


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 + ELEVATOR 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 BUILDER: GOLD PARK HOMES										DATE: Sep-18 LO# 79888		WINTER NATURAL AIR CHANGE RATE 0.416 SUMMER NATURAL AIR CHANGE RATE 0.138		HEAT LOSS AT °F. 76 HEAT GAIN AT °F. 13		CSA-F280-12 SB-12 PACKAGE A1	
OPT. 5 BED + ELEVATOR WOB TYPE: 5005 ELEV. 'B' - KNIGHTSWOOD										GFA: 4412		ENS-2/5		ENS-3		ENS-4	
ROOM USE										BED-1		BED-2		BED-3		BED-4	
EXP. WALL										34		374		336		190	
CLG. HT.										11		11		11		10	
FACTORS										LOS		LOS		LOS		LOS	
GROSS WALL AREA										300		300		300		300	
GLAZING										LOS		LOS		LOS		LOS	
NORTH										14		140		140		140	
EAST										14		140		140		140	
SOUTH										14		140		140		140	
WEST										14		140		140		140	
SKYL.T.										37.2		37.2		37.2		37.2	
DOORS										25.2		25.2		25.2		25.2	
NET EXPOSED WALL										4.5		4.5		4.5		4.5	
NET EXPOSED BSMT WALL ABOVE GR										3.8		3.8		3.8		3.8	
EXPOSED CLG										1.3		1.3		1.3		1.3	
NO ATTIC EXPOSED CLG										2.7		2.7		2.7		2.7	
EXPOSED FLOOR										2.8		2.8		2.8		2.8	
BASEMENT/CRAWL HEAT LOSS										0		0		0		0	
SLAB ON GRADE HEAT LOSS										0		0		0		0	
SUBTOTAL HT LOSS										3715		3715		3715		3715	
SUB TOTAL HT GAIN										2702		2702		2702		2702	
LEVEL FACTOR / MULTIPLIER										0.20		0.20		0.20		0.20	
AIR CHANGE HEAT LOSS										1394		1394		1394		1394	
AIR CHANGE HEAT GAIN										0		0		0		0	
DUCT LOSS										0		0		0		0	
DUCT GAIN										0		0		0		0	
HEAT GAIN PEOPLE										2		2		2		2	
HEAT GAIN APPLIANCES/LIGHTS										684		684		684		684	
TOTAL HT LOSS BTU/H										5109		5109		5109		5109	
TOTAL HT GAIN x 1.3 BTU/H										5308		5308		5308		5308	

ROOM USE	FACTORS		DIN		KIT/GT		CAB		LAUN		PWD		FOY		MUD		WOB		BAS		
EXP. WALL	CLG. HT.	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA		341		352		957		486		0		55		385		216		520		1302	
GLAZING																					
NORTH		0	0	0	0	46	978	735	0	0	0	9	192	144	0	0	0	0	0	6	
EAST		56	1192	2327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	
SOUTH		21.3	24.9	0	34	724	20	428	498	63	1341	1659	0	0	0	0	0	46	978	573	
WEST		21.3	41.6	0	0	0	105	2234	4353	63	1341	2518	0	0	0	0	0	106	2256	2202	
SKYL.T.		37.2	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS		25.2	4.3	0	0	0	10	252	43	0	0	0	0	56	1414	239	20	505	85	20	
NET EXPOSED WALL		4.5	0.8	286	1272	214	318	1419	239	776	3453	593	389	1647	277	0	48	205	36	329	
NET EXPOSED BSMT WALL ABOVE GR		3.8	0.6	0	0	0	0	0	0	0	0	0	0	0	0	198	876	147	1683	247	
EXPOSED CLG		1.3	0.6	0	0	0	0	0	0	142	182	83	0	0	0	0	0	0	0	588	
NO ATTIC EXPOSED CLG		2.7	1.3	0	0	0	0	0	0	203	568	255	0	0	0	0	0	0	0	0	
EXPOSED FLOOR		2.8	0.4	0	0	0	0	0	0	142	382	61	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	
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS		2464		2143		7354		4886		544		507		2995		1380		741		2977	
SUB TOTAL HT GAIN			2541		1086		6222		4719		144		229		537		3122		6034		
LEVEL FACTOR / MULTIPLIER		0.30	0.52	0.30	0.52	0.30	0.52	0.30	0.52	0.20	0.38	0.30	0.52	0.30	0.52	0.30	0.52	0.50	1.50	0.50	
AIR CHANGE HEAT LOSS		1283		1116		3830		2544		204		264		1550		716				18857	
AIR CHANGE HEAT GAIN			204		87		489		379		12		18		43		19			304	
DUCT LOSS		0		0		0		0		75		0		0		0				0	
DUCT GAIN			0		0		0		0		84		0		0		0			0	
HEAT GAIN PEOPLE		240		0		0		0		0		0		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS			694		684		684		684		684		0		0		684		0	684	
TOTAL HT LOSS BTU/H		3746		3258		11184		7430		923		771		4554		2098		6775		24503	
TOTAL HT GAIN x 1.3 BTU/H			4453		2414		9626		7517		1201		321		754		1216		4058	2154	

SITE NAME: PINE VALLEY & TESTON
BUILDER: GOLD PARK HOMESOPT. 5 BED + ELEVATOR WOB
TYPE: 500S ELEV. B' - KNIGHTSWOOD

DATE: Sep-18

GFA: 4412

LO# 79888

HEATING CFM	1955	COOLING CFM				
TOTAL HEAT LOSS	93,468	TOTAL HEAT GAIN	60,604			
AIR FLOW/RATE CFM	20.92	AIR FLOW/RATE CFM	32.26			
RUN COUNT		4th	3rd	2nd	1st	Bas
S/A		0	0	18	13	8
R/A		0	0	6	3	1

EL286UH10XE60C
FAN SPEED
LOW
MEDIUM
HIGH

110
1380
1505
1685
1955

AFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = 106,000

DESIGN CFM = 1955
CFM @ .6" E.S.P.

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

All S/A fans 5"Ø unless noted otherwise on layout.

RUN #	ROOM NAME	MBR	ENS	BED-5	BED-4	ENS-2/5	WIC-2	8	7	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	RM LOSS MBH	2.55	2.19	1.94	2.41	1.28	0.43	0.41	2.55	0.80	1.87	3.26	2.80	2.80	2.80	0.82	0.77	4.55	2.10	3.92	3.92	3.92	3.92
2	CFM PER RUN HEAT	53	48	41	50	27	9	9	53	17	39	68	58	58	58	17	16	95	44	82	82	82	82
3	RM GAIN MBH	2.65	1.96	2.11	2.79	0.42	0.10	0.12	2.65	0.43	2.23	2.41	2.41	2.41	2.41	1.20	0.32	0.75	1.22	0.78	0.78	0.78	0.78
4	CFM PER RUN COOLING	86	62	68	90	88	14	3	86	14	72	78	78	78	78	39	10	24	39	25	25	25	25
5	ADJUSTED PRESSURE	0.15	0.16	0.16	0.15	0.15	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
6	EQUIVALENT LENGTH	200	200	170	160	200	150	170	170	150	140	103	120	140	110	200	170	210	160	150	120	150	90
7	TOTAL EFFECTIVE LENGTH	270	270	241	209	230	208	274	198	223	234	197	132	172	209	164	236	250	207	227	180	219	128
8	ADJUSTED PRESSURE	0.05	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	0.08	0.08	0.06	0.07	0.11
9	ROUND DUCT SIZE	6	5	5	6	6	4	4	6	4	5	5	5	5	6	5	4	6	4	6	6	6	5
10	HEATING VELOCITY (ft/min)	270	352	338	301	255	310	103	270	195	286	499	426	296	426	195	184	484	505	418	418	418	602
11	COOLING VELOCITY (ft/min)	438	455	499	459	449	161	34	46	438	529	573	573	398	573	447	115	122	447	127	127	127	184
12	OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10
13	TRUNK	D	D	C	F	E	C	G	G	E	F	E	D	B	C	G	A	F	C	A	B	D	E

RUN #	ROOM NAME	BAS	BED-2	BED-2	WIC-3	LIB	31	32	33	34	35	36	37	38	39
14	RM LOSS MBH	3.92	1.94	1.94	1.42	1.87	2.41	2.80	2.48	2.48	0.55	0.69	0.69	3.92	3.92
15	CFM PER RUN HEAT	82	41	41	30	39	58	58	52	52	11	15	15	82	82
16	RM GAIN MBH	0.78	2.11	2.11	1.34	2.23	2.41	2.51	2.51	2.51	2.51	0.52	0.78	0.78	0.78
17	CFM PER RUN COOLING	25	68	68	43	72	78	81	81	81	5	17	25	25	25
18	ADJUSTED PRESSURE	0.15	0.16	0.16	0.15	0.16	0.16	0.15	0.15	0.15	0.16	0.16	0.15	0.15	0.15
19	EQUIVALENT LENGTH	110	150	170	160	190	120	150	130	140	140	180	190	140	170
20	TOTAL EFFECTIVE LENGTH	144	200	222	215	235	248	211	219	201	222	234	248	163	228
21	ADJUSTED PRESSURE	0.1	0.07	0.07	0.06	0.06	0.07	0.09	0.07	0.07	0.07	0.07	0.06	0.06	0.06
22	ROUND DUCT SIZE	5	6	5	5	5	5	5	6	6	6	4	4	5	6
23	HEATING VELOCITY (ft/min)	602	418	301	301	286	426	285	285	285	128	172	602	418	418
24	COOLING VELOCITY (ft/min)	184	127	499	499	573	529	573	413	413	57	184	127	184	127
25	OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10
26	TRUNK	G	F	G	F	F	F	B	A	A	C	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	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)			
TRUNK A	254	0.06	9	10	8	457	0.06	12.6	18	8	625	0.06	12.6	18	8	625			
TRUNK B	198	0.07	7.9	8	446	0.07	20.3	38	38	10	741	0.05	20.3	38	38	741			
TRUNK C	783	0.06	13.8	22	8	641	0.00	0	0	8	0	0.00	0	0	0	0			
TRUNK D	246	0.05	9.3	10	8	443	0.00	0	0	8	0	0.00	0	0	0	0			
TRUNK E	1328	0.05	17.5	28	8	683	0.00	0	0	8	0	0.00	0	0	0	0			
TRUNK F	385	0.06	10.5	14	8	495	0.00	0	0	8	0	0.00	0	0	0	0			
RETURN AIR #	1	2	3	4	5	6	7	8	9	BR									
AIR VOLUME	0	0	0	0	2@7"	0	0	0	0	0	0	0	0	0	0	0			
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	0.13	0.13			
ACTUAL DUCT LGH.	84	51	62	59	47	49	30	51	61	1	1	1	1	1	1	1			
EQUIVALENT LENGTH	200	135	155	185	135	140	170	195	165	0	0	0	0	0	0	0			
TOTAL EFFECTIVE LH	284	186	217	244	182	189	200	246	226	1	1	1	1	1	1	1			
ADJUSTED PRESSURE	0.05	0.07	0.06	0.05	0.07	0.07	0.07	0.05	0.06	13.36	13.36	13.36	13.36	13.36	13.36	13.36			
ROUND DUCT SIZE	7	6.8	7	7	8.5	7.9	9.8	10.3	6	0	0	0	0	0	0	0			
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8			
INLET GRILL SIZE	14	14	14	14	14	14	30	30	14	0	0	0	0	0	0	24			

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

LO # 79988
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	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: VANE 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 Sones
ENS	QTXEN050C	50	<input checked="" type="checkbox"/> 0.3
ENS-2/5	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		
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#: 79988	Model: 5005 ELEV. 'B' - KNIGHTSWOOD	Builder: GOLD PARK HOMES	Date: 9/11/2018																																																																								
Volume Calculation		Air Change & Delta T Data																																																																									
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5.2.3.1 Heat Loss due to Air Leakage																																																																											
$HL_{air-b} = LR_{air-b} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																																											
0.416	x	524.59	x																																																																								
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			11053 W																																																																								
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			37714 Btu/h																																																																								
5.2.3.2 Heat Loss due to Mechanical Ventilation																																																																											
$HL_{vair-b} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																											
155 CFM	x	76 °F	x																																																																								
		1.08	x																																																																								
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			3181 Btu/h																																																																								
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																											
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*HLairbv = Air leakage heat loss + ventilation heat loss
*For a balanced or supply only ventilation system HLairve = 0

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5005 ELEV. 'B' - KNIGHTSWOOD	OPT. 5 BED + ELEVATOR WOB	BUILDER: GOLD PARK HOMES
SFQT: 4412	LO# 79988	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):	66692.0	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		Compliance Package A1	
Component		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	-

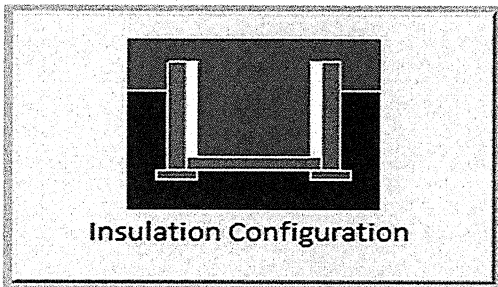
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

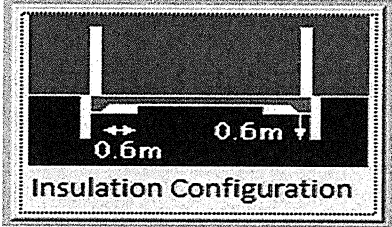
Supplemental tool for CAN/CSA-F280

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 + ELEVATOR WOB
LO# 79988

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# 79988

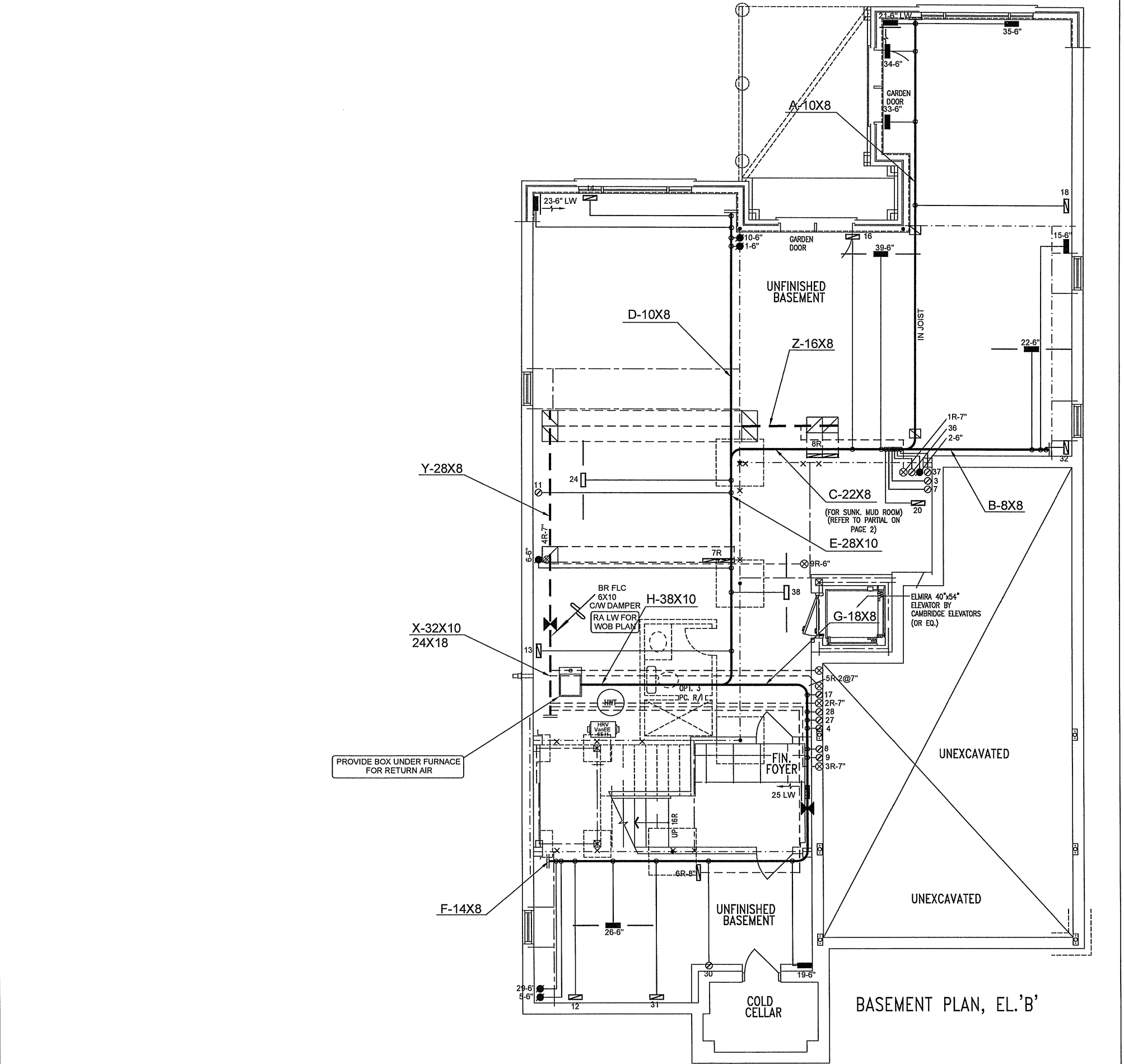
OPT. 5 BED + ELEVATOR WOB

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 ³):	1888.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2517.4 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 + ELEVATOR WOB
LO# 79988



BASEMENT PLAN, EL. 'B'

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

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

CSA-F280-12

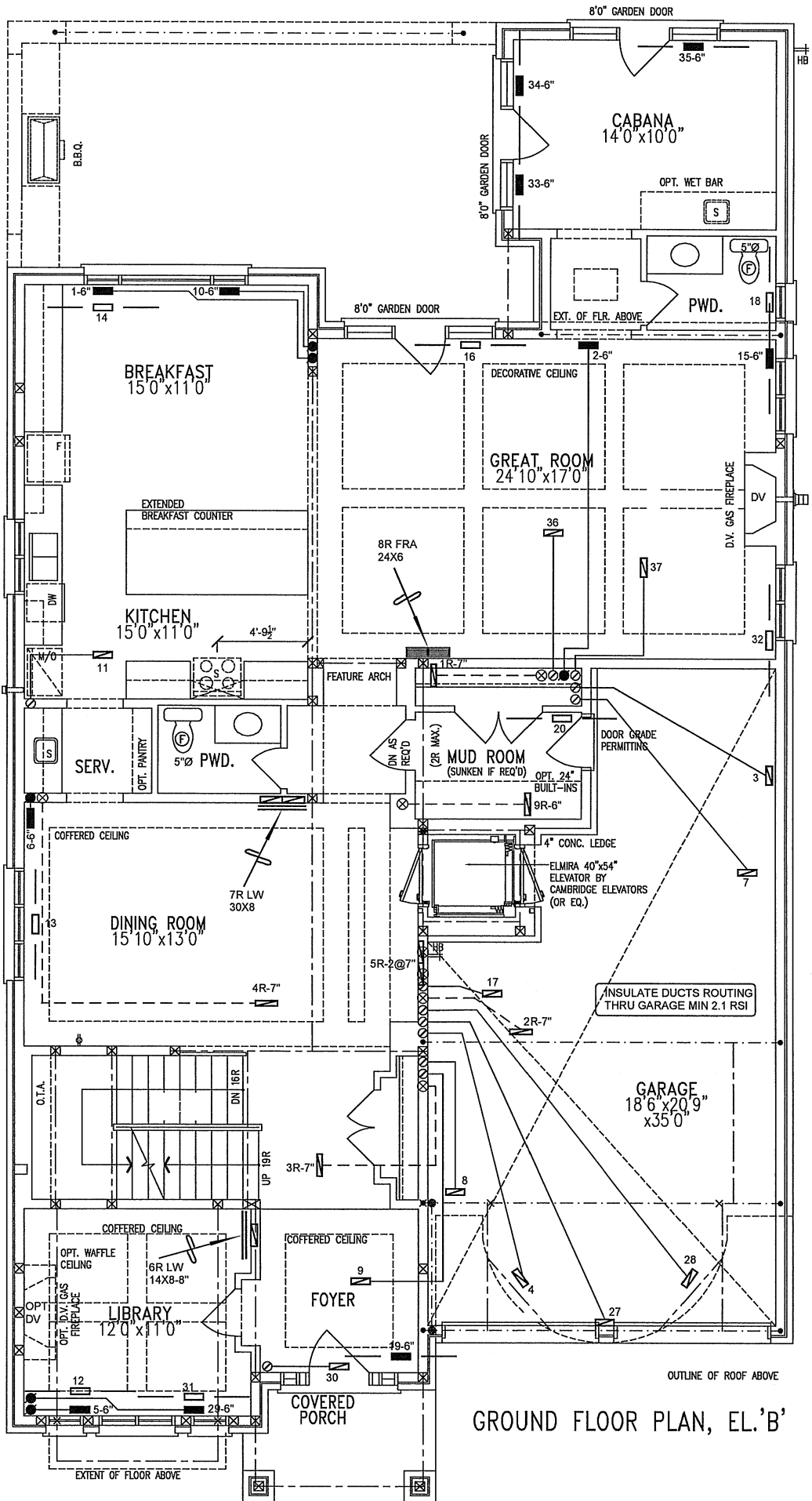
WOB

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

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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 96694 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO KNIGHTSWOOD - WOB OPT. 5 BED + ELEVATOR 5005 ELEV. 'B' 4412 sqft			MAKE LENNOX	3RD FLOOR				BASEMENT HEATING LAYOUT	
			MODEL EL296UH110XE60C	2ND FLOOR	18	6	6		
			INPUT 110 MBTU/H	1ST FLOOR	13	3	3		
			OUTPUT 106 MBTU/H	BASEMENT	8	1	0	Date SEPT/2018	
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			Scale 1/8" = 1'-0"			
		FAN SPEED 1955 cfm @ 0.6" w.c.				BCIN# 19669			
					LO# 79988				



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.

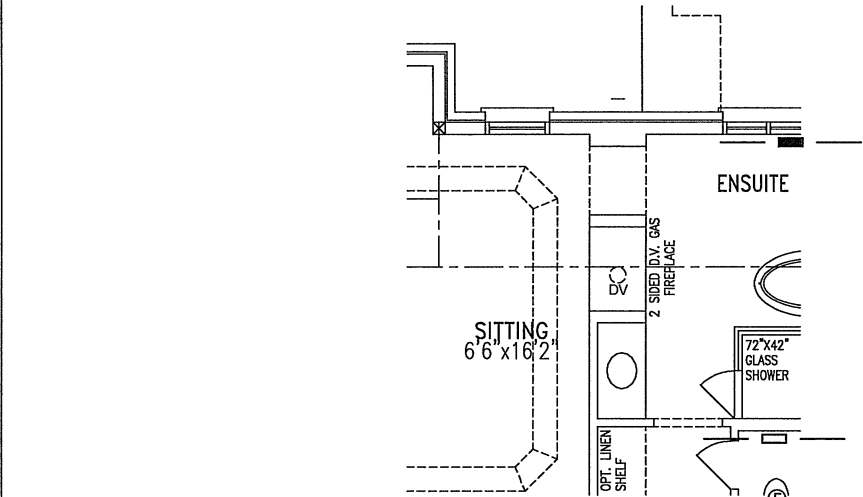
CSA-F280-12

WOB PACKAGE A1

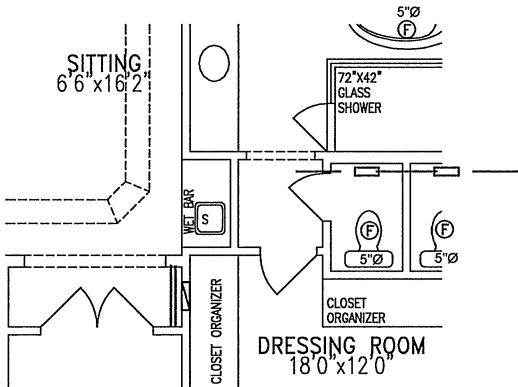
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
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	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description Date
	SUPPLY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

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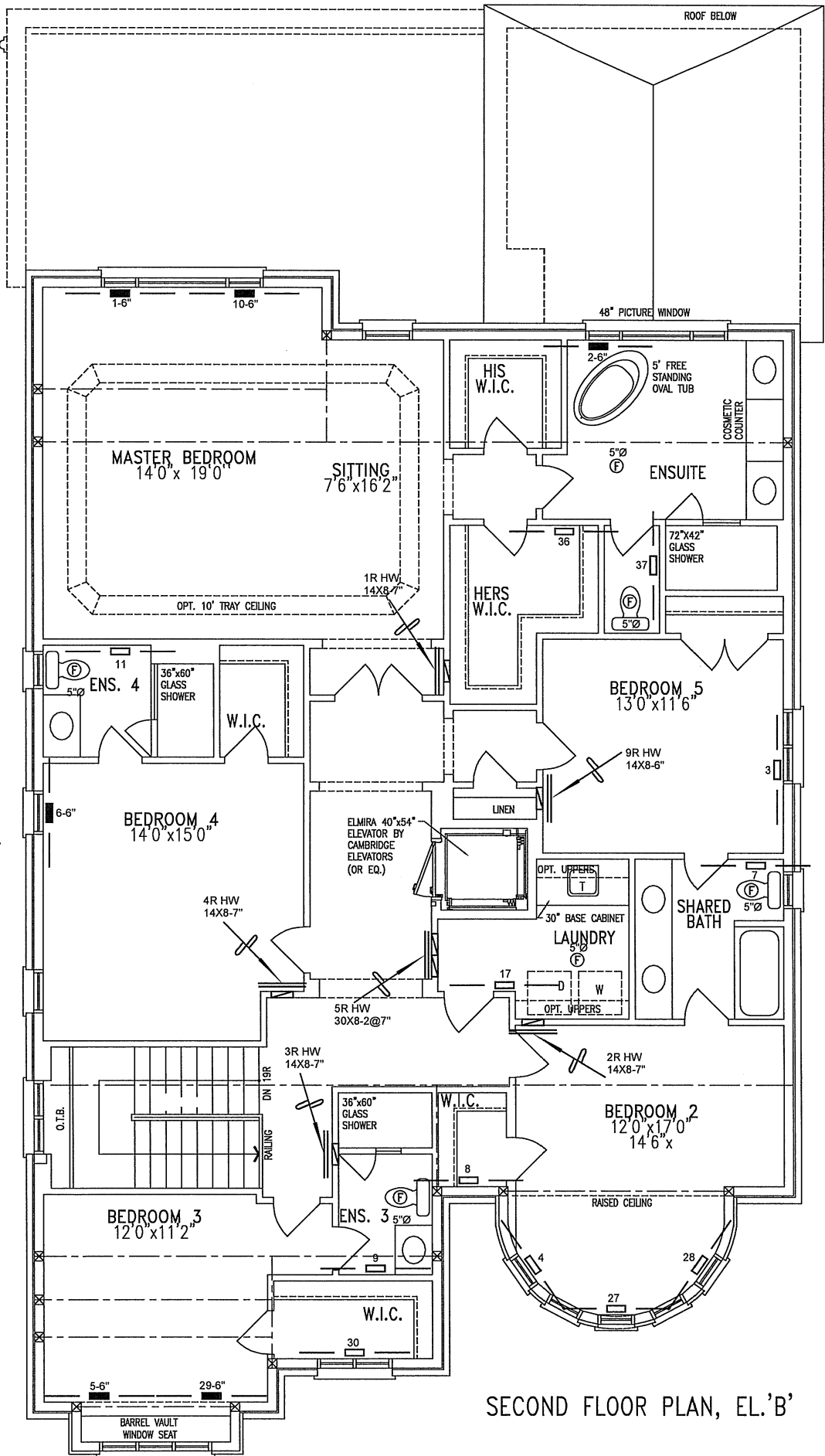
Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>Installation to comply with the latest Ontario Building Code. 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			Scale	1/8" = 1'-0"
KNIGHTSWOOD - WOB			BCIN# 19669	
OPT. 5 BED + ELEVATOR			LO#	79988
5005 ELEV. 'B' 4412 sqft				



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 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.		
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GOLDPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO KNIGHTSWOOD - WOB OPT. 5 BED + ELEVATOR 5005 ELEV. 'B' 4412 sqft			Scale	1/8" = 1'-0"
			BCIN# 19669	
			LO#	79988