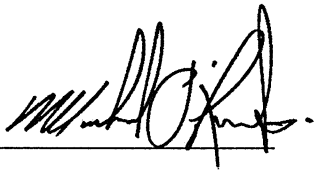


Schedule 1: Designer Information

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@hvacdsgns.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: 38-8 OPT. GROUND/OPT. 2ND. 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/OPT. 2ND		DATE: Mar-17		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS ΔT °F		CSA-F280-12	
BUILDER: GOLD PARK HOMES		TYPE: 38-3		LO# 72714		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN ΔT °F		SB-12 PACKAGE A1	
ROOM USE		ENS		BED-3		BED-2		BED-4		BED-5	
EXP. WALL CLG. HT.		MBR		BATH		FOY		WIR		DEN	
FACTORS		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
GRS. WALL AREA		380		171		450		81		135	
GLAZING		0		0		0		0		0	
NORTH		20.7 16.3		0		0		0		0	
EAST		30 622 1257		0		0		0		0	
SOUTH		20.7 41.9		0		0		0		0	
WEST		20.7 25.2		0		0		0		0	
SKYL.T.		20.7 41.9		0		0		0		0	
DOORS		20.7 86.9		0		0		0		0	
NET EXPOSED WALL		4.3 0.8		161 700 132		0		0		0	
SLAB ON GRADE HEAT LOSS		350 1521 288		0		0		0		0	
SUBTOTAL HT LOSS		52 226 43		0		0		0		0	
SUB TOTAL HT GAIN		0		0		0		0		0	
LEVEL FACTOR / MULTIPLIER		0.10 0.26		0.10 0.26		0.10 0.26		0.10 0.26		0.10 0.26	
AIR CHANGE HEAT LOSS		660		263		0		0		0	
AIR CHANGE HEAT GAIN		319		0		0		0		0	
DUCT LOSS		0		0		0		0		0	
DUCT GAIN		310		0		0		0		0	
HEAT GAIN PEOPLE		2		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS		757		0		0		0		0	
TOTAL HT LOSS BTU/H		3513		1832		1275		1155		1307	
TOTAL HT GAIN x 1.3 BTU/H		4428		4000		839		2053		748	
GRS. WALL AREA		288		1012		453		409		537	
GLAZING		0		0		0		0		0	
NORTH		20.7 16.3		0		0		0		0	
EAST		30 622 1257		0		0		0		0	
SOUTH		20.7 41.9		0		0		0		0	
WEST		20.7 25.2		0		0		0		0	
SKYL.T.		20.7 41.9		0		0		0		0	
DOORS		20.7 86.9		0		0		0		0	
NET EXPOSED WALL		4.3 0.8		161 700 132		0		0		0	
SLAB ON GRADE HEAT LOSS		350 1521 288		0		0		0		0	
SUBTOTAL HT LOSS		52 226 43		0		0		0		0	
SUB TOTAL HT GAIN		0		0		0		0		0	
LEVEL FACTOR / MULTIPLIER		0.10 0.26		0.10 0.26		0.10 0.26		0.10 0.26		0.10 0.26	
AIR CHANGE HEAT LOSS		660		263		0		0		0	
AIR CHANGE HEAT GAIN		319		0		0		0		0	
DUCT LOSS		0		0		0		0		0	
DUCT GAIN		310		0		0		0		0	
HEAT GAIN PEOPLE		2		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS		757		0		0		0		0	
TOTAL HT LOSS BTU/H		3513		1832		1275		1155		1307	
TOTAL HT GAIN x 1.3 BTU/H		4428		4000		839		2053		748	

ROOM USE	LIV		KITCHEN		LAUN		WIR		FOY		DEN		BTH-2		BAS	
EXP. WALL CLG. HT.	32	9	78	9	0	9	9	30	15	10	10	10	10	10	162	
FACTORS	288		702		0		81		450		135		100		972	
GRS.WALL AREA	LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
GLAZING	0 0 0		0 0 0		0 0 0		0 0 0		0 0 0		0 0 0		0 0 0		8 166 130	
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	
EAST	20.7 41.9		90 1866 3770		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		10 207 252		0 0 0		30 622 757		8 166 202		4 83 101	
WEST	20.7 41.9		0 0 0		0 0 0		0 0 0		78 1616 3257		0 0 0		0 0 0		0 0 0	
SKYL.T.	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	
DOORS	24.6 4.7		0 0 0		0 0 0		0 0 0		20 492 93		0 0 0		0 0 0		0 0 0	
NET EXPOSED WALL	4.3 0.8		612 2659 503		0 0 0		71 309 58		362 1530 289		105 456 86		92 400 76		20 492 93	
NET EXPOSED BMT 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	
EXPOSED CLG	1.2 0.6		12 15 7		0 0 0		0 0 0		144 180 88		0 0 0		0 0 0		486 1703 322	
NO A T T I C 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	
EXPOSED FLOOR	2.5 0.5		56 139 26		64 169 30		0 0 0		0 0 0		32 79 15		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		5567	
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		8010	
SUBTOTAL HT LOSS	3104		4678		169		516		3817		1157		566		647	
SUB TOTAL HT GAIN	2372		4307		30		311		3737		858		278		0.40 1.26	
LEVEL FACTOR / MULTIPLIER	0.20 0.37		0.20 0.37		0.20 0.37		0.20 0.37		0.20 0.37		0.20 0.37		0.30 1.03		10056	
AIR CHANGE HEAT LOSS	1162		1751		59		193		1429		433		583		0	
AIR CHANGE HEAT GAIN	171		310		2		22		269		62		20		47	
DUCT LOSS	427		643		22		0		0		159		0		0	
DUCT GAIN	330		537		79		0		0		92		0		0	
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS	757		757		757		757		5246		1750		1149		18066	
TOTAL HT LOSS BTU/H	4692		7072		240		709		5208		1316		387		901	
TOTAL HT GAIN x 1.3 BTU/H	4718		7684		1123		433		5208		1316		387		901	

SITE NAME: ENCORE
BUILDER: GOLD PARK HOMES

OPT. GROUND/OPT.2ND

DATE: Mar-17

GFA: 4401

LO# 72714

HEATING CFM 1525 COOLING CFM 1525
TOTAL HEAT LOSS 65,600 TOTAL HEAT GAIN 47,350
AIR FLOW RATE CFM 23.25 AIR FLOW RATE CFM 32.21

EL296UH090XE48C
FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1255

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000

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

All SIA diffusers 4"x10" unless noted otherwise on layout.

All SIA 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	MBR	ENS	ENS-2	BED-3	BED-4	BED-2	BED-2	ENS-3	BED-5	BATH	LIV	LIV	LIV	KT/FM	KT/FM	LAUN	W/R	FOY	DEN	REC	REC	BED-6	BTH2
RM LOSS MBH	1.76	1.76	0.98	1.18	0.92	0.92	1.14	1.14	0.58	1.16	1.28	2.35	2.35	2.35	2.36	2.36	0.24	0.71	2.62	1.75	3.38	3.38	3.58	1.15
CFM PER RUN HEAT	41	41	23	30	28	21	26	21	14	27	30	55	55	55	55	55	6	16	61	41	78	78	83	27
RM GAIN MBH	2.21	2.21	1.32	0.75	2.29	2.00	2.26	2.00	0.40	2.05	0.84	2.36	2.36	2.36	2.56	2.56	1.13	0.43	2.60	1.32	1.47	1.47	2.82	0.39
CFM PER RUN COOLING	71	71	43	24	74	64	73	64	13	66	27	76	76	76	83	83	36	14	84	42	47	47	91	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	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.17
EQUIVALENT LENGTH	180	200	200	170	200	170	140	140	200	200	200	170	180	160	160	210	205	232	185	197	128	144	157	149
TOTAL EFFECTIVE LENGTH	261	290	282	241	252	234	194	194	232	244	255	266	233	231	229	228	210	205	232	185	197	128	144	157
ADJUSTED PRESSURE	0.06	0.06	0.06	0.07	0.07	0.07	0.09	0.09	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.08	0.08	0.13	0.12	0.1	0.11
ROUND DUCT SIZE	6	6	5	4	5	5	5	5	4	5	4	6	6	6	6	6	4	4	6	4	5	5	5	4
HEATING VELOCITY (ft/min)	209	209	169	344	206	154	191	154	161	198	344	280	280	280	280	280	69	184	311	470	573	573	609	310
COOLING VELOCITY (ft/min)	362	362	316	275	543	470	536	470	149	485	310	388	388	388	423	423	413	161	428	482	345	345	668	138
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	A	A	C	B	C	C	C	B	B	A	B	A	A	C	B	C	E	C	H	G	G	E

RUN#	25	26	27	28	29	30
ROOM NAME	BAS	BAS	BAS	BAS	FOY	REC
RM LOSS MBH	4.52	4.52	4.52	4.52	2.62	3.38
CFM PER RUN HEAT	105	105	105	105	61	78
RM GAIN MBH	0.23	0.23	0.23	0.23	2.60	1.47
CFM PER RUN COOLING	7	7	7	7	84	47
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.17
EQUIVALENT LENGTH	120	120	120	120	150	120
TOTAL EFFECTIVE LENGTH	146	143	146	155	201	150
ADJUSTED PRESSURE	0.11	0.11	0.11	0.1	0.08	0.11
ROUND DUCT SIZE	6	6	6	6	6	5
HEATING VELOCITY (ft/min)	535	535	535	535	311	573
COOLING VELOCITY (ft/min)	36	36	36	36	428	345
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	3X10
TRUNK	G	H	G	E	E	E

TRUNK	CFM	STAT. PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STAT. PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	215	0.06	8.5	8	484	TRUNK G	371	0.10	9.1	10	8
TRUNK B	375	0.06	10.4	12	563	TRUNK H	183	0.11	6.9	6	8
TRUNK C	285	0.07	8.8	10	477	TRUNK I	554	0.10	10.6	14	8
TRUNK D	640	0.06	12.8	16	576	TRUNK J	0	0.00	0	0	8
TRUNK E	332	0.08	9.3	10	598	TRUNK K	0	0.00	0	0	8
TRUNK F	972	0.06	14.9	26	673	TRUNK L	0	0.00	0	0	8

RETURN AIR #	1	2	3	4	5	6	7	8
AIR VOLUME	75	75	95	120	120	220	260	360
PLENUM PRESSURE	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
ACTUAL DUCT LGH.	87	85	45	83	58	60	66	19
EQUIVALENT LENGTH	230	225	140	165	185	205	140	140
TOTAL EFFECTIVE LH	317	310	185	248	243	265	206	159
ADJUSTED PRESSURE	0.05	0.05	0.08	0.06	0.06	0.05	0.07	0.09
ROUND DUCT SIZE	6	6	5.8	6.8	6.8	8.9	8.8	9.3
INLET GRILL SIZE	8	8	8	8	8	8	8	8
INLET GRILL SIZE	14	14	14	14	14	30	30	30

TRUNK	CFM	STAT. PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STAT. PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	668	TRUNK X	1525	0.05	18.5	32	8
TRUNK P	0	0.05	0	0	549	TRUNK Y	490	0.05	12.1	18	8
TRUNK Q	0	0.05	0	0	712	TRUNK Z	0	0.05	0	0	8
TRUNK R	0	0.05	0	0	0	DROP	1525	0.05	18.5	24	14
TRUNK S	0	0.05	0	0	0						
TRUNK T	0	0.05	0	0	0						
TRUNK U	0	0.05	0	0	0						
TRUNK V	0	0.05	0	0	0						
TRUNK W	0	0.05	0	0	0						
TRUNK X	1525	0.05	18.5	32	8						
TRUNK Y	490	0.05	12.1	18	8						
TRUNK Z	0	0.05	0	0	8						
DROP	1525	0.05	18.5	24	14						

Michael O'Rourke

TYPE: 38-3
SITE NAME: ENCORE

LO # 72714
OPT. GROUND/OPT.2ND

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	5 @ 10.6 cfm	53 cfm
Kitchen & Bathrooms	7 @ 10.6 cfm	74.2 cfm
Other Rooms	4 @ 10.6 cfm	42.4 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	111.3 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	212	cfm
Less Principal Ventil. Capacity	120	cfm
Required Supplemental Capacity	92.0	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE 60H-V+ Location: BSMT		
120.0 cfm	3.0 sones ☒ HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
120.0 CFM	X 74 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	☒
BATH	QTXEN050C	50	☒
ENS-2	QTXEN050C	50	☒
W/R	QTXEN050C	50	☒

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: 38-3	OPT. GROUND/OPT.2ND	BUILDER: GOLD PARK HOMES
SFQT: 4401	LO# 72714	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):	46471.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	7
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: 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	-

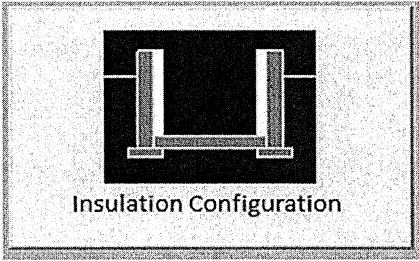
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



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):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.8	
Window Area (m ²):	1.1	
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):		1631

TYPE: 38-3
LO# 72714

OPT. GROUND/OPT.2ND

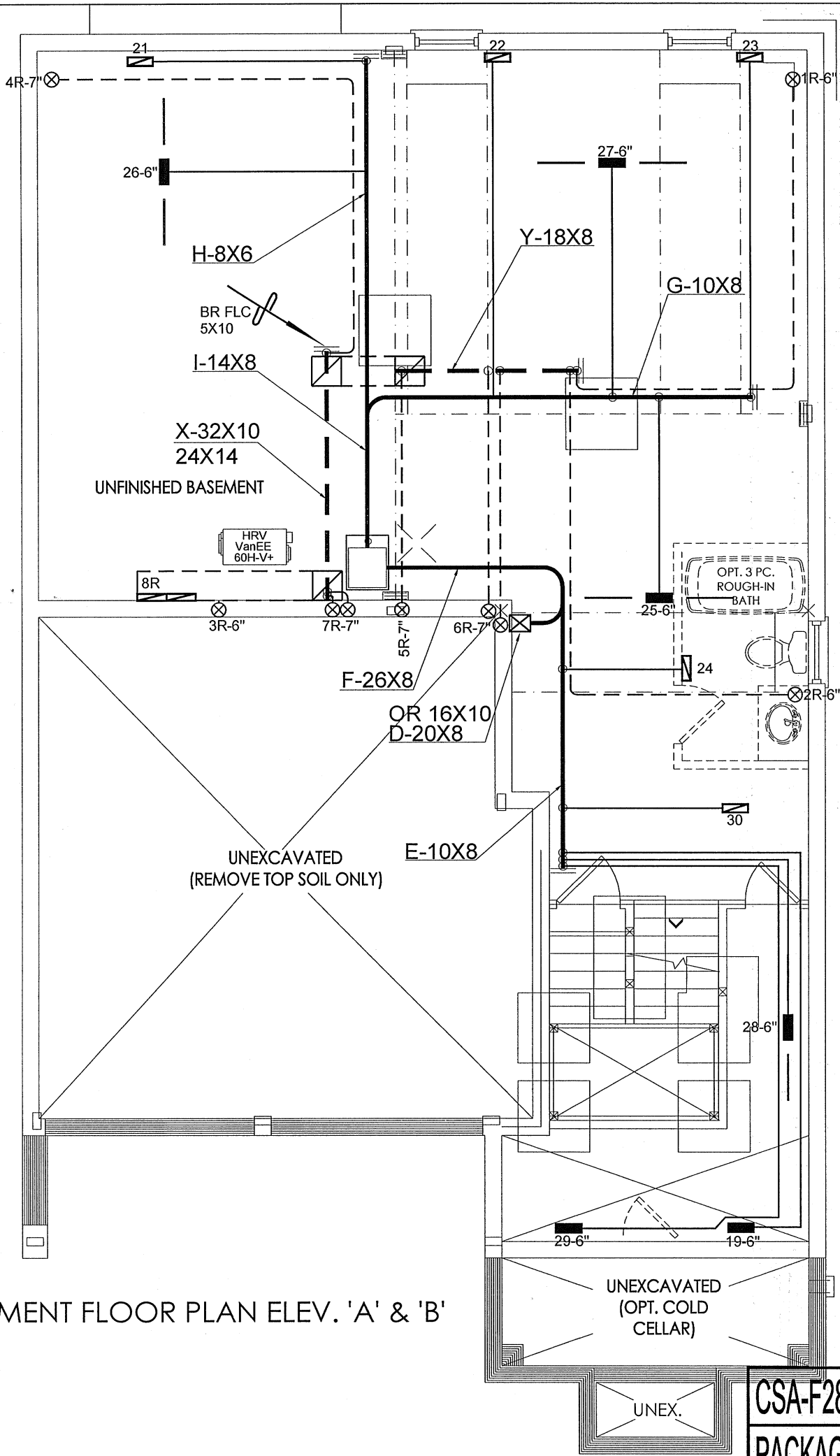
Air Infiltration Residential Load Calculator

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):	1315.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1754.2 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	56.6	56.6		
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: 38-3
LO# 72714

OPT. GROUND/OPT.2ND



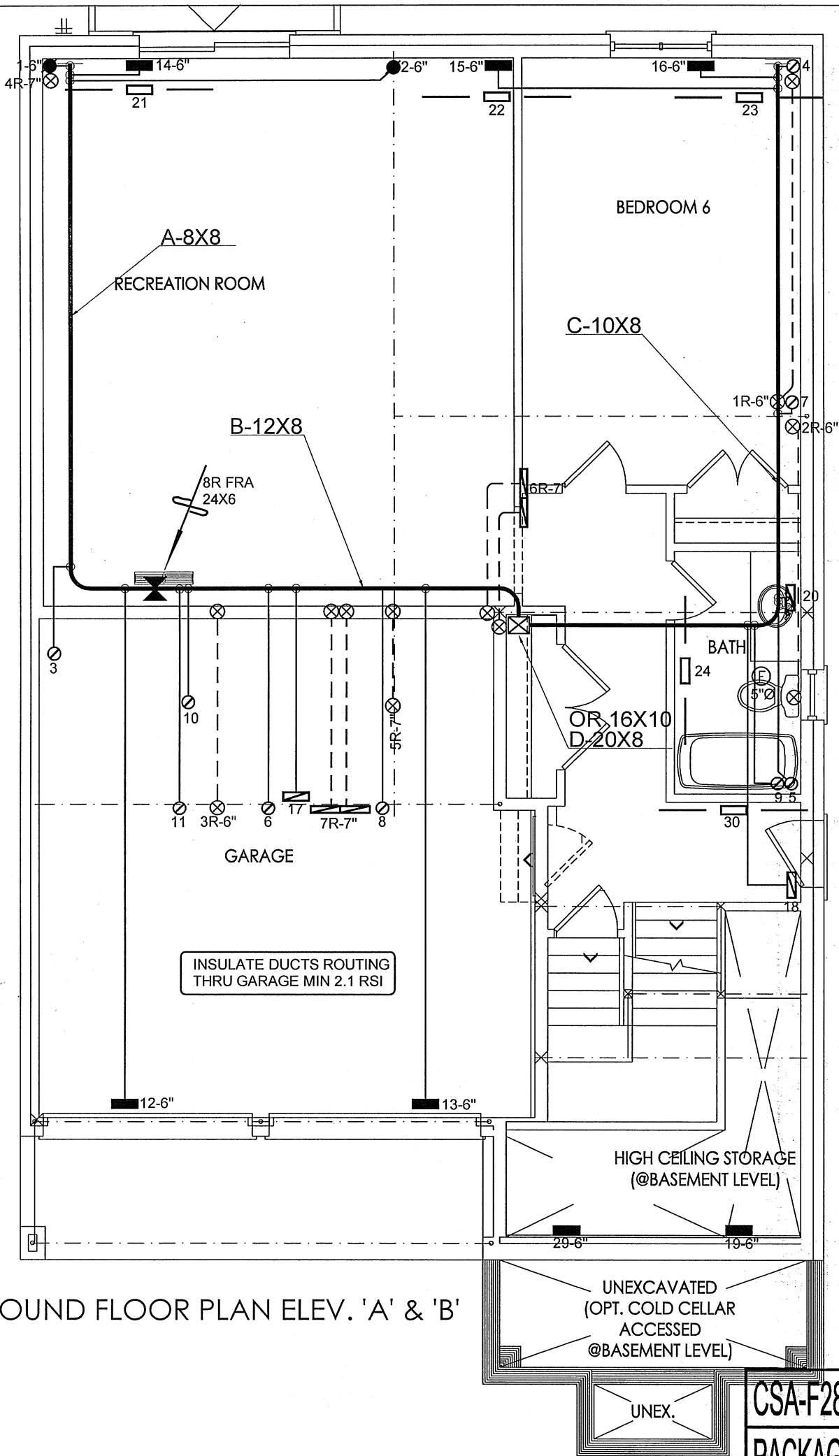
BASEMENT FLOOR PLAN ELEV. 'A' & 'B'

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			
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		 375 Finley Ave, Suite 202 - Ajax, Ontario L1S 2E2 Tel: 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: mike@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services				HEAT LOSS 67998 BTU/H		# OF RUNS		Sheet Title	
GOLD PARK HOMES						UNIT DATA		3RD FLOOR		BASEMENT	
Project Name		ENCORE BRAMPTON, ONTARIO				MAKE		2ND FLOOR		HEATING	
ENCORE						LENNOX		10		LAYOUT	
BRAMPTON, ONTARIO						MODEL		1ST FLOOR			
						EL296UH090XE48C		5			
						INPUT		BASEMENT			
		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.				88 MBTU/H		4		Date	
						OUTPUT		4		MAR/2017	
						84 MBTU/H		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	
						COOLING		4.0 TONS		3/16" = 1'-0"	
						FAN SPEED		1525 cfm @ 0.5" w.c.		BCIN# 19669	
OPT. GROUND/OPT. 2ND		4401 sqft						LO#		72714	
38-8											



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

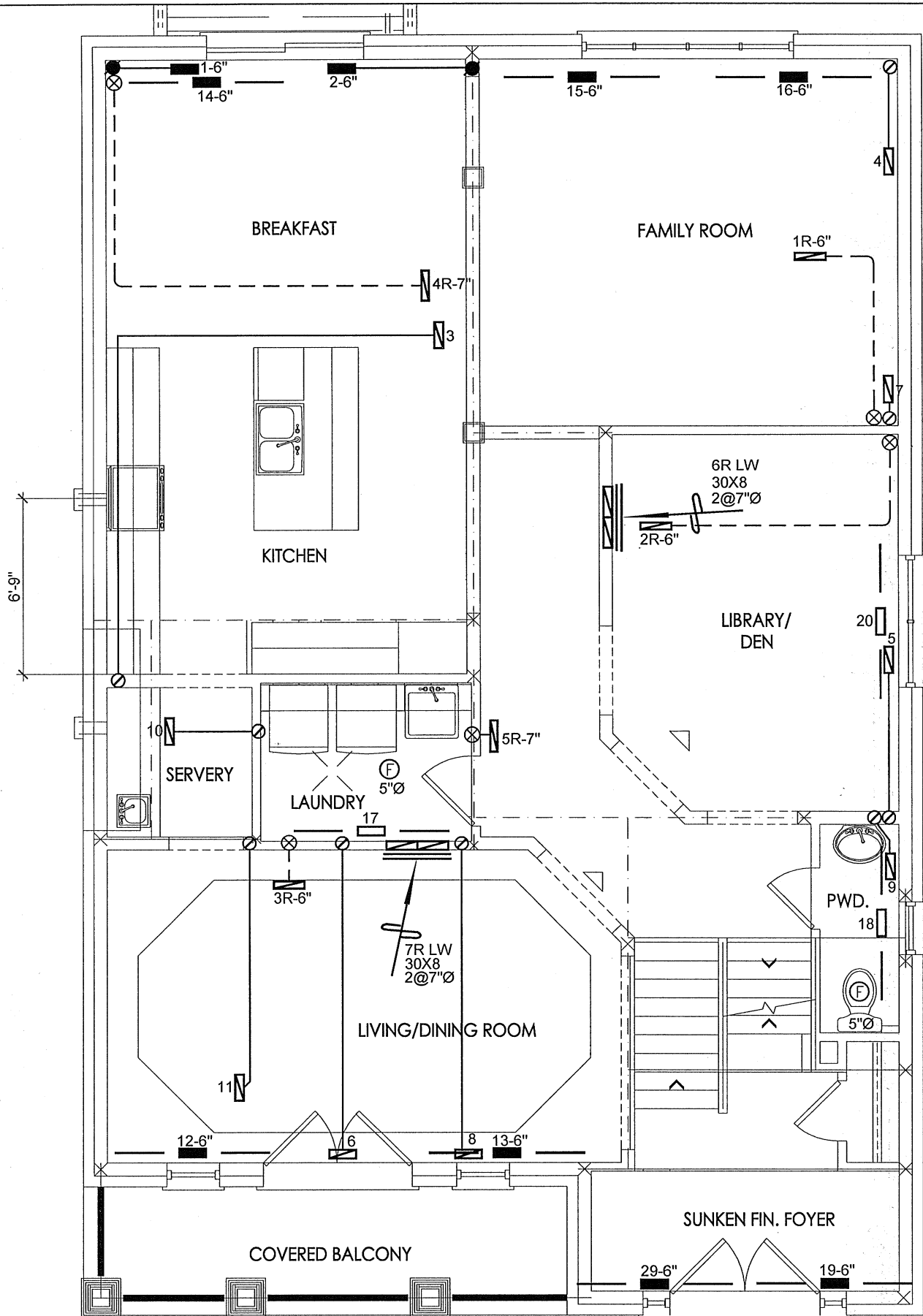
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Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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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GOLD PARK HOMES Project Name ENCORE BRAMPTON, ONTARIO OPT. GROUND/OPT. 2ND 38-8 4401 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.	Sheet Title FIRST FLOOR HEATING LAYOUT Date MAR/2017 Scale 3/16" = 1'-0" BCIN# 19669 LO# 72714
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**CSA-F280-12
PACKAGE A1**



MAIN FLOOR PLAN ELEV. 'A'

PART. MAIN FLOOR PLAN ELEV. 'B'

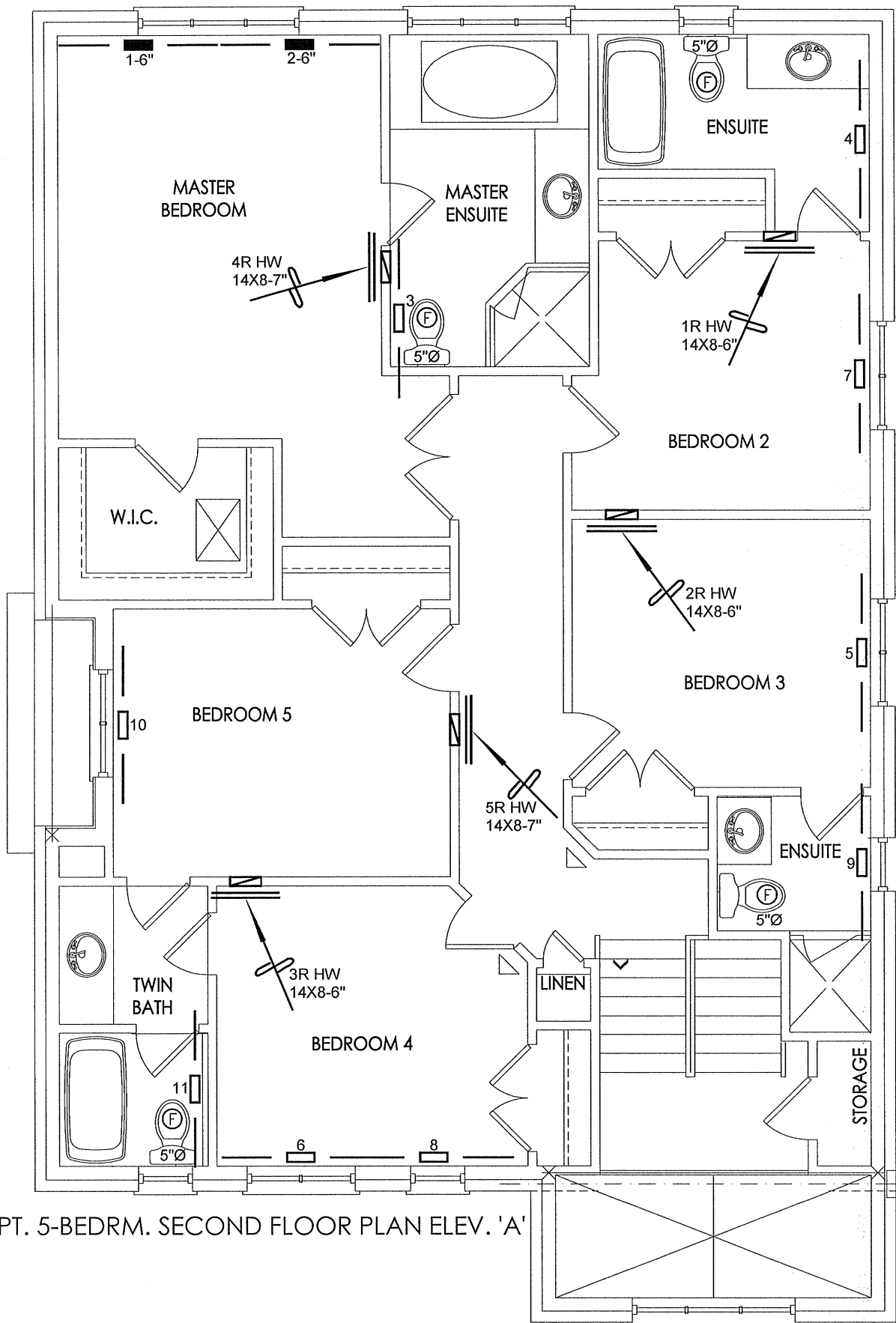
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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Symbol]	FLOOR SUPPLY AIR GRILLE	[Symbol]	6" SUPPLY AIR BOOT ABOVE	[Symbol]	14"x8" RETURN AIR GRILLE	[Symbol]	RETURN AIR STACK ABOVE
[Symbol]	FLOOR SUPPLY AIR GRILLE 6" BOOT	[Symbol]	SUPPLY AIR STACK FROM 2nd FLOOR	[Symbol]	30"x8" RETURN AIR GRILLE	[Symbol]	RETURN AIR STACK 2nd FLOOR
[Symbol]	SUPPLY AIR BOOT ABOVE	[Symbol]	6" SUPPLY AIR STACK 2nd FLOOR	[Symbol]	FRA-FLOOR RETURN AIR GRILLE	[Symbol]	REDUCER

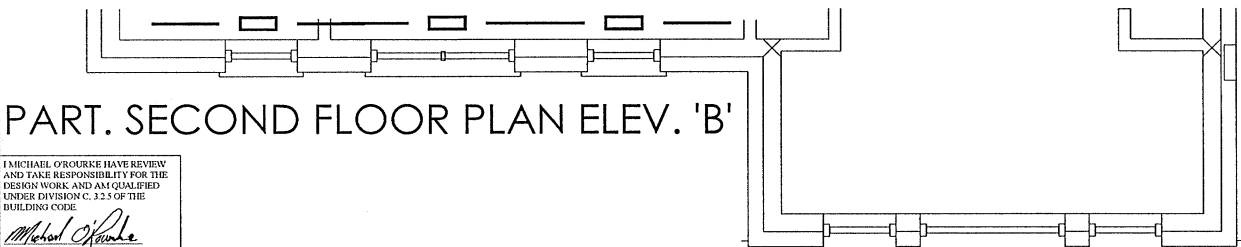
HVAC LEGEND							3.		
							2.		
							1.		
No.	Description								Date

CSA-F280-12
PACKAGE A1

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 SECOND FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
OPT. GROUND/OPT. 2ND 38-8 4401 sqft		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"	BCIN# 19669	
		LO#	72714	



OPT. 5-BEDRM. SECOND FLOOR PLAN ELEV. 'A'



PART. SECOND FLOOR PLAN ELEV. 'B'

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.

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 THIRD FLOOR HEATING LAYOUT	
Project Name ENCORE BRAMPTON, ONTARIO			Date MAR/2017	
OPT. GROUND/OPT. 2ND 38-8 4401 sqft		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"	BCIN# 19669
			LO#	72714