


## 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 VAUGHAN (WOODBIDGE)	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities				
Name <b>MICHAEL O'ROURKE</b>		Firm <b>HVAC DESIGNS LTD.</b>		
Street address <b>375 FINLEY AVE</b>			Unit no. <b>202</b>	Lot/con. <b>N/A</b>
Municipality <b>AJAX</b>	Postal code <b>L1S 2E2</b>	Province <b>ONTARIO</b>	E-mail <b>info@hvacdsgns.ca</b>	
Telephone number <b>(905) 619-2300</b>	Fax number <b>(905) 619-2375</b>	Cell number ( )		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]				
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings				
<input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection				
<input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems				
Description of designer's work <b>HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>			<b>Model:</b> 5001 - THE HILLSBOROUGH  ELEVATION B  <b>Project:</b> PINE VALLEY & TESTON	
D. Declaration of Designer				
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.  Individual BCIN: _____ Firm BCIN: _____				
<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.  Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>				
<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 ELEVATION B DATE: Oct-18 WINTER NATURAL AIR CHANGE RATE 0.330 CSA-F280-12  
BUILDER: GOLD PARK HOMES TYPE: 6001 - THE HILLSBOROUGH LO# 77472 SUMMER NATURAL AIR CHANGE RATE 0.111 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	LIB	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4
GRS.WALL AREA	410		25	90	99	333	337	180	63	64
GLAZING	LOSS	GAIN	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
NORTH	0	0	0	0	17	382	0	0	8	0
EAST	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0
SKYL.T.	38	809	1579	28	596	1183	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.6	0.8	372	1660	280	197	879	148	147	46
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	340	436	200	168	200	92	120	184
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2905		1675	556	1038	3317	1897	1179	880	530
SUB TOTAL HT GAIN	2008		1403	138	0.20	0.31	0.20	0.31	0.20	0.31
LEVEL FACTOR / MULTIPLIER	0.20	0.31	0.20	0.31	0.20	0.31	0.20	0.31	0.20	0.31
AIR CHANGE HEAT LOSS	911		525	174	325	1040	596	94	276	166
AIR CHANGE HEAT GAIN	164		111	11	0	436	0	116	0	24
DUCT LOSS	0		0	0	0	0	0	0	0	0
DUCT GAIN	0		0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240		480	0	1	240	1	240	0	0
HEAT GAIN APPLANCES/LIGHTS	761		761	0	0	761	0	761	0	0
TOTAL HT LOSS BTU/H	3816		2200	730	1364	4792	2492	1271	696	696
TOTAL HT GAIN x 1.3 BTU/H	4489		1989	194	1958	4847	2943	466	427	427

ROOM USE	EXP. WALL	CLG. HT.	LIB	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4
GRS.WALL AREA	320		32	66	200	207	207	50	420	468
GLAZING	LOSS	GAIN	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
NORTH	0	0	0	0	0	0	0	0	0	0
EAST	52	1107	2161	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	401.5	6233	150	3192	6233	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	258	1196	201	186	741	125	344	20
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	60	77	36	60	77	36	60	20
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2380		1395	5423	5609	1464	1395	223	3516	1476
SUB TOTAL HT GAIN	2387		1395	5423	5609	1464	1395	223	3516	1476
LEVEL FACTOR / MULTIPLIER	0.30	0.45	0.30	0.45	0.30	0.45	0.30	0.45	0.30	0.45
AIR CHANGE HEAT LOSS	1080		2462	525	685	77	437	101	1596	282
AIR CHANGE HEAT GAIN	190		525	0	0	0	0	0	0	20
DUCT LOSS	0		0	0	0	0	0	0	0	0
DUCT GAIN	0		0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240		480	0	1	240	1	240	0	282
HEAT GAIN APPLANCES/LIGHTS	751		751	0	0	751	0	751	0	1051
TOTAL HT LOSS BTU/H	3460		10251	7886	2129	4792	2492	1271	696	177
TOTAL HT GAIN x 1.3 BTU/H	4341		1989	194	1958	4847	2943	466	427	1122

TOTAL HEAT GAIN BTU/H: 43048 TONS: 3.59 TONS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 61480 TOTAL COMBINED HEAT LOSS BTU/H: 64671

*Michael O'Rourke*

**SITE NAME: PINE VALLEY & TESTON  
BUILDER: GOLD PARK HOMES**

**ELEVATION B  
TYPE: 5001 - THE HILLSBOROUGH**

GFA: 3602 LO# 77472

DATE: Oct-18

HEATING CFM	1255	COOLING CFM	1255
TOTAL HEAT LOSS	61,490	TOTAL HEAT GAIN	42,512
AIR FLOW RATE CFM	20.41	AIR FLOW RATE CFM	29.52

**EL296UH090XE48C**  
FAN SPEED  
LOW 0  
MEDLOW 0  
MEDIUM 1105  
HIGH 1255

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	9	5
R/A	0	0	4	2	1

DESIGN CFM = 1255  
CFM @ .6" E.S.P.  
TEMPERATURE RISE 63 °F

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

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

RUN #	ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2	RM LOSS MBH	1.91	2.20	0.73	1.36	2.40	2.49	0.64	2.40	0.64	1.91	0.70	1.73	1.73	2.63	2.63	2.13	1.83	0.32	5.11	2.46	4.19	4.19	4.19	4.19
3	CFM PER RUN HEAT	39	45	15	28	49	51	13	49	13	39	14	35	35	54	54	43	37	7	104	50	85	85	85	85
4	RM GAIN MBH	2.24	1.97	0.19	1.96	2.32	2.94	0.23	2.32	0.23	2.24	0.43	2.17	2.17	3.42	3.42	2.34	2.80	0.05	2.28	1.38	0.40	0.40	0.40	0.40
5	CFM PER RUN COOLING	66	58	6	58	69	87	7	69	7	66	13	64	64	101	101	89	83	2	67	41	12	12	12	12
6	ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.16	0.17	0.16	0.17	0.16	0.16	0.16	0.16
7	EQUIVALENT LENGTH	64	49	31	31	49	48	30	45	26	75	48	50	45	50	37	29	50	5	31	11	40	28	29	47
8	TOTAL EFFECTIVE LENGTH	205	165	110	135	125	180	145	105	165	205	220	120	120	120	120	190	160	100	150	170	120	190	160	160
9	ADJUSTED PRESSURE	0.06	0.08	0.12	0.1	0.1	0.07	0.1	0.11	0.09	0.06	0.06	0.1	0.1	0.1	0.1	0.1	0.08	0.08	0.16	0.09	0.1	0.07	0.09	0.08
10	ROUND DUCT SIZE	5	5	4	5	5	6	4	5	4	5	4	5	5	5	6	5	6	4	6	4	5	6	5	6
11	HEATING VELOCITY (ft/min)	288	330	172	206	360	260	149	360	149	288	161	257	257	275	275	316	189	80	530	574	624	433	624	433
12	COOLING VELOCITY (ft/min)	485	426	69	426	507	444	80	507	80	485	149	470	470	515	515	507	423	23	342	470	88	61	88	61
13	OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	3X10	4X10
14	TRUNK	A	D	C	D	D	A	D	D	D	A	A	B	B	A	A	B	B	C	B	D	A	A	D	B

**SUPPLY AIR TRUNK SIZE**

RUN #	ROOM NAME	BAS	KT/GT	25	26
1	ROOM NAME	BAS	KT/GT	25	26
2	RM LOSS MBH	4.19	2.63	85	54
3	CFM PER RUN HEAT	85	54	0.40	3.42
4	RM GAIN MBH	0.40	3.42	12	101
5	CFM PER RUN COOLING	0.16	0.16	40	35
6	ADJUSTED PRESSURE	0.16	0.16	110	130
7	EQUIVALENT LENGTH	150	165	150	165
8	ADJUSTED PRESSURE	0.11	0.1	6	6
9	ROUND DUCT SIZE	5	6	624	275
10	HEATING VELOCITY (ft/min)	88	515	88	515
11	COOLING VELOCITY (ft/min)	3X10	4X10	3X10	4X10
12	OUTLET GRILL SIZE	B	D	B	D
13	TRUNK	A	D	C	D

**RETURN 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	421	0.06	10.9	14		8	TRUNK G	0	0.00	0	0	541
TRUNK B	424	0.08	10.2	12		8	TRUNK H	0	0.00	0	0	636
TRUNK C	867	0.06	14.3	24		8	TRUNK I	0	0.00	0	0	650
TRUNK D	386	0.08	9.8	12		8	TRUNK J	0	0.00	0	0	579
TRUNK E	0	0.00	0	0		8	TRUNK K	0	0.00	0	0	8
TRUNK F	0	0.00	0	0		8	TRUNK L	0	0.00	0	0	8
RETURN AIR #	1	2	3	4	5	6						BR
AIR VOLUME	110	155	155	125	340	175	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0	0	0	0	0	0
ACTUAL DUCT LGH.	47	36	37	59	20	28	1	1	1	1	1	1
EQUIVALENT LENGTH	205	190	185	160	135	170	0	0	0	0	0	140
TOTAL EFFECTIVE LH	252	226	222	219	155	198	1	1	1	1	1	154
ADJUSTED PRESSURE	0.06	0.07	0.07	0.07	0.10	0.07	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6	7.2	7.2	6.7	8.9	7.5	0	0	0	0	0	0.10
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	7.2
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	14

TYPE: 5001 - THE HILLSBOROUGH  
SITE NAME: PINE VALLEY & TESTON

LO # 77472  
ELEVATION B

**RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY**

COMBUSTION APPLIANCES		9.32.3.1(1)
a) <input checked="" type="checkbox"/>	Direct vent (sealed combustion) only	
b) <input type="checkbox"/>	Positive venting induced draft (except fireplaces)	
c) <input type="checkbox"/>	Natural draft, B-vent or induced draft gas fireplace	
d) <input type="checkbox"/>	Solid Fuel (including fireplaces)	
e) <input type="checkbox"/>	No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/>	Forced Air
<input type="checkbox"/>	Non Forced Air
<input type="checkbox"/>	Electric Space Heat

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/>	I Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/>	II Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/>	III Any Type c) appliance	
<input type="checkbox"/>	IV Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/>	1 Exhaust only/Forced Air System	
<input type="checkbox"/>	2 HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/>	3 HRV Simplified/connected to forced air system	
<input type="checkbox"/>	4 HRV with Ducting/non forced air system	
<input type="checkbox"/>	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
TOTAL	79.5	cfm

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: VANE 65H	Location: BSMT
155.0 cfm	3.0 sones
<input checked="" type="checkbox"/>	HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	X 76 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	✓
BATH	QTXEN050C	50	✓
ENS-4	QTXEN050C	50	✓
W/R	QTXEN050C	50	✓

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/>	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:	October-18

<b>CSA F280-12 Residential Heat Loss and Heat Gain Calculations</b>																																									
<b>Formula Sheet (For Air Leakage / Ventilation Calculation)</b>																																									
LO#: 77472		Model: 5001 - THE HILLSBOROUGH		Builder: GOLD PARK HOMES		Date: 10/5/2018																																			
<b>Volume Calculation</b>																																									
<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>1666</td> <td>9</td> <td>14994</td> </tr> <tr> <td>First</td> <td>1666</td> <td>10</td> <td>16660</td> </tr> <tr> <td>Second</td> <td>1993</td> <td>9</td> <td>17937</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>49,591.0 ft³</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td>1404.3 m³</td> </tr> </table>										Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1666	9	14994	First	1666	10	16660	Second	1993	9	17937	Third	0	9	0	Fourth	0	9	0	Total:			49,591.0 ft³	Total:			1404.3 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																						
Bsmt	1666	9	14994																																						
First	1666	10	16660																																						
Second	1993	9	17937																																						
Third	0	9	0																																						
Fourth	0	9	0																																						
Total:			49,591.0 ft³																																						
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-20</td> <td>42</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>31</td> <td>7</td> </tr> </table>										Design Temperature Difference					Tin °C	Tout °C	ΔT °C	Winter DTDh	22	-20	42	Summer DTDc	24	31	7																
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<b>6.2.6 Sensible Gain due to Air Leakage</b>																																									
$HG_{satlb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																									
0.330	x	390.07	x	7 °C	x	1.2	=	369 W																																	
								=	1259 Btu/h																																
<b>6.2.7 Sensible heat Gain due to Ventilation</b>																																									
$HL_{vair-b} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																									
155 CFM	x	76 °F	x	1.08	x	0.25	=	536 Btu/h																																	
<b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>																																									
$HL_{air-r} = Level Factor \times HL_{air-bv} \times \{ (HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel}) \}$																																									
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>Hlaive Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL<sub>c-level</sub>)</th> <th>Air Leakage Heat Loss Multiplier (LF x Hlaive / HL<sub>c-level</sub>)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="5">22,243</td> <td>9,805</td> <td>1.134</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>14,698</td> <td>0.454</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>14,193</td> <td>0.313</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)	Hlaive Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL <sub>c-level</sub> )	Air Leakage Heat Loss Multiplier (LF x Hlaive / HL <sub>c-level</sub> )	1	0.5	22,243	9,805	1.134	2	0.3	14,698	0.454	3	0.2	14,193	0.313	4	0	0	0.000	5	0	0	0.000						
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<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> 5001 - THE HILLSBOROUGH	<b>ELEVATION B</b>	<b>BUILDER:</b> GOLD PARK HOMES
<b>SFQT:</b> 3602	<b>LO#</b> 77472	<b>SITE:</b> PINE VALLEY & TESTON

**DESIGN ASSUMPTIONS**

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

**BUILDING DATA**

ATTACHMENT:	DETACHED	# 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 (ft³):	49591.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 56.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	196.0 ft

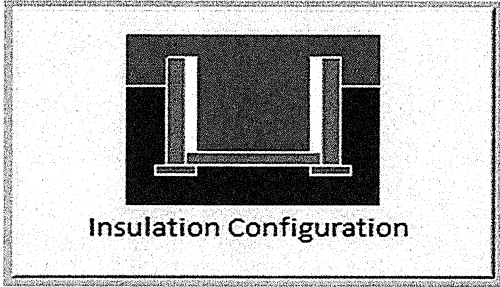
2012 OBC - COMPLIANCE PACKAGE		
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement 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



## 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):	17.1	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m <sup>2</sup> ):	2.4	
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):		1964

TYPE: 5001 - THE HILLSBOROUGH  
LO# 77472

ELEVATION B

# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

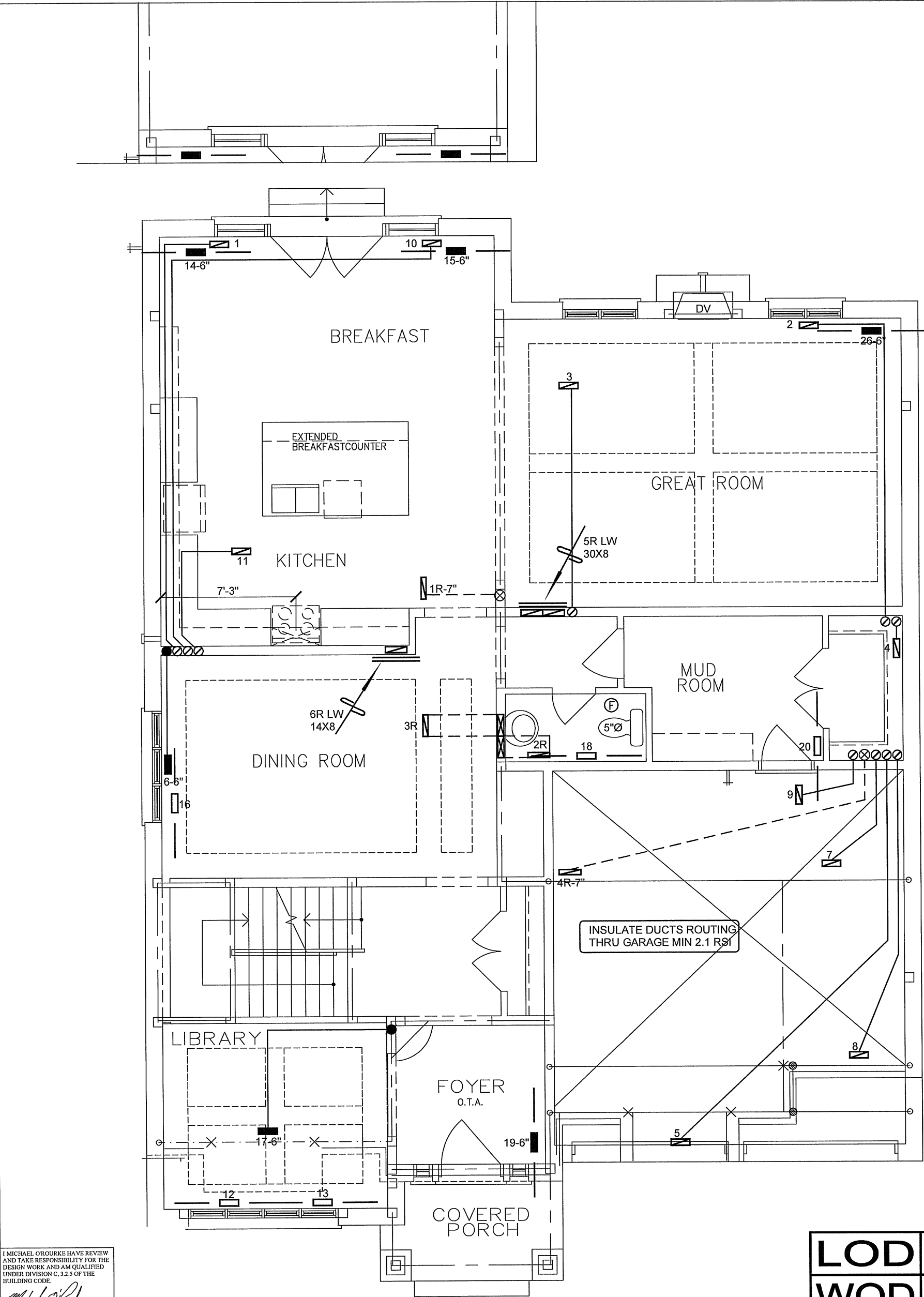
Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m <sup>3</sup> ):	1404.3			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1871.9 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):	0.330			
Cooling Air Leakage Rate (ACH/H):	0.111			

TYPE: 5001 - THE HILLSBOROUGH  
LO# 77472

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

LOD	CSA-F280-12
WOD	PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED	OCT/2018
	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		

Client

GOLD PARK HOMES

Project Name

PINE VALLEY & TESTON  
VAUGHAN, ONTARIO  
ELEVATION B  
THE HILLSBOROUGH  
5001

3602 sqft

**HVACDESIGNS LTD.**

375 Finley Ave. Suite 202 - Ajax, Ontario  
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375  
Email: info@hvacdsgns.ca  
Web: www.hvacdesigns.ca  
Specializing in Residential Mechanical Design Services

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

Sheet Title

FIRST FLOOR  
HEATING  
LAYOUT

Date

JAN/2018

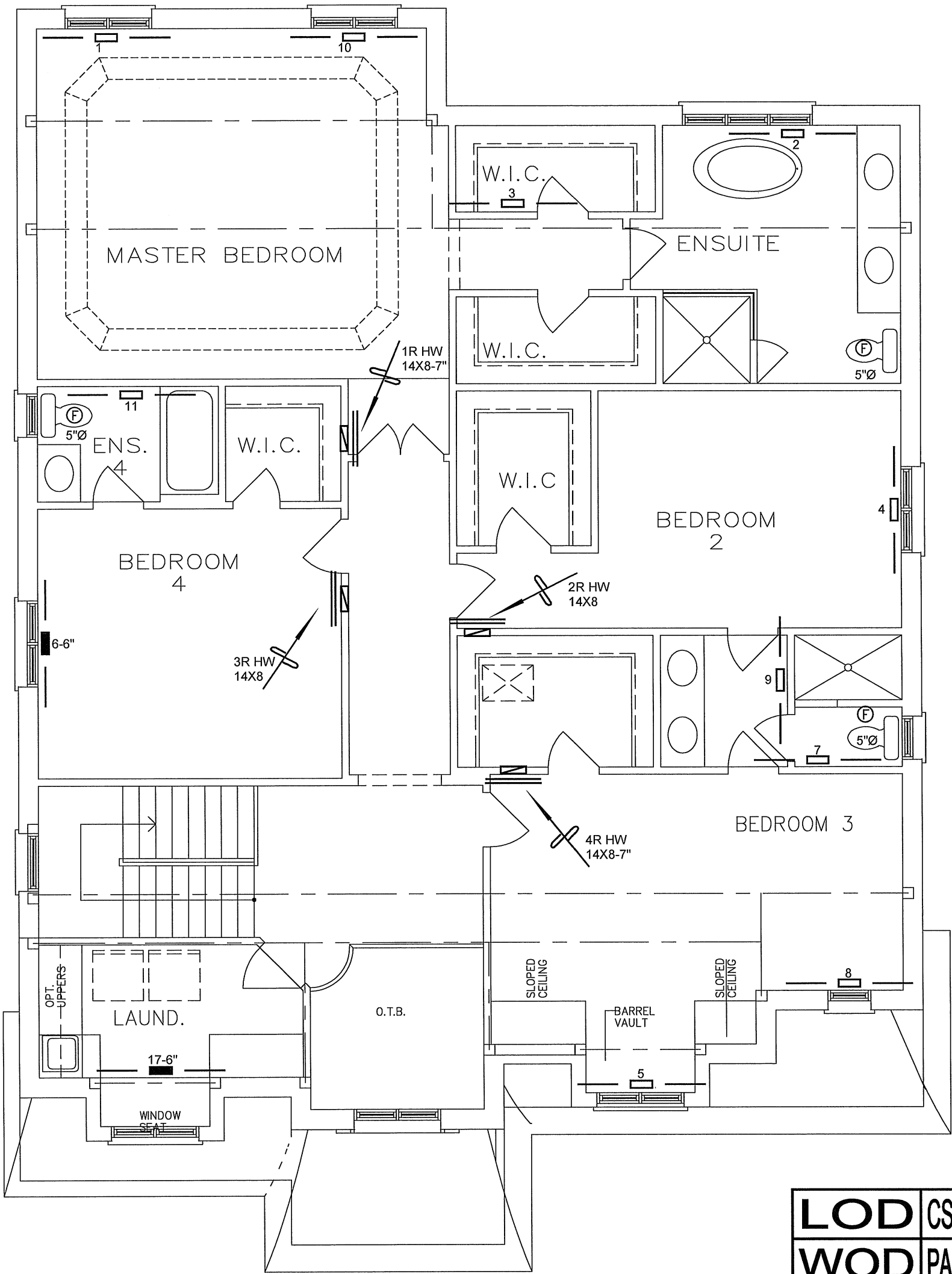
Scale

3/16" = 1'-0"

BCIN# 19669

LO#













77472



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.

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Michael O'Rourke, BCIN# 19669  
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WOD	PACKAGE A1

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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>	Sheet Title	
GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
ELEVATION B			BCIN# 19669	
THE HILLSBOROUGH			LO#	77472
5001	3602 sqft			