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		Firm		
MICHAEL O'ROURKE		**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: 42-2

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

SITE NAME: KLEINBURG GLEN | DATE: Jan-16 | WINTER NATURAL AIR CHANGE RATE 0.322 | HEAT LOSS ΔT °F. 76 | CSA-F280-12

BUILDER: GOLD PARK HOMES | TYPE: 42-2 | GFA: 3084 | LO# 66887 | SUMMER NATURAL AIR CHANGE RATE 0.098 | HEAT GAIN ΔT °F. 16 | SB-12 PACKAGE J

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH			WIC-2				ENS2		
EXP. WALL			37			26			11			19			13			12			14			12				6		
CLG. HT.			9			9			9			9			9			9			9			9				9		
	FACTORS																													
GRS.WALL AREA	LOSS	GAIN	333			234			99			171			117			108			126			108				54		
GLAZING			LOSS		GAIN	LOSS		GAIN	LOSS		GAIN	LOSS		GAIN	LOSS		GAIN	LOSS		GAIN	LOSS		GAIN	LOSS		GAIN		LOSS		GAIN
NORTH	24.1	17.5	0	0	0	7	169	122	0	0	0	0	0	0	0	0	0	16	385	279	7	169	122	0	0	0		0	0	0
EAST	24.1	43.0	32	771	1377	28	675	1205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0
SOUTH	24.1	26.4	0	0	0	0	0	0	0	0	0	16	385	422	0	0	0	0	0	0	0	0	0	0	0	0		7	169	185
WEST	24.1	43.0	0	0	0	0	0	0	0	0	0	0	0	0	33	795	1420	0	0	0	0	0	0	8	193	344		0	0	0
SKYLT.	24.1	88.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0
DOORS	25.2	5.3	0	0	0	0	0	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	301	1040	219	199	687	145	99	342	72	155	535	113	84	290	61	92	318	67	119	411	87	100	345	73		47	162	34
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	0	0	0		0	0	0
EXPOSED CLG	1.5	0.8	322	489	245	168	255	128	176	268	134	285	433	217	195	296	148	216	328	164	180	274	137	35	53	27		36	55	27
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	0	0	0		0	0	0
EXPOSED FLOOR	2.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	195	478	101	0	0	0	42	103	22	35	86	18		0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0			0				0		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0				0		
SUBTOTAL HT LOSS			2300			1786			610			1354			1860			1032			956			677				386		
SUB TOTAL HT GAIN					1841			1600			206			752			1730			510			367			462			246	
LEVEL FACTOR / MULTIPLIER			0.20	0.34		0.20	0.34		0.20	0.34		0.20	0.34		0.20	0.34		0.20	0.34		0.20	0.34		0.20	0.34			0.20	0.34	
AIR CHANGE HEAT LOSS			786			610			208			462			635			352			327			231				132		
AIR CHANGE HEAT GAIN					116			101			13			47			109			32			23			29			16	
DUCT LOSS			463			0			0			0			249			0			128			91				0		
DUCT GAIN					146			0			0			0			256			0			88			49			0	
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0	0		0		0		0
HEAT GAIN APPLIANCES/LIGHTS					485			0			0			485			485			485			485			0			0	
TOTAL HT LOSS BTU/H			3549			2396			818			1817			2744			1384			1411			999				517		
TOTAL HT GAIN x 1.3 BTU/H					3989			2211			284			1981			3667			1648			1252			702			340	

ROOM USE			LIV			DIN			KIT/GRT			DEN			LAUN						FOY			MUD					BAS	
EXP. WALL			22			12			70			12			18						34			11					180		
CLG. HT.			10			10			10			10			10						19			10					9		
	FACTORS																														
GRS.WALL AREA	LOSS	GAIN	220			120			700			120			180						646			110					1080		
GLAZING			LOSS		GAIN	LOSS		GAIN	LOSS		GAIN	LOSS		GAIN	LOSS		GAIN				LOSS		GAIN	LOSS		GAIN			LOSS		GAIN
NORTH	24.1	17.5	0	0	0	0	0	0	0	0	0	0	0	0	8	193	140				0	0	0	0	0	0			3	72	52
EAST	24.1	43.0	0	0	0	0	0	0	129	3108	5552	0	0	0	0	0	0				0	0	0	0	0	0			6	145	258
SOUTH	24.1	26.4	22	530	581	22	530	581	0	0	0	18	434	475	0	0	0				0	0	0	0	0	0			6	145	158
WEST	24.1	43.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				23	554	990	0	0	0			0	0	0
SKYLT.	24.1	88.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0	0	0			0	0	0
DOORS	25.2	5.3	0	0	0	0	0	0	0	0	0	0	0	0	20	505	106				40	1010	213	20	505	106			0	0	0
NET EXPOSED WALL	3.5	0.7	198	684	144	98	339	71	571	1973	415	102	352	74	152	525	111				583	2014	424	90	311	65			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	0	0	0				0	0	0	0	0	0			540	3420	720
EXPOSED CLG	1.5	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				75	114	57	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				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				0	0	0	0	0	0			0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0						0			0					7782		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0						0			0							
SUBTOTAL HT LOSS			1214			869			5081			786			1223						3692			816					11563		
SUB TOTAL HT GAIN					725			652			5967			549			357					1684			172					1189
LEVEL FACTOR / MULTIPLIER			0.30	0.41		0.30	0.41		0.30	0.41		0.30	0.41		0.30	0.41					0.30	0.41		0.30	0.41				0.50	0.81	
AIR CHANGE HEAT LOSS			498			357			2085			323			502						1516			335					9359		
AIR CHANGE HEAT GAIN					46			41			377			35			22					106			11					75	
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		0	0		0				0		0	0		0			0		0
HEAT GAIN APPLIANCES/LIGHTS					485			485			485			485			485					485			485						0
TOTAL HT LOSS BTU/H			1712			1225			7166			1109			1725						5208			1151					20922		
TOTAL HT GAIN x 1.3 BTU/H					1632			1531			8878			1389			1123					2957			868						1643

TOTAL HEAT GAIN BTU/H: 36654 TONS: 3.05 LOSS DUE TO VENTILATION LOAD BTU/H: 2651 STRUCTURAL HEAT LOSS: 55853 TOTAL COMBINED HEAT LOSS BTU/H: 58504

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

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SITE NAME: KLEINBURG GLEN
BUILDER: GOLD PARK HOMES

TYPE: 42-2 DATE: Jan-16 GFA: 3084 LO# 66887

HEATING CFM	1100	COOLING CFM	1100	furnace pressure	0.6	
TOTAL HEAT LOSS	55,853	TOTAL HEAT GAIN	36,096	furnace filter	0.05	
AIR FLOW RATE CFM	19.69	AIR FLOW RATE CFM	30.47	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	0.03	r/a grille press. Loss 0.02
				min adjusted pressure s/a	0.15	adjusted pressure r/a 0.15

.LENNOX AFUE = 95.0 %
EL195UH070XE36B 70 INPUT (BTU/H) = 66,000
FAN SPEED OUTPUT (BTU/H) = **63,000**

LOW	0
MEDLOW	0
MEDIUM	995
MEDIUM HIGH	1100
HIGH	1200

DESIGN CFM = **1100** CFM @ .6 " E.S.P.
TEMPERATURE RISE 53 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	9	5
R/A	0	0	4	3	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	6	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-4	BATH	WIC-2	ENS	MBR	ENS2	LIV	DIN	KIT/GRT	KIT/GRT	DEN	LAUN	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.77	1.20	0.82	1.82	1.38	1.41	1.00	1.20	1.77	0.52	1.71	1.23	2.39	2.39	1.11	1.72	5.21	1.15	4.18	4.18	4.18	4.18
CFM PER RUN HEAT	35	24	16	36	27	28	20	24	35	10	34	24	47	47	22	34	103	23	82	82	82	82
RM GAIN MBH.	1.99	1.11	0.28	1.98	1.65	1.25	0.70	1.11	1.99	0.34	1.63	1.53	2.96	2.96	1.39	1.12	2.96	0.87	0.33	0.33	0.33	0.33
CFM PER RUN COOLING	61	34	9	60	50	38	21	34	61	10	50	47	90	90	42	34	90	26	10	10	10	10
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	0.16	0.16	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	43	50	17	29	40	37	47	49	40	15	21	9	36	31	9	25	34	27	25	42	7	10
EQUIVALENT LENGTH	160	150	160	130	130	180	180	130	170	120	110	140	120	130	150	120	110	110	140	100	100	110
TOTAL EFFECTIVE LENGTH	203	200	177	159	170	217	227	179	210	135	131	149	156	161	159	145	144	137	165	142	107	120
ADJUSTED PRESSURE	0.08	0.09	0.1	0.11	0.1	0.08	0.08	0.1	0.08	0.13	0.13	0.12	0.1	0.1	0.11	0.12	0.11	0.13	0.1	0.11	0.15	0.14
ROUND DUCT SIZE	5	4	4	5	4	4	4	4	5	4	4	4	5	5	4	4	**6**	4	5	5	5	5
HEATING VELOCITY (ft/min)	257	275	184	264	310	321	229	275	257	115	390	275	345	345	252	390	525	264	602	602	602	602
COOLING VELOCITY (ft/min)	448	390	103	441	574	436	241	390	448	115	574	539	661	661	482	390	459	298	73	73	73	73
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	A	B	D	B	D	D	A	E	E	C	E	A	B	D	B	C	B	B	A	E	D

RUN #	25	26	27
ROOM NAME	BED-3	KIT/GRT	BAS
RM LOSS MBH.	2.74	2.39	4.18
CFM PER RUN HEAT	54	47	82
RM GAIN MBH.	3.67	2.96	0.33
CFM PER RUN COOLING	112	90	10
ADJUSTED PRESSURE	0.15	0.16	0.16
ACTUAL DUCT LGH.	55	47	29
EQUIVALENT LENGTH	170	100	100
TOTAL EFFECTIVE LENGTH	225	147	129
ADJUSTED PRESSURE	0.07	0.11	0.13
ROUND DUCT SIZE	**6**	5	5
HEATING VELOCITY (ft/min)	275	345	602
COOLING VELOCITY (ft/min)	571	661	73
OUTLET GRILL SIZE	4X10	3X10	3X10
TRUNK	D	A	C

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	224	0.09	7.8	8	x	8	504	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	488	0.08	10.7	14	x	8	627	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	219	0.11	7.3	6	x	8	657	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	461	0.07	10.8	14	x	8	593	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	151	0.08	6.9	6	x	8	453	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	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	1100	0.05	16.3	30	x	8	660
TRUNK Y	390	0.05	11.1	14	x	8	501
TRUNK Z	0	0.05	0	0	x	8	0
DROP	1100	0.05	16.3	24	x	10	660

RETURN AIR #	1	2	3	4	5	6	7										BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	175	95	75	75	195	145	145	0	0	0	0	0	0	0	0	195	
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.	37	38	45	48	21	16	23	1	1	1	1	1	1	1	1	14	
EQUIVALENT LENGTH	175	185	225	230	135	215	225	0	0	0	0	0	0	0	0	145	
TOTAL EFFECTIVE LH	212	223	270	278	156	231	248	1	1	1	1	1	1	1	1	159	
ADJUSTED PRESSURE	0.07	0.07	0.05	0.05	0.09	0.06	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09	
ROUND DUCT SIZE	7.5	6	6	6	7.4	7.3	7.3	0	0	0	0	0	0	0	0	7.4	
INLET GRILL SIZE	8	8	8	8	8	8	8	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	14	14	14	14	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.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
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Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

TYPE: 42-2 LO # 66887
SITE NAME: KLEINBURG GLEN

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	5	@ 10.6 cfm	53	cfm
Other Rooms	6	@ 10.6 cfm	63.6	cfm
Table 9.32.3.A.		TOTAL	190.8	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	190.8	cfm
Less Principal Ventil. Capacity	95	cfm
Required Supplemental Capacity	95.8	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
ENS2	QTXEN050C	50	✓	0.3
PWD	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

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 42-2 **BUILDER:** GOLD PARK HOMES
SFQT: 3084 **LO#** 66887 **SITE:** KLEINBURG 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)	72

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):	42749.0	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:	6.0 ft
LENGTH: 57.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	180.0 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

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MICHAEL O'ROURKE

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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):	6.71
Building Configuration	
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	1210.5
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):	**0.322**
Cooling Air Change Rate (ACH/H):	**0.098**

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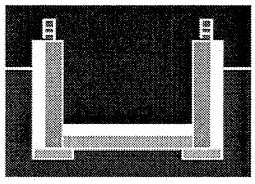
Residential Foundation Thermal Load Calculator

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):	17.4	
Floor Width (m):	10.1	
Exposed Perimeter (m):	0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.8	
Window Area (m^2):	1.4	
Door Area (m^2):	0	



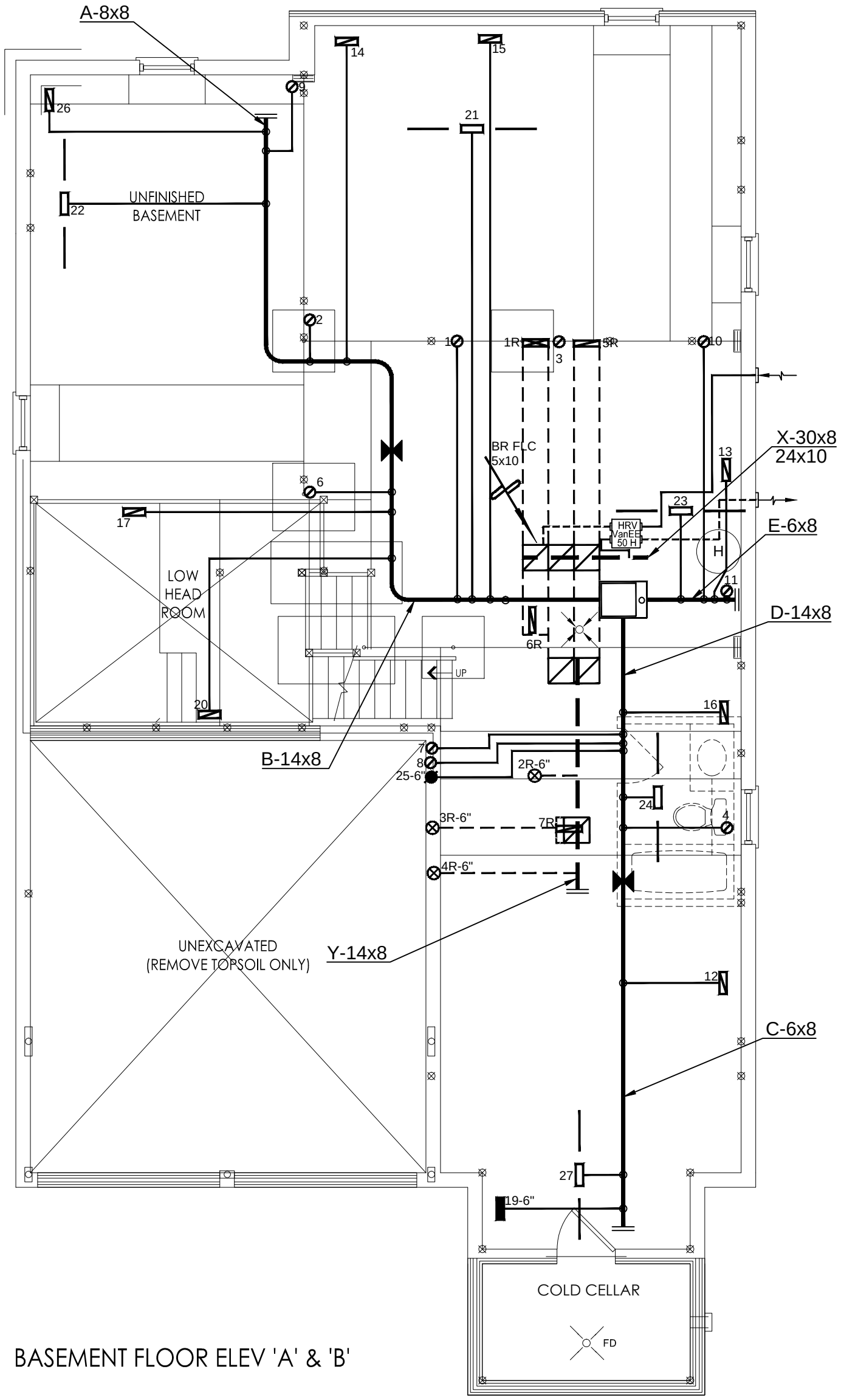
Insulation Configuration

Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	

Design Months	
Heating Month	1

Foundation Loads	
Heating Load (Watts):	**2280**

55 2.6 147.1 148.5



BASEMENT FLOOR ELEV 'A' & 'B'

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.

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

42-2 3084 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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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 58504 BTU/H	
UNIT DATA	
MAKE	LENNOX
MODEL	EL195UH070XE36B-70
INPUT	66 MBTU/H
OUTPUT	63 MBTU/H
COOLING	3.0 TONS
FAN SPEED	1100 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	11	4	4
1ST FLOOR	9	3	2
BASEMENT	5	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

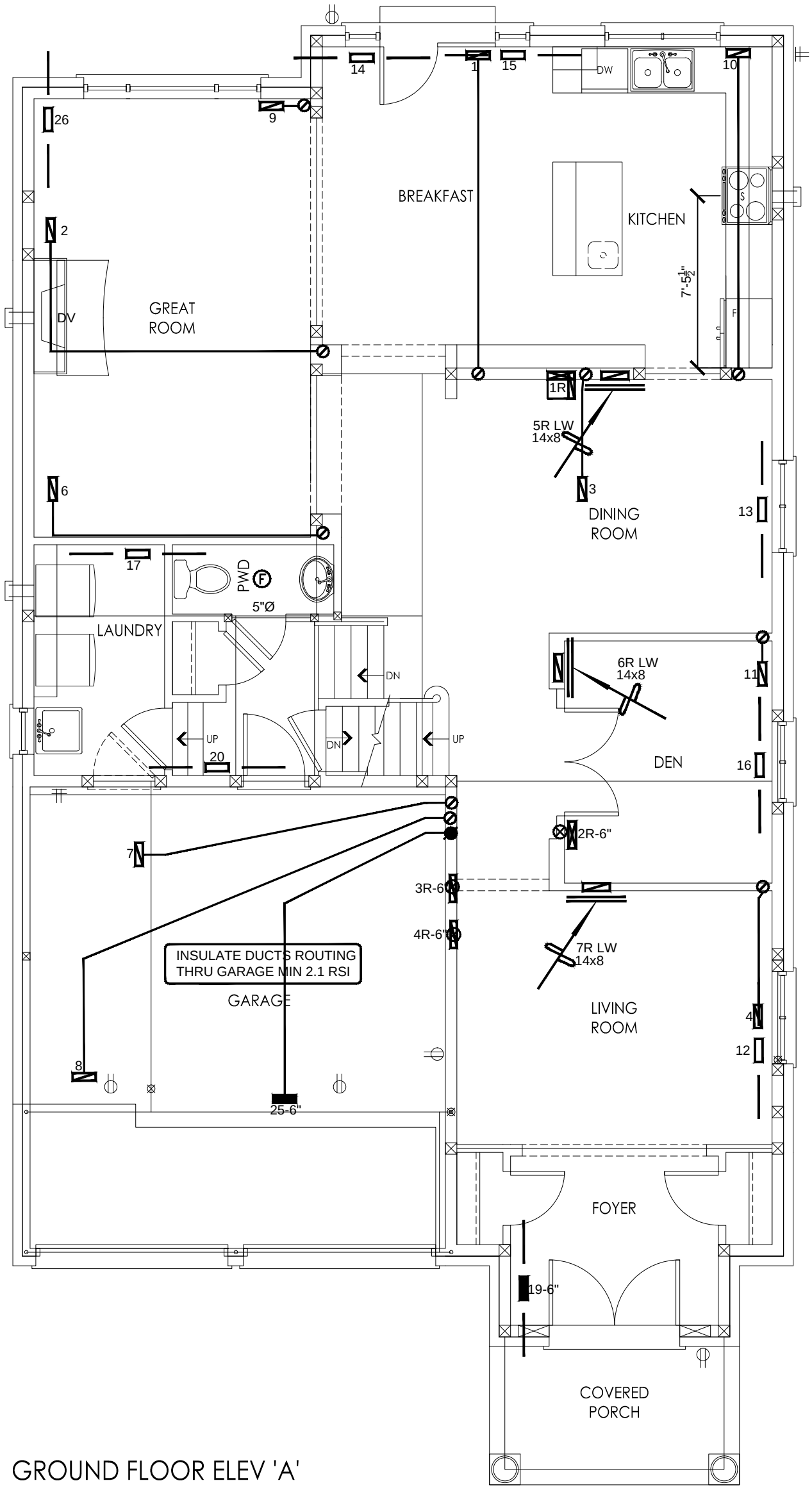
Sheet Title
BASEMENT HEATING LAYOUT

Date JAN/2016

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 66887



PARTIAL GROUND FLOOR ELEV 'B'

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HVAC DESIGNS LTD.

GROUND FLOOR 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

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VAUGHAN, ONTARIO

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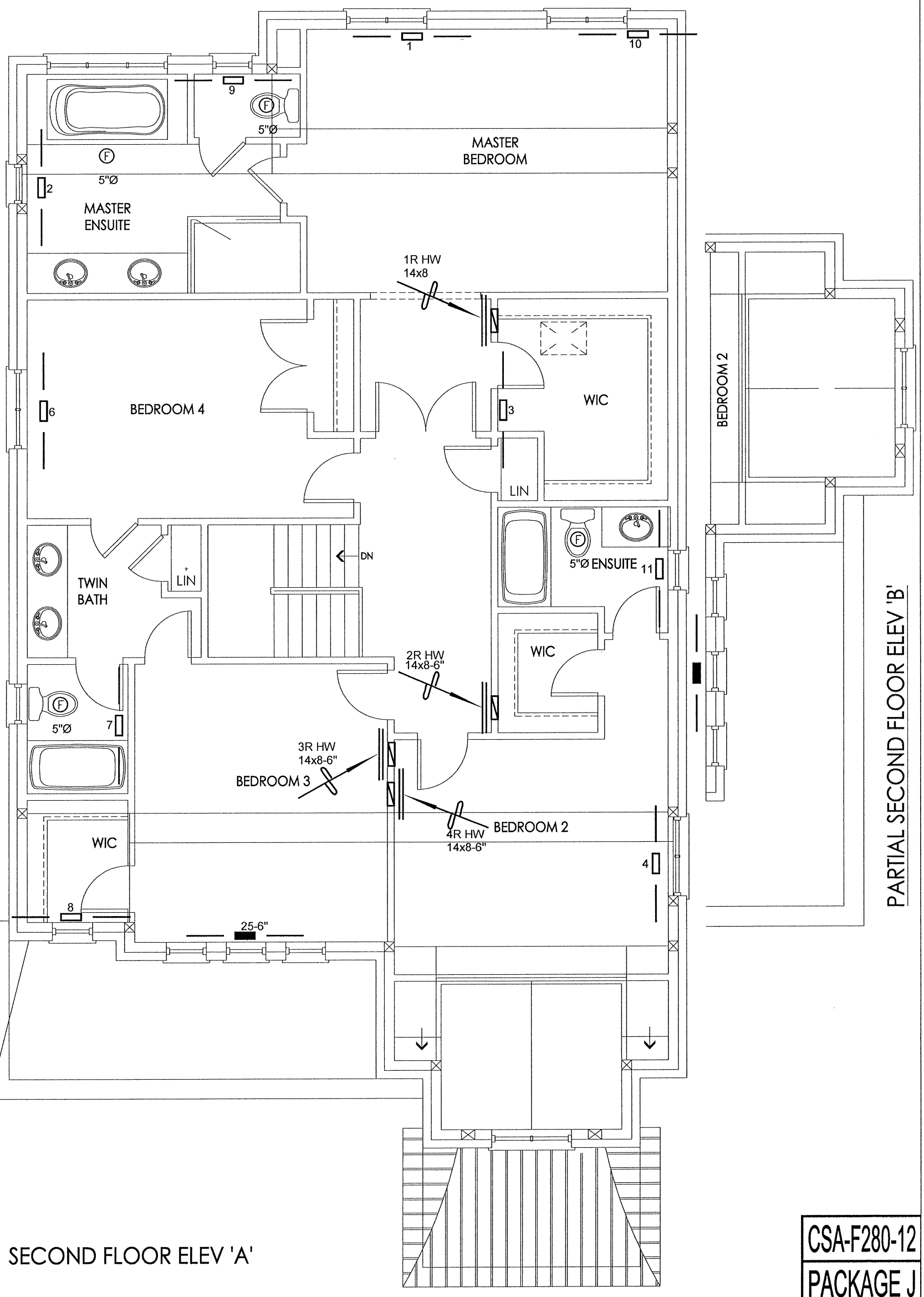
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date JAN/2016
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 66887



SECOND FLOOR ELEV 'A'

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HVAC DESIGNS LTD.

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.		
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Sheet Title
SECOND FLOOR HEATING LAYOUT

Date JAN/2016
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 66887