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 BRAMPTON	**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: 38-7 OPT. GROUND

Project: ENCORE

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.

March 7, 2017
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: ENCORE | OPT. GROUND | DATE: Mar-17 | WINTER NATURAL AIR CHANGE RATE 0.409 | HEAT LOSS ΔT °F. 74 | CSA-F280-12
BUILDER: GOLD PARK HOMES | TYPE: 38-7 | GFA: 3849 | LO# 72709 | SUMMER NATURAL AIR CHANGE RATE 0.145 | HEAT GAIN ΔT °F. 14 | SB-12 PACKAGE A1

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH						ENS-2			REC			BED-6		
EXP. WALL			37			25			7			12			42			32			7						11			78			34		
CLG. HT.			10			9			9			10			10			10			9						9			9			9		
	FACTORS																																		
GRS.WALL AREA	LOSS	GAIN	370			225			63			120			420			320			63						99			702			306		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN					LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	20.7	16.3	8	166	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				8	166	130	0	0	0	0	0	0
EAST	20.7	41.9	32	663	1340	18	373	754	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	40	829	1676	20	414	838
SOUTH	20.7	25.2	0	0	0	0	0	0	0	0	0	16	332	404	0	0	0	0	0	0	7	145	177				0	0	0	0	0	0	0	0	0
WEST	20.7	41.9	0	0	0	0	0	0	0	0	0	0	0	0	27	559	1131	38	787	1592	0	0	0				0	0	0	0	0	0	0	0	0
SKYLT.	20.7	86.9	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	0	0	0
DOORS	24.6	4.7	0	0	0	0	0	0	0	0	0	0	0	0	20	492	93	0	0	0	0	0	0				0	0	0	20	492	93	0	0	0
NET EXPOSED WALL	4.3	0.8	330	1434	271	207	899	170	63	274	52	104	452	85	373	1621	307	282	1225	232	56	243	46				91	395	75	642	2790	528	286	1243	235
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	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	0	0	0
EXPOSED CLG	1.2	0.6	300	375	182	144	180	88	112	140	68	216	270	131	234	292	142	219	274	133	126	157	77				129	161	78	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	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	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	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0			0			0						0			0			0	
SLAB ON GRADE HEAT LOSS				0			0			0			0			0			0			0						0			0			0	
SUBTOTAL HT LOSS				2638			1452			414			1053			2964			2287			546						723			4110			1657	
SUB TOTAL HT GAIN					1925			1012			120			621			1673			1957			299					284			2296			1073
LEVEL FACTOR / MULTIPLIER			0.10	0.19		0.10	0.19		0.10	0.19		0.10	0.19		0.10	0.19		0.10	0.19		0.10	0.19					0.10	0.19		0.30	1.10		0.30	1.10	
AIR CHANGE HEAT LOSS				501			276			79			200			563			434			104						137			4527			1825	
AIR CHANGE HEAT GAIN					121			63			8			39			105			123			19					18			144			67
DUCT LOSS				314			0			0			0			0			272			0						86			0			0	
DUCT GAIN					315			0			0			0			0			294			0					30			0			0
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0				0		0	0		0	1		240
HEAT GAIN APPLIANCES/LIGHTS					621			0			0			621			621			621			0					0			621			621
TOTAL HT LOSS BTU/H				3453			1728			492			1253			3528			2993			650						946			8637			3482	
TOTAL HT GAIN x 1.3 BTU/H					4499			1398			166			1977			3431			4205			413					431			3980			2602

ROOM USE			LIV			DIN			KT/FM			ENT			LAUN			W/R			FOY			MUD			ENS-3						BAS		
EXP. WALL			38			13			79			13			9			6			31			0			9						162		
CLG. HT.			10			10			10			10			10			10			15			9			9						9		
	FACTORS																																		
GRS.WALL AREA	LOSS	GAIN	380			130			790			130			90			60			465			0			81						972		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN					LOSS	GAIN
NORTH	20.7	16.3	0	0	0	0	0	0	16	332	261	0	0	0	0	0	0	0	0	0	5	104	82	0	0	0	0	0	0				0	0	0
EAST	20.7	41.9	0	0	0	0	0	0	110	2279	4608	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				6	124	251
SOUTH	20.7	25.2	0	0	0	37	767	934	0	0	0	0	0	0	0	0	0	12	249	303	0	0	0	0	0	0	8	166	202				3	62	76
WEST	20.7	41.9	69	1430	2890	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	642	1299	0	0	0	0	0	0				0	0	0
SKYLT.	20.7	86.9	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				0	0	0
DOORS	24.6	4.7	0	0	0	0	0	0	0	0	0	40	983	186	0	0	0	0	0	0	20	492	93	0	0	0	0	0	0				20	492	93
NET EXPOSED WALL	4.3	0.8	311	1351	256	93	404	76	664	2885	546	90	391	74	90	391	74	48	209	39	409	1777	336	0	0	0	73	317	60				0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	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				486	1703	322
EXPOSED CLG	1.2	0.6	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				0	0	0
NO ATTIC EXPOSED CLG	2.7	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				0	0	0
EXPOSED FLOOR	2.5	0.5	265	658	124	52	129	24	0	0	0	80	199	38	78	194	37	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						5580	
SLAB ON GRADE HEAT LOSS				0			0			0			0			0			0			0			0			0							
SUBTOTAL HT LOSS				3439			1300			5496			1573			585			457			3015			0			483						7961	
SUB TOTAL HT GAIN					3270			1035			5415			298			111			342			1809			0			262						742
LEVEL FACTOR / MULTIPLIER			0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.30	1.10		0.30	1.10					0.40	1.15	
AIR CHANGE HEAT LOSS				995			376			1590			455			169			132			872			0			532						9178	
AIR CHANGE HEAT GAIN					205			65			339			19			7			21			113			0			16						47
DUCT LOSS				443			168			0			203			75			0			0			0			0						0	
DUCT GAIN					410			172			0			32			74			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	0		0				0		0
HEAT GAIN APPLIANCES/LIGHTS					621			621			621			0			621			0			0			621			0						0
TOTAL HT LOSS BTU/H				4877			1843			7086			2231			829			589			3887			0			1015						17139	
TOTAL HT GAIN x 1.3 BTU/H					5858			2461			8288			452			1057			473			2499			808			362						1025

TOTAL HEAT GAIN BTU/H: 46909 | TONS: 3.91 | LOSS DUE TO VENTILATION LOAD BTU/H: 2777 | STRUCTURAL HEAT LOSS: 66659 | TOTAL COMBINED HEAT LOSS BTU/H: 69436

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.

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SITE NAME: ENCORE — OPT. GROUND
BUILDER: GOLD PARK HOMES — TYPE: 38-7 — DATE: Mar-17 — GFA: 3849 — LO# 72709

HEATING CFM	1525	COOLING CFM	1525	furnace pressure	0.6
TOTAL HEAT LOSS	66,659	TOTAL HEAT GAIN	46,384	furnace filter	0.05
AIR FLOW RATE CFM	22.88	AIR FLOW RATE CFM	32.88	a/c coil pressure	0.21
				available pressure for s/a & r/a	0.34
				plenum pressure s/a	0.18
				max s/a dif press. loss	0.02
				min adjusted pressure s/a	0.16
				r/a pressure	0.16
				r/a grille press. Loss	0.02
				adjusted pressure r/a	0.14

^LENNOX
EL296UH090XE48C 90
FAN SPEED
LOW 0
MEDLOW 0
MEDIUM 1105
MEDIUM HIGH 1255
HIGH 1525

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000
DESIGN CFM = 1525
CFM @ .6 " E.S.P.
TEMPERATURE RISE 52 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	11	10	4	4
R/A	0	4	2	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	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	BED-4	MBR	ENS-2	LIV	DIN	KT/FM	KT/FM	KT/FM	LAUN	W/R	FOY	ENT	BED-6	REC	REC	ENS-3
RM LOSS MBH.	1.73	1.73	0.49	1.25	1.76	1.50	0.65	1.76	1.50	1.73	0.95	2.44	1.84	2.36	2.36	2.36	0.83	0.59	3.89	2.23	3.48	4.32	4.32	1.01
CFM PER RUN HEAT	40	40	11	29	40	34	15	40	34	40	22	56	42	54	54	54	19	13	89	51	80	99	99	23
RM GAIN MBH.	2.25	1.40	0.17	1.98	1.72	2.10	0.41	1.72	2.10	2.25	0.43	2.93	2.46	2.76	2.76	2.76	1.06	0.47	2.50	0.45	2.60	1.99	1.99	0.36
CFM PER RUN COOLING	74	46	5	65	56	69	14	56	69	74	14	96	81	91	91	91	35	16	82	15	86	65	65	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.17
ACTUAL DUCT LGH.	81	63	62	42	64	58	48	72	64	68	48	43	35	64	55	42	29	11	24	26	46	28	15	5
EQUIVALENT LENGTH	160	200	200	200	190	160	140	200	140	200	140	140	140	130	140	170	140	110	80	120	100	100	100	110
TOTAL EFFECTIVE LENGTH	241	263	262	242	254	218	188	272	204	268	188	183	175	194	195	212	169	121	104	146	146	128	115	115
ADJUSTED PRESSURE	0.07	0.06	0.06	0.07	0.07	0.08	0.09	0.06	0.08	0.06	0.09	0.09	0.09	0.08	0.08	0.07	0.1	0.14	0.15	0.11	0.11	0.12	0.14	0.15
ROUND DUCT SIZE	5	5	4	5	5	5	4	5	5	6	4	6	5	6	6	6	4	4	5	4	5	5	5	4
HEATING VELOCITY (ft/min)	294	294	126	213	294	250	172	294	250	204	252	286	308	275	275	275	218	149	653	585	587	727	727	264
COOLING VELOCITY (ft/min)	543	338	57	477	411	507	161	411	507	377	161	489	595	464	464	464	402	184	602	172	631	477	477	138
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	A	A	B	F	B	B	E	A	E	G	B	A	A	A	G	F	F	F	D	E	E	E

RUN #	25	26	27	28	29
ROOM NAME	BAS	BAS	BAS	LIV	BAS
RM LOSS MBH.	4.28	4.28	4.28	2.44	4.28
CFM PER RUN HEAT	98	98	98	56	98
RM GAIN MBH.	0.26	0.26	0.26	2.93	0.26
CFM PER RUN COOLING	8	8	8	96	8
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	18	31	45	37	33
EQUIVALENT LENGTH	120	110	90	170	120
TOTAL EFFECTIVE LENGTH	138	141	135	207	153
ADJUSTED PRESSURE	0.11	0.11	0.12	0.08	0.1
ROUND DUCT SIZE	5	5	5	6	6
HEATING VELOCITY (ft/min)	720	720	720	286	500
COOLING VELOCITY (ft/min)	59	59	59	489	41
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10
TRUNK	F	D	D	F	D

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	322	0.06	9.9	12	x	8	483	TRUNK G	1185	0.06	16.1	30	x	8	711
TRUNK B	137	0.06	7.2	6	x	8	411	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	459	0.06	11.3	14	x	8	590	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	374	0.10	9.2	10	x	8	673	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	651	0.08	11.9	16	x	8	732	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	341	0.08	9.4	10	x	8	614	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	0.04	0	0	x	8	0
TRUNK P	0	0.04	0	0	x	8	0
TRUNK Q	0	0.04	0	0	x	8	0
TRUNK R	0	0.04	0	0	x	8	0
TRUNK S	0	0.04	0	0	x	8	0
TRUNK T	0	0.04	0	0	x	8	0
TRUNK U	0	0.04	0	0	x	8	0
TRUNK V	0	0.04	0	0	x	8	0
TRUNK W	0	0.04	0	0	x	8	0
TRUNK X	1525	0.04	19.5	36	x	10	610
TRUNK Y	715	0.04	14.7	26	x	8	495
TRUNK Z	0	0.04	0	0	x	8	0
DROP	1525	0.04	19.5	24	x	14	654

RETURN AIR #	1	2	3	4	5	6	7	8								BR
	0	0	0	0	2@8"	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	100	85	130	120	280	260	215	155	0	0	0	0	0	0	0	180
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ACTUAL DUCT LGH.	90	63	54	76	68	51	36	40	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	250	195	145	265	265	155	225	185	0	0	0	0	0	0	0	145
TOTAL EFFECTIVE LH	340	258	199	341	333	206	261	225	1	1	1	1	1	1	1	159
ADJUSTED PRESSURE	0.04	0.06	0.07	0.04	0.04	0.07	0.05	0.06	14.32	14.32	14.32	14.32	14.32	14.32	14.32	0.09
ROUND DUCT SIZE	7	6	6.8	7.5	10.4	8.8	8.9	7.5	0	0	0	0	0	0	0	7.2
INLET GRILL SIZE	8	8	8	8	8	8	8	8	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	30	30	30	14	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

HVA 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

TYPE: 38-7 LO # 72709
SITE NAME: ENCORE OPT. GROUND

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	4	@ 10.6 cfm	42.4	cfm
Kitchen & Bathrooms	6	@ 10.6 cfm	63.6	cfm
Other Rooms	6	@ 10.6 cfm	63.6	cfm
Table 9.32.3.A.		TOTAL	212.0	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	95.4	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	212	cfm
Less Principal Ventil. Capacity	139	cfm
Required Supplemental Capacity	73.0	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 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	74 F	X	1.08	X	0.25

SUPPLEMENTAL FANS NUTONE

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
ENS-2	QTXEN050C	50	✓	0.3
W/R	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.

Model: VANEE 60H-V+

139 cfm high 50 cfm low

75 % 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: March-17

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.
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:	38-7		OPT. GROUND	**BUILDER:**	GOLD PARK HOMES
SFQT:	3849	**LO#**	72709	**SITE:**	ENCORE

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	72

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	4
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):	42414.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD ($Btu/h/ft^2$):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 49.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	162.0 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	29.8
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	-

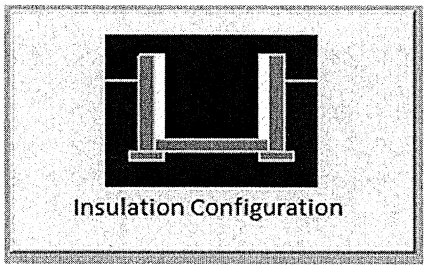
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Michael O'Rourke

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry dand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	**14.9**	 Insulation Configuration
Floor Width (m):	**9.8**	
Exposed Perimeter (m):	**0.0**	
Wall Height (m):	**2.7**	
Depth Below Grade (m):	**1.8**	
Window Area (m^2):	**0.8**	
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):	**1635**	

TYPE: 38-7 OPT. GROUND
LO# 72709

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

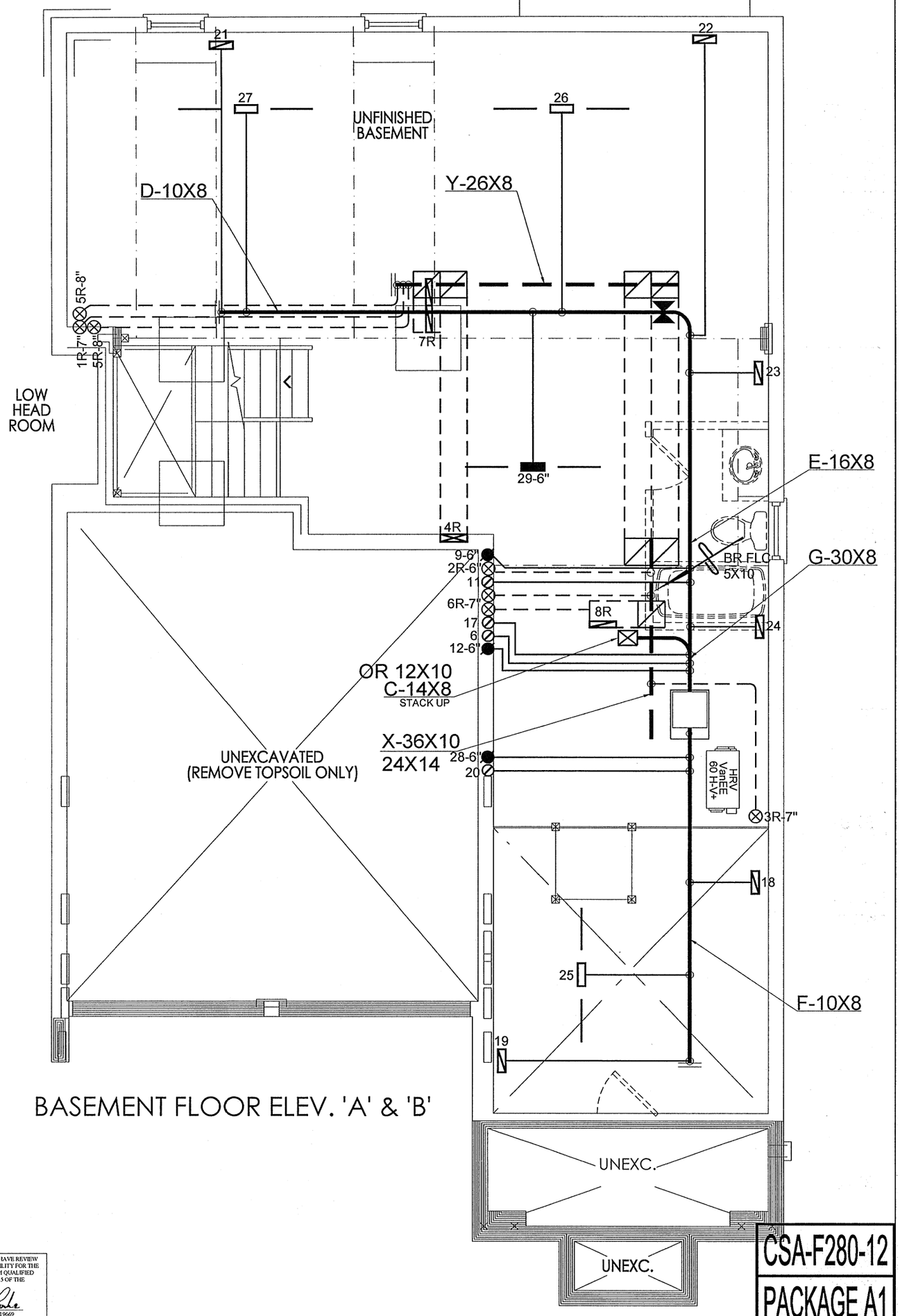
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Ontario
Region:	Brampton
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):	9.45
Building Configuration	
Type:	Detached
Number of Stories:	Three
Foundation:	Full
House Volume (m^3):	1201.0
Air Leakage/Ventilation	
Air Tightness Type:	Present (1961-) (3.57 ACH)
Custom BDT Data:	ELA @ 10 Pa. 1601.0 cm^2
	3.57 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):	**0.409**
Cooling Air Leakage Rate (ACH/H):	**0.145**

TYPE: 38-7 OPT. GROUND

LO# 72709



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 A1

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
ENCORE
BRAMPTON, ONTARIO

OPT. GROUND
38-7 3849 sqft

HVAC DESIGNS LTD.
375 Finley Ave, Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: mike@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.

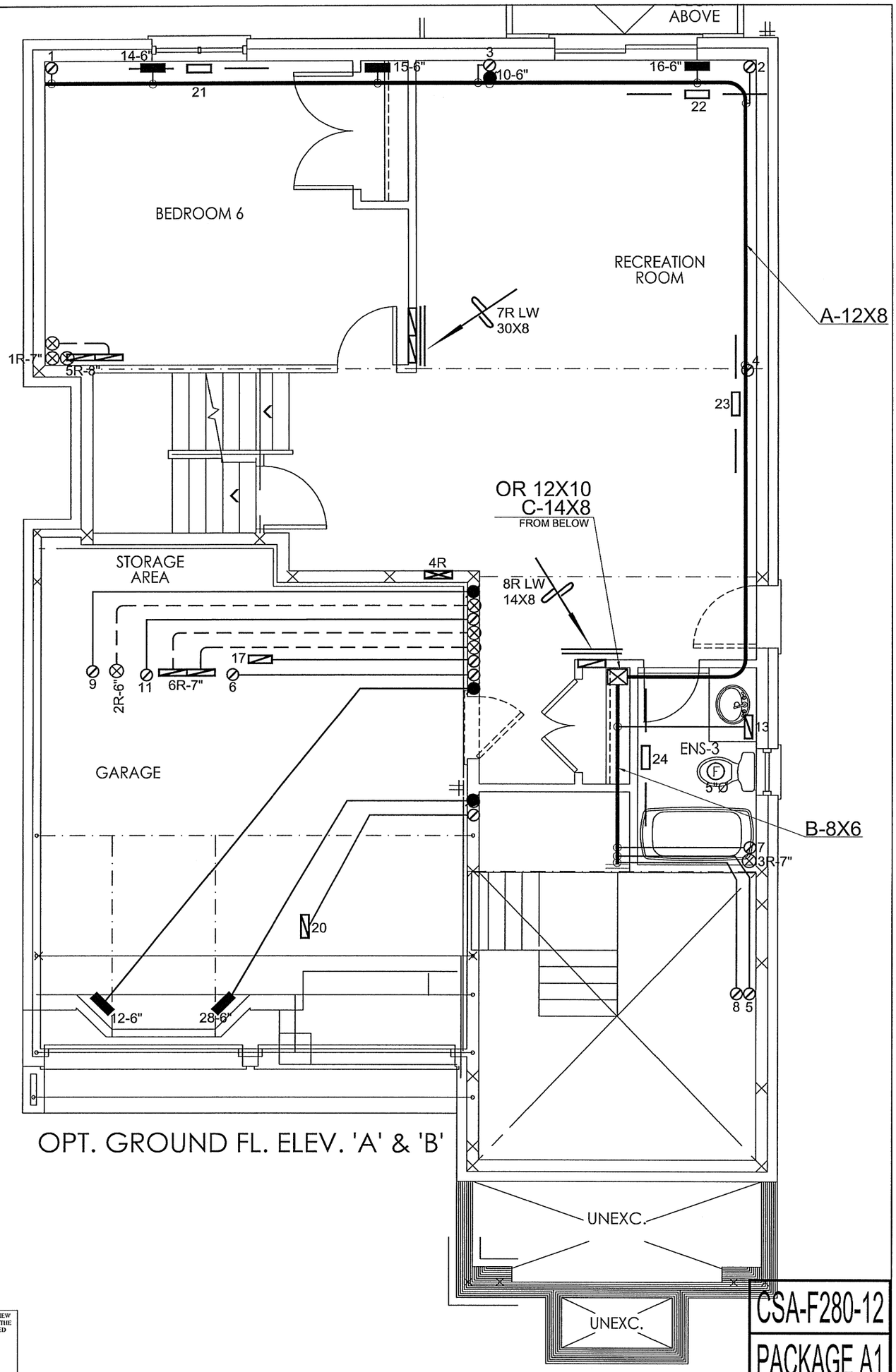
HEAT LOSS 69436 BTU/H	
UNIT DATA	
MAKE	LENNOX
MODEL	EL296UH090XE48C
INPUT	88 MBTU/H
OUTPUT	85 MBTU/H
COOLING	4.0 TONS
FAN SPEED	1525 cfm @ 0.5" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR	11	4	3
2ND FLOOR	10	2	2
1ST FLOOR	4	2	1
BASEMENT	4	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 MAR/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 72709



OPT. GROUND FL. ELEV. 'A' & 'B'

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, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND

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	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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1.		

REVISIONS

Client
GOLD PARK HOMES

Project Name
ENCORE
BRAMPTON, ONTARIO

OPT. GROUND
38-7 3849 sqft

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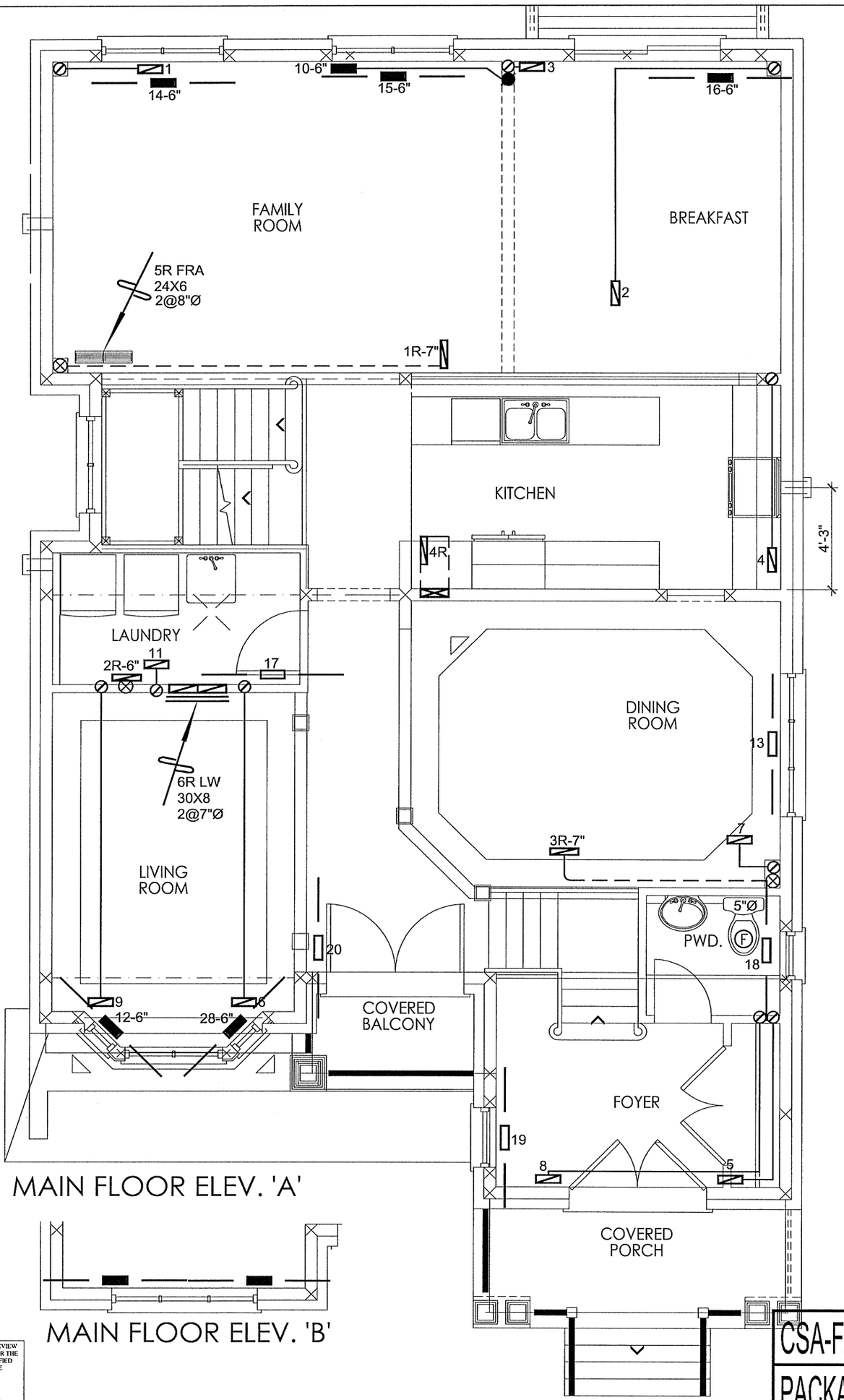
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date MAR/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 72709



MAIN FLOOR ELEV. 'A'

MAIN FLOOR ELEV. 'B'

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HVAC DESIGNS LTD.

CSA-F280-12

PACKAGE A1

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
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	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
ENCORE
BRAMPTON, ONTARIO

OPT. GROUND
38-7 3849 sqft

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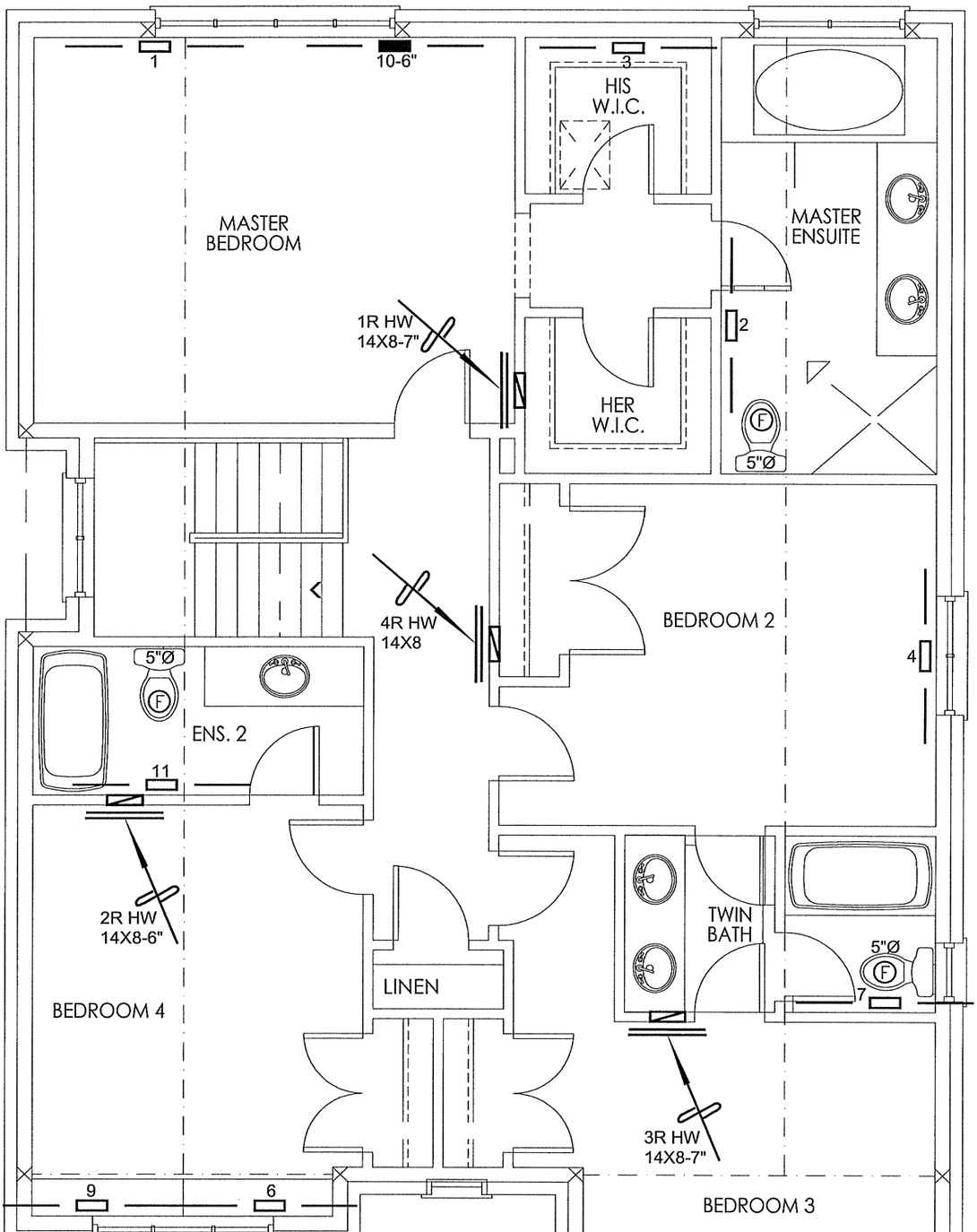
Sheet Title
SECOND FLOOR HEATING LAYOUT

Date MAR/2017

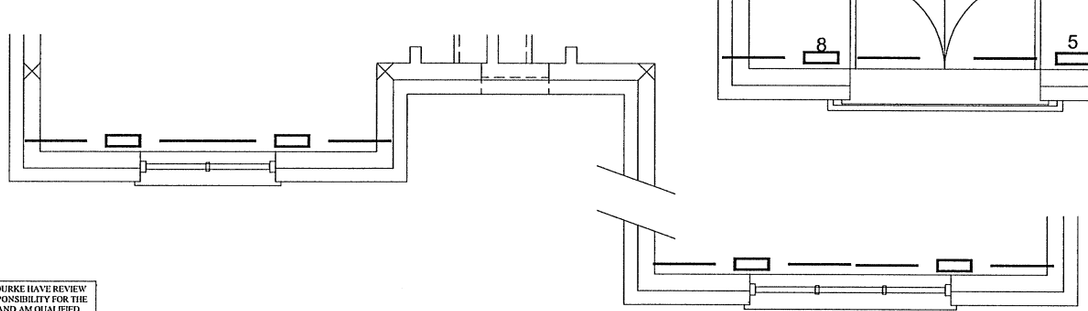
Scale 3/16" = 1'-0"

BCIN# 19669

LO# 72709



SECOND FLOOR ELEV. 'A'



PART. SECOND FLOOR ELEV. '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 A1

HVAC LEGEND

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	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

ENCORE
BRAMPTON, ONTARIO

OPT. GROUND
38-7 3849 sqft

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Sheet Title

THIRD FLOOR
HEATING
LAYOUT

Date MAR/2017

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 72709