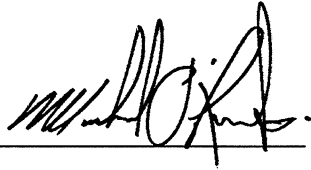


Schedule 1: Designer Information

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	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]			
<input type="checkbox"/> House	<input checked="" type="checkbox"/> HVAC – House	<input type="checkbox"/> Building Structural	
<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input type="checkbox"/> Plumbing – House	
<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings	
<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> 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: 38-1 Project: KLEINBURG GLEN	
D. Declaration of Designer			
I <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate):			
(print name)			
<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.			
January 27, 2016			
Date		Signature of Designer	

NOTE:

1. 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.
2. 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: KLEINBURG GLEN
 BUILDER: GOLD PARK HOMES

TYPE: 38-1 DATE: Jan-16

GFA: 2339 LO# 66903

HEATING CFM 995 COOLING CFM 995
 TOTAL HEAT LOSS 45,043 TOTAL HEAT GAIN 30,583
 AIR FLOW/RATE CFM 22.09 AIR FLOW/RATE CFM 32.53

AFUE = 95.0 %
 INPUT (BTU/H) = 66,000
 OUTPUT (BTU/H) = 63,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	10	6	4
R/A	0	0	4	1	1

furnace pressure 0.6
 furnace filter 0.05
 a/c coil pressure 0.2
 available pressure for s/a & r/a 0.35
 plenum pressure s/a 0.18
 max sra dir press. loss 0.03
 min adjusted pressure s/a 0.15
 r/a pressure 0.17
 r/a grille press. Loss 0.02
 adjusted pressure r/a 0.15

LENNOX
 EL195UH070XE36B 70
 FAN SPEED LOW 0
 MEDIUM 995
 HIGH 1100
 DESIGN CFM = 995
 CFM @ .8" E.S.P. 1200

TEMPERATURE RISE 59 °F

ROOM NAME	1	2	3	4	5	6	7	8	9	10	13	14	15	18	19	20	21	22	23	24
MBR	1.19	1.99	0.31	1.15	2.15	1.41	2.36	2.89	0.52	1.19	1.26	2.26	2.26	0.62	4.05	2.26	4.29	4.29	4.29	4.29
RM LOSS MBH	26	44	7	25	47	31	52	64	11	26	28	50	50	14	89	50	95	95	95	95
CFM PER RUN HEAT	1.74	1.90	0.10	1.59	3.29	1.95	2.64	2.87	0.95	1.74	1.57	2.59	2.59	0.31	1.01	2.59	0.29	0.29	0.29	0.29
RM GAIN MBH	57	62	3	52	107	63	86	94	31	57	51	84	84	10	33	84	9	9	9	9
CFM PER RUN COOLING	0.17	0.17	0.17	0.17	0.15	0.17	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.16
ADJUSTED PRESSURE	32	38	23	26	32	22	34	52	30	45	16	24	23	17	33	34	28	26	32	19
ACTUAL DUCT LGH	210	150	140	190	180	100	190	130	155	150	100	160	90	140	100	110	110	120	110	120
EQUIVALENT LENGTH	242	188	163	216	212	122	224	182	185	195	116	184	113	157	133	144	138	146	142	139
TOTAL EFFECTIVE LENGTH	0.07	0.09	0.11	0.08	0.07	0.14	0.07	0.09	0.09	0.09	0.15	0.09	0.14	0.11	0.12	0.11	0.12	0.11	0.11	0.12
ADJUSTED PRESSURE	5	5	4	5	6	4	6	6	4	5	4	5	5	4	5	5	5	5	5	5
ROUND DUCT SIZE	191	323	80	184	240	356	265	326	126	191	321	367	367	161	653	367	698	698	698	698
HEATING VELOCITY (ft/min)	419	455	34	382	546	723	438	479	356	419	585	617	617	115	242	617	66	66	66	66
COOLING VELOCITY (ft/min)	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
OUTLET GRILL SIZE	D	D	D	A	D	D	D	A	A	B	D	D	C	A	A	B	D	B	B	A
TRUNK	D	D	D	A	D	D	D	A	A	B	D	D	C	A	A	B	D	B	B	A

ROOM NAME	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	393	0.08	9.9	12	590	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK B	171	0.09	7	6	513	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK C	614	0.08	11.7	16	691	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK D	380	0.07	10.1	12	570	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK E	0	0.00	0	0	0	0	0.00	0	0	8	0	0.00	0	0	8
TRUNK F	0	0.00	0	0	0	0	0.00	0	0	8	0	0.00	0	0	8

RETURN AIR #	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
1	175	0.15	3	4	0	0	0.00	0	0	0
2	90	0.15	90	90	0	0	0.00	0	0	0
3	29	0.15	33	36	0	0	0.00	0	0	0
4	175	0.15	175	180	0	0	0.00	0	0	0
5	210	0.07	208	211	0	0	0.00	0	0	0
6	0.07	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80
7	5.9	5.9	5.9	5.9	0	0	0.00	0	0	0
8	8	8	8	8	0	0	0.00	0	0	0
9	X	X	X	X	0	0	0.00	0	0	0
10	14	14	14	14	0	0	0.00	0	0	0

RETURN AIR #	TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
1	175	0.15	3	4	0	0	0.00	0	0	0
2	90	0.15	90	90	0	0	0.00	0	0	0
3	29	0.15	33	36	0	0	0.00	0	0	0
4	175	0.15	175	180	0	0	0.00	0	0	0
5	210	0.07	208	211	0	0	0.00	0	0	0
6	0.07	0.07	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80
7	5.9	5.9	5.9	5.9	0	0	0.00	0	0	0
8	8	8	8	8	0	0	0.00	0	0	0
9	X	X	X	X	0	0	0.00	0	0	0
10	14	14	14	14	0	0	0.00	0	0	0

TYPE: 38-1
 SITE NAME: KLEINBURG GLEN

LO # 66903

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	4	@ 10.6 cfm	42.4	cfm
Other Rooms	3	@ 10.6 cfm	31.8	cfm
Table 9.32.3.A		TOTAL	148.4	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
More than 5 - Part 6	TOTAL	79.5 cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5

Total Ventilation Capacity	148.4	cfm
Less Principal Ventil. Capacity	95	cfm
Required Supplemental Capacity	53.4	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 50H Location: BSMT

95.0 cfm 3.0 sones HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
95.0 CFM	X 76 F	X 1.08	X 0.34

SUPPLEMENTAL FANS NUTONE

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
WR	QTXEN050C	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11

Model: VANEE 50H

95 cfm high 48 cfm low

66 % Sensible Efficiency @ 32 deg F (0 deg C) HVI Approved

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: *Michael O'Rourke*

HRAI # 001820

Date: January-16

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 38-1	BUILDER: GOLD PARK HOMES
SFQT: 2339	LO# 66903 SITE: KLEINBURG GLEN

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	74

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):	30991.0	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: 49.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	158.0 ft

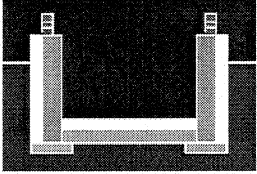
2012 OBC - COMPLIANCE PACKAGE

Component	Compliance Package
	J
Ceiling with Attic Space Minimum RSI (R)-Value	50
Ceiling Without Attic Space Minimum RSI (R)-Value	31
Exposed Floor Minimum RSI (R)-Value	31
Walls Above Grade Minimum RSI (R)-Value	22
Basement Walls Minimum RSI (R)-Value	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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10
Windows and Sliding Glass Doors Maximum U-Value	1.8
Skylights Maximum U-Value	2.8
Space Heating Equipment Minimum AFUE	0.94
HRV Minimum Efficiency	60%
Domestic Hot Water Heater Minimum EF	0.67

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):	14.9	 <p>Insulation Configuration</p>
Floor Width (m):	9.1	
Exposed Perimeter (m):	0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.8	
Window Area (m ²):	1.1	
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):	1928	

48

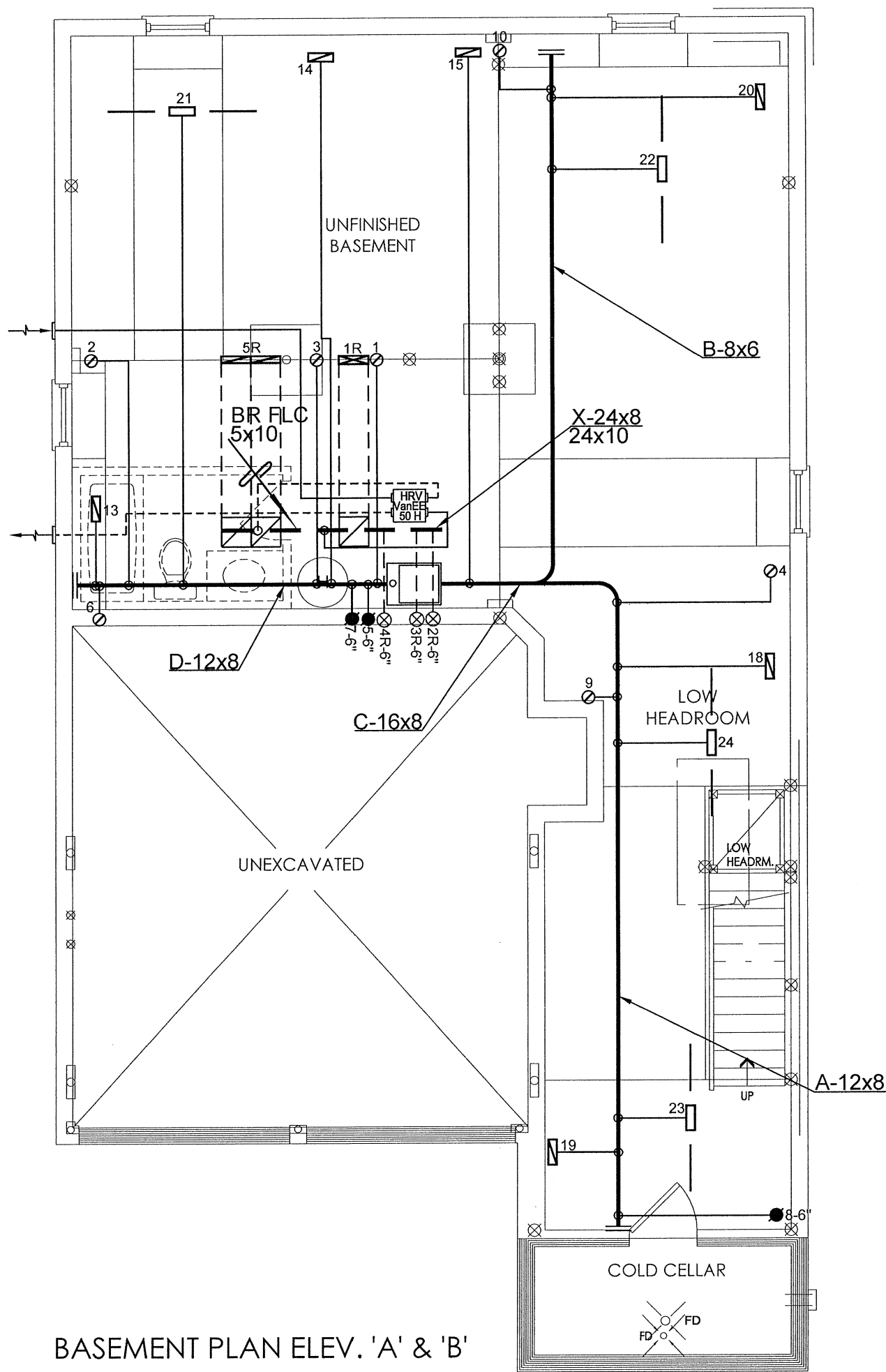
2.6 128.5

127.7

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):	877.6
Air Leakage/Ventilation	
Air Tightness Type:	Present (1961-) (ACH=3.57)
Custom BDT Data:	ELA @ 10 Pa: 716.42 cm ² ACH @ 50 Pa: 3.57
Mechanical Ventilation (L/s):	Total Supply: 0 Total Exhaust: 0
Flue Size	
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Natural Infiltration Rates	
Heating Air Change Rate (ACH/H):	0.322
Cooling Air Change Rate (ACH/H):	0.098



BASEMENT PLAN ELEV. 'A' & '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
 Michael O'Rourke, BCIN# 19669
 HVAC DESIGNS LTD.

CSA-F280-12
 PACKAGE J

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

No.	Description	Date
3.		
2.		
1.		

REVISIONS

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Client
GOLD PARK HOMES

Project Name
**KLEINBURG GLEN
 VAUGHAN, ONTARIO**

38-1 2339 sqft

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@hvacdsgns.ca
 Web: www.hvacdsgns.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 47694 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		
MAKE	LENNOX	3RD FLOOR		
MODEL	EL195UH070XE36B-70	2ND FLOOR	10	4 4
INPUT	66 MBTU/H	1ST FLOOR	6	1 2
OUTPUT	63 MBTU/H	BASEMENT	4	1 0
COOLING	2.5 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	995 cfm @ 0.6" w.c.			

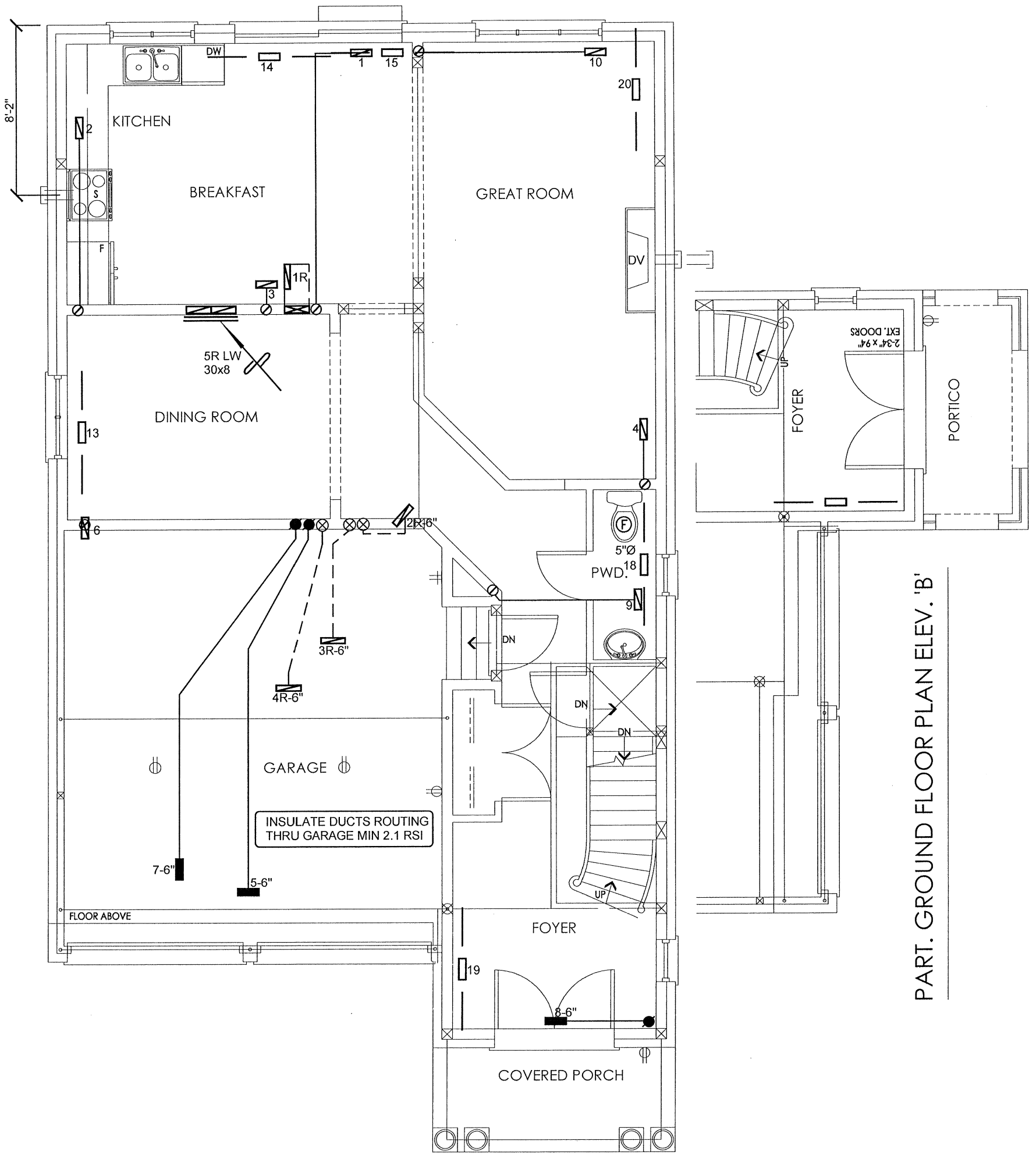
Sheet Title
BASEMENT HEATING LAYOUT

Date
 JAN/2016

Scale
 3/16" = 1'-0"

BCIN# 19669

LO# 66903



GROUND FLOOR PLAN ELEV. 'A'

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

CSA-F280-12
 PACKAGE J

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

No.	Description	Date
3.		
2.		
1.		
No.		

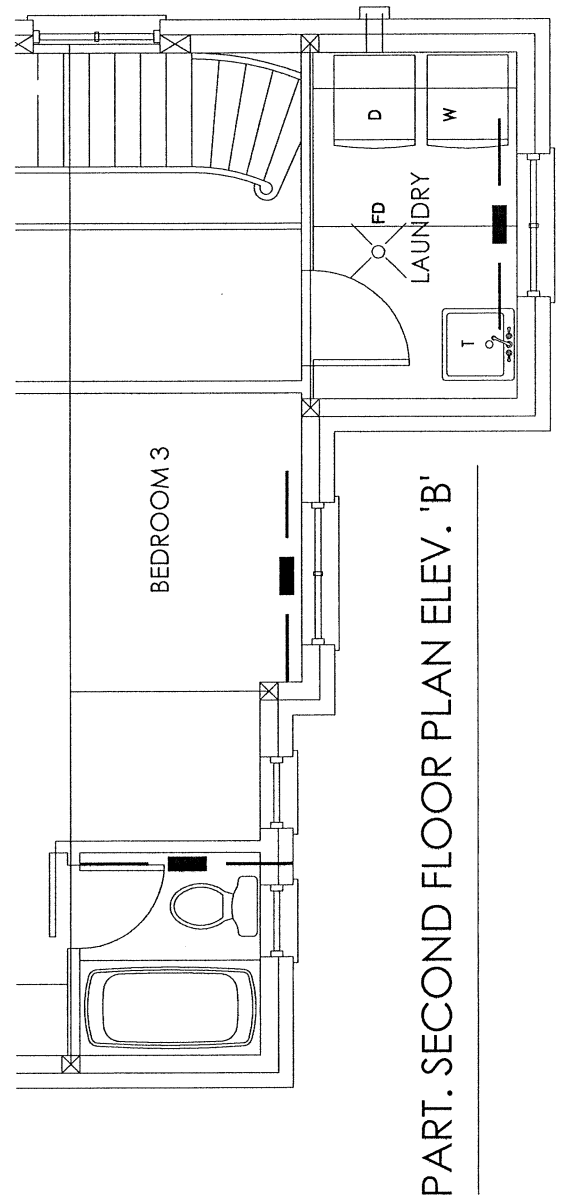
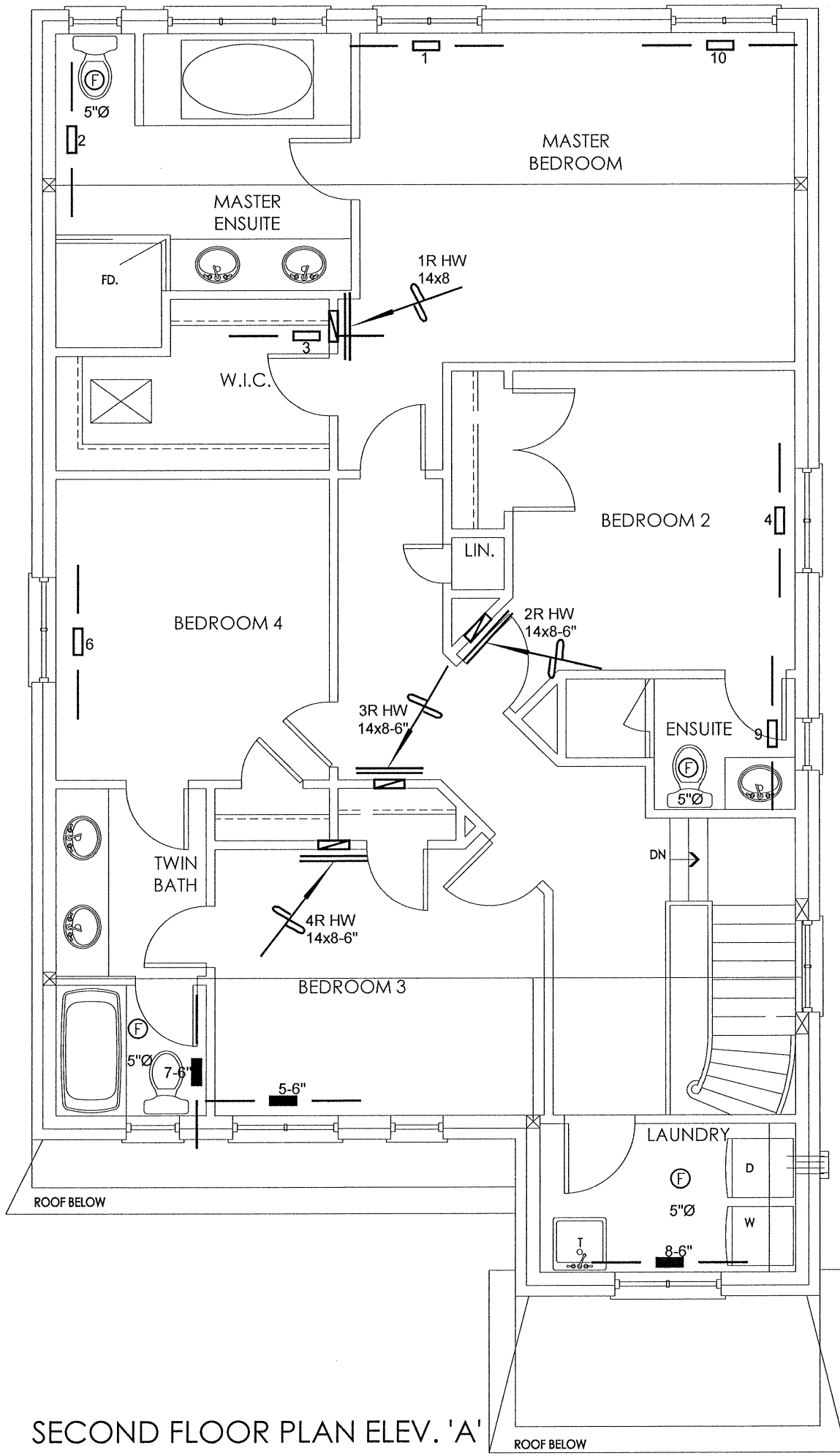
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Client
GOLD PARK HOMES
 Project Name
KLEINBURG GLEN VAUGHAN, ONTARIO
 38-1 2339 sqft

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

Sheet Title
FIRST FLOOR HEATING LAYOUT
 Date JAN/2016
 Scale 3/16" = 1'-0"
 BCIN# 19669
 LO# 66903



SECOND FLOOR PLAN ELEV. 'A'

PART. SECOND FLOOR PLAN ELEV. 'B'

I MICHAEL O'ROURKE HAVE REVIEW 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
 PACKAGE J

HVAC LEGEND							3.	
— □ —	FLOOR SUPPLY AIR GRILLE	— ■ —	6" SUPPLY AIR BOOT ABOVE	— ▨ —	14"x8" RETURN AIR GRILLE	— ▨ —	RETURN AIR STACK ABOVE	2.
— ■ —	FLOOR SUPPLY AIR GRILLE 6" BOOT	○	SUPPLY AIR STACK FROM 2nd FLOOR	— ▨ —	30"x8" RETURN AIR GRILLE	— ▨ —	RETURN AIR STACK 2nd FLOOR	1.
— ▨ —	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	— ▨ —	FRA- FLOOR RETURN AIR GRILLE	— ▨ —	REDUCER	No. Description Date

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Client
GOLD PARK HOMES

Project Name
**KLEINBURG GLEN
 VAUGHAN, ONTARIO**

38-1 2339 sqft

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

REVISIONS	
No.	Description Date

Sheet Title
**SECOND FLOOR
 HEATING
 LAYOUT**

Date JAN/2016

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 66903