

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

SITE NAME: LAMBERT'S LANE PH.2

BUILDER: GREENPARK HOMES

TYPE: BARTON 2 WOB

GFA: 2550

DATE: Jul-19

LO# 82659

WINTER NATURAL AIR CHANGE RATE 0.259

HEAT LOSS AT °F. 74

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.084

HEAT GAIN AT °F. 11

ENERGYSTAR

ROOM USE	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2
EXP. WALL	35	24	6	19	30	36	12	5
CLG. HT.	8	8	8	8	8	8	8	8
FACTORS		283	194	48	154	242	291	97
GRS.WALL AREA	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	18.6	15.1	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0
SOUTH	18.6	24.1	0	0	0	0	0	0
WEST	18.6	40.7	32	594	1303	14	260	570
SKYLT.	31.2	99.9	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	251	882	131	164	577	85
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	265	332	148	143	179	80
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0
SUBTOTAL HT LOSS			1808		1312	273		1055
SUB TOTAL HT GAIN			1581	977	71		436	1521
LEVEL FACTOR / MULTIPLIER	0.20	0.23	0.20	0.23	0.20	0.23	0.20	0.23
AIR CHANGE HEAT LOSS			420		305		63	
AIR CHANGE HEAT GAIN			102		63		5	
DUCT LOSS			0		0		0	
DUCT GAIN			0		0		0	
HEAT GAIN PEOPLE	240		480		0		0	
HEAT GAIN APPLIANCES/LIGHTS			520		0		0	
TOTAL HT LOSS BTU/H			2228		1617		337	
TOTAL HT GAIN x 1.3 BTU/H			3489		1353		98	

ROOM USE	FAM	LVDN	KIT	LAUN	PWD	FOY	WOB	BAS
EXP. WALL	34	35	30	24	14	28	39	127
CLG. HT.	10	10	10	11	10	10	9	9
FACTORS		337	347	296	264	139	278	335
GRS.WALL AREA	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	18.6	15.1	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0
SOUTH	18.6	24.1	0	0	0	0	0	0
WEST	18.6	40.7	36	688	1466	0	0	0
SKYLT.	31.2	99.9	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	301	1059	157	317	1115	165
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.2	10	27	12	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0
SUBTOTAL HT LOSS			1754		1672		1695	
SUB TOTAL HT GAIN			1635	897	821		1510	326
LEVEL FACTOR / MULTIPLIER	0.30	0.37	0.30	0.37	0.30	0.37	0.30	0.37
AIR CHANGE HEAT LOSS			649		619		627	
AIR CHANGE HEAT GAIN			105		57		53	
DUCT LOSS			0		0		0	
DUCT GAIN			0		0		0	
HEAT GAIN PEOPLE	240		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS			520		520		520	
TOTAL HT LOSS BTU/H			2403		2290		2322	
TOTAL HT GAIN x 1.3 BTU/H			2938		1984		1812	

RECEIVED
 JUL 16 2019
 TOWN OF CALEDON
 BUILDING SECTION
 FILE NO.

TOTAL HEAT GAIN BTU/H: 24842

TONS: 2.07

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 35582

TOTAL COMBINED HEAT LOSS BTU/H: 37175

Michael O'Rourke

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

TYPE: BARTON 2 W/OB

DATE: Jun-19

GFA: 2550 LO# 82659

HEATING CFM 890 COOLING CFM 890
 TOTAL HEAT LOSS 37,280 TOTAL HEAT GAIN 24,873
 AIR FLOW RATE CFM 23.87 AIR FLOW RATE CFM 35.78

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 @ .6" 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"Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	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	BATH	BED-3	MBR	ENS-2	FAM	LVDN	KIT	BED-4	BATH	LAUN	PWD	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.16	1.67	0.35	1.34	1.52	1.15	0.46	1.52	1.16	0.63	2.44	2.33	2.36	1.15	0.46	2.09	0.83	2.53	3.04	3.04	3.04	3.04
CFM PER RUN HEAT	28	40	8	32	36	28	11	36	28	15	58	56	56	28	11	50	20	60	72	72	72	72
RM GAIN MBH.	1.75	1.36	0.10	1.60	1.71	1.54	0.32	1.71	1.75	0.27	2.94	1.91	1.81	1.54	0.32	1.13	0.33	0.38	0.60	0.60	0.60	0.60
CFM PER RUN COOLING	63	49	4	57	61	55	11	61	63	10	105	68	65	55	11	40	12	13	22	22	22	22
ADJUSTED PRESSURE	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	0.17
ACTUAL DUCT LGH.	34	55	21	42	43	57	49	39	46	39	43	6	33	53	45	35	33	33	36	54	12	39
EQUIVALENT LENGTH	150	140	170	130	150	160	150	140	140	150	120	150	140	190	150	130	140	120	140	120	140	120
TOTAL EFFECTIVE LENGTH	184	195	191	172	193	217	199	179	186	189	163	156	173	243	195	165	173	153	176	174	152	159
ADJUSTED PRESSURE	0.09	0.09	0.09	0.1	0.09	0.08	0.09	0.1	0.09	0.09	0.1	0.11	0.1	0.07	0.09	0.1	0.1	0.11	0.1	0.1	0.11	0.11
ROUND DUCT SIZE	5	5	4	5	5	5	4	5	5	4	6	5	5	5	4	5	4	5	5	5	5	5
HEATING VELOCITY (ft/min)	206	294	92	235	264	206	126	264	206	172	296	411	411	206	126	367	229	441	529	529	529	529
COOLING VELOCITY (ft/min)	463	360	46	419	448	404	126	448	463	115	535	499	477	404	126	294	138	95	162	162	162	162
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
TRUNK	B	B	B	B	D	C	D	D	B	D	A	B	B	C	D	A	C	C	B	A	D	C

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
MBR	1.16	28	1.75	63	0.17	34	150	184	0.09	5	206	463	3X10	B
ENS	1.67	40	1.36	49	0.17	55	140	195	0.09	5	294	360	3X10	B
WIC	0.35	8	0.10	4	0.17	21	170	191	0.09	4	92	46	3X10	B
BED-2	1.34	32	1.60	57	0.17	42	130	172	0.1	5	235	419	3X10	B
BED-3	1.52	36	1.71	61	0.17	43	150	193	0.09	5	264	448	3X10	D
BED-4	1.15	28	1.54	55	0.17	57	160	217	0.08	5	206	404	3X10	D
BATH	0.46	11	0.32	11	0.17	49	150	199	0.09	4	126	126	3X10	D
BED-3	1.52	36	1.71	61	0.17	39	140	179	0.1	5	264	448	3X10	D
MBR	1.16	28	1.75	63	0.17	46	140	186	0.09	5	206	463	3X10	B
ENS-2	0.63	15	0.27	10	0.17	43	150	189	0.09	4	172	115	3X10	D
FAM	2.44	58	2.94	105	0.16	39	120	156	0.1	6	411	499	4X10	A
LVDN	2.33	56	1.91	68	0.17	43	150	173	0.11	5	296	535	3X10	B
KIT	2.36	56	1.81	65	0.17	33	140	173	0.1	5	411	477	3X10	B
BED-4	1.15	28	1.54	55	0.17	53	190	243	0.07	5	206	404	3X10	C
BATH	0.46	11	0.32	11	0.17	45	150	195	0.09	4	126	126	3X10	D
LAUN	2.09	50	1.13	40	0.17	35	130	165	0.1	5	367	294	3X10	A
PWD	0.83	20	0.33	12	0.17	33	140	173	0.1	4	229	138	3X10	C
FOY	2.53	60	0.38	13	0.17	33	120	153	0.11	5	441	95	3X10	C
BAS	3.04	72	0.60	22	0.17	36	140	176	0.1	5	529	162	3X10	B
BAS	3.04	72	0.60	22	0.17	54	120	174	0.1	5	529	162	3X10	A
BAS	3.04	72	0.60	22	0.17	12	140	152	0.11	5	529	162	3X10	D
BAS	3.04	72	0.60	22	0.17	39	120	159	0.11	5	529	162	3X10	C

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SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	180	0.10	7	8	405
TRUNK B	500	0.09	10.5	14	643
TRUNK C	208	0.07	8.1	8	468
TRUNK D	389	0.07	10.2	12	584
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 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
TRUNK O	0	0.06	0	0	8
TRUNK P	0	0.06	0	0	8
TRUNK Q	0	0.06	0	0	8
TRUNK R	0	0.06	0	0	8
TRUNK S	0	0.06	0	0	8
TRUNK T	0	0.06	0	0	8
TRUNK U	0	0.06	0	0	8
TRUNK V	0	0.06	0	0	8
TRUNK W	0	0.06	0	0	8
TRUNK X	540	0.06	12	16	8
TRUNK Y	350	0.06	10.2	12	8
TRUNK Z	400	0.06	10.7	14	8
DROP	890	0.06	14.4	24	10

RETURN AIR #

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	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	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	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	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	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	14.80	14.80	14.80	14.80	14.80	14.80
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	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	0	0	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	X
INLET GRILL SIZE	14	14	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: BARTON 2 WOB LO # 82659
 SITE NAME: LAMBERT'S LANE PH.2

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

165 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

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

1 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

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																		
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																		
LO#: 82659	Model: BARTON 2 WOB	Builder: GREENPARK HOMES	Date: 7/12/2019																																																															
Volume Calculation			Air Change & Delta T Data																																																															
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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																																																															
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ <p>0.259 x 255.47 x 41 °C x 1.2 = 3270 W = 11156 Btu/h</p>			$HG_{sairb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ <p>0.084 x 255.47 x 6 °C x 1.2 = 158 W = 537 Btu/h</p>																																																															
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																															
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h</p>			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ <p>80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h</p>																																																															
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																		
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{ (HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel}) \}$																																																																		
Level	Level Factor (LF)	HLairve 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	11,156	5,448	1.024																																																														
2	0.3		9,046	0.370																																																														
3	0.2		9,607	0.232																																																														
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: BARTON 2 WOB BUILDER: GREENPARK HOMES
 SFQT: 2550 LO# 82659 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 (ft ³):	33300.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	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:	127.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	39.0 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	-

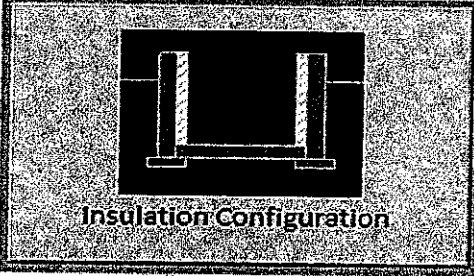
THIS STRUCTURE MUST BE
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INDIVIDUAL BCIN: 19669
 MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

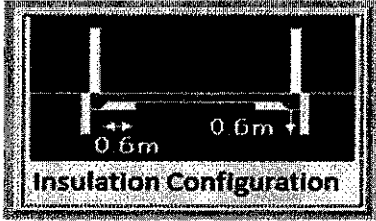
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 <p style="text-align: center;">Insulation Configuration</p>
Floor Width (m):	8.8	
Exposed Perimeter (m):	38.7	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.67	
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):	595	

TYPE: BARTON 2 WOB
 LO# 82659

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Residential Slab on Grade 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	 <p style="text-align: center; font-weight: bold;">Insulation Configuration</p>
Width (m):	8.8	
Exposed Perimeter (m):	11.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	147	

TYPE: BARTON 2 WOB
 LO# 82659

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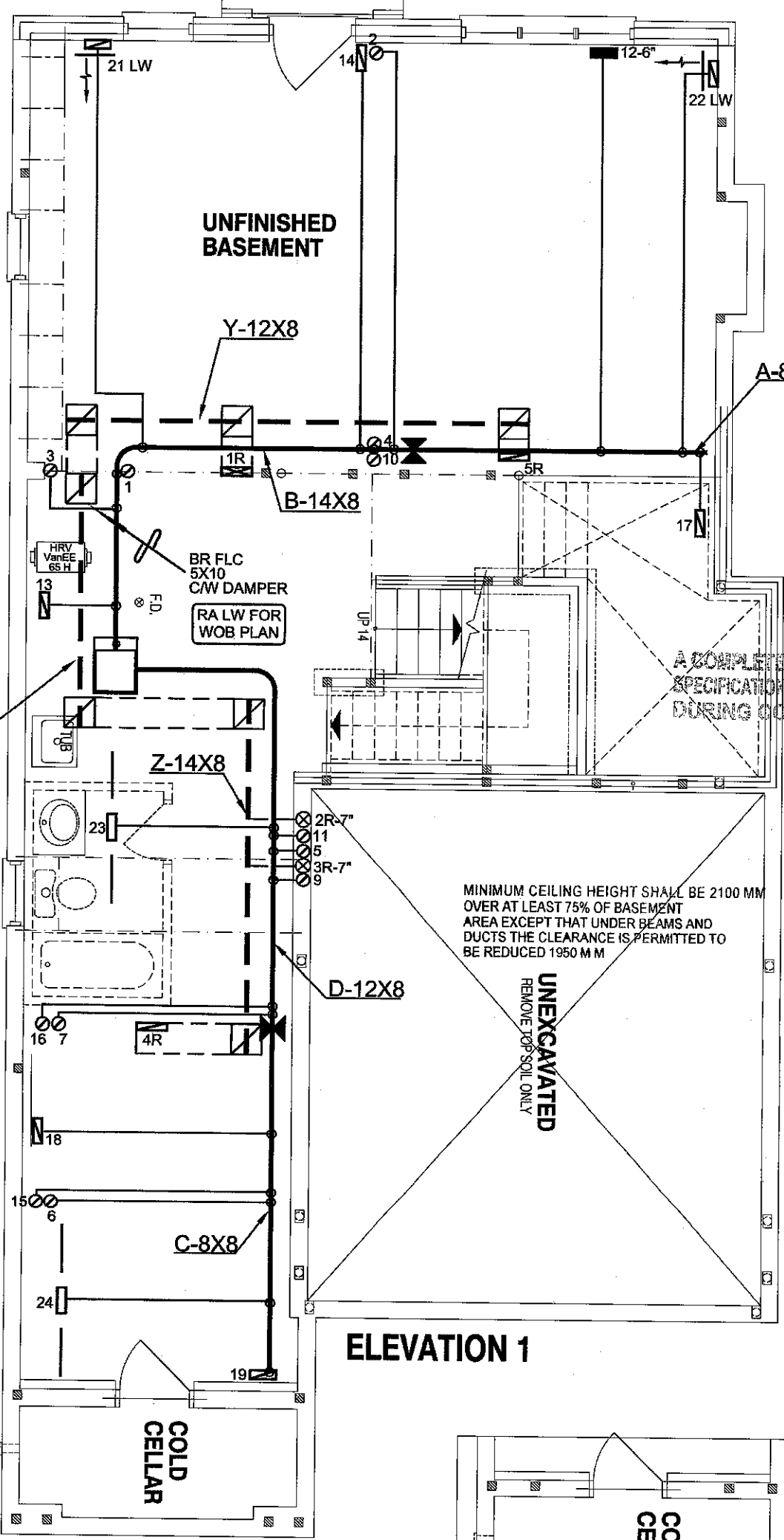
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

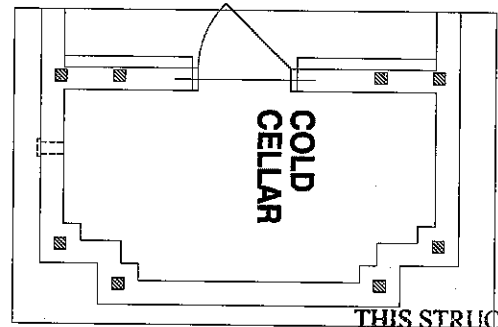
Weather Station Description			
Province:	Ontario		
Region:	Brampton		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	8.29		
Building Configuration			
Type:	Detached		
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):	0.263		
Cooling Air Leakage Rate (ACH/H):	0.085		

TYPE: BARTON 2 WOB
LO# 82659

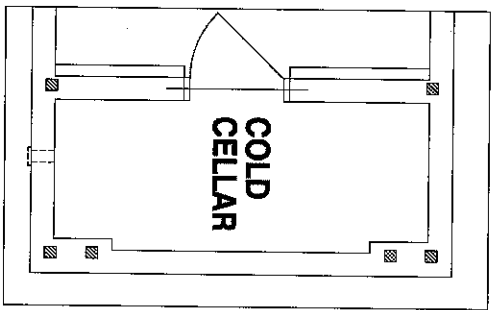
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ELEVATION 1



ELEVATION 2



ELEVATION 3

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 JUL 16 2019
 TOWN OF CALEDON
 BUILDING SECTION
 FILE NO

WOB
 CSA-F280-12

 ENERGY STAR

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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							REVISIONS	
— □ —	SUPPLY AIR GRILLE	—	6" SUPPLY AIR BOOT ABOVE	—	14"x8" RETURN AIR GRILLE	—	RETURN AIR STACK ABOVE	3.
— ■ —	SUPPLY AIR GRILLE 6" BOOT	○	SUPPLY AIR STACK FROM 2nd FLOOR	—	30"x8" RETURN AIR GRILLE	—	RETURN AIR STACK 2nd FLOOR	2.
—	SUPPLY AIR BOOT ABOVE	●	6" SUPPLY AIR STACK 2nd FLOOR	—	FRA- FLOOR RETURN AIR GRILLE	—	REDUCER	1.
								No. Description Date

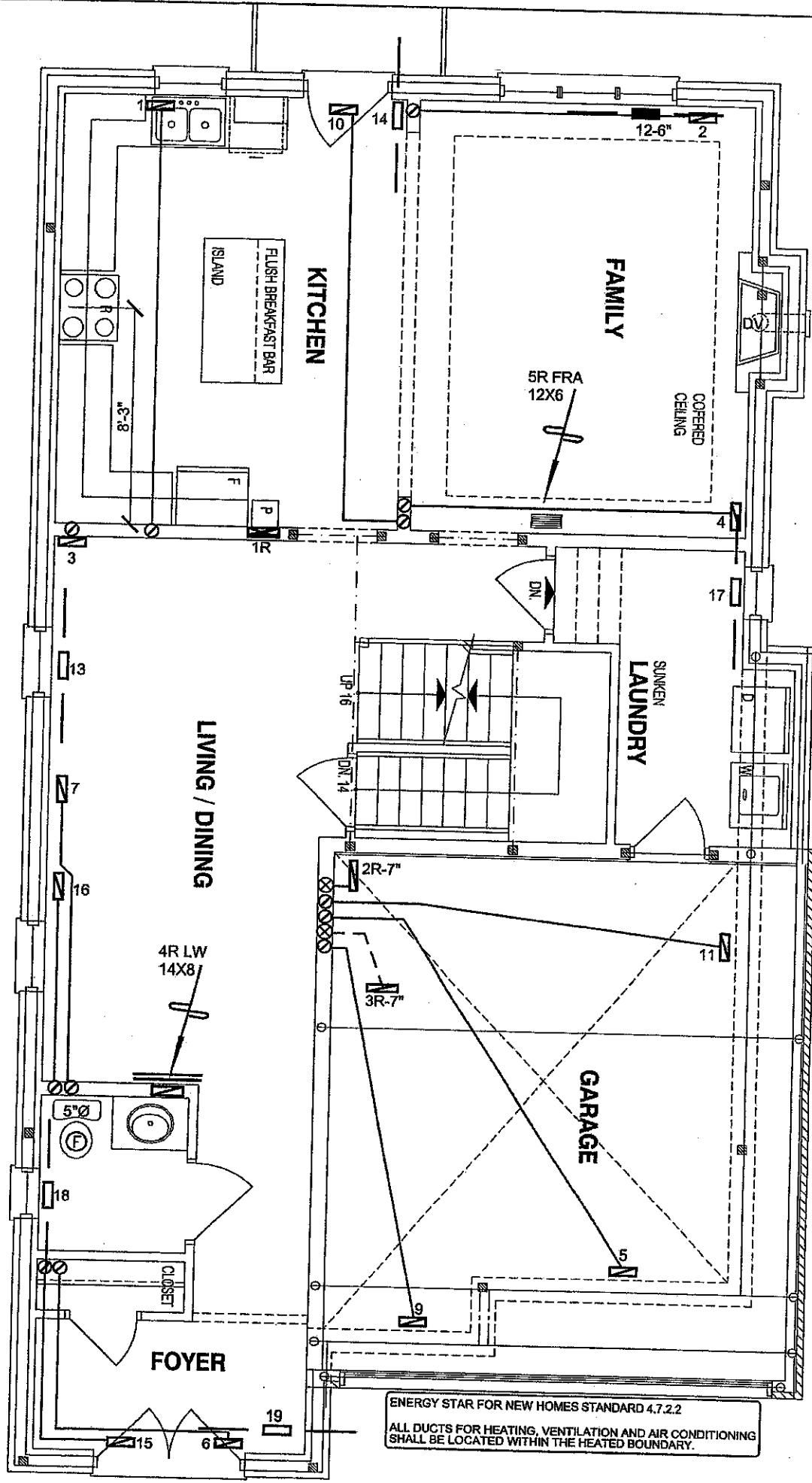
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Client
GREENPARK HOMES
 Project Name
LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO
BARTON 2 WOB 2550 sqft

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@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.

HEAT LOSS 37175 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		
MAKE	GOODMAN	3RD FLOOR		
MODEL	GMEC960402BNA	2ND FLOOR	12	3 3
INPUT	40 MBTU/H	1ST FLOOR	6	2 2
OUTPUT	38.4 MBTU/H	BASEMENT	4	1 0
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		
FAN SPEED	890 cfm @ 0.5" w.g.			

Sheet Title
BASEMENT HEATING LAYOUT
 Date
 JUNE/2019
 Scale
 3/16" = 1'-0"
 BCIN# 19669
LO# 82659



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 #: CMOD-BARTON2-WOB

(ELEV 1, 2, & 3)

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 TOWN OF CALEDON
 BUILDING SECTION
 FILE NO

WOB
 CSA-F280-12

 ENERGY STAR

HVAC LEGEND

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
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER

REVISIONS

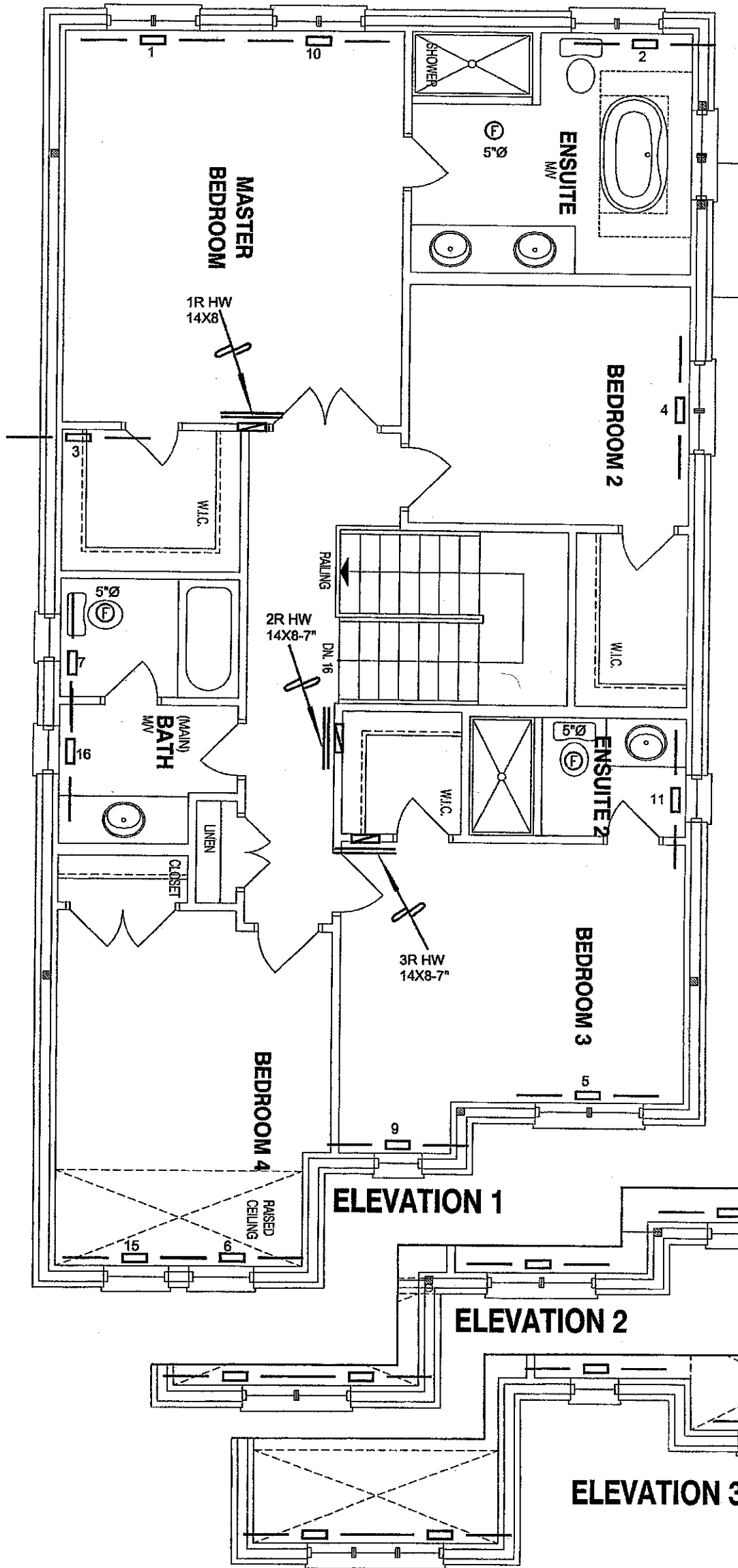
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Client
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 Project Name
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BARTON 2 WOB 2550 sqft

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Sheet Title
**FIRST FLOOR
 HEATING
 LAYOUT**
 Date **JUNE/2019**
 Scale **3/16" = 1'-0"**
 BCIN# 19669
 LO# **82659**



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 TOWN OF CALEDON
 BUILDING SECTION
 FILE NO

WOB
 CSA-F280-12

 ENERGY STAR

I MICHAEL OROURKE 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 OROURKE, LICENSED 1966
 HVAC DESIGNS LTD.

HVAC LEGEND						REVISIONS	
	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		8" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE	1.	
					REDUCER	No.	Description Date

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Client
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 CALEDON, ONTARIO**
 BARTON 2 WOB 2550 sqft

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Sheet Title
**SECOND FLOOR
 HEATING
 LAYOUT**
 Date **JUNE/2019**
 Scale **3/16" = 1'-0"**
 BCIN# 19669
 LO# **82659**