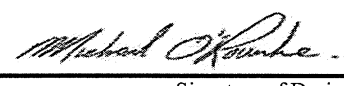


Schedule 1: Designer Information

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@hvacdsgns.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]			
<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 HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 5005 ELEV. 'B' - KNIGHTSWOOD OPT. 5 BED - WOB Project: 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.			
September 11, 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										OPT. 5 BED - WOB		DATE: Sep-18		WINTER NATURAL AIR CHANGE RATE 0.416		HEAT LOSS AT "F. 76		CSA-F280-42							
BUILDER: GOLD PARK HOMES										TYPE: 500S ELEV. "B" - KNIGHTSWOOD		LO# 79986		SUMMER NATURAL AIR CHANGE RATE 0.139		HEAT GAIN AT "F. 13		SB-12 PACKAGE A.1							
ROOM USE		MBR		ENS		BED-5		BED-2		BED-3		BED-4		ENS-2/5		WIC-2		ENS-3		ENS-4		WIC-3		WIC	
EXP. WALL CLG. HT.		46 11		30 10		14 10		36 11		36 11		19 10		6 10		3 10		7 10		4 10		14 10		6 10	
FACTORS		608		300		140		396		396		190		80		30		40		70		140		80	
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH	21.3	16.0	0	0	0	6	128	96	0	0	0	0	0	8	170	128	0	0	0	0	0	0	0	0	
EAST	21.3	41.6	0	0	0	0	0	0	66	1383	2701	80	1064	2078	0	0	0	0	0	0	0	0	0	0	
SOUTH	21.3	24.9	0	0	0	0	0	0	0	0	0	10	213	249	32	681	787	0	0	0	8	170	189	0	
WEST	21.3	41.6	50	1064	2078	34	724	1413	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SKYL.T.	37.2	101.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS	26.2	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL			4.5	0.8	466	2035	343	266	1187	200	134	698	101	331	1477	249	336	1489	263	168	705	119	82	232	39
NET EXPOSED BSMT WALL ABOVE GR			3.6	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG			1.3	0.6	480	616	282	205	263	120	316	404	186	176	225	103	0	0	0	0	0	0	0	0	0
NO A TTIC EXPOSED CLG			2.7	1.3	0	0	0	0	0	0	0	0	0	78	214	98	18	49	23	0	0	0	0	0	0
EXPOSED FLOOR			2.6	0.4	0	0	0	0	0	0	164	393	66	263	645	109	18	48	8	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	
SUB TOTAL HT LOSS			3715	2702	2174	1733	1523	448	3269	2766	3181	1762	1083	228	238	287	63	237	84	307	982	1029	982	389	
SUB TOTAL HT GAIN			0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	
LEVEL FACTOR / MUL TIPLIER			1401	215	820	138	574	36	1488	220	1204	86	87	18	108	5	7	112	219	388	76	388	160	160	
AIR CHANGE HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DUCT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DUCT GAIN			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN PEOPLE			2	480	0	0	1	240	1	240	1	240	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS			677	677	0	0	677	677	677	677	677	677	677	677	958	0	435	98	408	801	1417	1337	549	147	
TOTAL HT LOSS BTU/H			5116	5298	2993	2433	2307	2003	6344	5857	4834	2413	2713	352	958	435	98	118	432	801	1417	1337	549	147	
TOTAL HT GAIN x 1.3 BTU/H																									

ROOM USE		LIB		DIN		KIT/IGT		CAB		LAUN		PWD		FOY		MUD		WOB		BAS	
EXP. WALL CLG. HT.		31 11		32 11		87 11		46 11		0 10		6 11		36 11		18 12		62 10		186 10	
FACTORS		341		352		967		495		0		55		385		216		520		1302	
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH	21.3	16.0	0	0	0	46	979	735	0	0	0	9	192	144	0	0	0	0	0	6	128
EAST	21.3	41.6	56	1192	2327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	0	0	0	20	426	458	63	1341	1569	0	0	0	0	0	0	48	978	573	8
WEST	21.3	41.6	0	0	0	105	2234	4363	63	1341	2618	0	0	0	0	0	0	106	2266	2202	0
SKYL.T.	37.2	101.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	26.2	4.3	0	0	0	10	262	43	0	0	0	0	0	0	0	0	0	20	505	85	20
NET EXPOSED WALL			4.5	0.8	285	1272	214	318	1419	239	776	3463	553	369	1647	277	196	348	1553	262	0
NET EXPOSED BSMT WALL ABOVE GR			3.6	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG			1.3	0.6	0	0	0	0	0	0	102	131	60	0	0	0	0	0	0	0	0
NO A TTIC EXPOSED CLG			2.7	1.3	0	0	0	0	0	0	0	40	110	50	41	113	52	0	0	0	0
EXPOSED FLOOR			2.6	0.4	0	0	0	0	0	0	56	143	24	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0
SUB TOTAL HT LOSS			2464	2641	2143	7364	6222	4886	4719	274	84	229	507	2995	537	1380	3122	741	6034	5746	668
SUB TOTAL HT GAIN			0.30	0.62	0.30	0.62	0.30	0.62	0.30	0.20	0.38	0.30	0.62	0.30	0.52	0.30	0.62	0.50	1.68	0.50	1.68
LEVEL FACTOR / MUL TIPLIER			1270	203	1104	3781	486	2619	2619	103	38	261	18	1644	43	711	19	18	1644	1667	302
AIR CHANGE HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE			240	677	677	11145	677	7405	677	415	77	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			3733	4447	3247	11145	677	7405	677	415	77	768	0	4639	0	2091	677	6775	24413	877	2142
TOTAL HT LOSS BTU/H																					
TOTAL HT GAIN x 1.3 BTU/H																					

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

OPT. 5 BED - WOB

TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD DATE: Sep-18

GFA: 4380 LO# 79988

HEATING CFM 1955 COOLING CFM 1955
TOTAL HEAT LOSS 92,738 TOTAL HEAT GAIN 60,391
AIR FLOW RATE CFM 32.37EL296UH110XE60C
FAN SPEED 110
LOW 0
MEDIUM 1380
HIGH 1505
MEDIUM HIGH 1885
HIGH 1955

AFUE = 96 %

INPUT (BTU/H) = 110,000

OUTPUT (BTU/H) = 106,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	18	13	8
R/A	0	0	6	3	1

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

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

ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
RM LOSS MBH	2.56	2.30	2.31	1.99	2.42	2.41	0.96	0.44	0.41	2.56	0.80	0.80	1.87	3.25	2.79	2.79	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
CFM PER RUN HEAT	54	48	42	42	51	51	20	9	9	54	17	39	68	59	59	59	9	16	96	44	82	82	82	82
RM GAIN MBH	2.65	1.92	2.00	2.11	2.78	2.71	0.35	0.10	0.12	2.65	0.43	0.43	2.22	2.40	2.40	2.40	1.10	0.32	0.75	1.21	0.78	0.78	0.78	0.78
CFM PER RUN COOLING	86	62	66	68	90	88	11	3	4	86	14	72	78	78	78	78	36	10	24	39	25	25	25	25
ADJUSTED PRESSURE	0.15	0.16	0.16	0.16	0.15	0.15	0.16	0.16	0.16	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.16	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	70	70	53	49	70	48	47	48	53	64	59	57	29	52	69	54	36	73	40	47	77	60	69	38
EQUIVALENT LENGTH	200	200	170	160	160	160	200	150	170	170	150	140	103	120	140	110	200	170	210	180	150	120	150	90
TOTAL EFFECTIVE LENGTH	270	270	223	209	230	208	247	198	223	234	209	197	132	172	209	164	236	243	250	207	180	219	128	128
ADJUSTED PRESSURE	0.05	0.06	0.07	0.07	0.06	0.07	0.06	0.06	0.07	0.06	0.07	0.07	0.08	0.12	0.09	0.07	0.07	0.08	0.08	0.08	0.06	0.08	0.07	0.11
ROUND DUCT SIZE	6	5	5	5	6	6	4	4	4	6	4	5	5	5	6	5	4	4	6	4	6	6	6	5
HEATING VELOCITY (ft/min)	275	352	360	308	260	260	229	103	103	275	195	286	499	433	301	433	103	184	489	505	418	418	418	602
COOLING VELOCITY (ft/min)	438	455	477	499	459	449	126	34	46	438	161	529	573	573	398	573	413	115	122	447	127	127	127	184
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10
TRUNK	D	X	E	G	F	E	E	G	G	D	E	F	F	E	B	C	G	A	F	C	A	B	D	E

TEMPERATURE RISE 50 °F

DESIGN CFM = 1955

CFM @ 8" E.S.P.

AFUE = 96 %

INPUT (BTU/H) = 110,000

OUTPUT (BTU/H) = 106,000

FAN SPEED 110

LOW 0

MEDIUM 1380

HIGH 1505

MEDIUM HIGH 1885

HIGH 1955

AFUE = 96 %

INPUT (BTU/H) = 110,000

OUTPUT (BTU/H) = 106,000

FAN SPEED 110

LOW 0

MEDIUM 1380

HIGH 1505

MEDIUM HIGH 1885

HIGH 1955

AFUE = 96 %

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MEDIUM 1380

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MEDIUM HIGH 1885

HIGH 1955

AFUE = 96 %

INPUT (BTU/H) = 110,000

OUTPUT (BTU/H) = 106,000

FAN SPEED 110

LOW 0

MEDIUM 1380

HIGH 1505

MEDIUM HIGH

TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD
SITE NAME: PINE VALLEY & TESTON

LO # 79986
OPT. 5 BED - WOB

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	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	7 @ 10.6 cfm	74.2 cfm
Other Rooms	7 @ 10.6 cfm	74.2 cfm
Table 9.32.3.A.	TOTAL	233.2 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	95.4	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	233.2	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	78.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 65H
Location:	BSMT
155.0 cfm	3.0 sones
<input checked="" type="checkbox"/>	HVI Approved

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

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	<input checked="" type="checkbox"/>
ENS-2/5	QTXEN050C	50	<input checked="" type="checkbox"/>
ENS-4	QTXEN050C	50	<input checked="" type="checkbox"/>
PWD	QTXEN050C	50	<input checked="" type="checkbox"/>

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
155 cfm high	64 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/>	
@ 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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	September-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																			
Formula Sheet (For Air Leakage / Ventilation Calculation)																																			
LO#: 79986	Model: 5005 ELEV. 'B' - KNIGHTSWOOD	Builder: GOLD PARK HOMES	Date: 9/11/2018																																
Volume Calculation																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>2020</td> <td>10</td> <td>20200</td> </tr> <tr> <td>First</td> <td>2020</td> <td>11</td> <td>22220</td> </tr> <tr> <td>Second</td> <td>2360</td> <td>10</td> <td>23600</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>66,020.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1869.5 m³</td> </tr> </tbody> </table>				Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	2020	10	20200	First	2020	11	22220	Second	2360	10	23600	Third	0	9	0	Fourth	0	9	0	Total:			66,020.0 ft³	Total:			1869.5 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																
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Total:			66,020.0 ft³																																
Total:			1869.5 m³																																
6.2.6 Sensible Gain due to Air Leakage																																			
$HG_{salb} = LR_{aire} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																			
0.416	x	519.30	x																																
		42 °C	x																																
		1.2	=																																
		10942 W																																	
			=																																
		37334 Btu/h																																	
6.2.7 Sensible heat Gain due to 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)																																			
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{qgr} + HL_{pgr}) \div (HL_{qglevel} + HL_{pglevel})\}$																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HLlevel)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">37,334</td> <td>11,779</td> <td>1.585</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>21,728</td> <td>0.515</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>19,798</td> <td>0.377</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> </tbody> </table>				Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLlevel)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	37,334	11,779	1.585	2	0.3	21,728	0.515	3	0.2	19,798	0.377	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: (HLlevel)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																															
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4	0		0	0.000																															
5	0		0	0.000																															
<p>*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0</p>																																			

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 5005 ELEV. 'B' - KNIGHTSWOOD OPT. 5 BED - WOB
SFQT: 4380 **LO#** 79986**BUILDER:** GOLD PARK HOMES
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

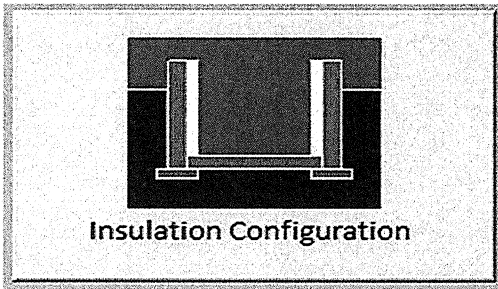
ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	66020.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
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: 77.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	186.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	52.0 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

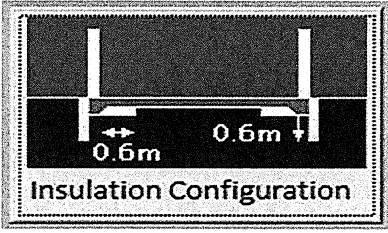
Supplemental tool for CAN/CSA-F280

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):	12.8	
Exposed Perimeter (m):	56.7	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.84	
Window Area (m ²):	1.1	
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):		872

TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD OPT. 5 BED - WOB
LO# 79986

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	
Width (m):	12.8	
Exposed Perimeter (m):	15.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		217

TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD
LO# 79986

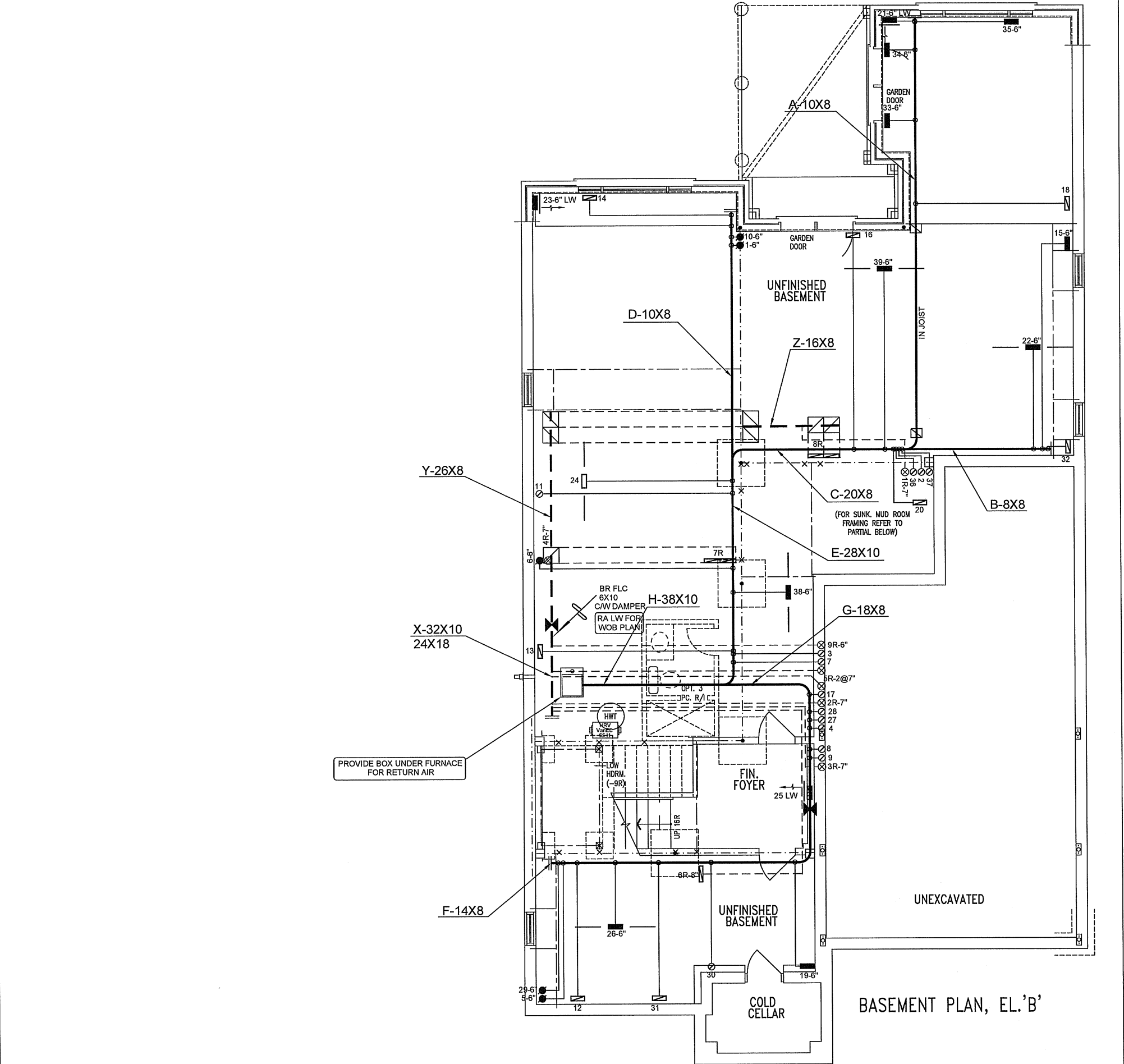
OPT. 5 BED - WOB

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):	9.45			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1869.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2492.1 cm ²		
	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):	0.416			
Cooling Air Leakage Rate (ACH/H):	0.139			

TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD OPT. 5 BED - WOB
LO# 79986



BASEMENT PLAN, EL. 'B'

I MICHAEL O'ROURKE HAVE REVIEW 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.

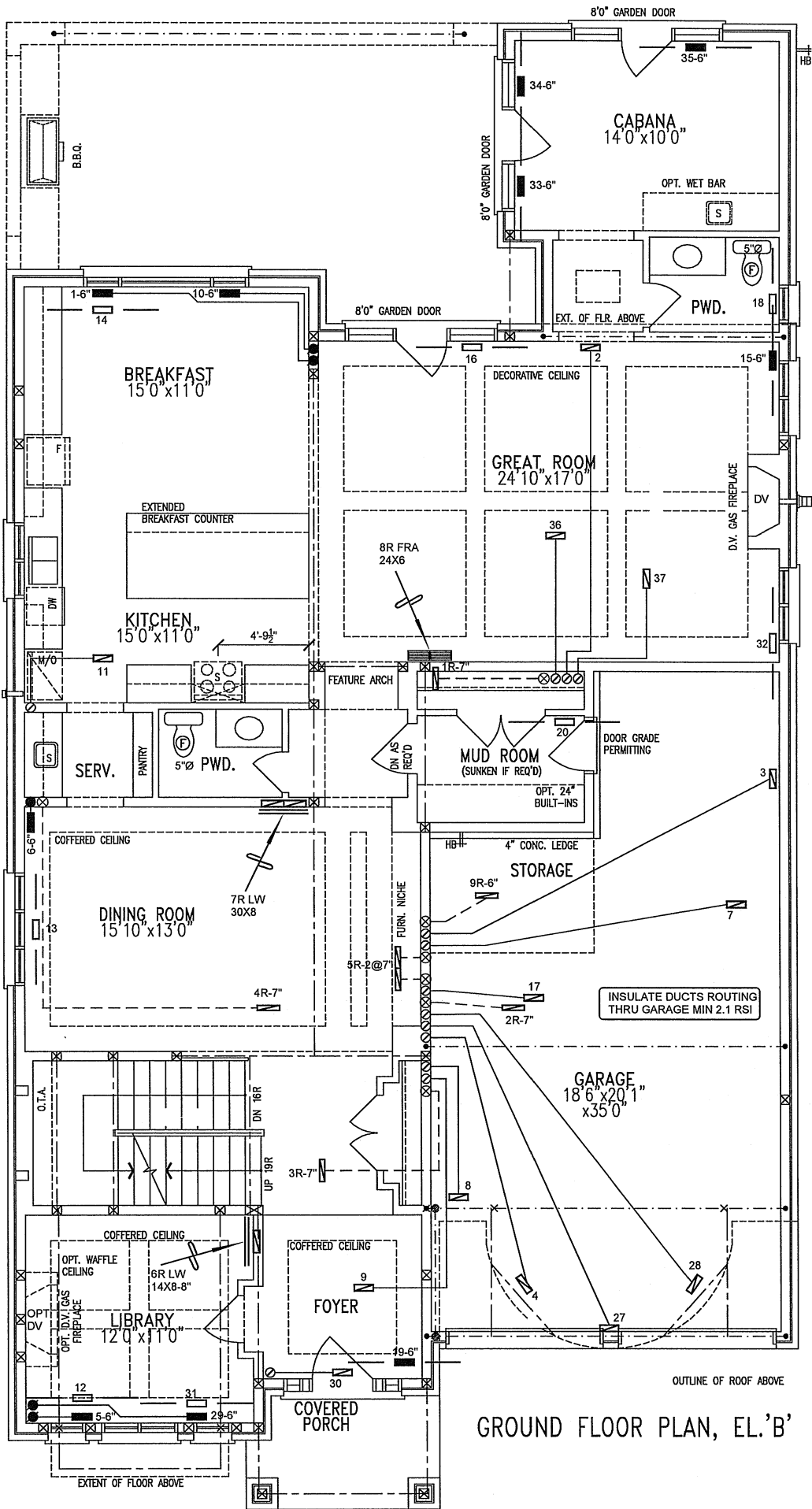
CSA-F280-12

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 GOLDPARK HOMES	 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 95918 BTU/H UNIT DATA MAKE LENNOX MODEL EL296UH110XE60C INPUT 110 MBTU/H OUTPUT 106 MBTU/H COOLING 5.0 TONS FAN SPEED 1955 cfm @ 0.6" w.c.	# OF RUNS S/A R/A FANS 3RD FLOOR 2ND FLOOR 18 6 6 1ST FLOOR 13 3 3 BASEMENT 8 1 0	Sheet Title BASEMENT HEATING LAYOUT	
				Date	SEPT/2018
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO THE HIGHBOURNE - WOB OPT. 5 BED 5005 ELEV. 'B' 4380 sqft	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.		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	Scale	1/8" = 1'-0"
				BCIN# 19669	LO# 79986



GROUND FLOOR PLAN, EL.'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.

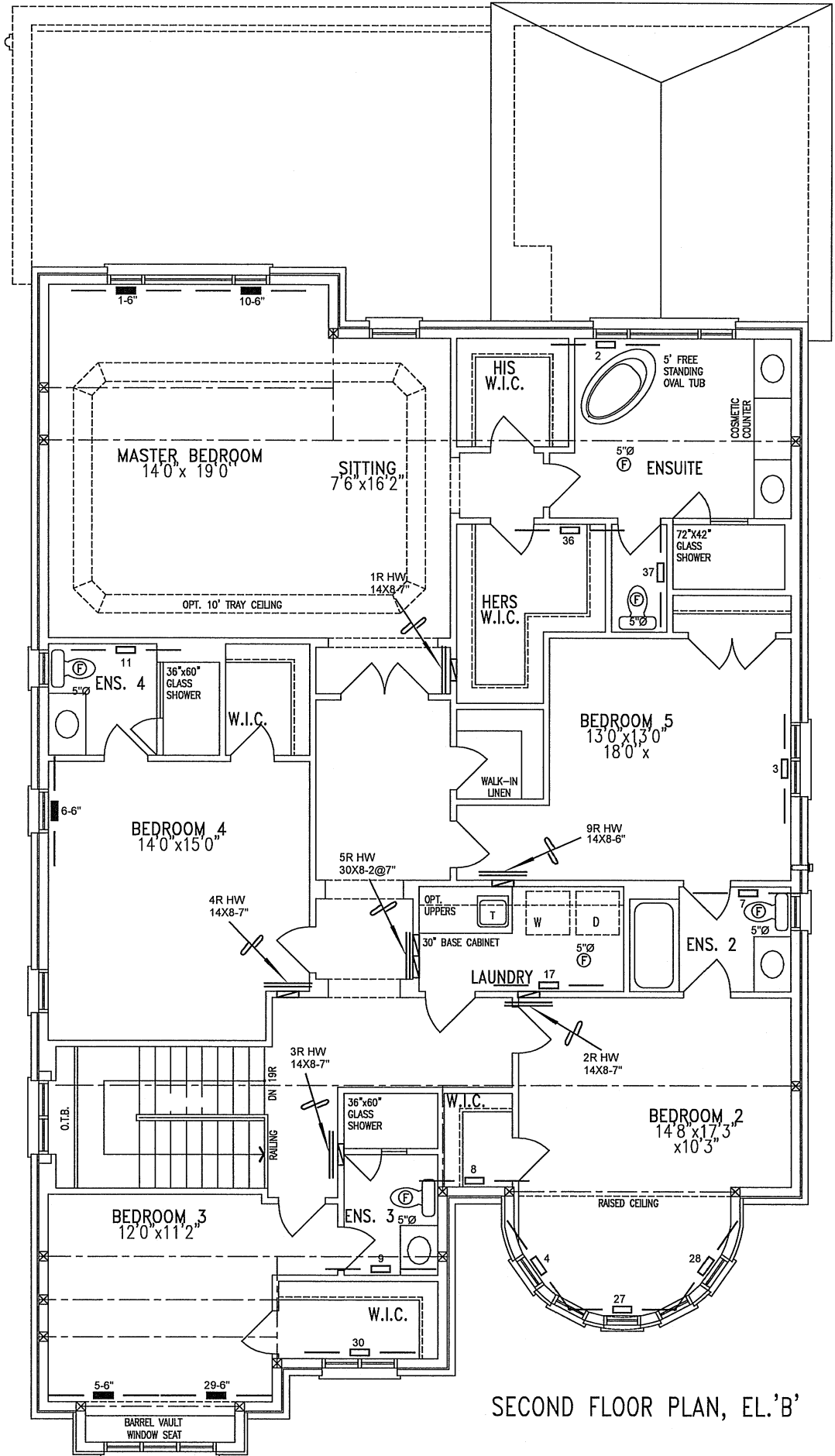
CSA-F280-12

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>			Sheet Title
GOLDPARK HOMES				FIRST FLOOR HEATING LAYOUT
Project Name	PINE VALLEY & TESTON VAUGHAN, ONTARIO THE HIGHBOURNE - WOB OPT. 5 BED 5005 ELEV. 'B' 4380 sqft			Date
				SEPT/2018
				Scale
				1/8" = 1'-0"
				BCIN# 19669
				LO# 79986



SECOND FLOOR PLAN, EL.'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.

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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GOLDPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO THE HIGHBOURNE - WOB OPT. 5 BED 5005 ELEV. 'B' 4380 sqft			Scale	1/8" = 1'-0"
			BCIN# 19669	
			LO#	79986