


## 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 VAUGHAN (WOODBIDGE)	Postal code	Plan number/ other description		
<b>B. Individual who reviews and takes responsibility for design activities</b>				
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@hvacdesigns.ca</b>	
Telephone number <b>(905) 619-2300</b>	Fax number <b>(905) 619-2375</b>	Cell number (     )		
<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 <b>HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>		<b>Model:</b> 5005 ELEV. 'B' - KNIGHTSWOOD  WOB  <b>Project:</b> PINE VALLEY & TESTON		
<b>D. Declaration of Designer</b>				
I <u><b>MICHAEL O'ROURKE</b></u> declare that (choose one as appropriate): (print name)				
<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		 Signature of Designer		
Date				

**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										WOR		DATE: Sep-18		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F.		CSA-F280-12	
BUILDER: GOLD PARK HOMES										TYPE: 6005 ELEV. 'B' - KNIGHTSWOOD		LO# 79985		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN AT °F.		SB-12 PACKAGE A1	
ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	ENS-4	WIC-3						
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS						
GRS.WALL AREA	506			360	130	386	386	190	60	30	40	70	140						
GLAZING																			
NORTH	21.3	16.0	0	0	6	128	96	0	8	170	128	0	0						
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0	0	0						
SOUTH	21.3	24.9	0	0	0	0	0	32	0	0	0	0	0						
WEST	21.3	41.6	50	1064	2078	34	724	1413	0	0	0	0	0						
SKYL.T.	37.2	101.6	0	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	0						
NET EXPOSED WALL	4.5	0.8	466	2035	343	326	1485	249	124	563	93	331	1477						
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0	0						
EXPOSED CLG	1.3	0.5	533	684	313	323	415	190	247	317	145	175	225						
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0						
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	164	383	66	253	645						
BASEMENT/CRAWL HEAT LOSS			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						
SUBTOTAL HT LOSS	3783			2593	1381	3945	3269	1752	632	287	297	882	1029						
SUB TOTAL HT GAIN	0.20	0.38	2734	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38						
LEVEL FACTOR / MULTIPLIER	1430			980	526	1491	1206	662	239	109	112	220	389						
AIR CHANGE HEAT LOSS			218		32	644	260	86	18	40	7	25	76						
AIR CHANGE HEAT GAIN	0		0	0	192	0	440	0	87	40	0	0	0						
DUCT LOSS																			
DUCT GAIN																			
HEAT GAIN PEOPLE	240		2	480	0	1	240	1	0	0	0	0	0						
HEAT GAIN APPLANCES/LIGHTS			677		677	5979	4837	2414	968	435	409	892	1418						
TOTAL HT LOSS BTU/H	5213			3573	2108	6979	4837	2414	968	435	409	892	1418						
TOTAL HT GAIN x 1.3 BTU/H	5342			2693	1587	8344	5587	2713	352	98	118	432	1337						

ROOM USE	EXP. WALL	CLG. HT.	LIB	DIN	KIT/IGT	CAB	LAUN	PWD	FOY	MUD		WOB	BAS
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN		LOSS	GAIN
GRS.WALL AREA	341			352	957	495	0	55	385	216		520	1302
GLAZING													
NORTH	0	0	0	0	48	979	736	0	0	0		0	6
EAST	56	1192	2327	0	0	0	0	9	192	144		0	128
SOUTH	0	0	0	0	0	0	0	0	0	0		0	0
WEST	0	0	34	724	20	426	438	63	1341	1569		48	979
SKYL.T.	0	0	0	0	105	2234	4363	63	1341	2616		106	2266
DOORS	0	0	0	0	0	0	0	0	0	0		0	0
NET EXPOSED WALL	4.5	0.8	285	1272	214	318	1419	239	776	3463		20	505
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	10	252	43	0	65	1414		348	1553
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	329	1468		20	606
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	102	131	41	113		0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	56	143	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	2464			2143	7354	4886	274	84	2995	1380		741	5746
SUB TOTAL HT GAIN	0.30	0.62	2541	0.30	0.52	0.30	0.20	0.38	0.30	0.52		6034	3122
LEVEL FACTOR / MULTIPLIER	1270			1104	3791	2519	103	261	1644	711		0	1.58
AIR CHANGE HEAT LOSS			203		486		7	18	43	19		0	18687
AIR CHANGE HEAT GAIN	0		0	0	0	0	38	0	0	0		0	302
DUCT LOSS													
DUCT GAIN													
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0		0	0
HEAT GAIN APPLANCES/LIGHTS			677		677	7405	415	788	4538	2091		6776	677
TOTAL HT LOSS BTU/H	3733			3247	11145	9513	1088	768	764	1207		0	24413
TOTAL HT GAIN x 1.3 BTU/H	4447			2404	1587	7805	1088	321	754	1207		4083	2142

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

WOB  
TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD DATE: Sep-18  
furnace pressure 0.6  
furnace filter 0.08  
a/c coil pressure 0.2  
available pressure  
for s/a & r/a 0.32

GFA: 4380 LO# 79885

HEATING CFM 1955 COOLING CFM 1955  
TOTAL HEAT LOSS 92,677 TOTAL HEAT GAIN 60,032  
AIR FLOW RATE CFM 21.09 AIR FLOW RATE CFM 32.57

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	18	13	8
R/A	0	0	5	3	1

All S/A diffusers 4"x10" unless noted otherwise on layout.  
All S/A runs 5'x10" unless noted otherwise on layout.

RUN #	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	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	MBR	ENS-4	LIB	DIN	KIT/GT	KIT/GT	KIT/GT	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.81	2.79	2.11	1.99	2.42	2.41	0.96	0.44	0.41	2.81	1.87	1.87	3.25	2.79	2.79	2.79	0.41	0.77	4.54	2.09	3.90	3.90	3.90	3.90
CFM PER RUN HEAT	55	59	44	42	51	51	20	9	9	55	17	39	68	59	59	59	9	16	96	44	82	82	82	82
RM GAIN MBH	2.67	2.26	1.59	2.11	2.78	2.71	0.35	0.10	0.12	2.67	0.43	2.22	2.40	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	87	74	52	69	91	88	11	3	4	87	14	72	78	78	78	78	38	10	25	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	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	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	89	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	227	180	219	128
ADJUSTED PRESSURE	0.05	0.06	0.07	0.07	0.06	0.07	0.06	0.08	0.07	0.06	0.07	0.08	0.12	0.09	0.07	0.1	0.07	0.06	0.08	0.08	0.06	0.08	0.07	0.11
ROUND DUCT SIZE	6	6	5	5	6	6	4	4	4	6	4	5	5	5	6	6	4	4	6	4	6	6	6	5
HEATING VELOCITY (ft/min)	280	301	323	308	260	260	229	103	103	280	195	286	499	433	301	433	103	184	489	505	418	418	418	602
COOLING VELOCITY (ft/min)	444	377	382	507	464	449	126	34	46	444	161	529	573	573	398	573	413	115	127	447	127	127	184	184
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10
TRUNK	D	C	E	G	F	E	E	G	G	D	E	F	E	D	B	C	G	A	F	C	A	B	D	E

TEMPERATURE RISE 50 °F

AFUE = 96 %  
INPUT (BTU/H) = 110,000  
OUTPUT (BTU/H) = 106,000  
DESIGN CFM = 1955  
CFM @ 0.1" E.S.P. = 1955

RUN #	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
ROOM NAME	BAS	BAS	BED-2	BED-2	BED-3	WIC-3	LIB	KIT/GT	CAB	CAB	CAB	ENS	ENS	BAS	BAS
RM LOSS MBH	3.90	3.90	1.99	1.99	2.42	2.42	1.87	2.79	2.47	2.47	2.47	0.39	0.39	3.90	3.90
CFM PER RUN HEAT	82	82	42	42	51	30	39	59	52	52	52	8	8	82	82
RM GAIN MBH	0.78	0.78	2.11	2.11	2.78	1.34	2.22	2.40	2.50	2.50	2.50	0.16	0.16	0.78	0.78
CFM PER RUN COOLING	25	25	69	69	91	44	72	78	81	81	81	5	5	25	25
ADJUSTED PRESSURE	0.15	0.15	0.16	0.16	0.15	0.16	0.16	0.16	0.15	0.15	0.15	0.16	0.16	0.15	0.15
ACTUAL DUCT LGH	34	50	52	55	75	58	51	55	69	71	82	56	58	23	58
EQUIVALENT LENGTH	110	170	160	160	160	160	160	150	150	130	140	200	190	140	170
TOTAL EFFECTIVE LENGTH	144	200	222	215	235	248	211	175	219	201	222	256	248	163	228
ADJUSTED PRESSURE	0.1	0.07	0.07	0.07	0.06	0.06	0.07	0.09	0.07	0.07	0.07	0.06	0.06	0.08	0.06
ROUND DUCT SIZE	5	6	5	5	6	5	5	5	6	6	6	4	4	5	6
HEATING VELOCITY (ft/min)	602	418	308	308	260	220	286	433	265	265	265	92	92	602	418
COOLING VELOCITY (ft/min)	184	127	507	507	464	323	529	573	413	413	413	57	57	184	127
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10
TRUNK	G	F	G	G	F	F	F	B	A	A	A	C	C	E	C

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	254	0.06	9	10	457	TRUNK G	623	0.06	12.6	18	623	TRUNK O	0	0.05	0	0	8
TRUNK B	200	0.07	7.9	8	450	TRUNK H	1955	0.05	20.3	38	741	TRUNK P	0	0.05	0	0	8
TRUNK C	714	0.06	13.3	20	643	TRUNK I	0	0.00	0	0	0	TRUNK Q	0	0.05	0	0	8
TRUNK D	251	0.05	9.4	10	452	TRUNK J	0	0.00	0	0	0	TRUNK R	0	0.05	0	0	8
TRUNK E	1329	0.05	17.5	28	683	TRUNK K	0	0.00	0	0	0	TRUNK S	0	0.05	0	0	8
TRUNK F	388	0.06	10.6	14	499	TRUNK L	0	0.00	0	0	0	TRUNK T	0	0.05	0	0	8
RETURN AIR #	1	2	3	4	6	7	8	0	0	0	0	TRUNK U	0	0.05	0	0	8
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	TRUNK V	0	0.05	0	0	8
PLENUM PRESSURE	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	TRUNK W	1500	0.05	18.4	32	8
ACTUAL DUCT LGH	84	51	62	59	47	49	30	51	1	1	1	TRUNK X	955	0.05	15.5	28	10
EQUIVALENT LENGTH	200	135	155	185	135	140	170	195	0	0	0	TRUNK Y	480	0.05	12	16	8
TOTAL EFFECTIVE LH	284	186	217	244	182	189	200	246	1	1	1	TRUNK Z	1955	0.05	20.3	24	18
ADJUSTED PRESSURE	0.05	0.07	0.06	0.05	0.07	0.07	0.07	0.05	13.36	13.36	13.36	DROP		0.05			
ROUND DUCT SIZE	7	6.8	6.9	7	8.5	7.9	9.9	10.8	0	0	0						
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0						
INLET GRILL SIZE	14	14	14	14	14	14	30	30	0	0	0						

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

LO # 79985  
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	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	7 @ 10.6 cfm	74.2 cfm
Other Rooms	8 @ 10.6 cfm	84.8 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	79.5	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	FACTOR	% LOSS
155.0 CFM	X 76 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	✓
ENS-2	QTXEN050C	50	✓
ENS-4	QTXEN050C	50	✓
PWD	QTXEN050C	50	✓

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 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:	September-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																							
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																							
LO#: 79985		Model: 5005 ELEV. 'B' - KNIGHTSWOOD		Builder: GOLD PARK HOMES		Date: 9/11/2018																																																																	
Volume Calculation				Air Change & Delta T Data																																																																			
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$HL_{air-b} = LR_{air-b} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																																							
0.416	x	519.30	x	42 °C	x	1.2	=	10942 W																																																															
								=	37334 Btu/h																																																														
<b>5.2.3.2 Heat Loss due to Mechanical 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	=	3181 Btu/h																																																															
<b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>																																																																							
$HL_{qirr} = Level Factor \times HL_{air-bv} \times \{(HL_{qgr} + HL_{b-gr}) \div (HL_{qlevel} + HL_{bqlevel})\}$																																																																							
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**HEAT LOSS AND GAIN SUMMARY SHEET****MODEL:** 5005 ELEV. 'B' - KNIGHTSWOOD WOB  
**SFQT:** 4380 **LO#** 79985**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 (ft <sup>3</sup> ):	66020.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft <sup>2</sup> ):	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

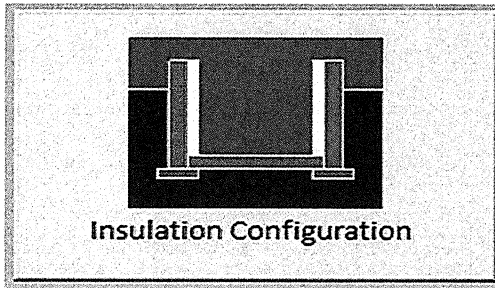
**2012 OBC - COMPLIANCE PACKAGE**

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

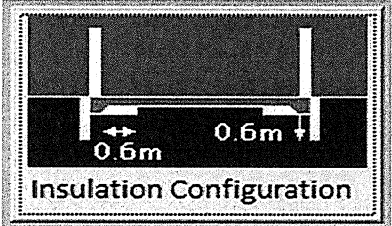
Supplemental tool for CAN/CSA-F280

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 <sup>2</sup> ):	1.1	
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):		872

TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD    WOB  
LO# 79985

## 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):	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      WOB  
LO# 79985

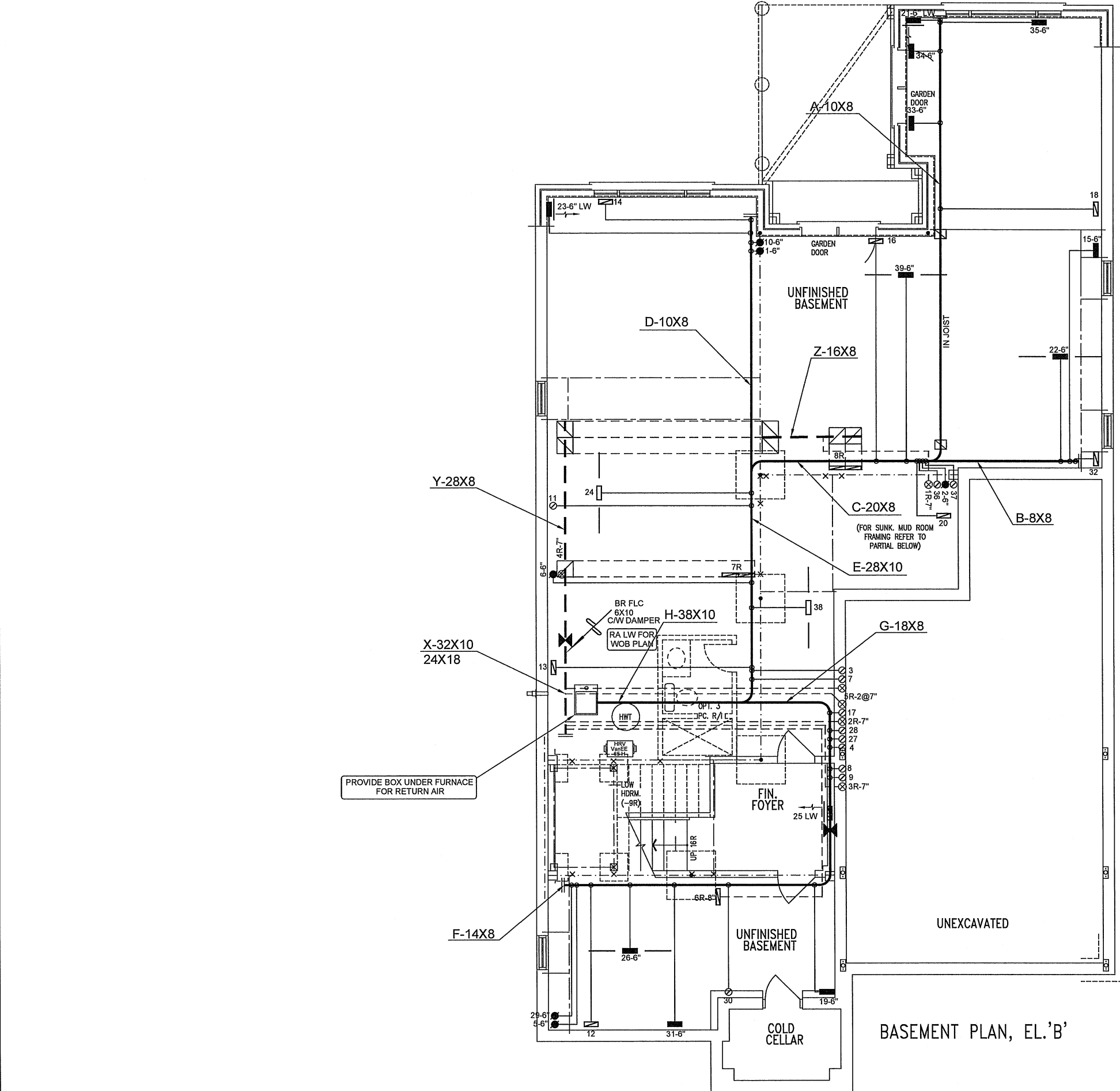


# Air Infiltration Residential Load Calculator

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 <sup>3</sup> ):	1869.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2492.1 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):	0.416			
Cooling Air Leakage Rate (ACH/H):	0.139			

TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD WOB  
LO# 79985



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

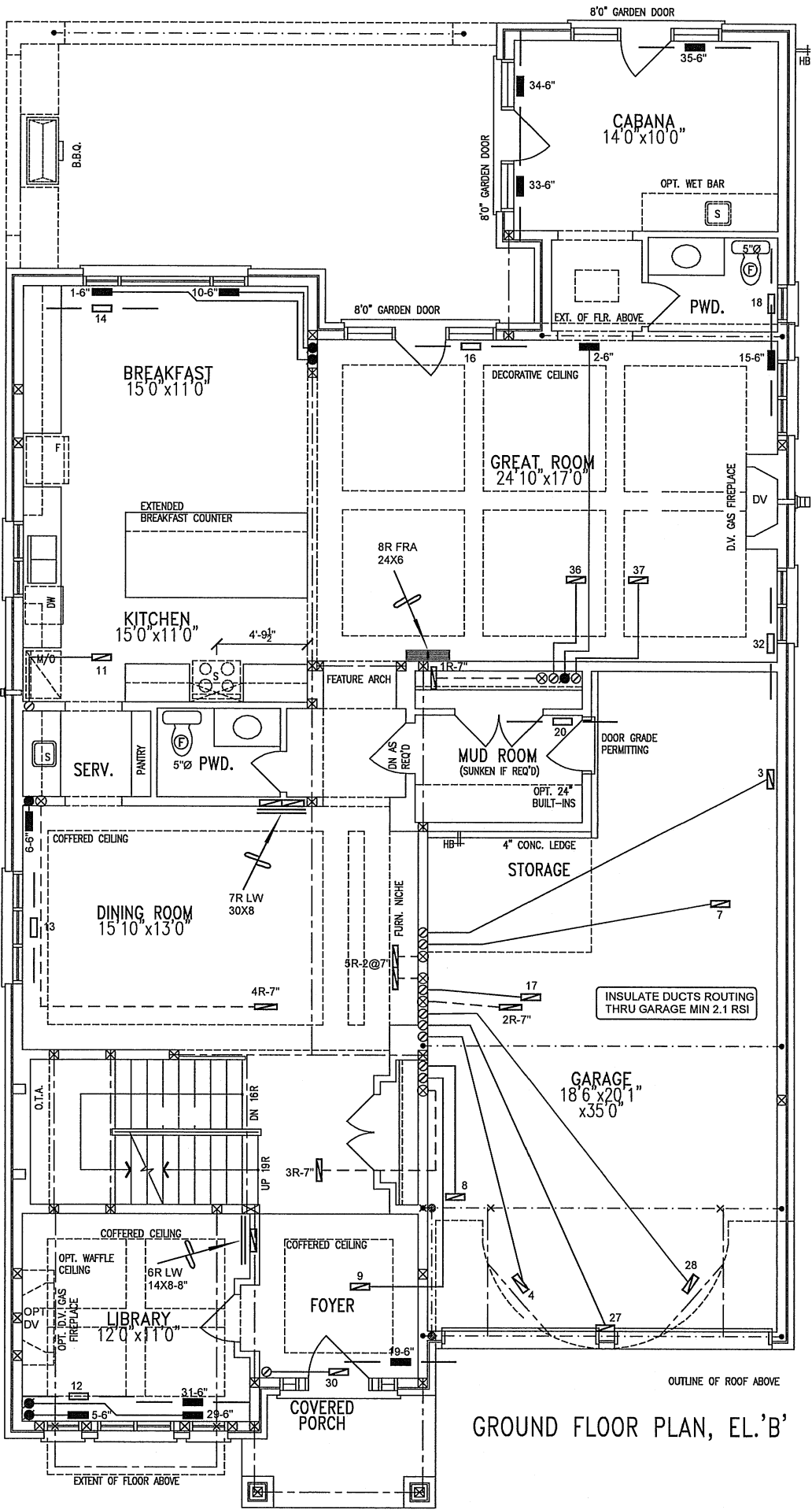
WOB

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		<div><div><div>HVACDESIGNS LTD.</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><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></div>	HEAT LOSS 95858 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  EL296UH110XE60C		2ND FLOOR		18 5 7			
			INPUT  110 MBTU/H		1ST FLOOR		13 3 3			
			OUTPUT  106 MBTU/H		BASEMENT		8 1 0			
KNIGHTSWOOD - WOB 5005 ELEV. 'B' 4380 sqft		COOLING  5.0 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				Date SEPT/2018		
		FAN SPEED  1955 cfm @ 0.6" w.c.						Scale 1/8" = 1'-0"		
										BCIN# 19669
								LO# 79985		



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.

CSA-F280-12

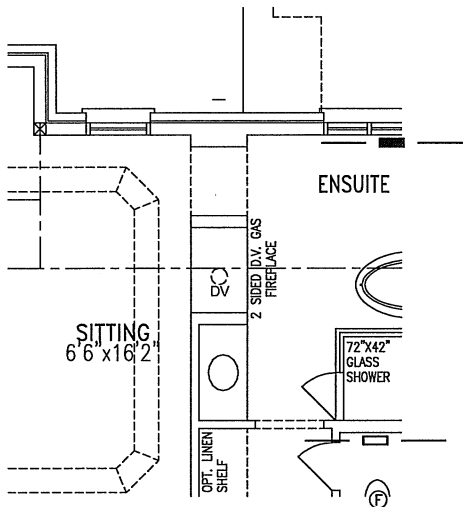
WOB

PACKAGE A1

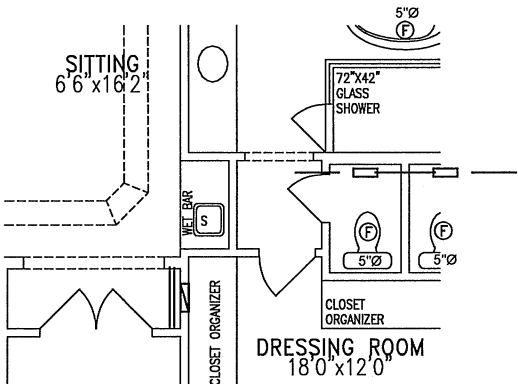
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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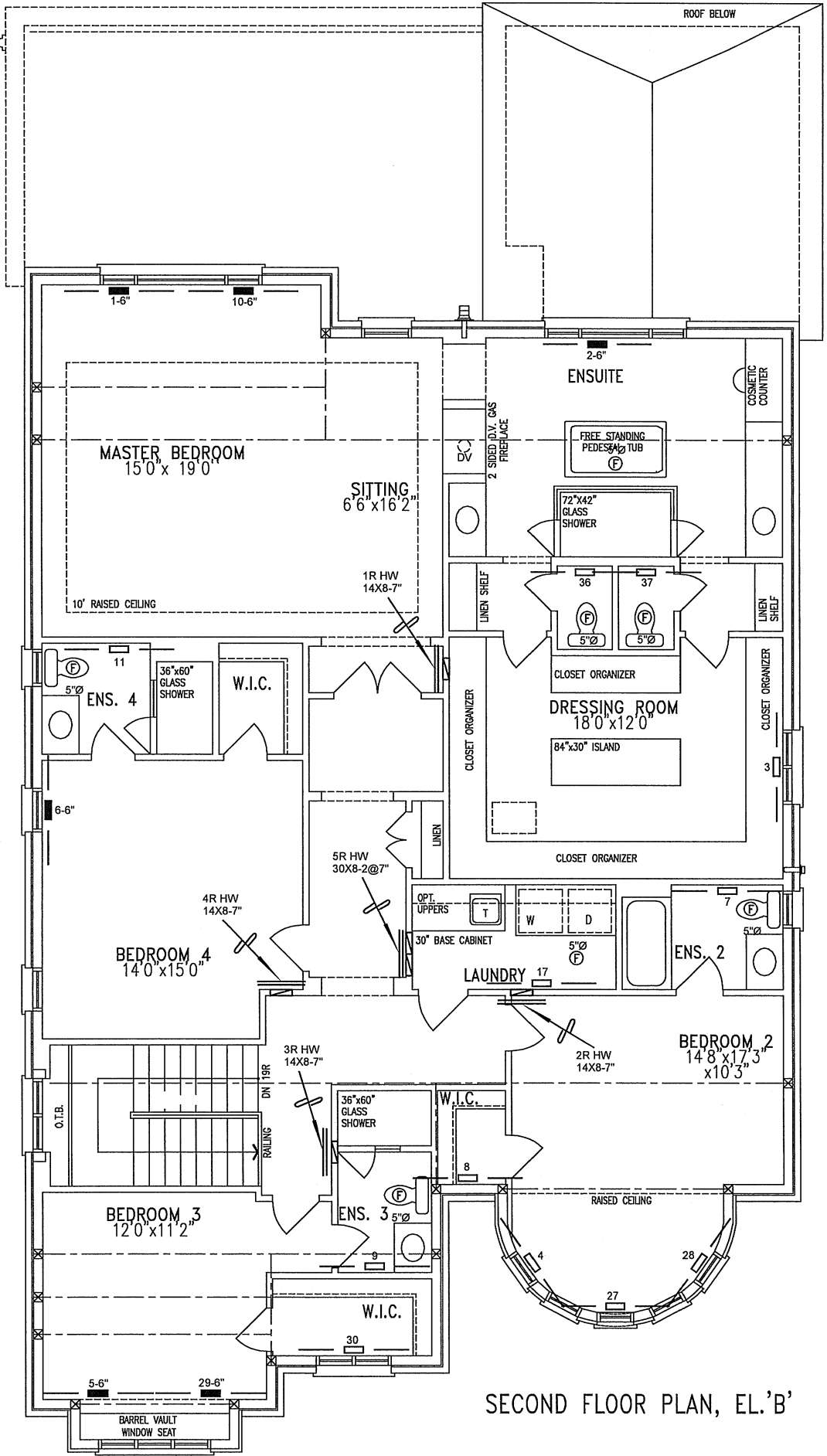
Client		<div></div> <p>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</p> <p>Installation to comply with the latest Ontario Building Code. All 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.</p>	Sheet Title	
GOLDPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			Date	SEPT/2018
KNIGHTSWOOD - WOB 5005 ELEV. 'B' 4380 sqft			Scale	1/8" = 1'-0"
			BCIN# 19669	
		LO#	79985	



PART. SECOND FLOOR PLAN  
OPT. SITTING AREA FIREPLACE



PART. SECOND FLOOR PLAN  
OPT. SITTING AREA WET BAR



SECOND 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.

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.		
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GOLDPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
KNIGHTSWOOD - WOB			BCIN# 19669	
5005 ELEV. 'B' 4380 sqft			LO#	79985