


## Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>					
Building number, street name				Unit no.	Lot/con.
Municipality	Postal code	Plan number/ other description			
VAUGHAN (WOODBIDGE)					
<b>B. Individual who reviews and takes responsibility for design activities</b>					
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@hvacdsgns.ca		
Telephone number	Fax number	Cell number			
(905) 619-2300	(905) 619-2375	( )			
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]</b>					
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> House  <input type="checkbox"/> Small Buildings  <input type="checkbox"/> Large Buildings  <input type="checkbox"/> Complex Buildings             </div> <div style="width: 30%;"> <input checked="" type="checkbox"/> HVAC – House  <input type="checkbox"/> Building Services  <input type="checkbox"/> Detection, Lighting and Power  <input type="checkbox"/> Fire Protection             </div> <div style="width: 30%;"> <input type="checkbox"/> Building Structural  <input type="checkbox"/> Plumbing – House  <input type="checkbox"/> Plumbing – All Buildings  <input type="checkbox"/> On-site Sewage Systems             </div> </div>					
Description of designer's work			Model: 4003 THE BROOKSIDE		
HEAT LOSS / GAIN CALCULATIONS			WOB		
DUCT SIZING			Project: PINE VALLEY & TESTON		
RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY					
RESIDENTIAL SYSTEM DESIGN per CSA-F280-12					
<b>D. Declaration of Designer</b>					
I, <u>MICHAEL O'ROURKE</u> (print name) declare that (choose one as appropriate):					
<input type="checkbox"/> 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. <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>Individual BCIN: _____</div> <div>Firm BCIN: _____</div> </div>					
<input checked="" type="checkbox"/> 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. <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>Individual BCIN: 19669</div> <div>Basis for exemption from registration and qualification: O.B.C. SENTENCE 3.2.4.1 (4)</div> </div>					
<input type="checkbox"/> 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.					
October 5, 2018					
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.

**Application for a Permit Construct or Demolish – Effective January 1, 2015**

SITE NAME: PINE VALLEY & TESTON										DATE: OCT-18		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F. 76		CSA-F280-12	
BUILDING: GOLD PARKHOMES										LO# 80232		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN AT °F. 13		SB-12 PACKAGE A1	
TYPE: 4003 THE BROOKSIDE										GFA: 3236		BATH		BED-4		BED-3	
WOB										WIC		BED-2		BED-1		WIR	
FACTORS										ENS		WOB		FOY		MUD	
GRS.WALL AREA										LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
GLAZING										25 9		13 9		15 9		12 9	
NORTH										0 0		0 0		0 0		0 0	
EAST										0 0		0 0		0 0		0 0	
SOUTH										0 0		0 0		0 0		0 0	
WEST										0 0		0 0		0 0		0 0	
SKYL.T.										37.2 101.5		37.2 101.5		37.2 101.5		37.2 101.5	
DOORS										25.2 4.3		25.2 4.3		25.2 4.3		25.2 4.3	
NET EXPOSED WALL										4.5 0.8		4.5 0.8		4.5 0.8		4.5 0.8	
NET EXPOSED BSMT WALL ABOVE GR										3.6 0.6		3.6 0.6		3.6 0.6		3.6 0.6	
EXPOSED CLG										1.3 0.6		1.3 0.6		1.3 0.6		1.3 0.6	
NO ATTIC EXPOSED CLG										2.7 1.3		2.7 1.3		2.7 1.3		2.7 1.3	
EXPOSED FLOOR										2.6 0.4		2.6 0.4		2.6 0.4		2.6 0.4	
BASEMENT/CRAWL HEAT LOSS										0 0		0 0		0 0		0 0	
SLAB ON GRADE HEAT LOSS										0 0		0 0		0 0		0 0	
SUBTOTAL HT LOSS										2284		2284		2284		2284	
SUB TOTAL HT GAIN										1783		1783		1783		1783	
LEVEL FACTOR / MULTIPLIER										0.20 0.37		0.20 0.37		0.20 0.37		0.20 0.37	
AIR CHANGE HEAT LOSS										839		839		839		839	
AIR CHANGE HEAT GAIN										0 0		0 0		0 0		0 0	
DUCT LOSS										0 0		0 0		0 0		0 0	
DUCT GAIN										0 0		0 0		0 0		0 0	
HEAT GAIN PEOPLE										240		240		240		240	
HEAT GAIN APPLIANCES/LIGHTS										480		480		480		480	
TOTAL HT LOSS BTU/H										3123		3123		3123		3123	
TOTAL HT GAIN x 1.3 BTU/H										3942		3942		3942		3942	

SITE NAME: PINE VALLEY & TESTON  
BUILDER: GOLD PARKHOMES

WOB

TYPE: 4003 THE BROOKSIDE

DATE: Oct-18

GFA: 3296 LO# 80232

HEATING CFM	1525	COOLING CFM	1525		
TOTAL HEAT LOSS	64,439	TOTAL HEAT GAIN	42,460		
AIR FLOW RATE CFM	23.67	AIR FLOW RATE CFM	35.92		
RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	10	6
R/A	0	0	5	2	1

EL296UH090XE48C	LENNOX	90
FAN SPEED	LOW	0
MEDIUM	MEDIUM	1105
HIGH	HIGH	1255
DESIGN CFM =	1525	
CFM @ 6" E.S.P.		

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

r/a pressure 0.17  
r/a grille press. Loss 0.02  
adjusted pressure r/a 0.15

ROOM #	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18	19	20	21	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	MEDIA	MEDIA	MBR	ENS-2	DIN	KT/GR	KT/GR	KT/GR	MUD	W/R	FOY	MEDIA	STDY	FOY	KT/GR
RM LOSS MBH	1.56	2.26	0.40	1.52	1.59	1.35	0.56	2.73	2.73	1.56	0.74	2.56	2.05	2.05	2.05	2.87	0.89	3.36	2.73	1.62	3.36	2.05
CFM PER RUN HEAT	37	53	9	36	38	32	13	65	65	37	18	61	49	49	49	68	21	79	65	38	79	49
RM GAIN MBH	1.97	1.66	0.11	1.80	2.03	1.94	0.15	1.95	1.95	1.97	0.30	2.23	1.97	1.97	1.97	1.41	0.14	2.09	1.95	1.62	2.09	1.97
CFM PER RUN COOLING	71	60	4	65	73	70	5	70	70	71	11	80	71	71	71	51	5	75	70	58	75	71
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	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	46	55	27	27	47	45	54	56	61	51	27	31	43	36	33	21	29	53	71	11	53	30
EQUIVALENT LENGTH	150	140	130	150	120	160	150	175	185	140	260	140	170	160	100	250	120	110	170	130	120	110
TOTAL EFFECTIVE LENGTH	196	195	157	177	167	205	204	231	246	191	287	171	213	196	133	271	149	163	241	141	173	140
ADJUSTED PRESSURE	0.09	0.09	0.11	0.1	0.1	0.08	0.08	0.07	0.07	0.09	0.06	0.1	0.08	0.09	0.13	0.06	0.12	0.11	0.07	0.12	0.1	0.12
ROUND DUCT SIZE	5	5	4	5	5	5	4	5	5	5	4	5	5	5	5	6	4	5	5	4	5	5
HEATING VELOCITY (ft/min)	272	389	103	264	279	235	149	477	477	272	207	448	360	360	360	347	241	580	477	436	580	360
COOLING VELOCITY (ft/min)	521	441	46	477	536	514	57	514	514	521	126	587	521	521	521	260	57	551	514	665	551	521
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	B	B	D	B	D	C	C	A	B	B	A	A	A	B	D	C	C	B	C	A

ROOM #	25	26	27	28	29	30
ROOM NAME	BAS	BAS	BAS	BAS	BAS	BAS
RM LOSS MBH	3.64	3.64	3.64	3.64	3.64	3.64
CFM PER RUN HEAT	86	86	86	86	86	86
RM GAIN MBH	1.20	1.20	1.20	1.20	1.20	1.20
CFM PER RUN COOLING	43	43	43	43	43	43
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	39	53	23	35	44	58
EQUIVALENT LENGTH	150	180	150	140	110	200
TOTAL EFFECTIVE LENGTH	189	233	173	175	154	258
ADJUSTED PRESSURE	0.09	0.07	0.09	0.09	0.11	0.06
ROUND DUCT SIZE	5	6	5	5	5	6
HEATING VELOCITY (ft/min)	631	438	631	631	438	631
COOLING VELOCITY (ft/min)	316	219	316	316	316	219
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	3X10	4X10
TRUNK	A	A	B	D	C	A

**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	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	528	0.06	11.9	16	594	TRUNK G	0	0.00	0	0	0	TRUNK O	0	0.06	0	0	8
TRUNK B	929	0.06	14.7	26	643	TRUNK H	0	0.00	0	0	0	TRUNK P	0	0.06	0	0	8
TRUNK C	439	0.07	10.7	14	564	TRUNK I	0	0.00	0	0	0	TRUNK Q	0	0.06	0	0	8
TRUNK D	597	0.07	12.2	18	597	TRUNK J	0	0.00	0	0	0	TRUNK R	0	0.06	0	0	8
TRUNK E	1526	0.06	17.7	28	785	TRUNK K	0	0.00	0	0	0	TRUNK S	0	0.06	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK T	0	0.06	0	0	8
RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AIR VOLUME	85	125	155	155	180	390	190	0	0	0	0	0	0	0	0	0	0
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	0.15
ACTUAL DUCT LGH.	41	53	45	67	71	26	25	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	195	190	185	190	185	145	145	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	236	243	230	257	256	171	170	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.06	0.06	0.06	0.06	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
ROUND DUCT SIZE	6	6.9	7.5	7.5	7.9	9.6	7.3	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
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0

TYPE: 4003 THE BROOKSIDE  
SITE NAME: PINE VALLEY & TESTON

LO # 80232  
WOB

**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	5	@ 10.6 cfm	53	cfm
Other Rooms	6	@ 10.6 cfm	63.6	cfm
Table 9.32.3.A.		TOTAL	190.8	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
	<b>TOTAL</b>	<b>79.5</b>	<b>cfm</b>

**SUPPLEMENTAL VENTILATION CAPACITY**

9.32.3.5.

Total Ventilation Capacity	190.8	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	35.8	cfm

**PRINCIPAL EXHAUST FAN CAPACITY**

Model: VANEE 65H Location: BSMT

155.0 cfm 3.0 sones ☒ HVI Approved

**PRINCIPAL EXHAUST HEAT LOSS CALCULATION**

CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	76 F	X	X
			0.25

**SUPPLEMENTAL FANS**

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
BATH	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
ENS-2	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
W/R	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3

**HEAT RECOVERY VENTILATOR**

9.32.3.11.

Model: VANEE 65H

155 cfm high 64 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 PARKHOMES

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:

October-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																									
Formula Sheet (For Air Leakage / Ventilation Calculation)																																									
LO#: 80232		Model: 4003 THE BROOKSIDE		Builder: GOLD PARKHOMES		Date: 10/5/2018																																			
Volume Calculation																																									
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> <tr> <td>Bsmt</td> <td>1530</td> <td>9</td> <td>13923</td> </tr> <tr> <td>First</td> <td>1530</td> <td>11</td> <td>16830</td> </tr> <tr> <td>Second</td> <td>1782</td> <td>9</td> <td>16216.2</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td>46,969.2 ft³</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td>1330.0 m³</td> </tr> </table>										Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1530	9	13923	First	1530	11	16830	Second	1782	9	16216.2	Third	0	9	0	Fourth	0	9	0	Total:			46,969.2 ft³	Total:			1330.0 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																						
Bsmt	1530	9	13923																																						
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Winter DTDh	22	-20	42	76																																					
Summer DTDc	24	31	7	13																																					
5.2.3.1 Heat Loss due to Air Leakage																																									
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																									
0.400	x	369.45	x	42 °C	x	1.2	=	7480 W																																	
								=	25521 Btu/h																																
5.2.3.2 Heat Loss due to Mechanical Ventilation																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																									
155 CFM	x	76 °F	x	1.08	x	0.25	=	3181 Btu/h																																	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																									
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																									
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL<sub>level</sub>)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="5">25,521</td> <td>8,547</td> <td>1.493</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>15,199</td> <td>0.504</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>13,894</td> <td>0.367</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </table>										Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL <sub>level</sub> )	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	25,521	8,547	1.493	2	0.3	15,199	0.504	3	0.2	13,894	0.367	4	0	0	0.000	5	0	0	0.000						
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL <sub>level</sub> )	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																					
1	0.5	25,521	8,547	1.493																																					
2	0.3		15,199	0.504																																					
3	0.2		13,894	0.367																																					
4	0		0	0.000																																					
5	0		0	0.000																																					
<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>																																									

**HEAT LOSS AND GAIN SUMMARY SHEET**

<b>MODEL:</b> 4003 THE BROOKSIDE	<b>WOB</b>	<b>BUILDER:</b> GOLD PARKHOMES
<b>SFQT:</b> 3296	<b>LO#</b> 80232	<b>SITE:</b> PINE VALLEY & TESTON

**DESIGN ASSUMPTIONS**

<b>HEATING</b>	<b>°F</b>	<b>COOLING</b>	<b>°F</b>
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

**BUILDING DATA**

<b>ATTACHMENT:</b>	DETACHED	<b># OF STORIES (+BASEMENT):</b>	3
<b>FRONT FACES:</b>	EAST	<b>ASSUMED (Y/N):</b>	Y
<b>AIR CHANGES PER HOUR:</b>	3.57	<b>ASSUMED (Y/N):</b>	Y
<b>AIR TIGHTNESS CATEGORY:</b>	AVERAGE	<b>ASSUMED (Y/N):</b>	Y
<b>WIND EXPOSURE:</b>	SHELTERED	<b>ASSUMED (Y/N):</b>	Y
<b>HOUSE VOLUME (ft³):</b>	46969.2	<b>ASSUMED (Y/N):</b>	Y
<b>INTERNAL SHADING:</b>	BLINDS/CURTAINS	<b>ASSUMED OCCUPANTS:</b>	5
<b>INTERIOR LIGHTING LOAD (Btu/h/ft²):</b>	1.27	<b>DC BRUSHLESS MOTOR (Y/N):</b>	Y
<b>FOUNDATION CONFIGURATION</b>	BCIN_1	<b>DEPTH BELOW GRADE:</b>	6.1 ft
<b>LENGTH:</b> 59.0 ft <b>WIDTH:</b> 32.0 ft		<b>EXPOSED PERIMETER:</b>	140.0 ft
<b>WOB INSULATION CONFIGURATION</b>	SCB_9	<b>WOB EXPOSED PERIMETER</b>	42.0 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	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

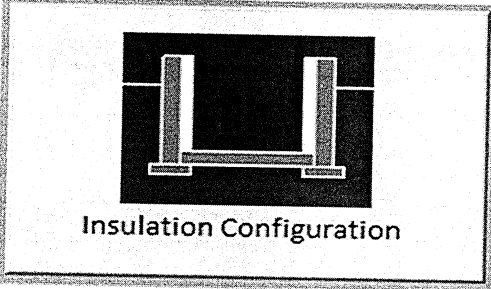
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

*Michael O'Rourke*

## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

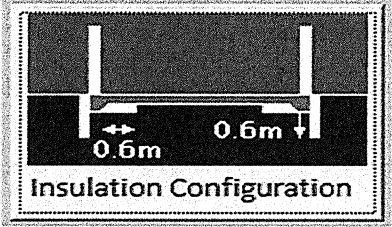
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	42.7	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.56	
Window Area (m <sup>2</sup> ):	0.6	
Door Area (m <sup>2</sup> ):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	706	

TYPE: 4003 THE BROOKSIDE  
LO# 80232

WOB

## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	1.5	 Insulation Configuration
Width (m):	9.8	
Exposed Perimeter (m):	12.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		156

TYPE: 4003 THE BROOKSIDE  
LO# 80232

WOB



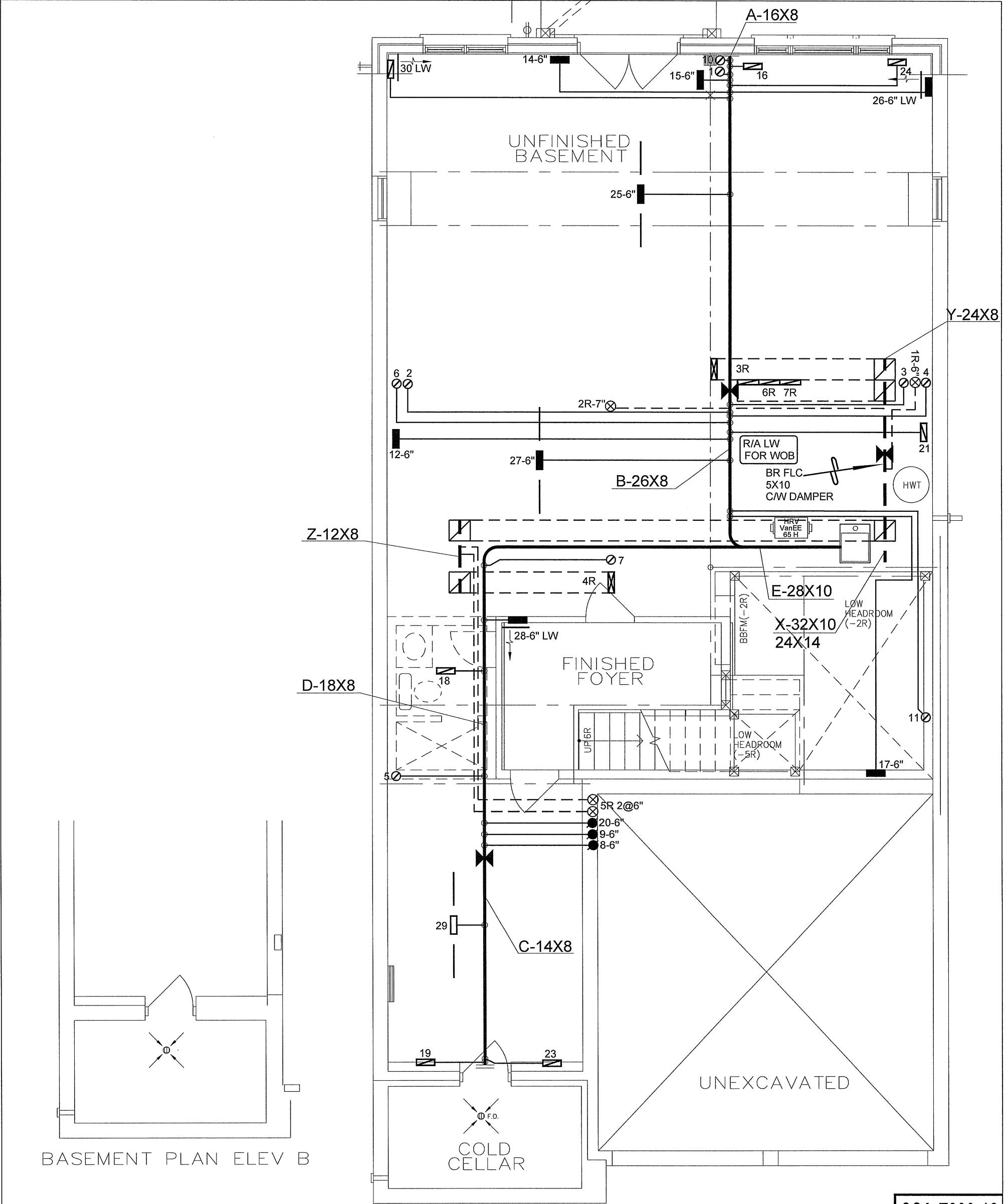
# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
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):	8.90			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m <sup>3</sup> ):	1330.0			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		1773.0 cm <sup>2</sup>	
	3.57		ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply		Total Exhaust	
	73.2		73.2	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.400			
Cooling Air Leakage Rate (ACH/H):	0.134			

TYPE: 4003 THE BROOKSIDE  
LO# 80232

WOB



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

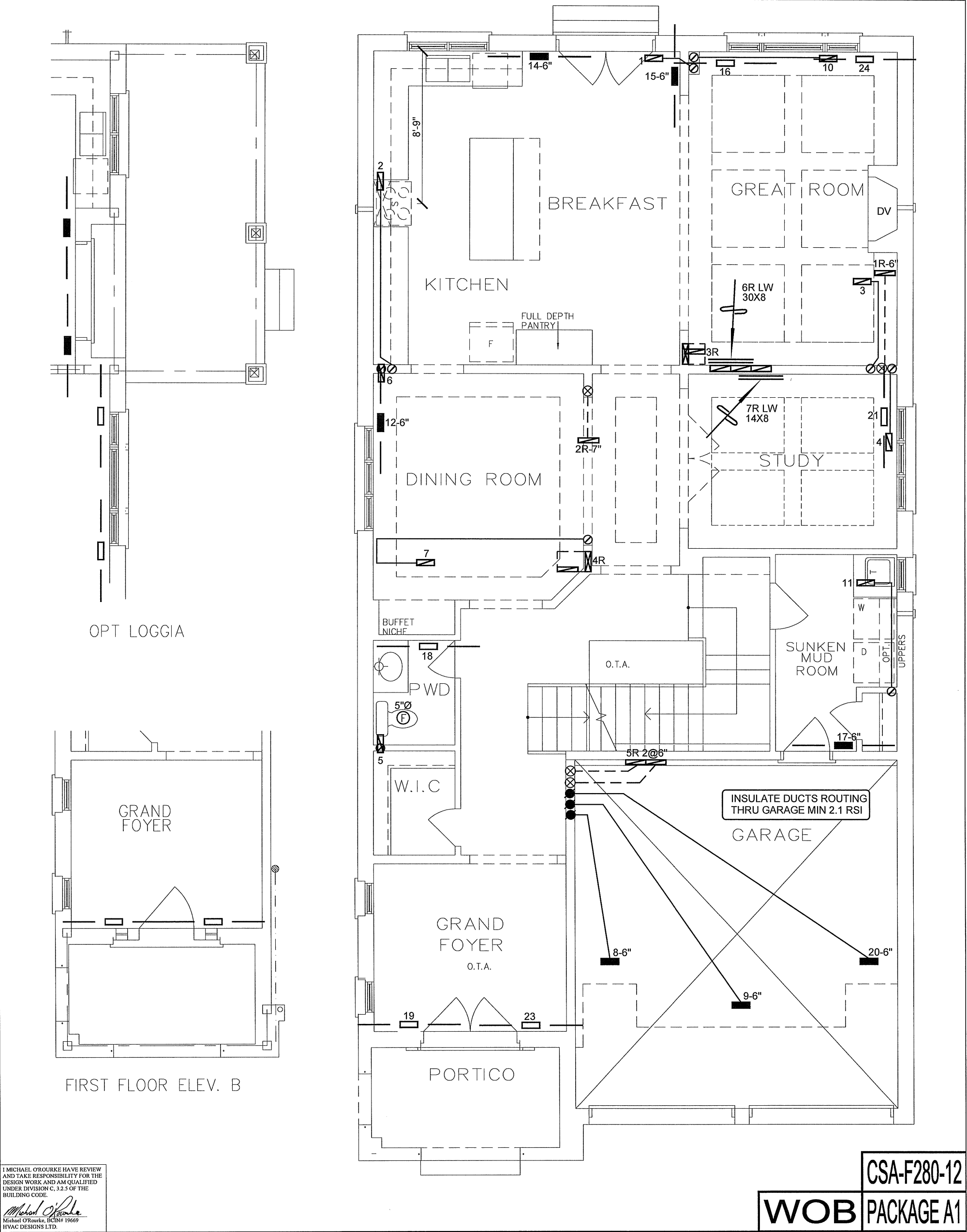
CSA-F280-12

**WOB** PACKAGE A1

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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Client		<div></div> <div>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</div> <div>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.</div>	HEAT LOSS 67620 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title <b>BASEMENT HEATING LAYOUT</b>		
GOLD PARK HOMES			MAKE LENNOX		3RD FLOOR					
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			MODEL EL296UH090XE48C		2ND FLOOR			12	5	3
THE BROOKSIDE WOB 4003 3296 sqft			INPUT 88 MBTU/H		1ST FLOOR			10	2	2
			OUTPUT 85 MBTU/H		BASEMENT			6	1	0
			COOLING 3.5 TONS		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			Date OCT/2018		
			FAN SPEED 1525 cfm @ 0.6" w.c.					Scale 3/16" = 1'-0"		
								BCIN# 19669		
								LO#		80232



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

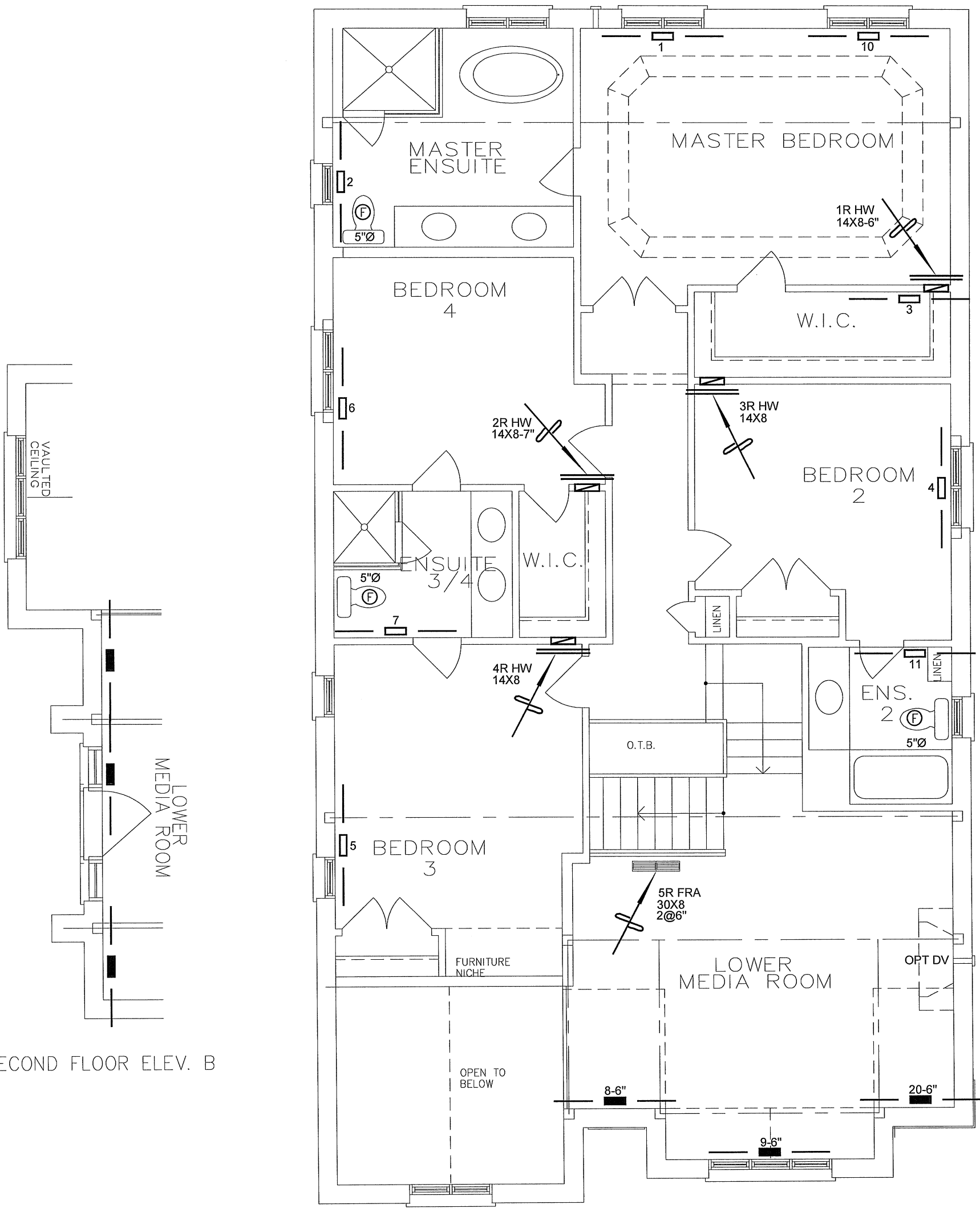
CSA-F280-12  
WOB PACKAGE A1

HVAC LEGEND							3.		
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	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			Date	OCT/2018
			Scale	3/16" = 1'-0"
			BCIN# 19669	
THE BROOKSIDE WOB 4003 3296 sqft		LO#	80232	

SECOND FLOOR ELEV. B



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AND TAKE RESPONSIBILITY FOR THE  
DESIGN WORK AND AM QUALIFIED  
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BUILDING CODE.  
*Michael O'Rourke*  
Michael O'Rourke, BCIN# 19669  
HVAC DESIGNS LTD.

CSA-F280-12  
WOB PACKAGE A1

HVAC LEGEND								3.		
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Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			Date	OCT/2018
			Scale	3/16" = 1'-0"
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THE BROOKSIDE WOB 4003 3296 sqft		LO#	80232	