


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@hvacdesigns.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 - KNIGHTSWOOD OPT. ELEVATOR 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 10, 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
BUILDER: GOLD PARK HOMES
TYPE: 5005 - KNIGHTSWOOD
DATE: Sep-18
LO# 77482
GFA: 4483
WINTER NATURAL AIR CHANGE RATE 0.360
SUMMER NATURAL AIR CHANGE RATE 0.118
HEAT LOSS AT °F. 76
HEAT GAIN AT °F. 43
CSA-P280-12
SB-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	ENS-4	
EXP. WALL CLG. HT.	46 11	36 10	13 10	32 11	50 11	19 10	6 10	9 10	4 10	7 10	
GRS.WALL AREA	508	360	130	352	550	190	60	90	40	70	
GLAZING											
NORTH	0	0	6	18	0	0	8	0	0	0	
EAST	21.3	0	128	383	0	0	170	0	0	0	
SOUTH	21.3	0	0	70	1653	0	0	0	0	0	
WEST	21.3	0	0	0	28	681	0	0	0	8	170
SKYL.T.	21.3	41.6	0	0	0	0	0	0	0	0	189
DOORS	37.2	101.5	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.6	0	0	0	0	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	533	684	313	323	415	190	247	317	145
NO ATTIC 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	3783	2593	1391	4152	4998	1752	632	566	419	582	429
SUB TOTAL HT GAIN	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
LEVEL FACTOR / MULTIPLIER	1149	787	422	1260	1517	532	192	178	127	177	307
AIR CHANGE HEAT LOSS											
AIR CHANGE HEAT GAIN	0	0	181	641	652	0	82	76	55	0	22
DUCT LOSS											
DUCT GAIN											
HEAT GAIN PEOPLE	2	0	0	1	240	1	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	692	0	692	5953	692	2284	907	840	601	758	429
TOTAL HT LOSS BTU/H	4532	3380	1994	5953	7167	2284	907	840	601	758	429
TOTAL HT GAIN x 1.3 BTU/H	5324	2575	1604	7478	8046	2722	349	179	188	429	

ROOM USE	LIB	DIN	KITGT	CAB	LAUN	PWD	FOY	MUD	LOD	BAS	
EXP. WALL CLG. HT.	31 11	32 11	87 11	46 11	0 10	5 11	35 11	18 12	520 10	238 10	
GRS.WALL AREA	341	352	957	495	0	55	385	216	520	1978	
GLAZING											
NORTH	0	0	46	0	0	0	0	0	0	6	128
EAST	56	0	0	0	0	0	0	0	0	0	96
SOUTH	0	34	724	63	0	0	0	0	0	6	128
WEST	21.3	0	115	1341	0	0	0	0	22	468	914
SKYL.T.	37.2	0	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	4.5	0.8	285	1272	214	318	1419	239	0	0	0
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 ATTIC 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	7315	4886	274	507	3120	1380	1512	10580	574
SUB TOTAL HT GAIN	0.30	0.30	0.30	0.30	0.20	0.30	0.30	0.30	0.30	0.30	1.33
LEVEL FACTOR / MULTIPLIER	1088	947	3232	2169	83	224	1378	610	1090	16081	120
AIR CHANGE HEAT LOSS											
AIR CHANGE HEAT GAIN	0	0	0	0	36	0	0	0	0	0	0
DUCT LOSS											
DUCT GAIN											
HEAT GAIN PEOPLE	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	692	692	692	692	692	731	4498	692	1512	28641	692
TOTAL HT LOSS BTU/H	3552	3089	10546	7045	393	731	4498	1989	1512	28641	692
TOTAL HT GAIN x 1.3 BTU/H	4442	2413	10092	7478	1119	319	778	1224	1417	1802	

TOTAL HEAT GAIN BTU/H: 60043 TONS: 5.00 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 88812 TOTAL COMBINED HEAT LOSS BTU/H: 91992

Michael O'Rourke

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

OPT. ELEVATOR

TYPE: 5005 - KNIGHTSWOOD

GFA: 4483

LO# 77482

DATE: Sep-18

HEATING CFM 1955
TOTAL HEAT LOSS 88,812
AIR FLOW RATE CFM 32.85COOLING CFM 1955
TOTAL HEAT GAIN 59,507
AIR FLOW RATE CFM 32.85^LENNOX
EL206UH10XE60C
FAN SPEEDAFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = 106,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	18	13	7
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	2.47	2.73	1.99	1.98	2.39	2.28	0.91	0.84	0.80	2.47	0.76	1.78	3.09	2.64	2.64	2.64	0.39	0.73	4.50	1.99	4.02	4.02	4.02	4.02
CFM PER RUN HEAT	54	60	44	53	50	50	20	18	13	54	17	39	68	58	58	58	9	16	99	44	89	89	89	89
RM GAIN MBH	2.67	2.26	1.80	2.33	2.68	2.72	0.35	0.18	0.19	2.67	0.43	2.22	2.41	2.52	2.52	2.52	1.12	0.32	0.78	1.22	0.46	0.46	0.46	0.46
CFM PER RUN COOLING	88	74	53	77	88	89	11	6	6	88	14	73	79	83	83	83	37	10	26	40	15	15	15	15
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	0.15	0.15	0.15	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	67	60	54	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	103	90
TOTAL EFFECTIVE LENGTH	270	270	223	209	245	208	207	198	223	234	209	197	132	172	209	164	236	243	250	207	217	180	157	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	0.09	0.07	0.06	0.06	0.08	0.07	0.08	0.09	0.11
ROUND DUCT SIZE	6	6	6	6	6	6	4	4	4	6	4	5	5	5	6	5	4	4	6	4	6	6	6	5
HEATING VELOCITY (ft/min)	275	306	323	224	270	255	229	207	149	275	195	286	499	426	296	426	103	184	505	505	454	454	454	653
COOLING VELOCITY (ft/min)	449	377	389	393	449	454	126	69	69	449	161	536	580	609	423	609	424	115	133	459	76	76	76	110
OUTLET GRILL SIZE	4X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10
TRUNK	D	C	C	G	F	F	C	G	G	D	E	F	E	D	B	C	G	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
ROOM NAME	BAS	BAS	BED-2	BED-2	BED-3	BED-3	LIB	KIT/GT	CAB	CAB	CAB	ENS	ENS	BAS
RM LOSS MBH	4.02	4.02	1.98	1.98	2.39	2.39	1.78	2.64	2.35	2.35	2.35	0.33	0.33	4.02
CFM PER RUN HEAT	89	89	44	44	53	53	39	58	52	52	52	7	7	89
RM GAIN MBH	0.46	0.46	2.33	2.33	2.68	2.68	2.22	2.52	2.49	2.49	2.49	0.16	0.16	0.46
CFM PER RUN COOLING	15	15	77	77	88	88	73	83	82	82	82	5	5	15
ADJUSTED PRESSURE	0.15	0.15	0.16	0.16	0.15	0.15	0.16	0.15	0.15	0.15	0.15	0.16	0.16	0.15
ACTUAL DUCT LGH.	34	50	52	55	80	63	51	55	69	71	82	56	58	23
EQUIVALENT LENGTH	110	150	170	160	170	200	160	120	150	130	140	200	190	140
TOTAL EFFECTIVE LENGTH	144	200	222	215	250	263	211	175	219	201	222	256	248	163
ADJUSTED PRESSURE	0.1	0.07	0.07	0.07	0.06	0.06	0.07	0.08	0.07	0.07	0.07	0.06	0.06	0.09
ROUND DUCT SIZE	5	6	6	6	6	6	5	6	6	6	6	4	4	6
HEATING VELOCITY (ft/min)	653	454	224	224	270	270	286	296	265	265	265	80	80	454
COOLING VELOCITY (ft/min)	110	76	393	393	449	449	536	423	418	418	418	57	57	76
OUTLET GRILL SIZE	3X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10
TRUNK	G	F	G	G	F	F	F	B	A	A	A	C	C	E

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	261	0.06	9.1	10	X	8	470	0.06	13.1	20	X	8	617	0.05	0	X	8			
TRUNK B	205	0.07	8	8	X	8	461	0.05	20.3	38	X	10	743	0.05	0	X	8			
TRUNK C	706	0.08	13.2	20	X	8	635	0.00	0	0	X	8	0	0.05	0	X	8			
TRUNK D	255	0.05	9.5	10	X	8	459	0.00	0	0	X	8	0	0.05	0	X	8			
TRUNK E	1274	0.05	17.3	28	X	10	655	0.00	0	0	X	8	0	0.05	0	X	8			
TRUNK F	425	0.06	10.9	14	X	8	546	0.00	0	0	X	8	0	0.05	0	X	8			
RETURN AIR #																				
AIR VOLUME	1	2	3	4	5	6	7	8	BR								0	0	0	0
PLENUM PRESSURE	115	130	125	115	240	200	360	365	0	0	0	0	0	0	0	0	0			
ACTUAL DUCT LGH	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	0.13			
EQUIVALENT LENGTH	84	51	62	59	47	49	30	51	1	1	1	1	1	1	1	1	14			
TOTAL EFFECTIVE LH	200	135	155	185	135	140	170	195	0	0	0	0	0	0	0	0	145			
ADJUSTED PRESSURE	284	186	217	244	182	189	200	246	1	1	1	1	1	1	1	1	159			
ROUND DUCT SIZE	0.05	0.07	0.06	0.05	0.07	0.07	0.07	0.05	13.36	13.36	13.36	13.36	13.36	13.36	13.36	13.36	0.08			
INLET GRILL SIZE	7	6.8	6.9	7	8.5	7.9	9.9	10.8	0	0	0	0	0	0	0	0	9			
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	8			
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
INLET GRILL SIZE	14	14	14	14	30	14	30	30	0	0	0	0	0	0	0	0	30			

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

LO # 77482
OPT. ELEVATOR

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	79.5	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: VANEE 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: VANEE 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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations											
Formula Sheet (For Air Leakage / Ventilation Calculation)											
LO#: 77482		Model: 5005 - KNIGHTSWOOD		Builder: GOLD PARK HOMES		Date: 9/10/2018					
Volume Calculation				Air Change & Delta T Data							
House Volume		Floor Area (ft²)		Floor Height (ft)		Volume (ft³)		WINTER NATURAL AIR CHANGE RATE		0.350	
Level								SUMMER NATURAL AIR CHANGE RATE		0.118	
Bsmt		2052		10		20520					
First		2052		11		22572					
Second		2439		10		24390					
Third		0		9		0					
Fourth		0		9		0					
		Total:				67,482.0 ft³					
		Total:				1910.9 m³					
5.2.3.1 Heat Loss due to Air Leakage										6.2.6 Sensible Gain due to Air Leakage	
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$										$HG_{satb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$	
0.350		x		530.80		x		42 °C		x 1.2 = 9415 W	
								7 °C		x 1.2 = 533 W	
										= 32123 Btu/h	
5.2.3.2 Heat Loss due to Mechanical Ventilation										6.2.7 Sensible heat Gain due to Ventilation	
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$										$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$	
155 CFM		x		76 °F		x		1.08		x 0.25 = 3181 Btu/h	
								13 °F		x 1.08 x 0.25 = 536 Btu/h	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)											
$HL_{qirr} = Level Factor \times HL_{airbv} \times \{(HL_{qirr} + HL_{bger}) \div (HL_{agelevel} + HL_{bgelevel})\}$											
Level		Level Factor (LF)		HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)		Level Conductive Heat Loss: (HL _{clevel})		Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)			
1		0.5		32,123		12,091		1.328			
2		0.3				21,813		0.442			
3		0.2				21,161		0.304			
4		0				0		0.000			
5		0				0		0.000			

*HLairbv = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HLairbv = 0

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5005 - KNIGHTSWOOD	OPT. ELEVATOR	BUILDER: GOLD PARK HOMES
SFQT: 4483	LO# 77482	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):	67482.0	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:	238.0 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	-

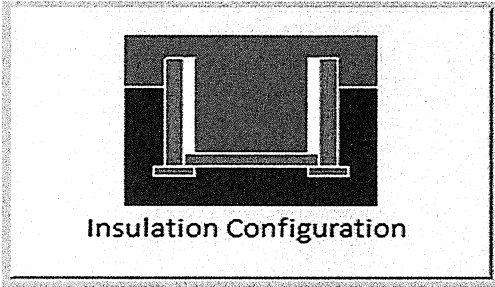
INDIVIDUAL BCIN: 19669

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):	23.5	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.2	
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):		2453

TYPE: 5005 - KNIGHTSWOOD
LO# 77482

OPT. ELEVATOR

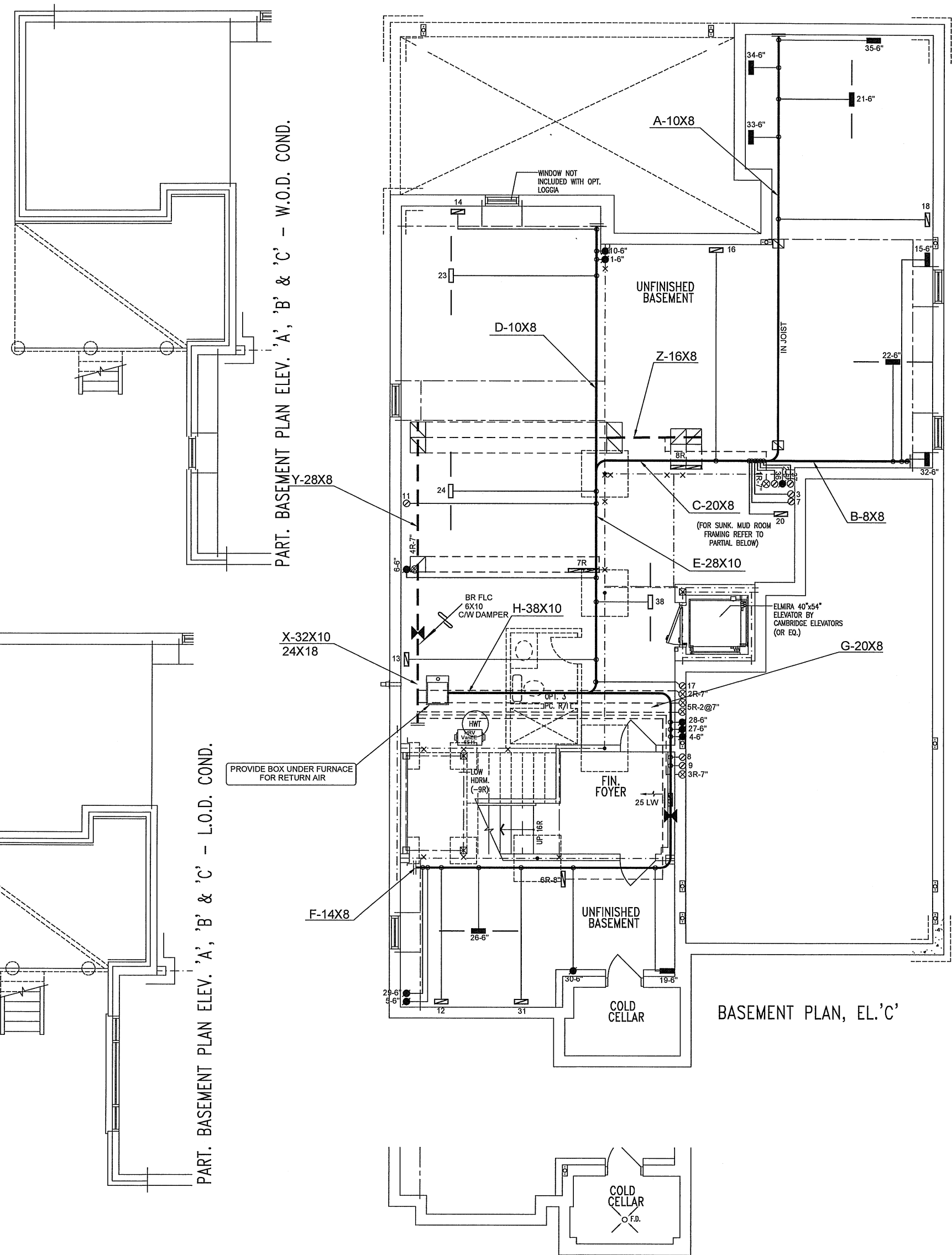
Air Infiltration Residential Load Calculator

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):	7.32			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1910.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2547.3 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):	0.350			
Cooling Air Leakage Rate (ACH/H):	0.118			

TYPE: 5005 - KNIGHTSWOOD
LO# 77482

OPT. ELEVATOR



PROVIDE BOX UNDER FURNACE FOR RETURN AIR

BASEMENT PLAN, EL.'C'

BASEMENT PLAN, EL.'A'

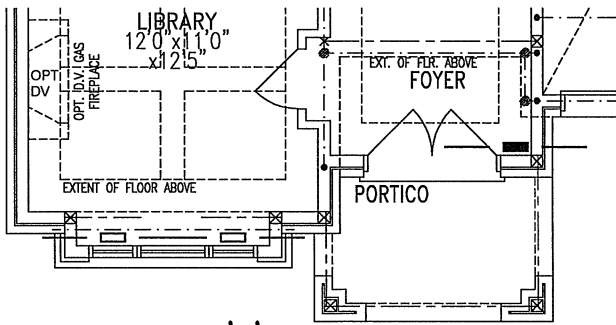
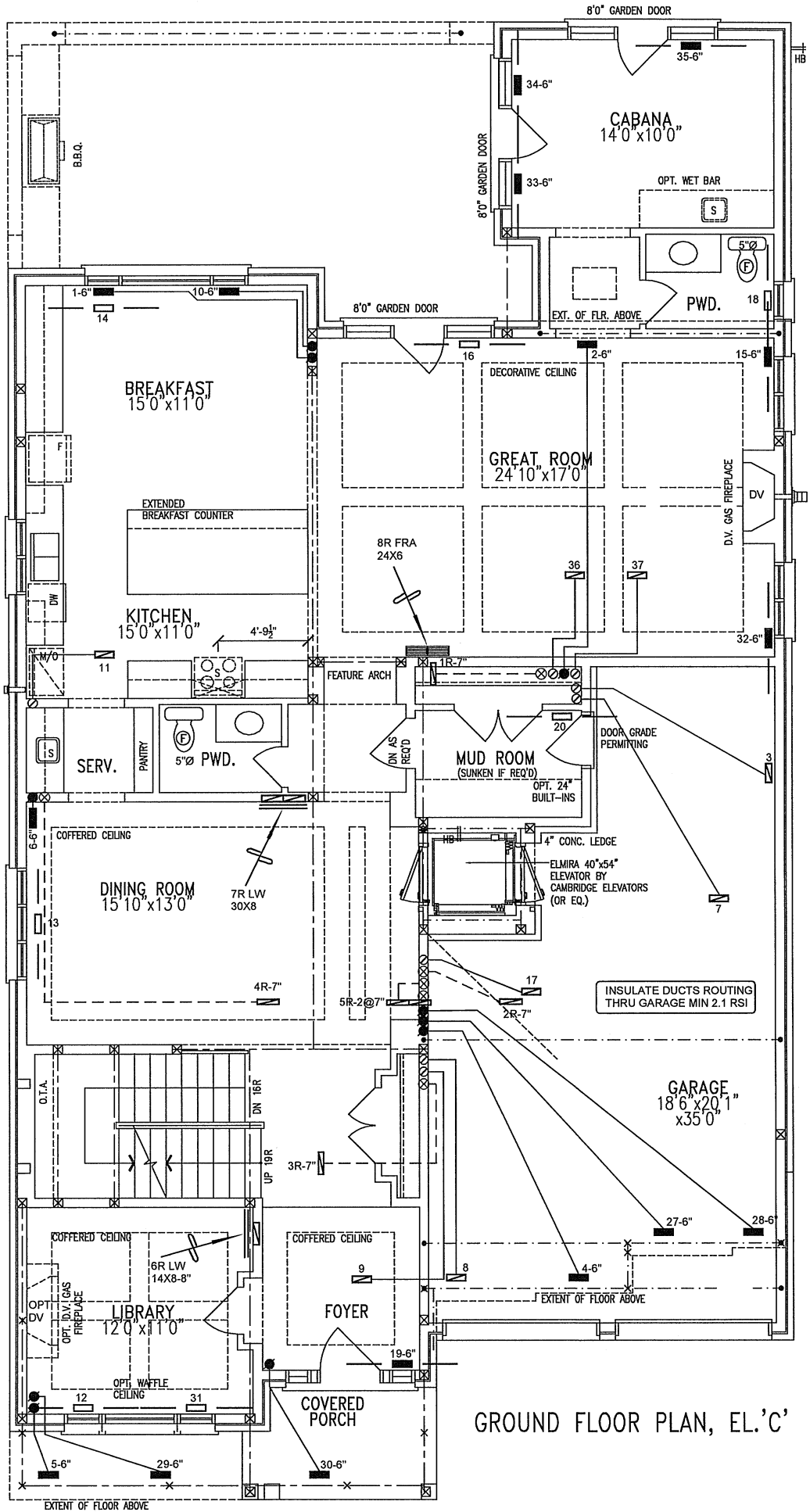
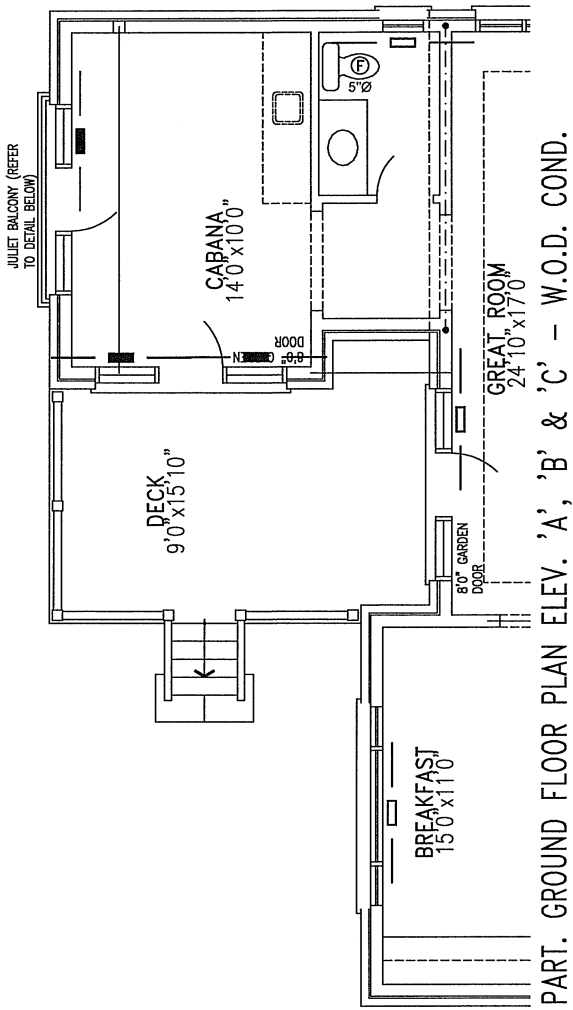
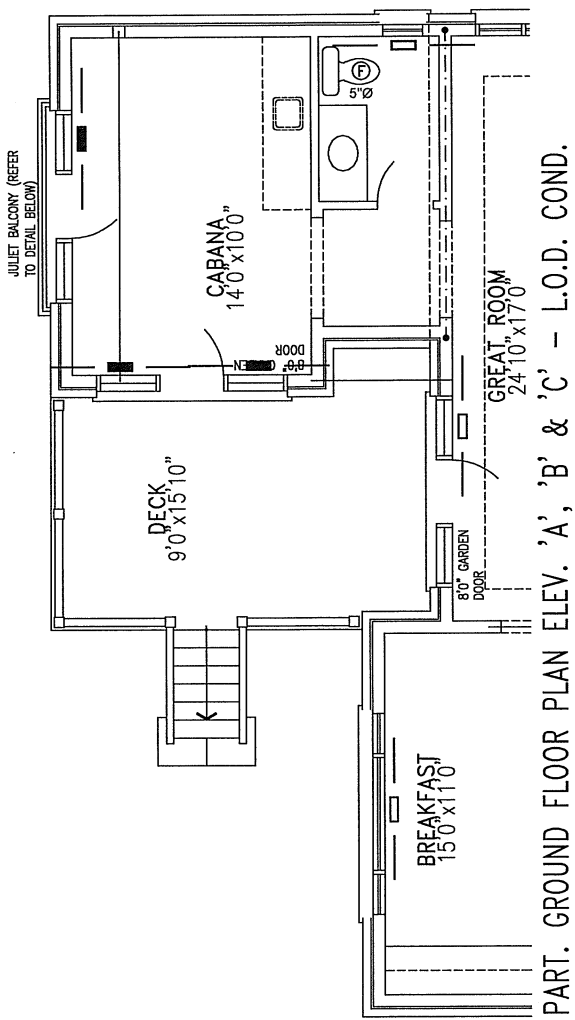
I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
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.	DECK CONDITIONS ADDED
	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>	HEAT LOSS 91992 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	18	5	7		
PINE VALLEY & TESTON VAUGHAN, ONTARIO			INPUT	110 MBTU/H	1ST FLOOR	13	3	3		
OPT. ELEVATOR KNIGHTSWOOD			OUTPUT	106 MBTU/H	BASEMENT	7	1	0	Date	JAN/2018
5005		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"
4483 sqft		FAN SPEED	1955 cfm @ 0.6" w.c.						BCIN# 19669	
					LO#		77482			



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.

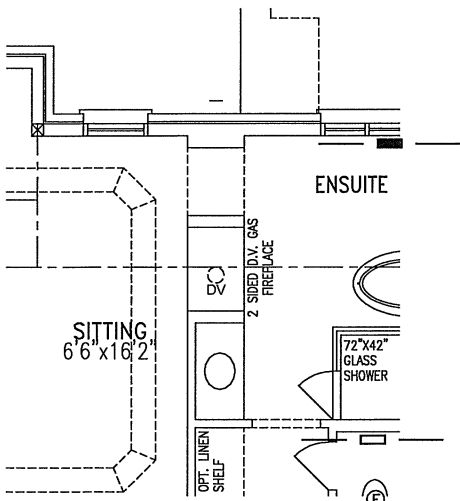
GROUND FLOOR PLAN, EL.'A'

CSA-F280-12
PACKAGE A1

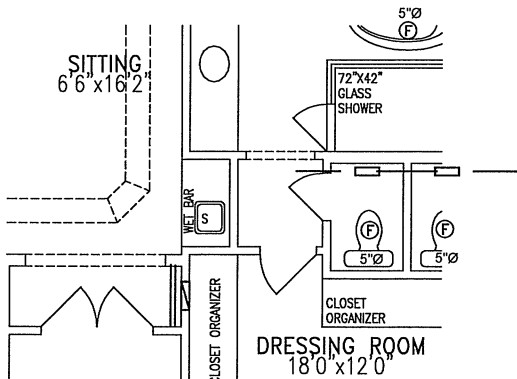
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" 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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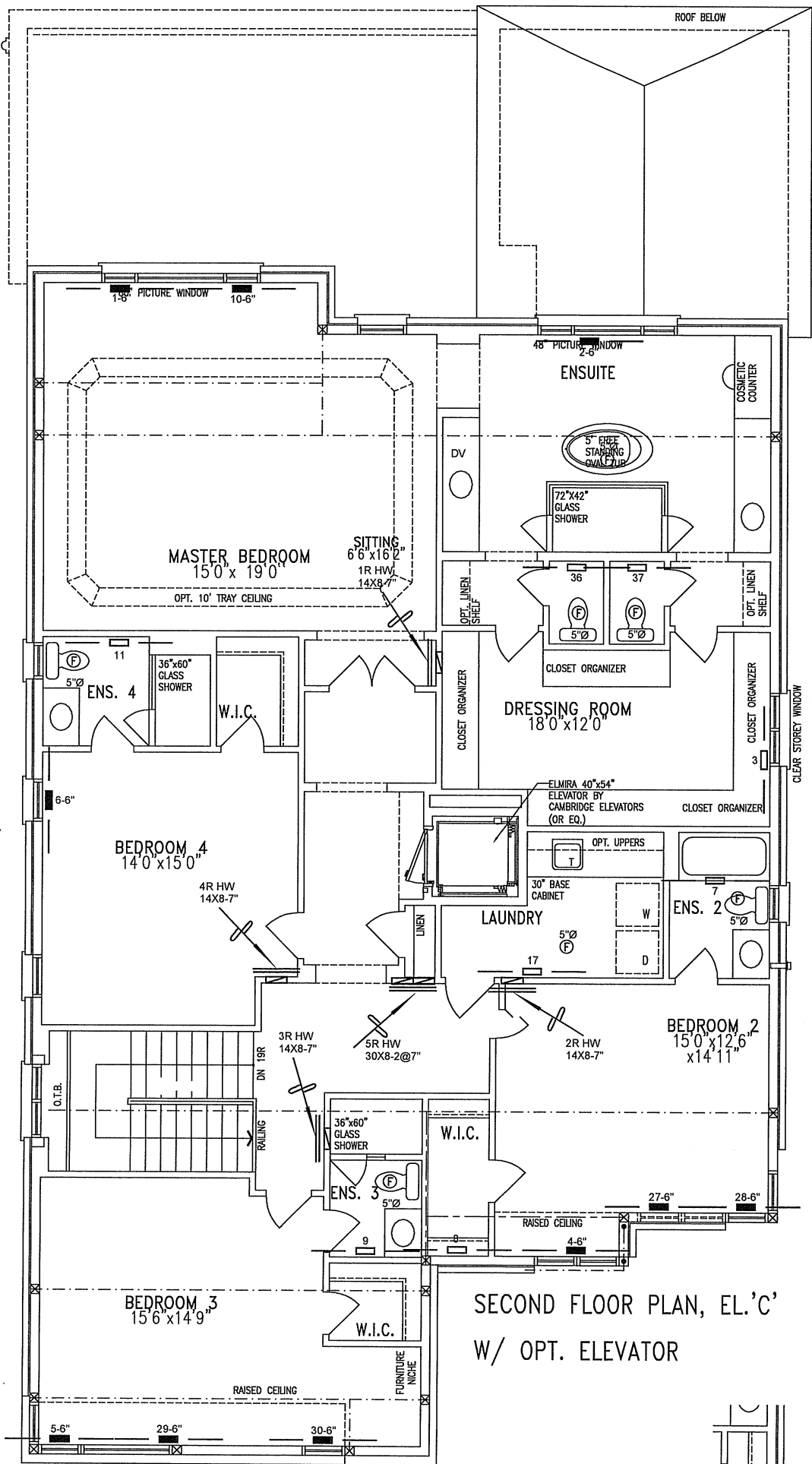
Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div>	Sheet Title	
GOLDPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project 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	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
OPT. ELEVATOR KNIGHTSWOOD			BCIN# 19669	
5005			LO#	77482
4483 sqft				



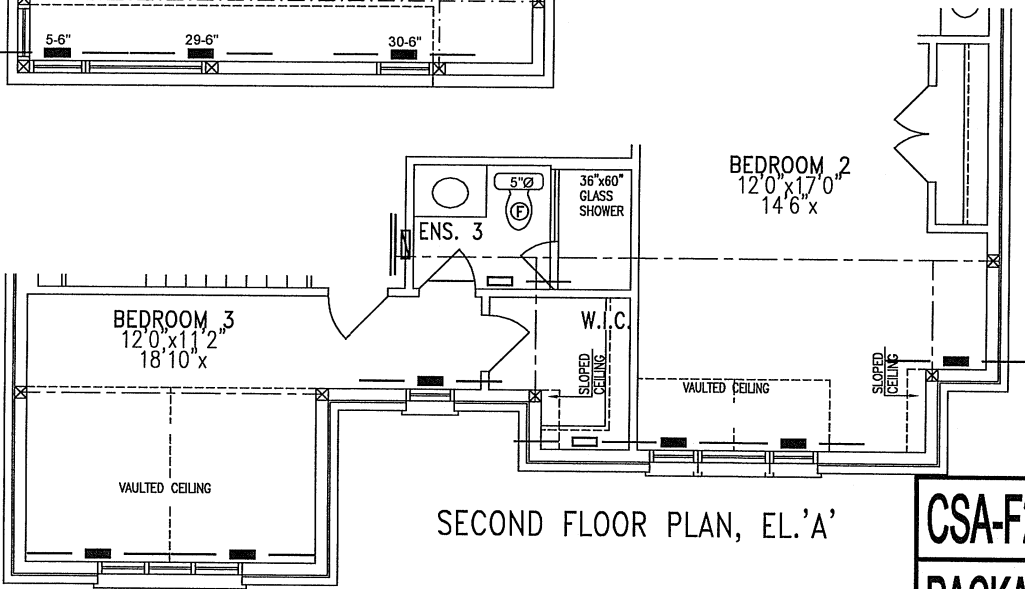
PART. SECOND FLOOR PLAN
OPT. SITTING AREA FIREPLACE



PART. SECOND FLOOR PLAN
OPT. SITTING AREA WET BAR



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



SECOND 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
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.	DECK CONDITIONS ADDED	SEPT/2018
	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		HVAC DESIGNS LTD.				Sheet Title	
GOLDPARK HOMES		375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services				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						JAN/2018	
OPT. ELEVATOR						Scale	
KNIGHTSWOOD						1/8" = 1'-0"	
5005						BCIN# 19669	
4483 sqft						LO# 77482	