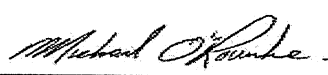


Schedule 1: Designer Information

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]				
☐ 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: 4006 - THE LLAC ELEV C Project: PINE VALLEY PH 2		
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 11, 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.

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMES
ELEV C
TYPE: 4006 - THE LLAC
DATE: Apr-22
LO# 96163
GFA: 3373
WINTER NATURAL AIR CHANGE RATE 0.370
HEAT LOSS AT °F. 76
CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	WIC-3	ENS-2	HEAT GAIN AT °F. 13
GRS.WALL AREA	360	360	252	90	387	306	153	99	45	126	
GLAZING	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	
NORTH	14.9	0	0	0	0	0	0	0	0	0	
EAST	38.4	0	0	0	45	958	1727	0	0	0	
SOUTH	21.3	23.1	0	0	0	0	0	43	915	994	
WEST	21.3	38.4	40	851	1536	0	0	0	0	0	
SKYL.T.	37.2	101.5	0	0	4	149	406	0	0	0	
DOORS	20.1	3.4	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	4.5	320	1428	241	194	866	146	159	710	120	84
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	24	66	30	0	0	0	
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	
SUBTOTAL HT LOSS	2684	0	0	0	0	0	0	0	0	0	
SUB TOTAL HT GAIN	1561	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26	0.20	0.26
LEVEL FACTOR / MULTIPLIER	705	118	652	129	1028	1072	628	343	93	226	
AIR CHANGE HEAT LOSS	0	0	0	0	494	0	0	0	45	0	
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0	0	
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	
DUCT GAIN	0	0	0	0	0	0	0	0	0	0	
HEAT GAIN PEOPLE	240	2	480	0	0	0	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS	521	521	0	0	521	521	521	0	0	0	
TOTAL HT LOSS BTU/H	3389	0	3181	767	5432	5149	3018	1649	492	1084	
TOTAL HT GAIN x 1.3 BTU/H	4004	0	2948	900	5234	6892	3822	1517	858	389	

ROOM USE	EXP. WALL CLG. HT.	DIN	KTGR	LIB	LAUN	FOY	MUD	LOD	BAS
GRS.WALL AREA	242	242	858	583	0	220	429	430	1473
GLAZING	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
NORTH	14.9	0	0	0	0	0	0	0	0
EAST	38.4	0	0	0	0	0	0	0	0
SOUTH	21.3	23.1	63	1341	1457	0	0	0	0
WEST	21.3	38.4	0	0	0	0	0	0	0
SKYL.T.	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	179	799	135	0	40	802	135	20
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0
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	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2139	1591	5287	4170	600	1605	2226	1459	8542
SUB TOTAL HT GAIN	0.30	0.43	0.30	0.43	0.30	0.43	0.30	0.43	0.50
LEVEL FACTOR / MULTIPLIER	917	917	2773	1787	257	688	954	1290	12292
AIR CHANGE HEAT LOSS	0	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	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	521	521	521	521	521	521	521	521	521
TOTAL HT LOSS BTU/H	3056	0	9244	5957	944	2283	3180	1459	20835
TOTAL HT GAIN x 1.3 BTU/H	2871	0	7937	5038	1573	373	1194	1677	1307

TOTAL HEAT GAIN BTU/H: 48809 TONS: 4.07 LOSS DUE TO VENTILATION LOAD BTU/H: 1631 STRUCTURAL HEAT LOSS: 71130 TOTAL COMBINED HEAT LOSS BTU/H: 72761

Michael O'Rourke

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

ELEV C
TYPE: 4006 - THE LLAC

DATE: Apr-22

GFA: 3373 LO# 95163

HEATING CFM 1575
TOTAL HEAT GAIN 48,534
AIR FLOW RATE CFM 22.14

COOLING CFM 1575
furnace filter 0.6
alc coil pressure 0.2
available pressure for s/a & r/a 0.35

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,600
\$*LENNOX
FAN SPEED
LOW 0
MEDIUM 1080
HIGH 1575

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	15	10	5
R/A	0	0	5	3	1

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

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

ROOM #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-2	BED-3	DIN	KT/GR	KT/GR	KT/GR	LAUN	KT/GR	FOY	ENS	BED-4	MUD	LIB	LIB
RM LOSS MBH	1.69	1.59	0.77	2.72	1.72	1.51	1.65	2.72	1.72	1.69	1.08	1.72	3.06	2.31	2.31	2.31	0.94	2.31	2.29	1.59	1.51	3.18	2.98	2.98
CFM PER RUN HEAT	38	35	17	60	38	33	37	60	38	38	24	38	68	51	51	51	21	51	51	35	33	70	66	66
RM GAIN MBH	2.00	1.47	0.90	2.62	2.30	1.91	1.52	2.62	2.30	2.00	0.39	2.30	2.87	1.98	1.98	1.98	1.57	1.98	1.47	1.47	1.91	1.19	2.52	2.52
CFM PER RUN COOLING	65	48	29	85	75	62	49	85	75	65	13	75	93	64	64	64	51	64	12	48	62	39	82	82
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16
ACTUAL DUCT LGH.	36	45	21	75	77	38	62	81	71	44	74	77	31	26	33	31	62	38	37	38	49	47	54	58
EQUIVALENT LENGTH	120	220	190	130	170	180	140	160	140	140	170	190	150	160	140	140	150	110	150	190	190	180	120	120
TOTAL EFFECTIVE LENGTH	156	265	211	205	247	218	202	241	211	184	244	267	181	186	173	121	212	148	187	228	239	227	174	178
ADJUSTED PRESSURE	0.11	0.06	0.08	0.08	0.07	0.08	0.09	0.07	0.08	0.09	0.07	0.06	0.09	0.09	0.1	0.14	0.08	0.12	0.09	0.08	0.07	0.08	0.09	0.09
ROUND DUCT SIZE	5	5	4	6	6	5	5	6	6	5	4	6	6	5	5	5	5	5	5	5	5	5	6	6
HEATING VELOCITY (ft/min)	279	257	195	306	194	242	272	306	194	279	275	194	347	374	374	374	154	374	374	257	242	514	337	337
COOLING VELOCITY (ft/min)	477	352	333	433	382	455	360	433	382	477	149	382	474	470	470	470	374	470	88	352	455	286	418	418
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	D	C	E	B	A	C	B	B	A	D	B	A	C	D	D	D	B	D	B	C	B	C	A	A

ROOM #	25	26	27	28	29	30
ROOM NAME	BAS	BAS	BAS	BAS	BAS	WIC-3
RM LOSS MBH	4.46	4.46	4.46	4.46	4.46	0.49
CFM PER RUN HEAT	99	99	99	99	99	11
RM GAIN MBH	0.60	0.60	0.60	0.60	0.60	0.86
CFM PER RUN COOLING	19	19	19	19	19	28
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.17
ACTUAL DUCT LGH.	28	23	23	32	32	65
EQUIVALENT LENGTH	130	150	120	130	130	200
TOTAL EFFECTIVE LENGTH	158	173	143	162	182	265
ADJUSTED PRESSURE	0.1	0.09	0.11	0.1	0.09	0.06
ROUND DUCT SIZE	6	6	6	6	6	4
HEATING VELOCITY (ft/min)	505	505	505	505	505	126
COOLING VELOCITY (ft/min)	97	97	97	97	97	321
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	3X10
TRUNK	D	D	C	C	A	A

TRUNK	CFM	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	356	0.06	12	12	8	TRUNK G	0	0.00	0	0	8	TRUNK O	0	0.05	0	0	8
TRUNK B	642	0.06	12.8	20	8	TRUNK H	0	0.00	0	0	8	TRUNK P	0	0.05	0	0	8
TRUNK C	1081	0.06	15.5	28	8	TRUNK I	0	0.00	0	0	8	TRUNK Q	0	0.05	0	0	8
TRUNK D	478	0.09	10.3	12	8	TRUNK J	0	0.00	0	0	8	TRUNK R	0	0.05	0	0	8
TRUNK E	1576	0.06	17.9	30	10	TRUNK K	0	0.00	0	0	8	TRUNK S	0	0.05	0	0	8
TRUNK F	0	0.00	0	0	8	TRUNK L	0	0.00	0	0	8	TRUNK T	0	0.05	0	0	8
RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AIR VOLUME	155	135	115	130	345	135	145	175	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
ACTUAL DUCT LGH.	46	65	85	84	35	63	71	33	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	145	225	225	185	185	230	145	185	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	191	290	310	269	220	293	216	218	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.05	0.05	0.06	0.07	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7	7.5	7	7	9.7	7.5	7	7.5	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	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
INLET GRILL SIZE	14	14	14	14	30	14	14	14	0	0	0	0	0	0	0	0	0

TRUNK	CFM	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	356	0.06	12	12	8	TRUNK G	0	0.00	0	0	8	TRUNK O	0	0.05	0	0	8
TRUNK B	642	0.06	12.8	20	8	TRUNK H	0	0.00	0	0	8	TRUNK P	0	0.05	0	0	8
TRUNK C	1081	0.06	15.5	28	8	TRUNK I	0	0.00	0	0	8	TRUNK Q	0	0.05	0	0	8
TRUNK D	478	0.09	10.3	12	8	TRUNK J	0	0.00	0	0	8	TRUNK R	0	0.05	0	0	8
TRUNK E	1576	0.06	17.9	30	10	TRUNK K	0	0.00	0	0	8	TRUNK S	0	0.05	0	0	8
TRUNK F	0	0.00	0	0	8	TRUNK L	0	0.00	0	0	8	TRUNK T	0	0.05	0	0	8
RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AIR VOLUME	155	135	115	130	345	135	145	175	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
ACTUAL DUCT LGH.	46	65	85	84	35	63	71	33	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	145	225	225	185	185	230	145	185	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	191	290	310	269	220	293	216	218	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.05	0.05	0.06	0.07	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7	7.5	7	7	9.7	7.5	7	7.5	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	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
INLET GRILL SIZE	14	14	14	14	30	14	14	14	0	0	0	0	0	0	0	0	0

TYPE: 4006 - THE LLAC
SITE NAME: PINE VALLEY PH 2

LO # 96163
ELEV C

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	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A.	TOTAL	190.8 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	190.8	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	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	X 76 F	X 1.08	X	0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR	
Location	Model	cfm	HVI Sones
ENS	BY INSTALLING CONTRACTOR	50	☒ 3.5
BATH	BY INSTALLING CONTRACTOR	50	☒ 3.5
ENS-2	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

I 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.

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																										
Formula Sheet (For Air Leakage / Ventilation Calculation)																																										
LO#: 96163		Model: 4006 - THE LLAC		Builder: GOLD PARK HOMES		Date: 2022-04-11																																				
Volume Calculation																																										
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>House Volume</th> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> <tr> <td>Bsmt</td> <td>1534</td> <td>10</td> <td>15340</td> </tr> <tr> <td>First</td> <td>1534</td> <td>11</td> <td>16874</td> </tr> <tr> <td>Second</td> <td>1856</td> <td>9</td> <td>16704</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></td> <td>Total:</td> <td></td> <td>48,918.0 ft³</td> </tr> <tr> <td></td> <td>Total:</td> <td></td> <td>1385.2 m³</td> </tr> </table>										House Volume	Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1534	10	15340	First	1534	11	16874	Second	1856	9	16704	Third	0	9	0	Fourth	0	9	0		Total:		48,918.0 ft³		Total:		1385.2 m³
House Volume	Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																						
Bsmt	1534	10	15340																																							
First	1534	11	16874																																							
Second	1856	9	16704																																							
Third	0	9	0																																							
Fourth	0	9	0																																							
	Total:		48,918.0 ft³																																							
	Total:		1385.2 m³																																							
Design Temperature Difference																																										
		Tin °C	Tout °C	ΔT °C	ΔT °F																																					
Winter DTDh		22	-20	42	76																																					
Summer DTDc		24	31	7	13																																					
WINTER NATURAL AIR CHANGE RATE																																										
SUMMER NATURAL AIR CHANGE RATE																																										
6.2.6 Sensible Gain due to Air Leakage																																										
$HG_{satb} = LR_{atrc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																										
0.370		x	384.78	x	7 °C	x	1.2	=	408 W																																	
								=	1392 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)																																										
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																										
<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_{level})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="4">24,585</td> <td>10,001</td> <td>1.229</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>17,214</td> <td>0.428</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>18,706</td> <td>0.263</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> </table>										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	24,585	10,001	1.229	2	0.3	17,214	0.428	3	0.2	18,706	0.263	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 _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																						
1	0.5	24,585	10,001	1.229																																						
2	0.3		17,214	0.428																																						
3	0.2		18,706	0.263																																						
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: 4006 - THE LLAC	ELEV C	BUILDER: GOLD PARK HOMES
SFQT: 3373	LO# 96163	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):	48918.0	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: 63.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	192.0 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	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

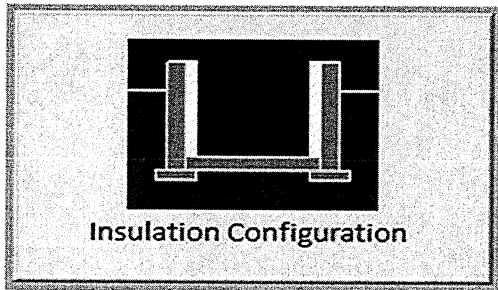
INDIVIDUAL BCIN: 19669

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):	19.2	 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):	3.1	
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):	1895	

TYPE: 4006 - THE LLAC
LO# 96163

ELEV C

Michael O'Rourke BCIN #19669



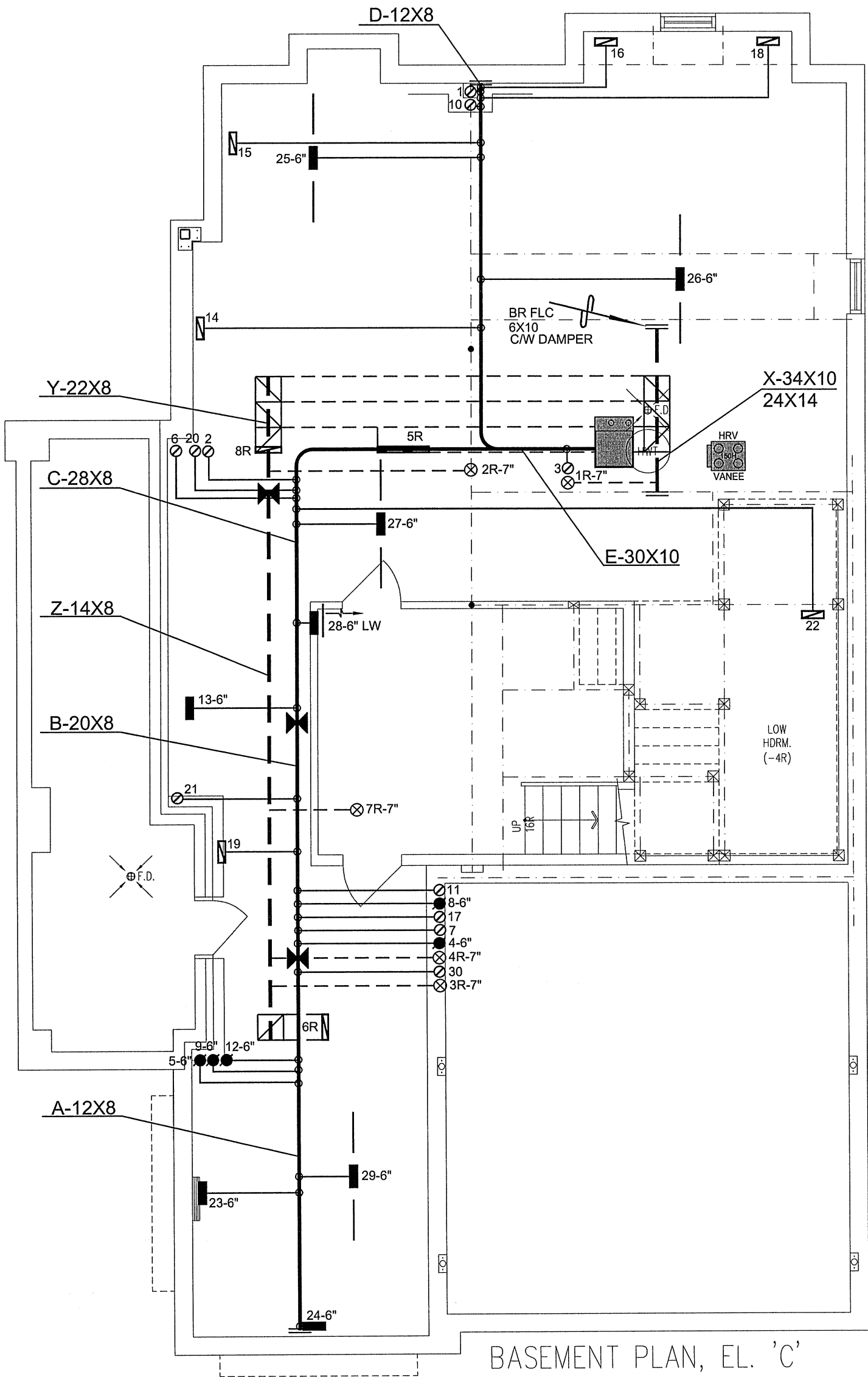
Air Infiltration Residential Load Calculator

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):	1385.2			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1846.5 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	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: 4006 - THE LLAC
LO# 96163

ELEV C



BASEMENT 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, BCIN# 19669
HVAC DESIGNS LTD.

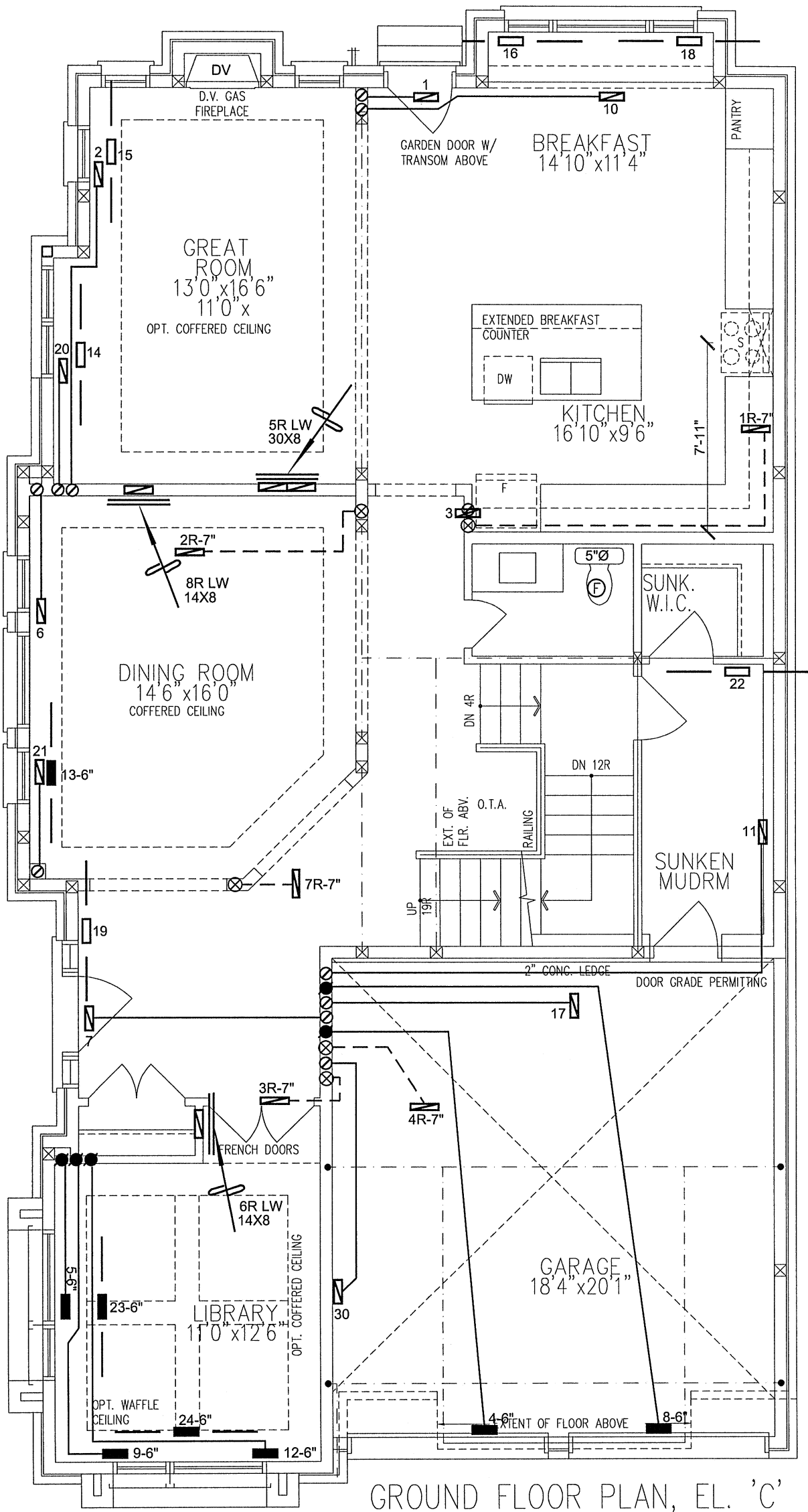
DECK CONDITIONS ON THIRD PAGE

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.		
	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		 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	HEAT LOSS 72761 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT	
Project Name PINE VALLEY PH 2 VAUGHAN, ONTARIO			MAKE LENNOX		3RD FLOOR				
			MODEL ML196UH090XE48C		2ND FLOOR				
			INPUT 88 MBTU/H		1ST FLOOR				
			OUTPUT 85.6 MBTU/H		BASEMENT				
THE LILAC - ELEV C 4006 CNR 3373 sqft		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			Date APR/2022		
		FAN SPEED 1575 cfm @ 0.6" w.c.					Scale 3/16" = 1'-0"		
							BCIN# 19669		
							LO# 96163		



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

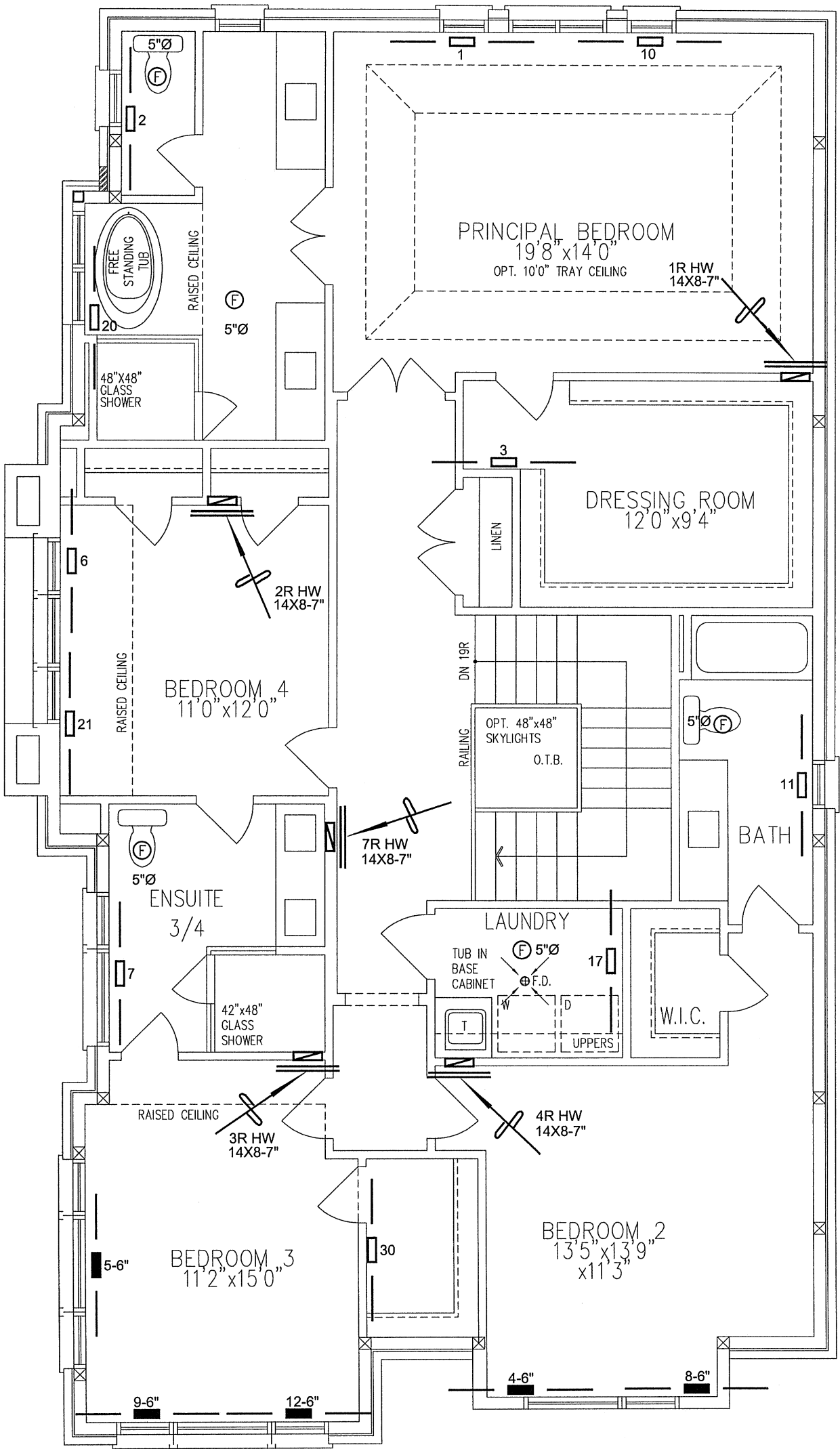
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
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.	
	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		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	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name PINE VALLEY PH 2 VAUGHAN, ONTARIO			Date APR/2022	
THE LILAC - ELEV C 4006 CNR3373 sqft		Scale 3/16" = 1'-0"		
		BCIN# 19669		
		LO#	96163	



SECOND 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.

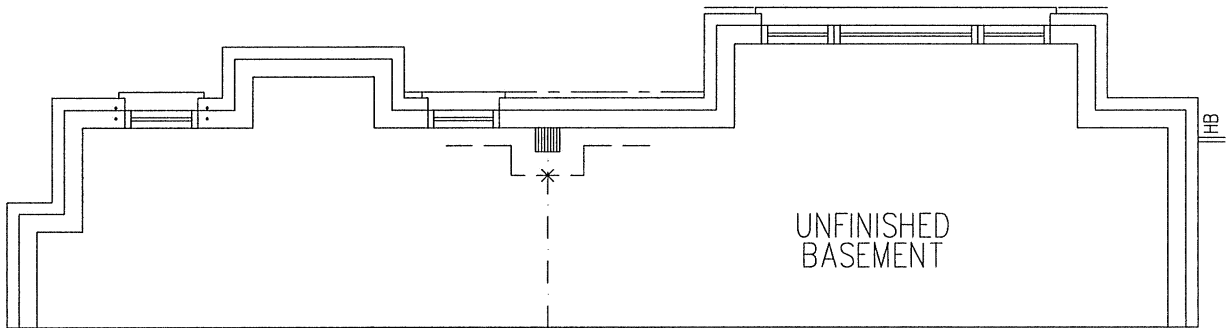
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

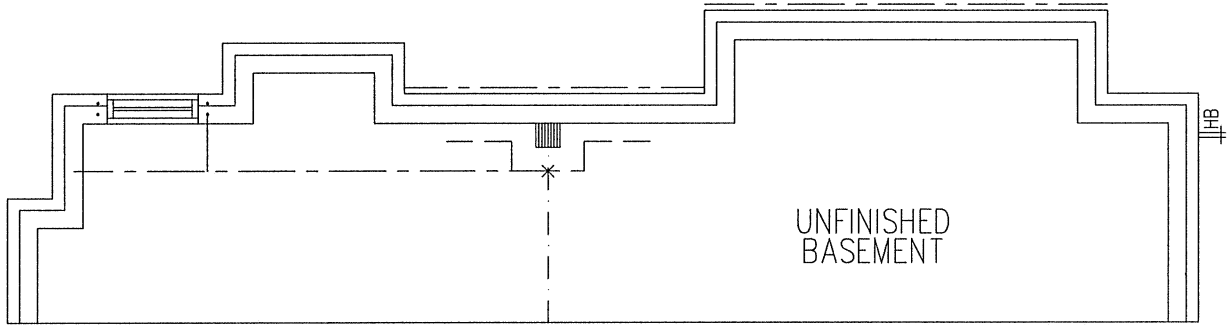
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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		 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 SECOND FLOOR HEATING LAYOUT	
Project Name PINE VALLEY PH 2 VAUGHAN, ONTARIO			Date APR/2022	
THE LILAC - ELEV C 4006 CNR 3373 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO#	96163



PART, BASEMENT PLAN ELEV. 'A' - L.O.D. COND.
ELEV. 'B' SIMILAR



PART, BASEMENT PLAN ELEV. 'A' - W.O.D. COND.
ELEV. 'B' 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.		
	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@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			ALT DECK HEATING LAYOUT	
Project Name			Date	APR/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE LILAC - ELEV C 4006 CNR 3373 sqft			BCIN# 19669	
		LO#	96163	