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 VAUGHAN	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	☒ HVAC – House	☐ Building Structural
☐ Small Buildings	☐ Building Services	☐ Plumbing – House
☐ Large Buildings	☐ Detection, Lighting and Power	☐ Plumbing – All Buildings
☐ Complex Buildings	☐ Fire Protection	☐ 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: 25-3 – OPT 2ND

Project: KLEINBURG GLEN

D. Declaration of Designer

I MICHAEL O'ROURKE declare that (choose one as appropriate):
(print name)

☐ 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: 19669
Basis for exemption from registration and qualification: O.B.C SENTENCE 3.2.4.1 (4)

☐ 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 18, 2016
Date

Signature of Designer

NOTE:

1. 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.

2. 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.

HVAC DESIGNS LTD.

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Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: KLEINGBURG GLEN | OPT 2nd | DATE: Jan-16 | WINTER NATURAL AIR CHANGE RATE 0.300 | HEAT LOSS ΔT °F. 76 | CSA-F280-12
BUILDER: GOLD PARK HOMES | TYPE: 25-3 | GFA: 2013 | LO# 66858 | SUMMER NATURAL AIR CHANGE RATE 0.091 | HEAT GAIN ΔT °F. 15 | SB-12 PACKAGE J

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH		
EXP. WALL			29			20			6			20			26			29			33		
CLG. HT.			10			9			9			9			9			9			9		
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN	276			180			54			180			234			261			297		
GLAZING			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN	
NORTH	24.1	17.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	24.1	42.7	24	578	1025	14	337	598	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	24.1	26.1	0	0	0	0	0	0	0	0	0	16	385	417	22	530	574	0	0	0	6	145	156
WEST	24.1	42.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	651	1154	23	554	983
SKYLT.	24.1	87.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.7	252	869	171	166	573	113	54	187	37	164	567	112	212	732	145	234	808	160	268	926	183
NET EXPOSED BSMT WALL ABOVE GR	6.3	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.5	0.7	198	301	147	96	146	71	48	73	36	190	289	141	246	374	182	198	301	147	162	246	120
NO ATTIC EXPOSED CLG	2.5	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198	485	96	0	0	0
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0			0			0	
SLAB ON GRADE HEAT LOSS				0			0			0			0			0			0			0	
SUBTOTAL HT LOSS				1748			1057			260			1241			1636			2245			1871	
SUB TOTAL HT GAIN					1343			782			72			670			900			1555			1442
LEVEL FACTOR / MULTIPLIER			0.20	0.21		0.20	0.21		0.20	0.21		0.20	0.21		0.20	0.21		0.20	0.21		0.20	0.21	
AIR CHANGE HEAT LOSS				374			226			56			266			351			481			401	
AIR CHANGE HEAT GAIN					69			40			4			34			46			79			74
DUCT LOSS				0			0			0			0			0			273			0	
DUCT GAIN					0			0			0			0			0			249			0
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0
HEAT GAIN APPLIANCES/LIGHTS					620			0			0			620			620			620			0
TOTAL HT LOSS BTU/H				2122			1283			315			1507			1987			2999			2271	
TOTAL HT GAIN x 1.3 BTU/H					3266			1069			99			2033			2348			3568			1970

ROOM USE				GRT			KIT						W/R			FOY					BAS		
EXP. WALL				38			45						18			61					160		
CLG. HT.				9			9						9			9					9		
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN		342			405						162			549					1120		
GLAZING				LOSS	GAIN		LOSS	GAIN					LOSS	GAIN		LOSS	GAIN				LOSS	GAIN	
NORTH	24.1	17.1		0	0	0	0	0	0				0	0	0	0	0	0			0	0	0
EAST	24.1	42.7		0	0	0	64	1542	2734				0	0	0	0	0	0			6	145	256
SOUTH	24.1	26.1		40	964	1043	0	0	0				0	0	0	0	0	0			6	145	156
WEST	24.1	42.7		0	0	0	0	0	0				0	0	0	0	0	0			0	0	0
SKYLT.	24.1	87.8		0	0	0	0	0	0				0	0	0	0	0	0			0	0	0
DOORS	25.2	5.0		0	0	0	0	0	0				20	505	100	40	1010	199			20	505	100
NET EXPOSED WALL	3.5	0.7		302	1043	206	341	1178	233				142	491	97	509	1758	347			0	0	0
NET EXPOSED BSMT WALL ABOVE GR	6.3	1.3		0	0	0	0	0	0				0	0	0	0	0	0			320	2027	400
EXPOSED CLG	1.5	0.7		0	0	0	0	0	0				0	0	0	0	0	0			0	0	0
NO ATTIC EXPOSED CLG	2.5	1.2		0	0	0	0	0	0				0	0	0	0	0	0			0	0	0
EXPOSED FLOOR	2.5	0.5		0	0	0	0	0	0				0	0	0	0	0	0			0	0	0
BASEMENT/CRAWL HEAT LOSS					0			0						0			0					5140	
SLAB ON GRADE HEAT LOSS					0			0						0			0						
SUBTOTAL HT LOSS					2007			2720						996			2768					7961	
SUB TOTAL HT GAIN						1249			2967						196			546					912
LEVEL FACTOR / MULTIPLIER				0.30	0.38		0.30	0.38					0.30	0.38		0.30	0.38				0.50	0.68	
AIR CHANGE HEAT LOSS					764			1035						379			1054					5386	
AIR CHANGE HEAT GAIN						64			151						10			28					47
DUCT LOSS					0			0						0			0					0	
DUCT GAIN						0			0						0			0					0
HEAT GAIN PEOPLE	240			0		0	1		240				0		0	0		0			0		0
HEAT GAIN APPLIANCES/LIGHTS						620			620						0			0					0
TOTAL HT LOSS BTU/H					2771			3755						1374			3822					13347	
TOTAL HT GAIN x 1.3 BTU/H						2512			5172						268			747					1247

TOTAL HEAT GAIN BTU/H: 24821 TONS: 2.07 LOSS DUE TO VENTILATION LOAD BTU/H: 2651 STRUCTURAL HEAT LOSS: 37554 TOTAL COMBINED HEAT LOSS BTU/H: 40205

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.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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SITE NAME: KLEINGBURG GLEN
BUILDER: GOLD PARK HOMES

OPT 2nd
TYPE: 25-3

DATE: Jan-16 GFA: 2013 LO# 66858

HEATING CFM	700	COOLING CFM	700	furnace pressure	0.6		
TOTAL HEAT LOSS	37,554	TOTAL HEAT GAIN	24,297	furnace filter	0.05		
AIR FLOW RATE CFM	18.64	AIR FLOW RATE CFM	28.81	a/c coil pressure	0.2		
				available pressure for s/a & r/a	0.35		
				plenum pressure s/a	0.18	r/a pressure	0.17
				max s/a dif press. loss	0.02	r/a grille press. Loss	0.02
				min adjusted pressure s/a	0.16	adjusted pressure r/a	0.15

.LENNOX
EL195UH045XE24B 45

FAN SPEED	
LOW	0
MEDLOW	0
MEDIUM	0
MEDIUM HIGH	700
HIGH	800

AFUE = 95.0 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = **42,000**

DESIGN CFM = 700
CFM @ .6 " E.S.P.

TEMPERATURE RISE 56 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	7	6	3
R/A	0	0	3	1	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	13	14	15	16	18	19	21	23	24
ROOM NAME	MBR	ENS	WIC	BED-3	BED-4	BED-2	BATH	GRT	GRT	KIT	KIT	W/R	FOY	BAS	BAS	BAS
RM LOSS MBH.	2.12	1.28	0.32	1.99	3.00	1.51	2.27	1.39	1.39	1.88	1.88	1.37	3.82	4.45	4.45	4.45
CFM PER RUN HEAT	40	24	6	37	56	28	42	26	26	35	35	26	71	83	83	83
RM GAIN MBH.	3.27	1.07	0.10	2.35	3.57	2.03	1.97	1.26	1.26	2.59	2.59	0.27	0.75	0.42	0.42	0.42
CFM PER RUN COOLING	94	31	3	68	103	59	57	36	36	74	74	8	22	12	12	12
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16
ACTUAL DUCT LGH.	44	44	42	53	49	53	61	19	19	24	22	19	41	22	18	38
EQUIVALENT LENGTH	170	170	160	110	160	170	160	110	140	100	100	120	100	90	100	120
TOTAL EFFECTIVE LENGTH	214	214	202	163	209	223	221	129	159	124	122	139	141	112	118	158
ADJUSTED PRESSURE	0.08	0.08	0.09	0.11	0.08	0.08	0.08	0.13	0.11	0.14	0.14	0.12	0.12	0.14	0.14	0.1
ROUND DUCT SIZE	6	4	4	5	6	5	5	4	4	5	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	204	275	69	272	286	206	308	298	298	257	257	298	521	609	609	609
COOLING VELOCITY (ft/min)	479	356	34	499	525	433	419	413	413	543	543	92	162	88	88	88
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	C	C	C	B	A	B	A	B	C	C	C	B	A	C	B	A

RUN #	
ROOM NAME	
RM LOSS MBH.	
CFM PER RUN HEAT	
RM GAIN MBH.	
CFM PER RUN COOLING	
ADJUSTED PRESSURE	
ACTUAL DUCT LGH.	
EQUIVALENT LENGTH	
TOTAL EFFECTIVE LENGTH	
ADJUSTED PRESSURE	
ROUND DUCT SIZE	
HEATING VELOCITY (ft/min)	
COOLING VELOCITY (ft/min)	
OUTLET GRILL SIZE	
TRUNK	

SUPPLY 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 A	252	0.08	8.4	8	x	8	567	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	452	0.08	10.4	12	x	8	678	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	249	0.08	8.3	8	x	8	560	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK O	0	0.07	0	0	x	8	0
TRUNK P	0	0.07	0	0	x	8	0
TRUNK Q	0	0.07	0	0	x	8	0
TRUNK R	0	0.07	0	0	x	8	0
TRUNK S	0	0.07	0	0	x	8	0
TRUNK T	0	0.07	0	0	x	8	0
TRUNK U	0	0.07	0	0	x	8	0
TRUNK V	0	0.07	0	0	x	8	0
TRUNK W	0	0.07	0	0	x	8	0
TRUNK X	700	0.07	12.7	18	x	8	700
TRUNK Y	0	0.07	0	0	x	8	0
TRUNK Z	0	0.07	0	0	x	8	0
DROP	700	0.07	12.7	24	x	10	420

RETURN AIR #	1	2	3	4												BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	120	85	85	295	0	0	0	0	0	0	0	0	0	0	0	115
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
ACTUAL DUCT LGH.	49	34	53	12	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	175	175	155	140	0	0	0	0	0	0	0	0	0	0	0	145
TOTAL EFFECTIVE LH	224	209	208	152	1	1	1	1	1	1	1	1	1	1	1	159
ADJUSTED PRESSURE	0.07	0.07	0.07	0.10	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
ROUND DUCT SIZE	6.6	5.8	5.8	8.4	0	0	0	0	0	0	0	0	0	0	0	6.1
INLET GRILL SIZE	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	14

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.

[signature] INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

TYPE: 25-3 LO # 66858
SITE NAME: KLEINGBURG GLEN OPT 2nd

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	4	@ 10.6 cfm	42.4	cfm
Other Rooms	1	@ 10.6 cfm	10.6	cfm
Table 9.32.3.A.		TOTAL	127.2	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
More than 5 - Part 6	**TOTAL**	**79.5**	**cfm**

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	127.2	cfm
Less Principal Ventil. Capacity	95	cfm
Required Supplemental Capacity	32.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 50H Location: BSMT

95.0 cfm 3.0 sones [✓] HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM		ΔT °F		FACTOR		% LOSS
95.0 CFM	X	76 F	X	1.08	X	0.34

SUPPLEMENTAL FANS NUTONE

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
W/R	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE 50H

95 cfm high 48 cfm low

66 % Sensible Efficiency @ 32 deg F (0 deg C) [✓] HVI Approved

LOCATION OF INSTALLATION

Lot: Concession

Township Plan:

Address

Roll # Building Permit #

BUILDER: GOLD PARK 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: Michael O'Rourke.

HRAI # 001820

Date: January-16

I REVIEW AND TAKE RESPONIBILITY 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. MICHAEL O'ROURKE

HVAC DESIGNS LTD.
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 25-3 OPT 2nd **BUILDER:** GOLD PARK HOMES
SFQT: 2013 **LO#** 66858 **SITE:** KLEINGBURG GLEN

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	73

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	WEST	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):	26406.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD ($Btu/h/ft^2$):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 61.0 ft	WIDTH: 19.0 ft	EXPOSED PERIMETER:	160.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component	Compliance Package J
Ceiling with Attic Space Minimum RSI (R)-Value	50
Ceiling Without Attic Space Minimum RSI (R)-Value	31
Exposed Floor Minimum RSI (R)-Value	31
Walls Above Grade Minimum RSI (R)-Value	22
Basement Walls Minimum RSI (R)-Value	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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10
Windows and Sliding Glass Doors Maximum U-Value	1.8
Skylights Maximum U-Value	2.8
Space Heating Equipment Minimum AFUE	0.94
HRV Minimum Efficiency	60%
Domestic Hot Water Heater Minimum EF	0.67

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Michael O'Rourke

HVAC Designs Ltd.
375 Finley Ave. Suite 202
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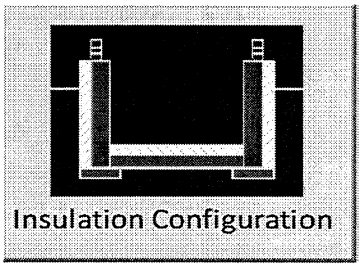
905.619.2300

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Ontario
Region:	Vaughan (Woodbridge)
Site Description	
Soil Conductivity:	Normal conductivity: dry sand, loam, clay
Water Table:	Normal (7-10 m, 23-33 Ft)

Foundation Dimensions		
Floor Length (m):	18.6	 Insulation Configuration
Floor Width (m):	5.8	
Exposed Perimeter (m):	0	
Wall Height (m):	2.7	
Depth Below Grade (m):	2.1	
Window Area (m^2):	1.1	
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):	**1654**	

48.8 2.6 130.66 129.86

HVAC Designs Ltd.
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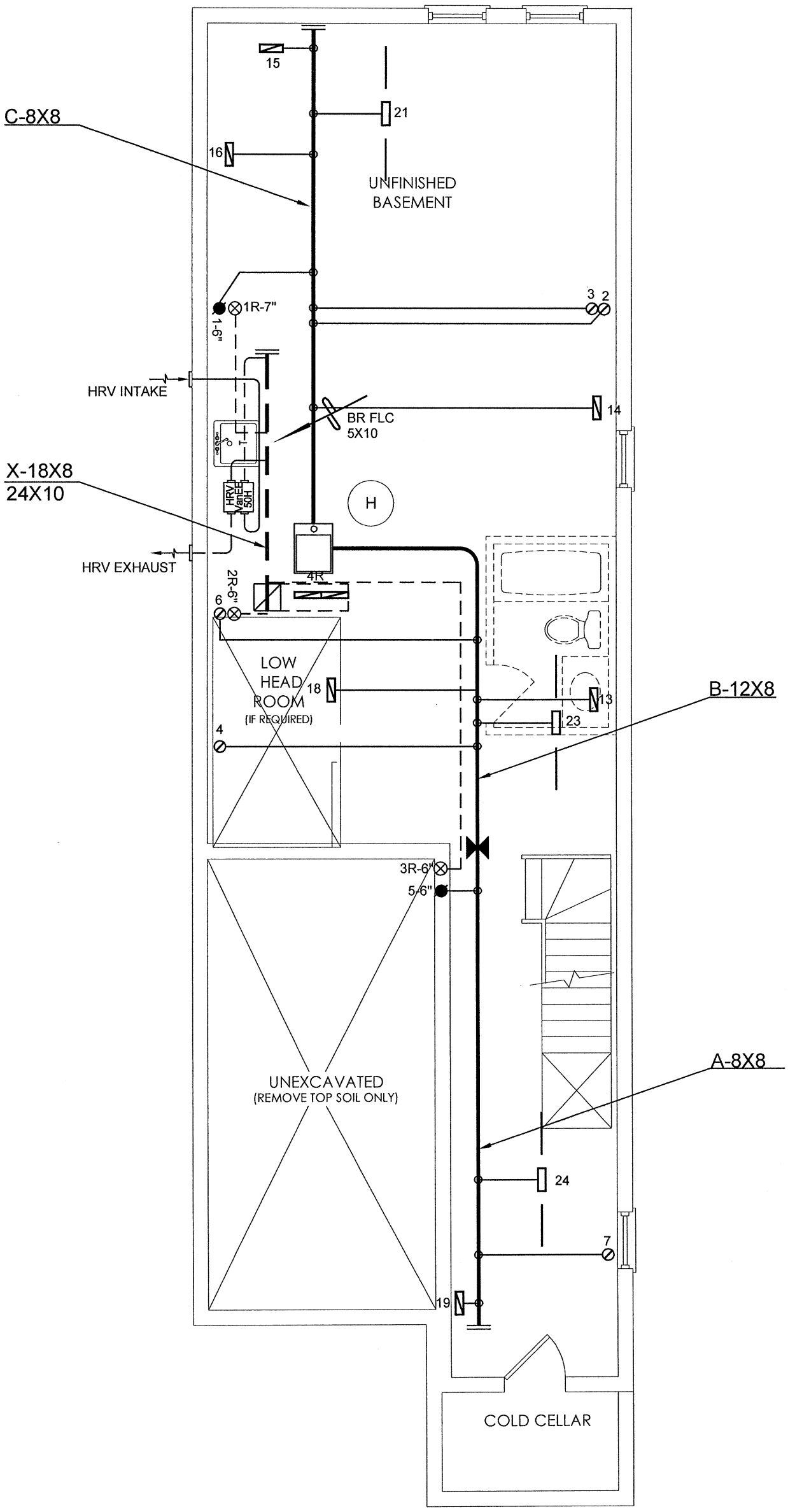
Ajax ON, L1S 2E2
905.619.2300

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Ontario
Region:	Vaughan (Woodbridge)
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):	6.1
Building Configuration	
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	747.7
Air Leakage/Ventilation	
Air Tightness Type:	Present (1961-) (ACH=3.57)
Custom BDT Data:	ELA @ 10 Pa. 716.42 cm^2
	3.57 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply: 0 Total Exhaust: 0
Flue Size	
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Natural Infiltration Rates	
Heating Air Change Rate (ACH/H):	**0.300**
Cooling Air Change Rate (ACH/H):	**0.091**



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, BCIN# 19669
HVAC DESIGNS LTD.

OPT. BASEMENT PLAN ELEV. 'A' & 'B'

CSA-F280-12

PACKAGE J

HVAC LEGEND

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
3.		
2.		
1.		

REVISIONS

Client

GOLD PARK HOMES

Project Name

KLEINBURG GLEN
VAUGHAN, ONTARIO

25-3 OPT. 2ND 2013 sqft

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
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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 40205 BTU/H	
UNIT DATA	
MAKE	LENNOX
MODEL	EL195UH045XE24B-45
INPUT	44 MBTU/H
OUTPUT	42 MBTU/H
COOLING	2.0 TONS
FAN SPEED	700 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	3	2
1ST FLOOR	6	1	2
BASEMENT	3	1	0

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

Sheet Title

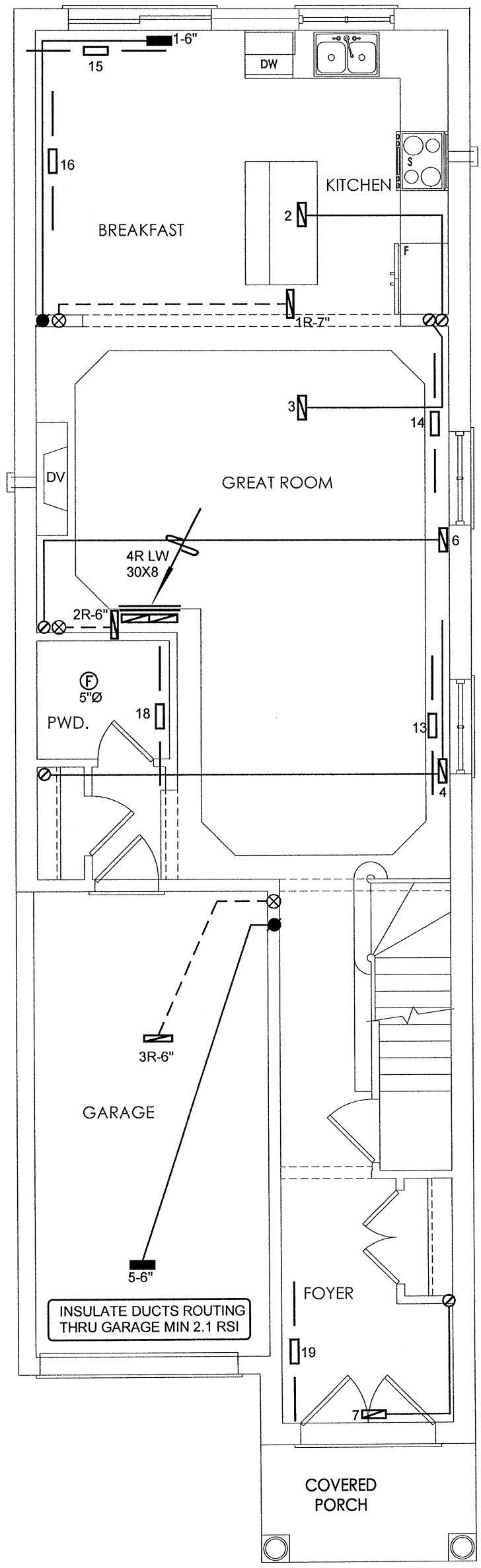
BASEMENT HEATING LAYOUT

Date JAN/2016

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 66858



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

OPT. GROUND FLOOR PLAN ELEV. 'A'

CSA-F280-12

PACKAGE J

HVAC LEGEND

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
3.		
2.		
1.		

REVISIONS

Client
GOLD PARK HOMES

Project Name
KLEINBURG GLEN
VAUGHAN, ONTARIO

25-3 OPT. 2ND 2013 sqft

HVAC DESIGNS LTD.
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L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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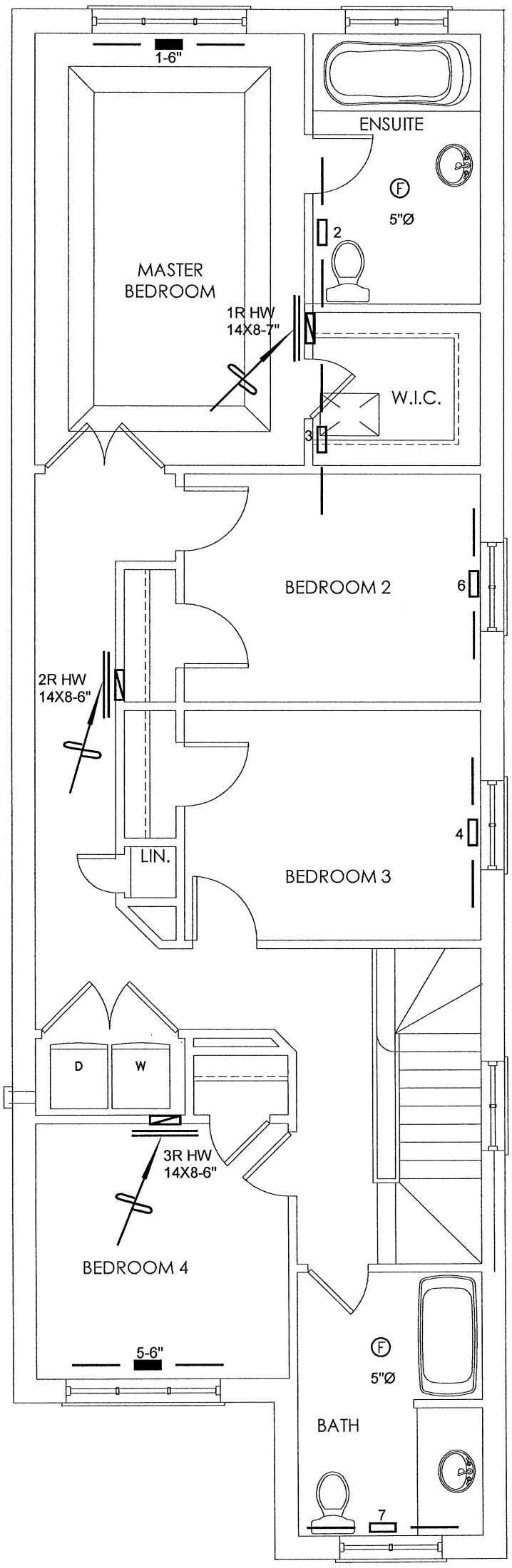
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

Sheet Title
GROUND FLOOR HEATING LAYOUT

Date JAN/2016
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 66858



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

OPTIONAL SECOND FLOOR PLAN ELEV. 'A'

CSA-F280-12

PACKAGE J

HVAC LEGEND

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
3.		
2.		
1.		

REVISIONS

Client
GOLD PARK HOMES

Project Name
KLEINBURG GLEN
VAUGHAN, ONTARIO

25-3 OPT. 2ND 2013 sqft

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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

Date JAN/2016
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 66858