

SITE NAME: RUSSEL GARDENS BUILDING: GREENPARK HOMES										DATE: Jul-17 LOW 75024		WINTER NATURAL AIR CHANGE RATE 0.442 SUMMER NATURAL AIR CHANGE RATE 0.149		HEAT LOSS AT °F. 71 HEAT GAIN AT °F. 15		CSA-F280-12 SB-12 PACKAGE A1	
ROOM USE	EXP. WALL CLG. HT.	WOB TYPE: HIGHGROVE 3	ENS	MER	GRS.WALL AREA GLAZING	FACTORS	WMC	BED-2	BED-3	LOUN	BATH	MUD	FOY	WOB	BAS		
EXP. WALL	29	8	8	9	0	0	0	7	9	9	14	15	21	45	90		
CLG. HT.	9	9	9	9	0	0	0	9	9	9	9	11	10	9	9		
GRS.WALL AREA	261	72	72	0	0	0	0	63	81	0	126	165	210	383	585		
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
NORTH	19.8	16.5	0	0	0	0	0	0	0	0	0	0	0	0	0		
EAST	19.8	42.1	0	0	0	0	0	0	0	0	0	0	0	0	0		
SOUTH	19.8	25.5	0	0	0	0	0	0	0	0	0	0	0	0	0		
WEST	19.8	42.1	32	633	1348	16	316	674	0	0	0	0	0	0	0		
SKYLT.	34.6	102.5	0	0	0	0	0	0	0	0	0	0	0	0	0		
DOORS	23.6	4.9	0	0	0	0	0	0	0	0	0	0	0	0	0		
NET EXPOSED WALL	4.1	0.9	229	949	199	56	232	49	0	0	104	431	90	20	469		
NET EXPOSED SLAB WALL ABOVE GR	3.3	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0		
EXPOSED CLG	1.2	0.8	357	426	222	80	95	60	137	163	103	123	64	32	633		
NO A TIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	16	41	21	0	0	0	0		
EXPOSED FLOOR	2.4	0.5	0	0	0	40	95	20	0	0	15	36	7	0	0		
EASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SUBTOTAL HT LOSS	2008	1768	739	792	107	1005	942	1084	864	197	1024	1088	143	380	585		
SUB TOTAL HT GAIN	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20		
LEVEL FACTOR / MULTIPLIER	921	232	339	104	7	147	461	142	405	90	470	702	948	1370	287		
AIR CHANGE HEAT LOSS	0	0	108	90	0	170	1	240	1	0	123	0	0	0	0		
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
DUCT GAIN	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HEAT GAIN PEOPLE	2	480	0	0	0	0	0	0	0	0	0	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS	390	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TOTAL HT LOSS BTU/H	2928	1185	1185	1281	156	1613	2425	2413	1289	287	1644	1750	2392	3512	9651		
TOTAL HT GAIN x 1.3 BTU/H	3734	1281	1281	1281	82	1613	2425	2413	1289	287	1644	1750	2392	3512	9651		

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CLG. HT.	9	9	9	9	0	0	0	9	9	9	9	11	10	9	9		
GRS.WALL AREA	261	72	72	0	0	0	0	63	81	0	126	165	210	383	585		
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
NORTH	19.8	16.5	0	0	0	0	0	0	0	0	0	0	0	0	0		
EAST	19.8	42.1	0	0	0	0	0	0	0	0	0	0	0	0	0		
SOUTH	19.8	25.5	0	0	0	0	0	0	0	0	0	0	0	0	0		
WEST	19.8	42.1	32	633	1348	16	316	674	0	0	0	0	0	0	0		
SKYLT.	34.6	102.5	0	0	0	0	0	0	0	0	0	0	0	0	0		
DOORS	23.6	4.9	0	0	0	0	0	0	0	0	0	0	0	0	0		
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NO A TIC EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	16	41	21	0	0	0	0		
EXPOSED FLOOR	2.4	0.5	0	0	0	40	95	20	0	0	15	36	7	0	0		
EASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SUBTOTAL HT LOSS	2008	1768	739	792	107	1005	942	1084	864	197	1024	1088	143	380	585		
SUB TOTAL HT GAIN	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20	0.46	0.20		
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AIR CHANGE HEAT LOSS	0	0	108	90	0	170	1	240	1	0	123	0	0	0	0		
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
DUCT GAIN	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HEAT GAIN PEOPLE	2	480	0	0	0	0	0	0	0	0	0	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS	390	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TOTAL HT LOSS BTU/H	2928	1185	1185	1281	156	1613	2425	2413	1289	287	1644	1750	2392	3512	9651		
TOTAL HT GAIN x 1.3 BTU/H	3734	1281	1281	1281	82	1613	2425	2413	1289	287	1644	1750	2392	3512	9651		

SITE NAME: RUSSEL GARDENS
BUILDER: GREENPARK HOMES

WOB
TYPE: HIGHGROVE 3

DATE: Jul-17

GFA: 1920 LO# 75024

HEATING CFM 890
TOTAL HEAT LOSS 33,570
AIR FLOW RATE CFM 26.51

COOLING CFM 890
TOTAL HEAT GAIN 23,804
AIR FLOW RATE CFM 37.39

#GOODMAN
GMEC960402BNA 40
FAN SPEED LOW
MEDIUM HIGH

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 38,400

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	6	4
R/A	0	0	4	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	13	14	15	16	17	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	LOUN	BATH	BED-2	BED-3	MBR	LV/DN	KT/FM	KT/FM	KT/FM	LAUN	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.46	1.18	1.18	0.81	0.64	0.29	1.64	0.81	0.64	1.46	1.44	1.70	1.70	1.70	0.31	2.39	1.77	3.37	3.37	3.37	3.37
CFM PER RUN HEAT	39	31	4	21	17	8	44	21	17	39	38	45	45	45	8	63	47	89	89	89	89
RM GAIN MBH	1.87	1.28	0.08	1.21	1.21	0.66	1.76	1.21	1.21	1.87	2.39	1.42	1.42	1.42	0.88	1.12	0.84	0.55	0.55	0.55	0.55
CFM PER RUN COOLING	70	48	3	45	45	25	66	45	45	70	89	53	53	53	26	42	31	20	20	20	20
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	41	42	25	37	30	15	38	40	36	50	19	28	38	31	37	24	19	32	20	12	19
TOTAL EFFECTIVE LENGTH	170	160	170	180	160	180	140	180	160	170	140	110	120	160	160	120	150	170	120	160	130
ADJUSTED PRESSURE	0.08	0.09	0.08	0.08	0.09	0.09	0.1	0.07	0.09	0.08	0.1	0.12	0.11	0.09	0.09	0.12	0.1	0.08	0.12	0.09	0.11
ROUND DUCT SIZE	5	4	4	4	4	4	5	5	4	5	5	4	4	5	4	4	4	6	5	6	5
HEATING VELOCITY (ft/min)	286	356	46	241	195	92	323	154	195	286	279	516	516	330	92	723	539	454	653	454	653
COOLING VELOCITY (ft/min)	514	551	34	516	516	287	485	330	516	514	653	608	608	389	298	482	356	102	147	102	147
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10
TRUNK	A	B	B	C	C	B	C	C	C	A	C	A	A	A	B	C	B	A	B	C	C

DESIGN CFM = 890
CFM @ 0.6" E.S.P.
TEMPERATURE RISE 40 °F

RUN #

ROOM NAME

RM LOSS MBH

CFM PER RUN HEAT

RM GAIN MBH

CFM PER RUN COOLING

ADJUSTED PRESSURE

EQUIVALENT LENGTH

TOTAL EFFECTIVE LENGTH

ADJUSTED PRESSURE

ROUND DUCT SIZE

HEATING VELOCITY (ft/min)

COOLING VELOCITY (ft/min)

OUTLET GRILL SIZE

TRUNK

RUN #	1	2	3	4	5	6	7	8	9	10	13	14	15	16	17	19	20	21	22	23	24
ROOM NAME	TRUNK A	TRUNK B	TRUNK C	TRUNK D	TRUNK E	TRUNK F	TRUNK G	TRUNK H	TRUNK I	TRUNK J	TRUNK K	TRUNK L	TRUNK M	TRUNK N	TRUNK O	TRUNK P	TRUNK Q	TRUNK R	TRUNK S	TRUNK T	TRUNK U
RM LOSS MBH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CFM PER RUN HEAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RM GAIN MBH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CFM PER RUN COOLING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EQUIVALENT LENGTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROUND DUCT SIZE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEATING VELOCITY (ft/min)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COOLING VELOCITY (ft/min)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTLET GRILL SIZE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRUNK	A	B	B	C	C	B	C	C	C	A	C	A	A	A	B	C	B	A	B	C	C

SUPPLY AIR TRUNK SIZE

TRUNK

CFM

RECT

DUCT

STATIC

PRESS

ROUND

DUCT

VELOCITY

(ft/min)

TRUNK

CFM

RECT

DUCT

STATIC

PRESS

ROUND

RUN #	1	2	3	4	5	6	7	8	9	10	13	14	15	16	17	19	20	21	22	23	24
AIR VOLUME	130	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
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
ACTUAL DUCT LGH	46	35	43	51	28	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	135	185	145	230	140	225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	181	220	188	281	168	242	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.07	0.08	0.05	0.09	0.06	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ROUND DUCT SIZE	6.5	6	5.9	6	7.1	7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
INLET GRILL SIZE	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
TRUNK	A	B	B	C	C	B	C	C	C	A	C	A	A	A	B	C	B	A	B	C	C

TYPE: HIGHGROVE 3
SITE NAME: RUSSEL GARDENS

LO # 75024
WOB

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	2 @ 10.6 cfm	21.2 cfm
Kitchen & Bathrooms	4 @ 10.6 cfm	42.4 cfm
Other Rooms	7 @ 10.6 cfm	74.2 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	63.6	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	180.2	cfm
Less Principal Ventil. Capacity	139	cfm
Required Supplemental Capacity	41.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE 60H-V+ Location: BSMT		
139.0 cfm	3.0 sones ☒ HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
139.0 CFM	71 F	1.08	0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	☒
BATH	QTXEN050C	50	☒

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 60H-V+	
139 cfm high	50 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:	July-17

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: HIGHGROVE 3	WOB	BUILDER: GREENPARK HOMES
SFQT: 1920	LO# 75024	SITE: RUSSEL GARDENS

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	1	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	73

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	4.55	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	UNSHelterED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	25279.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.5 ft
LENGTH: 49.0 ft	WIDTH: 21.0 ft	EXPOSED PERIMETER:	90.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	45.0 ft

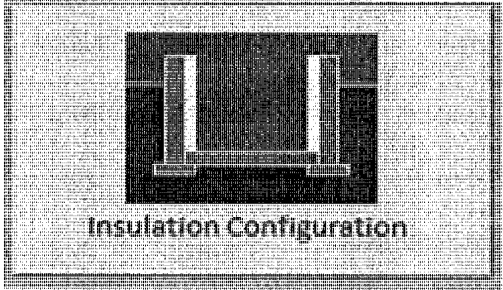
2012 OBC - COMPLIANCE PACKAGE		
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement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

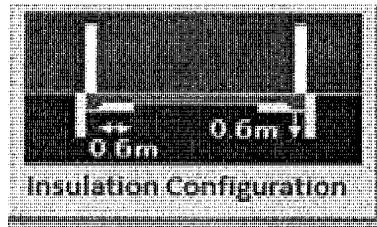
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	6.7	
Floor Width (m):	6.4	
Exposed Perimeter (m):	27.4	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.68	
Window Area (m ²):	-3.0	
Door Area (m ²):	0.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		533

TYPE: HIGHGROVE 3
LO# 75024

WOB

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		
Length (m):	3.7	
Width (m):	6.4	
Exposed Perimeter (m):	13.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		152

TYPE: HIGHGROVE 3
LO# 75024

WOB

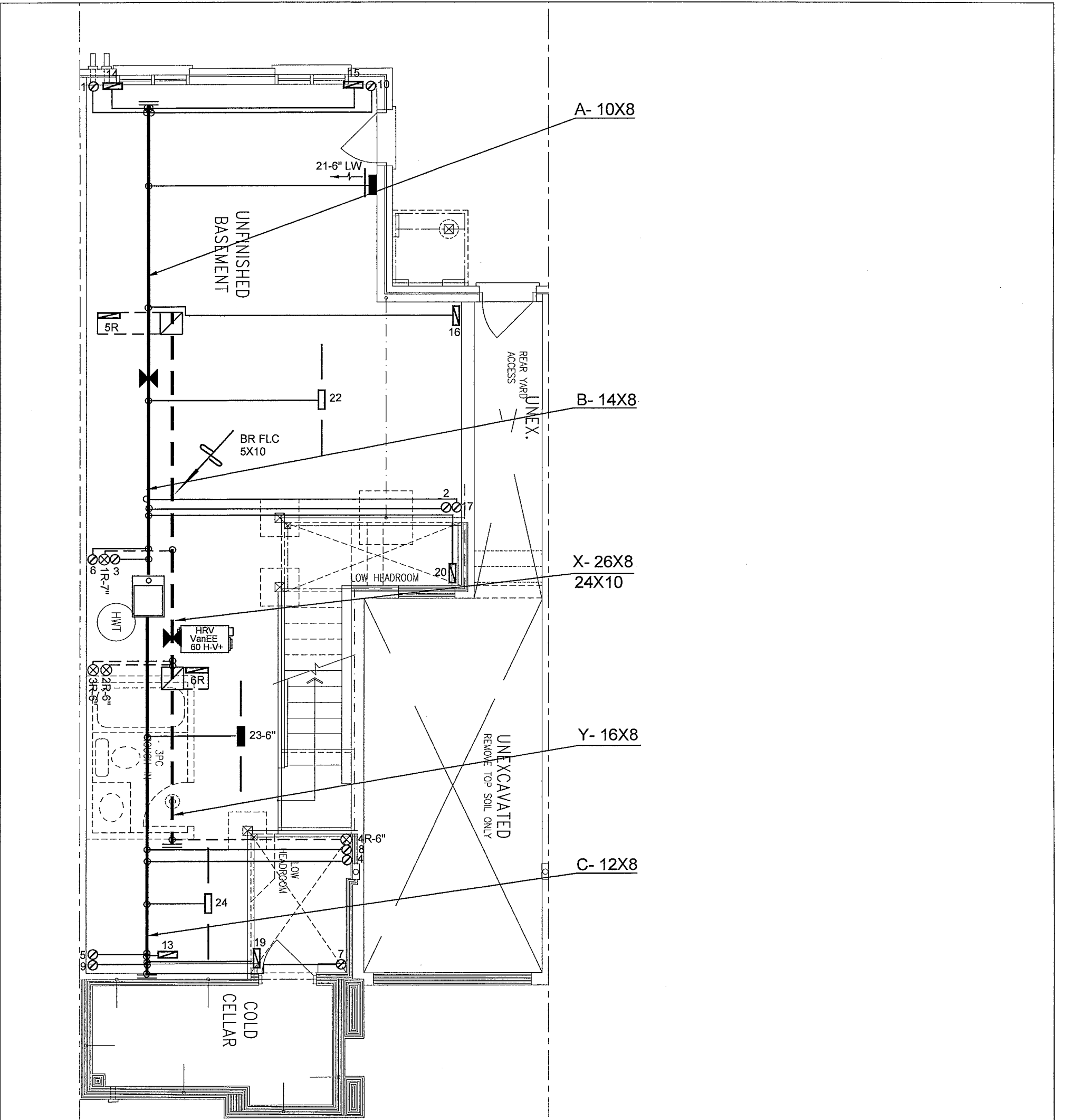
Air Infiltration Residential Load Calculator

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:	Very heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	8.08			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	715.8			
Air Leakage/Ventilation				
Air Tightness Type:	Average (1946-1960) (4.55 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1216.2 cm ²		
	4.55	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	65.6	65.6		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.442			
Cooling Air Leakage Rate (ACH/H):	0.149			

TYPE: HIGHGROVE 3
LO# 75024

WOB



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.

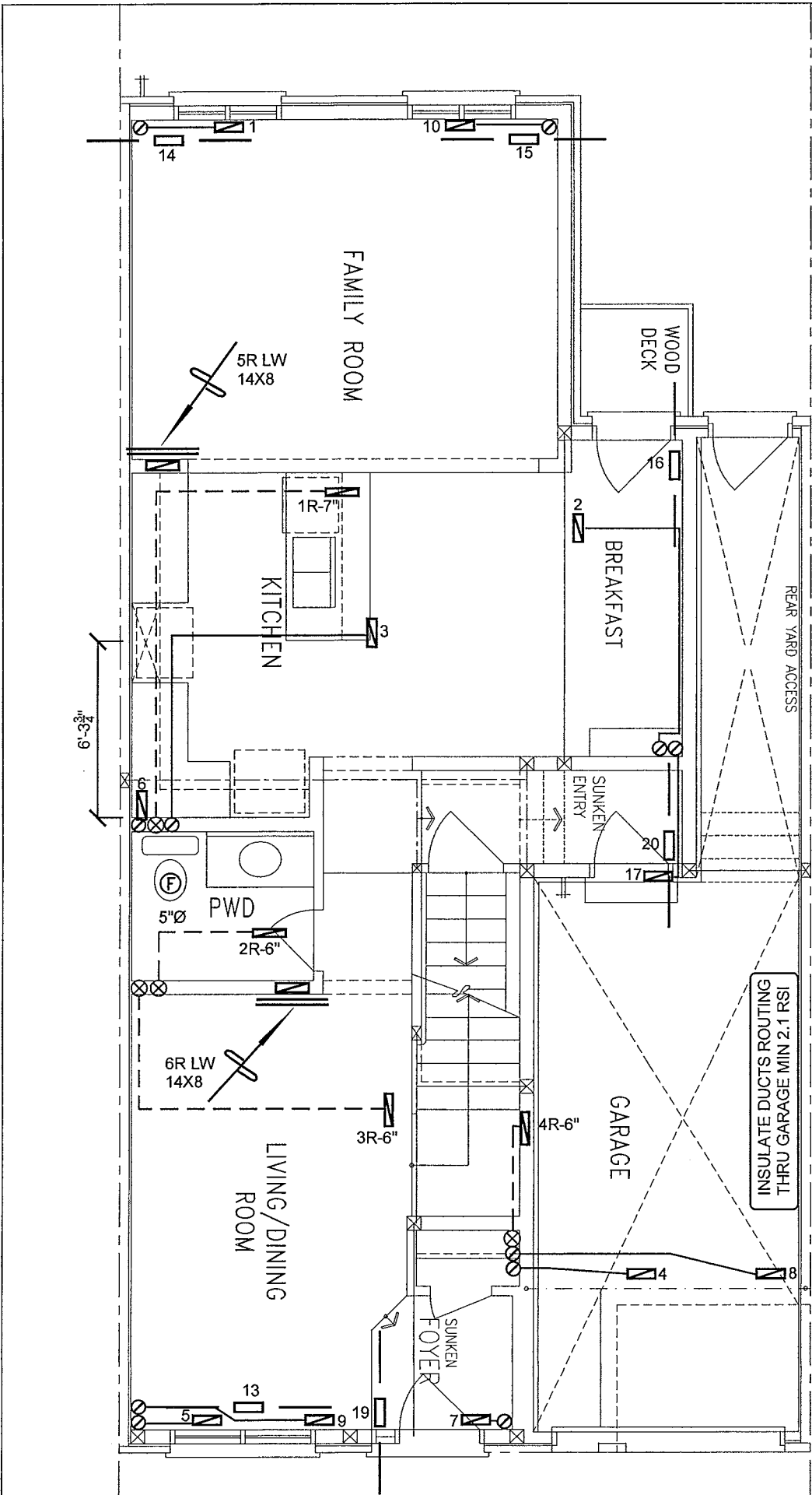
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOB
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		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Client		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services		HEAT LOSS 36220 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title	
Project Name RUSSEL GARDENS HAMILTON, ONTARIO				UNIT DATA		3RD FLOOR		BASEMENT HEATING LAYOUT	
				MAKE GOODMAN		2ND FLOOR 11 4 3			
				MODEL GMEC960402BNA-40		1ST FLOOR 6 2 2			
WOB HIGHGROVE 3 1920 sqft		INPUT 40 MBTU/H		BASEMENT 4 1 0		Date JULY/2017			
		OUTPUT 38.4 MBTU/H		ALL S/A DIFFUSERS 4"x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A		Scale 3/16" = 1'-0"			
		COOLING 2.0 TONS				BCIN# 19669			
		FAN SPEED 890 cfm @ 0.6" w.c.				LO# 75024			
		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.							



GROUND FLOOR PLAN ELEV. '1', '2' & '3'

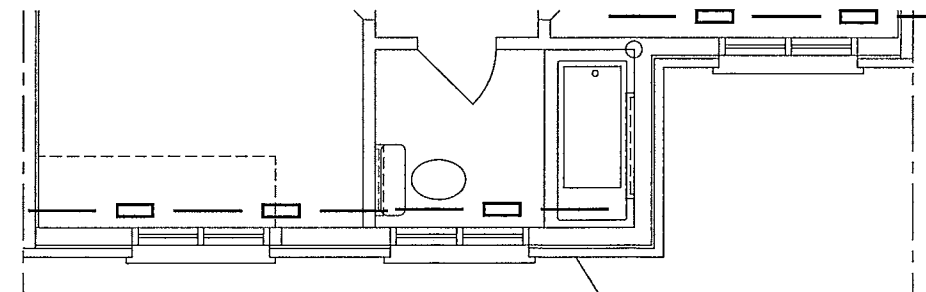
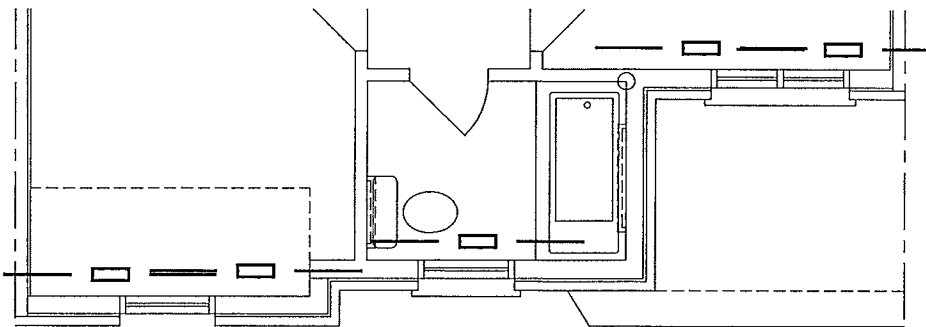
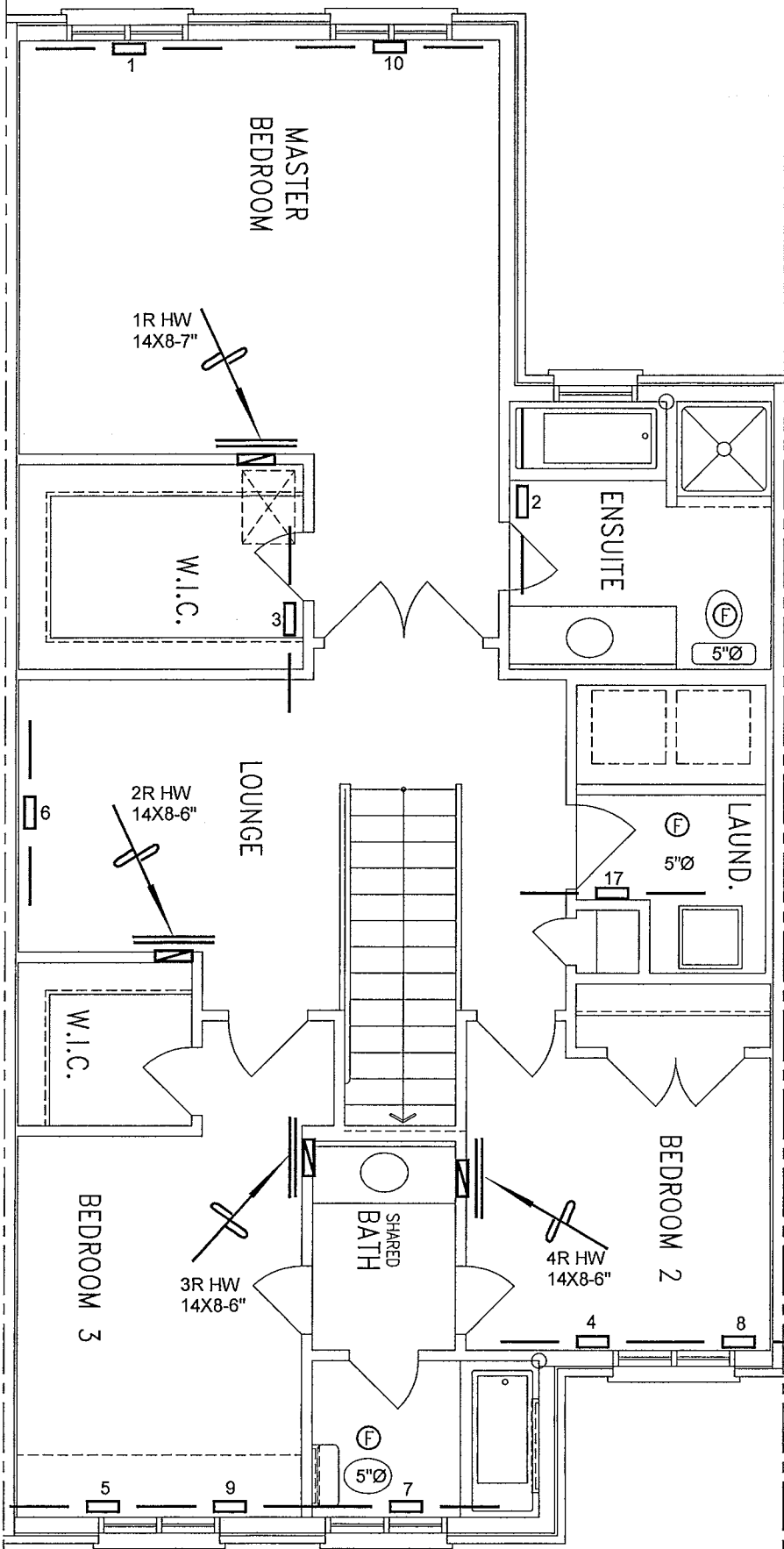
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOB
CSA-F280-12
PACKAGE A1

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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 HAMILTON, ONTARIO			Date JULY/2017	
WOB HIGHGROVE 3 1920 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	75024



SECOND FLOOR PLAN ELEV. '1'

SECOND FLOOR PLAN ELEV. '2'

SECOND FLOOR PLAN ELEV. '3'

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

WOB
CSA-F280-12
PACKAGE A1

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Client
GREENPARK HOMES

Project Name
**RUSSEL GARDENS
HAMILTON, ONTARIO**

**WOB
HIGHGROVE 3 1920 sqft**

HVACDESIGNS LTD.

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L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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Specializing in Residential Mechanical Design Services

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Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**

Date
JULY/2017

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 75024