


## 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 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 ( )	
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]</b>			
<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		<b>Model:</b> 5005 ELEV. 'B' - KNIGHTSWOOD  OPT. ELEVATOR - WOB  <b>Project:</b> PINE VALLEY & TESTON	
<b>D. Declaration of Designer</b>			
I <u>MICHAEL O'ROURKE</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 12, 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.

SITE NAME: PINE VALLEY & TESTON BUILDERS: GOLD PARK HOMES TYPE: 6005 ELEV. 'B' - KNIGHTSWOOD OFA: 4412 DATE: Sep-18 OPT. ELEVATOR - WOB WINTER NATURAL AIR CHANGE RATE 0.416 HEAT LOSS AT 'F' 76 CSA-P280-42  
LO# 78987 SUMMER NATURAL AIR CHANGE RATE 0.139 HEAT GAIN AT 'F' 13 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
GRS.WALL AREA	508	508	380	130	374	386	190	80	30	40	70	140
GLAZING												
NORTH	21.3	16.0	0	0	0	0	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	101.6	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	4.6	0.8	326	1465	246	124	553	93	309	1379	232	336
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	533	684	313	323	415	180	207	266	122	175
NO A TTIC 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	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS												
SLAB ON GRADE HEAT LOSS												
SUBTOTAL HT LOSS		3783	2593	1339	3846	3191	1762	722	287	297	562	1029
SUB TOTAL HT GAIN		2734	1848	377	3243	2766	1083	243	63	84	307	982
LEVEL FACTOR / MULTIPLIER	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38
AIR CHANGE HEAT LOSS	1445	1445	990	512	1489	1219	869	276	110	113	222	393
AIR CHANGE HEAT GAIN	0	220	0	185	532	441	0	100	40	0	0	0
DUCT LOSS												
DUCT GAIN												
HEAT GAIN PEOPLE	240	480	0	0	390	240	0	26	7	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		684	0	0	684	684	0	0	0	0	0	0
TOTAL HT LOSS BTU/H		5228	3583	2036	5847	4851	2421	1097	437	410	804	1422
TOTAL HT GAIN x 1.3 BTU/H		5363	2655	1560	6322	5679	2722	376	96	118	432	1338

ROOM USE	EXP. WALL CLG. HT.	LIB	DIN	KIT/GT	CAB	LAUN	PWD	FOY	MUD	WOB	BAS
GRS.WALL AREA	341	341	352	957	495	0	55	386	216	620	1302
GLAZING											
NORTH	21.3	16.0	0	0	0	0	0	0	0	0	0
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	0	0	0	0	0	0	0	0	0
WEST	21.3	41.6	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.6	0	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.6	0.8	286	1272	214	318	1419	239	776	3463	583
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	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
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS											
SLAB ON GRADE HEAT LOSS											
SUBTOTAL HT LOSS		2464	2143	7354	4886	325	807	2995	1380	741	5746
SUB TOTAL HT GAIN		2841	1086	6222	4719	107	229	537	232	3122	668
LEVEL FACTOR / MULTIPLIER	0.30	0.62	0.30	0.62	0.30	0.38	0.30	0.52	0.30	0.62	0.50
AIR CHANGE HEAT LOSS	1283	1283	1116	3830	2644	124	264	1560	718	1560	18867
AIR CHANGE HEAT GAIN	0	204	0	0	0	45	0	0	0	0	0
DUCT LOSS											
DUCT GAIN											
HEAT GAIN PEOPLE	240	480	0	0	0	80	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		684	0	0	0	684	0	0	0	0	0
TOTAL HT LOSS BTU/H		3746	3258	11184	7430	484	771	4554	2058	6775	24603
TOTAL HT GAIN x 1.3 BTU/H		4458	2414	9523	7518	1144	321	764	1216	4658	2164

TOTAL HEAT GAIN BTU/H: 60703 TONS: 5.06 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 93051 TOTAL COMBINED HEAT LOSS BTU/H: 96231

*Michael O'Rourke*

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

OPT. ELEVATOR - WOB

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

GFA: 4412 LO# 79987

HEATING CFM	1955	COOLING CFM	1955
TOTAL HEAT LOSS	93,051	TOTAL HEAT GAIN	60,167
AIR FLOW RATE CFM	21.01	AIR FLOW RATE CFM	32.49

ALLENNOX  
EL296UH110XE60C 110  
FAN SPEED  
LOW 0  
MEDIUM 1380  
HIGH 1505  
DESIGN CFM = 1955  
CFM @ 8" E.S.P. = 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	5	3	1

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

All S/A runs 5"Ø 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	2.61	2.79	2.04	1.95	2.43	2.42	1.10	0.44	0.41	2.61	0.80	1.87	3.26	2.80	2.80	2.80	0.49	0.77	4.55	2.10	3.92	3.92	3.92	3.92
CFM PER RUN HEAT	55	59	43	41	51	51	23	9	9	55	17	39	68	59	59	59	10	16	96	44	82	82	82	82
RM GAIN MBH	2.68	2.26	1.56	2.11	2.79	2.72	0.38	0.10	0.12	2.68	0.43	2.23	2.41	2.41	2.41	2.41	1.14	0.32	0.75	1.22	0.78	0.78	0.78	0.78
CFM PER RUN COOLING	87	74	51	69	91	88	12	3	4	87	14	72	78	78	78	78	37	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	0.15	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	71	49	70	48	74	48	53	64	59	57	29	52	69	54	36	73	40	47	77	60	69	38
EQUIVALENT LENGTH	200	200	170	180	160	160	200	150	170	170	150	140	103	120	140	110	200	170	210	160	150	120	150	90
TOTAL EFFECTIVE LENGTH	270	270	241	209	230	208	274	198	223	234	209	197	132	172	209	164	236	243	250	207	227	180	219	128
ADJUSTED PRESSURE	0.05	0.06	0.06	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	0.06	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	5	4	4	6	4	6	5	6	5
HEATING VELOCITY (ft/min)	280	301	316	301	260	260	264	103	103	280	195	286	489	433	301	433	115	184	489	505	418	602	418	602
COOLING VELOCITY (ft/min)	444	377	374	507	464	449	138	34	46	444	161	529	573	573	398	573	424	115	127	447	127	184	127	184
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	3X10
TRUNK	D	C	C	G	F	E	C	G	G	D	E	F	E	D	B	C	E	A	F	C	A	B	D	E

TEMPERATURE RISE 50 °F

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	ENS	BAS
RM LOSS MBH	3.92	3.92	1.95	1.95	2.43	1.42	1.87	2.80	2.48	2.48	2.48	0.39	0.39	0.39	3.92
CFM PER RUN HEAT	82	82	41	41	51	30	39	59	52	52	52	8	8	8	82
RM GAIN MBH	0.78	0.78	2.11	2.11	2.79	1.34	2.23	2.41	2.51	2.51	2.51	0.16	0.16	0.16	0.78
CFM PER RUN COOLING	25	25	69	69	91	43	72	78	81	81	81	5	5	5	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	58	58	23	58
EQUIVALENT LENGTH	110	150	170	160	160	190	160	120	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	0.09	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	301	301	260	220	286	433	265	265	265	92	92	602	418
COOLING VELOCITY (ft/min)	184	127	507	507	464	316	529	573	413	413	413	57	57	184	127
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	4X10	3X10	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

## SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	254	0.06	9	10	457	TRUNK G	611	0.06	12.5	18	611	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	780	0.06	13.7	22	638	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	1341	0.05	17.6	28	690	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	7	8	BR	0	0	0	0	TRUNK U	0	0.05	0	0	8
AIR VOLUME	115	135	130	115	370	340	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	0	0	0	0	TRUNK W	0	0.05	0	0	8
ACTUAL DUCT LGH	84	51	62	59	49	30	51	1	1	1	1	TRUNK X	1490	0.05	18.3	32	10
EQUIVALENT LENGTH	200	135	155	185	140	170	195	0	0	0	0	TRUNK Y	940	0.05	15.4	28	8
TOTAL EFFECTIVE LH	284	186	217	244	182	189	200	1	1	1	1	TRUNK Z	455	0.05	11.7	16	8
ADJUSTED PRESSURE	0.05	0.07	0.06	0.05	0.07	0.07	0.05	0.07	0.05	0.07	0.05	DROP	1955	0.05	20.3	24	18
ROUND DUCT SIZE	7	6.8	7	7	7.9	10	10.5	0	0	0	0						
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	8	8						
	X	X	X	X	X	X	X	X	X	X	X						
	14	14	14	14	14	14	30	30	30	30	30						

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

LO # 79987  
OPT. ELEVATOR - 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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>7</u> @ 10.6 cfm	<u>74.2</u> cfm
Other Rooms	<u>8</u> @ 10.6 cfm	<u>84.8</u> cfm
Table 9.32.3.A.	TOTAL	<u>233.2</u> 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		<u>79.5</u> cfm

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

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 65H	Location: BSMT
<u>155.0</u> cfm	<u>3.0</u> 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	Sones
ENS	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
ENS-2	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
ENS-4	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
PWD	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % 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

<b>CSA F280-12 Residential Heat Loss and Heat Gain Calculations</b>									
<b>Formula Sheet (For Air Leakage / Ventilation Calculation)</b>									
LO#: 79987		Model: 5005 ELEV. 'B' - KNIGHTSWOOD		Builder: GOLD PARK HOMES		Date: 9/12/2018			
		<b>Volume Calculation</b>		<b>Air Change &amp; Delta T Data</b>					
<b>House Volume</b>									
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)						
Bsmt	2052	10	20520						
First	2052	11	22572						
Second	2360	10	23600						
Third	0	9	0						
Fourth	0	9	0						
		Total:	66,692.0 ft³						
		Total:	1888.5 m³						
<b>5.2.3.1 Heat Loss due to Air Leakage</b>									
$HL_{air-b} = LR_{air-b} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$									
0.416	x	524.59	x	42 °C	x	1.2	=	11053 W	
								=	37714 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>									
$HL_{qirr} = Level Factor \times HL_{air-bv} \times \{(HL_{qgr} + HL_{bgr}) \div (HL_{qglevel} + HL_{bglevel})\}$									
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL <sub>level</sub> )	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)					
1	0.5	37,714	11,779	1.601					
2	0.3		21,728	0.521					
3	0.2		19,746	0.382					
4	0		0	0.000					
5	0		0	0.000					
<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>									

**HEAT LOSS AND GAIN SUMMARY SHEET**

<b>MODEL:</b> 5005 ELEV. 'B' - KNIGHTSWOOD	<b>OPT. ELEVATOR - WOB</b>	<b>BUILDER:</b> GOLD PARK HOMES
<b>SFQT:</b> 4412	<b>LO#</b> 79987	<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):	66692.0	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: 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	-

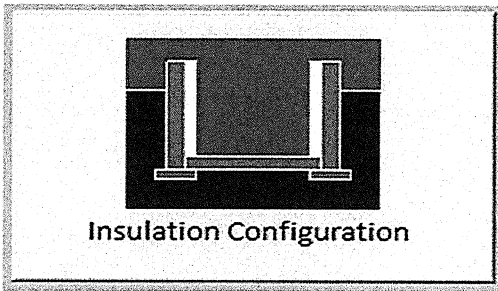
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



## Residential Foundation Thermal Load Calculator

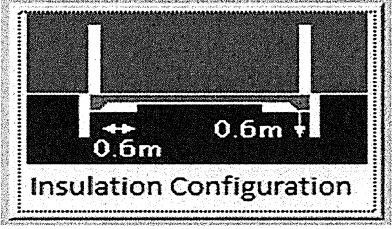
Supplemental tool for CAN/CSA-F280

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    OPT. ELEVATOR - WOB  
LO# 79987

## 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# 79987

OPT. ELEVATOR - WOB

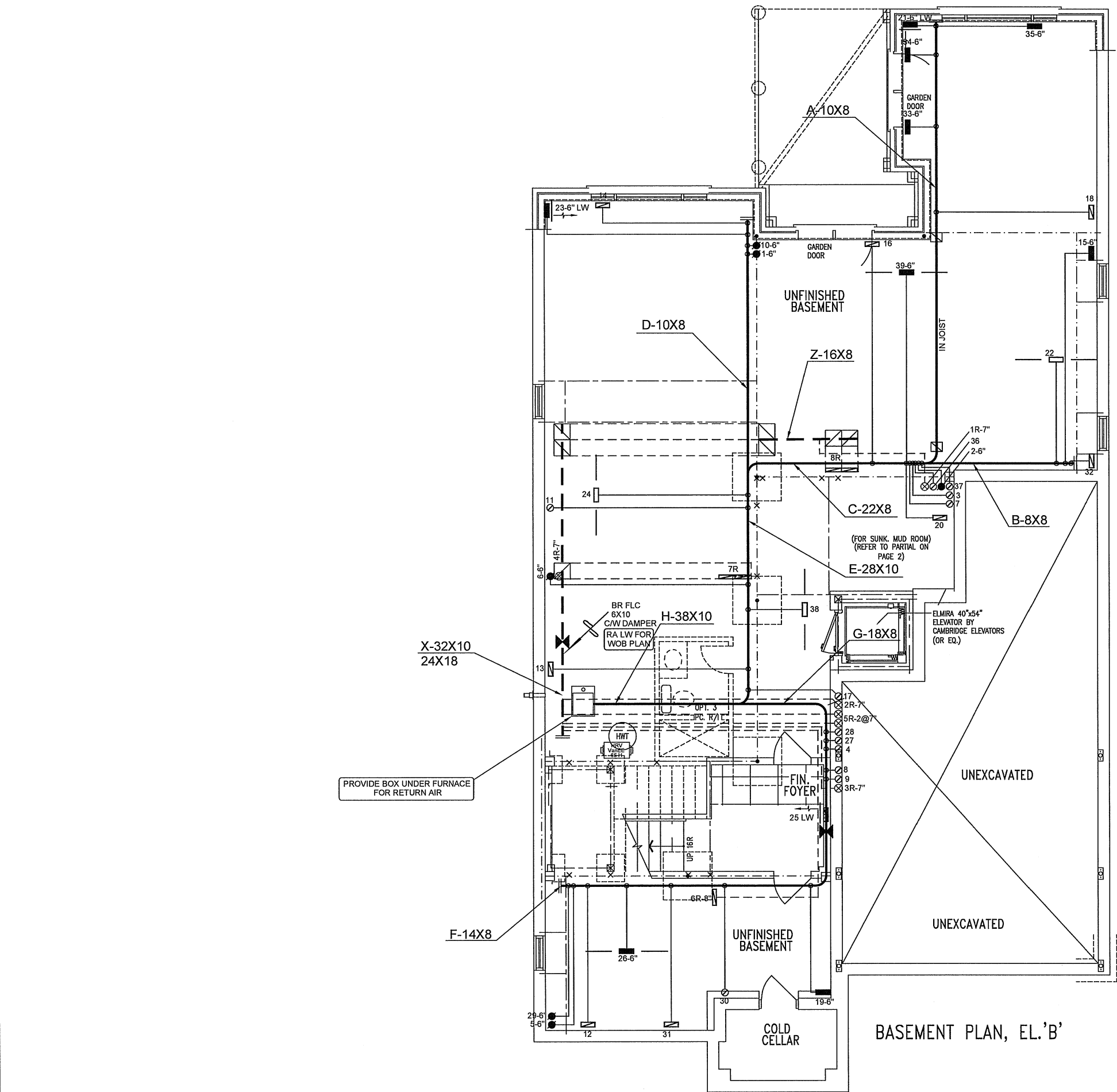


# Air Infiltration Residential Load Calculator

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 <sup>3</sup> ):	1888.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2517.4 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    OPT. ELEVATOR - WOB  
LO# 79987



BASEMENT PLAN, EL.'B'

I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.

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

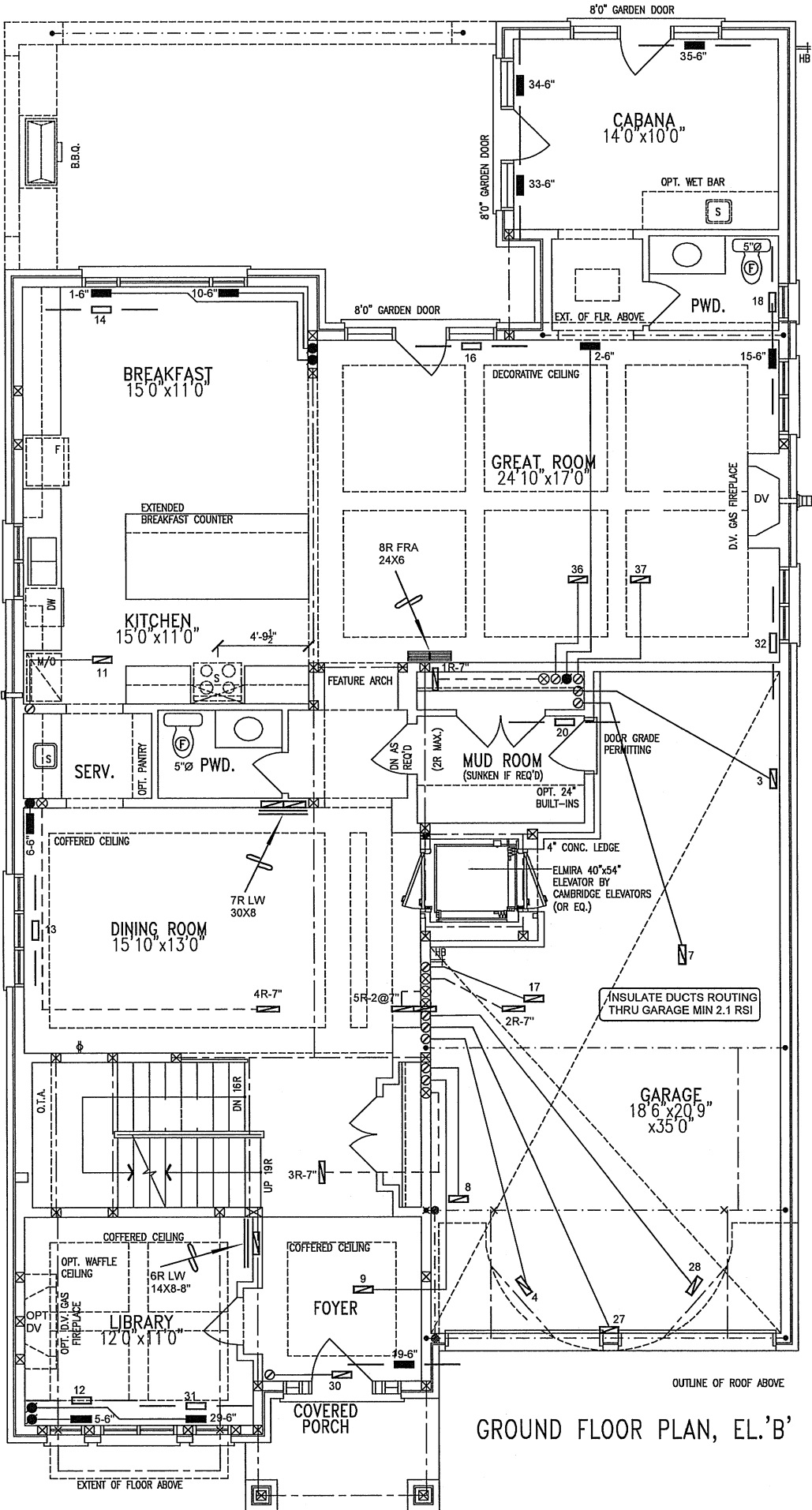
CSA-F280-12

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
	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>	HEAT LOSS 96231 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GOLDPARK HOMES			MAKE LENNOX		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name			MODEL EL296UH110XE60C		2ND FLOOR			Date	
PINE VALLEY & TESTON VAUGHAN, ONTARIO			INPUT		1ST FLOOR			SEPT/2018	
KNIGHTSWOOD - WOB			110 MBTU/H		BASEMENT			Scale	
OPT. ELEVATOR		OUTPUT		8 1 0			1/8" = 1'-0"		
5005 ELEV. 'B' 4412 sqft		106 MBTU/H		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		
		COOLING		TONS			LO#		
		5.0					79987		
		FAN SPEED		cfm @ 0.6" w.c.					
		1955							



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.

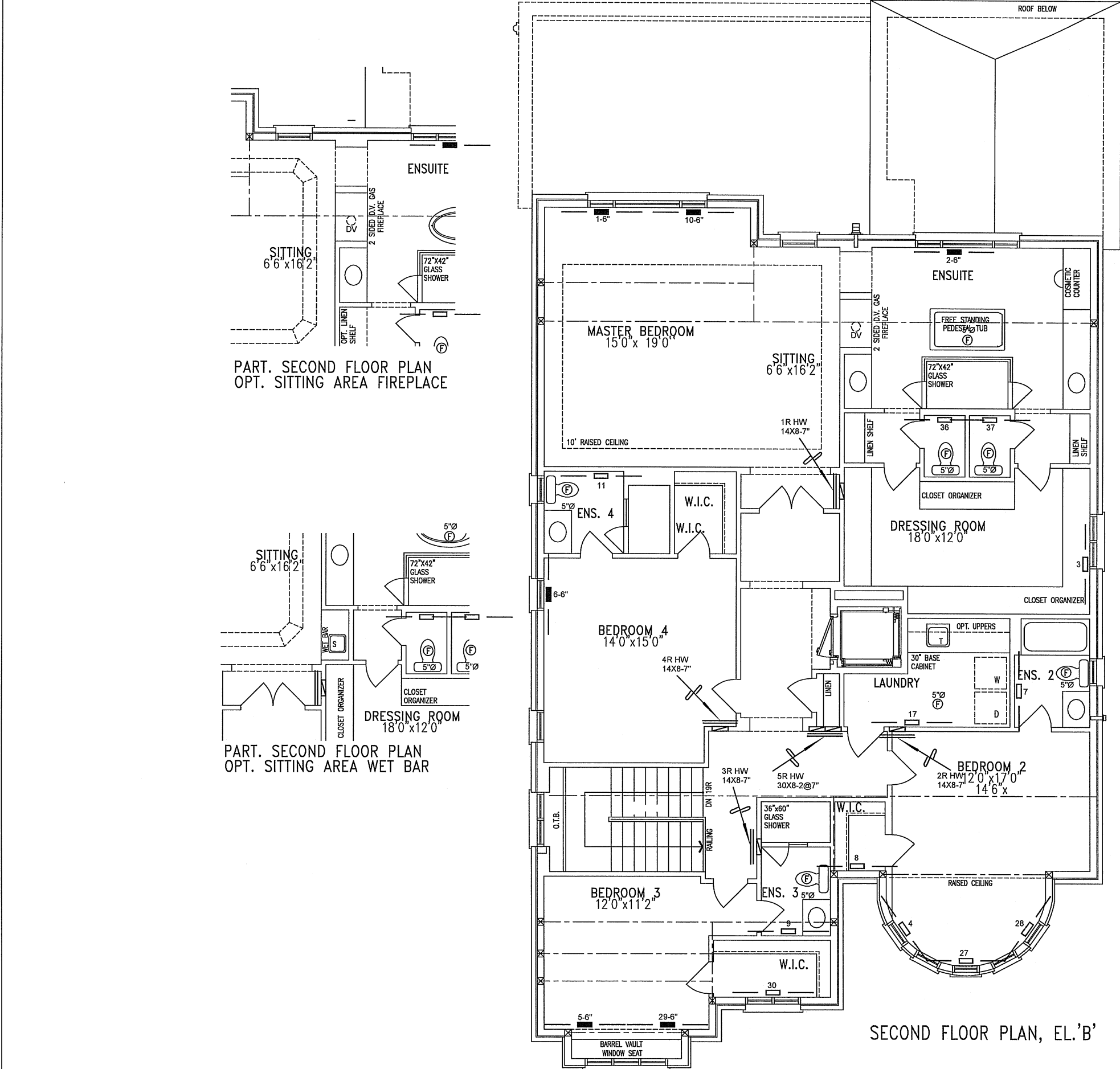
CSA-F280-12

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			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO KNIGHTSWOOD - WOB OPT. ELEVATOR			Scale	1/8" = 1'-0"
5005 ELEV. 'B' 4412 sqft			BCIN# 19669	
			LO#	79987















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

CSA-F280-12

**WOB** PACKAGE A1

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

Client

**GOLDPARK HOMES**

Project Name

**PINE VALLEY & TESTON  
VAUGHAN, ONTARIO  
KNIGHTSWOOD - WOB  
OPT. ELEVATOR  
5005 ELEV. 'B'      4412 sqft**

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Sheet Title

**SECOND FLOOR  
HEATING  
LAYOUT**

Date      **SEPT/2018**

Scale      **1/8" = 1'-0"**

BCIN# 19669

**LO#      79987**