

SITE NAME: LAMBERT'S LANE PH.2

WOB

DATE: Jun-19

WINTER NATURAL AIR CHANGE RATE 0.258

HEAT LOSS AT °F. 74

CSA-F280-12

BUILDER: GREENPARK HOMES

TYPE: BARTON 3

GFA: 2635

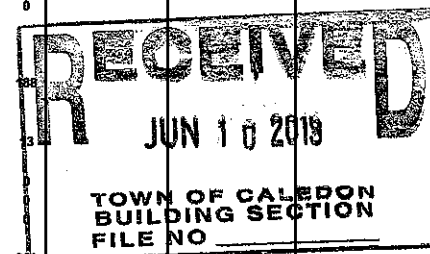
LO# 82655

SUMMER NATURAL AIR CHANGE RATE 0.084

HEAT GAIN AT °F. 11

ENERGYSTAR

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2
37	8		37	22	5	13	28	34	8	8
8			8	8	8	8	8	8	8	8
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	289		176		40		105		226	
GLAZING	18.6	14.4	0	0	0	0	0	0	0	0
NORTH	18.6	38.5	0	0	0	0	0	0	0	0
EAST	18.6	22.8	6	111	137	0	0	0	0	0
SOUTH	18.6	38.5	32	584	1234	9	167	347	0	0
WEST	31.2	99.9	0	0	0	0	0	0	0	0
SKYLT.	24.7	3.7	0	0	0	0	0	0	0	0
DOORS	3.5	0.5	261	918	136	160	562	83	40	142
NET EXPOSED WALL	3.5	0.5	0	0	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	1.3	0.6	281	352	157	134	168	75	56	70
EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.5	0.4	0	0	0	0	0	0	0	0
EXPOSED FLOOR										
BASEMENT/CRAWL HEAT LOSS										
SLAB ON GRADE HEAT LOSS										
SUBTOTAL HT LOSS	1975		1064		212		911		2137	
SUB TOTAL HT GAIN		1863		835	52		426		1828	
LEVEL FACTOR / MULTIPLIER	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24	0.20	0.24
AIR CHANGE HEAT LOSS	465		251		50		215		504	
AIR CHANGE HEAT GAIN		116		45	4		30		130	
DUCT LOSS										
DUCT GAIN										
HEAT GAIN PEOPLE	240		2	480	0	0	1	240	1	240
HEAT GAIN APPLIANCES/LIGHTS				483	0	0		483		483
TOTAL HT LOSS BTU/H	2440		1314		262		1125		2904	
TOTAL HT GAIN x 1.3 BTU/H		3568		884	73		1532		3833	



ROOM USE	EXP. WALL	CLG. HT.	DIN	FAM	KIT	LIV	LAUN	PWD	FOY	MUD	WOB	BAS
7	10		7	26	10	20	8	5	20	10	50	120
10			10	10	10	10	8	10	10	11	9	9
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	69		258		198		198		50		425	
GLAZING	18.6	14.4	20	371	289	0	0	0	0	0	30	557
NORTH	18.6	38.5	0	0	0	0	0	0	0	0	0	0
EAST	18.6	22.8	0	0	0	0	0	0	5	93	193	0
SOUTH	18.6	38.5	0	0	0	0	0	0	0	0	0	0
WEST	31.2	99.9	0	0	0	0	0	0	0	0	0	0
SKYLT.	24.7	3.7	0	0	0	0	0	0	0	0	0	0
DOORS	3.5	0.5	49	174	26	232	615	121	163	574	85	174
NET EXPOSED WALL	3.5	0.5	0	0	0	0	0	0	0	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	1.3	0.6	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.5	0.4	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR												
BASEMENT/CRAWL HEAT LOSS												
SLAB ON GRADE HEAT LOSS												
SUBTOTAL HT LOSS	545		1297		1345		1058		529		688	
SUB TOTAL HT GAIN		314		1123	375		639		371		810	
LEVEL FACTOR / MULTIPLIER	0.30	0.49	0.30	0.49	0.30	0.49	0.20	0.24	0.30	0.49	0.30	0.49
AIR CHANGE HEAT LOSS	268		639		663		521		125		399	
AIR CHANGE HEAT GAIN		22		80	27		45		26		9	
DUCT LOSS												
DUCT GAIN												
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				483	483		483		483		0	
TOTAL HT LOSS BTU/H	813		1936		2008		1579		854		3056	
TOTAL HT GAIN x 1.3 BTU/H		1065		2191	1149		1518		1145		912	

TOTAL HEAT GAIN BTU/H:

24125

TONS: 2.01

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 35319

TOTAL COMBINED HEAT LOSS BTU/H: 36912

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.

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

Michael O'Rourke

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

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

WOB
TYPE: BARTON 3

DATE: Jun-19

GFA: 2635 LO# 82655

HEATING CFM 890 COOLING CFM 890
TOTAL HEAT LOSS 35,319 TOTAL HEAT GAIN 23,889
AIR FLOW RATE CFM 25.2 AIR FLOW RATE CFM 37.26

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

#GOODMAN
GMEC960402BNA 40

AFUE = 96 %
INPUT (BTU/H) = 40,000
OUTPUT (BTU/H) = 38,400

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

plenum pressure s/a 0.18
max s/a dif 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

FAN SPEED LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 890

DESIGN CFM = 890
CFM @ .6" E.S.P.

TEMPERATURE RISE 40 °F

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"x2" unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	BED-4	MBR	ENS-2	DIN	FAM	KIT	LIV	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.22	1.31	0.26	1.13	1.45	1.21	0.92	1.45	1.21	1.22	0.25	0.81	1.94	2.01	1.58	0.65	0.42	2.41	1.21	3.10	3.10	3.10	3.10
CFM PER RUN HEAT	31	33	7	28	37	30	23	37	30	31	6	20	49	51	40	16	11	61	30	78	78	78	78
RM GAIN MBH.	1.78	0.88	0.07	1.53	1.92	1.56	0.46	1.92	1.56	1.78	0.13	1.07	2.19	1.15	1.52	1.14	0.25	0.58	0.17	0.52	0.52	0.52	0.52
CFM PER RUN COOLING	66	33	3	57	71	58	17	71	58	66	5	40	82	43	57	43	9	22	6	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	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	55	38	38	25	58	69	56	55	64	48	51	5	47	34	28	66	46	46	8	41	25	7	42
EQUIVALENT LENGTH	170	170	120	170	130	150	200	120	180	170	150	130	110	120	130	220	130	120	140	110	110	130	140
TOTAL EFFECTIVE LENGTH	225	206	158	195	188	219	256	175	244	218	201	135	157	154	158	286	176	166	148	151	135	137	182
ADJUSTED PRESSURE	0.08	0.08	0.11	0.09	0.09	0.08	0.07	0.1	0.07	0.08	0.09	0.13	0.1	0.11	0.11	0.06	0.1	0.1	0.12	0.11	0.13	0.13	0.09
ROUND DUCT SIZE	5	4	4	5	5	5	4	5	5	5	4	4	6	4	5	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	228	379	80	206	272	220	264	272	220	228	69	229	250	585	294	117	126	448	344	573	573	573	573
COOLING VELOCITY (ft/min)	485	379	34	419	521	426	195	521	426	485	57	459	418	493	419	316	103	162	69	140	140	140	140
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	B	B	D	C	C	D	C	A	D	B	A	B	D	C	C	C	D	A	B	D	C

RUN #	25
ROOM NAME	ENS-2
RM LOSS MBH.	0.25
CFM PER RUN HEAT	6
RM GAIN MBH.	0.13
CFM PER RUN COOLING	5
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	45
EQUIVALENT LENGTH	140
TOTAL EFFECTIVE LENGTH	185
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	4
HEATING VELOCITY (ft/min)	69
COOLING VELOCITY (ft/min)	57
OUTLET GRILL SIZE	3X10
TRUNK	D

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	CFM
TRUNK A	189	0.08	7.5	8	x 8 425	TRUNK G	0	0.00	0	0	x 8 0	TRUNK O	0	0.06	0	0	x 8 0	TRUNK O	0
TRUNK B	406	0.08	10	12	x 8 609	TRUNK H	0	0.00	0	0	x 8 0	TRUNK P	0	0.06	0	0	x 8 0	TRUNK P	0
TRUNK C	249	0.06	9	10	x 8 448	TRUNK I	0	0.00	0	0	x 8 0	TRUNK Q	0	0.06	0	0	x 8 0	TRUNK Q	0
TRUNK D	483	0.06	11.5	16	x 8 543	TRUNK J	0	0.00	0	0	x 8 0	TRUNK R	0	0.06	0	0	x 8 0	TRUNK R	0
TRUNK E	0	0.00	0	0	x 8 0	TRUNK K	0	0.00	0	0	x 8 0	TRUNK S	0	0.06	0	0	x 8 0	TRUNK S	0
TRUNK F	0	0.00	0	0	x 8 0	TRUNK L	0	0.00	0	0	x 8 0	TRUNK T	0	0.06	0	0	x 8 0	TRUNK T	0

RETURN AIR #	1	2	3	4	5	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE

TYPE: BARTON 3
SITE NAME: LAMBERT'S LANE PH.2

LO # 82655
WOB

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	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.		TOTAL	169.6	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	169.6	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	90.1	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	AT °F	FACTOR	% LOSS
79.5 CFM	74 F	1.08	0.25

SUPPLEMENTAL FANS PANASONIC

Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
BATH	FV-05-11VK1	50	☒	0.3
ENS-2	FV-05-11VK1	50	☒	0.3
PWD	FV-05-11VK1	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: 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: June-19

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.6 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19669 *Michael O'Rourke* MICHAEL O'ROURKE

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

LO#: 82655

Model: BARTON 3

Builder: GREENPARK HOMES

Date: 6/6/2019

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1166	9	9911
First	1166	10	11555.06
Second	1469	8	11869.52
Third	0	9	0
Fourth	0	9	0
Total:			33,335.6 ft³
Total:			944.0 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.258
SUMMER NATURAL AIR CHANGE RATE	0.084

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

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

$$0.258 \times 262.21 \times 41^\circ\text{C} \times 1.2 = 3346 \text{ W}$$

$$= 11417 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.084 \times 262.21 \times 6^\circ\text{C} \times 1.2 = 161 \text{ W}$$

$$= 550 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

$$80 \text{ CFM} \times 74^\circ\text{F} \times 1.08 \times 0.25 = 1593 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

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

$$80 \text{ CFM} \times 11^\circ\text{F} \times 1.08 \times 0.25 = 236 \text{ Btu/h}$$

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

$$HL_{airrr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve} + HL_{bgcleve})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{cleve})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{cleve})
1	0.5	11,417	6,697	0.852
2	0.3		6,951	0.493
3	0.2		9,687	0.236
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

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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BARTON 3	WOB	BUILDER: GREENPARK HOMES
SFQT: 2635	LO# 82655	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):	33335.6	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:	6.5 ft
LENGTH: 57.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	120.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	50.0 ft

2012 OBC - COMPLIANCE PACKAGE		Compliance Package	
Component		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	-

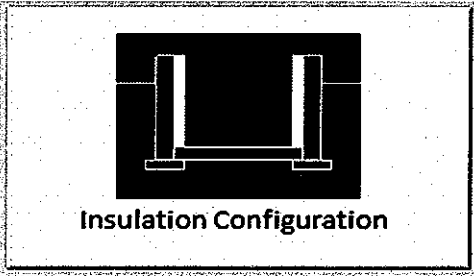
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

*Michael O'Rourke*THIS DOCUMENT IS TO BE USED
ONLY FOR THE PURPOSES OF
EXCEEDING THE PROVISIONS OF
THE ONTARIO BUILDING CODE

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):	6.4	 Insulation Configuration
Floor Width (m):	8.5	
Exposed Perimeter (m):	36.6	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.70	
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):		621

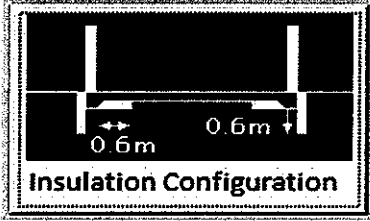
TYPE: BARTON 3
LO# 82655

WOB

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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):	3.4	 Insulation Configuration
Width (m):	8.5	
Exposed Perimeter (m):	15.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		202

TYPE: BARTON 3
LO# 82655

WOB

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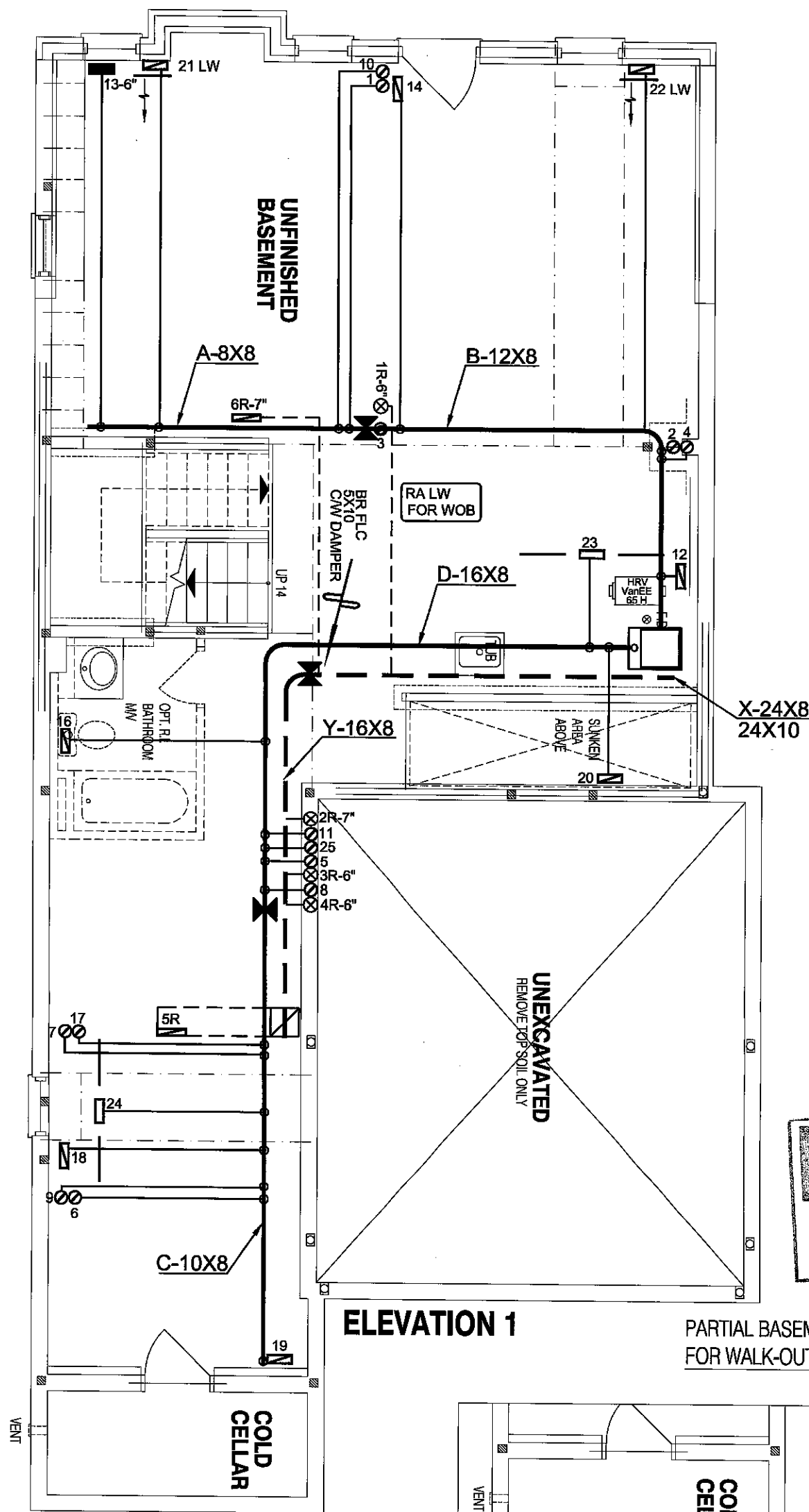
Air Infiltration Residential Load Calculator

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):	8.07			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	944.0			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		881.2 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):	0.258			
Cooling Air Leakage Rate (ACH/H):	0.084			

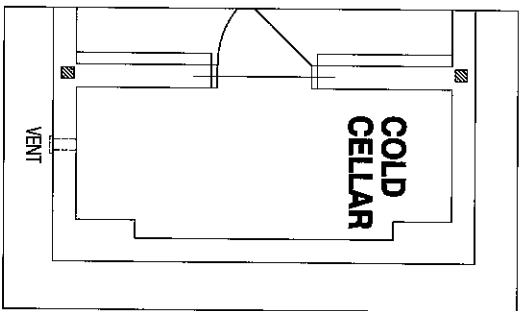
TYPE: BARTON 3
LO# 82655

WOB



CERTIFIED MODEL
PRE-APPROVED
FOR PERMIT APPLICATION AS PER THE
ONTARIO BUILDING CODE
TOWN OF CALEDON BUILDING DIVISION
REVIEWED BY [Signature] (SA)
DATE June 21, 2019
FILE # CMOD-BARTON3-WOB
(ELEVATIONS 1 & 2)

RECEIVED
JUN 10 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO



ELEVATION 2

WOB
CSA-F280-12

ENERGY STAR

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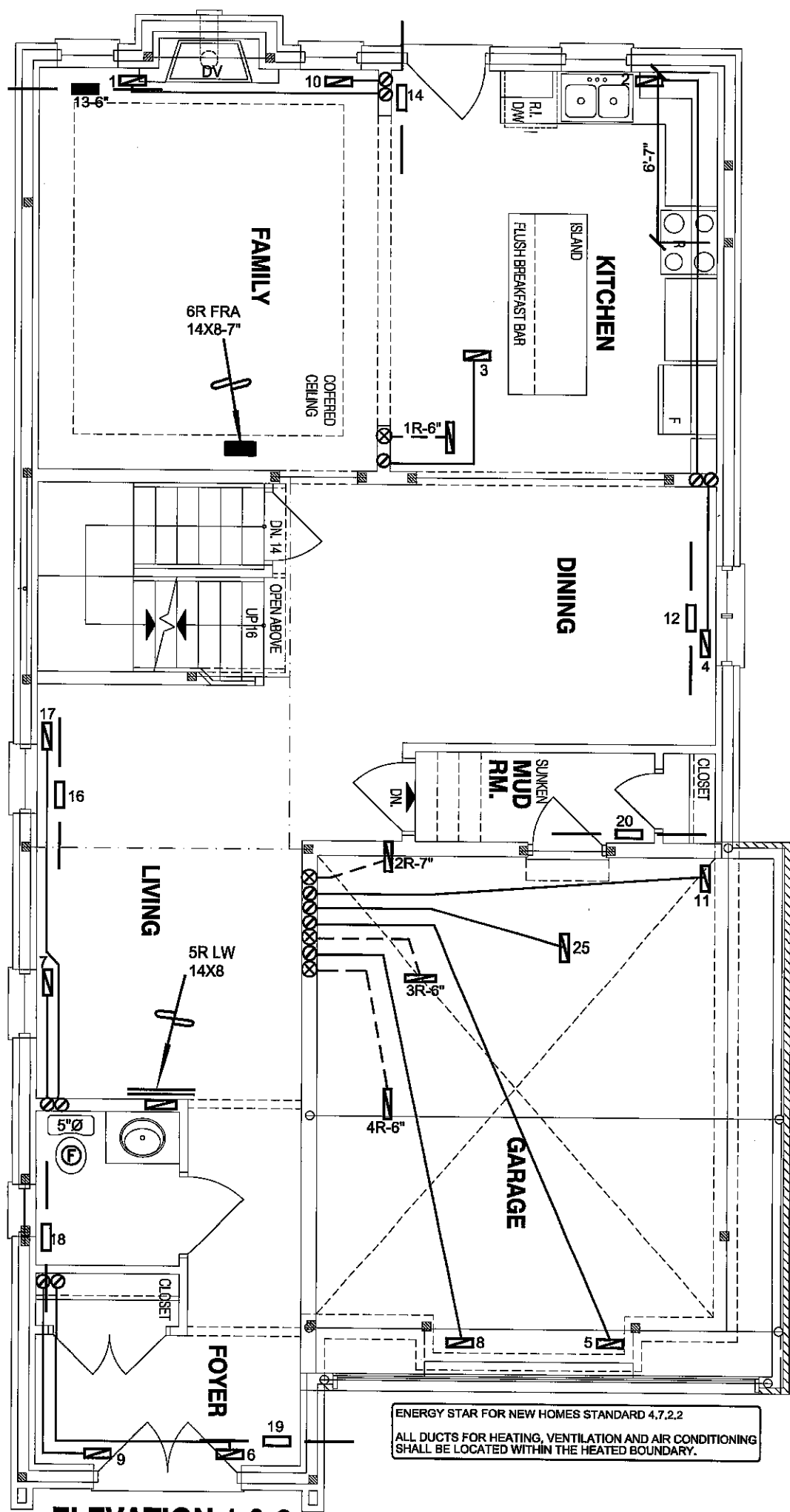
I MICHAEL O'ROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.
[Signature]
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	Date	

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Client GREENPARK HOMES Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO BARTON 3 WOB 2635 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@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 36912 BTU/H UNIT DATA MAKE GOODMAN MODEL GMEC960402BNA INPUT 40 MBTU/H OUTPUT 38.4 MBTU/H COOLING 2.0 TONS FAN SPEED 890 cfm @ 0.6" w.c.	# OF RUNS S/A R/A FANS 3RD FLOOR 2ND FLOOR 13 4 3 1ST FLOOR 7 2 2 BASEMENT 4 1 0 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	Sheet Title BASEMENT HEATING LAYOUT Date JUNE/2019 Scale 3/16" = 1'-0" BCIN# 19669 LO# 82655

APPLICANT COPY

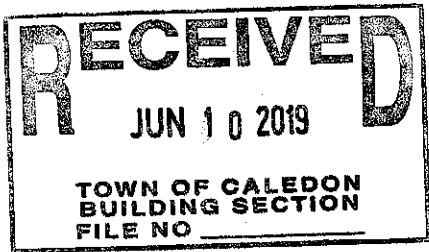


ELEVATION 1 & 2

DUCTS LOCATED IN UNCONDITIONED SPACES SHALL BE SEALED TO A CLASS A SEAL LEVEL IN ACCORDANCE WITH THE SMACNA MANUAL

ENERGY STAR FOR NEW HOMES STANDARD 4.7.2.2
ALL DUCTS FOR HEATING, VENTILATION AND AIR CONDITIONING SHALL BE LOCATED WITHIN THE HEATED BOUNDARY.

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.



WOB

CSA-F280-12

ENERGY STAR

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

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

BARTON 3 WOB 2635 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.

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Sheet Title

FIRST FLOOR
HEATING
LAYOUT

Date

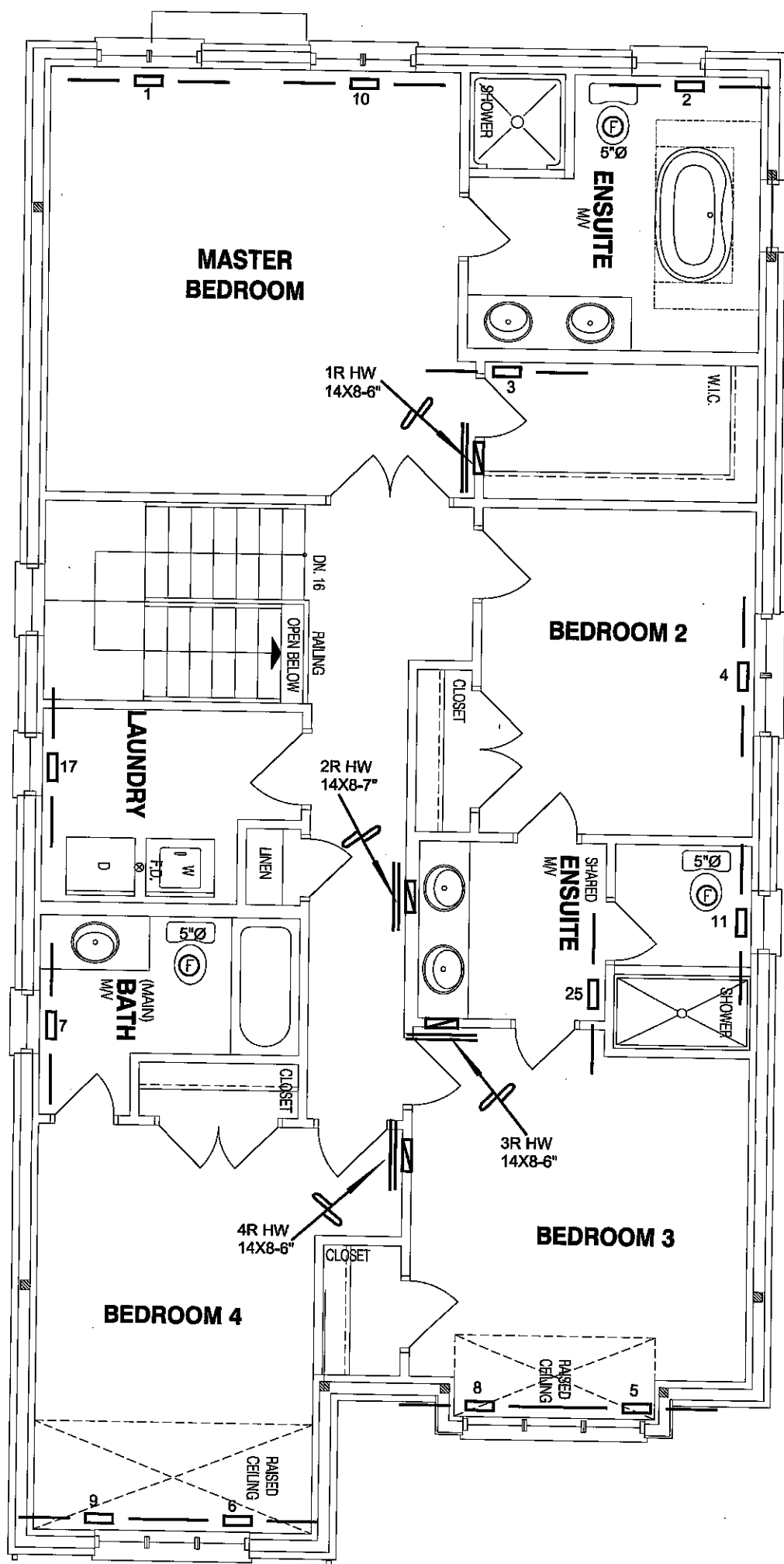
JUNE/2019

Scale

3/16" = 1'-0"

BCIN# 19669

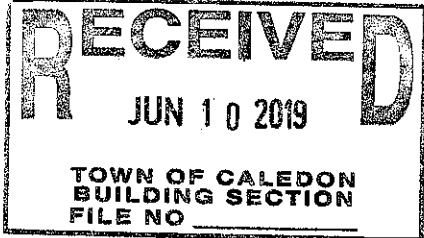
LO# 82655



ELEVATION 1

ELEVATION 2

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.



WOB

CSA-F280-12

ENERGY STAR

HVAC LEGEND						3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	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

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

BARTON 3 WOB 2635 sqft

375 Finley Ave. Suite 202 - Ajax, Ontario
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Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

JUNE/2019

Scale

3/16" = 1'-0"

BCIN# 19669

LO# 82655