

SITE NAME: PINE VALLEY & TESTON
BUILDER: GOLD PARK HOMES
TYPE: 5001 - THE HILLSBOROUGH
DATE: Oct-18
LO# 77471
GFA: 3558
WINTER NATURAL AIR CHANGE RATE 0.330
SUMMER NATURAL AIR CHANGE RATE 0.111
HEAT LOSS AT °F. 76
HEAT GAIN AT °F. 43
CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4
GRS-WALL AREA	410	225	90	99	333	180	63	7	6
GLAZING	21.3	16.0	0	0	0	0	0	0	0
NORTH	21.3	16.0	0	0	0	0	0	0	0
EAST	21.3	16.0	0	0	0	0	0	0	0
SOUTH	21.3	16.0	0	0	0	0	0	0	0
WEST	21.3	16.0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.6	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	372	1680	280	197	879	148	48
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.6	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	340	436	200	166	200	92	120
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0
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	2805	1675	1403	556	1038	475	1179	880	530
LEVEL FACTOR / MULT TPLER	0.20	0.33	0.20	0.33	0.20	0.33	0.20	0.33	0.20
AIR CHANGE HEAT LOSS	957	652	183	342	1054	625	296	174	304
AIR CHANGE HEAT GAIN	167	114	11	39	146	96	24	0	25
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	2	480	0	0	1	240	0	0	0
HEAT GAIN APPLANCES/LIGHTS	671	671	0	0	671	671	0	0	0
TOTAL HT LOSS BTU/H	3852	2227	739	1380	4579	2522	1287	0	428
TOTAL HT GAIN x 1.3 BTU/H	4389	1972	194	1852	4095	2841	467	0	530

ROOM USE	CLG. HT.	LIB	KT/GT	DIN	LAUN	WIR	FOY	MUD	LOD	BAS
GRS-WALL AREA	480	200	650	200	117	50	310	286	488	1488
GLAZING	21.3	16.0	0	0	0	0	0	0	0	0
NORTH	21.3	16.0	0	0	0	0	0	0	0	0
EAST	21.3	16.0	0	0	0	0	0	0	0	0
SOUTH	21.3	16.0	0	0	0	0	0	0	0	0
WEST	21.3	16.0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.6	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	395	1763	297	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	182	500	229	0	0	0	0	0
EXPOSED FLOOR	2.5	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	4072	4058	5423	1464	724	223	2423	1692	476	8328
LEVEL FACTOR / MULT TPLER	0.30	0.43	0.30	0.43	0.20	0.33	0.30	0.30	0.43	0.50
AIR CHANGE HEAT LOSS	1753	329	2348	534	238	97	1049	285	1008	11039
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLANCES/LIGHTS	671	671	671	671	671	671	671	671	671	671
TOTAL HT LOSS BTU/H	5856	6575	7771	2098	962	320	3472	2425	1476	13937
TOTAL HT GAIN x 1.3 BTU/H	6575	10160	10160	2237	1684	53	1272	1310	1310	1643

TOTAL HEAT GAIN BTU/H: 42179 TONS: 3.51
LOSS DUE TO VENTILATION LOAD BTU/H: 3181
STRUCTURAL HEAT LOSS: 6425
TOTAL COMBINED HEAT LOSS BTU/H: 64307
MICHAEL O'ROURKE
INDIVIDUAL BCIN: 19569

20-120006-6LD-0001

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C-3.3.5 OF THE BUILDING CODE.

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

ELEVATION A

TYPE: 5001 - THE HILLSBOROUGH

GFA: 3588

LO# 77471

DATE: Oct-18

HEATING CFM 1255
TOTAL HEAT GAIN 41,643
AIR FLOW RATE CFM 30.14COOLING CFM 1255
TOTAL HEAT LOSS 61,126
AIR FLOW RATE CFM 30.14furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35EL296UH090XE48C
FAN SPEED
LOW 0
MEDIUM 1105
HIGH 1255AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	9	5
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.

RUN #	ROOM NAME	WIC	ENS	2	3	4	BED-2	BED-3	BED-4	BATH	BED-3	BATH	BED-4	7	8	9	10	11	ENS-4	LIB	LIB	13	14	15	16	17	18	19	20	21	22	23	24
1	MBR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	RM LOSS MBH	1.93	2.23	0.74	1.38	0.64	2.34	0.64	2.34	0.64	1.93	0.70	2.92	2.92	2.59	2.59	2.10	0.96	0.32	3.47	2.42	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	
3	CFM PER RUN HEAT	40	46	15	28	13	48	52	13	48	52	40	14	60	60	53	53	43	20	7	71	50	86	86	86	86	86	86	86	86	86	86	
4	RM GAIN MBH	2.19	1.97	0.19	1.85	0.23	2.05	0.23	2.05	0.23	2.19	0.43	3.29	3.29	3.39	3.39	2.24	1.88	0.05	0.57	1.27	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	
5	CFM PER RUN COOLING	66	59	6	56	86	62	86	7	62	86	66	13	99	99	102	102	67	51	2	17	38	17	17	17	17	17	17	17	17	17	17	
6	ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	
7	EQUIVALENT LENGTH	205	165	110	135	125	125	180	145	105	165	205	220	120	120	120	120	190	195	100	150	170	120	190	160	160	160	160	160	160	160	160	
8	TOTAL EFFECTIVE LENGTH	269	214	141	166	174	228	175	150	191	280	268	170	165	170	157	219	240	105	181	181	181	181	181	189	189	189	189	189	189	189	189	
9	ADJUSTED PRESSURE	0.06	0.08	0.12	0.1	0.1	0.07	0.1	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	0.1	0.1	0.07	0.09	0.09	0.09	0.09	0.09	0.09	0.08	
10	ROUND DUCT SIZE	5	5	4	5	6	4	5	4	5	4	5	4	6	6	6	6	6	5	4	5	4	5	4	5	6	5	6	5	6	5	6	
11	HEATING VELOCITY (ft/min)	294	338	172	206	352	149	352	149	352	149	294	161	306	306	270	270	316	147	80	521	574	631	438	438	438	438	438	438	438	438	438	
12	COOLING VELOCITY (ft/min)	485	433	69	411	455	438	80	485	455	80	485	149	505	505	520	520	492	374	23	125	436	125	87	125	87	125	87	125	87	125	87	
13	OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	
14	TRUNK	A	D	C	D	A	D	D	D	D	D	A	A	B	B	A	A	B	B	C	B	D	A	A	A	D	B	A	A	A	D	B	

TEMPERATURE RISE 63 °F

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

RUN #	ROOM NAME	WIC	ENS	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
25	BAS	KT/GT																								
26	RM LOSS MBH	4.17	2.59																							
27	CFM PER RUN HEAT	86	53																							
28	RM GAIN MBH	0.57	3.39																							
29	CFM PER RUN COOLING	17	102																							
30	ADJUSTED PRESSURE	0.16	0.16																							
31	EQUIVALENT LENGTH	40	35																							
32	ADJUSTED PRESSURE	0.11	0.11																							
33	ROUND DUCT SIZE	5	6																							
34	HEATING VELOCITY (ft/min)	631	270																							
35	COOLING VELOCITY (ft/min)	125	520																							
36	OUTLET GRILL SIZE	3X10	4X10																							
37	TRUNK	B	D																							

SUPPLY AIR TRUNK SIZE												RETURN AIR TRUNK SIZE											
TRUNK	CFM	RECT	ROUND	STATIC PRESS.	VELOCITY (ft/min)	TRUNK	CFM	RECT	ROUND	STATIC PRESS.	VELOCITY (ft/min)	TRUNK	CFM	RECT	ROUND	STATIC PRESS.	TRUNK	CFM	RECT	ROUND	STATIC PRESS.	VELOCITY (ft/min)	
TRUNK A	424	0.06	10.9	0.06	8	TRUNK G	0	0	0	0.00	8	TRUNK O	0	0	0	0.06	TRUNK U	0	0	0	0.06	8	
TRUNK B	426	0.07	10.5	0.07	8	TRUNK H	0	0	0	0.00	8	TRUNK P	0	0	0	0.06	TRUNK V	0	0	0	0.06	8	
TRUNK C	872	0.06	14.3	0.06	8	TRUNK I	0	0	0	0.00	8	TRUNK Q	0	0	0	0.06	TRUNK W	0	0	0	0.06	8	
TRUNK D	385	0.08	9.8	0.08	8	TRUNK J	0	0	0	0.00	8	TRUNK R	0	0	0	0.06	TRUNK X	0	0	0	0.06	8	
TRUNK E	0	0.00	0	0.00	8	TRUNK K	0	0	0	0.00	8	TRUNK S	0	0	0	0.06	TRUNK Y	0	0	0	0.06	8	
TRUNK F	0	0.00	0	0.00	8	TRUNK L	0	0	0	0.00	8	TRUNK T	0	0	0	0.06	TRUNK Z	0	0	0	0.06	8	
RETURN AIR #												BR											
AIR VOLUME	110	155	155	110	340	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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	
ACTUAL DUCT LGH.	47	36	37	59	20	28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
EQUIVALENT LENGTH	205	190	185	160	135	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TOTAL EFFECTIVE LH	252	226	222	219	155	198	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
ADJUSTED PRESSURE	0.06	0.07	0.07	0.07	0.10	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80		
ROUND DUCT SIZE	6.6	7.2	7.2	6.3	8.9	7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

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

LO # 77471
ELEVATION A

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: VANEE 65H	Location: BSMT
155.0 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
155.0 CFM	X 76 F	X 1.08	X	0.25

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

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 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 #	Bulking Permit #

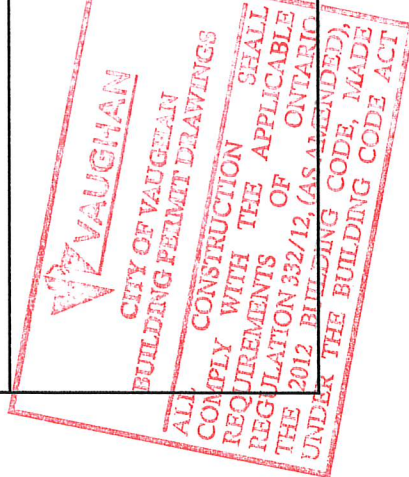
BUILDER:	
Name:	GOLD PARK HOMES
Address:	
City:	
Telephone #:	Fax #:

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#: 77471		Model: 5001 - THE HILLSBOROUGH			Builder: GOLD PARK HOMES			Date: 10/5/2018	
Volume Calculation									
House Volume									
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)						
Bsmt	1693	9	15237						
First	1693	10	16930						
Second	1895	9	17055						
Third	0	9	0						
Fourth	0	9	0						
Total:		49,222.0 ft³							
Total:		1393.8 m³							
Air Change & Delta T Data									
WINTER NATURAL AIR CHANGE RATE		0.330							
SUMMER NATURAL AIR CHANGE RATE		0.111							
				Design Temperature Difference					
Tin °C		Tout °C		ΔT °C		ΔT °F			
Winter DTDh		22		-20		42		76	
Summer DTDc		24		31		7		13	
6.2.6 Sensible Gain due to Air Leakage									
$HG_{sub} = LR_{air} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$									
0.330	x	387.17	x	42 °C	x	1.2	=	6471 W	
								=	22078 Btu/h
5.2.3.2 Heat Loss due to Mechanical Ventilation									
$HL_{airb} = PVC \times DTD_h \times 1.08 \times (1 - E)$									
155 CFM	x	76 °F	x	1.08	x	0.25	=	3181 Btu/h	
6.2.7 Sensible heat Gain due to Ventilation									
$HL_{airb} = PVC \times DTD_h \times 1.08 \times (1 - E)$									
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)									
$HL_{air} = Level Factor \times HL_{airb} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$									
Level		Level Factor (LF)		HLairb Air Leakage + Ventilation Heat Loss (Btu/h)		Level Conductive Heat Loss: (HLlevel)		Air Leakage Heat Loss Multiplier (LF x HLairb / HLlevel)	
1	0.5					9,805		1.126	
2	0.3					15,297		0.433	
3	0.2			22,078		13,404		0.329	
4	0					0		0.000	
5	0					0		0.000	

*HLairb = Air leakage heat loss + ventilation heat loss
*For a balanced or supply only ventilation system HLairve = 0



HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5001 - THE HILLSBOROUGH	ELEVATION A	BUILDER: GOLD PARK HOMES
SFQT: 3588	LO# 77471	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:	196.0 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**

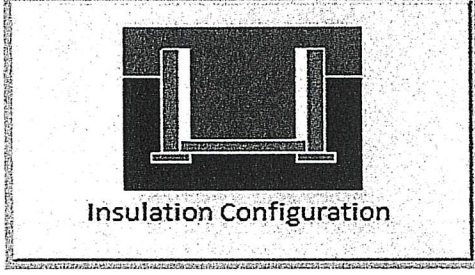
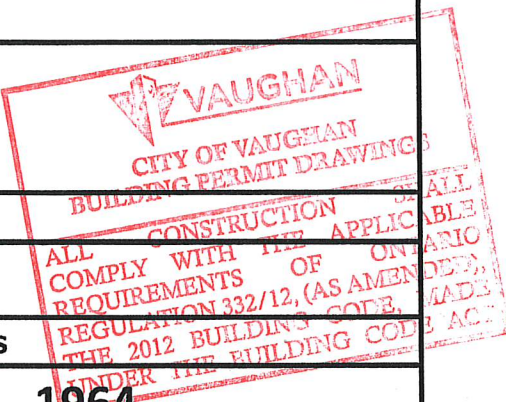
Nominal	Min. Eff.
60	59.22
31	27.65
31	29.80
22	17.03
20 ci	21.12
-	-
10	10
10	11.13
0.28	-
0.49	-
0.96	-
75%	-
0.8	-

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):	17.1	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.4	
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):		1964

TYPE: 5001 - THE HILLSBOROUGH
LO# 77471

ELEVATION A

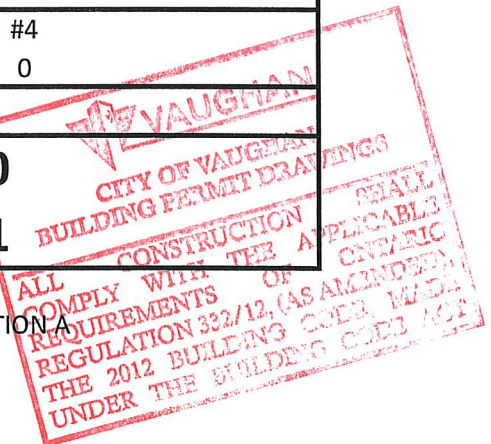
Air Infiltration Residential Load Calculator

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):	6.71			
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):	0.330			
Cooling Air Leakage Rate (ACH/H):	0.111			

TYPE: 5001 - THE HILLSBOROUGH
LO# 77471

ELEVATION A



PART. BASEMENT PLAN

ELEV. 'A', & 'B' - W.O.D. COND.

PART. BASEMENT PLAN

ELEV. 'A', & 'B' - L.O.D. COND.

The Principal Exhaust Fan shall be controlled by a manual switch centrally located in the dwelling unit and identified by the words "Ventilation Fan."

The forced air heating system circulation fan shall be controlled by a manual switch located adjacent to the ventilation fan switch and identified by the words "Circulation Fan."

Supply or Return Air Duct exposed to an unheated space shall be insulated to provide a thermal resistance of not less than RSI 2.1 (R12)

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

UNEXCAVATED

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

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, BCIN# 19669
HVAC DESIGNS LTD.

WOD CSA-F280-12
LOD PACKAGE A1

HVAC LEGEND

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 BOOT ABOVE		FRA- FLOOR RETURN AIR GRILLE		REDUCER

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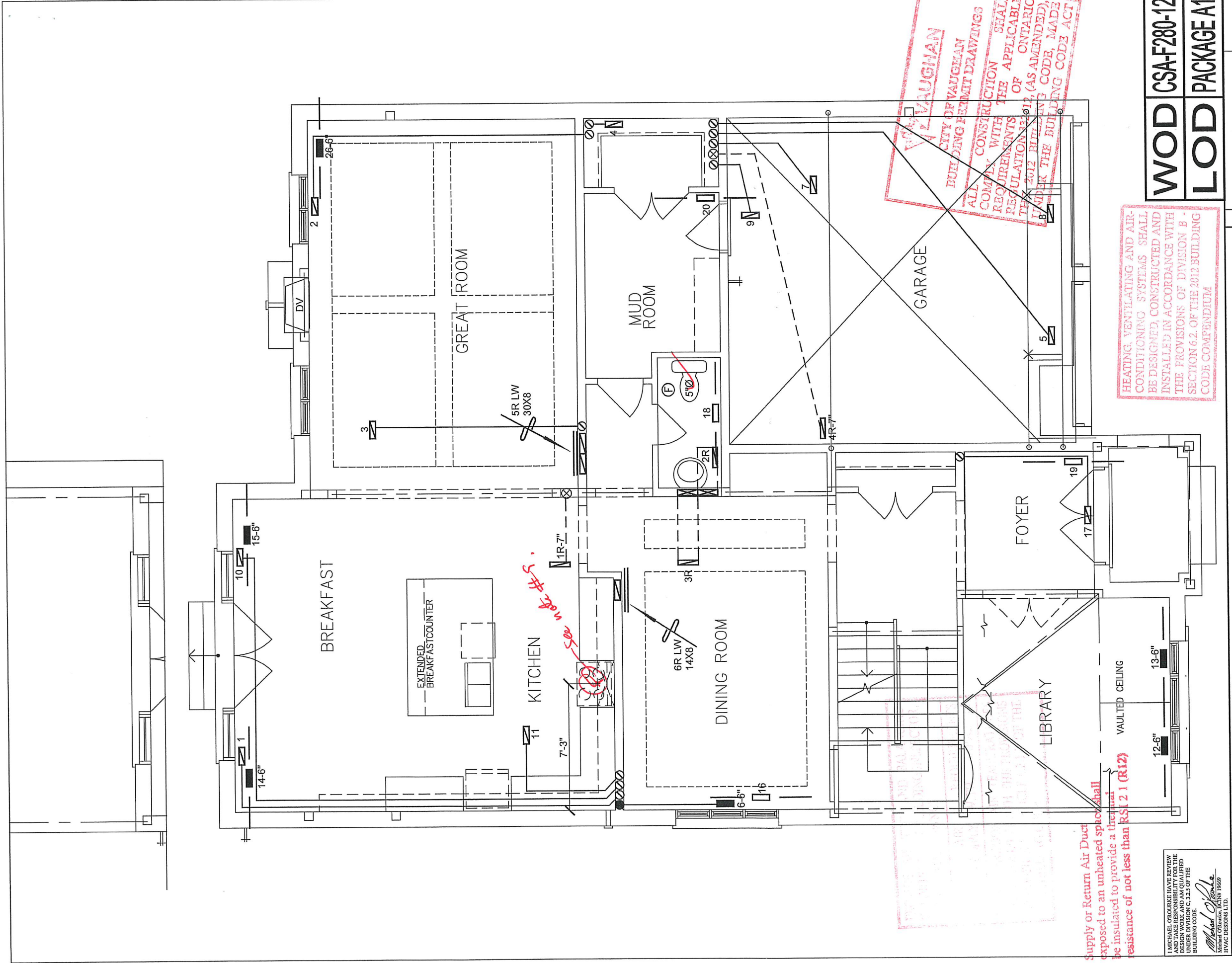
Client
GOLD PARK HOMES
Project Name
PINE VALLEY & TESTON
VAUGHAN, ONTARIO
ELEVATION A
THE HILLSBOROUGH
5001

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
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 64307 BTU/H	# OF RUNS	S/A	R/A	FANS
UNIT DATA	3RD FLOOR			
MAKE	LENNOX	2ND FLOOR	12	4
MODEL	EL296UH090XE48C	1ST FLOOR	9	2
INPUT	88 MBTUH	BASEMENT	5	1
OUTPUT	85 MBTUH	ALL SIA DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL SIA RUNS 5/8" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A		
COOLING	3.5 TONS			
FAN SPEED	1255 cfm @ 0.6" w.g.			

Sheet Title	BASEMENT HEATING LAYOUT
Date	JAN/2018
Scale	3/16" = 1'-0"
BCIN#	19669
LO#	77471

Please see back side for Notes



1 MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN AND CONSTRUCTION OF THE HEATING SYSTEM IN ACCORDANCE WITH THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, ECHM 1969
HVAC DESIGNS LTD.

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

W. VAUGHAN
CITY OF VAUGHAN
BUILDING PERMIT DRAWINGS
ALL CONSTRUCTION SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE 2012 BUILDING CODE, MADE UNDER THE BUILDING CODE ACT

WOD CSA-F280-12
LOD PACKAGE A1

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

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Client

GOLD PARK HOMES

Project Name

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

5001

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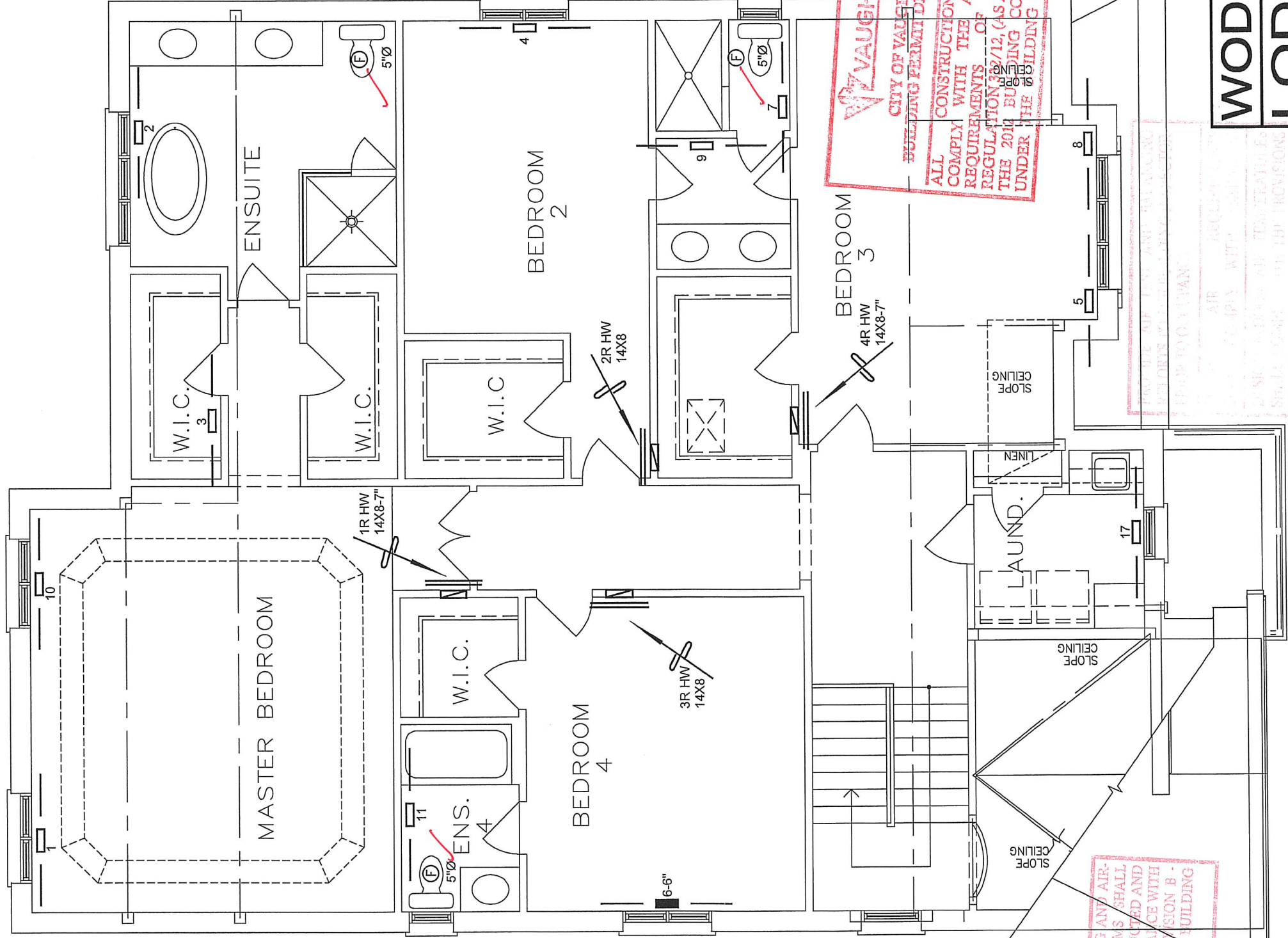
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

Sheet Title

**FIRST FLOOR
HEATING
LAYOUT**

Date JAN/2018
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 77471

3588 sqft



1. VISUAL CHECK/REVIEW
2. DESIGN REVIEW
3. DESIGN REVIEW
4. DESIGN REVIEW
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WOD CSA-F280-12
LOD PACKAGE A1

HVAC LEGEND			REVISIONS		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
—	SUPPLY AIR GRILLE	—	RETURN AIR STACK ABOVE	1.	OCT/2018
—	SUPPLY AIR GRILLE 6" BOOT	—	RETURN AIR STACK 2nd FLOOR		
—	SUPPLY AIR BOOT ABOVE	—	REDUCER		

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Client

GOLD PARK HOMES

Project Name

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

5001

Sheet Title

**SECOND FLOOR
HEATING
LAYOUT**

Date

JAN/2018

Scale

3/16" = 1'-0"

BCIN#

19669

LO#

77471

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