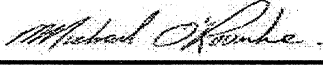


Schedule 1: Designer Information

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]			
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ 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: 5004 THE BEAUMONT LOT 92 Project: PINE VALLEY & TESTON	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> (print name)		declare that (choose one as appropriate):	
☐ 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: _____			
☒ 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>			
☐ 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.			
April 30, 2019 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 LOT 92 DATE: Apr-19 WINTER NATURAL AIR CHANGE RATE 0.340 HEAT LOSS AT °F. 76 CSA-F280-12
BUILDER: GOLD PARK HOMES TYPE: 5004 THE BEAUMONT LO# 82132 SUMMER NATURAL AIR CHANGE RATE 0.124 HEAT GAIN AT °F. 16 SB-12 PACKAGE A1

ROOM USE	MBR	ENS	DRESS	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	
EXP. WALL	19	38	12	11	18	43	0	13	18	
CLG. HT.	10	9	9	9	9	10	9	9	9	
GRS.WALL AREA	190	342	108	99	162	430	0	117	162	
GLAZING	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	
NORTH	0	0	0	18	383	303	0	0	0	0
EAST	0	0	0	0	0	0	63	1341	2671	13
SOUTH	0	0	0	0	0	0	9	192	232	277
WEST	0	0	0	0	0	0	0	0	0	561
SKYLT.	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	148	660	137	305	1361	283	104	464	96	149
NET EXPOSED BSMT WALL ABOVE GR	25.2	5.2	0	0	0	0	0	0	0	665
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	138
NO ATTIC EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.5	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	2155	2549	842	1461	2622	3035	223	821	1237	779
SUB TOTAL HT GAIN	2216	1901	345	596	596	0.20	0.34	0.20	0.34	0.20
LEVEL FACTOR / MULTIPLIER	0.20	0.34	0.20	0.34	0.20	0.34	0.20	0.34	0.20	0.34
AIR CHANGE HEAT LOSS	738	873	288	500	897	1330	76	281	423	69
AIR CHANGE HEAT GAIN	196	168	31	196	352	522	30	110	166	85
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	2	480	0	1	240	1	240	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	758	0	758	2158	758	5737	0	0	0	0
TOTAL HT LOSS BTU/H	2893	3421	1130	2158	3871	6162	329	1212	1826	1213
TOTAL HT GAIN x 1.3 BTU/H	4746	2690	1473	2355	6162	6869	121	311	1826	1213

ROOM USE	LIBR	DIN	KIT	GREAT	LAUN	ENS-4	FOY	MUD	LOD	BAS
EXP. WALL	11	17	11	56	0	6	37	18	51	230
CLG. HT.	11	11	11	16	9	9	11	13	10	10
GRS.WALL AREA	297	187	1221	896	0	54	407	234	510	1916
GLAZING	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
NORTH	0	0	0	26	563	437	0	0	0	4
EAST	0	0	0	0	0	0	0	0	0	85
SOUTH	0	0	0	0	0	0	35	745	1484	67
WEST	0	0	0	0	0	0	0	0	0	0
SKYLT.	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	244	1089	226	163	727	151	1061	4735	984	25
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	532
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	1060
NO ATTIC EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.5	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	2217	1238	8386	6772	375	453	2821	1460	1543	8012
SUB TOTAL HT GAIN	2273	769	6726	4720	131	287	1915	304	1270	10239
LEVEL FACTOR / MULTIPLIER	0.30	0.37	0.30	0.37	0.20	0.34	0.30	0.37	0.30	0.50
AIR CHANGE HEAT LOSS	826	462	3126	2525	128	155	1052	544	281	1382
AIR CHANGE HEAT GAIN	201	68	596	418	12	25	170	27	1011	384
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	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	768	0	768	2158	768	5737	0	0	0	0
TOTAL HT LOSS BTU/H	3043	1700	11513	9296	553	607	3872	2004	1543	24464
TOTAL HT GAIN x 1.3 BTU/H	4202	2073	10503	7665	1288	406	2710	1415	1651	1234

TOTAL HEAT GAIN BTU/H: 59739 TONS: 4.98 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 81174 TOTAL COMBINED HEAT LOSS BTU/H: 84355

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

LOT 92

TYPE: 5004 THE BEAUMONT

DATE: Apr-19

GFA: 4106 LO# 82132

HEATING CFM 1955 COOLING CFM 1955
TOTAL HEAT LOSS 81,174
AIR FLOW RATE CFM 24.08 AIR FLOW RATE CFM 33.09EL296UH110XE60C 110
FAN SPEED
LOW 0
MEDIUM 1380
HIGH 1505
HIGH 1685
1955AFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = 106,000DESIGN CFM = 1955
CFM @ .5" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	17	12	8
R/A	0	0	5	4	1

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

All S/A runs 5/8" 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	DRESS	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-4	MBR	ENS-3	LIBR	DIN	KIT	KIT	GREAT	LAUN	KIT	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.45	1.71	1.13	2.16	1.29	1.91	0.33	1.21	0.61	1.45	1.83	1.52	1.70	2.88	2.88	3.10	0.55	2.88	3.87	2.00	3.25	3.25	3.25	3.25
CFM PER RUN HEAT	35	41	27	52	31	46	8	29	15	35	44	37	41	69	69	75	13	69	93	48	78	78	78	78
RM GAIN MBH	2.37	1.34	1.47	2.36	2.05	2.29	0.12	0.31	0.41	2.37	1.21	2.10	2.07	2.63	2.63	2.56	1.29	2.63	2.71	1.41	0.36	0.36	0.36	0.36
CFM PER RUN COOLING	79	45	49	78	68	76	4	10	13	79	40	70	69	87	87	85	43	87	90	47	12	12	12	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17
EQUVALENT LENGTH	46	62	29	34	38	50	28	31	43	54	41	41	27	40	32	49	26	36	24	16	50	39	30	30
TOTAL EFFECTIVE LENGTH	190	140	180	180	120	150	160	150	190	180	160	180	80	140	150	130	150	140	150	130	140	100	102	102
ADJUSTED PRESSURE	0.07	0.09	0.08	0.08	0.11	0.09	0.09	0.1	0.07	0.07	0.09	0.08	0.16	0.09	0.09	0.09	0.1	0.09	0.09	0.12	0.1	0.09	0.12	0.13
ROUND DUCT SIZE	6	4	5	5	5	5	4	4	4	6	4	5	5	5	5	5	4	5	6	4	5	5	5	5
HEATING VELOCITY (ft/min)	178	470	198	382	228	338	92	333	172	178	505	272	301	507	507	551	149	507	474	551	573	573	573	573
COOLING VELOCITY (ft/min)	403	516	360	573	499	558	46	115	149	403	459	514	507	639	639	624	493	639	459	539	88	88	88	88
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	C	D	F	F	E	F	D	E	B	F	E	F	C	C	A	D	B	E	D	A	A	C	C

RUN #	25	26	27	28	29	31	32	33	34	35	36	37	38
ROOM NAME	BAS	BAS	BAS	BAS	ENS	BED-3	BED-3	BED-3	BED-4	LIBR	KIT	GREAT	GREAT
RM LOSS MBH	3.25	3.25	3.25	3.25	1.71	1.29	1.29	1.29	1.91	1.52	2.88	3.10	3.10
CFM PER RUN HEAT	78	78	78	78	41	31	31	31	46	37	69	75	75
RM GAIN MBH	0.36	0.36	0.36	0.36	1.34	2.05	2.05	2.29	2.29	2.10	2.63	2.56	2.56
CFM PER RUN COOLING	12	12	12	12	45	68	68	76	76	70	87	85	85
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	37	23	17	31	34	42	46	47	40	35	28	39	64
EQUIVALENT LENGTH	120	80	120	150	140	130	140	150	130	140	150	150	150
TOTAL EFFECTIVE LENGTH	157	103	137	181	174	172	186	197	170	175	178	189	214
ADJUSTED PRESSURE	0.11	0.17	0.13	0.1	0.1	0.1	0.09	0.09	0.1	0.1	0.09	0.09	0.08
ROUND DUCT SIZE	5	5	5	5	4	5	5	5	5	5	5	5	6
HEATING VELOCITY (ft/min)	573	573	573	573	470	228	228	338	338	272	507	551	382
COOLING VELOCITY (ft/min)	88	88	88	88	516	499	499	558	558	514	639	624	433
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10
TRUNK	B	D	F	F	D	F	F	F	F	F	B	A	A

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 CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	381	0.08	9.8	12	0	0.08	9.8	12	0	0	0.08	9.8	12	0	0	0.08	9.8	12	0
TRUNK B	667	0.07	12.5	18	0	0.07	12.5	18	0	0	0.07	12.5	18	0	0	0.07	12.5	18	0
TRUNK C	335	0.09	9	10	0	0.09	9	10	0	0	0.09	9	10	0	0	0.09	9	10	0
TRUNK D	1238	0.07	15.7	28	0	0.07	15.7	28	0	0	0.07	15.7	28	0	0	0.07	15.7	28	0
TRUNK E	398	0.07	10.3	12	0	0.07	10.3	12	0	0	0.07	10.3	12	0	0	0.07	10.3	12	0
TRUNK F	714	0.07	12.8	20	0	0.07	12.8	20	0	0	0.07	12.8	20	0	0	0.07	12.8	20	0
RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
AIR VOLUME	120	120	120	120	305	85	300	300	185	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	38	37	37	45	43	59	27	25	34	1	1	1	1	1	1	1	1	1	1
EQUVALENT LENGTH	195	185	165	205	145	175	190	185	150	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	233	222	202	250	188	234	217	210	184	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.08	0.06	0.07	0.07	0.08	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6.8	6.6	6.6	6.8	9	6	9.2	9.2	7.5	0	0	0	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	8	8	8
INLET GRILL SIZE	14	14	14	14	30	14	30	30	14	0	0	0	0	0	0	0	0	0	0

Michael O'Rourke

TYPE: 5004 THE BEAUMONT
SITE NAME: PINE VALLEY & TESTON

LO # 82132
LOT 92

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	6 @ 10.6 cfm	63.6 cfm
Other Rooms	6 @ 10.6 cfm	63.6 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: VANEE 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 ✓ 0.3
ENS-2	QTXEN050C	50 ✓ 0.3
ENS-3	QTXEN050C	50 ✓ 0.3
ENS-4	QTXEN050C	50 ✓ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 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:	
HRAI #	001820
Date:	April-19

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																						
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																						
LO#: 82132		Model: 5004 THE BEAUMONT		Builder: GOLD PARK HOMES		Date: 4/30/2019																																																
Volume Calculation				Air Change & Delta T Data																																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">House Volume</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bsmt</td> <td></td> <td>1984</td> <td>10</td> <td>19840</td> </tr> <tr> <td>First</td> <td></td> <td>1984</td> <td>11</td> <td>21824</td> </tr> <tr> <td>Second</td> <td></td> <td>2207</td> <td>9</td> <td>19863</td> </tr> <tr> <td>Third</td> <td></td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td></td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td></td> <td>61,527.0 ft³</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td></td> <td>1742.3 m³</td> </tr> </tbody> </table>										House Volume		Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)	Level					Bsmt		1984	10	19840	First		1984	11	21824	Second		2207	9	19863	Third		0	9	0	Fourth		0	9	0	Total:				61,527.0 ft ³	Total:				1742.3 m ³
House Volume		Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)																																																		
Level																																																						
Bsmt		1984	10	19840																																																		
First		1984	11	21824																																																		
Second		2207	9	19863																																																		
Third		0	9	0																																																		
Fourth		0	9	0																																																		
Total:				61,527.0 ft ³																																																		
Total:				1742.3 m ³																																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th colspan="2">WINTER NATURAL AIR CHANGE RATE</th> <th colspan="2">SUMMER NATURAL AIR CHANGE RATE</th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td></td> <td>0.340</td> <td colspan="2">0.124</td> </tr> <tr> <td colspan="2"></td> <td></td> <td></td> <td colspan="2"></td> </tr> </tbody> </table>												WINTER NATURAL AIR CHANGE RATE		SUMMER NATURAL AIR CHANGE RATE					0.340	0.124																																		
		WINTER NATURAL AIR CHANGE RATE		SUMMER NATURAL AIR CHANGE RATE																																																		
			0.340	0.124																																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> </tr> </thead> <tbody> <tr> <td>Winter DTDh</td> <td>22</td> <td>-20</td> <td>42</td> </tr> <tr> <td>Summer DTDc</td> <td>22</td> <td>31</td> <td>9</td> </tr> <tr> <td></td> <td></td> <td></td> <td>16</td> </tr> </tbody> </table>										Design Temperature Difference					Tin °C	Tout °C	ΔT °C	Winter DTDh	22	-20	42	Summer DTDc	22	31	9				16																									
Design Temperature Difference																																																						
	Tin °C	Tout °C	ΔT °C																																																			
Winter DTDh	22	-20	42																																																			
Summer DTDc	22	31	9																																																			
			16																																																			
6.2.6 Sensible Gain due to Air Leakage																																																						
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>0.340</td> <td>x</td> <td>483.96</td> <td>x</td> <td>42 °C</td> <td>x</td> <td>1.2</td> <td>=</td> <td>632 W</td> </tr> <tr> <td colspan="7"></td> <td>=</td> <td>2157 Btu/h</td> </tr> </table>										0.340	x	483.96	x	42 °C	x	1.2	=	632 W								=	2157 Btu/h																											
0.340	x	483.96	x	42 °C	x	1.2	=	632 W																																														
							=	2157 Btu/h																																														
6.2.7 Sensible heat Gain due to Ventilation																																																						
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>155 CFM</td> <td>x</td> <td>76 °F</td> <td>x</td> <td>1.08</td> <td>x</td> <td>0.25</td> <td>=</td> <td>661 Btu/h</td> </tr> </table>										155 CFM	x	76 °F	x	1.08	x	0.25	=	661 Btu/h																																				
155 CFM	x	76 °F	x	1.08	x	0.25	=	661 Btu/h																																														
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																						
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HLlevel)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="4" style="text-align: center;">28,450</td> <td>11,782</td> <td>1.207</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>22,893</td> <td>0.373</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>16,622</td> <td>0.342</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td></td> <td>0</td> <td>0.000</td> </tr> </tbody> </table>										Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLlevel)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	28,450	11,782	1.207	2	0.3	22,893	0.373	3	0.2	16,622	0.342	4	0	0	0.000	5	0		0	0.000																		
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLlevel)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																		
1	0.5	28,450	11,782	1.207																																																		
2	0.3		22,893	0.373																																																		
3	0.2		16,622	0.342																																																		
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 HLairve = 0																																																						

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5004 THE BEAUMONT	LOT 92	BUILDER: GOLD PARK HOMES
SFQT: 4106	LO# 82132	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)	72

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):	61527.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.35	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 74.0 ft	WIDTH: 41.0 ft	EXPOSED PERIMETER:	230.0 ft

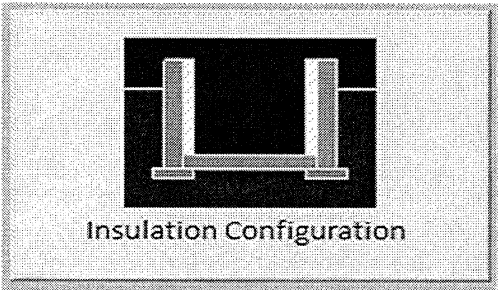
2012 OBC - COMPLIANCE PACKAGE		
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement 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):	22.6	 Insulation Configuration
Floor Width (m):	12.5	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.8	
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):		2347

TYPE: 5004 THE BEAUMONT
LO# 82132

LOT 92

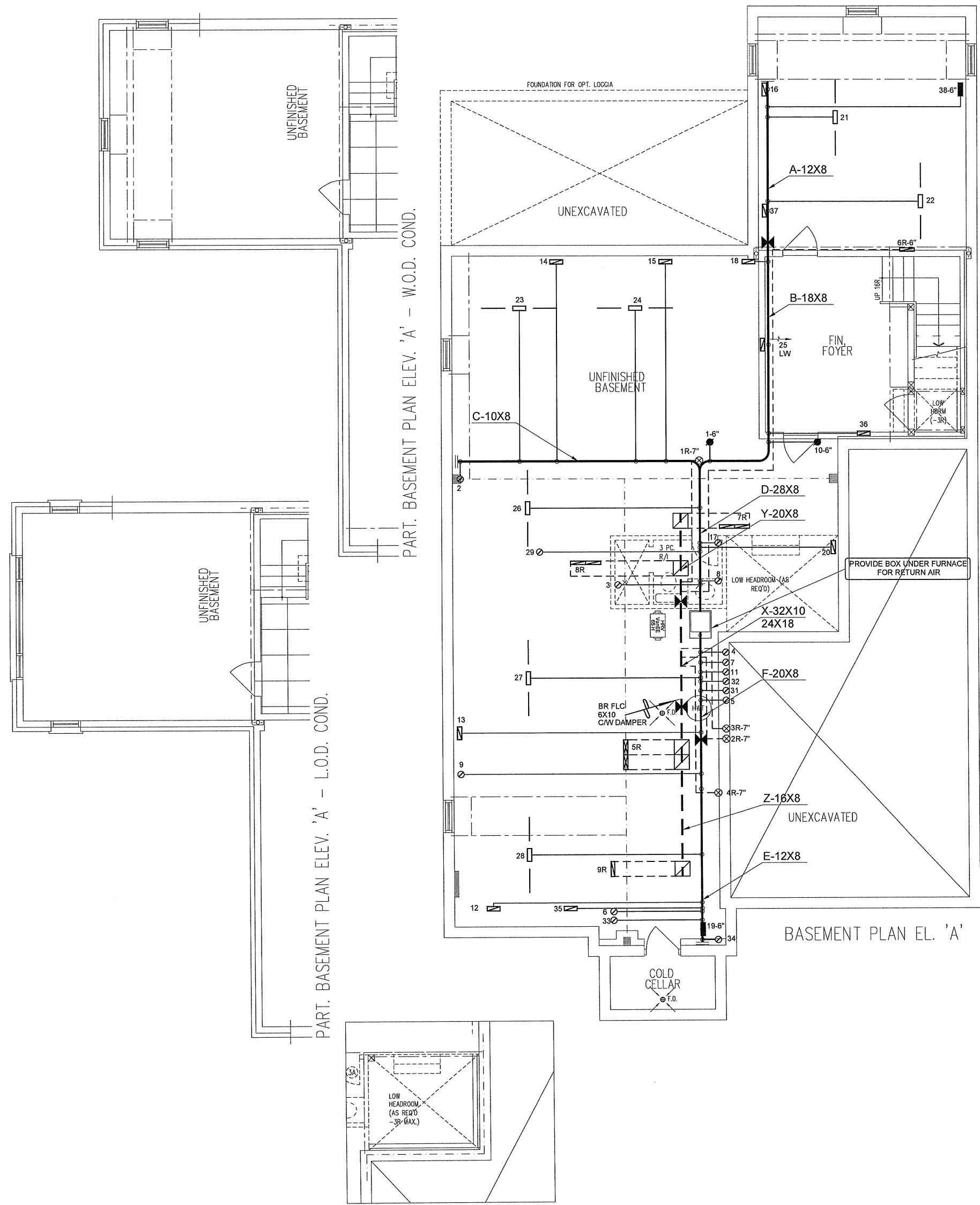
Air Infiltration Residential Load Calculator

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):	7.01			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1742.3			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2322.5 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):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.124			

TYPE: 5004 THE BEAUMONT
LO# 82132

LOT 92



PART. BASEMENT PLAN EL. 'A'
SUNKEN MUDROOM CONDITION
(EL. 'B&C' SIMILAR)

I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.32.5 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.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED	SEPT/2018
	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		

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**

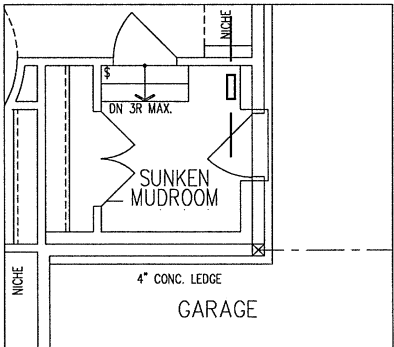
THE BEAUMONT
5004 LOT 92 4106 sqft

HVACDESIGNS LTD.
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

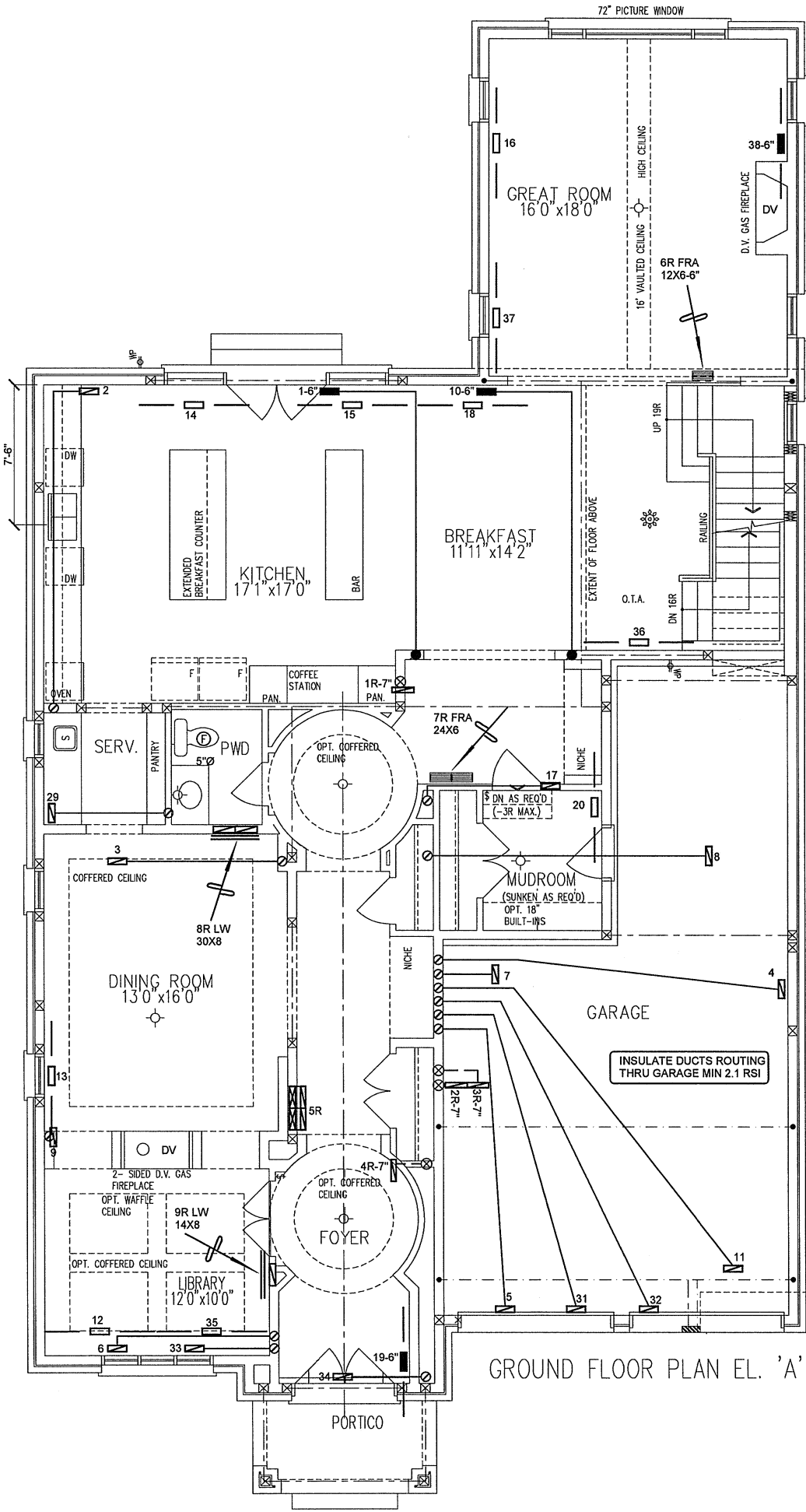
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

HEAT LOSS 84355 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS
MAKE	LENNOX	3RD FLOOR			
MODEL	EL296110XE60C	2ND FLOOR	17	5	6
INPUT	110 MBTU/H	1ST FLOOR	12	4	2
OUTPUT	106 MBTU/H	BASEMENT	8	1	0
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			
FAN SPEED	1955 cfm @ 0.6" w.c.				

Sheet Title	
BASEMENT HEATING LAYOUT	
Date	APRIL/2019
Scale	1/8" = 1'-0"
BCIN# 19669	
LO#	82132



PART. GROUND FLOOR PLAN EL. 'A'
SUNKEN MUDROOM CONDITION
(EL. 'B&C' SIMILAR)



GROUND FLOOR PLAN EL. 'A'

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 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.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED
	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		

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 BEAUMONT
5004 LOT 92 4106 sqft

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

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.

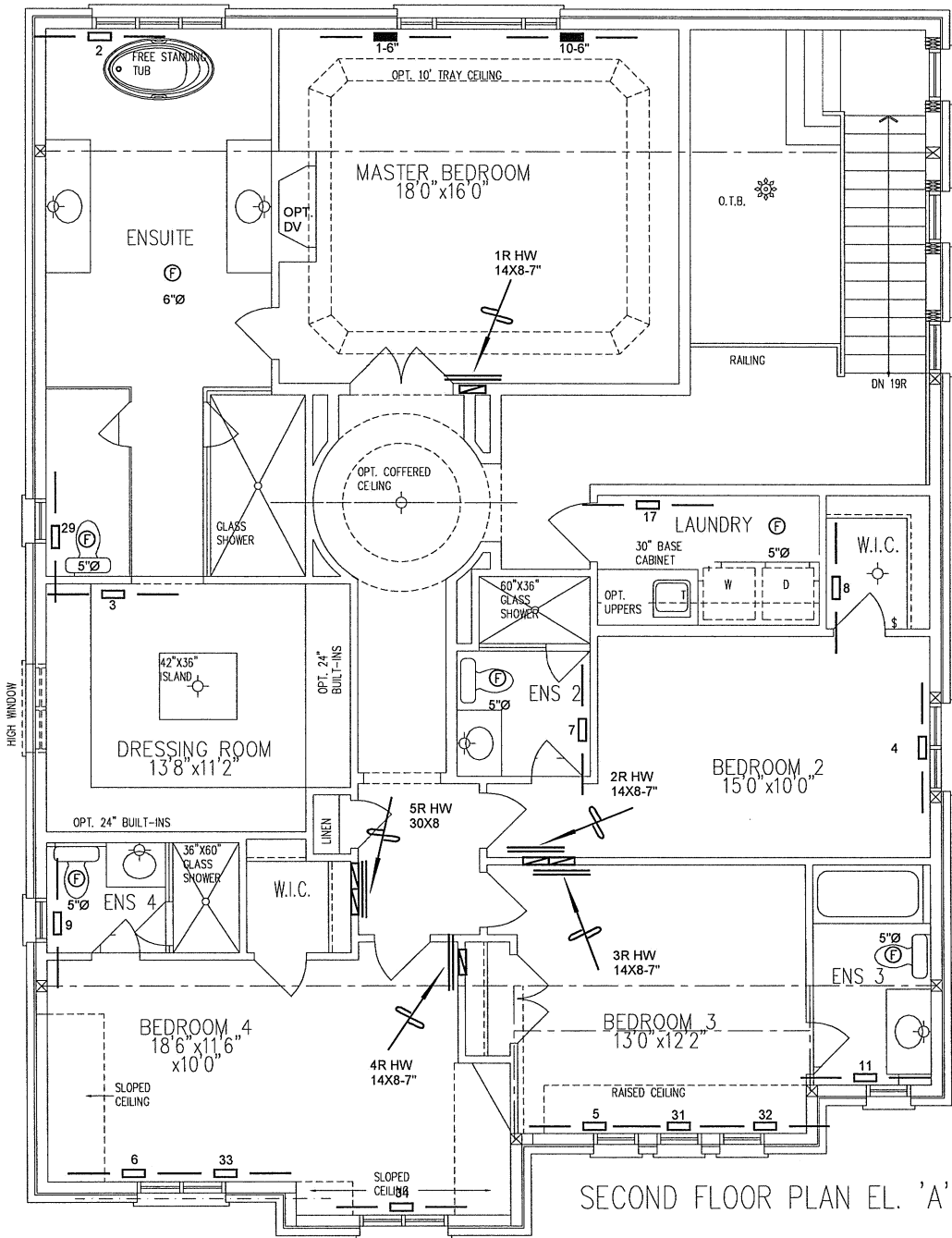
Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**

Date **APRIL/2019**

Scale **1/8" = 1'-0"**

BCIN# 19669

LO# 82132



SECOND FLOOR PLAN EL. 'A'

I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.32.5 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.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED
	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		

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		 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 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	
GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	APRIL/2019
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
THE BEAUMONT			BCIN# 19669	
5004 LOT 92	4106 sqft		LO#	82132