

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: 4003 - BROOKSIDE Project: PINE VALLEY PH 2		
D. Declaration of Designer					
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)					
☐ 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: - The information contained in this schedule is true to the best of my knowledge. - I have submitted this application with the knowledge and consent of the firm.					
April 14, 2022 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 PH 2
BUILDING: GOLD PARK HOMES
DATE: Apr-22
LOF: 96120
GFA: 3228
TYPE: 4003 - BROOKSIDE
WIC
ENS
MBR
GRS.WALL AREA
GLAZING
FACTORS
NORTH
EAST
SOUTH
WEST
SKYLT.
DOORS
NET EXPOSED WALL
NET EXPOSED BSMT WALL ABOVE GR
EXPOSED CLG
NO ATTIC EXPOSED CLG
EXPOSED FLOOR
BASEMENT/CRAWL HEAT LOSS
SLAB ON GRADE HEAT LOSS
SUBTOTAL HT LOSS
SUB TOTAL HT GAIN
LEVEL FACTOR / MULTIPLIER
AIR CHANGE HEAT LOSS
AIR CHANGE HEAT GAIN
DUCT LOSS
DUCT GAIN
HEAT GAIN PEOPLE
HEAT GAIN APPLIANCES/LIGHTS
TOTAL HT LOSS BTU/H
TOTAL HT GAIN x 1.3 BTU/H

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	WINTER NATURAL AIR CHANGE RATE	HEAT LOSS AT °F	76	CSA-F280-12
EXP. WALL	33	9		25	5	9	13	15	12	7	0.370	HEAT GAIN AT °F	13	SB-12 PACKAGE A1
GRS.WALL AREA	297			225	45		117	135	108	63				
GLAZING				LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS				
NORTH	21.3	16.0		0	0	0	18	383	288	0				
EAST	21.3	41.6		0	0	0	0	0	0	0				
SOUTH	21.3	24.9		0	9	192	224	0	0	0				
WEST	21.3	41.6		36	766	1496	0	0	0	0				
SKYLT.	37.2	101.5		0	0	0	0	0	0	0				
DOORS	20.1	3.4		0	0	0	0	0	0	0				
NET EXPOSED WALL	4.5	0.8		198	884	149	45	201	34	99				
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6		0	0	0	0	0	0	0				
EXPOSED CLG	1.3	0.6		290	372	170	166	200	92	70				
NO ATTIC EXPOSED CLG	2.7	1.3		0	0	0	0	0	0	0				
EXPOSED FLOOR	2.6	0.4		0	0	0	0	0	0	0				
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0	0	0				
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0				
SUBTOTAL HT LOSS	2303	1862		1658	1213	291	1125	499	513	407				
SUB TOTAL HT GAIN	0.20	0.33		0.20	0.33	0.20	0.33	0.20	0.33	0.20				
LEVEL FACTOR / MULTIPLIER	766	132		551	97	5	374	384	332	135				
AIR CHANGE HEAT LOSS				86	0	0	0	0	0	0				
AIR CHANGE HEAT GAIN				0	0	0	0	0	0	0				
DUCT LOSS				0	0	0	0	0	0	0				
DUCT GAIN				0	0	0	0	0	0	0				
HEAT GAIN PEOPLE	2	480		0	0	0	1	240	1	240				
HEAT GAIN APPLIANCES/LIGHTS		776		0	0	0	0	776	0	776				
TOTAL HT LOSS BTU/H	3069			2210	387	104	1499	1540	1330	542				
TOTAL HT GAIN x 1.3 BTU/H	4226			1688			2016	2227	2175	146				

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MEDIA	DIN	KT/GT	STUDY	PWD	FOY	MUD	LOD	BAS
EXP. WALL	40	14		23	70	11	11	12	12	25	42	184
GRS.WALL AREA	560			253	770		121	132	516	300	420	1414
GLAZING	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
NORTH	21.3	16.0		0	0	0	32	681	511	9	192	144
EAST	21.3	41.6		0	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9		0	34	724	847	0	0	0	0	0
WEST	21.3	41.6		0	0	119	2532	4545	0	0	0	0
SKYLT.	37.2	101.5		0	0	0	0	0	0	0	0	0
DOORS	20.1	3.4		0	0	20	401	68	0	0	0	0
NET EXPOSED WALL	4.5	0.8		456	2035	343	219	977	165	631	2816	474
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6		0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6		244	313	143	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3		200	550	252	0	0	0	156	429	186
EXPOSED FLOOR	2.6	0.4		444	1132	191	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	6219	4486		1701	5749	5487	1078	589	5092	1802	1437	8522
SUB TOTAL HT GAIN	0.20	0.33		0.30	0.46	0.30	0.46	0.30	0.46	0.30	0.46	0.50
LEVEL FACTOR / MULTIPLIER	2068	318		779	2632	389	494	270	2331	825	1381	12216
AIR CHANGE HEAT LOSS				72	0	0	0	0	0	0	0	0
AIR CHANGE HEAT GAIN				0	0	0	0	0	0	0	0	0
DUCT LOSS				0	0	0	0	0	0	0	0	0
DUCT GAIN				558	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240			0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		776		0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	9116			2479	776	8381	1572	859	7423	2627	1437	20738
TOTAL HT GAIN x 1.3 BTU/H	7981			2417	8648	1814	1814	138	5779	578	1795	846

TOTAL HEAT GAIN BTU/H: 43151
TONS: 3.60
LOSS DUE TO VENTILATION LOAD BTU/H: 1631
STRUCTURAL HEAT LOSS: 65925
TOTAL COMBINED HEAT LOSS BTU/H: 67557

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMES

TYPE: 4003 - BROOKSIDE DATE: Apr-22 LO# 96120 GFA: 3228

HEATING CFM 1340 COOLING CFM 1340
TOTAL HEAT LOSS 65,925 TOTAL HEAT GAIN 42,876
AIR FLOW RATE CFM 20.33 AIR FLOW RATE CFM 31.25

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,600
DESIGN CFM = 1340
CFM @ 5" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	10	5
R/A	0	0	6	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'Ø unless noted otherwise on layout.

ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
RM LOSS MBH	1.53	2.21	0.39	1.50	1.54	1.33	0.54	3.04	3.04	1.53	0.72	2.48	2.10	2.10	2.10	2.10	2.63	0.86	3.71	3.04	1.57	3.71	3.71	2.10
CFM PER RUN HEAT	31	45	8	30	31	27	11	62	62	31	15	50	43	43	43	43	53	17	75	62	32	75	75	43
RM GAIN MBH	2.11	1.69	0.10	2.02	2.23	2.17	0.15	2.66	2.66	2.11	0.30	2.42	2.16	2.16	2.16	2.16	0.58	0.14	2.89	2.66	1.81	2.89	2.89	2.16
CFM PER RUN COOLING	66	53	3	63	70	68	5	83	83	66	9	76	68	68	68	68	18	4	90	83	57	90	90	68
ADJUSTED PRESSURE	0.17	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	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.16	0.17	0.17
ACTUAL DUCT LGH.	46	55	27	27	47	45	54	56	61	51	27	31	43	43	43	36	33	21	29	53	71	53	30	30
EQUIVALENT LENGTH	150	140	130	150	120	160	150	175	185	140	260	140	170	170	160	100	250	120	110	170	130	120	110	110
TOTAL EFFECTIVE LENGTH	196	195	157	177	167	205	204	231	246	191	287	171	213	213	196	133	271	149	163	241	141	173	140	140
ADJUSTED PRESSURE	0.09	0.09	0.11	0.1	0.1	0.08	0.08	0.07	0.07	0.09	0.06	0.1	0.08	0.08	0.09	0.13	0.06	0.12	0.1	0.07	0.07	0.09	0.12	0.12
ROUND DUCT SIZE	5	5	4	6	6	6	4	6	6	5	4	6	5	5	5	5	5	4	4	6	6	6	6	5
HEATING VELOCITY (ft/min)	228	330	92	153	158	138	126	316	316	228	172	255	316	316	316	316	389	195	382	316	163	382	316	316
COOLING VELOCITY (ft/min)	485	389	34	321	357	347	57	423	423	485	103	388	499	499	499	499	132	46	459	423	291	459	499	499
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10
TRUNK	A	B	B	B	D	B	D	D	D	A	B	B	A	A	A	A	B	D	C	D	B	C	C	A

ROOM NAME	25	26	27	28	29
RM LOSS MBH	4.44	4.44	4.44	4.44	4.44
CFM PER RUN HEAT	90	90	90	90	90
RM GAIN MBH	0.53	0.53	0.53	0.53	0.53
CFM PER RUN COOLING	17	17	17	17	17
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	44	19	23	35	44
EQUIVALENT LENGTH	150	160	150	140	110
TOTAL EFFECTIVE LENGTH	194	179	173	175	154
ADJUSTED PRESSURE	0.08	0.09	0.09	0.09	0.11
ROUND DUCT SIZE	6	6	6	6	6
HEATING VELOCITY (ft/min)	459	459	459	459	459
COOLING VELOCITY (ft/min)	87	87	87	87	87
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10
TRUNK	A	A	B	D	C

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0.08	10.1	12	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK B	0.06	13.6	22	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK C	0.09	8	8	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK D	0.07	11.8	16	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK E	0.06	16.8	32	8	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK F	0.00	0	0	8	0	0.00	0	0	8	0	0.00	0	0	8

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	85	85	135	135	85	330	200	75	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.	41	53	45	67	71	26	25	47	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	195	190	185	230	190	185	145	245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	236	243	230	257	256	171	170	292	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.06	0.06	0.06	0.06	0.09	0.09	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6	6	7.1	7.1	6	9	7.5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

TYPE: 4003 - BROOKSIDE
SITE NAME: PINE VALLEY PH 2

LO # 96120

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	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A.	TOTAL	180.2 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	180.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	100.7	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
79.5 cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 CFM	76 F	1.08	X	0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-3/4	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE V150H	
150 cfm high	35 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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	April-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																			
Formula Sheet (For Air Leakage / Ventilation Calculation)																																			
LO#: 96120	Model: 4003 - BROOKSIDE	Builder: GOLD PARK HOMES	Date: 4/14/2022																																
Volume Calculation																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> <tr> <td>Bsmt</td> <td>1538</td> <td>10</td> <td>15380</td> </tr> <tr> <td>First</td> <td>1538</td> <td>11</td> <td>16918</td> </tr> <tr> <td>Second</td> <td>1813</td> <td>9</td> <td>16317</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>Total:</td> <td></td> <td></td> <td>48,615.0 ft³</td> </tr> <tr> <td>Total:</td> <td></td> <td></td> <td>1376.6 m³</td> </tr> </table>				Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1538	10	15380	First	1538	11	16918	Second	1813	9	16317	Third	0	9	0	Fourth	0	9	0	Total:			48,615.0 ft³	Total:			1376.6 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																
Bsmt	1538	10	15380																																
First	1538	11	16918																																
Second	1813	9	16317																																
Third	0	9	0																																
Fourth	0	9	0																																
Total:			48,615.0 ft³																																
Total:			1376.6 m³																																
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4">Design Temperature Difference</th> </tr> <tr> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-20</td> <td>42</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>31</td> <td>7</td> </tr> <tr> <td></td> <td></td> <td></td> <td>13</td> </tr> </table>				Design Temperature Difference				Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	Summer DTDc	24	31	7				13												
Design Temperature Difference																																			
Tin °C	Tout °C	ΔT °C	ΔT °F																																
Winter DTDh	22	-20	42																																
Summer DTDc	24	31	7																																
			13																																
6.2.6 Sensible Gain due to Air Leakage																																			
$HG_{salb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																			
0.370	x	382.40	x																																
		7 °C	x																																
		1.2	=																																
			405 W																																
			=																																
			1383 Btu/h																																
6.2.7 Sensible heat Gain due to Ventilation																																			
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																			
80 CFM	x	13 °F	x																																
		1.08	x																																
		0.25	=																																
			275 Btu/h																																
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																			
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclvel} + HL_{bgclvel})\}$																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clvel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center; vertical-align: middle;">24,433</td> <td>9,959</td> <td>1.227</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>16,011</td> <td>0.458</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>14,694</td> <td>0.333</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>0</td> <td>0.000</td> </tr> </table>				Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clvel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	24,433	9,959	1.227	2	0.3	16,011	0.458	3	0.2	14,694	0.333	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: (HL _{clvel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																															
1	0.5	24,433	9,959	1.227																															
2	0.3		16,011	0.458																															
3	0.2		14,694	0.333																															
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																																			

Michael O'Rourke
 BCIN# 19669

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 4003 - BROOKSIDE**BUILDER:** GOLD PARK HOMES**SFQT:** 3228**LO#** 96120**SITE:** PINE VALLEY PH 2**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
		WINDOW SHGC	0.50

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):	48615.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 58.0 ft	WIDTH: 34.0 ft	EXPOSED PERIMETER:	184.0 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		96%	-
HRV/ERV Minimum Efficiency		75%	-
Domestic Hot Water Heater Minimum EF		0.8	-

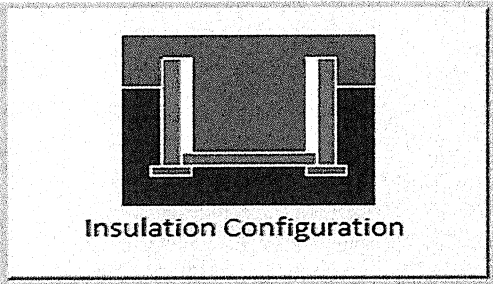
INDIVIDUAL BCIN: 19669

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):	17.7	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.3	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	1775	

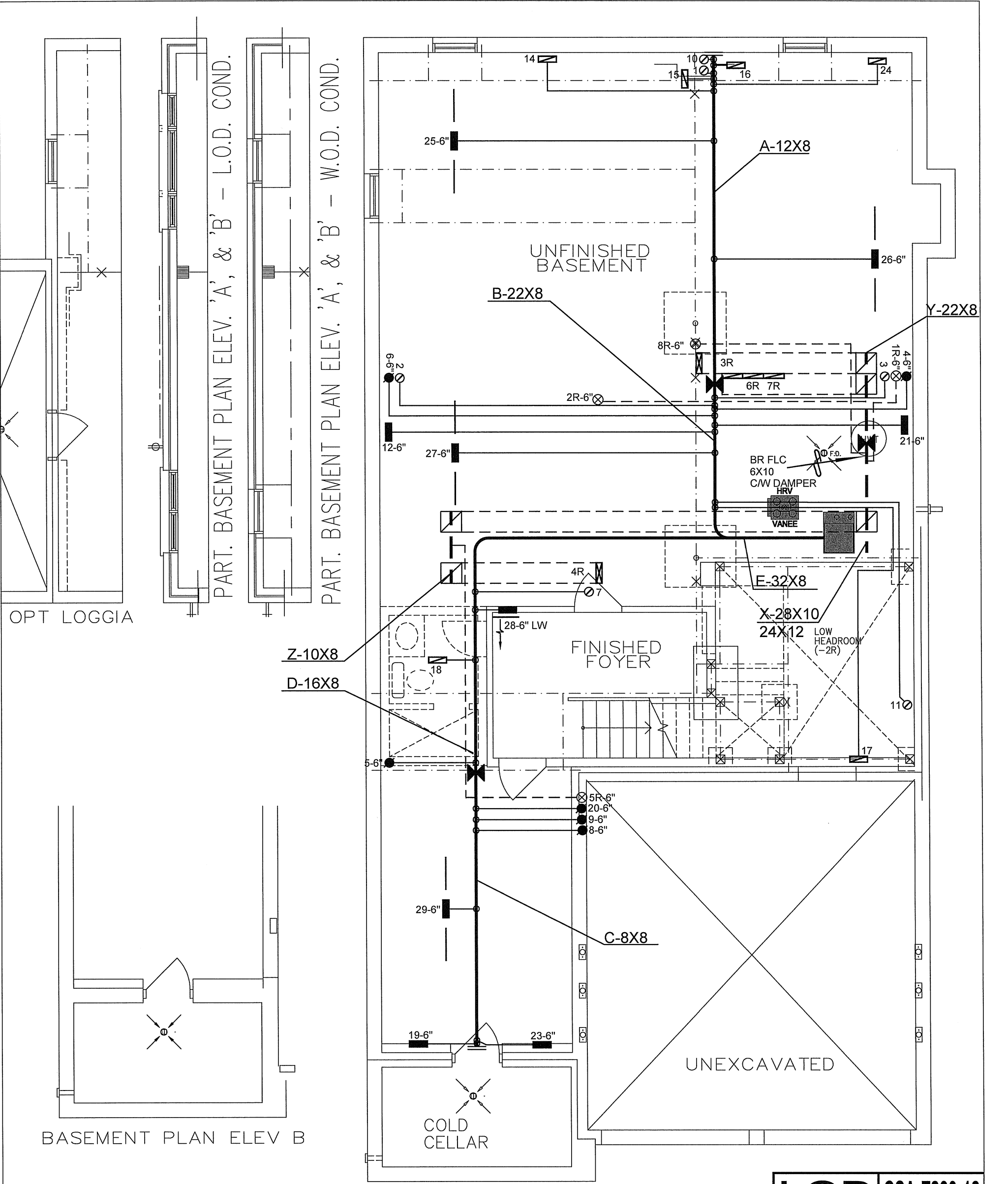
TYPE: 4003 - BROOKSIDE
LO# 96120

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):	7.92			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1376.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa. 3.57	1835.1 cm ² ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply 37.5	Total Exhaust 37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.370			
Cooling Air Leakage Rate (ACH/H):	0.124			

TYPE: 4003 - BROOKSIDE
LO# 96120



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

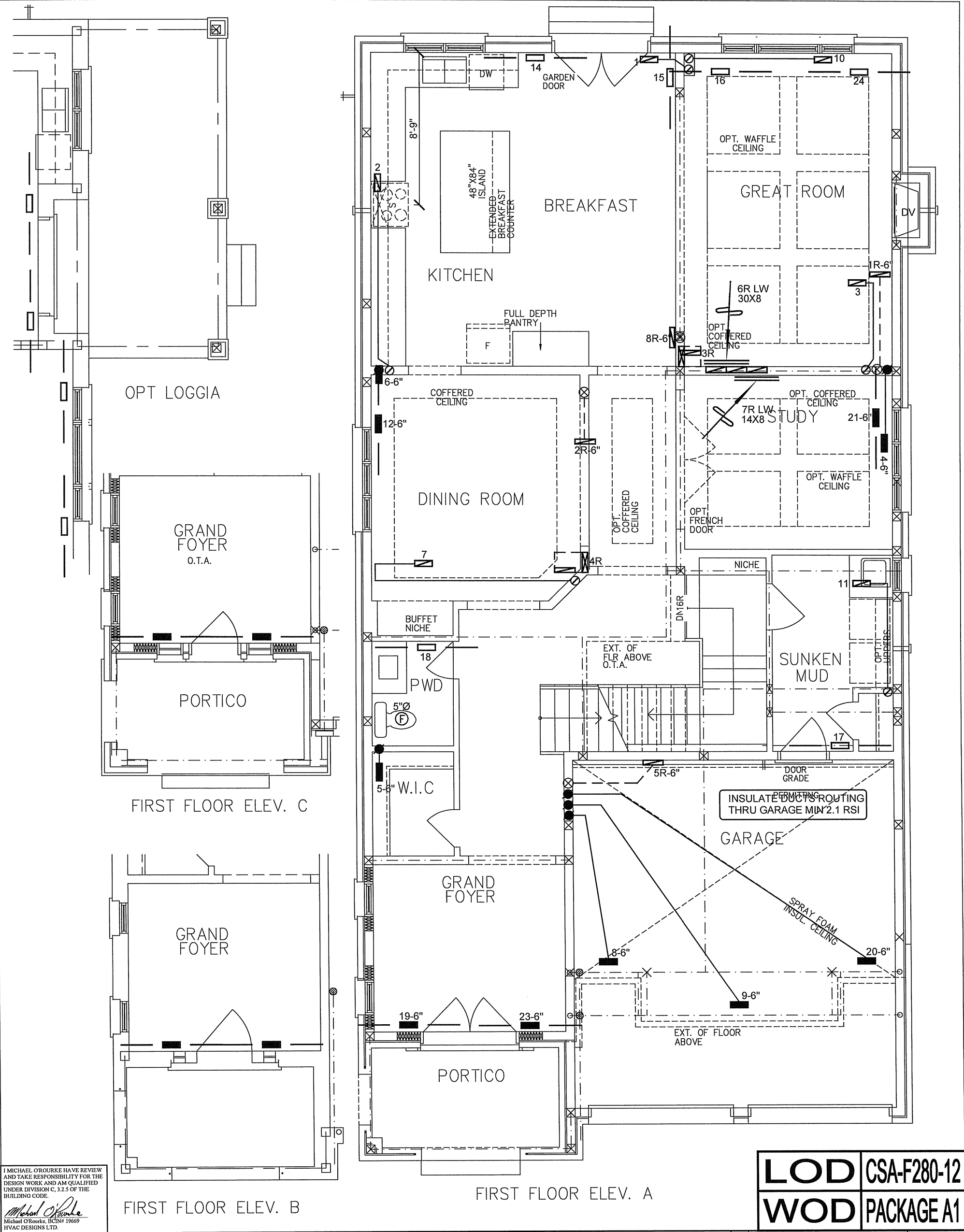
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOD CSA-F280-12
WOD PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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		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 67557 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GOLD PARK HOMES			MAKE LENNOX		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name PINE VALLEY PH 2 VAUGHAN, ONTARIO			MODEL ML196UH090XE48C		2ND FLOOR 12 6 3				
			INPUT 88 MBTU/H		1ST FLOOR 10 2 2				
			OUTPUT 85.6 MBTU/H		BASEMENT 5 1 0				
THE BROOKSIDE 4003 3228 sqft			COOLING 3.5 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			Date APR/2022	
			FAN SPEED 1340 cfm @ 0.6" w.c.					Scale 3/16" = 1'-0"	
								BCIN# 19669	
								LO# 96120	



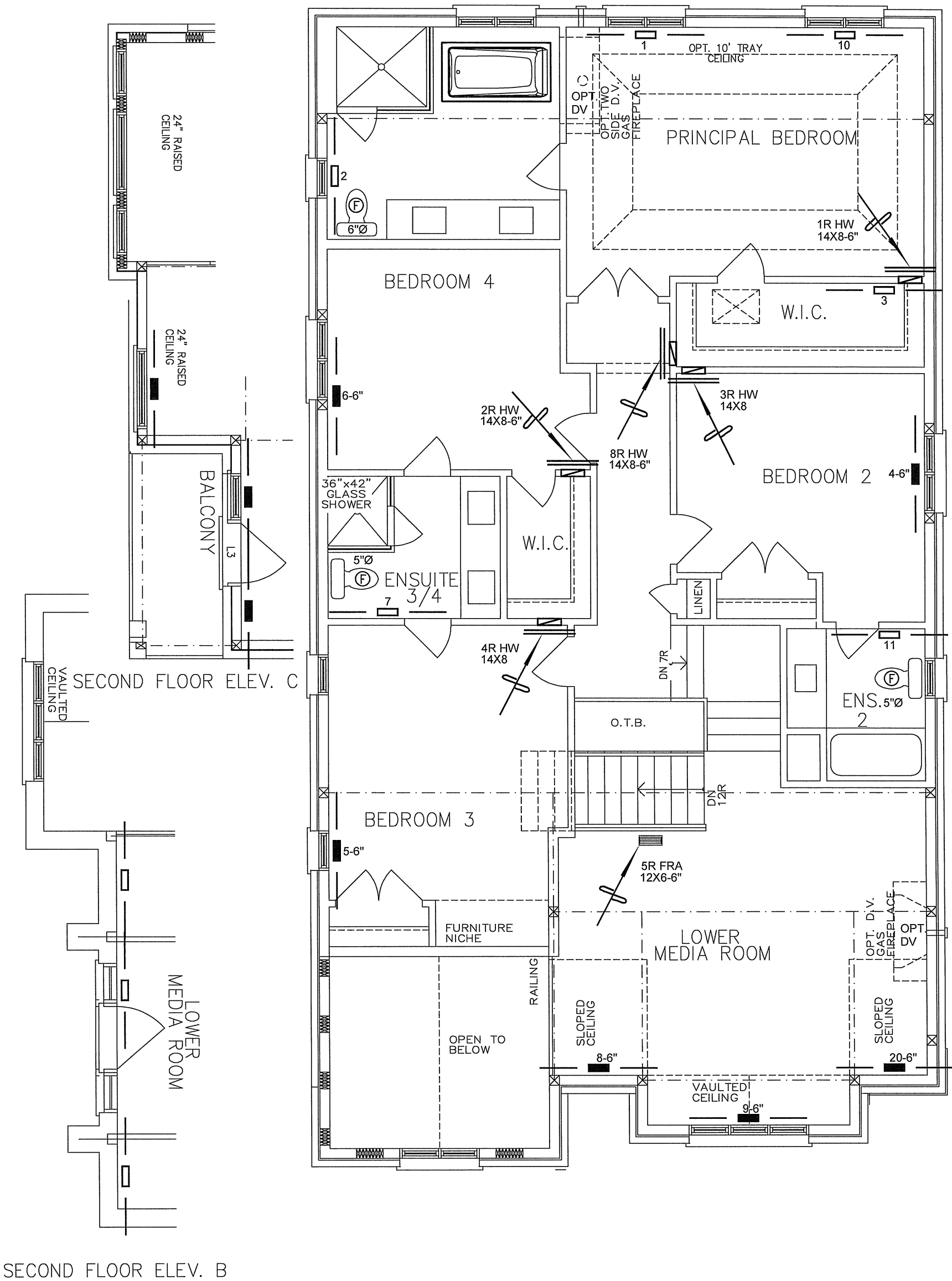
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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@hvacadesigns.ca Web: www.hvacadesigns.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			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	APR/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE BROOKSIDE			BCIN# 19669	
4003	3228 sqft		LO#	96120



SECOND FLOOR ELEV. A

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

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

LOD CSA-F280-12
WOD PACKAGE A1

HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	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		 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	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name PINE VALLEY PH 2 VAUGHAN, ONTARIO			Date APR/2022	
THE BROOKSIDE 4003 3228 sqft		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.	Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	96120