

THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE

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SITE NAME: LAMBERT'S LANE PH.2
BUILDER: GREENPARK HOMES

TYPE: BRENTWOOD 3A - LOT 12

GFA: 2767

DATE: Jul-19
LOW 83122

WINTER NATURAL AIR CHANGE RATE 0.268
SUMMER NATURAL AIR CHANGE RATE 0.087

HEAT LOSS AT °F. 74
HEAT GAIN AT °F. 11

CSA-F280-12
ENERGYSTAR

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-4	ENS-3	ENS-2
			32	23	6	15	33	19	9	17	6
			9	9	9	9	10	9	9	9	9
GRS.WALL AREA	LOSS	GAIN	208	207	54	135	330	171	81	153	54
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	18.6	15.1	0	0	0	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0
SOUTH	18.6	24.1	0	0	0	0	0	0	0	0	0
WEST	18.6	40.7	26	668	1455	15	278	611	0	0	0
SKYL.T.	31.2	99.9	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	252	885	131	181	637	94	54	190	28
NET EXPOSED BMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	255	320	142	132	165	74	102	128	57
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	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			1874	1284	318	1046	2598	1374	574	950	468
SUB TOTAL HT GAIN			1739	1043	85	467	1704	1006	356	547	231
LEVEL FACTOR / MULTIPLIER	0.20	0.25	476	326	81	286	860	349	148	242	119
AIR CHANGE HEAT LOSS			169	65	5	29	107	63	22	34	14
AIR CHANGE HEAT GAIN			0	0	0	0	326	0	0	118	0
DUCT LOSS			0	0	0	0	0	0	0	0	0
DUCT GAIN			0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	2	480	0	0	1	281	0	0	58	0
HEAT GAIN APPLIANCES/LIGHTS			755	0	0	755	755	755	0	0	0
TOTAL HT LOSS BTU/H			2350	1611	399	1312	3585	1724	720	1311	587
TOTAL HT GAIN x 1.3 BTU/H			4099	1441	117	1939	4012	2684	492	831	319

ROOM USE	EXP. WALL	CLG. HT.	LY/DN	KITCHEN	LAUN	W/R	FOY	WOB	BAS
			34	72	18	12	42	38	146
			10	10	11	10	10	5	9
GRS.WALL AREA	LOSS	GAIN	340	720	198	120	420	342	876
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	18.6	15.1	0	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	0
SOUTH	18.6	24.1	28	519	874	0	0	0	0
WEST	18.6	40.7	0	0	0	0	0	0	0
SKYL.T.	31.2	99.9	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	312	1087	163	8	197	29	20
NET EXPOSED BMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	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			1617	3438	1294	422	2322	481	2307
SUB TOTAL HT GAIN			838	2370	327	63	344	2455	4561
LEVEL FACTOR / MULTIPLIER	0.30	0.44	712	1513	585	188	1022	2349	6655
AIR CHANGE HEAT LOSS			62	148	20	4	22	0.50	0.94
AIR CHANGE HEAT GAIN			0	0	0	0	0	0	0
DUCT LOSS			0	0	0	0	0	0	0
DUCT GAIN			0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			755	755	755	0	0	0	0
TOTAL HT LOSS BTU/H			2328	4951	1850	608	3345	2495	11226
TOTAL HT GAIN x 1.3 BTU/H			2197	4255	1433	85	476	3054	1939

TOTAL HEAT GAIN BTU/H: 29461

TONS: 2.46

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 48401

TOTAL COMBINED HEAT LOSS BTU/H: 41993

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

INDIVIDUAL BCIN: 19659

MICHAEL O'ROURKE

SITE NAME: LAMBERT'S LANE PH.2
 BUILDER: GREENPARK HOMES

TYPE: BRENTWOOD 3A - LOT 12

DATE: Jul-19

GFA: 2787 LO# 83122

 HEATING CFM 1131 COOLING CFM 1131
 TOTAL HEAT LOSS 40,401 TOTAL HEAT GAIN 29,225
 AIR FLOW RATE CFM 27.99 AIR FLOW RATE CFM 38.7

 furnace pressure 0.8
 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 s/a diff press. loss 0.02
 min adjusted pressure s/a 0.16

 r/a pressure 0.17
 r/a grille press. Loss 0.02
 adjusted pressure r/a 0.15

 #GOODMAN
 GMEC960603BNA 60
 FAN SPEED LOW
 MEDLOW
 MEDIUM
 MEDIUM HIGH
 HIGH 1131

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

 DESIGN CFM = 1131
 CFM @ 5°F E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	8	4
R/A	0	0	4	2	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	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3	ENS-4	BED-3	MBR	ENS-2	LV/DN	LV/DN	KT/FM	KT/FM	KT/FM	LAUN	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.17	1.61	0.40	1.31	1.79	1.72	1.31	0.72	1.79	1.17	0.59	1.16	1.16	1.65	1.65	1.65	1.85	0.61	3.34	3.43	3.43	3.43	3.43
CFM PER RUN HEAT	33	45	11	37	50	48	37	20	50	33	16	33	33	46	46	46	52	17	94	96	96	96	96
RM GAIN MBH	2.00	1.44	0.12	1.94	2.01	2.88	0.83	0.49	2.01	2.00	0.32	1.07	1.07	1.42	1.42	1.42	1.43	0.09	0.48	1.25	1.25	1.25	1.25
CFM PER RUN COOLING	78	56	5	75	78	104	32	19	78	78	12	41	41	55	55	55	55	3	18	48	48	48	48
ADJUSTED PRESSURE	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	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	63	60	37	30	41	32	41	48	55	70	37	29	19	41	36	49	13	9	37	55	48	18	32
EQUIVALENT LENGTH	160	140	190	190	160	170	190	150	130	160	200	160	180	120	130	160	130	190	130	170	180	190	180
TOTAL EFFECTIVE LENGTH	223	200	227	220	201	202	231	198	185	230	237	189	209	161	166	209	143	199	167	225	228	208	212
ADJUSTED PRESSURE	0.08	0.09	0.08	0.08	0.09	0.08	0.07	0.09	0.09	0.07	0.07	0.09	0.08	0.11	0.1	0.08	0.12	0.09	0.1	0.07	0.07	0.08	0.08
ROUND DUCT SIZE	6	5	4	6	5	6	4	6	6	4	4	4	4	5	5	5	4	4	6	6	6	6	6
HEATING VELOCITY (ft/min)	168	330	126	189	367	245	424	229	255	168	184	379	379	338	338	338	597	195	479	489	489	489	489
COOLING VELOCITY (ft/min)	398	411	57	382	573	530	367	218	398	398	138	470	470	404	404	404	631	34	92	245	245	245	245
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	B	B	B	C	B	C	B	C	A	C	B	B	A	A	A	D	B	C	A	A	B	C

 RUN #
 ROOM NAME
 RM LOSS MBH
 CFM PER RUN HEAT
 RM GAIN MBH
 CFM PER RUN COOLING
 ADJUSTED PRESSURE
 ACTUAL DUCT LGH
 EQUIVALENT LENGTH
 TOTAL EFFECTIVE LENGTH
 ADJUSTED PRESSURE
 ROUND DUCT SIZE
 HEATING VELOCITY (ft/min)
 COOLING VELOCITY (ft/min)
 OUTLET GRILL SIZE
 TRUNK

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SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	396	0.07	10.2	12	594
TRUNK B	736	0.07	12.9	20	862
TRUNK C	343	0.07	9.7	12	515
TRUNK D	1131	0.07	15.2	26	783
TRUNK E	0	0.00	0	0	0
TRUNK F	0	0.00	0	0	0

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK G	0	0.00	0	0	0
TRUNK H	0	0.00	0	0	0
TRUNK I	0	0.00	0	0	0
TRUNK J	0	0.00	0	0	0
TRUNK K	0	0.00	0	0	0
TRUNK L	0	0.00	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	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	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	49	29	22	45	38	22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	145	295	255	180	215	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	194	324	277	225	253	172	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.05	0.05	0.07	0.06	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	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7.1	7.5	7.5	5.8	9.4	6.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	0
TRUNK P	0	0.05	0	0	0
TRUNK Q	0	0.05	0	0	0
TRUNK R	0	0.05	0	0	0
TRUNK S	0	0.05	0	0	0
TRUNK T	0	0.05	0	0	0
TRUNK U	0	0.05	0	0	0
TRUNK V	0	0.05	0	0	0
TRUNK W	0	0.05	0	0	0
TRUNK X	1131	0.05	16.5	32	636
TRUNK Y	300	0.05	10.1	12	450
TRUNK Z	0	0.05	0	0	0
DROP	1131	0.05	16.5	24	679

TYPE: BRENTWOOD 3A - LOT 12
SITE NAME: LAMBERT'S LANE PH.2

LO # 83122

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, II or IV 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	3	@ 21.2 cfm	63.6	cfm
Other Bedrooms	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	6	@ 10.6 cfm	63.6	cfm
Other Rooms	3	@ 10.6 cfm	31.8	cfm
Table 9.32.3.A.			TOTAL	190.8 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	190.8	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

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

SUPPLEMENTAL FANS PANASONIC

Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	✓	0.3
ENS-4	FV-05-11VK1	50	✓	0.3
ENS-2	FV-05-11VK1	50	✓	0.3
W/R	FV-05-11VK1	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.
Model: VANE 65H
155 cfm high 64 cfm low
75 % Sensible Efficiency @ 32 deg F (0 deg C) ☒ HVI Approved

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: *Michael O'Rourke*
HRAI #: 001820
Date: July-19

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19669 *Michael O'Rourke* MICHAEL O'ROURKE

THIS STRUCTURE SHALL BE CONSTRUCTED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE

CSA F280-12 Residential Heat Loss and Heat Gain Calculations
 Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 83122

Model: BRENTWOOD 3A - LOT 12

Builder: GREENPARK HOMES

Date: 07/19/2019

Volume Calculation

House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1241	9	11169
First	1241	10	12410
Second	1546	9	13914
Third	0	9	0
Fourth	0	9	0
Total:			37,493.0 ft³
Total:			1061.7 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.268
SUMMER NATURAL AIR CHANGE RATE	0.087

Design Temperature Difference				
	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-19	41	74
Summer DTDc	24	30	6	11

5.2.3.1 Heat Loss due to Air Leakage

$$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

0.268 x 294.91 x 41 °C x 1.2 = 3907 W
 = 13329 Btu/h

6.2.6 Sensible Gain due to Air Leakage

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

0.087 x 294.91 x 6 °C x 1.2 = 188 W
 = 642 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

80 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h

6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{lger} + HL_{bger}) \div (HL_{agcleve} + HL_{bgcleve})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	13,329	7,056	0.944
2	0.3		9,083	0.440
3	0.2		10,487	0.254
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: BRENTWOOD 3A - LOT 12

BUILDER: GREENPARK HOMES

SFQT: 2787

LO# 83122

SITE: LAMBERT'S LANE PH.2

DESIGN ASSUMPTIONS

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

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):	37493.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 64.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	146.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	38.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component	Compliance Package ENERGYSTAR	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	R22+R5	21.10
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	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.9	-

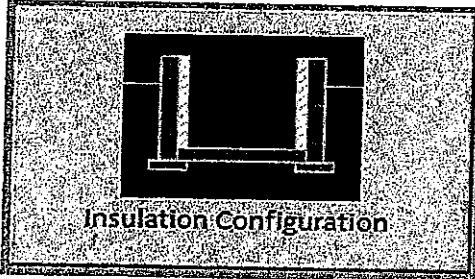
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

Residential Foundation Thermal Load Calculator

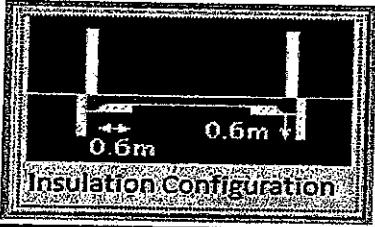
Supplemental tool for CAN/CSA-F280

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):	4.6	
Floor Width (m):	8.5	
Exposed Perimeter (m):	44.5	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.51	
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):	676	

TYPE: BRENTWOOD 3A - LOT 12
LO# 83122

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		
Length (m):	1.5	
Width (m):	8.5	
Exposed Perimeter (m):	11.6	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	141	

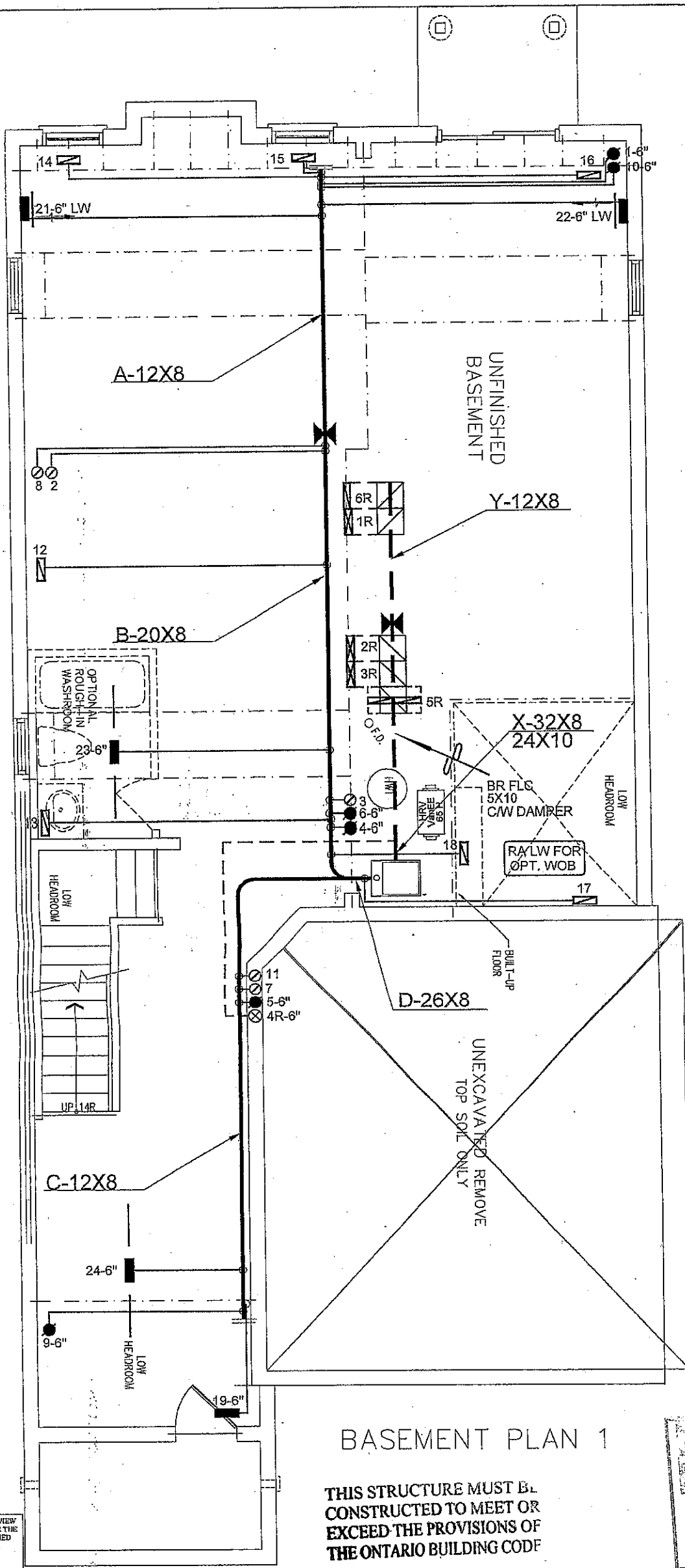
TYPE: BRENTWOOD 3A - LOT 12
LO# 83122THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
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Air Infiltration Residential Load Calculator

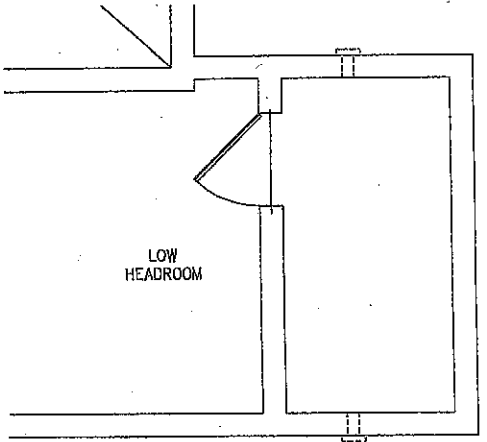
Supplemental tool for CAN/CSA-F280

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):	8.53			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1061.7			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		991.1 cm ²	
	2.50		ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply		Total Exhaust	
	37.5		37.5	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.268			
Cooling Air Leakage Rate (ACH/H):	0.087			

TYPE: BRENTWOOD 3A - LOT 12
LO# 83122THIS STRUCTURE MUST BE
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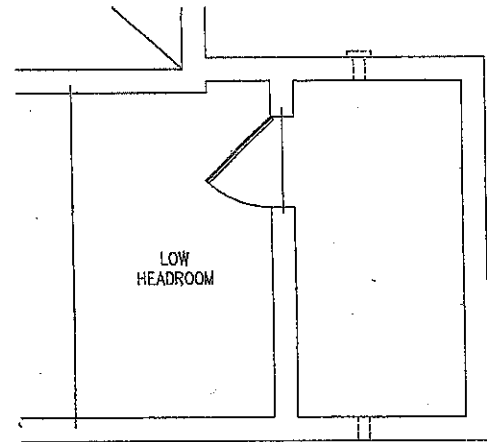


APPROVED
For construction as per the
Ontario Building Code
Town of Caledon Building Department
Initial: SA
Date: AUG 16, 2019
File #: BA/19/0468



BASEMENT PLAN 2

MINIMUM CEILING HEIGHT SHALL BE 2100 MM
OVER AT LEAST 75% OF BASEMENT
AREA EXCEPT THAT UNDER BEAMS AND
DUCTS THE CLEARANCE IS PERMITTED TO
BE REDUCED 1950 MM



BASEMENT PLAN 3

BASEMENT PLAN 1

THIS STRUCTURE MUST BE
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EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE

RECEIVED
AUG 08 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.

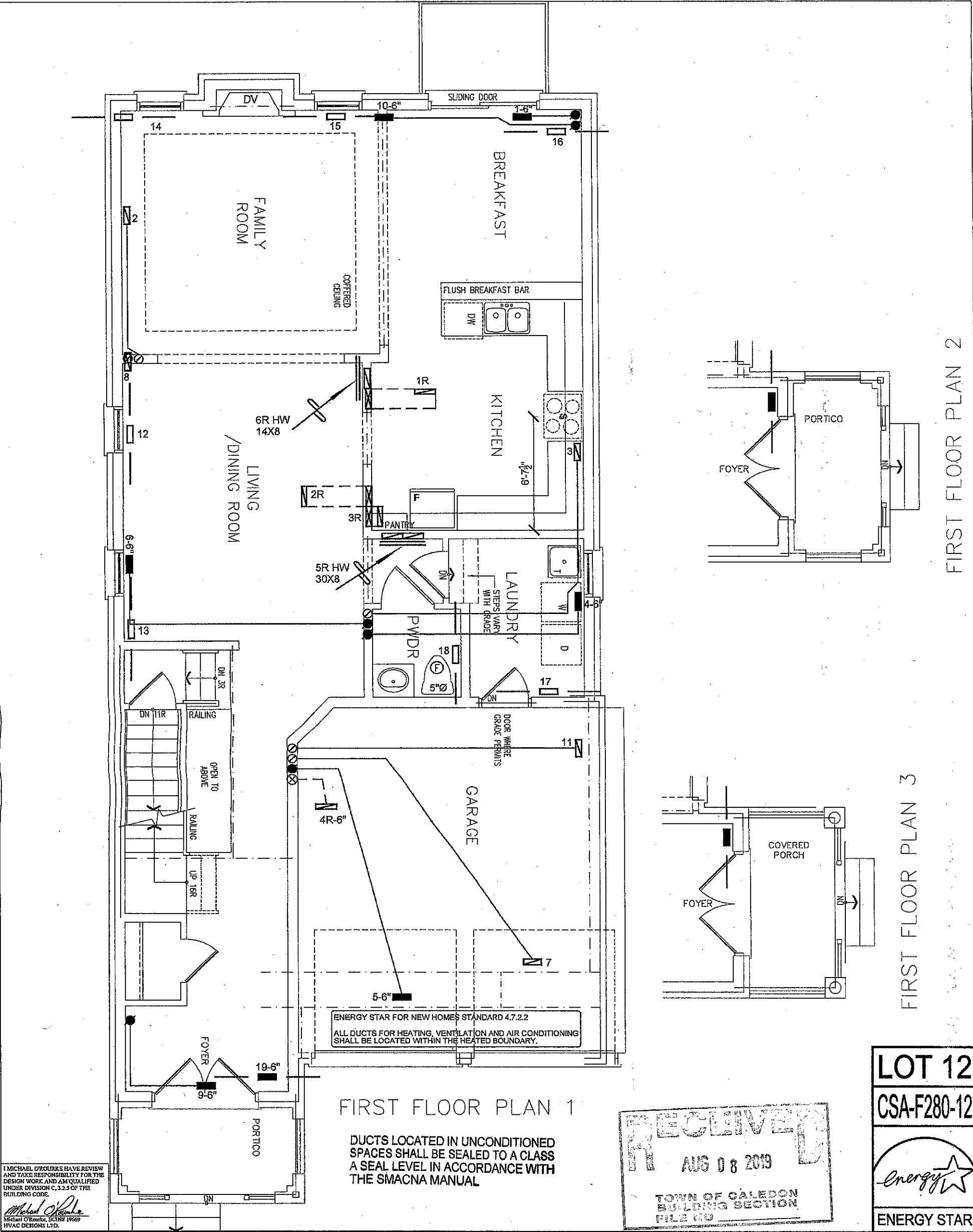
LOT 12
CSA-F280-12
ENERGY STAR

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

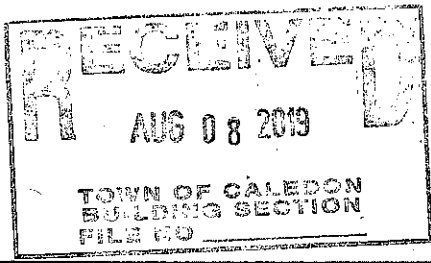
HVAC LEGEND								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK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

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Client GREENPARK HOMES		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	HEAT LOSS 41993 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title BASEMENT HEATING LAYOUT
Project Name LAMBERT'S LANE HOME CORP PH 2 CALEDON, ONTARIO			MAKE GOODMAN		3RD FLOOR		
BRENTWOOD 3A LOT 12 2787 sqft		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.	MODEL GMEC960603BNA		2ND FLOOR		Date JULY/2019
			INPUT 60 MBTU/H		1ST FLOOR		
			OUTPUT 57.6 MBTU/H		BASEMENT		Scale 3/16" = 1'-0"
			COOLING 2.5 TONS		ALL S/A DIFFUSERS 4"x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 6"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A		
			FAN SPEED 1131 cfm @ 0.5" w.g.				BCIN# 19669 LO# 83122



I, MICHAEL O'ROURKE 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.



LOT 12

CSA-F280-12

ENERGY STAR

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

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Client

GREENPARK HOMES

Project Name

LAMBERT'S LANE HOME CORP PH 2
CALEDON, ONTARIO

BRENTWOOD 3A
LOT 12

2787 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.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.

THIS STRUCTURE MUST BE
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THE ONTARIO BUILDING CODE

Sheet Title

FIRST FLOOR
HEATING
LAYOUT

Date

JULY/2019

Scale

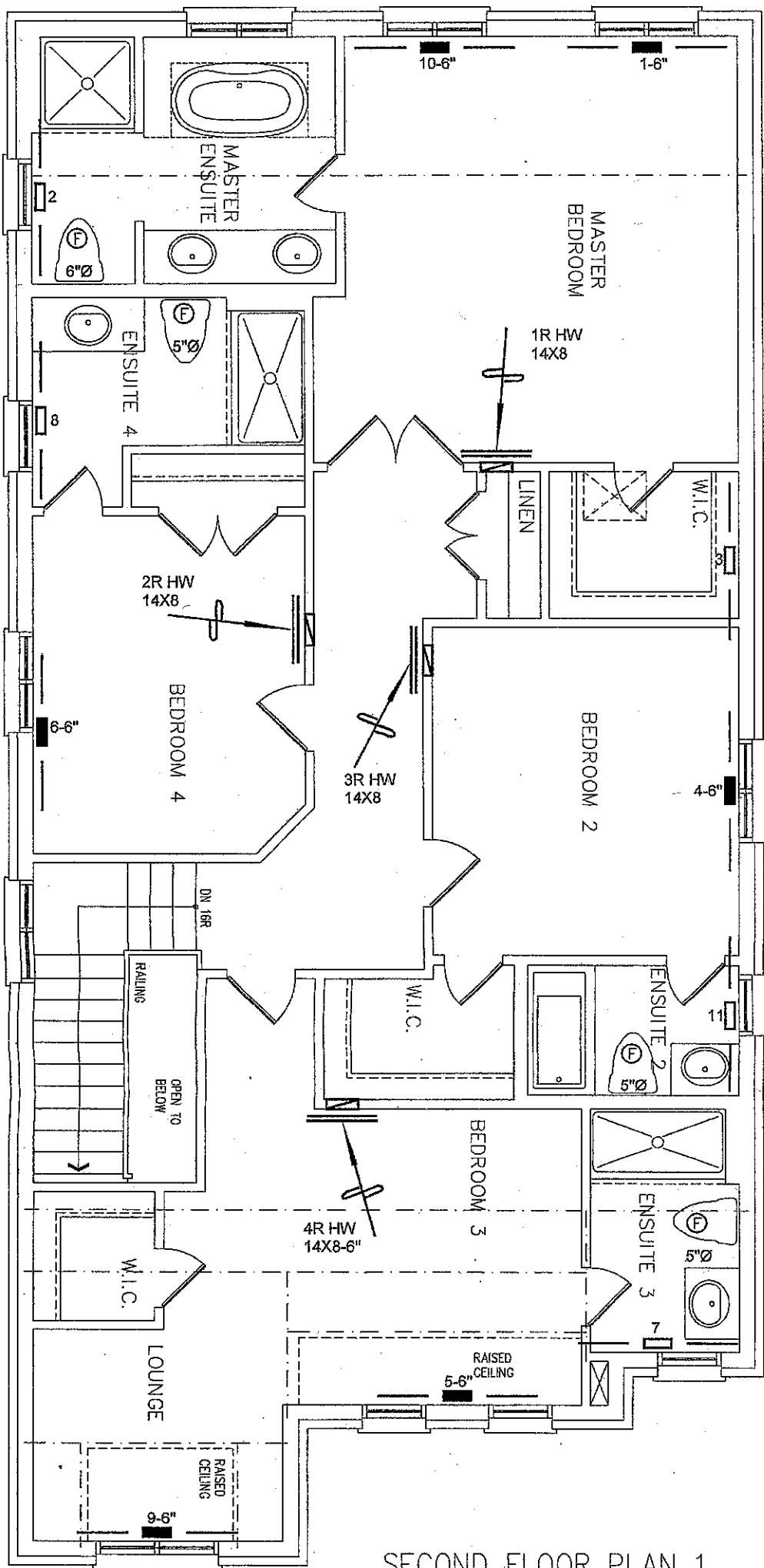
3/16" = 1'-0"

BCIN#

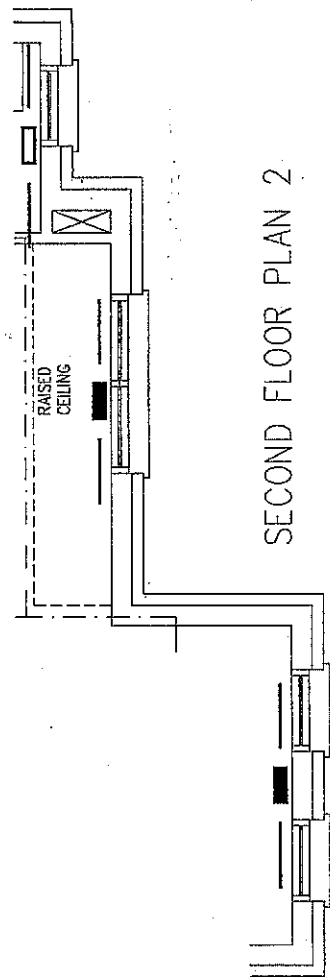
19669

LO#

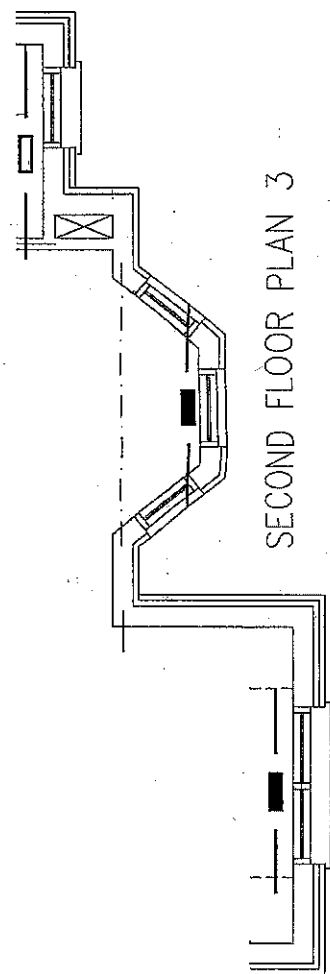
83122



SECOND FLOOR PLAN 1

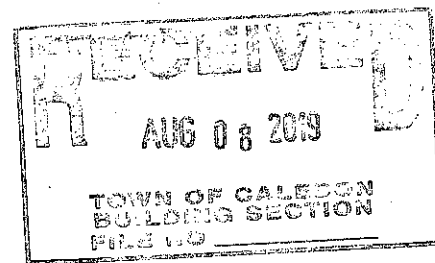


SECOND FLOOR PLAN 2



SECOND FLOOR PLAN 3

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



LOT 12
CSA-F280-12

ENERGY STAR

HVAC LEGEND								3.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.		
	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 GREENPARK HOMES Project Name LAMBERT'S LANE HOME CORP PH 2 CALEDON, ONTARIO BRENTWOOD 3A LOT 12	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.	THIS STRUCTURE MUST BE CONSTRUCTED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE	Sheet Title SECOND FLOOR HEATING LAYOUT Date JULY/2019 Scale 3/16" = 1'-0" BCIN# 19669 LO# 83122
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2787 sqft