

SITE NAME: LAMBERT'S LANE PH.2

BUILDER: GREENPARK HOMES

 LOT 32
 TOWN OF CALEDON
 GFA: 2770

DATE: Jul-19

LOS 83005

WINTER NATURAL AIR CHANGE RATE 0.227

HEAT LOSS AT °F. 74

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.074

HEAT GAIN AT °F. 11

ENERGYSTAR

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	207	63	108	243	342	108	72
EXP. WALL	33	9										
CLG. HT.	9											
GRS.WALL AREA	297											
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	18.6	14.7	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
SOUTH	18.6	23.4	0	0	0	0	0	0	0	0	0	0
WEST	18.6	39.3	32	594	1282	14	260	552	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	265	932	138	185	661	96	63	222	33	90
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	282	353	157	145	182	81	76	95	42	200
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												
SLAB ON GRADE HEAT LOSS												
SUBTOTAL HT LOSS			1879			1240			301			2110
SUB TOTAL HT GAIN				1558		847			423			1494
LEVEL FACTOR / MULTIPLIER	0.20	0.21			0.20	0.21		0.20	0.21		0.20	0.21
AIR CHANGE HEAT LOSS			400			264			182			480
AIR CHANGE HEAT GAIN				102		55			28			98
DUCT LOSS			0			0			0			256
DUCT GAIN				0		0			0			0
HEAT GAIN PEOPLE	240		2	480		0			1	240		1
HEAT GAIN APPLIANCES/LIGHTS				549		0				549		
TOTAL HT LOSS BTU/H			2279			1505			2816			2428
TOTAL HT GAIN x 1.3 BTU/H				3496		1174			3485			2971

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

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	FAM	DIN	KT/BR	LAUN	PWD	FOY	MUD	WUB	BAS
EXP. WALL	33	10												
CLG. HT.	10													
GRS.WALL AREA	330													
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	18.6	14.7	0	0	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
SOUTH	18.6	23.4	0	0	0	24	445	581	0	0	0	0	0	0
WEST	18.6	39.3	26	482	1026	0	0	0	33	612	1302	0	0	0
SKYL.T.	31.2	99.9	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	16	394	58	0	0	0
NET EXPOSED WALL	3.5	0.5	304	1069	158	296	1041	154	431	1516	223	0	0	0
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	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
NO ATTIC EXPOSED CLG	2.7	1.2	10	27	12	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
BASEMENT/CRAWL HEAT LOSS														
SLAB ON GRADE HEAT LOSS														
SUBTOTAL HT LOSS			1578			1486			440			771		
SUB TOTAL HT GAIN				1196		715			243			114		
LEVEL FACTOR / MULTIPLIER	0.30	0.36			0.30	0.36		0.30	0.36		0.30	0.36		
AIR CHANGE HEAT LOSS			562			529			94			275		
AIR CHANGE HEAT GAIN				78		47			16			35		
DUCT LOSS			0			0			0			0		
DUCT GAIN				0		0			0			0		
HEAT GAIN PEOPLE	240		0	0		0			0			0		
HEAT GAIN APPLIANCES/LIGHTS				549		549				549				
TOTAL HT LOSS BTU/H			2140			2015			633			1046		
TOTAL HT GAIN x 1.3 BTU/H				2371		1704			1061			158		

TOTAL HEAT GAIN BTU/H:

24594

TONS: 2.06

LOSS DUE TO VENTILATION LOAD BTU/H: 1693

STRUCTURAL HEAT LOSS: 39648

TOTAL COMBINED HEAT LOSS BTU/H: 41241

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

LOT 32
TYPE: BARTON 4

DATE: Jul-19

GFA: 2710 LO# 83005

HEATING CFM 1131
TOTAL HEAT LOSS 39,848
AIR FLOW RATE CFM 28.53

COOLING CFM 1131
TOTAL HEAT GAIN 24,458
AIR FLOW RATE CFM 46.24

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

#GOODMAN
GMCE960603BNA 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 @ 8" E.S.P.

TEMPERATURE RISE 47 °F

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

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	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	FAM	DIN	KT/BR	KT/BR	LAUN	PWD	FOY	MJD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.14	1.50	0.38	1.09	1.41	1.21	0.89	1.41	1.21	1.14	0.86	2.14	2.02	1.71	1.71	0.53	0.72	3.16	1.05	3.59	3.59	3.59	3.59
CFM PER RUN HEAT	33	43	11	31	40	35	25	40	35	33	25	61	57	49	49	15	20	90	30	102	102	102	102
RM GAIN MBH	1.75	1.17	0.10	1.61	1.70	1.49	0.63	1.70	1.49	1.75	0.21	2.37	1.70	1.45	1.45	1.05	0.31	0.73	0.16	0.41	0.41	0.41	0.41
CFM PER RUN COOLING	81	54	5	75	79	69	29	79	69	81	10	110	79	67	67	49	14	34	7	19	19	19	19
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.15	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	53	59	30	25	56	73	43	54	68	45	45	46	29	36	44	29	48	47	25	54	35	24	50
EQUIVALENT LENGTH	180	190	130	150	140	180	180	130	180	150	150	150	170	130	140	190	150	130	160	130	110	120	140
TOTAL EFFECTIVE LENGTH	213	249	160	175	196	253	223	184	248	195	195	196	199	166	184	219	198	177	185	184	145	144	190
ADJUSTED PRESSURE	0.08	0.07	0.11	0.1	0.09	0.07	0.08	0.09	0.07	0.08	0.09	0.08	0.09	0.1	0.09	0.08	0.09	0.09	0.09	0.09	0.11	0.11	0.09
ROUND DUCT SIZE	6	5	4	5	6	6	4	6	6	6	4	6	5	5	5	5	4	6	4	6	6	6	6
HEATING VELOCITY (ft/min)	168	316	126	228	204	178	287	204	178	168	287	311	419	360	360	110	229	459	344	520	520	520	520
COOLING VELOCITY (ft/min)	413	396	57	551	403	352	333	403	352	413	115	561	580	492	492	360	161	173	80	97	97	97	97
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	A	B	B	D	C	D	D	C	A	D	A	D	A	A	D	C	C	D	B	B	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
-------	-----------	-------------	------------------	-------------	---------------------	-------------------	------------------	-------------------	------------------------	-------------------	-----------------	---------------------------	---------------------------	-------------------	-------

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

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOC
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	268	0.07	8.9	12	X	8	402		TRUNK G	0	0.00	0	0	X	8
TRUNK B	616	0.07	12.1	18	X	8	616		TRUNK H	0	0.00	0	0	X	8
TRUNK C	282	0.07	9	10	X	8	508		TRUNK I	0	0.00	0	0	X	8
TRUNK D	514	0.07	11.3	14	X	8	661		TRUNK J	0	0.00	0	0	X	8
TRUNK E	1130	0.07	15.2	26	X	8	782		TRUNK K	0	0.00	0	0	X	8
TRUNK F	0	0.00	0	0	X	8	0		TRUNK L	0	0.00	0	0	X	8

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT		VELOCITY
	CFM	PRESS.	DUCT	DUCT		(ft/min)
TRUNK O	0	0.05	0	0	x	8
TRUNK P	0	0.05	0	0	x	8
TRUNK Q	0	0.05	0	0	x	8
TRUNK R	0	0.05	0	0	x	8
TRUNK S	0	0.05	0	0	x	8
TRUNK T	0	0.05	0	0	x	8
TRUNK U	0	0.05	0	0	x	8
TRUNK V	0	0.05	0	0	x	8
TRUNK W	0	0.05	0	0	x	8
TRUNK X	1131	0.05	16.5	32	x	8
TRUNK Y	495	0.05	12.1	18	x	8
TRUNK Z	305	0.05	10.1	12	x	8
DROP	1131	0.05	16.5	24	x	10

RETURN AIR #	1	2	3	4	5	6																			BR
AIR VOLUME	135	135	115	115	360	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190
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	0.15
ACTUAL DUCT LGH.	41	37	61	63	43	49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	141
EQUIVALENT LENGTH	185	185	225	265	190	270	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18
TOTAL EFFECTIVE LH	226	222	286	328	233	319	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	135
ADJUSTED PRESSURE	0.07	0.07	0.05	0.05	0.06	0.05	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	0.10
ROUND DUCT SIZE	6.8	6.8	7	7	10.3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.2
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	0	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	X	X
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	0	14

TYPE: BARTON 4
 SITE NAME: LAMBERT'S LANE PH.2

 LO # 83005
 LOT 32

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:	July-19

 REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 32.6 OF THE BUILDING CODE.
 INDIVIDUAL BCIN: 19669 *Michael O'Rourke* MICHAEL O'ROURKE

 THIS STRUCTURE MUST 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#: 83005

Model: BARTON 4

Builder: GREENPARK HOMES

Date: 7/5/2019

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1195	9	10755
First	1195	10	11950
Second	1503	9	13527
Third	0	9	0
Fourth	0	9	0
Total:			36,232.0 ft³
Total:			1026.0 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.227
SUMMER NATURAL AIR CHANGE RATE	0.074

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

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

0.227 x 284.99 x 41 °C x 1.2 = 3205 W

= 10936 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.074 x 284.99 x 6 °C x 1.2 = 154 W

= 527 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)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{ager} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{clevel})
1	0.5	10,936	8,900	0.614
2	0.3		9,212	0.356
3	0.2		10,266	0.213
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 4	LOT 32	BUILDER: GREENPARK HOMES
SFQT: 2710	LO# 83005	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):	36232.0	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:	6.0 ft
LENGTH: 60.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	159.0 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	-

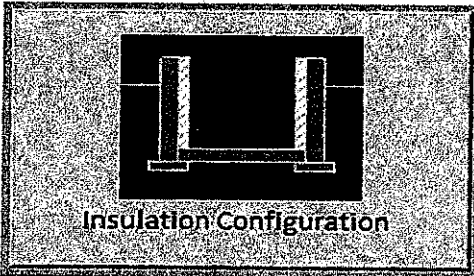
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

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

Michael O'Rourke

Residential Foundation Thermal Load Calculator

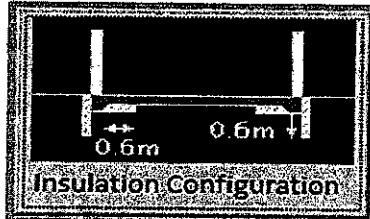
Supplemental tool for CAN/CSA-F280

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):	18.3	 Insulation Configuration
Floor Width (m):	8.5	
Exposed Perimeter (m):	48.5	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.9	
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):	1595	

TYPE: BARTON 4
LO# 83005LOT 324
RECEIVED THE PROCEEDINGS
OF THE BOARD OF DIRECTORS
ON 11/11/2014

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):	4.3	
Exposed Perimeter (m):	5.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):	41	

TYPE: BARTON 4
LO# 83005

LOT 32

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

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

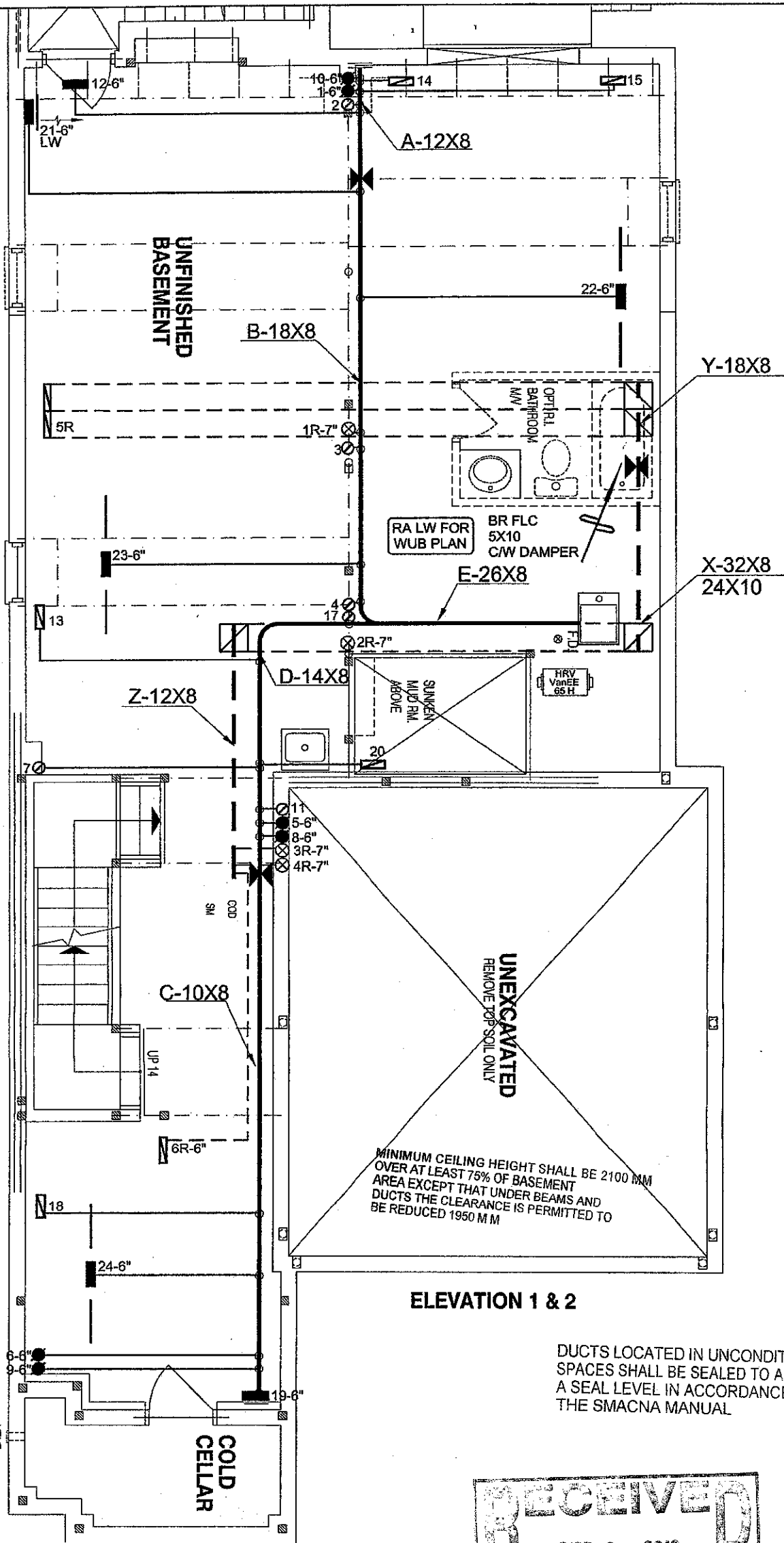
Air Infiltration Residential Load Calculator

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):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1026.0			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa. 2.50	957.7 cm ² ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply 37.5	Total Exhaust 37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.227			
Cooling Air Leakage Rate (ACH/H):	0.074			

TYPE: BARTON 4
LO# 83005

LOT 32



ELEVATION 1 & 2

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

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

APPROVED
For construction as per the
Ontario Building Code
Town of Caledon Building Department
Initial *SADDAM*
Date *Oct 10, 2019*
File # *BA/19/0706*

RECEIVED
SEP 26 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

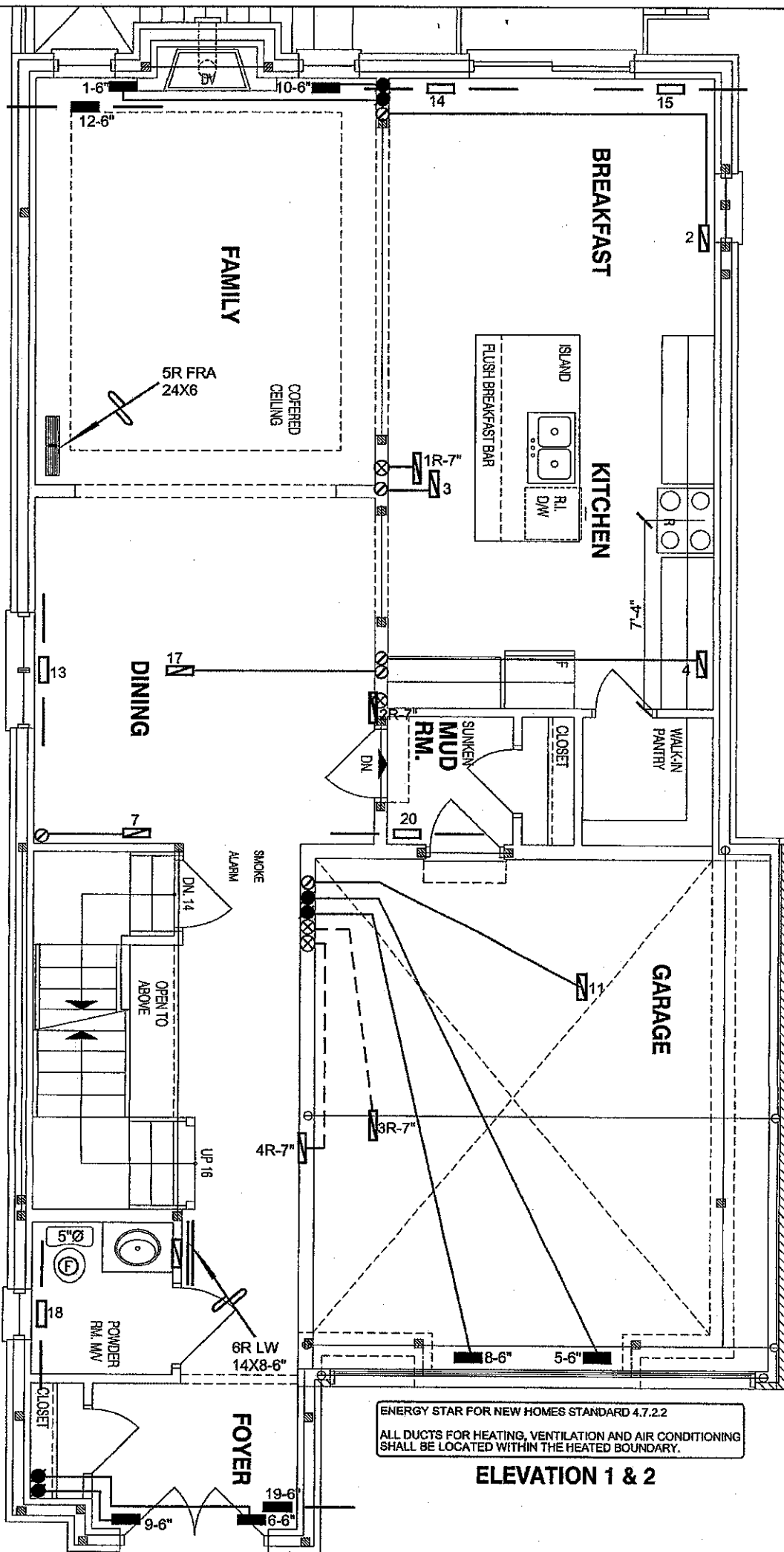
LOT 32
CSA-F280-12
Energy Star
ENERGY STAR

I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, DCSP 1966
HVAC DESIGNS LTD.

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

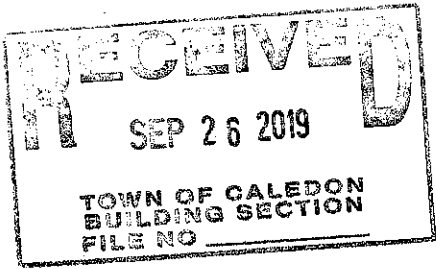
Client GREENPARK HOMES	Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO	LOT 32 BARTON 4	2710 sqft	HVAC DESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential 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 41241 BTU/H UNIT DATA	# OF RUNS S/A R/A FANS	Sheet Title BASEMENT HEATING LAYOUT
					MAKE GOODMAN	3RD FLOOR	
					MODEL GMEC960603BNA	2ND FLOOR 12 4 3	
					INPUT 60 MBTU/H	1ST FLOOR 7 2 2	
					OUTPUT 57.6 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	Date JULY/2019
					FAN SPEED 1131 cfm @ 0.6" w.g.		Scale 3/16" = 1'-0"
							BCIN# 19669
							LO# 83005



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.

ELEVATION 1 & 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.



LOT 32

CSA-F280-12

ENERGY STAR

HVAC LEGEND							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	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		RETURN AIR STACK ABOVE	1.	
					RETURN AIR STACK 2nd FLOOR	No.	Description
					FRA- FLOOR RETURN AIR GRILLE		Date
					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

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 32
BARTON 4

2710 sqft

375 Finlay 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

FIRST FLOOR
HEATING
LAYOUT

Date

JULY/2019

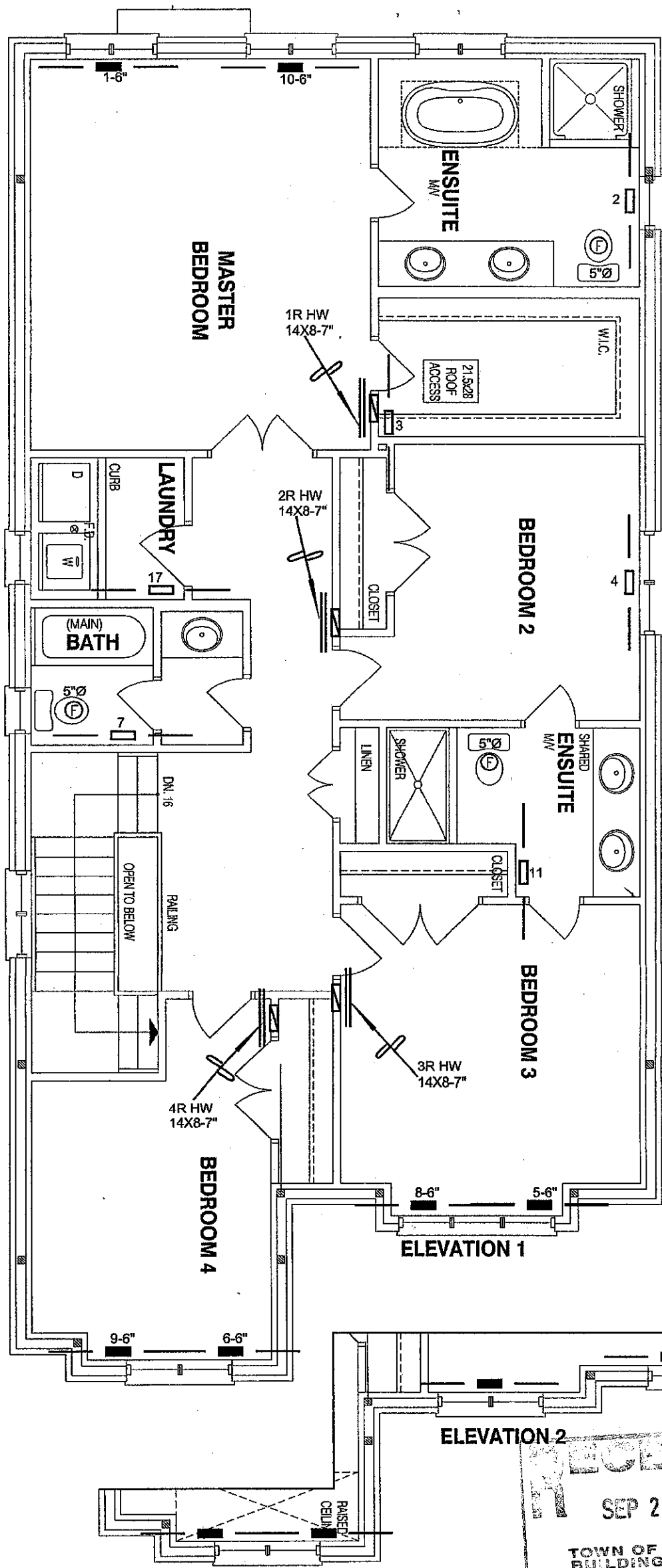
Scale

3/16" = 1'-0"

BCIN# 19669

LO#

83005



ELEVATION 2

ELEVATION 1

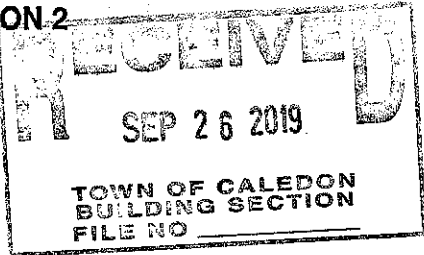
LOT 32

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, BCIN# 19669
HVAC DESIGNS LTD.



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
						Date	

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		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@hvacadesigns.ca Web: www.hvacadesigns.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
Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO	LOT 32 BARTON 4			Date JULY/2019 Scale 3/16" = 1'-0" BCIN# 19669 LO# 83005

2710 sqft