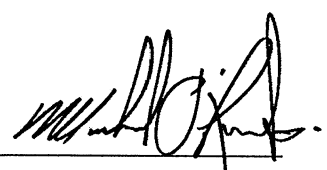


Schedule 1: Designer Information

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: 38-7 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		BUILDER: GOLD PARK HOMES		TYPE: 38-7		OPT. GROUND/OPT. 2ND		DATE: Mar-17		WINTER NATURAL AIR CHANGE RATE		0.409		HEAT LOSS AT °F. 74		CSA-F280-12	
ROOM USE		EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MBR		FACTORS		GRS.WALL AREA		GLAZING		NORTH		EAST	
EXP. WALL		CLG. HT.		ENS		MB											

SITE NAME: ENCORE
BUILDING: GOLD PARK HOMES

TYPE: 38-7 OPT. GROUND/OPT. 2ND

GFA: 3849 LO# 72710

DATE: Mar-17

HEATING CFM	1525	COOLING CFM	1525		
TOTAL HEAT LOSS	66,733	TOTAL HEAT GAIN	47,772		
AIR FLOW RATE CFM	22.85	AIR FLOW RATE CFM	31.92		
RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	11	10	4	4
R/A	0	4	2	2	1

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

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

EL195UH090XE48C

^LENNOX

90

FAN SPEED

LOW

0

MEDIUM

1105

HIGH

1255

1525

DESIGN CFM = 1525

CFM @ 6" E.S.P.

AFUE = 95 %

INPUT (BTU/H) = 88,000

OUTPUT (BTU/H) = 84,000

TEMPERATURE RISE 51 °F

ROOM NAME	ENS	BATH	MBR	BED-2	BED-4	BED-3	BED-4	BED-5	MBR	ENS-2	LIV	DIN	KT/FM	KT/FM	KT/FM	LAUN	W/R	FOY	ENT	BED-6	REC	REC	ENS-3
RM LOSS MBH:	2.29	0.07	1.31	1.08	1.64	1.72	1.64	2.57	1.31	0.87	2.44	1.84	2.36	2.36	2.36	0.83	0.59	3.89	2.23	3.48	4.32	4.32	1.01
CFM PER RUN HEAT	52	2	30	25	38	39	38	59	30	20	56	42	54	54	54	19	13	89	51	80	99	99	23
RM GAIN MBH:	1.69	0.04	1.84	1.81	1.63	3.34	1.63	3.39	1.84	0.39	2.85	2.32	2.71	2.71	2.71	0.92	0.47	2.49	0.45	2.47	1.92	1.92	0.36
CFM PER RUN COOLING	54	1	59	58	52	107	52	108	59	12	91	74	87	87	87	29	15	80	14	79	61	61	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.15	0.15	0.17	0.15	0.17	0.16	0.17	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.17	0.16	0.17	
ACTUAL DUCT LGH.	81	48	62	42	64	48	72	64	68	48	43	35	64	55	42	29	11	24	26	46	28	15	5
EQUIVALENT LENGTH	200	190	200	200	190	140	200	140	190	140	140	140	130	140	170	140	110	80	120	100	100	100	110
TOTAL EFFECTIVE LENGTH	281	238	262	242	254	188	272	204	258	188	183	175	194	195	212	169	121	104	146	146	128	115	115
ADJUSTED PRESSURE	0.06	0.07	0.06	0.07	0.07	0.08	0.06	0.07	0.06	0.09	0.09	0.1	0.08	0.08	0.07	0.1	0.14	0.15	0.11	0.11	0.12	0.14	0.15
ROUND DUCT SIZE	5	4	5	5	5	6	5	6	5	4	6	5	6	6	6	4	4	5	4	5	5	4	4
HEATING VELOCITY (ft/min)	382	23	220	184	279	199	279	301	220	229	286	308	275	275	275	218	149	653	585	587	727	727	264
COOLING VELOCITY (ft/min)	396	11	433	426	382	546	382	551	433	138	464	543	444	444	444	333	172	587	161	580	448	448	138
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	A	A	B	B	B	E	A	G	G	B	A	A	A	G	F	F	F	D	E	E	E

ROOM NAME	25	26	27	28	29	30	HALL
RM LOSS MBH	4.28	4.28	4.28	2.44	4.28	0.62	0.62
CFM PER RUN HEAT	98	98	98	56	98	14	14
RM GAIN MBH	0.26	0.26	0.26	2.85	0.26	1.29	1.29
CFM PER RUN COOLING	8	8	8	91	8	41	41
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.17	0.17
ACTUAL DUCT LGH.	18	31	45	37	33	46	46
EQUIVALENT LENGTH	120	110	90	170	120	200	200
TOTAL EFFECTIVE LENGTH	138	141	135	207	153	246	246
ADJUSTED PRESSURE	0.11	0.11	0.12	0.08	0.1	0.07	0.07
ROUND DUCT SIZE	5	5	5	6	6	4	4
HEATING VELOCITY (ft/min)	720	720	720	286	500	161	161
COOLING VELOCITY (ft/min)	59	59	59	484	41	470	470
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	3X10	3X10
TRUNK	F	D	D	G	D	F	F

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	299	0.06	9.6	10	8	538	279	10	8	1263	0.06	16.4	32	710
TRUNK B	159	0.06	7.8	8	358	279	10	8	8	0	0.00	0	0	0
TRUNK C	458	0.06	11.2	12	550	279	10	8	8	0	0.00	0	0	0
TRUNK D	374	0.10	9.2	10	673	279	10	8	8	0	0.00	0	0	0
TRUNK E	654	0.07	12.4	18	654	279	10	8	8	0	0.00	0	0	0
TRUNK F	265	0.07	8.8	10	477	279	10	8	8	0	0.00	0	0	0

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

TYPE: 38-7
SITE NAME: ENCORE

LO # 72710
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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Kitchen & Bathrooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Other Rooms	<u>7</u> @ 10.6 cfm	<u>74.2</u> cfm
Table 9.32.3.A.	TOTAL	<u>233.2</u> 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	<u>111.3</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>233.2</u>	cfm
Less Principal Ventil. Capacity	<u>120</u>	cfm
Required Supplemental Capacity	<u>113.2</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 60H-V+	Location: BSMT
<u>120.0</u> cfm	<u>3.0</u> 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	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+		
<u>139</u>	cfm high	<u>50</u> cfm low
<u>75</u>	% 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: 38-7	OPT. GROUND/OPT. 2ND	BUILDER: GOLD PARK HOMES
SFQT: 3849	LO# 72710	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):	42414.0	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	-

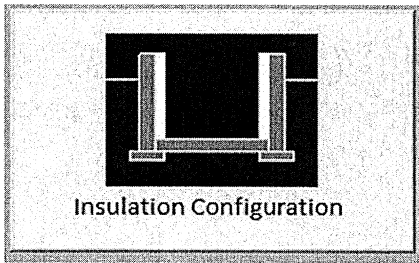
INDIVIDUAL BCIN: 19669

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):	0.8	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1635

TYPE: 38-7
LO# 72710

OPT. GROUND/OPT. 2ND

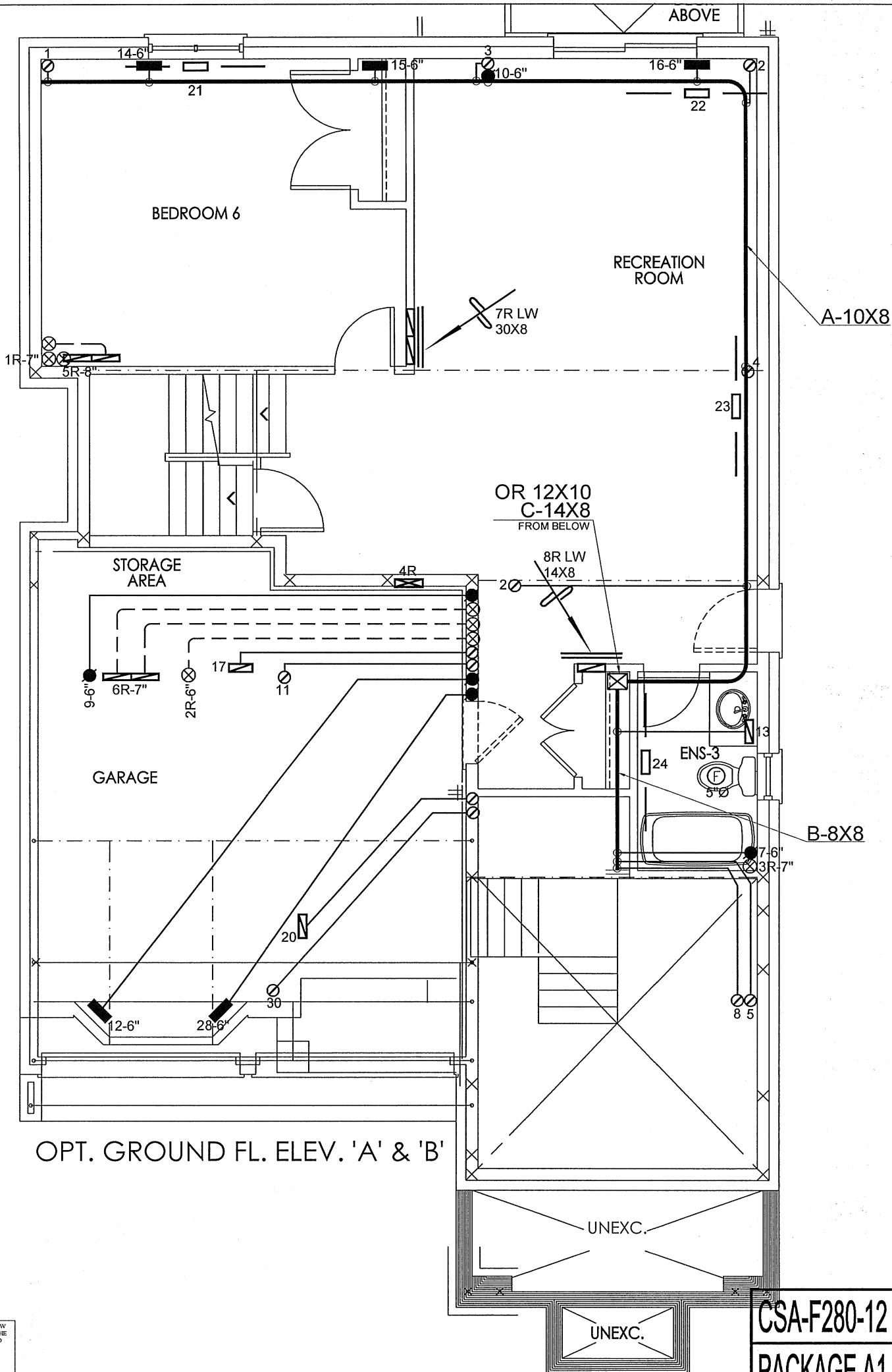
Air Infiltration Residential Load Calculator

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):	1201.0			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1601.0 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	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: 38-7
LO# 72710

OPT. GROUND/OPT. 2ND



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

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

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
GOLD PARK HOMES

Project Name
**ENCORE
BRAMPTON, ONTARIO**

**OPT. GROUND/OPT. 2ND
38-7 3849 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@hvacdsgns.ca
Web: www.hvacdsgns.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**

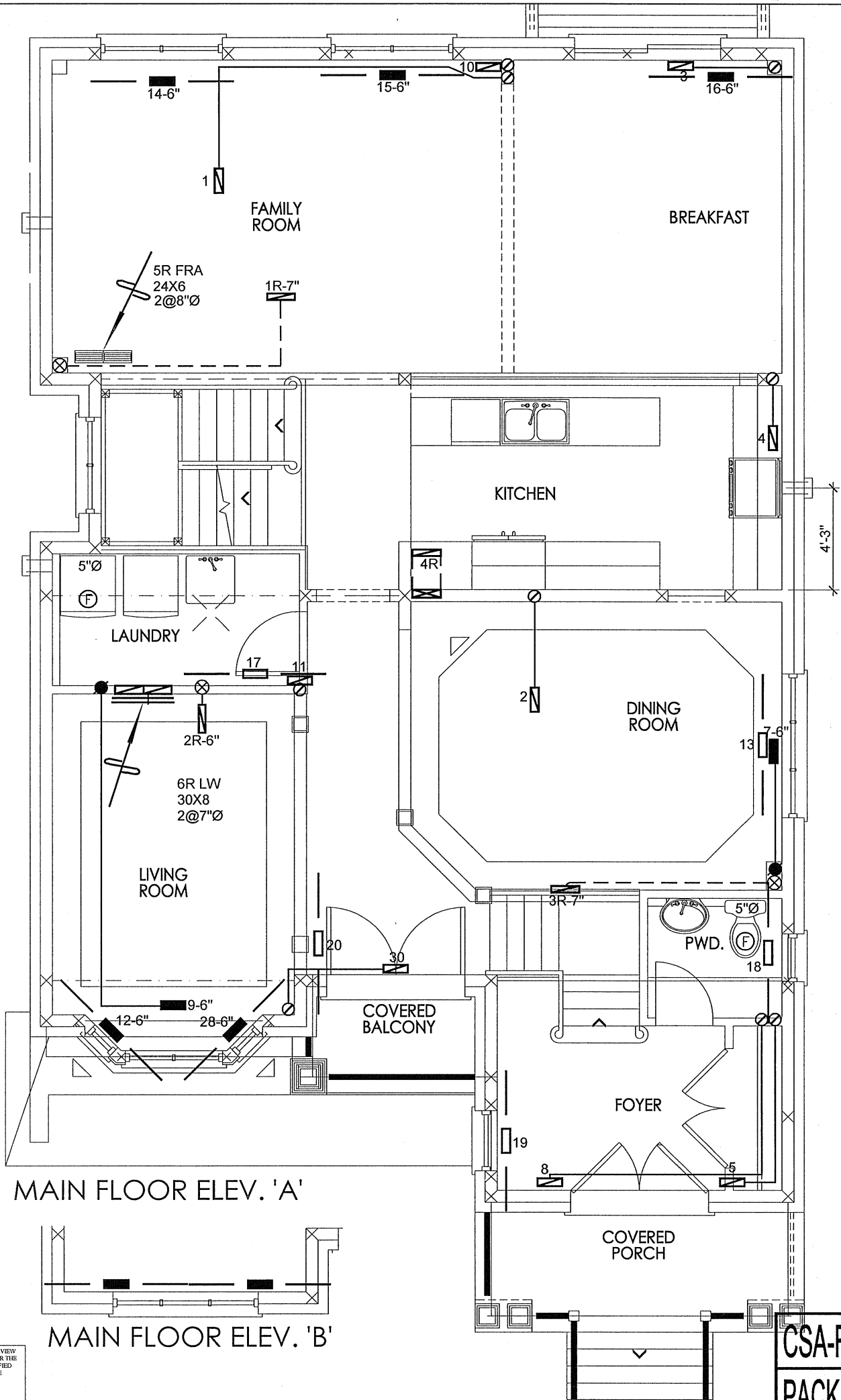
Date **MAR/2017**

Scale **3/16" = 1'-0"**

BCIN# 19669

LO# 72710

**CSA-F280-12
PACKAGE A1**



MAIN FLOOR ELEV. 'A'

MAIN FLOOR ELEV. '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

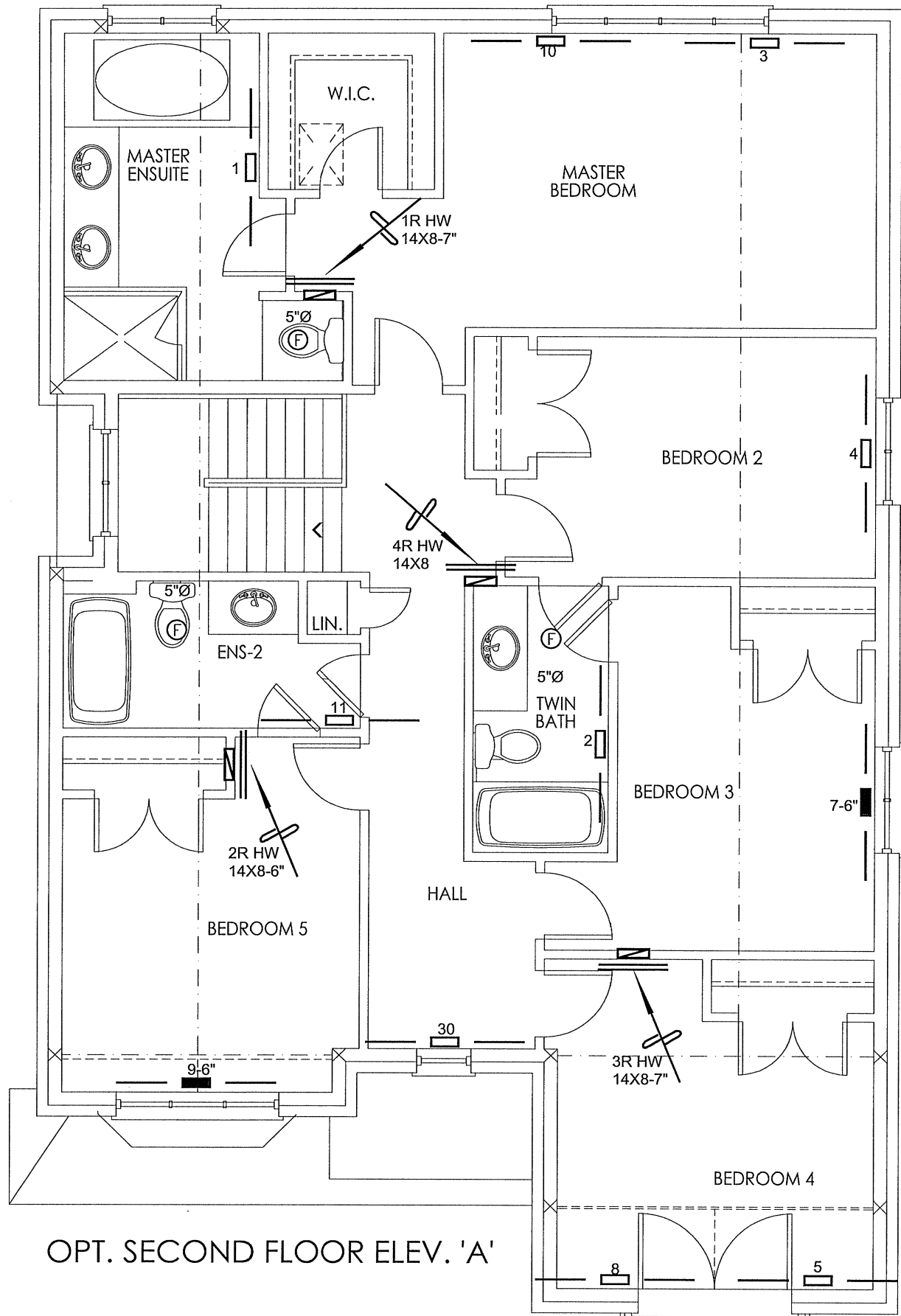
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

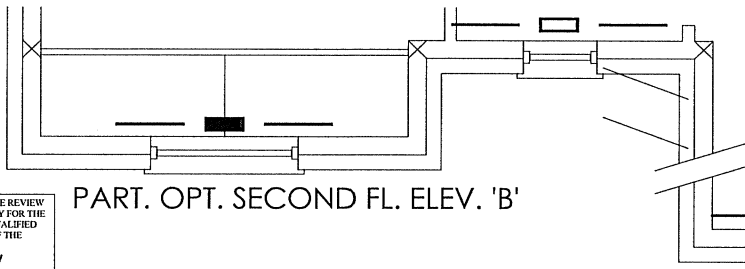
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		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 NOTE 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 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 38-73849 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#	72710



OPT. SECOND FLOOR ELEV. 'A'



PART. OPT. SECOND FL. ELEV. 'B'

CSA-F280-12
PACKAGE A1

IMICHAEL 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.

HVAC LEGEND									
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	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	

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
GOLD PARK HOMES

Project Name
**ENCORE
BRAMPTON, ONTARIO**

**OPT. GROUND/OPT. 2ND
38-7**

3849 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.

Sheet Title
**THIRD FLOOR
HEATING
LAYOUT**

Date
MAR/2017

Scale
3/16" = 1'-0"

BCIN# 19669

LO# **72710**