


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@hvacadesigns.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: 5003 - THE OAKGROVE WOB Project: PINE VALLEY & TESTON	
D. Declaration of Designer			
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.			
<u> October 5, 2018 </u> Date		 Signature of Designer	

NOTE:

1. 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.
2. 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 BUILDER: GOLD PARK HOMES	WOB		GFA: 3862		BED-4		BED-3		BED-2		BED-1		BATH		STUDY		LAUN		ENS-2		HEAT LOSS AT °F: 76		HEAT GAIN AT °F: 13		
	ROOM USE	EXP. WALL CLG. HT.	ENS	WIC	BED-2	BED-3	BED-4	BED-3	BED-2	BED-1	BATH	STUDY	LAUN	ENS-2	HEAT LOSS AT °F: 76	HEAT GAIN AT °F: 13	ENS-2	HEAT LOSS AT °F: 76	HEAT GAIN AT °F: 13	ENS-2	HEAT LOSS AT °F: 76	HEAT GAIN AT °F: 13	CSA-F280-12	SB-12 PACKAGE A1	
GRS.WALL AREA	500	117	108	90	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	288	
GLAZING	19	404	304	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NORTH	21.3	16.0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	
WEST	21.3	41.6	61	1298	2535	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SKYLT.	37.2	101.5	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	4.5	0.8	94	419	71	108	482	81	73	326	55	195	870	147	234	1044	176	37	165	28	206	919	155	54	241
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0.6	424	544	249	182	234	107	168	216	99	250	321	147	193	254	116	204	262	120	117	150	69	169	217
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	170	434	73	204	520	88	0	0	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	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	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS	4121	3403	1143	750	1442	3706	2510	2332	1925	1252	1732	1418	287	657	287	657	287	657	287	657	287	657	287	657	
SUB TOTAL HT GAIN	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	
LEVEL FACTOR / MULTIPLIER	1427	396	242	499	36	153	869	1284	434	126	93	600	228	228	19	19	19	19	19	19	19	19	19	19	
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR CHANGE HEAT GAIN	2	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DUCT GAIN	2	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN PEOPLE	240	652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS	5548	6186	1538	1039	2136	5489	3380	652	652	1685	2667	2332	885	885	1245	1245	885	1245	885	1245	885	1245	885	1245	
TOTAL HT LOSS BTU/H																									
TOTAL HT GAIN x 1.3 BTU/H																									

ROOM USE	EXP. WALL CLG. HT.	DIN	LIV	KIT/GT	FOY	MUD	WOB	BAS	TOTAL COMBINED HEAT LOSS BTU/H: 81774	
									STRUCTURAL HEAT LOSS: 78994	TOTAL COMBINED HEAT LOSS BTU/H: 81774
GRS.WALL AREA	176	341	341	1034	330	372	500	1064	6010	6590
GLAZING	0	0	0	37	0	9	0	0	0	0
NORTH	21.3	16.0	0	787	0	192	0	0	0	0
EAST	21.3	41.6	48	1994	0	0	0	0	0	0
SOUTH	21.3	24.9	17	362	0	0	0	0	0	0
WEST	21.3	41.6	0	0	0	0	0	0	0	0
SKYLT.	37.2	101.5	0	198	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	150	276	62	20	343	20	505	85
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	268	1196	201	343	1531	258
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	1223	760	2648	8970	2761	2227	487	5114	5070	559
SUB TOTAL HT GAIN	0.30	0.52	0.30	0.52	0.30	0.52	0.30	0.50	0.50	0.50
LEVEL FACTOR / MULTIPLIER	638	1383	4683	656	1442	1163	32	15515	15515	369
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0	0
AIR CHANGE HEAT GAIN	0	0	0	0	0	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	240	652	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	1861	1900	4030	13654	4203	3390	652	652	6010	6590
TOTAL HT LOSS BTU/H										
TOTAL HT GAIN x 1.3 BTU/H										

Michael O'Rourke

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

WOB TYPE: 5003 - THE OAKGROVE DATE: Oct-18 LO# 80241 GFA: 3862

HEATING CFM	1955	COOLING CFM	1955
TOTAL HEAT LOSS	78,594	TOTAL HEAT GAIN	60,021
AIR FLOW RATE CFM	24.87	AIR FLOW RATE CFM	32.57

EL296UH110XE60C 110
 FAN SPEED
 ^LENNOX
 MEDIUM HIGH 1505
 MEDIUM HIGH 1685
 HIGH 1955

0.6 furnace pressure
 0.05 furnace filter
 0.2 a/c coil pressure
 0.35 available pressure for s/a & r/a
 0.18 plenum pressure s/a
 0.02 max s/a diff press. loss
 0.16 min adjusted pressure s/a

AFUE = 96 %
 INPUT (BTU/H) = 110,000
 OUTPUT (BTU/H) = 106,000
 DESIGN CFM = 1955
 CFM @ 5" E.S.P.
 TEMPERATURE RISE 50 °F

All S/A diffusers 4"x10" unless noted otherwise on layout.
 All S/A runs 5"Ø 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	WIC	BED-2	BED-3	BED-4	BATH	STUDY	LAUN	MBR	ENS-2	DIN	LIV	KT/VT	KT/VT	KT/VT	KT/VT	KT/VT	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.85	0.77	1.83	2.14	1.83	1.69	1.69	2.33	0.88	1.85	0.88	1.86	2.02	2.73	2.73	2.73	2.73	2.73	4.20	3.39	3.81	3.81	3.81	3.81
CFM PER RUN HEAT	46	19	23	53	46	42	42	58	22	46	22	46	50	68	68	68	68	68	105	84	95	95	95	95
RM GAIN MBH	2.06	0.52	2.11	2.34	2.11	2.19	2.67	2.81	1.25	2.06	0.40	1.90	2.25	2.94	2.94	2.94	2.94	2.94	0.64	1.52	1.23	1.23	1.23	1.23
CFM PER RUN COOLING	67	17	8	69	76	71	87	92	41	67	13	62	73	96	96	96	96	96	21	50	40	40	40	40
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	48	26	36	48	45	54	42	63	45	41	49	26	39	36	27	31	38	45	35	40	45	22	57	41
EQUIVALENT LENGTH	185	205	120	165	140	195	150	150	130	185	170	90	110	110	110	170	160	110	120	150	140	150	130	120
TOTAL EFFECTIVE LENGTH	233	231	156	213	185	249	192	213	175	226	219	116	149	146	137	201	198	155	155	190	185	172	187	161
ADJUSTED PRESSURE	0.07	0.11	0.08	0.09	0.09	0.07	0.08	0.08	0.1	0.08	0.08	0.12	0.12	0.11	0.12	0.12	0.08	0.1	0.1	0.09	0.09	0.09	0.09	0.1
ROUND DUCT SIZE	5	4	4	5	6	5	6	6	4	5	4	4	5	5	6	6	6	6	6	5	6	6	6	5
HEATING VELOCITY (ft/min)	338	218	264	389	235	308	214	296	252	338	252	528	367	489	347	347	347	347	535	617	484	484	484	698
COOLING VELOCITY (ft/min)	492	195	92	507	388	521	444	469	470	492	149	711	536	705	489	489	489	489	107	367	204	204	204	294
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	E	C	E	E	D	D	B	B	A	B	E	D	A	A	A	B	B	D	B	A	A	A	B

ROOM #	25	26	27	28	29	30	31	32	33
ROOM NAME	BAS	BAS	BAS	MBR	BED-3	BED-3	BED-4	LIV	ENS
RM LOSS MBH	3.81	1.85	1.83	1.83	1.83	1.83	1.69	2.02	0.77
CFM PER RUN HEAT	95	95	46	46	46	46	42	50	19
RM GAIN MBH	1.23	1.23	2.06	2.34	2.34	2.34	2.19	2.25	0.52
CFM PER RUN COOLING	40	40	67	76	76	76	71	73	17
ADJUSTED PRESSURE	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	21	23	36	52	56	43	34	37	37
EQUIVALENT LENGTH	180	100	130	160	145	155	190	100	195
TOTAL EFFECTIVE LENGTH	201	123	166	198	197	211	233	134	232
ADJUSTED PRESSURE	0.08	0.13	0.1	0.09	0.09	0.08	0.07	0.13	0.07
ROUND DUCT SIZE	6	5	5	5	5	5	5	5	4
HEATING VELOCITY (ft/min)	484	698	338	338	338	308	367	218	218
COOLING VELOCITY (ft/min)	204	294	294	492	558	558	521	536	195
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	E	E	D	A	E	E	D	D	E

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	464	0.07	10.9	14	597	TRUNK G	0	0.00	0	0
TRUNK B	580	0.08	11.4	16	653	TRUNK H	0	0.00	0	0
TRUNK C	1067	0.07	14.9	26	739	TRUNK I	0	0.00	0	0
TRUNK D	426	0.07	10.5	14	548	TRUNK J	0	0.00	0	0
TRUNK E	891	0.07	13.9	22	729	TRUNK K	0	0.00	0	0
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0

RETURN AIR #	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
1	1	2	0	3	4	7	8	0	0	0	BR
2	0	0	0	0	0	0	0	0	0	0	0
3	120	360	0.15	135	135	320	0	0	0	0	0
4	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
5	50	26	44	49	53	17	32	1	1	1	14
6	175	135	185	190	185	160	135	145	0	0	135
7	225	161	229	239	238	177	154	177	1	1	149
8	0.07	0.09	0.06	0.06	0.08	0.10	14.80	14.80	14.80	14.80	14.80
9	6.6	9.3	7.1	6.8	7.2	8.7	9.2	0	0	0	8.2
10	8	8	8	8	8	8	8	8	8	8	8
11	X	X	X	X	X	X	X	X	X	X	X
12	14	30	14	14	14	30	30	0	0	0	24

TYPE: 5003 - THE OAKGROVE
 SITE NAME: PINE VALLEY & TESTON

LO # 80241
 WOB

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES 9.32.3.1(1)

a) Direct vent (sealed combustion) only

b) Positive venting induced draft (except fireplaces)

c) Natural draft, B-vent or induced draft gas fireplace

d) Solid Fuel (including fireplaces)

e) No Combustion Appliances

HEATING SYSTEM

Forced Air Non Forced Air

Electric Space Heat

HOUSE TYPE 9.32.1(2)

I Type a) or b) appliance only, no solid fuel

II Type I except with solid fuel (including fireplaces)

III Any Type c) appliance

IV Type I, or II with electric space heat

Other: Type I, II or IV no forced air

SYSTEM DESIGN OPTIONS O.N.H.W.P.

1 Exhaust only/Forced Air System

2 HRV with Ducting/Forced Air System

3 HRV Simplified/connected to forced air system

4 HRV with Ducting/non forced air system

Part 6 Design

TOTAL VENTILATION CAPACITY 9.32.3.3(1)

Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	5	@ 10.6 cfm	53	cfm
Other Rooms	7	@ 10.6 cfm	74.2	cfm
Table 9.32.3.A.		TOTAL	201.4	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	201.4	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	46.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANE 65H Location: BSMT

155.0 cfm 3.0 sones 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
BATH	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
ENS-2	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 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: *Michael O'Rourke*

HRAI # 001820

Date: October-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations			
Formula Sheet (For Air Leakage / Ventilation Calculation)			
LO#: 80241	Model: 5003 - THE OAKGROVE	Builder: GOLD PARK HOMES	Date: 10/5/2018
Volume Calculation			
House Volume			
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1760	10	17600
First	1760	11	19360
Second	2125	9	19125
Third	0	9	0
Fourth	0	9	0
Total:			56085.0 ft³
Total:			1588.2 m³
5.2.3.1 Heat Loss due to Air Leakage			
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$			
0.407	x	441.15	x
		42 °C	x
		1.2	=
		9094 W	
		=	31030 Btu/h
5.2.3.2 Heat Loss due to Mechanical Ventilation			
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$			
155 CFM	x	76 °F	x
		1.08	x
		0.25	=
		3181 Btu/h	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)			
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{aglevel} + HL_{bglevel})\}$			
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	10,427	1.488
2	0.3	17,829	0.522
3	0.2	17,917	0.346
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 HLairrv = 0			
6.2.6 Sensible Gain due to Air Leakage			
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$			
	x	0.137	x
		441.15	x
		7 °C	x
		1.2	=
		514 W	
		=	1753 Btu/h
6.2.7 Sensible heat Gain due to Ventilation			
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$			
	x	155 CFM	x
		13 °F	x
		1.08	x
		0.25	=
		536 Btu/h	

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5003 - THE OAKGROVE	WOB	BUILDER: GOLD PARK HOMES
SFQT: 3862	LO# 80241	SITE: PINE VALLEY & TESTON

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft ³):	56085.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 61.0 ft	WIDTH: 40.0 ft	EXPOSED PERIMETER:	152.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	50.0 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	-

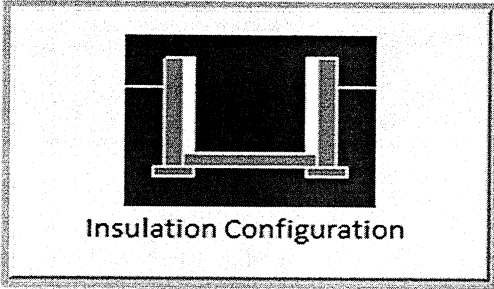
INDIVIDUAL BCIN: 19669

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	 <p>Insulation Configuration</p>
Floor Width (m):	12.2	
Exposed Perimeter (m):	46.3	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.8	
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):	814	

TYPE: 5003 - THE OAKGROVE
 LO# 80241

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	
Width (m):	12.2	
Exposed Perimeter (m):	15.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	204	

TYPE: 5003 - THE OAKGROVE
 LO# 80241

WOB

Air Infiltration Residential Load Calculator

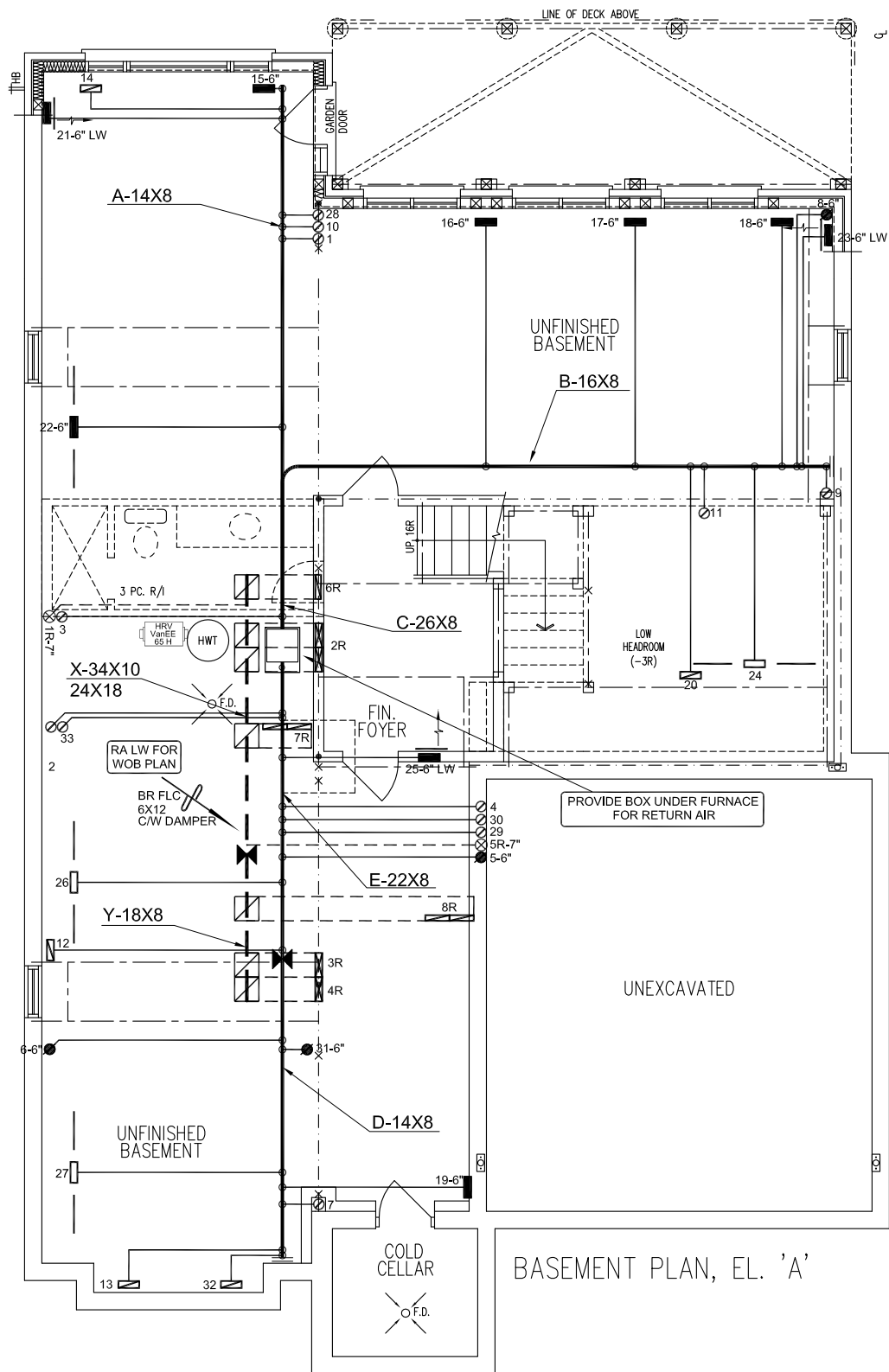
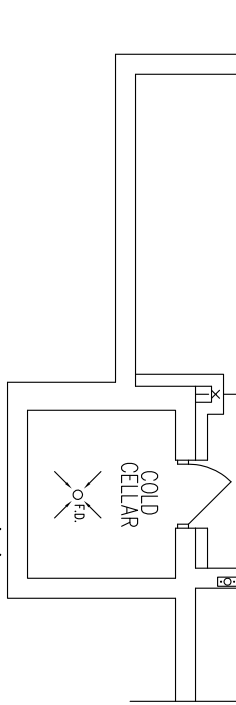
Supplemental tool for CAN/CSA-F280

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):	9.14		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1588.2		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	2117.1 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):	0.407		
Cooling Air Leakage Rate (ACH/H):	0.137		

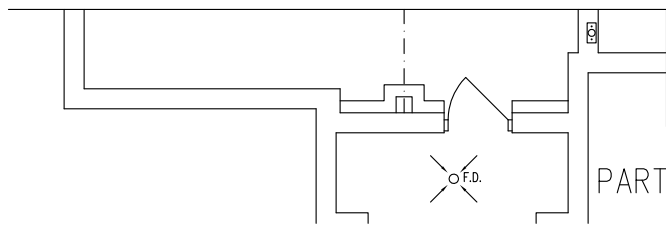
TYPE: 5003 - THE OAKGROVE
 LO# 80241

WOB

PART. BASEMENT PLAN, EL. 'B'



BASEMENT PLAN, EL. 'A'



PART. BASEMENT PLAN, EL. 'C'

CSA-F280-12

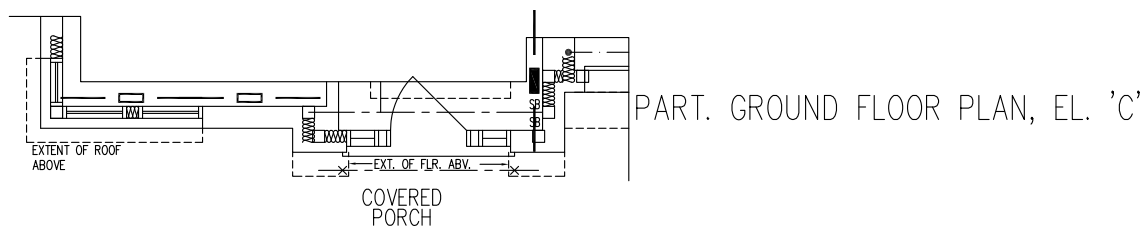
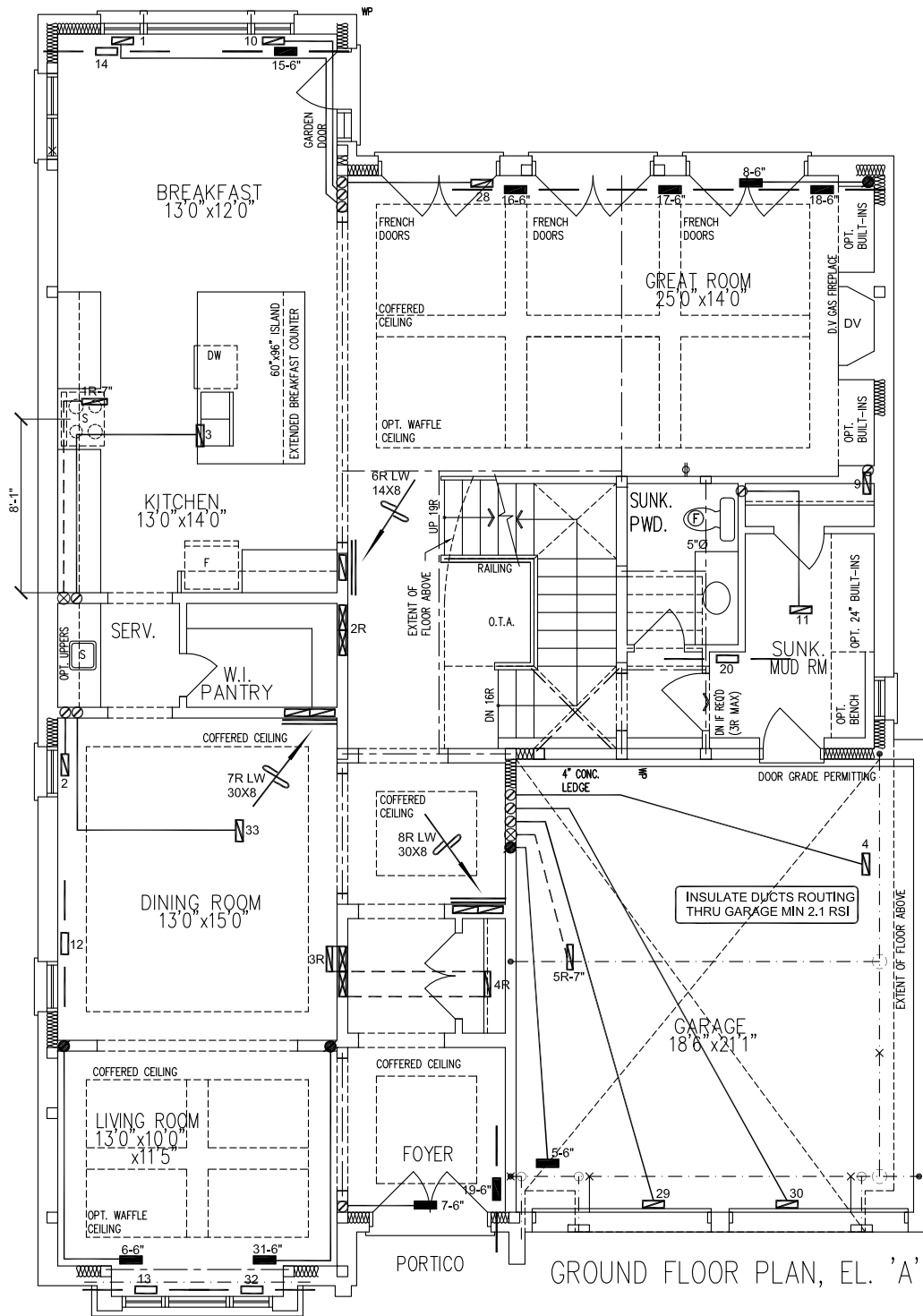
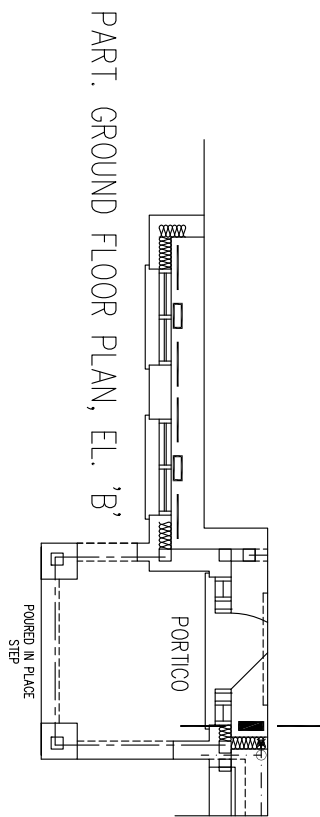
WOB PACKAGE A1

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, BCIN# 19669
 HVAC DESIGNS LTD.

HVAC LEGEND							REVISIONS		
— □ —	SUPPLY AIR GRILLE	— ■ —	6" SUPPLY AIR BOOT ABOVE	— ▨ —	14"x8" RETURN AIR GRILLE	— ▩ —	RETURN AIR STACK ABOVE	3.	
— ■ —	SUPPLY AIR GRILLE 6" BOOT	○	SUPPLY AIR STACK FROM 2nd FLOOR	— ▨ —	30"x8" RETURN AIR GRILLE	— ▩ —	RETURN AIR STACK 2nd FLOOR	2.	REVISED AS PER ARCHITECTURALS
— ▨ —	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	— ▨ —	FRA- FLOOR RETURN AIR GRILLE	— ▩ —	REDUCER	1.	DECK CONDITIONS ADDED
								No.	Description
									Date

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. © AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GOLD PARK HOMES	Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO	 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 81774 BTU/H	# OF RUNS S/A R/A FANS	Sheet Title BASEMENT HEATING LAYOUT			
			UNIT DATA	3RD FLOOR				
			MAKE LENNOX	2ND FLOOR	16	5	4	Date OCT/2018
			MODEL EL296UH110XE60C	1ST FLOOR	10	3	2	Scale 1/8" = 1'-0"
			INPUT 110 MBTU/H	BASEMENT	7	1	0	BCIN# 19669
			OUTPUT 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				LO# 80241
			COOLING 5.0 TONS					
			FAN SPEED 1955 cfm @ 0.6" w.c.					
		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.						



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							REVISIONS		
— □ —	SUPPLY AIR GRILLE	■	6" SUPPLY AIR BOOT ABOVE	— ▨ —	14"x8" RETURN AIR GRILLE	— ▨ —	RETURN AIR STACK ABOVE	3.	
— ■ —	SUPPLY AIR GRILLE 6" BOOT	○	SUPPLY AIR STACK FROM 2nd FLOOR	— ▨ —	30"x8" RETURN AIR GRILLE	— ▨ —	RETURN AIR STACK 2nd FLOOR	2.	REVISED AS PER ARCHITECTURALS
— ▨ —	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	— ▨ —	FRA- FLOOR RETURN AIR GRILLE	— ▨ —	REDUCER	1.	DECK CONDITIONS ADDED
								No.	Description
									Date

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. © AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client
GOLD PARK HOMES

Project Name
PINE VALLEY & TESTON VAUGHAN, ONTARIO

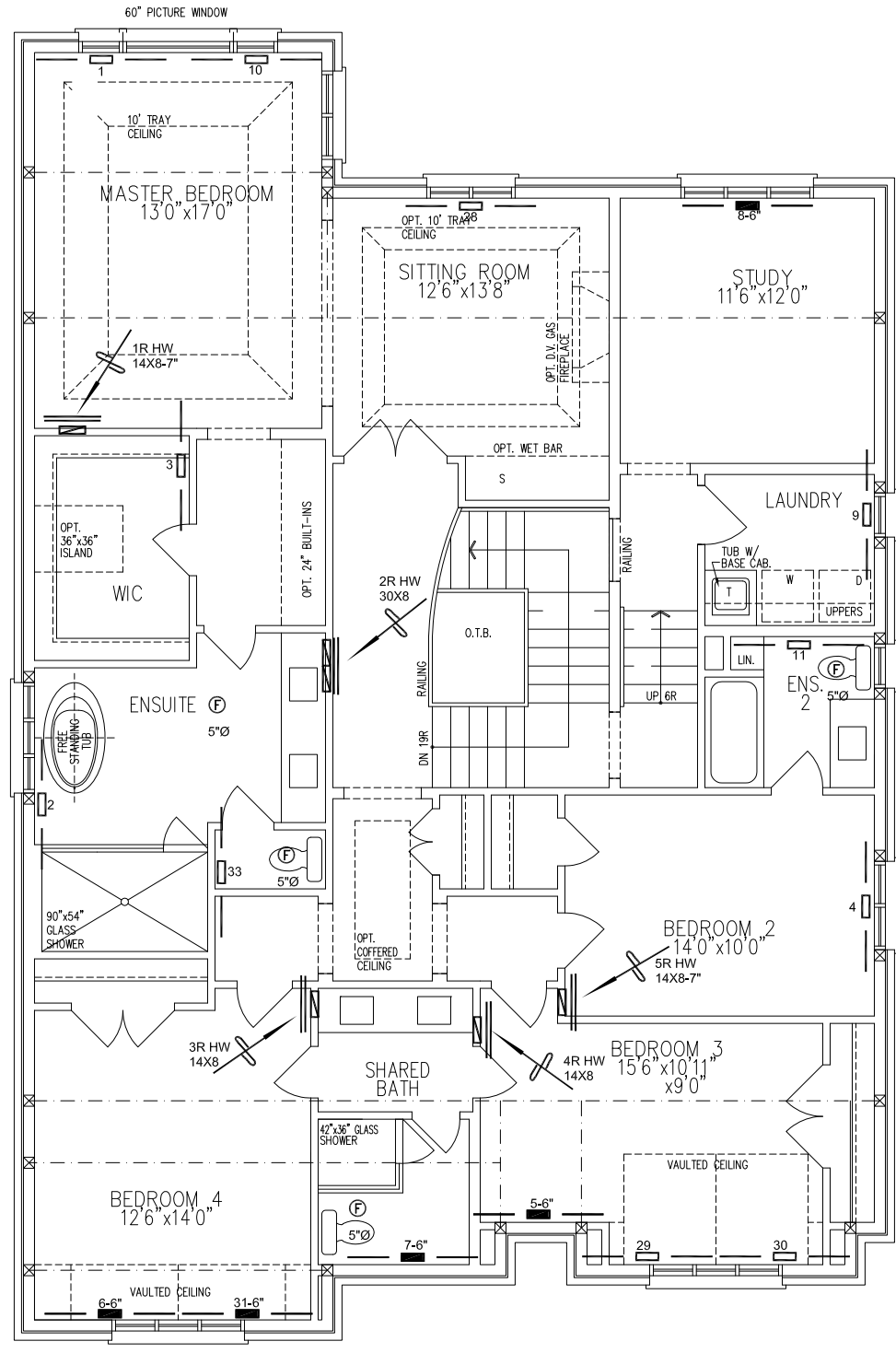
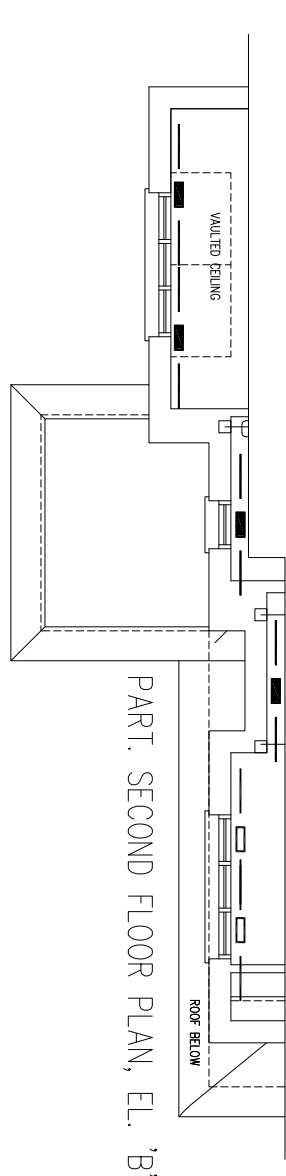
THE OAKGROVE - WOB
 5003 3862 sqft

HVAC DESIGNS LTD.
 375 Finley Ave. Suite 202 - Ajax, Ontario
 L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
 Email: info@hvacdsgns.ca
 Web: www.hvacdsgns.ca
 Specializing in Residential Mechanical Design Services

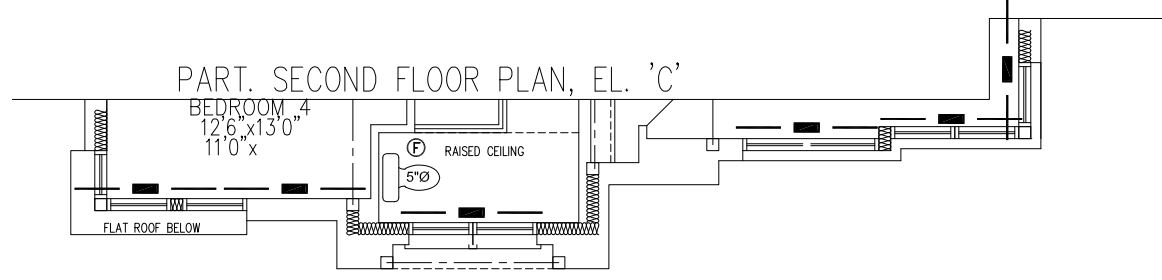
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

Sheet Title
FIRST FLOOR HEATING LAYOUT

Date OCT/2018
 Scale 1/8" = 1'-0"
 BCIN# 19669
LO# 80241



SECOND FLOOR PLAN, EL. 'A'



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, BCIN# 19669
 HVAC DESIGNS LTD.

CSA-F280-12

WOB PACKAGE A1

HVAC LEGEND							REVISIONS		
— □ —	SUPPLY AIR GRILLE	■	6" SUPPLY AIR BOOT ABOVE	— ▨ —	14"x8" RETURN AIR GRILLE	— ▨ —	RETURN AIR STACK ABOVE	3.	
— ■ —	SUPPLY AIR GRILLE 6" BOOT	○	SUPPLY AIR STACK FROM 2nd FLOOR	— ▨ —	30"x8" RETURN AIR GRILLE	— ▨ —	RETURN AIR STACK 2nd FLOOR	2.	REVISED AS PER ARCHITECTURALS
— ▨ —	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	— ▨ —	FRA- FLOOR RETURN AIR GRILLE	— ▨ —	REDUCER	1.	DECK CONDITIONS ADDED
								No.	Description
									Date

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. © AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client
GOLD PARK HOMES
 Project Name
PINE VALLEY & TESTON VAUGHAN, ONTARIO
THE OAKGROVE - WOB
5003 3862 sqft

HVAC DESIGNS LTD.
 375 Finley Ave. Suite 202 - Ajax, Ontario
 L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
 Email: info@hvacdsgns.ca
 Web: www.hvacdsgns.ca
 Specializing in Residential Mechanical Design Services
 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.

Sheet Title
SECOND FLOOR HEATING LAYOUT
 Date **OCT/2018**
 Scale **1/8" = 1'-0"**
 BCIN# 19669
LO# 80241