


Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information				
Building number, street name			Unit no.	Lot/con.
Municipality VAUGHAN (WOODBIDGE)	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities				
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.		
Street address 375 FINLEY AVE		Unit no. 202	Lot/con. N/A	
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdesigns.ca	
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]				
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings </div> <div style="width: 30%;"> <input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection </div> <div style="width: 30%;"> <input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems </div> </div>				
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 4000 OPT 1ST FL THE BRIARWOOD Project: PINE VALLEY & TESTON		
D. Declaration of Designer				
I, <u>MICHAEL O'ROURKE</u> (print name)		declare that (choose one as appropriate):		
<input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____				
<input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>				
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____				
I certify that:				
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
September 10, 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 THE BRIARWOOD DATE: Sep-18 WINTER NATURAL AIR CHANGE RATE 0.341 HEAT LOSS AT °F. 76 CSA-P280-12
BUILDER: GOLD PARK HOMES TYPE: 4000 OPT 1ST FL LO# 78330 SUMMER NATURAL AIR CHANGE RATE 0.115 HEAT GAIN AT °F. 13 SB-12 PACKAGE A1

ROOM USE	EXP. WALL CLG. HT.	MBR	ENS	GFA: 2820	LO# 78330	BED-4	BED-3	BED-4	BATH	MEDIA	WINTER NATURAL AIR CHANGE RATE	HEAT LOSS AT °F. 76	CSA-P280-12
ROOM USE	EXP. WALL CLG. HT.	38	13			38	12	38	14	20			
FACTORS													
GRS. WALL AREA	LOSS GAIN	418	143			348	109	348	127	182			
GLAZING													
NORTH	21.3 16.0	0	0			0	17	0	9	0			
EAST	21.3 41.6	0	21	447	335	0	0	0	192	144			
SOUTH	21.3 24.9	0	0	0	0	41	0	872	1704	0			
WEST	21.3 41.6	0	0	0	0	0	0	0	0	0			
SKYL.T.	37.2 101.5	41	0	0	0	0	0	0	0	0			
DOORS	25.2 4.3	0	0	0	0	0	0	0	0	0			
NET EXPOSED WALL	4.5 0.8	377	1682	283	92	305	411	1360	118	828	89	174	777
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	328	421	193	0	179	200	230	105	182	234	107	432
NO ATTIC EXPOSED CLG	2.7 1.3	0	0	0	0	0	0	117	322	147	0	0	0
EXPOSED FLOOR	2.6 0.4	0	0	0	0	296	756	127	53	135	23	28	71
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		2976	981			3538	973	2312	1089	1573			
SUB TOTAL HT GAIN		0.30	0.27	2180	427	0.20	0.59	0.20	0.59	0.20	0.59		
LEVEL FACTOR / MULTIPLIER		812	271			2102	678	2102	647	934			
AIR CHANGE HEAT LOSS		0	0	40		584	0	584	174	261			
AIR CHANGE HEAT GAIN		0	0	0		0	0	0	40	140			
DUCT LOSS		0	0	0		0	0	0	0	0			
DUCT GAIN		2	480	0	0	1	240	1	0	0			
HEAT GAIN PEOPLE	240												
HEAT GAIN APPLANCES/LIGHTS		744				744							
TOTAL HT LOSS BTU/H		3788	1262			6205	1552	6205	1909	2757			
TOTAL HT GAIN x 1.3 BTU/H		4691	807			5024	1854	5024	567	1995			

ROOM USE	EXP. WALL CLG. HT.	FORM	KTGR	LAUN	WIR	FOY	LOD	BAS
ROOM USE	EXP. WALL CLG. HT.	24	60	29	6	57	42	204
FACTORS								
GRS. WALL AREA	LOSS GAIN	480	900	377	78	1028	382	1496
GLAZING								
NORTH	21.3 16.0	0	0	21	0	0	0	0
EAST	21.3 41.6	0	0	0	0	0	0	0
SOUTH	21.3 24.9	58	1234	0	0	6	128	249
WEST	21.3 41.6	100	2128	0	0	0	0	0
SKYL.T.	37.2 101.5	0	0	0	0	0	0	0
DOORS	25.2 4.3	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5 0.8	422	3311	336	78	40	222	799
NET EXPOSED BSMT WALL ABOVE GR	3.6 0.6	0	0	0	0	0	0	0
EXPOSED CLG	1.3 0.6	168	216	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
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0
SUBTOTAL HT LOSS		3333	7228	2451	348	6083	1437	8634
SUB TOTAL HT GAIN		0.30	0.27	0.30	0.27	0.30	0.27	0.50
LEVEL FACTOR / MULTIPLIER		910	1973	669	95	1680	1381	10650
AIR CHANGE HEAT LOSS		0	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	240							
HEAT GAIN APPLANCES/LIGHTS		744						
TOTAL HT LOSS BTU/H		4243	9201	3120	443	7743	1437	19484
TOTAL HT GAIN x 1.3 BTU/H		3612	10084	1924	83	2016	1795	1741

TOTAL HEAT GAIN BTU/H: 36569 TONS: 3.05 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 83144 TOTAL COMBINED HEAT LOSS BTU/H: 86325

Michael O'Rourke

SITE NAME: PINE VALLEY & TESTON
BUILDER: GOLD PARK HOMESTHE BRIARWOOD
TYPE: 4000 OPT 1ST FL

DATE: Sep-18

GFA: 2820 LO# 79330

HEATING CFM 1105 COOLING CFM 1105
TOTAL HEAT LOSS 63,144 TOTAL HEAT GAIN 36,034
AIR FLOW RATE CFM 17.5 AIR FLOW RATE CFM 30.67EL296UH090XE48C
FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1255AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	6	13	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	BED-4	MEDIA	MBR	KT/GR	FORM	FORM	KT/GR	KT/GR	KT/GR	ENS	W/R	FOY	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.89	0.63	1.38	3.12	1.55	3.10	1.91	3.10	1.38	1.89	3.07	2.12	2.12	3.07	3.07	3.07	0.63	0.44	3.87	3.87	4.18	4.18	4.18	4.18
CFM PER RUN HEAT	33	11	24	55	27	54	33	54	24	33	54	37	37	54	54	54	11	8	68	68	73	73	73	73
RM GAIN MBH	2.35	0.30	1.00	1.92	1.89	2.51	0.57	2.51	1.00	2.35	3.36	1.81	1.81	3.36	3.36	3.36	0.30	0.08	1.01	1.01	0.71	0.71	0.71	0.71
CFM PER RUN COOLING	72	9	31	59	58	77	17	77	31	72	103	55	55	103	103	103	9	3	31	31	22	22	22	22
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	160	190	150	150	160	180	160	190	150	110	120	130	120	100	120	110	170	120	170	120	180	90	130	130
TOTAL EFFECTIVE LENGTH	207	207	199	156	184	235	187	239	242	152	162	169	166	145	181	162	189	216	175	183	167	198	124	184
ADJUSTED PRESSURE	0.08	0.08	0.09	0.11	0.09	0.07	0.09	0.07	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	0.09	0.14	0.1
ROUND DUCT SIZE	5	4	5	4	5	6	4	6	5	5	6	5	5	6	6	6	4	4	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	242	126	176	631	198	275	379	275	176	242	275	272	272	275	275	275	126	92	499	499	536	536	536	536
COOLING VELOCITY (ft/min)	529	103	228	677	426	393	195	393	228	529	525	404	404	525	525	525	103	34	228	228	162	162	162	162
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	E	E	E	C	C	C	C	C	C	C	B	B	B	B	B	B	E	E	A	A	B	E	E	B

TEMPERATURE RISE 71 °F

DESIGN CFM = 1105
CFM @ 6" E.S.P.FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1255AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000r/a pressure 0.17
r/a grille press. loss 0.02
r/a adjusted pressure r/a 0.15furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35
plenium pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

RUN # 25

ROOM NAME BAS

RM LOSS MBH 4.18

CFM PER RUN HEAT 73

RM GAIN MBH 0.71

CFM PER RUN COOLING 22

ADJUSTED PRESSURE 0.17

ACTUAL DUCT LGH 58

EQUIVALENT LENGTH 130

TOTAL EFFECTIVE LENGTH 188

ADJUSTED PRESSURE 0.09

ROUND DUCT SIZE 5

HEATING VELOCITY (ft/min) 536

COOLING VELOCITY (ft/min) 162

OUTLET GRILL SIZE 3X10

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	0.09	7.6	8	8	0	0.00	0	0	8	0	0.00	0	0	0
TRUNK B	0.07	9.3	10	805	0	0.00	0	0	8	0	0.00	0	0	0
TRUNK C	0.07	15	26	784	0	0.00	0	0	8	0	0.00	0	0	0
TRUNK D	0.00	0	0	8	0	0.00	0	0	8	0	0.00	0	0	0
TRUNK E	0.08	13	20	742	0	0.00	0	0	8	0	0.00	0	0	0
TRUNK F	0.00	0	0	8	0	0.00	0	0	8	0	0.00	0	0	0

RETURN AIR #

AIR VOLUME 130

PLENUM PRESSURE 0.15

ACTUAL DUCT LGH 42

EQUIVALENT LENGTH 180

TOTAL EFFECTIVE LENGTH 222

ADJUSTED PRESSURE 0.07

ROUND DUCT SIZE 6.8

INLET GRILL SIZE 8

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

INLET GRILL SIZE 14

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.

Michael Spence

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

TYPE: 4000 OPT 1ST FL
SITE NAME: PINE VALLEY & TESTON

LO # 79330
THE BRIARWOOD

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	<input checked="" type="checkbox"/> Direct vent (sealed combustion) only	
b)	<input type="checkbox"/> Positive venting induced draft (except fireplaces)	
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft gas fireplace	
d)	<input type="checkbox"/> Solid Fuel (including fireplaces)	
e)	<input type="checkbox"/> No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/> Forced Air	<input type="checkbox"/> Non Forced Air
<input type="checkbox"/> Electric Space Heat	

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/> I	Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/> II	Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/> III	Any Type c) appliance	
<input type="checkbox"/> IV	Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/> 1	Exhaust only/Forced Air System	
<input type="checkbox"/> 2	HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/> 3	HRV Simplified/connected to forced air system	
<input type="checkbox"/> 4	HRV with Ducting/non forced air system	
<input type="checkbox"/>	Part 6 Design	

TOTAL VENTILATION CAPACITY					9.32.3.3(1)
Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm	
Other Bedrooms	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	155	cfm
Required Supplemental Capacity	4.0	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE 65H	Location:	BSMT
155.0	cfm	3.0	sones
			<input checked="" type="checkbox"/> HVI Approved

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

SUPPLEMENTAL FANS		NUTONE		
Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
BATH	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
LAUN	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3
PWD	QTXEN050C	50	<input checked="" type="checkbox"/>	0.3

HEAT RECOVERY VENTILATOR				9.32.3.11.
Model:	VANEE 65H			
155	cfm high	64	cfm low	
75	% Sensible Efficiency			
			@ 32 deg F (0 deg C)	<input checked="" type="checkbox"/> HVI Approved

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:	September-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																													
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																													
LO#: 79330		Model: 4000 OPT 1ST FL		Builder: GOLD PARK HOMES		Date: 9/10/2018																																																							
Volume Calculation				Air Change & Delta T Data																																																									
<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>1739</td> <td>9</td> <td>15824.9</td> </tr> <tr> <td>First</td> <td>1739</td> <td>11</td> <td>19129</td> </tr> <tr> <td>Second</td> <td>1206</td> <td>9</td> <td>10974.6</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>45,928.5 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1300.6 m³</td> </tr> </tbody> </table>				Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1739	9	15824.9	First	1739	11	19129	Second	1206	9	10974.6	Third	0	9	0	Fourth	0	9	0	Total:			45,928.5 ft³	Total:			1300.6 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> </tr> </thead> <tbody> <tr> <td>Winter DTDh</td> <td>22</td> <td>-20</td> <td>42</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>31</td> <td>7</td> </tr> <tr> <td></td> <td></td> <td></td> <td>13</td> </tr> </tbody> </table>						Design Temperature Difference					Tin °C	Tout °C	ΔT °C	Winter DTDh	22	-20	42	Summer DTDc	24	31	7				13
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5.2.3.1 Heat Loss due to Air Leakage				6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$				$HG_{sdlb} = LR_{dlrc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																									
0.341 x 361.26 x 42 °C x 1.2 = 6243 W				0.115 x 361.26 x 7 °C x 1.2 = 353 W																																																									
= 21300 Btu/h				= 1206 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation				6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$				$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																									
155 CFM x 76 °F x 1.08 x 0.25 = 3181 Btu/h				155 CFM x 13 °F x 1.08 x 0.25 = 536 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																													
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{qgr} + HL_{bgr}) \div (HL_{qlevel} + HL_{bqlevel})\}$																																																													
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*Hlairebv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system Hlairev = 0																																																													

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4000 OPT 1ST FL	THE BRIARWOOD	BUILDER: GOLD PARK HOMES
SFQT: 2820	LO# 79330	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)	75

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):	45928.5	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.1 ft
LENGTH: 70.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	204.0 ft

2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement Walls Minimum RSI (R)-Value		20 ci	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value		-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value		10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value		10	11.13
Windows and Sliding Glass Doors Maximum U-Value		0.28	-
Skylights Maximum U-Value		0.49	-
Space Heating Equipment Minimum AFUE		0.96	-
HRV Minimum Efficiency		75%	-
Domestic Hot Water Heater Minimum EF		0.8	-

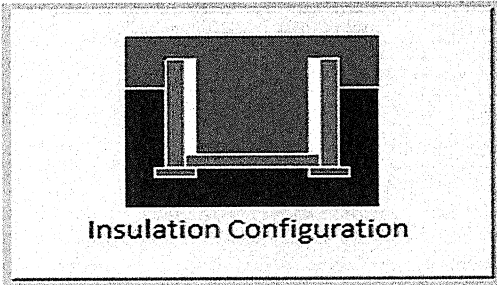
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	21.3	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.86	
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):		2023

TYPE: 4000 OPT 1ST FL
LO# 79330

THE BRIARWOOD

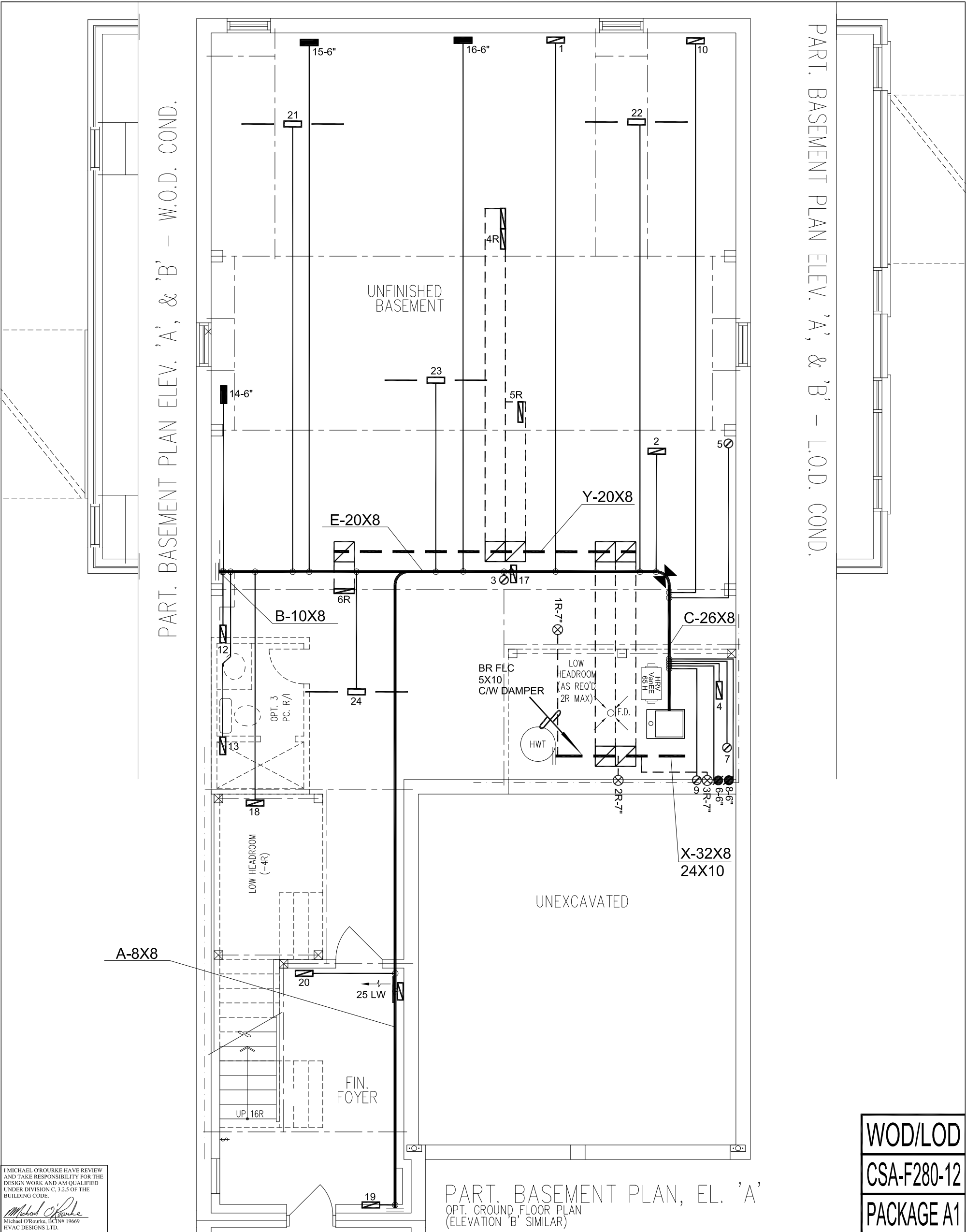
Air Infiltration Residential Load Calculator

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):	7.04			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1300.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1733.7 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):	0.341			
Cooling Air Leakage Rate (ACH/H):	0.115			

TYPE: 4000 OPT 1ST FL
LO# 79330

THE BRIARWOOD



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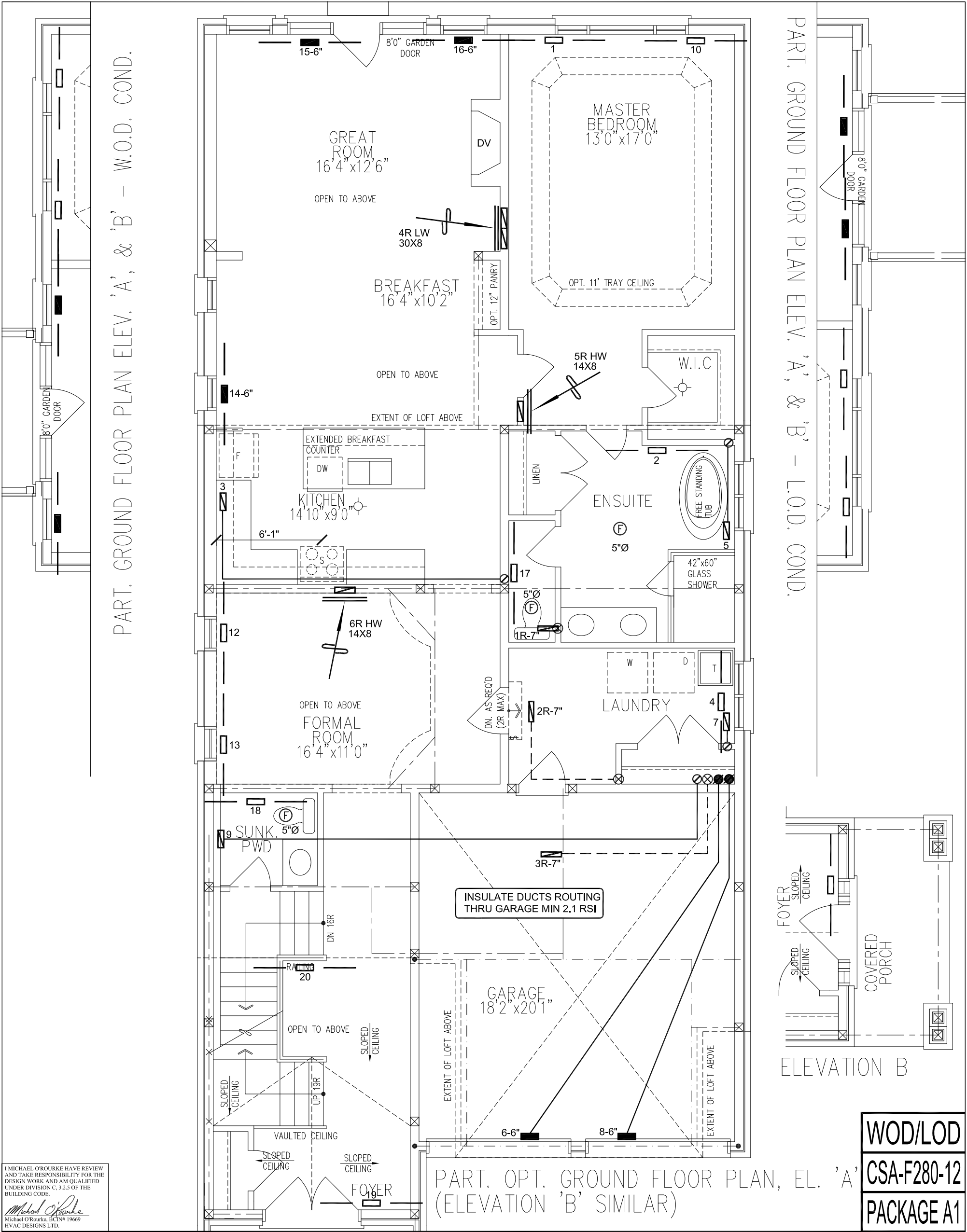
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOD/LOD
CSA-F280-12
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	DECK CONDITIONS ADDED	SEPT/2018
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED CAD	JULY/2018
	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	<div><p>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</p></div>	HEAT LOSS 66325 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO		MAKE	LENNOX	3RD FLOOR					
		MODEL	EL296UH090XE48C	2ND FLOOR	6	3	1		
		INPUT	88 MBTU/H	1ST FLOOR	13	3	5		
		OUTPUT	85 MBTU/H	BASEMENT	5	1	0		
THE BRIARWOOD 4000 OPT 1ST FL 2820 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.	COOLING	3.0 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	JULY/2018	
		FAN SPEED	1105 cfm @ 0.6" w.c.				Scale	3/16" = 1'-0"	
								BCIN# 19669	
						LO#	79330		



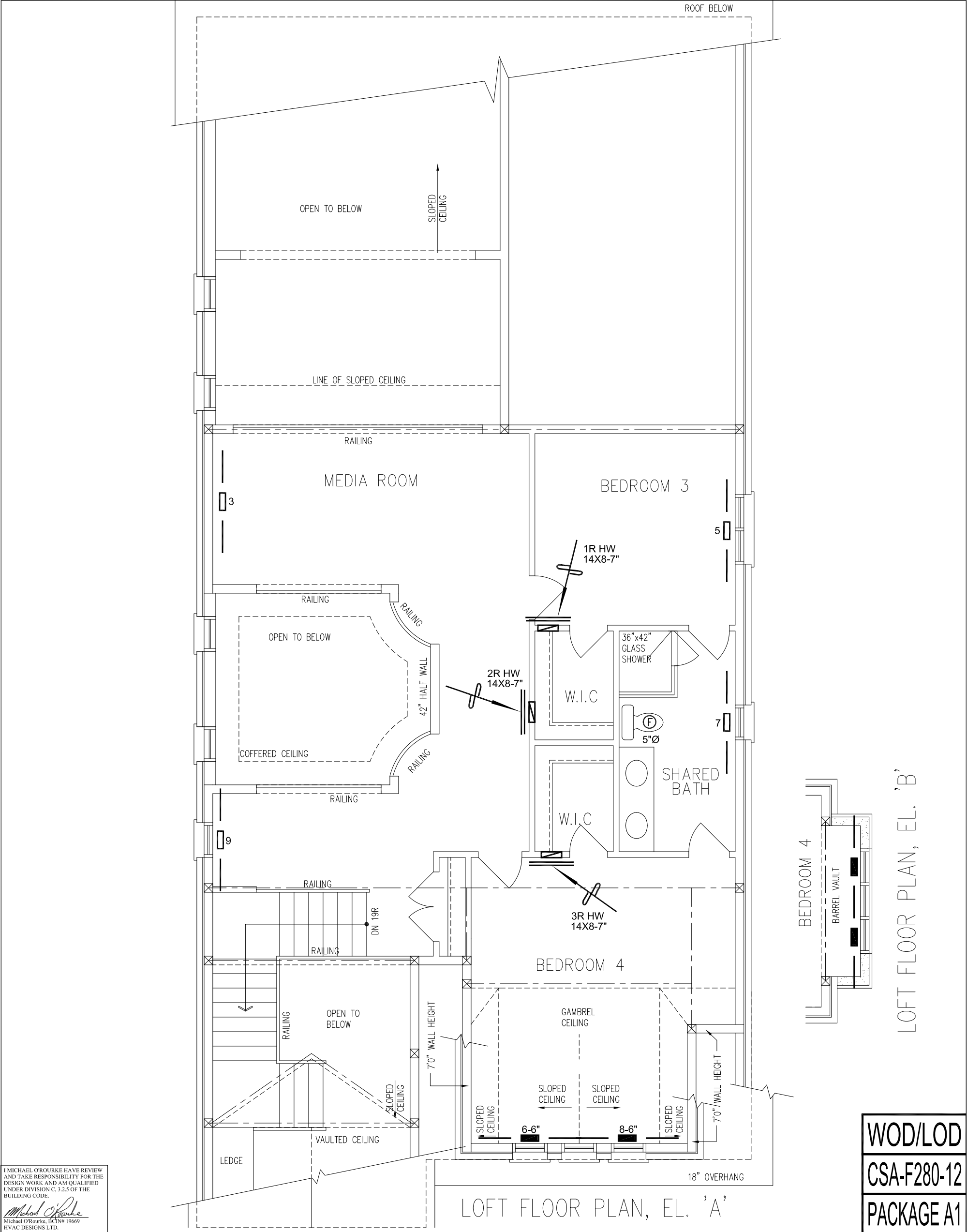
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Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JULY/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE BRIARWOOD			BCIN# 19669	
4000 OPT 1ST FL 2820 sqft			LO#	79330



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Project Name			Date	JULY/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
THE BRIARWOOD 4000 OPT 1ST FL 2820 sqft			LO#	79330