

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 7 WOB 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.			
January 25, 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 BUILDER: GREENPARK HOMES WOB TYPE: ROSEWOOD 7 GFA: 3193 DATE: Jan-18 LO# 77283 WINTER NATURAL AIR CHANGE RATE 0.365 SUMMER NATURAL AIR CHANGE RATE 0.130 HEAT LOSS AT °F. 71 HEAT GAIN AT °F. 13 CSA-P280-12 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	GRS. WALL AREA	GLAZING	LOSS GAIN	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	ENS-4	HEAT LOSS	HEAT GAIN
GRS. WALL AREA	34	9	306	243	243	243	243	99	285	390	108	81	64	81	54	6	9
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH	19.8	16.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	19.8	24.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	19.8	41.6	36	712	1496	4	79	166	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
DOORS	23.5	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	270	1119	203	231	958	174	245	1016	184	340	1410	255	92	381	69
NET EXPOSED BMT WALL ABOVE GR	3.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.6	285	340	167	182	217	107	188	224	110	126	160	74	90	107	53
NO A T T I C EXPOSED CLG	2.6	1.3	0	0	0	0	0	0	36	92	45	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.4	0	0	0	0	0	0	224	531	96	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	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	0	0
SUB TOTAL HT LOSS	2171	1866	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20
SUB TOTAL HT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEVEL FACTOR / MULTIPLIER	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20
AIR CHANGE HEAT LOSS	886	183	0	0	0	0	0	0	838	206	204	188	216	205	148	27	32
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	349	0	0	0	90	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	1	240	660	0	0	0	0	0	0
HEAT GAIN PEOPLE	2	480	0	0	0	0	0	0	3840	3311	1275	783	991	854	617	395	472
HEAT GAIN APPLIANCES/LIGHTS	2856	4147	1858	820	235	782	3311	4130	4582	2029	784	345	784	472	395	472	395
TOTAL HT LOSS BTU/H	2856	4147	1858	820	235	782	3311	4130	4582	2029	784	345	784	472	395	472	395
TOTAL HT GAIN x 1.3 BTU/H	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147	4147

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	GRS. WALL AREA	GLAZING	LOSS GAIN	OFF	LVIDN	KTIFM	LAUN	WIR	FOY	WIC-2	ENS-3	ENS-4	HEAT LOSS	HEAT GAIN
GRS. WALL AREA	120	10	120	330	330	330	330	330	847	231	130	340	130	81	54	6	9
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH	19.8	16.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	19.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	19.8	24.9	20	395	498	26	514	647	0	0	0	0	0	0	0	0	0
WEST	19.8	41.6	0	0	0	0	0	0	102	2016	4238	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
DOORS	23.5	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.1	0.8	100	416	76	304	1280	228	745	3088	560	46	1079	196	10	235	43
NET EXPOSED BMT WALL ABOVE GR	3.3	0.6	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	0	0	0	0	0	0
NO A T T I C EXPOSED CLG	2.6	1.3	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
BASEMENT/CRAWL HEAT LOSS	0	0	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	0	0
SUB TOTAL HT LOSS	810	573	0.30	0.50	0.30	0.50	0.30	0.50	5105	4798	465	2298	417	417	417	417	417
SUB TOTAL HT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEVEL FACTOR / MULTIPLIER	0.30	0.50	0.30	0.50	0.30	0.50	0.30	0.50	0.30	0.50	0.30	0.50	0.30	0.50	0.30	0.50	0.30
AIR CHANGE HEAT LOSS	401	56	0	0	0	0	0	0	2528	743	336	1138	41	41	41	41	41
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	660	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	1211	1676	2653	2109	7709	660	660	660	7632	2243	1016	3435	991	854	617	395	472
TOTAL HT LOSS BTU/H	1211	1676	2653	2109	7709	660	660	660	7632	2243	1016	3435	991	854	617	395	472
TOTAL HT GAIN x 1.3 BTU/H	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676

TOTAL HEAT GAIN BTU/H: 35161 TONS: 3.01 LOSS DUE TO VENTILATION LOAD BTU/H: 2650 STRUCTURAL HEAT LOSS: 53807 TOTAL COMBINED HEAT LOSS BTU/H: 56256

SITE NAME: RUSSEL GARDENS
BUILDER: GREENPARK HOMES

WOB

DATE: Jan-18

LO# 77293

GFA: 3193

TYPE: ROSEWOOD 7

HEATING CFM	1131	COOLING CFM	1131
TOTAL HEAT LOSS	53,607	TOTAL HEAT GAIN	35,681

furnace filter	0.05
a/c coil pressure	0.2

#GOODMAN
GMEC960603BNA 60

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

	RUN COUNT	4th	3rd	2nd	1st	Bas
	S/A	0	0	13	8	5
	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.

ROOM NAME	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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
RM LOSS MBH	1.43	1.86	0.78	1.92	1.66	1.28	0.78	0.99	0.85	1.43	0.62	1.21	2.65	2.54	2.54	2.54	2.24	1.02	3.44	3.65	3.65	3.65	3.65	3.65
CFM PER RUN HEAT	30	39	16	41	35	27	17	21	18	30	13	26	56	54	54	54	47	21	72	77	77	77	77	77
RM GAIN MBH	2.07	0.82	0.24	2.29	2.07	2.03	0.34	0.78	0.47	2.07	0.39	1.68	2.11	2.57	2.57	2.57	1.42	0.66	0.59	0.71	0.71	0.71	0.71	
CFM PER RUN COOLING	66	26	7	73	65	64	11	25	15	66	13	53	67	81	81	81	45	21	19	23	23	23	23	
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	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
ACTUAL DUCT LGH	58	71	37	48	54	50	44	36	38	49	38	28	18	51	43	51	34	39	33	42	37	18	28	28
EQUIVALENT LENGTH	200	220	170	140	180	150	200	120	170	160	180	130	160	130	160	170	130	130	100	130	100	100	140	140
TOTAL EFFECTIVE LENGTH	258	291	207	188	234	200	244	156	208	209	218	158	178	181	203	221	164	169	133	172	137	158	168	168
ADJUSTED PRESSURE	0.07	0.06	0.08	0.09	0.07	0.09	0.07	0.11	0.08	0.08	0.08	0.11	0.1	0.09	0.08	0.07	0.1	0.1	0.13	0.1	0.13	0.11	0.1	
ROUND DUCT SIZE	5	4	4	5	5	5	4	4	4	5	4	4	5	5	5	6	4	4	5	5	5	5	5	
HEATING VELOCITY (ft/min)	220	447	184	301	257	198	195	241	207	220	149	298	411	396	396	275	539	241	529	565	565	565	565	
COOLING VELOCITY (ft/min)	485	298	80	536	477	470	126	287	172	485	149	608	492	595	595	413	516	241	140	169	169	169	169	
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	
TRUNK	A	B	B	D	C	B	D	D	D	A	D	D	D	A	A	A	B	C	C	A	A	B	B	C

	25	26	27
RUN #	BED-2	BED-3	BAS
ROOM NAME	BED-2	BED-3	BAS
RM LOSS MBH	1.92	1.66	3.65
CFM PER RUN HEAT	41	35	77
RM GAIN MBH	2.29	2.07	0.71
CFM PER RUN COOLING	73	65	23
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH	42	50	62
EQUIVALENT LENGTH	130	150	200
TOTAL EFFECTIVE LENGTH	172	200	262
ADJUSTED PRESSURE	0.1	0.09	0.07
ROUND DUCT SIZE	5	5	6
HEATING VELOCITY (ft/min)	301	257	393
COOLING VELOCITY (ft/min)	536	477	117
OUTLET GRILL SIZE	3X10	3X10	4X10
TRUNK	D	C	A

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	415	0.06	10.8	14	8						TRUNK O	0	0.05	0	0	8			
TRUNK B	659	0.06	12.9	20	8	TRUNK G	0	0.00	0	x	TRUNK P	0	0.05	0	0	8			
TRUNK C	240	0.07	8.5	8	593	TRUNK H	0	0.00	0	x	TRUNK Q	0	0.05	0	0	8			
TRUNK D	473	0.07	11	14	540	TRUNK I	0	0.00	0	x	TRUNK R	0	0.05	0	0	8			
TRUNK E	1132	0.06	15.8	28	608	TRUNK J	0	0.00	0	x	TRUNK S	0	0.05	0	0	8			
TRUNK F	0	0.00	0	0	728	TRUNK K	0	0.00	0	x	TRUNK T	0	0.05	0	0	8			
					8	TRUNK L	0	0.00	0	x	TRUNK U	0	0.05	0	0	8			
					0						TRUNK V	0	0.05	0	0	8			
					6						TRUNK W	0	0.05	0	0	8			
RETURN AIR #	1	2	3	4	5					BR	TRUNK X	756	0.05	14.2	24	567			
AIR VOLUME	135	85	155	155	300	0	0	0	0	0	TRUNK Y	0	0.05	0	0	0			
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0	0	0	0	0	TRUNK Z	0	0.05	0	0	0			
ACTUAL DUCT LGH.	52	47	46	49	31	0.15	0.15	0.15	0.15	0.15	TRUNK Z	0	0.05	0	0	0			
EQUIVALENT LENGTH	220	135	155	175	140	1	1	1	1	1	DROP	1131	0.05	16.5	24	679			
TOTAL EFFECTIVE LH	272	182	201	264	206	1	1	1	1	1									
ADJUSTED PRESSURE	0.05	0.08	0.07	0.06	0.07	0.15	0.15	0.15	0.15	0.15									
ROUND DUCT SIZE	7.5	5.6	7.2	7.5	9.2	14.80	14.80	14.80	14.80	14.80									
INLET GRILL SIZE	8	8	8	8	8	0	0	0	0	0									
						0	0	0	0	0									
INLET GRILL SIZE	14	14	14	14	30	0	0	0	0	0									

TYPE: ROSEWOOD 7
SITE NAME: RUSSEL GARDENS

LO # 77293
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	<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>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Other Rooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Table 9.32.3.A.	TOTAL	<u>201.4</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		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>201.4</u>	cfm
Less Principal Ventil. Capacity	<u>139</u>	cfm
Required Supplemental Capacity	<u>62.4</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
ENS-2	QTXEN050C	50	☒	0.3
ENS-4	QTXEN050C	50	☒	0.3
W/R	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:	January-18

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: ROSEWOOD 7	WOB	BUILDER: GREENPARK HOMES
SFQT: 3193	LO# 77293	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)	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):	43587.0	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:	6.5 ft
LENGTH: 63.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	149.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	43.0 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	-

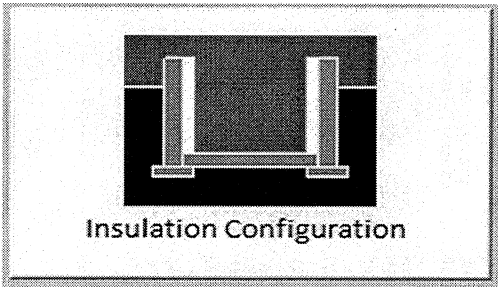
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

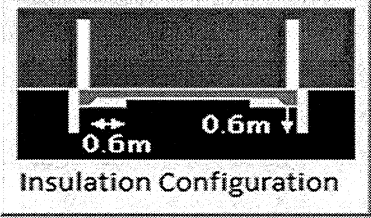
Weather Station Description		
Province:	Ontario	
Region:	Hamilton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	10.1	
Exposed Perimeter (m):	45.4	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.67	
Window Area (m ²):	1.4	
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):		658

TYPE: ROSEWOOD 7
LO# 77293

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):	1.5	
Width (m):	10.1	
Exposed Perimeter (m):	13.1	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		162

TYPE: ROSEWOOD 7
LO# 77293

WOB

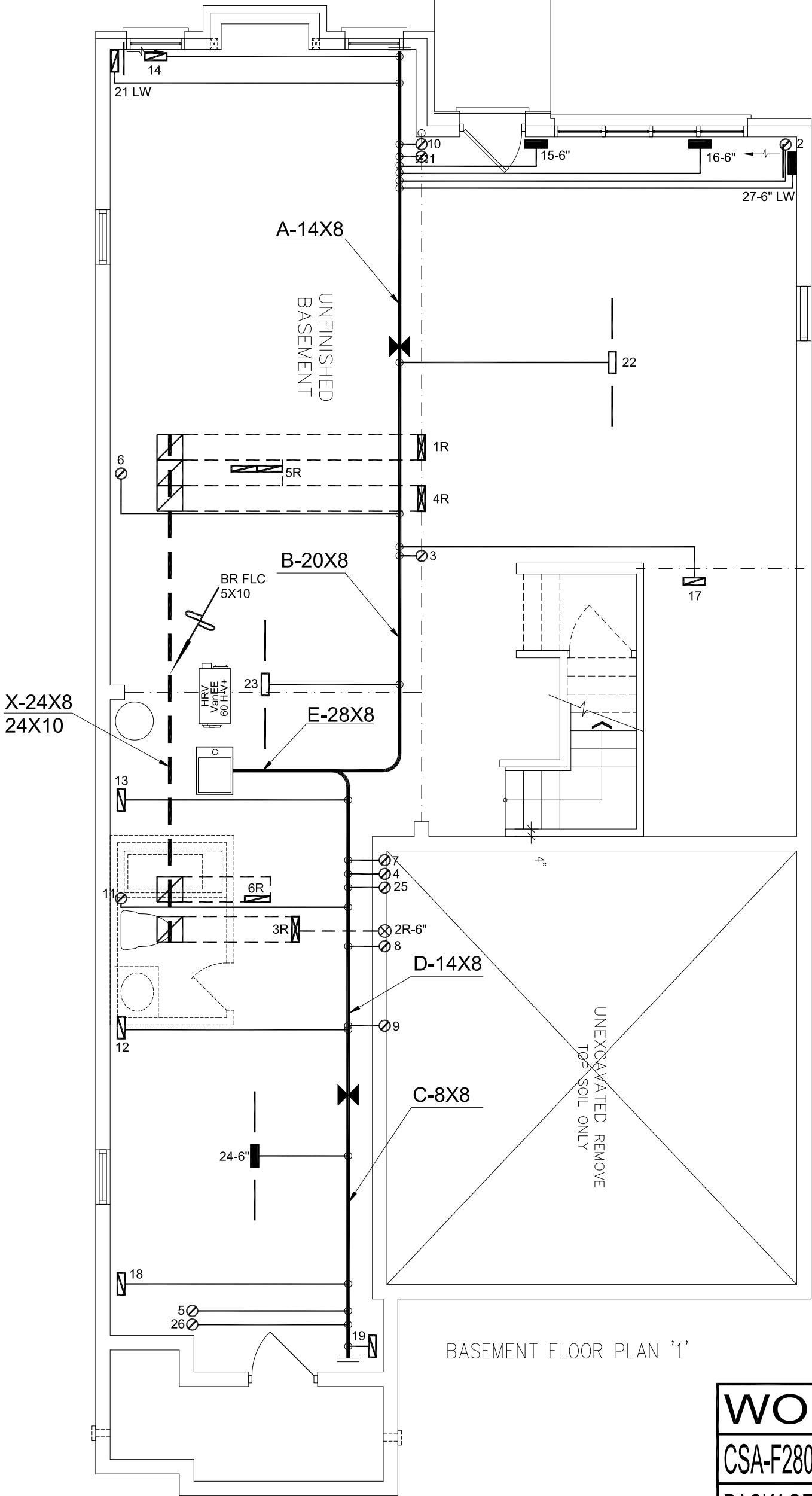
Air Infiltration Residential Load Calculator

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:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	8.53			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1234.2			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa. 3.57	1645.3 cm ² ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply 65.6	Total Exhaust 65.6		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.365			
Cooling Air Leakage Rate (ACH/H):	0.130			

TYPE: ROSEWOOD 7
LO# 77293

WOB



BASEMENT FLOOR PLAN '1'

WOB

CSA-F280-12

PACKAGE A1

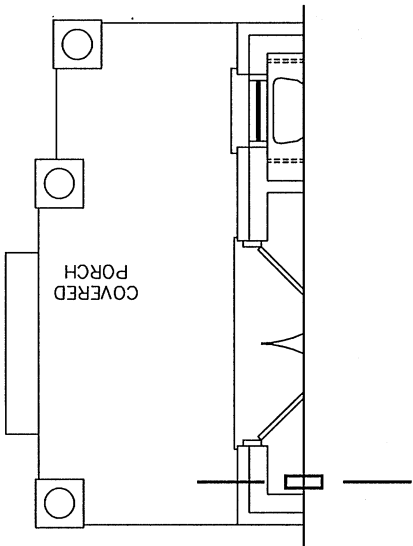
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

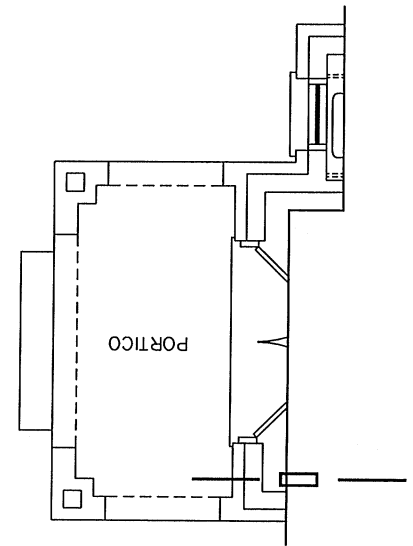
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	WUB CONDITION ADDED	FEB/2018
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		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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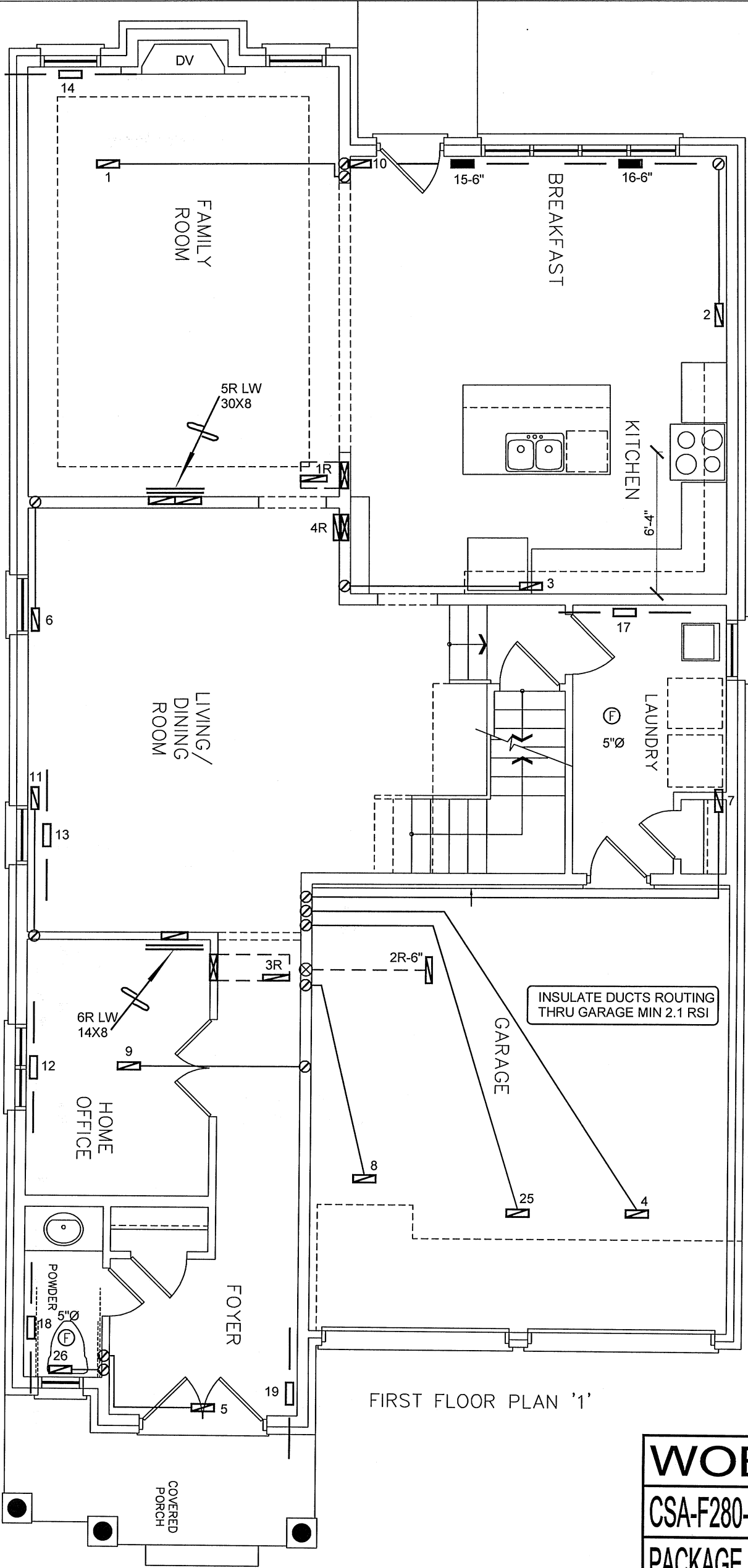
Client		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services		HEAT LOSS 56256 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GREENPARK HOMES				MAKE GOODMAN		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name		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.		MODEL GMEC960603BNA-60		2ND FLOOR 13 4 4			Date JAN/2018	
RUSSEL GARDENS HAMILTON, ONTARIO				INPUT 60 MBTU/H		1ST FLOOR 8 2 3				
WOB ROSEWOOD 7 3193 sqft				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			Scale 3/16" = 1'-0"	
				COOLING 3.0 TONS					BCIN# 19669	
				FAN SPEED 1131 cfm @ 0.5" w.c.					LO# 77293	



FIRST FLOOR PLAN '2'



FIRST FLOOR PLAN '3'



FIRST FLOOR PLAN '1'

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.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR 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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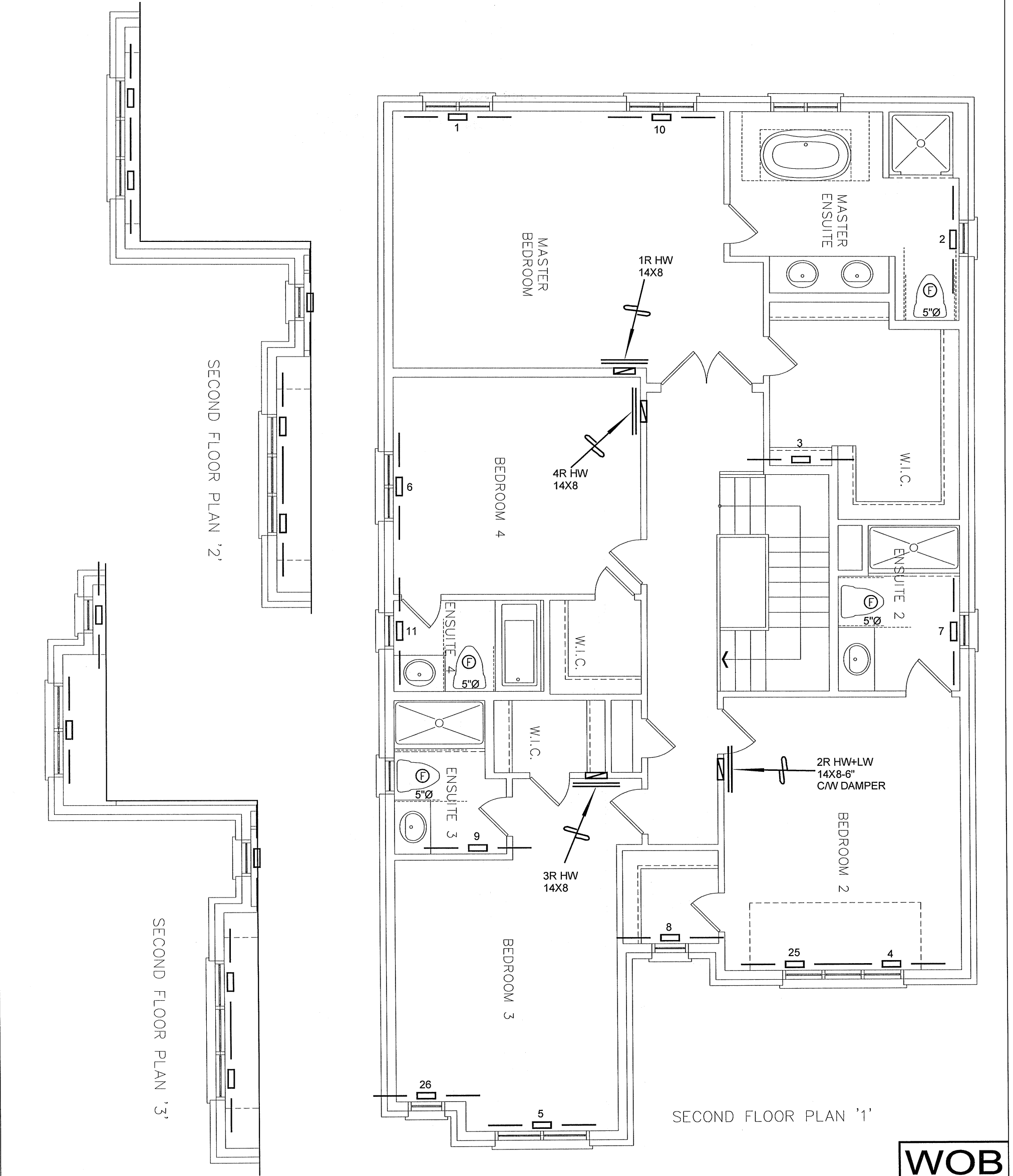
Client
GREENPARK HOMES
Project Name
**RUSSEL GARDENS
HAMILTON, ONTARIO**
WOB
ROSEWOOD 7 3193 sqft

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

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 **JAN/2018**
Scale **3/16" = 1'-0"**
BCIN# 19669
LO# **77293**



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
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	FLOOR 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

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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 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	JAN/2018
RUSSEL GARDENS HAMILTON, ONTARIO			Scale	3/16" = 1'-0"
WOB			BCIN# 19669	
ROSEWOOD 7	3193 sqft		LO#	77293