

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@hvacdesigns.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]			
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems			
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 3102 INT Project: PINE VALLEY DRIVE	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> (print name)		declare that (choose one as appropriate):	
☐ 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: _____			
☒ 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>			
☐ 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.			
April 30, 2021			
Date		Signature of Designer	

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

SITE NAME: PINE VALLEY DRIVE BUILDER: GOLD PARK HOMES										INT TYPE: 3102		DATE: Apr-21 LO# 90640		WINTER NATURAL AIR CHANGE RATE SUMMER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F. HEAT GAIN AT °F.		CSA-F280-12 SB-12 PACKAGE A1	
ROOM USE		EXP. WALL CLG. HT.		MBR		ENS		WIC		BED-2		BED-3		ENS-2		ENS-3		B-BTH	
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH		21.3	16.0	0	0	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	45	958	1870	43	915	1787	0	0	0	0
SOUTH		21.3	24.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST		21.3	41.6	41	872	1704	16	340	665	0	0	0	0	0	0	0	0	0	0
SKYLT.		37.2	101.5	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
NET EXPOSED WALL		4.5	0.8	121	540	91	47	210	35	63	281	47	81	361	61	200	893	150	0
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
EXPOSED CLG		1.3	0.6	306	393	180	119	153	70	195	250	115	269	345	158	90	116	53	18
NO ATTIC EXPOSED CLG		2.7	1.3	0	0	0	0	0	0	0	0	0	25	69	31	0	0	0	0
EXPOSED FLOOR		2.6	0.4	0	0	0	0	0	0	195	497	84	0	0	0	90	230	39	0
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198
SLAB ON GRADE HEAT LOSS				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS				1805			703	434		2067		2222		345		714		263	
SUB TOTAL HT GAIN				1974			770	117		2129		2127		92		483		11	
LEVEL FACTOR / MULTIPLIER				0.20	0.31	0.20		0.31	0.20		0.31	0.20		0.31	0.20		0.31	0.50	
AIR CHANGE HEAT LOSS				568			221	136		650		699		109		225		381	
AIR CHANGE HEAT GAIN				133			52	8		143		143		45		94		1	
DUCT LOSS				0			0	0		272		0		10		53		0	
DUCT GAIN				0			0	0		329		0		0		0		0	
HEAT GAIN PEOPLE		240		2	480		0	0		1		240		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS				776			0	0		776		776		0		0		0	
TOTAL HT LOSS BTU/H				2373			924	570		2988		2920		499		1033		645	
TOTAL HT GAIN x 1.3 BTU/H				4373			1069	163		4703		4272		140		753		15	

ROOM USE		EXP. WALL CLG. HT.		KID/G		WIR		FOY		MUD		BAS		
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		
GLAZING														
NORTH		21.3	16.0	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	
SOUTH		21.3	24.9	0	0	0	0	0	0	0	0	0	0	
WEST		21.3	41.6	119	2532	4945	0	0	0	0	0	8	170	
SKYLT.		37.2	101.5	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	
NET EXPOSED WALL		4.5	0.8	391	1745	294	80	357	60	217	968	101	451	
NET EXPOSED BSMT WALL ABOVE GR		3.6	0.6	0	0	0	0	0	0	0	0	20	505	
EXPOSED CLG		1.3	0.6	0	0	0	0	0	0	0	0	101	451	
EXPOSED CLG		2.7	1.3	0	0	0	0	0	0	0	0	76	76	
EXPOSED FLOOR		2.6	0.4	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				4277	5239		357		2054		956		161	
SUB TOTAL HT GAIN				4277	5239		357		2054		956		161	
LEVEL FACTOR / MULTIPLIER				0.30	0.53	0.30		0.53	0.30		0.53	0.30		
AIR CHANGE HEAT LOSS				2250	353		188		1080		503		11	
AIR CHANGE HEAT GAIN				0	0		0		0		23		0	
DUCT LOSS				0	0		0		0		0		0	
DUCT GAIN				0	0		0		0		0		0	
HEAT GAIN PEOPLE		240		0	0		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS				776			0		0		0		0	
TOTAL HT LOSS BTU/H				6527	776		545		3134		1458		776	
TOTAL HT GAIN x 1.3 BTU/H				8278			83		480		1232		1800	

TOTAL HEAT GAIN BTU/H: 28808 TONS: 2.40 LOSS DUE TO VENTILATION LOAD BTU/H: 1305 STRUCTURAL HEAT LOSS: 34632 TOTAL COMBINED HEAT LOSS BTU/H: 35937

Michael O'Rourke

**SITE NAME: PINE VALLEY DRIVE
BUILDER: GOLD PARK HOMES**

$$\vdash_{\Sigma}$$

DATE: Apr-21

90640

90640

90640

HEATING CFM	980	COOLING CFM	980
TOTAL HEAT LOSS	34,632	TOTAL HEAT GAIN	28,588
AIR FLOW RATE CFM	28.3	AIR FLOW RATE CFM	34.28

\$LENNOX
ML196UH045XE36B 45
FAN SPEED

AFUE = 96 %
INPUT (BTU/H) = 44,000
OUTPUT (BTU/H) = 42,800

	4th	3rd	2nd	1st	Bas
RUN COUNT					
S/A	0	0	11	7	5
R/A	0	0	4	1	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	TRUNK																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
MBR	RM LOSS MBH	1.19	0.92	0.57	1.49	1.46	1.49	0.50	1.46	0.34	1.19	1.03	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.46	2.67	2.67	2.67	BAS
	CFM PER RUN HEAT	34	26	16	42	41	42	14	41	10	34	29	46	46	46	46	46	46	46	46	89	76	76	76	BAS
RM GAIN MBH	RM LOSS MBH	2.19	1.07	0.16	2.35	2.14	2.35	0.14	2.14	1.23	2.19	0.75	2.07	2.07	2.07	2.07	2.07	2.07	2.07	0.08	0.48	1.23	0.45	0.45	0.45
	CFM PER RUN COOLING	75	37	6	81	73	81	5	73	42	75	26	71	71	71	71	71	71	71	3	16	42	15	15	15
ADJUSTED PRESSURE	ADJUSTED PRESSURE	0.17	0.17	0.16	0.17	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	0.16	0.17	0.17	0.17	0.17	0.17
	ACTUAL DUCT LGH	48	46	36	52	48	57	43	46	29	38	37	26	26	33	33	33	33	33	16	33	39	51	36	37
EQUIVALENT LENGTH	EQUIVALENT LENGTH	180	180	190	170	140	140	130	135	140	180	150	130	150	120	160	160	160	160	150	110	130	130	140	180
	TOTAL EFFECTIVE LENGTH	228	226	226	222	188	197	173	181	169	218	187	146	176	153	199	199	199	166	143	169	181	176	218	137
ADJUSTED PRESSURE	ADJUSTED PRESSURE	0.08	0.08	0.08	0.07	0.09	0.08	0.1	0.1	0.1	0.08	0.09	0.12	0.1	0.11	0.09	0.09	0.09	0.1	0.11	0.1	0.1	0.1	0.08	0.13
	ROUND DUCT SIZE	6	4	4	6	5	6	4	5	4	6	4	5	5	5	5	5	5	6	6	4	5	5	5	5
HEATING VELOCITY (ft/min)	HEATING VELOCITY (ft/min)	173	298	184	214	301	214	161	301	115	173	333	338	338	338	338	338	338	172	454	470	558	558	388	558
	COOLING VELOCITY (ft/min)	382	424	69	413	536	413	57	536	482	382	298	521	521	521	521	521	521	34	82	482	110	110	76	110
OUTLET GRILL SIZE	OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10
	TRUNK	B	A	A	A	C	A	B	C	B	B	A	D	D	B	B	A	A	C	C	C	A	A	C	C

25	Run #	B-BTH
0.64	Room Name	
18	RM LOSS MBH	
0.02	CFM PER RUN HEAT	
1	RM GAIN MBH	
0.17	CFM PER RUN COOLING	
16	ADJUSTED PRESSURE	
90	ACTUAL DUCT LGH	
106	EQUIVALENT LENGTH	
0.16	TOTAL EFFECTIVE LENGTH	
4	ADJUSTED PRESSURE	
207	ROUND DUCT SIZE	
11	HEATING VELOCITY (ft/min)	
3x10	COOLING VELOCITY (ft/min)	
D	OUTLET GRILL SIZE	
	TRUNK	

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE									
TRUNK					VELOCITY					TRUNK					VELOCITY				
CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		(ft/min)	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		(ft/min)	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		(ft/min)		
TRUNK A	353	9.8	12		8	TRUNK G	0	0.00	0		8	TRUNK O	0	0.06	0		8		
TRUNK B	537	0.07	16	X	8	TRUNK H	0	0.00	0	X	8	TRUNK P	0	0.06	0	X	8		
TRUNK C	379	0.07	11.5	X	8	TRUNK I	0	0.00	0	X	8	TRUNK Q	0	0.06	0	X	8		
TRUNK D	980	0.08	9.7	X	8	TRUNK J	0	0.00	0	X	8	TRUNK R	0	0.06	0	X	8		
TRUNK E	0	0.07	12	X	8	TRUNK K	0	0.00	0	X	8	TRUNK S	0	0.06	0	X	8		
TRUNK F	0	0.00	24	X	8	TRUNK L	0	0.00	0	X	8	TRUNK T	0	0.06	0	X	8		
TRUNK G	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK H	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK I	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK J	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK K	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK L	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK M	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK N	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK O	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK P	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK Q	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK R	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK S	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		
TRUNK T	0	0.00	0	X	8		0	0.00	0	X	8		0	0.06	0	X	8		

[illegible]

Michael O'Rourke

TYPE: 3102
SITE NAME: PINE VALLEY DRIVE

LO # 90640
INT

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>2</u> @ 10.6 cfm	<u>21.2</u> cfm
Kitchen & Bathrooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>180.2</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>63.6</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>63.6</u>	cfm
Required Supplemental Capacity	<u>116.6</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE V150H	Location: BSMT
<u>63.6</u> cfm	☒ HVI Approved

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

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-3	BY INSTALLING CONTRACTOR	50	☒	3.5
W/R	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE V150H		
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % 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 #:	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:	April-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations										
Formula Sheet (For Air Leakage / Ventilation Calculation)										
LO#: 90640		Model: 3102		Builder: GOLD PARK HOMES		Air Change & Delta T Data				
		Volume Calculation								
House Volume										
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)							
Bsmt	904	9	8136							
First	904	10	9040							
Second	1297	9	11673							
Third	0	9	0							
Fourth	0	9	0							
		Total:	28,849.0 ft³							
		Total:	816.9 m³							
5.2.3.1 Heat Loss due to Air Leakage										
$HL_{air-b} = LR_{air-h} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$										
0.342	x	226.92	x	42 °C	x	1.2	=	3928 W		
								=	13401 Btu/h	
6.2.6 Sensible Gain due to Air Leakage										
$HG_{salb} = LR_{air-c} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$										
	=	0.111	x	226.92	x	7 °C	x	1.2	=	215 W
								=	734 Btu/h	
5.2.3.2 Heat Loss due to Mechanical Ventilation										
$HL_{vair-b} = PVC \times DTD_h \times 1.08 \times (1 - E)$										
64 CFM	x	76 °F	x	1.08	x	0.25	=	1305 Btu/h		
								=	220 Btu/h	
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)										
$HL_{airrr} = Level Factor \times HL_{air-bv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$										
		Level Factor (LF)		HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)		Level Conductive Heat Loss: (HL _{clevel})		Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)		
Level	1	0.5	13,401		4,623		1.450			
2	0.3	7,644			0.526					
3	0.2	8,522			0.314					
4	0	0			0.000					
5	0	0			0.000					
*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: 3102	INT	BUILDER: GOLD PARK HOMES
SFQT: 2201	LO# 90640	SITE: PINE VALLEY DRIVE

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:	ATTACHED	# 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):	28849.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 44.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	90.0 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	96%	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

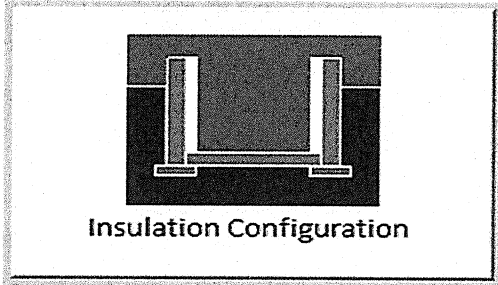
INDIVIDUAL BCIN: 19669

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):	13.4	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	27.4	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.7	
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):		872

TYPE: 3102
LO# 90640

INT

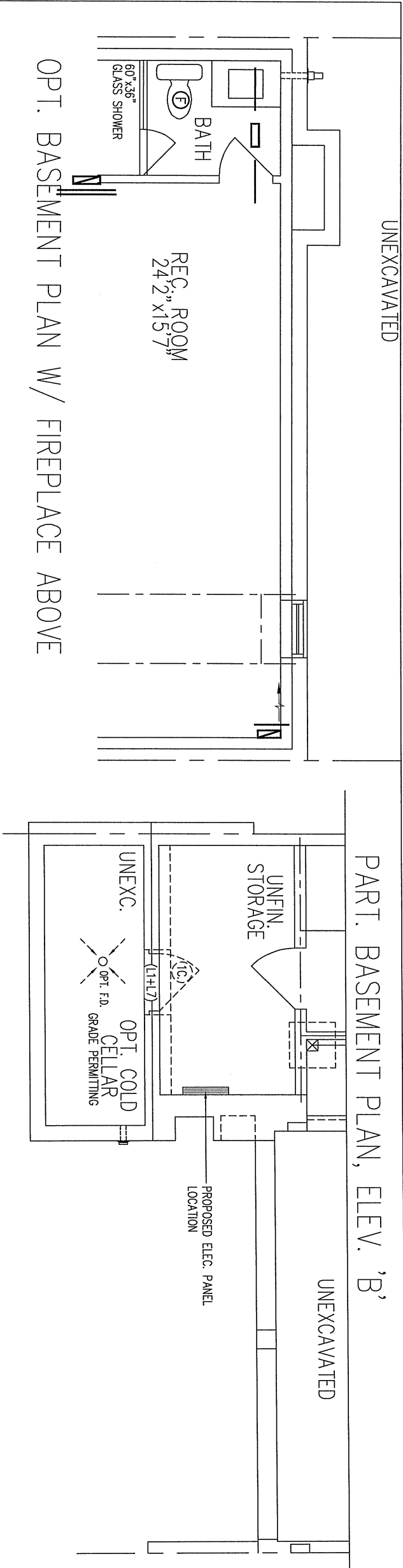
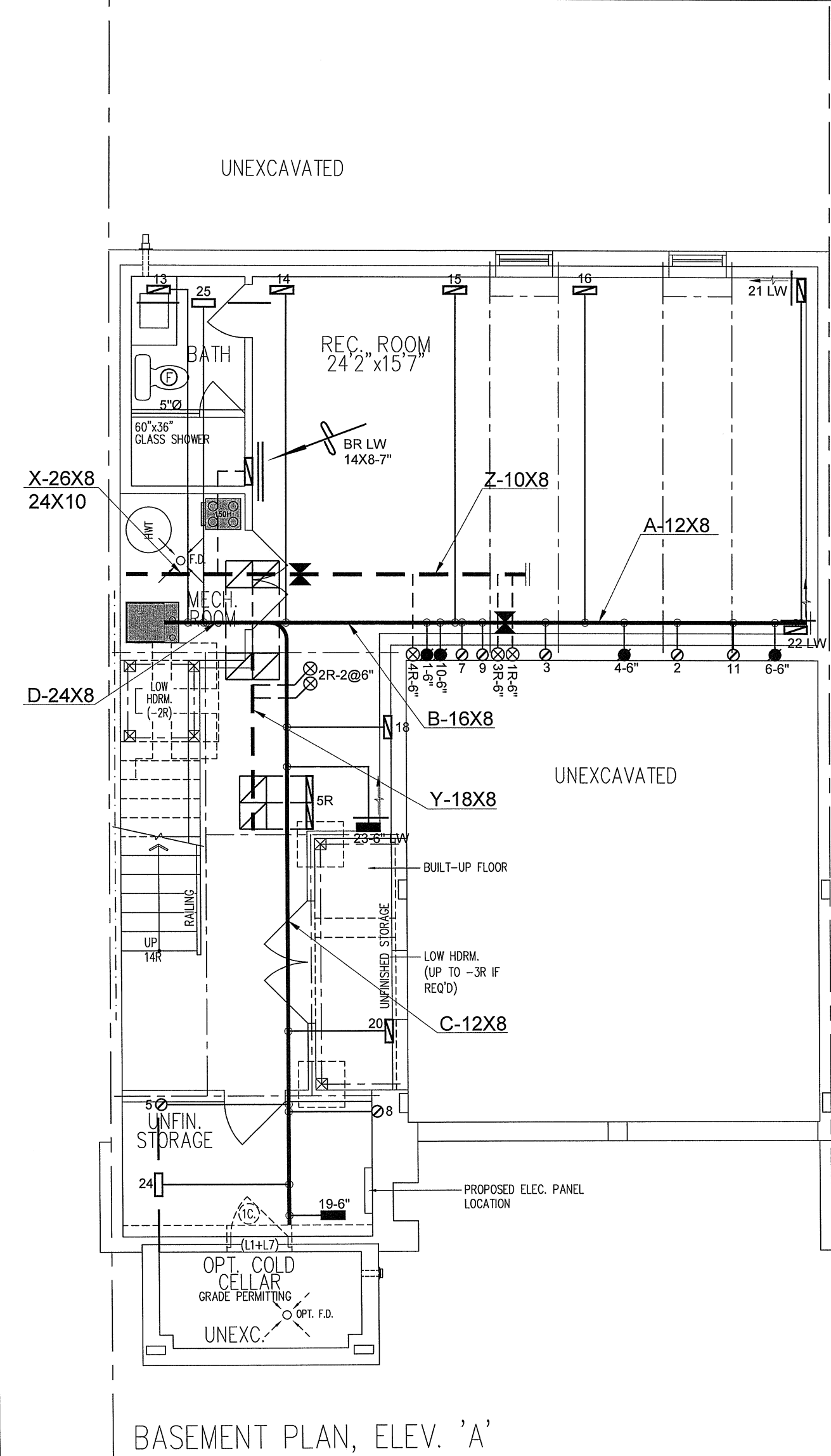
Air Infiltration Residential Load Calculator

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:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	816.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1089.0 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	30.0	30.0		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.342			
Cooling Air Leakage Rate (ACH/H):	0.111			

TYPE: 3102
LO# 90640

INT



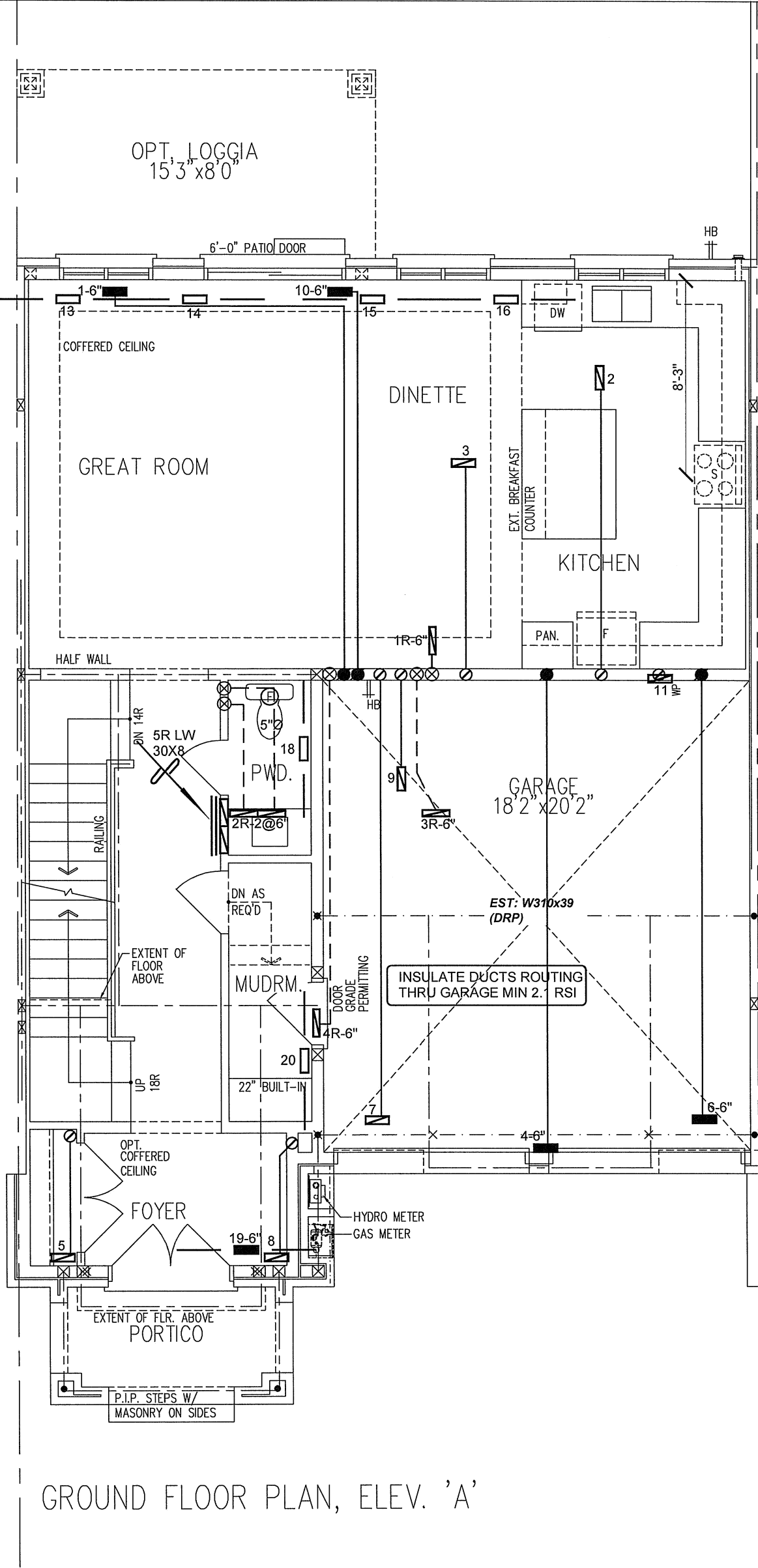
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

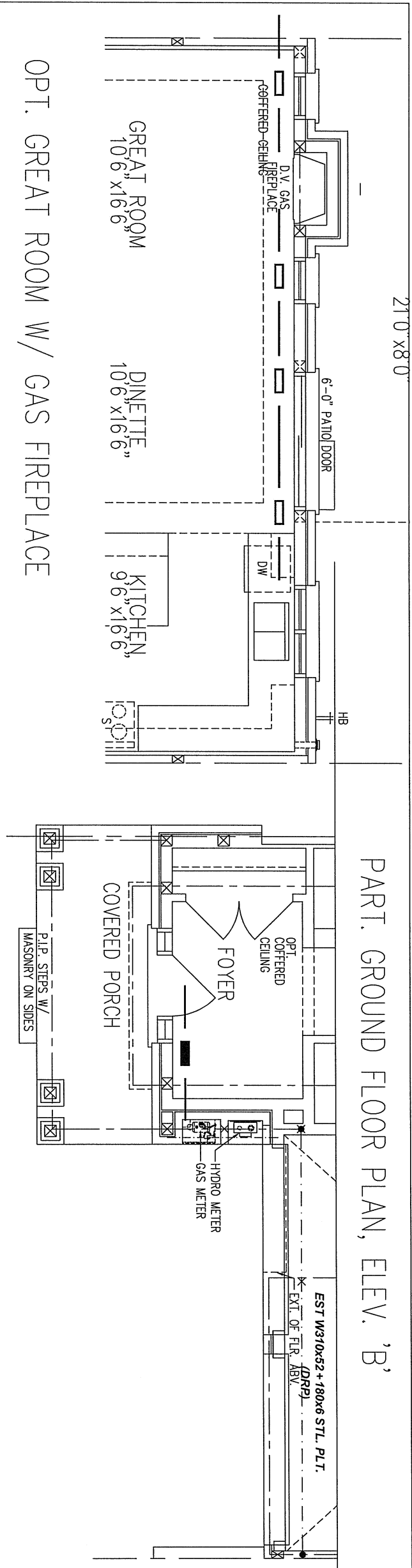
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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		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	HEAT LOSS 35937 BTU/H UNIT DATA		# OF RUNS		S/A		R/A		FANS		Sheet Title					
Project Name PINE VALLEY DRIVE VAUGHAN, ONTARIO			MAKE LENNOX		3RD FLOOR								BASEMENT HEATING LAYOUT					
			MODEL ML196UH045XE36B		2ND FLOOR		11		4		4							
			INPUT		44		MBTU/H		BASEMENT		5				1		1	
			OUTPUT		42.8		MBTU/H		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									
COOLING		2.5		TONS														
FAN SPEED		980		cfm @ 0.6" w.c.														
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.																		
3102 - INT		2201 sqft																



GROUND FLOOR PLAN, ELEV. 'A'



PART. GROUND FLOOR PLAN, ELEV. 'B'

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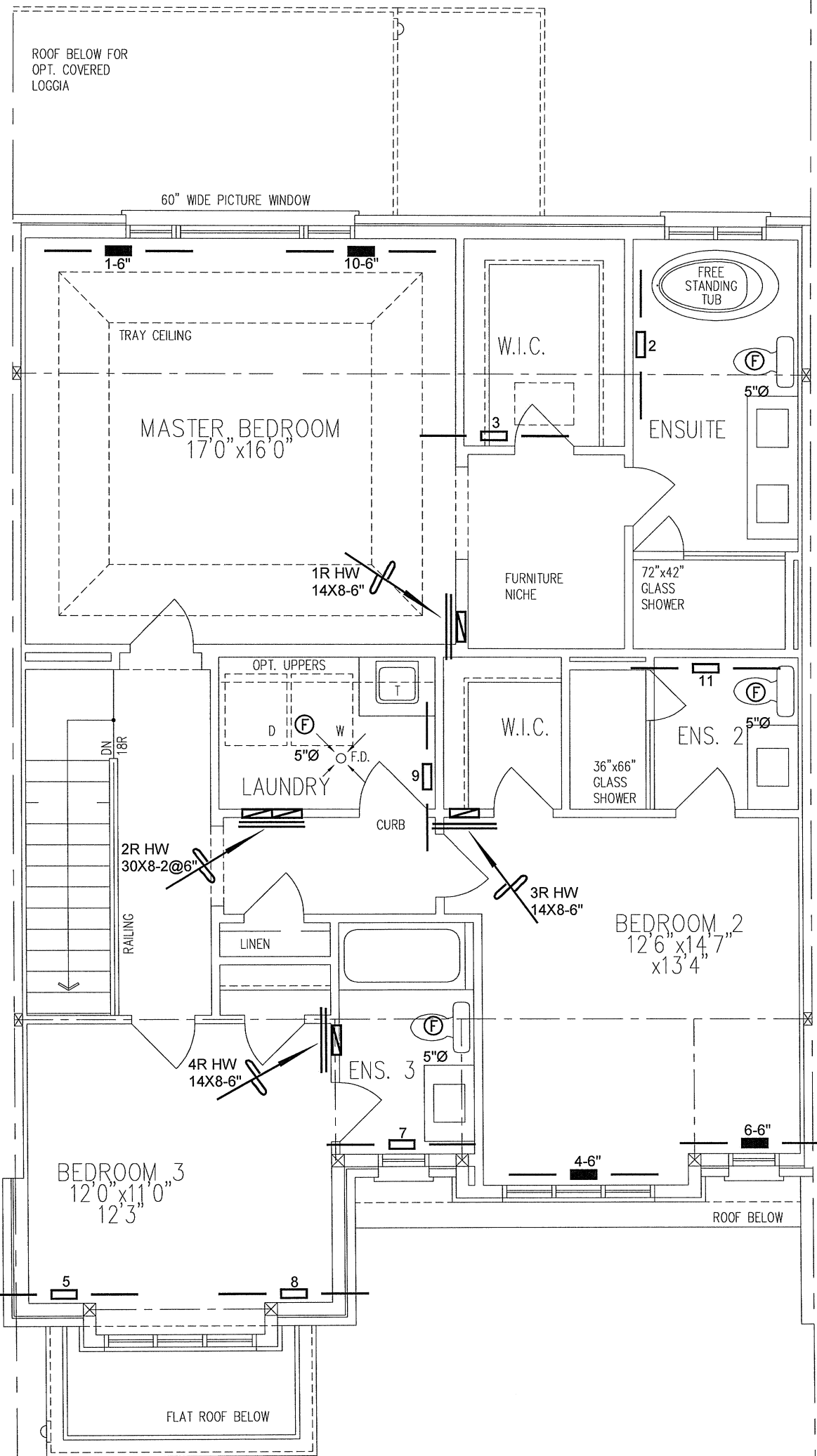
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12 PACKAGE A1

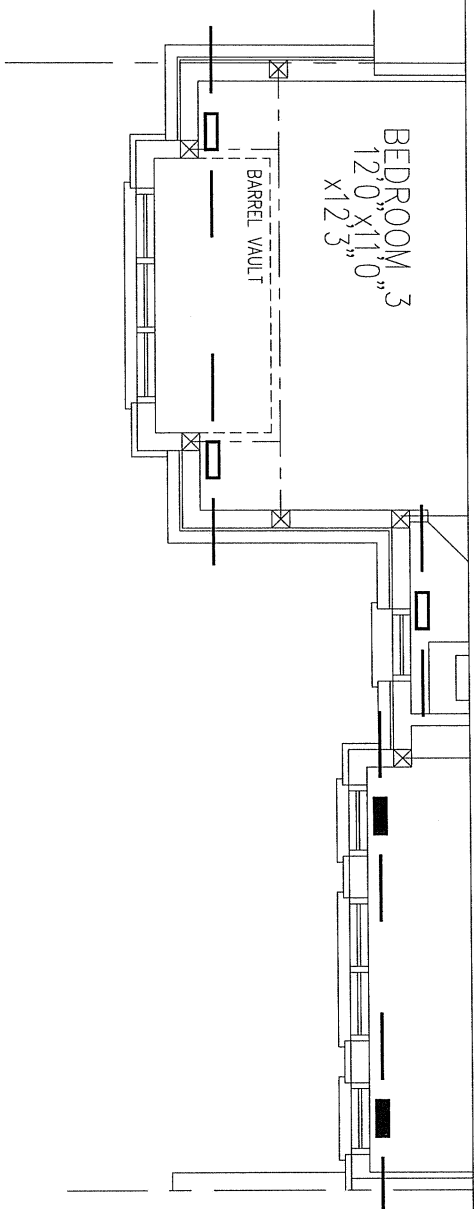
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	APR/2021
PINE VALLEY DRIVE VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
		BCIN# 19669		
3102 - INT	2201 sqft	LO#	90640	



SECOND FLOOR PLAN, ELEV. 'A'



PART. SECOND FLOOR PLAN, ELEV. 'B'

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.5 OF THE BUILDING CODE.

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

CSA-F280-12 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.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	
								Description	Date

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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	APR/2021
PINE VALLEY DRIVE VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
3102 - INT			LO#	90640
2201 sqft				