

SITE NAME: PINE VALLEY & TESTON BUILDER: GOLD PARK HOMES TYPE: 5001 - THE HILLBOROUGH ELEVATION A - WOB DATE: Oct-18 LO# 80237 WINTER NATURAL AIR CHANGE RATE 0.389 HEAT LOSS AT °F. 76 CSA-F200-12
SUMMER NATURAL AIR CHANGE RATE 0.130 HEAT GAIN AT °F. 43 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4
GRS.WALL AREA	410	226	410	226	90	99	333	180	63	54
GLAZING										
NORTH	21.3	16.4	0	0	0	17	362	283	0	0
EAST	21.3	39.9	0	0	0	0	30	638	1198	0
SOUTH	21.3	24.0	0	0	0	0	0	0	0	0
WEST	21.3	39.9	38	809	1517	28	586	1118	0	0
SKYL.T.	37.2	101.5	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.6	0.8	372	1650	280	197	879	148	90	402
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	340	436	200	156	200	92	120	154
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	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
SUBTOTAL HT LOSS	2905	1937	1368	556	138	1038	3199	1767	880	530
SUB TOTAL HT GAIN	0.20	0.39	0.20	0.39	0.20	0.39	0.20	0.39	0.20	0.39
LEVEL FACTOR / MUL TIPLIER	1127	850	216	13	44	283	1241	736	341	206
AIR CHANGE HEAT LOSS	0	187	127	0	0	0	444	107	122	28
DUCT LOSS	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	2	480	0	0	0	1	240	1	0	0
HEAT GAIN APPLANCES/LIGHTS	671	0	0	0	0	671	671	671	0	0
TOTAL HT LOSS BTU/H	4032	2326	1930	771	196	1441	4886	2633	1343	422
TOTAL HT GAIN x 1.3 BTU/H		4334								

ROOM USE	EXP. WALL	CLG. HT.	LIB	KTGT	DIN	LAUN	WIR	FOY	MUD	WOB	BAS
GRS.WALL AREA	480	297	480	297	200	117	50	310	286	488	848
GLAZING											
NORTH	21.3	16.4	0	0	0	0	0	0	0	0	0
EAST	21.3	39.9	85	1809	3394	0	0	0	0	0	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	101.5	0	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.6	0.8	395	1763	166	741	125	105	469	79	20
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	182	500	229	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	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
SUBTOTAL HT LOSS	4072	3920	0.30	0.61	0.30	0.51	0.30	0.51	0.30	0.51	0.30
SUB TOTAL HT GAIN	0.20	0.39	2066	2792	743	88	113	4	0	0	0
LEVEL FACTOR / MUL TIPLIER	2066	366	0	0	0	0	0	0	0	0	0
AIR CHANGE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLANCES/LIGHTS	671	0	0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	6138	6443									
TOTAL HT GAIN x 1.3 BTU/H											

TOTAL HEAT GAIN BTU/H: 4748 TONS: 3.48
STRUCTURAL HEAT LOSS: 65512 LOSS DUE TO VENTILATION LOAD BTU/H: 3181
TOTAL COMBINED HEAT LOSS BTU/H: 6892
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'DOUBKE
INDIVIDUAL BCIN: 15669

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

ELEVATION A - WOB
TYPE: 5001 - THE HILLSBOROUGH

CFA: 3588 LO# 80237

DATE: Oct-18

HEATING CFM 1255 COOLING CFM 1255
TOTAL HEAT GAIN 41,212
AIR FLOW RATE CFM 30.45

ALLENNOX
EL286UH090XE48C 90
FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1255
DESIGN CFM = 1255
CFM @ 6" E.S.P.

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

ROOM COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	9	6
R/A	0	0	4	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 #	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-3	BATH	MBR	ENS-4	LIB	LIB	KT/GT	KT/GT	DIN	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.02	2.33	0.77	1.44	2.44	2.63	0.67	2.44	0.67	2.02	0.73	3.07	3.07	2.76	2.76	2.21	1.00	0.34	3.65	2.55	3.86	3.86	3.86	3.86
CFM PER RUN HEAT	39	45	15	28	47	50	13	47	13	39	14	59	59	53	53	42	19	6	70	49	74	74	74	74
RM GAIN MBH	2.17	1.93	0.20	1.85	2.03	2.82	0.23	2.03	0.23	2.17	0.42	3.22	3.22	2.97	2.97	2.21	1.67	0.05	0.58	1.28	0.67	0.67	0.67	0.67
CFM PER RUN COOLING	66	59	6	56	62	86	7	62	7	66	13	98	98	90	90	67	51	2	18	39	20	20	20	20
ADJUSTED PRESSURE	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	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	64	49	31	31	49	48	30	45	26	75	48	50	45	50	37	29	45	5	31	11	40	28	44	47
EQUIVALENT LENGTH	205	165	110	135	125	180	145	105	165	205	220	120	120	120	120	190	195	100	150	170	120	190	170	160
TOTAL EFFECTIVE LENGTH	269	214	141	166	174	228	175	150	191	280	268	170	165	170	157	219	240	105	181	181	160	218	214	207
ADJUSTED PRESSURE	0.06	0.08	0.12	0.1	0.1	0.07	0.1	0.11	0.09	0.06	0.06	0.1	0.1	0.1	0.1	0.08	0.07	0.16	0.1	0.1	0.11	0.08	0.08	0.08
ROUND DUCT SIZE	5	5	4	5	5	6	4	5	4	5	4	6	6	5	5	5	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	286	330	172	206	345	255	149	345	149	286	161	301	301	389	389	308	140	69	514	562	543	543	543	543
COOLING VELOCITY (ft/min)	485	433	69	411	455	438	80	455	80	485	149	500	500	661	661	492	374	23	132	447	147	147	147	147
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	D	C	D	D	A	D	D	D	A	A	B	B	A	A	B	B	C	B	D	A	A	D	B

VAUGHAN
CITY OF VAUGHAN
BUILDING PERMIT DRAWINGS
ALL CONSTRUCTION SHALL
COMPLY WITH THE APPLICABLE
REQUIREMENTS OF ONTARIO
REGULATION 332/12, (AS AMENDED),
THE 2012 BUILDING CODE, MADE
UNDER THE BUILDING CODE ACT

ROOM #	25	26	27	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS	KT/GT	BAS
ROOM NAME	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS	BAS
RM LOSS MBH	3.86	2.76	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86
CFM PER RUN HEAT	74	53	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
RM GAIN MBH	0.67	2.97	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
CFM PER RUN COOLING	20	90	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
ADJUSTED PRESSURE	0.17	0.16	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
ACTUAL DUCT LGH	40	35	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
EQUIVALENT LENGTH	110	130	150	130	150	130	150	130	150	130	150	130	150	130	150	130	150	130	150	130	150	130	150	130
TOTAL EFFECTIVE LENGTH	150	165	209	150	165	209	150	165	209	150	165	209	150	165	209	150	165	209	150	165	209	150	165	209
ADJUSTED PRESSURE	0.11	0.1	0.08	0.11	0.1	0.08	0.11	0.1	0.08	0.11	0.1	0.08	0.11	0.1	0.08	0.11	0.1	0.08	0.11	0.1	0.08	0.11	0.1	0.08
ROUND DUCT SIZE	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
HEATING VELOCITY (ft/min)	543	389	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543	543
COOLING VELOCITY (ft/min)	147	851	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	D	A	B	D	A	B	D	A	B	D	A	B	D	A	B	D	A	B	D	A	B	D	A

SUPPLY AIR TRUNK SIZE											RETURN AIR TRUNK SIZE										
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 CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)		
TRUNK A	470	0.06	11.4	16	x	8	529	0	0.00	0	0	0	0	8	0	0.06	0	0	8		
TRUNK B	397	0.07	10.3	12	x	8	596	0	0.00	0	0	0	0	8	0	0.06	0	0	8		
TRUNK C	888	0.06	14.4	24	x	8	666	0	0.00	0	0	0	0	8	0	0.06	0	0	8		
TRUNK D	369	0.08	9.7	12	x	8	554	0	0.00	0	0	0	0	8	0	0.06	0	0	8		
TRUNK E	0	0.00	0	0	x	8	0	0	0.00	0	0	0	0	8	0	0.06	0	0	8		
TRUNK F	0	0.00	0	0	x	8	0	0	0.00	0	0	0	0	8	0	0.06	0	0	8		
RETURN AIR #																					
AIR VOLUME				1	2	3	4	5	6	BR											
PLENUM PRESSURE				0	0	0	0	0	0	0											
ACTUAL DUCT LGH.				110	155	155	110	340	175	0											
EQUIVALENT LENGTH				0.15	0.15	0.15	0.15	0.15	0.15	0.15											
TOTAL EFFECTIVE LH				47	36	37	59	20	28	1	1	1	1	1	14	0	0.05	30	8	465	
ADJUSTED PRESSURE				205	190	185	160	135	170	0	0	0	0	0	140	0	0.05	12	8	0	
ROUND DUCT SIZE				252	226	222	219	155	198	1	1	1	1	1	154	1255	16.4	24	628	12	
INLET GRILL SIZE				0.06	0.07	0.07	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	DROP	0.08	0	0	0	
ROUND DUCT SIZE				6.6	7.2	7.2	6.3	8.9	7.5	0	0	0	0	0	0.10	0.08	15.9	12	0	0	
INLET GRILL SIZE				8	8	8	8	8	8	0	0	0	0	0	8	0.06	0	0	0	0	
INLET GRILL SIZE				X	X	X	X	X	X	X	X	X	X	X	8	0.06	0	0	0	0	
INLET GRILL SIZE				14	14	14	14	30	14	0	0	0	0	0	14	0.06	0	0	0	0	

TYPE: 5001 - THE HILLSBOROUGH
SITE NAME: PINE VALLEY & TESTON

LO # 80237
ELEVATION A - WOB
RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	☒ Direct vent (sealed combustion) only	
b)	☐ Positive venting induced draft (except fireplaces)	
c)	☐ Natural draft, B-vent or induced draft gas fireplace	
d)	☐ Solid Fuel (Including fireplaces)	
e)	☐ No Combustion Appliances	

HEATING SYSTEM	
☒ Forced Air	☐ Non Forced Air
☐ Electric Space Heat	

HOUSE TYPE		9.32.1(2)
☒ I	Type a) or b) appliance only, no solid fuel	
☐ II	Type I except with solid fuel (including fireplaces)	
☐ III	Any Type c) appliance	
☐ IV	Type I, or II with electric space heat	
☐	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐ 1	Exhaust only/Forced Air System	
☐ 2	HRV with Ducting/Forced Air System	
☒ 3	HRV Simplified/connected to forced air system	
☐ 4	HRV with Ducting/non forced air system	
☐	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	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A.	TOTAL	190.8 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	190.8	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	35.8	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANE 65H	Location: BSMT		
155.0 cfm	3.0 sones ☒ HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	76 F	1.08	0.25

SUPPLEMENTAL FANS		NUTONE		
Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	☒	0.3
BATH	QTXEN050C	50	☒	0.3
ENS-4	QTXEN050C	50	☒	0.3
W/R	QTXEN050C	50	☒	0.3

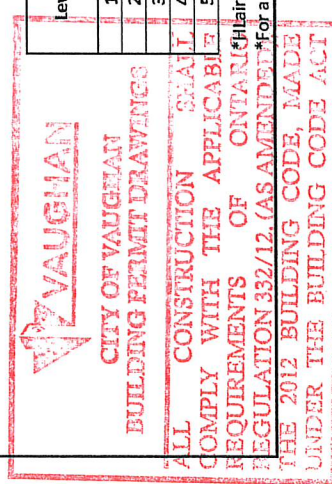
HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER:		GOLD PARK HOMES
Name:		
Address:		
City:		
Telephone #:		
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#: 80237				Model: 5001 - THE HILLSBOROUGH				Builder: GOLD PARK HOMES																																							
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Volume Calculation																																															
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House Volume																																															
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6.2.6 Sensible Gain due to Air Leakage																																															
$HG_{salb} = LR_{aire} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																															
= 0.130 x 387.17 x 7 °C x 1.2				=				431 W																																							
								= 1471 Btu/h																																							
6.2.7 Sensible heat Gain due to Ventilation																																															
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																															
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)																																															
$HL_{airv} = Level Factor \times HL_{airbv} \times \{(HL_{qger} + HL_{bger}) \div (HL_{qgclvel} + HL_{bgclvel})\}$																																															
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>Hlaive Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{level})</th> <th>Air Leakage Heat Loss Multiplier (LF x Hlaiveb / HLlevel)</th> </tr> <tr> <td>1</td> <td>0.5</td> <td rowspan="5">26,004</td> <td>9,353</td> <td>1.390</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>15,377</td> <td>0.507</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>13,404</td> <td>0.388</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)	Hlaive Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x Hlaiveb / HLlevel)	1	0.5	26,004	9,353	1.390	2	0.3	15,377	0.507	3	0.2	13,404	0.388	4	0	0	0.000	5	0	0	0.000										
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5	0		0	0.000																																											



HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5001 - THE HILLSBOROUGH	ELEVATION A - WOB	BUILDER: GOLD PARK HOMES
SFQT: 3588	LO# 80237	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):	49222.0	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:	141.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	55.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component

Ceiling with Attic Space Minimum RSI (R)-Value
Ceiling Without Attic Space Minimum RSI (R)-Value
Exposed Floor Minimum RSI (R)-Value
Walls Above Grade Minimum RSI (R)-Value
Basement Walls Minimum RSI (R)-Value
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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value
Windows and Sliding Glass Doors Maximum U-Value
Skylights Maximum U-Value
Space Heating Equipment Minimum AFUE
HRV Minimum Efficiency
Domestic Hot Water Heater Minimum EF

Compliance Package A1

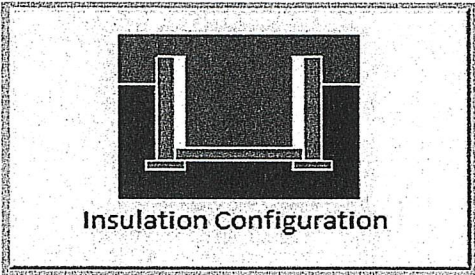
Nominal	Min. Eff.
60	59.22
31	27.65
31	29.80
22	17.03
20 ci	21.12
-	-
10	10
10	11.13
0.28	-
0.49	-
0.96	-
75%	-
0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Michael O'Rourke

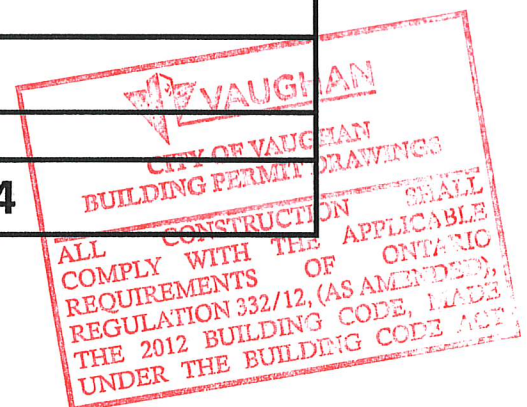
Residential Foundation Thermal Load Calculator

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):	43.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.58	
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):	804	

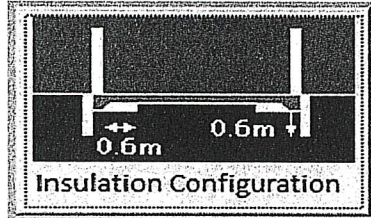
TYPE: 5001 - THE HILLSBOROUGH
LO# 80237

ELEVATION A - 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):	13.7	
Exposed Perimeter (m):	16.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		237

TYPE: 5001 - THE HILLSBOROUGH
LO# 80237

ELEVATION A - WOB

VAUGHAN
CITY OF VAUGHAN
BUILDING PERMIT DRAWINGS
ALL CONSTRUCTION SHALL
COMPLY WITH THE APPLICABLE
REQUIREMENTS OF ONTARIO
REGULATION 332/12, (AS AMENDED),
THE 2012 BUILDING CODE, MADE
UNDER THE BUILDING CODE ACT

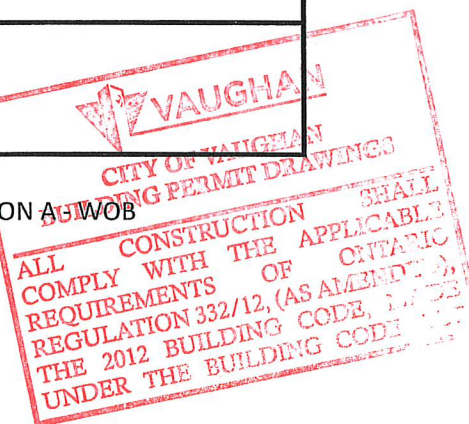
Air Infiltration Residential Load Calculator

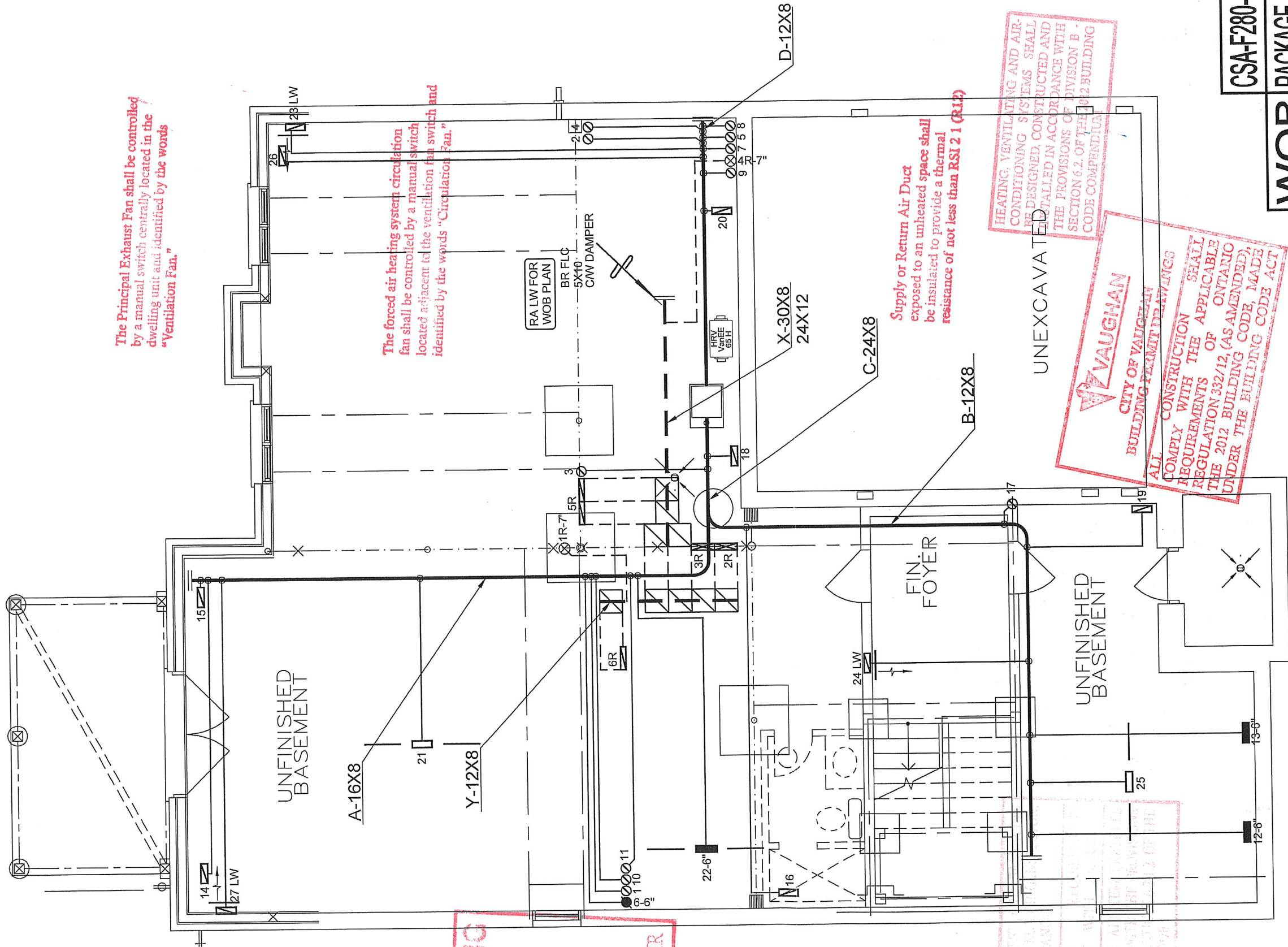
Supplemental tool for CAN/CSA-F280

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 ³):	1393.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1858.0 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):	0.389			
Cooling Air Leakage Rate (ACH/H):	0.130			

TYPE: 5001 - THE HILLSBOROUGH
LO# 80237

ELEVATION A WOB





I, MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER THE REGULATION C.32.5 OF THE BUILDING CODE.
Michael Oroure
MICHAEL OROURKE, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		14\"/>		RETURN AIR STACK ABOVE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR GRILLE 6\"/>		SUPPLY AIR STACK FROM 2nd FLOOR		REDUCER		
	SUPPLY AIR BOOT ABOVE		6\"/>				

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GOLD PARK HOMES

Project Name
PINE VALLEY & TESTON
VAUGHAN, ONTARIO
ELEVATION A - WOB
THE HILLSBOROUGH
5001

Client
HVAO DESIGNS LTD.
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
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.

HEAT LOSS 68692 BTU/H

UNIT DATA

MAKE	LENNOX
MODEL	EL296UH090XE48C
INPUT	88 MBTU/H
OUTPUT	85 MBTU/H
COOLING	3.5 TONS
FAN SPEED	1255 cfm @ 0.6\"/>

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	12	4	3
1ST FLOOR	9	2	2
BASEMENT	6	1	0

ALL SIA DIFFUSERS 4\"/>

UNLESS NOTED OTHERWISE ON LAYOUT. ALL SIA RUNS 5\"/>

UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1\" min. FOR R/A

Sheet Title

BASEMENT HEATING LAYOUT

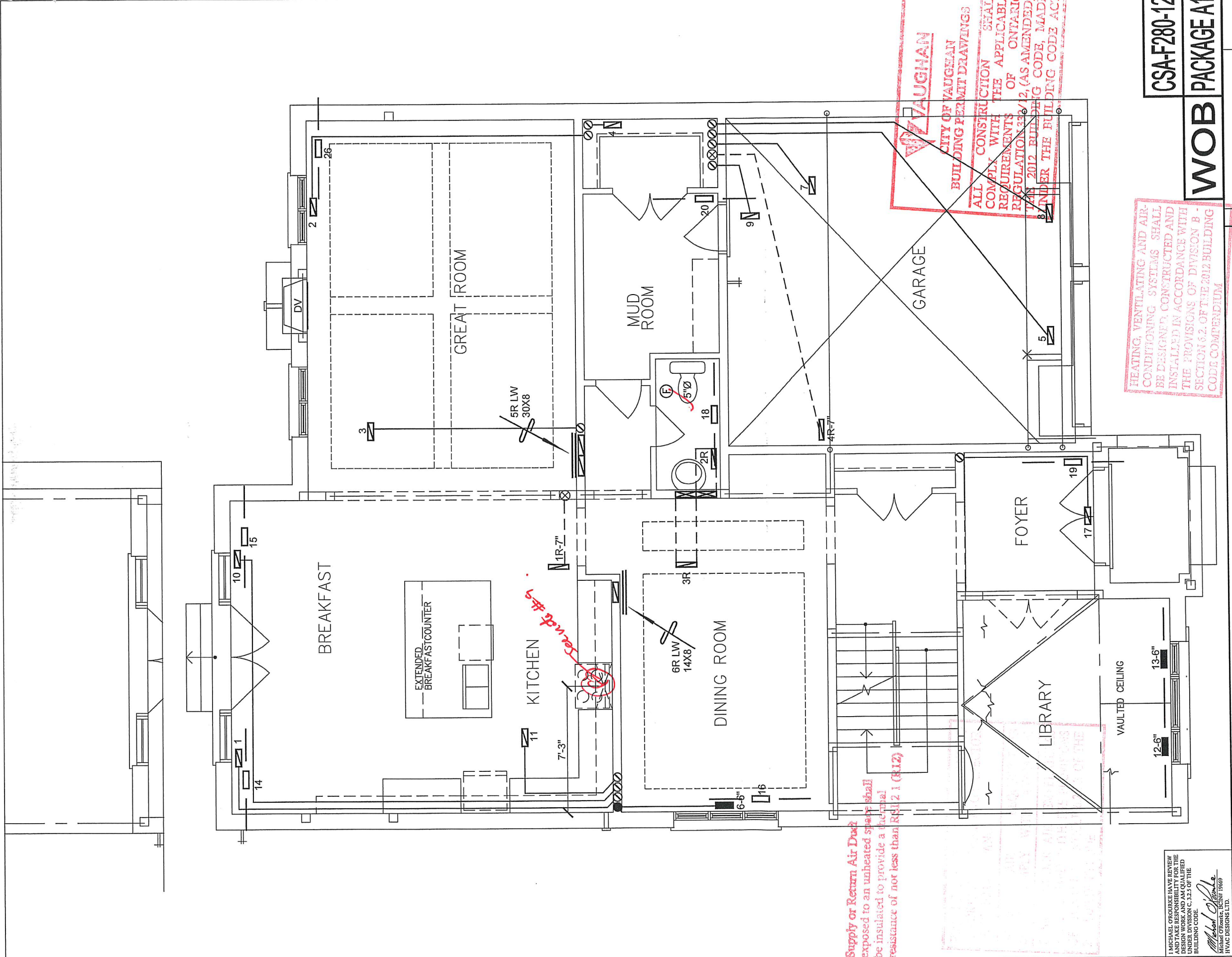
Date OCT/2018

Scale 3/16\"/>

BCIN# 19669

LO# **80237**

Please see back side for Notes



I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED TO SIGN THESE DRAWINGS IN ACCORDANCE WITH THE BUILDING CODE.
Michael O'Rourke
HVAC DESIGNS LTD.

CSA-F280-12
WOB PACKAGE A1

HVAC LEGEND			1.	2.	3.
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	SUPPLY AIR GRILLE 6" BOOT		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR GRILLE 6" BOOT ABOVE		FRA- FLOOR RETURN AIR GRILLE		REDUCER

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Client

GOLD PARK HOMES

Project Name

**PINE VALLEY & TESTON
VAUGHAN, ONTARIO
ELEVATION A - WOB
THE HILLSBOROUGH**

5001

Sheet Title

**FIRST FLOOR
HEATING
LAYOUT**

Date

OCT/2018

Scale

3/16" = 1'-0"

BCIN#

19669

LO#

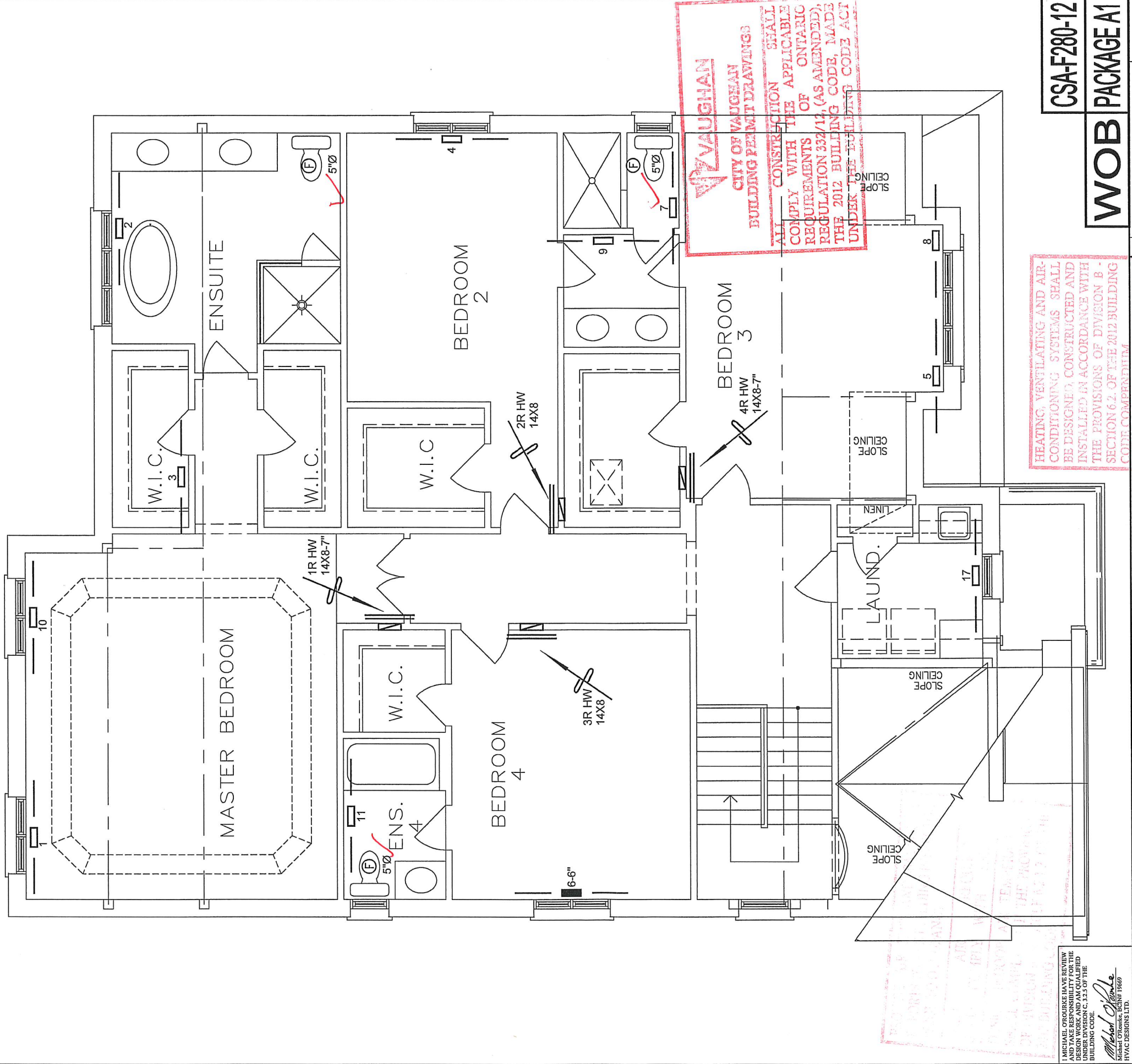
80237

HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
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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.



CSA-F280-12
WOB PACKAGE A1

HEATING, VENTILATING AND AIR-CONDITIONING SYSTEMS SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF DIVISION B - SECTION 6.2 OF THE 2012 BUILDING CODE COMPENDIUM

VAUGHAN
CITY OF VAUGHAN
BUILDING PERMIT DRAWINGS
ALL CONSTRUCTION SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF ONTARIO REGULATION 332/12, (AS AMENDED), THE 2012 BUILDING CODE, MADE UNDER THE BUILDING CODE ACT

HVAC LEGEND				REVISIONS			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
	SUPPLY AIR GRILLE		14\"/>		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6\"/>		30\"/>		RETURN AIR STACK 2nd FLOOR		
	SUPPLY AIR BOOT ABOVE		FRA-FLOOR RETURN AIR GRILLE		REDUCER		

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Client

GOLD PARK HOMES

Project Name
**PINE VALLEY & TESTON
VAUGHAN, ONTARIO
ELEVATION A - WOB
THE HILLSBOROUGH**

5001

Sheet Title

**SECOND FLOOR
HEATING
LAYOUT**

Date
OCT/2018

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 80237

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