

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: 4000 - BRIARWOOD OPT GROUND 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 14, 2022		 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 PH 2
BUILDING: GOLD PARK HOMES
TYPE: 4000 - BRIARWOOD
DATE: Apr-22
LO# 96115
GFA: 2827
WINTER NATURAL AIR CHANGE RATE 0.425
HEAT LOSS ΔT °F. 76
HEAT GAIN ΔT °F. 13
CSA-F280-12
SB-12 PACKAGE A1

ROOM USE EXP. WALL CLG. HT.	MBR	ENS	KT/GT	LAUN	PWD	FOY	MEDIA	BATH-2	BED-3	BED-4	WINTER NATURAL AIR CHANGE RATE	HEAT LOSS ΔT °F.	HEAT GAIN ΔT °F.
GRS.WALL AREA GLAZING	418	143											
NORTH	0	22	0	0	0	0	0	0	0	0			
EAST	0	0	0	0	0	0	0	0	0	0			
SOUTH	0	0	0	0	0	0	0	0	0	0			
WEST	0	0	0	0	0	0	0	0	0	0			
SKYLT.	0	0	0	0	0	0	0	0	0	0			
DOORS	0	0	0	0	0	0	0	0	0	0			
NET EXPOSED WALL	4.5	376	1678	283	121	540	91	117	522	88	172	768	129
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	328	421	193	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	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	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2993	1008	442	1016	3896	2698	2139	1144	372	2210			
LEVEL FACTOR / MULTIPLIER	0.30	0.33	0.30	0.67	0.20	0.67	0.20	0.67	0.20	0.67			
AIR CHANGE HEAT LOSS	986	332	680	680	2610	766	1433	31	357	340			
AIR CHANGE HEAT GAIN	184	0	0	0	651	191	183	191	40	340			
DUCT LOSS	0	0	0	0	0	0	0	0	0	0			
DUCT GAIN	0	0	0	0	0	0	0	0	0	0			
HEAT GAIN PEOPLE	2	480	0	0	240	0	0	0	0	0			
HEAT GAIN APPLIANCES/LIGHTS	1007	1340	1007	1007	1007	1007	1007	1007	1007	1007			
TOTAL HT LOSS BTU/H	3979	1340	1007	1696	7156	5960	3929	2101	0	1007			
TOTAL HT GAIN x 1.3 BTU/H	5058	623	2270	2270	5960	5960	4861	576	0	1007			

ROOM USE EXP. WALL CLG. HT.	FORM	KT/GT	LAUN	PWD	FOY	WINTER NATURAL AIR CHANGE RATE	HEAT LOSS ΔT °F.	HEAT GAIN ΔT °F.
GRS.WALL AREA GLAZING	600	1040	377	91	1140			
NORTH	0	0	0	0	0			
EAST	0	0	0	0	0			
SOUTH	0	0	0	0	0			
WEST	0	0	0	0	0			
SKYLT.	0	0	0	0	0			
DOORS	0	0	0	0	0			
NET EXPOSED WALL	4.5	882	3336	663	252	91	406	68
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	432	554	254	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	3869	7853	2364	406	6491	1904	1437	9304
SUBTOTAL HT GAIN	1950	6516	671	68	1904	1904	1437	9304
LEVEL FACTOR / MULTIPLIER	0.30	0.33	0.30	0.33	0.30	0.33	0.30	0.33
AIR CHANGE HEAT LOSS	1275	2588	779	134	2139	157	1381	9304
AIR CHANGE HEAT GAIN	161	539	55	6	157	157	1381	9304
DUCT LOSS	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	1007	1007	1007	1007	1007	1007	1007	1007
TOTAL HT LOSS BTU/H	5144	10441	3143	540	8630	0	1437	23027
TOTAL HT GAIN x 1.3 BTU/H	4054	10480	2253	96	2698	0	1795	836

TOTAL HEAT GAIN BTU/H: 41761

TONS: 3.48

LOSS DUE TO VENTILATION LOAD BTU/H: 1305

STRUCTURAL HEAT LOSS: 72563

TOTAL COMBINED HEAT LOSS BTU/H: 73868

Michael O'Rourke

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMESOPT GROUND
TYPE: 4000 - BRIARWOOD

GFA: 2827 LO# 96115

DATE: Apr-22

HEATING CFM 1340 COOLING CFM 1340
TOTAL HEAT LOSS 72,563 TOTAL HEAT GAIN 41,541
AIR FLOW RATE CFM 18.47 AIR FLOW RATE CFM 32.26

ML196UH090XE48C \$*LENNOX 90

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,600

FAN SPEED LOW 0

DESIGN CFM = 1340

CFM @ 8" E.S.P. 1190

MEDIUM HIGH 1340

HIGH 1575

TEMPERATURE RISE 59 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	6	14	5
R/A	0	0	3	3	1

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

All S/A runs 5'Ø 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	MEDIA	LAUN	BED-3	BED-4	BATH-2	BED-4	MEDIA	MBR	KT/GT	FORM	FORM	KT/GT	KT/GT	KT/GT	ENS	PWD	FOY	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.99	0.67	1.96	3.14	1.70	3.58	2.10	3.58	1.96	1.99	2.61	2.57	2.57	2.61	2.61	2.61	0.67	0.54	4.31	4.31	4.89	4.89	4.89	4.89
CFM PER RUN HEAT	37	12	36	58	31	66	39	66	36	37	48	48	48	48	48	48	12	10	80	80	90	90	90	90
RM GAIN MBH	2.53	0.31	2.43	2.25	2.27	2.98	0.58	2.98	2.43	2.53	2.62	2.03	2.03	2.62	2.62	2.62	0.31	0.10	1.34	1.34	0.53	0.53	0.53	0.53
CFM PER RUN COOLING	82	10	78	73	73	96	19	96	78	82	85	65	65	85	85	85	10	3	43	43	17	17	17	17
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.17	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	47	21	49	6	24	49	33	48	60	42	55	39	46	45	61	52	33	46	55	53	36	34	34	34
EQUIVALENT LENGTH	170	190	150	160	160	210	130	220	200	110	120	130	120	100	120	110	160	170	120	130	110	180	90	130
TOTAL EFFECTIVE LENGTH	217	211	199	156	184	259	163	268	260	152	175	169	166	145	181	162	193	216	175	183	167	216	124	164
ADJUSTED PRESSURE	0.07	0.08	0.09	0.11	0.09	0.06	0.11	0.06	0.07	0.11	0.09	0.1	0.1	0.11	0.09	0.1	0.09	0.08	0.1	0.09	0.1	0.08	0.13	0.1
ROUND DUCT SIZE	6	4	6	6	6	6	4	6	6	6	6	5	5	6	6	6	4	4	6	6	6	6	6	6
HEATING VELOCITY (ft/min)	189	138	184	296	158	337	447	337	184	189	245	352	352	245	245	245	138	115	408	408	459	459	459	459
COOLING VELOCITY (ft/min)	418	115	398	372	372	489	218	489	398	418	433	477	477	433	433	433	115	34	219	219	87	87	87	87
OUTLET GRILL SIZE	4X10	3X10	4X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10
TRUNK	C	C	C	D	D	D	D	D	D	D	B	B	B	B	B	C	C	B	A	A	B	C	C	B

RUN #	25
ROOM NAME	BAS
RM LOSS MBH	4.89
CFM PER RUN HEAT	90
RM GAIN MBH	0.53
CFM PER RUN COOLING	17
ADJUSTED PRESSURE	0.16
ACTUAL DUCT LGH	58
EQUIVALENT LENGTH	130
TOTAL EFFECTIVE LENGTH	188
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	6
HEATING VELOCITY (ft/min)	459
COOLING VELOCITY (ft/min)	87
OUTLET GRILL SIZE	4X10
TRUNK	A

SUPPLY 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 CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	250	0.09	8.1	8	563	0	0.00	0	0	8	0	0.05	0	0	0
TRUNK B	430	0.08	10.2	12	645	0	0.00	0	0	8	0	0.05	0	0	0
TRUNK C	1005	0.07	14.5	24	754	0	0.00	0	0	8	0	0.05	0	0	0
TRUNK D	1338	0.06	16.8	32	753	0	0.00	0	0	8	0	0.05	0	0	0
TRUNK E	0	0.00	0	0	0	0	0.00	0	0	8	0	0.05	0	0	0
TRUNK F	0	0.00	0	0	0	0	0.00	0	0	8	0	0.05	0	0	0
RETURN AIR #	1	2	3	4	5	6	0	0	0	0	0	0	0	0	0
AIR VOLUME	130	230	115	300	175	205	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
ACTUAL DUCT LGH	58	52	62	43	32	21	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	185	225	265	230	185	145	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	243	277	327	273	217	166	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.06	0.05	0.05	0.05	0.07	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
ROUND DUCT SIZE	7	9.1	7	10.1	7.5	7.5	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	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
INLET GRILL SIZE	14	30	14	30	14	14	0	0	0	0	0	0	0	0	0
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 CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK P	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK Q	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK R	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK S	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK T	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK U	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK V	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK W	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
TRUNK X	1225	0.05	17	26	678	1225	0.05	17	26	678	1225	0.05	17	26	678
TRUNK Y	680	0.05	13.7	22	556	680	0.05	13.7	22	556	680	0.05	13.7	22	556
TRUNK Z	0	0.05	0	0	8	0	0.05	0	0	8	0	0.05	0	0	8
DROP	1340	0.05	17.6	24	670	1340	0.05	17.6	24	670	1340	0.05	17.6	24	670

TYPE: 4000 - BRIARWOOD
SITE NAME: PINE VALLEY PH 2

LO # 96115
OPT GROUND

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	2 @ 10.6 cfm	21.2 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A.	TOTAL	159.0 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		63.6 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	159	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	95.4	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
63.6 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-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#: 96115		Model: 4000 - BRIARWOOD		Builder: GOLD PARK HOMES		Date: 4/14/2022			
Volume Calculation				Air Change & Delta T Data					
House Volume									
Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)						
Bsmt	1746	10	17460						
First	1746	11	19206						
Second	1206	9	10854						
Third	0	9	0						
Fourth	0	9	0						
Total:		47,520.0 ft ³							
Total:		1345.6 m ³							
5.2.3.1 Heat Loss due to Air Leakage									
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$									
0.425	x	373.78	x	42 °C	x	1.2	=	8044 W	
								=	27446 Btu/h
5.2.3.2 Heat Loss due to Mechanical Ventilation									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$									
64 CFM	x	76 °F	x	1.08	x	0.25	=	1305 Btu/h	
								=	220 Btu/h
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)									
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclel} + HL_{bgclel})\}$									
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)					
1	0.5	27,446	10,741	1.278					
2	0.3		24,983	0.330					
3	0.2		8,194	0.670					
4	0		0	0.000					
5	0	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: 4000 - BRIARWOOD	OPT GROUND	BUILDER: GOLD PARK HOMES
SFQT: 2827	LO# 96115	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):	47520.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
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: 70.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	206.0 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	-

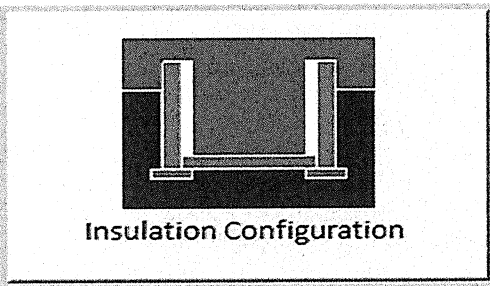
INDIVIDUAL BCIN: 19669

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):	21.3	 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):	3.3	
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):	2052	

TYPE: 4000 - BRIARWOOD
LO# 96115

OPT GROUND

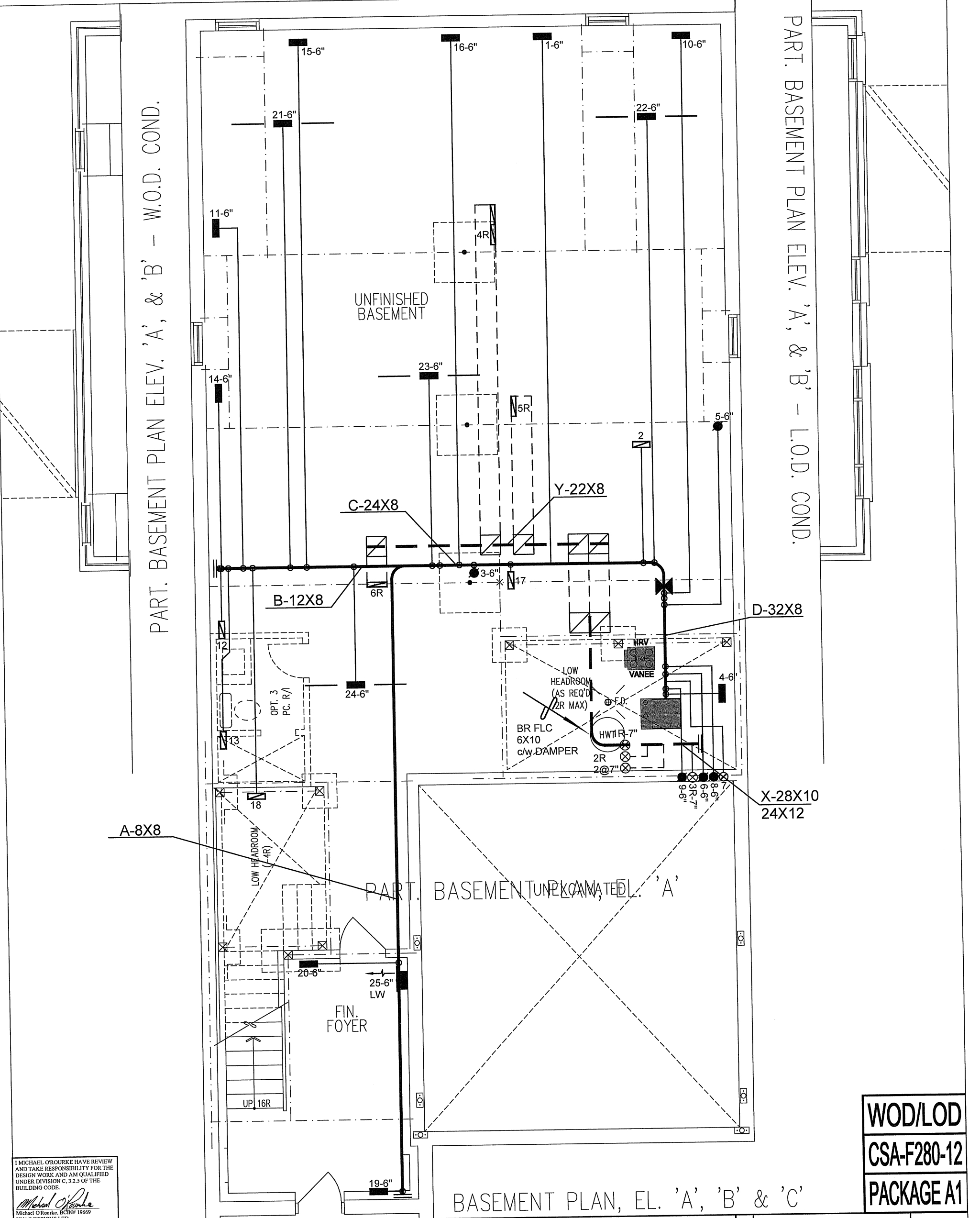
Air Infiltration Residential Load Calculator

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):	9.75			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1345.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa. 3.57	1793.7 cm ² ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply 30.0	Total Exhaust 30.0		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):		0.425		
Cooling Air Leakage Rate (ACH/H):		0.142		

TYPE: 4000 - BRIARWOOD
LO# 96115

OPT GROUND



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/LOD
CSA-F280-12
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.
REVISIONS								
Description								Date

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Client
GOLD PARK HOMES

Project Name
**PINE VALLEY PH 2
VAUGHAN, ONTARIO
OPT GROUND
BRIARWOOD
4000**

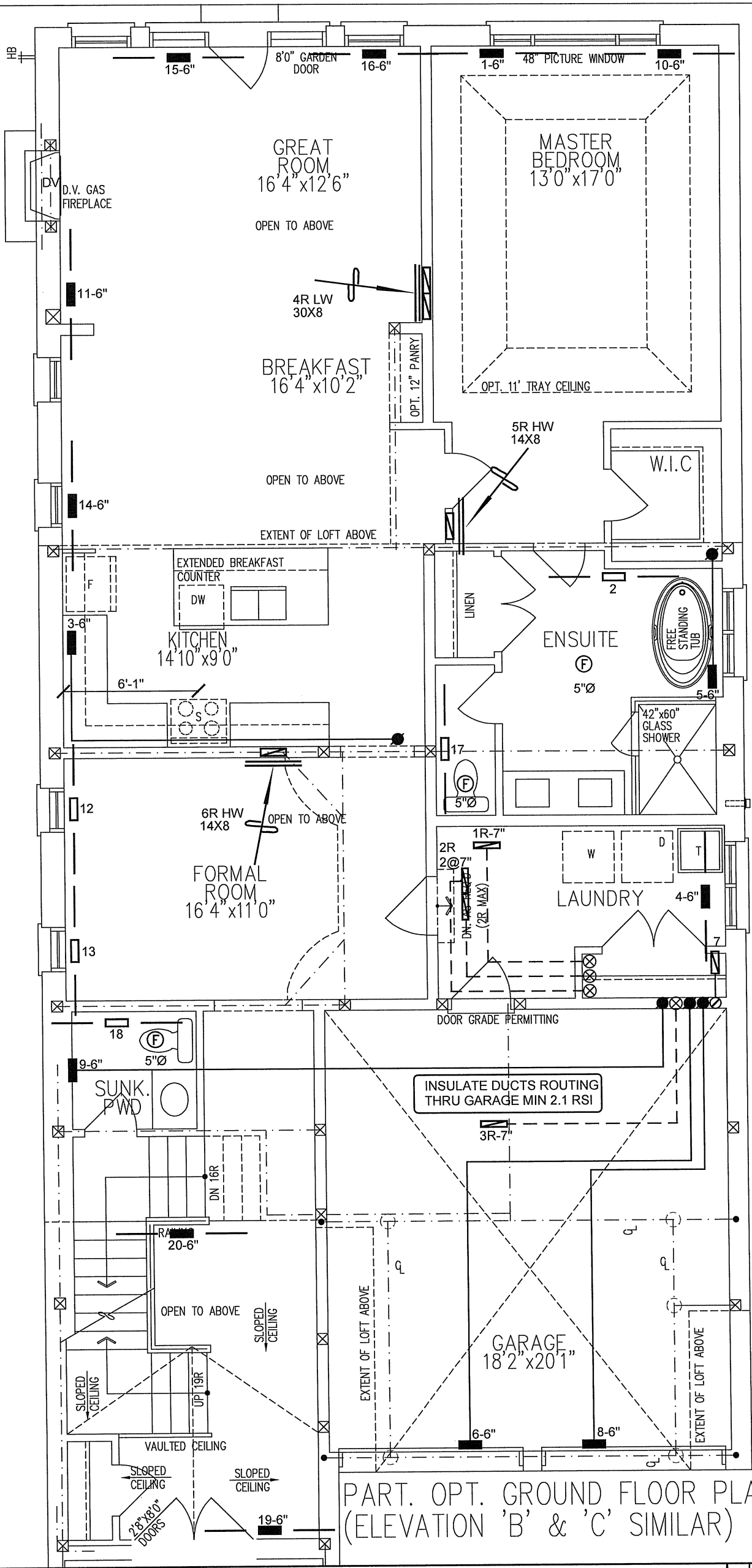
2827 sqft

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

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

HEAT LOSS 73868 BTU/H UNIT DATA		# OF RUNS	S/A	R/A	FANS
MAKE LENNOX		3RD FLOOR			
MODEL ML196UH090XE48C		2ND FLOOR	6	3	1
INPUT 88 MBTU/H		1ST FLOOR	14	3	3
OUTPUT 85.6 MBTU/H		BASEMENT	5	1	0
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			
FAN SPEED 1340	cfm @ 0.6" w.c.				

Sheet Title	
BASEMENT HEATING LAYOUT	
Date	APR/2022
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	96115



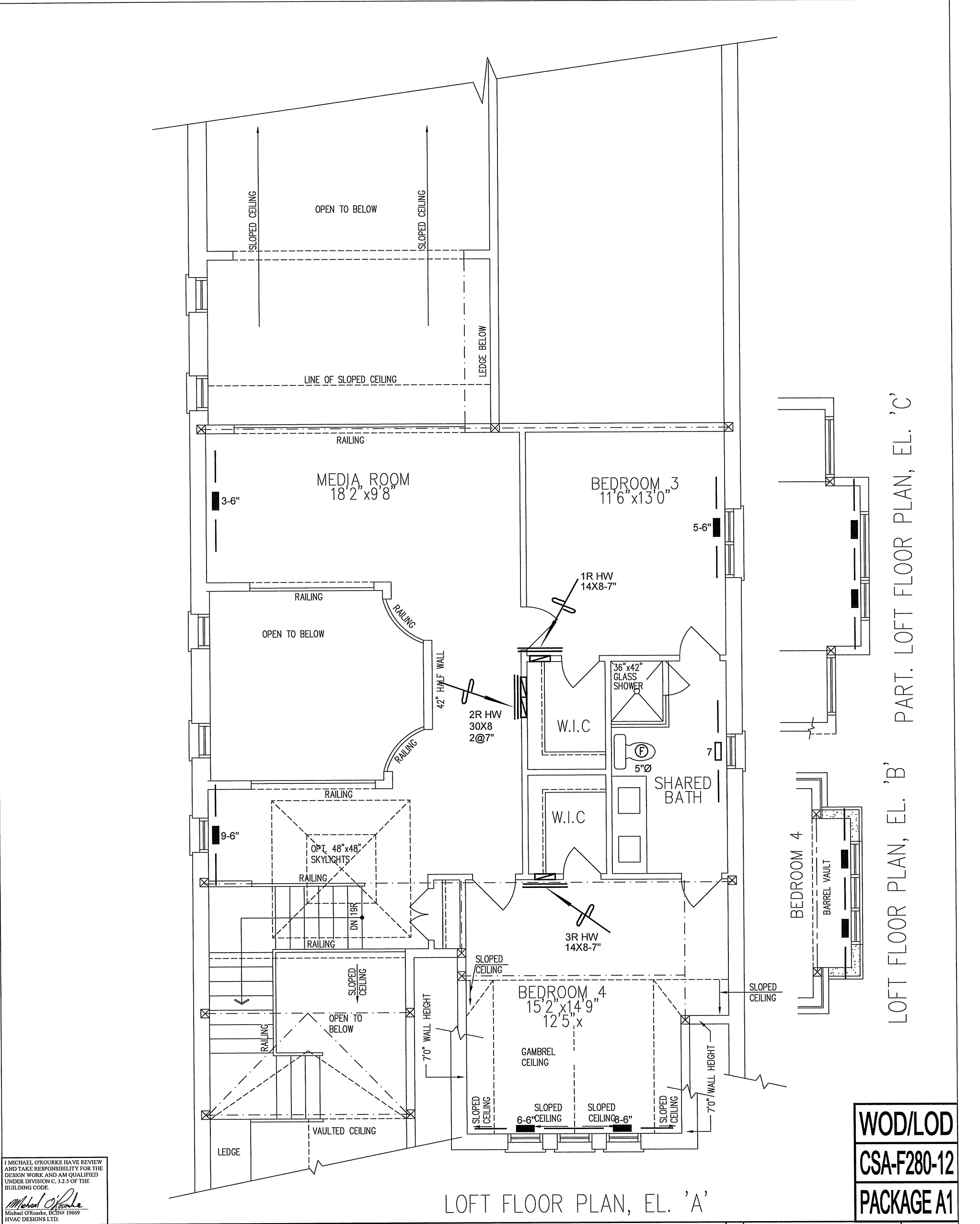
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Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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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			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	APR/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
OPT GROUND BRIARWOOD 4000			BCIN# 19669	
2827 sqft			LO#	96115



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

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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	
REVISIONS								

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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	APR/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
OPT GROUND BRIARWOOD 4000			BCIN# 19669	
2827 sqft			LO#	96115