


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 BRAMPTON	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: 2301 Project: FORESTSIDE		
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.				
May 15, 2018		 Signature of Designer		
Date				

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: FORESTSIDE

BUILDER: ROYAL PINE HOMES

TYPE: 2001

GRF: 2322

DATE: May-18

LOF 78596

WINTER NATURAL AIR CHANGE RATE 0.336
SUMMER NATURAL AIR CHANGE RATE 0.109

HEAT LOSS AT F. 74
HEAT GAIN AT F. 12

CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH			
EXP. WALL	12	26	9	13	36	20	9			
CLG. HT.	9	9	9	9	9	9	9			
GRS.WALL AREA	108	234	0	117	324	180	0			
GLAZING	0	0	0	0	0	0	0			
NORTH	0	0	0	0	0	0	0			
EAST	0	0	0	0	0	0	0			
SOUTH	0	0	0	0	0	0	0			
WEST	0	0	0	0	0	0	0			
SKYL.T.	0	0	0	0	0	0	0			
DOORS	0	0	0	0	0	0	0			
NET EXPOSED WALL	84	366	59	218	950	154	0			
NET EXPOSED BSMT WALL ABOVE GR	3.5	0	0	0	0	0	0			
EXPOSED CLG	1.3	0.6	228	286	131	133	167	76	72	90
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.3	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	1150	1449	90	1678	2618	1390	816	293	134	
LEVEL FACTOR / MUL. TIPLER	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32	0.20	0.32
AIR CHANGE HEAT LOSS	373	470	29	544	848	451	66	95	11	
AIR CHANGE HEAT GAIN	96	0	0	114	162	0	0	0	0	
DUCT LOSS	0	0	0	222	347	0	0	0	0	
HEAT GAIN PEOPLE	2	0	0	248	310	0	0	0	0	
HEAT GAIN APPLANCES/LIGHTS	480	0	0	240	240	240	0	0	0	
TOTAL HT LOSS BTU/H	1523	1918	119	2444	3812	1841	716	388	189	
TOTAL HT GAIN x 1.3 BTU/H	3216	1253	58	3539	4438	2389				

ROOM USE	KTGT	WIR	FOY	MUD					
EXP. WALL	64	7	42	10					
CLG. HT.	10	10	10	12					
GRS.WALL AREA	640	70	420	120					
GLAZING	0	0	0	0					
NORTH	0	0	0	0					
EAST	0	0	0	0					
SOUTH	0	0	0	0					
WEST	0	0	0	0					
SKYL.T.	0	0	0	0					
DOORS	0	0	0	0					
NET EXPOSED WALL	516	2244	363	62	270	44	375	1634	284
NET EXPOSED BSMT WALL ABOVE GR	3.5	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	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	4918	4083	241	668	929	150	6129	606	
LEVEL FACTOR / MUL. TIPLER	0.30	0.47	0.30	0.47	0.30	0.47	0.50	1.15	
AIR CHANGE HEAT LOSS	2302	332	0	0	0	0	7023	49	
AIR CHANGE HEAT GAIN	0	0	0	0	0	0	0	0	
DUCT LOSS	0	0	0	0	0	0	0	0	
HEAT GAIN PEOPLE	0	0	0	0	0	0	0	0	
HEAT GAIN APPLANCES/LIGHTS	716	716	0	0	0	0	0	0	
TOTAL HT LOSS BTU/H	7220	6669	339	3993	539	1363	13192	716	
TOTAL HT GAIN x 1.3 BTU/H	6669								
TOTAL HEAT GAIN BTU/H:	25279	TONS: 2.11	LOSS DUE TO VENTILATION LOAD BTU/H: 1593	STRUCTURAL HEAT LOSS: 38415	TOTAL COMBINED HEAT LOSS BTU/H: 40008				

Michael O'Rourke

SITE NAME: FORESTSIDE
BUILDER: ROYAL PINE HOMES

TYPE: 2301

DATE: May-18

GFA: 2322 LO# 78696

HEATING CFM 785
TOTAL HEAT LOSS 38,415
AIR FLOW RATE CFM 20.43
TOTAL HEAT GAIN 25,022
AIR FLOW RATE CFM 31.37furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.3559SP5A-60-12 #CARRIER
FAN SPEED 60
LOW 0
MEDIUM 785
HIGH 845AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 58,000
DESIGN CFM = 785
CFM @ 6" E.S.P.

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

All S/A diffusers 4"x10" unless noted otherwise on layout.
All R/A runs 5'0" unless noted otherwise on layout.plenium pressure s/a 0.18
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.16r/a pressure 0.17
r/a grille press. loss 0.02
adjusted pressure r/a 0.15

TEMPERATURE RISE 68 °F

RUN #	ROOM NAME	RM LOSS MBH	CFM PER RUN HEAT	CFM PER RUN COOLING	ACTUAL DUCT LGTH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE
1	MBR	0.76	1.92	0.12	2.25	1.91	1.91	0.08	5	117	447	3X10
2	ENS	1.39	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
3	WIC	0.12	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
4	BED-2	1.22	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
5	BED-3	1.91	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
6	BED-4	1.84	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
7	BATH	0.39	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
8	BED-2	1.22	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
9	BED-3	1.91	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
10	MBR	0.76	1.92	0.12	2.25	1.91	1.91	0.08	5	117	447	3X10
11	KT/GT	2.41	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
12	KT/GT	2.41	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
13	KT/GT	2.41	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
14	KT/GT	2.41	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
15	KT/GT	2.41	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
16	W/R	0.64	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
17	FOY	3.99	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
18	MUD	1.36	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
19	BAS	3.29	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
20	BAS	3.29	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
21	BAS	3.29	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
22	BAS	3.29	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
23	BAS	3.29	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10
24	BAS	3.29	0.06	1.77	2.22	2.39	2.39	0.08	5	117	447	3X10

RUN #	ROOM NAME	RM LOSS MBH	CFM PER RUN HEAT	CFM PER RUN COOLING	ACTUAL DUCT LGTH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE
1	TRUNK A	305	0.08	9	10	x	8	549	0	0	0	0
2	TRUNK B	268	0.07	8.9	10	x	8	482	0	0	0	0
3	TRUNK C	480	0.07	11	14	x	8	617	0	0	0	0
4	TRUNK D	0	0.00	0	0	x	8	0	0	0	0	0
5	TRUNK E	0	0.00	0	0	x	8	0	0	0	0	0
6	TRUNK F	0	0.00	0	0	x	8	0	0	0	0	0
7	TRUNK G	0	0.00	0	0	x	8	0	0	0	0	0
8	TRUNK H	0	0.00	0	0	x	8	0	0	0	0	0
9	TRUNK I	0	0.00	0	0	x	8	0	0	0	0	0
10	TRUNK J	0	0.00	0	0	x	8	0	0	0	0	0
11	TRUNK K	0	0.00	0	0	x	8	0	0	0	0	0
12	TRUNK L	0	0.00	0	0	x	8	0	0	0	0	0

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)					
RETURN AIR #	1	2	3	4	5						BR	TRUNK W	0	0.05	0	0	8				
	0	0	0	0	0						TRUNK X	465	0.05	11.8	16	8					
	85	85	75	75	335	0.15	0	0	0	130	TRUNK Y	0	0.05	0	0	0					
	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	TRUNK Z	0	0.05	0	0	0					
	ACTUAL DUCT LGH:	53	41	72	71	24	1	1	1	1	22	TRUNK A	0	0.05	0	0	8				
	EQUIVALENT LENGTH	185	185	205	225	140	0	0	0	0	135	TRUNK B	0	0.05	0	0	0				
TOTAL EFFECTIVE LH	238	226	277	296	164	1	1	1	1	157	TRUNK C	0	0.05	0	0	8					
ADJUSTED PRESSURE	0.06	0.07	0.05	0.05	0.09	14.80	14.80	14.80	14.80	14.80	0.09	TRUNK D	0	0.05	0	0	8				
ROUND DUCT SIZE	6	5.8	6	6	9	14.80	14.80	14.80	14.80	14.80	6.3	TRUNK E	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK F	0	0.05	0	0	8				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK G	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK H	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK I	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK J	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK K	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK L	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK M	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK N	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK O	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK P	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK Q	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK R	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK S	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK T	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK U	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK V	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK W	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK X	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK Y	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	TRUNK Z	0	0.05	0	0	0				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8	DROP	785	0.05	14.4	24	10				
INLET GRILL SIZE	X	X	X	X	X	0	0	0	0	0	8						471				

TYPE: 2301
SITE NAME: FORESTSIDE

LO # 78696

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
	TOTAL	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY

9.32.3.5.

Total Ventilation Capacity	148.4	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	68.9	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 65H Location: BSMT

79.5 cfm 3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	74 F	X	X
		1.08	0.25

SUPPLEMENTAL FANS

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	✓	0.3
BATH	QTXEN050C	50	✓	0.3
LAUN	QTXEN050C	50	✓	0.3
W/R	QTXEN050C	50	✓	0.3

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 # Building Permit #

BUILDER: ROYAL PINE 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:

May-18

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 2301**SFQT:** 2322**LO#** 78696**BUILDER:** ROYAL PINE HOMES**SITE:** FORESTSIDE**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	74

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 (ft ³):	31480.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 65.0 ft	WIDTH: 19.5 ft	EXPOSED PERIMETER:	125.0 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	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

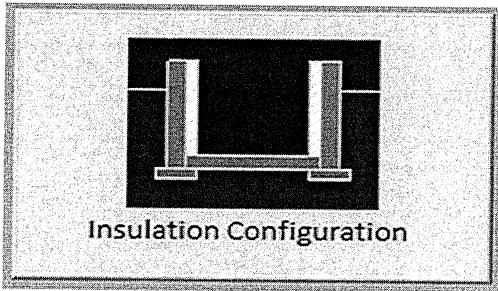
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	19.8	 Insulation Configuration
Floor Width (m):	5.9	
Exposed Perimeter (m):	38.1	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.9	
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):		1204

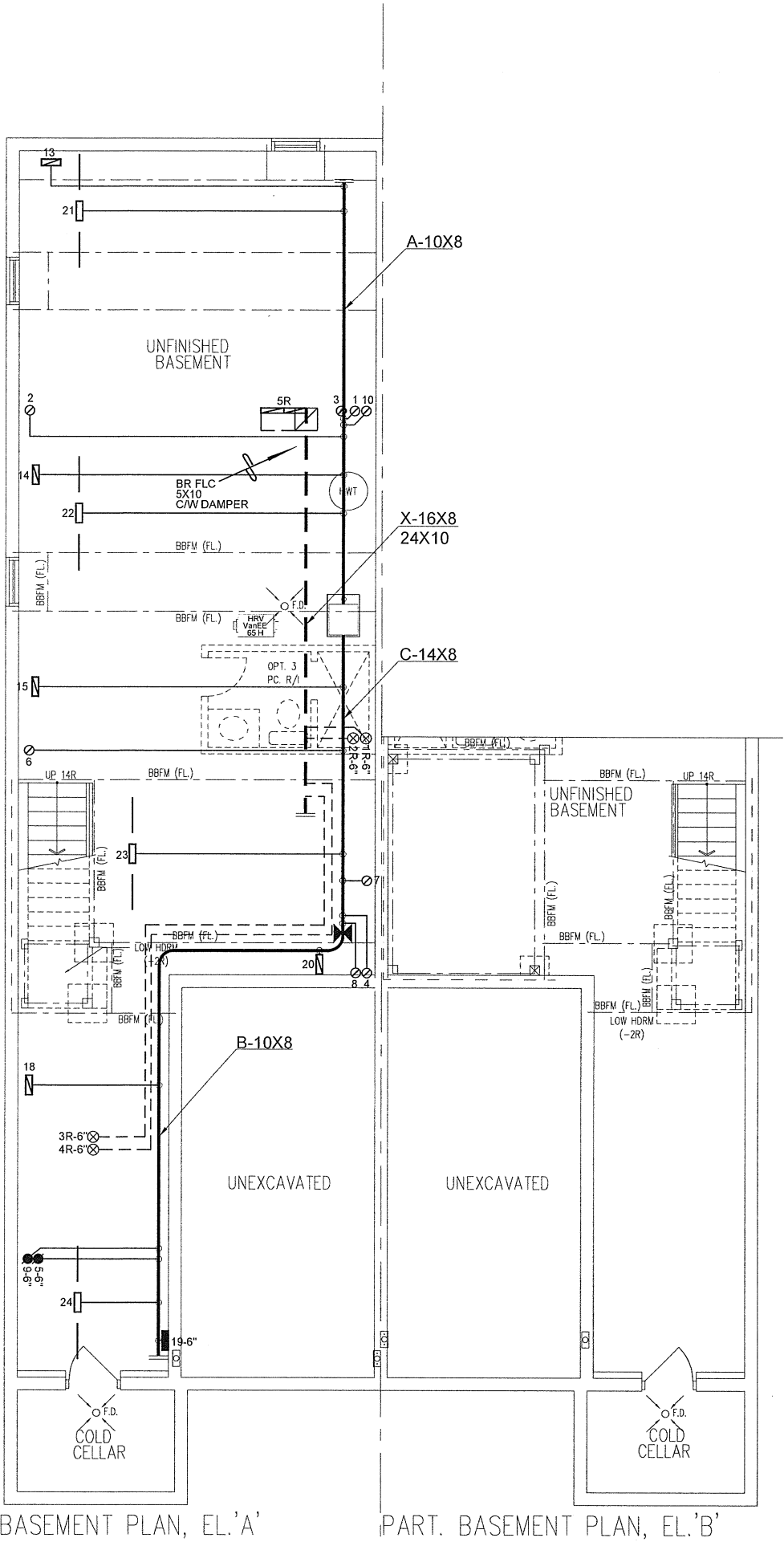
TYPE: 2301
LO# 78696

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Brampton			
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):	891.4			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa. 3.57	1188.3 cm ² ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply 37.5	Total Exhaust 37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.336			
Cooling Air Leakage Rate (ACH/H):	0.109			

TYPE: 2301
LO# 78696



BASEMENT PLAN, EL. 'A'

PART. BASEMENT PLAN, EL. 'B'

BASEMENT PLAN, EL. 'C'

PART. BASEMENT PLAN, EL. 'D'

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.

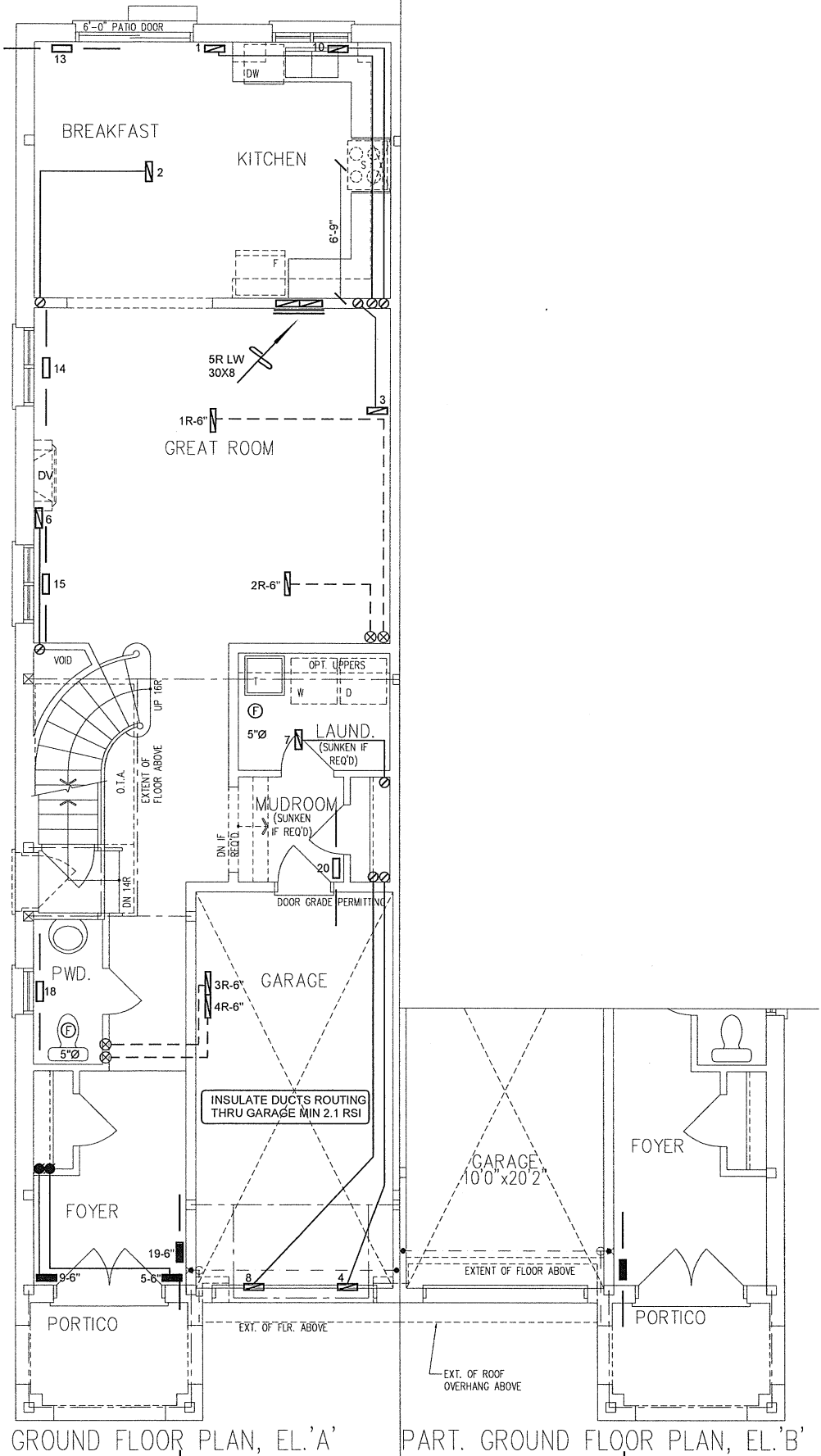
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE 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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Client ROYAL PINE HOMES		<div><p>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</p><p>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.</p></div>	HEAT LOSS 40008 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
Project Name FORESTSIDE BRAMPTON, ONTARIO			MAKE CARRIER		3RD FLOOR			BASEMENT HEATING LAYOUT	
			MODEL 59SP5A-60-12		2ND FLOOR				
			INPUT 60 MBTU/H		1ST FLOOR				
			OUTPUT 58 MBTU/H		BASEMENT				
2301 2322 sqft			COOLING 2.0 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			Date MAY/2018	
			FAN SPEED 785 cfm @ 0.6" w.c.					Scale 1/8" = 1'-0"	
							BCIN# 19669		
							LO# 78696		



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Michael O'Rourke
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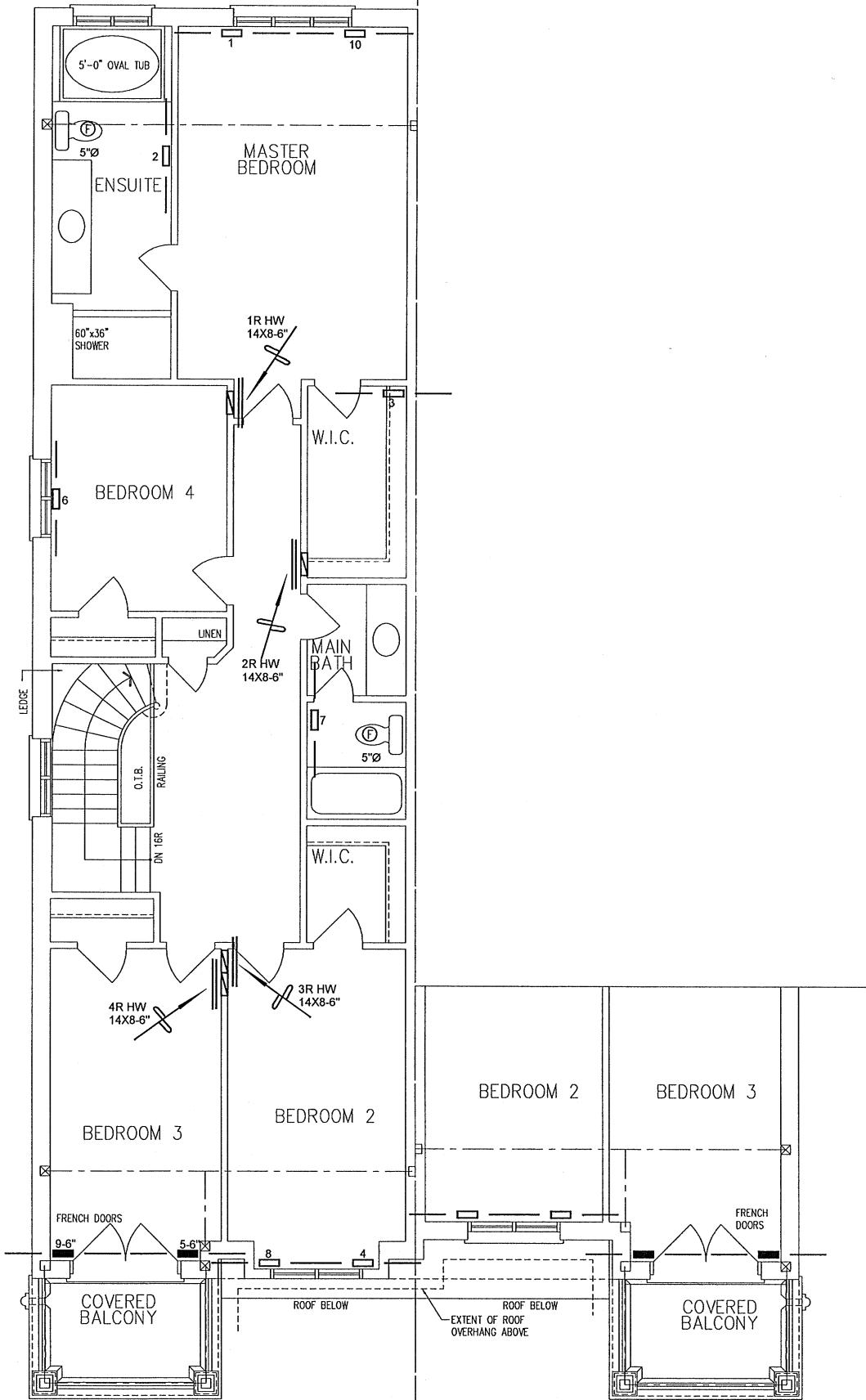
CSA-F280-12

PACKAGE A1

HVAC LEGEND								3.		
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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		

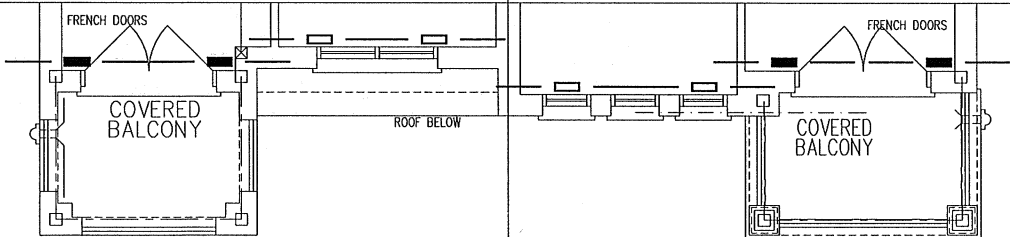
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Client		<div></div> <div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div> <div>Installation 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	
ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	MAY/2018
FORESTSIDE BRAMPTON, ONTARIO			Scale	1/8" = 1'-0"
2301			BCIN# 19669	
2322 sqft			LO#	78696



SECOND FLOOR PLAN, EL.'A'

PART. SECOND FLOOR PLAN, EL.'B'



SECOND FLOOR PLAN, EL.'C'

PART. SECOND FLOOR PLAN, EL.'D'

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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.		
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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	MAY/2018
FORESTSIDE BRAMPTON, ONTARIO			Scale	1/8" = 1'-0"
			BCIN# 19669	
2301	2322 sqft		LO#	78696