

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.
Municipality VAUGHAN (WOODBIDGE)			Postal code
Plan number/ other description			Lot/con.
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: 4202- THE HILLHURST ALT 1ST 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.			
January 24, 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 ALT 1ST TYPE: 4202 THE HILLHURST GFA: 3592 DATE: Jan-18 WINTER NATURAL AIR CHANGE RATE 0.340 HEAT LOSS AT °F. 76 CSA-F280-12
BUILDER: GOLD PARK HOMES LO# 77529 SUMMER NATURAL AIR CHANGE RATE 0.124 HEAT GAIN AT °F. 16 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	HERS	BED-2	BED-3	BED-4	ENS-2	LOFT	ENS-3	ENS-4
GRS.WALL AREA	470		470	306	72	162	324	108	0	351	81	99
GLAZING												
NORTH	0	0	0	0	0	0	0	0	0	0	0	0
EAST	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	54	1149	2289	18	383	763	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	416	1856	386	277	1236	257	72	321	67	144	643	134
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	480	616	306	168	216	107	98	126	63	324
NO ATTIC EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.5	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
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	3622		2882	2069	447	1809	3411	1000	160	3156	685	678
SUB TOTAL HT GAIN	0.20	0.27	0.20	0.27	0.20	0.27	0.20	0.27	0.20	0.27	0.20	0.27
LEVEL FACTOR / MULTIPLIER	962		550		119	480	906	266	42	839	182	180
AIR CHANGE HEAT LOSS	317		0		14	76	300	70	20	399	87	38
DUCT LOSS	0		0		0	229	432	0	0	0	0	0
HEAT GAIN PEOPLE	2		480	0	0	1	240	1	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	820		0	0	0	820	820	820	0	820	0	0
TOTAL HT LOSS BTU/H	4584		2618	2028	566	2518	4748	1266	222	4394	954	858
TOTAL HT GAIN x 1.3 BTU/H	5978						5986	2319	79	5548	428	514

ROOM USE	EXP. WALL	CLG. HT.	DIN	KT/GT	LIB	LAUN	FOY	MUD	HIS	BAS
GRS.WALL AREA	187		187	1100	132	0	649	312	63	1414
GLAZING										
NORTH	0	0	0	10	213	168	0	0	0	0
EAST	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	29	617	746	0	0	0	0
WEST	0	0	0	123	2617	5214	0	0	0	0
SKYLT.	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	10	252	52	0	0	0	0
NET EXPOSED WALL	153	683	142	928	4141	861	109	486	101	0
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0
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	1406		1017	7841	976	123	4081	1808	603	9832
SUB TOTAL HT GAIN	0.30	0.44	0.30	0.44	0.30	0.44	0.30	0.44	0.20	0.27
LEVEL FACTOR / MULTIPLIER	618		108	3445	429	33	1793	794	160	11797
AIR CHANGE HEAT LOSS	0		0	0	0	0	0	0	0	0
DUCT LOSS	0		0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	0		0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	820		820	820	820	820	820	820	820	820
TOTAL HT LOSS BTU/H	2024		2529	11286	1405	156	5874	2602	840	21628
TOTAL HT GAIN x 1.3 BTU/H				11194	1768	1154	1220	1607	248	2357

TOTAL HEAT GAIN BTU/H: 48460 TONS: 4.04 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 68544 TOTAL COMBINED HEAT LOSS BTU/H: 71725

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

ALT 1ST
TYPE: 4202- THE HILLHURST

DATE: Jan-18

GFA: 3592

LO# 77529

HEATING CFM	1525	COOLING CFM	1525		
TOTAL HEAT LOSS	68 544	TOTAL HEAT GAIN	47 799		
AIR FLOW RATE CFM	22.25	AIR FLOW RATE CFM	31.9		
RUN COUNT		3rd	2nd	1st	Bas
S/A	0	0	17	9	6
R/A	0	0	5	2	1

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

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000
DESIGN CFM = 1525
CFM @ 8" E.S.P.

EL296UH090XE48C 90

FAN SPEED

LOW 0

MEDLOW 0

MEDIUM 1105

HIGH 1255

TEMPERATURE RISE 52 °F

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	ENS	BED-2	BED-3	BED-4	ENS-2	LOFT	ENS-3	MBR	ENS-4	DIN	KT/GT	KT/GT	KT/GT	KT/GT	LAUN	LIB	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.29	1.31	1.31	2.52	1.58	1.27	0.22	2.20	0.95	2.29	0.86	2.02	2.82	2.82	2.82	2.82	0.16	1.40	2.94	2.60	3.60	3.60	3.60	3.60
CFM PER RUN HEAT	51	29	29	56	35	28	5	49	21	51	19	45	63	63	63	63	3	31	65	58	80	80	80	80
RM GAIN MBH	2.99	1.01	1.01	2.65	2.00	2.32	0.08	2.77	0.43	2.99	0.51	2.53	2.80	2.80	2.80	2.80	1.15	1.77	0.61	0.39	0.39	0.39	0.39	0.39
CFM PER RUN COOLING	95	32	32	85	64	74	3	88	14	95	16	81	89	89	89	89	37	56	19	51	13	13	13	13
ADJUSTED PRESSURE	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	69	53	61	39	49	25	42	55	48	73	39	10	43	47	46	57	52	36	42	27	45	50	13	36
EQUIVALENT LENGTH	160	150	130	180	150	140	190	190	160	140	140	150	130	130	130	130	190	120	150	160	120	110	120	130
TOTAL EFFECTIVE LENGTH	229	203	191	219	199	165	232	245	208	213	179	160	173	177	176	187	242	156	192	187	165	160	133	166
ADJUSTED PRESSURE	0.07	0.08	0.09	0.07	0.09	0.1	0.07	0.07	0.08	0.08	0.1	0.1	0.09	0.09	0.09	0.09	0.07	0.11	0.09	0.09	0.1	0.11	0.13	0.1
ROUND DUCT SIZE	6	4	4	6	5	5	4	6	4	6	5	6	6	6	6	6	4	4	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	260	333	333	286	257	206	57	250	241	260	218	330	321	321	321	321	34	356	477	426	587	587	587	587
COOLING VELOCITY (ft/min)	484	367	367	433	470	543	34	449	161	484	184	595	454	454	454	454	424	642	140	374	95	95	95	95
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	A	A	C	E	C	E	D	E	B	C	C	A	A	B	B	B	C	D	E	A	B	C	D

RUN #	25	26	27	28	29	30	31	32
ROOM NAME	BED-3	LOFT	BAR	FOY	HERS	HIS	BED-3	BED-3
RM LOSS MBH	1.58	2.20	3.60	2.94	0.57	0.84	1.58	3.60
CFM PER RUN HEAT	35	49	80	65	13	19	35	80
RM GAIN MBH	2.00	2.77	0.39	0.61	0.19	0.25	2.00	0.39
CFM PER RUN COOLING	64	88	13	19	6	8	64	13
ADJUSTED PRESSURE	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	45	57	33	40	50	60	58	22
EQUIVALENT LENGTH	140	150	180	150	180	150	160	120
TOTAL EFFECTIVE LENGTH	185	207	213	190	230	210	218	142
ADJUSTED PRESSURE	0.09	0.08	0.08	0.09	0.07	0.08	0.08	0.12
ROUND DUCT SIZE	5	6	5	5	4	4	5	5
HEATING VELOCITY (ft/min)	257	250	587	477	149	218	257	587
COOLING VELOCITY (ft/min)	470	449	95	140	69	92	470	95
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	E	D	D	D	B	B	E	C

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	264	0.08	8.5	8	594	TRUNK G	0	0.00	0	0	0
TRUNK B	343	0.07	9.7	12	515	TRUNK H	0	0.00	0	0	0
TRUNK C	946	0.07	14.2	24	710	TRUNK I	0	0.00	0	0	0
TRUNK D	388	0.07	10.2	12	582	TRUNK J	0	0.00	0	0	0
TRUNK E	577	0.07	11.8	16	649	TRUNK K	0	0.00	0	0	0
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	62	69	49	53	30	52	56	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	155	165	145	185	185	140	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	217	234	194	238	215	192	206	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.08	0.06	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08
ROUND DUCT SIZE	6.8	6.9	6.5	7	9.7	9.4	6.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 4202- THE HILLHURST
SITE NAME: PINE VALLEY & TESTON

LO # 77529
ALT 1ST

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	<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>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Other Rooms	<u>8</u> @ 10.6 cfm	<u>84.8</u> cfm
Table 9.32.3.A.	TOTAL	<u>222.6</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		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>222.6</u>	cfm
Less Principal Ventil. Capacity	<u>155</u>	cfm
Required Supplemental Capacity	<u>67.6</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
<u>155.0</u> cfm	<u>3.0</u> sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	$\Delta T \cdot F$
155.0 CFM X	76 F X
	FACTOR 1.08 X
	% LOSS 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	☒
ENS-2	QTXEN050C	50	☒
ENS-4	QTXEN050C	50	☒

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	☒ 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:	January-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																									
Formula Sheet (For Air Leakage / Ventilation Calculation)																																									
LO#: 77529		Model: 4202- THE HILLHURST		Builder: GOLD PARK HOMES		Date: 24/01/2018																																			
Volume Calculation																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1540</td> <td>10</td> <td>15400</td> </tr> <tr> <td>First</td> <td>1540</td> <td>11</td> <td>16940</td> </tr> <tr> <td>Second</td> <td>2076</td> <td>9</td> <td>18684</td> </tr> <tr> <td>Third</td> <td>0</td> <td>0</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>51,024.0 ft³</td> </tr> <tr> <td colspan="2">Total:</td> <td></td> <td>1444.8 m³</td> </tr> </tbody> </table>										Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1540	10	15400	First	1540	11	16940	Second	2076	9	18684	Third	0	0	0	Fourth	0	9	0	Total:			51,024.0 ft³	Total:			1444.8 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																						
Bsmt	1540	10	15400																																						
First	1540	11	16940																																						
Second	2076	9	18684																																						
Third	0	0	0																																						
Fourth	0	9	0																																						
Total:			51,024.0 ft³																																						
Total:			1444.8 m³																																						
Air Change & Delta T Data																																									
		WINTER NATURAL AIR CHANGE RATE		0.340																																					
		SUMMER NATURAL AIR CHANGE RATE		0.124																																					
Design Temperature Difference																																									
		Tin °C		Tout °C		ΔT °C		ΔT °F																																	
Winter DTDh		22		-20		42		76																																	
Summer DTDc		22		31		9		16																																	
6.2.6 Sensible Gain due to Air Leakage																																									
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																									
0.340		x		401.34		x		1.2																																	
								= 524 W																																	
								= 1789 Btu/h																																	
6.2.7 Sensible heat Gain due to Ventilation																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																									
155 CFM		x		16 °F		x		0.25																																	
								= 661 Btu/h																																	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																									
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																									
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																									

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4202- THE HILLHURST	ALT 1ST	BUILDER: GOLD PARK HOMES
SFQT: 3592	LO# 77529	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):	51024.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 68.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	202.0 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	-

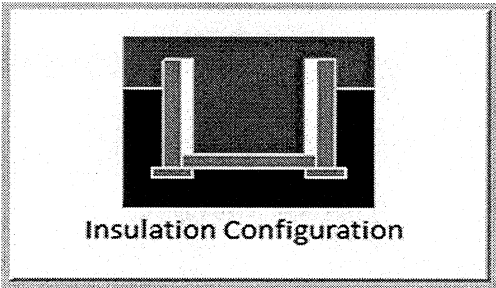
INDIVIDUAL BCIN: 19669

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):	20.7	 Insulation Configuration
Floor Width (m):	10.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	0.7	
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):	2044	

TYPE: 4202- THE HILLHURST
LO# 77529

ALT 1ST

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):	1444.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1926.0 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: 4202- THE HILLHURST
LO# 77529

ALT 1ST

CSA-F280-12

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		
SYMBOL	DESCRIPTION	
	SUPPLY AIR GRILLE	
	SUPPLY AIR BOOT 6" BOOT	
	SUPPLY AIR STACK ABOVE	
	SUPPLY AIR STACK 2nd FLOOR	
	FRA FLOOR RETURN AIR GRILLE	
	RETURN AIR STACK ABOVE	
	RETURN AIR STACK 2nd FLOOR	
	REDUCER	
REVISIONS		
No.	Description	Date
1.		
2.		
3.		

Y-16X8

A-8X8

B-12X8

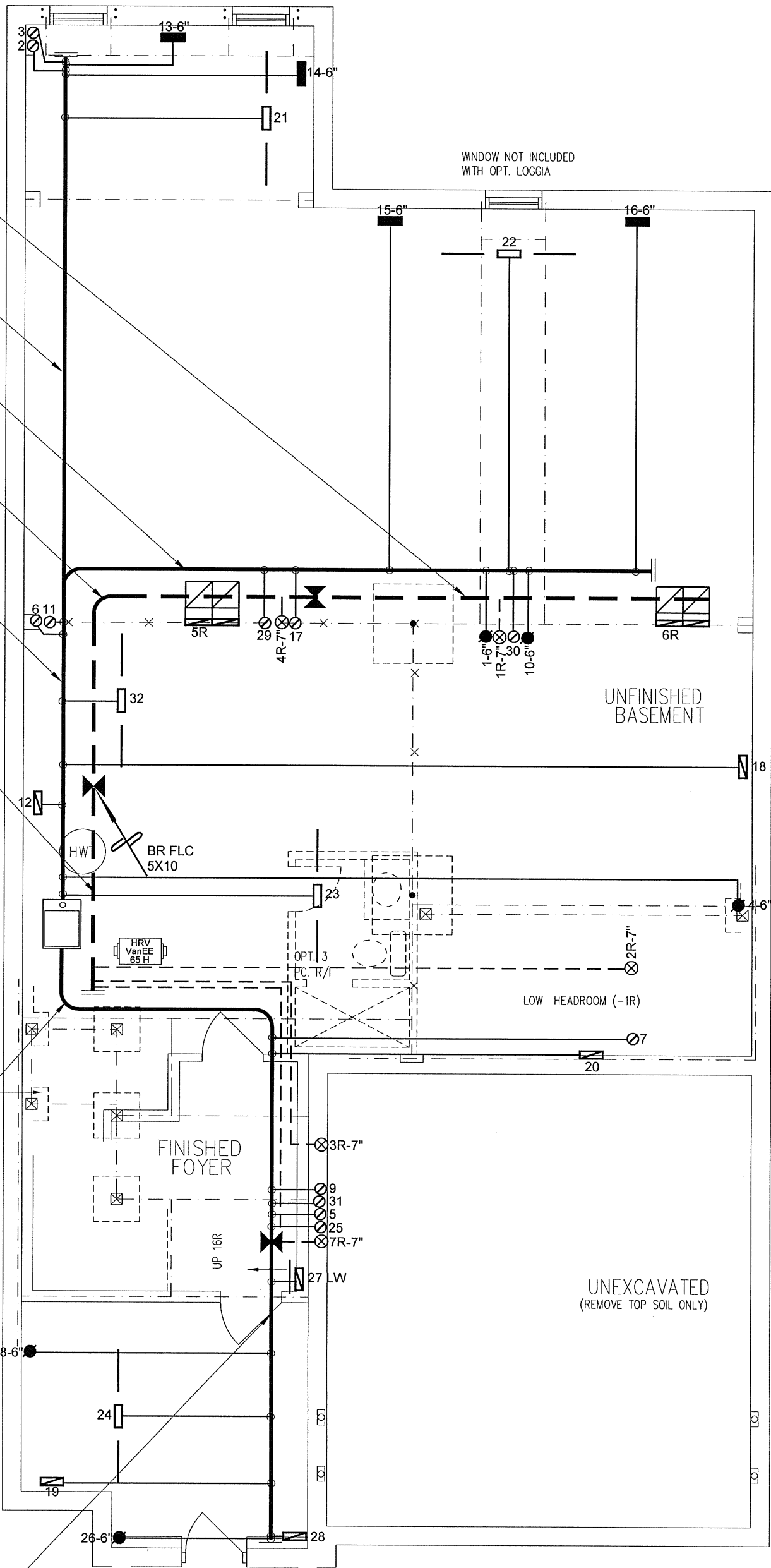
Z-26X8

C-24X8

X-32X10
24X14

E-16X8

D-12X8



PARTIAL BASEMENT PLAN ELEV. 'A' (ELEV. 'B'/'C' SIMILAR FOR OPT. GROUND FLOOR PLAN W/ LIBRARY)

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Client
GOLD PARK HOMES

Project Name
**PINE VALLEY & TESTON
VAUGHAN, ONTARIO
ALT. 1ST
THE HILLHURST
4202**

3592 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 71725 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			
MAKE	LENNOX	3RD FLOOR			
MODEL	EL296UH090XE48C	2ND FLOOR	17	5	6
INPUT	88 MBTU/H	1ST FLOOR	9	2	2
OUTPUT	85 MBTU/H	BASEMENT	6	1	0
COOLING	4.0 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	1525 cfm @ 0.6" w.c.				

Sheet Title	
BASEMENT HEATING LAYOUT	
Date	JAN/2018
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	77529

CSA-F280-12

PACKAGE A1

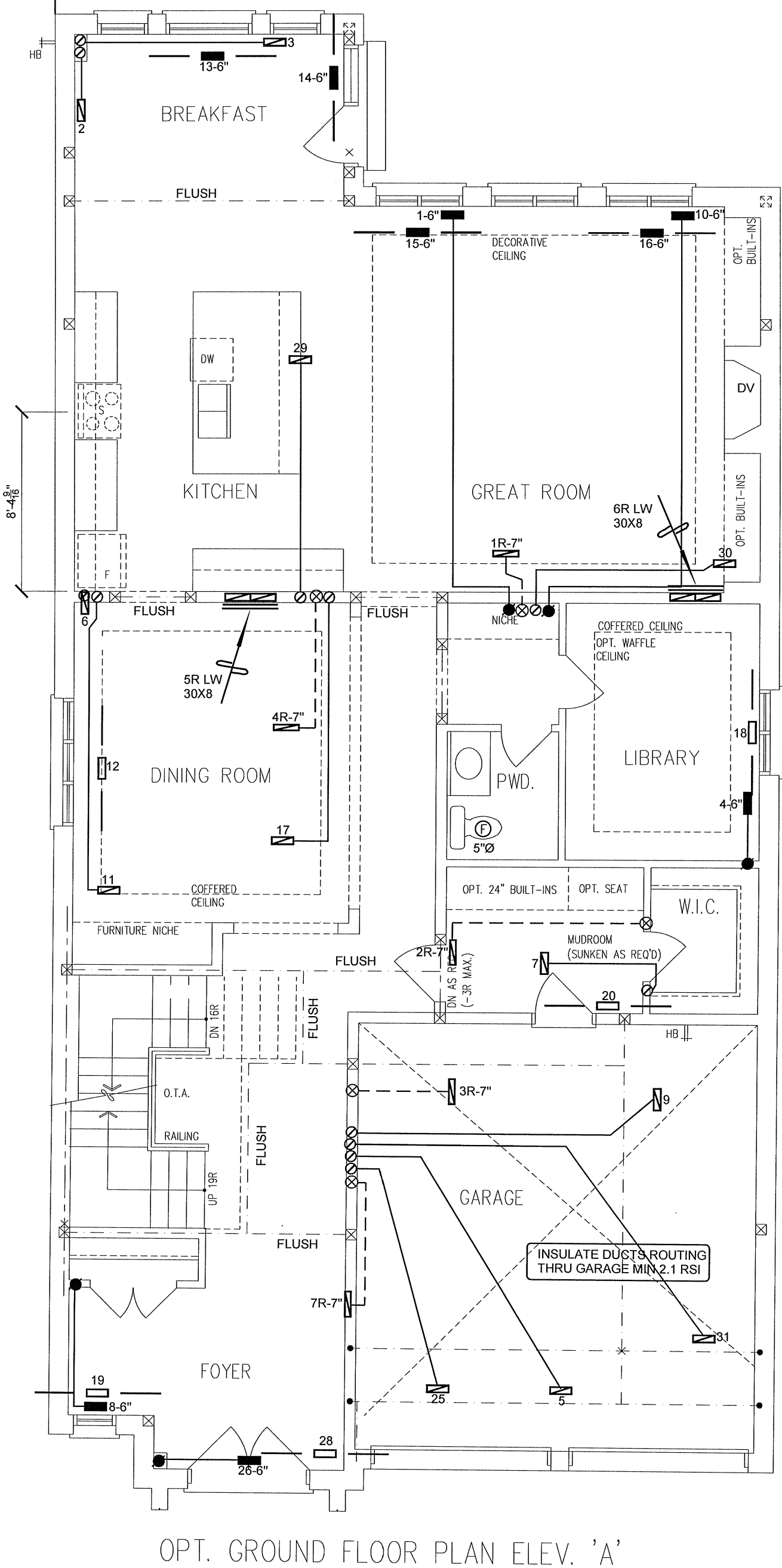
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C. 3.2.5 OF THE BUILDING CODE.

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

ELEVATION 'B'

ELEVATION 'C'

HVAC LEGEND		
SYMBOL	DESCRIPTION	
	SUPPLY AIR GRILLE	1.
	SUPPLY AIR GRILLE 6\"/>	2.
	SUPPLY AIR BOOT	
	SUPPLY AIR BOOT 6\"/>	
	SUPPLY AIR STACK	
	SUPPLY AIR STACK 2nd FLOOR	
	FRA. FLOOR RETURN AIR GRILLE	
	RETURN AIR STACK	
	RETURN AIR STACK 2nd FLOOR	
	REDUCER	
REVISIONS		
No.	Description	Date



OPT. GROUND FLOOR PLAN ELEV. 'A'

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Client
GOLD PARK HOMES
Project Name
PINE VALLEY & TESTON VAUGHAN, ONTARIO ALT. 1ST THE HILLHURST 4202
3592 sqft

HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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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
JAN/2018
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 77529

CSA-F280-12
PACKAGE A1

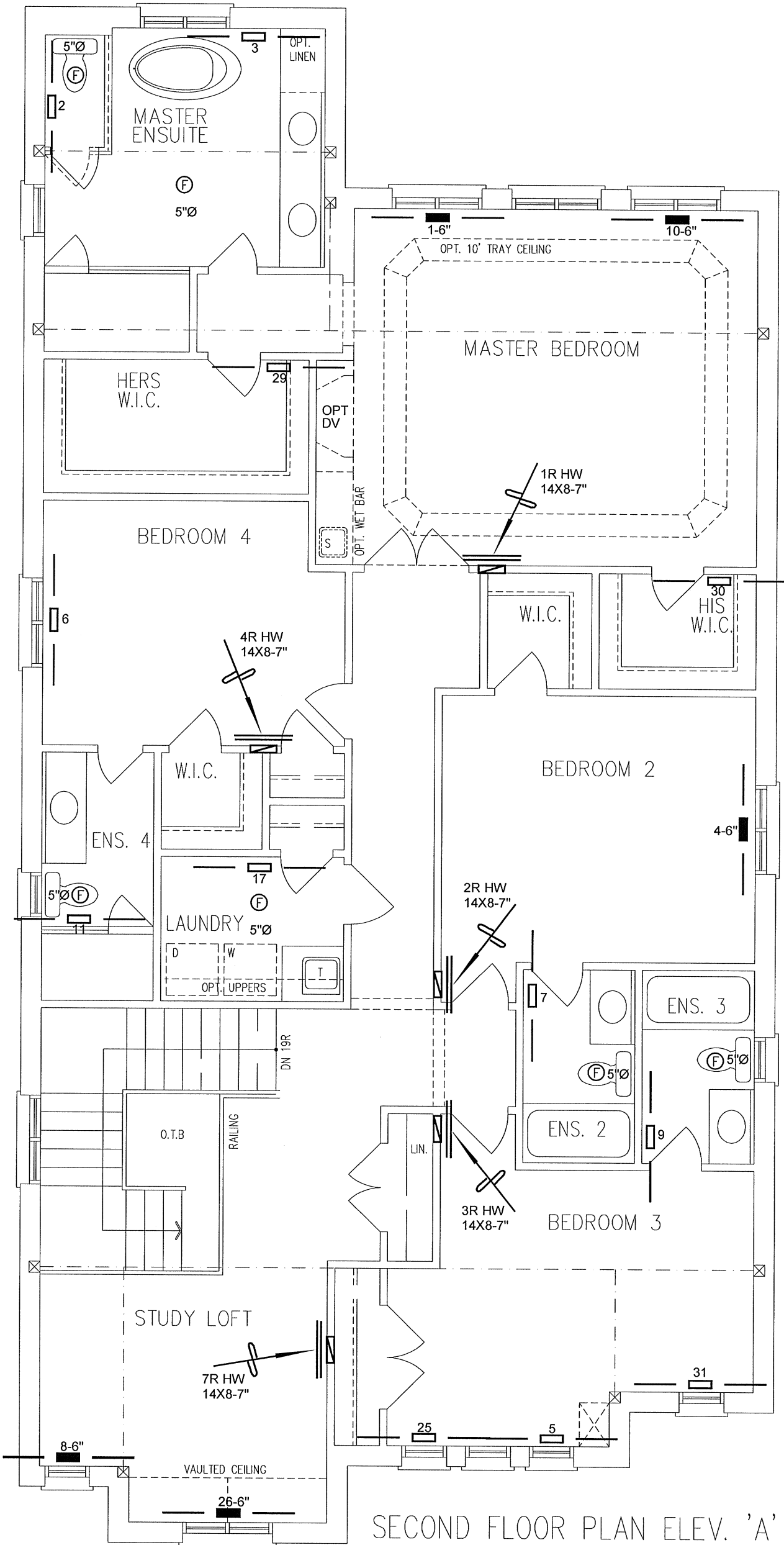
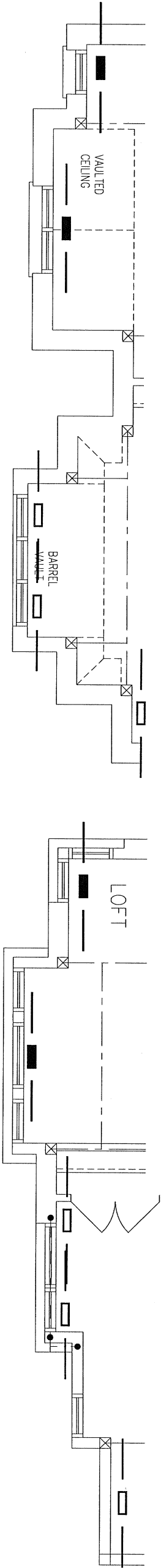
I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.3 OF THE BUILDING CODE.

Michael O'Rourke
Michael O'Rourke, B.Sc. 19669
HVAC DESIGNS LTD.

HVAC LEGEND		
SYMBOL	DESCRIPTION	3.
	SUPPLY AIR GRILLE	2.
	SUPPLY AIR BOOT	1.
	SUPPLY AIR BOOT ABOVE	
	SUPPLY AIR STACK FROM 2nd FLOOR	
	6" SUPPLY AIR STACK 2nd FLOOR	
	SUPPLY AIR STACK 2nd FLOOR	
	FRA - FLOOR RETURN AIR GRILLE	
	RETURN AIR STACK ABOVE	
	RETURN AIR STACK 2nd FLOOR	
	REDUCER	
REVISIONS		
Description		Date

PARTIAL SECOND FLOOR PLAN - ELEVATION 'B'

PARTIAL SECOND FLOOR PLAN - ELEVATION 'C'



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Client
GOLD PARK HOMES

Project Name
**PINE VALLEY & TESTON
VAUGHAN, ONTARIO
ALT. 1ST
THE HILLHURST
4202**

3592 sqft

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Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**

Date
JAN/2018

Scale
3/16" = 1'-0"

BCIN# 19669

LO# **77529**