

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 MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.		
Street address 375 FINLEY AVE			Unit no. 202	Lot/con. N/A
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdesigns.ca	
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]				
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems				
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12			Model: 4008 'THE HILLSDALE WOB Project: PINE VALLEY & TESTON	
D. Declaration of Designer				
I, <u>MICHAEL O'ROURKE</u> (print name) declare that (choose one as appropriate):				
☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____				
☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>				
☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____				
I certify that:				
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
February 4, 2020 Date			 Signature of Designer	

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

SITE NAME: PINE VALLEY & TESTON BUILDER: GOLD PARK HOMES WOB TYPE: 4008 THE HILLSDALE GFA: 2716 DATE: Feb-20 LO# 85234 WINTER NATURAL AIR CHANGE RATE 0.407 SUMMER NATURAL AIR CHANGE RATE 0.437 HEAT LOSS AT °F. 76 HEAT GAIN AT °F. 13 CSA-P280-12 SB-12 PACKAGE A1

ROOM/USE	EXP. WALL	CLG. HT.	MBR	ENS	WOB	BED-2	BED-3	BED-4	ENS-2	ENS-2/3	HEAT LOSS AT °F.	HEAT GAIN AT °F.
GRS WALL AREA	390		390	207		135	135	188	81	198		
GLAZING												
NORTH	21.3	16.0	0	0	0	18	0	0	0	0	0	0
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	0	0	0	0	0	0	0	0	0	0
WEST	21.3	41.6	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.5	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	354	1580	266	117	522	88	75	335	56	161
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	408	524	240	183	235	108	227	291	133	244
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	21	54	9	212	541	91	0
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			2959			1194	2542	1627	577	1471		704
SUB TOTAL HT GAIN			2002			0.20	0.30	0.20	0.30	0.20	0.30	0.20
LEVEL FACTOR / MUL TIPLIER			871			362	772	484	175	447		704
AIR CHANGE HEAT LOSS			148			36	209	71	22	192		52
DUCT LOSS			0			156	331	0	0	0		76
DUCT GAIN			0			148	338	0	0	0		0
HEAT GAIN PEOPLE			2			1	240	1	240	0		0
HEAT GAIN APPLIANCES/LIGHTS			713			713	713	713	0	0		0
TOTAL HT LOSS BTU/H			3741			1711	3545	2121	752	2109		1082
TOTAL HT GAIN x 1.3 BTU/H			4346									

ROOM/USE	EXP. WALL	CLG. HT.	GTIDN	KIT	LAUN	WIR	FOY	MUD	WOB	BAS
GRS WALL AREA	605		605	386	270	176	539	336	430	931
GLAZING										
NORTH	21.3	16.0	36	0	0	0	0	0	0	0
EAST	21.3	41.6	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	0	0	0	0	0	0	0	0
WEST	21.3	41.6	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.5	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	521	2325	382	218	973	164	466	741
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0
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
SLAB ON GRADE HEAT LOSS						0	0	0	0	0
SUBTOTAL HT LOSS			4140			2418	2314	1815	3784	2101
SUB TOTAL HT GAIN			2574			0.20	0.30	0.30	0.47	0.30
LEVEL FACTOR / MUL TIPLIER			1842			734	1676	898	24	42
AIR CHANGE HEAT LOSS			220			0	0	0	0	0
DUCT LOSS			0			0	0	0	0	0
DUCT GAIN			0			0	0	0	0	0
HEAT GAIN PEOPLE			240			0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			713			713	713	713	0	0
TOTAL HT LOSS BTU/H			6082			5015	4723	3154	3784	2101
TOTAL HT GAIN x 1.3 BTU/H			5079							

TOTAL HEAT GAIN BTU/H: 37289 TONS: 3.10 LOSS DUE TO VENTILATION LOAD BTU/H: 1631 STRUCTURAL HEAT LOSS: 58457 TOTAL COMBINED HEAT LOSS BTU/H: 60088

Michael O'Rourke

SITE NAME: PINE VALLEY & TESTON
BUILDER: GOLD PARK HOMESWOB
TYPE: 4008 THE HILLSDALE

DATE: Feb-20

GFA: 2716 LO# 85234

HEATING CFM 1100 COOLING CFM 1100
TOTAL HEAT LOSS 58,457 TOTAL HEAT GAIN 36,985
AIR FLOW RATE CFM 18.82 AIR FLOW RATE CFM 29.74AFUE = 96 %
INPUT (BTU/H) = 66,000
OUTPUT (BTU/H) = 64,000DESIGN CFM = 1100
CFM @ 0.1" E.S.P.

TEMPERATURE RISE 54 °F

^LENNOX
EL296UH07XE36B
FAN SPEED 70LOW 0
MEDIUM 0
HIGH 0furnace pressure 0.6
furnace filler 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 diff press. loss 0.02
min adjusted pressure s/a 0.16
r/a grille press. loss 0.17
adjusted pressure r/a 0.15

ROOM #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	ENS-2	ENS-3	ENS-2/3	MBR	ENS-2/3	GT/DN	GT/DN	GT/DN	KIT	KIT	LAUN	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.87	1.95	1.71	1.82	2.12	0.75	1.82	1.05	1.87	1.05	3.04	3.04	3.04	2.51	2.51	1.58	1.58	1.58	4.94	2.81	4.76	4.76	4.76	4.76
CFM PER RUN HEAT	35	37	32	34	40	14	34	20	35	20	57	57	57	47	47	30	30	30	26	53	90	90	90	90
RM GAIN MBH	2.17	1.51	2.12	2.85	2.58	0.41	2.85	0.54	2.17	0.54	2.54	2.54	2.54	2.36	2.36	2.08	2.08	0.52	0.79	0.45	0.88	0.88	0.88	0.88
CFM PER RUN COOLING	65	45	63	85	77	12	85	16	65	16	76	76	76	70	70	62	62	16	24	13	26	26	26	26
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	46	43	41	51	36	48	55	52	57	58	26	32	36	36	43	58	56	27	48	18	32	46	24	45
EQUIVALENT LENGTH	160	150	170	160	150	170	170	190	160	180	100	90	140	140	150	180	170	120	120	160	160	160	110	110
TOTAL EFFECTIVE LENGTH	206	193	211	211	186	218	225	242	217	238	126	122	176	193	238	226	226	147	168	178	182	206	124	155
ADJUSTED PRESSURE	0.08	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.08	0.07	0.14	0.14	0.14	0.1	0.09	0.07	0.08	0.12	0.1	0.1	0.09	0.08	0.13	0.1
ROUND DUCT SIZE	5	4	6	6	6	4	6	4	5	4	5	5	5	5	5	6	5	4	6	5	6	6	6	6
HEATING VELOCITY (ft/min)	257	424	163	173	204	161	173	229	229	229	419	419	419	345	345	153	220	298	474	389	459	459	459	459
COOLING VELOCITY (ft/min)	477	516	321	433	393	636	433	184	477	184	558	558	558	514	514	316	455	184	122	95	133	133	133	133
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	C	B	A	B	B	A	A	C	C	A	C	C	C	C	A	A	B	A	B	C	C	B	A

ROOM #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	ENS-2	ENS-3	ENS-2/3	MBR	ENS-2/3	GT/DN	GT/DN	GT/DN	KIT	KIT	LAUN	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.87	1.95	1.71	1.82	2.12	0.75	1.82	1.05	1.87	1.05	3.04	3.04	3.04	2.51	2.51	1.58	1.58	1.58	4.94	2.81	4.76	4.76	4.76	4.76
CFM PER RUN HEAT	35	37	32	34	40	14	34	20	35	20	57	57	57	47	47	30	30	30	26	53	90	90	90	90
RM GAIN MBH	2.17	1.51	2.12	2.85	2.58	0.41	2.85	0.54	2.17	0.54	2.54	2.54	2.54	2.36	2.36	2.08	2.08	0.52	0.79	0.45	0.88	0.88	0.88	0.88
CFM PER RUN COOLING	65	45	63	85	77	12	85	16	65	16	76	76	76	70	70	62	62	16	24	13	26	26	26	26
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	46	43	41	51	36	48	55	52	57	58	26	32	36	36	43	58	56	27	48	18	32	46	24	45
EQUIVALENT LENGTH	160	150	170	160	150	170	170	190	160	180	100	90	140	140	150	180	170	120	120	160	160	160	110	110
TOTAL EFFECTIVE LENGTH	206	193	211	211	186	218	225	242	217	238	126	122	176	193	238	226	226	147	168	178	182	206	124	155
ADJUSTED PRESSURE	0.08	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.08	0.07	0.14	0.14	0.14	0.1	0.09	0.07	0.08	0.12	0.1	0.1	0.09	0.08	0.13	0.1
ROUND DUCT SIZE	5	4	6	6	6	4	6	4	5	4	5	5	5	5	5	6	5	4	6	5	6	6	6	6
HEATING VELOCITY (ft/min)	257	424	163	173	204	161	173	229	229	229	419	419	419	345	345	153	220	298	474	389	459	459	459	459
COOLING VELOCITY (ft/min)	477	516	321	433	393	636	433	184	477	184	558	558	558	514	514	316	455	184	122	95	133	133	133	133
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	C	B	A	B	B	A	A	C	C	A	C	C	C	C	A	A	B	A	B	C	C	B	A

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	351	0.07	9.8	12	527	TRUNK G	0	0.00	0	8	TRUNK O	0	0.05	0	8
TRUNK B	606	0.07	12	16	682	TRUNK H	0	0.00	0	8	TRUNK P	0	0.05	0	8
TRUNK C	495	0.08	10.8	14	636	TRUNK I	0	0.00	0	8	TRUNK Q	0	0.05	0	8
TRUNK D	0	0.00	0	0	0	TRUNK J	0	0.00	0	8	TRUNK R	0	0.05	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	8	TRUNK S	0	0.05	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	8	TRUNK T	0	0.05	0	8
RETURN AIR #	1	2	3	4	6	BR	0	0.00	0	8	TRUNK U	0	0.05	0	8
AIR VOLUME	130	130	115	115	130	0	0	0	0	0	TRUNK V	0	0.05	0	8
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0	0	0	0	0	TRUNK W	0	0.05	0	8
ACTUAL DUCT LGH.	55	46	63	63	36	0	0	0	0	0	TRUNK X	1100	0.05	16.3	8
EQUIVALENT LENGTH	165	165	265	265	215	0	0	0	0	0	TRUNK Y	670	0.05	13.6	8
TOTAL EFFECTIVE LH	220	211	328	328	251	0	0	0	0	0	TRUNK Z	0	0.05	0	8
ADJUSTED PRESSURE	0.07	0.07	0.05	0.05	0.06	0	0	0	0	0	DROP	1100	0.05	16.3	10
ROUND DUCT SIZE	6.8	6.8	7	7	7	0	0	0	0	0					
INLET GRILL SIZE	8	8	8	8	8	0	0	0	0	0					
INLET GRILL SIZE	14	14	14	14	14	0	0	0	0	0					

TYPE: 4008 THE HILLSDALE
SITE NAME: PINE VALLEY & TESTON

LO # 85234
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	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A. TOTAL		169.6 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	169.6 cfm	
Less Principal Ventil. Capacity	79.5 cfm	
Required Supplemental Capacity	90.1 cfm	

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 65H	Location: BSMT
79.5 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	$\Delta T ^\circ F$
79.5 CFM	76 F
X	X
FACTOR	% LOSS
1.08	0.25

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
ENS-2	FV-05-11VK1	50	☒	0.3
ENS-2/3	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER: GOLD PARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	February-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																			
Formula Sheet (For Air Leakage / Ventilation Calculation)																																			
LO#: 85234	Model: 4008 'THE HILLSDALE	Builder: GOLD PARK HOMES	Date: 02/04/2020																																
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>1195</td> <td>10</td> <td>11950</td> </tr> <tr> <td>First</td> <td>1195</td> <td>11</td> <td>13145</td> </tr> <tr> <td>Second</td> <td>1539</td> <td>9</td> <td>13851</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" style="text-align: right;">Total:</td> <td></td> <td>38,946.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1102.8 m³</td> </tr> </table>				Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1195	10	11950	First	1195	11	13145	Second	1539	9	13851	Third	0	9	0	Fourth	0	9	0	Total:			38,946.0 ft³	Total:			1102.8 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																
Bsmt	1195	10	11950																																
First	1195	11	13145																																
Second	1539	9	13851																																
Third	0	9	0																																
Fourth	0	9	0																																
Total:			38,946.0 ft³																																
Total:			1102.8 m³																																
5.2.3.1 Heat Loss due to Air Leakage																																			
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																			
0.407	x	306.34	x	42 °C	x	1.2	=	6315 W																											
								=	21548 Btu/h																										
5.2.3.2 Heat Loss due to Mechanical Ventilation																																			
$HL_{airbv} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																			
80 CFM	x	76 °F	x	1.08	x	0.25	=	1631 Btu/h																											
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																			
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{qgcr} + HL_{bgcr}) \div (HL_{aqclevel} + HL_{bgclevel})\}$																																			
<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_{level})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLaiveb / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="4" style="text-align: center;">21,548</td> <td>8,250</td> <td>1.306</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>13,784</td> <td>0.469</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>14,197</td> <td>0.304</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></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 _{level})	Air Leakage Heat Loss Multiplier (LF x HLaiveb / HLlevel)	1	0.5	21,548	8,250	1.306	2	0.3	13,784	0.469	3	0.2	14,197	0.304	4	0	0	0.000	5	0		0	0.000					
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4	0		0	0.000																															
5	0		0	0.000																															
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																			

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4008 THE HILLSDALE	WOB	BUILDER: GOLD PARK HOMES
SFQT: 2716	LO# 85234	SITE: 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):	38946.0	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:	7.0 ft
LENGTH: 55.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	133.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	43.0 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	-

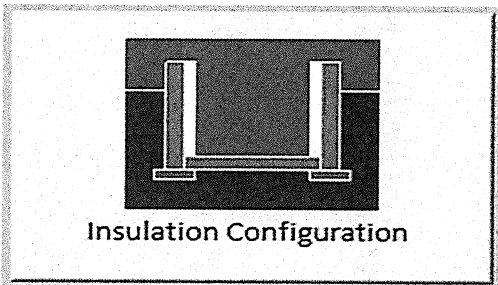
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

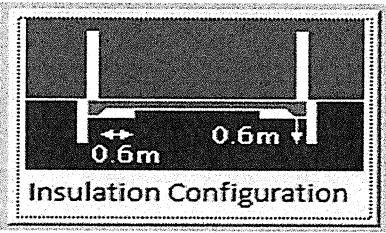
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	10.1	
Exposed Perimeter (m):	40.5	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.79	
Window Area (m ²):	0.4	
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):		715

TYPE: 4008 'THE HILLSDALE
LO# 85234

WOB

Residential Slab on Grade 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	
Width (m):	10.1	
Exposed Perimeter (m):	13.1	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		162

TYPE: 4008 'THE HILLSDALE
LO# 85234

WOB

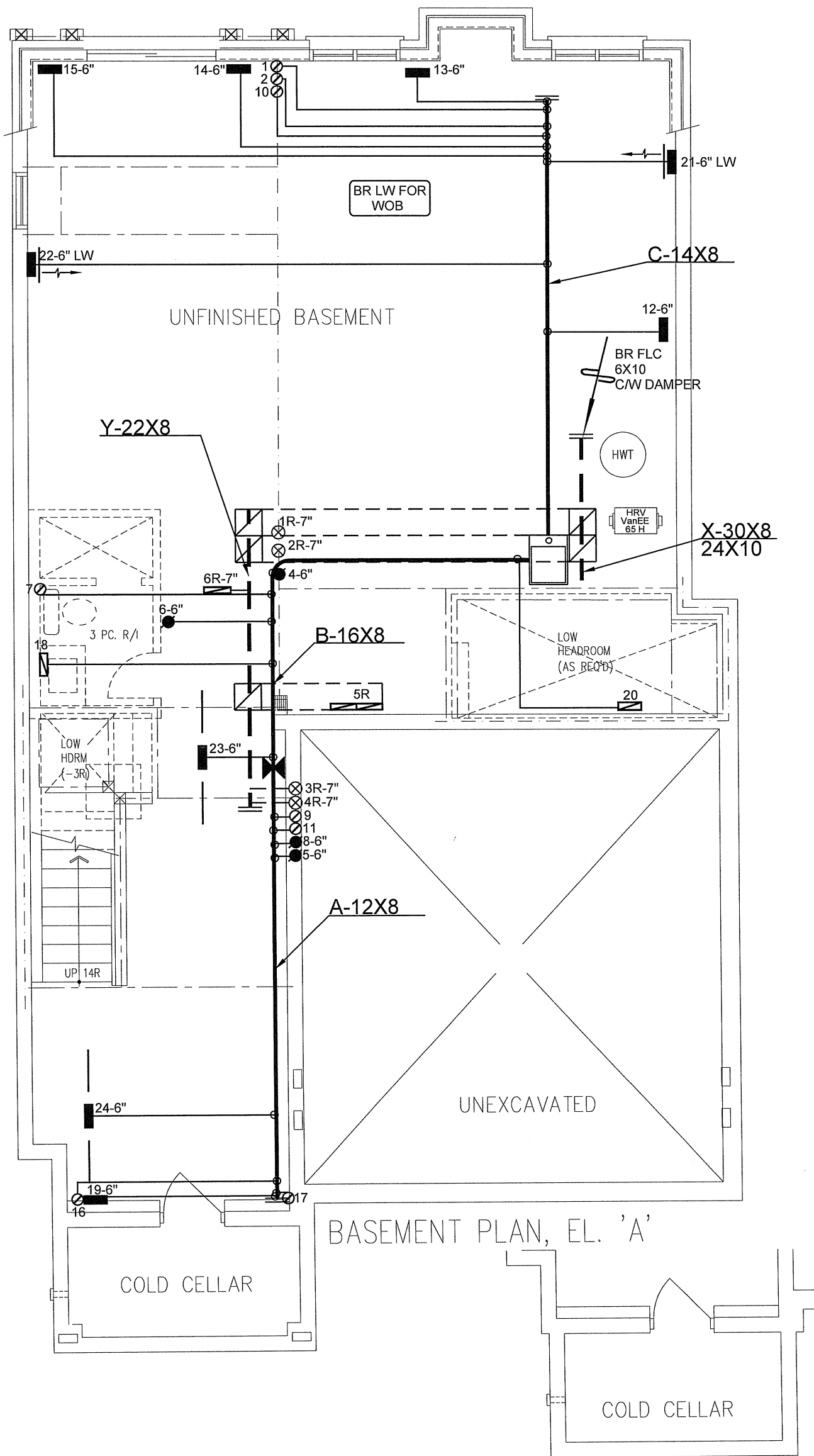
Air Infiltration Residential Load Calculator

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):	9.14			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1102.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1470.1 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.407			
Cooling Air Leakage Rate (ACH/H):	0.137			

TYPE: 4008 'THE HILLSDALE
LO# 85234

WOB



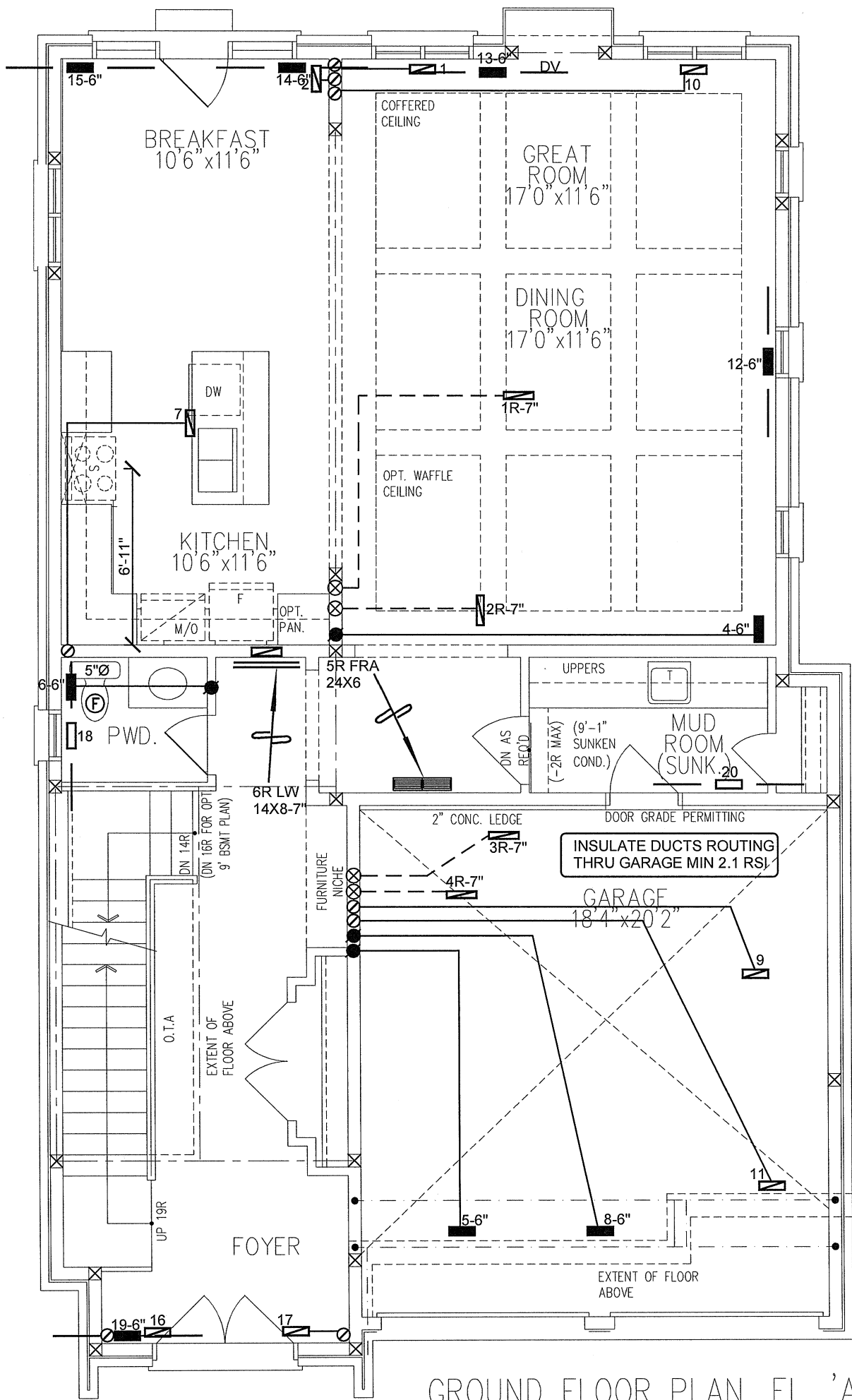
WOB
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

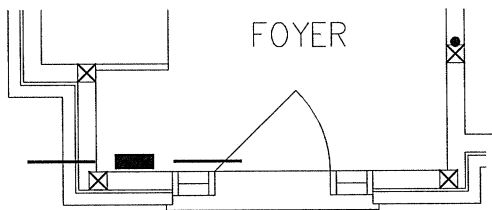
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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 GOLD PARK HOMES		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 60088 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT		
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			MAKE LENNOX		3RD FLOOR						
		MODEL EL296UH070XE36B		2ND FLOOR		12	4	3			
THE HILLSDALE WOB 4008 2716 sqft		INPUT 66 MBTU/H		1ST FLOOR		7	2	2	Date FEB/2020		
		OUTPUT 64 MBTU/H		BASEMENT		4	1	0	Scale 3/16" = 1'-0"		
		COOLING 3.0 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						BCIN# 19669	
		FAN SPEED 1100 cfm @ 0.6" w.c.								LO#	85234



GROUND FLOOR PLAN, EL. 'A'



PARTIAL GROUND FLOOR PLAN, EL. 'B'

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

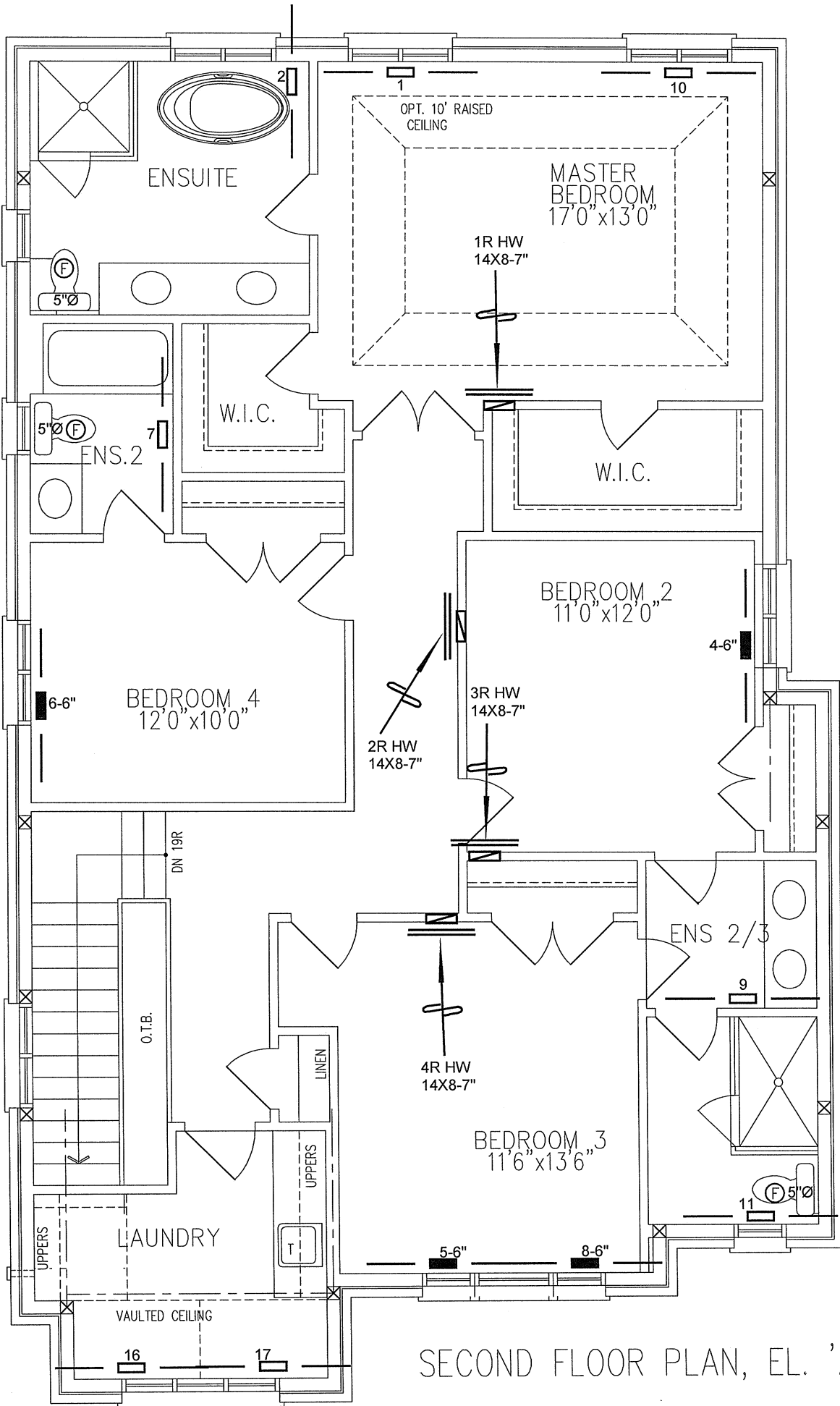
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOB
CSA-F280-12
PACKAGE A1

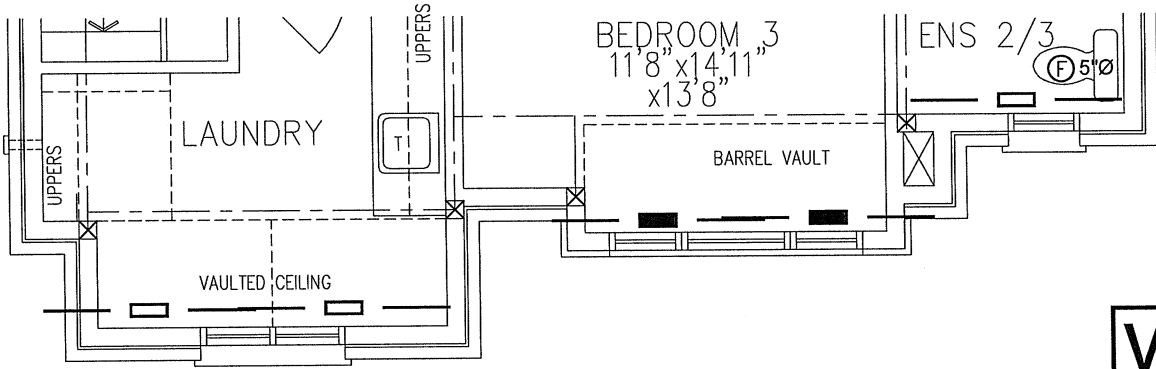
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
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Client		 375 Finley Ave. Suite 202 - Ajax, 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.	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	FEB/2020
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE HILLSDALE WOB 4008			BCIN# 19669	
2716 sqft			LO#	85234



SECOND FLOOR PLAN, EL. 'A'



PARTIAL
SECOND FLOOR PLAN, EL. 'B'

WOB
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C. 32.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			Date FEB/2020	Scale 3/16" = 1'-0"
THE HILLSDALE WOB 4008		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.	BCIN# 19669	
2716 sqft			LO#	85234