

SITE NAME: LAMBERT'S LANE PH.2										LOT 7				DATE: JUL-19				WINTER NATURAL AIR CHANGE RATE 0.268				HEAT LOSS AT °F. 74				CSA-F280-12			
BUILDER: GREENPARK HOMES										TYPE: BARTON 8				GFA: 3610				SUMMER NATURAL AIR CHANGE RATE 0.087				HEAT GAIN AT °F. 11				ENERGYSTAR			
ROOM USE		MBR		ENS		WIC		BED-2		BED-3		BED-4		BATH		WIC-2		ENS-2											
EXP. WALL		36		19		6		23		31		26		12		9		19											
CLG. HT.		9		9		9		9		9		9		9		9		9											
FACTORS																													
GRS.WALL AREA		LOSS GAIN		324		171		54		207		279		234		108		81		171									
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		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	0	0	0	0				
EAST		18.6	40.7	0	0	0	0	0	0	0	0	30	557	1222	30	557	1222	0	0	0	12	223	489	10	186	407			
SOUTH		18.6	24.1	0	0	0	0	0	0	0	0	0	9	167	217	9	167	217	9	167	217	0	0	0	0	0			
WEST		18.6	40.7	32	594	1303	24	445	577	0	0	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	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	0	0	0	0	0			
NET EXPOSED WALL		3.5	0.5	292	1027	152	147	517	77	54	190	28	177	622	92	240	844	125	209	735	109	99	348	52	69	243	36		
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	0	0	0	0	0	0		
EXPOSED CLG		1.3	0.6	397	498	221	160	188	84	84	105	47	242	303	135	249	312	139	162	203	90	136	169	75	63	79	35		
NO ATTIC EXPOSED CLG		2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	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	40	100	15	8	29	3	0	0	0	0	0	0	0	0	0	0	0	0		
BASEMENT/CRAWL HEAT LOSS																													
SLAB ON GRADE HEAT LOSS																													
SUBTOTAL HT LOSS				2118			1160			395			1502			1899			1402			684			544		1081		
SUB TOTAL HT GAIN				1677			1137			90			1452			1705			1067			343			560		32		
LEVEL FACTOR / MULTIPLIER		0.20	0.32		0.20	0.32		0.20	0.32		0.20	0.32		0.20	0.32		0.20	0.32		0.20	0.32		0.20	0.32		0.20	0.32		
AIR CHANGE HEAT LOSS				685			372			128			486			614			463			221			176		350		
AIR CHANGE HEAT GAIN				80			54			4			69			81			61			16			27		27		
DUCT LOSS				0			0			52			199			251			0			0			0		143		
DUCT GAIN				0			0			9			243			269			0			0			0		60		
HEAT GAIN PEOPLE		240		2			480			0		0	1	240		1	240		1	240		0		0	0	0	0	60	
HEAT GAIN APPLIANCES/LIGHTS							667			0			667			667			667			667			0		0		
TOTAL HT LOSS BTU/H				2803			1522			675			2187			2765			1855			906			720		1574		
TOTAL HT GAIN x 1.3 BTU/H				3776			1549			134			3472			3852			2633			468			762		858		

RECEIVED

AUG 08 2019

TOWN OF CALEDONIA
BUILDING DEPARTMENT
FILE NO

ROOM USE		EXP. WALL		CLG. HT.		LVDN		KIT		FAM		LAUN		W/R		FOY		LIBR		WOB		BAS	
						43		47		45		18		9		8		27		70		120	
						10		10		10		10		10		10		10		9		9	
FACTORS		LOSS		GAIN																			
GRS.WALL AREA		430		470		450		180		90		80		270						830		720	
GLAZING		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS	
NORTH	18.6	15.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	74	
EAST	18.6	40.7	44	816	1792	0	0	0	0	0	0	0	0	0	0	8	148	326	44	816	1792	0	0
SOUTH	18.6	24.1	34	631	818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEST	18.6	40.7	0	0	0	71	1317	2891	36	668	1466	0	0	0	0	0	0	0	0	0	8	148	
SKYLT.	31.2	99.9	0	0	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	20	493	73	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	3.5	0.5	352	1238	184	379	1333	198	414	1466	216	160	563	83	90	316	47	32	113	17	228	795	
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.6	0	0	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	360	1265	
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	120	321	143	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	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0	0	
SLAB ON GRADE HEAT LOSS									0						0			0				2876	
SUBTOTAL HT LOSS			2886			3143			2445			1056			316			1247			1159		
SUB TOTAL HT GAIN				2793		3162			1826			167		47		489			1611		1909		
LEVEL FACTOR / MULTIPLIER	0.30	0.42			0.30	0.42		0.30	0.42		0.30	0.42		0.30	0.42		0.30	0.42			0.50	0.94	
AIR CHANGE HEAT LOSS				1123		1314		1023			442		132		522		674					8715	
AIR CHANGE HEAT GAIN				133		180		87			7		2		23		91					172	
DUCT LOSS			0		0		0		0		0		0		0		0					0	
DUCT GAIN			0		0		0		0		0		0		0		0					0	
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0		0				0	0	
HEAT GAIN APPLIANCES/LIGHTS				667		667		667		667		667		667		667		667			0	667	
TOTAL HT LOSS BTU/H			3808			4457		3468		1497		449		1769		2285		3468		4411		13571	
TOTAL HT GAIN x 1.3 BTU/H				4672		5173		3352		1081		64		665						4833		1759	

TOTAL HEAT GAIN BTU/H: 42005

TONS: 3.50

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 50520 TOTAL COMBINED HEAT LOSS BTU/H: 52215

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

INDIVIDUAL BCIN: 19663

MICHAEL O'ROURKE

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

 LOT 7
 TYPE: BARTON 8

DATE: Jul-19

GFA: 3510 LO#: 83240

 HEATING CFM 1504 COOLING CFM 1504
 TOTAL HEAT LOSS 50,622 TOTAL HEAT GAIN 41,769
 AIR FLOW RATE CFM 29.71 AIR FLOW RATE CFM 36.01

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

 #GOODMAN
 GMEC960804CNA 80
 FAN SPEED LOW

 AFUE = 96 %
 INPUT (BTU/H) = 80,000
 OUTPUT (BTU/H) = 76,800

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	11	6
R/A	0	0	4	2	1

 plenum pressure s/a 0.18
 max s/a dif press. loss 0.02
 min adjusted pressure s/a 0.16

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

 MEDLOW
 MEDIUM
 MEDIUM HIGH 1504
 HIGH 1615

 DESIGN CFM = 1504
 CFM @ 5" E.S.P.

TEMPERATURE RISE 47 °F

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	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	MBR	WIC	ENS	ENS	ENS-2	BED-2	WIC-2	BED-3	BED-3	BATH	BED-4	KIT	KIT	FAM	FAM	LAUN	W/R	LIBR	FOY	LV/DN	LV/DN	BAS	BAS
RM LOSS MBH	1.40	1.40	0.57	0.76	0.76	1.57	1.09	0.72	1.38	1.38	0.91	0.93	2.23	2.23	1.73	1.73	1.50	0.45	1.14	1.77	1.90	1.90	3.00	3.00
CFM PER RUN HEAT	42	42	17	23	23	47	32	21	41	41	27	28	66	66	52	52	44	13	34	53	57	89	89	89
RM GAIN MBH	1.89	1.89	0.13	0.77	0.77	0.86	1.74	0.76	1.93	1.93	0.47	1.32	2.59	2.59	1.68	1.68	1.08	0.06	1.73	0.67	2.34	2.34	0.97	0.97
CFM PER RUN COOLING	68	68	5	28	28	31	63	27	69	69	17	47	93	93	60	60	39	2	62	24	84	84	35	35
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	62	59	65	50	65	63	53	42	40	49	34	30	31	41	51	62	39	40	42	36	33	8	81	34
EQUIVALENT LENGTH	160	170	150	170	180	180	180	160	130	130	140	160	140	140	140	140	160	170	180	150	140	180	170	180
TOTAL EFFECTIVE LENGTH	222	229	215	220	245	243	233	202	170	179	174	190	171	181	191	202	199	210	222	186	173	188	231	214
ADJUSTED PRESSURE	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.09	0.1	0.1	0.1	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.09	0.09	0.09	0.07	0.08
ROUND DUCT SIZE	6	6	4	4	4	5	6	4	5	5	4	5	6	6	5	5	4	4	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	214	214	195	264	264	345	163	241	301	301	310	206	337	337	382	382	505	149	250	389	291	291	454	454
COOLING VELOCITY (ft/min)	347	347	57	321	321	228	321	310	507	507	195	345	474	474	441	441	447	23	455	176	428	428	178	178
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	A	R	R	A	R	D	D	D	D	E	C	C	C	A	A	B	B	D	D	D	C	A	B

RUN #	25	26	27	28	29	30	31
ROOM NAME	BAS	BAS	BAS	BAS	BED-2	BED-4	LIBR
RM LOSS MBH	3.00	3.00	3.00	3.00	1.09	0.93	1.14
CFM PER RUN HEAT	89	89	89	89	32	28	34
RM GAIN MBH	0.97	0.97	0.97	0.97	1.74	1.32	1.73
CFM PER RUN COOLING	35	35	35	35	63	47	62
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.17	0.17	0.17
ACTUAL DUCT LGH	28	34	32	28	54	28	46
EQUIVALENT LENGTH	90	100	110	170	210	170	160
TOTAL EFFECTIVE LENGTH	118	134	142	198	264	198	206
ADJUSTED PRESSURE	0.14	0.12	0.11	0.08	0.07	0.09	0.08
ROUND DUCT SIZE	6	6	6	6	5	5	5
HEATING VELOCITY (ft/min)	454	454	454	454	163	206	250
COOLING VELOCITY (ft/min)	178	178	178	178	321	345	455
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	3X10	3X10	3X10
TRUNK	E	E	E	C	D	C	D

SUPPLY AIR TRUNK SIZE

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	258	0.07	8	464
TRUNK B	599	0.07	12	674
TRUNK C	867	0.07	13.7	709
TRUNK D	345	0.07	9.7	444
TRUNK E	639	0.07	12.3	639
TRUNK F	0	0.00	0	0

RETURN AIR TRUNK SIZE

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK G	0	0.00	0	0
TRUNK H	0	0.00	0	0
TRUNK I	0	0.00	0	0
TRUNK J	0	0.00	0	0
TRUNK K	0	0.00	0	0
TRUNK L	0	0.00	0	0

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	165	85	185	185	300	325	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	52	67	40	38	44	19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	175	175	140	135	175	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	227	242	180	173	219	164	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.08	0.09	0.07	0.10	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	7.4	6	7.5	7.2	9.2	8.7	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	8	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

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TYPE: BARTON 8
SITE NAME: LAMBERT'S LANE PH.2

LO # 83240
LOT 7

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	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A. TOTAL		180.2 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	180.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	100.7	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 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
W/R	FV-05-11VK1	50 ✓ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
155 cfm high	84 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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	July-19

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

LO#: 83240

Model: BARTON 8

Builder: GREENPARK HOMES

Date: 23/07/2019

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1744	9	15696
First	1744	10	17440
Second	1766	9	15894
Third	0	9	0
Fourth	0	9	0
Total:			49,030.0 ft³
Total:			1388.4 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.268
SUMMER NATURAL AIR CHANGE RATE	0.087

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

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

$$0.268 \times 385.66 \times 41^\circ\text{C} \times 1.2 = 5109 \text{ W}$$

$$= 17431 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.087 \times 385.66 \times 6^\circ\text{C} \times 1.2 = 246 \text{ W}$$

$$= 839 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

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

6.2.7 Sensible heat Gain due to Ventilation

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

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

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: (HL _{cleve})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	17,431	9,267	0.940
2	0.3		12,503	0.418
3	0.2		10,776	0.324
4	0		0	0.000
5	0		0	0.000

*HLairbv = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HLairve = 0

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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BARTON 8	LOT 7	BUILDER: GREENPARK HOMES
SFQT: 3510	LO# 83240	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):	49030.0	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: 55.0 ft	WIDTH: 40.0 ft	EXPOSED PERIMETER:	120.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	70.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
ENERGYSTAR****Nominal Min. Eff.**

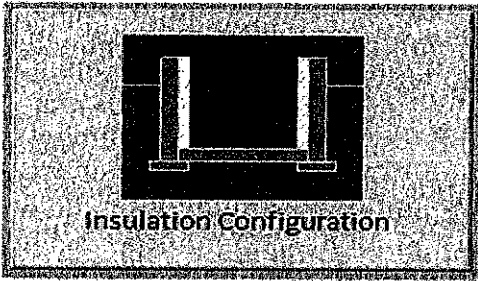
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	R22+R5	21.10
Basement Walls Minimum RSI (R)-Value	20	21.12
Below Grade Slab Entire surface > 600 mm below 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 BUILDING
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Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

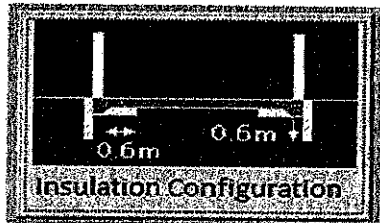
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	7.6	
Floor Width (m):	12.2	
Exposed Perimeter (m):	36.6	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.63	
Window Area (m ²):	1.1	
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):		843

THIS STRUCTURE MUST BE
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THE ONTARIO BUILDING CODETYPE: BARTON 8
LO# 83240

LOT 7

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	4.6	
Width (m):	12.2	
Exposed Perimeter (m):	21.3	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		339

TYPE: BARTON 8
LO# 83240

LOT 7

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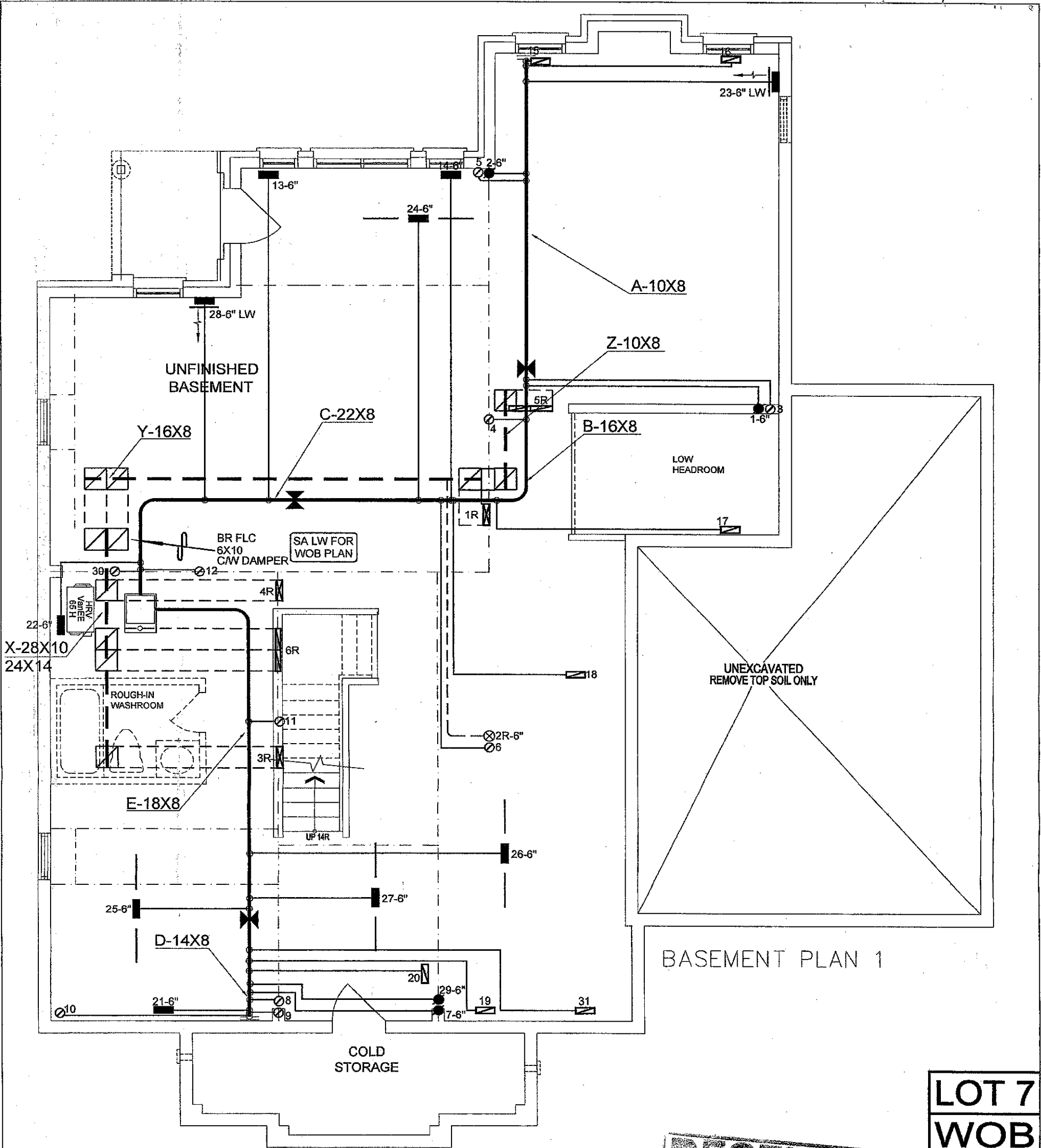
Air Infiltration Residential Load Calculator

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):	8.53			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1388.4			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1296.0 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):	0.268			
Cooling Air Leakage Rate (ACH/H):	0.087			

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LO# 83240

LOT 7

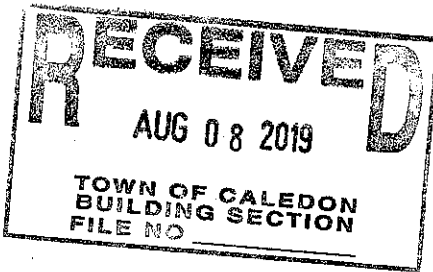


BASEMENT PLAN 1

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.

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



LOT 7

WOB

CSA-F280-12

ENERGY STAR

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

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Client

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 7
BARTON 8

3510 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
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 52215 BTU/H
UNIT DATA

MAKE GOODMAN

MODEL GMEC960804CNA

INPUT 80 MBTU/H

OUTPUT 76.8 MBTU/H

COOLING 3.5 TONS

FAN SPEED 1504 cfm @ 0.5" w.c.

OF RUNS S/A R/A FANS

3RD FLOOR

2ND FLOOR 14 4 4

1ST FLOOR 11 2 3

BASEMENT 6 1 0

ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A

Sheet Title

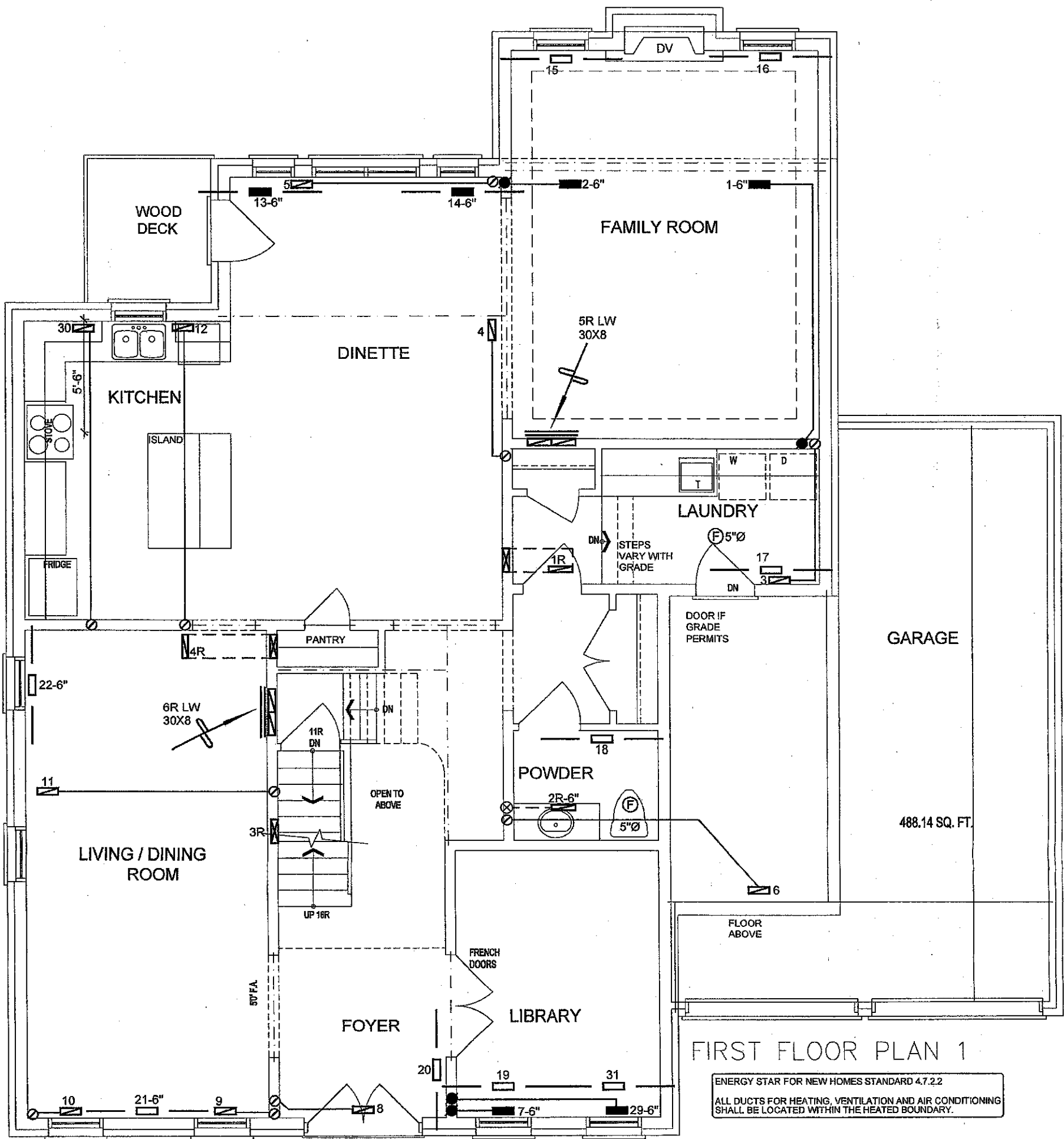
BASEMENT HEATING LAYOUT

Date JULY/2019

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 83240



FIRST FLOOR PLAN 1

APPROVED
For construction as per the
Ontario Building Code
Town of Caledon Building Department
Initial *[Signature]* SA
Date *Aug 30, 2019*
File # *BA1910467*

RECEIVED
AUG 08 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

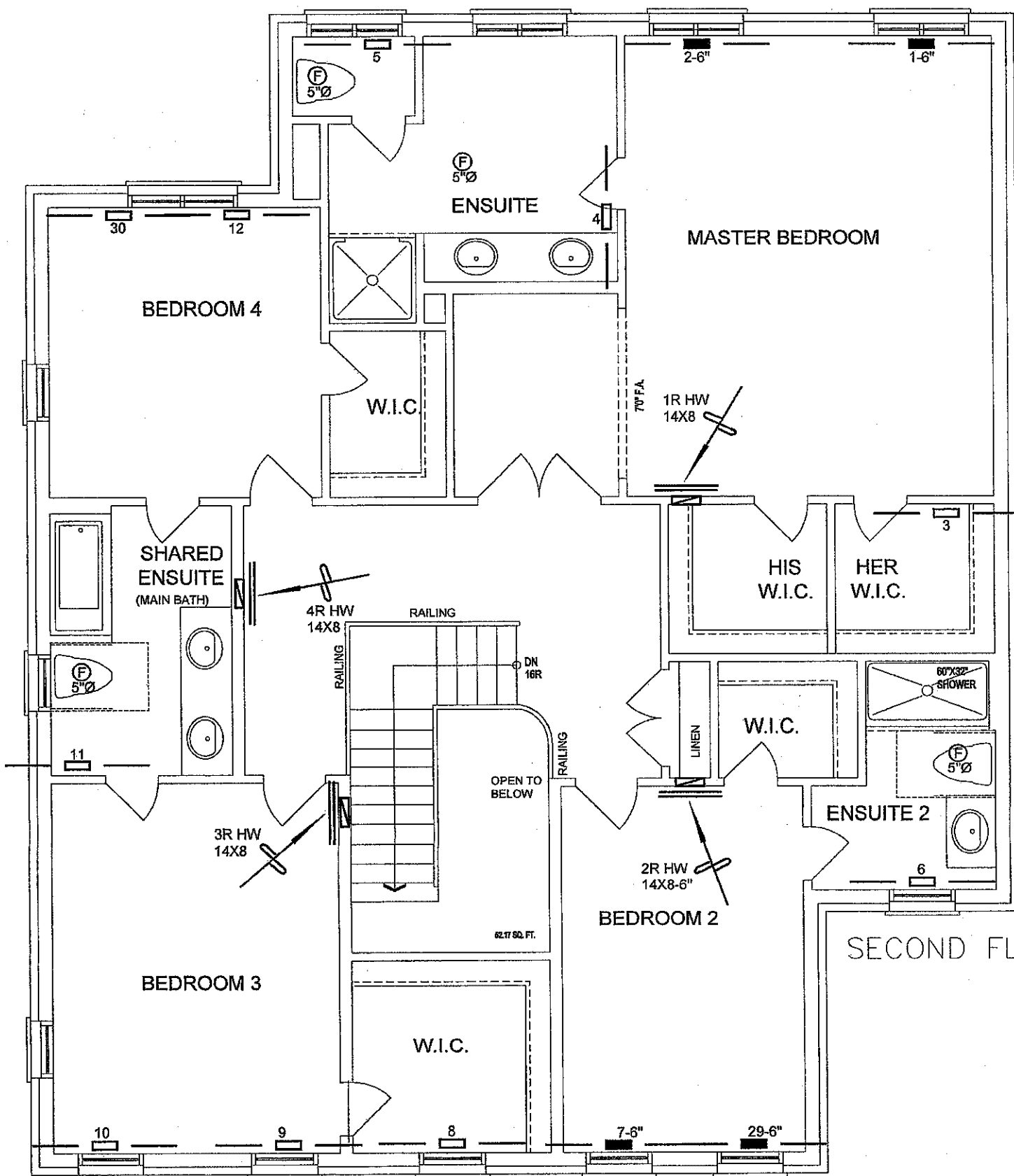
LOT 7
WOB
CSA-F280-12
ENERGY STAR

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.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

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

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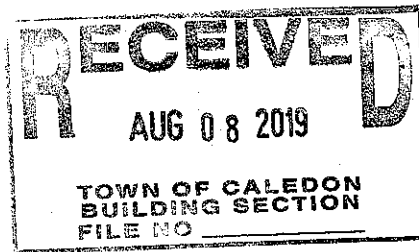
Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets 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	
GREENPARK HOMES				FIRST FLOOR HEATING LAYOUT	
Project Name	LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO			Date	JULY/2019
LOT 7 BARTON 8		Scale	3/16" = 1'-0"	BCIN# 19669	
3510 sqft		LO#		83240	



SECOND FLOOR PLAN 1

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 7

WOB

CSA-F280-12

ENERGY STAR

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

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Client

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 7
BARTON 8

3510 sqft

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
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Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

JULY/2019

Scale

3/16" = 1'-0"

BCIN# 19669

LO#

83240