

SITE NAME: RUSSEL GARDENS
BUILDER: GREENPARK HOMES
DATE: Jul-17
LO# 75038
TYPE: ROSEWOOD 4
GFA: 2903
WINTER NATURAL AIR CHANGE RATE 0.310
SUMMER NATURAL AIR CHANGE RATE 0.120
HEAT LOSS AT °F. 71
HEAT GAIN AT °F. 16
CSA-F280-12
SB-12 PACKAGE A1

ROOM USE EXP. WALL CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2	GRS.WALL AREA GLAZING	FACTORS	LOSS GAIN
NORTH	40	11	14	16	38	44	7	18	19.8	16.8	0
EAST	9	9	9	9	10	10	9	9	19.8	42.4	0
SOUTH									19.8	25.7	0
WEST									19.8	42.4	0
SKYLT.	35	15	7	0	0	0	0	0	34.6	103.0	0
DOORS	23.5	0	0	0	0	0	0	0	23.5	5.2	0
NET EXPOSED WALL	4.1	84	119	129	325	364	53	155	41.1	0.9	325
NET EXPOSED BSMT WALL ABOVE GR	3.3	0	0	0	0	0	0	0	3.3	0.7	0
EXPOSED CLG	1.2	110	224	288	251	258	140	77	1.2	0.6	342
NO ATTIC EXPOSED CLG	2.6	0	0	0	0	0	0	0	2.6	1.4	0
EXPOSED FLOOR	0	0	0	0	0	0	0	0	0	0.5	0
BASEMENT/CRAWL HEAT LOSS	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
SUBTOTAL HT LOSS	2447	776	899	1175	3125	3012	916	873			
SUB TOTAL HT GAIN	0.20	0.23	0.20	0.23	0.20	0.23	0.20	0.23			
LEVEL FACTOR / MULTIPLIER	564	179	207	271	721	695	211	201			
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0			
AIR CHANGE HEAT GAIN	211	82	46	58	230	287	113	33			
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			
HEAT GAIN APPLIANCES/LIGHTS	665	0	0	0	0	0	0	0			
TOTAL HT LOSS BTU/H	3011	955	1106	1446	4231	3706	1240	1074			
TOTAL HT GAIN x 1.3 BTU/H	4367	1126	623	1975	4751	5094	1006	446			

ROOM USE EXP. WALL CLG. HT.	DIN	KTIFM	LAUN	FOY	OFF	WUB	BAS	GRS.WALL AREA GLAZING	FACTORS	LOSS GAIN
NORTH	38	75	24	39	11	25	180	19.8	16.8	0
EAST	10	10	12	10	10	9	9	19.8	42.4	0
SOUTH								19.8	25.7	0
WEST								19.8	42.4	0
SKYLT.	380	750	288	390	110	225	1080	34.6	103.0	0
DOORS	23.5	0	0	0	0	0	0	23.5	5.2	0
NET EXPOSED WALL	361	846	261	50	0	20	205	41.1	0.9	361
NET EXPOSED BSMT WALL ABOVE GR	3.3	0	0	0	0	0	0	3.3	0.7	0
EXPOSED CLG	1.2	0	0	0	0	0	0	1.2	0.6	0
NO ATTIC EXPOSED CLG	2.6	0	0	0	0	0	0	2.6	1.4	0
EXPOSED FLOOR	0	0	0	0	0	0	0	0	0.5	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	1872	4759	1689	2582	753	1319	8469			
SUB TOTAL HT GAIN	0.30	0.39	0.30	0.39	0.30	0.39	0.50			
LEVEL FACTOR / MULTIPLIER	735	1868	663	1013	295	295	7624			
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0			
AIR CHANGE HEAT GAIN	87	528	49	61	60	0	0			
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			
HEAT GAIN APPLIANCES/LIGHTS	665	0	0	0	0	0	0			
TOTAL HT LOSS BTU/H	2607	6627	2353	3596	1048	1319	16093			
TOTAL HT GAIN x 1.3 BTU/H	2049	8080	1533	830	1689	384	1262			

SITE NAME: RUSSEL GARDENS
BUILDING: GREENPARK HOMES

TYPE: ROSEWOOD 4

DATE: Jul-17

GFA: 2903 LO# 75038

HEATING CFM	1131	COOLING CFM	1131
TOTAL HEAT LOSS	50,412	TOTAL HEAT GAIN	35,216
AIR FLOW RATE CFM	22.44	AIR FLOW RATE CFM	32.12

furnace pressure 0.6
furnace filler 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35
plenum pressure s/a 0.18
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.16

#GOODMAN
GMEC960603BNA 60
FAN SPEED
LOW
MEDIUM
HIGH

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	11	7	5
R/A	0	0	5	3	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'0" unless noted otherwise on layout.

ROOM #	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	BED-4	MBR	ENS-2	DIN	KT/FM	KT/FM	KT/FM	LAUN	FOY	OFF	BAS	BAS	BAS	BAS
RM LOSS MBH	1.51	0.95	1.11	1.45	2.12	1.85	1.24	2.12	1.85	1.51	1.07	2.61	2.21	2.21	2.21	2.35	3.60	1.05	3.48	3.48	3.48	3.48
CFM PER RUN HEAT	34	21	25	32	47	42	28	47	42	34	24	58	50	50	50	53	81	24	78	78	78	78
RM GAIN MBH	2.18	1.13	0.62	1.98	2.38	2.55	1.01	2.38	2.55	2.18	0.45	2.05	2.69	2.69	2.69	1.53	0.83	1.69	0.33	0.33	0.33	0.33
CFM PER RUN COOLING	70	36	20	63	76	82	32	76	82	70	14	66	87	87	87	49	27	54	11	11	11	11
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	0.16	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	53	58	44	49	46	57	36	52	64	43	53	35	34	26	37	23	35	27	29	34	34	18
EQUIVALENT LENGTH	110	150	170	230	190	180	170	190	160	170	170	110	120	110	110	120	110	130	140	130	110	120
TOTAL EFFECTIVE LENGTH	163	208	214	279	236	237	206	242	224	213	223	145	154	136	147	143	144	165	167	159	144	138
ADJUSTED PRESSURE	0.11	0.08	0.08	0.06	0.07	0.07	0.08	0.07	0.07	0.08	0.08	0.12	0.11	0.12	0.12	0.12	0.11	0.1	0.1	0.1	0.12	0.12
ROUND DUCT SIZE	5	4	4	5	6	6	4	6	6	5	4	5	5	5	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	250	241	287	235	240	214	321	240	214	250	275	426	367	367	367	608	595	275	573	573	573	573
COOLING VELOCITY (ft/min)	514	413	229	463	388	418	367	388	418	514	161	485	639	639	639	562	198	620	81	81	81	81
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	A	D	D	D	D	D	D	A	B	A	A	B	B	C	D	D	A	B	A	C

ROOM NAME	BAS
RM LOSS MBH	3.48
CFM PER RUN HEAT	78
RM GAIN MBH	0.33
CFM PER RUN COOLING	11
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH	33
EQUIVALENT LENGTH	100
TOTAL EFFECTIVE LENGTH	133
ADJUSTED PRESSURE	0.13
ROUND DUCT SIZE	5
HEATING VELOCITY (ft/min)	573
COOLING VELOCITY (ft/min)	81
OUTLET GRILL SIZE	3X10
TRUNK	D

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	357	0.08	9.5	10	643	TRUNK G	0	0.00	0	0	0	TRUNK Q	0	0.05	0	0	8
TRUNK B	223	0.08	8	8	502	TRUNK H	0	0.00	0	0	0	TRUNK P	0	0.05	0	0	8
TRUNK C	711	0.08	12.3	18	711	TRUNK I	0	0.00	0	0	0	TRUNK R	0	0.05	0	0	8
TRUNK D	421	0.06	10.9	14	541	TRUNK J	0	0.00	0	0	0	TRUNK S	0	0.05	0	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	0	TRUNK T	0	0.05	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK U	0	0.05	0	0	8

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	135	0.15	155	85	155	TRUNK V	0	0.05	0	0	0	TRUNK W	0	0.05	0	0	8
TRUNK B	62	0.15	155	85	155	TRUNK X	1131	0.05	16.5	32	191	TRUNK Y	445	0.05	11.6	16	8
TRUNK C	230	0.15	155	85	155	TRUNK Z	0	0.05	0	0	0	DROP	1131	0.05	16.5	24	10
TRUNK D	292	0.15	155	85	155												
TRUNK E	0.05	0.06	0.08	0.07	0.06												
TRUNK F	7.5	7.5	5.6	5.8	7.5												
TRUNK G	8	8	8	8	8												
TRUNK H	14	14	14	14	14												
TRUNK I	14	14	14	14	14												
TRUNK J	14	14	14	14	14												
TRUNK K	14	14	14	14	14												
TRUNK L	14	14	14	14	14												
TRUNK M	14	14	14	14	14												
TRUNK N	14	14	14	14	14												
TRUNK O	14	14	14	14	14												
TRUNK P	14	14	14	14	14												
TRUNK Q	14	14	14	14	14												
TRUNK R	14	14	14	14	14												
TRUNK S	14	14	14	14	14												
TRUNK T	14	14	14	14	14												
TRUNK U	14	14	14	14	14												
TRUNK V	14	14	14	14	14												
TRUNK W	14	14	14	14	14												
TRUNK X	14	14	14	14	14												
TRUNK Y	14	14	14	14	14												
TRUNK Z	14	14	14	14	14												
DROP	14	14	14	14	14												

TYPE: ROSEWOOD 4
SITE NAME: RUSSEL GARDENS

LO # 75038

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>180.2</u> 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	<u>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>139</u>	cfm
Required Supplemental Capacity	<u>41.2</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 60H-V+ Location: BSMT
<u>139.0</u> cfm	<u>3.0</u> sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	ΔT °F FACTOR % LOSS
139.0 CFM	X 71 F X 1.08 X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI Sones
ENS	QTXEN050C	50	☒ 0.3
BATH	QTXEN050C	50	☒ 0.3
ENS-2	QTXEN050C	50	☒ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 60H-V+	
<u>139</u> cfm high	<u>50</u> cfm low	
<u>75</u> % 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:** ROSEWOOD 4**BUILDER:** GREENPARK HOMES**SFQT:** 2903**LO#** 75038**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)	72

BUILDING DATA

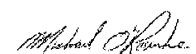
ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	38987.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 55.0 ft	WIDTH: 35.0 ft	EXPOSED PERIMETER:	180.0 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	-

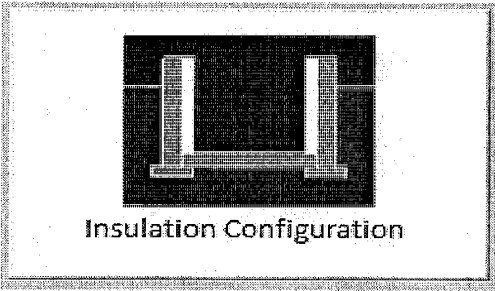
INDIVIDUAL BCIN: 19669

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):	16.8	 Insulation Configuration
Floor Width (m):	10.7	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.4	
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):	1728	

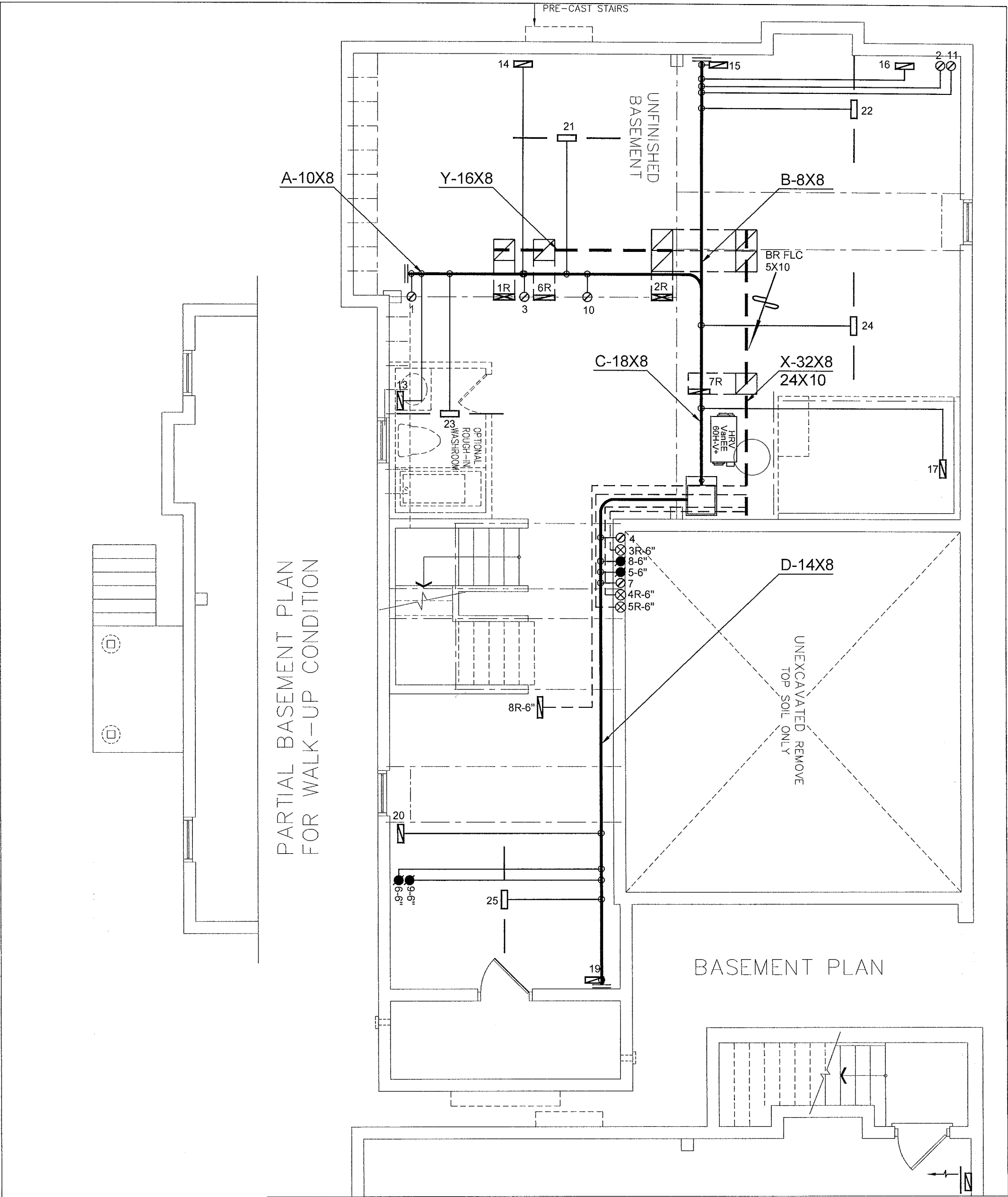
TYPE: ROSEWOOD 4
LO# 75038

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):	1104.0			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1471.7 cm ²		
	3.57	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):	0.310			
Cooling Air Leakage Rate (ACH/H):	0.120			

TYPE: ROSEWOOD 4
LO# 75038



I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION 2, 3.2.5 OF THE BUILDING CODE.

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

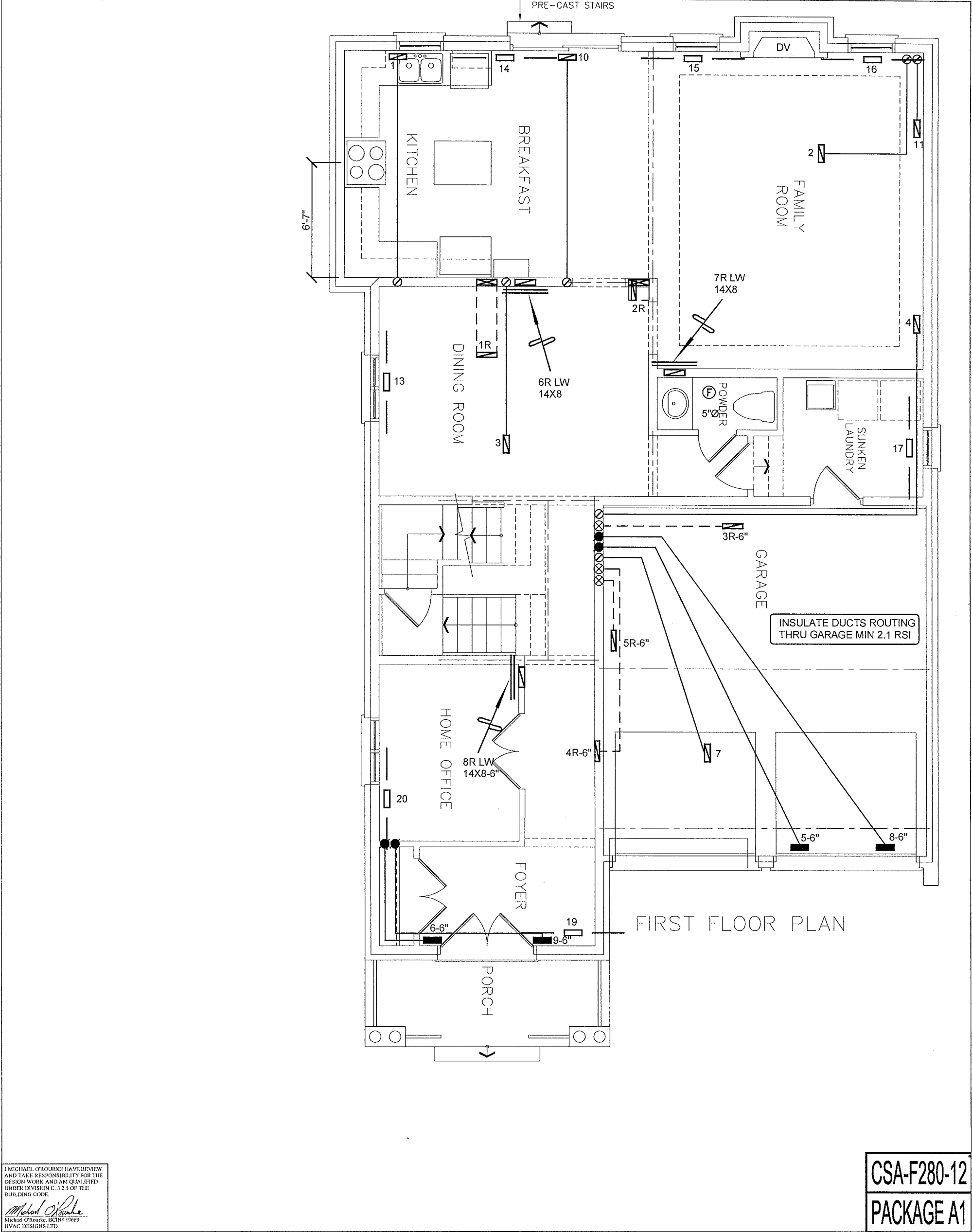
PARTIAL BASEMENT PLAN
FOR WALK-UP CONDITION

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	

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@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.	HEAT LOSS 53061 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
Project Name RUSSEL GARDENS HAMILTON, ONTARIO			MAKE GOODMAN	3RD FLOOR				Date JULY/2017	
			MODEL GMEC960603BNA	2ND FLOOR	11	5	3		
			INPUT 60 MBTU/H	1ST FLOOR	7	3	2		
			OUTPUT 57.6 MBTU/H	BASEMENT	5	1	0		
ROSEWOOD 4 2903 sqft		COOLING 3.0 TONS	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"			
		FAN SPEED 1131 cfm @ 0.6" w.c.				BCIN# 19669			
						LO#	75038		



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.

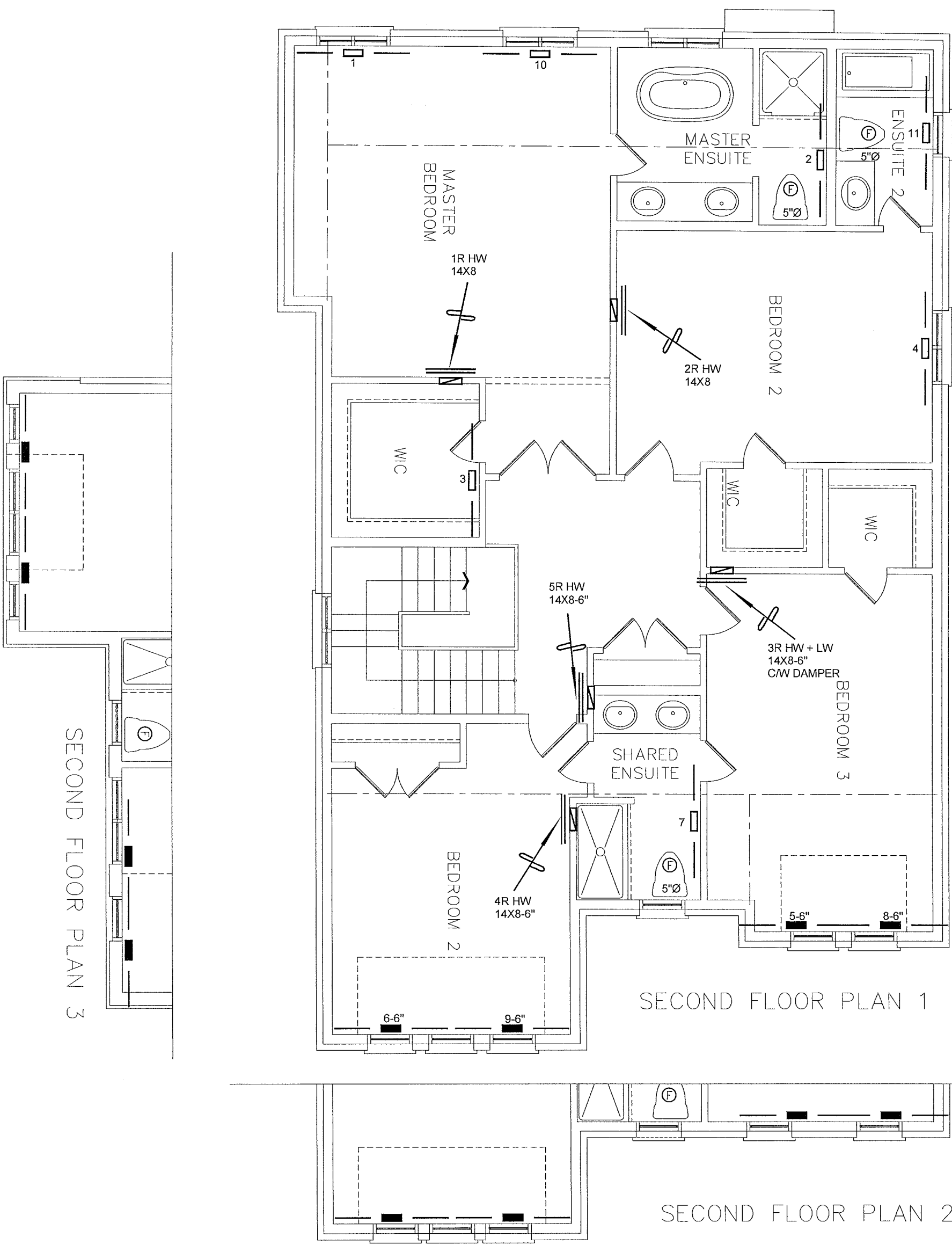
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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		

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@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	
			Scale 3/16" = 1'-0"	
			BCIN# 19669	
ROSEWOOD 4	2903 sqft		LO#	75038



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.

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	

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@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 SECOND FLOOR HEATING LAYOUT	
Project Name RUSSEL GARDENS HAMILTON, ONTARIO			Date JULY/2017	
ROSEWOOD 4 2903 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	75038