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-6 C CNR - OPT. 4 BED **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.

September 28, 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.

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SITE NAME: ENCORE | CNR - OPT. 4 BED | DATE: Sep-17 | WINTER NATURAL AIR CHANGE RATE 0.315 | HEAT LOSS ΔT °F. 74 | CSA-F280-12

BUILDER: GOLD PARK HOMES | TYPE: SD-6 C | GFA: 2032 | LO# 76093 | SUMMER NATURAL AIR CHANGE RATE 0.108 | HEAT GAIN ΔT °F. 14 | SB-12 PACKAGE A1

ROOM USE			MBR			ENS				BED-2			BED-3			BED-4			BATH								
EXP. WALL			17			22				21			14			39			0								
CLG. HT.			9			9				9			9			9			9								
	FACTORS																										
GRS.WALL AREA	LOSS	GAIN	145			187				189			126			351			0								
GLAZING				LOSS	GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN						
NORTH	20.8	16.1	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0						
EAST	20.8	41.3	0	0	0	0	0	0		0	0	0	36	748	1485	35	727	1444	0	0	0						
SOUTH	20.8	24.9	0	0	0	16	332	398		46	956	1144	0	0	0	0	0	0	20	416	498						
WEST	20.8	41.3	32	665	1320	22	457	908		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	0	0	0	0	0	0						
NET EXPOSED WALL	4.4	0.8	113	490	92	149	649	122		143	623	118	90	392	74	316	1377	260	-20	-87	-16						
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						
EXPOSED CLG	1.3	0.6	303	380	184	112	140	68		191	239	116	187	234	114	133	167	81	84	105	51						
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0		55	148	72	0	0	0	105	282	137	0	0	0						
EXPOSED FLOOR	2.5	0.5	30	75	14	0	0	0		0	0	0	187	466	88	0	0	0	0	0	0						
BASEMENT/CRAWL HEAT LOSS				0			0				0			0			0			0						
SLAB ON GRADE HEAT LOSS				0			0				0			0			0			0						
SUBTOTAL HT LOSS				1609			1579				1966			1840			2552			434						
SUB TOTAL HT GAIN					1611			1496				1450			1761			1921			532						
LEVEL FACTOR / MULTIPLIER			0.20	0.22		0.20	0.22			0.20	0.22		0.20	0.22		0.20	0.22		0.20	0.22						
AIR CHANGE HEAT LOSS				352			345				430			402			558			95						
AIR CHANGE HEAT GAIN					117			108				105			127			139			39						
DUCT LOSS				196			0				0			224			0			0						
DUCT GAIN					263			0				0			255			0			0						
HEAT GAIN PEOPLE	240		2		480	0		0		1		240	1		240	1		240	0		0						
HEAT GAIN APPLIANCES/LIGHTS					418			418				418			418			418			418						
TOTAL HT LOSS BTU/H				2157			1924				2396			2467			3111			528						
TOTAL HT GAIN x 1.3 BTU/H					3755			2629				2877			3641			3534			1285						

ROOM USE			FORM				KT/FM							FOY						BAS		
EXP. WALL			31				48							43						148		
CLG. HT.			10				10							10						9		
	FACTORS																					
GRS.WALL AREA	LOSS	GAIN	295				456							430						1012		
GLAZING				LOSS	GAIN			LOSS	GAIN						LOSS	GAIN					LOSS	GAIN
NORTH	20.8	16.1	0	0	0		0	0	0					0	0	0				14	291	225
EAST	20.8	41.3	0	0	0		0	0	0					13	270	536				0	0	0
SOUTH	20.8	24.9	24	499	597		36	748	896					10	208	249				0	0	0
WEST	20.8	41.3	0	0	0		82	1704	3383					0	0	0				0	0	0
SKYLT.	36.4	102.1	0	0	0		0	0	0					0	0	0				0	0	0
DOORS	24.7	4.7	20	493	93		0	0	0					60	1479	279				20	493	93
NET EXPOSED WALL	4.4	0.8	251	1091	206		338	1473	278					347	1512	285				0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0		0	0	0					0	0	0				246	864	163
EXPOSED CLG	1.3	0.6	0	0	0		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				0	0	0
EXPOSED FLOOR	2.5	0.5	0	0	0		0	0	0					0	0	0				0	0	0
BASEMENT/CRAWL HEAT LOSS				0				0							0						3695	
SLAB ON GRADE HEAT LOSS				0				0							0							
SUBTOTAL HT LOSS				2083				3924							3469						5343	
SUB TOTAL HT GAIN					896				4556							1349						482
LEVEL FACTOR / MULTIPLIER			0.30	0.35			0.30	0.35						0.30	0.35					0.50	1.02	
AIR CHANGE HEAT LOSS				720				1356							1198						5456	
AIR CHANGE HEAT GAIN					65				330							98						35
DUCT LOSS				0				0							0						0	
DUCT GAIN					0				0							0						0
HEAT GAIN PEOPLE	240		0		0		0		0					0		0				0		0
HEAT GAIN APPLIANCES/LIGHTS					418				418							418						0
TOTAL HT LOSS BTU/H				2803				5280							4667						10799	
TOTAL HT GAIN x 1.3 BTU/H					1793				6896							2425						671

TOTAL HEAT GAIN BTU/H: 29959 TONS: 2.50 LOSS DUE TO VENTILATION LOAD BTU/H: 2404 STRUCTURAL HEAT LOSS: 36132 TOTAL COMBINED HEAT LOSS BTU/H: 38536

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 — CNR - OPT. 4 BED
BUILDER: GOLD PARK HOMES — TYPE: SD-6 C — DATE: Sep-17 — GFA: 2032 — LO# 76093

HEATING CFM	950	COOLING CFM	950	furnace pressure	0.6					^LENNOX		AFUE = 96 %
TOTAL HEAT LOSS	36,132	TOTAL HEAT GAIN	29,505	furnace filter	0.05					**EL296UH045XE36B**	**45**	INPUT (BTU/H) = 44,000
AIR FLOW RATE CFM	26.29	AIR FLOW RATE CFM	32.2	a/c coil pressure	0.2					FAN SPEED		OUTPUT (BTU/H) = **43,000**
				available pressure for s/a & r/a	0.35					LOW	0	
										MEDLOW	650	DESIGN CFM = **950**
				plenum pressure s/a	0.18	r/a pressure	0.17			MEDIUM	950	CFM @ .6 " E.S.P.
				max s/a dif press. loss	0.03	r/a grille press. Loss	0.02			MEDIUM HIGH	1060	
				min adjusted pressure s/a	0.15	adjusted pressure r/a	0.15			HIGH	0	TEMPERATURE RISE 42 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	4	3
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	4	5	6	7	8	10	12	14	15	17	20	21	22	23
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-3	BATH	BED-4	MBR	FORM	KT/FM	KT/FM	BED-4	FOY	BAS	BAS	BAS
RM LOSS MBH.	1.08	1.92	2.40	1.23	1.23	0.53	1.56	1.08	2.80	2.64	2.64	1.56	4.67	3.60	3.60	3.60
CFM PER RUN HEAT	28	51	63	32	32	14	41	28	74	69	69	41	123	95	95	95
RM GAIN MBH.	1.88	2.63	2.88	1.82	1.82	1.29	1.77	1.88	1.79	3.45	3.45	1.77	2.42	0.22	0.22	0.22
CFM PER RUN COOLING	60	85	93	59	59	41	57	60	58	111	111	57	78	7	7	7
ADJUSTED PRESSURE	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.15	0.17	0.15	0.16	0.16	0.16
ACTUAL DUCT LGH.	43	48	37	42	40	18	55	40	23	34	21	50	34	32	16	31
EQUIVALENT LENGTH	130	160	180	150	190	180	140	170	120	120	120	130	100	120	130	110
TOTAL EFFECTIVE LENGTH	173	208	217	192	230	198	195	210	143	154	141	180	134	152	146	141
ADJUSTED PRESSURE	0.1	0.08	0.07	0.09	0.07	0.09	0.09	0.08	0.12	0.1	0.11	0.1	0.11	0.11	0.11	0.11
ROUND DUCT SIZE	5	**6**	**6**	5	5	4	5	5	5	**6**	**6**	5	**6**	5	5	5
HEATING VELOCITY (ft/min)	206	260	321	235	235	161	301	206	543	352	352	301	627	698	698	698
COOLING VELOCITY (ft/min)	441	433	474	433	433	470	419	441	426	566	566	419	398	51	51	51
OUTLET GRILL SIZE	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10
TRUNK	A	A	A	B	B	B	B	A	B	A	A	B	B	A	A	B

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	498	0.07	11.2	14	x	8	640	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	452	0.07	10.8	14	x	8	581	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	0	0.00	0	0	x	8	0	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	0	0.00	0	0	x	8	0	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	690	0.06	13.1	20	x	8	621
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	155	155	120	380	0	0	0	0	0	0	0	0	0	0	0	140
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.	52	55	37	36	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	195	200	165	165	0	0	0	0	0	0	0	0	0	0	0	145
TOTAL EFFECTIVE LH	247	255	202	201	1	1	1	1	1	1	1	1	1	1	1	159
ADJUSTED PRESSURE	0.06	0.06	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
ROUND DUCT SIZE	7.5	7.5	6.6	10.1	0	0	0	0	0	0	0	0	0	0	0	6.5
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-6 C LO # 76093
SITE NAME: ENCORE CNR - OPT. 4 BED

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	3	@ 10.6 cfm	31.8	cfm
Table 9.32.3.A.		TOTAL	148.4	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	148.4	cfm
Less Principal Ventil. Capacity	120	cfm
Required Supplemental Capacity	28.4	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	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: September-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-6 C CNR - OPT. 4 BED **BUILDER:** GOLD PARK HOMES
SFQT: 2032 **LO#** 76093 **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):	26116.5	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD ($Btu/h/ft^2$):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.5 ft
LENGTH: 48.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	123.0 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

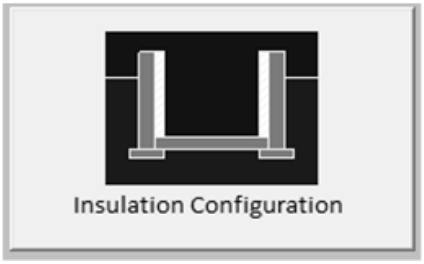
Michael O'Rourke

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):	**14.6**	 Insulation Configuration
Floor Width (m):	**7.9**	
Exposed Perimeter (m):	**37.5**	
Wall Height (m):	**2.6**	
Depth Below Grade (m):	**2.0**	
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):	**1083**	

TYPE: SD-6 C CNR - OPT. 4 BED
LO# 76093

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

Air Infiltration Residential Load Calculator

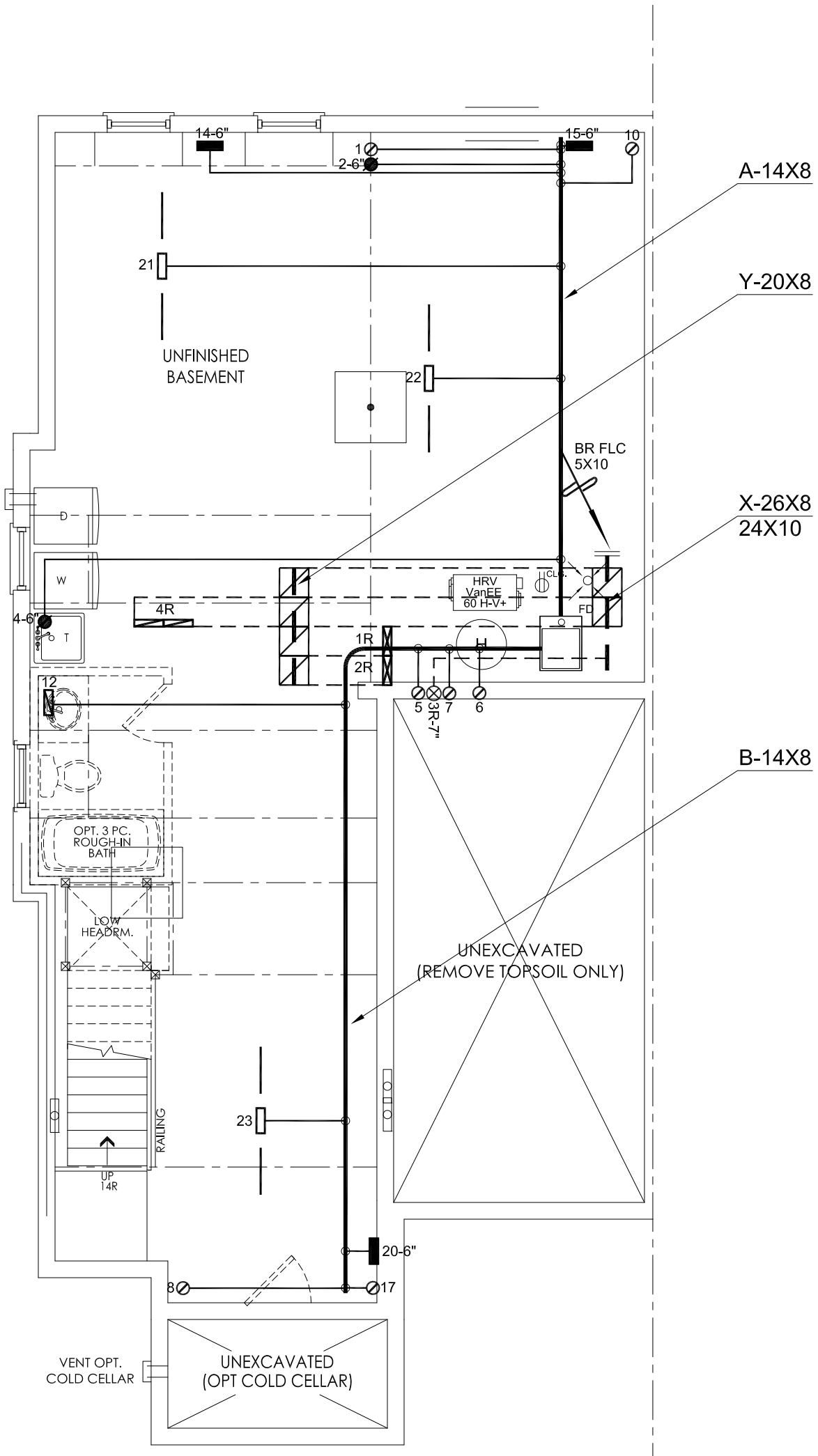
Supplemental tool for CAN/CSA-F280

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):	6.10
Building Configuration	
Type:	Semi
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	739.5
Air Leakage/Ventilation	
Air Tightness Type:	Present (1961-) (3.57 ACH)
Custom BDT Data:	ELA @ 10 Pa. 985.8 cm^2
	3.57 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply 56.6 / Total Exhaust 56.6
Flue Size	
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Natural Infiltration Rates	
Heating Air Leakage Rate (ACH/H):	**0.315**
Cooling Air Leakage Rate (ACH/H):	**0.108**

TYPE: SD-6 C

LO# 76093

CNR - OPT. 4 BED



PARTIAL BASEMENT EL. 'C'
CORNER UPGRADE

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

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

CORNER UPG
OPT. 4 BED
SD-6 C 2032 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: info@hvacdesigns.ca
Web: www.hvacdesigns.ca
Specializing in Residential Mechanical Design Services

Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

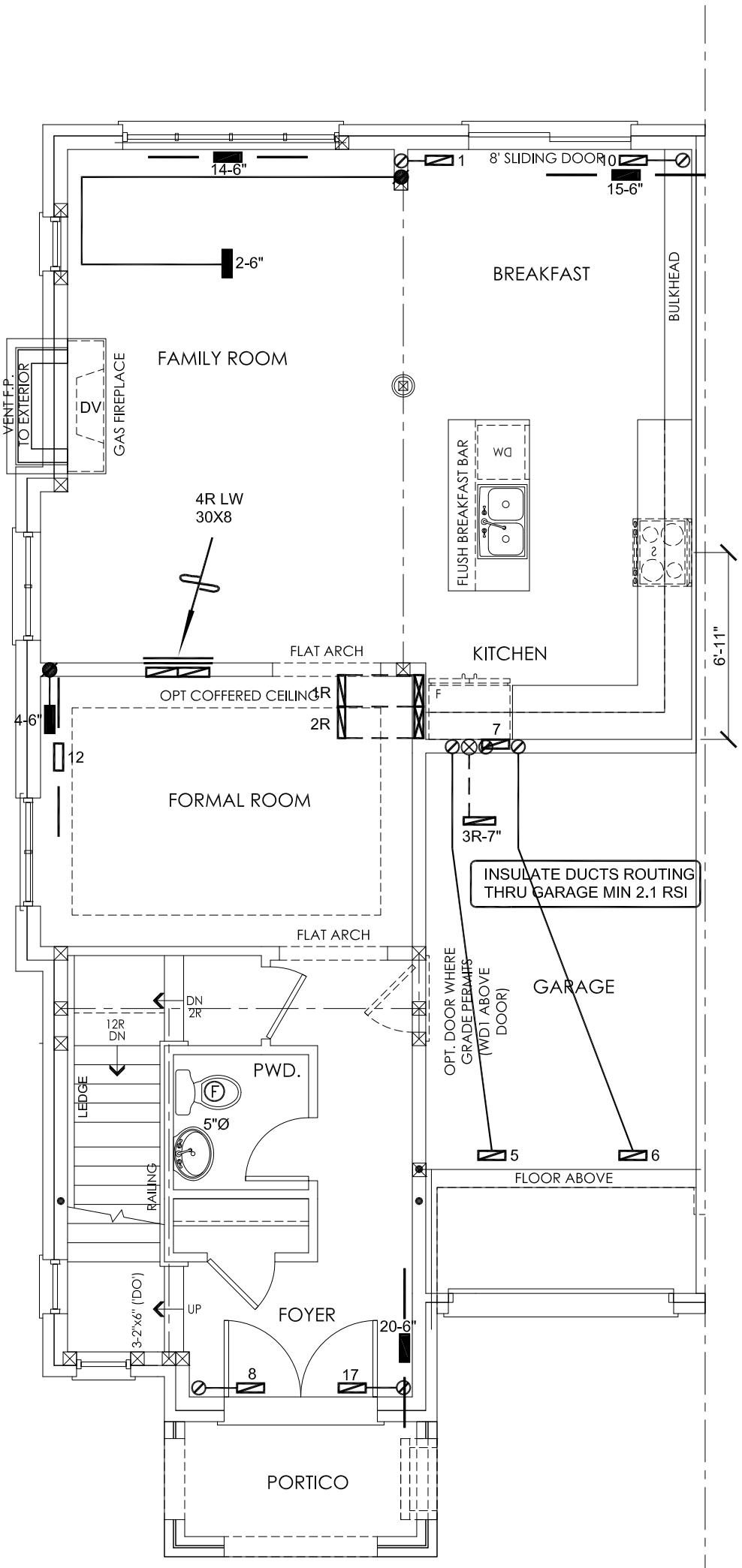
HEAT LOSS 38536 BTU/H	
UNIT DATA	
MAKE	LENNOX
MODEL	EL296UH045XE36B
INPUT	44 MBTU/H
OUTPUT	43 MBTU/H
COOLING	2.5 TONS
FAN SPEED	950 cfm @ 0.6" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	3	2
1ST FLOOR	4	1	2
BASEMENT	3	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 SEPT/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 76093



PARTIAL MAIN FLOOR EL. 'C'
CORNER UPGRADE

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
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

CORNER UPG
OPT. 4 BED
SD-6 C 2032 sqft

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
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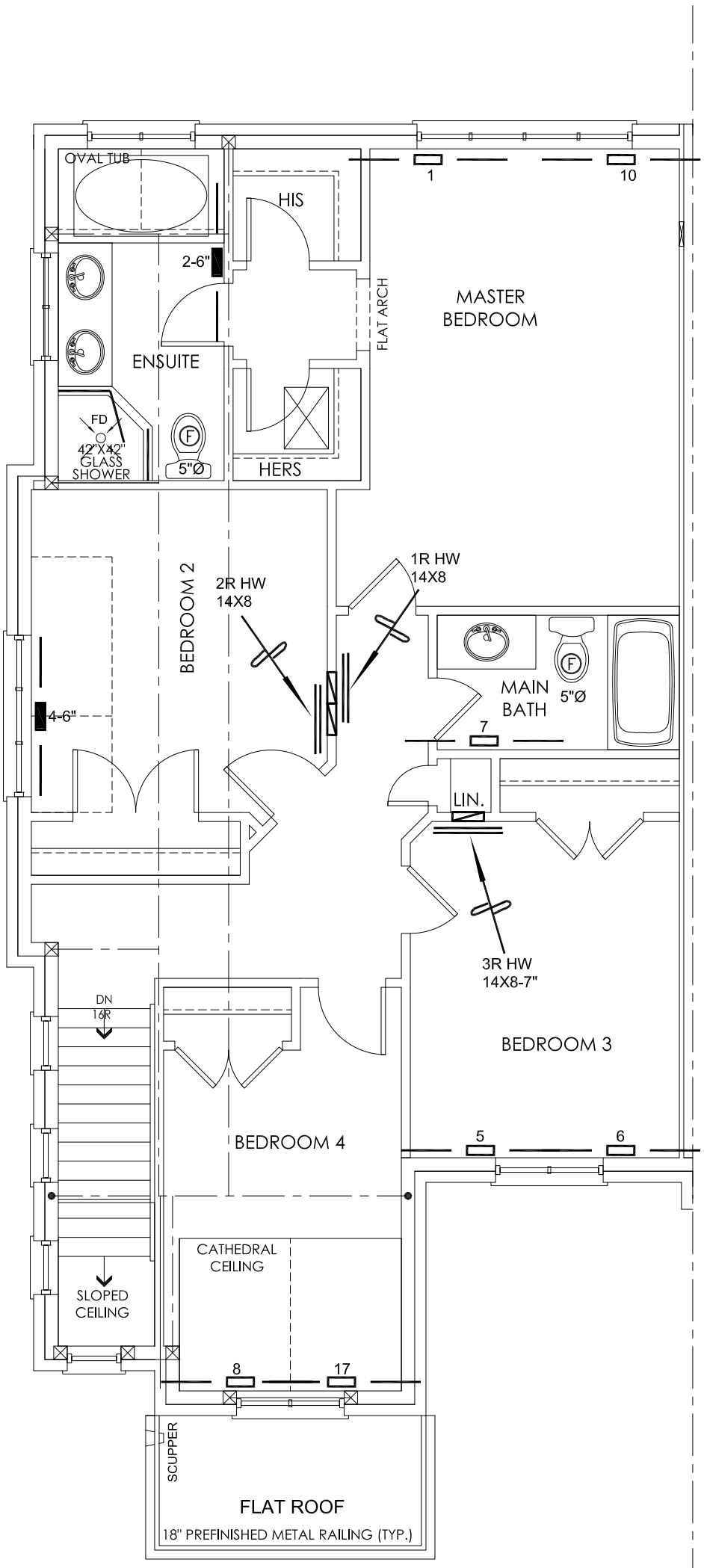
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

Sheet Title
FIRST FLOOR HEATING LAYOUT

Date SEPT/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 76093



PARTIAL SECOND FLOOR ELEV. 'C'
CORNER UPG / OPT. 4 BEDRM

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
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
CORNER UPG
OPT. 4 BED
SD-6 C 2032 sqft

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Sheet Title
SECOND FLOOR
HEATING
LAYOUT

Date SEPT/2017
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 76093