

SITE NAME: RUSSEL GARDENS PHASE 3				LOT 176				DATE: Nov-20				WINTER NATURAL AIR CHANGE RATE 0.347				HEAT LOSS AT °F. 71				CSA-F260-12							
BUILDER: GREENPARK HOMES				TYPE: MOUNTAINASH 3				GFA: 3072				LO# 88159				SUMMER NATURAL AIR CHANGE RATE 0.124				HEAT GAIN AT °F. 13				SB-12 PACKAGE A1			
ROOM USE		MBR		ENS		WIC-3		BED-2		BED-3		BED-4		ENS-2		S-ENS											
EXP. WALL		42		29		7		27		32		18		8		6											
CLG. HT.		9		9		9		9		9		9		9		9											
FACTORS																											
GRS.WALL AREA		378		261		63		243		288		162		72		54											
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN											
NORTH		19.8	14.9	0	0	0	0	0	0	0	0	0	0	0	7	138	105										
EAST		19.8	38.4	0	0	0	0	18	356	591	26	614	998	52	1028	1996	0	0									
SOUTH		19.8	23.1	0	0	7	138	162	0	0	0	0	0	16	316	370	7	138									
WEST		19.8	38.4	32	633	1228	14	277	537	0	0	0	0	0	0	0	0	0									
SKYLT.		34.6	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
DOORS		23.6	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
NET EXPOSED WALL		4.1	0.3	346	1434	260	240	995	180	45	187	34	217	900	163	236	978	177									
NET EXPOSED BSMT WALL ABOVE GR.		3.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
EXPOSED CLG		1.2	0.6	612	610	301	204	243	120	46	55	27	227	271	133	235	280	138									
NO ATTIC EXPOSED CLG		2.6	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
EXPOSED FLOOR		2.4	0.4	0	0	0	0	0	0	42	100	18	252	597	108	51	121	22									
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		2677		1663		697		2345		2522		1246		475		419		239									
SUB TOTAL HT GAIN				1739		1000		770		1434		2390		640		186											
LEVEL FACTOR / MULTIPLIER		0.20		0.30		0.20		0.30		0.20		0.30		0.20		0.30		0.20									
AIR CHANGE HEAT LOSS		808		499		210		708		761		376		143		126		19									
AIR CHANGE HEAT GAIN		145		81		62		116		193		52		15		19		19									
DUCT LOSS		0		0		91		306		328		0		0		0		0									
DUCT GAIN		0		0		83		236		339		0		0		0		0									
HEAT GAIN PEOPLE		240	2	480	0	0	0	0	1	240	1	240	1	240	0	0	0	0	0								
HEAT GAIN APPLIANCES/LIGHTS		565		0		0		565		565		565		565		565		0									
TOTAL HT LOSS BTU/H		3485		2152		998		3358		3612		1622		618		546		337									
TOTAL HT GAIN x 1.3 BTU/H		3873		1404		1190		3368		4846		1945		262		337		337									

ROOM USE	L/D		FM		K/B		L/H		LND		W/R		FOY		WOD		BAS	
EXP. WALL	30		33		35		27		31		7		18		46		178	
CLG. HT.	11		11		11		12		11		11		11		8		8	
GRS.WALL AREA	330		363		385		324		341		77		198		368		1094	
GLAZING	LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH	19.8	14.9	0	0	0	0	0	0	0	8	158	120	0	0	0	0	5	99
EAST	19.8	38.4	0	0	0	0	0	0	28	554	1075	0	0	0	6	119	230	0
SOUTH	19.8	23.1	36	712	832	0	0	8	158	185	0	0	0	7	138	162	0	10
WEST	19.8	38.4	0	0	0	34	672	1306	81	1601	3109	0	0	0	0	0	0	138
SKYLT.	34.6	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	231
DOORS	23.5	4.3	0	0	0	0	0	12	281	51	0	0	20	459	85	48	938	85
NET EXPOSED WALL	4.1	0.8	294	1219	221	329	1364	247	284	1177	213	298	1227	222	313	1298	235	469
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	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	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.5	1.3	0	0	0	0	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	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	1930		2036		3218		1781		1925		1201		1687		923		7481	
SUB TOTAL HT GAIN	1053		1582		3559		1297		440		355		515		167		591	
LEVEL FACTOR / MULTIPLIER	0.30	0.40	0.30 0.40		0.30 0.40		0.30 0.40		0.30 0.40		0.30 0.40		0.30 0.40		0.50		1.08	
AIR CHANGE HEAT LOSS	763		805		1272		704		761		475		667		3078		9078	
AIR CHANGE HEAT GAIN	85		126		288		105		36		29		42		0		61	
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	
HEAT GAIN APPLIANCES/LIGHTS	565		565		565		565		565		565		565		923		16559	
TOTAL HT LOSS BTU/H	2694		2841		4490		2485		2686		1676		2354		923		16559	
TOTAL HT GAIN x 1.3 BTU/H	2215		2910		5735		2558		1353		498		723		217		1588	

TOTAL HEAT GAIN BTU/H: 35297

TONS: 2.94

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 53096

TOTAL COMBINED HEAT LOSS BTU/H: 54611

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: 19689

MICHAEL O'BROURKE

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMESLOT 176
TYPE: MOUNTAINASH 3

DATE: Nov-20

GFA: 3072 LO# 88159

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 53,096 TOTAL HEAT GAIN 35,023
AIR FLOW RATE CFM 21.3 AIR FLOW RATE CFM 32.29furnace 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 @ .5" 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	1.74	2.15	1.00	1.68	1.81	1.62	0.62	1.68	1.81	1.74	0.55	2.69	2.84	2.25	2.25	2.48	2.69	1.68	2.35	4.37	4.37	4.37	4.37
CFM PER RUN HEAT	37	46	21	36	38	35	13	36	38	37	12	57	61	48	48	53	57	36	50	93	93	93	93
RM GAIN MBH	1.94	1.40	1.19	1.68	2.42	1.95	0.26	1.68	2.42	1.94	0.34	2.21	2.92	2.87	2.87	2.56	1.35	0.50	0.72	0.45	0.45	0.45	0.45
CFM PER RUN COOLING	63	45	38	54	78	63	8	54	78	63	11	72	94	93	93	83	44	16	23	15	15	15	15
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	0.16	0.16	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	0.1	0.12	0.09	0.11	0.1	0.13	0.09	0.13	0.12	0.11
ROUND DUCT SIZE	5	4	4	5	6	6	4	5	6	5	4	5	6	6	6	6	5	4	4	6	6	6	6
HEATING VELOCITY (ft/min)	272	528	241	264	194	178	149	264	194	272	138	419	311	245	245	270	419	413	574	474	474	474	474
COOLING VELOCITY (ft/min)	463	516	436	396	398	321	92	396	398	463	126	529	479	474	474	423	323	184	284	76	76	76	76
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	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	C	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
1	MBR	1.74	37	1.94	63	0.17	57	140	197	0.09	5	272	463	3X10	A
2	ENS	2.15	46	1.40	45	0.17	28	140	168	0.1	4	528	516	3X10	B
3	WIC-3	1.00	21	1.19	38	0.17	43	110	153	0.11	4	241	436	3X10	D
4	BED-2	1.68	36	1.68	54	0.17	51	120	171	0.1	5	264	396	3X10	D
5	BED-3	1.81	38	2.42	78	0.17	48	150	198	0.09	6	194	398	4X10	C
6	BED-4	1.62	35	1.95	63	0.17	26	170	196	0.09	6	178	321	4X10	B
7	ENS-2	0.62	13	0.26	8	0.17	55	130	185	0.09	4	149	92	3X10	A
8	BED-2	1.68	36	1.68	54	0.17	56	130	186	0.08	5	264	396	3X10	D
9	BED-3	1.81	38	2.42	78	0.17	47	160	207	0.08	6	194	398	4X10	C
10	MBR	1.74	37	1.94	63	0.17	46	190	220	0.08	5	272	463	3X10	A
11	S-ENS	0.55	12	0.34	11	0.17	30	120	137	0.13	4	419	126	3X10	C
12	L/D	2.69	57	2.21	72	0.17	17	120	167	0.1	5	311	529	3X10	D
13	FM	2.84	61	2.92	94	0.16	47	140	163	0.1	6	419	479	4X10	A
14	K/B	2.25	48	2.87	93	0.16	23	100	133	0.1	6	245	474	4X10	B
15	K/B	2.25	48	2.87	93	0.16	33	100	133	0.12	6	245	474	4X10	C
16	L/H	2.48	53	2.56	83	0.16	37	150	187	0.09	6	270	423	4X10	C
17	LND	2.69	57	1.35	44	0.17	47	110	157	0.11	5	419	323	3X10	A
18	W/R	1.68	36	0.50	16	0.17	16	150	166	0.1	4	413	184	3X10	C
19	FOY	2.35	50	0.72	23	0.17	35	100	135	0.13	4	574	284	3X10	C
21	BAS	4.37	93	0.45	15	0.16	44	140	184	0.09	6	474	76	4X10	A
22	BAS	4.37	93	0.45	15	0.16	19	110	129	0.13	6	474	76	4X10	B
23	BAS	4.37	93	0.45	15	0.16	4	130	134	0.12	6	474	76	4X10	D
24	BAS	4.37	93	0.45	15	0.16	22	130	152	0.11	6	474	76	4X10	C

SUPPLY AIR TRUNK SIZE														RETURN AIR TRUNK SIZE													
	TRUNK	STATIC	ROUND	RECT	VELOCITY				TRUNK	STATIC	ROUND	RECT	VELOCITY				TRUNK	STATIC	ROUND	RECT	VELOCITY						
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)				
TRUNK A	298	0.08	8.9	10	x	8	536	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0				
TRUNK B	568	0.08	11.3	14	x	8	730	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0				
TRUNK C	320	0.08	9.2	10	x	8	576	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0				
TRUNK D	563	0.08	11.3	14	x	8	724	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	811	0.05	14.6	24	x	8	608						
														TRUNK Y	650	0.05	13.4	20	x	8	585						
														TRUNK Z	270	0.05	9.7	12	x	8	405						
														DROP	1131	0.05	16.5	24	x	10	679						

RETURN AIR #	1	2	3	4	5	6	7											BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AIR VOLUME	135	135	85	85	75	380	75	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			
ACTUAL DUCT LGH.	56	58	52	56	51	31	33	1	1	1	1	1	1	1	15			
EQUIVALENT LENGTH	215	245	195	165	255	195	240	0	0	0	0	0	0	0	175			
TOTAL EFFECTIVE LH	271	303	247	221	306	226	273	1	1	1	1	1	1	1	190			
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	0.08			
ROUND DUCT SIZE	7.5	7.5	6	5.8	6	10.1	6	0	0	0	0	0	0	0	7.1			
INLET GRILL SIZE	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			
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	14			

TYPE: MOUNTAINASH 3
 SITE NAME: RUSSEL GARDENS PHASE 3

 LO # 88159
 LOT 176

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	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: VANEE 65H	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-2	FV-05-11VK1	50	☒	0.3
S-ENS	FV-05-11VK1	50	☒	0.3
WR	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
165 cfm high	64 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
CITY OF HAMILTON	
Lot: BUILDING DIVISION	Concession
Planning & Development Department	
Township	Plan:
FEB 05 2021	
Address	Building Permit #
Roll #	
REG'D BY	DATE
BUILDER: GREENPARK HOMES	DATE
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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	November-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																								
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																								
LO#: 88159		Model: MOUNTAINASH 3		Builder: GREENPARK HOMES																																																				
				Date: 09/11/2020																																																				
Volume Calculation			Air Change & Delta T Data																																																					
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5.2.3.1 Heat Loss due to Air Leakage $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.347 x 325.86 x 39 °C x 1.2 = 5321 W = 18155 Btu/h			6.2.6 Sensible Gain due to Air Leakage $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ 0.124 x 325.86 x 7 °C x 1.2 = 345 W = 1179 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)																																																								
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																								
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																				
1	0.5	18,155	8,404	1.080																																																				
2	0.3		13,778	0.395																																																				
3	0.2		12,034	0.302																																																				
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	LOT 176	BUILDER: GREENPARK HOMES
SFQT: 3072	LO# 88159	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):	41428.0	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:	5.5 ft
LENGTH: 53.0 ft	WIDTH: 36.0 ft	EXPOSED PERIMETER:	178.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component**

Ceiling with Attic Space Minimum RSI (R)-Value	
Ceiling Without Attic Space Minimum RSI (R)-Value	
Exposed Floor Minimum RSI (R)-Value	
Walls Above Grade Minimum RSI (R)-Value	
Basement Walls Minimum RSI (R)-Value	
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	
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	
Windows and Sliding Glass Doors Maximum U-Value	
Skylights Maximum U-Value	
Space Heating Equipment Minimum AFUE	
HRV Minimum Efficiency	
Domestic Hot Water Heater Minimum EF	

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

FEB 05 2021

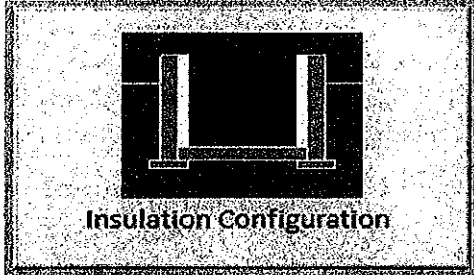
REC'D BY _____ DATE _____
REF'D TO _____ DATE _____**Compliance Package**
A1

Nominal	Min. Eff.
60	59.22
31	27.65
31	29.80
22	17.03
20 ci	21.12
-	-
10	10
10	11.13
0.28	-
0.49	-
0.96	-
75%	-
0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE*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):	1.68	
Window Area (m ²):	1.4	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	CITY OF HAMILTON BUILDING DIVISION Planning & Development Department FEB 05 2021 REC'D BY _____ DATE _____ REF'D TO _____ DATE _____
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	1644	

TYPE: MOUNTAINASH 3
LO# 88159

LOT 176

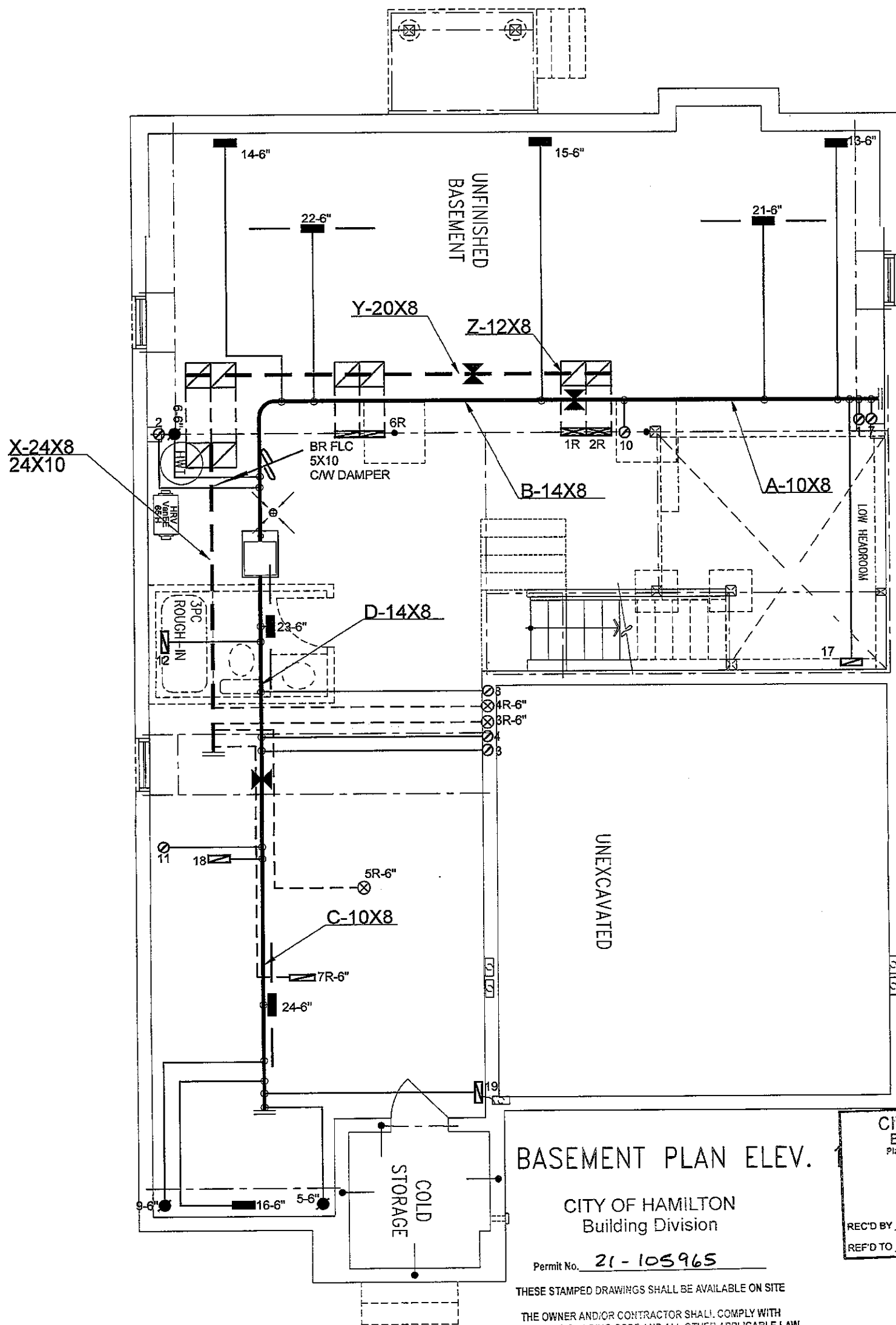
Air Infiltration Residential Load Calculator

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):	7.92			
Building Configuration			CITY OF HAMILTON BUILDING DIVISION Planning & Development Department FEB 05 2021 REC'D BY _____ DATE _____ REF'D TO _____ DATE _____	
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1173.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1563.8 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):	0.347			
Cooling Air Leakage Rate (ACH/H):	0.124			

TYPE: MOUNTAINASH 3
LO# 88159

LOT 176



BASEMENT PLAN ELEV.

CITY OF HAMILTON
Building Division

Permit No. 21-105965

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
Kenn Smith Feb 22, 2021
FOR CHIEF BUILDING OFFICIAL DATE

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

FEB 05 2021

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

LOT 176
CSA-F280-12
PACKAGE A1

I MICHAEL O'BROUNKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THIS
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.3.2.3 OF THE
BUILDING CODE.
Michael O'Brooke
Michael O'Brooke, BCIN# 19669
HVAC DESIGNS LTD.

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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Client
GREENPARK HOMES

Project Name
RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO

LOT 176
MOUNTAINASH 3 3072 sqft

HVAC DESIGNS LTD.

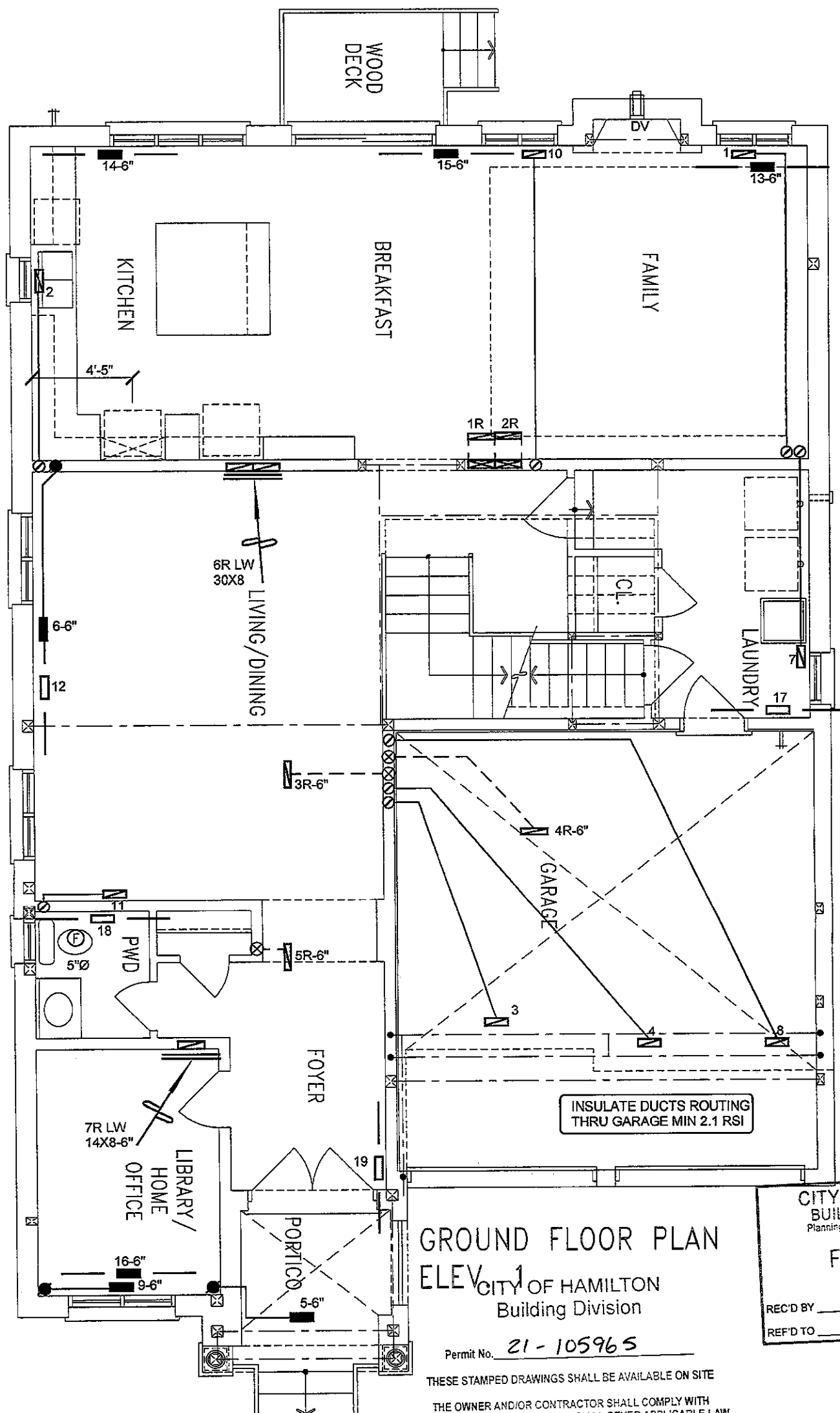
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
Web: www.hvacdesigns.ca

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 54611 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS
MAKE	GOODMAN	3RD FLOOR			
MODEL	GMEC960603BNA	2ND FLOOR	11	5	3
INPUT	60 MBTU/H	1ST FLOOR	8	2	2
OUTPUT	57.6 MBTU/H	BASEMENT	4	1	0
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			
FAN SPEED	1131 cfm @ 0.6" w.c.				

Sheet Title	
BASEMENT HEATING LAYOUT	
Date	NOV/2020
Scale	3/16" = 1'-0"
BCIN#	19669
LO#	88159



GROUND FLOOR PLAN
ELEV. 1

CITY OF HAMILTON
Building Division

Permit No. 21-105965

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THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed by
Karl Smith Feb 22, 2021
FOR CHIEF BUILDING OFFICIAL DATE

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
FEB 05 2021
REC'D BY _____ DATE _____
REF'D TO _____ DATE _____

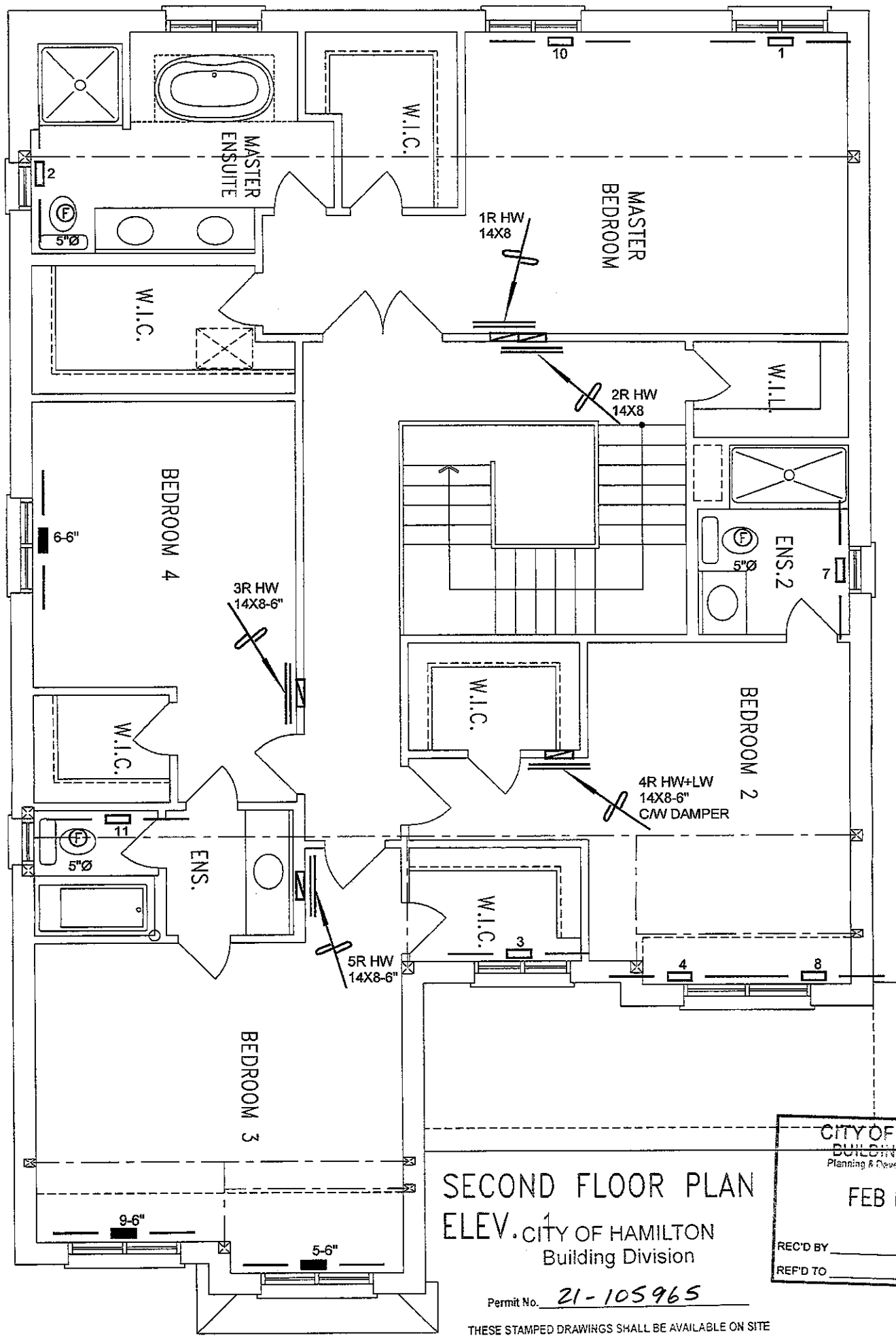
LOT 176
CSA-F280-12
PACKAGE A1

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
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 NOV/2020		
LOT 176 MOUNTAINASH 3 3072 sqft			Scale 3/16" = 1'-0"	BCIN# 19669	
			LO#	88159	



SECOND FLOOR PLAN
ELEV. CITY OF HAMILTON
Building Division

Permit No. 21-105965

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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
Kenn Smith Feb 22, 2021
FOR CHIEF BUILDING OFFICIAL DATE

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
FEB 05 2021
REC'D BY _____ DATE _____
REF'D TO _____ DATE _____

LOT 176
CSA-F280-12
PACKAGE A1

I MICHAEL O'BROCKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.32.3 OF THE
BUILDING CODE.
Michael O'Brocke
Michael O'Brocke, 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.		
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Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date NOV/2020	
LOT 176 MOUNTAINASH 3 3072 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669 LO# 88159	