTU/H			2174	2867	4899	3148	1316	487	699	807	1604

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
AUG 25 2021
REC BY
REF'D TO
DATE
DATE

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



INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

SITE NAME: RUSSELL GARDENS PH 4
BUILDER: GREENPARK HOMES

TYPE: MOUNTAINASH 3

DATE: Mar-21

GFA: 3072 LO# 60125

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 52,146 TOTAL HEAT GAIN 36,083
AIR FLOW RATE CFM 21.69 AIR FLOW RATE CFM 31.34

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

plenium 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
GMEC960603BNA 60
FAN SPEED LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

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

DESIGN 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	120	140	100	150	110	150	100	140	110	130	130
TOTAL EFFECTIVE LENGTH	197	168	153	171	198	196	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	0.09	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	6	5	4	4	6	6	6	6
HEATING VELOCITY (ft/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 (ft/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 (ft/min)
COOLING VELOCITY (ft/min)
OUTLET GRILL SIZE
TRUNK

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

AUG 25 2021

REC BY _____ DATE _____
REFD TO _____ DATE _____

CITY OF HAMILTON
Building Division

Permit No. 20-196110-02

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

SUPPLY AIR TRUNK SIZE

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	293	0.08	8.9	10	x	8	527		
TRUNK B	555	0.08	11.2	14	x	8	714		
TRUNK C	323	0.08	9.2	10	x	8	581		
TRUNK D	574	0.08	11.4	16	x	8	646		
TRUNK E	0	0.00	0	0	x	8	0		
TRUNK F	0	0.00	0	0	x	8	0		
TRUNK G	0	0.00	0	0	x	8	0		
TRUNK H	0	0.00	0	0	x	8	0		
TRUNK I	0	0.00	0	0	x	8	0		
TRUNK J	0	0.00	0	0	x	8	0		
TRUNK K	0	0.00	0	0	x	8	0		
TRUNK L	0	0.00	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	20	21	22	23	24
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
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	306	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	8	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: RUSSELL GARDENS PH 4

LO # 90125

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		CITY OF HAMILTON BUILDING DIVISION Planning & Development Department AUG 25 2021
☒	Forced Air	
☐	Electric Space Heat	

HOUSE TYPE		REC BY	DATE	9.32.1(2)
☒	I	REF'D TO	DATE	
☐	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	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 V150H	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
ENS	FV-05-11VK1	50	☒
ENS-2	FV-05-11VK1	50	☒
S-ENS	FV-05-11VK1	50	☒
W/R	FV-05-11VK1	50	☒

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE V150H		
150 cfm high	35 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: CITY OF HAMILTON	
Name:	Building Division
Address:	20-196110-01
Permit No.	
City:	THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
Telephone #:	THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

INSTALLING CONTRACTOR	
These drawings and/or specifications have been reviewed by	
Name:	
Address:	SEP 28 2021
City:	DATE
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:	March-21

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

LO#: 90125

Model: MOUNTAINASH 3

Builder: GREENPARK HOMES

Date: 31/03/2021

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1378	8	11024
First	1378	10	13780
Second	1694	9	15246
Third	0	9	0
Fourth	0	9	0
Total:			40,050.0 ft ³
Total:			1134.1 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 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)

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

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 / HL _{clevel})
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#** 90125**SITE:** RUSSELL GARDENS PH 4**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:	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: 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	-

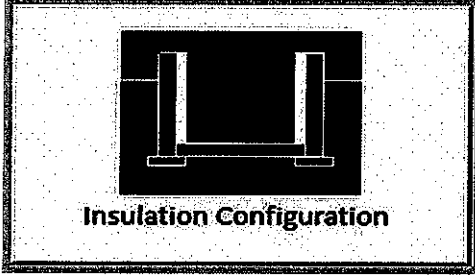
INDIVIDUAL BCIN: 19669

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

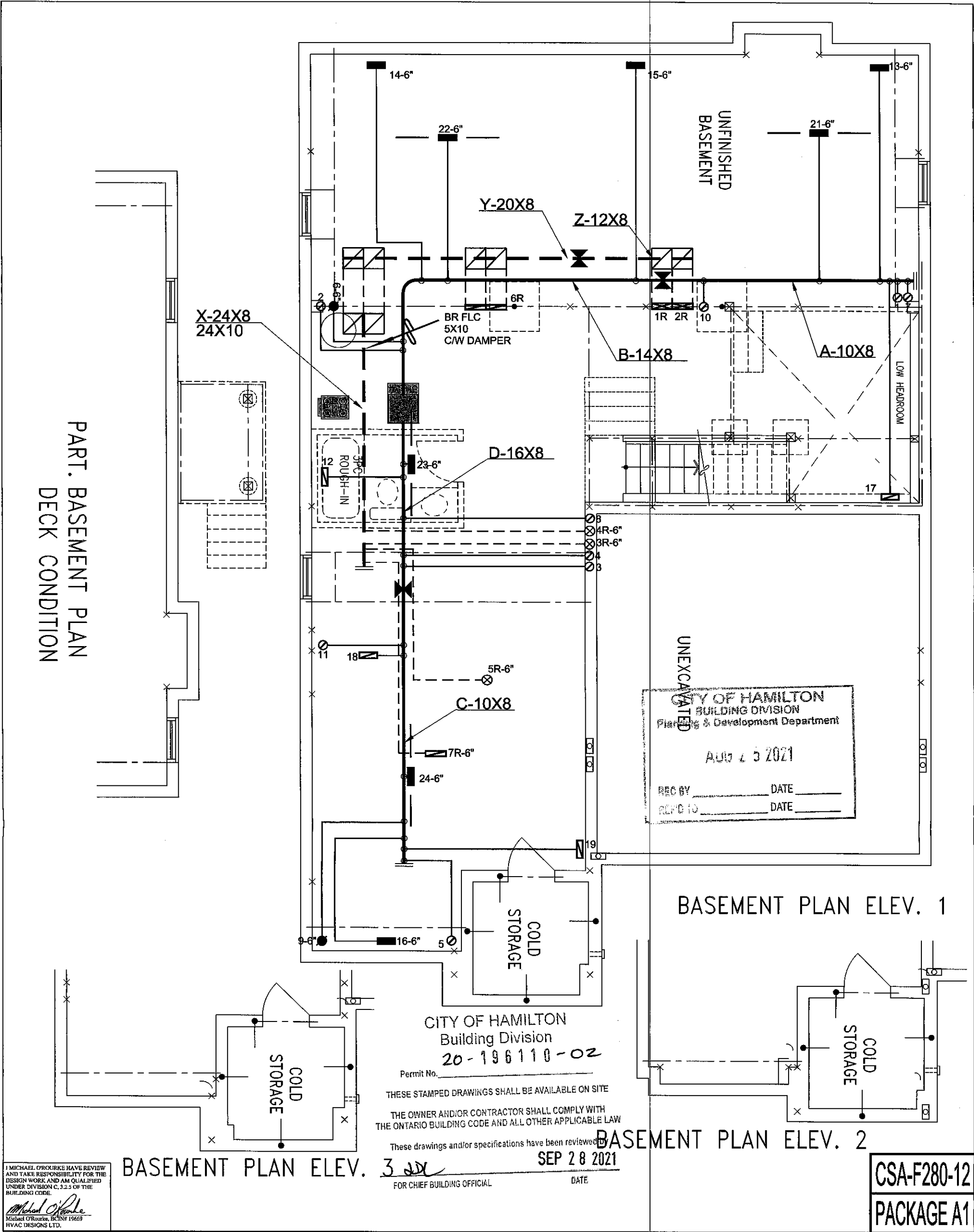
TYPE: MOUNTAINASH 3
LO# 90125

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# 90125

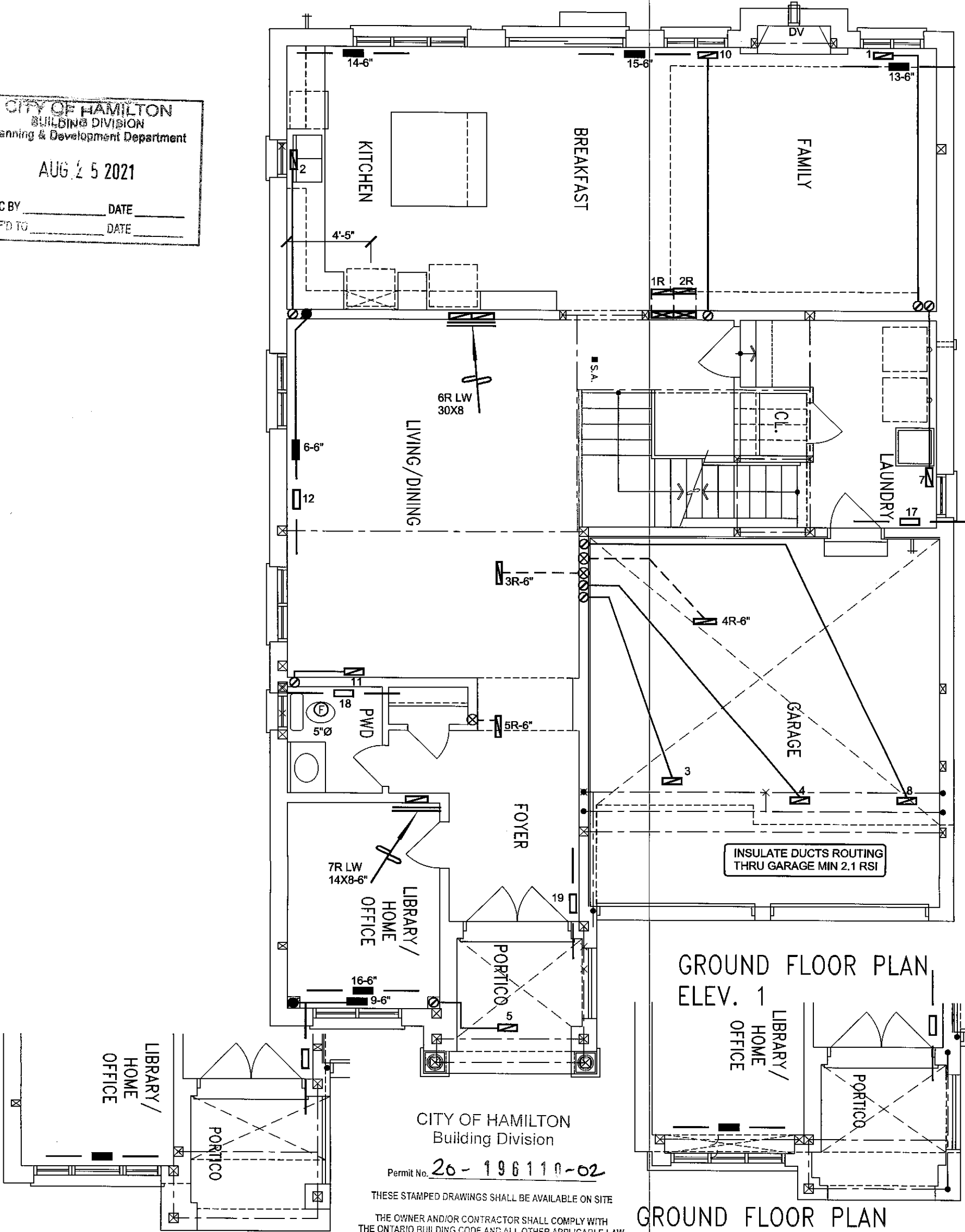


HVAC LEGEND												
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION					
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	3.				
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	2.				
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	1.				
								No.	Description	Date		
								REVISIONS				
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.® AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.												
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.				HEAT LOSS 53661 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
Project Name RUSSELL GARDENS PH 4 HAMILTON, ONTARIO						MAKE GOODMAN		3RD FLOOR				
						MODEL GMEC960603BNA		2ND FLOOR 11 5 3				
						INPUT 60 MBTU/H		1ST FLOOR 8 2 2				
MOUNTAINASH 3 3072 sqft		OUTPUT 57.6 MBTU/H		BASEMENT 4 1 0			Date MAR/2021					
		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"					
		FAN SPEED 1131 cfm @ 0.6" w.c.					BCIN# 19669					
							LO# 90125					

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

AUG 25 2021

REC BY _____ DATE _____
REFD TO _____ 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.

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

GROUND FLOOR PLAN
ELEV. 3

CITY OF HAMILTON
Building Division

Permit No. **20-196110-02**

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] **SEP 28 2021**
FOR CHIEF BUILDING OFFICIAL DATE

GROUND FLOOR PLAN
ELEV. 1

GROUND 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"x6" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x6" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client
GREENPARK HOMES

Project Name
**RUSSELL GARDENS PH 4
HAMILTON, ONTARIO**

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
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.

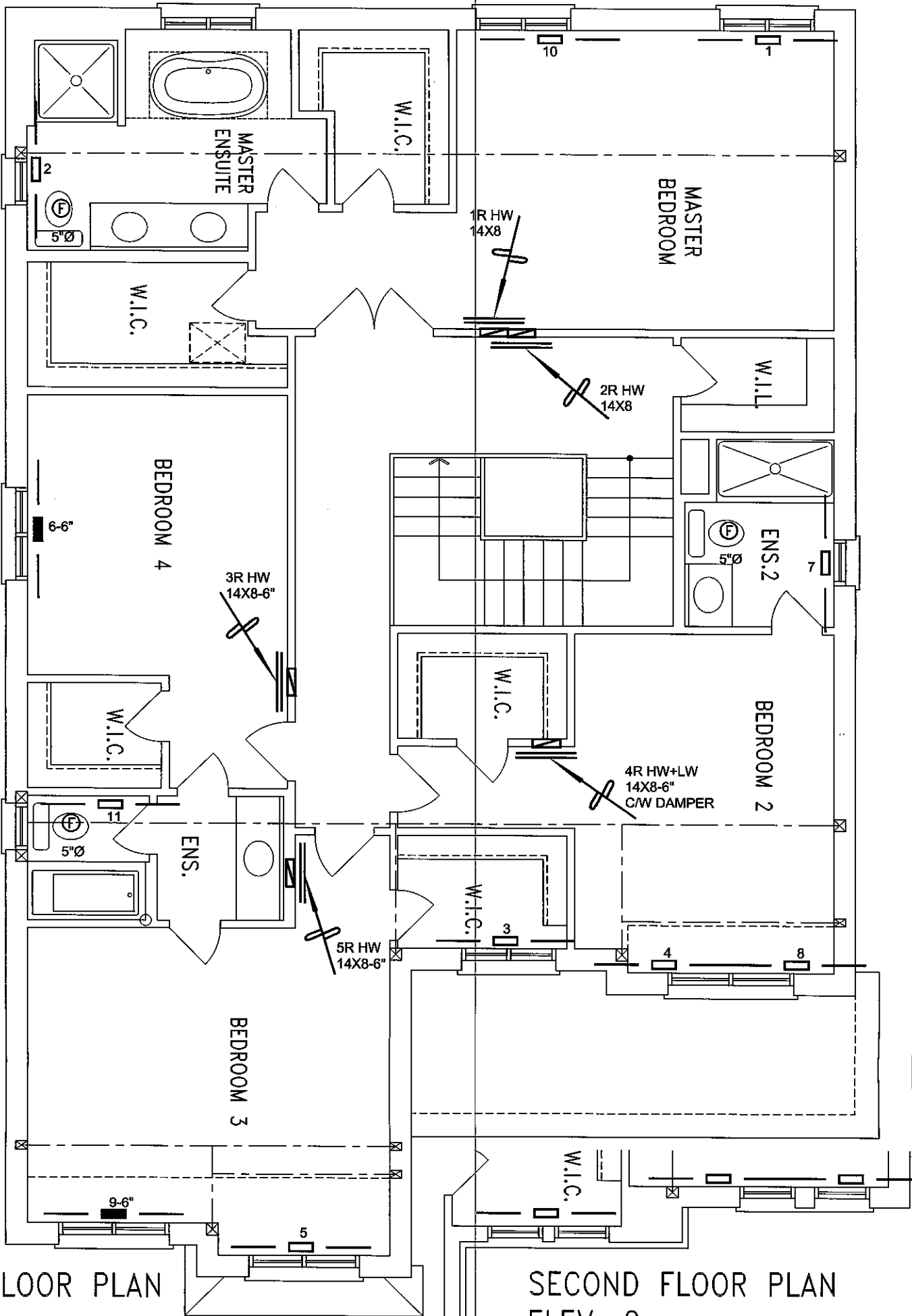
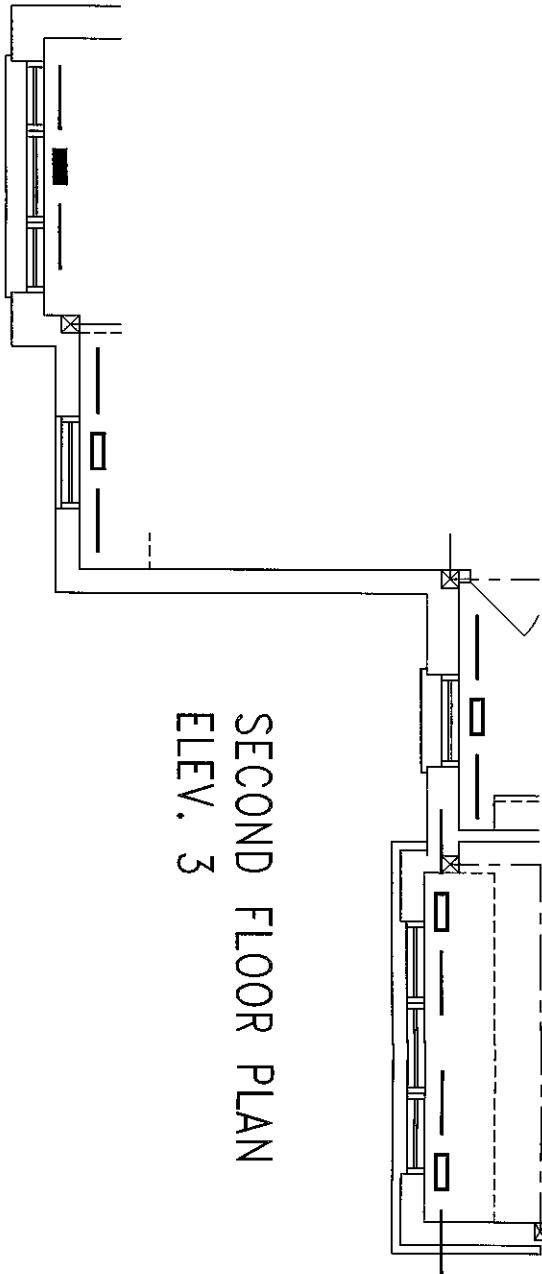
Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**

Date
MAR/2021

Scale
3/16" = 1'-0"

BCIN# 19669

LO# **90125**



SECOND FLOOR PLAN
ELEV. 1

SECOND FLOOR PLAN
ELEV. 2

CITY OF HAMILTON
Building Division

Permit No. 20-196110-02

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

SD SEP 28 2021
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.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND								REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
	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.	

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client

GREENPARK HOMES

Project Name

RUSSELL GARDENS PH 4
HAMILTON, ONTARIO

MOUNTAINASH 3 3072 sqft

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

SECOND FLOOR
HEATING
LAYOUT

Date

MAR/2021

Scale

3/16" = 1'-0"

BCIN# 19669

LO# 90125