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	**Postal code**	**Plan number/ other description**		
BRAMPTON				

B. Individual who reviews and takes responsibility for design activities

Name		Firm		
MICHAEL O'ROURKE		**HVAC DESIGNS LTD.**		
Street address			**Unit no.**	**Lot/con.**
375 FINLEY AVE			**202**	**N/A**
Municipality	**Postal code**	**Province**	**E-mail**	
AJAX	**L1S 2E2**	**ONTARIO**	**info@hvacdesigns.ca**	
Telephone number	**Fax number**		**Cell number**	
(905) 619-2300	**(905) 619-2375**		( )	

C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]

☐ House	☒ HVAC – House	☐ Building Structural
☐ Small Buildings	☐ Building Services	☐ Plumbing – House
☐ Large Buildings	☐ Detection, Lighting and Power	☐ Plumbing – All Buildings
☐ Complex Buildings	☐ Fire Protection	☐ 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:** SD-7 LOT 63L - REAR UPG **Project:** ENCORE

D. Declaration of Designer

I MICHAEL O'ROURKE 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 Di vision C, of the Building Code.

Individual BCIN: 19669
Basis for exemption from registration and qualification: O.B.C SENTENCE 3.2.4.1 (4)

☐ 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.

August 16, 2017
Date

Michael O'Rourke
Signature of Designer

NOTE:

1. 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.
2. 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.

HVAC DESIGNS LTD.

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Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: ENCORE | LOT 63L - REAR UPG | DATE: Aug-17 | WINTER NATURAL AIR CHANGE RATE 0.326 | HEAT LOSS ΔT °F. 74 | CSA-F280-12
BUILDER: GOLD PARK HOMES | TYPE: SD-7 | GFA: 1979 | LO# 75560 | SUMMER NATURAL AIR CHANGE RATE 0.112 | HEAT GAIN ΔT °F. 14 | SB-12 PACKAGE A1

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH		
EXP. WALL			14			22			0			12			17			13			0		
CLG. HT.			9			9			9			9			9			10			9		
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN	126			198			0			108			153			130			0		
GLAZING				LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN
NORTH	20.8	16.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	20.8	41.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	1060	2136	0	0	0
SOUTH	20.8	25.2	0	0	0	0	0	0	0	0	0	16	332	404	23	478	580	0	0	0	0	0	0
WEST	20.8	41.9	27	561	1131	18	374	754	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	36.4	102.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	4.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.4	0.8	99	431	81	180	784	148	0	0	0	92	401	76	130	566	107	79	344	65	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	266	333	162	120	150	73	98	123	60	144	180	88	204	256	124	166	208	101	84	105	51
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	118	57	0	0	0
EXPOSED FLOOR	2.5	0.5	0	0	0	0	0	0	33	82	16	0	0	0	0	0	0	165	411	78	66	164	31
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				1326			1309			205			914			1300			2141			270	
SUB TOTAL HT GAIN					1374			975			75			567			811			2437			82
LEVEL FACTOR / MULTIPLIER			0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29	
AIR CHANGE HEAT LOSS				380			375			59			262			373			614			77	
AIR CHANGE HEAT GAIN					118			83			6			48			69			208			7
DUCT LOSS				0			0			26			0			0			275			35	
DUCT GAIN					0			0			8			0			0			353			9
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0
HEAT GAIN APPLIANCES/LIGHTS					648			0			0			648			648			648			0
TOTAL HT LOSS BTU/H				1706			1684			290			1176			1673			3030			382	
TOTAL HT GAIN x 1.3 BTU/H					3406			1376			117			1955			2300			5053			127

ROOM USE			FORM				KT/FM				LAUN			PWD			FOY				BAS		
EXP. WALL			31				56				17			12			27				148		
CLG. HT.			10				10				9			10			19				9		
	FACTORS																						
GRS.WALL AREA	LOSS	GAIN	310				560				153			120			513				1082		
GLAZING				LOSS	GAIN			LOSS	GAIN			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN			LOSS	GAIN
NORTH	20.8	16.3	0	0	0		0	0	0		0	0	0	0	0	0	27	561	440		14	291	228
EAST	20.8	41.9	0	0	0		0	0	0		10	208	419	11	229	461	20	416	838		0	0	0
SOUTH	20.8	25.2	20	416	505		0	0	0		7	145	177	0	0	0	0	0	0		0	0	0
WEST	20.8	41.9	0	0	0		100	2078	4189		0	0	0	0	0	0	0	0	0		0	0	0
SKYLT.	36.4	102.1	0	0	0		0	0	0		0	0	0	0	0	0	0	0	0		0	0	0
DOORS	24.7	4.7	0	0	0		0	0	0		0	0	0	0	0	0	60	1479	279		20	493	93
NET EXPOSED WALL	4.4	0.8	290	1264	238		460	2004	378		136	593	112	109	475	90	406	1769	334		0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0		0	0	0		0	0	0	0	0	0	0	0	0		250	878	166
EXPOSED CLG	1.3	0.6	0	0	0		0	0	0		66	83	40	0	0	0	58	73	35		0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0		0	0	0		0	0	0	0	0	0	30	81	39		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
BASEMENT/CRAWL HEAT LOSS				0				0				0			0			0				3765	
SLAB ON GRADE HEAT LOSS				0				0				0			0			0					
SUBTOTAL HT LOSS				1679				4082				1028			703			4378				5427	
SUB TOTAL HT GAIN					743				4567				747			550			1965				487
LEVEL FACTOR / MULTIPLIER			0.30	0.34			0.30	0.34			0.20	0.29		0.30	0.34		0.30	0.34			0.50	1.12	
AIR CHANGE HEAT LOSS				566				1375				295			237			1475				6087	
AIR CHANGE HEAT GAIN					64				391				64			47			168				42
DUCT LOSS				0				0				0			0			0				0	
DUCT GAIN					0				0				0			0			0				0
HEAT GAIN PEOPLE	240		0		0		1		240		1		240	0		0	0		0		0		0
HEAT GAIN APPLIANCES/LIGHTS					648				648				648			0			0				0
TOTAL HT LOSS BTU/H				2245				5457				1323			940			5852				11514	
TOTAL HT GAIN x 1.3 BTU/H					1892				7600				2210			777			2773				687

TOTAL HEAT GAIN BTU/H: 30798 TONS: 2.57 LOSS DUE TO VENTILATION LOAD BTU/H: 2785 STRUCTURAL HEAT LOSS: 37270 TOTAL COMBINED HEAT LOSS BTU/H: 40055

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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SITE NAME: ENCORE — LOT 63L - REAR UPG
BUILDER: GOLD PARK HOMES — TYPE: SD-7 — DATE: Aug-17 — GFA: 1979 — LO# 75560

HEATING CFM	950	COOLING CFM	950
TOTAL HEAT LOSS	37,270	TOTAL HEAT GAIN	30,273
AIR FLOW RATE CFM	25.49	AIR FLOW RATE CFM	31.38

furnace pressure	0.6
furnace filter	0.05
a/c coil pressure	0.2
available pressure for s/a & r/a	0.35
plenum pressure s/a	0.18
max s/a dif press. loss	0.03
min adjusted pressure s/a	0.15
r/a pressure	0.17
r/a grille press. Loss	0.02
adjusted pressure r/a	0.15

^LENNOX
EL296UH045XE36B 45
FAN SPEED
LOW 0
MEDLOW 650
MEDIUM 950
MEDIUM HIGH 1060
HIGH 0

AFUE = 96 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = 43,000
DESIGN CFM = 950 CFM @ .6 " E.S.P.
TEMPERATURE RISE 42 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	7	4
R/A	0	0	3	1	1

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

RUN #	1	2	3	4	5	6	7	8	12	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	FORM	KT/FM	KT/FM	KT/FM	LAUN	PWD	FOY	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.71	1.68	0.29	1.18	1.67	1.51	0.38	1.51	2.24	1.82	1.82	1.82	1.32	0.94	2.93	2.93	2.88	2.88	2.88	2.88
CFM PER RUN HEAT	43	43	7	30	43	39	10	39	57	46	46	46	34	24	75	75	73	73	73	73
RM GAIN MBH.	3.41	1.38	0.12	1.96	2.30	2.53	0.13	2.53	1.89	2.53	2.53	2.53	2.21	0.78	1.39	1.39	0.17	0.17	0.17	0.17
CFM PER RUN COOLING	107	43	4	61	72	79	4	79	59	79	79	79	69	24	44	44	5	5	5	5
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	0.17	0.17	0.17
ACTUAL DUCT LGH.	41	51	30	35	27	34	23	41	16	32	29	34	42	30	32	26	24	17	25	14
EQUIVALENT LENGTH	140	170	160	150	140	120	130	140	80	130	110	150	150	130	120	160	100	100	140	120
TOTAL EFFECTIVE LENGTH	181	221	190	185	167	154	153	181	96	162	139	184	192	160	152	186	124	117	165	134
ADJUSTED PRESSURE	0.08	0.08	0.09	0.09	0.1	0.11	0.11	0.1	0.18	0.11	0.12	0.09	0.09	0.11	0.11	0.09	0.14	0.15	0.1	0.13
ROUND DUCT SIZE	6	4	4	5	5	5	4	5	4	5	5	5	5	4	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	219	493	80	220	316	286	115	286	654	338	338	338	250	275	551	551	536	536	536	536
COOLING VELOCITY (ft/min)	546	493	46	448	529	580	46	580	677	580	580	580	507	275	323	323	37	37	37	37
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	B	B	D	D	D	D	D	A	A	A	C	C	C	C	B	B	C	D

RUN #	
ROOM NAME	
RM LOSS MBH.	
CFM PER RUN HEAT	
RM GAIN MBH.	
CFM PER RUN COOLING	
ADJUSTED PRESSURE	
ACTUAL DUCT LGH.	
EQUIVALENT LENGTH	
TOTAL EFFECTIVE LENGTH	
ADJUSTED PRESSURE	
ROUND DUCT SIZE	
HEATING VELOCITY (ft/min)	
COOLING VELOCITY (ft/min)	
OUTLET GRILL SIZE	
TRUNK	

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK A	224	0.08	8	8	x	8	504	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	407	0.08	10	12	x	8	611	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	281	0.09	8.5	8	x	8	632	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	542	0.09	10.8	16	x	8	610	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK O	0	0.06	0	0	x	8	0
TRUNK P	0	0.06	0	0	x	8	0
TRUNK Q	0	0.06	0	0	x	8	0
TRUNK R	0	0.06	0	0	x	8	0
TRUNK S	0	0.06	0	0	x	8	0
TRUNK T	0	0.06	0	0	x	8	0
TRUNK U	0	0.06	0	0	x	8	0
TRUNK V	0	0.06	0	0	x	8	0
TRUNK W	0	0.06	0	0	x	8	0
TRUNK X	950	0.06	14.8	26	x	8	658
TRUNK Y	0	0.06	0	0	x	8	0
TRUNK Z	0	0.06	0	0	x	8	0
DROP	950	0.06	14.8	24	x	10	570

RETURN AIR #	1	2	3	4												BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	125	185	95	400	0	0	0	0	0	0	0	0	0	0	0	145
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
ACTUAL DUCT LGH.	48	36	40	15	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	180	160	165	135	0	0	0	0	0	0	0	0	0	0	0	145
TOTAL EFFECTIVE LH	228	196	205	150	1	1	1	1	1	1	1	1	1	1	1	159
ADJUSTED PRESSURE	0.06	0.08	0.07	0.10	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
ROUND DUCT SIZE	6.9	7.5	6	9.4	0	0	0	0	0	0	0	0	0	0	0	6.6
INLET GRILL SIZE	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	14

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke — INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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TYPE: SD-7 LO # 75560
SITE NAME: ENCORE LOT 63L - REAR UPG

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	4	@ 10.6 cfm	42.4	cfm
Other Rooms	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.		TOTAL	159.0	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
	TOTAL	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	159	cfm
Less Principal Ventil. Capacity	139	cfm
Required Supplemental Capacity	20.0	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	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
PWD	QTXEN050C	50	✓	0.3

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: Michael O'Rourke

HRAI # 001820

Date: August-17

I REVIEW AND TAKE RESPONIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669 Michael O'Rourke MICHAEL O'ROURKE

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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: SD-7 LOT 63L - REAR UPG **BUILDER:** GOLD PARK HOMES
SFQT: 1979 **LO#** 75560 **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:	ATTACHED	# 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 (ft^3):	28170.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft^2):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 49.0 ft	WIDTH: 25.0 ft	EXPOSED PERIMETER:	125.0 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

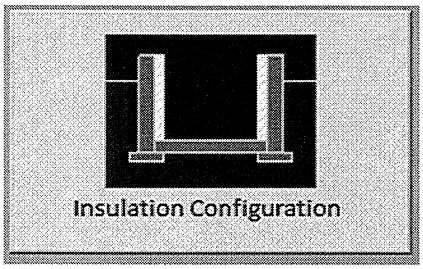
Michael O'Rourke

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

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 dand, loam, clay
Water Table:	Normal (7-10 m, 23-33 ft)

Foundation Dimensions		
Floor Length (m):	**14.9**	 Insulation Configuration
Floor Width (m):	**7.6**	
Exposed Perimeter (m):	**38.1**	
Wall Height (m):	**2.7**	
Depth Below Grade (m):	**2.1**	
Window Area (m^2):	**1.3**	
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):	**1103**	

TYPE: SD-7

LO# 75560

LOT 63L - REAR UPG

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

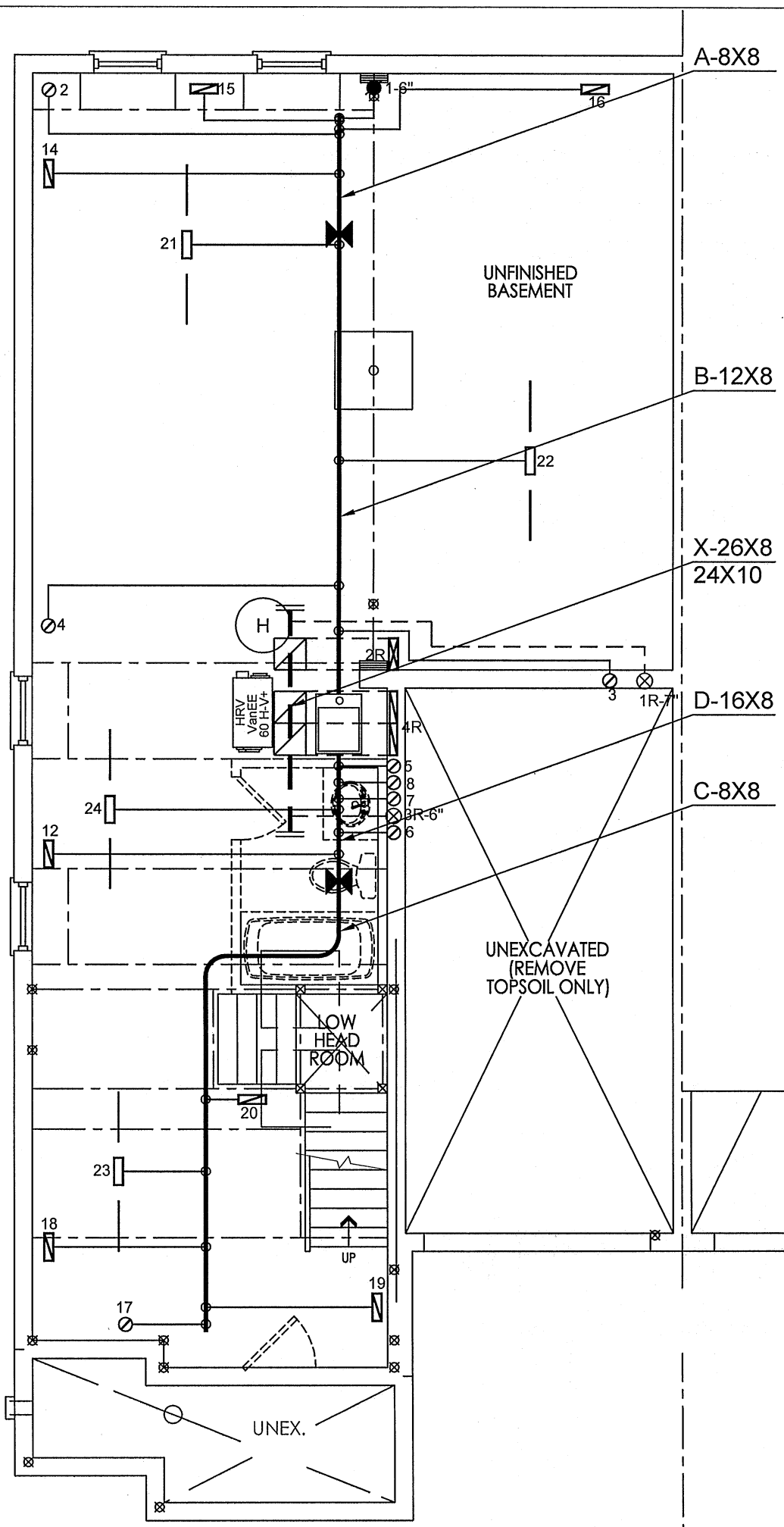
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

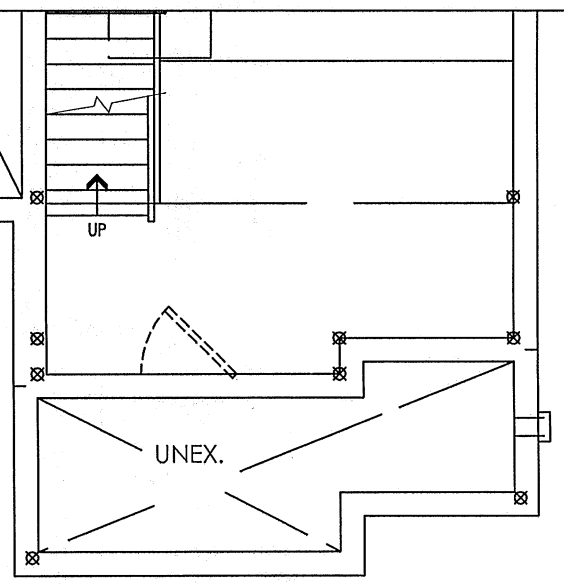
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Weather Station Location:	Open flat terrain, grass	
Anemometer height (m):	10	
Local Shielding		
Building Site:	Suburban, forest	
Walls:	Heavy	
Flue:	Heavy	
Highest Ceiling Height (m):	6.40	
Building Configuration		
Type:	Semi	
Number of Stories:	Two	
Foundation:	Full	
House Volume (m^3):	797.7	
Air Leakage/Ventilation		
Air Tightness Type:	Present (1961-) (3.57 ACH)	
Custom BDT Data:	ELA @ 10 Pa.	1063.3 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):	**0.326**	
Cooling Air Leakage Rate (ACH/H):	**0.112**	

TYPE: SD-7 LOT 63L - REAR UPG

LO# 75560



BASEMENT FLOOR ELEV. 'A'



BASEMENT FLOOR ELEV. 'B'

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

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

CSA-F280-12

LOT 63L | PACKAGE A1

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
— ▭ —	FLOOR SUPPLY AIR GRILLE	▬	6" SUPPLY AIR BOOT ABOVE	▭	14"x8" RETURN AIR GRILLE	▭	RETURN AIR STACK ABOVE
— ▬ —	FLOOR SUPPLY AIR GRILLE 6" BOOT	⊘	SUPPLY AIR STACK FROM 2nd FLOOR	▭▭	30"x8" RETURN AIR GRILLE	⊠	RETURN AIR STACK 2nd FLOOR
▭	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	▬	FRA- FLOOR RETURN AIR GRILLE	⧗	REDUCER

No.	Description	Date
3.		
2.		
1.		

REVISIONS

Client
GOLD PARK HOMES

Project Name
ENCORE
BRAMPTON, ONTARIO

REAR UPG
SD-7 - LOT 63L 1979 sqft

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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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.

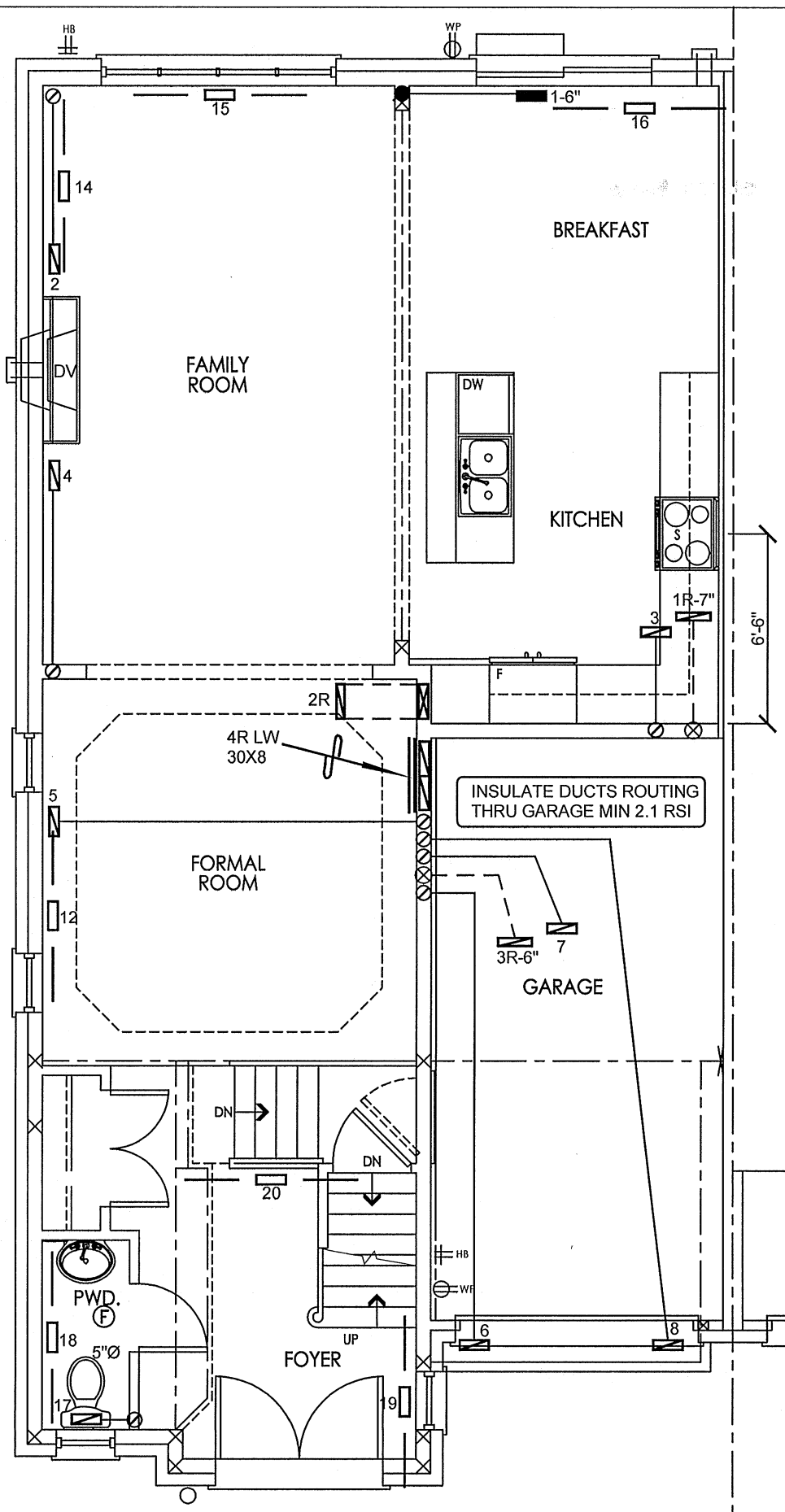
HEAT LOSS 40055 BTU/H	
UNIT DATA	
MAKE	LENNOX
MODEL	EL296UH045XE36B
INPUT	44 MBTU/H
OUTPUT	43 MBTU/H
COOLING	2.5 TONS
FAN SPEED	950 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	3	2
1ST FLOOR	7	1	2
BASEMENT	4	1	0

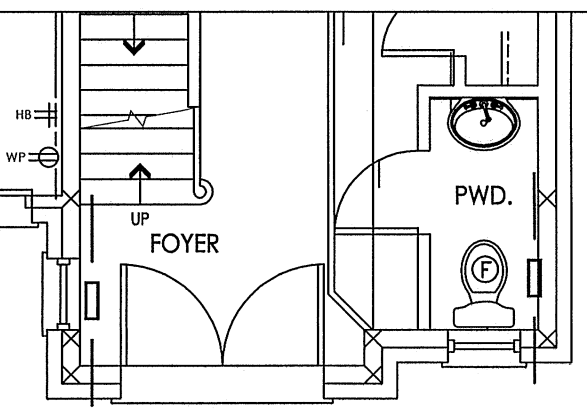
ALL S/A DIFFUSERS 4"x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

Sheet Title
BASEMENT HEATING LAYOUT

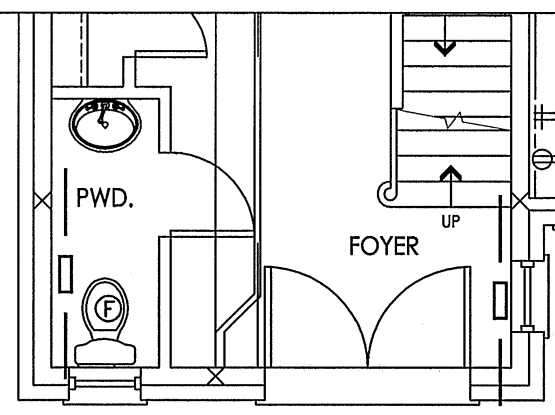
Date AUG/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 75560



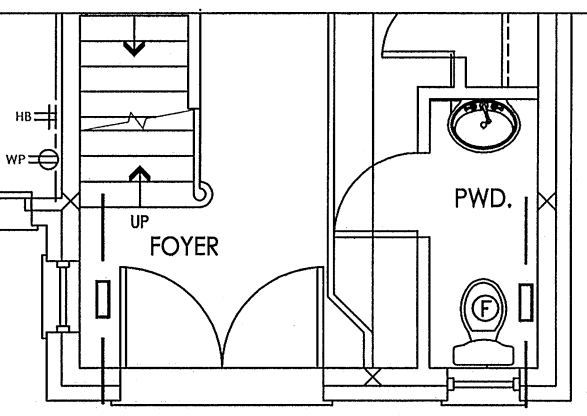
GROUND FLOOR ELEV. 'A'



GROUND FLOOR ELEV. 'B'



PART. GROUND FLOOR ELEV. 'C'



PART. GROUND FLOOR ELEV. 'D'

CSA-F280-12

LOT 63L | PACKAGE A1

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

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

HVAC LEGEND

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GOLD PARK HOMES

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ENCORE
BRAMPTON, ONTARIO

REAR UPG
SD-7 - LOT 63L 1979 sqft

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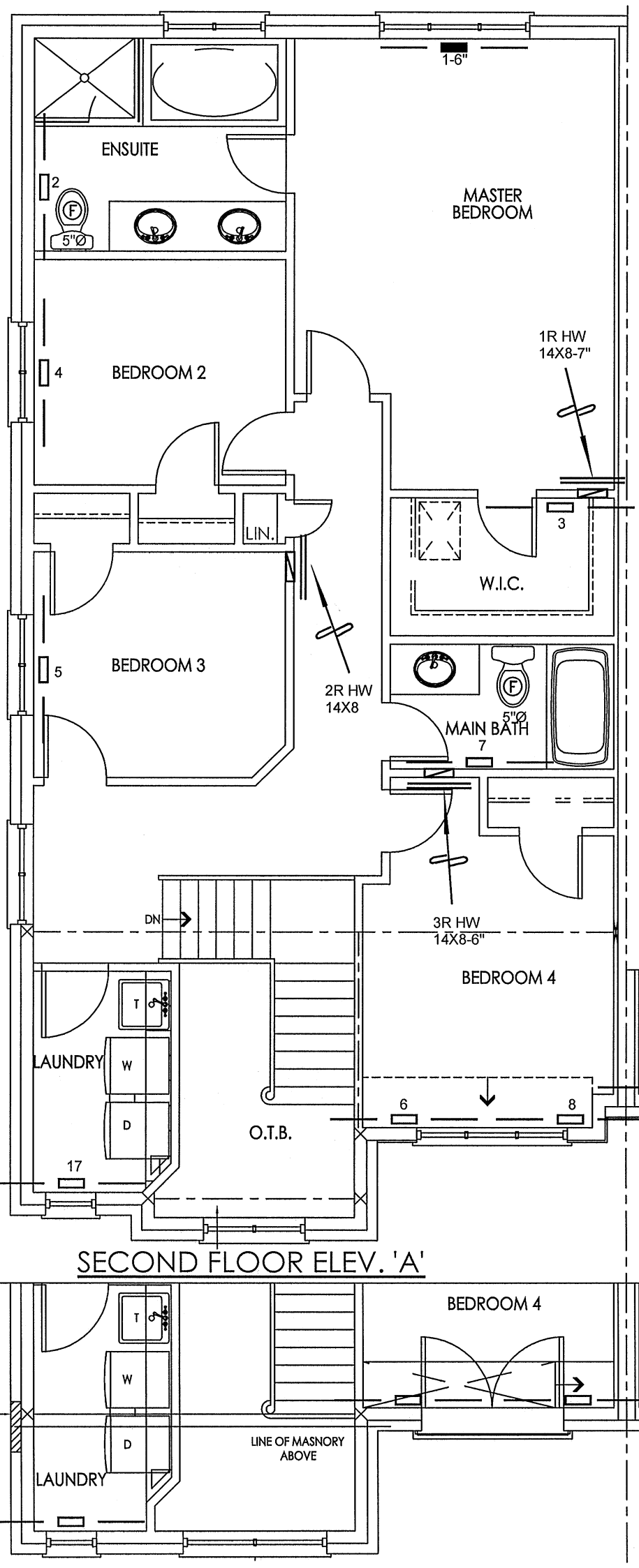
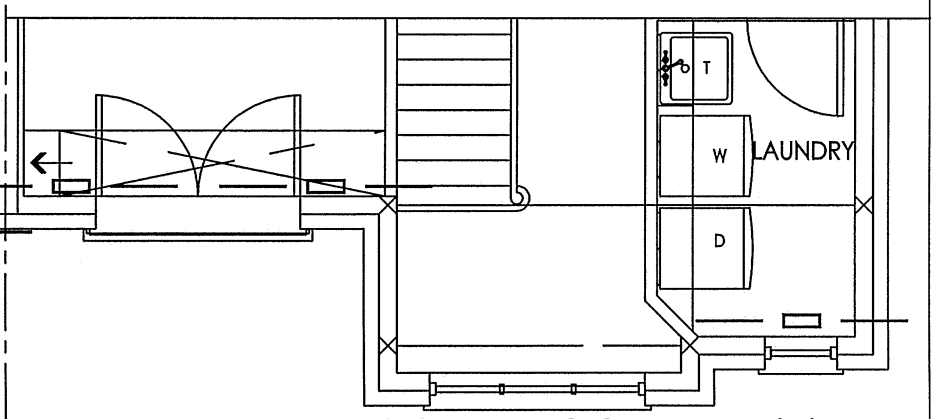
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date MAR/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 75560

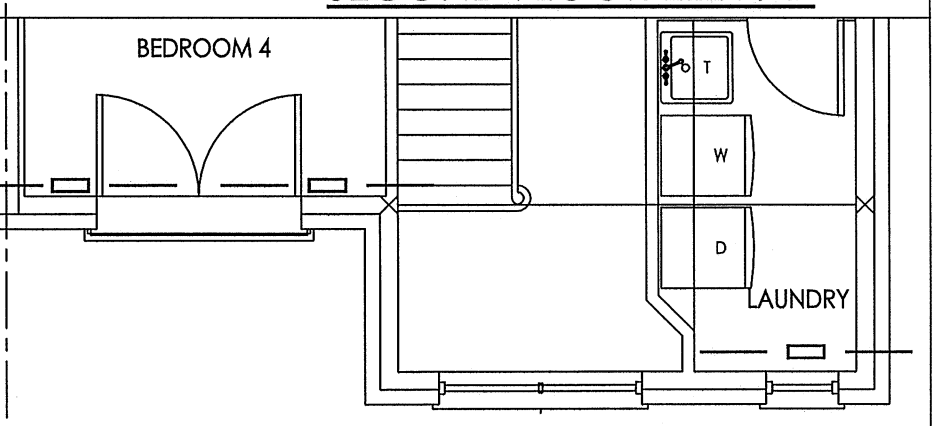


SECOND FLOOR ELEV. 'A'



SECOND FLOOR ELEV. 'B'

PART. SECOND FLOOR ELEV. 'C'



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CSA-F280-12

LOT 63L | PACKAGE A1

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SECOND FLOOR HEATING LAYOUT

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