

SITE NAME: RUSSELL GARDENS PH 4				DATE: Mar-21				WINTER NATURAL AIR CHANGE RATE 0.338				HEAT LOSS AT °F. 71		CSA-F280-12	
BUILDER: GREENPARK HOMES				LO# 90127				SUMMER NATURAL AIR CHANGE RATE 0.121				HEAT GAIN AT °F. 13		SB-12 PACKAGE A1	
ROOM USE		MBR		ENS		FLEX		BED-2		BED-3		BED-4		ENS-3	
EXP. WALL		40		28		44		14		30		13		6	
CLG. HT.		9		9		9		9		9		9		9	
FACTORS															
GRS.WALL AREA		360		252		396		126		270		117		54	
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH		19.8	16.1	0	0	0	0	16	316	242	0	0	0	0	0
EAST		19.8	39.0	0	0	0	0	72	1423	2809	0	0	0	0	0
SOUTH		19.8	23.5	0	0	0	0	0	0	0	0	0	0	0	0
WEST		19.8	39.0	32	633	1249	14	277	546	0	0	0	0	0	0
SKYL.T.		34.8	101.5	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
NET EXPOSED WALL		4.1	0.8	328	1360	247	224	929	168	324	1343	244	110	456	83
NET EXPOSED BSMT WALL ABOVE GR		3.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG		1.2	0.6	364	458	226	192	229	113	189	226	111	251	299	147
NO ATTIC EXPOSED CLG		2.6	1.3	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
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		2450		1711		3116		1235		2885		973		448	
SUB TOTAL HT GAIN		1721		1040		3210		502		2617		568		256	
LEVEL FACTOR / MULTIPLIER		0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25
AIR CHANGE HEAT LOSS		616		430		783		310		705		245		112	
AIR CHANGE HEAT GAIN		130		78		242		38		198		43		19	
DUCT LOSS		0		0		390		155		351		0		0	
DUCT GAIN		0		0		398		131		368		0		0	
HEAT GAIN PEOPLE		240	2	480	0	0	0	1	240	1	240	1	240	0	0
HEAT GAIN APPLIANCES/LIGHTS		530		530		530		530		530		530		530	
TOTAL HT LOSS BTU/H		3068		2141		4288		1700		3852		1218		560	
TOTAL HT GAIN x 1.3 BTU/H		3719		1453		5895		1873		5126		1796		358	

ROOM USE		FAM		L/D		K/B		L/H		LND		WR		FOY	
EXP. WALL		34		24		37		18		8		26		42	
CLG. HT.		10		10		10		10		9		11		10	
FACTORS															
GRS.WALL AREA		340		240		370		180		72		286		420	
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH		19.8	15.1	0	0	0	0	0	0	0	0	7	138	108	0
EAST		19.8	39.0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH		19.8	23.5	0	0	0	0	12	237	282	7	138	164	0	0
WEST		19.8	39.0	40	791	1561	0	0	0	0	0	0	0	0	0
SKYL.T.		34.8	101.5	0	0	0	0	0	0	0	0	0	0	0	0
DOORS		23.5	4.3	0	0	0	0	12	281	51	0	0	0	0	0
NET EXPOSED WALL		4.1	0.8	292	1211	219	207	858	156	298	1235	224	168	686	126
NET EXPOSED BSMT WALL ABOVE GR		3.3	0.6	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	120	143	71	0
NO ATTIC EXPOSED CLG		2.6	1.3	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
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		2159		1510		2703		934		551		1681		2607	
SUB TOTAL HT GAIN		1901		930		2616		408		284		386		685	
LEVEL FACTOR / MULTIPLIER		0.30	0.46	0.30	0.46	0.30	0.46	0.30	0.46	0.20	0.25	0.30	0.46	0.30	0.46
AIR CHANGE HEAT LOSS		985		689		1232		426		138		767		1189	
AIR CHANGE HEAT GAIN		144		70		198		31		21		29		52	
DUCT LOSS		0		0		0		0		0		0		0	
DUCT GAIN		0		0		0		0		0		0		0	
HEAT GAIN PEOPLE		240	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		530		530		530		530		530		530		530	
TOTAL HT LOSS BTU/H		3144		2199		3936		1389		689		2448		3796	
TOTAL HT GAIN x 1.3 BTU/H		3347		1989		4347		1289		1085		539		958	

REC'D BY: _____
REF'D TO: _____
DATE: _____
SEP 14 2021
CITY OF HAMILTON
BUILDING DIVISION

TOTAL HEAT GAIN BTU/H: 36875 TONS: 3.07 LOSS DUE TO VENTILATION LOAD BTU/H: 1515 STRUCTURAL HEAT LOSS: 53256 TOTAL COMBINED HEAT LOSS BTU/H: 54772

SITE NAME: RUSSELL GARDENS PH 4
BUILDER: GREENPARK HOMES

TYPE: MOUNTAINASH 4

DATE: Mar-21

GFA: 3190 LO# 90127

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 53,256 TOTAL HEAT GAIN 36,600
AIR FLOW RATE CFM 21.24 AIR FLOW RATE CFM 30.9

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

#GOODMAN
GMEC980603BNA 60

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	7	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.

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

FAN SPEED LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

DESIGN CFM = 1131
CFM @ 5" E.S.P.

TEMPERATURE RISE 47 °F

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	FLEX	BED-2	BED-3	BED-4	ENS-3	FLEX	BED-3	MBR	S-ENS	FAM	L/D	K/B	K/B	L/H	LND	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.53	2.14	2.14	1.70	1.93	1.22	0.56	2.14	1.93	1.53	0.51	3.14	2.20	1.97	1.97	1.36	0.89	2.45	3.80	4.46	4.46	4.46	4.46
CFM PER RUN HEAT	33	45	46	36	41	26	12	46	41	33	11	67	47	42	42	29	15	52	81	95	95	95	95
RM GAIN MBH	1.86	1.45	2.85	1.87	2.56	1.80	0.36	2.85	2.56	1.86	0.20	3.35	1.99	2.17	2.17	1.26	1.09	0.54	0.96	0.66	0.66	0.66	0.66
CFM PER RUN COOLING	57	45	88	58	79	56	11	88	79	57	6	103	61	67	67	39	34	17	30	21	21	21	21
ADJUSTED PRESSURE	0.17	0.17	0.16	0.17	0.17	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	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	32	63	51	56	61	46	49	58	49	38	46	26	25	38	44	40	23	47	48	34	20	24	41
EQUIVALENT LENGTH	130	150	160	140	100	210	200	130	190	100	130	130	140	120	120	140	160	130	110	120	100	130	130
TOTAL EFFECTIVE LENGTH	162	213	211	196	161	256	249	188	239	138	176	156	165	158	164	180	183	177	158	154	120	154	171
ADJUSTED PRESSURE	0.11	0.08	0.08	0.09	0.11	0.07	0.07	0.09	0.07	0.12	0.1	0.1	0.1	0.11	0.1	0.1	0.09	0.1	0.1	0.11	0.14	0.11	0.09
ROUND DUCT SIZE	5	5	6	5	6	5	4	6	6	5	4	6	5	5	5	4	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	242	330	235	264	209	191	138	235	209	242	126	342	345	308	308	333	172	382	595	484	484	484	484
COOLING VELOCITY (ft/min)	419	330	449	426	403	411	126	449	403	419	69	525	448	492	492	447	390	125	220	107	107	107	107
OUTLET GRILL SIZE	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	C	A	D	A	E	D	D	D	D	C	E	C	E	B	B	D	C	A	D	B	C	E	D

RUN #	25
ROOM NAME	S-ENS
RM LOSS MBH	0.51
CFM PER RUN HEAT	11
RM GAIN MBH	0.20
CFM PER RUN COOLING	6
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	46
EQUIVALENT LENGTH	140
TOTAL EFFECTIVE LENGTH	186
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	4
HEATING VELOCITY (ft/min)	126
COOLING VELOCITY (ft/min)	69
OUTLET GRILL SIZE	3X10
TRUNK	E

RECEIVED BY _____ DATE _____

SEP 14 2021

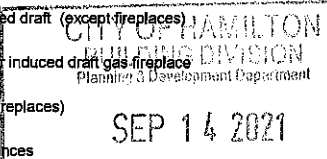
CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

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	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT
TRUNK A	133	0.08	6.6	8	x	8	299	0	0.00	0	0	TRUNK G	0	0.00	0	0	x	8	0	0	0.05	0	0
TRUNK B	179	0.10	7	8	x	8	403	0	0.00	0	0	TRUNK H	0	0.00	0	0	x	8	0	0	0.05	0	0
TRUNK C	555	0.08	11.2	14	x	8	714	0	0.00	0	0	TRUNK I	0	0.00	0	0	x	8	0	0	0.05	0	0
TRUNK D	376	0.07	10.1	12	x	8	564	0	0.00	0	0	TRUNK J	0	0.00	0	0	x	8	0	0	0.05	0	0
TRUNK E	581	0.07	11.8	16	x	8	654	0	0.00	0	0	TRUNK K	0	0.00	0	0	x	8	0	0	0.05	0	0
TRUNK F	0	0.00	0	0	x	8	0	0	0.00	0	0	TRUNK L	0	0.00	0	0	x	8	0	0	0.05	0	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
AIR VOLUME	85	95	95	85	75	360	175	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.	51	42	51	53	63	26	26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	205	165	155	205	210	185	190	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	256	207	206	258	273	211	216	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.05	0.07	0.07	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	6	6	6	9.9	7.5	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 4
 SITE NAME: RUSSELL GARDENS PH 4

LO # 90127

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a) ☒	Direct vent (sealed combustion) only	 SEP 14 2021
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
☐	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 V150H	Location: BSMT
79.5 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °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
ENS-3	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: VANEE V150H		
150 cfm high	35 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:	
HRAI #	001820
Date:	March-21

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

LO#: 90127

Model: MOUNTAINASH 4

Builder: GREENPARK HOMES

Date: 31/03/2021

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1398	8	11184
First	1398	10	13980
Second	1792	9	16128
Third	0	9	0
Fourth	0	9	0
Total:			41,292.0 ft ³
Total:			1169.3 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 324.79 x 39 °C x 1.2 = 5165 W

= 17622 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 324.79 x 7 °C x 1.2 = 335 W

= 1144 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

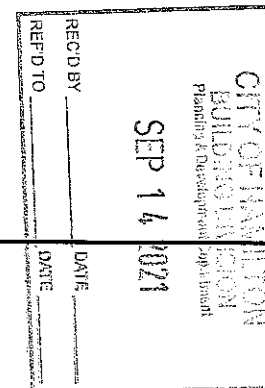
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

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

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{cleve})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{cleve})
1	0.5	17,622	9,022	0.977
2	0.3		11,595	0.456
3	0.2		14,029	0.251
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

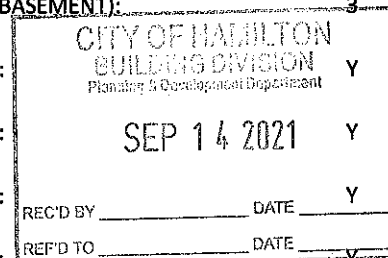


HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** MOUNTAINASH 4**BUILDER:** GREENPARK HOMES**SFQT:** 3190**LO#** 90127**SITE:** RUSSELL GARDENS PH 4**DESIGN ASSUMPTIONS**

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

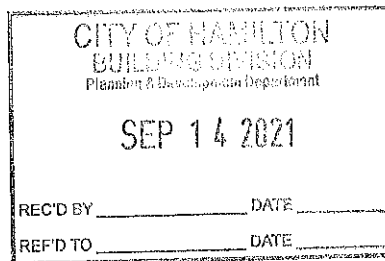
ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	41292.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED 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: 52.0 ft	WIDTH: 36.0 ft	EXPOSED PERIMETER:	176.0 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	-

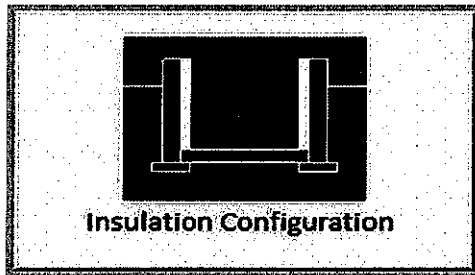
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

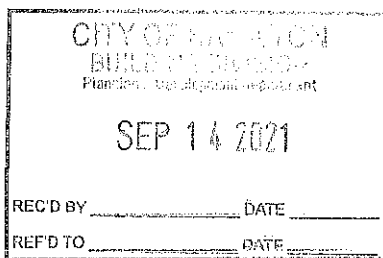


Residential Foundation Thermal Load Calculator

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):	15.8	 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):	2.6	
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):	1703	

TYPE: MOUNTAINASH 4
LO# 90127

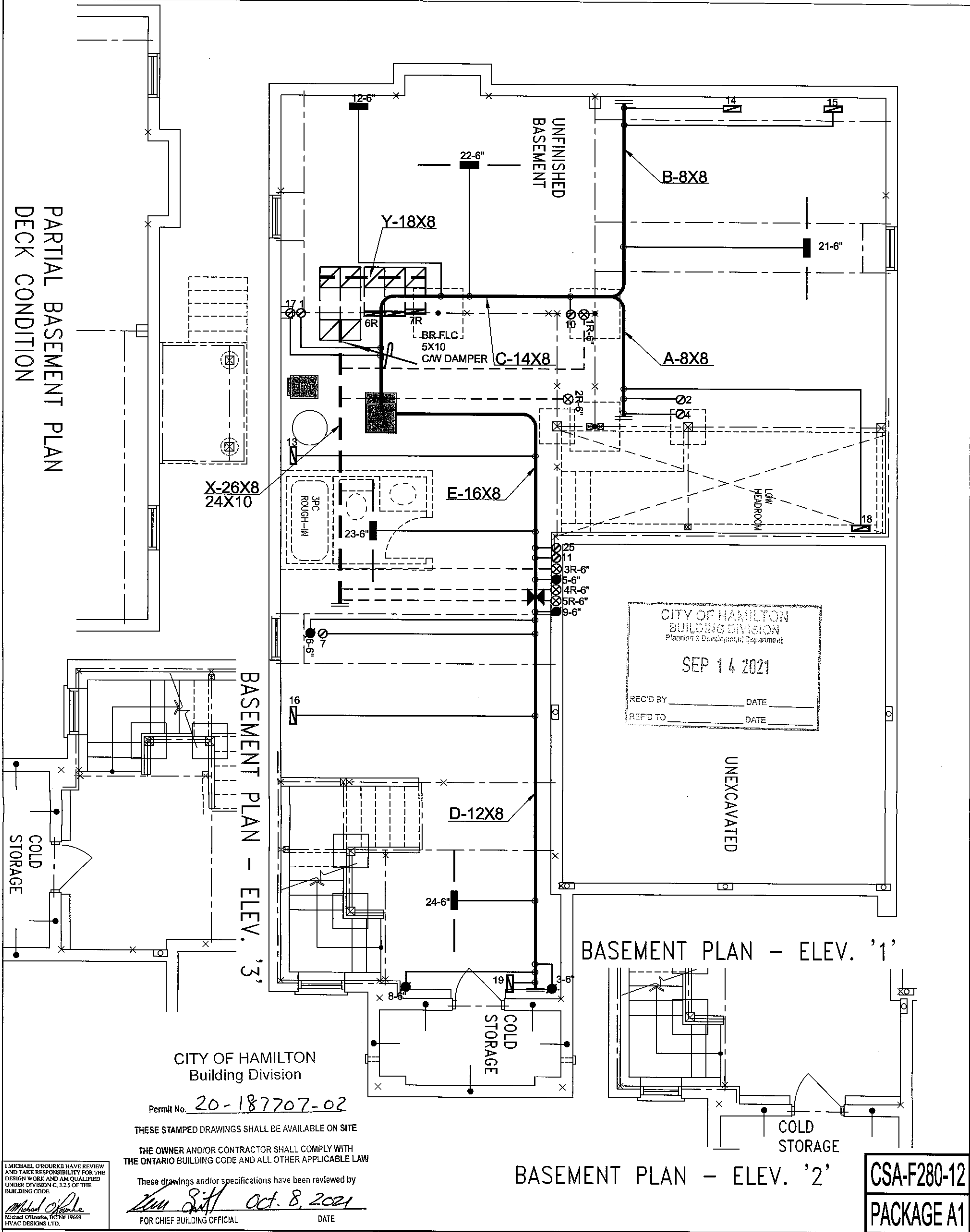


Air Infiltration Residential Load Calculator

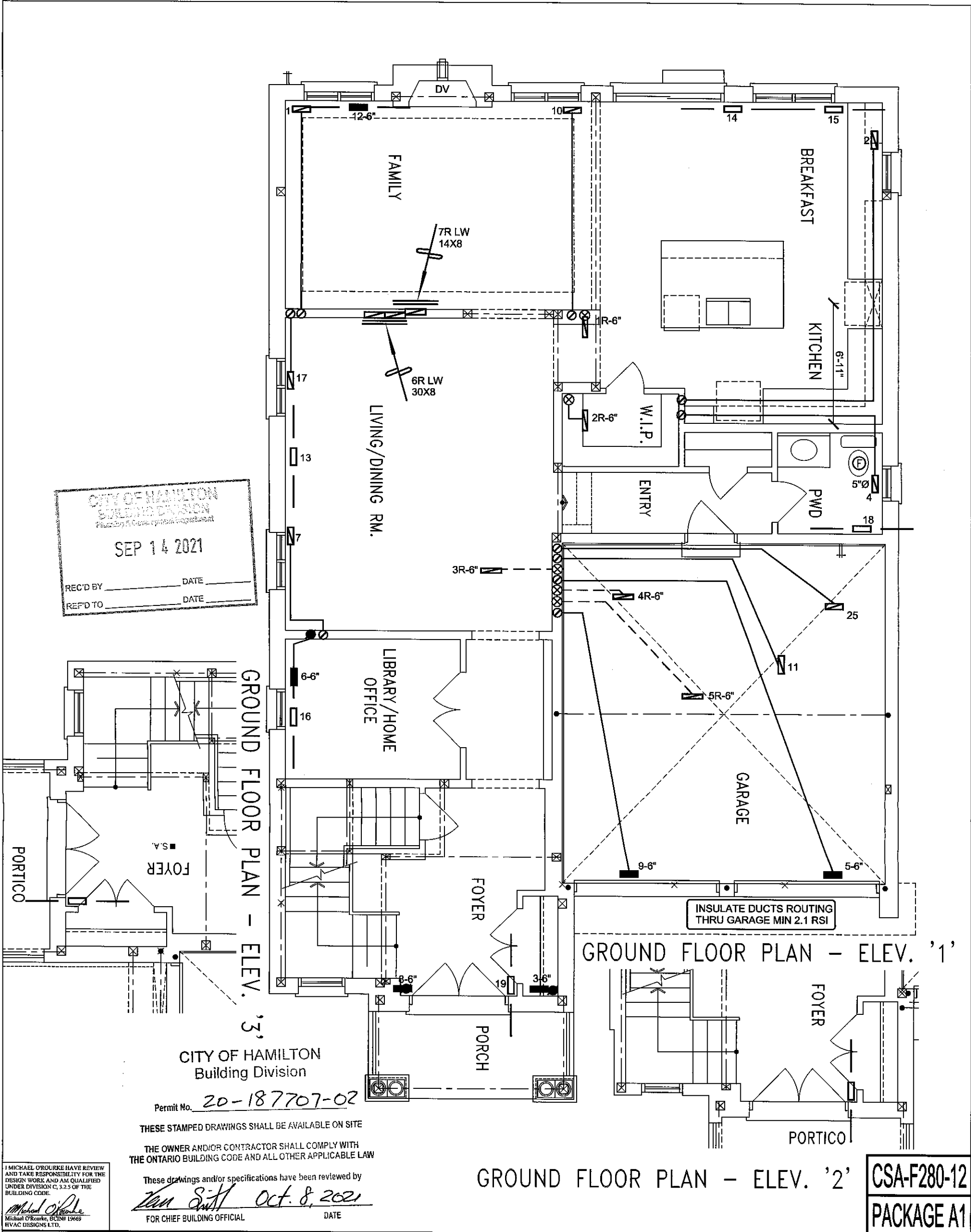
Supplemental tool for CAN/CSA-F280

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):	1169.3			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1558.7 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	#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			

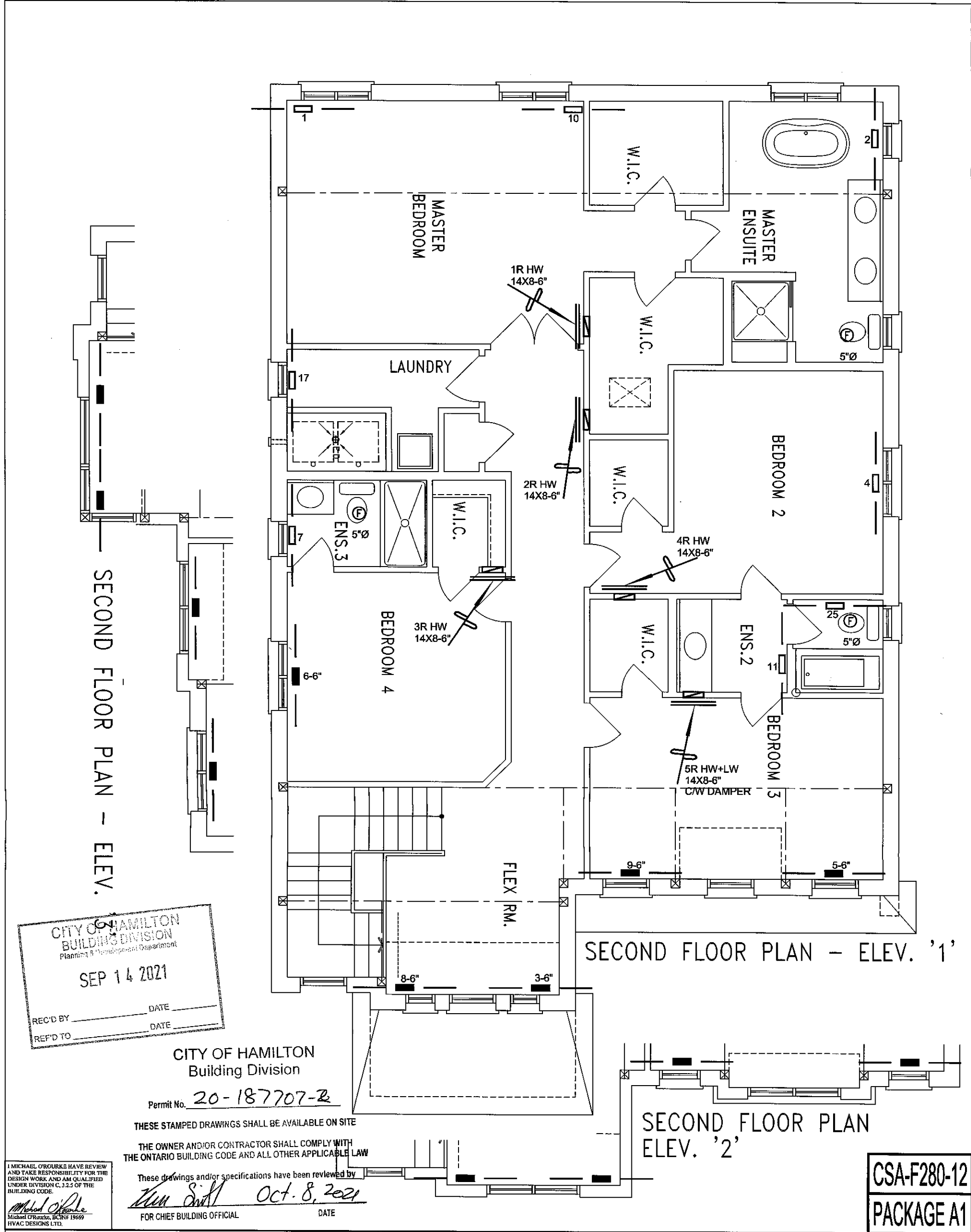
TYPE: MOUNTAINASH 4
LO# 90127



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	Date	
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Client								3.	
GREENPARK HOMES								2.	
Project Name								1.	
RUSSELL GARDENS PH 4								No.	
HAMILTON, ONTARIO								Description	
MOUNTAINASH 4 3190 sqft								Date	
HVADESIGNS LTD.								3.	
375 Finley Ave. Suite 202 - Ajax, Ontario								2.	
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375								1.	
Email: info@hvacadesigns.ca								No.	
Web: www.hvacadesigns.ca								Description	
Specializing in Residential Mechanical Design Services								Date	
Installation to comply with the latest Ontario Building Code. All supply								3.	
branch outlets shall be equipped with a manual balancing damper.								2.	
Ductwork which passes through the garage or unheated spaces shall be								1.	
adequately insulated and be gas-proofed.								No.	
HEAT LOSS 54772 BTU/H								Description	
UNIT DATA								Date	
MAKE GOODMAN								3.	
MODEL GMEC960603BNA								2.	
INPUT 60 MBTU/H								1.	
OUTPUT 57.6 MBTU/H								No.	
COOLING 3.0 TONS								Description	
FAN SPEED 1131 cfm @ 0.6" w.c.								Date	
# OF RUNS S/A R/A FANS								3.	
3RD FLOOR								2.	
2ND FLOOR 13 5 3								1.	
1ST FLOOR 7 2 2								No.	
BASEMENT 4 1 0								Description	
ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE								Date	
ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE								3.	
ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A								2.	
Sheet Title								1.	
BASEMENT HEATING LAYOUT								No.	
Date								Description	
MAR/2021								Date	
Scale								3.	
3/16" = 1'-0"								2.	
BCIN# 19669								1.	
LO#								No.	
90127								Description	



HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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	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		 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						Sheet Title		
GREENPARK HOMES								FIRST FLOOR HEATING LAYOUT		
Project Name		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.						Date	MAR/2021	
RUSSELL GARDENS PH 4 HAMILTON, ONTARIO								Scale	3/16" = 1'-0"	
MOUNTAINASH 4 3190 sqft								BCIN# 19669		
								LO# 90127		



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
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GREENPARK HOMES							SECOND FLOOR HEATING LAYOUT			
Project Name							Date MAR/2021			
RUSSELL GARDENS PH 4 HAMILTON, ONTARIO							Scale 3/16" = 1'-0"			
MOUNTAINASH 4 3190 sqft							BCIN# 19669			
							LO# 90127			