

SITE NAME: RUSSEL GARDENS PHASE 3				LOT 305				DATE: Dec-20				WINTER NATURAL AIR CHANGE RATE 0.319				HEAT LOSS AT °F. 71				CSA-F280-12			
BUILDER: GREENPARK HOMES				TYPE: VALLEYCREEK 5				LO# 38601				SUMMER NATURAL AIR CHANGE RATE 0.114				HEAT GAIN AT °F. 13				SB-12 PACKAGE A1			
ROOM USE				MBR				ENS				WIC				BED-2				BED-3			
EXP. WALL				35				28				17				12				29			
CLG. HT.				9				9				9				9				9			
FACTORS				315				252				153				108				261			
GRS.WALL AREA				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN			
GLAZING				0 0 0				0 0 0				0 0 0				0 0 0				0 0 0			
NORTH				19.8 16.0				15 297 240				0 0 0				15 297 240				0 0 0			
EAST				19.8 41.6				0 0 0				0 0 0				0 0 0				39 771 1621			
SOUTH				19.8 24.9				0 0 0				0 0 0				0 0 0				0 0 0			
WEST				19.8 41.6				35 692 1454				15 297 623				0 0 0				0 0 0			
SKYL.T.				34.6 101.5				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			
NET EXPOSED WALL				4.1 0.8				230 1161 210				222 920 167				134 556 101				93 386 70			
NET EXPOSED BSMT WALL ABOVE GR				3.3 0.6				0 0 0				0 0 0				0 0 0				0 0 0			
EXPOSED CLG				1.2 0.6				309 368 182				197 235 116				229 273 135				213 254 125			
NO ATTIC EXPOSED CLG				2.6 1.3				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				274 649 118			
BASEMENT/CRAWL HEAT LOSS				0				0				0				0				0			
SLAB ON GRADE HEAT LOSS				0				0				0				0				0			
SUBTOTAL HT LOSS				2221				1748				1204				936				2239			
SUB TOTAL HT GAIN				1846				1146				708				435				2966			
LEVEL FACTOR / MULTIPLIER				0.20 0.26				0.20 0.26				0.20 0.26				0.20 0.26				0.20 0.26			
AIR CHANGE HEAT LOSS				567				446				308				239				587			
AIR CHANGE HEAT GAIN				144				90				55				34				162			
DUCT LOSS				0				0				0				335				0			
DUCT GAIN				0				0				0				316				0			
HEAT GAIN PEOPLE				240				0				1				240				1			
HEAT GAIN APPLIANCES/LIGHTS				694				0				0				694				0			
TOTAL HT LOSS BTU/H				2788				2195				1512				1176				3683			
TOTAL HT GAIN x 1.3 BTU/H				4115				1606				993				1824				4522			

ROOM USE			FAM		DIN		KT/BF		LIB		LAUN		WVR		FOY				WUB		BAS		
EXP. WALL			34		12		35		19		26		3		30				28		152		
CLG. HT.			11		11		11		11		12		12		12				9		9		
FACTORS																							
GRS.WALL AREA	LOSS	GAIN	374		132		396		209		312		36		360				252		912		
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	16.0	0	0	0	0	0	0	0	0	0	7	138	112	0	0	0	0	0	0	5	99	80
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	19.8	24.9	0	0	0	17	336	423	0	0	12	237	299	0	0	7	138	174	0	0	15	297	373
WEST	19.8	41.6	30	593	1247	0	0	0	65	1285	2701	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	0	0
DOORS	23.5	4.3	0	0	0	0	0	0	0	0	0	20	469	85	0	0	0	0	0	20	469	85	0
NET EXPOSED WALL	4.1	0.6	344	1426	259	116	477	86	331	1372	249	197	817	148	285	1182	214	29	120	22	232	962	174
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
EXPOSED CLG	1.2	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	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
BASEMENT/CRAWL HEAT LOSS																							
SLAB ON GRADE HEAT LOSS																							
SUBTOTAL HT LOSS																							
SUB TOTAL HT GAIN																							
LEVEL FACTOR / MULTIPLIER			0.30	0.45		0.30	0.45		0.30	0.45		0.30	0.45		0.30	0.45		0.30	0.45			0.50	0.90
AIR CHANGE HEAT LOSS				960			362			1185			470			798			115				8152
AIR CHANGE HEAT GAIN					113			40			231			35			32			15			84
DUCT LOSS			0			0			0			0			0								0
DUCT GAIN				0			0			0			0			0							0
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0		0		0		0		0
HEAT GAIN APPLIANCES/LIGHTS				694			694			694			694			694							694
TOTAL HT LOSS BTU/H				2919			1176			3842			1624			2687						1688	15486
TOTAL HT GAIN x 1.3 BTU/H					3013		1617			5037			1629			1479						337	2071

CITY OF HAMILTON
Building Division
21-107138

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
APR 12 2021
DATE
FOR CHIEF BUILDING OFFICIAL

SITE NAME: RUSSEL GARDENS PHASE 3
BUILDER: GREENPARK HOMES

LOT 305
TYPE: VALLEYCREEK 5

DATE: Dec-20

GFA: 2933 LO# 88801

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 49,561 TOTAL HEAT GAIN 35,017
AIR FLOW RATE CFM 22.82 AIR FLOW RATE CFM 32.3

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

plenium pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

#GOODMAN
GMCE960603BNA 60
FAN SPEED LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

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

DESIGN CFM = 1131
CFM @ .8" E.S.P.

TEMPERATURE RISE 47 °F

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

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5" 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	WIC-4	BED-3	MBR	ENS-4	FAM	DIN	KT/BF	KT/BF	LIB	LAUN	W/R	FOY	BED-4	BAS	BAS	BAS	BAS
RM LOSS MBH	1.39	1.10	1.51	1.18	1.84	1.44	0.47	0.83	1.84	1.39	0.50	2.92	1.18	1.92	1.92	1.52	2.59	0.37	3.44	1.44	4.29	4.29	4.29	4.29
CFM PER RUN HEAT	32	25	34	27	42	33	11	19	42	32	11	67	27	44	44	35	59	9	79	33	98	98	98	98
RM GAIN MBH	2.06	0.80	0.99	1.82	2.26	2.15	0.20	0.95	2.26	2.06	0.34	3.01	1.62	2.52	2.52	1.53	1.48	0.27	0.60	2.15	0.60	0.60	0.60	0.60
CFM PER RUN COOLING	66	26	32	59	73	70	6	31	73	66	11	97	52	81	81	49	48	9	20	70	19	19	19	19
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	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.	50	36	31	27	44	58	36	39	49	36	44	27	19	26	32	37	20	37	44	47	45	19	13	34
EQUIVALENT LENGTH	190	150	170	130	130	160	150	120	140	120	200	130	130	120	140	150	130	150	120	130	90	100	180	140
TOTAL EFFECTIVE LENGTH	240	186	201	157	174	218	186	159	189	156	244	157	149	146	172	187	150	187	164	177	135	119	173	174
ADJUSTED PRESSURE	0.07	0.09	0.09	0.11	0.1	0.08	0.09	0.11	0.09	0.11	0.07	0.1	0.12	0.11	0.09	0.09	0.11	0.09	0.1	0.1	0.12	0.14	0.09	0.09
ROUND DUCT SIZE	6	4	4	6	5	6	4	4	5	6	4	6	5	6	6	5	5	4	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	163	287	390	138	308	168	126	218	308	163	126	342	198	224	224	257	433	103	580	168	500	500	500	500
COOLING VELOCITY (ft/min)	337	298	367	301	536	357	69	356	536	337	126	495	382	413	413	360	352	103	147	357	97	97	97	97
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	A	D	B	D	C	D	D	D	A	C	A	B	A	A	C	B	C	C	C	B	B	D	C

RUN #	25	26
ROOM NAME	ENS	S-ENS
RM LOSS MBH	1.10	0.47
CFM PER RUN HEAT	25	11
RM GAIN MBH	0.80	0.20
CFM PER RUN COOLING	26	6
ADJUSTED PRESSURE	0.17	0.17
ACTUAL DUCT LGH.	58	32
EQUIVALENT LENGTH	190	180
TOTAL EFFECTIVE LENGTH	248	212
ADJUSTED PRESSURE	0.07	0.08
ROUND DUCT SIZE	4	4
HEATING VELOCITY (ft/min)	287	126
COOLING VELOCITY (ft/min)	298	69
OUTLET GRILL SIZE	3X10	3X10
TRUNK	A	D

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	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT
TRUNK A	269	0.07	8.9	14	X	8	346	0	0.00	0	0	TRUNK G	0	0.00	0	0	X	8	0	0	0.05	0	0
TRUNK B	578	0.07	11.8	18	X	8	578	0	0.00	0	0	TRUNK H	0	0.00	0	0	X	8	0	0	0.05	0	0
TRUNK C	298	0.07	9.2	10	X	8	536	0	0.00	0	0	TRUNK I	0	0.00	0	0	X	8	0	0	0.05	0	0
TRUNK D	555	0.07	11.6	16	X	8	624	0	0.00	0	0	TRUNK J	0	0.00	0	0	X	8	0	0	0.05	0	0
TRUNK E	0	0.00	0	0	X	8	0	0	0.00	0	0	TRUNK K	0	0.00	0	0	X	8	0	0	0.05	0	0
TRUNK F	0	0.00	0	0	X	8	0	0	0.00	0	0	TRUNK L	0	0.00	0	0	X	8	0	0	0.05	0	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
AIR VOLUME	175	180	85	75	180	135	135	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.	38	36	53	57	25	40	46	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	150	135	185	225	145	265	270	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	188	171	238	282	170	305	316	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.09	0.06	0.05	0.09	0.05	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	14.80
ROUND DUCT SIZE	7.3	7.2	6	6	7.2	7.5	7.5	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	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: VALLEYCREEK 5
SITE NAME: RUSSEL GARDENS PHASE 3

LO # 88601
LOT 305

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	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
S-ENS	FV-05-11VK1	50	☒	0.3
ENS-4	FV-05-11VK1	50	☒	0.3
WR	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:	December-20

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

LO#: 88601

Model: VALLEYCREEK 5

Builder: GREENPARK HOMES

Date: 16/12/2020

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1276	9	11484
First	1276	11	14036
Second	1657	9	14913
Third	0	9	0
Fourth	0	9	0
Total:			40,433.0 ft ³
Total:			1144.9 m ³

Air Change & Delta T Data

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

Design Temperature Difference

	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-17	39	71
Summer DTD _c	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage

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

$$0.319 \times 318.04 \times 39^\circ\text{C} \times 1.2 = 4778 \text{ W}$$

$$= 16303 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.114 \times 318.04 \times 7^\circ\text{C} \times 1.2 = 310 \text{ W}$$

$$= 1058 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

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

6.2.7 Sensible heat Gain due to Ventilation

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

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

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

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve1} + HL_{bgcleve1})\}$$

Level	Level Factor (LF)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{cleve1})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{cleve1})
1	0.5	16,303	9,023	0.903
2	0.3		10,971	0.446
3	0.2		12,767	0.255
4	0		0	0.000
5	0		0	0.000

*HL_{airbv} = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HL_{airve} = 0

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: VALLEYCREEK 5	LOT 305	BUILDER: GREENPARK HOMES
SFQT: 2933	LO# 88601	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):	40433.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.65	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 57.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	152.0 ft

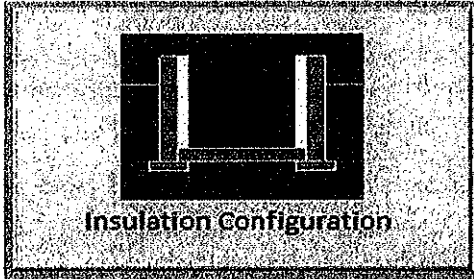
2012 OBC - COMPLIANCE PACKAGE Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls 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

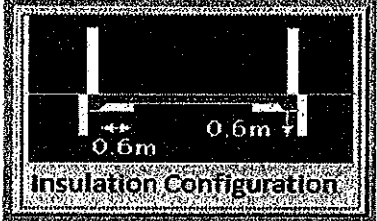
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	17.4	 Insulation Configuration
Floor Width (m):	10.1	
Exposed Perimeter (m):	46.3	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.9	
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):		1449

TYPE: VALLEYCREEK 5
LO# 88601

LOT 305

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):	1.8	
Width (m):	4.9	
Exposed Perimeter (m):	8.5	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		75

TYPE: VALLEYCREEK 5
LO# 88601

LOT 305

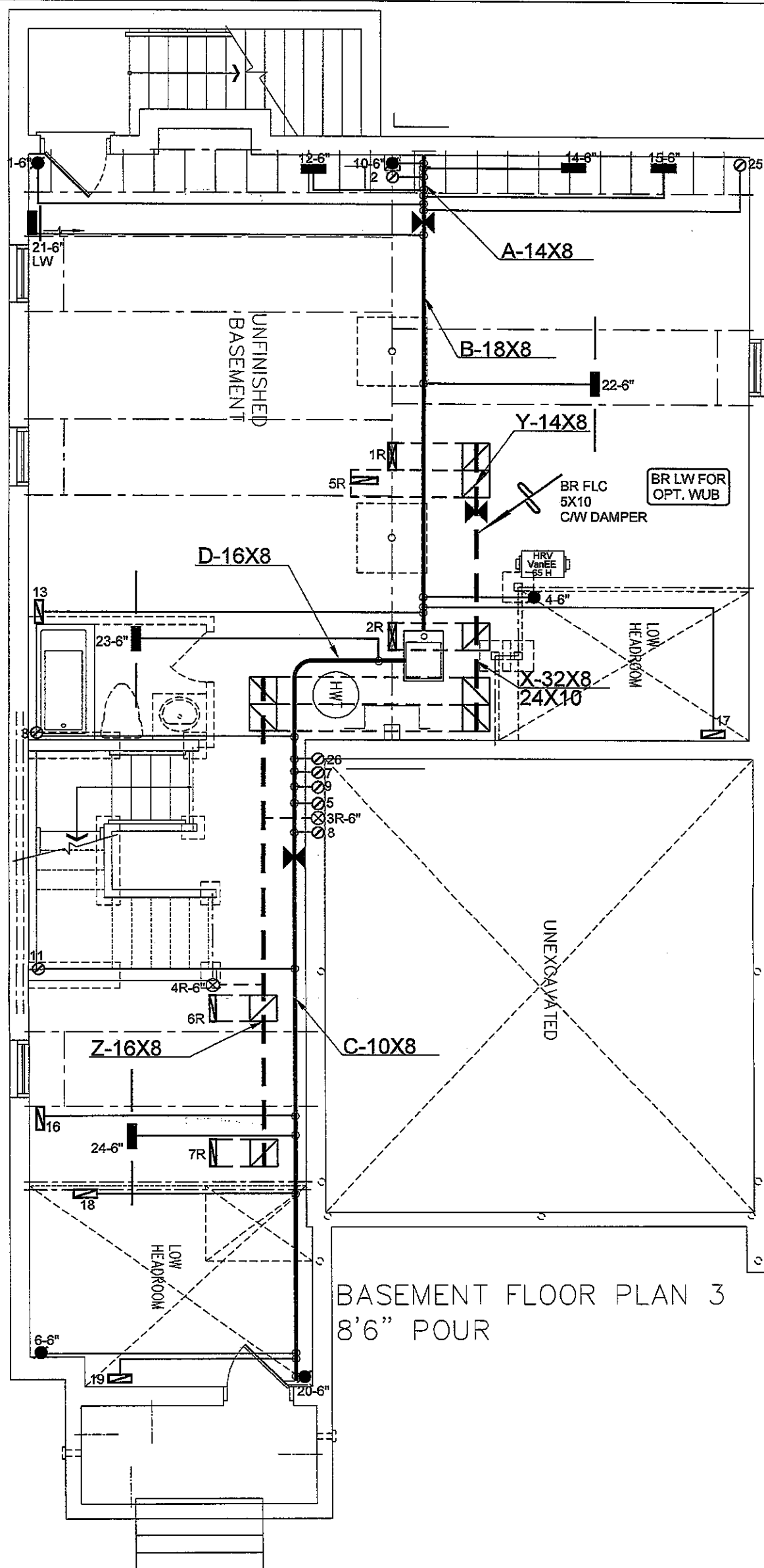
Air Infiltration Residential Load Calculator

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):	1144.9		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1526.2 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):	0.319		
Cooling Air Leakage Rate (ACH/H):	0.114		

TYPE: VALLEYCREEK 5
LO# 88601

LOT 305



I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.

Michael O'Rourke

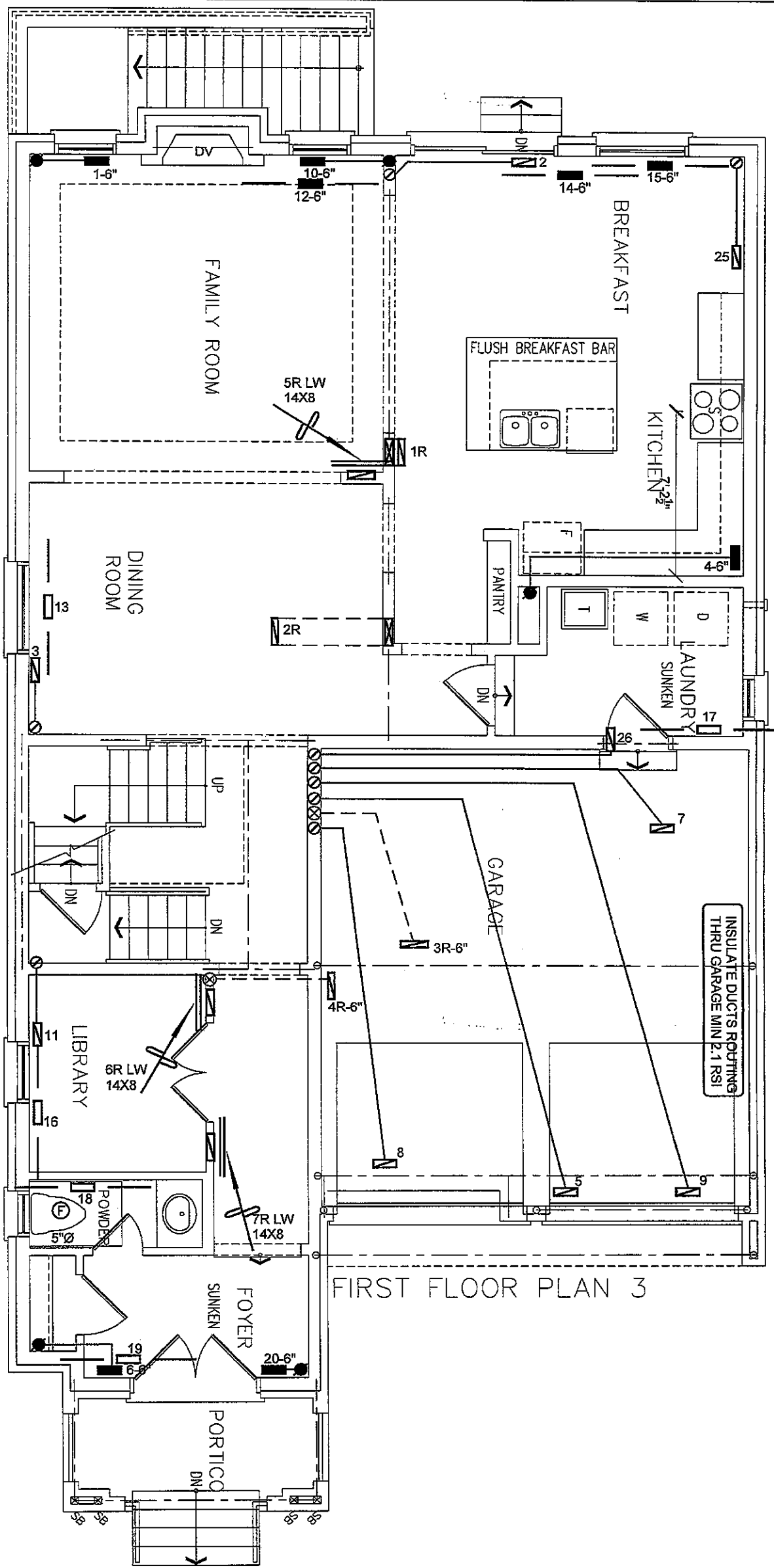
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 305
WUB
CSA-F280-12
PACKAGE A1

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"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		

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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 51076 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GREENPARK HOMES		MAKE GOODMAN	3RD FLOOR					BASEMENT HEATING LAYOUT
Project Name		MODEL GMEC960603BNA	2ND FLOOR		14	4	4	
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO		INPUT 60 MBTU/H	1ST FLOOR		8	3	2	
LOT 305 VALLEYCREEK 5 2933 sqft		OUTPUT 57.6 MBTU/H	BASEMENT		4	1	0	Date DEC/2020
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.		COOLING 3.0 TONS	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				Scale 3/16" = 1'-0"	
		FAN SPEED 1131 cfm @ 0.5" w.c.					BCIN# 19669	
						LO#	88601	



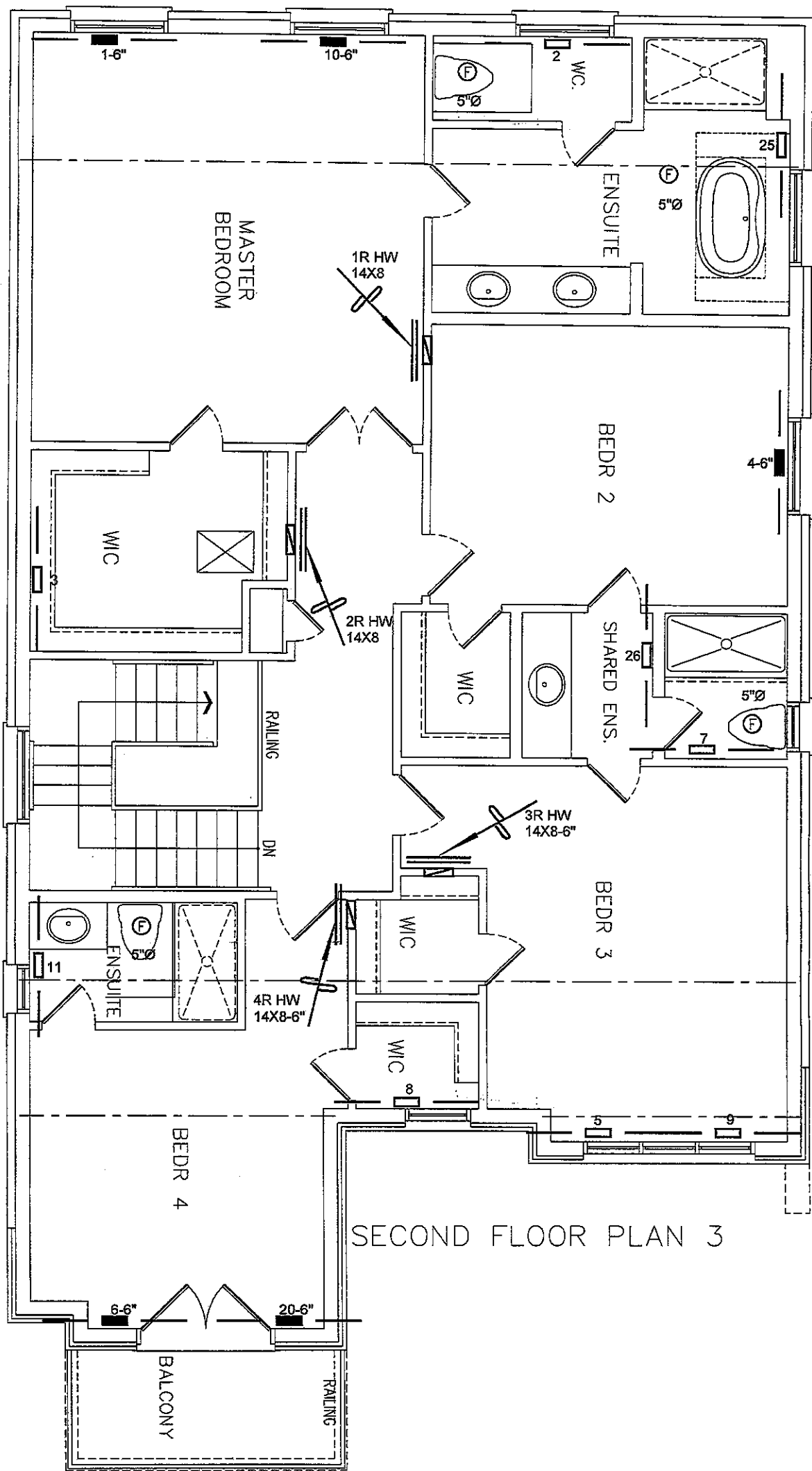
1 MICHAEL O'Rourke HAS REVIEWED AND TAKEN RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION 6, 12.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 305
WUB
CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		8" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Client GREENPARK HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@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	
LOT 305 VALLEYCREEK 5 2933 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	88601



SECOND FLOOR PLAN 3

LOT 305
WUB
CSA-F280-12
PACKAGE A1

I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C. 32.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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

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Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacadesigns.ca Web: www.hvacadesigns.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	
GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	DEC/2020
RUSSEL GARDENS PHASE 3 HAMILTON, ONTARIO			Scale	3/16" = 1'-0"
LOT 305 VALLEYCREEK 5 2933 sqft			BCIN# 19669	
		LO#	88601	