

SITE NAME: LAMBERT'S LANE PH.2			LOT 35			DATE: Nov-19			WINTER NATURAL AIR CHANGE RATE 0.240			HEAT LOSS AT °F. 74			CSA-F280-12		
BUILDER: GREENPARK HOMES			TYPE: BARTON 3			LO# 83490			SUMMER NATURAL AIR CHANGE RATE 0.068			HEAT GAIN AT °F. 11			ENERGYSTAR		
ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH			ENS-2					
			37	22	5	13	28	34	8			6					
			9	9	9	9	9	9	9			9					
FACTORS			338			200			45			118			254		
GRS.WALL AREA	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
GLAZING																	
NORTH	18.6	15.1	0	0	0	9	167	136	0	0	0	18	334	273	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0	40	742	1629	28	519	1140
SOUTH	18.6	24.1	6	111	144	0	0	0	0	0	0	0	0	0	0	0	0
WEST	18.6	40.7	32	594	1303	9	167	366	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
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	298	1048	155	182	639	95	45	160	24	109	352	52	214	754	112
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
EXPOSED CLG	1.3	0.6	281	352	157	134	168	75	56	70	31	216	271	120	170	213	95
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	20	54	24
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0	0	190	473	70
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0		
SUBTOTAL HT LOSS			2105			1141			230			957			2235		
SUB TOTAL HT GAIN				1759		672			55				445		1929		
LEVEL FACTOR / MULTIPLIER	0.20	0.23				0.20	0.23		0.20	0.23		0.20	0.23		0.20	0.23	
AIR CHANGE HEAT LOSS			479			260			52			218			508		
AIR CHANGE HEAT GAIN				112		43			3				28		122		
DUCT LOSS			0			0			0			0			274		
DUCT GAIN			0			0			0			0			277		
HEAT GAIN PEOPLE	240		2	480		0			0			1	240		1	240	
HEAT GAIN APPLIANCES/LIGHTS				483		0			0				483			483	
TOTAL HT LOSS BTU/H			2584			1401			282			1174			3018		
TOTAL HT GAIN x 1.3 BTU/H			3684			929			76			1555			3967		

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

ROOM USE	EXP. WALL	CLG. HT.	DIN	FAM	KIT	LIV	LAUN	PWD	FOY	MUD							
			7	26	20	20	8	5	20	10							
			11	11	11	11	9	11	11	11							
FACTORS			77			286			220			73			55		
GRS.WALL AREA	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
GLAZING																	
NORTH	18.6	15.1	20	371	303	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
SOUTH	18.6	24.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	18.6	40.7	0	0	0	25	482	1059	15	278	611	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
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	57	200	30	260	914	136	185	651	95	196	689	102	50	210	31
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
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	85	107	47
NO ATTIC EXPOSED CLG	2.7	1.2	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	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0		
SUBTOTAL HT LOSS			571			1397			1422			1134			558		
SUB TOTAL HT GAIN				333		1194			780			680			299		
LEVEL FACTOR / MULTIPLIER	0.30	0.48				0.30	0.48		0.30	0.48		0.20	0.23		0.30	0.48	
AIR CHANGE HEAT LOSS			273			667			679			542			143		
AIR CHANGE HEAT GAIN				21		75			50			43			12		
DUCT LOSS			0			0			0			0			0		
DUCT GAIN			0			0			0			0			0		
HEAT GAIN PEOPLE	240		0			0			0			0			0		
HEAT GAIN APPLIANCES/LIGHTS				483		483			483			483			0		
TOTAL HT LOSS BTU/H			844			2063			2101			1675			684		
TOTAL HT GAIN x 1.3 BTU/H			1087			2279			1705			1567			1169		

TOTAL HEAT GAIN BTU/H:

24657

TONS: 2.05

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 36616

TOTAL COMBINED HEAT LOSS BTU/H: 36209

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

LOT 35
TYPE: BARTON 3

DATE: Nov-19

GFA: 2635 LO# 83490

LO# 83490

HEATING CFM	890	COOLING CFM	890
TOTAL HEAT LOSS	36,616	TOTAL HEAT GAIN	24,421
AIR FLOW RATE CFM	24.31	AIR FLOW RATE CFM	36.44

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

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	7	4
R/A	0	0	4	2	1

plenum pressure s/a	0.18	r/a pressure	0.17
max s/a dif press. loss	0.02	r/a grille press. loss	0.02
min adjusted pressure s/a	0.16	adjusted pressure r/a	0.15

LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 890

DESIGN CFM = 890
CFM @ .6" E.S.P.

TEMPERATURE RISE 40 °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	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	BED-4	MBR	ENS-2	DIN	FAM	KIT	LIV	LAUN	PVWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.29	1.40	0.28	1.12	1.51	1.28	0.95	1.51	1.28	1.29	0.26	0.84	2.06	2.10	1.68	0.68	0.44	2.50	1.20	3.15	3.15	3.15	3.15
CFM PER RUN HEAT	31	34	7	29	37	31	23	37	31	31	6	21	50	51	41	17	11	61	29	77	77	77	77
RM GAIN MBH	1.84	0.93	0.08	1.55	1.98	1.61	0.48	1.98	1.61	1.84	0.14	1.09	2.28	1.71	1.57	1.17	0.27	0.61	0.17	0.35	0.35	0.35	0.35
CFM PER RUN COOLING	67	34	3	57	72	59	18	72	59	67	5	40	83	82	57	43	10	22	6	13	13	13	13
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	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	55	36	38	25	58	69	56	55	64	48	51	5	47	34	28	66	46	46	8	41	25	7	42
EQUIVALENT LENGTH	170	170	120	170	130	150	200	120	180	170	150	130	110	120	130	220	130	120	140	110	110	130	140
TOTAL EFFECTIVE LENGTH	225	206	158	195	188	219	256	175	244	218	201	135	157	154	158	286	176	166	148	151	135	137	182
ADJUSTED PRESSURE	0.08	0.08	0.11	0.09	0.09	0.08	0.07	0.1	0.07	0.08	0.09	0.13	0.1	0.11	0.11	0.06	0.1	0.1	0.12	0.11	0.13	0.13	0.09
ROUND DUCT SIZE	5	4	4	5	5	5	4	5	5	5	4	4	6	5	5	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	228	390	80	213	272	228	264	272	228	228	69	241	255	374	301	125	126	448	333	565	565	565	565
COOLING VELOCITY (ft/min)	492	390	34	419	529	433	207	529	433	492	57	459	423	455	419	316	115	162	69	95	95	95	95
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	B	B	B	D	C	C	D	C	A	D	B	A	B	D	C	C	C	D	A	B	D	C

RUN #	25
ROOM NAME	ENS-2
RM LOSS MBH.	0.26
CFM PER RUN HEAT	6
RM GAIN MBH.	0.14
CFM PER RUN COOLING	5
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	45
EQUIVALENT LENGTH	140
TOTAL EFFECTIVE LENGTH	185
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	4
HEATING VELOCITY (ft/min)	69
COOLING VELOCITY (ft/min)	57
OUTLET GRILL SIZE	3X10
TRUNK	D

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE																
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)			TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)			TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)	
TRUNK A	189	0.08	7.5	8	x	8	425	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.06	0	0	x	8	0			0
TRUNK B	408	0.08	10	12	x	8	612	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.06	0	0	x	8	0			0
TRUNK C	251	0.06	9	10	x	8	452	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.06	0	0	x	8	0			0
TRUNK D	484	0.06	11.5	16	x	8	545	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.06	0	0	x	8	0			0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.06	0	0	x	8	0			0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.06	0	0	x	8	0			0

[illegible]

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

LO # 83490
LOT 35

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: VANE 65H	Location: BSMT
79.5 cfm	3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	ΔT °F
79.5 CFM	74 F
X	X
	FACTOR 1.08
	X
	% LOSS 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: VANE 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:	November-19

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
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CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 83490	Model: BARTON 3	Builder: GREENPARK HOMES	Date: 11/5/2019																																																									
Volume Calculation		Air Change & Delta T Data																																																										
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr><td>Bsmt</td><td>1166</td><td>9</td><td>10494</td></tr> <tr><td>First</td><td>1166</td><td>11</td><td>12826</td></tr> <tr><td>Second</td><td>1469</td><td>9</td><td>13342.927</td></tr> <tr><td>Third</td><td>0</td><td>9</td><td>0</td></tr> <tr><td>Fourth</td><td>0</td><td>9</td><td>0</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>36,662.9 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>1038.2 m³</td></tr> </tbody> </table>		Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)	Bsmt	1166	9	10494	First	1166	11	12826	Second	1469	9	13342.927	Third	0	9	0	Fourth	0	9	0	Total:			36,662.9 ft ³	Total:			1038.2 m ³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%; text-align: center;">0.240</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.068</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td style="text-align: center;">22</td> <td style="text-align: center;">-19</td> <td style="text-align: center;">41</td> <td style="text-align: center;">74</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">24</td> <td style="text-align: center;">30</td> <td style="text-align: center;">6</td> <td style="text-align: center;">11</td> </tr> </table>			WINTER NATURAL AIR CHANGE RATE	0.240	SUMMER NATURAL AIR CHANGE RATE	0.068	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-19	41	74	Summer DTDc	24	30	6	11
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5.2.3.1 Heat Loss due to Air Leakage		6.2.6 Sensible Gain due to Air Leakage																																																										
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.240 x 288.38 x 41 °C x 1.2 = 3418 W = 11661 Btu/h		$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.068 x 288.38 x 6 °C x 1.2 = 145 W = 493 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 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h		$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h																																																										
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{clevel})																																																								
1	0.5	11,661	6,780	0.860																																																								
2	0.3		7,327	0.477																																																								
3	0.2		10,255	0.227																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HL_{airbv} = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HL_{airve} = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BARTON 3	LOT 35	BUILDER: GREENPARK HOMES
SFQT: 2635	LO# 83490	SITE: LAMBERT'S LANE PH.2

DESIGN ASSUMPTIONS

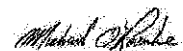
HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

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:	UNSHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	36662.9	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 57.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	170.0 ft

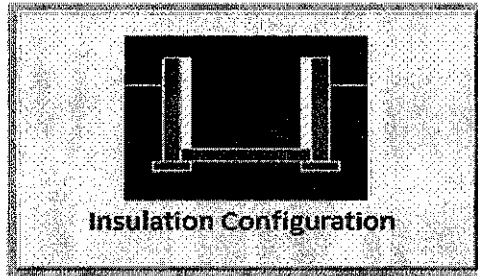
2012 OBC - COMPLIANCE PACKAGE		Compliance Package	
Component		ENERGYSTAR	
		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.70
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		R22+R5	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



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	17.4	 Insulation Configuration
Floor Width (m):	8.5	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	2.13	
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):	1546	

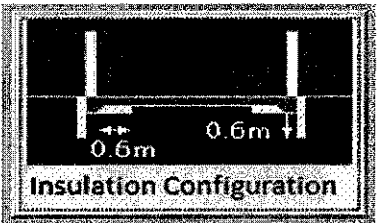
TYPE: BARTON 3
LO# 83490

LOT 35

ALL WORK MUST BE
CONSTRUCTED TO MEET OR
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THE ONTARIO BUILDING CODE

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):	0.0	
Width (m):	0.0	
Exposed Perimeter (m):	0.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		0

TYPE: BARTON 3
LO# 83490

LOT 35

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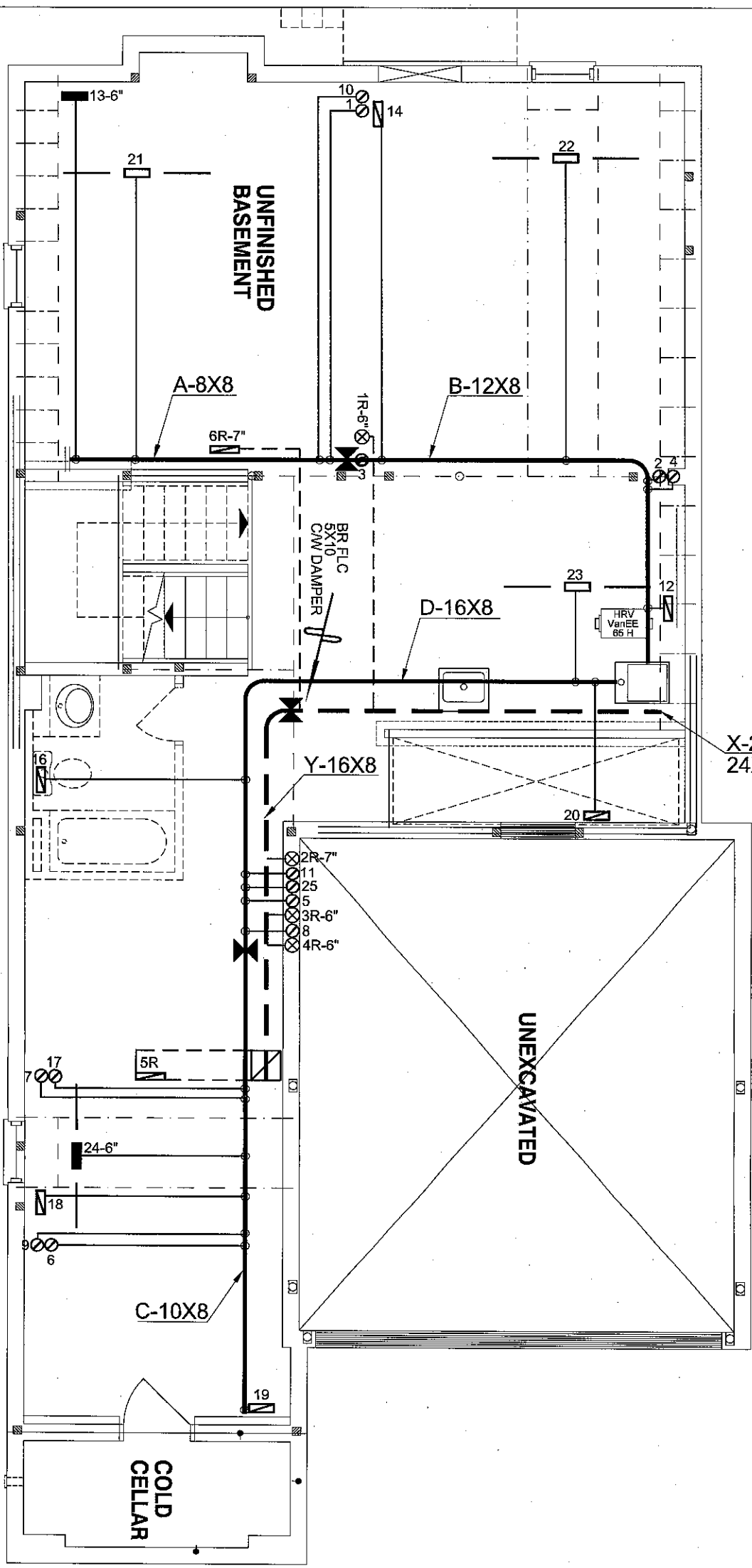
Air Infiltration Residential Load Calculator

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:	Very heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.95			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1038.2			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	969.1 cm ²		
	2.50	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.240			
Cooling Air Leakage Rate (ACH/H):	0.068			

TYPE: BARTON 3
LO# 83490

LOT 35



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I 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.

LOT 35

CSA-F280-12

ENERGY STAR

HVAC LEGEND						REVISIONS		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Description	Date
	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			

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Client

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 35
BARTON 3

2635 sqft

375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
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 38209 BTU/H
UNIT DATA

MAKE GOODMAN

MODEL GMEC960402BNA

INPUT 40 MBTU/H

OUTPUT 38.4 MBTU/H

COOLING 2.0 TONS

FAN SPEED 890 cfm @ 0.6" w.c.

OF RUNS S/A R/A FANS

3RD FLOOR

2ND FLOOR 13 4 3

1ST FLOOR 7 2 2

BASEMENT 4 1 0

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

Sheet Title

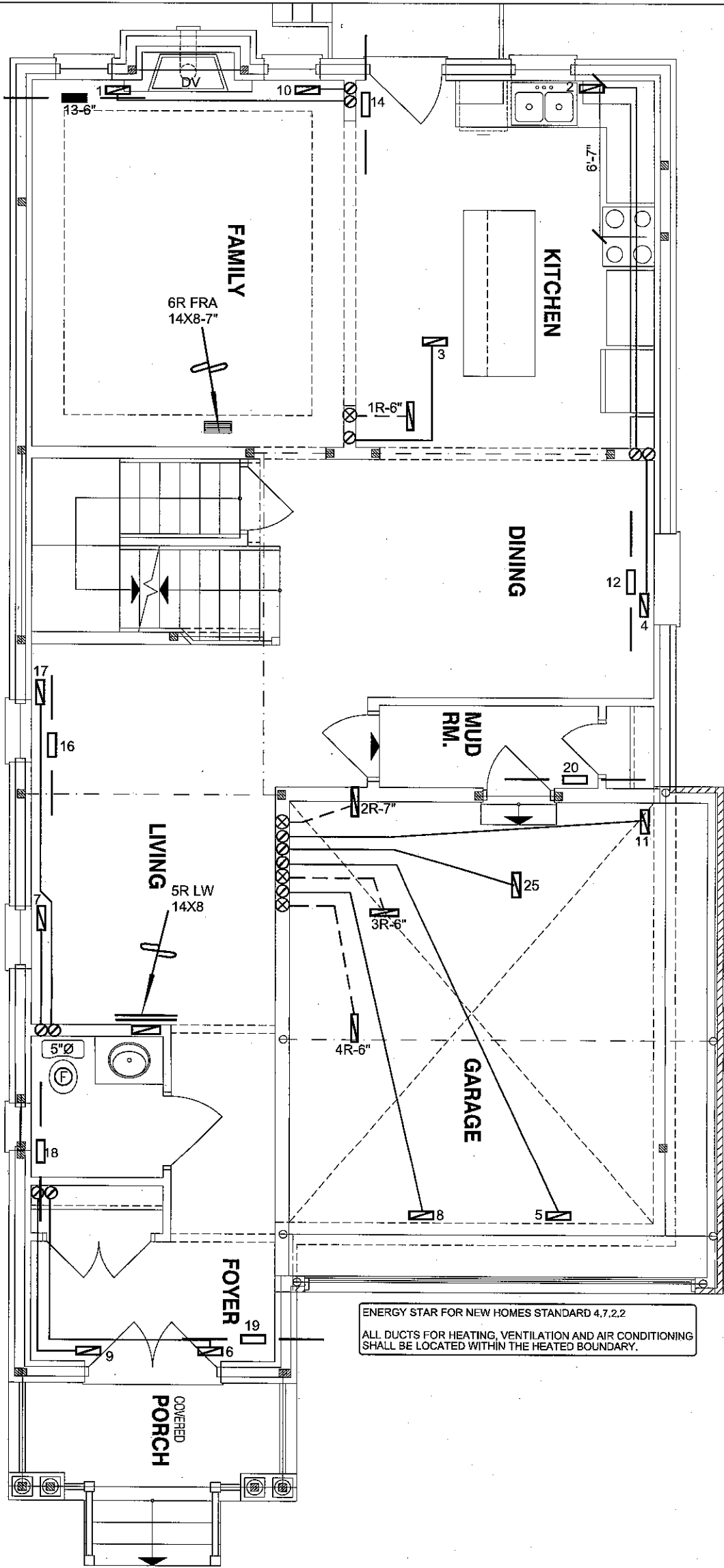
BASEMENT
HEATING
LAYOUT

Date FEB/2019

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 83490



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THE ONTARIO BUILDING CODE

LOT 35

CSA-F280-12

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, BCIN# 19669
HVAC DESIGNS LTD.

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

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Client

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 35
BARTON 3

2635 sqft

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

Sheet Title

FIRST FLOOR
HEATING
LAYOUT

Date

FEB/2019

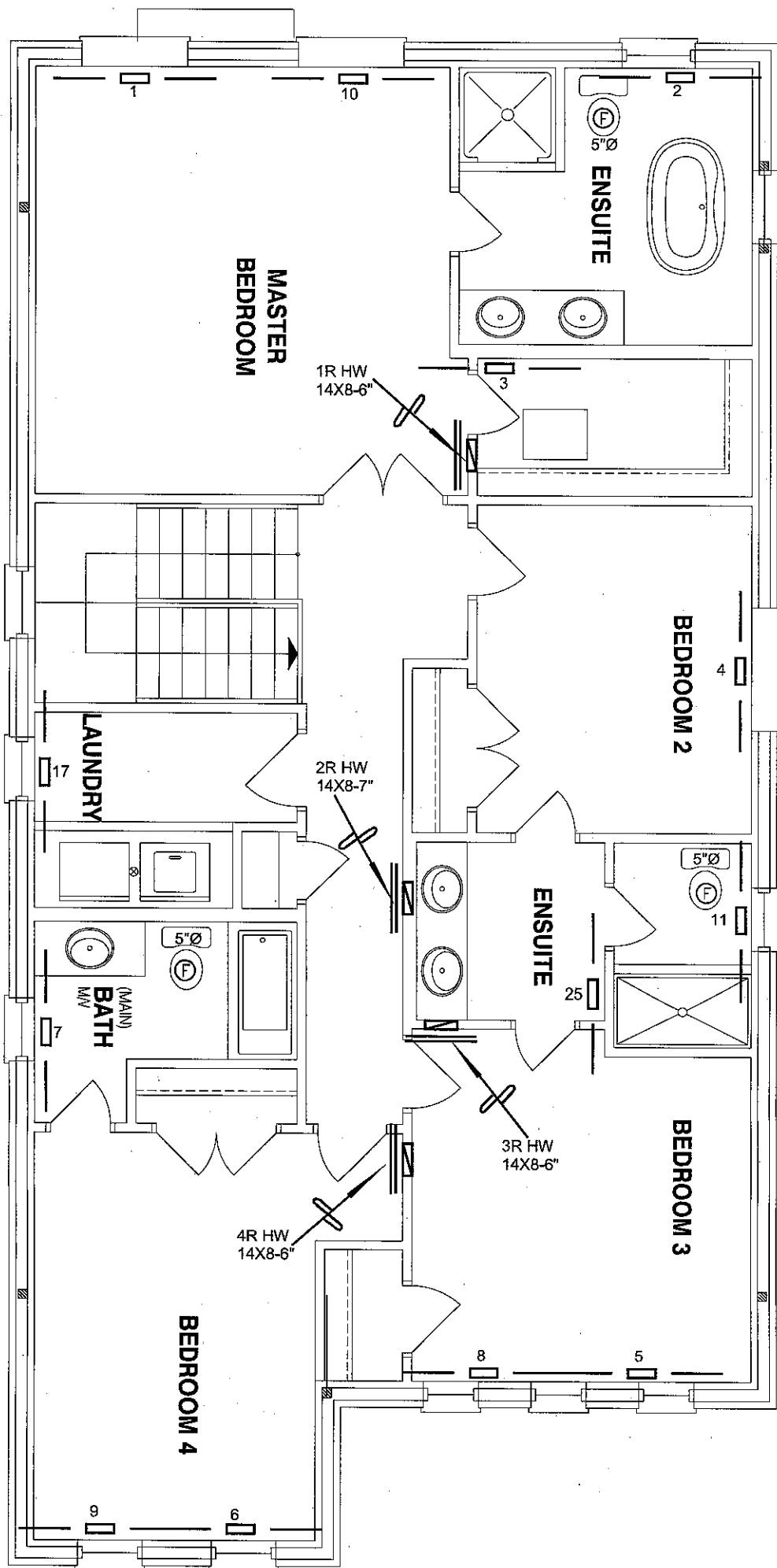
Scale

3/16" = 1'-0"

BCIN# 19669

LO#

83490



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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 35

CSA-F280-12

ENERGY STAR

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

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Client

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Project Name

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2635 sqft

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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.

Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

FEB/2019

Scale

3/16" = 1'-0"

BCIN# 19669

LO# 83490