


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]				
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings </div> <div style="width: 30%;"> <input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection </div> <div style="width: 30%;"> <input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems </div> </div>				
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 5003 - THE OAKGROVE 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. <div style="display: flex; justify-content: space-between;"> <div>Individual BCIN: _____</div> <div>Firm BCIN: _____</div> </div>				
<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. <div style="display: flex; justify-content: space-between;"> <div>Individual BCIN: <u>19669</u></div> <div>Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u></div> </div>				
<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.				
October 5, 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

59632	TONS: 4.97	LOSS DUE TO VENTILATION LOAD BTU/H: 3181	STRUCTURAL HEAT LOSS: 76540	TOTAL COMBINED HEAT LOSS BTU/H: 76720
TOTAL HEAT GAIN BTU/H:				

59832	TONS: 4.97	LOSS DUE TO VENTILATION LOAD BTU/H: 3181	STRUCTURAL HEAT LOSS: 72540	TOTAL COMBINED HEAT LOSS BTU/H: 75720
TOTAL HEAT GAIN BTU/H:				

REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C. 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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

TYPE: 5003 - THE OAK GROVE

DATE: Oct-18

GFA: 3862 LO# 77475

HEATING CFM 1955 COOLING CFM 1955
TOTAL HEAT LOSS 72,540
AIR FLOW RATE CFM 26.95EL296UH10XE60C
FAN SPEED
AFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = 106,000

LENNOX

110

LOW

MEDIUM

HIGH

1380

1505

1885

DESIGN CFM = 1955

CFM @ 6" E.S.P.

TEMPERATURE RISE 50 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	16	10	7
R/A	0	0	5	3	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	WIC	BED-2	BED-3	BED-4	BATH	STUDY	LAUN	MBR	ENS-2	DIN	LIV	KT/GT	KT/GT	KT/GT	KT/GT	KT/GT	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.77	0.74	0.90	2.05	1.75	1.62	1.61	2.23	0.85	1.77	0.85	1.76	1.90	2.58	2.58	2.58	2.58	2.58	3.97	3.20	3.31	3.31	3.31	3.31
CFM PER RUN HEAT	48	20	24	55	47	44	43	60	23	48	23	47	51	69	69	69	69	69	107	86	89	89	89	89
RM GAIN MBH	2.21	0.56	0.29	2.38	2.50	2.36	2.77	3.09	1.44	2.21	0.44	2.14	2.43	3.11	3.11	3.11	3.11	3.11	0.81	1.81	0.49	0.49	0.49	0.49
CFM PER RUN COOLING	73	19	10	79	83	78	92	102	48	73	15	71	81	103	103	103	103	103	27	60	16	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.16	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	48	26	36	48	45	54	42	63	45	41	49	26	39	36	27	31	38	45	35	40	30	22	42	41
TOTAL EFFECTIVE LENGTH	185	205	120	165	140	195	150	150	130	185	170	90	110	110	170	170	160	110	120	150	110	150	130	120
ADJUSTED PRESSURE	0.07	0.07	0.11	0.08	0.09	0.07	0.08	0.08	0.1	0.08	0.08	0.15	0.11	0.11	0.12	0.08	0.08	0.1	0.1	0.09	0.12	0.09	0.09	0.1
ROUND DUCT SIZE	5	4	4	5	6	6	6	6	6	5	4	4	5	6	6	6	6	6	6	5	5	6	6	5
HEATING VELOCITY (ft/min)	352	229	275	404	240	224	219	306	264	352	264	539	374	352	352	352	352	352	546	631	653	454	454	653
COOLING VELOCITY (ft/min)	536	218	115	580	423	398	469	520	551	536	172	815	595	525	525	525	525	525	138	441	117	82	82	117
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10
TRUNK	A	E	C	E	E	D	D	B	B	A	B	E	D	A	A	B	B	B	D	B	A	A	B	B

RUN #	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	3.31	3.31	3.31	1.77	1.75	1.75	1.62	1.90	0.74
CFM PER RUN HEAT	89	89	89	48	47	47	46	51	20
RM GAIN MBH	0.49	0.49	0.49	2.21	2.50	2.50	2.36	2.43	0.56
CFM PER RUN COOLING	16	16	16	73	83	83	78	81	19
ADJUSTED PRESSURE	0.16	0.16	0.16	0.17	0.16	0.16	0.17	0.16	0.17
EQUIVALENT LENGTH	21	23	36	38	52	56	43	34	37
TOTAL EFFECTIVE LENGTH	180	100	130	160	145	155	190	100	195
ADJUSTED PRESSURE	0.08	0.13	0.1	0.09	0.08	0.08	0.07	0.12	0.07
ROUND DUCT SIZE	6	5	5	5	6	6	6	5	4
HEATING VELOCITY (ft/min)	454	653	653	352	240	240	224	374	229
COOLING VELOCITY (ft/min)	82	117	117	536	423	423	398	595	218
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10
TRUNK	E	E	D	A	E	E	D	D	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	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0.07	10.8	14	591	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK B	0.08	11.4	16	649	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK C	0.07	14.8	26	735	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK D	0.07	10.6	14	552	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK E	0.07	13.9	22	728	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK F	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK G	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK H	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK I	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK J	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK K	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK L	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK M	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK N	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK O	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK P	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK Q	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK R	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK S	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK T	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK U	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK V	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK W	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK X	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK Y	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
TRUNK Z	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
DROP	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
BR	0	0	0	0	0	0.00	0	0	8	0	0.00	0	0	0	0	0.06	0	0	8
AIR VOLUME	120	360	135	135	120	170	320	320	0	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
EQUIVALENT LENGTH	50	26	44	49	53	17	19	32	1	1	1	1	1	1	1	1	1	1	1
TOTAL EFFECTIVE LENGTH	175	135	185	190	185	160	135	145	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED PRESSURE	0.07	0.09	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
ROUND DUCT SIZE	6.6	9.3	7.1	7.1	6.8	7.2	8.7	9.2	0	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	30	14	14	14	14	14	30	30	30	30	30	30	30	30	30	30	30	30

Michael O'Rourke

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

LO # 77475

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	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:	VANEE 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
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:	VANEE 65H	
155 cfm high	64 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/> HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER:	
GOLD PARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	October-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																									
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																									
LO#: 77475		Model: 5003 - THE OAKGROVE		Builder: GOLD PARK HOMES		Date: 10/5/2018																																																			
Volume Calculation				Air Change & Delta T Data																																																					
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>House Volume Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1760</td> <td>10</td> <td>17600</td> </tr> <tr> <td>First</td> <td>1760</td> <td>11</td> <td>19360</td> </tr> <tr> <td>Second</td> <td>2125</td> <td>9</td> <td>19125</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td>56,085.0 ft³</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td>1588.2 m³</td> </tr> </tbody> </table>				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:			56,085.0 ft³	Total:			1588.2 m³	<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> </tbody> </table>						Design Temperature Difference					Tin °C	Tout °C	ΔT °C	Winter DTDh	22	-20	42	Summer DTDc	22	31	9
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5.2.3.1 Heat Loss due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																									
0.340	x	441.15	x	42 °C	x	1.2	=	7601 W																																																	
								=	25934 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																																																	
								=	661 Btu/h																																																
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																									
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{qgcr} + HL_{bgcr}) \div (HL_{qglevel} + HL_{bglevel})\}$																																																									
Level		Level Factor (LF)		HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)		Level Conductive Heat Loss: (HL _{level})		Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																	
1	0.5					10,196		1.272																																																	
2	0.3					17,829		0.436																																																	
3	0.2			25,934		17,917		0.289																																																	
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:** 5003 - THE OAKGROVE**BUILDER:** GOLD PARK HOMES**SFQT:** 3862**LO#** 77475**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):	56085.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	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:	202.0 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	-

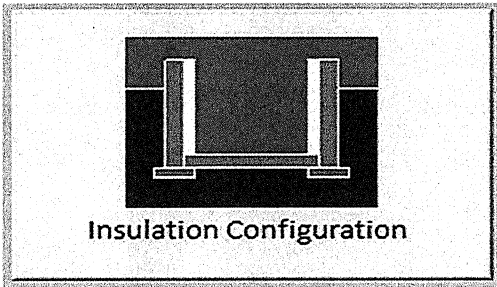
INDIVIDUAL BCIN: 19669

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):	18.6	 Insulation Configuration
Floor Width (m):	12.2	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.0	
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):		2025

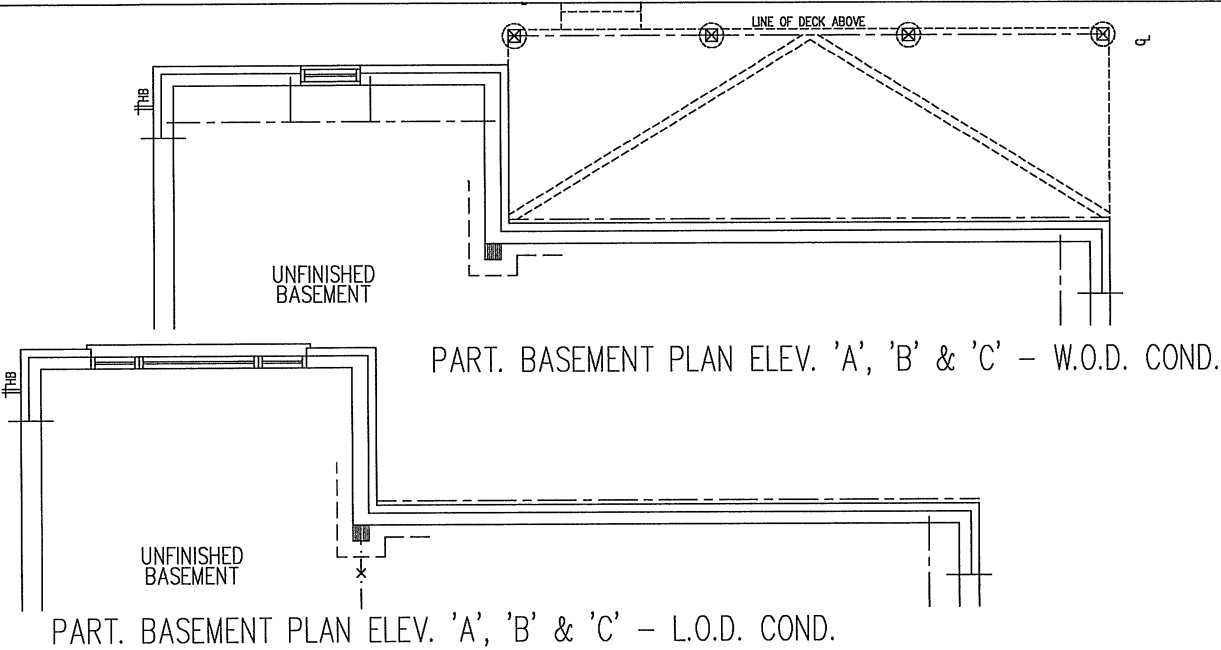
TYPE: 5003 - THE OAKGROVE
LO# 77475

Air Infiltration Residential Load Calculator

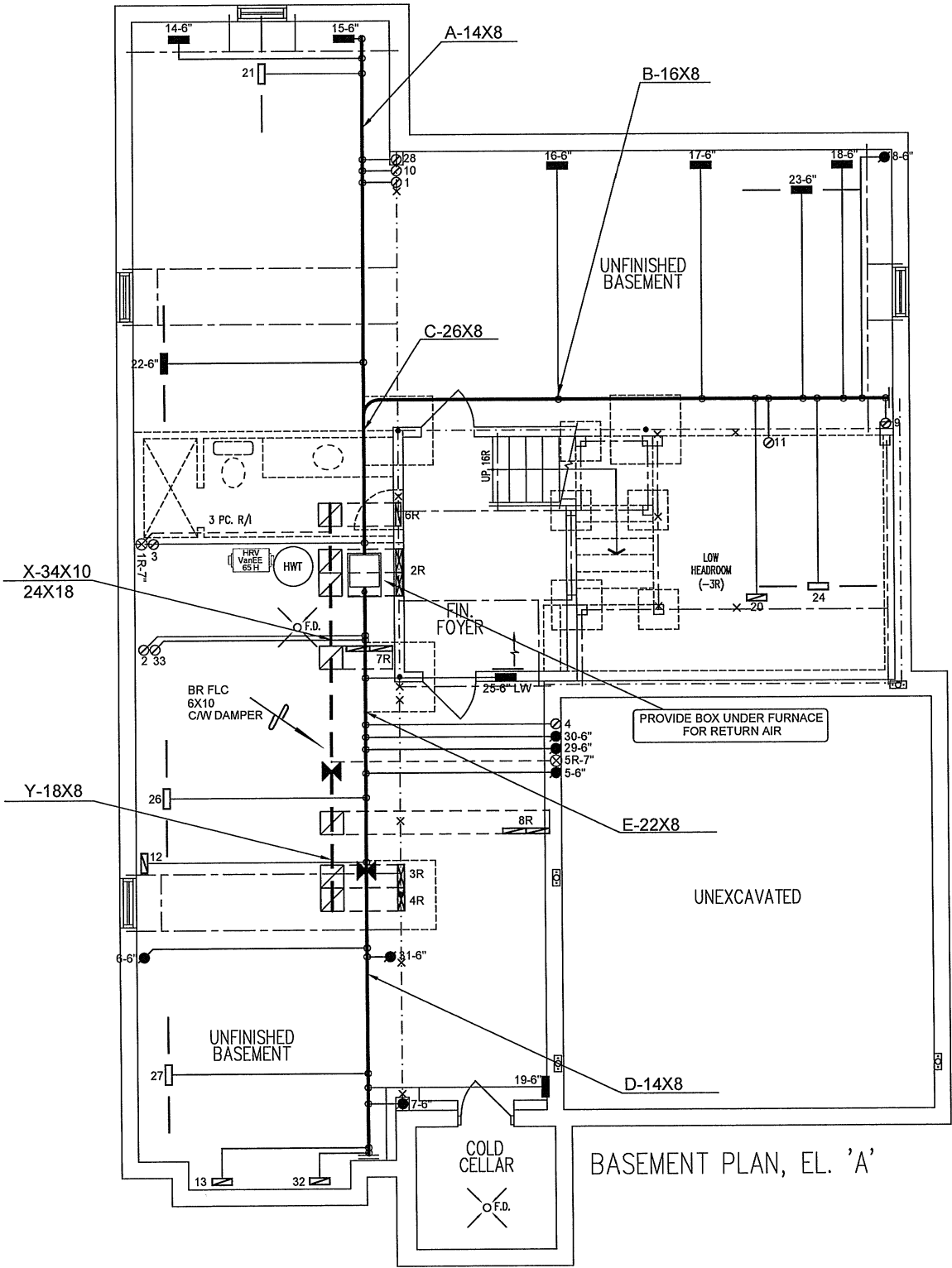
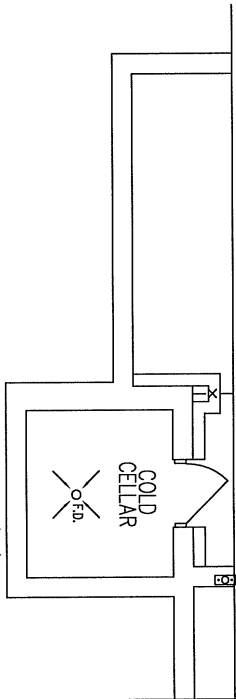
Supplemental tool for CAN/CSA-F280

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):	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):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.124			

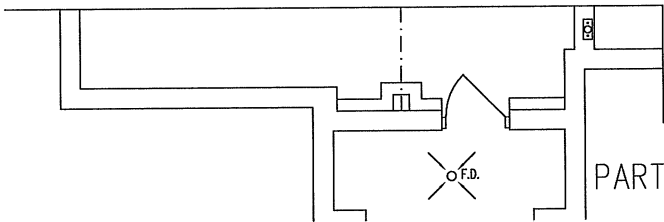
TYPE: 5003 - THE OAKGROVE
LO# 77475



PART. BASEMENT PLAN, EL. 'B'



BASEMENT PLAN, EL. 'A'















PART. BASEMENT PLAN, EL. 'C'

WOD	CSA-F280-12
LOD	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
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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	OCT/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		

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

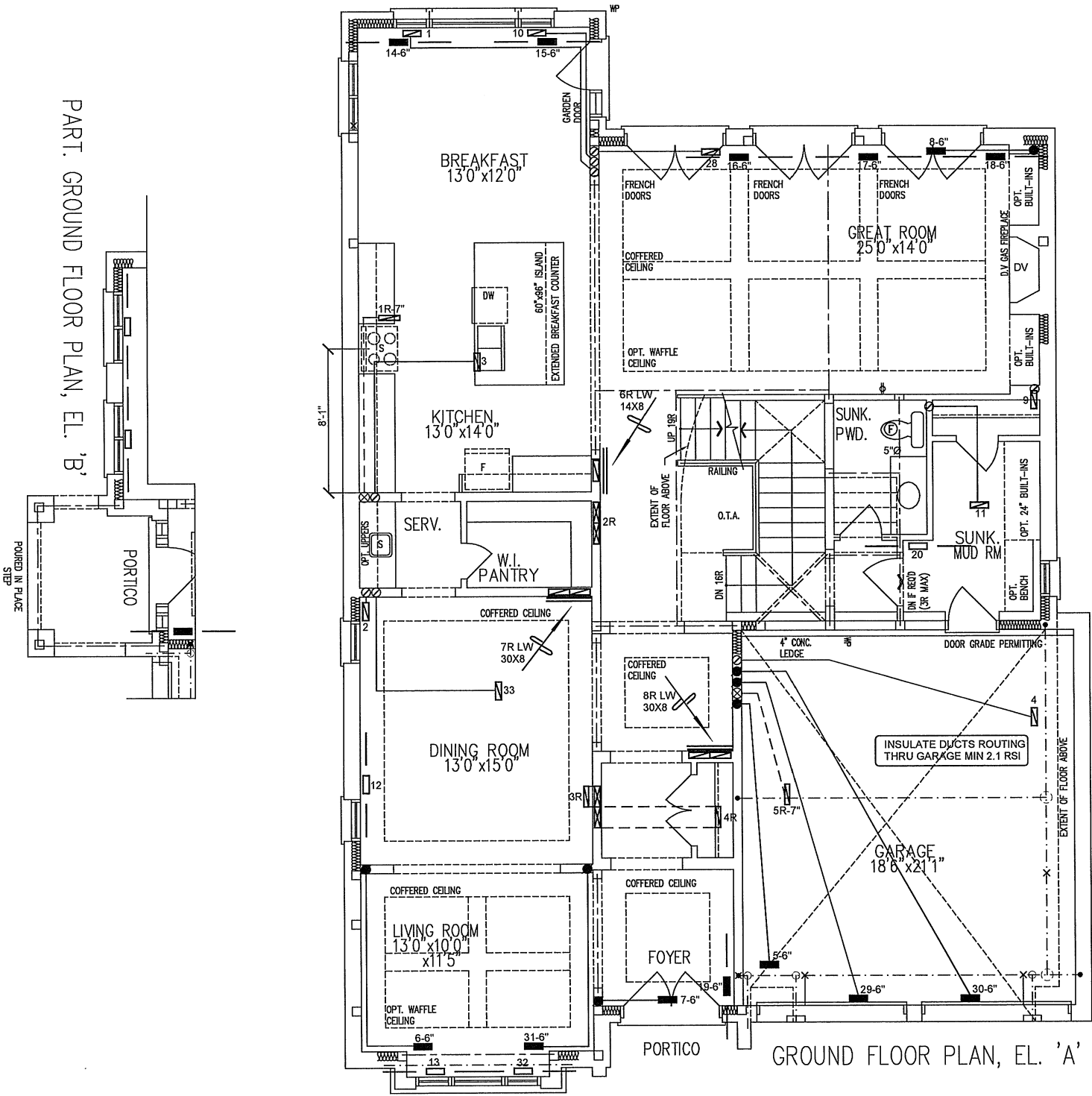
HVACDESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdsgns.ca
Web: www.hvacdesigns.ca
Specializing in Residential Mechanical Design Services

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.

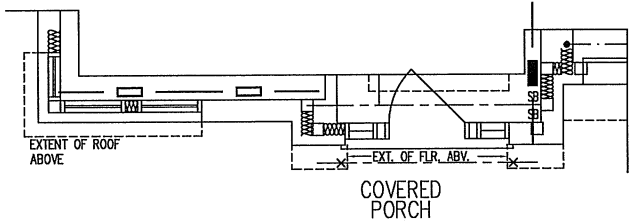
HEAT LOSS 75720 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS
MAKE	LENNOX	3RD FLOOR			
MODEL	EL296UH110XE60C	2ND FLOOR	16	5	4
INPUT	110 MBTU/H	1ST FLOOR	10	3	2
OUTPUT	106 MBTU/H	BASEMENT	7	1	0
COOLING	5.0 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A			
FAN SPEED	1955 cfm @ 0.6" w.c.				

Sheet Title		BASEMENT HEATING LAYOUT
Date	JAN/2018	
Scale	1/8" = 1'-0"	
BCIN# 19669		
LO#	77475	

PART. GROUND FLOOR PLAN, EL. 'B'



GROUND FLOOR PLAN, EL. 'A'



PART. GROUND FLOOR PLAN, EL. 'C'

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.

WOD CSA-F280-12
LOD 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	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	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
THE OAKGROVE 5003			BCIN# 19669	
3862 sqft			LO#	77475

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

Client
GOLD PARK HOMES

Project Name
**PINE VALLEY & TESTON
VAUGHAN, ONTARIO**













**THE OAKGROVE
5003** **3862 sqft**

HVACDESIGNS LTD.

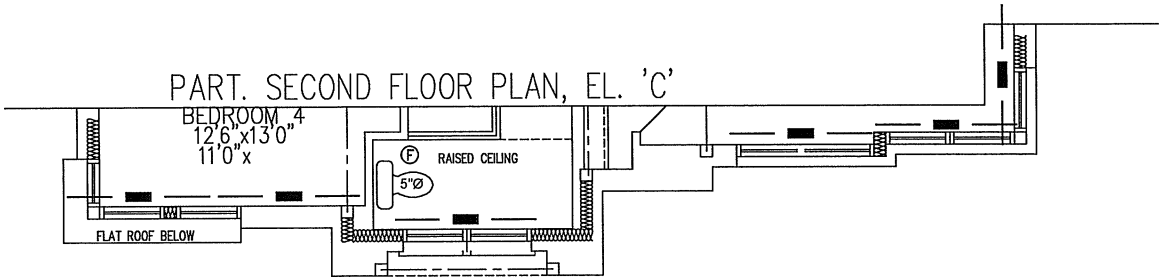
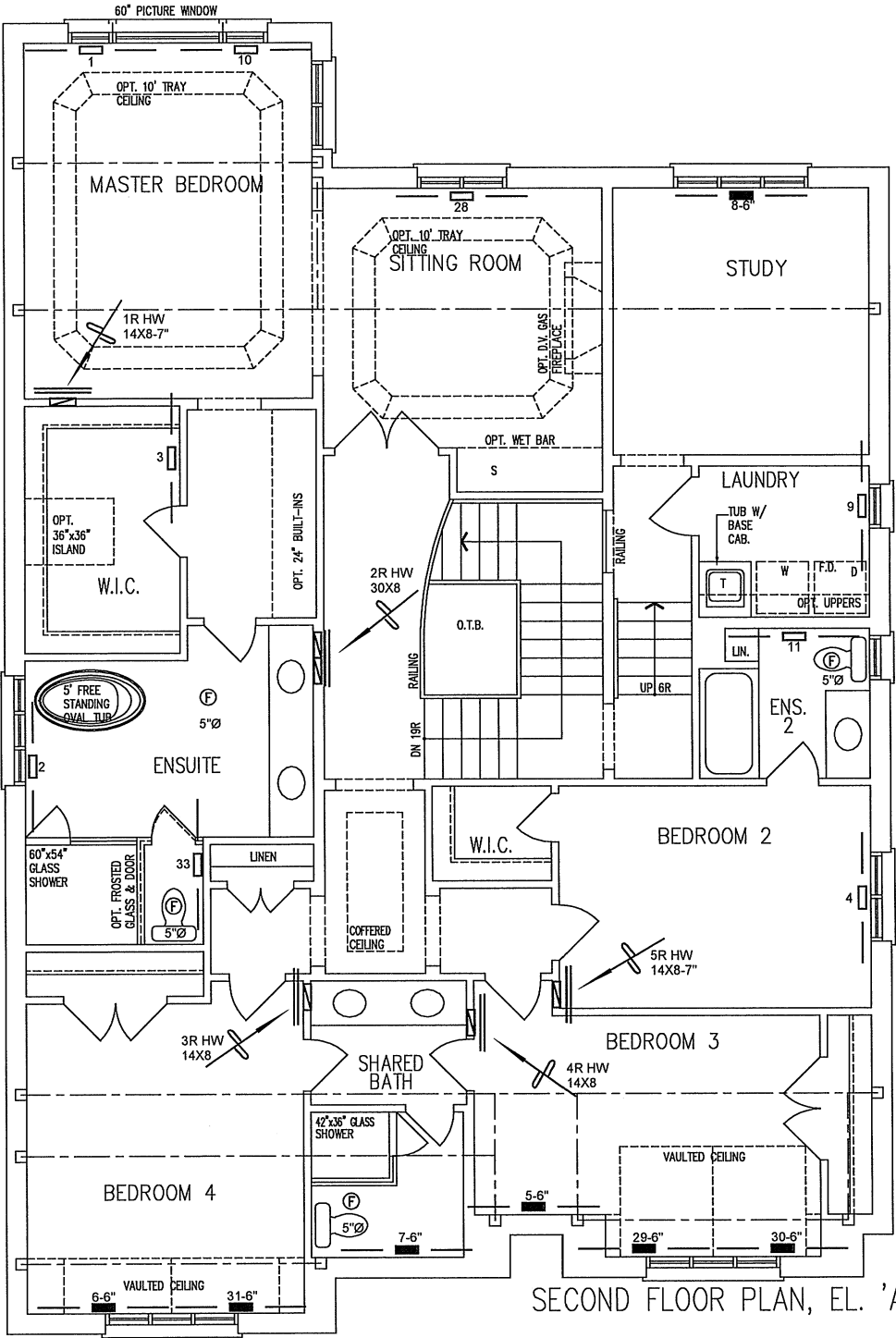
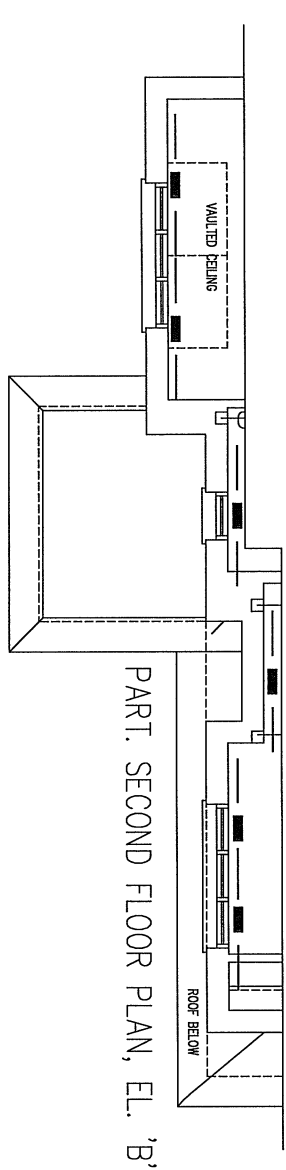
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Sheet Title	
SECOND FLOOR HEATING LAYOUT	
Date	JAN/2018
Scale	1/8" = 1'-0"
BCIN# 19669	
LO#	77475

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	OCT/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		

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WOD	CSA-F280-12
LOD	PACKAGE A1