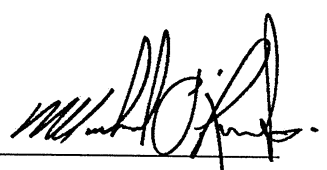


Schedule 1: Designer Information

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 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: 38-6 Project: ENCORE	
D. Declaration of Designer			
I <u>MICHAEL O'ROURKE</u> 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: <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.			
<u>March 7, 2017</u> 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.

ROOM USE	LIV	DIN	KTFM	LAUN	FOY	MUD	BAS
EXP. WALL	32	15	69	7	37	39	158
CLG. HT.	10	10	10	10	16	10	9
FACTORS							
GRS.WALL AREA	320	150	690	70	592	390	948
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	0 0 0	0 0 0	0 0 0	2 41 33
EAST	20.7 41.9	0 0 0	99 2051 4147	0 0 0	0 0 0	0 0 0	6 124 251
SOUTH	20.7 25.2	0 0 0	30 622 757	0 0 0	39 808 984	10 207 252	2 41 50
WEST	20.7 41.9	51 1057 2136	0 0 0	0 0 0	11 228 481	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
DOORS	24.6 4.7	20 492 93	0 0 0	0 0 0	40 983 186	30 738 140	20 492 93
NET EXPOSED WALL	4.3 0.8	249 1082 205	150 652 123	561 2438 461	502 2181 413	350 1521 288	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	474 1661 314
EXPOSED CLG	1.2 0.6	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
EXPOSED FLOOR	2.5 0.5	266 661 125	0 0 0	38 94 18	0 0 0	0 0 0	0 0 0
BASEMENT/CRAWL HEAT LOSS		0 0 0	0 0 0	114 283 54	0 0 0	0 0 0	5424
SLAB ON GRADE HEAT LOSS		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	7783
SUBTOTAL HT LOSS			5205	587	4201	2466	742
SUB TOTAL HT GAIN			5383	111	2044	680	1.21
LEVEL FACTOR / MULTIPLIER	0.20 0.34	0.20 0.34	0.20 0.34	0.20 0.34	0.20 0.34	0.30 1.06	0.40
AIR CHANGE HEAT LOSS	1108	219	1752	198	1414	2615	9382
AIR CHANGE HEAT GAIN			350	7	133	44	48
DUCT LOSS	440	0	696	78	0	0	0
DUCT GAIN	323	0	624	62	0	0	0
HEAT GAIN PEOPLE	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	504	504	504	504	0	504	504
TOTAL HT LOSS BTU/H	4839	871	7653	863	5615	5081	17165
TOTAL HT GAIN x 1.3 BTU/H	4618	826	8919	891	2829	1597	1683

TOTAL HEAT GAIN BTU/H: 47672 TONS: 3.97 LOSS DUE TO VENTILATION LOAD BTU/H: 2777 STRUCTURAL HEAT LOSS: 66179 TOTAL COMBINED HEAT LOSS BTU/H: 68956

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: 19659

SITE NAME: ENCORE
BUILDER: GOLD PARK HOMES

TYPE: 38-6

DATE: Mar-17

GFA: 3724 LO# 72704

HEATING CFM	1525	COOLING CFM	1525
TOTAL HEAT LOSS	66,179	TOTAL HEAT GAIN	47,147
AIR FLOW RATE CFM	23.04	AIR FLOW RATE CFM	32.35
4th	0	3rd	2
2nd	9	1st	4
Bas	5		1

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

plenum pressure s/a 0.18
max s/a dif press. loss 0.03
min adjusted pressure s/a 0.15

EL296UH090XE48C
FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1255

AFUE = 96 %
INPUT (BTU/H) = 85,000
OUTPUT (BTU/H) = 85,000
DESIGN CFM = 1525
CFM @ 8" E.S.P.

ROOM NAME	1	2	3	4	5	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-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-2	LIV	DIN	KT/FM	KT/FM	KT/FM	LAUN	FOY	FOY	LIV	REC	REC	REC
RM LOSS MBH	1.59	1.39	0.60	1.73	1.30	2.46	0.79	1.73	1.30	1.59	1.02	2.42	0.87	2.55	2.55	2.55	0.86	2.81	2.81	2.42	2.86	2.86	2.86
CFM PER RUN HEAT	37	32	14	40	30	57	18	40	30	37	23	56	20	59	59	59	20	65	65	56	66	66	66
RM GAIN MBH	2.28	1.86	0.21	1.90	1.81	2.67	1.09	1.90	1.81	2.28	1.77	2.31	0.83	2.97	2.97	2.97	0.89	1.41	1.41	2.31	2.07	2.07	2.07
CFM PER RUN COOLING	74	60	7	61	58	86	35	61	58	74	57	75	27	96	96	96	29	46	46	75	67	67	67
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	190	190	200	190	200	160	10	180	200	180	200	150	110	130	160	170	130	180	80	140	100	130	100
TOTAL EFFECTIVE LENGTH	257	230	236	244	262	236	75	230	268	256	273	196	129	192	208	210	177	198	99	175	151	168	141
ADJUSTED PRESSURE	0.07	0.07	0.07	0.07	0.07	0.07	0.23	0.07	0.06	0.07	0.06	0.09	0.13	0.08	0.08	0.08	0.1	0.09	0.17	0.11	0.11	0.1	0.12
ROUND DUCT SIZE	5	5	4	5	5	6	4	5	5	5	5	5	4	6	6	6	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	272	235	161	294	220	291	207	294	220	272	169	411	229	301	301	301	301	477	746	411	485	485	485
COOLING VELOCITY (ft/min)	543	441	80	448	426	438	402	448	426	543	419	551	310	489	489	489	333	338	528	551	492	492	492
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	E	A	E	E	A	E	G	E	A	G	E	A	A	A	A	E	E	G	E	B	B	C

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'Ø unless noted otherwise on layout.

TEMPERATURE RISE 52 °F

RUN #	ROOM NAME	25																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
31X10	MBR	1.59	1.39	0.60	1.73	1.30	2.46	0.79	1.73	1.30	1.59	1.02	2.42	0.86	2.55	2.55	2.55	2.55	2.55	2.81	2.81	2.42	2.86	2.86	2.86
	RM LOSS MBH	37	32	14	40	30	57	18	40	30	37	23	56	20	59	59	59	59	59	65	65	56	66	66	66
	CFM PER RUN HEAT	2.28	1.86	0.21	1.90	1.81	2.67	1.09	1.90	1.81	2.28	1.77	2.31	0.83	2.97	2.97	2.97	2.97	2.97	1.41	1.41	2.31	2.07	2.07	2.07
	RM GAIN MBH	74	60	7	61	58	86	35	61	58	74	57	75	27	96	96	96	96	96	46	46	75	67	67	67
31X10	CFM PER RUN COOLING	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	
	ADJUSTED PRESSURE	67	40	36	54	62	76	65	50	68	76	73	46	19	62	48	40	47	18	19	35	51	36	41	41
	ACTUAL DUCT LGH	190	190	200	190	200	160	10	180	200	180	200	156	110	130	160	170	130	180	80	140	100	130	100	100
	EQUIVALENT LENGTH	257	230	236	244	262	236	75	230	268	256	273	196	129	192	208	210	177	198	99	175	151	166	141	141
31X10	TOTAL EFFECTIVE LENGTH	0.07	0.07	0.07	0.07	0.07	0.07	0.23	0.07	0.06	0.07	0.06	0.09	0.13	0.08	0.08	0.08	0.1	0.09	0.17	0.1	0.11	0.11	0.12	0.12
	ADJUSTED PRESSURE	5	5	4	5	5	6	4	5	5	5	5	5	4	6	6	6	4	5	5	5	5	5	5	5
	ROUND DUCT SIZE	272	235	161	294	426	291	207	294	220	272	169	411	229	301	301	301	229	477	746	411	485	485	485	485
	HEATING VELOCITY (ft/min)	543	441	80	448	426	438	402	448	426	543	419	551	310	489	489	489	333	338	528	338	551	492	492	492
31X10	COOLING VELOCITY (ft/min)	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
	OUTLET GRILL SIZE	A	E	A	E	E	A	E	G	F	A	F	E	A	A	A	A	F	F	G	F	F	B	B	C
	TRUNK																								

ROOM NAME	25	26	27	28	29	30
RM LOSS MBH	MUD	BAS	BAS	BAS	BAS	BAS
CFM PER RUN HEAT	508	343	343	343	343	343
RM GAIN MBH	117	79	79	79	79	79
CFM PER RUN COOLING	160	0.34	0.34	0.34	0.34	0.34
ADJUSTED PRESSURE	52	11	11	11	11	11
ACTUAL DUCT LGH	0.15	0.17	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	6	30	35	44	20	20
TOTAL EFFECTIVE LENGTH	160	120	110	110	100	100
ADJUSTED PRESSURE	166	150	145	154	130	120
ROUND DUCT SIZE	0.09	0.11	0.12	0.11	0.13	0.14
HEATING VELOCITY (ft/min)	597	580	580	580	580	580
COOLING VELOCITY (ft/min)	265	81	81	81	81	81
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	D	B	C	B	G	D

SUPPLY AIR TRUNK SIZE												RETURN AIR TRUNK SIZE											
TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)				
TRUNK A	342	0.07	9.7	12	8	513	0.06	8.4	8	X	207	0.06	8.4	8	TRUNK O	0	0.05	0	X	8	466		
TRUNK B	290	0.10	8.3	8	8	653	0	0	0	X	TRUNK H	0	0	0	TRUNK P	0	0.05	0	0	X	8		
TRUNK C	145	0.12	6.1	4	8	653	0	0	0	X	TRUNK I	0	0	0	TRUNK Q	0	0.05	0	0	X	8		
TRUNK D	631	0.09	11.5	16	8	710	TRUNK J	0	0	X	TRUNK K	0	0	0	TRUNK R	0	0.05	0	0	X	8		
TRUNK E	554	0.06	12.1	18	X	554	TRUNK L	0	0	X	TRUNK M	0	0	0	TRUNK S	0	0.05	0	0	X	8		
TRUNK F	0	0.00	0	0	8	0	TRUNK N	0	0	X	TRUNK T	0	0	0	TRUNK U	0	0.05	0	0	X	8		

RETURN AIR #	1	2	3	4	5	6	2@7"	7	BR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
AIR VOLUME	0	0	0	115	260	260	375	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0	0	0	0	0

TYPE: 38-6
SITE NAME: ENCORE

LO # 72704

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	7 @ 10.6 cfm	74.2 cfm
Table 9.32.3.A.	TOTAL	201.4 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
1 Bedroom	31.8 cfm	
2 Bedroom	47.7 cfm	
3 Bedroom	63.6 cfm	
4 Bedroom	79.5 cfm	
5 Bedroom	95.4 cfm	
More than 5 - Part 6	TOTAL	79.5 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	201.4	cfm
Less Principal Ventil. Capacity	139	cfm
Required Supplemental Capacity	62.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: 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	74 F	X	0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	✓
BATH	QTXEN050C	50	✓
ENS-2	QTXEN050C	50	✓

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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	March-17

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 38-6**BUILDER:** GOLD PARK HOMES**SFQT:** 3724**LO#** 72704**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 (ft³):	43357.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 49.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	158.0 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	-

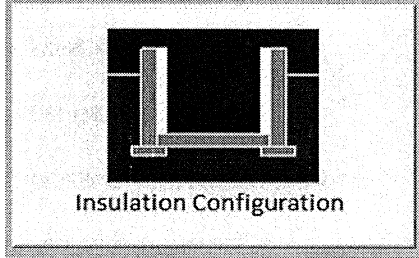
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



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 sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	14.9	 Insulation Configuration
Floor Width (m):	9.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.8	
Window Area (m ²):	0.9	
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):		1589

TYPE: 38-6

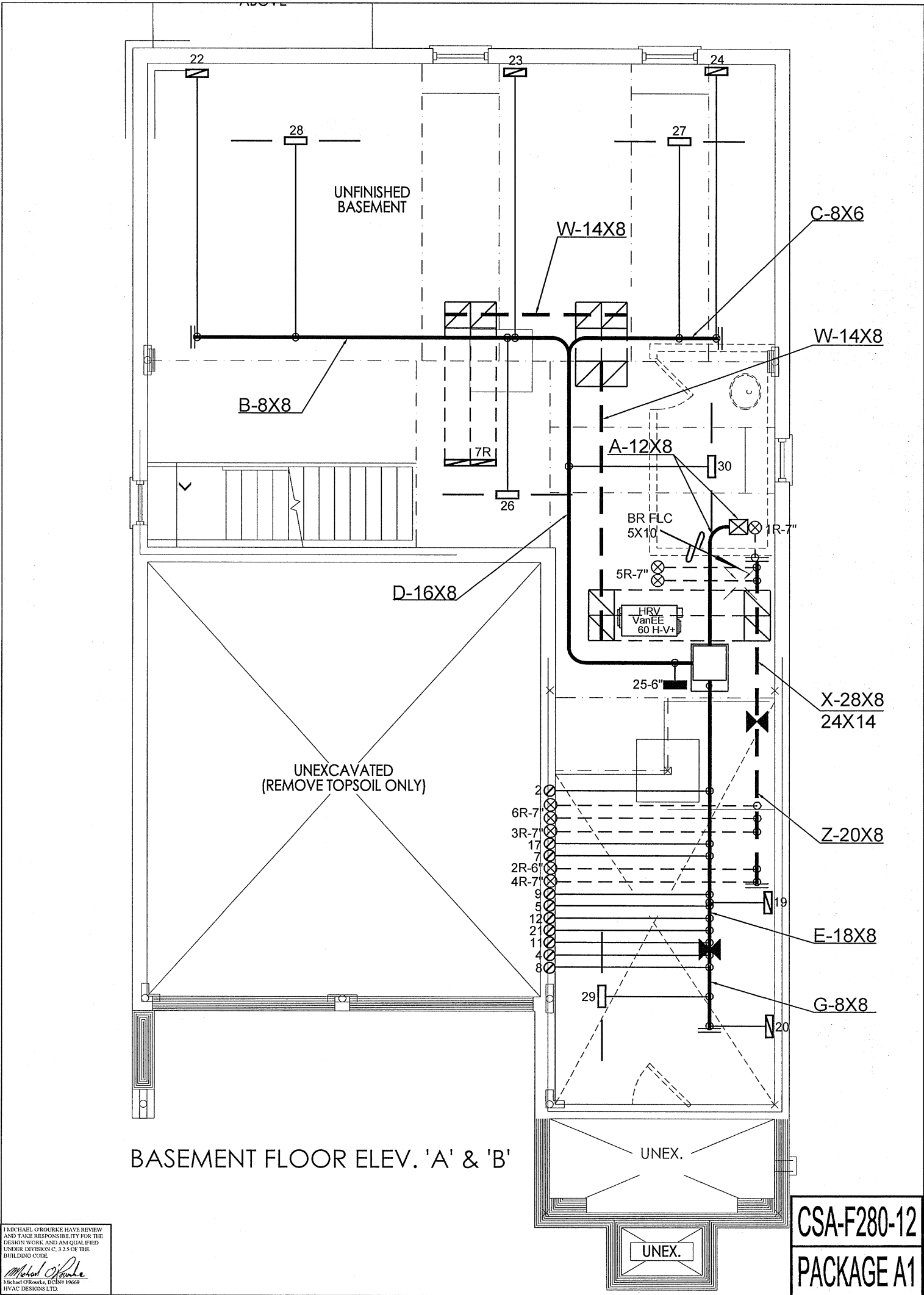
LO# 72704

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):	1227.7			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1636.6 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	65.6	65.6		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.409			
Cooling Air Leakage Rate (ACH/H):	0.145			

TYPE: 38-6
LO# 72704



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

Michael O'Brourke
Michael O'Brourke, 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.		
	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:
GOLD PARK HOMES

Project Name
**ENCORE
BRAMPTON, ONTARIO**

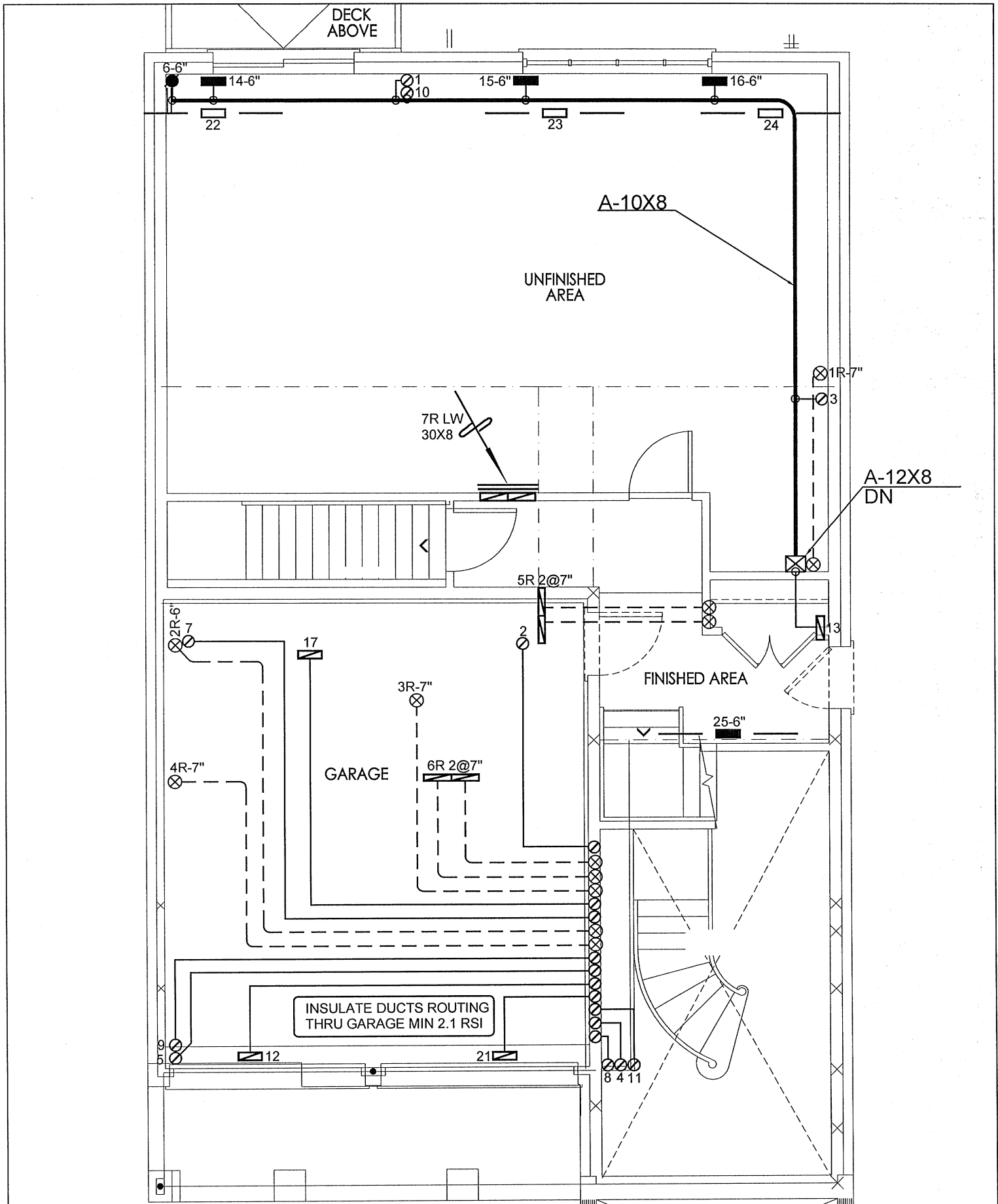
38-6 3724 sqft

HVACDESIGNS 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 68956 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS
MAKE	LENNOX	3RD FLOOR	11	4	3
MODEL	EL296UH090XE48C	2ND FLOOR	9	2	2
INPUT	88 MBTUH	1ST FLOOR	4	1	0
OUTPUT	85 MBTUH	BASEMENT	5	1	0
COOLING	4.0 TONS	ALL S/A DIFFUSERS 4" x 10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A			
FAN SPEED	1525 cfm @ 0.5" w.c.				

Sheet Title	
BASEMENT HEATING LAYOUT	
Date	MAR/2017
Scale	3/16" = 1'-0"
BCIN#	19669
LO#	72704



GROUND FLOOR ELEV. 'A' & 'B'

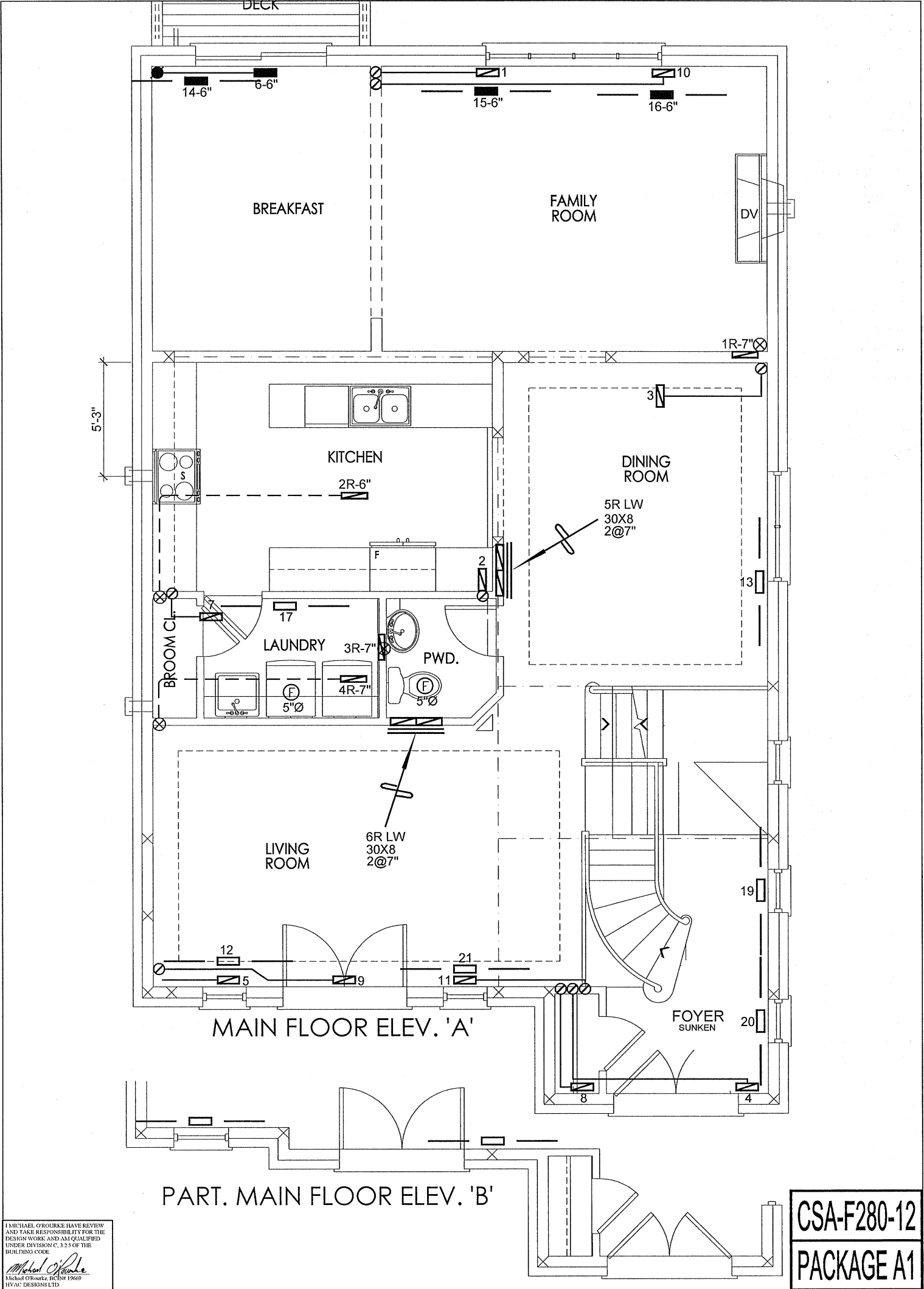
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	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
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	Date	

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Client GOLD PARK HOMES		HVACDESIGNS 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	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
38-6		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.	Scale 3/16" = 1'-0"	
3724 sqft			BCIN# 19669	
			LO#	72704



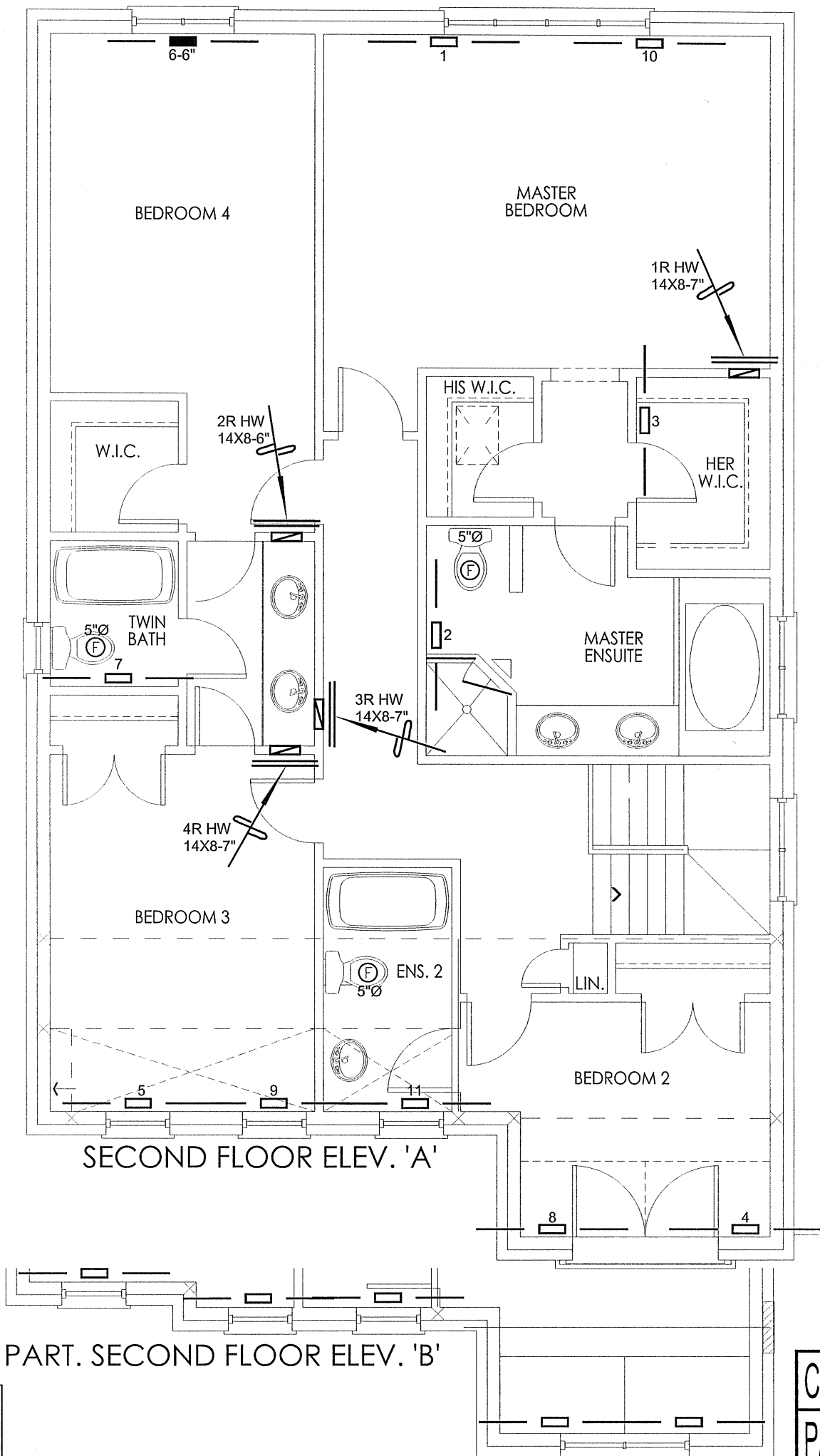
1 MICHAEL O'Rourke HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke BCIN 19669
HVAC DESIGNS LTD.

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
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	Date	

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Client GOLD PARK HOMES		 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	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
38-6		3724 sqft	Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 72704	
		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.		



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

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

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	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
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Client GOLD PARK HOMES		HVACDESIGNS 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	Sheet Title THIRD FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
38-63724 sqft			Scale 3/16" = 1'-0"	
		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.	BCIN# 19669	
			LO#	72704