

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@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: 2202.T2 Project: FORESTSIDE	
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.			
May 15, 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.

SITE NAME: FORESTSIDE
BUILDER: ROYAL PINE HOMES
TYPE: 2202.T2
DATE: May-18
LO# 78690
GFA: 2144
WINTER NATURAL AIR CHANGE RATE 0.336
SUMMER NATURAL AIR CHANGE RATE 0.116
HEAT LOSS AT °F. 74
HEAT GAIN AT °F. 14
CSA-F280-12
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BATH	WIC-2	HEAT LOSS AT °F.	HEAT GAIN AT °F.
GRS.WALL AREA	315		315	54	0	198	160	72	54		
GLAZING											
NORTH	20.8	16.3	0	0	0	0	0	0	0		
EAST	20.8	41.9	24	499	1005	16	332	670	0		
SOUTH	20.8	25.2	0	0	0	0	0	0	0		
WEST	20.8	41.9	0	0	0	0	0	0	0		
SKYLT.	36.4	102.1	0	0	0	0	0	0	0		
DOORS	24.7	4.7	0	0	0	0	0	0	0		
NET EXPOSED WALL	4.4	0.8	291	1268	239	38	166	31	0		
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0	0	0		
EXPOSED CLG	1.3	0.6	338	423	205	84	105	51	84		
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0		
EXPOSED FLOOR	2.5	0.5	0	0	0	0	0	0	0		
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0		
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0		
SUBTOTAL HT LOSS	2190		603	1736	1105	1436					
SUB TOTAL HT GAIN	0.20	0.35	753	0.20	0.35	0.20	0.35	0.20	0.35		
LEVEL FACTOR / MULTIPLIER	768		212	609	122	159					
AIR CHANGE HEAT LOSS	160		83	234	238	0					
AIR CHANGE HEAT GAIN	0		0	0	0	0					
DUCT LOSS	0		0	0	0	0					
DUCT GAIN	0		0	0	0	0					
HEAT GAIN PEOPLE	240		2	480	0	0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS	910		0	0	0	0	0	0	0		
TOTAL HT LOSS BTU/H	2958		815	2579	3399	1994					
TOTAL HT GAIN x 1.3 BTU/H	3900		1086	74							

ROOM USE	EXP. WALL	CLG. HT.	K/L/D	LAUN	FOY	MUD	BAS
GRS.WALL AREA	500		500	54	320	198	594
GLAZING							
NORTH	20.8	16.3	0	0	0	0	0
EAST	20.8	41.9	71	1475	2974	0	4
SOUTH	20.8	25.2	0	0	0	0	0
WEST	20.8	41.9	0	0	0	0	0
SKYLT.	36.4	102.1	0	0	0	0	0
DOORS	24.7	4.7	0	0	0	0	0
NET EXPOSED WALL	4.4	0.8	429	1869	353	45	20
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.7	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0
EXPOSED FLOOR	2.5	0.5	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0
SUBTOTAL HT LOSS	3344		3327	303	2307	1400	4825
SUB TOTAL HT GAIN	0.30	0.55	0.30	0.35	0.55	0.30	0.50
LEVEL FACTOR / MULTIPLIER	1844		1844	106	1273	772	6482
AIR CHANGE HEAT LOSS	0		0	0	0	0	0
AIR CHANGE HEAT GAIN	0		0	0	0	0	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
HEAT GAIN APPLIANCES/LIGHTS	910		0	0	0	0	0
TOTAL HT LOSS BTU/H	5189		5986	409	3560	2172	11307
TOTAL HT GAIN x 1.3 BTU/H				1294	629	628	1843

TOTAL HEAT GAIN BTU/H: 23065 TONS: 1.92 LOSS DUE TO VENTILATION LOAD BTU/H: 1274 STRUCTURAL HEAT LOSS: 32600 TOTAL COMBINED HEAT LOSS BTU/H: 33875

Michael O'Rourke

SITE NAME: FORESTSIDE
BUILDER: ROYAL PINE HOMES

TYPE: 2202 T2

DATE: May-18

GFA: 2144 LO# 78690

HEATING CFM 710 COOLING CFM 710
TOTAL HEAT LOSS 32,600 TOTAL HEAT GAIN 22,825
AIR FLOW RATE CFM 21.78 AIR FLOW RATE CFM 31.11

#CARRIER 40
FAN SPEED LOW 0
MEDIUM 0
HIGH 710
DESIGN CFM = 710
CFM @ 6" E.S.P. = 39,000
AFUE = 97 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 39,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	4	3
R/A	0	0	3	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 #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BATH	BED-2	BED-3	MBR	WIC-2	KILD	KILD	KILD	KILD	KILD	KILD	LAUN	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.48	0.81	0.14	1.29	1.00	0.84	1.29	1.00	1.48	0.62	2.59	2.59	2.59	2.59	2.59	2.59	0.41	3.58	2.17	2.17	3.77	3.77	3.77
CFM PER RUN HEAT	32	18	3	28	22	18	28	22	32	13	57	57	57	57	57	57	9	78	47	82	82	82	82
RM GAIN MBH	1.95	1.09	0.07	1.70	1.78	0.26	1.70	1.78	1.95	0.15	2.99	2.99	2.99	2.99	2.99	2.99	40	0.63	0.63	0.61	0.61	0.61	0.61
CFM PER RUN COOLING	61	34	2	53	56	8	53	56	61	5	93	93	93	93	93	93	40	20	20	19	19	19	19
ADJUSTED PRESSURE	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	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16
EQUIVALENT LENGTH	220	210	160	180	200	180	190	190	200	190	100	100	100	100	100	100	160	130	140	100	130	120	120
TOTAL EFFECTIVE LENGTH	265	264	211	239	262	211	253	256	241	247	138	115	115	115	115	115	196	169	158	124	144	161	161
ADJUSTED PRESSURE	0.06	0.07	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.12	0.09	0.1	0.11	0.13	0.11	0.11	0.11
ROUND DUCT SIZE	5	4	4	5	5	4	5	5	5	4	6	6	6	6	6	6	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	235	207	34	206	162	207	206	162	235	149	291	291	291	291	291	291	103	573	539	418	418	418	418
COOLING VELOCITY (ft/min)	448	390	23	389	411	92	389	411	448	57	474	474	474	474	474	474	459	147	229	97	97	97	97
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	A	A	B	B	C	B	B	A	B	A	A	A	A	A	A	A	B	C	A	C	C	B

RUN #	ROOM NAME	RM LOSS MBH	CFM PER RUN HEAT	RM GAIN MBH	CFM PER RUN COOLING	ADJUSTED PRESSURE	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE	TRUNK
1	MBR	1.48	32	1.95	61	0.17	220	265	0.06	5	235	448	3X10	A
2	ENS	0.81	18	1.09	34	0.17	160	211	0.07	4	207	390	3X10	A
3	WIC	0.14	3	0.07	2	0.17	180	211	0.08	4	207	23	3X10	A
4	BED-2	1.29	28	1.70	53	0.17	180	239	0.07	5	206	389	3X10	B
5	BED-3	1.00	22	1.78	56	0.17	200	262	0.07	5	162	411	3X10	B
6	BATH	0.84	18	0.26	8	0.17	180	211	0.08	4	207	92	3X10	C
7	BED-2	1.29	28	1.70	53	0.17	190	253	0.07	5	206	389	3X10	B
8	BED-3	1.00	22	1.78	56	0.17	200	262	0.07	5	162	411	3X10	B
9	MBR	1.48	32	1.95	61	0.17	200	241	0.07	5	235	448	3X10	A
10	WIC-2	0.62	13	0.15	5	0.17	100	247	0.07	4	291	57	3X10	B
11	KILD	2.59	57	2.99	93	0.16	100	138	0.12	6	291	474	4X10	A
12	KILD	2.59	57	2.99	93	0.16	100	138	0.12	6	291	474	4X10	A
13	KILD	2.59	57	2.99	93	0.16	100	138	0.12	6	291	474	4X10	A
14	KILD	2.59	57	2.99	93	0.16	100	138	0.12	6	291	474	4X10	A
15	KILD	2.59	57	2.99	93	0.16	100	138	0.12	6	291	474	4X10	A
16	KILD	2.59	57	2.99	93	0.16	100	138	0.12	6	291	474	4X10	A
17	LAUN	0.41	9	1.29	40	0.17	160	196	0.1	4	103	459	3X10	A
18	FOY	3.58	78	0.63	20	0.17	130	169	0.11	5	573	147	3X10	B
19	MUD	2.17	47	0.63	20	0.17	140	158	0.11	4	539	229	3X10	C
20	BAS	3.77	82	0.61	19	0.16	120	144	0.13	6	418	97	4X10	A
21	BAS	3.77	82	0.61	19	0.16	120	144	0.13	6	418	97	4X10	C
22	BAS	3.77	82	0.61	19	0.16	120	144	0.13	6	418	97	4X10	C
23	BAS	3.77	82	0.61	19	0.16	120	144	0.13	6	418	97	4X10	B

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)		
TRUNK A	290	0.06	9.5	10	8	522	TRUNK G	0	0.00	0	0	8	0	0.06	0	0	0		
TRUNK B	273	0.07	8.9	10	8	491	TRUNK H	0	0.00	0	0	8	0	0.06	0	0	0		
TRUNK C	420	0.07	10.5	14	8	540	TRUNK I	0	0.00	0	0	8	0	0.06	0	0	0		
TRUNK D	0	0.00	0	0	8	0	TRUNK J	0	0.00	0	0	8	0	0.06	0	0	0		
TRUNK E	0	0.00	0	0	8	0	TRUNK K	0	0.00	0	0	8	0	0.06	0	0	0		
TRUNK F	0	0.00	0	0	8	0	TRUNK L	0	0.00	0	0	8	0	0.06	0	0	0		
RETURN AIR #	1	2	3	4	BR														
AIR VOLUME	120	85	95	305	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		
ACTUAL DUCT LGH.	58	59	22	1	1	1	1	1	1	1	1	1	1	1	1	1	14		
EQUIVALENT LENGTH	145	175	165	150	0	0	0	0	0	0	0	0	0	0	0	0	180		
TOTAL EFFECTIVE LH	203	233	224	172	1	1	1	1	1	1	1	1	1	1	1	1	194		
ADJUSTED PRESSURE	0.07	0.06	0.07	0.09	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.08		
ROUND DUCT SIZE	6.6	6	6	8.7	0	0	0	0	0	0	0	0	0	0	0	0	6		
INLET GRILL SIZE	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8		
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
INLET GRILL SIZE	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	0	14		

TYPE: 2202.T2
SITE NAME: FORESTSIDE

LO # 78690

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	2 @ 10.6 cfm	21.2 cfm
Kitchen & Bathrooms	4 @ 10.6 cfm	42.4 cfm
Other Rooms	4 @ 10.6 cfm	42.4 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		63.6 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	148.4	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	84.8	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
63.6 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	$\Delta T \cdot F$	FACTOR	% LOSS
63.6 CFM	X 74 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI Sones
ENS	QTXEN050C	50	☒ 0.3
BATH	QTXEN050C	50	☒ 0.3
PWD	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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	May-18

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 2202.T2**BUILDER:** ROYAL PINE HOMES**SFQT:** 2144**LO#** 78690**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)	72

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	WEST	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):	29056.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 20.0 ft	WIDTH: 59.0 ft	EXPOSED PERIMETER:	99.0 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	-

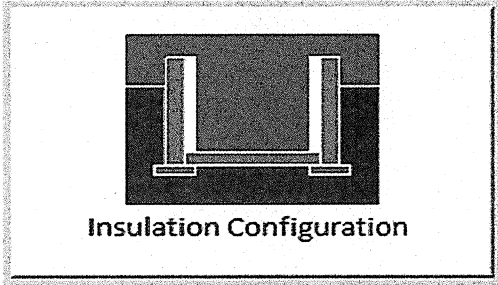
INDIVIDUAL BCIN: 19669

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):	6.1	 Insulation Configuration
Floor Width (m):	18.0	
Exposed Perimeter (m):	30.2	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.4	
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):		939

TYPE: 2202.T2

LO# 78690

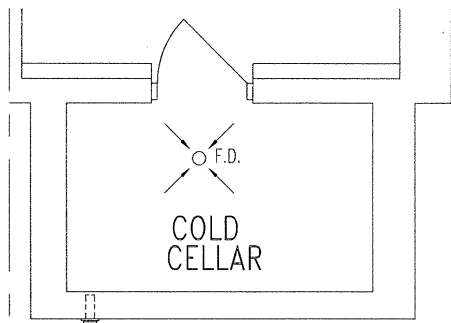
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

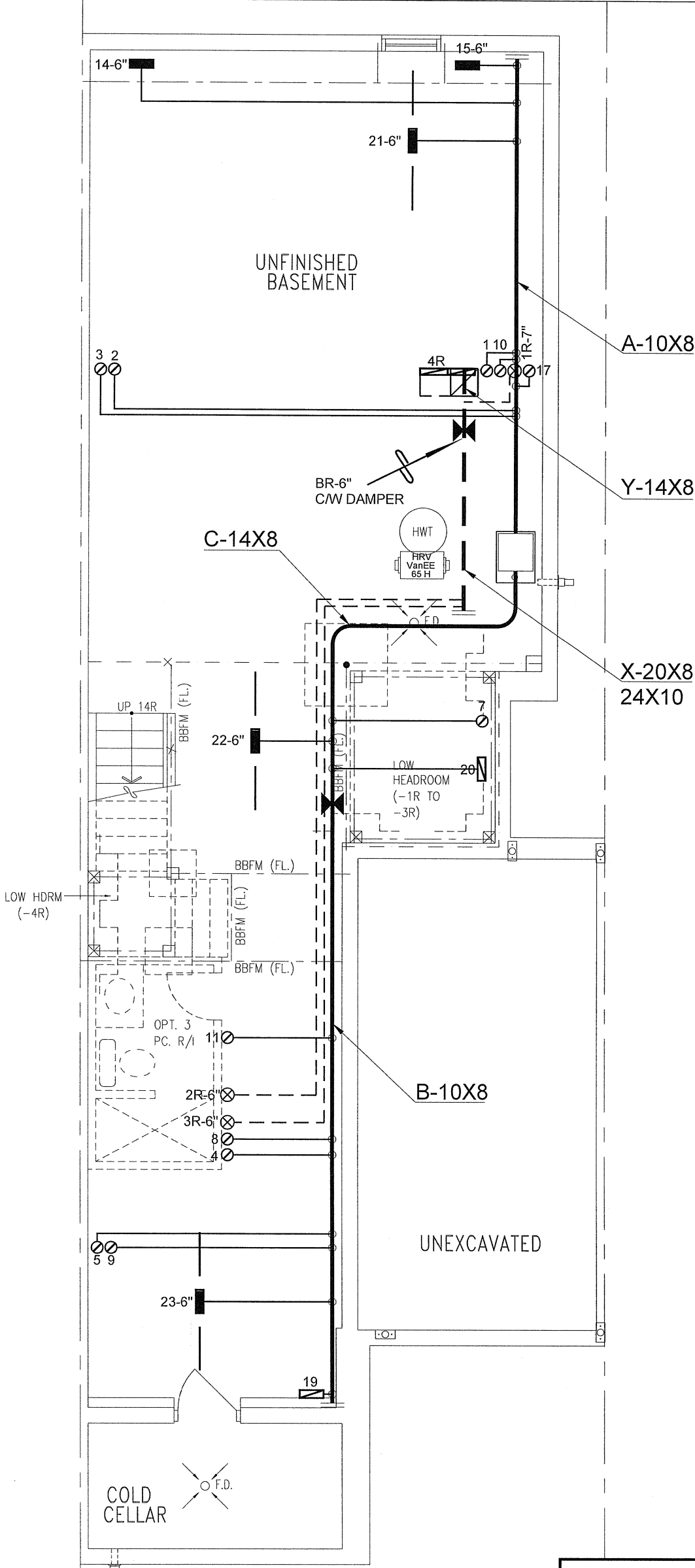
Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	822.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1096.8 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):	0.336			
Cooling Air Leakage Rate (ACH/H):	0.116			

TYPE: 2202.T2

LO# 78690



BASEMENT PLAN, EL. 'B'



BASEMENT PLAN, EL. 'A'

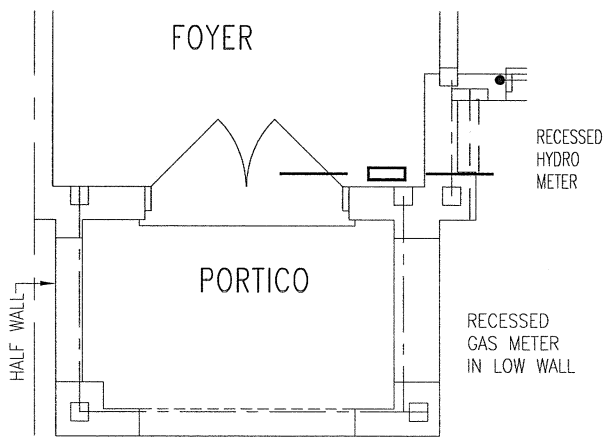
CSA-F280-12
PACKAGE A1

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.

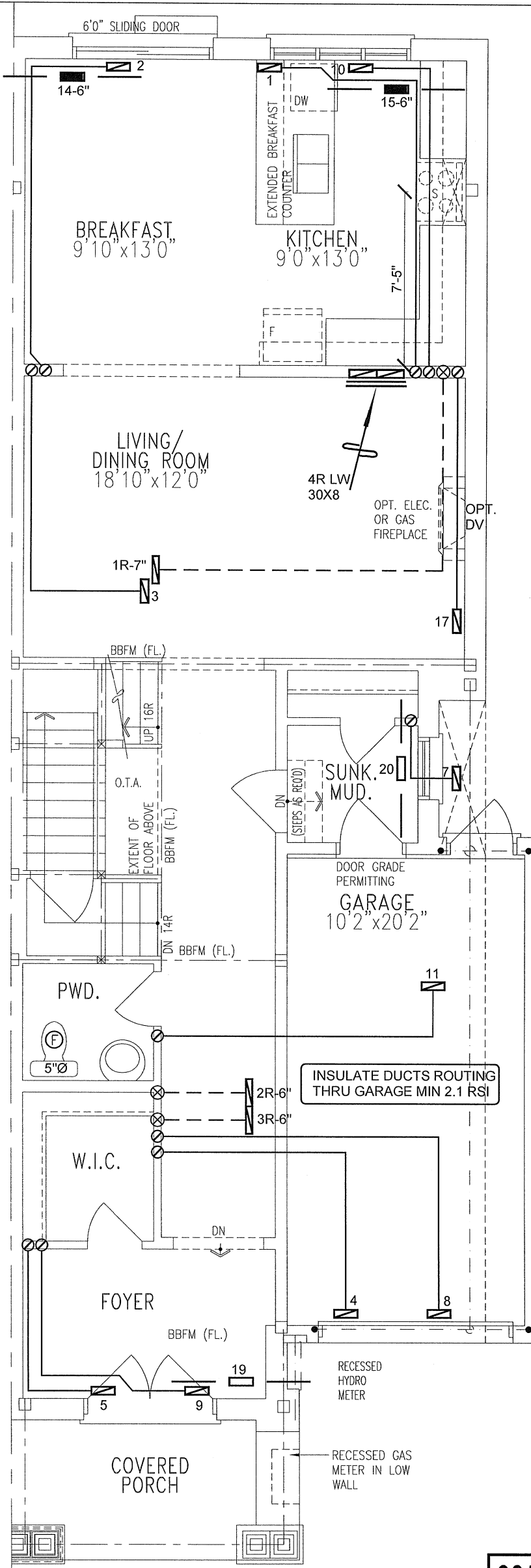
HVAC LEGEND								
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	3.
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	2.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	1.
REVISIONS								
No.	Description	Date						

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Client		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 33875 BTU/H		# OF RUNS S/A R/A FANS			Sheet Title	
ROYAL PINE HOMES			UNIT DATA		3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name			MAKE		2ND FLOOR			Date	
FORESTSIDE			CARRIER		11 3 3			MAY/2018	
BRAMPTON, ONTARIO			MODEL		1ST FLOOR			Scale	
			59SP5A-40-10		4 1 2			3/16" = 1'-0"	
			INPUT		BASEMENT			BCIN# 19669	
			40 MBTU/H		3 1 0			LO# 78690	
2202.T2		2144 sqft		OUTPUT		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			
				39 MBTU/H					
				COOLING					
				2.0 TONS					
				FAN SPEED					
				710 cfm @ 0.6" w.c.					



GROUND FLOOR PLAN, EL. 'B'



GROUND FLOOR PLAN, EL. 'A'

CSA-F280-12
PACKAGE A1

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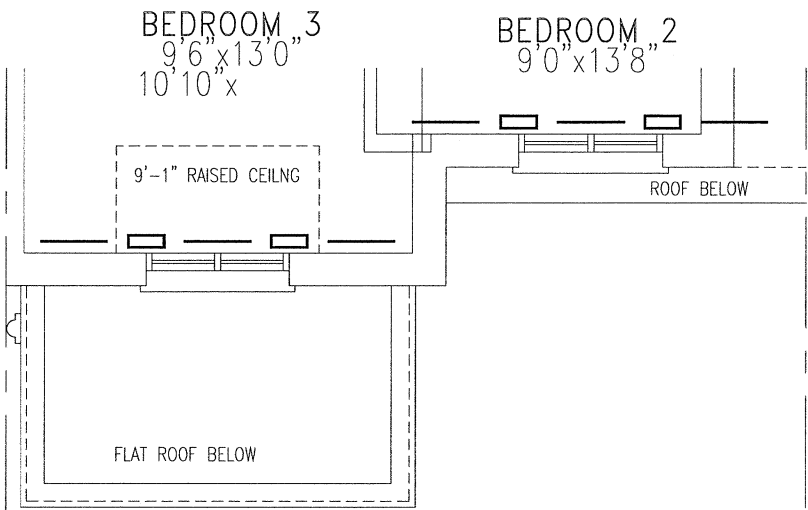
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR 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		

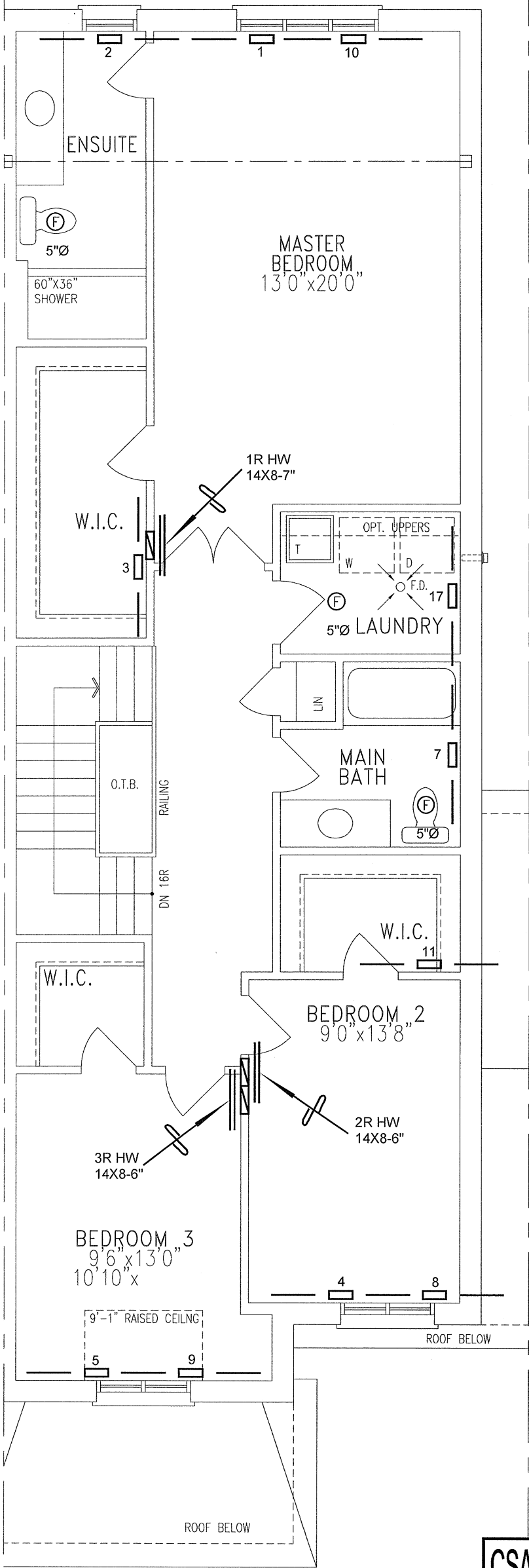
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Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest 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.	Sheet Title	
ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	MAY/2018
FORESTSIDE BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
2202.T2			BCIN# 19669	
2144 sqft			LO#	78690

OPT. ENSUITE SECOND FLOOR PLAN, EL. 'A' & 'B'



SECOND FLOOR PLAN, EL. 'B'



SECOND FLOOR PLAN, EL. 'A'

CSA-F280-12
PACKAGE A1

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

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR 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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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	MAY/2018
FORESTSIDE BRAMPTON, ONTARIO			Scale	3/16" = 1'-0"
		BCIN# 19669		
2202.T2	2144 sqft	LO# 78690		