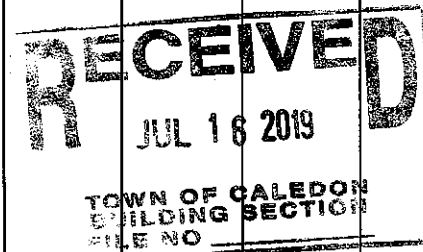


SITE NAME: LAMBERT'S LANE PH.2			TYPE: BARTON 2			GFA: 2550			DATE: Jul-19			WINTER NATURAL AIR CHANGE RATE 0.213			HEAT LOSS AT °F. 74			CSA-F280-12		
BUILDER: GREENPARK HOMES									LOF 81363			SUMMER NATURAL AIR CHANGE RATE 0.069			HEAT GAIN AT °F. 11			ENERGYSTAR		
ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH						ENS-2					
			35	24	6	19	30	36	12						5					
			8	8	8	8	8	8	8						8					
FACTORS																				
GRS.WALL AREA	LOSS	GAIN	283	194	48	154	242	291	97						40					
GLAZING	LOSS	GAIN													LOSS GAIN					
NORTH	18.6	15.1	0	0	0	16	297	242	0	0	0	0	0	0	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	29	538	1181	30	557	1222	0	0	0	0	0	0
SOUTH	18.6	24.1	0	0	0	0	0	0	0	0	0	0	0	0	14	260	337	0	0	0
WEST	18.6	40.7	32	594	1303	14	260	570	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	31.2	99.9	0	0	0	0	0	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	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	251	882	131	164	577	85	48	171	25	138	484	72	213	751	111	261	918	136
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	265	332	148	143	179	80	82	103	46	219	274	122	196	246	109	179	224	100
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	30	80	36	40	107	48	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	226	563	83	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	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1808		1312		273		1055		2177		1806		722					
SUB TOTAL HT GAIN				1581		977		71		436		1521		1505		456				
LEVEL FACTOR / MULTIPLIER	0.20	0.19		0.20	0.19		0.20	0.19		0.20	0.19		0.20	0.19		0.20	0.19			
AIR CHANGE HEAT LOSS			346		251		52		202		416		345		138					
AIR CHANGE HEAT GAIN				94		58		4		26		90		89		27				
DUCT LOSS			0		0		0		0		259		0		0					
DUCT GAIN			0		0		0		0		237		0		0					
HEAT GAIN PEOPLE	240		2	480	0	0	0	0	1	240	1	240	1	240	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				520	0	0	0	0		520		520		520		520		0	0	0
TOTAL HT LOSS BTU/H			2154		1563		326		1257		2853		2151		860			594		
TOTAL HT GAIN x 1.3 BTU/H				3478		1346		98		1589		3391		3081		628		264		

ROOM USE	EXP. WALL	CLG. HT.	FAM	LV/DN	KIT		LAUN	PWD	FOY											BAS
			34	35	30		24	14	28											166
			10	10	10		11	10	10											9
FACTORS																				
GRS.WALL AREA	LOSS	GAIN	337	347	298		264	139	278											1428
GLAZING	LOSS	GAIN																		LOSS GAIN
NORTH	18.6	15.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	18.6	24.1	0	0	0	30	557	722	0	0	0	7	130	168	0	0	0	0	0	0
WEST	18.6	40.7	36	668	1466	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	31.2	99.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	20	493	73	0	0	0	40	986	146	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	301	1059	157	317	1115	165	263	923	137	237	833	124	132	464	69	238	836	124
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	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	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2	10	27	12	0	0	0	0	0	0	20	54	24	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	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	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	0	0	0
SUBTOTAL HT LOSS			1754		1672		1510		594		1822									
SUB TOTAL HT GAIN				1635		897		821		326		237		270						
LEVEL FACTOR / MULTIPLIER	0.30	0.30		0.30	0.30		0.30	0.30		0.30	0.30		0.30	0.30		0.30	0.30			
AIR CHANGE HEAT LOSS			534		509		516		460		19		181		555					
AIR CHANGE HEAT GAIN				97		53		49		0		14		16						
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	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				520	520	520		520		520		520		520		520		0	0	0
TOTAL HT LOSS BTU/H			2288		2181		2211		1970		774		2377					10468		
TOTAL HT GAIN x 1.3 BTU/H				2828		1898		1897		1126		327		372				1389		



TOTAL HEAT GAIN BTU/H: 23937 TONS: 1.99 LOSS DUE TO VENTILATION LOAD BTU/H: 1593 STRUCTURAL HEAT LOSS: 34025 TOTAL COMBINED HEAT LOSS BTU/H: 35618

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

TYPE: BARTON 2

DATE: May-19

GFA: 2550

LO#: 81363

HEATING CFM 890 COOLING CFM 890
TOTAL HEAT LOSS 35,969 TOTAL HEAT GAIN 24,021
AIR FLOW RATE CFM 24.74 AIR FLOW RATE CFM 37.05

furnace pressure 0.6
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 dif press. loss 0.03
min adjusted pressure s/a 0.15

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

#GOODMAN
GMCC960402BNA 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 @ 0.5" E.S.P.

TEMPERATURE RISE 40 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	6	4
R/A	0	0	3	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'12" 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	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	MBR	ENS-2	FAM	LV/DN	KIT	BED-4	BATH	LAUN	PWD	FOY	BAS	BAS	BAS	BAS	BAS	BAS
RM LOSS MBH	1.12	1.62	0.34	1.30	1.47	1.12	0.44	1.47	1.12	0.61	2.32	2.22	2.24	1.12	0.44	1.99	0.79	2.41	2.96	2.96	2.96	2.96	2.96	2.96
CFM PER RUN HEAT	28	40	8	32	36	28	11	36	28	15	57	55	55	28	11	49	19	60	73	73	73	73	73	73
RM GAIN MBH	1.75	1.36	0.10	1.60	1.70	1.54	0.32	1.70	1.75	0.27	2.93	1.90	1.81	1.54	0.32	1.13	0.33	0.37	0.41	0.41	0.41	0.41	0.41	0.41
CFM PER RUN COOLING	65	50	4	59	63	57	12	63	65	10	109	70	67	57	12	42	12	14	15	15	15	15	15	15
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.15	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	34	55	21	42	43	57	49	39	48	39	43	6	33	53	45	35	33	33	24	42	12	39	39	39
EQUIVALENT LENGTH	150	140	170	130	150	160	150	140	140	150	120	150	140	190	150	130	140	120	130	110	140	120	120	120
TOTAL EFFECTIVE LENGTH	184	195	191	172	193	217	199	179	186	189	163	156	173	243	195	165	173	153	164	152	152	159	159	159
ADJUSTED PRESSURE	0.09	0.09	0.09	0.1	0.09	0.08	0.09	0.1	0.09	0.09	0.09	0.11	0.1	0.07	0.09	0.1	0.1	0.11	0.11	0.11	0.11	0.11	0.11	0.11
ROUND DUCT SIZE	5	5	4	5	5	5	4	5	5	4	6	5	5	5	4	4	4	5	5	5	5	5	5	5
HEATING VELOCITY (f/min)	206	294	92	235	264	206	126	264	206	172	291	404	411	206	126	562	218	441	536	536	536	536	536	536
COOLING VELOCITY (f/min)	477	367	46	433	463	419	138	463	477	115	556	514	492	419	138	482	138	103	110	110	110	110	110	110
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	B	B	B	D	C	D	D	B	D	A	B	B	C	D	A	C	C	B	A	D	C	C	C

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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 (f/min)	COOLING VELOCITY (f/min)	OUTLET GRILL SIZE	TRUNK
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SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (f/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (f/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (f/min)
TRUNK A	179	0.09	7.1	8	403	TRUNK G	0	0.00	0	0	0	TRUNK Q	0	0.06	0	0	8
TRUNK B	499	0.09	10.5	14	642	TRUNK H	0	0.00	0	0	0	TRUNK R	0	0.06	0	0	8
TRUNK C	208	0.07	8.1	8	468	TRUNK I	0	0.00	0	0	0	TRUNK S	0	0.06	0	0	8
TRUNK D	390	0.07	10.2	12	585	TRUNK J	0	0.00	0	0	0	TRUNK T	0	0.06	0	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	0	TRUNK U	0	0.06	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK V	0	0.06	0	0	8

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	175	125	120	155	175	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	42	40	43	35	36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	185	185	225	230	190	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	227	225	268	265	226	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.07	0.06	0.06	0.07	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	0.10	0.10	0.10	0.10	0.10
ROUND DUCT SIZE	7.5	6.7	6.8	7.5	7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	6.3	6.3	6.3	6.3	6.3
INLET GRILL SIZE	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8
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

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

LO#: 81363

Model: BARTON 2

Builder: GREENPARK HOMES

Date: 7/12/2019

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1137	9	9778.2
First	1137	10	11279.04
Second	1413	8	11421.279
Third	0	9	0
Fourth	0	9	0
Total:			32,478.5 ft³
Total:			919.7 m³

WINTER NATURAL AIR CHANGE RATE	0.213
SUMMER NATURAL AIR CHANGE RATE	0.069

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
6.2.6 Sensible Gain due to Air Leakage

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

$$0.213 \times 255.47 \times 41^\circ\text{C} \times 1.2 = 2690 \text{ W}$$

$$= 9180 \text{ Btu/h}$$

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

$$0.069 \times 255.47 \times 6^\circ\text{C} \times 1.2 = 129 \text{ W}$$

$$= 441 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

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

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

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

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

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

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

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HLcleve)	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLcleve)
1	0.5	9,180	5,878	0.781
2	0.3		9,046	0.304
3	0.2		9,607	0.191
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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TYPE: BARTON 2
SITE NAME: LAMBERT'S LANE PH.2

LO # 81363

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	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
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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	February-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: 19569 *Michael O'Rourke* MICHAEL O'ROURKE

THIS STRUCTURE MUST BE
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HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** BARTON 2**BUILDER:** GREENPARK HOMES**SFQT:** 2550**LO#** 81363**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):	33300.0	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:	6.6 ft
LENGTH: 54.0 ft	WIDTH: 29.0 ft	EXPOSED PERIMETER:	166.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component**

Ceiling with Attic Space Minimum RSI (R)-Value
Ceiling Without Attic Space Minimum RSI (R)-Value
Exposed Floor Minimum RSI (R)-Value
Walls Above Grade Minimum RSI (R)-Value
Basement Walls Minimum RSI (R)-Value
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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value
Windows and Sliding Glass Doors Maximum U-Value
Skylights Maximum U-Value
Space Heating Equipment Minimum AFUE
HRV Minimum Efficiency
Domestic Hot Water Heater Minimum EF

CONSTRUCTED TO MEET OR
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THE ONTARIO BUILDING CODE

**Compliance Package
ENERGYSTAR**

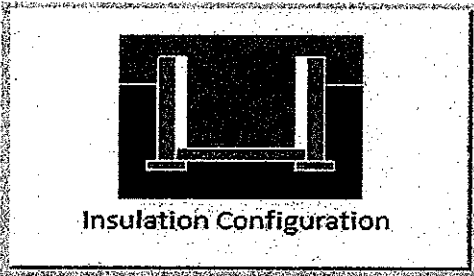
Nominal	Min. Eff.
60	59.20
31	27.70
31	29.80
R22+R5	21.10
20	21.12
-	-
10	10
10	11.13
ZONE 2	-
ZONE 2	-
0.96	-
75%	-
0.9	-

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):	16.5	 Insulation Configuration
Floor Width (m):	8.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.6	
Depth Below Grade (m):	2.01	
Window Area (m ²):	1.4	
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):		1496

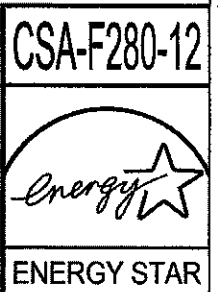
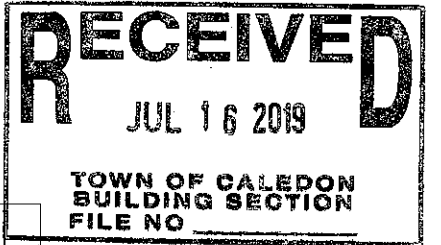
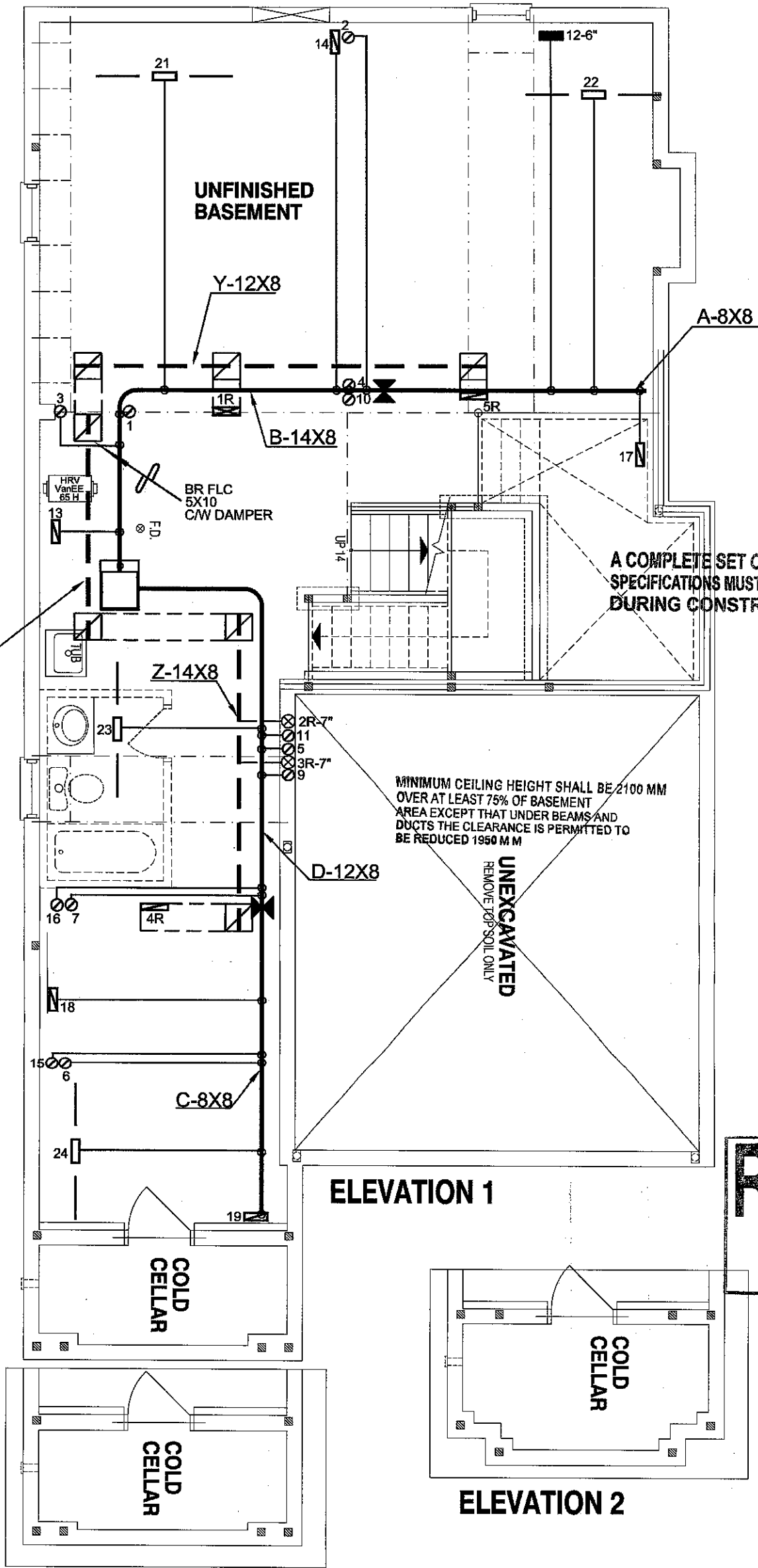
TYPE: BARTON 2
LO# 81363CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE

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):	6.28			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	943.0			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	880.2 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):	0.217			
Cooling Air Leakage Rate (ACH/H):	0.071			

TYPE: BARTON 2
LO# 81363



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

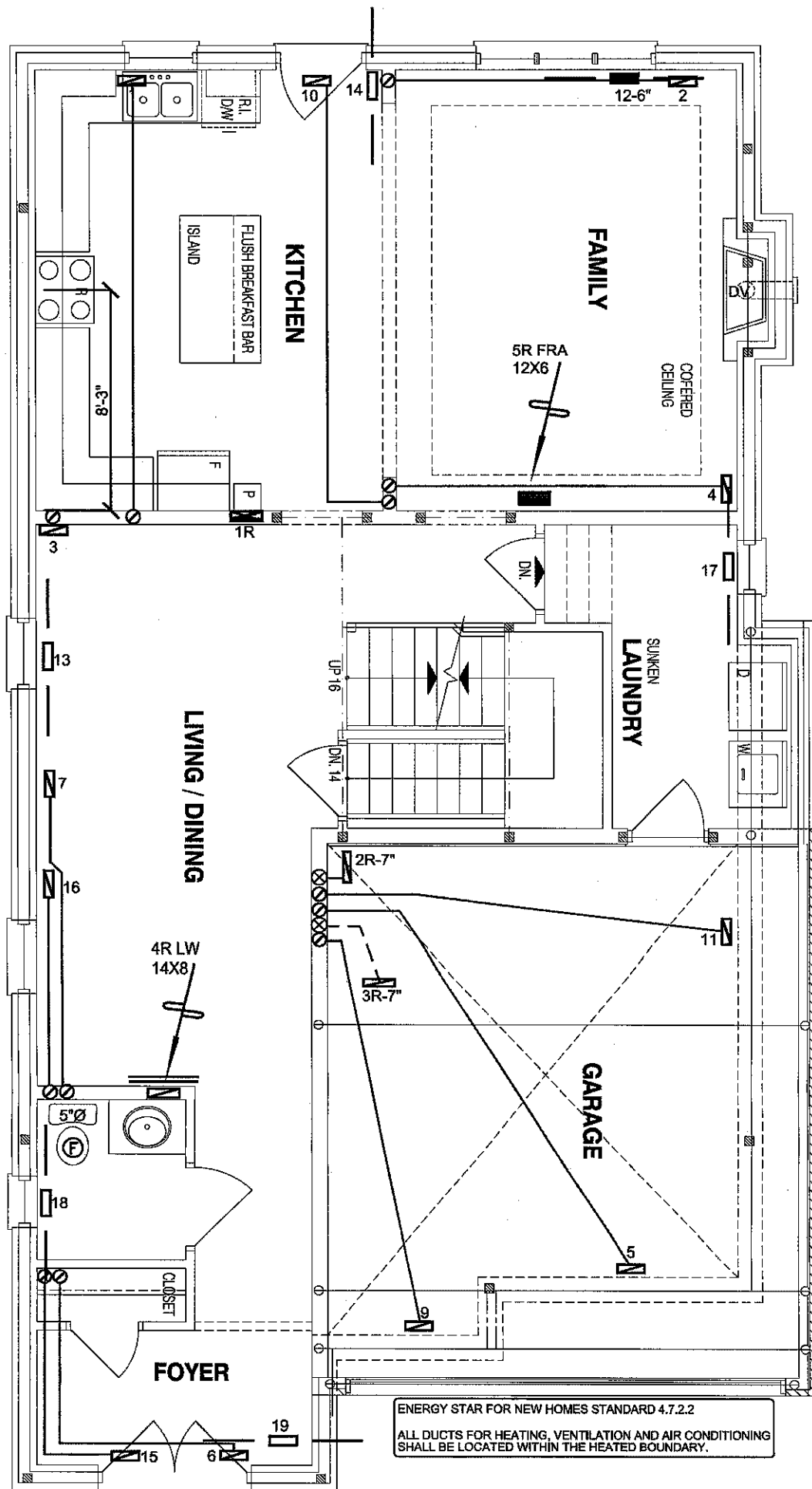
Michael O'Rourke, B.C.N. 19669

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.	ELEV 3 ADDED
	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
								REVISIONS	

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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 35618 BTU/H		# OF RUNS S/A R/A FANS				Sheet Title	
GREENPARK HOMES			UNIT DATA		3RD FLOOR				BASEMENT HEATING LAYOUT	
Project Name			MAKE GOODMAN		2ND FLOOR 12 3 3				Date FEB/2019	
LAMBERTS LANE HOME CORP PH 2			MODEL GMEC960402BNA		1ST FLOOR 6 2 2				Scale 3/16" = 1'-0"	
CALEDON, ONTARIO			INPUT 40 MBTU/H		BASEMENT 4 1 0				BCIN# 19669	
BARTON 2		OUTPUT 38.4 MBTU/H		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				LO# 81363		
2550 sqft		COOLING 2.0 TONS								
		FAN SPEED 890 cfm @ 0.6" w.c.								



ELEVATION 1 & 2 & 3

CERTIFIED MODEL
PRE-APPROVED
FOR PERMIT APPLICATION AS PER THE
ONTARIO BUILDING CODE
TOWN OF CALEDON BUILDING DIVISION
REVIEWED BY *[Signature]* SA
DATE *Aug 07, 2019*
FILE # *CMO1-BARTON 2*

(ELEVATION 1, 2, & 3)

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JUL 16 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

CSA-F280-12

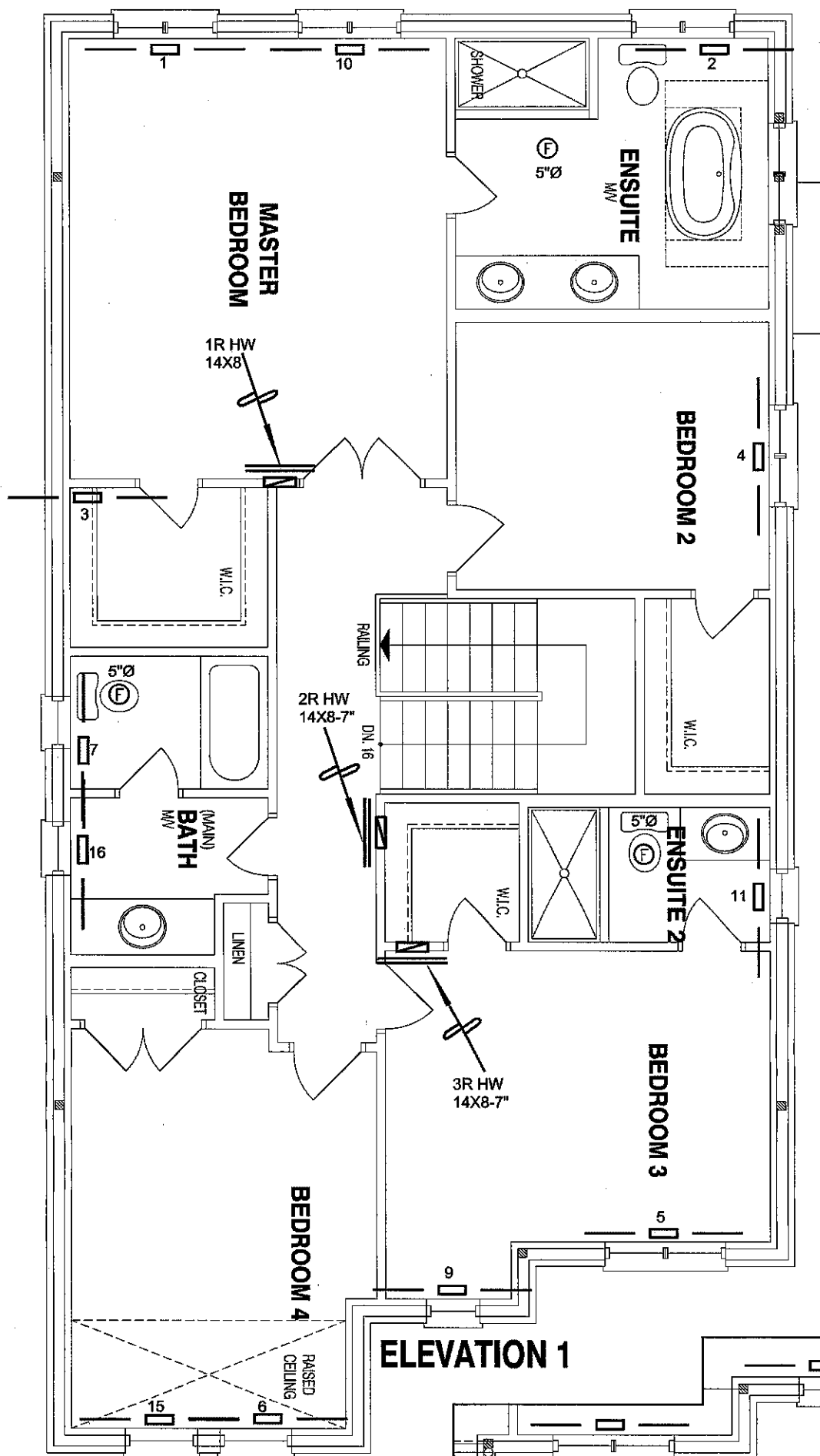
ENERGY STAR

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

HVAC LEGEND						3.		
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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	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 FEB/2019	Scale 3/16" = 1'-0"
BARTON 2 2550 sqft		BCIN# 19669			
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.		LO#		81363	

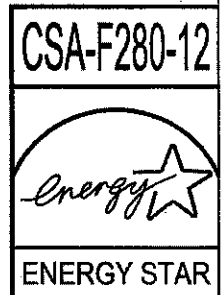


ELEVATION 1

ELEVATION 2

ELEVATION 3

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JUL 16 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO



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.

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Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO				Date FEB/2019	Scale 3/16" = 1'-0"	
BARTON 2 2550 sqft				BCIN# 19669	LO# 81363	