


## 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@hvacdesigns.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>				
<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 <b>HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12</b>		<b>Model:</b> 5002 - THE ROSEVIEW  WOB  <b>Project:</b> PINE VALLEY & TESTON		
<b>D. Declaration of Designer</b>				
I, <u><b>MICHAEL O'ROURKE</b></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.				
October 5, 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		DATE: Oct-18		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS ΔT °F.		CSA-F280-12	
BUILDER: GOLD PARK HOMES										TYPE: 5002 - THE ROSEVIEW		LO# 80239		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN ΔT °F.		SB-12 PACKAGE A1	
ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4		BATH		BATH		ENS-4		BATH	
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	500		500	270	90	351	432	144	36	0	0	0	0	0	0	0	0	0	0
GLAZING																			
NORTH	21.3	16.0	18	383	288	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	0	0	0	59	1256	2452	56	1404	2742	0	0	0	0	0	0	0	0
WEST	21.3	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	442	1973	332	224	1000	168	90	402	68	292	1303	219	357	1593	268	112	500
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	437	561	257	224	287	132	160	205	94	294	377	173	374	480	220	224	287
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	282	719	121	20	51	9	0	0
BASEMENT/CRAWL HEAT LOSS																			
SLAB ON GRADE HEAT LOSS																			
SUBTOTAL HT LOSS	3768		2266		607	162	3463	1013	0.20	0.32	0.20	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32
SUB TOTAL HT GAIN	2539		1878		195	13	269	79	80	64	0	240	0	463	584	102	651		
LEVEL FACTOR / MULTIPLIER																			
AIR CHANGE HEAT LOSS	1208		727		146														
AIR CHANGE HEAT GAIN	197		0		0														
DUCT LOSS	0		0		0														
DUCT GAIN	0		0		0														
HEAT GAIN PEOPLE	240		0		0														
HEAT GAIN APPLIANCES/LIGHTS	463		463		463														
TOTAL HT LOSS BTU/H	4976		2993		802	227	5310	1939	884	912									
TOTAL HT GAIN x 1.3 BTU/H	4782		3233		802	227	5574	2332											

ROOM USE	EXP. WALL	CLG. HT.	LIBR	DIN	KIT	LIV	LAUN	FOY	MUD	WOB		BAS	
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	370		370	290	630	120	63	310	324	0	0	0	0
GLAZING													
NORTH	21.3	16.0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.3	41.6	48	1021	1994	0	0	0	0	0	0	0	0
SOUTH	21.3	24.9	12	255	299	0	0	0	0	0	0	0	0
WEST	21.3	41.6	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.5	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	310	1383	233	236	1053	177	528	2356	397	96	428
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS													
SLAB ON GRADE HEAT LOSS													
SUBTOTAL HT LOSS	2660		2526		4506	939	594	2589	1862	741	4355	5102	610
SUB TOTAL HT GAIN													
LEVEL FACTOR / MULTIPLIER													
AIR CHANGE HEAT LOSS	1444		1444		2500	510	191	1405	1010	0.50	1.42	0.50	1.42
AIR CHANGE HEAT GAIN	196		196		188	52	20	34	24	0	0	0	0
DUCT LOSS	0		0		0	0	0	0	0	0	0	0	0
DUCT GAIN	0		0		0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240		463		463	463	463	463	463	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	463		463		463	463	463	463	463	0	0	0	0
TOTAL HT LOSS BTU/H	4104		4141		7106	1449	785	3994	2872	5097	4049	18540	463
TOTAL HT GAIN x 1.3 BTU/H													

TOTAL HEAT GAIN BTU/H: 49349 TONS: 4.11 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 69752 TOTAL COMBINED HEAT LOSS BTU/H: 72933

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 O'Rourke*

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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

WOB

TYPE: 5002 - THE ROSEVIEW

DATE: Oct-18

GFA: 3764 LO# 80239

HEATING CFM 1525  
TOTAL HEAT LOSS 69,752  
AIR FLOW RATE CFM 21.86COOLING CFM 1525  
TOTAL HEAT GAIN 48,813  
AIR FLOW RATE CFM 31.24EL296UH090XE48C  
FAN SPEED 90AFUE = 96 %  
INPUT (BTU/H) = 88,000  
OUTPUT (BTU/H) = 85,000DESIGN CFM = 1525  
CFM @ 6" E.S.P.furnace 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 diff press. loss 0.02  
min adjusted pressure s/a 0.16  
r/a pressure 0.17  
r/a grille press. loss 0.02  
adjusted pressure r/a 0.15

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	10	6
R/A	0	0	5	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	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-4	LIBR	DIN	KIT	KIT	LIV	LAUN	ENS	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.49	1.50	0.80	2.65	2.70	1.94	0.44	2.65	2.70	2.49	0.10	2.05	1.70	2.37	2.37	1.45	0.78	1.50	3.99	2.87	3.94	3.94	3.94	3.94
CFM PER RUN HEAT	54	33	18	58	59	42	10	58	59	54	2	45	37	52	52	32	17	33	87	63	86	86	86	86
RM GAIN MBH	2.39	1.62	0.23	2.79	3.17	2.33	0.46	2.79	3.17	2.39	0.65	2.07	2.00	2.02	2.02	1.54	0.96	1.62	1.21	1.04	0.97	0.97	0.97	0.97
CFM PER RUN COOLING	75	50	7	87	99	73	14	87	99	75	20	65	62	63	63	48	30	50	38	33	30	30	30	30
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	48	62	51	46	72	45	47	43	66	42	29	65	44	28	23	45	22	47	44	16	33	21	19	47
EQUIVALENT LENGTH	200	205	195	130	170	140	140	140	205	190	150	100	110	110	150	110	120	190	190	130	120	160	100	180
TOTAL EFFECTIVE LENGTH	248	267	246	176	242	185	187	183	271	232	179	165	154	138	173	155	142	237	234	146	153	181	119	227
ADJUSTED PRESSURE	0.07	0.06	0.07	0.09	0.07	0.09	0.09	0.09	0.06	0.07	0.1	0.1	0.11	0.12	0.1	0.11	0.12	0.07	0.07	0.12	0.11	0.09	0.14	0.07
ROUND DUCT SIZE	5	5	4	5	6	5	4	5	6	5	4	5	5	4	5	4	4	5	6	4	5	5	5	6
HEATING VELOCITY (ft/min)	396	242	207	426	301	308	115	426	301	396	23	330	272	597	382	367	195	242	444	723	631	631	438	438
COOLING VELOCITY (ft/min)	551	367	80	639	505	536	161	639	505	551	229	477	455	723	463	551	344	367	194	379	220	220	220	153
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10
TRUNK	D	A	A	D	B	A	D	D	B	D	C	B	A	C	D	A	D	A	B	C	A	D	C	B

RUN #	25	26	27	28	29	30
ROOM NAME	BAS	LIBR	DIN	KIT	BATH	BAS
RM LOSS MBH	3.94	2.05	1.70	2.37	0.44	3.94
CFM PER RUN HEAT	86	45	37	52	10	86
RM GAIN MBH	0.97	2.07	2.00	2.02	0.46	0.97
CFM PER RUN COOLING	30	65	62	63	14	30
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.16
ACTUAL DUCT LGH	55	56	36	25	41	30
EQUIVALENT LENGTH	110	120	130	90	170	160
TOTAL EFFECTIVE LENGTH	165	176	166	115	211	190
ADJUSTED PRESSURE	0.1	0.1	0.1	0.15	0.08	0.09
ROUND DUCT SIZE	5	5	5	4	4	5
HEATING VELOCITY (ft/min)	631	330	272	597	115	631
COOLING VELOCITY (ft/min)	220	477	455	723	161	220
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	B	A	C	D	A

TRUNK	CFM	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	404	0.06	10.7	14	519	TRUNK G	0	0.00	0	0	8	TRUNK O	0	0.06	0	0	8
TRUNK B	467	0.06	11.3	14	600	TRUNK H	0	0.00	0	0	8	TRUNK P	0	0.06	0	0	8
TRUNK C	1126	0.06	15.8	28	724	TRUNK I	0	0.00	0	0	8	TRUNK Q	0	0.06	0	0	8
TRUNK D	399	0.07	10.3	12	599	TRUNK J	0	0.00	0	0	8	TRUNK R	0	0.06	0	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	8	TRUNK S	0	0.06	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	8	TRUNK T	0	0.06	0	0	8

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	130	130	130	155	155	85	180	0	0	0	0	0	0	0	0	0	1525	995	1525	17.7	32	32	32
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	0.06	0.06	0.06	0.06	0.06	0.06	0.06
ACTUAL DUCT LGH	59	59	53	66	35	33	54	39	1	1	1	1	1	1	1	1	1	TRUNK X	TRUNK Y	TRUNK Z	TRUNK W	TRUNK V	TRUNK U	TRUNK T
EQUIVALENT LENGTH	175	165	165	195	195	195	185	165	0	0	0	0	0	0	0	0	0	995	995	995	15.25	17.7	17.7	17.7
TOTAL EFFECTIVE LENGTH	234	224	218	261	230	228	239	204	1	1	1	1	1	1	1	1	1	285	285	285	9.4	10	10	10
ADJUSTED PRESSURE	0.06	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
ROUND DUCT SIZE	7	6.8	6.8	7	7.5	10.3	6	7.6	0	0	0	0	0	0	0	0	0	1525	1525	1525	17.7	24	24	24
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	DROP	DROP	DROP	DROP	DROP	DROP	DROP
INLET GRILL SIZE	14	14	14	14	14	14	14	14	0	0	0	0	0	0	0	0	0	1525	1525	1525	17.7	24	24	24

TYPE: 5002 - THE ROSEVIEW  
SITE NAME: PINE VALLEY & TESTON

LO # 80239  
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	<u>2</u> @ 21.2 cfm <u>42.4</u> cfm	
Other Bedrooms	<u>3</u> @ 10.6 cfm <u>31.8</u> cfm	
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm <u>53</u> cfm	
Other Rooms	<u>7</u> @ 10.6 cfm <u>74.2</u> cfm	
Table 9.32.3.A.	TOTAL <u>201.4</u> 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	<u>79.5</u> cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>201.4</u> cfm	
Less Principal Ventil. Capacity	<u>155</u> cfm	
Required Supplemental Capacity	<u>46.4</u> cfm	

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	$\Delta T \text{ } ^\circ F$	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"/>
BATH	QTXEN050C	50	<input checked="" type="checkbox"/>
ENS-4	QTXEN050C	50	<input checked="" type="checkbox"/>

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % 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:	October-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																							
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																							
LO#: 80239		Model: 5002 - THE ROSEVIEW		Builder: GOLD PARK HOMES		Date: 10/5/2018																																																																	
Volume Calculation				Air Change & Delta T Data																																																																			
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$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$				$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																																			
0.389 x 400.18 x 42 °C x 1.2 = 7877 W				0.130 x 400.18 x 7 °C x 1.2 = 446 W																																																																			
= 26877 Btu/h				= 1520 Btu/h																																																																			
5.2.3.2 Heat Loss due to Mechanical Ventilation				6.2.7 Sensible heat Gain due to Ventilation																																																																			
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$				$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																			
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)																																																																							
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclvl} + HL_{bgclvl})\}$																																																																							
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*HLairbv = Air leakage heat loss + ventilation heat loss **For a balanced or supply only ventilation system HLairve = 0																																																																							

**HEAT LOSS AND GAIN SUMMARY SHEET**

MODEL: 5002 - THE ROSEVIEW	WOB	BUILDER: GOLD PARK HOMES
SFQT: 3764	LO# 80239	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):	50876.0	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:	6.0 ft
LENGTH: 56.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	144.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	52.0 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	-

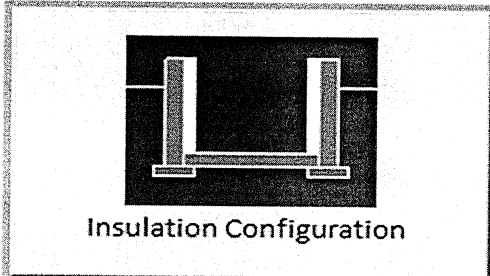
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

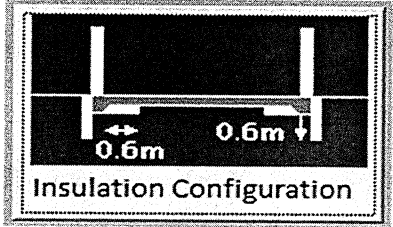
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	43.9	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.57	
Window Area (m <sup>2</sup> ):	1.1	
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):		<b>817</b>

TYPE: 5002 - THE ROSEVIEW  
LO# 80239

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):	12.8	
Exposed Perimeter (m):	15.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		<b>217</b>

TYPE: 5002 - THE ROSEVIEW  
LO# 80239

WOB



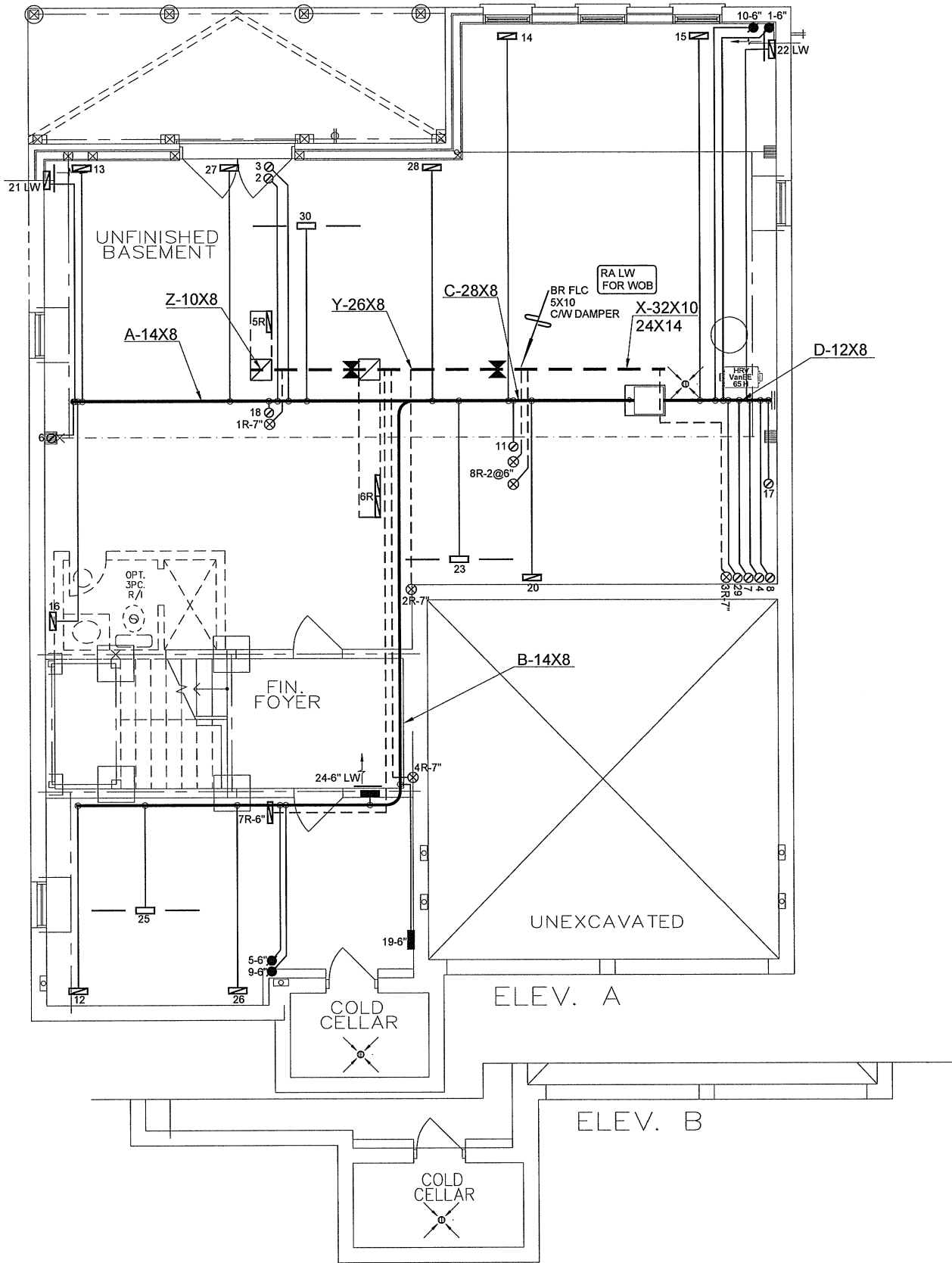
# Air Infiltration Residential Load Calculator

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):	8.53			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m <sup>3</sup> ):	1440.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1920.4 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):	0.389			
Cooling Air Leakage Rate (ACH/H):	0.130			

TYPE: 5002 - THE ROSEVIEW  
LO# 80239

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.

CSA-F280-12

WOB

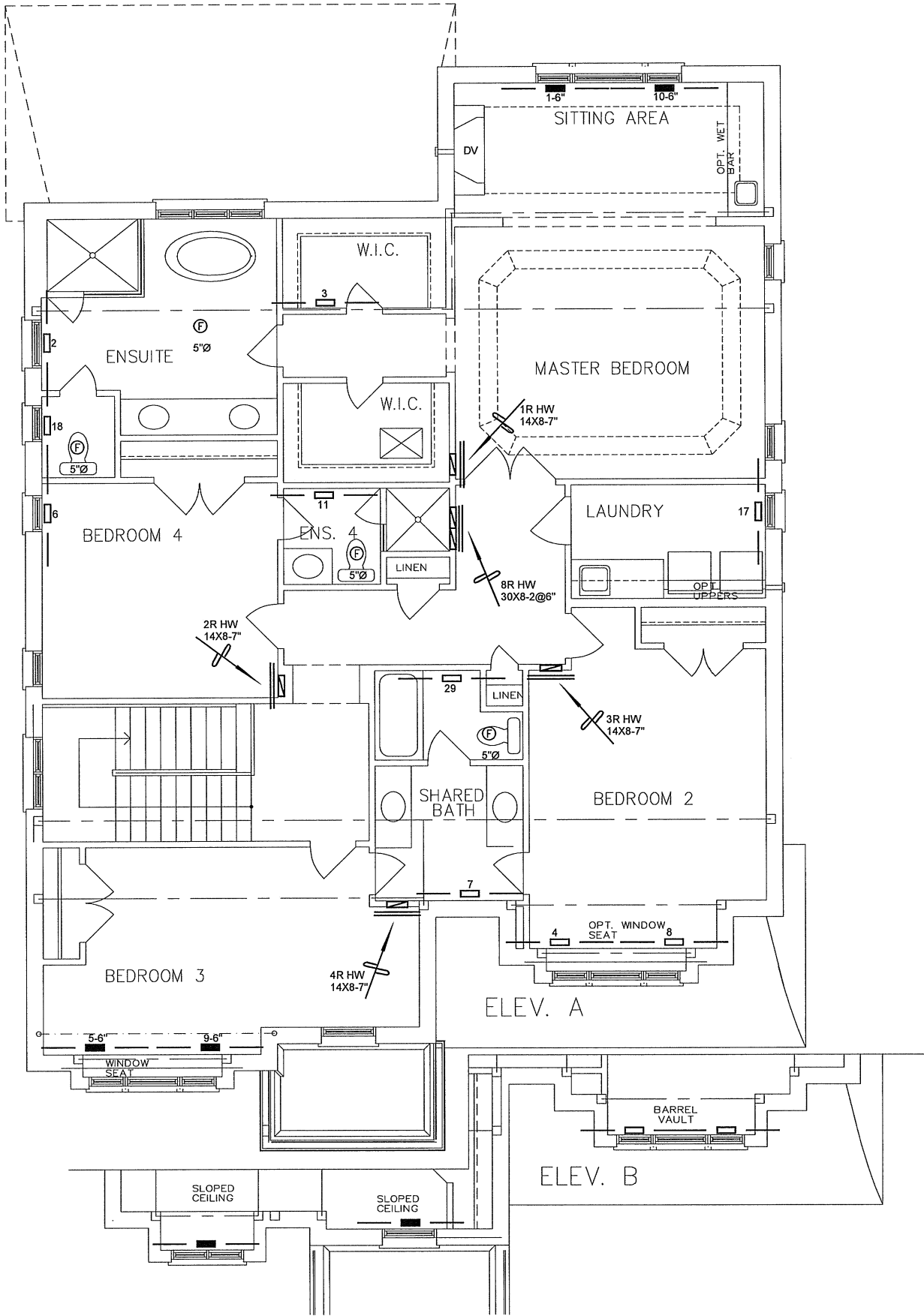
PACKAGE A1

HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1. DECK CONDITIONS ADDED OCT/2018
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No. 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> <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 72933 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GOLD PARK HOMES			MAKE		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name			LENNOX		2ND FLOOR			Date	
PINE VALLEY & TESTON VAUGHAN, ONTARIO			MODEL EL296UH090XE48C		1ST FLOOR			OCT/2018	
WOB			INPUT		BASEMENT			Scale	
5002 - ROSEVIEW 3764 sqft			88 MBTU/H		6 1 0			3/16" = 1'-0"	
			OUTPUT		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	
			85 MBTU/H					LO#	
		COOLING					80239		
		4.0 TONS							
		FAN SPEED							
		1525 cfm @ 0.6" w.c.							





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.

CSA-F280-12  
WOB  
PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED	OCT/2018
	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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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	OCT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
WOB			BCIN# 19669	
5002 - ROSEVIEW 3764 sqft			LO#	80239