

SITE NAME: RUSSEL GARDENS PHASE 3				LOT 87				DATE: Aug-20				WINTER NATURAL AIR CHANGE RATE 0.310				HEAT LOSS AT °F. 71		CSA-F280-12					
BUILDER: GREENPARK HOMES				TYPE: VALLEYCREEK 11				GFA: 2685				LO# 87258				SUMMER NATURAL AIR CHANGE RATE 0.111				HEAT GAIN AT °F. 13		SB-12 PACKAGE A1	
ROOM USE		MBR		ENS		WIC		BED-2		BED-3		BED-4		ENS-2		WIC-3		ENS-3					
EXP. WALL		31		23		7		26		29		14		6		7		9					
CLG. HT.		9		9		9		9		9		9		9		9		9					
FACTORS																							
GRS.WALL AREA		LOSS GAIN		279		207		63		234		261		126		64		63		81			
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN			
NORTH		19.8	14.5	0	0	0	0	0	0	0	0	0	0	0	0	7	138	102	0	0	0		
EAST		19.8	37.1	0	0	0	0	0	0	0	33	652	1225	44	870	1633	0	0	0	13	257	483	
SOUTH		19.8	22.4	18	356	403	0	0	0	0	0	0	0	44	870	966	48	949	1076	0	0	0	
WEST		19.8	37.1	32	633	1188	16	316	594	0	0	0	0	0	0	0	0	0	0	0	0	0	
SKYL.T.		34.6	101.5	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	
NET EXPOSED WALL		4.1	0.8	229	949	172	191	792	144	63	281	47	201	833	151	173	717	130	78	323	59	47	
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	
EXPOSED CLG		1.2	0.6	255	304	150	130	158	76	98	117	58	241	287	142	210	250	123	254	303	149	60	
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	
EXPOSED FLOOR		2.4	0.4	0	0	0	0	0	0	0	0	0	275	652	118	0	0	0	59	140	25	36	
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				2242		1263		378		2424		2707		1575		545		591		697			
SUB TOTAL HT GAIN					1913		814		105		1636		2873		1284		198		556		462		
LEVEL FACTOR / MULTIPLIER		0.20	0.20			0.20	0.20		0.20	0.20		0.20	0.20		0.20	0.20		0.20	0.20		0.20	0.20	
AIR CHANGE HEAT LOSS				450		253		76		486		543		316		109		119		140			
AIR CHANGE HEAT GAIN					106		46		6		91		160		71		11		31		26		
DUCT LOSS				0		0		0		291		0		0		66		71		0			
DUCT GAIN				0		0		0		232		0		0		56		89		0			
HEAT GAIN PEOPLE		240		2		480		0		0	1	240		1	240		0		0		0		
HEAT GAIN APPLIANCES/LIGHTS						349		349		0		349		349		349		349		0		349	
TOTAL HT LOSS BTU/H				2691		1516		464		3202		3250		1891		719		781		836			
TOTAL HT GAIN x 1.3 BTU/H					3703		1570		144		3311		4708		2527		797		840		1087		

ROOM USE			L/H		DIN		K/E		FAM		LND		W/R		FOY				WUB		BAS
EXP. WALL			42		14		34		33		14		27		16				42		120
CLG. HT.			10		10		10		10		9		10		10				8		8
FACTORS																					
GRS.WALL AREA	LOSS	GAIN	420		140		340		330		126		270		160				336		600
GLAZING	LOSS	GAIN																			
NORTH	19.8	14.5	0	0	0	0	178	131	0	0	23	455	334	8	158	116	0	0	0	0	
EAST	19.8	37.1	48	949	1782	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SOUTH	19.8	22.4	48	949	1076	48	949	1076	0	0	24	474	538	0	0	0	6	119	134	5	
WEST	19.8	37.1	0	0	0	51	1008	1893	28	554	1039	0	0	0	0	0	0	0	0	5	
SKYL.T.	34.6	101.5	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	281	51	6	0	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	4.1	0.8	324	1343	244	92	381	69	268	1111	201	278	1182	209	103	427	77	242	1003	182	
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	
EXPOSED CLG	1.2	0.6	0	0	0	0	0	0	0	0	0	164	184	90	0	0	0	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	
EXPOSED FLOOR	2.4	0.4	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			3241		1330		2579		2160		1065		1630		1529				535		3906
SUB TOTAL HT GAIN				3101		1145		2276		1786		562		383		390			2131		5776
LEVEL FACTOR / MULTIPLIER	0.30	0.32			0.30	0.32		0.30	0.32		0.20	0.20		0.30	0.32		0.30	0.32			
AIR CHANGE HEAT LOSS			1053		432		836		706		214		530		497						
AIR CHANGE HEAT GAIN				172		64		126		99		28		21		22					
DUCT LOSS			0		0		0		0		0		0		0						
DUCT GAIN			0		0		0		0		0		0		0						
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0				0		
HEAT GAIN APPLIANCES/LIGHTS					349		349		349		349		349		349				0		
TOTAL HT LOSS BTU/H			4294		1762		3416		2889		1279		2150		2026				2131		12540
TOTAL HT GAIN x 1.3 BTU/H				4705		2024		3577		2904		1142		979		536			943		1330

TOTAL HEAT GAIN BTU/H: 37104

TONS: 3.09

LOSS DUE TO VENTILATION LOAD BTU/H: 1515

STRUCTURAL HEAT LOSS: 47839

TOTAL COMBINED HEAT LOSS BTU/H: 49365

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 87
TYPE: VALLEYCREEK 11

DATE: Aug-20

GFA: 2685 LO# 87258

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 47,839 TOTAL HEAT GAIN 36,830
AIR FLOW RATE CFM 23.64 AIR FLOW RATE CFM 30.71

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

#GOODMAN
GMIEC960603BNA 80
FAN SPEED LOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

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

DESIGN CFM = 1131
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	9	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.

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-2	MBR	ENS-3	L/H	DIN	K/B	K/B	FAM	LND	W/R	FOY	BAS	BAS	BAS	BAS	BAS
RM LOSS MBH	1.35	1.52	0.45	1.60	1.63	1.89	0.72	0.78	1.80	1.35	0.84	2.15	1.76	1.71	1.71	1.44	1.28	2.16	2.03	2.93	2.93	2.93	2.93	2.93
CFM PER RUN HEAT	32	36	11	38	38	45	17	18	38	32	20	51	42	40	40	34	30	51	48	69	69	69	69	69
RM GAIN MBH	1.85	1.57	0.14	1.66	2.35	2.53	0.80	0.84	1.66	1.85	1.09	2.35	2.02	1.79	1.79	1.45	1.14	0.98	0.54	0.45	0.45	0.45	0.45	0.45
CFM PER RUN COOLING	57	48	4	51	72	78	24	26	51	57	33	72	62	55	55	45	35	30	16	14	14	14	14	14
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.	39	38	20	51	50	42	43	55	53	28	46	40	21	24	21	26	32	22	27	31	21	24	19	38
EQUIVALENT LENGTH	160	140	160	120	190	200	150	120	140	100	200	120	170	110	150	90	150	160	160	160	150	140	160	110
TOTAL EFFECTIVE LENGTH	199	178	180	171	240	242	193	175	193	128	246	180	191	134	171	116	182	182	187	191	171	164	179	148
ADJUSTED PRESSURE	0.09	0.1	0.1	0.1	0.07	0.07	0.09	0.1	0.09	0.13	0.07	0.11	0.09	0.13	0.1	0.15	0.09	0.09	0.09	0.09	0.1	0.1	0.1	0.12
ROUND DUCT SIZE	5	4	4	5	6	6	4	4	5	5	4	5	5	5	5	5	4	5	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	235	413	126	279	194	229	195	207	279	235	229	374	308	294	294	250	344	374	352	507	507	507	507	507
COOLING VELOCITY (ft/min)	419	551	46	374	367	398	275	298	374	419	379	529	455	404	404	330	402	220	117	103	103	103	103	103
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	B	D	C	D	D	D	D	A	C	C	D	A	A	B	B	B	D	C	A	A	D	C

RUN #	25	26	27
ROOM NAME	BED-3	FAM	L/H
RM LOSS MBH	1.63	1.44	2.15
CFM PER RUN HEAT	38	34	51
RM GAIN MBH	2.35	1.45	2.35
CFM PER RUN COOLING	72	45	72
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH.	53	31	40
EQUIVALENT LENGTH	170	120	120
TOTAL EFFECTIVE LENGTH	223	151	180
ADJUSTED PRESSURE	0.08	0.11	0.11
ROUND DUCT SIZE	6	4	5
HEATING VELOCITY (ft/min)	194	390	374
COOLING VELOCITY (ft/min)	387	516	529
OUTLET GRILL SIZE	4X10	3X10	3X10
TRUNK	C	A	C

SUPPLY AIR TRUNK SIZE

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	316	0.09	8.8	10	X	8	569	TRUNK G	0	0.00	0	0	X	8	0	0.05	0	0	X	8	0		
TRUNK B	478	0.09	10.5	14	X	8	615	TRUNK H	0	0.00	0	0	X	8	0	0.05	0	0	X	8	0		
TRUNK C	336	0.07	9.8	10	X	8	605	TRUNK I	0	0.00	0	0	X	8	0	0.05	0	0	X	8	0		
TRUNK D	651	0.07	12.3	18	X	8	651	TRUNK J	0	0.00	0	0	X	8	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	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	0.05	0	0	X	8	0		

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	135	155	75	75	300	155	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	40	37	58	66	38	49	80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	165	120	215	255	225	200	205	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL EFFECTIVE LH	205	157	273	321	263	249	265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.09	0.05	0.05	0.06	0.06	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6.8	6.8	6	6	9.6	7.5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: VALLEYCREEK 11
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 87258
LOT 87

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 @ 10.8 cfm	31.8 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A.	TOTAL	180.2 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		9.32.3.5.
Total Ventilation Capacity	180.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	100.7	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
79.5 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: VANEE 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:	August-20

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

LO#: 87258

Model: VALLEYCREEK 11

Builder: GREENPARK HOMES

Date: 27/08/2020

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1158	8	9264
First	1158	10	11580
Second	1527	9	13743
Third	0	9	0
Fourth	0	9	0
Total:			34,587.0 ft³
Total:			979.4 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.310
SUMMER NATURAL AIR CHANGE RATE	0.111

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

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

0.310 x 272.05 x 39 °C x 1.2 = 3965 W

= 13528 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

0.111 x 272.05 x 7 °C x 1.2 = 257 W

= 878 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)

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

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{clevel})
1	0.5	13,528	7,907	0.855
2	0.3		12,490	0.325
3	0.2		13,487	0.201
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 11	LOT 87	BUILDER: GREENPARK HOMES
SFQT: 2685	LO# 87258	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):	34587.0	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: 49.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	120.0 ft

2012 OBC - COMPLIANCE PACKAGE

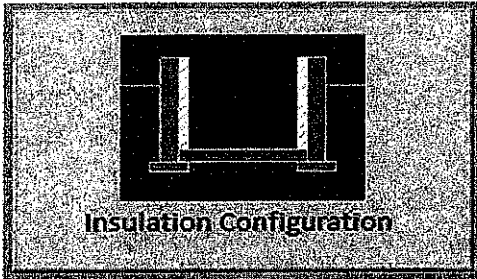
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20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

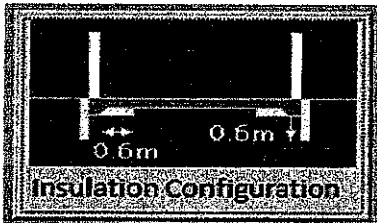
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	14.9	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	36.6	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m ²):	2.1	
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):		1144

TYPE: VALLEYCREEK 11
LO# 87258

LOT 87

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):	1.5	
Width (m):	9.8	
Exposed Perimeter (m):	12.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		157

TYPE: VALLEYCREEK 11
LO# 87258

LOT 87

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):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	979.4			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1305.6 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):	0.310			
Cooling Air Leakage Rate (ACH/H):	0.111			

TYPE: VALLEYCREEK 11
LO# 87258

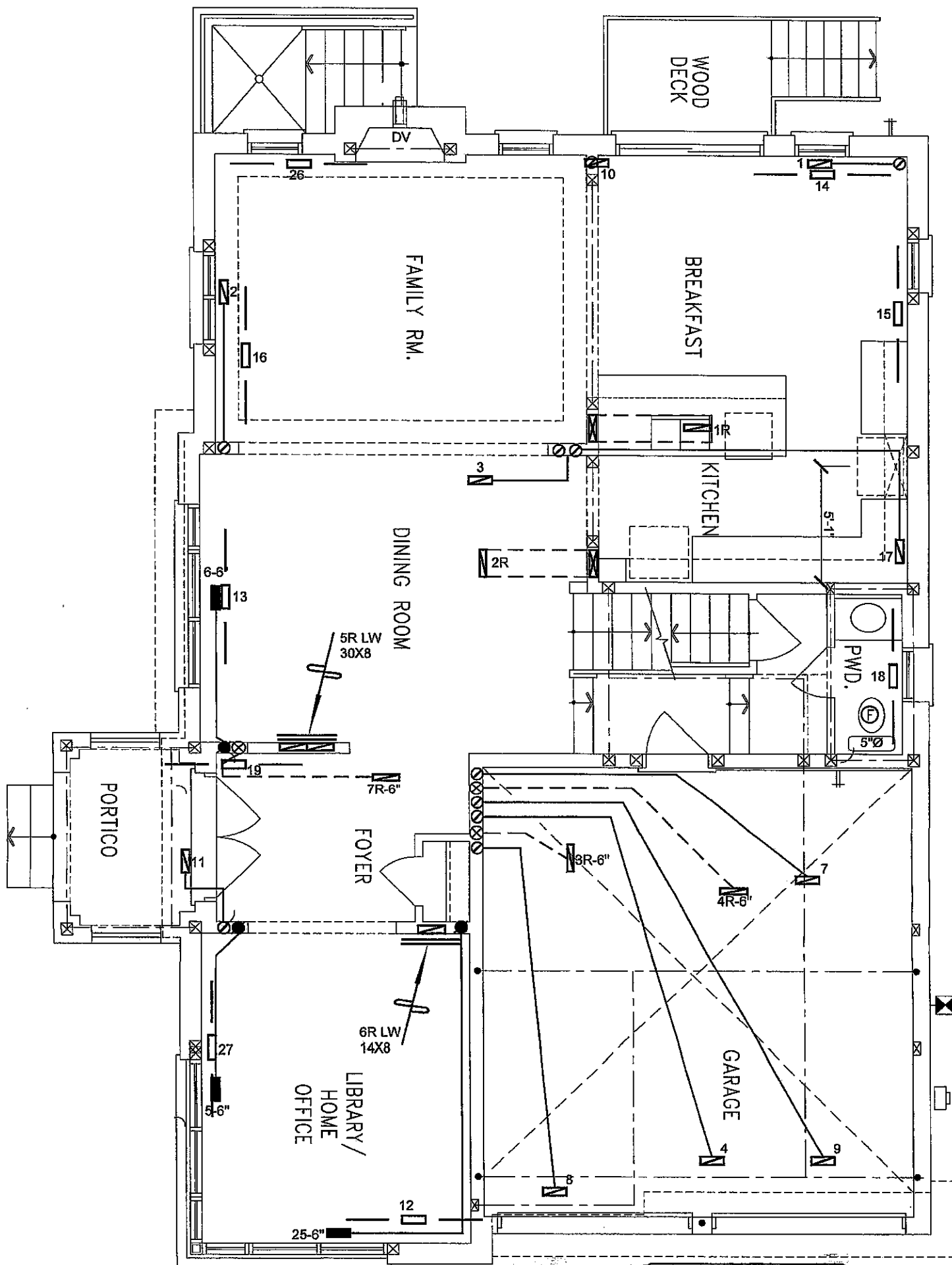
LOT 87



WUB	CSA-F280-12
LOT 87	PACKAGE A1

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 49355 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GREENPARK HOMES			MAKE GOODMAN	3RD FLOOR					BASEMENT HEATING LAYOUT
Project Name RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			MODEL GMEC960603BNA	2ND FLOOR		13	5	3	
			INPUT 60 MBTU/H	1ST FLOOR		9	2	2	
		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			Date AUG/2020	
LOT 87 VALLEYCREEK 11 2685 sqft			COOLING 3.0 TONS					Scale 3/16" = 1'-0"	
			FAN SPEED 1131 cfm @ 0.5" w.g.					BCIN# 19669	
								LO# 87258	



GROUND FLOOR PLAN ELEV. 3

CITY OF INSULATE DUCTS ROUTING
THRU GARAGE MIN 2.1 RSI

Permit No. 20-199041

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

JAN 15 2021

FOR CHIEF BUILDING OFFICIAL DATE

WUB CSA-F280-12
LOT 87 PACKAGE A1

I MICHAEL O'BROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.

Michael O'Brien
Michael O'Brien, 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		8" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER
						No.	Description
							Date

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

Project Name

RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO

LOT 87
VALLEYCREEK 11 2685 sqft

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

Date

AUG/2020

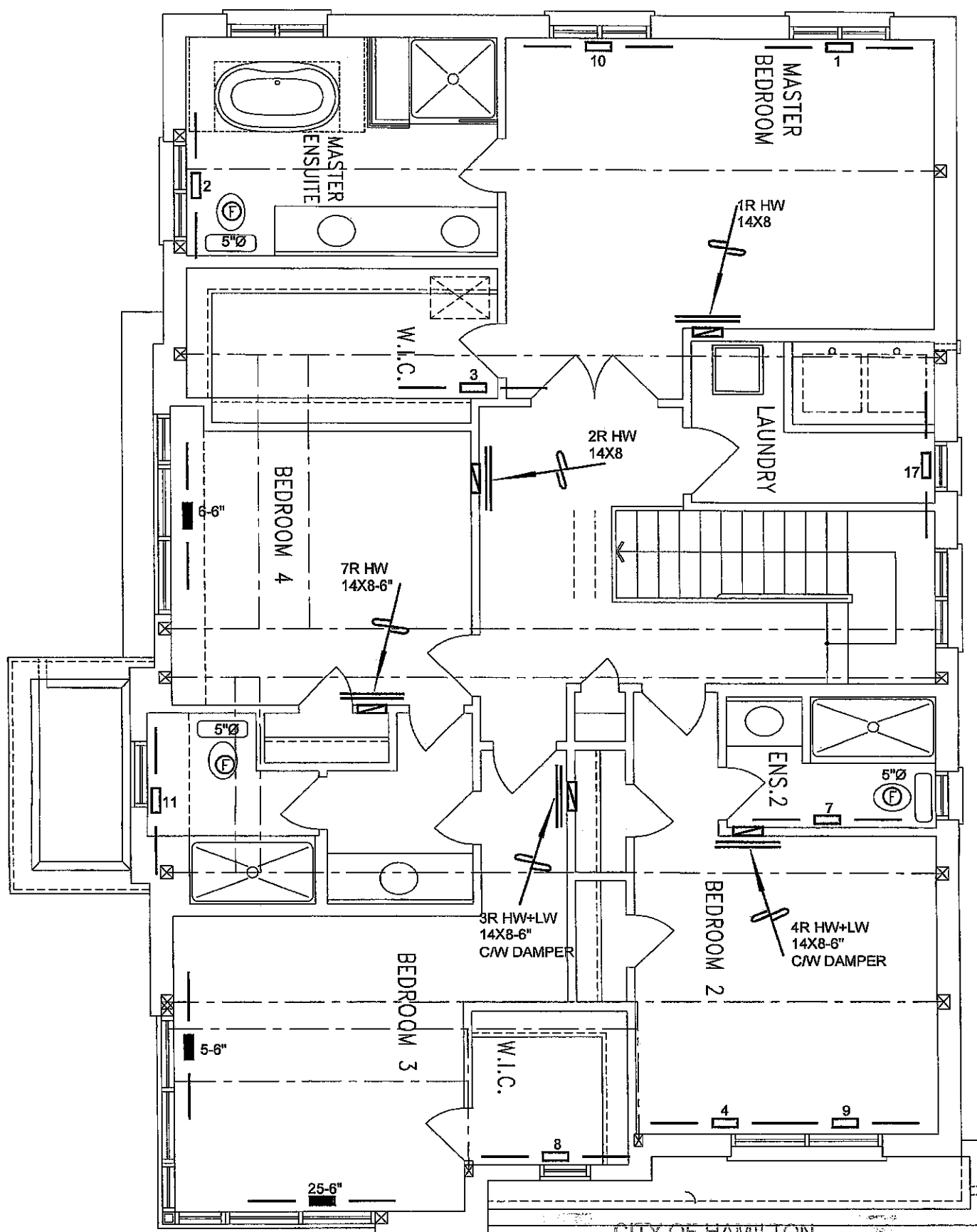
Scale

3/16" = 1'-0"

BCIN# 19669

LO#

87258



CITY OF HAMILTON
Building Division
SECOND FLOOR PLAN ELEV. 3
Permit No. 20-199 041

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

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

These drawings and/or specifications have been reviewed by
JAN 15 2021
FOR CHIEF BUILDING OFFICIAL DATE

WUB CSA-F280-12
LOT 87 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

No.	Description	Date
3.		
2.		
1.		
No.	Description	Date

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
GREENPARK HOMES
Project Name
RUSSEL GARDENS PHASE 3
HAMILTON, ONTARIO
LOT 87
VALLEYCREEK 11 2685 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.

Sheet Title
SECOND FLOOR
HEATING
LAYOUT
Date
AUG/2020
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 87258