


## 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 DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>		<b>Model:</b> 4005 THE EDGEBROOK  WOB  <b>Project:</b> PINE VALLEY & TESTON	
<b>D. Declaration of Designer</b>			
I <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
<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.

SITE NAME: PINE VALLEY & TESTON				WOB				DATE: Sep-18				WINTER NATURAL AIR CHANGE RATE				HEAT LOSS AT °F.				CSA-F280-12			
BUILDER: GOLD PARK HOMES				TYPE: 4005 THE EDGEBROOK				GFA: 3481				LO# 78971				SUMMER NATURAL AIR CHANGE RATE				SB-12 PACKAGE A1			
ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	MEDIA	BATH	GRS.WALL AREA	FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
EXP. WALL	37	28	8	13	13	13	8	32	6														
CLG. HT.	10	9	9	9	9	9	9	9	9														
GRS.WALL AREA																							
GLAZING	374	265	73	118	118	118	73	281	55														
NORTH	0	0	0	0	0	0	0	0	0														
EAST	0	0	0	0	0	0	0	0	0														
SOUTH	0	0	0	0	0	0	0	0	0														
WEST	34	16	0	0	0	0	0	0	0														
SKYL.T.	37.2	0	0	0	0	0	0	0	0														
DOORS	25.2	0	0	0	0	0	0	0	0														
NET EXPOSED WALL	4.5	223	73	99	99	99	76	200	883														
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0														
EXPOSED CLG	1.3	220	88	113	208	287	122	295	379														
NO ATTIC EXPOSED CLG	2.7	0	0	0	0	0	0	20	55														
EXPOSED FLOOR	2.6	0	0	0	0	0	0	315	803														
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																							
SUB TOTAL HT GAIN	1888	1922	438	106	1171	679	624	4087	586														
LEVEL FACTOR / MULTIPLIER	0.20	0.20	0.20	0.20	0.42	0.20	0.20	0.20	0.42														
AIR CHANGE HEAT LOSS	1134	801	182	478	488	464	260	1695	236														
AIR CHANGE HEAT GAIN	0	0	0	9	58	57	28	328	11														
DUCT LOSS																							
DUCT GAIN																							
HEAT GAIN PEOPLE	240	0	0	0	163	0	0	484	80														
HEAT GAIN APPLIANCES/LIGHTS	667	0	0	1	240	1	0	0	0														
TOTAL HT LOSS BTU/H	3855	2722	620	1788	1824	1579	884	6338	882														
TOTAL HT GAIN x 1.3 BTU/H	4142	1895	150	2068	2337	2111	456	6923	1136														

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	GRDN	K/M/G	LAUN	WIR	FOY	WOB	BAS
GRS.WALL AREA	372			372	912	276	96	732	382	952
GLAZING										
NORTH	21.3	16.0		0	0	0	0	0	0	0
EAST	21.3	41.6		0	0	0	0	0	0	0
SOUTH	21.3	24.9		0	0	0	0	0	0	0
WEST	21.3	41.6		0	0	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		326	1455	245	326	1455	245	326
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.8		0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6		0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3		0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4		0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2434			1390	6316	1799	546	5632	3984	4785
SUB TOTAL HT GAIN				0.30	0.61	0.30	0.61	0.30	0.61	0.60
LEVEL FACTOR / MULTIPLIER	1247			118	3274	921	280	2885	256	16345
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			480	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				667	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	3880			2815	9665	2720	826	8517	4493	18130
TOTAL HT GAIN x 1.3 BTU/H										1951

TOTAL HEAT GAIN BTU/H: 47497 TONS: 3.96 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 68923 TOTAL COMBINED HEAT LOSS BTU/H: 72704

*Michael O'Rourke*

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

WOB TYPE: 4005 THE EDGEBROOK

GFA: 3481 LO# 79971

DATE: Sep-18

HEATING CFM 1525 COOLING CFM 1525  
TOTAL HEAT LOSS 69,523 TOTAL HEAT GAIN 46,961  
AIR FLOW RATE CFM 21.94 AIR FLOW RATE CFM 32.47

EL206UH090XE48C

^LENNOX

90

FAN SPEED

LOW 0

MEDIUM 1105

HIGH 1525

DESIGN CFM = 1525

CFM @ 8" 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	12	9	5
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.

RUN #	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	MEDIA	MEDIA	MEDIA	BATH	GRDN	K/M/G	K/M/G	K/M/G	LAUN	W/R	FOY	FOY	MEDIA	K/M/G	BAS	BAS
RM LOSS MBH	1.93	2.72	0.62	1.79	1.82	1.58	0.88	2.11	2.11	1.93	0.88	3.68	2.42	2.42	2.42	2.72	0.83	4.26	4.26	2.11	2.42	4.72	4.72
CFM PER RUN HEAT	42	60	14	39	40	35	19	46	46	42	19	81	53	53	53	60	18	93	93	46	53	104	104
RM GAIN MBH	2.07	1.90	0.15	2.07	2.34	2.11	0.46	2.31	2.31	2.07	1.14	2.82	2.44	2.44	2.44	1.44	0.34	2.12	2.12	2.31	2.44	1.43	1.43
CFM PER RUN COOLING	67	62	5	67	76	69	15	75	75	67	37	91	79	79	79	47	11	69	69	75	79	46	46
ADJUSTED PRESSURE	0.17	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	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16
ACTUAL DUCT LGH	64	42	87	52	15	38	22	40	43	79	31	12	42	48	57	67	6	36	25	46	63	36	54
EQUIVALENT LENGTH	150	130	190	170	180	140	170	165	150	130	180	165	140	130	100	180	180	100	120	180	120	190	160
TOTAL EFFECTIVE LENGTH	214	172	277	222	195	178	192	205	193	209	211	177	182	178	157	247	188	136	145	208	183	226	214
ADJUSTED PRESSURE	0.08	0.1	0.06	0.08	0.09	0.1	0.09	0.08	0.09	0.08	0.08	0.09	0.09	0.1	0.11	0.07	0.09	0.12	0.11	0.08	0.09	0.07	0.08
ROUND DUCT SIZE	5	5	4	5	5	5	4	5	5	5	4	6	5	5	5	5	4	5	5	5	5	6	6
HEATING VELOCITY (ft/min)	308	441	161	286	294	257	218	338	338	308	218	413	389	389	389	441	207	683	683	338	389	530	530
COOLING VELOCITY (ft/min)	492	455	57	492	558	507	172	551	551	492	424	464	580	580	580	345	126	507	507	551	580	235	235
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	B	C	A	D	C	C	C	D	D	A	D	C	B	B	B	A	C	D	D	D	A	B	A

RUN #	25	26	27
ROOM NAME	BAS	BAS	BAS
RM LOSS MBH	4.72	4.72	4.72
CFM PER RUN HEAT	104	104	104
RM GAIN MBH	1.43	1.43	1.43
CFM PER RUN COOLING	46	46	46
ADJUSTED PRESSURE	0.16	0.16	0.16
ACTUAL DUCT LGH	44	11	39
EQUIVALENT LENGTH	110	130	160
TOTAL EFFECTIVE LENGTH	154	141	199
ADJUSTED PRESSURE	0.11	0.11	0.08
ROUND DUCT SIZE	6	6	6
HEATING VELOCITY (ft/min)	530	530	530
COOLING VELOCITY (ft/min)	235	235	235
OUTLET GRILL SIZE	4X10	4X10	4X10
TRUNK	B	C	D

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC	ROUND	DUCT	RECT	VELOCITY	TRUNK	STATIC	ROUND	DUCT	RECT	VELOCITY
TRUNK A	273	0.06	9.3	10	10	8	TRUNK G	0	0.00	0	0	8
TRUNK B	682	0.06	13.1	20	20	8	TRUNK H	0	0.00	0	0	8
TRUNK C	1039	0.06	15.3	28	28	8	TRUNK I	0	0.00	0	0	8
TRUNK D	486	0.08	10.7	14	14	8	TRUNK J	0	0.00	0	0	8
TRUNK E	0	0.00	0	0	0	8	TRUNK K	0	0.00	0	0	8
TRUNK F	0	0.00	0	0	0	8	TRUNK L	0	0.00	0	0	8

RETURN AIR #	1	2	3	4	5	6	7
AIR VOLUME	135	135	130	130	130	345	275
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	79	59	46	35	36	41	45
EQUIVALENT LENGTH	230	225	190	145	185	185	225
TOTAL EFFECTIVE LH	309	284	236	180	221	226	270
ADJUSTED PRESSURE	0.05	0.05	0.06	0.08	0.07	0.07	0.05
ROUND DUCT SIZE	7.5	7.5	7	6.5	6.8	9.7	9.7
INLET GRILL SIZE	8	8	8	8	8	8	8
INLET GRILL SIZE	14	14	14	14	14	30	30

TYPE: 4005 THE EDGEBROOK  
SITE NAME: PINE VALLEY & TESTON

LO # 79971  
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	4 @ 10.6 cfm	42.4 cfm
Other Rooms	5 @ 10.6 cfm	53.0 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	$\Delta T$ °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	<input checked="" type="checkbox"/>
ENS-3/4	QTXEN050C	50	<input checked="" type="checkbox"/>
BATH	QTXEN050C	50	<input checked="" type="checkbox"/>
W/R	QTXEN050C	50	<input checked="" type="checkbox"/>

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

<b>CSA F280-12 Residential Heat Loss and Heat Gain Calculations</b>																																			
<b>Formula Sheet (For Air Leakage / Ventilation Calculation)</b>																																			
LO#: 79971	Model: 4005 THE EDGEBROOK	Builder: GOLD PARK HOMES	Date: 9/11/2018																																
<b>Volume Calculation</b>																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> <tr> <td>Bsmt</td> <td>1573</td> <td>9</td> <td>14314.3</td> </tr> <tr> <td>First</td> <td>1573</td> <td>12</td> <td>18876</td> </tr> <tr> <td>Second</td> <td>2026</td> <td>9</td> <td>18436.6</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>51,626.9 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1461.9 m³</td> </tr> </table>				Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1573	9	14314.3	First	1573	12	18876	Second	2026	9	18436.6	Third	0	9	0	Fourth	0	9	0	Total:			51,626.9 ft³	Total:			1461.9 m³
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																
Bsmt	1573	9	14314.3																																
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<b>Air Change &amp; Delta T Data</b>																																			
		WINTER NATURAL AIR CHANGE RATE	0.409																																
		SUMMER NATURAL AIR CHANGE RATE	0.137																																
<b>Design Temperature Difference</b>																																			
	Tin °C	Tout °C	ΔT °C																																
Winter DTDh	22	-20	42																																
Summer DTDc	24	31	7																																
			ΔT °F																																
			76																																
			13																																
<b>6.2.6 Sensible Gain due to Air Leakage</b>																																			
$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																			
0.409	x	406.09	x																																
		7 °C	x																																
		1.2	=																																
			475 W																																
			=																																
			1621 Btu/h																																
<b>6.2.7 Sensible heat Gain due to Ventilation</b>																																			
$HL_{vaibv} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																			
155 CFM	x	13 °F	x																																
		1.08	x																																
		0.25	=																																
			536 Btu/h																																
<b>5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)</b>																																			
$HL_{airv} = Level Factor \times HL_{airbv} \times \{(HL_{qgcr} + HL_{bgcr}) \div (HL_{aqclel} + HL_{bgclel})\}$																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HLclel)</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center;">28,690</td> <td>8,745</td> <td>1.640</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>16,801</td> <td>0.512</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>13,769</td> <td>0.417</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </table>				Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLclel)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	28,690	8,745	1.640	2	0.3	16,801	0.512	3	0.2	13,769	0.417	4	0	0	0.000	5	0	0	0.000						
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLclel)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																															
1	0.5	28,690	8,745	1.640																															
2	0.3		16,801	0.512																															
3	0.2		13,769	0.417																															
4	0		0	0.000																															
5	0		0	0.000																															
<p>*HLairbv = Air leakage heat loss + ventilation heat loss          *For a balanced or supply only ventilation system HLairv = 0</p>																																			

**HEAT LOSS AND GAIN SUMMARY SHEET**

<b>MODEL:</b> 4005 THE EDGEBROOK	<b>WOB</b>	<b>BUILDER:</b> GOLD PARK HOMES
<b>SFQT:</b> 3481	<b>LO#</b> 79971	<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):	51626.9	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: 67.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	156.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	42.0 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	-

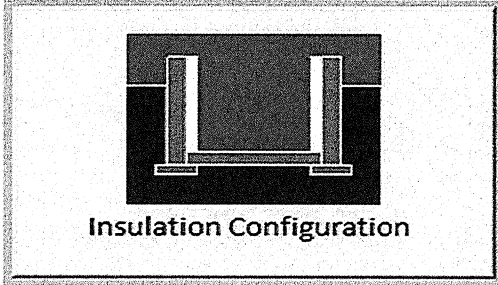
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

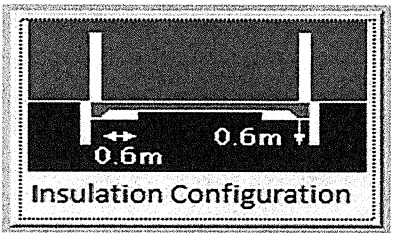
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	47.5	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.56	
Window Area (m <sup>2</sup> ):	0.6	
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):		723

TYPE: 4005 THE EDGEBROOK  
LO# 79971

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	
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: 4005 THE EDGEBROOK  
LO# 79971

WOB





HVAC Designs Ltd.  
375 Finley Ave, Suite 202  
Ajax ON, L1S 2E2  
905-619-2300

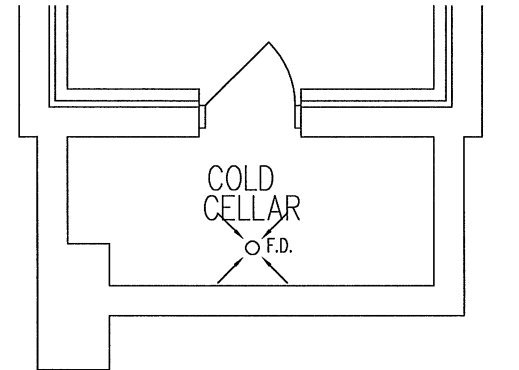
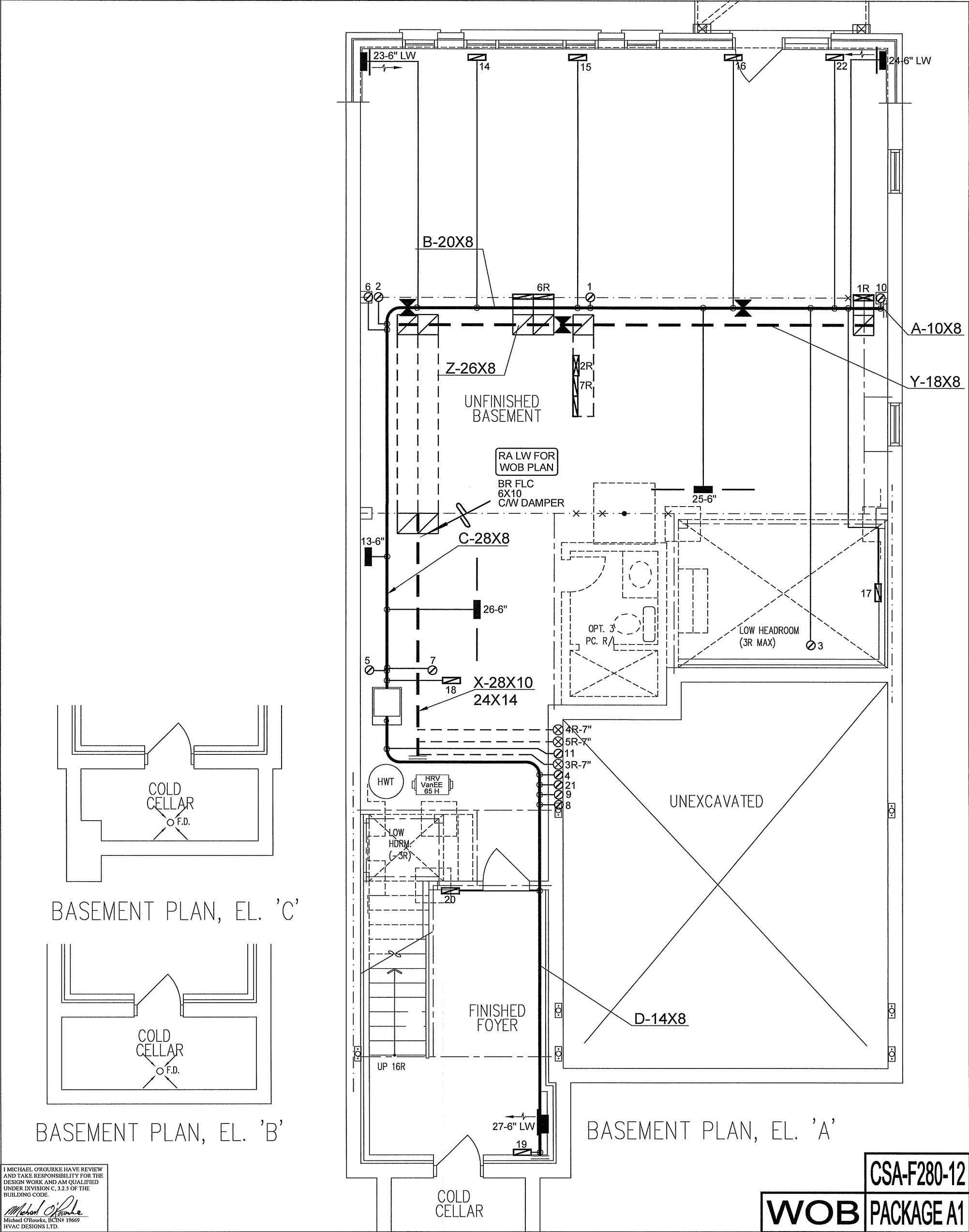
# Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

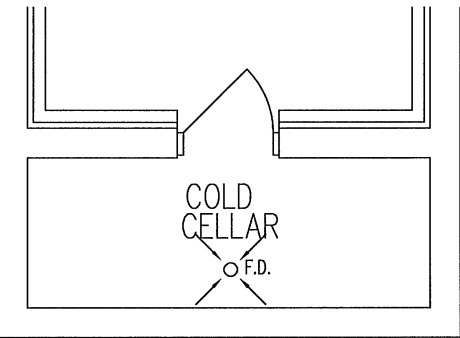
Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	9.20			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m <sup>3</sup> ):	1461.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1948.8 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):	0.409			
Cooling Air Leakage Rate (ACH/H):	0.137			

TYPE: 4005 THE EDGEBROOK  
LO# 79971

WOB



BASEMENT PLAN, EL. 'C'



BASEMENT PLAN, EL. 'B'

BASEMENT PLAN, EL. 'A'

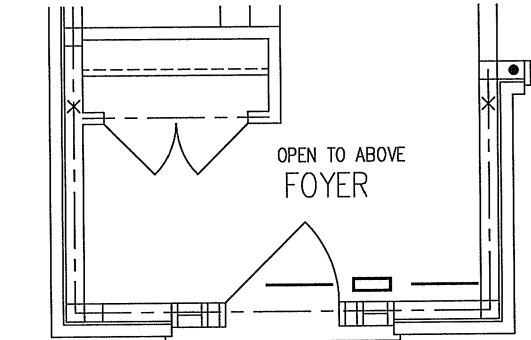
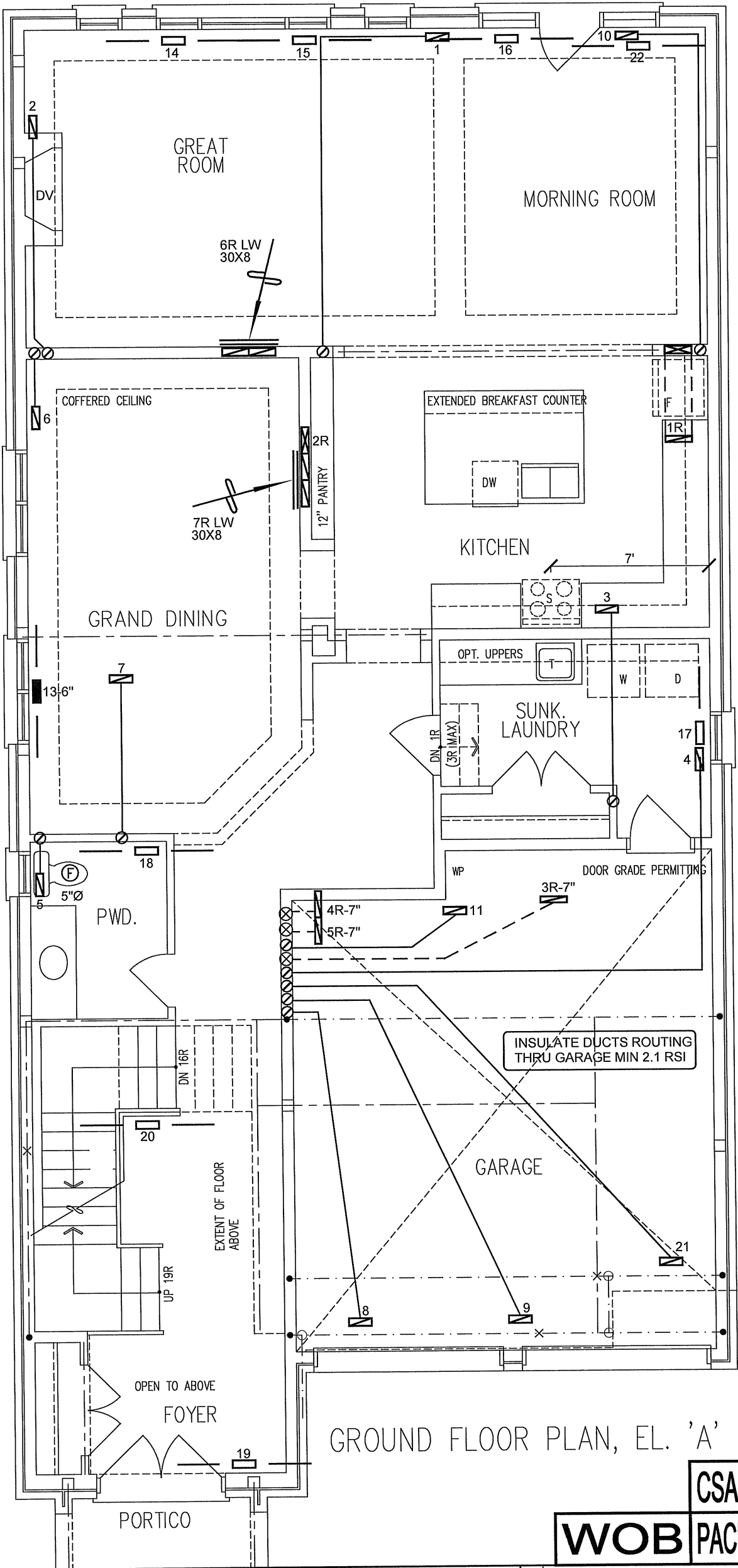
I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.  
*Michael O'Rourke*  
Michael O'Rourke, BCIN# 19669  
HVAC DESIGNS LTD.

CSA-F280-12  
**WOB** PACKAGE A1

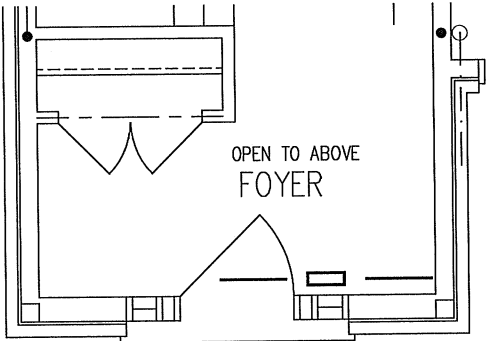
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		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>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>	HEAT LOSS 72704 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			MODEL EL296UH090XE48C	2ND FLOOR	12	5	3		
PINE VALLEY & TESTON VAUGHAN, ONTARIO			INPUT 88 MBTU/H	1ST FLOOR	9	2	2	Date	SEPT/2018
			OUTPUT 85 MBTU/H	BASEMENT	5	1	0	Scale	3/16" = 1'-0"
		COOLING 4.0 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				BCIN# 19669		
THE EDGEBROOK - WOB 4005 3481 sqft		FAN SPEED 1525 cfm @ 0.6" w.c.					LO#	79971	



GROUND FLOOR PLAN, EL. 'C'



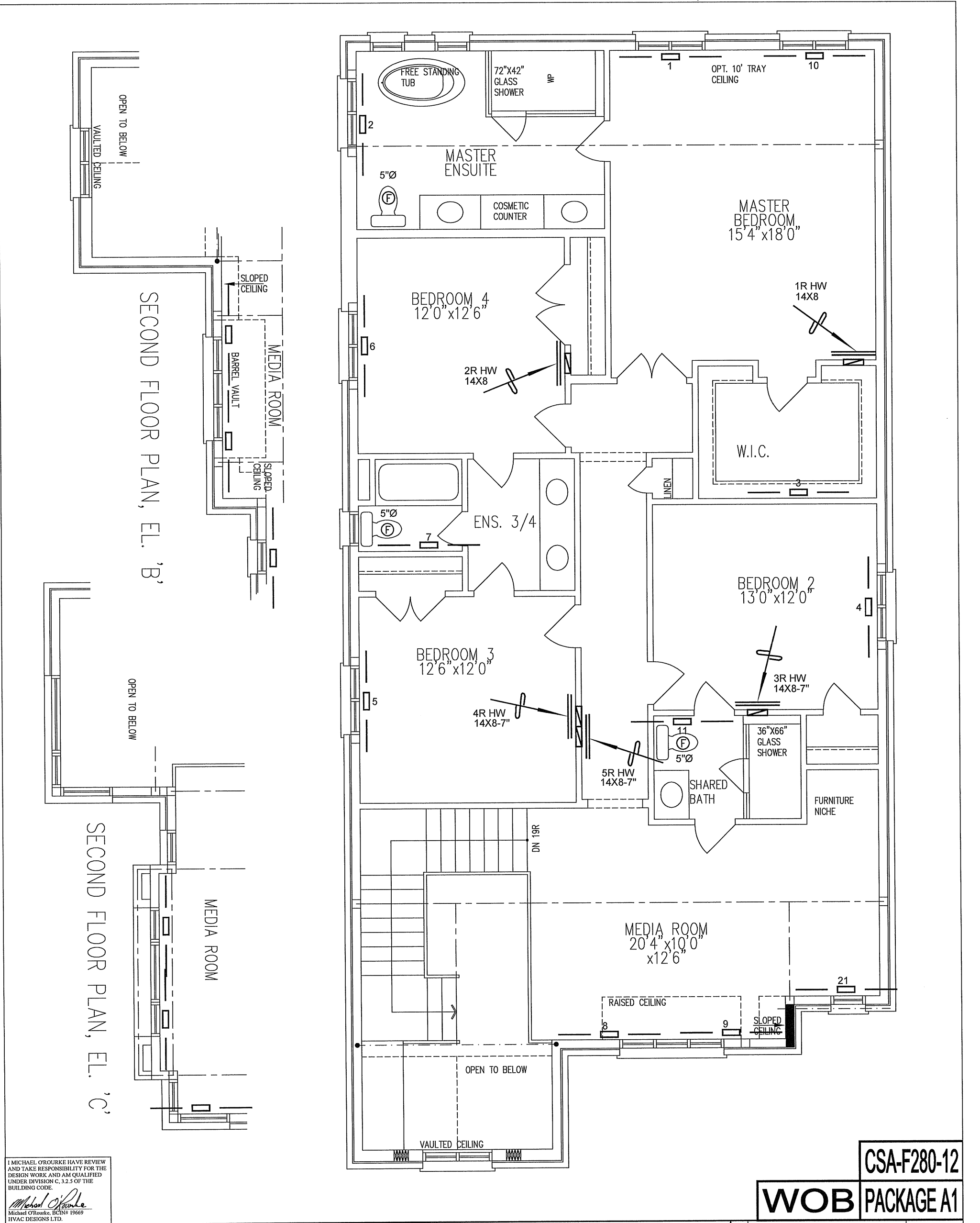
GROUND FLOOR PLAN, EL. 'B'

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.

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.	
	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> <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 EDGEBROOK - WOB 4005			BCIN# 19669	
3481 sqft			LO#	79971



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

CSA-F280-12

WOB PACKAGE A1

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

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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO			Date	SEPT/2018
			Scale	3/16" = 1'-0"
THE EDGEBROOK - WOB 4005		BCIN# 19669		
3481 sqft		LO#	79971	