

SITE NAME: RUSSEL GARDENS PHASE 3

BUILDER: GREENPARK HOMES

LOT 182

TYPE: MOUNTAINASH 6

GFA: 3405

DATE: Dec-20

LO#: 88538

WINTER NATURAL AIR CHANGE RATE 0.319

SUMMER NATURAL AIR CHANGE RATE 0.114

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	BED-2	BED-3	BED-4	S-ENS	BED-5	WIC-3	ENS-3		
FACTORS			33	29	8	34	33	26	0	11	8	6		
GRS.WALL AREA			9	9	9	9	9	9	9	9	9	9		
GLAZING			237	261	72	306	297	234	0	99	72	54		
NORTH	19.8	16.0	0	0	0	0	0	0	0	0	0	0		
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0	0		
SOUTH	19.8	24.9	0	0	0	0	0	0	0	0	0	0		
WEST	19.8	41.6	32	633	1330	14	277	582	0	0	0	0		
SKYL.T.	34.6	101.5	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		
NET EXPOSED WALL	4.1	0.8	265	1099	199	240	995	180	72	236	54	262	1086	197
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0	0		
EXPOSED CLG	1.2	0.6	285	340	167	204	243	120	130	155	76	272	324	160
NO ATTIC EXPOSED CLG	2.6	1.3	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		
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0	0		
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0	0		
SUBTOTAL HT LOSS			2071	1696	1653	453	2958	2476	438	831	639	455		
SUB TOTAL HT GAIN														
LEVEL FACTOR / MULTIPLIER	0.20	0.26		0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20
AIR CHANGE HEAT LOSS			549		438	120	784	666	359	220	169	120		
AIR CHANGE HEAT GAIN				139		87	11	189		45		39		22
DUCT LOSS			0		0		374	313		55		81		0
DUCT GAIN			0	0	0	0	356	370	0	14	0	52	0	0
HEAT GAIN PEOPLE	240	2	480	0	0	0	1	240	1	240	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			823	0	0	0	823	823	0	823	0	0	0	0
TOTAL HT LOSS BTU/H			2620	2091	574	4116	3445	1716	609	1052	888	575		
TOTAL HT GAIN x 1.3 BTU/H			4079	1486	184	5390	5289	2161	194	2032	740	379		

ROOM USE	EXP. WALL	CLG. HT.	L/D	FAM	K/B	L/H	LND	F-WIC	FOY	ENT				
FACTORS			50	35	44	10	7	12	16	24				
GRS.WALL AREA			11	11	11	11	9	11	11	12				
GLAZING			550	385	484	110	63	132	176	288				
NORTH	19.8	16.0	0	0	0	0	0	0	0	0				
EAST	19.8	41.6	0	0	0	0	0	0	0	0				
SOUTH	19.8	24.3	35	712	896	0	0	0	0	0				
WEST	19.8	41.6	0	0	0	0	0	0	0	0				
SKYL.T.	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	514	2131	386	339	1405	255	407	1687	308	52	381	69
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	0	0	0	0	0	0	0	0		0	0	0
NO ATTIC EXPOSED CLG	2.6	1.3	0	0	0	10	26	13	23	74	36	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	0	0		0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0		0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0		0	0	0
SUBTOTAL HT LOSS			2842	2340	3320	737	521	688	1627	1580				
SUB TOTAL HT GAIN				1283	2179	2698	357	456	599	286				
LEVEL FACTOR / MULTIPLIER	0.30	0.42		0.30	0.42	0.30	0.42	0.30	0.42	0.30	0.42	0.30	0.42	0.30
AIR CHANGE HEAT LOSS			1191		981	1391	309	288	682	662				
AIR CHANGE HEAT GAIN				105	179	221	29		49	23				
DUCT LOSS			0		0	0	0		0	0				
DUCT GAIN			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			823	823	823	823	823	823	823	823				
TOTAL HT LOSS BTU/H			4034	3321	4712	1046	659	976	2308	2242				
TOTAL HT GAIN x 1.3 BTU/H			2874	4134	4864	1571	1330	656	842	403				

TOTAL HEAT GAIN BTU/H:

41097

TONS: 3.42

LOSS DUE TO VENTILATION LOAD BTU/H: 1819

STRUCTURAL HEAT LOSS: 54928

TOTAL COMBINED HEAT LOSS BTU/H: 59747

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 182
TYPE: MOUNTAINASH 6

DATE: Dec-20

GFA: 3405 LO# 88538

HEATING CFM 1504
TOTAL HEAT LOSS 54,928
AIR FLOW RATE CFM 27.38
COOLING CFM 1504
TOTAL HEAT GAIN 40,767
AIR FLOW RATE CFM 36.89

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

#*GOODMAN

GMEC960804CNA 80

FAN SPEED

LOW 868

MEDLOW 978

MEDIUM 1112

MEDIUM HIGH 1504

HIGH 1615

AFUE = 96 %
INPUT (BTU/H) = 80,000
OUTPUT (BTU/H) = 76,800

DESIGN CFM = 1504
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	17	10	5
R/A	0	0	6	3	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	MBR	ENS	WIC	BED-2	BED-3	BED-4	S-ENS	BED-5	WIC-3	MBR	ENS-3	L/D	FAM	K/B	K/B	L/H	LND	F-WIC	FOY	ENT	BAS	BAS	BAS	BAS
RM LOSS MBH	1.31	1.05	0.57	2.08	1.15	1.72	0.30	1.05	0.89	1.31	0.58	2.02	1.66	2.36	2.36	1.05	0.66	0.98	2.31	2.24	3.59	3.59	3.59	3.59
CFM PER RUN HEAT	36	29	16	56	31	47	8	29	24	36	16	55	45	65	65	29	18	27	63	61	98	98	98	98
RM GAIN MBH	2.04	0.74	0.18	2.55	1.76	2.15	0.10	2.03	0.74	2.04	0.38	1.44	2.07	2.43	2.43	1.57	1.39	0.66	0.84	0.40	0.48	0.48	0.48	0.48
CFM PER RUN COOLING	75	27	7	94	65	79	4	75	27	75	14	53	76	90	90	58	51	24	31	15	18	18	18	18
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	36	48	22	65	67	49	44	34	56	26	45	35	26	31	24	19	49	53	46	23	15	22	33	33
EQUIVALENT LENGTH	100	170	160	150	200	190	170	150	160	170	180	120	110	140	130	100	180	140	130	120	140	120	120	180
TOTAL EFFECTIVE LENGTH	136	218	182	215	267	239	214	184	216	196	225	155	136	171	154	119	229	193	176	143	155	142	153	213
ADJUSTED PRESSURE	0.13	0.08	0.09	0.08	0.06	0.07	0.08	0.09	0.08	0.09	0.08	0.11	0.13	0.09	0.11	0.14	0.08	0.09	0.1	0.12	0.1	0.11	0.11	0.08
ROUND DUCT SIZE	5	4	4	6	6	6	4	6	4	5	4	5	5	6	6	5	5	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	284	333	184	286	158	240	92	148	275	264	184	404	330	331	331	213	132	310	463	448	500	500	500	500
COOLING VELOCITY (ft/min)	551	310	80	479	331	403	46	382	310	551	161	389	558	459	459	426	374	275	228	110	92	92	92	92
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	F	C	F	C	A	C	B	C	B	F	C	B	F	D	D	F	C	A	A	F	F	D	C	A

RUN #	25	26	27	28	29	30	31	32
ROOM NAME	BED-2	BED-3	ENS	S-ENS	FAM	L/D	BAS	BED-3
RM LOSS MBH	2.06	1.15	1.05	0.30	1.66	2.02	3.59	1.15
CFM PER RUN HEAT	56	31	29	8	45	55	98	31
RM GAIN MBH	2.55	1.76	0.74	0.10	2.07	1.44	0.48	1.76
CFM PER RUN COOLING	94	65	27	4	76	53	18	65
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17
ACTUAL DUCT LGH.	60	74	44	40	14	49	46	70
EQUIVALENT LENGTH	180	200	180	180	150	170	160	200
TOTAL EFFECTIVE LENGTH	240	274	224	220	164	219	206	270
ADJUSTED PRESSURE	0.07	0.06	0.08	0.08	0.1	0.08	0.08	0.06
ROUND DUCT SIZE	6	6	4	4	5	6	6	6
HEATING VELOCITY (ft/min)	286	158	333	92	330	404	500	158
COOLING VELOCITY (ft/min)	479	331	310	46	558	389	92	331
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	B	A	C	B	F	A	A	A

SUPPLY 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 A	434	0.06	11	14	558	TRUNK G	0	0.00	0	0
TRUNK B	585	0.06	12.3	18	585	TRUNK H	0	0.00	0	0
TRUNK C	907	0.06	14.5	24	680	TRUNK I	0	0.00	0	0
TRUNK D	228	0.09	7.8	8	513	TRUNK J	0	0.00	0	0
TRUNK E	1135	0.06	15.8	28	730	TRUNK K	0	0.00	0	0
TRUNK F	366	0.09	9.3	12	549	TRUNK L	0	0.00	0	0

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 O	0	0.05	0	0	0	TRUNK Q	0	0.05	0	0
TRUNK P	0	0.05	0	0	0	TRUNK R	0	0.05	0	0
TRUNK Q	0	0.05	0	0	0	TRUNK S	0	0.05	0	0
TRUNK R	0	0.05	0	0	0	TRUNK T	0	0.05	0	0
TRUNK S	0	0.05	0	0	0	TRUNK U	0	0.05	0	0
TRUNK T	0	0.05	0	0	0	TRUNK V	585	0.05	12.9	20
TRUNK U	0	0.05	0	0	0	TRUNK W	150	0.05	7.8	8
TRUNK V	585	0.05	12.9	20	527	TRUNK X	919	0.05	15.3	28
TRUNK W	150	0.05	7.8	8	338	TRUNK Y	685	0.05	13.7	22
TRUNK X	919	0.05	15.3	28	591	TRUNK Z	535	0.05	12.5	18
TRUNK Y	685	0.05	13.7	22	560	DROP	1504	0.05	18.4	24
TRUNK Z	535	0.05	12.5	18	535					
DROP	1504	0.05	18.4	24	645					

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	75	75	135	115	75	75	185	400	135	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.	71	68	57	74	67	69	21	23	38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	245	235	215	235	220	215	155	160	285	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	316	303	272	309	287	284	176	183	323	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	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
ROUND DUCT SIZE	6	6	7.5	7	6	6	7.5	9.9	7.5	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	8	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	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: MOUNTAINASH 6
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88538
LOT 162

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	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	6 @ 10.6 cfm	63.6 cfm
Other Rooms	7 @ 10.6 cfm	74.2 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 65H
Location:	BSMT
95.4 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	AT °F	FACTOR	% LOSS
95.4 CFM	71 F	1.08	0.25

SUPPLEMENTAL FANS		PANASONIC
Location	Model	cfm
ENS	FV-05-11VK1	50
S-ENS	FV-05-11VK1	50
ENS-3	FV-05-11VK1	50
F-W/C	FV-05-11VK1	50

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
165	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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	December-20

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

LO#: 88598

Model: MOUNTAINASH 6

Builder: GREENPARK HOMES

Date: 07/12/2020

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1486	8	11888
First	1486	11	16346
Second	1919	9	17271
Third	0	9	0
Fourth	0	9	0
Total:			45,505.0 ft³
Total:			1288.6 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.319
SUMMER NATURAL AIR CHANGE RATE	0.114

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

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

0.319 x 357.93 x 39 °C x 1.2 = 5378 W

= 18348 Btu/h

6.2.6 Sensible Gain due to Air Leakage

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

= 0.114 x 357.93 x 7 °C x 1.2 = 349 W

= 1191 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

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

6.2.7 Sensible heat Gain due to Ventilation

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

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)

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

Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{deval})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	18,348	8,770	1.046
2	0.3		13,135	0.419
3	0.2		13,851	0.265
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 6 ✓	LOT 182 ✓	BUILDER:	GREENPARK HOMES
SFQT:	3405	LO#	88538	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):	45505.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.85	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 55.0 ft	WIDTH: 36.0 ft	EXPOSED PERIMETER:	182.0 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	-

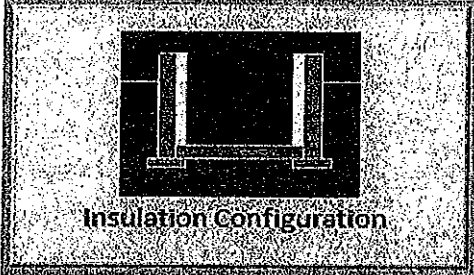
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

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):	16.8	
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):	1.9	
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):	1782	

TYPE: MOUNTAINASH 6
LO# 88538

LOT 182

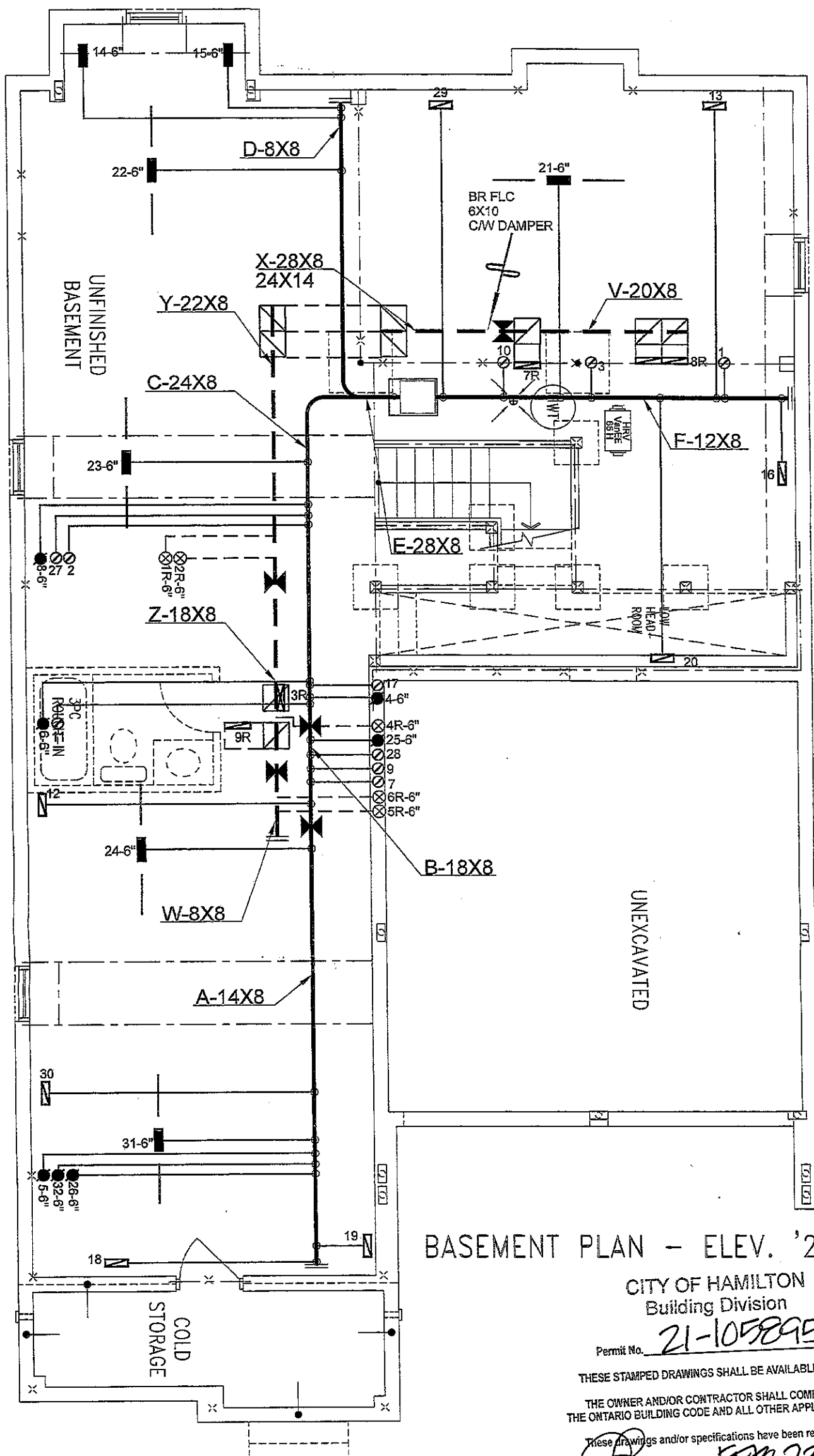
Air Infiltration Residential Load Calculator

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):	7.01		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1288.6		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1717.7 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):	0.319		
Cooling Air Leakage Rate (ACH/H):	0.114		

TYPE: MOUNTAINASH 6
LO# 88538

LOT 182



BASEMENT PLAN - ELEV. '2'

CITY OF HAMILTON
Building Division

Permit No. **21-105895**

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
FEB. 23/21
FOR CHIEF BUILDING OFFICIAL DATE

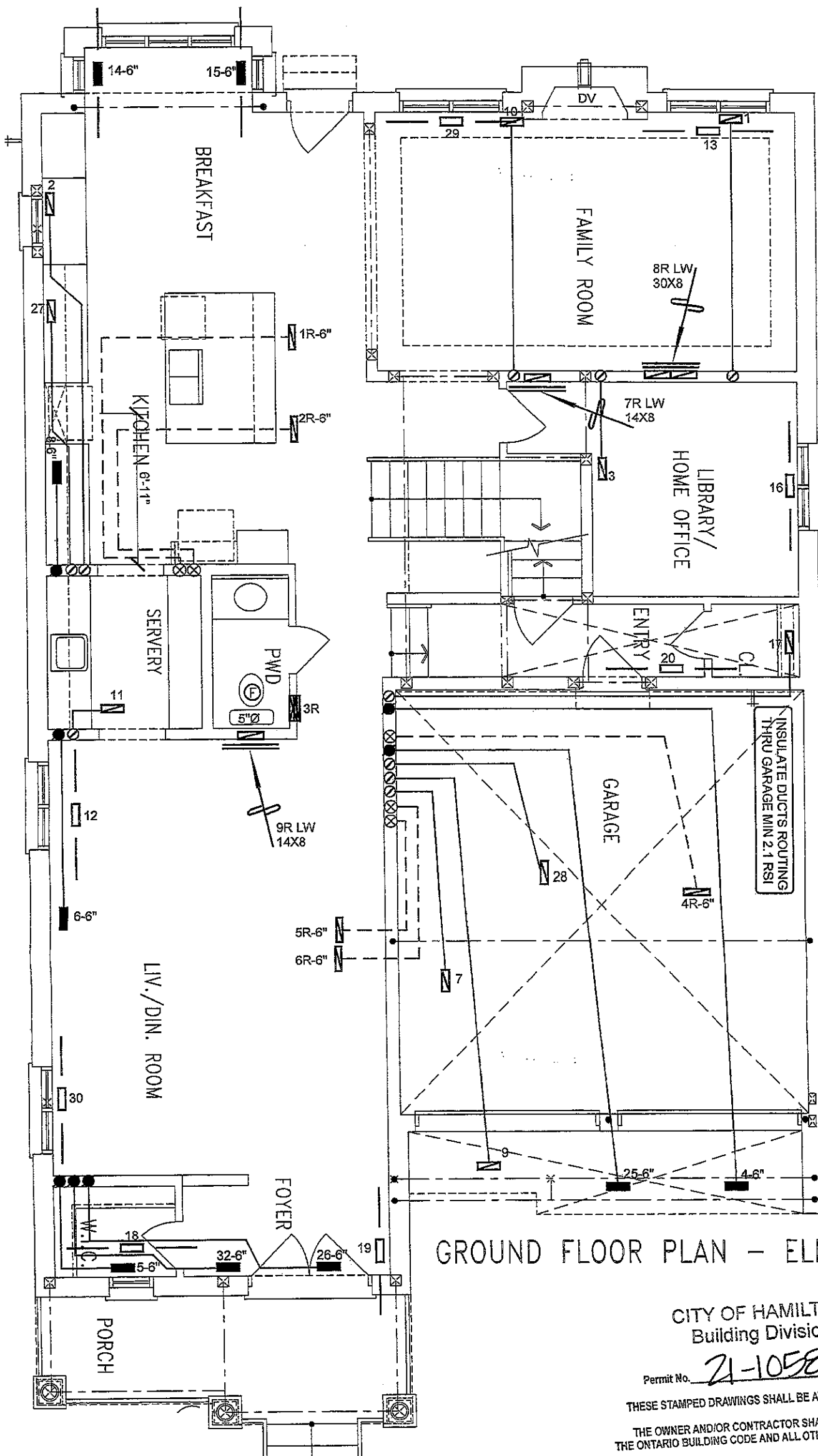
LOT 182
CSA-F280-12
PACKAGE A1

I MICHAEL O'Rourke HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.32.3 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
	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		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	HEAT LOSS 56747 BTU/H		# OF RUNS		S/A	R/A	FANS	Sheet Title BASEMENT HEATING LAYOUT
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			UNIT DATA		3RD FLOOR					
		MAKE GOODMAN		2ND FLOOR		17	6	4		
		MODEL GMEC960804CNA		1ST FLOOR		10	3	2		
LOT 182 MOUNTAINASH 6 3405 sqft		INPUT 80 MBTU/H		BASEMENT		5	1	0	Date DEC/2020	
		OUTPUT 76.8 MBTU/H		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"
		COOLING 3.5 TONS								
		FAN SPEED 1504 cfm @ 0.6" w.c.								BCIN# 19669
				LO# 88538						



GROUND FLOOR PLAN - ELEV. '2'

CITY OF HAMILTON
Building Division

Permit No. **21-105895**

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These drawings and/or specifications have been reviewed by
CA **FEB. 23/21**
DATE
FOR CHIEF BUILDING OFFICIAL

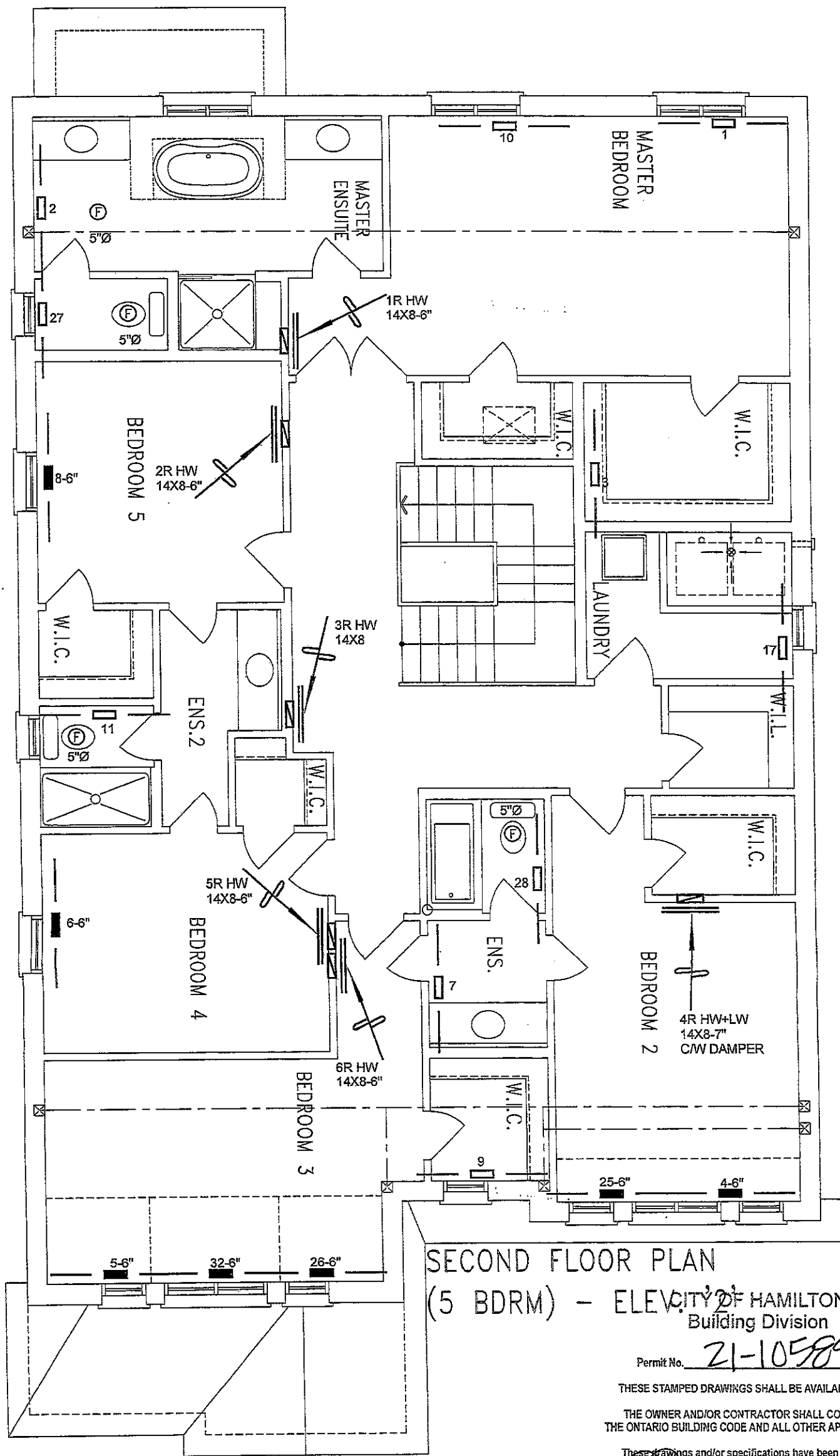
LOT 182
CSA-F280-12
PACKAGE A1

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

HVAC LEGEND								REVISIONS		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Description	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.		

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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		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 FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	Scale 3/16" = 1'-0"
LOT 182 MOUNTAINASH 6 3405 sqft			BCIN# 19669	
			LO#	88538



SECOND FLOOR PLAN
(5 BDRM) - ELEV. CITY OF HAMILTON
Building Division

Permit No. 21-105895

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAWS

These drawings and/or specifications have been reviewed by
[Signature] FEB. 23/21
FOR CHIEF BUILDING OFFICIAL DATE

LOT 182
CSA-F280-12
PACKAGE A1

I MICHAEL O'BRIEN HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.32.5 OF THE BUILDING CODE.
[Signature]
MICHAEL O'BRIEN, BORN 1969
HVAC DESIGNS LTD.

HVAC LEGEND							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Symbol]	SUPPLY AIR GRILLE	[Symbol]	6" SUPPLY AIR BOOT ABOVE	[Symbol]	14"x8" RETURN AIR GRILLE	[Symbol]	RETURN AIR STACK ABOVE
[Symbol]	SUPPLY AIR GRILLE 6" BOOT	[Symbol]	SUPPLY AIR STACK FROM 2nd FLOOR	[Symbol]	30"x8" RETURN AIR GRILLE	[Symbol]	RETURN AIR STACK 2nd FLOOR
[Symbol]	SUPPLY AIR BOOT ABOVE	[Symbol]	6" SUPPLY AIR STACK 2nd FLOOR	[Symbol]	FRA- FLOOR RETURN AIR GRILLE	[Symbol]	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 STANDARDS 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@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	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date DEC/2020	
LOT 182		MOUNTAINASH 6 3405 sqft	Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 88538	