

SITE NAME: RUSSEL GARDENS PHASE 3
 BUILDER: GREENPARK HOMES

TYPE: VALLEYCREEK 12

GFA: 2739

 DATE: May-20
 LO# 85961

 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.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-3	ENS-3
FACTORS	31	9	32	9	6	11	28	30	7	6	6
GRS.WALL AREA	279		288		54	99	252	270	63	54	54
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN
NORTH	19.8 14.7	0 0 0	0 0 0	0 0 0	0 0 0	19 376 280	0 0 0	0 0 0	0 0 0	0 0 0	7 138 103
EAST	19.8 37.8	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	36 712 1359	28 573 1096	0 0 0	13 267 491	0 0 0
SOUTH	19.8 22.8	0 0 0	46 889 1047	0 0 0	0 0 0	0 0 0	0 0 0	42 830 956	11 217 250	0 0 0	0 0 0
WEST	19.8 37.8	44 870 1561	13 257 491	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
SKYLT.	34.5 101.5	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
DOORS	23.5 4.3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
NET EXPOSED WALL	4.1 0.8	235 974 177	229 948 172	54 224 41	80 332 90	216 895 162	198 825 160	62 216 39	41 170 31	47 195 35	0 0 0
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 0 0	0 0 0	0 0 0	0 0 0	0 0 0
EXPOSED CLG	1.2 0.6	255 304 160	226 269 133	108 128 63	209 249 123	202 241 119	221 283 130	84 100 49	55 50 32	112 134 68	0 0 0
NO ATTIC EXPOSED CLG	2.6 1.3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 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	63 149 27	202 479 87	0 0 0	0 0 0	55 130 24	112 266 48	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		2148	2386	353	1106	2326	2492	533	623	732	252
SUB TOTAL HT GAIN		1968	1843	104	490	1727	2331	339	578		
LEVEL FACTOR / MULTIPLIER	0.20 0.23	488	0.20 0.23	0.20 0.23	0.20 0.23	0.20 0.23	0.20 0.23	0.20 0.23	0.20 0.23	0.20 0.23	0.20 0.23
AIR CHANGE HEAT LOSS		122	114	5	30	106	144	21	36	16	16
AIR CHANGE HEAT GAIN		0	0	0	136	286	0	0	76	90	27
DUCT LOSS		0	0	0	0	0	0	0	0	0	0
DUCT GAIN		0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0	0
HEAT GAIN APPLIANCES/LIGHTS		563	0	0	0	563	563	563	563	563	563
TOTAL HT LOSS BTU/H		2836	2927	433	1493	3141	3069	654	841	988	383
TOTAL HT GAIN x 1.3 BTU/H		4086	2644	144	1877	3766	4247	468	877		

ROOM USE	EXP. WALL	CLG. HT.	DIN	K/B/F	L/R	LND	W/R	FOY	WOD	BAS
FACTORS	15	10	75	10	39	7	23	18	42	168
GRS.WALL AREA	160		750		390	63	253	180	336	968
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN
NORTH	19.8 14.7	0 0 0	12 237 177	0 0 0	0 0 0	0 0 0	7 138 103	0 0 0	0 0 0	3 59 44
EAST	19.8 37.8	0 0 0	0 0 0	42 830 1686	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	3 59 113
SOUTH	19.8 22.8	42 830 956	40 791 911	42 830 956	11 217 250	0 0 0	0 0 0	6 119 137	0 0 0	6 119 137
WEST	19.8 37.8	0 0 0	77 1522 2907	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	13 267 491	0 0 0
SKYLT.	34.5 101.5	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
DOORS	23.5 4.3	0 0 0	12 284 51	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
NET EXPOSED WALL	4.1 0.8	108 448 81	809 2625 458	386 1269 230	52 216 39	226 937 170	134 555 101	40 538 170	0 0 0	20 469 85
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 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	84 100 49	0 0 0	0 0 0	0 0 0	239 790 145	378 1264 229
NO ATTIC EXPOSED CLG	2.6 1.3	0 0 0	0 0 0	0 0 0	0 0 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 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		1278	5366	2929	533	1544	1612	407	1056	7462
SUB TOTAL HT GAIN		1037	4803	2772	338	358	407		638	808
LEVEL FACTOR / MULTIPLIER	0.30 0.35	463	0.30 0.35	0.30 0.35	0.20 0.23	0.30 0.35	0.30 0.35	0.30 0.35	0.30 0.35	0.30 0.35
AIR CHANGE HEAT LOSS		64	277	171	21	22	25	25	7820	77
AIR CHANGE HEAT GAIN		0	0	0	0	0	0	0	0	0
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		563	563	563	563	563	563	563	563	563
TOTAL HT LOSS BTU/H		1731	7258	3868	654	2092	2184	825	14982	1609
TOTAL HT GAIN x 1.3 BTU/H		2160	6934	4544	1185	484	582			

TOTAL HEAT GAIN BTU/H: 38959

TONS: 3.08

LOSS DUE TO VENTILATION LOAD BTU/H: 1816

STRUCTURAL HEAT LOSS: 50097

TOTAL COMBINED HEAT LOSS BTU/H: 51613

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

TYPE: VALLEYCREEK 12

DATE: May-20

GFA: 2739

LO# 85961

HEATING CFM 1131
TOTAL HEAT LOSS 50,097
AIR FLOW RATE CFM 22.58

COOLING CFM 1131
TOTAL HEAT GAIN 36,685
AIR FLOW RATE CFM 30.83

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

#GOODMAN
GMEC980603BNA
FAN SPEED 60

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

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	8	5
R/A	0	0	5	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

plenum pressure s/a 0.18
max s/a dif press. loss 0.01
min adjusted pressure s/a 0.17
r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

TEMPERATURE RISE 47 °F

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	ENS-2	WIC-3	BED-3	MBR	ENS-3	BED-4	DIN	K/B/F	K/B/F	L/H	LND	W/R	FOY	K/B/F	BAS	BAS	BAS	BAS
RM LOSS MBH	1.32	2.93	0.43	1.49	1.57	1.53	0.85	0.84	1.57	1.32	0.49	1.53	1.73	2.42	2.42	1.98	0.85	2.09	2.18	2.42	3.21	3.21	3.21	3.21
CFM PER RUN HEAT	30	66	10	34	35	35	15	19	35	30	11	35	39	55	55	45	15	47	49	55	72	72	72	72
RM GAIN MBH	2.04	2.54	0.14	1.88	1.88	2.12	0.47	0.88	1.88	2.04	0.19	2.12	2.15	2.31	2.31	2.27	1.19	0.49	0.56	2.31	0.49	0.49	0.49	0.49
CFM PER RUN COOLING	63	78	4	58	58	65	14	27	58	63	8	65	66	71	71	70	37	15	17	71	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	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	44	41	18	44	52	53	40	48	56	31	41	51	26	21	23	48	32	23	37	37	21	29	7	21
EQUIVALENT LENGTH	130	140	100	210	160	230	191	210	160	130	170	200	110	110	110	140	130	150	190	100	110	130	100	120
TOTAL EFFECTIVE LENGTH	174	181	118	254	212	283	231	258	216	161	211	251	138	131	133	188	162	173	227	137	131	159	107	141
ADJUSTED PRESSURE	0.1	0.1	0.15	0.07	0.08	0.06	0.07	0.07	0.08	0.11	0.08	0.07	0.13	0.13	0.13	0.09	0.11	0.1	0.08	0.13	0.13	0.11	0.16	0.12
ROUND DUCT SIZE	5	5	4	5	5	5	4	4	5	5	4	6	5	5	5	5	4	4	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	220	485	115	250	257	178	172	218	257	220	126	178	286	404	404	330	172	539	360	404	529	529	529	529
COOLING VELOCITY (ft/min)	463	573	46	426	426	331	161	310	426	463	69	331	485	521	521	514	424	172	125	521	110	110	110	110
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	F	E	F	B	B	A	B	A	B	E	B	A	C	D	D	A	C	C	A	E	D	E	F	C

RUN #	25	26	27
ROOM NAME	ENS-3	L/H	BAS
RM LOSS MBH	0.49	1.98	3.21
CFM PER RUN HEAT	11	45	72
RM GAIN MBH	0.19	2.27	0.49
CFM PER RUN COOLING	6	70	15
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH.	47	43	40
EQUIVALENT LENGTH	180	170	130
TOTAL EFFECTIVE LENGTH	227	213	170
ADJUSTED PRESSURE	0.08	0.08	0.1
ROUND DUCT SIZE	4	5	5
HEATING VELOCITY (ft/min)	126	330	529
COOLING VELOCITY (ft/min)	69	514	110
OUTLET GRILL SIZE	3X10	3X10	3X10
TRUNK	B	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	300	0.06	9.6	10	x	8	540	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	441	0.06	11.1	14	x	8	567	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	614	0.06	12.6	18	x	8	614	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	182	0.13	6.6	8	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	223	0.10	7.6	8	x	8	502	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0
TRUNK F	517	0.10	10.4	12	x	8	776	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											BR	TRUNK V	270	0.05	9.7	12	x	8	405
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	430	0.05	11.5	16	x	8	484			
AIR VOLUME	85	135	75	135	330	135	85	0	0	0	0	0	0	0	0	0	TRUNK X	1131	0.05	16.5	32	x	8	636		
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	TRUNK Y	415	0.05	11.3	14	x	8	534		
ACTUAL DUCT LGH.	50	37	82	61	32	45	37	1	1	1	1	1	1	1	1	1	TRUNK Z	330	0.05	10.4	12	x	8	495		
EQUIVALENT LENGTH	185	195	255	235	160	230	205	0	0	0	0	0	0	0	0	0	DROP	1131	0.05	16.5	24	x	10	679		
TOTAL EFFECTIVE LH	235	232	317	296	192	275	242	1	1	1	1	1	1	1	1	1										
ADJUSTED PRESSURE	0.06	0.06	0.05	0.05	0.08	0.05	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80										
ROUND DUCT SIZE	6	7.1	6	7.5	9.3	7.5	6	0	0	0	0	0	0	0	0	0										
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0										
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X										
INLET GRILL SIZE	14	14	14	14	30	14	14	0	0	0	0	0	0	0	0	0										

TYPE: VALLEYCREEK 12
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 85981

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	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A.	TOTAL	190.8 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	190.8	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 65H	Location: BSMT
79.5 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	AT °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
ENS-3	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
155 cfm high	64 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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	May-20

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: 19869 *Michael O'Rourke* MICHAEL O'ROURKE

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

LO#: 85961

Model: VALLEYCREEK 12

Builder: GREENPARK HOMES

Date: 04/05/2020

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1177	8	9416
First	1177	10	11770
Second	1562	9	14058
Third	0	9	0
Fourth	0	9	0
Total:			35,244.0 ft³
Total:			998.0 m³

WINTER NATURAL AIR CHANGE RATE	0.338
SUMMER NATURAL AIR CHANGE RATE	0.121

Design Temperature Difference				
	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-17	39	71
Summer DTDc	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage
6.2.6 Sensible Gain due to Air Leakage

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

0.338 x 277.22 x 39 °C x 1.2 = 4408 W

= 15041 Btu/h

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

= 0.121 x 277.22 x 7 °C x 1.2 = 286 W

= 977 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

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

80 CFM x 71 °F x 1.08 x 0.25 = 1515 Btu/h

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

80 CFM x 13 °F x 1.08 x 0.25 = 275 Btu/h

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

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

Level	Level Factor (LF)	HLairve 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	15,041	8,518	0.883
2	0.3		12,720	0.355
3	0.2		13,231	0.227
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:** VALLEYCREEK 12**BUILDER:** GREENPARK HOMES**SFQT:** 2739**LO#** 85961**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:	SOUTH	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):	35244.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 52.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	168.0 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	-

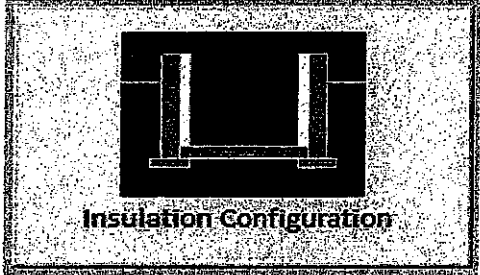
INDIVIDUAL BCIN: 19669

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):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m ²):	2.3	
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):	1609	

TYPE: VALLEYCREEK 12
LO# 85961

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):	998.0			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1330.4 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.338			
Cooling Air Leakage Rate (ACH/H):	0.121			

TYPE: VALLEYCREEK 12
LO# 85961

PARTIAL BASEMENT PLAN
DECK CONDITION

BASEMENT PLAN ELEV. 1
CITY OF HAMILTON
Building Division
Permit No. 187706
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 Nov 6 2020
FOR CHIEF BUILDING OFFICIAL DATE

BASEMENT PLAN ELEV. 2

BASEMENT PLAN ELEV. 3

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 6 2020
REC BY _____ DATE _____
REF'D TO _____ DATE _____

CSA-F280-12
PACKAGE A1

UNFINISHED BASEMENT

UNEXCAVATED

COLD STORAGE

3PC ROUGH-IN

BR FLC 5X10 C/W DAMPER

HRV VanEE 65 H

Z-12X8

E-8X8

D-8X8

Y-14X8

10

5R

3

1R-6"

F-12X8

23

X-32X8 24X10

2R

17

7R

C-18X8

24

3PC ROUGH-IN

W-16X8

B-14X8

A-10X8

V-12X8

4R

6R

12-6"

27

16

26

22

20

14

15

21

18

19

6-6"

3R-6"

8

25

2

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

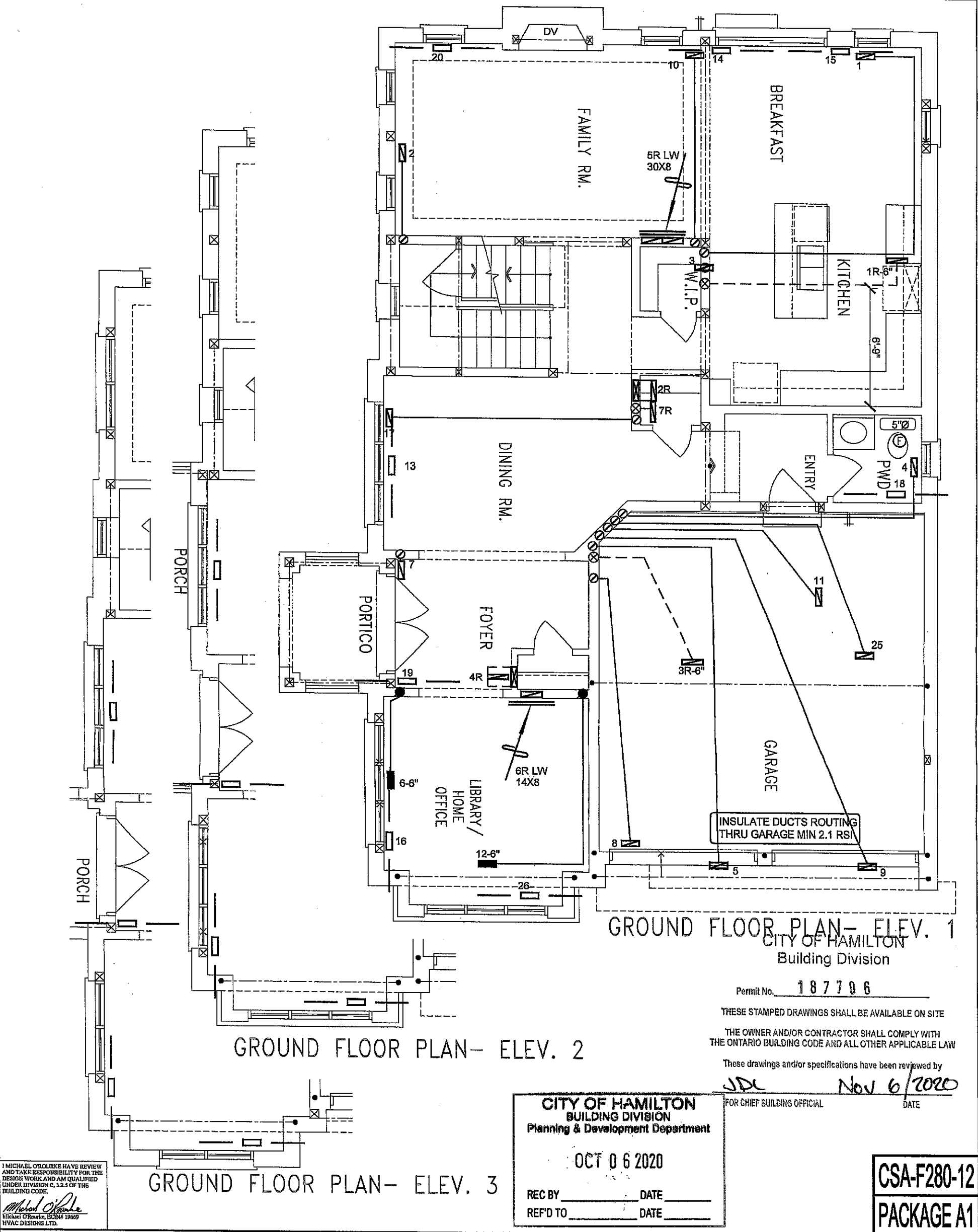
272

273

274

275</

HVAC LEGEND						3.					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		8" 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"x6" 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 51613 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title	
GREENPARK HOMES						UNIT DATA		3RD FLOOR		BASEMENT HEATING LAYOUT	
Project Name		RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO				GOODMAN		2ND FLOOR		14 5 3	
RUSSEL GARDENS PHASE 3						MODEL		1ST FLOOR		8 2 2	
HAMILTON, ONTARIO						GMEC960803BNA		BASEMENT		5 1 0	
VALLEYCREEK 12 2739 sqft						INPUT		60 MBTU/H			
		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		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	
						COOLING		3.0 TONS			
						FAN SPEED		1131 cfm @ 0.6" w.c.			
										Date	
										APRIL/2020	
										Scale	
										3/16" = 1'-0"	
										BCIN# 19669	
										LO# 85961	



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.

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

OCT 06 2020

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

Permit No. 187706

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

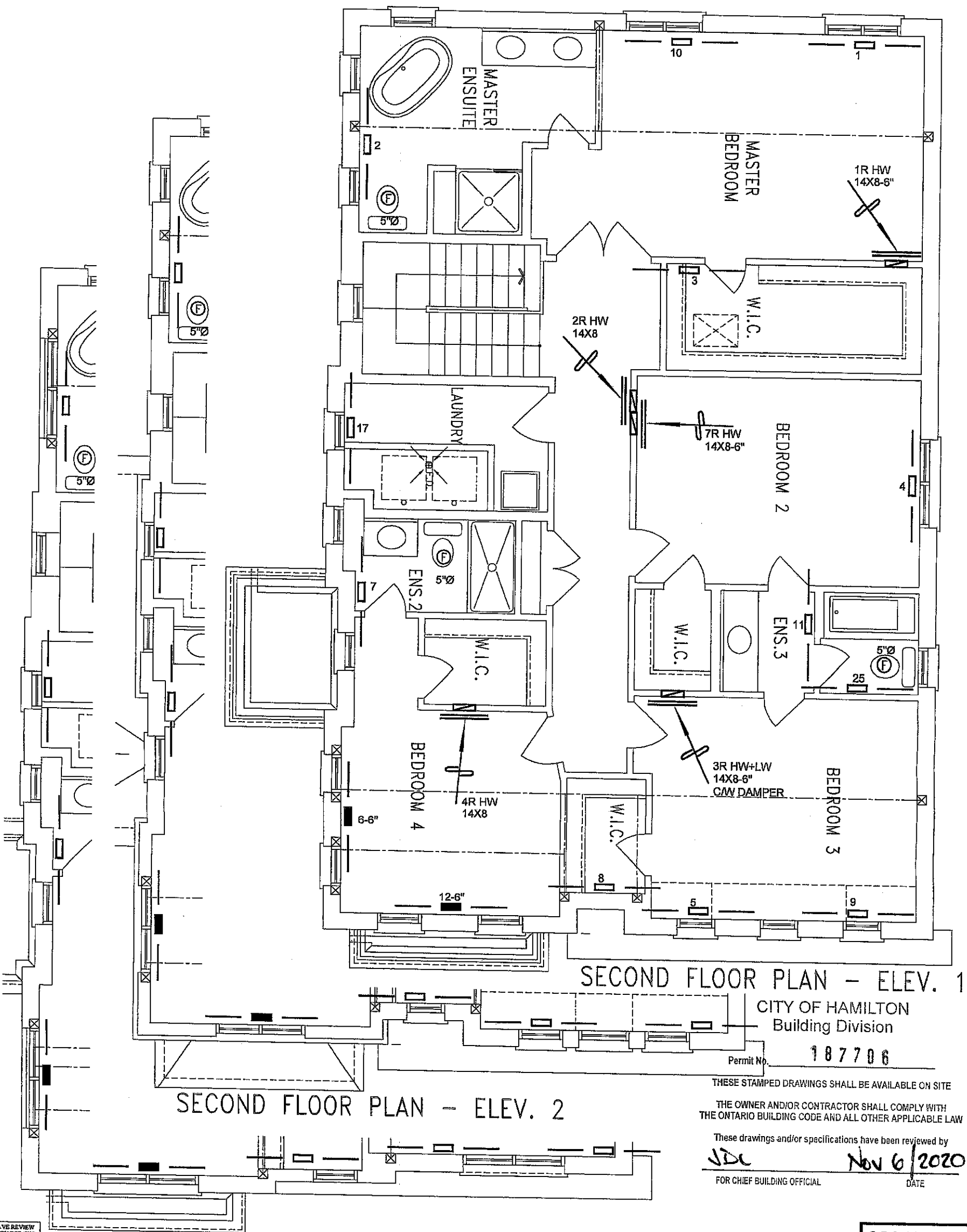
These drawings and/or specifications have been reviewed by
JDL Nov 6/2020
FOR CHIEF BUILDING OFFICIAL DATE

CSA-F280-12
PACKAGE A1

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

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 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.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 APRIL/2020	
VALLEYCREEK 12 2739 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 85961	



SECOND FLOOR PLAN - ELEV. 1

SECOND FLOOR PLAN - ELEV. 2

SECOND FLOOR PLAN - ELEV. 3

CITY OF HAMILTON
Building Division

Permit No. 187706

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

JDC

Nov 6 / 2020

FOR CHIEF BUILDING OFFICIAL

DATE

I MICHAEL OROURKE 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.

CSA-F280-12
PACKAGE A1

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"x6" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE		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 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
Project Name
**RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO**
VALLEYCREEK 12 2739 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.

**CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department**
OCT 06 2020
REC BY _____ DATE _____
REF'D TO _____ DATE _____

Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**
Date
APRIL/2020
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 85961