

SITE NAME: RUSSELL GARDENS PH 4
BUILDER: GREENPARK HOMES

OPT 5 BED
TYPE: MOUNTAINASH 4

GFA: 3190

DATE: Mar-21
LOS: 90128

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.	FACTORS	LOSS	GAIN	ENS	FLEX	BED-2	BED-3	BED-4	ENS-3	BED-5	S-ENS
EXP. WALL													
CLG. HT.													
GRS.WALL AREA													
GLAZING													
NORTH	19.8	15.1	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	39.0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	19.8	23.5	0	0	0	7	138	164	0	0	0	13	257
WEST	19.8	39.0	32	633	1249	14	277	546	0	0	0	13	257
SKYL.T.	34.5	101.5	0	0	0	0	0	0	0	0	0	0	0
DOORS	23.5	4.3	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	355	1472	267	177	734	133	324	1343	244	101	419
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	316	377	186	120	143	71	189	225	111	260	310
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	30	77	35	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	20	47	9	89	163
BASEMENT/CRAWL HEAT LOSS													
SLAB ON GRADE HEAT LOSS													
SUBTOTAL HT LOSS			2481			1292			3115			1208	
SUB TOTAL HT GAIN				1701		914			3210			501	
LEVEL FACTOR / MULTIPLIER	0.20	0.26				0.20	0.26		0.20	0.26		0.20	0.26
AIR CHANGE HEAT LOSS			641			334			805			312	
AIR CHANGE HEAT GAIN				134		72			254			40	
DUCT LOSS			0			0			392			152	
DUCT GAIN			0			0			395			127	
HEAT GAIN PEOPLE	240	2	480	0	0	0	0	0	1	240	1	240	1
HEAT GAIN APPLIANCES/LIGHTS			486			0			486			486	
TOTAL HT LOSS BTU/H			3122			1626			4313			1673	
TOTAL HT GAIN x 1.3 BTU/H				3642		1282			5848			1510	

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	FAM	L/D	K/B	L/H	LND	WR	FOY	WOD	BAS
EXP. WALL														
CLG. HT.														
GRS.WALL AREA														
GLAZING														
NORTH	19.8	15.1	8	158	121	0	0	0	0	0	0	0	0	0
EAST	19.8	39.0	0	0	0	0	0	0	0	0	0	6	119	234
SOUTH	19.8	23.5	0	0	0	33	652	775	0	0	0	0	0	0
WEST	19.8	39.0	40	791	1561	0	0	0	60	1186	2341	0	0	0
SKYL.T.	34.5	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	12	281	51	0	0	0
NET EXPOSED WALL	4.1	0.8	292	1211	219	207	858	156	298	1235	224	168	696	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	0	73	87	43
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														
SLAB ON GRADE HEAT LOSS														
SUBTOTAL HT LOSS			2159			1510			2783			934		
SUB TOTAL HT GAIN				1901		930			2616			408		
LEVEL FACTOR / MULTIPLIER	0.30	0.46				0.30	0.46		0.30	0.46		0.20	0.26	
AIR CHANGE HEAT LOSS			985			689			1232			425		
AIR CHANGE HEAT GAIN				150		74			207			32		
DUCT LOSS			0			0			0			0		
DUCT GAIN			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			486			486			486			486		
TOTAL HT LOSS BTU/H			3144			2198			3935			1359		
TOTAL HT GAIN x 1.3 BTU/H				3298		1938			4301			1204		

REC'D BY: _____ DATE: _____
REF'D TO: _____ DATE: _____
SEP 14 2021
CITY OF MONTGOMERY
BUILDING DIVISION
Planning & Development Department

TOTAL HEAT GAIN BTU/H: 37092

TONS: 3.09

LOSS DUE TO VENTILATION LOAD BTU/H: 1819

STRUCTURAL HEAT LOSS: 52814

TOTAL COMBINED HEAT LOSS BTU/H: 54633

SITE NAME: RUSSELL GARDENS PH 4
BUILDER: GREENPARK HOMESOPT 5 BED
TYPE: MOUNTAINASH 4

DATE: Mar-21

GFA: 3190 LO# 90128

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 52,814 TOTAL HEAT GAIN 36,762
AIR FLOW RATE CFM 21.41 AIR FLOW RATE CFM 30.77furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35#GOODMAN
GMEC960603BNA 60
FAN SPEED LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
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	14	7	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	ENS	MBR	FLEX	BED-2	BED-3	BED-4	ENS-3	FLEX	BED-3	MBR	S-ENS	FAM	L/D	K/B	K/B	L/H	BED-5	W/R	FOY	LND	BAS	BAS	BAS	BAS
RM LOSS MBH	1.63	1.56	2.16	1.67	1.18	1.07	0.83	2.16	1.18	1.56	1.00	3.14	2.20	1.97	1.97	1.36	0.99	2.45	3.80	0.11	4.46	4.46	4.46	4.46
CFM PER RUN HEAT	35	33	46	36	25	23	18	46	25	33	21	67	47	42	42	29	21	52	81	2	95	95	95	95
RM GAIN MBH	1.28	1.82	2.82	1.81	1.74	1.63	0.44	2.82	1.74	1.82	0.85	3.30	1.94	2.15	2.15	1.20	1.58	0.54	0.96	0.69	0.65	0.65	0.65	0.65
CFM PER RUN COOLING	39	56	87	56	54	50	14	87	54	56	26	101	60	66	66	37	49	17	30	21	20	20	20	20
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	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	27	67	51	56	61	46	49	58	49	40	56	26	25	38	44	40	23	47	48	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	160	120	100	130	130
TOTAL EFFECTIVE LENGTH	157	217	211	196	161	256	249	188	239	140	186	156	165	158	164	180	183	177	158	208	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	0.09	0.1	0.1	0.11	0.1	0.1	0.09	0.1	0.08	0.11	0.14	0.11	0.09	0.09
ROUND DUCT SIZE	4	5	6	5	6	5	4	6	5	5	4	6	5	5	5	4	5	5	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	402	242	235	264	127	169	207	235	184	242	241	342	345	308	308	333	154	382	595	23	484	484	484	484
COOLING VELOCITY (ft/min)	447	411	444	411	275	367	161	444	396	411	298	515	441	485	485	424	360	125	220	241	102	102	102	102
OUTLET GRILL SIZE	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	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	A	B	C	E	D

RUN #	25
ROOM NAME	S-ENS
RM LOSS MBH	1.00
CFM PER RUN HEAT	21
RM GAIN MBH	0.85
CFM PER RUN COOLING	26
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	51
EQUIVALENT LENGTH	140
TOTAL EFFECTIVE LENGTH	191
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	4
HEATING VELOCITY (ft/min)	241
COOLING VELOCITY (ft/min)	298
OUTLET GRILL SIZE	3X10
TRUNK	E

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		VELOCITY (ft/min)				TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)			
TRUNK A	123	0.08	6.4	8	x	8	277			TRUNK G	0	0.00	0	0	x	8	0			TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	179	0.10	7	8	x	8	403			TRUNK H	0	0.00	0	0	x	8	0			TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	553	0.08	11.2	14	x	8	711			TRUNK I	0	0.00	0	0	x	8	0			TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	363	0.07	9.9	12	x	8	545			TRUNK J	0	0.00	0	0	x	8	0			TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	572	0.07	11.8	16	x	8	644			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
RETURN AIR #	1	2	3	4	5	6	7	8	BR																		
AIR VOLUME	85	95	95	85	75	280	155	85	0	0	0	0	0	0	0	0	0	176									
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									
ACTUAL DUCT LGH.	51	42	57	53	63	26	26	48	1	1	1	1	1	1	1	1	1	15									
EQUVALENT LENGTH	205	165	155	205	210	185	190	155	0	0	0	0	0	0	0	0	0	185									
TOTAL EFFECTIVE LH	256	207	212	258	273	211	216	203	1	1	1	1	1	1	1	1	1	200									
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.05	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.07									
ROUND DUCT SIZE	6	6	6	6	6	9	7.2	5.8	0	0	0	0	0	0	0	0	0	7.6									
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	8									
	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	24									

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	85	95	95	85	75	280	155	85	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.	51	42	57	53	63	26	26	48	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	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	256	207	212	258	273	211	216	203	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	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	7.2	5.8	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 4
SITE NAME: RUSSELL GARDENS PH 4

LO # 90128
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
REC'D BY _____ DATE _____

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	8	@ 10.6 cfm	84.8	cfm
Table 9.32.3.A.		TOTAL	222.6	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	222.6	cfm
Less Principal Ventil. Capacity	95.4	cfm
Required Supplemental Capacity	127.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY
Model: VANEE V150H Location: BSMT
95.4 cfm 3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
95.4 CFM	71 F	1.08	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 ☒ HVI Approved
@ 32 deg F (0 deg C)

LOCATION OF INSTALLATION
Lot: _____ Concession _____
Township: _____ Plan: _____
Address: _____
Roll # _____ Building Permit # _____

BUILDER: GREENPARK HOMES
Name: _____
Address: _____
City: _____
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: March-21

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

LO#: 90128

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				
	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-17	39	71
Summer DTD _c	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage

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

0.338 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

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

95 CFM x 71 °F x 1.08 x 0.25 = 1819 Btu/h

6.2.7 Sensible heat Gain due to Ventilation

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

95 CFM x 13 °F x 1.08 x 0.25 = 330 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)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{devel})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{level})
1	0.5	17,622	9,022	0.977
2	0.3		11,595	0.456
3	0.2		13,634	0.258
4	0		0	0.000
5	0		0	0.000

*HL_{airbv} = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HL_{airv} = 0

REC'D BY	DATE
REF'D TO	DATE
SEP 14 2021 CITY OF HAMILTON BUILDING DIVISION Planning & Development Department	

HEAT LOSS AND GAIN SUMMARY SHEET

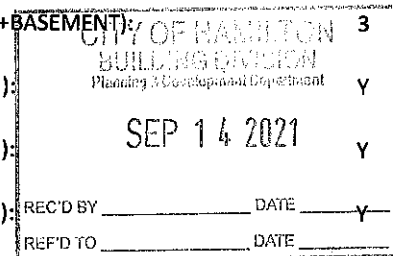
MODEL: MOUNTAINASH 4	OPT 5 BED	BUILDER: GREENPARK HOMES
SFQT: 3190	LO# 90128	SITE: RUSSELL GARDENS PH 4

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

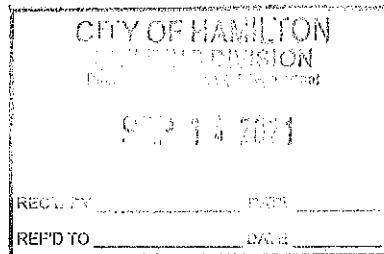
BUILDING DATA

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:	6
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**

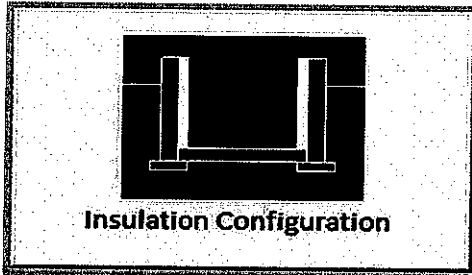
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 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



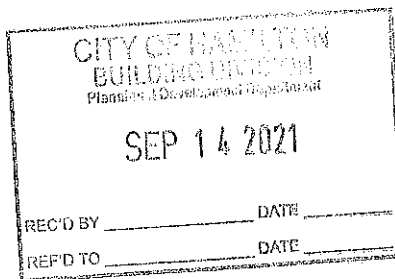
Residential Foundation Thermal Load Calculator

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# 90128

OPT 5 BED



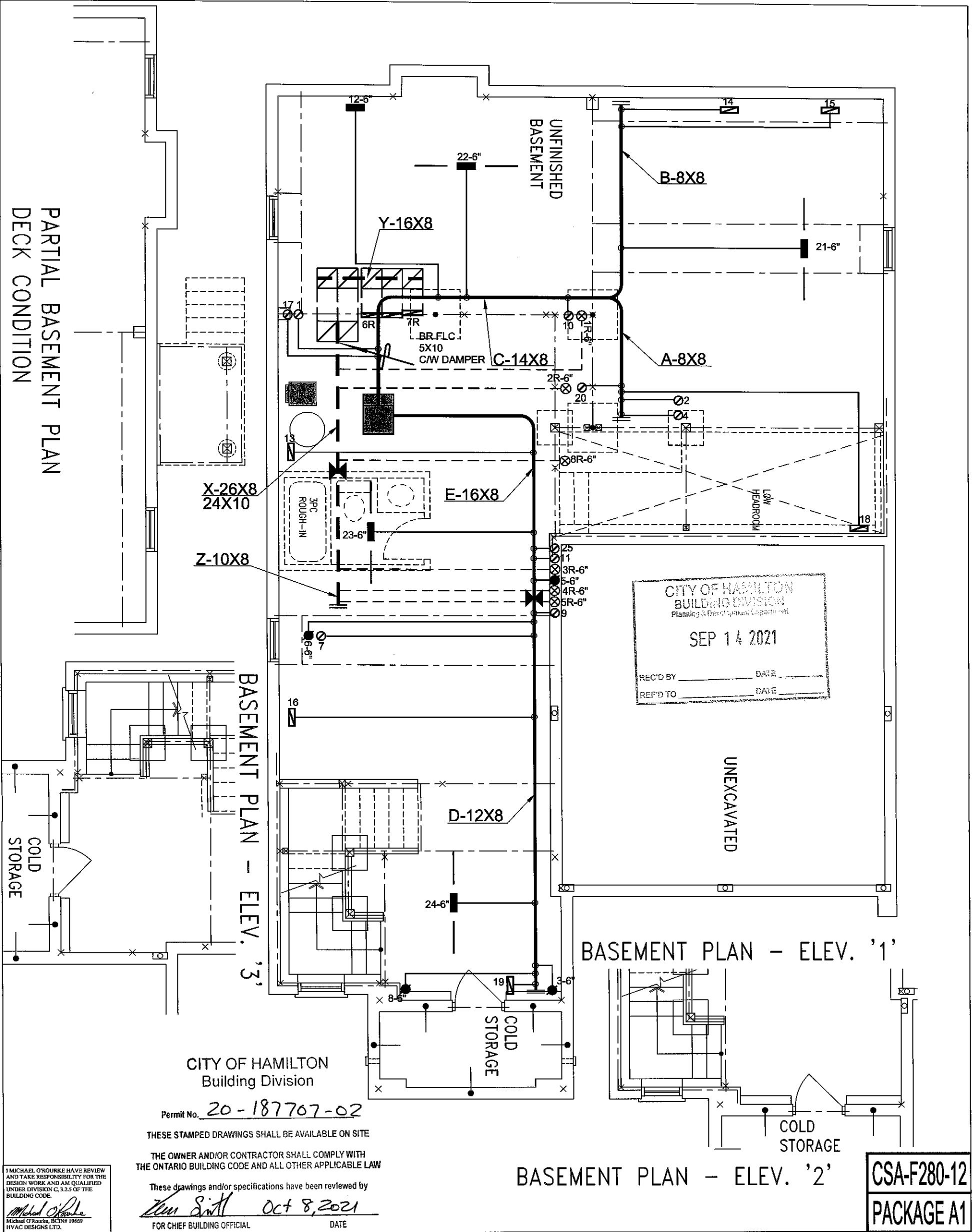
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

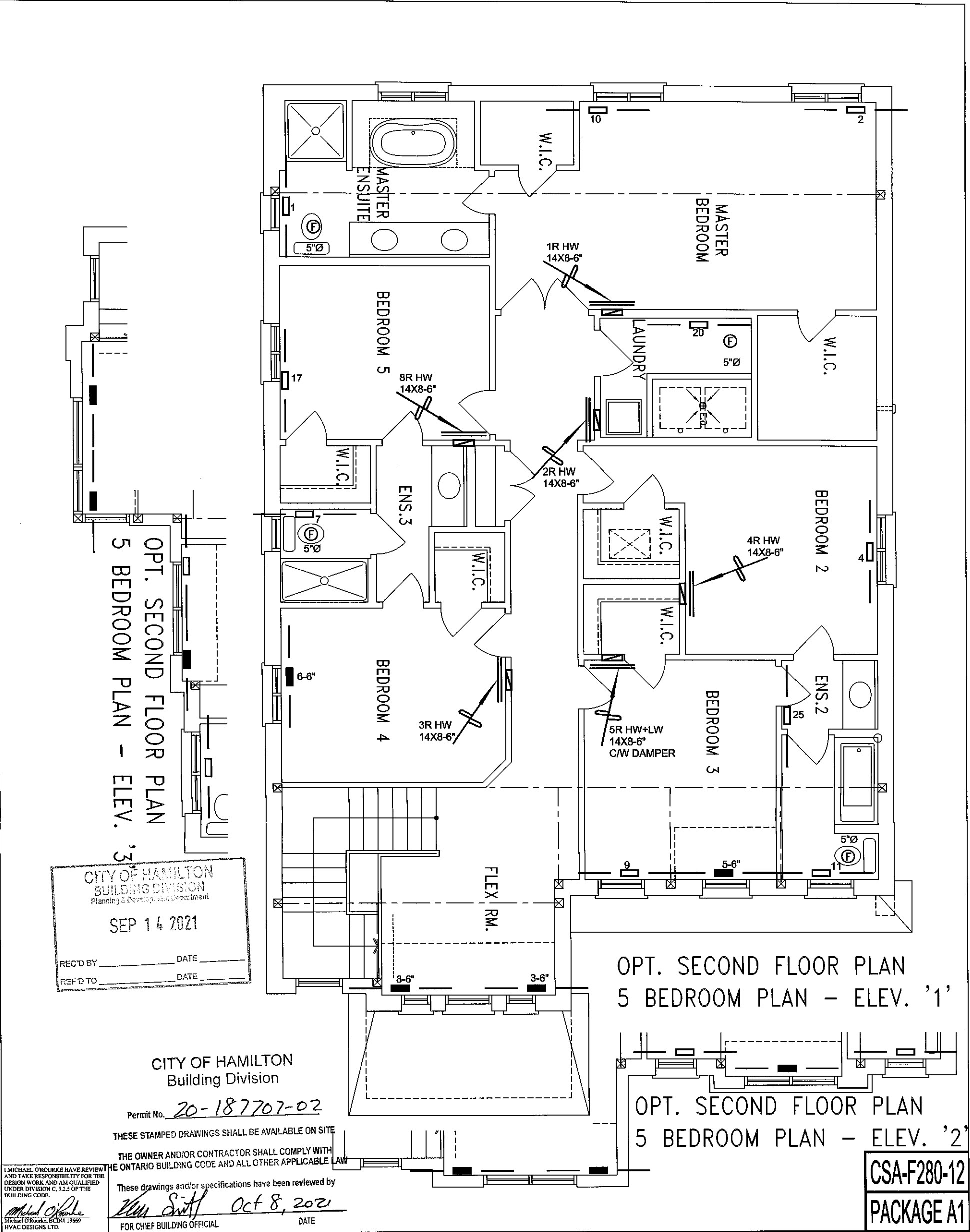
Weather Station Description				
Province:	Ontario			
Region:	Hamilton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	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		
	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 4
LO# 90128

OPT 5 BED



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		
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		 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 54633 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title	
GREENPARK HOMES					MAKE GOODMAN		3RD FLOOR		BASEMENT HEATING LAYOUT	
Project Name		RUSSELL GARDENS PH 4 HAMILTON, ONTARIO			MODEL GMEC960603BNA		2ND FLOOR 14 6 4		Date MAR/2021	
OPT 5 BED					INPUT 60 MBTU/H		1ST FLOOR 7 2 2		Scale 3/16" = 1'-0"	
MOUNTAINASH 4 3190 sqft		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.			OUTPUT 57.6 MBTU/H		BASEMENT 4 1 0		BCIN# 19669	
					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		LO# 90128	
					FAN SPEED 1131 cfm @ 0.6" w.g.					



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		
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		 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							SECOND 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"			
							BCIN# 19669			
OPT 5 BED MOUNTAINASH 4 3190 sqft							LO#		90128	