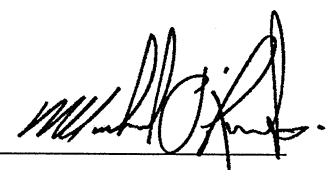


Schedule 1: Designer Information

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 – OPT GROUND 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				OPT. GROUND				DATE: Mar-17				WINTER NATURAL AIR CHANGE RATE 0.409				HEAT LOSS AT °F. 74				CSA-F280-12																							
BUILDER: GOLD PARK HOMES				TYPE: 38-6				GFA: 3724				LO# 72706				SUMMER NATURAL AIR CHANGE RATE 0.145				HEAT GAIN AT °F. 14				SB-12 PACKAGE A1																			
ROOM USE				ENS				WIC				BED-2				BED-3				BED-4				BATH				BED-5				ENS-2				REC				ENS-3			
EXP. WALL				11				8				30				27				33				9				26				12				58				9			
CLG. HT.				9				9				10				10				9				9				10				9				9				9			
FACTORS																																											
GRS.WALL AREA				99				72				300				270				297				81				260				108				522				81			
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
EAST				20.7	41.9	40	829	1676	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
SOUTH				20.7	25.2	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	0	0	0								
WEST				20.7	41.9	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								
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
NET EXPOSED WALL				4.3	0.8	290	1260	238	77	335	63	72	313	59	238	1034	196	281	1221	231	74	322	61	240	1043	197	92	400	76	474	2060	390	73	317	60								
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	266	332	162	209	261	127	192	190	92	168	210	102	140	175	85	252	315	153	108	135	66	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	48	128	62	40	107	52	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	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
SUBTOTAL HT LOSS						2422					503		1792		1673		1868		602					1457		1035		822		3054		483		262									
SUB TOTAL HT GAIN						0.10	0.20		0.10	0.20		0.10	0.20		0.10	0.20		0.10	0.20		0.10	0.20		0.30	1.10		0.10	0.20		0.30	1.10		0.30	1.10									
LEVEL FACTOR / MULTIPLIER						479			99		99		518		391		369		119				1609				162		3372		533												
AIR CHANGE HEAT LOSS						139			50		10		120		112		71		16				69				53		147		18												
AIR CHANGE HEAT GAIN						290			0		0		314		237		224		72				0				98		0		0		0										
DUCT LOSS						318			0		0		264		251		185		74				0				133		0		0		0										
DUCT GAIN						480			0		0		240		240		1		0				240				0		0		0		0										
HEAT GAIN PEOPLE				240		2			0		0		1		240		1		0				1				0		0		0		0										
HEAT GAIN APPLIANCES/LIGHTS						486			486		486		486		486		486		486				486				486		486		486		486		0								
TOTAL HT LOSS BTU/H						3190			1259		602		3452		2608		2461		793				3066				1082		6426		1016												
TOTAL HT GAIN x 1.3 BTU/H						4548			1665		210		3772		3590		2646		1062				2379				1899		3677		353												

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LIV	DIN	KTIFM	LAUN	WIR	FOY	MUD	BAS					
GRS.WALL AREA	320			320	150	690	70	0	592	140	948					
GLAZING	0	0	0	0	0	0	0	0	0	0	0					
NORTH	20.7	16.3		0	0	0	0	0	0	0	0					
EAST	20.7	41.9		0	0	0	0	0	0	0	0					
SOUTH	20.7	25.2		0	0	0	0	0	0	0	0					
WEST	20.7	41.9		0	0	0	0	0	0	0	0					
SKYLT.	20.7	86.9		0	0	0	0	0	0	0	0					
DOORS	24.6	4.7		0	0	0	0	0	0	0	0					
NET EXPOSED WALL	4.3	0.8		249	1082	205	70	304	58	0	0					
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7		0	0	0	0	0	0	0	0					
EXPOSED CLG	1.2	0.6		0	0	0	0	0	0	0	0					
NO ATTIC EXPOSED CLG	2.7	1.3		0	0	0	0	0	0	0	0					
EXPOSED FLOOR	2.5	0.5		266	661	125	114	283	54	60	149					
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	3291			2559	652	5205	587	149	4201	1379	7783					
SUB TOTAL HT GAIN	0.20	0.33		0.20	0.33	0.20	0.33	0.20	0.33	0.30	1.10					
LEVEL FACTOR / MULTIPLIER	1096			1096	217	1734	196	50	1399	1523	9382					
AIR CHANGE HEAT LOSS	171			171	8	360	7	2	137	32	50					
AIR CHANGE HEAT GAIN	439			439	0	694	78	20	0	0	0					
DUCT LOSS	0			322	0	623	60	3	0	0	0					
HEAT GAIN PEOPLE	486			486	486	486	486	486	486	486	486					
HEAT GAIN APPLIANCES/LIGHTS	4599			4599	869	7632	861	218	5600	2902	17165					
TOTAL HT LOSS BTU/H																
TOTAL HT GAIN x 1.3 BTU/H																

SITE NAME: ENCORE
BUILDER: GOLD PARK HOMESTYPE: 38-6
OPT. GROUND

DATE: Mar-17

GFA: 3724

LO# 72706

HEATING CFM 1525
TOTAL HEAT LOSS 66,029
AIR FLOW RATE CFM 23.1furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35EL296UH090XE48C 90
FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1255AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	11	10	5	5
R/A	0	4	2	1	1

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

All S/A runs 5'x10" 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-2	MBR	ENS-2	LIV	DIN	KT/FM	KT/FM	KT/FM	LAUN	WIR	FOY	FOY	LIV	REC	REC	BED-5
RM LOSS MBH	1.60	1.26	0.60	1.73	1.30	2.46	0.79	1.30	1.73	1.60	1.08	2.41	0.87	2.54	2.54	2.54	0.86	0.22	2.80	2.80	2.41	3.21	3.21	3.07
CFM PER RUN HEAT	37	29	14	40	30	57	18	30	40	37	25	56	20	59	59	59	20	5	65	65	56	74	74	71
RM GAIN MBH	2.27	1.67	0.21	1.89	1.80	2.65	1.06	1.80	1.89	2.27	1.90	2.30	0.80	2.97	2.97	2.97	0.86	0.04	1.73	1.73	2.30	1.84	1.84	2.38
CFM PER RUN COOLING	73	54	7	61	58	85	34	58	61	73	61	74	26	95	95	95	28	1	56	56	74	59	59	76
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	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	67	40	36	54	62	76	65	58	59	76	73	46	19	62	48	40	47	30	16	19	35	55	48	41
EQUIVALENT LENGTH	190	190	200	170	200	160	10	200	200	180	200	150	110	130	160	170	130	180	150	135	140	100	120	100
TOTAL EFFECTIVE LENGTH	257	230	236	224	262	236	75	258	259	256	273	196	129	192	208	210	177	210	166	154	175	155	168	141
ADJUSTED PRESSURE	0.07	0.07	0.07	0.08	0.07	0.07	0.23	0.07	0.07	0.07	0.06	0.09	0.13	0.08	0.08	0.08	0.1	0.08	0.1	0.11	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	4	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	272	213	161	294	220	291	207	220	294	272	184	411	229	301	301	301	321	57	477	477	411	543	543	521
COOLING VELOCITY (ft/min)	536	396	80	448	426	433	390	426	448	536	448	543	298	484	484	484	321	11	411	411	543	433	433	558
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	3X10
TRUNK	A	F	A	E	F	A	F	F	E	A	E	F	A	A	A	A	F	F	F	E	E	B	B	C

TEMPERATURE RISE 52 °F

RUN #	25	26	27	28	29	30	31
ROOM NAME	MUD	BAS	BAS	BAS	BAS	ENS-3	BAS
RM LOSS MBH	2.90	3.43	3.43	3.43	3.43	1.02	3.43
CFM PER RUN HEAT	67	79	79	79	79	23	79
RM GAIN MBH	1.29	0.33	0.33	0.33	0.33	0.36	0.33
CFM PER RUN COOLING	41	11	11	11	11	12	11
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	5	30	35	44	20	21	22
EQUIVALENT LENGTH	140	120	110	110	130	90	150
TOTAL EFFECTIVE LENGTH	145	150	145	154	150	111	172
ADJUSTED PRESSURE	0.12	0.11	0.12	0.11	0.11	0.15	0.1
ROUND DUCT SIZE	5	5	5	5	5	4	5
HEATING VELOCITY (ft/min)	492	580	580	580	580	264	580
COOLING VELOCITY (ft/min)	301	81	81	81	81	138	81
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	D	B	C	B	E	D	D

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	342	0.07	9.7	12	8	513	0	0.00	0	0	0	0.00	0	0	0
TRUNK B	306	0.10	8.5	8	8	689	0	0.00	0	0	0	0.00	0	0	0
TRUNK C	150	0.12	6.2	4	8	675	0	0.00	0	0	0	0.00	0	0	0
TRUNK D	625	0.10	11.1	14	8	804	0	0.00	0	0	0	0.00	0	0	0
TRUNK E	305	0.06	9.7	12	8	458	0	0.00	0	0	0	0.00	0	0	0
TRUNK F	558	0.06	12.1	18	8	558	0	0.00	0	0	0	0.00	0	0	0

RETURN AIR TRUNK SIZE	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK G	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK H	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK I	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK J	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK K	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK L	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK M	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK N	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK O	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK P	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK Q	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK R	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK S	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK T	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK U	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK V	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK W	370	0.05	10.9	14	8	476	0.05	10.9	14	8	476	0.05	10.9	14	8
TRUNK X	945	0.05	15.4	28	8	608	0.05	15.4	28	8	608	0.05	15.4	28	8
TRUNK Y	580	0.05	12.9	20	8	522	0.05	12.9	20	8	522	0.05	12.9	20	8
TRUNK Z	1525	0.05	18.5	24	14	654	0.05	18.5	24	14	654	0.05	18.5	24	14

TYPE: 38-6
SITE NAME: ENCORE

LO # 72706
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	74 F	X	0.25

SUPPLEMENTAL FANS		NUTONE
Location	Model	cfm
ENS	QTXEN050C	50
BATH	QTXEN050C	50
ENS-2	QTXEN050C	50
PWD	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	OPT. GROUND	BUILDER: GOLD PARK HOMES
SFQT: 3724	LO# 72706	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:	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):	43357.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.65	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	-

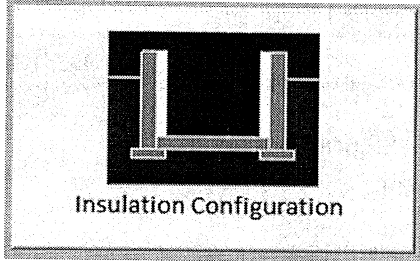
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

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# 72706

OPT. GROUND

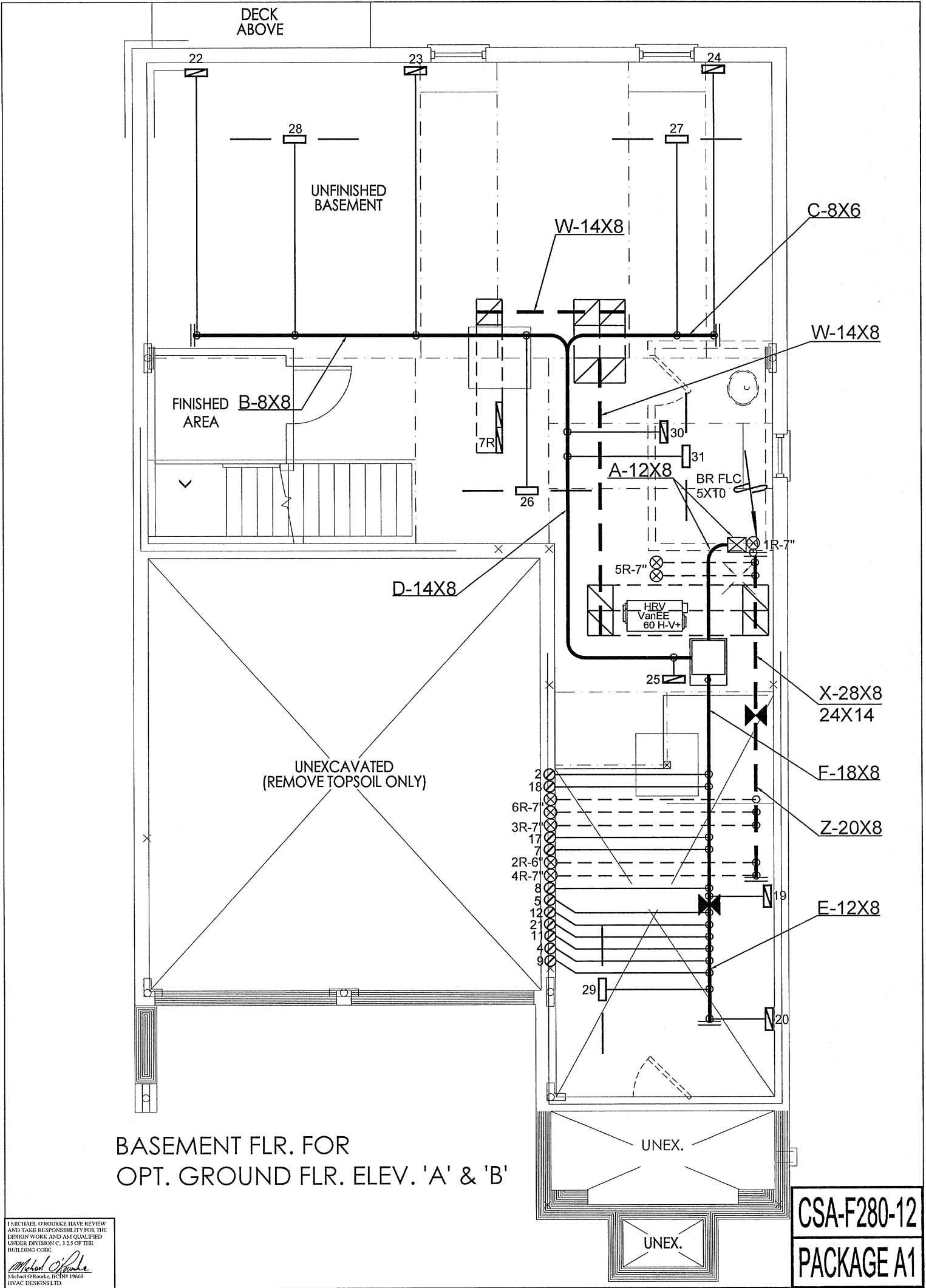
Air Infiltration Residential Load Calculator

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
Diameter (mm):	0	0	0
	#4	0	
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.409		
Cooling Air Leakage Rate (ACH/H):	0.145		

TYPE: 38-6
LO# 72706

OPT. GROUND

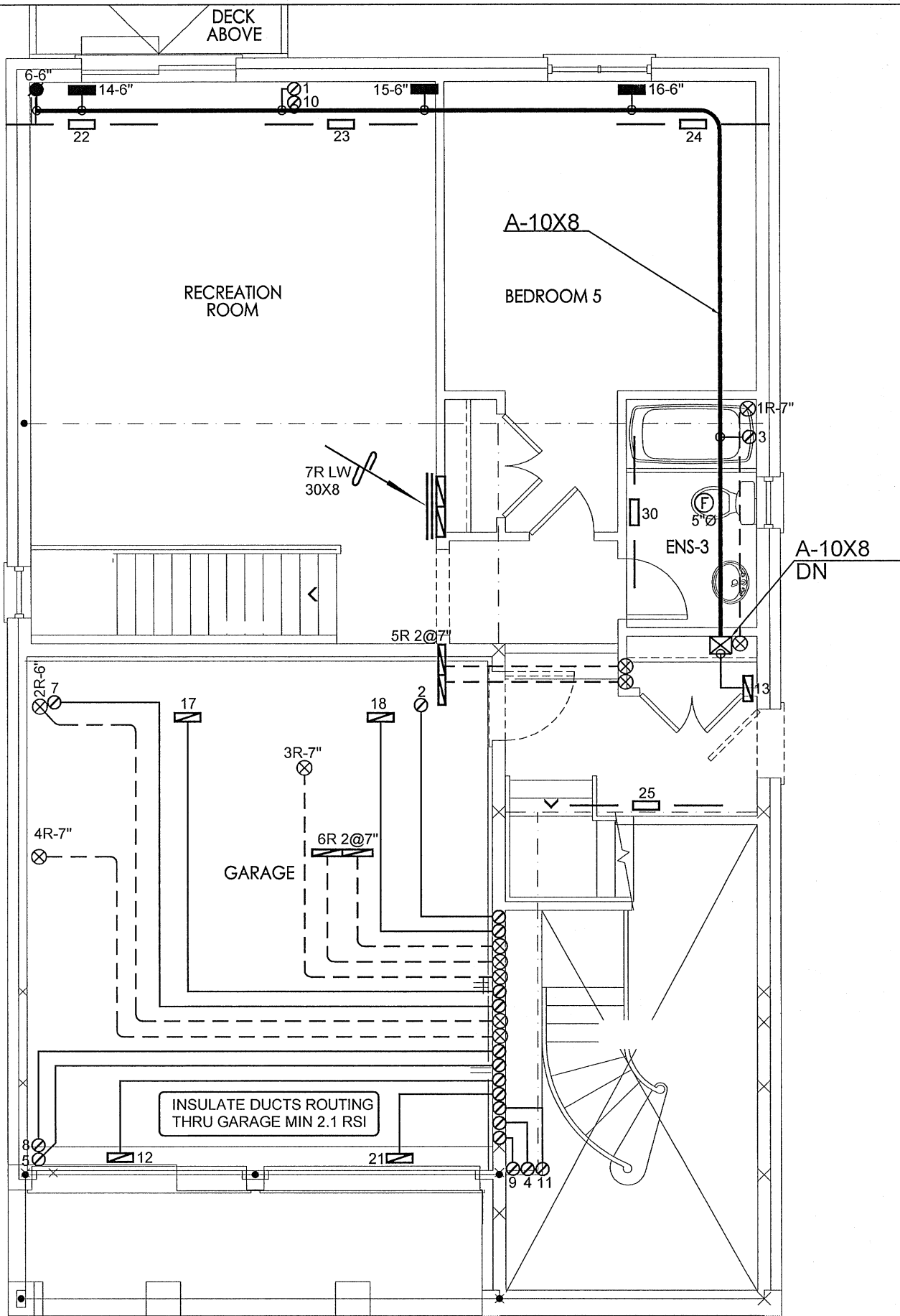


I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

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

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			
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.® AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.											
Client		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 68806 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title	
GOLD PARK HOMES						MAKE LENNOX		3RD FLOOR 11 4 3		BASEMENT HEATING LAYOUT	
Project Name		MODEL EL296UH090XE48C		2ND FLOOR 10 2 3		Date MAR/2017					
ENCORE BRAMPTON, ONTARIO		INPUT 88 MBTU/H		1ST FLOOR 5 1 1		Scale 3/16" = 1'-0"					
OPT. GROUND 38-6		OUTPUT 85 MBTU/H		BASEMENT 5 1 0		BCIN# 19669					
3724 sqft		COOLING 4.0 TONS		ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A		LO# 72706					
		FAN SPEED 1525 cfm @ 0.5" w.c.									



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

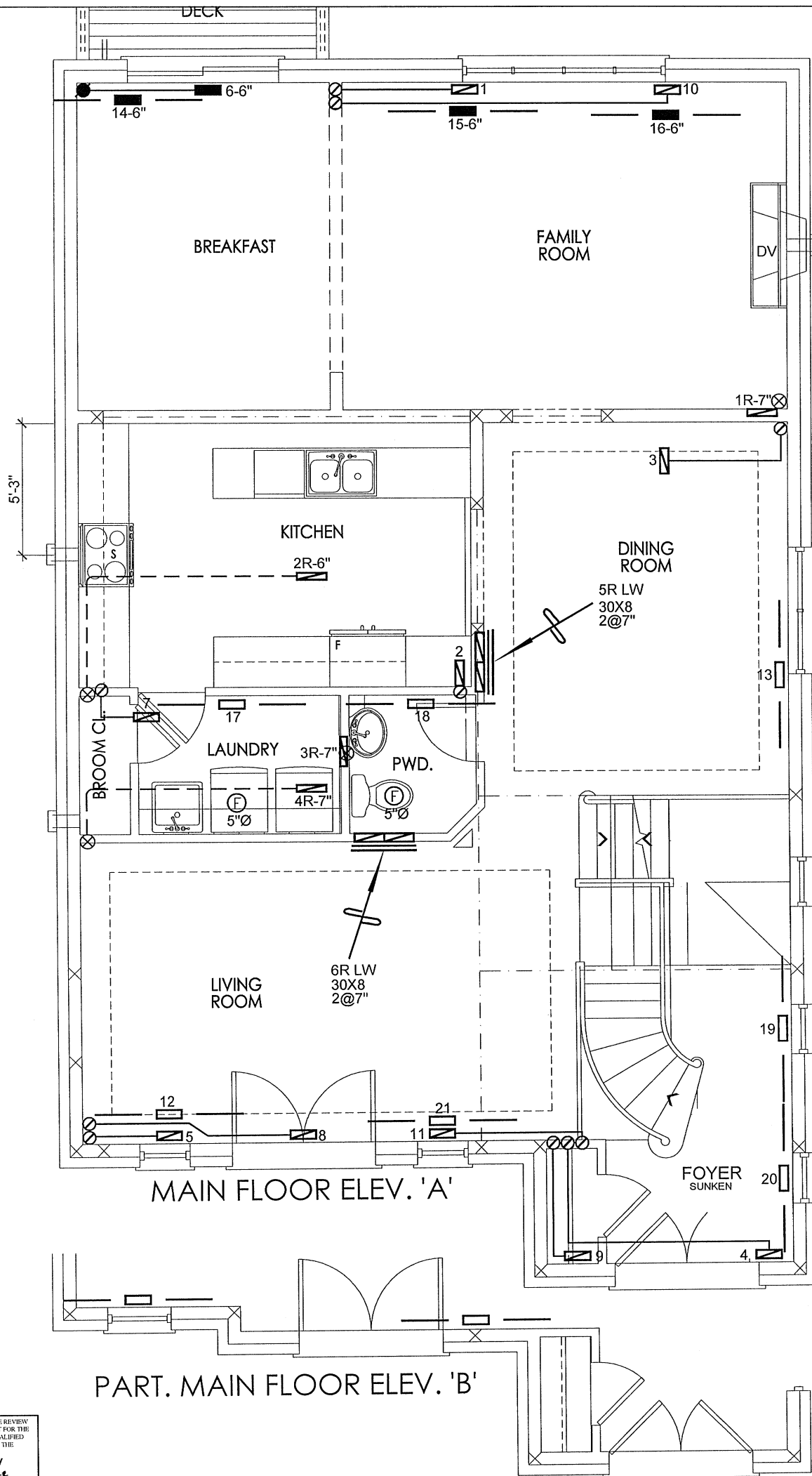
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Michael O'Rourke
Michael O'Rourke BCIN 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE		REDUCER	No.	Description
								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 FIRST FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
OPT. GROUND 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# 72706



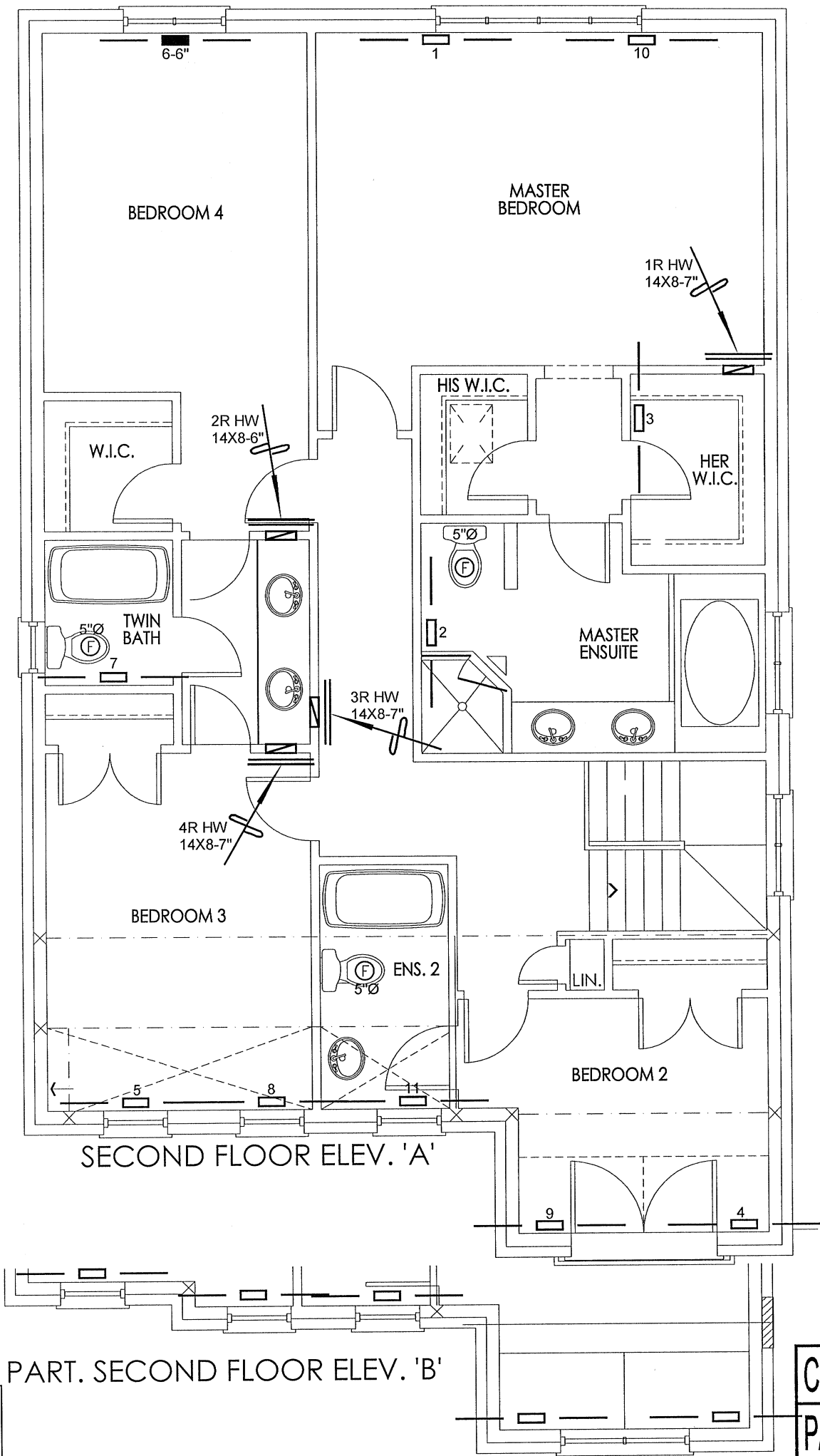
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HVAC DESIGNS LTD.

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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Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
OPT. GROUND 38-6			Scale 3/16" = 1'-0"	
3724 sqft			BCIN# 19669	
			LO#	72706



I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32-5 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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Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	Scale 3/16" = 1'-0"
OPT. GROUND 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.	BCIN# 19669	
3724 sqft			LO#	72706