


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 THE BRIARWOOD WOB 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 11, 2018 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 & TESTON THE BRIARWOOD WOB DATE: 9-9-18 WINTER NATURAL AIR CHANGE RATE 0.400 CSA-F280-12
BUILDER: GOLD PARK HOMES TYPE: 4000 LO# 79867 SUMMER NATURAL AIR CHANGE RATE 0.134 HEAT LOSS AT °F. 76 HEAT GAIN AT °F. 13 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	MBR	ENS	BED-2	BED-3	BED-4	BATH	MEDIA	WOB	BAS
GRS. WALL AREA	386			386	143	283	109	346	127	182		
GLAZING												
NORTH	21.3	16.4		0	0	21	447	324	17	382	283	0
EAST	21.3	39.9		0	0	0	0	0	41	872	1637	0
SOUTH	21.3	24.0		0	0	0	0	0	0	0	0	0
WEST	21.3	39.9		0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.6		0	0	0	0	0	0	0	0	0
DOORS	26.2	4.3		0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.8	0.8	344	1636	269	122	644	92	118	528	89	174
NET EXPOSED BSMT WALL ABOVE GR	3.8	0.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	328	421	183	32	41	19	182	234	107	432
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.8	0.4	0	0	0	0	0	0	53	136	23	28
BASEMENT/CRAWL HEAT LOSS												
SLAB ON GRADE HEAT LOSS												
SUBTOTAL HT LOSS	2829			2088	1032	1482	973	3539	1089	1673		589
SUB TOTAL HT GAIN												
LEVEL FACTOR / MULTIPLIER	0.30	0.33		0.30	0.33	0.30	0.33	0.20	0.70	0.20	0.70	0.20
AIR CHANGE HEAT LOSS	920			336	46	482	677	2462	787	1094		62
AIR CHANGE HEAT GAIN												
DUCT LOSS	0			0	0	0	0	800	186	287		131
DUCT GAIN												
HEAT GAIN PEOPLE	240			480	0	1	240	1	0	0		0
HEAT GAIN APPLANCES/LIGHTS				661	0	1	661	661	0	0		661
TOTAL HT LOSS BTU/H	3748			1368	1368	1964	1651	6801	2031	2933		661
TOTAL HT GAIN x 1.3 BTU/H	4484				626	1888	1780	4837	585	1876		1818

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	FORM	KTGR	LAUN	WIR	FOY	WOB	BAS
GRS. WALL AREA	480			480	936	104	0	1026	382	988
GLAZING										
NORTH	21.3	16.4		0	0	0	0	0	0	0
EAST	21.3	39.9		0	0	0	0	6	128	240
SOUTH	21.3	24.0		58	1224	1391	0	0	0	0
WEST	21.3	39.9		100	2128	3992	0	0	0	0
SKYL.T.	37.2	101.6		0	0	0	0	0	0	0
DOORS	26.2	4.3		0	0	0	0	0	0	0
NET EXPOSED WALL	4.8	0.8	422	1693	317	84	375	63	40	1010
NET EXPOSED BSMT WALL ABOVE GR	3.8	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	168	216	99	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.8	0.4	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS										
SLAB ON GRADE HEAT LOSS										
SUBTOTAL HT LOSS	3333			7389	6222	880	0	6083	533	2488
SUB TOTAL HT GAIN										
LEVEL FACTOR / MULTIPLIER	0.30	0.33		0.30	0.33	0.30	0.33	0.30	0.33	0.30
AIR CHANGE HEAT LOSS	1084			2402	655	286	0	1978	1783	488
AIR CHANGE HEAT GAIN										
DUCT LOSS	0			0	0	0	0	0	0	0
DUCT GAIN										
HEAT GAIN PEOPLE	240			480	0	0	0	0	0	0
HEAT GAIN APPLANCES/LIGHTS				661	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	4417			9791	9791	1166	0	8060	4594	17347
TOTAL HT GAIN x 1.3 BTU/H	3456					1072	0	2023	2318	1818

TOTAL HEAT GAIN BTU/H: 37076 TONS: 3.09 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 65671 TOTAL COMBINED HEAT LOSS BTU/H: 68852

Michael O'Rourke

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

THE BRIARWOOD WOB

DATE: Sep-18

LO# 79987

GFA: 2820

DATE: Sep-18

TYPE: 4000

HEATING CFM 1105
TOTAL HEAT LOSS 65,671
AIR FLOW RATE CFM 16.83

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

EL296UH080XE48C
FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1235

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

^LENNOX 90

DESIGN CFM = 1105
CFM @ 8" E.S.P.

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.

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
MBR	1.87	1.37	1.47	1.37	1.86	3.30	2.03	3.30	3.30	1.47	1.87	2.21	2.21	3.26	3.26	3.26	1.17	0.00	4.03	4.03	4.03	4.39	4.39	4.39
RM LOSS MBH	32	23	25	33	28	56	34	56	56	25	32	37	37	55	55	55	20	0	68	68	74	74	74	74
CFM PER RUN HEAT	2.24	0.82	0.94	1.89	1.78	2.42	0.57	2.42	2.42	0.94	2.24	1.73	1.73	3.27	3.27	3.27	1.07	0.00	1.01	1.01	0.83	0.83	0.83	0.83
RM GAIN MBH	68	19	28	57	54	73	17	73	28	68	68	52	52	99	99	99	32	0	31	31	25	25	25	25
CFM PER RUN COOLING	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ADJUSTED PRESSURE	0.08	0.08	0.09	0.09	0.11	0.08	0.11	0.08	0.08	0.07	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.08	0.11	0.09	0.07	0.07	0.14	0.1
TOTAL EFFECTIVE LENGTH	217	211	199	156	184	270	163	278	260	200	110	130	120	100	120	110	160	170	120	130	180	180	124	164
ADJUSTED PRESSURE	0.08	0.08	0.09	0.09	0.11	0.08	0.11	0.08	0.08	0.07	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.08	0.11	0.09	0.07	0.07	0.14	0.1
ROUND DUCT SIZE	5	4	4	4	5	6	4	6	4	4	5	4	4	5	6	6	4	4	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	235	264	287	379	206	286	390	286	287	235	286	424	424	404	280	280	229	0	499	499	543	543	543	543
COOLING VELOCITY (ft/min)	499	218	321	654	396	372	195	372	321	499	499	597	597	727	505	505	367	0	228	228	184	184	184	184
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	C	C	E	E	C	C	C	C	E	C	C	B	B	B	B	B	E	B	A	A	B	C	E	B

25	BAS	4.39	74	0.83	25	0.17	58	130	188	0.09	5	543	184	3X10	A
ROOM NAME	BAS	4.39	74	0.83	25	0.17	58	130	188	0.09	5	543	184	3X10	A
RM LOSS MBH	74	0.83	25	0.17	58	130	188	0.09	5	543	184	3X10	A		
CFM PER RUN HEAT	74	0.83	25	0.17	58	130	188	0.09	5	543	184	3X10	A		
ADJUSTED PRESSURE	0.17	58	130	188	0.09	5	543	184	3X10	A					
ACTUAL DUCT LGH	58	130	188	0.09	5	543	184	3X10	A						
EQUIVALENT LENGTH	130	188	0.09	5	543	184	3X10	A							
TOTAL EFFECTIVE LENGTH	188	0.09	5	543	184	3X10	A								
ADJUSTED PRESSURE	0.09	5	543	184	3X10	A									
ROUND DUCT SIZE	5	543	184	3X10	A										
HEATING VELOCITY (ft/min)	5	543	184	3X10	A										
COOLING VELOCITY (ft/min)	543	184	3X10	A											
OUTLET GRILL SIZE	3X10	A													
TRUNK	A														

TRUNK	CFM	RECT	ROUND	STATIC PRESS	VELOCITY (ft/min)	TRUNK	CFM	RECT	ROUND	STATIC PRESS	VELOCITY (ft/min)	TRUNK	CFM	RECT	ROUND	STATIC PRESS	VELOCITY (ft/min)
TRUNK A	210	0.07	7.6	0.07	473	TRUNK G	0	0	0	0.00	0	TRUNK H	0	0	0	0.00	0
TRUNK B	332	0.07	9.6	0.07	598	TRUNK H	0	0	0	0.00	0	TRUNK I	0	0	0	0.00	0
TRUNK C	1109	0.06	15.7	0.06	713	TRUNK I	0	0	0	0.00	0	TRUNK J	0	0	0	0.00	0
TRUNK D	0	0.00	0	0.00	0	TRUNK J	0	0	0	0.00	0	TRUNK K	0	0	0	0.00	0
TRUNK E	797	0.06	13.8	0.06	652	TRUNK K	0	0	0	0.00	0	TRUNK L	0	0	0	0.00	0
TRUNK F	0	0.00	0	0.00	0	TRUNK L	0	0	0	0.00	0						

RETURN AIR #	1	2	3	4	5	6	BR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
AIR VOLUME	130	115	115	255	155	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0</

INDIVIDUAL BCIN: 19669

MICHAEL O'Rourke

TYPE: 4000
SITE NAME: PINE VALLEY & TESTON

LO # 79967
THE BRIARWOOD WOB

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	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	4 @ 10.6 cfm	42.4 cfm
Table 9.32.3.A.	TOTAL	169.6 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	169.6	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	14.6	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
ENS	QTXEN050C	50	✓
BATH	QTXEN050C	50	✓
LAUN	QTXEN050C	50	✓
PWD	QTXEN050C	50	✓

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/> 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:	September-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																									
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																									
LO#: 79967		Model: 4000		Builder: GOLD PARK HOMES		Date: 9/11/2018																																																																			
Volume Calculation				Air Change & Delta T Data																																																																					
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5.2.3.1 Heat Loss due to Air Leakage																																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																																									
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$= 24956 \text{ Btu/h}$																																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation																																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																									
$155 \text{ CFM} \times 76^\circ\text{F} \times 1.08 \times 0.25 = 3181 \text{ Btu/h}$																																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																									
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<p>*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0</p>																																																																									

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4000	THE BRIARWOOD WOB	BUILDER: GOLD PARK HOMES
SFQT: 2820	LO# 79967	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:	5
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:	162.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	42.0 ft

2012 OBC - COMPLIANCE PACKAGE

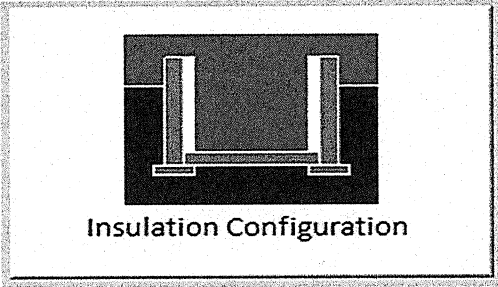
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20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

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

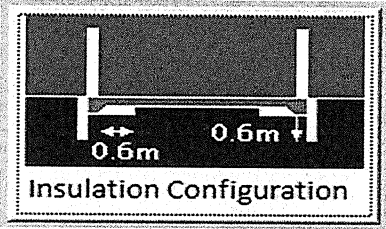
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	49.4	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.56	
Window Area (m ²):	0.6	
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):		729

TYPE: 4000
LO# 79967

THE BRIARWOOD WOB

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		
Length (m):	1.5	 Insulation Configuration
Width (m):	9.8	
Exposed Perimeter (m):	12.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		156

TYPE: 4000
LO# 79967

THE BRIARWOOD WOB

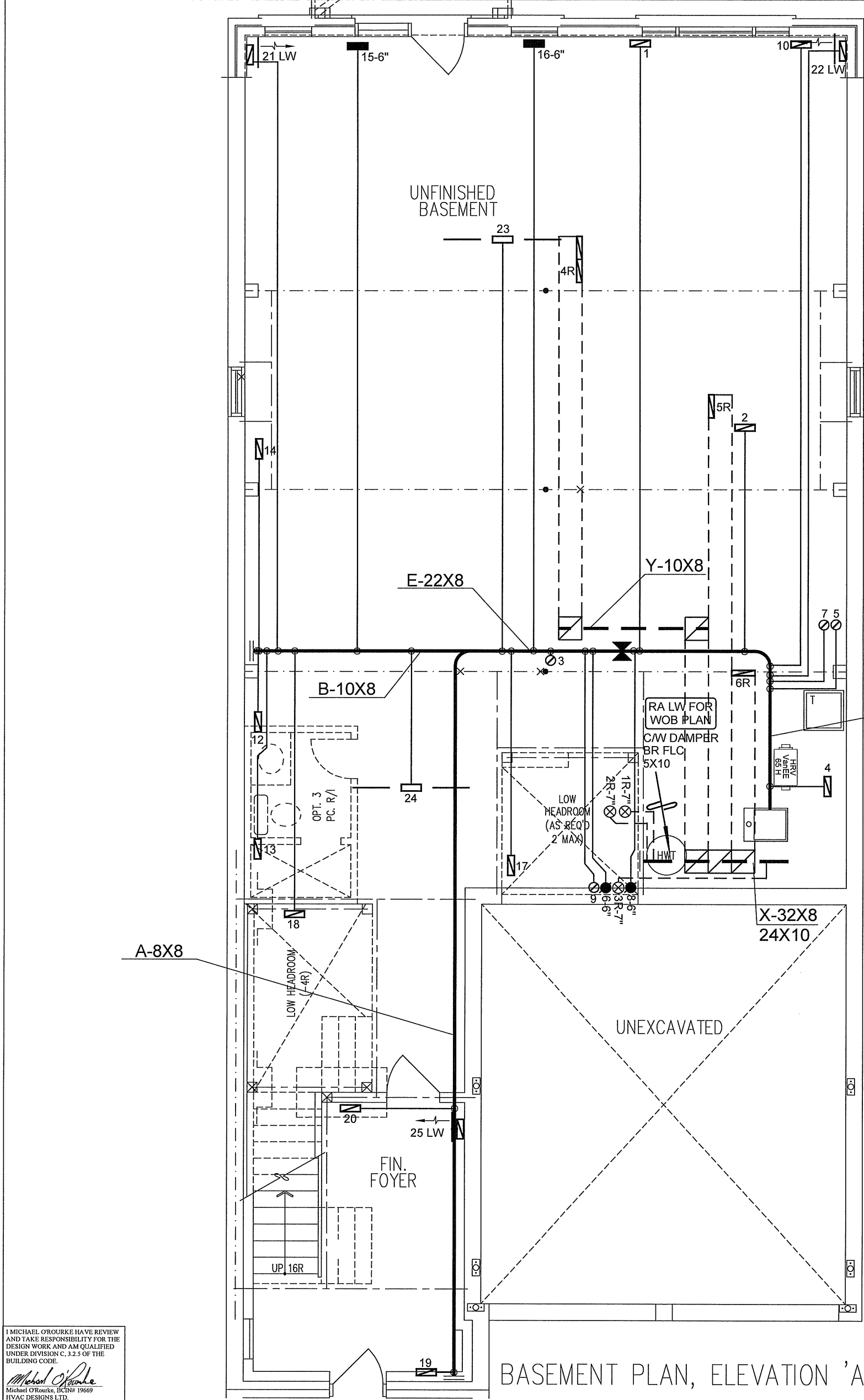
Air Infiltration Residential Load Calculator

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):	8.90			
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):	0.400			
Cooling Air Leakage Rate (ACH/H):	0.134			

TYPE: 4000
LO# 79967

THE BRIARWOOD WOB



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.

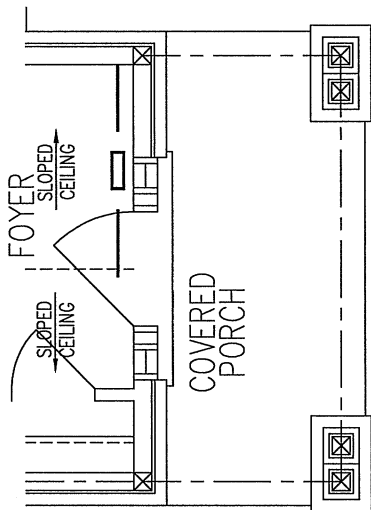
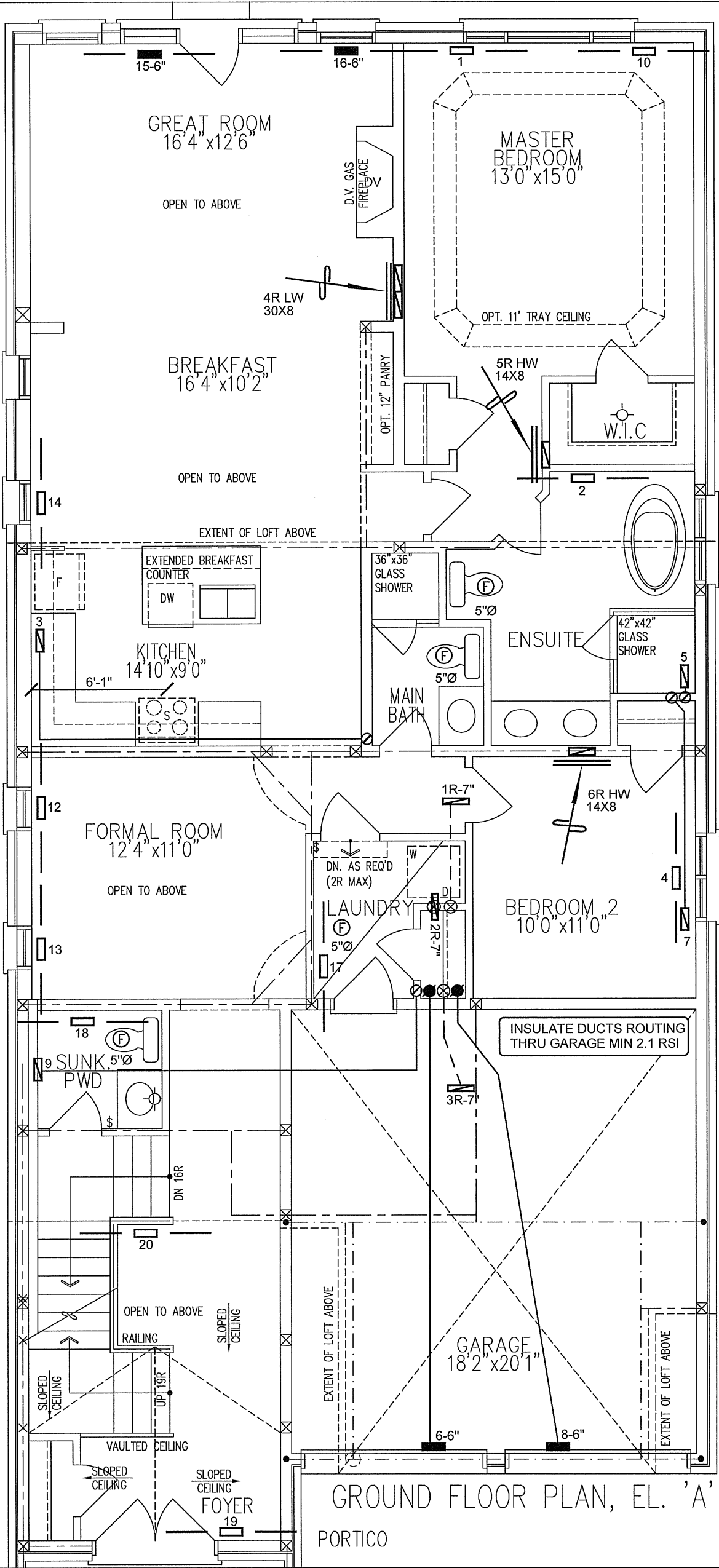
WOB
CSA-F280-12
PACKAGE A1

BASEMENT PLAN, ELEVATION 'A' & 'B'

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	

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Client		<div></div> <div>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</div> <div>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.</div>	HEAT LOSS 68852 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 & TESTON VAUGHAN, ONTARIO			MODEL EL296UH090XE48C		2ND FLOOR		6	3			1
			INPUT 88 MBTU/H		1ST FLOOR		13	3			5
THE BRIARWOOD 4000 - WOB 2820 sqft			OUTPUT 85 MBTU/H		BASEMENT			5	1	0	Date SEPT/2018
			COOLING 3.0 TONS		Scale 3/16" = 1'-0"						
			FAN SPEED 1105 cfm @ 0.6" w.c.		BCIN# 19669						
				LO# 79967							



ELEVATION B

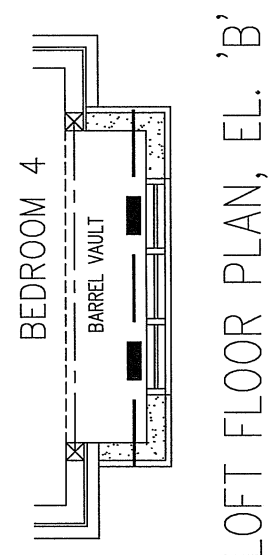
WOB
CSA-F280-12
PACKAGE A1

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.

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		

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Client		<div>HVACDESIGNS LTD.</div> <div>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</div> <div>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.</div>	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE BRIARWOOD 4000 - WOB		BCIN# 19669		
2820 sqft		LO#	79967	



WOB
CSA-F280-12
PACKAGE A1

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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE BRIARWOOD 4000 - WOB		BCIN# 19669		
2820 sqft		LO#	79967	