

118 Great Falls Blvd.

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMESLOT 154
TYPE: MOUNTAINASH S

GFA: 3385

DATE: Nov-20
LO# 85158WINTER NATURAL AIR CHANGE RATE 0.319
SUMMER NATURAL AIR CHANGE RATE 0.114HEAT LOSS AT °F. 71
HEAT GAIN AT °F. 13CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MER	ENS	WIC	BED-2	BED-3	BED-4	S-ENS	BED-5	WIC-3	ENS-2		
			33	29	8	34	33	26	0	11	8	6		
			9	9	9	9	9	9	9	9	9	9		
GRS.WALL AREA	LOSS	GAIN	287	281	72	306	287	234	0	89	72	84		
GLAZING	LOSS	GAIN												
NORTH	19.8	16.0	0	0	0	0	0	0	0	0	0	0		
EAST	19.8	41.6	0	0	0	46	890	1870	47	929	1953	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	882	0	0	0	0		
SKYLT.	34.6	101.5	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		
NET EXPOSED WALL	4.1	0.8	265	1099	199	240	995	180	72	298	54	261	1082	196
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	180
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	2973	2568	1357	438	831	652		
SUB TOTAL HT GAIN														
LEVEL FACTOR / MULTIPLIER	0.20	0.27												
AIR CHANGE HEAT LOSS	562													
AIR CHANGE HEAT GAIN		147		91	11	203	218	47	11	40	42	23		
DUCT LOSS	0													
DUCT GAIN		0		0	0	337	366	0	71	0	110	0		
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0	1	240	0	
HEAT GAIN APPLIANCES/LIGHTS			575	575	575	575	575	575	575	575	575	575		
TOTAL HT LOSS BTU/H			2533	2102	576	4158	3691	1724	613	1067	912	578		
TOTAL HT GAIN x 1.3 BTU/H			3758	2240	932	4816	5083	1833	1017	1714	1876	1129		

ROOM USE	EXP. WALL	CLG. HT.	L/D	FAM	KIB	L/H	LND	F-WIC	FOY	MUD			WUB	BAS
			30	35	44	10	7	12	16	24			24	168
			11	11	11	11	9	11	11	12			9	9
GRS.WALL AREA	LOSS	GAIN	550	386	494	110	63	132	176	288			218	848
GLAZING	LOSS	GAIN												
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	36	712	898	0	0	0	0	0			0	0
WEST	19.8	41.6	0	0	46	569	1911	30	893	1247			0	0
SKYLT.	34.6	101.5	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
NET EXPOSED WALL	4.1	0.8	514	2131	386	339	1405	255	409	1696	307		92	381
NET EXPOSED BSMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0			56	232
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0	0			125	180
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			2842	2315	3286	737	621	668	1602	1590			184	1468
SUB TOTAL HT GAIN														
LEVEL FACTOR / MULTIPLIER	0.20	0.44												
AIR CHANGE HEAT LOSS	1248													
AIR CHANGE HEAT GAIN		111		188	191	31	20	40	24	25				
DUCT LOSS	0			0	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			575	575	575	575	575	575	575	575				
TOTAL HT LOSS BTU/H			4080	3331	4728	1061	662	890	2161	2274			1466	17033
TOTAL HT GAIN x 1.3 BTU/H			2550	3808	3955	1282	1070	659	386	1153			302	2804

TOTAL HEAT GAIN BTU/H:

41497

TONS: 3.46

LOSS DUE TO VENTILATION LOAD BTU/H: 1819

STRUCTURAL HEAT LOSS: 55738

TOTAL COMBINED HEAT LOSS BTU/H: 87588

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.

Michael O'Rourke

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 154
TYPE: MOUNTAINASH 6

DATE: Nov-20

GFA: 3395 LO# 88158

HEATING CFM 1504
TOTAL HEAT LOSS 55,739
AIR FLOW RATE CFM 26.98

COOLING CFM 1504
TOTAL HEAT GAIN 41,187
AIR FLOW RATE CFM 36.53

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 @ 5" 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-2	L/D	FAM	K/B	K/B	L/H	LND	F-WIC	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.32	1.05	0.58	2.08	1.20	1.72	0.31	1.06	0.91	1.32	0.58	2.05	1.67	2.36	2.36	1.06	0.66	0.99	2.16	2.27	3.70	3.70	3.70	3.70
CFM PER RUN HEAT	36	28	16	56	32	47	8	29	25	36	16	55	45	64	64	29	18	27	58	61	100	100	100	100
RM GAIN MBH	1.88	1.12	0.93	2.41	1.69	1.83	0.51	1.71	1.58	1.88	1.13	1.28	1.90	1.93	1.93	1.25	1.07	0.66	0.38	1.15	0.46	0.46	0.46	0.46
CFM PER RUN COOLING	69	41	34	88	62	67	19	63	58	69	41	47	70	71	71	46	39	24	14	42	17	17	17	17
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	0.17	0.17	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	36	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	176	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	0.1	0.11	0.14	0.08	0.09	0.1	0.12	0.09	0.11	0.11	0.08
ROUND DUCT SIZE	5	4	4	6	6	5	4	5	5	5	4	5	6	5	5	4	4	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	264	321	184	286	163	345	92	213	184	264	184	404	229	470	470	333	207	310	426	448	510	510	510	510
COOLING VELOCITY (ft/min)	507	470	390	449	316	492	218	463	426	507	470	345	357	521	521	528	447	275	103	308	87	87	87	87
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	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	2.08	1.20	1.05	0.31	1.67	2.05	3.70	1.20
CFM PER RUN HEAT	56	32	28	8	45	55	100	32
RM GAIN MBH	2.41	1.69	1.12	0.51	1.90	1.28	0.46	1.69
CFM PER RUN COOLING	88	62	41	19	70	47	17	62
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17
ACTUAL DUCT LGH	80	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	5	6	6
HEATING VELOCITY (ft/min)	286	163	321	92	330	404	510	163
COOLING VELOCITY (ft/min)	449	316	470	218	514	345	87	316
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	B	A	C	B	F	A	A	A

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	436	0.06	11	14	x	8	561		TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	588	0.06	12.4	18	x	8	588		TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	910	0.06	14.5	24	x	8	683		TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	228	0.10	7.6	10	x	8	410		TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	1138	0.06	15.8	28	x	8	732		TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0
TRUNK F	368	0.09	9.4	10	x	8	662		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
RETURN AIR #	1	2	3	4	5	6	7	8	9	0	0	0	0	0	0	BR	TRUNK V	585	0.05	12.9	20	x	8	527
AIR VOLUME	75	75	135	115	75	75	185	400	135	0	0	0	0	0	0		TRUNK W	150	0.05	7.8	8	x	8	338
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		TRUNK X	919	0.05	15.3	28	x	8	591
ACTUAL DUCT LGH.	71	68	57	74	67	69	21	23	38	1	1	1	1	1	1		TRUNK Y	685	0.05	13.7	22	x	8	580
EQUIVALENT LENGTH	245	235	215	235	220	215	155	160	285	0	0	0	0	0	0		TRUNK Z	535	0.05	12.5	18	x	8	535
TOTAL EFFECTIVE LH	316	303	272	309	287	284	176	183	323	1	1	1	1	1	1		DROP	1504	0.05	18.4	24	x	14	645
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	0.09								
ROUND DUCT SIZE	6	6	7.5	7	6	6	7.5	9.9	7.5	0	0	0	0	0	0									
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0	7.9								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8								
INLET GRILL SIZE	14	14	14	14	14	14	14	30	14	0	0	0	0	0	0	24								

RETURN AIR #	1	2	3	4	5	6	7	8	9													BR		
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	23
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	17
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	145
TOTAL EFFECTIVE LH	316	303	272	308	287	284	176	183	323	1	1	1	1	1	1	1	1	1	1	1	1	1	1	162
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	0.05
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	7.5
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	8
	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	24

118 Great Falls Blvd.

 TYPE: MOUNTAINASH 8
 SITE NAME: RUSSEL GARDENS PHASE 3

 LO # 88158
 LOT 154

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	6 @ 10.6 cfm	63.6 cfm
Other Rooms	9 @ 10.6 cfm	95.4 cfm
Table 9.32.3.A.	TOTAL	233.2 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		9.32.3.6.
Total Ventilation Capacity	233.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	153.7	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	
79.6 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
S-ENS	FV-05-11VK1	50	☒	0.3
ENS-2	FV-05-11VK1	60	☒	0.3
F-WIC	FV-05-11VK1	60	☒	0.3

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:	November-20

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

LO#: 88158

Model: MOUNTAINASH 6

Builder: GREENPARK HOMES

Date: 09/11/2020

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1486	9	13374
First	1486	11	16346
Second	1919	9	17271
Third	0	9	0
Fourth	0	9	0
Total:			46,991.0 ft³
Total:			1330.6 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

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

$$0.319 \times 369.62 \times 39 \text{ °C} \times 1.2 = 5553 \text{ W}$$

$$= 18947 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.114 \times 369.62 \times 7 \text{ °C} \times 1.2 = 361 \text{ W}$$

$$= 1230 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

$$80 \text{ CFM} \times 71 \text{ °F} \times 1.08 \times 0.25 = 1515 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

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

$$80 \text{ CFM} \times 13 \text{ °F} \times 1.08 \times 0.25 = 275 \text{ Btu/h}$$

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	18,947	9,026	1.050
2	0.3		12,951	0.439
3	0.2		13,973	0.271
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 HLairv = 0

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL:	MOUNTAINASH 6	LOT	154	BUILDER:	GREENPARK HOMES
SFQT:	3395	LO#	88158	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):	46991.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	2.00	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 55.0 ft	WIDTH: 36.0 ft	EXPOSED PERIMETER:	158.0 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 cl	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	-

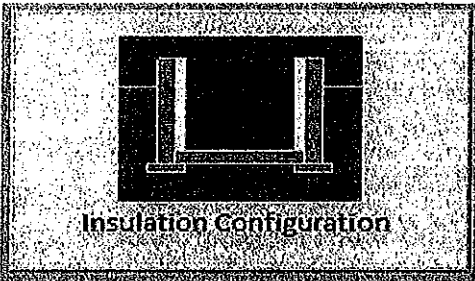
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

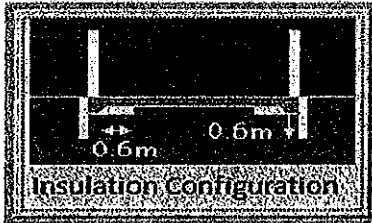
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.8	
Floor Width (m):	11.0	
Exposed Perimeter (m):	48.2	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.5	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	1521	

TYPE: MOUNTAINASH 6
LO# 88158

LOT 154

Residential Slab on Grade 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		
Length (m):	2.1	 Insulation Configuration
Width (m):	3.0	
Exposed Perimeter (m):	7.3	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		54

TYPE: MOUNTAINASH 6
LO# 88158

LOT 154

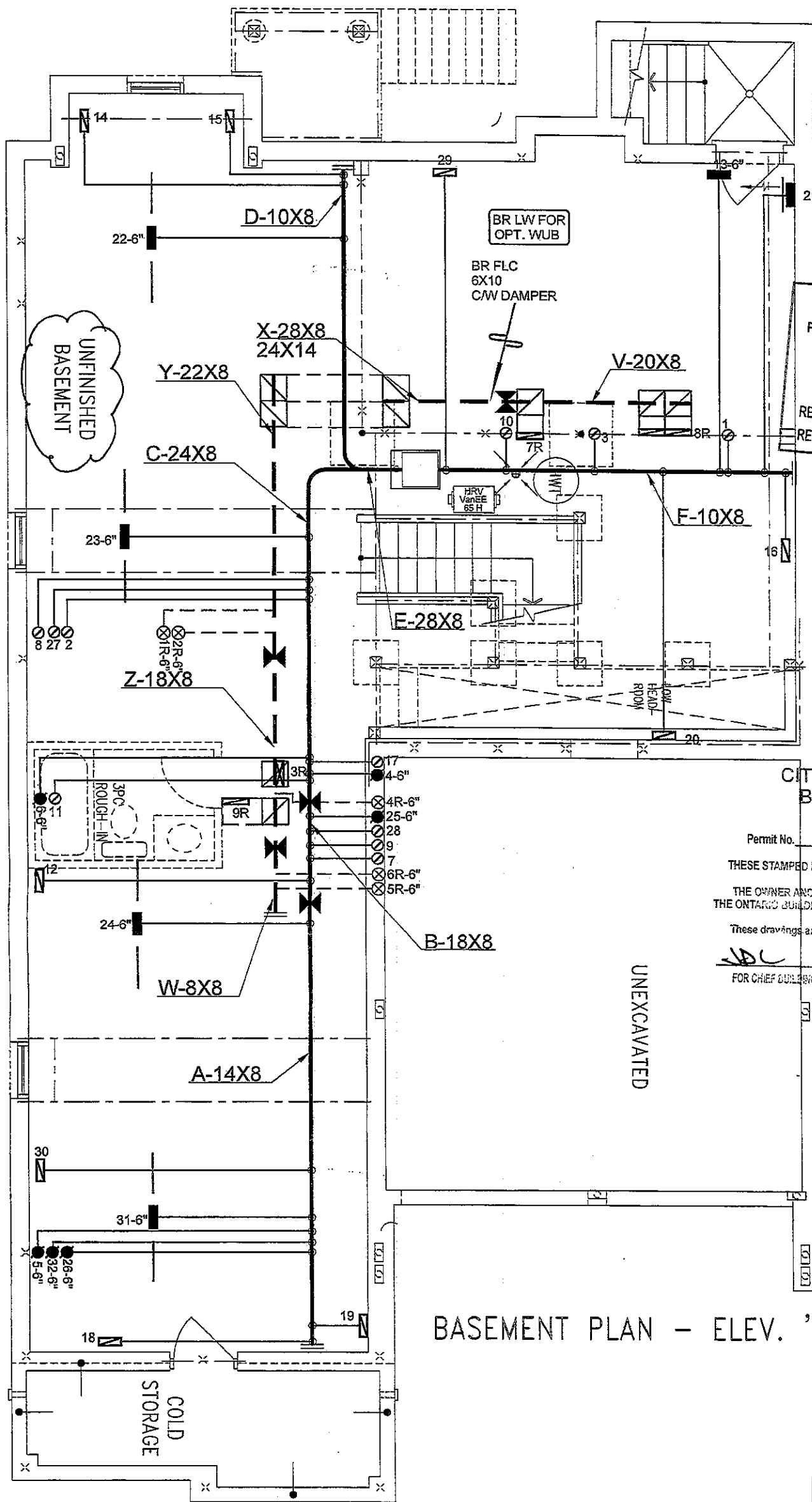
Air Infiltration Residential Load Calculator

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):	1330.6		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1773.8 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
Diameter (mm):	0	0	0
	#4	0	
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.319		
Cooling Air Leakage Rate (ACH/H):	0.114		

TYPE: MOUNTAINASH 6
LO# 88158

LOT 154



CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
APR 09 2021
REC BY _____ DATE _____
REF'D TO _____ DATE _____

CITY OF HAMILTON
Building Division
Permit No. 21-105991
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
JDL FOR CHIEF BUILDING OFFICIAL
APR 20/21 DATE

BASEMENT PLAN - ELEV. '2'

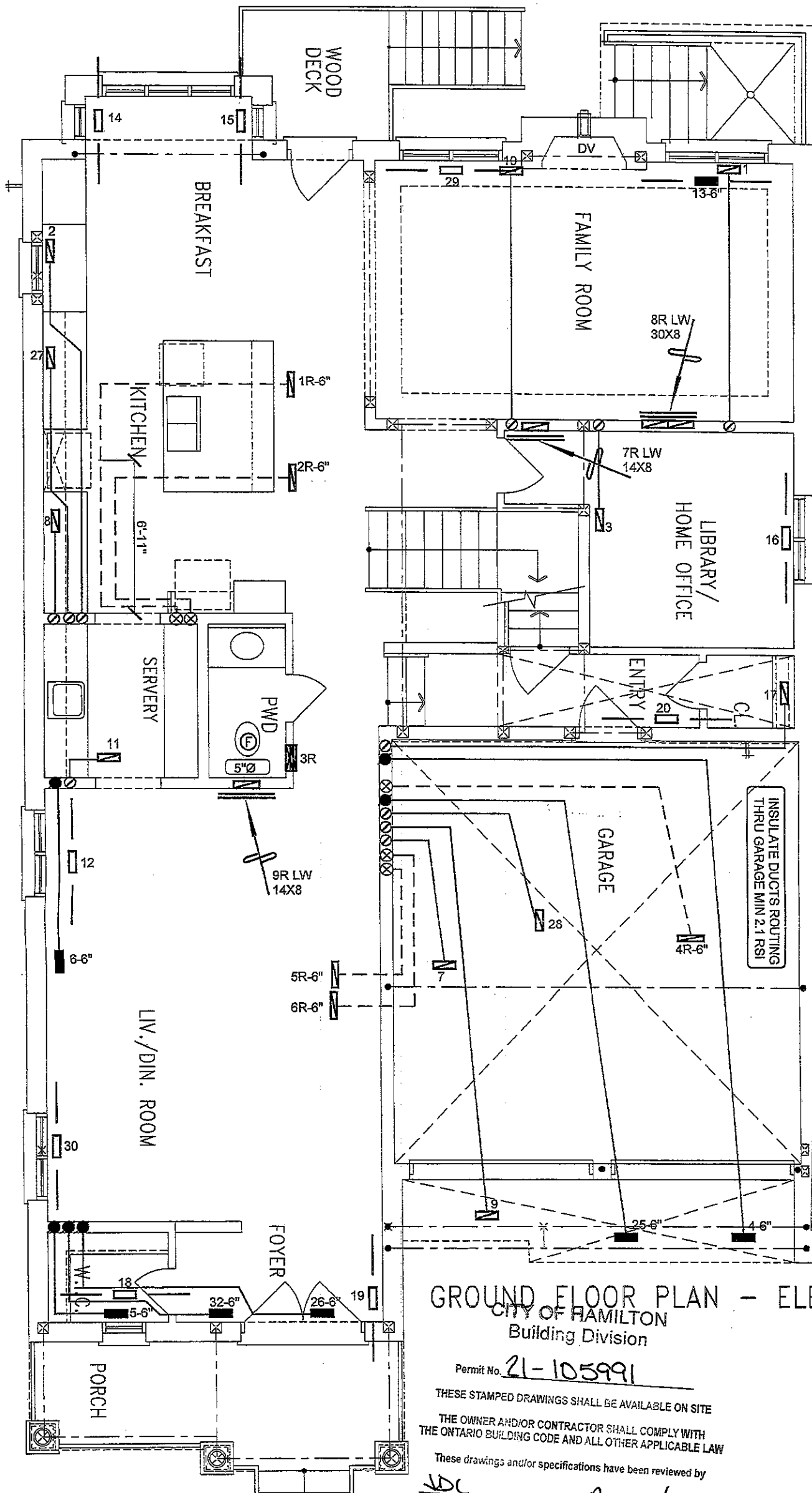
WUB
CSA-F280-12
LOT 154 PACKAGE A1

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, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND						REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE	3.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE	2.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE	1.	
					REDUCER	No.	Description

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Client GREENPARK HOMES Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO LOT 154 MOUNTAINASH 6 3395 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@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.	HEAT LOSS 57255 BTU/H UNIT DATA MAKE GOODMAN MODEL GMEC960804CNA INPUT 80 MBTU/H OUTPUT 76.8 MBTU/H COOLING 3.5 TONS FAN SPEED 1504 cfm @ 0.6" w.c.	# OF RUNS S/A R/A FANS 3RD FLOOR 2ND FLOOR 17 6 4 1ST FLOOR 10 3 2 BASEMENT 5 1 0 ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A	Sheet Title BASEMENT HEATING LAYOUT Date NOV/2020 Scale 3/16" = 1'-0" BCIN# 19669 LO# 88158



Doing electrical work? A notification must be filed with the Electrical Safety Authority. Hiring someone to do electrical work? They must be a licensed Electrical Contractor. It's the law.
For more information go to esasafe.com or call 1-877-372-7233

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

APR 09 2021

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

GROUND FLOOR PLAN - ELEV. '2'

CITY OF HAMILTON
Building Division

Permit No. 21-105991

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These drawings and/or specifications have been reviewed by
IDL *Apr 20/21*

WUB
CSA-F280-12
LOT 154 PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION 6.3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

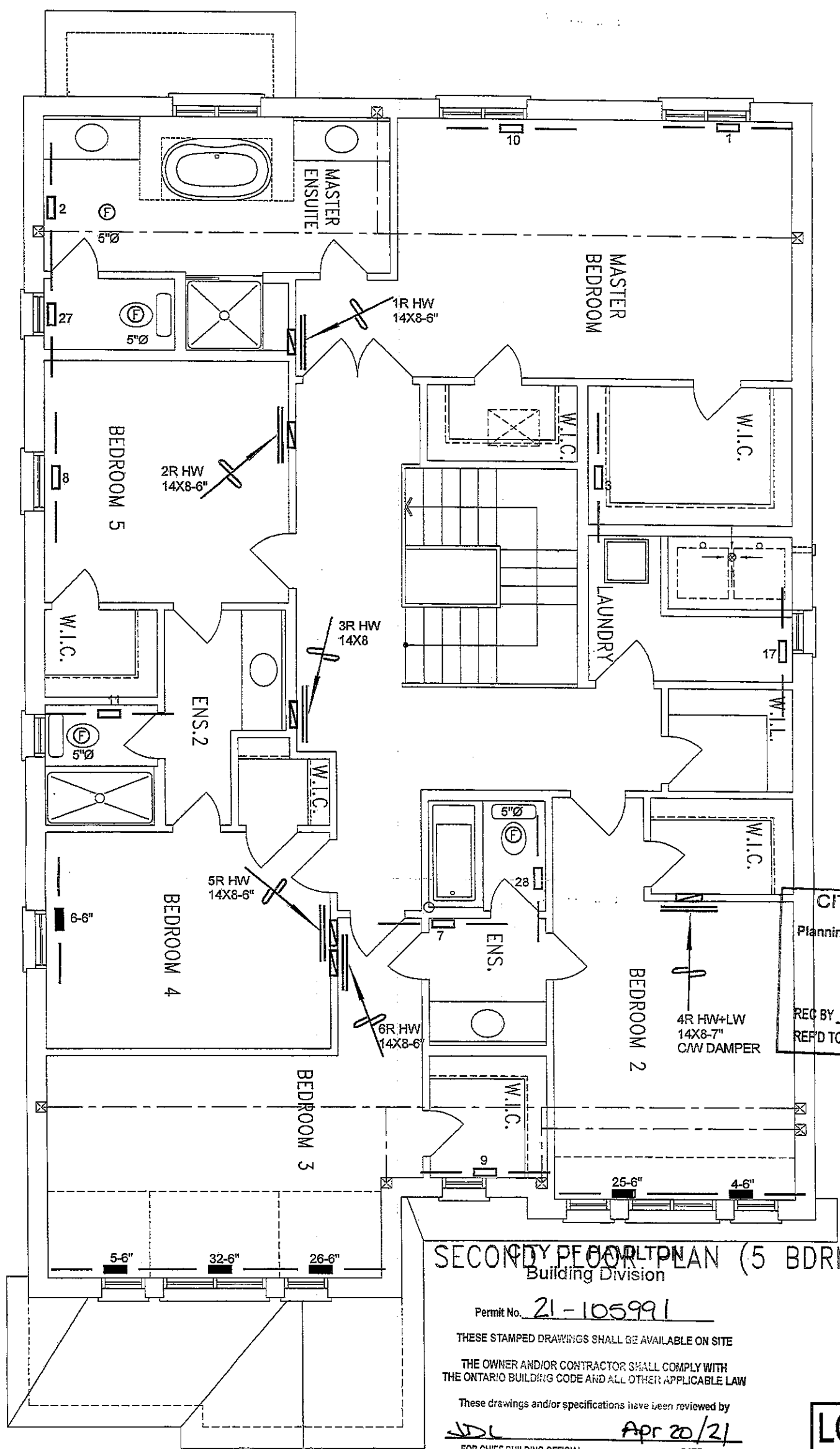
HVAC LEGEND FOR CHIEF BUILDING OFFICIAL						DATE		REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		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		 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 FIRST FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date NOV/2020	
LOT 154		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.	Scale 3/16" = 1'-0"	
MOUNTAINASH 6 3395 sqft			BCIN# 19669	
				LO# 88158



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CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
APR 09 2021
REC BY _____ DATE _____
REF'D TO _____ DATE _____

SECOND FLOOR PLAN (5 BDRM) - ELEV. '2'

Building Division
Permit No. 21-105991
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
JD Apr 20/21
FOR CHIEF BUILDING OFFICIAL DATE

WUB
CSA-F280-12
LOT 154 PACKAGE A1

I, MICHAEL O'BROUKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.5 OF THE BUILDING CODE.
Michael O'Brooke
Michael O'Brooke, 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.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	Description
							REVISIONS	
							Date	Date

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Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Date NOV/2020	
LOT 154			Scale 3/16" = 1'-0"	
MOUNTAINASH 6 3395 sqft			BCIN# 19669	
			LO#	88158