


Schedule 1: Designer Information

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

A. Project Information				
Building number, street name			Unit no.	Lot/con.
Municipality VAUGHAN (WOODBIDGE)	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities				
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.		
Street address 375 FINLEY AVE		Unit no. 202	Lot/con. N/A	
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdsgns.ca	
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]				
<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 HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 5001 - THE HILLSBOROUGH ELEVATION A Project: PINE VALLEY & TESTON		
D. Declaration of Designer				
I, <u>MICHAEL O'ROURKE</u> (print name) declare that (choose one as appropriate):				
<input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____				
<input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>				
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____				
I certify that:				
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
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 ELEVATION A DATE: Oct-18 WINTER NATURAL AIR CHANGE RATE 0.330 CSA-F280-12
BUILDER: GOLD PARK HOMES TYPE: 5001 - THE HILLBOROUGH LO# 77471 SUMMER NATURAL AIR CHANGE RATE 0.111 SB-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4	HEAT LOSS AT °F	HEAT GAIN AT °F
EXP. WALL	41	25	10	11	37	20	7	6		
CLG. HT.	10	9	9	9	9	9	9	9		
FACTORS										
GRS.WALL AREA	410	225	90	99	333	180	63	54		
GLAZING								LOSS GAIN		
NORTH	0	0	0	0	0	0	0	0	0	0
EAST	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0
SKYL.T.	38	28	1183	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	372	1660	280	197	879	148	48	205	36
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	340	436	200	166	200	120	154	71
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0
EXPOSED FLOOR	0	0	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	2805	1675	556	1038	3199	1897	880	530		
SUB TOTAL HT GAIN	2068	1403	138	475	1806	1179	302	304		
LEVEL FACTOR / MULTIPLIER	0.20	0.33	0.20	0.33	0.20	0.33	0.20	0.33		
AIR CHANGE HEAT LOSS	957	552	183	342	1064	626	290	174		
AIR CHANGE HEAT GAIN	167	114	11	146	425	0	117	0		
DUCT LOSS	0	0	0	0	0	0	0	0		
DUCT GAIN	0	0	0	0	0	0	0	0		
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0		
HEAT GAIN APPLANCES/LIGHTS	671	0	0	671	671	240	0	0		
TOTAL HT LOSS BTU/H	3862	2227	739	1380	4679	2522	1287	704		
TOTAL HT GAIN x 1.3 BTU/H	4389	1972	194	1802	4085	2544	467	428		

ROOM USE	LIB	KITCH	DIN	LAUN	WIR	FOY	MUD	LOD	BAS
EXP. WALL	32	66	20	13	5	31	26	62	196
CLG. HT.	15	10	10	9	10	10	11	9	9
FACTORS									
GRS.WALL AREA	480	650	200	117	50	310	286	468	1488
GLAZING								LOSS GAIN	LOSS GAIN
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	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	37.2	37.2	37.2	37.2	37.2	37.2	37.2	37.2
DOORS	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	395	1753	297	38	260	1187	200	20
NET EXPOSED BSMT WALL ABOVE GR	3.6	0	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	0	0	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	4072	5423	1464	724	223	2423	1692	1476	8328
SUB TOTAL HT GAIN	4068	6609	971	578	38	408	285	1008	402
LEVEL FACTOR / MULTIPLIER	0.30	0.43	0.30	0.20	0.43	0.30	0.43	0.50	1.13
AIR CHANGE HEAT LOSS	1763	2348	634	238	97	1049	733	11039	11039
AIR CHANGE HEAT GAIN	329	536	79	47	3	33	23	0	114
DUCT LOSS	0	0	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0
HEAT GAIN APPLANCES/LIGHTS	671	671	671	671	0	0	0	0	0
TOTAL HT LOSS BTU/H	5835	7771	2098	962	320	3472	2425	1476	19367
TOTAL HT GAIN x 1.3 BTU/H	6575	10160	2237	1684	53	573	1272	1310	1543

TOTAL HEAT GAIN BTU/H: 42179 TONS: 3.51 LOSS DUE TO VENTILATION LOAD BTU/H: 3161 STRUCTURAL HEAT LOSS: 8126 TOTAL COMBINED HEAT LOSS BTU/H: 84307

Michael O'Rourke

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

ELEVATION A

TYPE: 5001 - THE HILLSBOROUGH

DATE: Oct-18

GFA: 3588

LO# 77471

HEATING CFM 1255 COOLING CFM 1255
TOTAL HEAT GAIN 41,643
AIR FLOW RATE CFM 30.14

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

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

DESIGN CFM = 1255
CFM @ 6" E.S.P.

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 #	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	1.93	2.23	0.74	1.38	2.34	2.52	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
CFM PER RUN HEAT	40	46	15	28	48	52	13	48	13	40	14	60	60	53	53	43	20	7	71	50	86	86	86	86
RM GAIN MBH	2.19	1.97	0.19	1.85	2.05	2.84	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
CFM PER RUN COOLING	66	59	6	56	62	86	7	62	7	66	13	99	99	102	102	67	51	2	17	38	17	17	17	17
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	0.16	0.16	0.16	0.16
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	29	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	160	160
TOTAL EFFECTIVE LENGTH	269	214	141	168	174	228	175	150	191	280	268	170	165	170	157	219	240	105	181	160	218	189	207	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	0.1	0.07	0.09	0.08
ROUND DUCT SIZE	5	5	4	5	5	6	4	5	4	5	4	6	6	6	6	5	5	4	5	4	5	6	5	6
HEATING VELOCITY (ft/min)	294	338	172	206	352	265	149	352	149	294	161	306	306	270	270	316	147	80	521	574	631	438	631	438
COOLING VELOCITY (ft/min)	485	433	69	411	455	438	80	455	80	485	149	505	505	520	520	492	374	23	125	436	125	87	125	87
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10
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

RUN #	25	26
ROOM NAME	BAS	KT/GT
RM LOSS MBH	4.17	2.59
CFM PER RUN HEAT	86	53
RM GAIN MBH	0.57	3.39
CFM PER RUN COOLING	17	102
ADJUSTED PRESSURE	0.16	0.16
ACTUAL DUCT LGH	40	35
EQUIVALENT LENGTH	110	130
TOTAL EFFECTIVE LENGTH	150	165
ADJUSTED PRESSURE	0.11	0.1
ROUND DUCT SIZE	5	6
HEATING VELOCITY (ft/min)	631	270
COOLING VELOCITY (ft/min)	125	520
OUTLET GRILL SIZE	3X10	4X10
TRUNK	B	D

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	424	0.06	10.9	14	545	TRUNK G	0	0.00	0	0	0	TRUNK O	0	0.06	0	0	8
TRUNK B	426	0.07	10.5	14	548	TRUNK H	0	0.00	0	0	0	TRUNK P	0	0.06	0	0	8
TRUNK C	872	0.06	14.3	24	854	TRUNK I	0	0.00	0	0	0	TRUNK Q	0	0.06	0	0	8
TRUNK D	385	0.08	9.8	12	578	TRUNK J	0	0.00	0	0	0	TRUNK R	0	0.06	0	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	0	TRUNK S	0	0.06	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	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	110	155	10.9	110	340	175	0	0	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	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	1	1	1
EQUIVALENT LENGTH	205	190	185	180	135	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	252	226	222	219	155	198	1	1	1	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	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
ROUND DUCT SIZE	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	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	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) <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	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
<input checked="" type="checkbox"/>	HVI Approved

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

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
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	<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#: 77471	Model: 5001 - THE HILLSBOROUGH	Builder: GOLD PARK HOMES	Date: 10/5/2018
Volume Calculation		Air Change & Delta T Data	
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
Design Temperature Difference			
	Tin °C	Tout °C	ΔT °C
Winter DTDh	22	-20	42
Summer DTDc	24	31	7
			ΔT °F
			76
			13
WINTER NATURAL AIR CHANGE RATE			
SUMMER NATURAL AIR CHANGE RATE			
0.330			
0.111			
6.2.6 Sensible Gain due to Air Leakage			
$HG_{salb} = LR_{air} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$			
0.330	x	387.17	x
		7 °C	x
		1.2	=
			366 W
			=
			1250 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	76 °F	x
		1.08	x
		0.25	=
			3181 Btu/h
			=
			536 Btu/h
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)			
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{qgr} + HL_{qgr} \div (HL_{qlevel} + HL_{bqlevel}))\}$			
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	22,078	9,805
2	0.3		15,297
3	0.2		13,404
4	0		0
5	0		0
<p>*HLairbv = Air leakage heat loss + ventilation heat loss</p> <p>*For a balanced or supply only ventilation system HLairve = 0</p>			

HEAT LOSS AND GAIN SUMMARY SHEET

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		Compliance Package	
Component		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	-

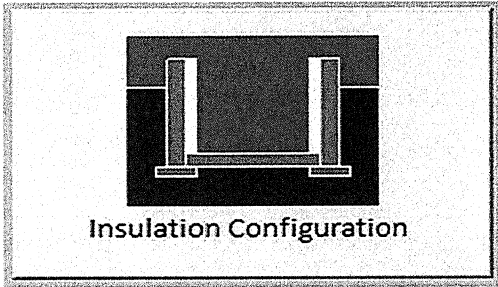
INDIVIDUAL BCIN: 19669

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):	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

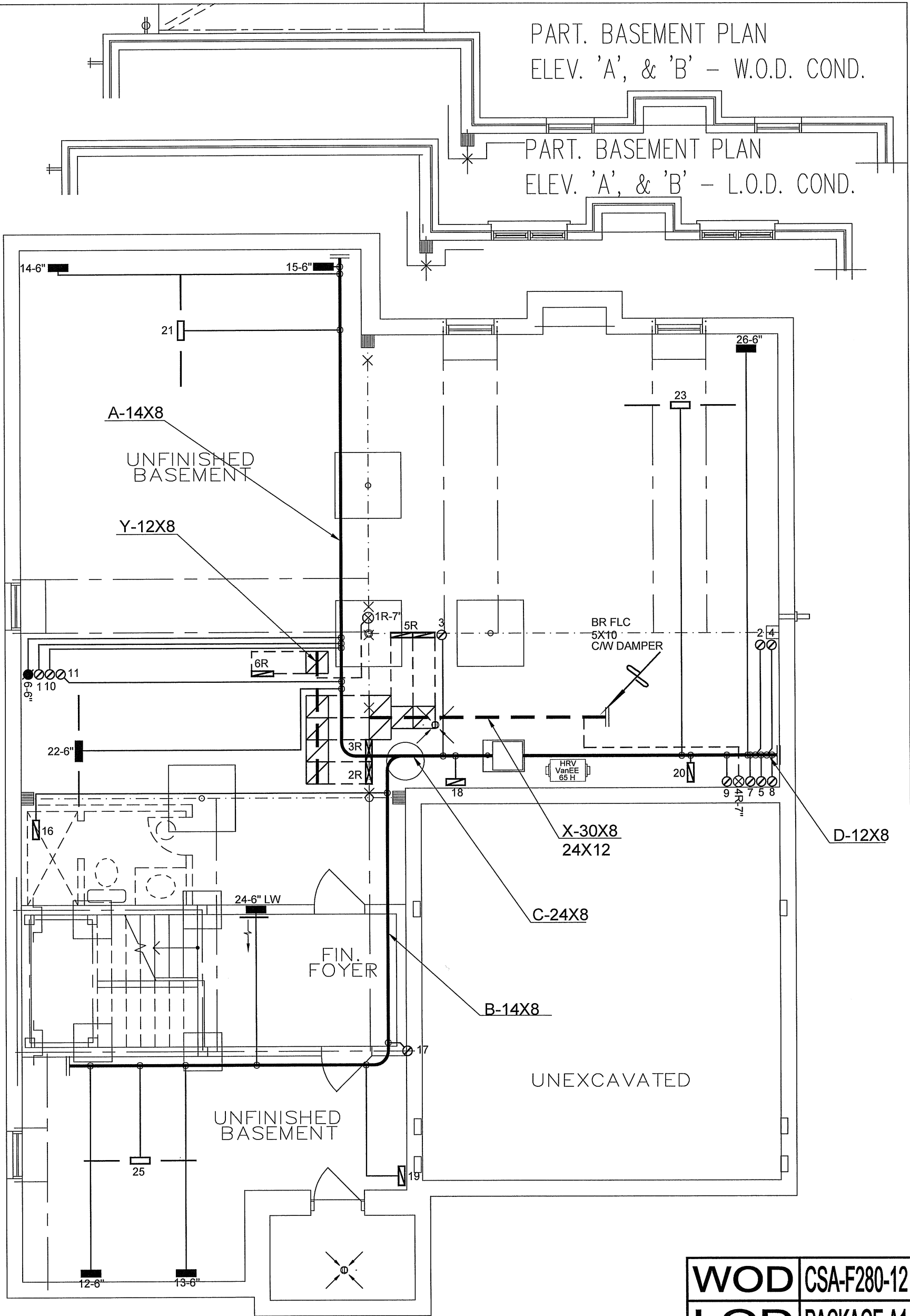
Air Infiltration Residential Load Calculator

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















I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.32.5 OF THE
BUILDING CODE.

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

WOD CSA-F280-12

LOD 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		

Client

GOLD PARK HOMES

Project Name

PINE VALLEY & TESTON
VAUGHAN, ONTARIO
ELEVATION A
THE HILLSBOROUGH
5001

3588 sqft

HVACDESIGNS LTD.

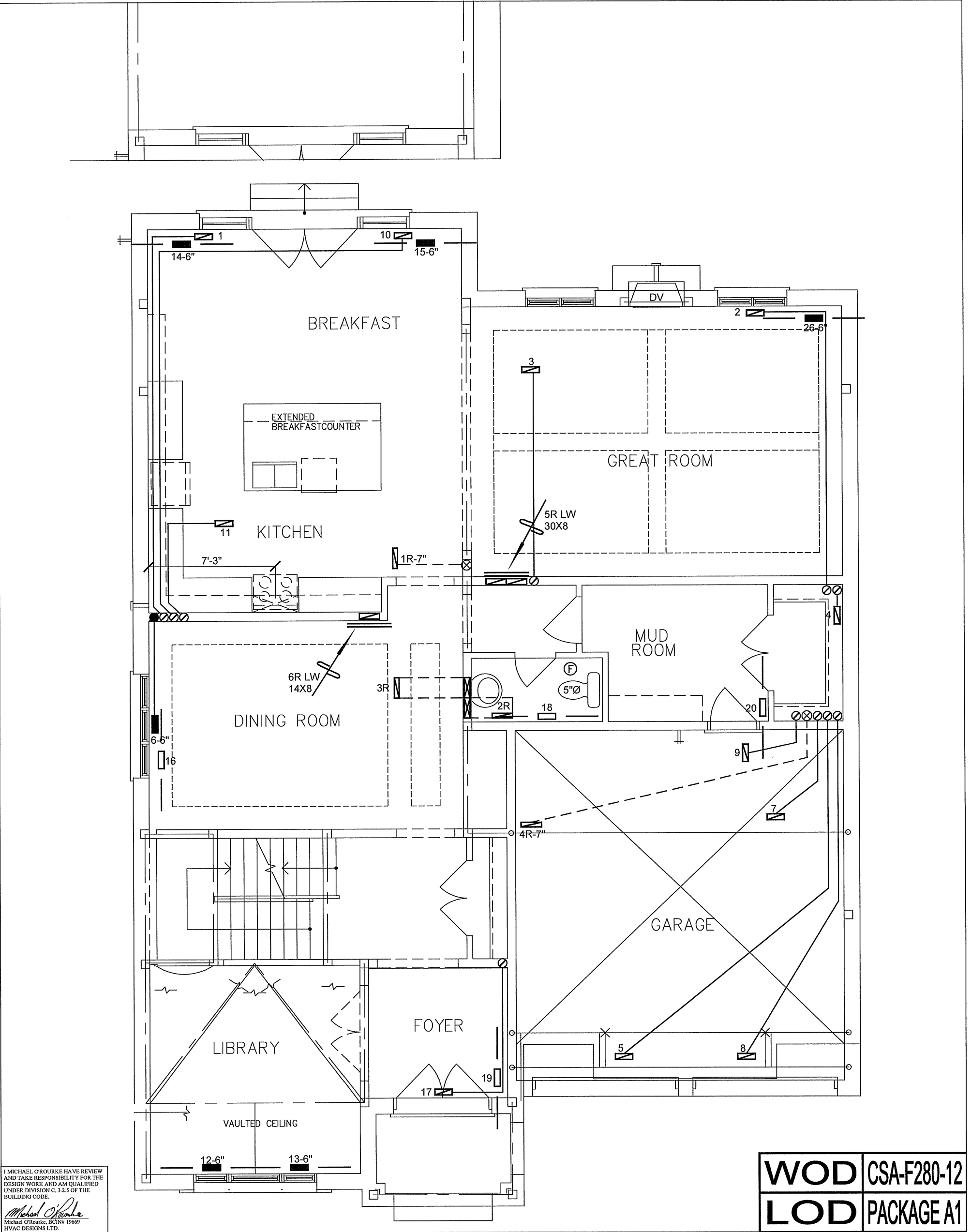
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
Web: www.hvacdesigns.ca

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 UNIT DATA		# OF RUNS	S/A	R/A	FANS
MAKE	LENNOX	3RD FLOOR			
MODEL	EL296UH090XE48C	2ND FLOOR	12	4	3
INPUT	88 MBTU/H	1ST FLOOR	9	2	2
OUTPUT	85 MBTU/H	BASEMENT	5	1	0
COOLING	3.5 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			
FAN SPEED	1255 cfm @ 0.6" w.c.				

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



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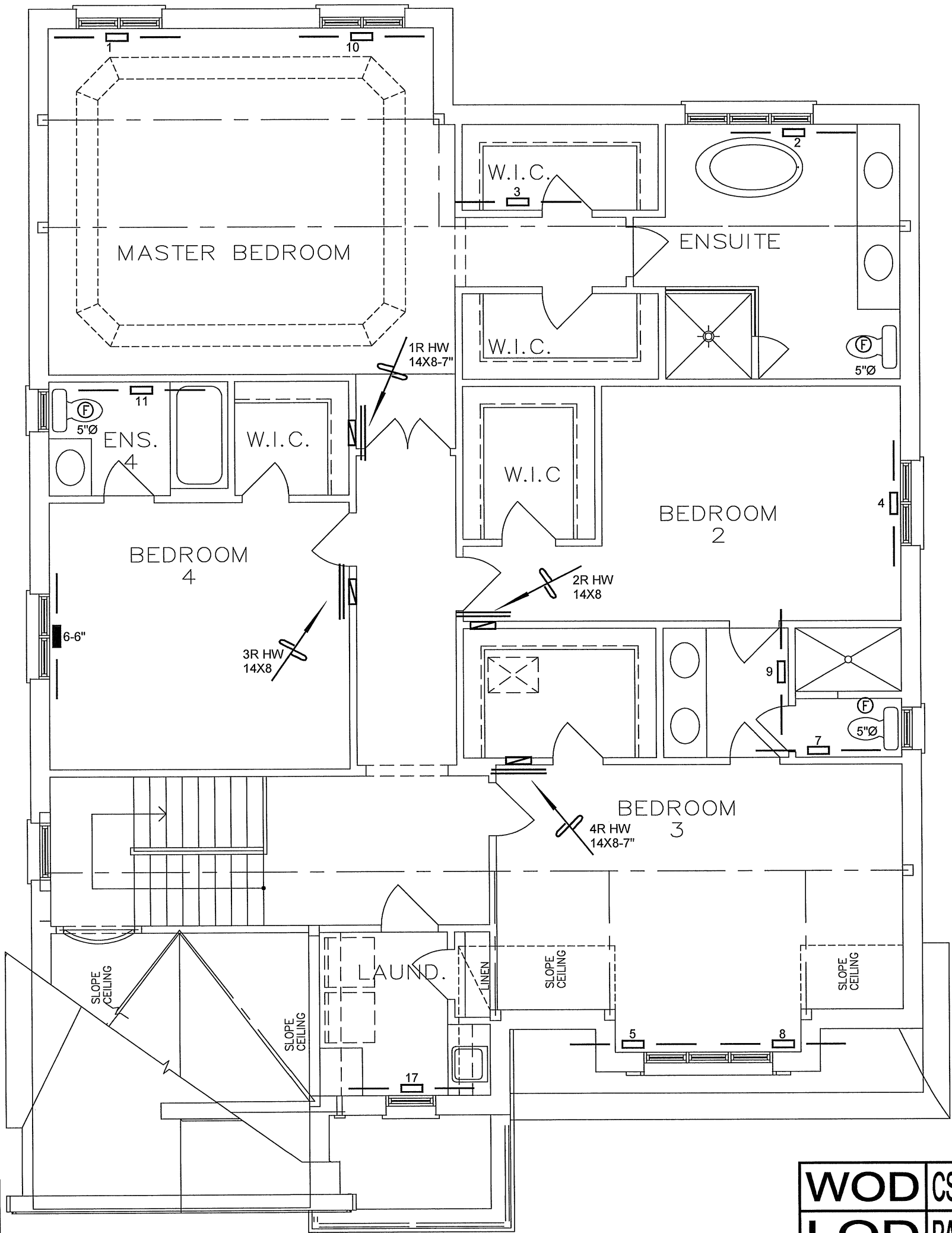
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOD	CSA-F280-12
LOD	PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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	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> <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	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
ELEVATION A			BCIN# 19669	
THE HILLSBOROUGH			LO#	77471
5001	3588 sqft			



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

WOD CSA-F280-12
LOD PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO ELEVATION A THE HILLSBOROUGH 5001			Scale	3/16" = 1'-0"
3588 sqft			BCIN# 19669	
			LO#	77471