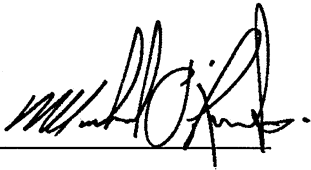


Schedule 1: Designer Information

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: 41-3 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.

SITE NAME: ENCORE
BUILDER: GOLD PARK HOMES
TYPE: 41-3
DATE: Mar-17
LO# 72719
GFA: 2803
WINTER NATURAL AIR CHANGE RATE 0.324
HEAT LOSS AT °F. 74
HEAT GAIN AT °F. 14
CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2	
EXP. WALL	35	33	11	16	41	29	6	8	
CLG. HT.	10	9	9	9	10	10	9	9	
FACTORS									
GRS.WALL AREA	350	297	99	144	410	290	54	72	
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	
NORTH	0	0	0	0	0	0	0	0	
EAST	24	7	0	0	0	0	0	0	
SOUTH	26	539	1089	0	0	0	0	0	
WEST	20.7	145	177	0	0	0	0	0	
SKYLT.	20.7	41.9	0	0	0	0	0	0	
DOORS	20.7	86.9	0	0	0	0	0	0	
NET EXPOSED WALL	4.3	326	1417	268	257	1117	211	99	
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0	0	
EXPOSED CLG	1.2	0.6	334	417	203	176	220	107	
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	
EXPOSED FLOOR	2.5	0.5	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS	2331	1476	717	1286	2952	2745	672	587	
SUB TOTAL HT GAIN	0.20	0.23	0.20	0.23	0.20	0.23	0.20	0.23	
LEVEL FACTOR / MULTIPLIER	537	499	165	296	680	632	155	135	
AIR CHANGE HEAT LOSS	82	94	10	44	121	116	30	17	
AIR CHANGE HEAT GAIN	0	0	88	0	363	309	83	0	
DUCT LOSS	0	0	19	0	318	240	0	0	
DUCT GAIN	2	480	0	1	240	1	0	0	
HEAT GAIN PEOPLE	637	0	0	637	637	637	0	0	
HEAT GAIN APPLIANCES/LIGHTS	2868	970	266	1582	3995	3716	910	723	
TOTAL HT LOSS BTU/H		2664							
TOTAL HT GAIN x 1.3 BTU/H		3477							

ROOM USE	DIN	KT/FM	LAUN	WIR	FOY	S. ENT	BAS
EXP. WALL	17	100	0	6	45	14	176
CLG. HT.	10	10	9	11	11	10	9
FACTORS							
GRS.WALL AREA	170	1000	0	66	495	140	1056
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN
NORTH	0	12	0	0	20	0	9
EAST	0	249	0	0	414	0	186
SOUTH	24	5320	0	0	0	0	147
WEST	20.7	2631	0	0	0	0	0
SKYLT.	20.7	303	0	9	0	0	0
DOORS	20.7	41.9	0	186	0	0	0
NET EXPOSED WALL	4.3	849	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0
EXPOSED CLG	1.2	0.6	154	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0
EXPOSED FLOOR	2.5	0.5	110	0	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	1132	6818	145	434	3615	1013	8686
SUBTOTAL HT GAIN	0.30	0.37	0.20	0.30	0.30	0.37	0.50
LEVEL FACTOR / MULTIPLIER	418	2520	107	160	1337	375	8017
AIR CHANGE HEAT LOSS	40	361	8	15	94	11	33
AIR CHANGE HEAT GAIN	0	0	57	0	0	0	0
DUCT LOSS	0	0	79	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	637	637	0	4952	637	16703
HEAT GAIN APPLIANCES/LIGHTS	1550	9338	630	595	2320	1388	809
TOTAL HT LOSS BTU/H		9769					
TOTAL HT GAIN x 1.3 BTU/H		1823					

SITE NAME: ENCORE

BUILDER: GOLD PARK HOMES

TYPE: 41-3

DATE: Mar-17

GFA: 2803 LO# 72719

HEATING CFM	1100	COOLING CFM	1100
TOTAL HEAT LOSS	52,583	TOTAL HEAT GAIN	35,931
AIR FLOW RATE CFM	20.92	AIR FLOW RATE CFM	30.7

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure 0.35
plenum pressure s/a 0.18
max s/a diff press. loss 0.03
min adjusted pressure s/a 0.15

AFUE = 96 %
INPUT (BTU/H) = 66,000
OUTPUT (BTU/H) = 64,000
FAN SPEED 70
LOW 0
MEDIUM 995
HIGH 1100
DESIGN CFM = 1100
CFM @ 6" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	8	4
R/A	0	0	5	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A fans 5'Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	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-4	BED-3	ENS-2	DIN	KT/FM	KT/FM	KT/FM	KT/FM	LAUN	WIR	FOY	S. ENT	BAS	BAS	BAS	BAS
RM LOSS MBH	2.87	2.66	0.97	1.58	2.00	1.86	0.91	1.86	2.00	0.72	1.55	2.33	2.33	2.33	2.33	0.63	0.59	4.95	1.39	4.18	4.18	4.18	4.18
CFM PER RUN HEAT	60	56	20	33	42	39	19	39	42	15	32	49	49	49	49	13	12	104	29	87	87	87	87
RM GAIN MBH	3.48	2.33	0.27	2.24	2.27	2.21	0.81	2.21	2.27	0.42	1.82	2.44	2.44	2.44	2.44	1.13	0.38	2.32	1.09	0.20	0.20	0.20	0.20
CFM PER RUN COOLING	107	72	8	69	70	68	25	68	70	13	56	75	75	75	75	35	12	71	33	6	6	6	6
ADJUSTED PRESSURE	0.15	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	150	160	90	150	100	100	130	110	110	120	120	150	140	140	140	160	32	40	28	30	32	13	34
TOTAL EFFECTIVE LENGTH	196	203	120	200	145	145	176	156	162	150	138	191	172	117	147	192	122	160	148	120	142	123	144
ADJUSTED PRESSURE	0.08	0.08	0.14	0.09	0.12	0.12	0.1	0.11	0.11	0.11	0.12	0.09	0.1	0.15	0.12	0.09	0.14	0.1	0.12	0.14	0.11	0.13	0.11
ROUND DUCT SIZE	6	5	4	5	5	5	4	5	5	4	4	5	5	5	5	4	4	6	4	5	5	5	5
HEATING VELOCITY (f/min)	306	411	229	242	308	286	218	286	308	172	367	360	360	360	360	149	138	530	333	639	639	639	639
COOLING VELOCITY (f/min)	546	529	92	507	514	499	287	499	514	149	642	551	551	551	551	402	138	382	379	44	44	44	44
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	E	E	C	E	E	E	C	B	C	A	A	A	A	E	C	C	C	B	B	C	C

RUN #	1	2	3	4	5	6	7	8	9	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-4	BED-3	ENS-2	DIN	KT/FM	KT/FM	KT/FM	KT/FM	LAUN	WIR	FOY	S. ENT	BAS	BAS	BAS	BAS
RM LOSS MBH	2.87	2.66	0.97	1.58	2.00	1.86	0.91	1.86	2.00	0.72	1.55	2.33	2.33	2.33	2.33	0.63	0.59	4.95	1.39	4.18	4.18	4.18	4.18
CFM PER RUN HEAT	60	56	20	33	42	39	19	39	42	15	32	49	49	49	49	13	12	104	29	87	87	87	87
RM GAIN MBH	3.48	2.33	0.27	2.24	2.27	2.21	0.81	2.21	2.27	0.42	1.82	2.44	2.44	2.44	2.44	1.13	0.38	2.32	1.09	0.20	0.20	0.20	0.20
CFM PER RUN COOLING	107	72	8	69	70	68	25	68	70	13	56	75	75	75	75	35	12	71	33	6	6	6	6
ADJUSTED PRESSURE	0.15	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	150	160	90	150	100	100	130	110	110	120	120	150	140	140	140	160	32	40	28	30	32	13	34
TOTAL EFFECTIVE LENGTH	196	203	120	200	145	145	176	156	162	150	138	191	172	117	147	192	122	160	148	120	142	123	144
ADJUSTED PRESSURE	0.08	0.08	0.14	0.09	0.12	0.12	0.1	0.11	0.11	0.11	0.12	0.09	0.1	0.15	0.12	0.09	0.14	0.1	0.12	0.14	0.11	0.13	0.11
ROUND DUCT SIZE	6	5	4	5	5	5	4	5	5	4	4	5	5	5	5	4	4	6	4	5	5	5	5
HEATING VELOCITY (f/min)	306	411	229	242	308	286	218	286	308	172	367	360	360	360	360	149	138	530	333	639	639	639	639
COOLING VELOCITY (f/min)	546	529	92	507	514	499	287	499	514	149	642	551	551	551	551	402	138	382	379	44	44	44	44
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	E	E	C	E	E	E	C	B	C	A	A	A	A	E	C	C	C	B	B	C	C

RUN #	1	2	3	4	5	6	7	8	9	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-4	BED-3	ENS-2	DIN	KT/FM	KT/FM	KT/FM	KT/FM	LAUN	WIR	FOY	S. ENT	BAS	BAS	BAS	BAS
RM LOSS MBH	2.87	2.66	0.97	1.58	2.00	1.86	0.91	1.86	2.00	0.72	1.55	2.33	2.33	2.33	2.33	0.63	0.59	4.95	1.39	4.18	4.18	4.18	4.18
CFM PER RUN HEAT	60	56	20	33	42	39	19	39	42	15	32	49	49	49	49	13	12	104	29	87	87	87	87
RM GAIN MBH	3.48	2.33	0.27	2.24	2.27	2.21	0.81	2.21	2.27	0.42	1.82	2.44	2.44	2.44	2.44	1.13	0.38	2.32	1.09	0.20	0.20	0.20	0.20
CFM PER RUN COOLING	107	72	8	69	70	68	25	68	70	13	56	75	75	75	75	35	12	71	33	6	6	6	6
ADJUSTED PRESSURE	0.15	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	150	160	90	150	100	100	130	110	110	120	120	150	140	140	140	160	32	40	28	30	32	13	34
TOTAL EFFECTIVE LENGTH	196	203	120	200	145	145	176	156	162	150	138	191	172	117	147	192	122	160	148	120	142	123	144
ADJUSTED PRESSURE	0.08	0.08	0.14	0.09	0.12	0.12	0.1	0.11	0.11	0.11	0.12	0.09	0.1	0.15	0.12	0.09	0.14	0.1	0.12	0.14	0.11	0.13	0.11
ROUND DUCT SIZE	6	5	4	5	5	5	4	5	5	4	4	5	5	5	5	4	4	6	4	5	5	5	5
HEATING VELOCITY (f/min)	306	411	229	242	308	286	218	286	308	172	367	360	360	360	360	149	138	530	333	639	639	639	639
COOLING VELOCITY (f/min)	546	529	92	507	514	499	287	499	514	149	642	551	551	551	551	402	138	382	379	44	44	44	44
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	E	E	C	E	E	E	C	B	C	A	A	A	A	E	C	C	C	B	B	C	C

RETURN AIR #	1	2	3	4	5	6	7	BR															
AIR VOLUME	85	95	125	95	85	300	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	54	30	35	48	47	20	21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
EQUIVALENT LENGTH	185	185	185	175	195	200	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL EFFECTIVE LH	239	215	220	223	242	220	226	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
ADJUSTED PRESSURE	0.06	0.07	0.07	0.07	0.06	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	
ROUND DUCT SIZE	6	6	6.7	6	6	9.2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
																						</	

TYPE: 41-3
SITE NAME: ENCORE

LO # 72719

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	139	cfm
Required Supplemental Capacity	51.8	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	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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:** 41-3**BUILDER:** GOLD PARK HOMES**SFQT:** 2803**LO#** 72719**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):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	37367.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 53.0 ft	WIDTH: 35.0 ft	EXPOSED PERIMETER:	176.0 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	-

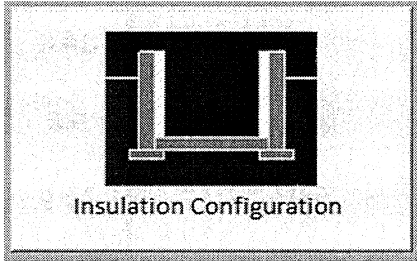
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

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):	16.2	 Insulation Configuration
Floor Width (m):	10.7	
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):		1804

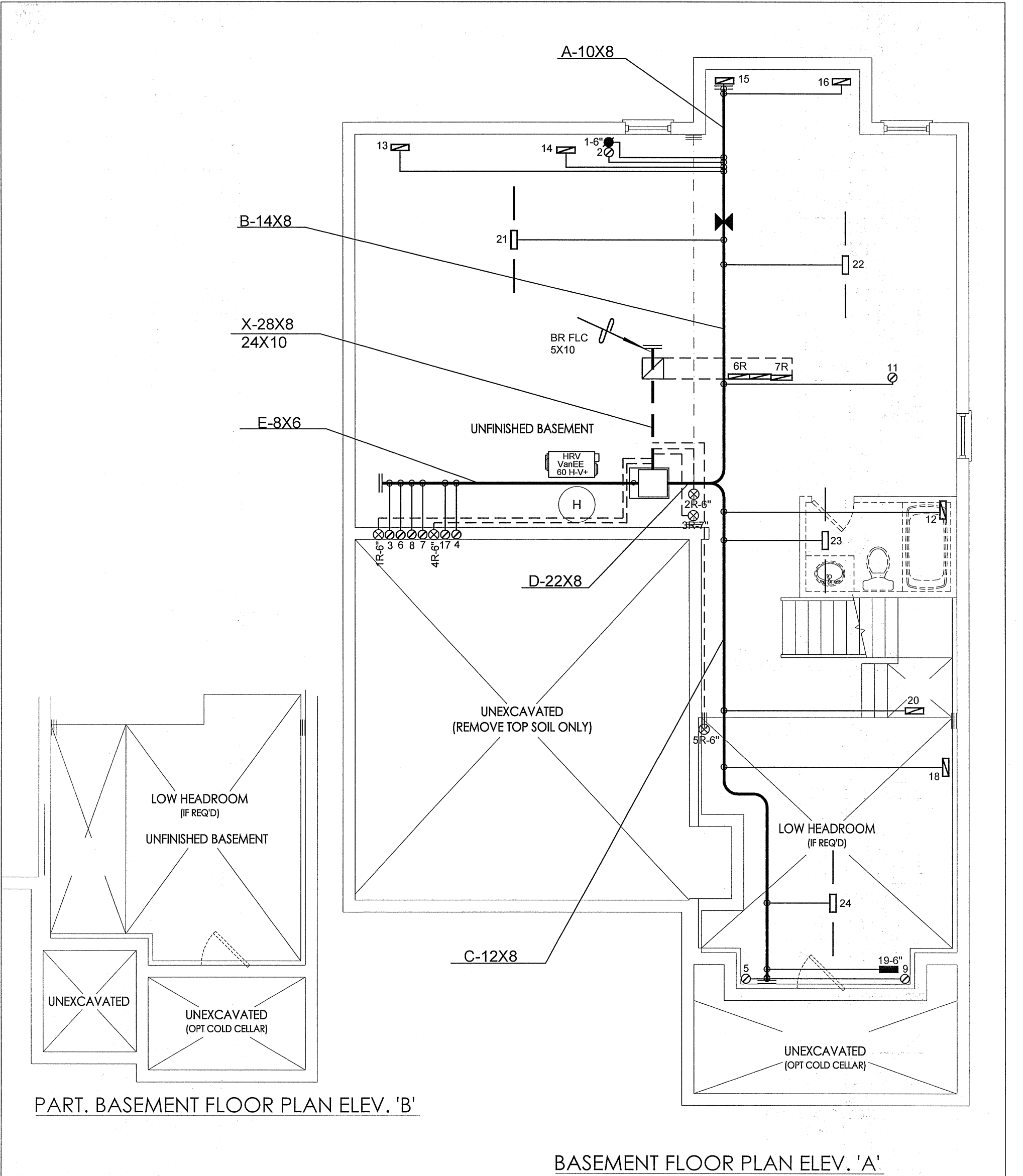
TYPE: 41-3
LO# 72719

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):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1058.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1410.5 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):	0.324			
Cooling Air Leakage Rate (ACH/H):	0.115			

TYPE: 41-3
LO# 72719



PART. BASEMENT FLOOR PLAN ELEV. 'B'

BASEMENT FLOOR PLAN ELEV. 'A'

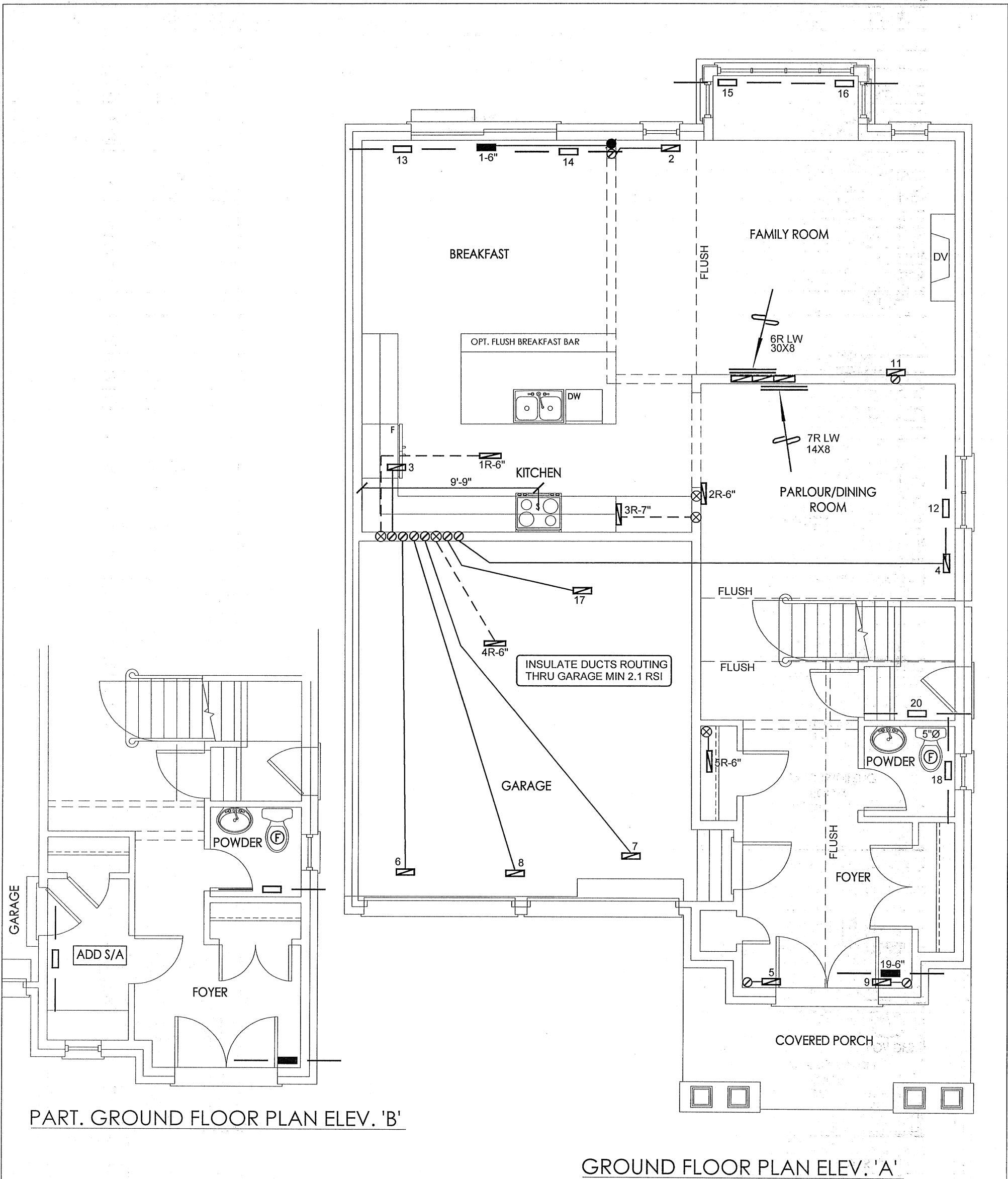
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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

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Client		 375 Finley Ave - Unit 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 55360 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GOLD PARK HOMES			MAKE LENNOX		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			MODEL EL296UH070XE36B		2ND FLOOR	11	5	5	
			INPUT 66 MBTU/H		1ST FLOOR	8	2	2	
			OUTPUT 64 MBTU/H		BASEMENT	4	1	0	Date MAR/2017
		COOLING 3.0 TONS		ALL S/A DIFFUSERS 4"x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A					Scale 3/16" = 1'-0"
		FAN SPEED 1100 cfm @ 0.5" w.c.							BCIN# 19669
41-3 2803 sqft							LO# 72719		



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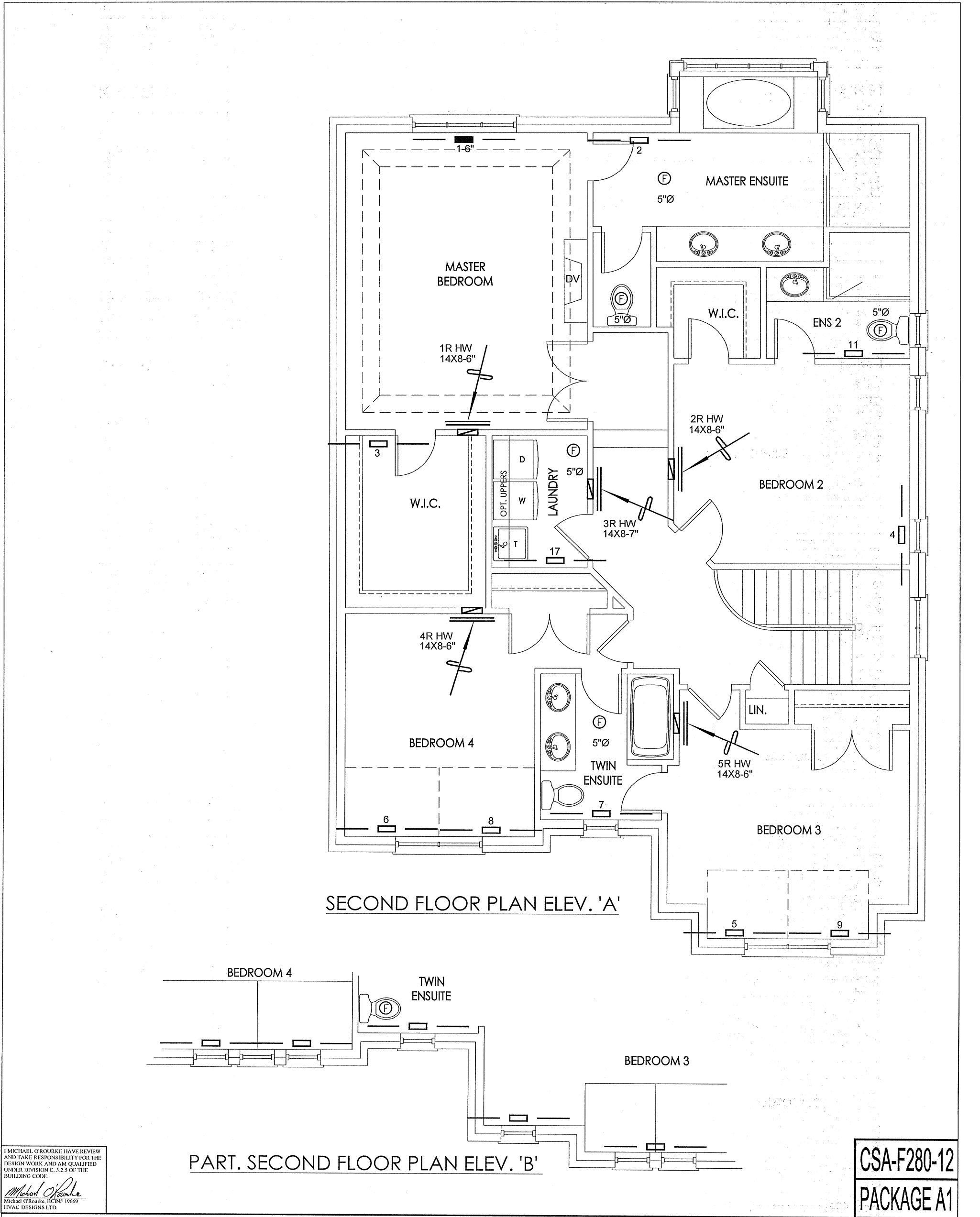
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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
							REVISIONS		

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Client		 375 Finley Ave - Unit 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date	MAR/2017
41-32803 sqft			Scale	3/16" = 1'-0"
		BCIN# 19669		
		LO#	72719	



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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
	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		 375 Finley Ave - Unit 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
41-32803 sqft		Scale 3/16" = 1'-0"		
		BCIN# 19669		
		LO#	72719	