


## 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.
Municipality VAUGHAN (WOODBIDGE)			Postal code
Plan number/ other description			Lot/con.
B. Individual who reviews and takes responsibility for design activities			
Name <b>MICHAEL O'ROURKE</b>		Firm <b>HVAC DESIGNS LTD.</b>	
Street address <b>375 FINLEY AVE</b>		Unit no. <b>202</b>	Lot/con. <b>N/A</b>
Municipality <b>AJAX</b>	Postal code <b>L1S 2E2</b>	Province <b>ONTARIO</b>	E-mail <b>info@hvacdsgns.ca</b>
Telephone number <b>(905) 619-2300</b>	Fax number <b>(905) 619-2375</b>	Cell number (     )	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]			
<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</b> <b>DUCT SIZING</b> <b>RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY</b> <b>RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>		<b>Model:</b> 5005 - KNIGHTSWOOD  OPT. 5 BED & ELEVATOR - WOB  <b>Project:</b> PINE VALLEY & TESTON	
D. Declaration of Designer			
I, <u><b>MICHAEL O'ROURKE</b></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  
BUILDER: GOLD PARK HOMES  
TYPE: 5 BED & ELEVATOR - WOB  
DATE: Sep-18  
LO# 79984  
GFA: 4483  
WINTER NATURAL AIR CHANGE RATE 0.416  
SUMMER NATURAL AIR CHANGE RATE 0.139  
HEAT LOSS AT °F. 76  
HEAT GAIN AT °F. 13  
CSA-F200-12  
S9-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	ENS-4	BED-5
EXP. WALL	45	29	6	34	37	26	6	9	4	7	14
CLG. HT.	11	10	10	11	11	10	10	10	10	10	14
FACTORS											
GRS.WALL AREA	495	290	60	374	407	260	80	90	40	70	140
GLAZING											
NORTH	0	0	0	18	383	0	8	0	0	0	18
EAST	0	0	0	70	1653	0	0	0	0	0	383
SOUTH	0	0	0	0	28	681	0	0	0	0	0
WEST	0	0	0	0	598	768	0	0	0	0	0
SKYL.T.	37.2	1367	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	445	1142	60	286	1366	228	82	90	40	82	122
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0	0	0
NO A TTIC EXPOSED CLG	440	282	102	216	329	398	80	48	140	105	364
EXPOSED FLOOR	2.7	0	0	24	66	30	0	0	0	0	0
BA SEMENT/CRAWL HEAT LOSS	0	0	0	240	612	103	60	153	28	43	122
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	3615	2128	399	4104	4340	2207	632	586	715	582	1767
SUB TOTAL HT GAIN	2689	1670	106	3648	4117	1172	224	116	172	300	600
LEVEL FACTOR / MULTIPLIER	0.20	0.36	0.20	0.36	0.20	0.36	0.20	0.36	0.20	0.36	0.20
AIR CHANGE HEAT LOSS	1291	760	142	1466	1550	788	228	209	255	208	638
AIR CHANGE HEAT GAIN	0	0	0	557	589	0	88	79	97	0	243
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	2	0	0	1	240	1	0	0	0	0	1
HEAT GAIN APPLANCES/LIGHTS	639	0	0	639	639	639	0	0	0	0	639
TOTAL HT LOSS BTU/H	4906	2888	541	6127	6479	2395	944	874	1088	789	2688
TOTAL HT GAIN x 1.3 BTU/H	5091	2345	978	6738	7617	2758	346	180	266	422	2261

ROOM USE	LIB	DIN	KIT/IGT	CAB	LAUN	PWD	FOY	MUD	WOB	BAS
EXP. WALL	31	32	87	45	0	6	35	18	82	188
CLG. HT.	11	11	11	11	10	11	11	12	10	10
FACTORS										
GRS.WALL AREA	341	352	957	495	0	55	385	216	520	1302
GLAZING										
NORTH	0	0	48	0	0	9	0	0	0	6
EAST	56	0	0	0	0	0	0	0	0	128
SOUTH	0	34	224	63	1341	0	0	0	46	979
WEST	0	0	105	63	1341	0	0	0	106	2286
SKYL.T.	37.2	4192	0	0	0	0	0	0	0	0
DOORS	20.2	4.3	0	0	0	0	0	0	0	0
NET EXPOSED WALL	285	1272	318	369	1647	46	62	1655	20	505
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0	0	0	102	131	0	0	0	0
NO A TTIC EXPOSED CLG	0	0	0	203	558	40	41	82	0	0
EXPOSED FLOOR	0	0	0	0	56	143	0	0	0	0
BA SEMENT/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	507	3120	1380	741	2977
SUB TOTAL HT GAIN	2450	1055	6008	4569	84	224	558	232	6034	5746
LEVEL FACTOR / MULTIPLIER	0.30	0.52	0.30	0.52	0.20	0.52	0.30	0.52	0.80	1.52
AIR CHANGE HEAT LOSS	1291	1123	3853	2560	98	266	1634	723	0	19000
AIR CHANGE HEAT GAIN	0	0	0	0	37	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	0	0	0	0	73	0	0	0	0	0
HEAT GAIN APPLANCES/LIGHTS	639	0	639	639	639	0	0	639	0	639
TOTAL HT LOSS BTU/H	3764	3265	11207	7446	409	772	4754	2102	6775	24826
TOTAL HT GAIN x 1.3 BTU/H	4272	2312	9268	7234	1044	314	784	1157	3919	2072

TOTAL HEAT GAIN BTU/H: 61945 TONS: 5.16

LOSS DUE TO VENTILATION LOAD BTU/H: 3181

STRUCTURAL HEAT LOSS: 96590

TOTAL COMBINED HEAT LOSS BTU/H: 98770



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

OPT. 5 BED & ELEVATOR - WOB  
TYPE: 5005 - KNIGHTSWOOD

DATE: Sep-18

GFA: 4483 LO# 79984

HEATING CFM 1955 COOLING CFM 1955  
TOTAL HEAT LOSS 95,590 TOTAL HEAT GAIN 61,409  
AIR FLOW RATE CFM 20.45 AIR FLOW RATE CFM 31.84

EL296UH140XE60C  
FAN SPEED 0  
LOW MEDIUM HIGH  
DESIGN CFM = 1955  
CFM @ 8" E.S.P. 1955

ALLENNOX

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'x0" unless noted otherwise on layout.

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-5	BED-4	BED-3	BED-2	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	2.45	2.24	2.67	2.04	2.16	2.36	2.99	0.94	0.87	1.07	0.78	1.88	3.27	2.80	2.80	2.80	0.41	0.77	4.75	2.10	3.95	3.95	3.95	3.95
CFM PER RUN HEAT	50	46	55	42	44	61	19	18	22	50	16	38	67	57	57	57	8	16	97	43	81	81	81	81
RM GAIN MBH	2.55	1.87	2.26	2.25	2.54	2.79	0.35	0.18	0.27	2.55	0.42	2.14	2.31	2.32	2.32	2.32	1.04	0.31	0.78	1.18	0.75	0.75	0.75	0.75
CFM PER RUN COOLING	81	60	72	72	81	89	11	6	8	81	13	68	74	74	74	74	33	10	25	37	24	24	24	24
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	75	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	170	160	160	150	170	170	150	140	103	120	140	110	200	170	210	160	150	120	150	90
TOTAL EFFECTIVE LENGTH	270	270	223	209	245	208	207	198	223	234	209	197	132	172	209	184	236	243	250	207	227	180	219	128
ADJUSTED PRESSURE	0.05	0.06	0.07	0.07	0.06	0.07	0.08	0.08	0.07	0.06	0.07	0.08	0.12	0.09	0.07	0.07	0.07	0.06	0.08	0.08	0.08	0.08	0.07	0.11
ROUND DUCT SIZE	6	5	5	5	6	6	4	4	4	6	4	5	5	5	5	5	4	4	6	4	6	6	6	5
HEATING VELOCITY (ft/min)	255	338	404	308	224	311	218	207	252	255	184	279	492	419	419	419	92	184	495	483	413	413	413	595
COOLING VELOCITY (ft/min)	413	441	529	529	413	454	126	69	92	413	149	499	543	543	543	543	379	115	127	424	122	122	122	176
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	4X10	3X10
TRUNK	D	C	C	G	F	F	E	C	G	G	E	F	E	D	B	C	G	A	F	C	A	B	D	E

ROOM #	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	BED-3	LIB	KIT/GT	CAB	CAB	CAB	WIC	ENS	BAS	BAS
RM LOSS MBH	3.95	3.95	2.04	2.04	2.16	2.16	1.88	2.80	2.48	2.48	2.48	0.54	0.84	3.95	3.95
CFM PER RUN HEAT	81	81	42	42	44	44	38	57	51	51	51	11	13	81	81
RM GAIN MBH	0.75	0.75	2.25	2.25	2.54	2.54	2.14	2.32	2.41	2.41	2.41	0.98	0.47	0.75	0.75
CFM PER RUN COOLING	24	24	72	72	81	81	68	74	77	77	77	31	15	24	24
ADJUSTED PRESSURE	0.15	0.15	0.16	0.16	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15
ACTUAL DUCT LGH	34	50	52	55	80	63	51	55	69	71	82	56	58	23	58
EQUIVALENT LENGTH	110	150	170	160	170	200	160	120	150	130	140	200	190	140	170
TOTAL EFFECTIVE LENGTH	144	200	222	215	250	263	211	175	219	201	222	256	248	163	228
ADJUSTED PRESSURE	0.1	0.07	0.07	0.07	0.06	0.06	0.06	0.07	0.09	0.07	0.07	0.06	0.06	0.09	0.06
ROUND DUCT SIZE	5	6	5	5	6	6	5	5	6	5	6	4	4	5	6
HEATING VELOCITY (ft/min)	595	413	308	308	224	224	279	419	280	374	260	126	149	595	413
COOLING VELOCITY (ft/min)	176	122	529	529	413	413	499	543	393	565	393	356	172	176	122
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	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										RETURN AIR TRUNK SIZE									
TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0.06	9	10	450	641	0.06	12.8	20	577	TRUNK G	0.05	0	0	0	TRUNK O	0.05	0	0	8
TRUNK B	0.07	7.9	8	439	1955	0.05	20.3	38	741	TRUNK H	0.00	0	0	0	TRUNK P	0.05	0	0	8
TRUNK C	0.06	13.7	22	630	0	0.00	0	0	0	TRUNK I	0.00	0	0	0	TRUNK Q	0.05	0	0	8
TRUNK D	0.05	9.2	10	428	0	0.00	0	0	0	TRUNK J	0.00	0	0	0	TRUNK R	0.05	0	0	8
TRUNK E	0.05	17.5	28	676	0	0.00	0	0	0	TRUNK K	0.00	0	0	0	TRUNKS	0.05	0	0	8
TRUNK F	0.06	10.6	14	496	0	0.00	0	0	0	TRUNK L	0.00	0	0	0	TRUNK T	0.05	0	0	8
RETURN AIR #	1	2	3	4	5	6	7	8	9	0	0	0	0	0	TRUNK U	0.05	0	0	8
AIR VOLUME	115	130	125	115	280	185	350	300	85	0	0	0	0	0	TRUNK V	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	0.13	0.13	0.13	TRUNK W	0.05	0	0	8
ACTUAL DUCT LGH	84	51	62	59	47	49	30	51	49	1	1	1	1	1	TRUNK X	0.05	18.4	32	10
EQUIVALENT LENGTH	200	135	155	185	135	140	170	195	220	0	0	0	0	0	TRUNK Y	0.05	15	26	8
TOTAL EFFECTIVE LH	284	186	217	244	182	189	200	246	289	1	1	1	1	1	TRUNK Z	0.05	11.3	14	8
ADJUSTED PRESSURE	0.05	0.07	0.06	0.05	0.07	0.07	0.07	0.05	0.05	13.36	13.36	13.36	13.36	13.36	DROP	0.05	20.3	24	18
ROUND DUCT SIZE	7	6.8	6.9	7	9	7.7	9.8	10.1	6.3	0	0	0	0	0					
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	0	0	0	0	0					
INLET GRILL SIZE	14	14	14	14	30	14	30	30	14	0	0	0	0	0					

TYPE: 5005 - KNIGHTSWOOD  
SITE NAME: PINE VALLEY & TESTON

LO # 79984  
OPT. 5 BED & 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	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	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	243.8 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL		95.4 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	243.8	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	88.8	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	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"/> 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#: 79984		Model: 5005 - KNIGHTSWOOD		Builder: GOLD PARK HOMES		Date: 9/11/2018																																																			
Volume Calculation					Air Change & Delta T Data																																																				
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6.2.6 Sensible Gain due to Air Leakage																																																									
$HG_{salb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																									
$= 0.139 \times 530.80 \times 7^\circ\text{C} \times 1.2 = 632 \text{ W}$																																																									
$= 38161 \text{ Btu/h}$																																																									
6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																									
$155 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 536 \text{ Btu/h}$																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																									
$HL_{qirr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{qgr} + HL_{qgrv}) \div (HL_{qglevel} + HL_{qglevel})\}$																																																									
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<p>*H<sub>lairbv</sub> = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system H<sub>lairb</sub> = 0</p>																																																									

**HEAT LOSS AND GAIN SUMMARY SHEET**

<b>MODEL:</b> 5005 - KNIGHTSWOOD	<b>OPT.</b> 5 BED & ELEVATOR - WOB	<b>BUILDER:</b> GOLD PARK HOMES
<b>SFQT:</b> 4483	<b>LO#</b> 79984	<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):	67482.0	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	-

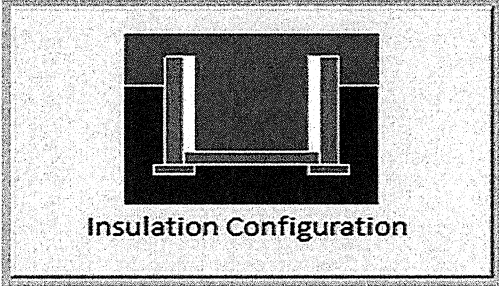
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

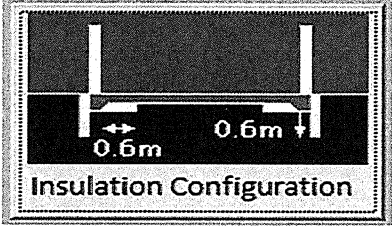
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	56.7	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.84	
Window Area (m <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 - KNIGHTSWOOD  
LO# 79984

OPT. 5 BED &amp; ELEVATOR - WOB

## 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 - KNIGHTSWOOD  
LO# 79984

OPT. 5 BED &amp; ELEVATOR - WOB



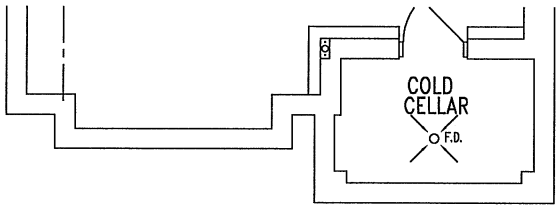
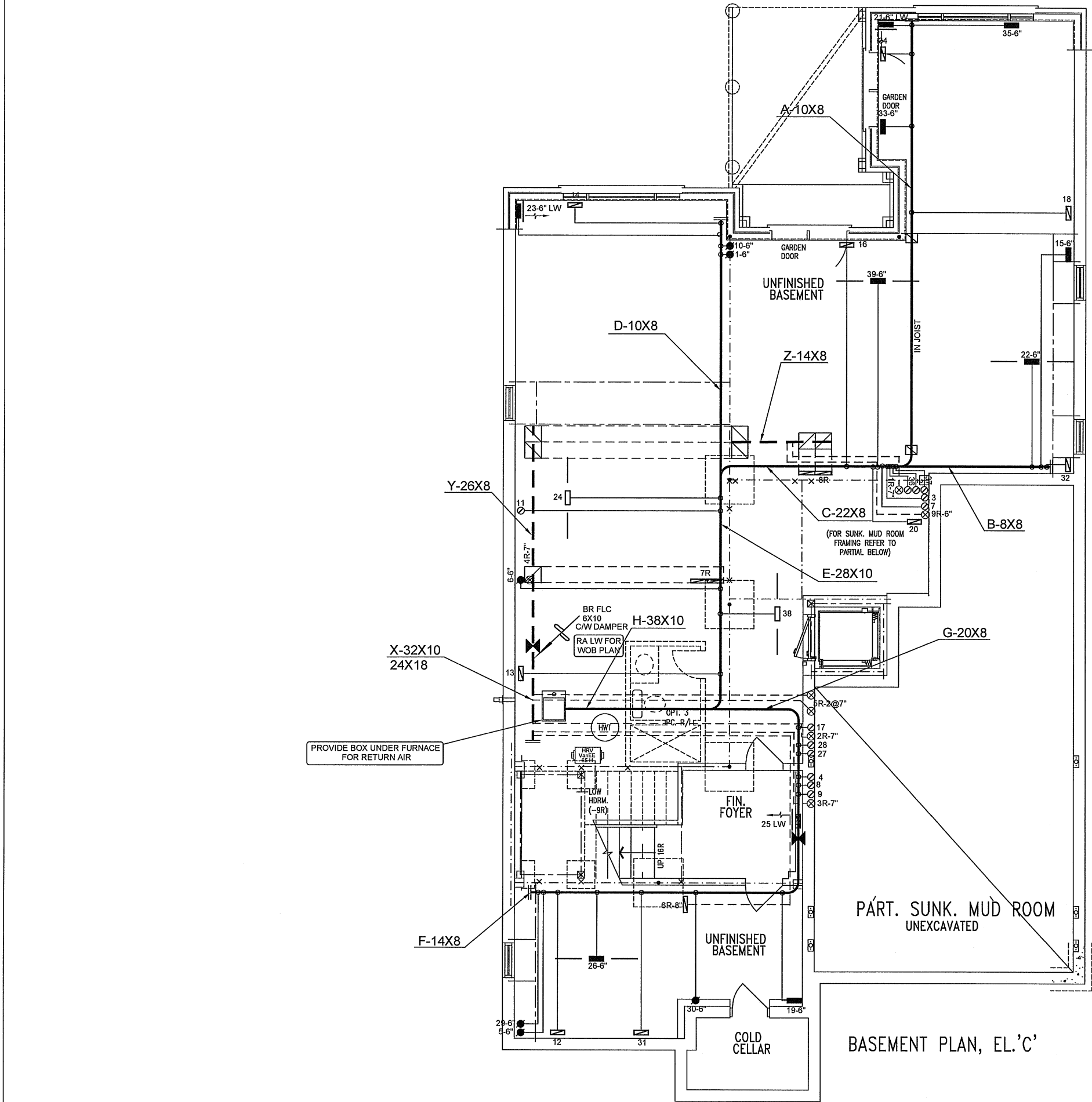
## Air Infiltration Residential Load Calculator

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> ):	1910.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2547.3 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 - KNIGHTSWOOD  
LO# 79984

OPT. 5 BED &amp; ELEVATOR - WOB



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.

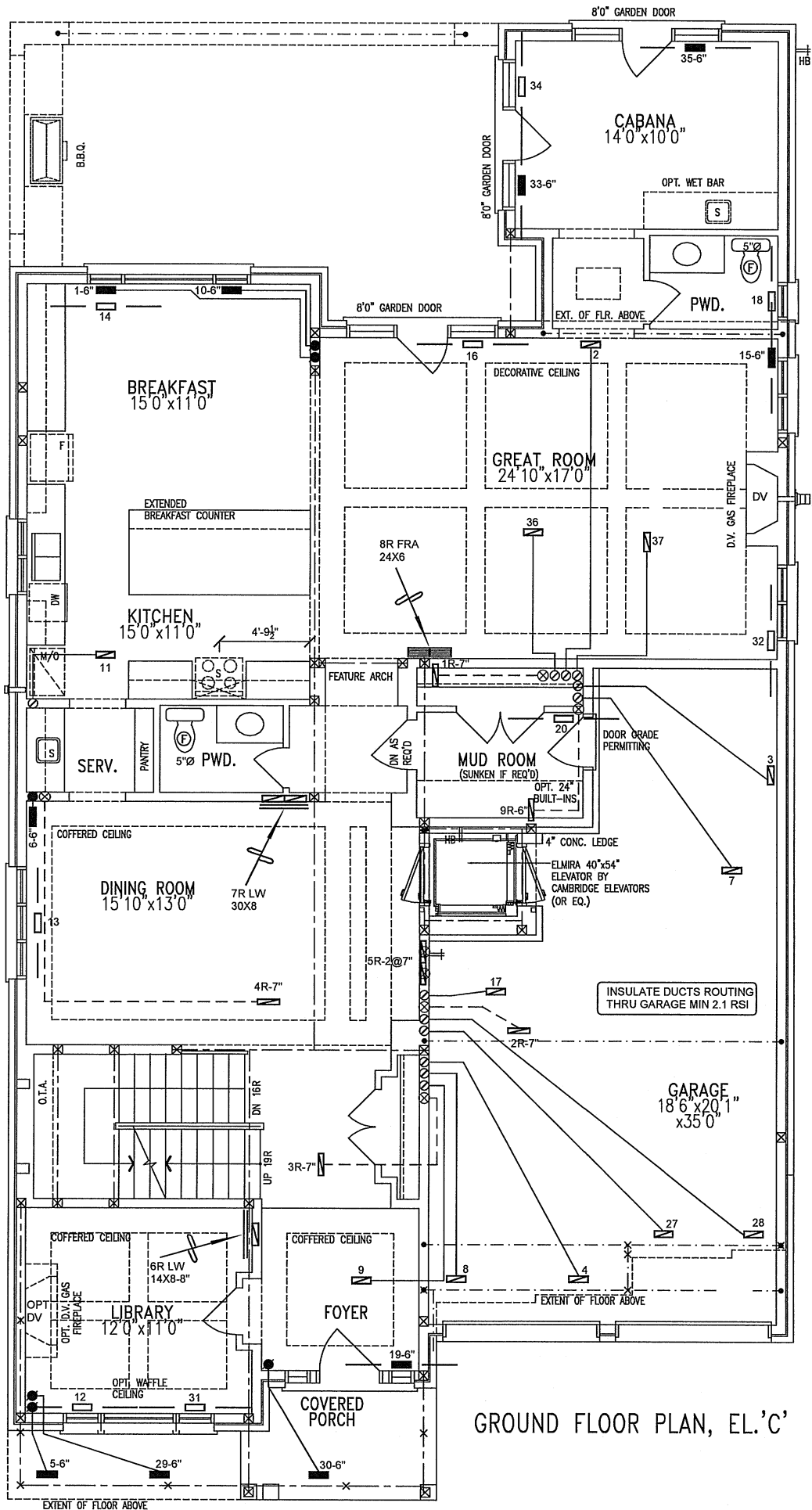
CSA-F280-12

**WOB** PACKAGE A1

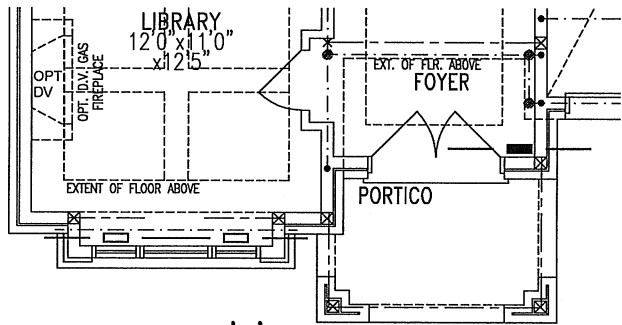
HVAC LEGEND							3.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR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

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Client		<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></div>	HEAT LOSS 98770 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
GOLDPARK HOMES			MAKE LENNOX	3RD FLOOR					BASEMENT HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO OPT. 5 BED & ELEVATOR KNIGHTSWOOD - WOB 5005 4483 sqft			MODEL EL296UH110XE60C	2ND FLOOR		18	6	7		
			INPUT 110 MBTU/H	1ST FLOOR		13	3	3		
			OUTPUT 106 MBTU/H	BASEMENT		8	1	0		
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.		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#	79984	



GROUND FLOOR PLAN, EL.'C'



GROUND FLOOR PLAN, EL.'A'

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

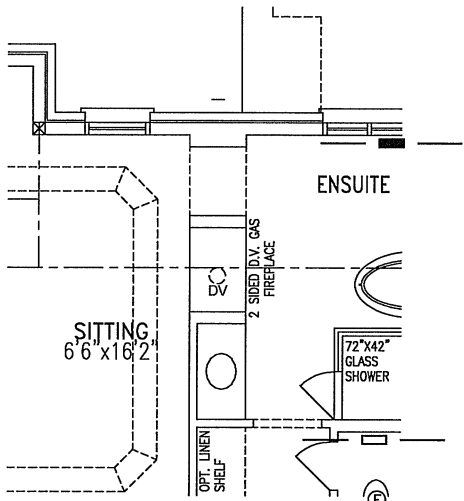
WOB

PACKAGE A1

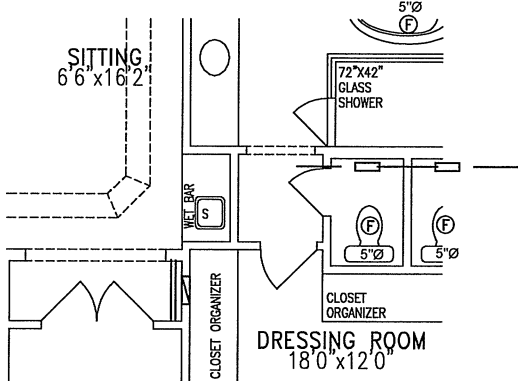
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE	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

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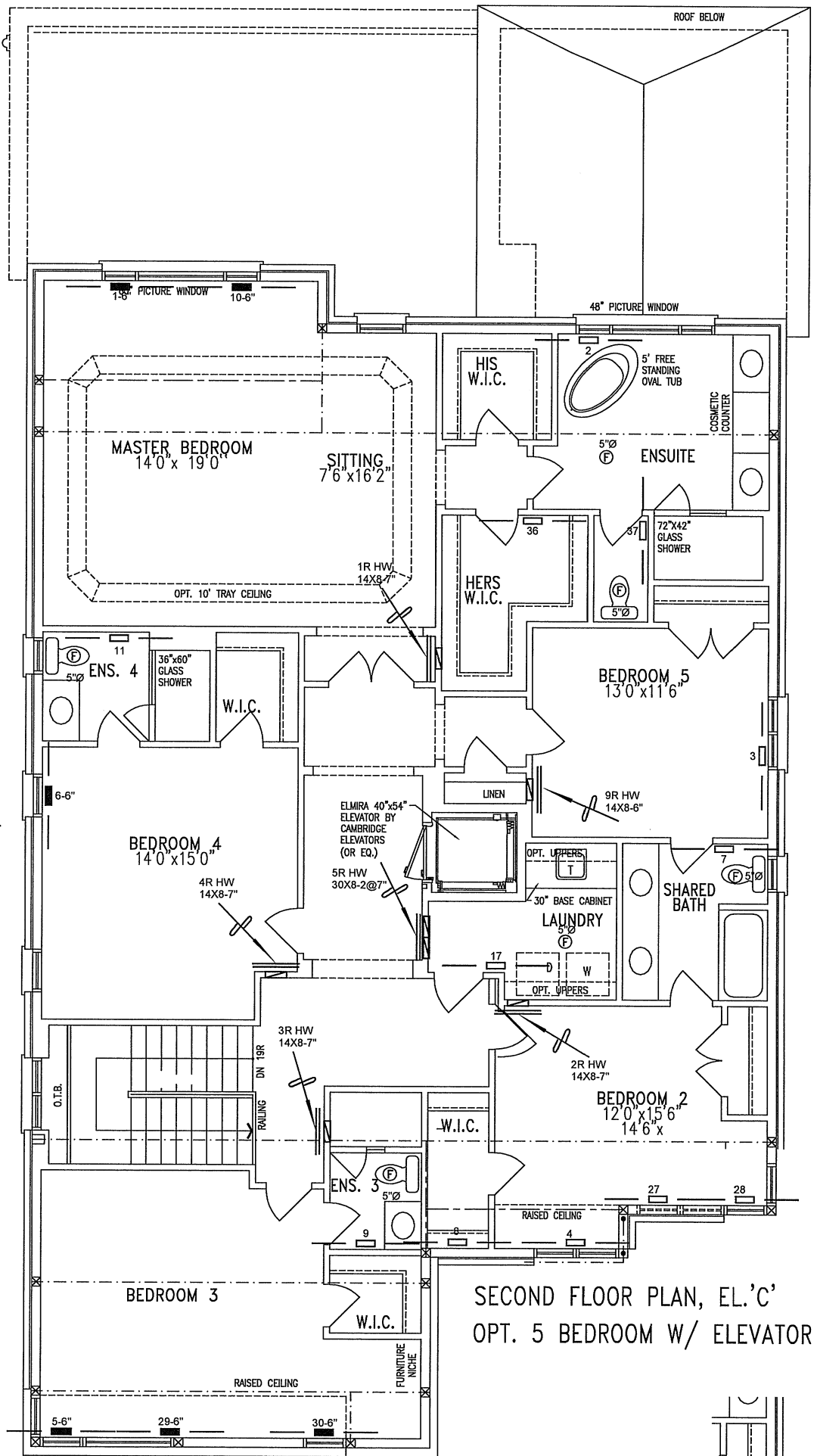
Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>Installation to comply with the latest Ontario Building Code. 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			Scale	1/8" = 1'-0"
OPT. 5 BED & ELEVATOR KNIGHTSWOOD - WOB			BCIN# 19669	
5005	4483 sqft		LO#	79984



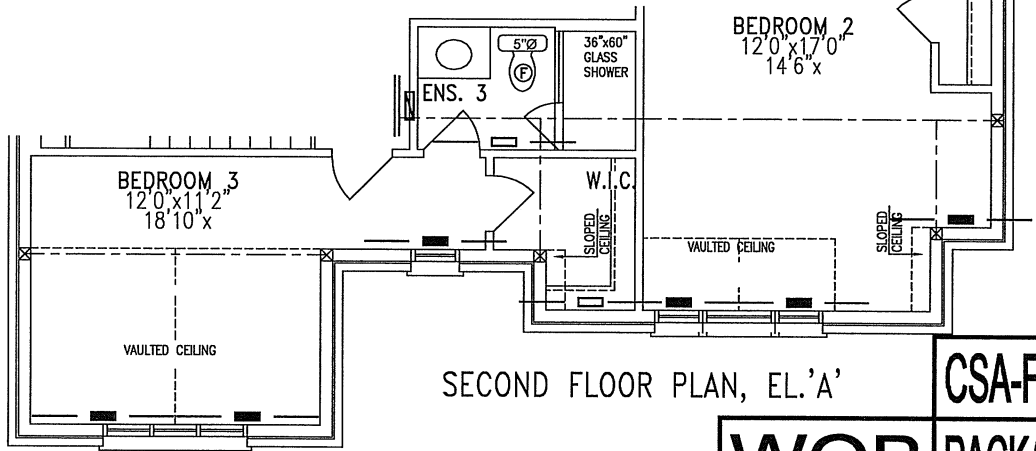
PART. SECOND FLOOR PLAN  
OPT. SITTING AREA FIREPLACE



PART. SECOND FLOOR PLAN  
OPT. SITTING AREA WET BAR



SECOND FLOOR PLAN, EL.'C'  
OPT. 5 BEDROOM W/ ELEVATOR



SECOND FLOOR PLAN, EL.'A'

CSA-F280-12

WOB

PACKAGE A1

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.

HVAC LEGEND							3.		
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GOLDPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name		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.	Date	
PINE VALLEY & TESTON VAUGHAN, ONTARIO			SEPT/2018	
OPT. 5 BED & ELEVATOR KNIGHTSWOOD - WOB			Scale	
5005			1/8" = 1'-0"	
4483 sqft			BCIN# 19669	
			LO# 79984	