

SITE NAME: SECONDO BUILDING: GREENPARK HOMES										DATE Jan-18	HEAT LOSS $\Delta T^{\circ}F$ 81	HEAT GAIN $\Delta T^{\circ}F$ 14	CSA-F280-12 ENERGY STAR
TYPE: PINEBROOK 1A										LO# 77368	WINTER NATURAL AIR CHANGE RATE 0.227	SUMMER NATURAL AIR CHANGE RATE 0.070	
GFA: 2926													
ROOM USE													
EXP. WALL CLG. HT.													
FACTORS													
GRS. WALL AREA LOSS GAIN													
GLAZING	20.4	15.9	0	0	0	0	0	0	0	15	9	9	
NORTH	20.4	41.5	0	0	0	0	0	0	0	15	9	9	
EAST	20.4	41.5	0	0	0	0	0	0	0	15	9	9	
SOUTH	20.4	24.8	0	0	0	0	0	0	0	15	9	9	
WEST	20.4	41.5	34	692	1410	17	346	705	0	15	305	372	
SKYLIT.	34.2	101.2	0	0	0	0	0	0	0	0	0	0	
DOORS	27.0	4.7	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	5.4	0.9	281	1513	260	217	1169	201	90	485	83	283	1524
NET EXPOSED BSMT WALL ABOVE GR	3.9	0.7	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.6	0.7	365	586	259	157	252	111	128	205	91	213	342
NO ATTIC EXPOSED CLG	4.0	1.8	0	0	0	0	0	0	0	60	238	105	
EXPOSED FLOOR	3.3	0.5	0	0	0	18	60	10	128	424	73	273	904
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	
SUB TOTAL HT LOSS			2791						1114				
SUB TOTAL HT GAIN			1929						247				
LEVEL FACTOR / MULTIPLIER			0.20	0.16					0.20	0.16			
AIR CHANGE HEAT LOSS			460						184				
AIR CHANGE HEAT GAIN			154						20				
DUCT LOSS			0						130				
DUCT GAIN			0						27				
HEAT GAIN PEOPLE	240		2	480	0	0	0	0	0	1	240	1	
HEAT GAIN APPLIANCES/LIGHTS			929						929				
TOTAL HT LOSS BTU/H			3251						1427				
TOTAL HT GAIN x 1.3 BTU/H			4540						1932				

ROOM USE													
EXP. WALL CLG. HT.													
FACTORS													
GRS. WALL AREA LOSS GAIN													
GLAZING	20.4	15.9	0	0	0	0	0	0	0	15	9	9	
NORTH	20.4	41.5	0	0	0	0	0	0	0	15	9	9	
EAST	20.4	41.5	0	0	0	0	0	0	0	15	9	9	
SOUTH	20.4	24.8	38	773	943	0	0	0	0	15	305	372	
WEST	20.4	41.5	0	0	0	0	0	0	0	15	9	9	
SKYLIT.	34.2	101.2	0	0	0	0	0	0	0	0	0	0	
DOORS	27.0	4.7	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	5.4	0.9	292	1572	270	0	0	0	0	485	83	283	1524
NET EXPOSED BSMT WALL ABOVE GR	3.9	0.7	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.6	0.7	15	24	11	0	0	0	0	60	238	105	
NO ATTIC EXPOSED CLG	4.0	1.8	0	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR	3.3	0.5	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	
SUB TOTAL HT LOSS			2370						4789				
SUB TOTAL HT GAIN			1224						3639				
LEVEL FACTOR / MULTIPLIER			0.30	0.31					0.30	0.31			
AIR CHANGE HEAT LOSS			742						1489				
AIR CHANGE HEAT GAIN			98						291				
DUCT LOSS			0						0				
DUCT GAIN			0						0				
HEAT GAIN PEOPLE	240		0						0				
HEAT GAIN APPLIANCES/LIGHTS			929						929				
TOTAL HT LOSS BTU/H			3112						6289				
TOTAL HT GAIN x 1.3 BTU/H			2926						6316				

SITE NAME: SECONDO
BUILDER: GREENPARK HOMES

TYPE: PINEBROOK 1A

DATE: Jan-18

GFA: 2926 LO# 77388

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 51,150 TOTAL HEAT GAIN 34,541
AIR FLOW RATE CFM 22.11 AIR FLOW RATE CFM 32.74

#GOODMAN
GMEC960603BNA 60
FAN SPEED
LOW
MEDIUM
HIGH

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	7	4
R/A	0	0	4	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'0" unless noted otherwise on layout.

ROOM #	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	S-ENS	ENS	BED-2	MBR	ENS-3	BED-3	WIC-2	KT/FM	KT/FM	KT/FM	LAUN	PWD	FOY	LV/DN	BAS	BAS	BAS	BAS
RM LOSS MBH	1.63	1.29	1.43	2.54	1.65	1.57	0.70	1.29	2.54	1.63	0.84	1.65	0.59	2.10	2.10	2.10	2.93	0.53	3.57	3.11	3.85	3.85	3.85	
CFM PER RUN HEAT	36	28	32	56	36	35	15	28	56	36	19	36	13	46	46	46	65	12	79	69	85	85	85	
RM GAIN MBH	2.27	0.97	0.38	2.86	1.99	2.44	0.48	0.97	2.86	2.27	0.39	1.99	0.15	2.11	2.11	2.11	1.89	0.37	0.92	2.93	0.52	0.52	0.52	
CFM PER RUN COOLING	74	32	12	94	65	80	16	32	94	74	13	65	5	69	69	69	62	12	30	96	17	17	17	
ADJUSTED PRESSURE	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	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	
ACTUAL DUCT LGH	27	43	53	70	73	39	43	38	65	34	59	63	65	32	20	28	18	48	54	39	22	18	34	51
EQUIVALENT LENGTH	150	180	150	160	160	190	140	190	160	160	180	180	150	110	130	140	100	140	140	160	150	150	110	130
TOTAL EFFECTIVE LENGTH	177	223	203	230	233	229	183	228	225	194	239	243	215	142	150	168	118	188	194	199	172	168	144	181
ADJUSTED PRESSURE	0.1	0.08	0.08	0.07	0.07	0.08	0.09	0.08	0.07	0.09	0.07	0.07	0.08	0.12	0.11	0.11	0.15	0.09	0.09	0.08	0.09	0.1	0.11	0.09
ROUND DUCT SIZE	5	4	4	6	5	5	4	4	6	5	4	5	4	5	5	5	4	4	5	6	5	5	5	5
HEATING VELOCITY (ft/min)	264	321	367	286	264	257	172	321	286	264	218	264	149	338	338	338	746	138	580	352	624	624	624	624
COOLING VELOCITY (ft/min)	543	367	138	479	477	587	184	367	479	543	149	477	57	507	507	507	711	138	220	489	125	125	125	125
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10
TRUNK	A	D	D	C	C	D	E	D	C	A	C	B	C	A	A	A	E	B	B	C	A	A	D	B

RUN #	ROOM NAME	RM LOSS MBH	CFM PER RUN HEAT	RM GAIN MBH	CFM PER RUN COOLING	ADJUSTED PRESSURE	ACTUAL DUCT LGH	EQUIVALENT LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE	TRUNK
1	TRUNK A	380	0.09	9.5	10	0.15	10	10	0.15	10	0.15	0.15	10	TRUNK A
2	TRUNK B	212	0.07	8.1	14	0.15	14	14	0.15	14	0.15	0.15	14	TRUNK B
3	TRUNK C	461	0.07	10.8	18	0.15	18	18	0.15	18	0.15	0.15	18	TRUNK C
4	TRUNK D	669	0.07	12.5	26	0.15	26	26	0.15	26	0.15	0.15	26	TRUNK D
5	TRUNK E	1129	0.07	15.2	0	0.15	0	0	0.15	0	0.15	0.15	0	TRUNK E
6	TRUNK F	0	0.00	0	0	0.15	0	0	0.15	0	0.15	0.15	0	TRUNK F

RETURN AIR #	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)
1	TRUNK A	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
2	TRUNK B	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
3	TRUNK C	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
4	TRUNK D	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
5	TRUNK E	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
6	TRUNK F	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
7	TRUNK G	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
8	TRUNK H	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
9	TRUNK I	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
10	TRUNK J	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
11	TRUNK K	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
12	TRUNK L	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
13	TRUNK M	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
14	TRUNK N	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
15	TRUNK O	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
16	TRUNK P	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
17	TRUNK Q	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
18	TRUNK R	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
19	TRUNK S	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
20	TRUNK T	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
21	TRUNK U	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
22	TRUNK V	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
23	TRUNK W	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
24	TRUNK X	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
25	TRUNK Y	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
26	TRUNK Z	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
27	DROP	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

TYPE: PINEBROOK 1A
SITE NAME: SECONDO

LO # 77368

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	5 @ 10.6 cfm	53 cfm
Other Rooms	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A.	TOTAL	180.2 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	180.2	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	25.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANE 65H	Location: BSMT		
155.0 cfm	3.0 sones		
☒ HVI Approved			
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	X 81 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI Sones
ENS	QTXEN050C	50	☒ 0.3
S-ENS	QTXEN050C	50	☒ 0.3
ENS-3	QTXEN050C	50	☒ 0.3
PWD	QTXEN050C	50	☒ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 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:		GREENPARK 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:	January-18

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: PINEBROOK 1A

BUILDER: GREENPARK HOMES

SFQT: 2926

LO# 77368

SITE: SECONDO

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-9	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	72

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	39537.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
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: 54.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	172.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
ENERGYSTAR****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	50	50.72
Ceiling Without Attic Space Minimum RSI (R)-Value	31	20.54
Exposed Floor Minimum RSI (R)-Value	31	24.58
Walls Above Grade Minimum RSI (R)-Value	20 + 5	15.12
Basement Walls Minimum RSI (R)-Value	20	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	ZONE 2	-
Skylights Maximum U-Value	ZONE 2	-
Space Heating Equipment Minimum AFUE	0.95	-
HRV Minimum Efficiency	65%	-
Domestic Hot Water Heater Minimum EF	90% TE	-

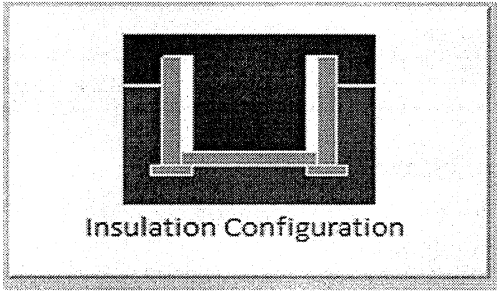
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Bradford	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.5	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.8	
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):	1802	

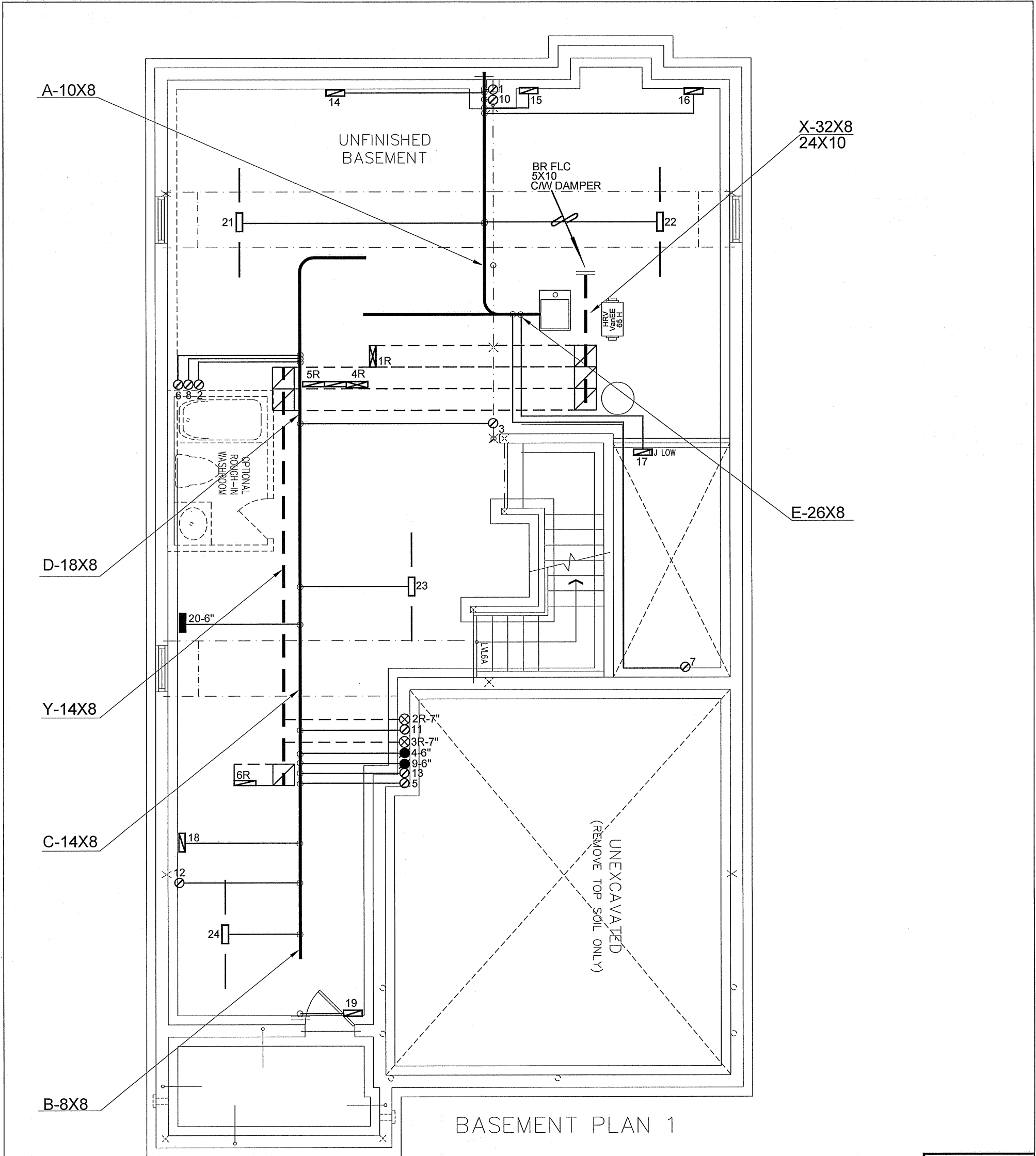
TYPE: PINEBROOK 1A
LO# 77368

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

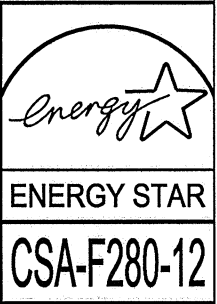
Weather Station Description				
Province:	Ontario			
Region:	Bradford			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1119.6			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1045.1 cm ²		
	2.50	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):	0.227			
Cooling Air Leakage Rate (ACH/H):	0.070			

TYPE: PINEBROOK 1A
LO# 77368



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.

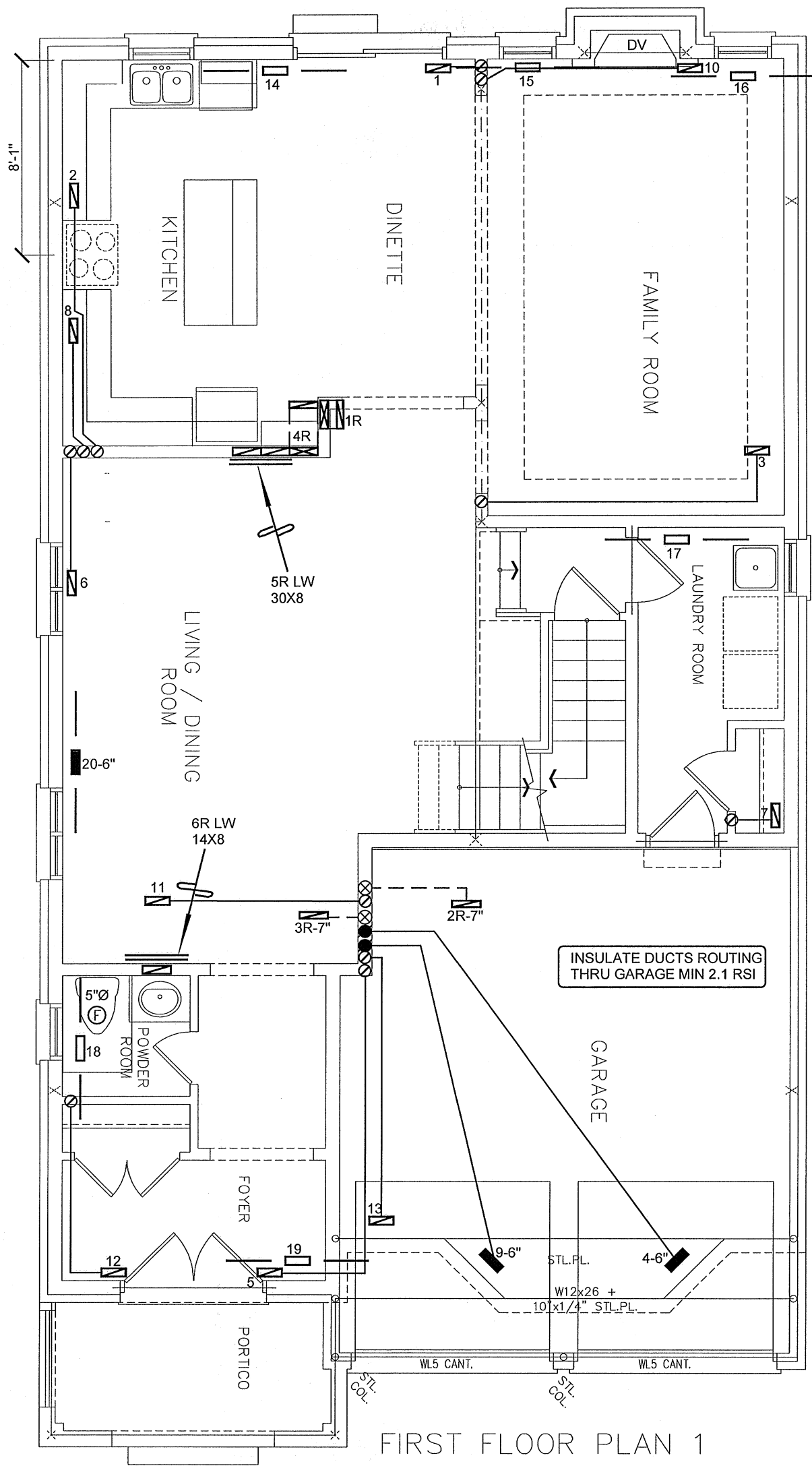
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.



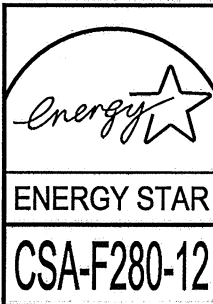
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR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

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

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 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 54557 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
GREENPARK HOMES			MAKE GOODMAN	3RD FLOOR					BASEMENT HEATING LAYOUT	
			MODEL GMEC960603BNA	2ND FLOOR		13	4	4		
			INPUT 60 MBTU/H	1ST FLOOR		7	2	2		
			OUTPUT 57.6 MBTU/H	BASEMENT		4	1	0		
Project Name SECONDO EAST GWILLIMBURY, ONTARIO			COOLING 3.0 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 JAN/2018
			FAN SPEED 1131 cfm @ 0.6" w.c.							Scale 3/16" = 1'-0"
			BCIN# 19669							
PINEBROOK 1A 2926 sqft									LO#	77368



FIRST FLOOR PLAN 1

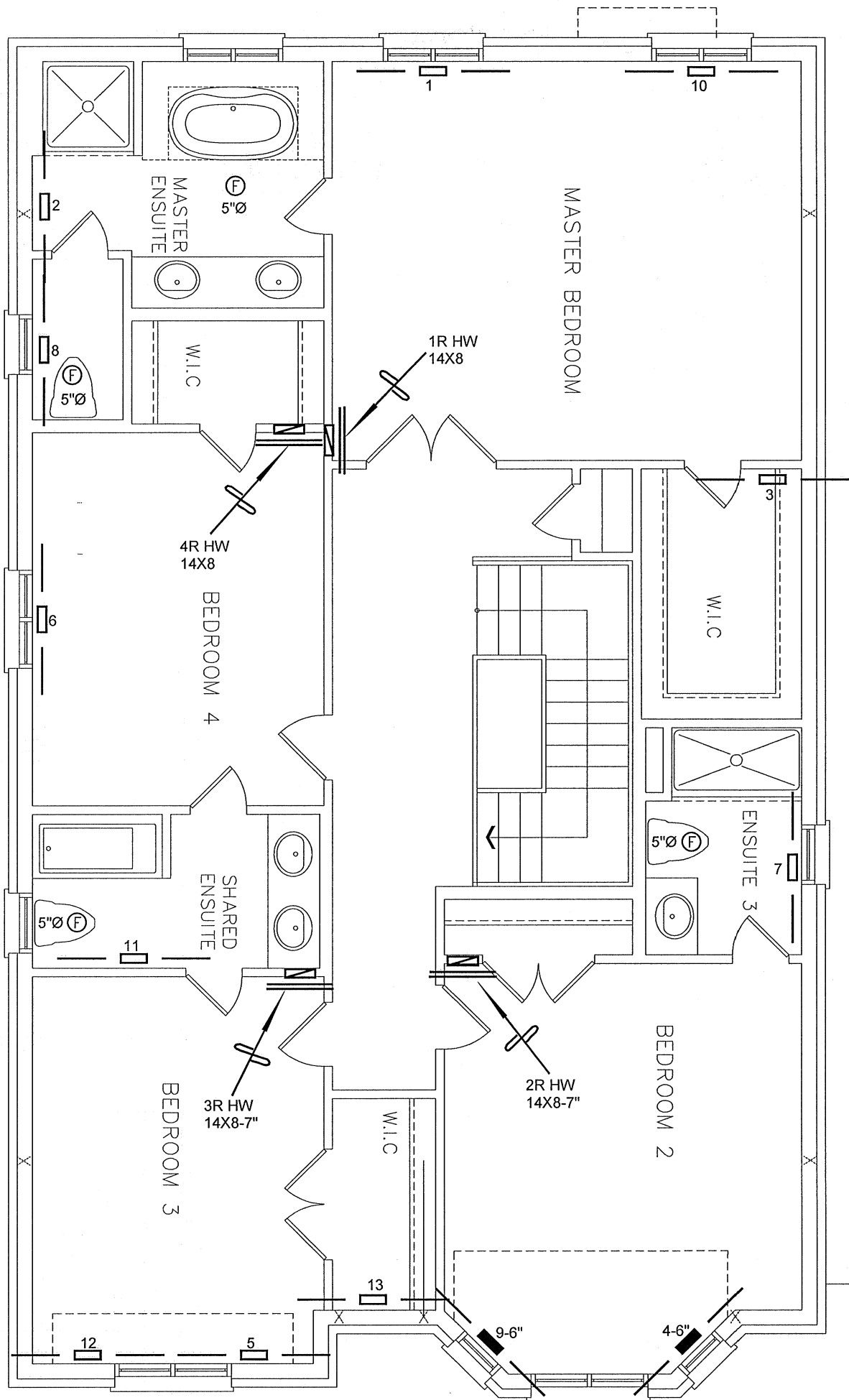


I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

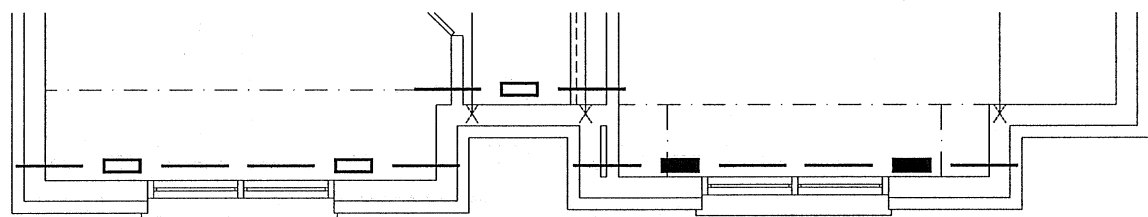
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR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

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

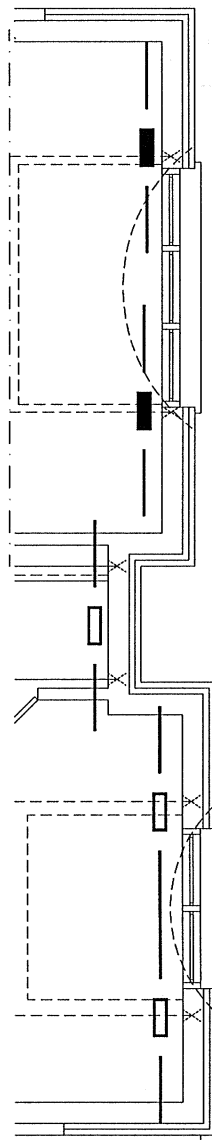
Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets 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	
GREENPARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name SECONDO EAST GWILLIMBURY, ONTARIO			Date	JAN/2018
			Scale	3/16" = 1'-0"
			BCIN# 19669	
PINEBROOK 1A 2926 sqft		LO#	77368	



SECOND FLOOR PLAN 1



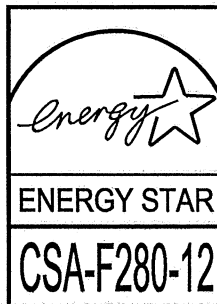
SECOND FLOOR PLAN 2



SECOND FLOOR PLAN 3

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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GREENPARK HOMES		 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 SECOND FLOOR HEATING LAYOUT	
Project Name SECONDO EAST GWILLIMBURY, ONTARIO			Date JAN/2018	
PINEBROOK 1A 2926 sqft			Scale 3/16" = 1'-0"	
			BCIN# 19669	
			LO# 77368	