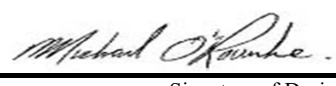


Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information			
Building number, street name		Unit no.	Lot/con.
Municipality HAMILTON	Postal code	Plan number/ other description	
B. Individual who reviews and takes responsibility for design activities			
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.	
Street address 375 FINLEY AVE		Unit no. 202	Lot/con. N/A
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdesigns.ca
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]			
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems			
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: ROSEWOOD 2 Project: RUSSEL GARDENS	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> (print name) declare that (choose one as appropriate):			
☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____			
☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>			
☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____			
I certify that:			
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.			
February 5, 2018			
Date		Signature of Designer	

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Application for a Permit Construct or Demolish – Effective January 1, 2015

SITE NAME: RUSSEL GARDENS
BUILDING: GREENPARK HOMES
TYPE: ROSEWOOD 2
DATE: JUL-17
LO# 75037
GFA: 2766
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	WMC	BED-2	BED-3	BED-4	ENS-2	WINTER NATURAL AIR CHANGE RATE 0.310	SUMMER NATURAL AIR CHANGE RATE 0.120	BATH
GRS.WALL AREA	297	99	0	262	351	243	72			63
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN			LOSS GAIN
NORTH	0	16	0	0	0	0	0			0
EAST	0	0	0	0	0	0	0			10
SOUTH	0	0	0	0	0	0	0			198
WEST	0	0	0	0	0	0	0			424
SKYLT.	40	0	0	0	0	0	0			0
DOORS	791	0	0	0	0	0	0			0
NET EXPOSED WALL	4.1	0	0	0	0	0	0			0
NET EXPOSED BMT WALL ABOVE GR	3.3	0	0	0	0	0	0			0
EXPOSED CLG	1.2	0	0	0	0	0	0			0
NO ATTIC EXPOSED CLG	2.9	0	0	0	0	0	0			0
EXPOSED FLOOR	2.4	0	0	0	0	0	0			0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0			0
SUBTOTAL HT LOSS	2173	839	274	2321	2513	1530	442			766
SUB TOTAL HT GAIN	2104	427	135	2037	2481	1167	143			588
LEVEL FACTOR / MULTIPLIER	0.20	0.25	0.20	0.25	0.20	0.25	0.20			0.20
AIR CHANGE HEAT LOSS	552	213	70	589	638	388	112			0.25
AIR CHANGE HEAT GAIN	239	48	15	231	282	133	16			195
DUCT LOSS	0	105	34	291	0	0	0			96
DUCT GAIN	0	48	15	327	0	0	0			65
HEAT GAIN PEOPLE	2	0	0	1	1	240	0			0
HEAT GAIN APPLIANCES/LIGHTS	767	0	0	767	767	767	0			0
TOTAL HT LOSS BTU/H	2725	1157	378	3201	3151	1918	554			1057
TOTAL HT GAIN x 1.3 BTU/H	4866	680	215	4683	4900	2988	208			936

ROOM USE EXP. WALL CLG. HT.	LVDN	KT/IFM	LAUN	PWD	FOY	MUD	WUB	BAS
GRS.WALL AREA	340	870	54	130	160	160	135	1032
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN
NORTH	0	12	0	0	0	0	0	0
EAST	0	237	0	0	0	0	0	0
SOUTH	30	0	8	0	0	0	0	0
WEST	593	0	158	0	0	0	0	0
SKYLT.	0	81	0	0	0	0	0	0
DOORS	0	1601	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0	0	0	0	0	0	0
NET EXPOSED BMT WALL ABOVE GR	3.3	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.8	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	1878	5471	442	539	663	1008	0	5635
SUB TOTAL HT GAIN	1060	4456	298	421	149	228	212	7908
LEVEL FACTOR / MULTIPLIER	0.30	0.45	0.20	0.30	0.30	0.30	0.60	0.81
AIR CHANGE HEAT LOSS	845	2463	112	243	299	454	7172	7172
AIR CHANGE HEAT GAIN	120	506	34	14	17	26	0	0
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	767	767	767	0	0	767	0	767
TOTAL HT LOSS BTU/H	2724	7934	554	782	962	1462	946	15090
TOTAL HT GAIN x 1.3 BTU/H	2531	7448	1429	475	215	1323	275	1888

TOTAL HEAT GAIN BTU/H: 35162 TONS: 2.93 LOSS DUE TO VENTILATION LOAD BTU/H: 2650 STRUCTURAL HEAT LOSS: 44584 TOTAL COMBINED HEAT LOSS BTU/H: 47233

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: 19669

MICHAEL O'ROURKE

SITE NAME: RUSSEL GARDENS
BUILDUP: GREENPARK HOMES

GFA: 2756 LO# 75037

DATE: Jul-17

TYPE: ROSEWOOD 2

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 44,584 TOTAL HEAT GAIN 34,569
AIR FLOW RATE CFM 25.37 AIR FLOW RATE CFM 32.72

#GOODMAN
GMEC960603BNA 60
FAN SPEED LOW
MEDIUM HIGH
DESIGN CFM = 1131
CFM @ .6" E.S.P. = 57,600
AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	7	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	11	12	13	14	15	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-2	BED-3	BED-4	ENS-2	BATH	BED-3	MBR	BATH	LV/DN	KT/FM	KT/FM	KT/FM	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.36	1.16	1.60	1.60	1.58	1.92	0.55	0.53	0.53	1.36	0.53	2.72	2.64	2.64	2.64	0.55	0.78	0.96	1.46	4.01	4.01	4.01	4.01
CFM PER RUN HEAT	35	29	41	41	40	49	14	13	13	35	13	69	67	67	67	14	20	24	37	102	102	102	102
RM GAIN MBH	2.33	0.68	2.34	2.34	2.45	3.00	0.21	0.47	0.47	2.45	0.47	2.53	2.48	2.48	2.48	1.43	0.17	0.21	1.32	0.54	0.54	0.54	0.54
CFM PER RUN COOLING	76	22	77	77	80	98	7	15	15	80	15	83	81	81	81	47	6	7	43	18	18	18	18
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	34	44	51	54	59	39	40	47	65	44	41	39	36	36	21	40	52	50	14	28	14	32	46
EQUIVALENT LENGTH	140	190	170	180	160	150	110	160	170	140	150	100	90	130	120	190	130	120	90	100	100	110	140
TOTAL EFFECTIVE LENGTH	174	234	221	234	219	189	150	207	235	184	191	139	126	144	141	230	182	170	104	126	114	142	186
ADJUSTED PRESSURE	0.1	0.07	0.08	0.07	0.08	0.09	0.11	0.08	0.07	0.09	0.09	0.12	0.13	0.11	0.11	0.07	0.09	0.1	0.17	0.13	0.14	0.11	0.09
ROUND DUCT SIZE	5	4	5	6	5	6	4	4	6	5	4	5	5	5	5	5	4	4	4	5	5	6	6
HEATING VELOCITY (ft/min)	257	333	301	209	294	250	161	149	204	257	149	507	492	492	492	103	229	275	424	749	749	520	520
COOLING VELOCITY (ft/min)	558	252	565	393	587	500	80	172	408	558	172	609	595	595	595	345	69	80	493	132	132	92	92
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	D	B	B	B	A	D	C	B	A	D	B	B	C	E	E	B	A	A	E	C	E	B	A

RUN #	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
ROOM NAME	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC	WIC
RM LOSS MBH	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
CFM PER RUN HEAT	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
RM GAIN MBH	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
CFM PER RUN COOLING	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
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
ACTUAL DUCT LGH	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
EQUIVALENT LENGTH	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
TOTAL EFFECTIVE LENGTH	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134
ADJUSTED PRESSURE	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
ROUND DUCT SIZE	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
HEATING VELOCITY (ft/min)	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
COOLING VELOCITY (ft/min)	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	B	A

SUPPLY AIR TRUNK SIZE													RETURN AIR TRUNK SIZE															
TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	TRUNK PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	TRUNK PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)		
TRUNK A	226	0.07	8.3	8	x	8	509	TRUNK G	0	0.00	0	0	0	x	8	0	0.06	0	0	0	TRUNK O	0	0.06	0	0	x	8	0
TRUNK B	548	0.07	11.6	16	x	8	617	TRUNK H	0	0.00	0	0	0	x	8	0	0.06	0	0	0	TRUNK P	0	0.06	0	0	x	8	0
TRUNK C	183	0.11	6.9	6	x	8	549	TRUNK I	0	0.00	0	0	0	x	8	0	0.06	0	0	0	TRUNK Q	0	0.06	0	0	x	8	0
TRUNK D	860	0.07	13.7	22	x	8	704	TRUNK J	0	0.00	0	0	0	x	8	0	0.06	0	0	0	TRUNK R	0	0.06	0	0	x	8	0
TRUNK E	273	0.11	8	8	x	8	614	TRUNK K	0	0.00	0	0	0	x	8	0	0.06	0	0	0	TRUNK S	0	0.06	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	0	x	8	0	0.06	0	0	0	TRUNK T	0	0.06	0	0	x	8	0
RETURN AIR #	1	2	3	4	5	6	BR	TRUNK U	0	0.00	0	0	0	0	8	0	0.06	0	0	0	TRUNK V	0	0.06	0	0	0	8	0
AIR VOLUME	175	155	85	85	320	120	0	0	0	0	0	0	0	0	0	0	0.06	15.8	30	x	8	679	TRUNK W	0	0.06	0	8	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0	0	0	0	0	0	0	0	0	0	0.06	0	0	0	TRUNK X	0	0.06	0	0	x	8	0
ACTUAL DUCT LGH.	40	43	40	50	21	40	1	1	1	1	1	1	1	1	1	1	0.06	0	0	0	TRUNK Y	0	0.06	0	0	x	8	0
EQUIVALENT LENGTH	185	225	145	200	230	160	0	0	0	0	0	0	0	0	0	0	0.06	0	0	0	TRUNK Z	0	0.06	0	0	x	8	0
TOTAL EFFECTIVE LH	225	268	185	250	251	200	1	1	1	1	1	1	1	1	1	1	0.06	15.8	24	x	10	DROP	1131	0.06	15.8	x	10	679
ADJUSTED PRESSURE	0.07	0.06	0.08	0.06	0.06	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.06	0.06	0.06	0.06	TRUNK DROP	1131	0.06	0.06	0.06	0.06	0.06	0.06
ROUND DUCT SIZE	7.5	7.5	5.6	6	9.8	6.6	0	0	0	0	0	0	0	0	0	0	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
INLET GRILL SIZE	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06

TYPE: ROSEWOOD 2
SITE NAME: RUSSEL GARDENS

LO # 75037

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	3 @ 21.2 cfm	63.6 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	201.4 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	201.4	cfm
Less Principal Ventil. Capacity	139	cfm
Required Supplemental Capacity	62.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 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	X 71 F	X 1.08	X	0.25	

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

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 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:	
HRAI #	001820
Date:	July-17

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** ROSEWOOD 2**BUILDER:** GREENPARK HOMES**SFQT:** 2756**LO#** 75037**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 (ft ³):	36674.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 51.0 ft	WIDTH: 35.0 ft	EXPOSED PERIMETER:	172.0 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	-

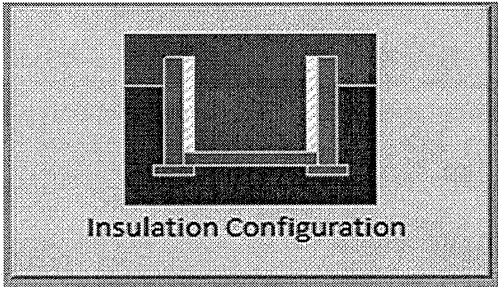
INDIVIDUAL BCIN: 19669

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):	15.5	 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):	0.4	
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):		1651

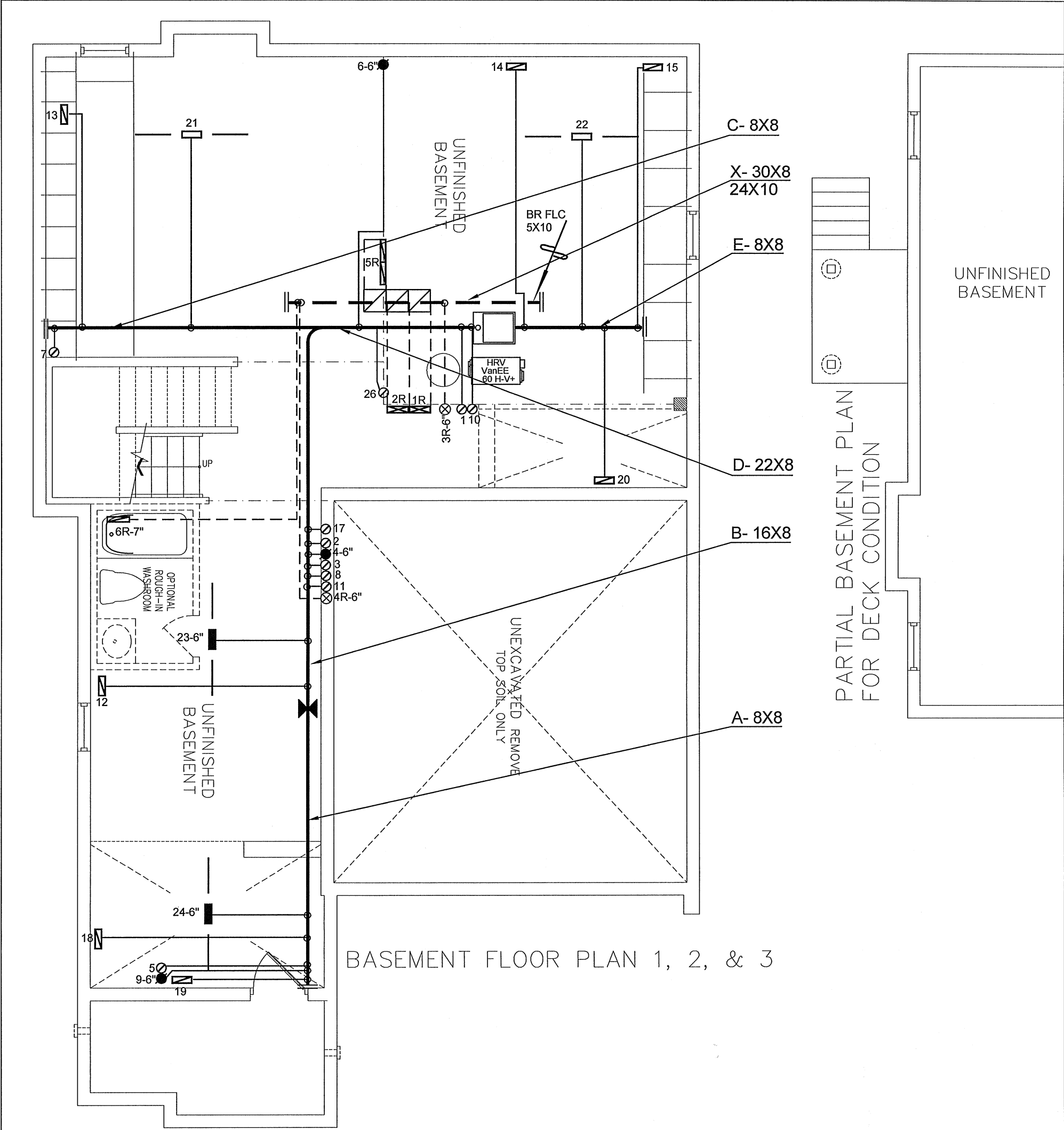
TYPE: ROSEWOOD 2
LO# 75037

Air Infiltration Residential Load Calculator

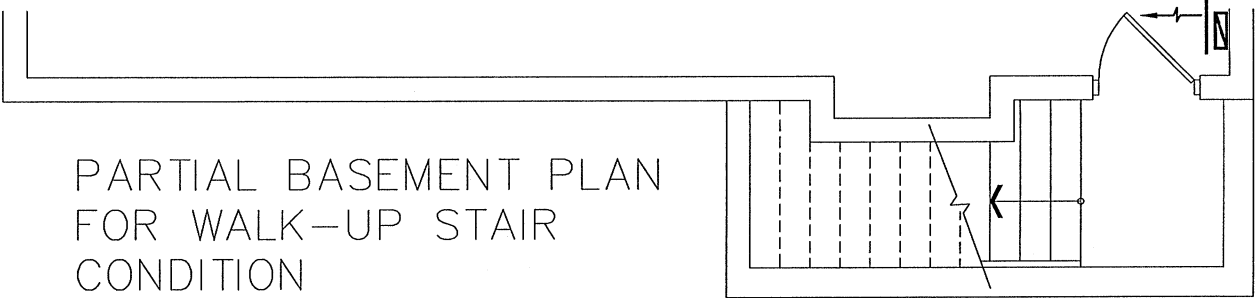
Supplemental tool for CAN/CSA-F280

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):	1038.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1384.3 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 2
LO# 75037



BASEMENT FLOOR PLAN 1, 2, & 3



PARTIAL BASEMENT PLAN FOR WALK-UP STAIR CONDITION

CSA-F280-12
PACKAGE A1

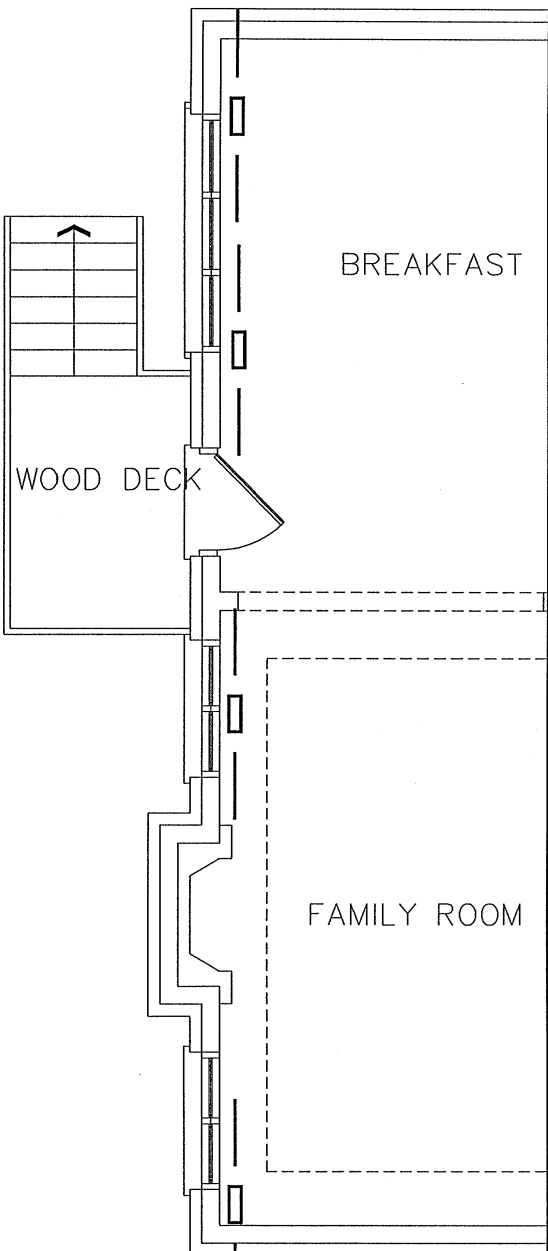
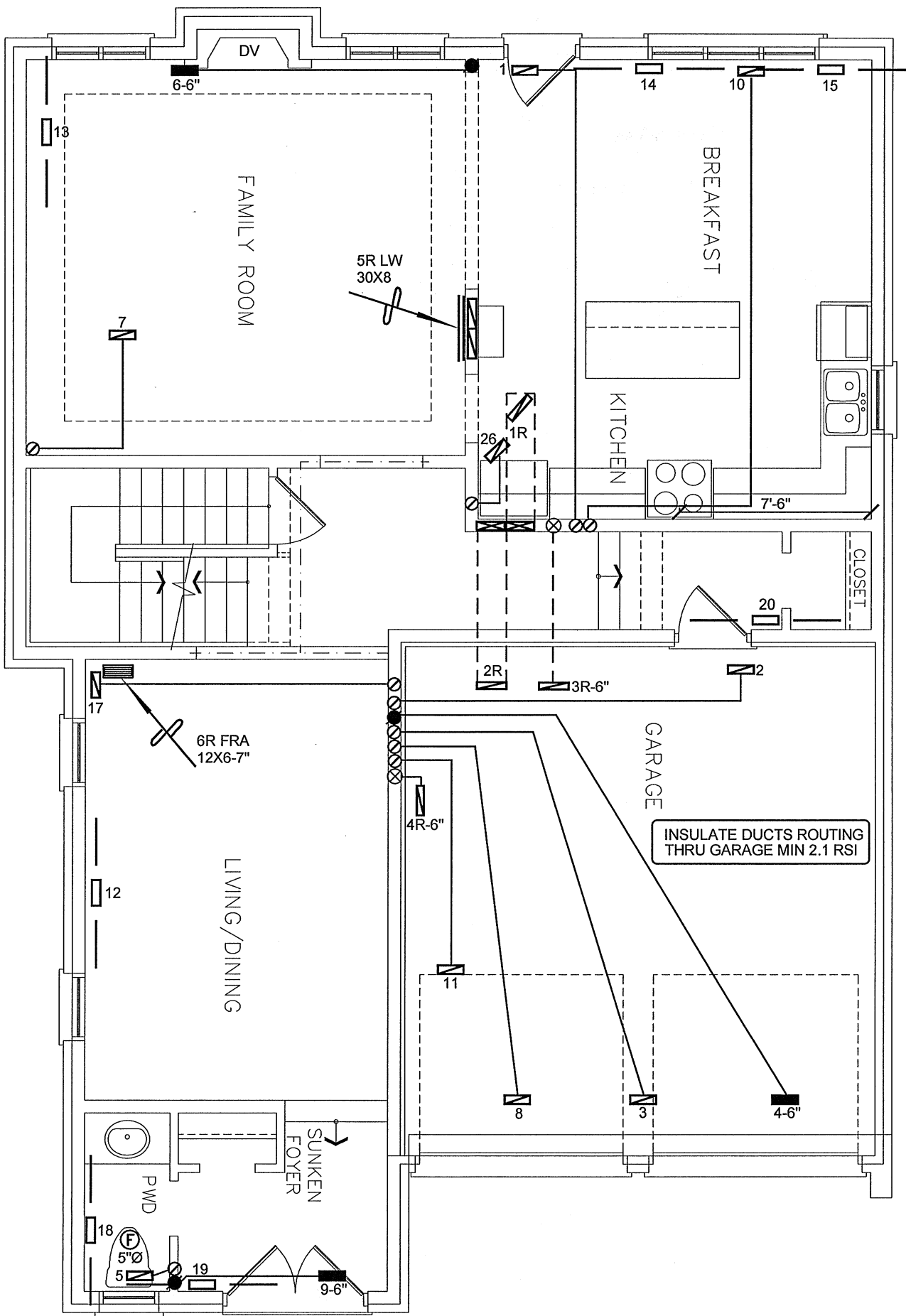
I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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.

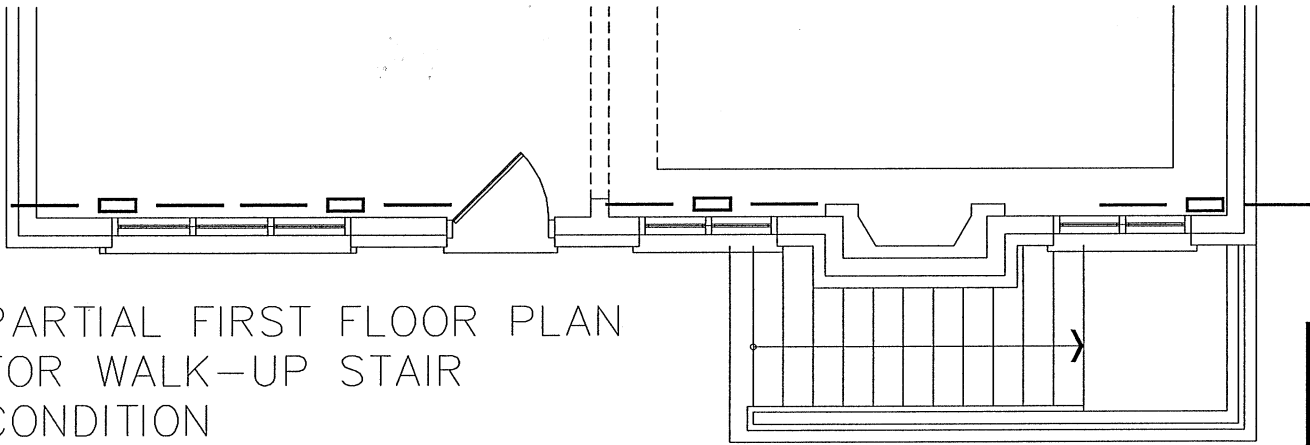
Client GREENPARK HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply 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 47233 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
Project Name RUSSEL GARDENS HAMILTON, ONTARIO			MAKE GOODMAN	3RD FLOOR				BASEMENT HEATING LAYOUT		
			MODEL GMEC960603BNA-60	2ND FLOOR		13	4			3
			INPUT 60 MBTU/H	1ST FLOOR		7	2			2
			OUTPUT 57.6 MBTU/H	BASEMENT		4	1			0
ROSEWOOD 2 2756 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							
		FAN SPEED 1131 cfm @ 0.6" w.c.								
						Date JULY/2017		Scale 3/16" = 1'-0"		
				BCIN# 19669						
				LO#		75037				

ROSEWOOD 2 2756 sqft



PARTIAL FIRST FLOOR PLAN FOR DECK CONDITION

GROUND FLOOR PLAN 1, 2, & 3



PARTIAL FIRST FLOOR PLAN FOR WALK-UP STAIR CONDITION

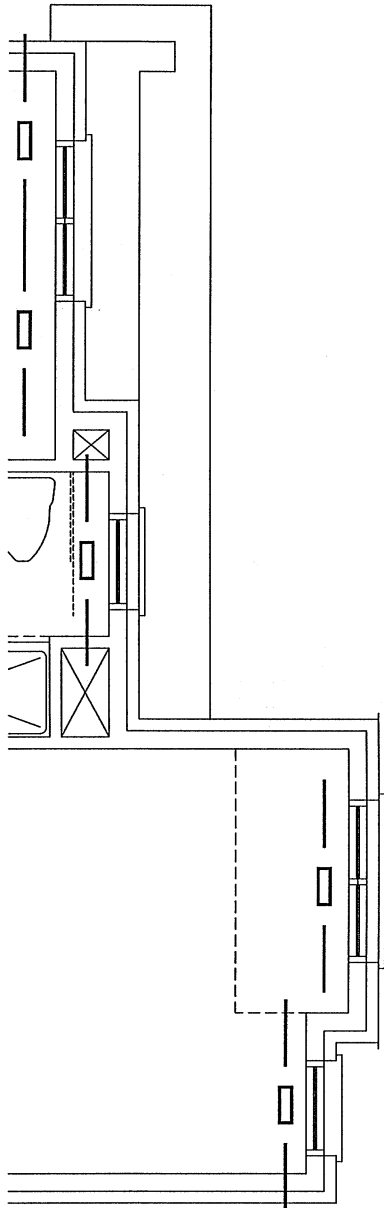
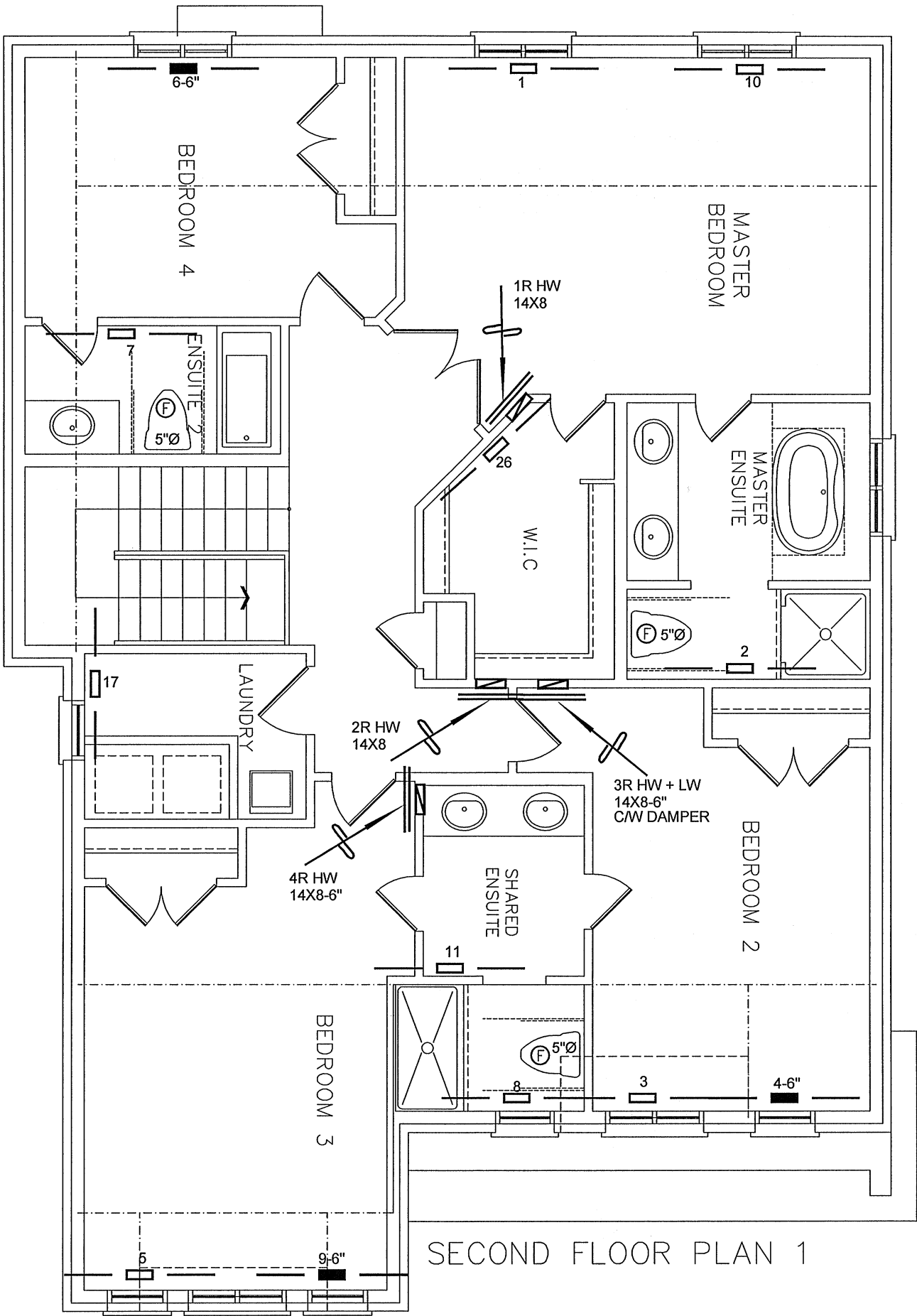
CSA-F280-12
PACKAGE A1

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.

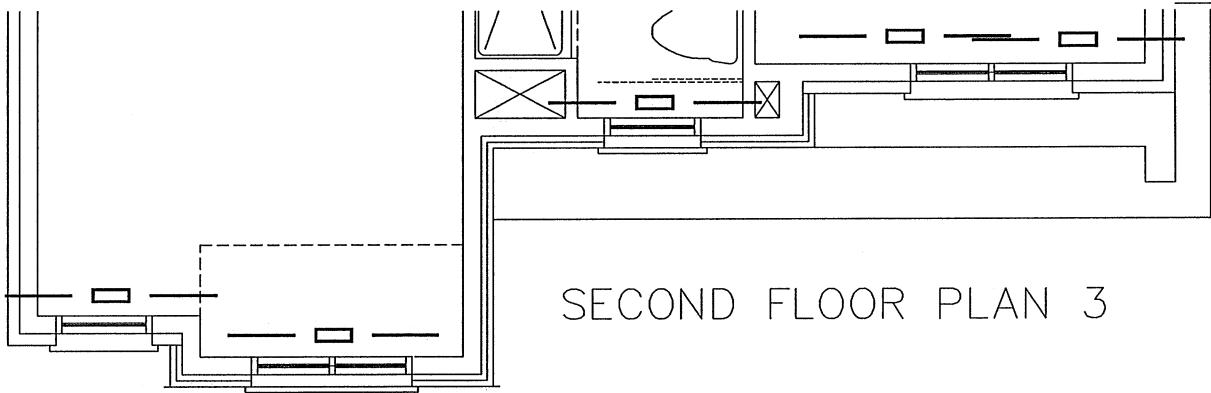
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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		 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	Sheet Title	
GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JULY/2017
RUSSEL GARDENS HAMILTON, ONTARIO			Scale	3/16" = 1'-0"
ROSEWOOD 2 2756 sqft		BCIN# 19669		
		LO#	75037	
		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.		



SECOND FLOOR PLAN 2



SECOND FLOOR PLAN 3

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 2 2756 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 75037	