


## Schedule 1: Designer Information

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

<b>A. Project Information</b>					
Building number, street name				Unit no.	Lot/con.
Municipality VAUGHAN (WOODBIDGE)		Postal code	Plan number/ other description		
<b>B. Individual who reviews and takes responsibility for design activities</b>					
Name <b>MICHAEL O'ROURKE</b>			Firm <b>HVAC DESIGNS LTD.</b>		
Street address <b>375 FINLEY AVE</b>				Unit no. <b>202</b>	Lot/con. <b>N/A</b>
Municipality <b>AJAX</b>	Postal code <b>L1S 2E2</b>	Province <b>ONTARIO</b>	E-mail <b>info@hvacdsgns.ca</b>		
Telephone number <b>(905) 619-2300</b>	Fax number <b>(905) 619-2375</b>	Cell number (     )			
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]</b>					
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings		<input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection		<input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems	
Description of designer's work <b>HEAT LOSS / GAIN CALCULATIONS</b> <b>DUCT SIZING</b> <b>RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY</b> <b>RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>			<b>Model:</b> 4202- ROSEDALE  WOB  <b>Project:</b> PINE VALLEY & TESTON		
<b>D. Declaration of Designer</b>					
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				WOB		TYPE: 4202-ROSEDALE		GFA: 3592		DATE: Sep-18		WINTER NATURAL AIR CHANGE RATE 0.407		HEAT LOSS AT °F. 76		CSA-F280-12	
BUILDING: GOLD PARK HOMES				ENS		HERS		BED-2		BED-3		BED-4		ENS-2		LOFT	
ROOM USE	EXP. WALL CLG. HT.	MBR	FACTORS	34	9	7	9	18	18	36	9	12	9	0	9	38	11
GRS.WALL AREA	LOSS GAIN	470		308		83		162		324		108		0		342	98
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	LOSS GAIN
NORTH	21.3	0	0	0	0	0	0	18	383	288	0	0	0	0	0	0	0
EAST	21.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	21.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	37.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0	0	277	1236	208	63	144	643	108	271	1209	204	90	402	281	1204
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0	0	188	216	99	98	324	418	180	280	369	185	45	58	276	354
NO A TTIC EXPOSED CLG	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0	0	0	0	0	0	144	387	62	280	714	120	40	102	17	50
BASEMENT/CRAWL HEAT LOSS		0	0	0	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	0	0	0
SUBTOTAL HT LOSS		3522		2069		407		1809		3411		1000		160		3116	678
SUB TOTAL HT GAIN				1329		105		648		2691		615		44		2634	331
LEVEL FACTOR / MUL TIPLIER		0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32
AIR CHANGE HEAT LOSS		1169		862		130		579		1091		320		51		997	219
AIR CHANGE HEAT GAIN		237		111		9		54		224		0		4		220	20
DUCT LOSS		0		0		0		239		450		0		21		411	90
DUCT GAIN		0		0		0		1		240		1		0		361	26
HEAT GAIN PEOPLE	240	2	480	0	0	0	0	0	0	240	1	240	1	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		4781	655	0	0	0	0	655		655		655		0	0	655	0
TOTAL HT LOSS BTU/H		4781	5473	2731	1871	537	145	2626		4952		1320		232		4525	895
TOTAL HT GAIN x 1.3 BTU/H								2284		5448		2029		68		5018	468

ROOM USE				KIT/GT		LAUN		PWD		FOY		MUD		HIS		WOB		BAS	
EXP. WALL	CLG. HT.	17	11	100	11	0	9	15	12	69	11	15	12	6	9	43	10	169	10
GRS.WALL AREA	LOSS GAIN	187		1100		0		180		649		180		54		430		1113	
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH	21.3	0	0	10	213	180	0	0	0	0	0	0	0	0	0	28	563	0	0
EAST	21.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	0	0	29	617	722	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	21.3	0	0	123	2617	5111	0	0	0	0	0	0	0	0	0	98	2085	4072	0
SKYLT.	37.2	0	0	10	252	43	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	0	0	928	4141	897	0	0	0	0	0	0	0	0	0	288	1276	215	0
NET EXPOSED WALL	4.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO A TTIC EXPOSED CLG	2.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0	0	0	0	0	0	0	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	0	0	0	0	0
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS		1406		7841		6733		803		4081		1219		563		4972		4782	
SUB TOTAL HT GAIN				0.30	0.55			0.30	0.55	0.30	0.55	0.30	0.55	0.20	0.32	0.30	0.55	0.50	1.45
LEVEL FACTOR / MUL TIPLIER		0.30	0.55	0.30	0.55	0.20	0.32	0.30	0.55	0.30	0.55	0.30	0.55	0.20	0.32	0.30	0.55	0.50	1.45
AIR CHANGE HEAT LOSS		776		4326		582		443		2252		673		180		0		14115	
AIR CHANGE HEAT GAIN		80		0		0		0		0		0		74		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	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS		655		0		655		655		655		655		0		0		0	
TOTAL HT LOSS BTU/H		2182		12167		10334		1245		6333		1892		818		5523		18887	
TOTAL HT GAIN x 1.3 BTU/H								191		968		1140		195		6224		18887	

TOTAL HEAT GAIN BTU/H: 47803 TONS: 3.98 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 72815 TOTAL COMBINED HEAT LOSS BTU/H: 76985

*Michael O'Rourke*

SITE NAME: PINE VALLEY & TESTON  
BUILDER: GOLD PARK HOMESWOB  
TYPE: 4202-ROSEDALE

DATE: Sep-18

GFA: 3592 LO# 79973

HEATING CFM 1525 COOLING CFM 1525  
TOTAL HEAT LOSS 72,815 TOTAL HEAT GAIN 47,267  
AIR FLOW RATE CFM 20.94 AIR FLOW RATE CFM 32.26

EL206UH090XE48C

^LENNOX

80

FAN SPEED

LOW 0

MEDIUM 1105

HIGH 1255

HIGH 1525

DESIGN CFM = 1525

CFM @ 0" E.S.P.

AFUE = 96 %

INPUT (BTU/H) = 88,000

OUTPUT (BTU/H) = 85,000

TEMPERATURE RISE 52 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	17	9	6
R/A	0	0	5	2	1

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

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

ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	ENS	BED-2	BED-3	BED-3	ENS-2	LOFT	ENS-3	MBR	ENS-4	DIN	KT/GT	KT/GT	KT/GT	KT/GT	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.39	1.37	1.37	2.63	1.85	1.32	2.26	2.26	1.00	2.39	0.89	2.18	3.04	3.04	3.04	3.04	0.16	1.25	3.17	1.89	4.07	4.07	4.07	4.07
CFM PER RUN HEAT	50	29	29	55	35	28	5	47	21	50	19	46	64	64	64	64	3	26	66	40	85	85	85	85
RM GAIN MBH	2.74	0.94	0.94	2.28	1.82	1.82	2.03	0.07	0.38	2.74	0.47	2.21	2.58	2.58	2.58	2.58	0.93	0.19	0.48	1.14	1.35	1.35	1.35	1.35
CFM PER RUN COOLING	88	30	30	74	59	65	2	81	12	88	15	71	83	83	83	83	30	6	16	37	44	44	44	44
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.17	0.17	0.16	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	69	53	61	60	49	25	48	55	48	73	39	10	43	47	46	57	52	22	42	24	45	65	13	36
EQUIVALENT LENGTH	160	150	130	190	150	140	190	190	160	140	140	150	130	130	130	130	190	160	150	110	140	120	130	166
TOTAL EFFECTIVE LENGTH	229	203	191	250	199	165	238	245	208	213	179	180	173	177	178	187	242	182	192	134	215	205	133	166
ADJUSTED PRESSURE	0.07	0.08	0.09	0.07	0.09	0.11	0.07	0.07	0.08	0.08	0.1	0.11	0.09	0.09	0.09	0.09	0.07	0.09	0.09	0.13	0.08	0.08	0.12	0.1
ROUND DUCT SIZE	6	4	4	5	5	5	4	6	4	6	4	5	5	5	5	5	4	4	5	4	6	6	5	5
HEATING VELOCITY (ft/min)	255	333	333	404	257	206	57	240	241	255	218	338	470	470	470	470	34	298	485	459	433	433	624	624
COOLING VELOCITY (ft/min)	449	344	344	543	433	477	23	413	138	449	172	521	609	609	609	609	344	69	117	424	224	224	323	323
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10
TRUNK	B	A	A	E	E	B	E	D	E	B	C	C	A	A	B	B	B	E	D	C	A	B	C	D

ROOM NAME	25	26	27	28	29	30	31	32
ROOM NAME	BED-3	LOFT	BAS	FOY	HERS	HIS	BED-3	BAS
RM LOSS MBH	1.65	2.26	4.07	3.17	0.54	0.54	1.65	4.07
CFM PER RUN HEAT	35	47	85	66	11	17	35	85
RM GAIN MBH	1.82	2.51	1.35	0.48	0.15	0.20	1.82	1.35
CFM PER RUN COOLING	59	81	44	16	5	6	59	44
ADJUSTED PRESSURE	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.16
ACTUAL DUCT LGH	45	57	33	40	50	60	58	22
EQUIVALENT LENGTH	140	150	180	150	180	150	160	120
TOTAL EFFECTIVE LENGTH	185	207	213	190	230	210	218	142
ADJUSTED PRESSURE	0.09	0.08	0.09	0.08	0.07	0.08	0.08	0.11
ROUND DUCT SIZE	5	5	6	5	4	4	5	5
HEATING VELOCITY (ft/min)	257	345	433	485	126	195	257	624
COOLING VELOCITY (ft/min)	433	595	224	117	57	69	433	323
OUTLET GRILL SIZE	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	E	D	D	D	B	B	E	C

TRUNK	STATIC PRESS	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	271	0.08	8.6	8	0	0.08	8.6	8	8	0	0.08	8.6	8	8
TRUNK B	344	0.07	9.7	12	0	0.07	9.7	12	12	0	0.07	9.7	12	12
TRUNK C	918	0.07	14	22	0	0.07	14	22	22	0	0.07	14	22	22
TRUNK D	396	0.07	10.2	12	0	0.07	10.2	12	12	0	0.07	10.2	12	12
TRUNK E	608	0.07	12	16	0	0.07	12	16	16	0	0.07	12	16	16
TRUNK F	0	0.00	0	0	0	0.00	0	0	0	0	0.00	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	130	125	130	130	365	300	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	62	69	49	53	30	52	56	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	155	165	145	185	185	140	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	217	234	194	238	215	192	206	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.08	0.06	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08
ROUND DUCT SIZE	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	30	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

TYPE: 4202- ROSEDALE  
SITE NAME: PINE VALLEY & TESTON

LO # 79973  
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	6 @ 10.6 cfm	63.6 cfm
Other Rooms	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	222.6 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	222.6	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	67.6	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	Sones
ENS	QTXEN050C	50	✓	0.3
ENS-2	QTXEN050C	50	✓	0.3
ENS-4	QTXEN050C	50	✓	0.3
PWD	QTXEN050C	50	✓	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#: 79973		Model: 4202-ROSEDALE		Builder: GOLD PARK HOMES		Date: 9/11/2018			
Volume Calculation				Air Change & Delta T Data					
<b>House Volume</b>									
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)						
Bsmt	1540	10	15400						
First	1540	11	16940						
Second	2076	9	18684						
Third	0	9	0						
Fourth	0	9	0						
		Total:	51,024.0 ft³						
		Total:	1444.8 m³						
<b>5.2.3.1 Heat Loss due to Air Leakage</b>									
$HL_{air-b} = LR_{air-b} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$									
0.407	x	401.34	x	42 °C	x	1.2	=	8274 W	
							=	28230 Btu/h	
<b>5.2.3.2 Heat Loss due to Mechanical Ventilation</b>									
$HL_{vair-b} = PVC \times DTD_h \times 1.08 \times (1 - E)$									
155 CFM	x	76 °F	x	1.08	x	0.25	=	3181 Btu/h	
<b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>									
$HL_{air} = Level Factor \times HL_{air-bv} \times \{(HL_{lagger} + HL_{bgcr}) \div (HL_{agcllevel} + HL_{bgcllevel})\}$									
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL <sub>cllevel</sub> )	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)					
1	0.5	28,230	9,753	1.447					
2	0.3		15,351	0.552					
3	0.2		17,643	0.320					
4	0		0	0.000					
5	0		0	0.000					
<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>									

**HEAT LOSS AND GAIN SUMMARY SHEET**

<b>MODEL:</b> 4202- ROSEDALE	<b>WOB</b>	<b>BUILDER:</b> GOLD PARK HOMES
<b>SFQT:</b> 3592	<b>LO#</b> 79973	<b>SITE:</b> 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

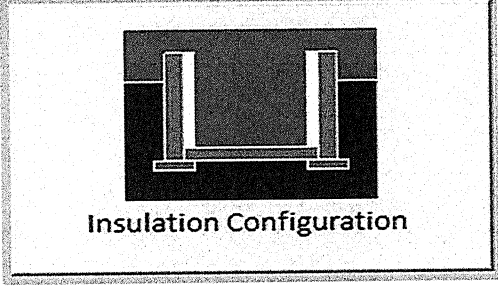
**BUILDING DATA**

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):	51024.0	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: 68.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	159.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	43.0 ft

2012 OBC - COMPLIANCE PACKAGE	Compliance Package	
	A1	
	Nominal	Min. Eff.
Component		
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	-

## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

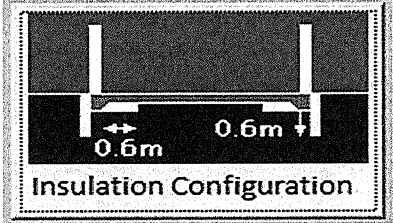
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	10.1	
Exposed Perimeter (m):	48.5	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.79	
Window Area (m <sup>2</sup> ):	0.0	
Door Area (m <sup>2</sup> ):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		750

TYPE: 4202- ROSEDALE  
LO# 79973

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):	10.1	
Exposed Perimeter (m):	13.1	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		162

TYPE: 4202- ROSEDALE  
LO# 79973

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):	9.14			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m <sup>3</sup> ):	1444.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1926.0 cm <sup>2</sup>		
	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):	0.407			
Cooling Air Leakage Rate (ACH/H):	0.137			

TYPE: 4202- ROSEDALE  
LO# 79973

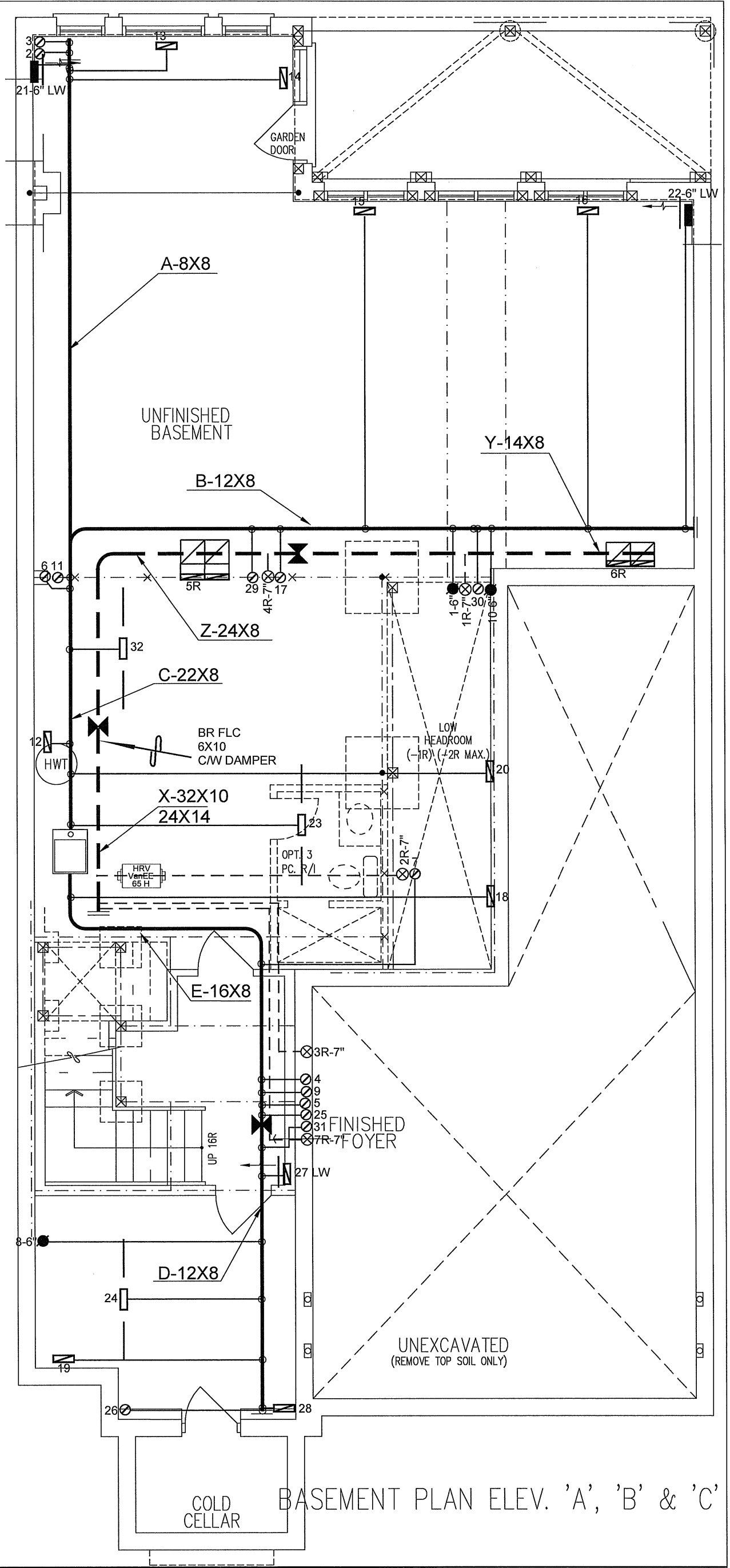
WOB

# 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, BCIN# 19669  
HVAC DESIGNS LTD.

HVAC LEGEND									
								3.	
								2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x6" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6' BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x6" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	
	SUPPLY AIR BOOT ABOVE		6' SUPPLY AIR STACK 2nd FLOOR		FRA-FLOOR RETURN AIR GRILLE		REDUCER		
									Description
									Date
REVISIONS									













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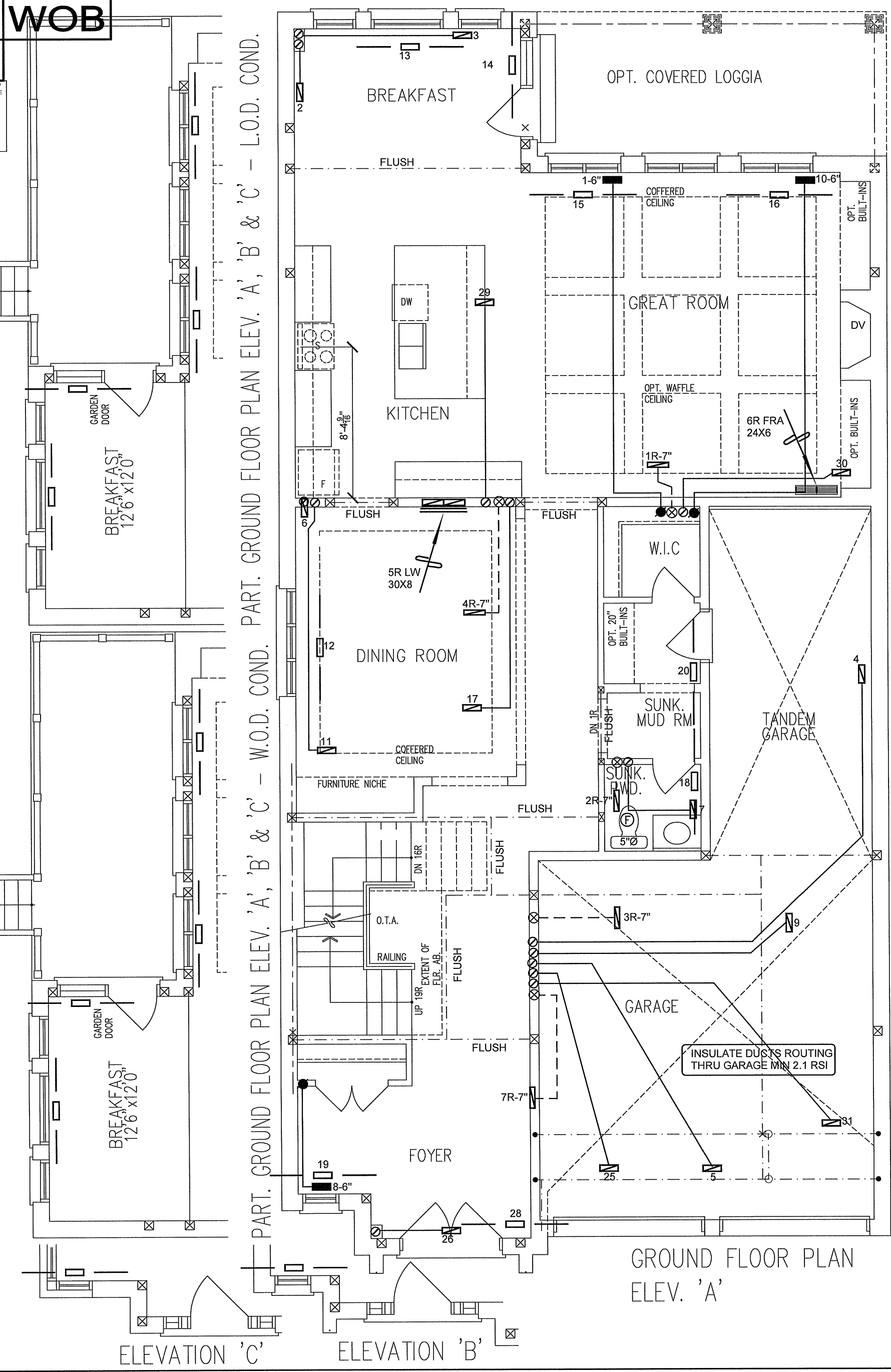
Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div>	HEAT LOSS 75995 BTU/H		# OF RUNS S/A R/A FANS				Sheet Title		
GOLD PARK HOMES			UNIT DATA		3RD FLOOR				BASEMENT HEATING LAYOUT		
Project Name			MAKE		2ND FLOOR						
PINE VALLEY & TESTON VAUGHAN, ONTARIO			MODEL		1ST FLOOR						
ROSEDALE - WOB			INPUT		88 MBTU/H		BASEMENT		Date		
4202		OUTPUT		85 MBTU/H		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				SEPT/2018	
3592 sqft		COOLING		4.0 TONS						Scale	
		FAN SPEED		1525 cfm @ 0.6" w.c.						BCIN# 19669	
										LO# 79973	

WOB

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

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



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Client		<div></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> <p>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.</p>	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			Date	SEPT/2018
ROSEDALE - WOB 4202			Scale	3/16" = 1'-0"
3592 sqft		BCIN# 19669		
		LO#	79973	

CSA-F280-12

WOB

PACKAGE A1

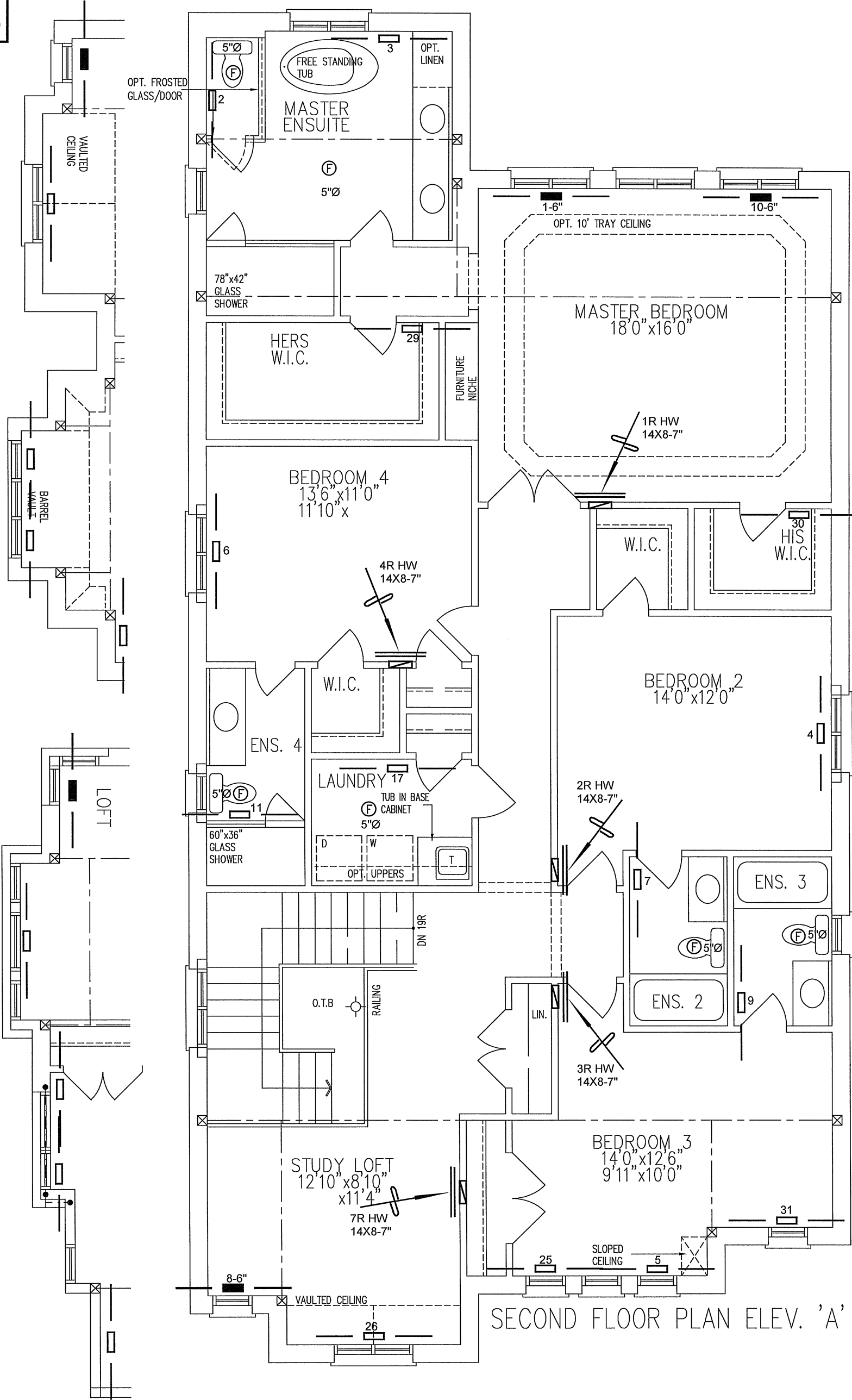
I MICHAEL O'ROURKE HAVE REVIEW  
AND TAKE RESPONSIBILITY FOR THE  
DESIGN WORK AND AM QUALIFIED  
UNDER DIVISION C, 3.2.5 OF THE  
BUILDING CODE.

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

PARTIAL SECOND FLOOR PLAN – ELEVATION 'B'

PARTIAL SECOND FLOOR PLAN – ELEVATION 'C'

HVAC LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"X8" RETURN AIR GRILLE
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"X8" RETURN AIR GRILLE
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE
					RETURN AIR STACK ABOVE
					RETURN AIR STACK 2nd FLOOR
					REDUCER
				REVISIONS	
				No.	Date



SECOND FLOOR PLAN ELEV. 'A'

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GOLD PARK HOMES			SECOND FLOOR	
Project Name			HEATING LAYOUT	
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Date	SEPT/2018
		Scale	3/16" = 1'-0"	
		BCIN# 19669		
ROSEDALE - WOB		LO#	79973	
4202	3592 sqft			