

RECEIVED

SEP 26 2019

 SITE NAME: LAMBERT'S LANE PH2
 BUILDER: GREENPARK HOMES

 TOWN OF CALEDON
 BUILDING SECTION 3

DATE: JUL-19

LO# 83994

WINTER NATURAL AIR CHANGE RATE 0.220

SUMMER NATURAL AIR CHANGE RATE 0.072

HEAT LOSS AT °F. 74

HEAT GAIN AT °F. 11

CSA-F280-12

ENERGYSTAR

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2
GRS.WALL AREA	333	198	45	117	252	306	72					54
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	18.6	14.7	0	0	0	167	133	0	0	0	0	0
EAST	18.6	38.5	0	0	0	0	0	0	0	0	0	0
SOUTH	18.6	23.4	6	111	140	0	0	0	40	742	1578	28
WEST	18.6	39.5	32	594	1282	9	187	356	0	0	0	0
SKYL.T.	31.2	99.9	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	295	1037	154	180	633	94	45	158	23	99
NET EXPOSED BSMT WALL ABOVE GR	3.5	-0.5	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	281	352	157	134	168	75	56	70	31	216
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	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	0	0
SUBTOTAL HT LOSS	2084					1135			2227			1885
SUB TOTAL HT GAIN		1713				696			437			1877
LEVEL FACTOR / MULTIPLIER	0.20	0.20				0.20	0.20		0.20	0.20		0.20
AIR CHANGE HEAT LOSS	424					230			193			451
AIR CHANGE HEAT GAIN		110				42			20			121
DUCT LOSS	0					0			0			268
DUCT GAIN	0					0			0			227
HEAT GAIN PEOPLE	240					0			0			272
HEAT GAIN APPLIANCES/LIGHTS	483					0			1			240
TOTAL HT LOSS BTU/H	2519					1365			1146			2946
TOTAL HT GAIN x 1.3 BTU/H	3622					908			1844			3891

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	DIN	FAM	KIT	LN	LAUN	PWD	FOY	MUD	WUB	BAS
GRS.WALL AREA	70	260	200	72	50	200	110							279	973
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	GAIN
NORTH	18.6	14.7	20	371	295	0	0	0	0	0	0	0	0	0	0
EAST	18.6	38.5	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	18.6	23.4	0	0	0	0	0	0	24	445	591	13	241	304	7
WEST	18.6	39.5	0	0	0	26	482	1026	15	278	692	0	0	0	0
SKYL.T.	31.2	99.9	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	50	176	26	224	823	122	165	580	86	176	619	92	59
NET EXPOSED BSMT WALL ABOVE GR	3.5	-0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	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	0	0	0	0	0
SUBTOTAL HT LOSS	547					1305			1352			281		1624	
SUB TOTAL HT GAIN		321				1148			751			382		810	
LEVEL FACTOR / MULTIPLIER	0.30	0.44				0.30	0.44		0.30	0.44		0.30	0.44	0.30	0.44
AIR CHANGE HEAT LOSS	243					580			473			125		722	
AIR CHANGE HEAT GAIN		21				74			48			12		360	
DUCT LOSS	0					0			0			0		0	
DUCT GAIN	0					0			0			0		0	
HEAT GAIN PEOPLE	240					0			0			0		0	
HEAT GAIN APPLIANCES/LIGHTS	483					483			483			0		0	
TOTAL HT LOSS BTU/H	790					1865			1537			406		2345	
TOTAL HT GAIN x 1.3 BTU/H	1074					2216			1667			527		3087	

TOTAL HEAT GAIN BTU/H:

24538

TONS: 2.04

LOSS DUE TO VENTILATION LOAD BTU/H: 1693

STRUCTURAL HEAT LOSS: 36784

TOTAL COMBINED HEAT LOSS BTU/H: 37377

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

 LOT 10
 TYPE: BARTON 3

DATE: Jul-19

GFA: 2635 LO# 83004

 HEATING CFM 890 COOLING CFM 890
 TOTAL HEAT LOSS 35,784 TOTAL HEAT GAIN 24,302
 AIR FLOW RATE CFM 24.87 AIR FLOW RATE CFM 36.62

 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
 FAN SPEED LOW
 MEDLOW
 MEDIUM
 MEDIUM HIGH
 HIGH 890

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

 DESIGN CFM = 890
 CFM @ .8" E.S.P.

TEMPERATURE RISE 40 °F

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"Ø unless noted otherwise on layout.

 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

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	1.26	1.36	0.27	1.15	1.47	1.25	0.93	1.47	1.25	1.26	0.26	0.79	1.89	1.95	1.54	0.67	0.41	2.35	1.17	3.21	3.21	3.21	3.21
CFM PER RUN HEAT	31	34	7	28	37	31	23	37	31	31	6	20	47	49	38	17	10	58	29	80	80	80	80
RM GAIN MBH	1.81	0.91	0.08	1.54	1.95	1.59	0.47	1.95	1.59	1.81	0.13	1.07	2.22	1.67	1.53	1.16	0.26	0.59	0.17	0.43	0.43	0.43	0.43
CFM PER RUN COOLING	86	33	3	57	71	58	17	71	58	66	5	39	81	61	56	42	9	21	6	16	16	16	16
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	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	55	36	38	25	58	69	58	55	64	48	51	5	47	34	28	66	46	46	8	57	25	7	42
EQUIVALENT LENGTH	170	170	120	170	130	150	200	120	180	170	150	130	110	120	130	220	130	120	140	140	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	197	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	0.09	0.13	0.13	0.09
ROUND DUCT SIZE	5	4	4	5	5	5	4	5	5	5	4	4	6	5	5	5	4	5	4	6	5	5	5
HEATING VELOCITY (ft/min)	228	390	80	206	272	228	264	272	228	228	69	229	240	360	279	125	115	426	333	408	587	587	587
COOLING VELOCITY (ft/min)	485	379	34	419	521	426	195	521	426	485	57	447	413	448	411	308	103	154	69	82	117	117	117
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	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	0.26
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

THIS SPACE IS NOT TO BE USED FOR ANYTHING EXCEPT THE PROVISIONS OF THE ONTARIO BUILDING CODE

SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	189	0.08	7.5	8	425
TRUNK B	407	0.08	10	12	611
TRUNK C	250	0.06	9	10	450
TRUNK D	483	0.06	11.5	16	543
TRUNK E	0	0.00	0	0	0
TRUNK F	0	0.00	0	0	0

RETURN AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.06	0	0	0
TRUNK P	0	0.06	0	0	0
TRUNK Q	0	0.06	0	0	0
TRUNK R	0	0.06	0	0	0
TRUNK S	0	0.06	0	0	0
TRUNK T	0	0.06	0	0	0
TRUNK U	0	0.06	0	0	0
TRUNK V	0	0.06	0	0	0
TRUNK W	0	0.06	0	0	0
TRUNK X	890	0.06	14.4	24	668
TRUNK Y	475	0.06	11.4	16	534
TRUNK Z	0	0.06	0	0	0
DROP	890	0.06	14.4	24	534

RETURN AIR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	105	150	85	85	155	155	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	50	50	55	57	45	38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	135	135	175	175	220	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	185	185	230	232	285	176	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.08	0.06	0.06	0.06	0.08	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	6	6.9	6	6	7.5	7	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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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

LO # 83004
LOT 10

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	X 74 F	X 1.08	X 0.25

SUPPLEMENTAL FANS PANASONIC

Location	Model	cfm	HVI	Sones
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 @ 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

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

LO#: 83004

Model: BARTON 3

Builder: GREENPARK HOMES

Date: 7/5/2019

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1166	9	10494
First	1166	10	11660
Second	1469	9	13221
Third	0	9	0
Fourth	0	9	0
Total:			35,375.0 ft³
Total:			1001.7 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.220
SUMMER NATURAL AIR CHANGE RATE	0.072

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

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

0.220 x 278.25 x 41 °C x 1.2 = 3031 W

= 10341 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.072 x 278.25 x 6 °C x 1.2 = 146 W

= 498 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)

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

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{level})
1	0.5	10,341	7,674	0.674
2	0.3		6,982	0.444
3	0.2		10,208	0.203
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 HLairv = 0

THIS STRUCTURE MUST BE CONSTRUCTED TO MEET THE CANADIAN BUILDING CODE REQUIREMENTS

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BARTON 3	LOT 10	BUILDER: GREENPARK HOMES
SFQT: 2635	LO# 83004	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):	35375.0	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:	7.0 ft
LENGTH: 57.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	139.0 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	-

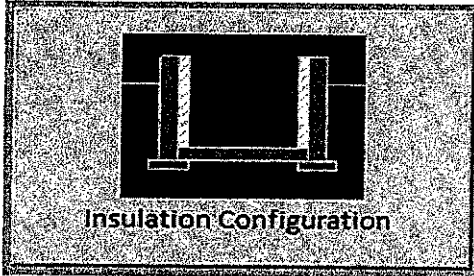
INDIVIDUAL BCIN: 19669

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):	17.4	 Insulation Configuration
Floor Width (m):	8.5	
Exposed Perimeter (m):	42.4	
Wall Height (m):	2.7	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.0	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1242

TYPE: BARTON 3
LO# 83004

LOT 10

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):	6.40		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1001.7		
Air Leakage/Ventilation			
Air Tightness Type:	Energy Star Detached (2.5 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	935.1 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
Diameter (mm):	0	0	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.220		
Cooling Air Leakage Rate (ACH/H):	0.072		

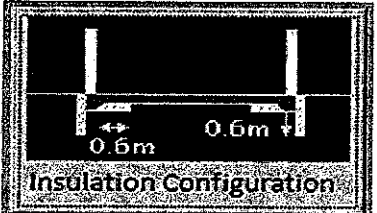
TYPE: BARTON 3
LO# 83004

LOT 10

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

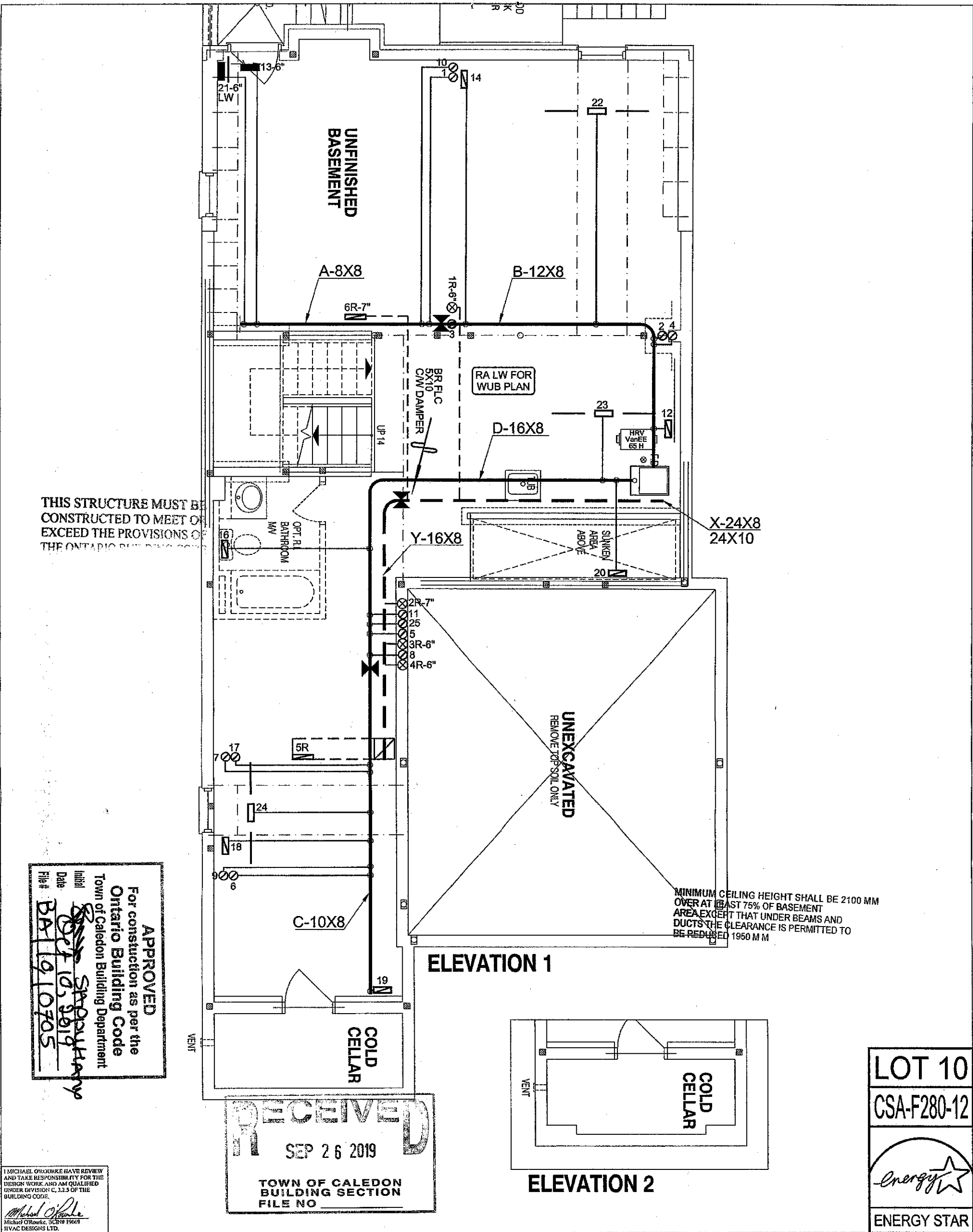
Residential Slab Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

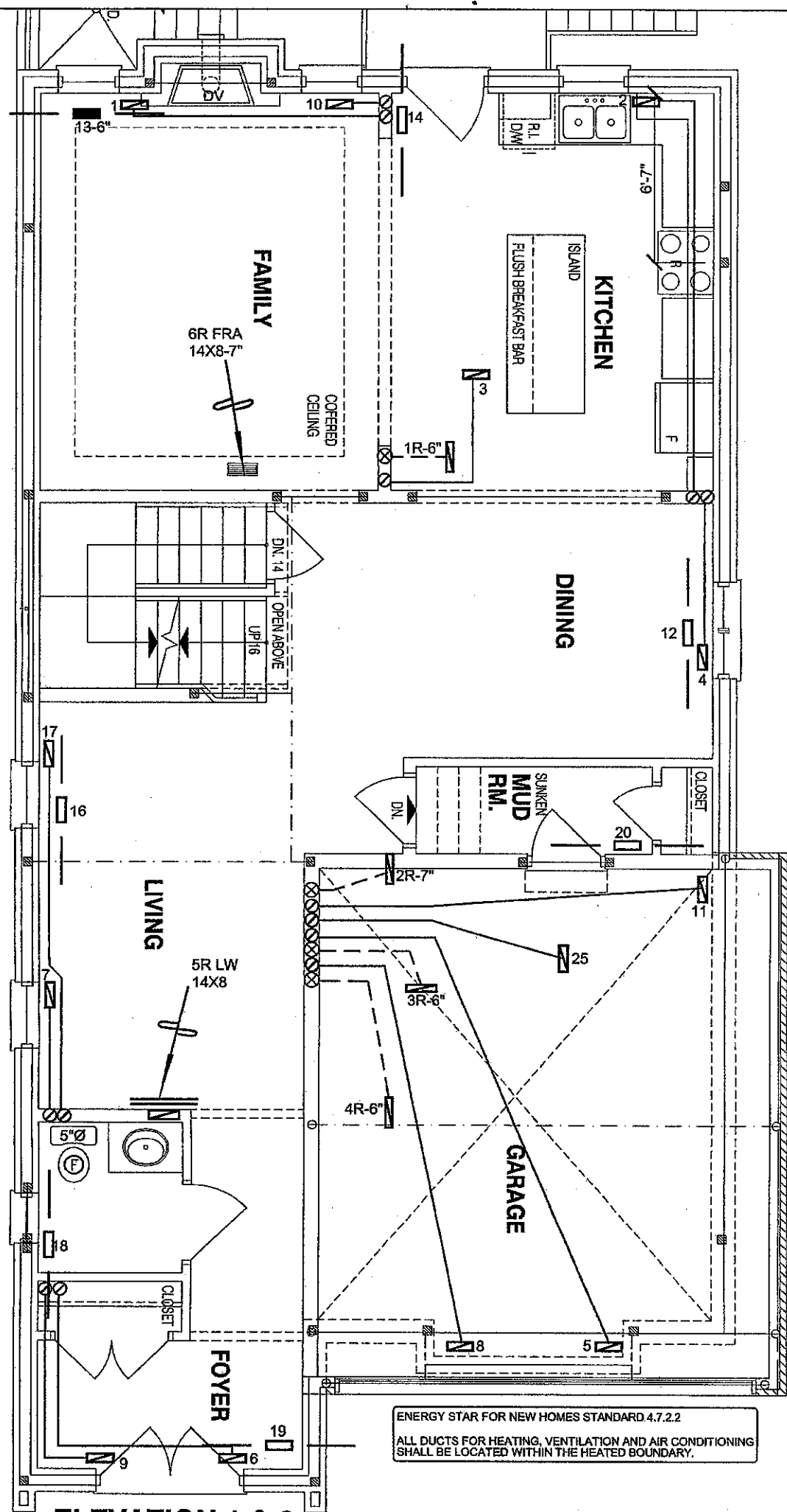
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	0.9	
Width (m):	8.5	
Exposed Perimeter (m):	9.4	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		111

TYPE: BARTON 3
LO# 83004

LOT 10

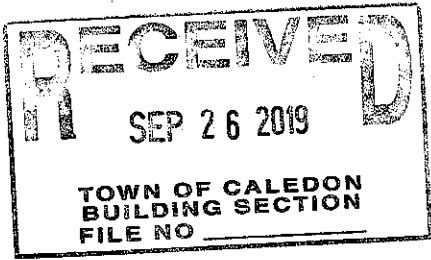


HVAC LEGEND								3.						
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.						
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.						
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		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.			HEAT LOSS 37377 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title BASEMENT HEATING LAYOUT			
Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO						MAKE GOODMAN		3RD FLOOR						
						MODEL GMEC960402BNA		2ND FLOOR					13 4 3	
						INPUT 40 MBTU/H		1ST FLOOR					7 2 2	
LOT 10 BARTON 3			OUTPUT 38.4 MBTU/H		BASEMENT			4 1 0		Date JULY/2019				
			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			Scale 3/16" = 1'-0"						
			FAN SPEED 890 cfm @ 0.6" w.g.					BCIN# 19669						
2635 sqft								LO#		83004				



ELEVATION 1 & 2

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



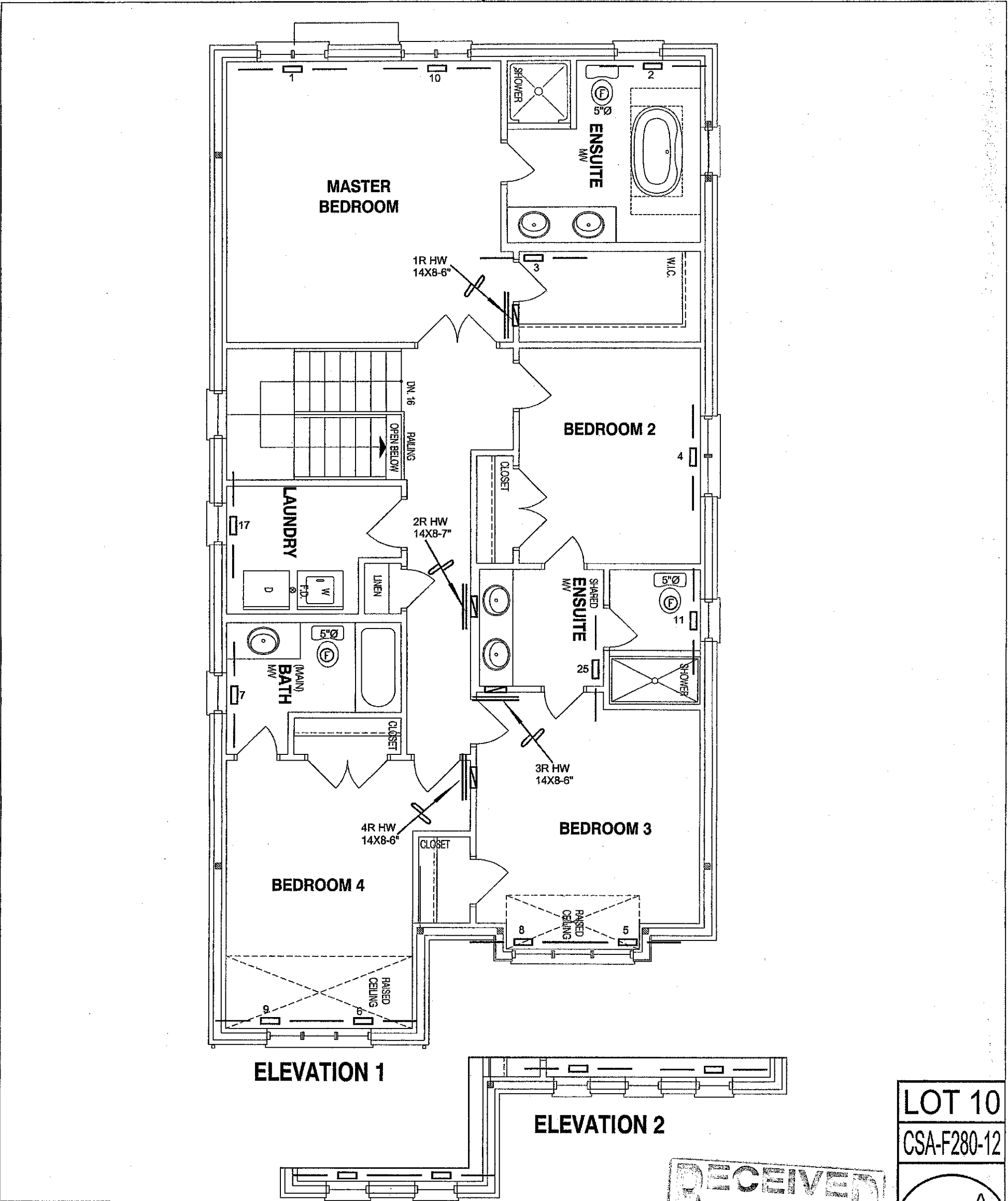
LOT 10
CSA-F280-12
ENERGY STAR

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.

HVAC LEGEND								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x6" 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		 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.	THIS STRUCTURE MUST BE CONSTRUCTED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE	Sheet Title FIRST FLOOR HEATING LAYOUT
Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO				Date JULY/2019
LOT 10 BARTON 3	2635 sqft			Scale 3/16" = 1'-0"
				BCIN# 19669
				LO# 83004



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.

RECEIVED
SEP 26 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.

LOT 10

CSA-F280-12

ENERGY STAR

HVAC LEGEND							
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x6" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x6" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

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Client

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 10
BARTON 3

2635 sqft

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
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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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THE ONTARIO BUILDING CODE

Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

JULY/2019

Scale

3/16" = 1'-0"

BCIN# 19669

LO# 83004