

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

LOT 5
TYPE: BARTON 3

GFA: 2636

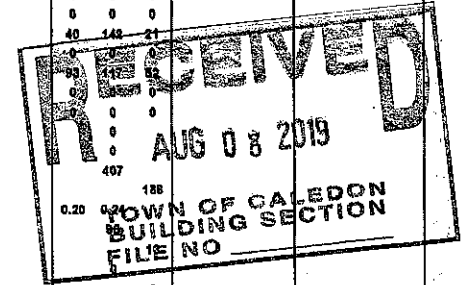
DATE: Jul-19
LO# 83033

WINTER NATURAL AIR CHANGE RATE 0.288
SUMMER NATURAL AIR CHANGE RATE 0.084

HEAT LOSS AT °F. 74
HEAT GAIN AT °F. 11

CSA-F280-12
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
			8	8	8	8	8	8	8	8
FACTORS										
GRS.WALL AREA	LOSS	GAIN	289	178	40	105	226	278	65	48
GLAZING	LOSS	GAIN								
NORTH	18.6	14.4	0	0	0	18	334	260	0	0
EAST	18.6	38.6	0	0	0	0	0	40	742	1042
SOUTH	18.6	22.8	0	111	137	0	0	0	0	0
WEST	18.6	38.6	32	594	1234	0	167	347	0	0
SKYLT.	31.2	99.9	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	261	918	136	160	562	33	40	142
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	281	352	167	134	168	75	58	70
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	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	0	0	0	0	0
SUBTOTAL HT LOSS			1975	1064	212	911	2137	1775	677	407
SUB TOTAL HT GAIN				1653	935	62	425	1828	1362	302
LEVEL FACTOR / MULTIPLIER	0.20	0.24		0.20	0.24		0.20	0.24		0.20
AIR CHANGE HEAT LOSS			455	251	50	216	804	418	160	188
AIR CHANGE HEAT GAIN				118	45	4	30	130	97	22
DUCT LOSS			0	0	0	0	264	219	84	0
DUCT GAIN			0	0	0	0	268	218	32	0
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0
HEAT GAIN APPLIANCES/LIGHTS			483	0	0	483	483	483	0	0
TOTAL HT LOSS BTU/H			2440	1314	262	1125	2904	2413	920	593
TOTAL HT GAIN x 1.3 BTU/H			3588	884	73	1632	3533	3120	463	262



ROOM USE	EXP. WALL	CLG. HT.	DIN	FAM	KIT	LIV	LAUN	PWD	FOY	MUD	WCB	BAS
			7	26	20	20	8	5	20	10	50	120
			10	10	10	10	8	10	10	11	9	9
FACTORS												
GRS.WALL AREA	LOSS	GAIN	68	288	198	198	68	60	188	110	426	780
GLAZING	LOSS	GAIN										
NORTH	18.6	14.4	20	371	289	0	0	0	0	0	30	587
EAST	18.6	38.6	0	0	0	0	0	0	8	83	183	0
SOUTH	18.6	22.8	0	0	0	24	448	548	13	241	297	0
WEST	18.6	38.6	0	0	25	482	1002	0	0	0	0	0
SKYLT.	31.2	99.9	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	20	493	73	0	0	40	980
NET EXPOSED WALL	3.5	0.5	49	174	26	232	815	121	163	574	85	174
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	0	0	0	0	0	0	85	107	47	0
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			0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			545	1287	1345	1058	529	279	1618	810	3055	2119
SUB TOTAL HT GAIN				314	1123	375	639	371	182	419	702	342
LEVEL FACTOR / MULTIPLIER	0.30	0.48		0.30	0.48		0.30	0.48		0.30	0.48	
AIR CHANGE HEAT LOSS			258	639	663	521	125	138	797	399	8708	74
AIR CHANGE HEAT GAIN				22	80	27	45	26	13	30	9	0
DUCT LOSS			0	0	0	0	0	0	0	0	0	0
DUCT GAIN			0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			483	483	483	483	483	483	0	0	0	483
TOTAL HT LOSS BTU/H			813	1936	2008	1679	654	417	2415	1208	3066	9349
TOTAL HT GAIN x 1.3 BTU/H			1065	2191	1149	1618	1145	254	583	167	912	1189

TOTAL HEAT GAIN BTU/H: 24128

TONS: 2.01

LOSS DUE TO VENTILATION LOAD BTU/H: 1693

STRUCTURAL HEAT LOSS: 35319

TOTAL COMBINED HEAT LOSS BTU/H: 36912

Michael O'Rourke

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

LOTS
TYPE: BARTON 3

DATE: Jul-19

GFA: 2635 LO# 83033

HEATING CFM 890 COOLING CFM 890
TOTAL HEAT LOSS 35,319 TOTAL HEAT GAIN 23,889
AIR FLOW RATE CFM 25.2 AIR FLOW RATE CFM 37.26

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

#GOODMAN
GMCC960402BNA 40

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

plenium 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

FAN SPEED
LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 890

DESIGN CFM = 890
CFM @ 0.5" 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	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.22	1.31	0.26	1.13	1.45	1.21	0.92	1.45	1.21	1.22	0.25	0.81	1.94	2.01	1.58	0.65	0.42	2.41	1.21	3.10	3.10	3.10	3.10
CFM PER RUN HEAT	31	33	7	28	37	30	23	37	30	31	6	20	49	51	40	16	11	61	30	78	78	78	78
RM GAIN MBH	1.78	0.88	0.07	1.53	1.92	1.56	0.46	1.92	1.56	1.78	0.13	1.07	2.19	1.15	1.52	1.14	0.25	0.58	0.17	0.52	0.52	0.52	0.52
CFM PER RUN COOLING	68	33	3	57	71	58	17	71	58	66	5	40	82	43	57	43	9	22	6	19	19	19	19
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	258	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	6	5	5	4	5	5	5	4	4	6	4	5	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	228	379	80	143	272	220	264	272	220	228	69	229	250	585	294	117	126	448	344	573	573	573	573
COOLING VELOCITY (ft/min)	485	379	34	291	521	426	195	521	426	485	57	459	418	493	419	316	103	162	69	140	140	140	140
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	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	0.25
CFM PER RUN HEAT	6
RM GAIN MBH	0.13
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

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	VELOCITY
CFM	PRESS.	DUCT	DUCT	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	189	0.08	7.5	8	x	8	425		
TRUNK B	408	0.08	10	12	x	8	609		
TRUNK C	249	0.06	9	10	x	8	448		
TRUNK D	483	0.06	11.5	16	x	8	543		
TRUNK E	0	0.00	0	0	x	8	0		
TRUNK F	0	0.00	0	0	x	8	0		
TRUNK G	0	0.00	0	0	x	8	0		
TRUNK H	0	0.00	0	0	x	8	0		
TRUNK I	0	0.00	0	0	x	8	0		
TRUNK J	0	0.00	0	0	x	8	0		
TRUNK K	0	0.00	0	0	x	8	0		
TRUNK L	0	0.00	0	0	x	8	0		

RETURN AIR TRUNK SIZE

TYPE	TRUNK	STATIC	ROUND	RECT	VELOCITY			
	CFM	PRESS.	DUCT	DUCT			(ft/min)	
TRUNK	O	0	0.06	0	0	x	8	0
	P	0	0.06	0	0	x	8	0
	Q	0	0.06	0	0	x	8	0
	R	0	0.06	0	0	x	8	0
	S	0	0.06	0	0	x	8	0
	T	0	0.06	0	0	x	8	0
	U	0	0.06	0	0	x	8	0
	V	0	0.06	0	0	x	8	0
	W	0	0.06	0	0	x	8	0
	X	890	0.06	14.4	24	x	8	668
DROP	Y	475	0.06	11.4	16	x	8	534
	Z	0	0.06	0	0	x	8	0
		890	0.06	14.4	24	x	10	534

RETURN AIR #	1	2	3	4	5	6																		BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	105	150	85	85	155	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155
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.	50	50	55	57	45	36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	135	135	175	175	220	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	185	185	230	232	265	176	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.08	0.08	0.06	0.06	0.06	0.08	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	6.9	6	6	7.5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.6
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	8
	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	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

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

LO # 83033
LOT 5

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 Vent. 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>
HRAJ #	001820
Date:	July-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: 19689 *Michael O'Rourke* MICHAEL O'ROURKE

THIS STRUCTURE HAS NOT BEEN CONSTRUCTED BY A DESIGNER 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#: 83033	Model: BARTON 3	Builder: GREENPARK HOMES	Date: 2019-07-09																																																									
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>9911</td> </tr> <tr> <td>First</td> <td>1166</td> <td>10</td> <td>11555.06</td> </tr> <tr> <td>Second</td> <td>1469</td> <td>8</td> <td>11869.52</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>33,335.6 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>944.0 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1166	9	9911	First	1166	10	11555.06	Second	1469	8	11869.52	Third	0	9	0	Fourth	0	9	0	Total:			33,335.6 ft³	Total:			944.0 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%;">0.258</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.084</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>22</td> <td>-19</td> <td>41</td> <td>74</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.258	SUMMER NATURAL AIR CHANGE RATE	0.084	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-19	41	74	Summer DTDc	24	30	6	11
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
Bsmt	1166	9	9911																																																									
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Second	1469	8	11869.52																																																									
Third	0	9	0																																																									
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.258 x 262.21 x 41 °C x 1.2 = 3346 W = 11417 Btu/h			$HG_{sath} = LR_{airc} \times \frac{V_h}{3.6} \times DTD_c \times 1.2$ 0.084 x 262.21 x 6 °C x 1.2 = 161 W = 550 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)																																																												
$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{lagger} + HL_{lgyr}) \div (HL_{laggerlevel} + HL_{lgyrlevel})\}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{level})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HL_{level})</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center;">11,417</td> <td>6,697</td> <td>0.852</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>6,951</td> <td>0.493</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>9,687</td> <td>0.236</td> </tr> <tr> <td>4</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td>0</td> <td>0.000</td> </tr> </tbody> </table> *HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairv = 0					Level	Level Factor (LF)	HLairbv 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	11,417	6,697	0.852	2	0.3	6,951	0.493	3	0.2	9,687	0.236	4	0	0	0.000	5	0	0	0.000																														
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THIS STRUCTURE MUST BE
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BARTON 3	LOT 5	BUILDER: GREENPARK HOMES
SFQT: 2635	LO# 83033	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):	33335.6	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:	6.5 ft
LENGTH: 57.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	120.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	50.0 ft

2012 OBC - COMPLIANCE PACKAGE

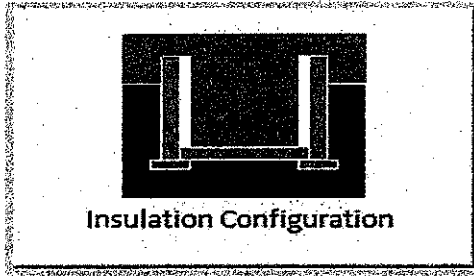
Component	Compliance Package	
	ENERGYSTAR	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	R22+R5	21.10
Basement Walls Minimum RSI (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

Michael O'Rourke

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

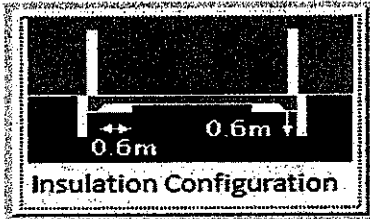
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	6.4	 Insulation Configuration
Floor Width (m):	8.5	
Exposed Perimeter (m):	36.6	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.70	
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):		621

THIS STRUCTURE MUST BE
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THE ONTARIO BUILDING CODETYPE: BARTON 3
LO# 83033

LOT 5

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):	3.4	 Insulation Configuration
Width (m):	8.5	
Exposed Perimeter (m):	15.2	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		202

TYPE: BARTON 3
LO# 83033

LOT 5

CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE

Air Infiltration Residential Load Calculator

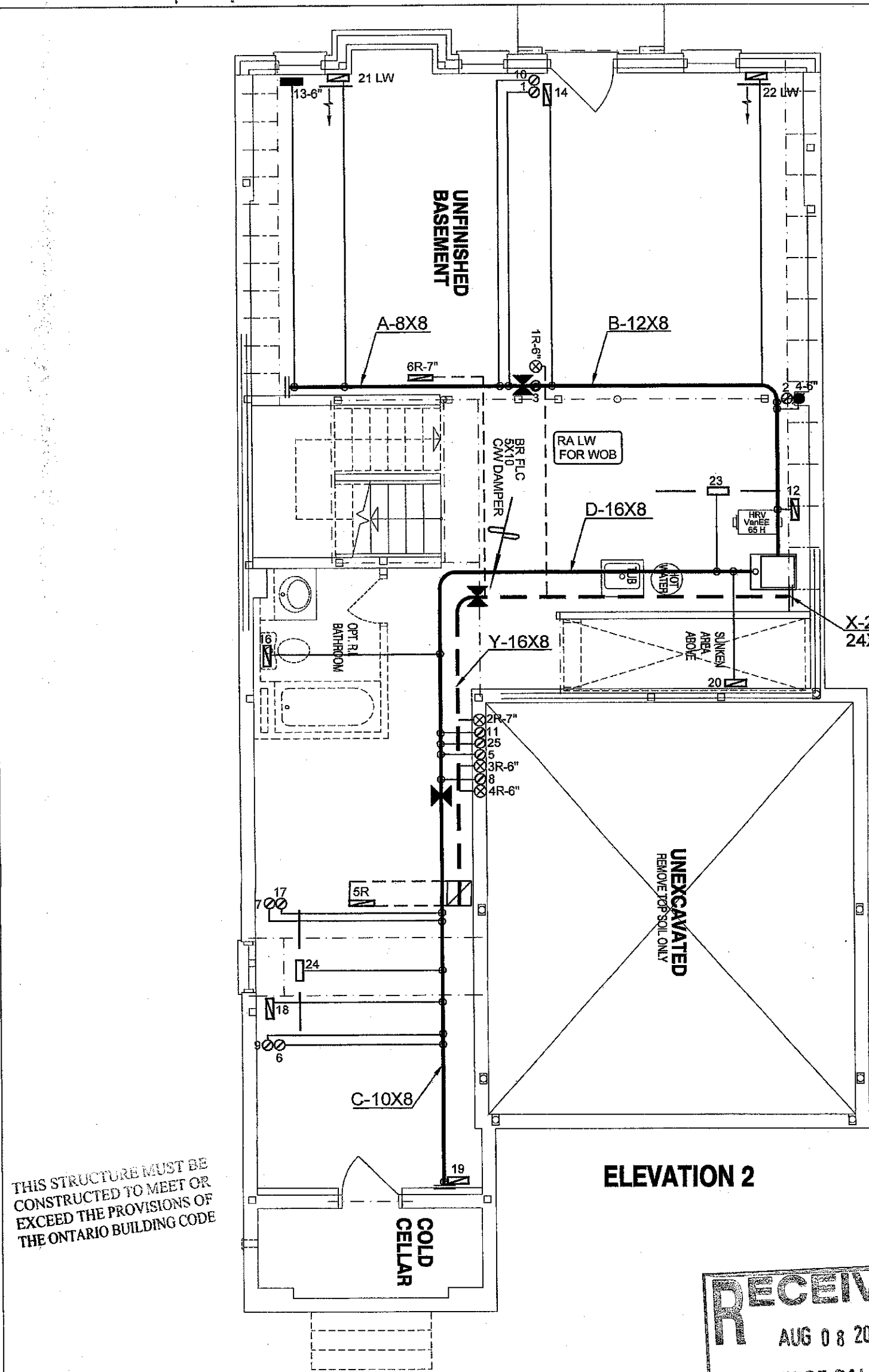
Supplemental tool for CAN/CSA-F280

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):	8.07		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	944.0		
Air Leakage/Ventilation			
Air Tightness Type:	Energy Star Detached (2.5 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	881.2 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):	0.258		
Cooling Air Leakage Rate (ACH/H):	0.084		

TYPE: BARTON 3
LO# 83033

LOT 5

CONSTRUCTED TO MEET OR
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THE ONTARIO BUILDING CODE



APPROVED
For construction as per the
Ontario Building Code
Town of Caledon Building Department
Initial SA
Date AUG 15, 2019
File # BAP19/0465

ELEVATION 2

RECEIVED
AUG 08 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

LOT 5
CSA-F280-12

ENERGY STAR

I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION 6, 12.5 OF THE BUILDING CODE.

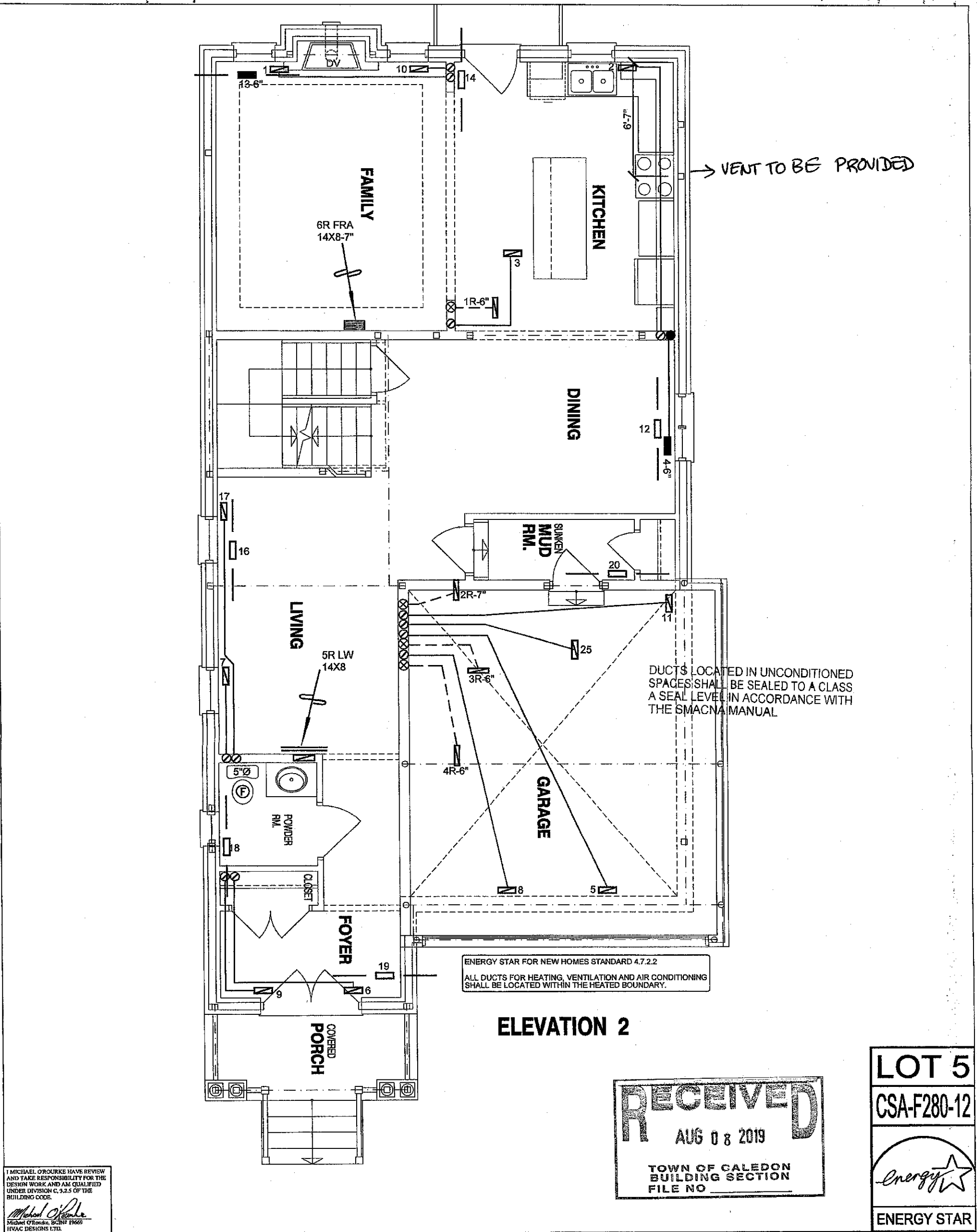
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

MINIMUM CEILING HEIGHT SHALL BE 2100 MM OVER AT LEAST 75% OF BASEMENT AREA EXCEPT THAT UNDER BEAMS AND DUCTS THE CLEARANCE IS PERMITTED TO BE REDUCED 1950 MM

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	 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	HEAT LOSS 36912 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
		MAKE GOODMAN	MODEL GMEC960402BNA	3RD FLOOR					BASEMENT HEATING LAYOUT
		INPUT 40 MBTUH		2ND FLOOR		13	4	3	
		OUTPUT 38.4 MBTUH		1ST FLOOR		7	2	2	
		Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO	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.	COOLING 2.0 TONS	FAN SPEED 890 cfm @ 0.6" w.c.	BASEMENT 4 1 0			
LOT 5 BARTON 3				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				Scale 3/16" = 1'-0"	
								BCIN# 19669	
								LO# 83033	
2635 sqft									

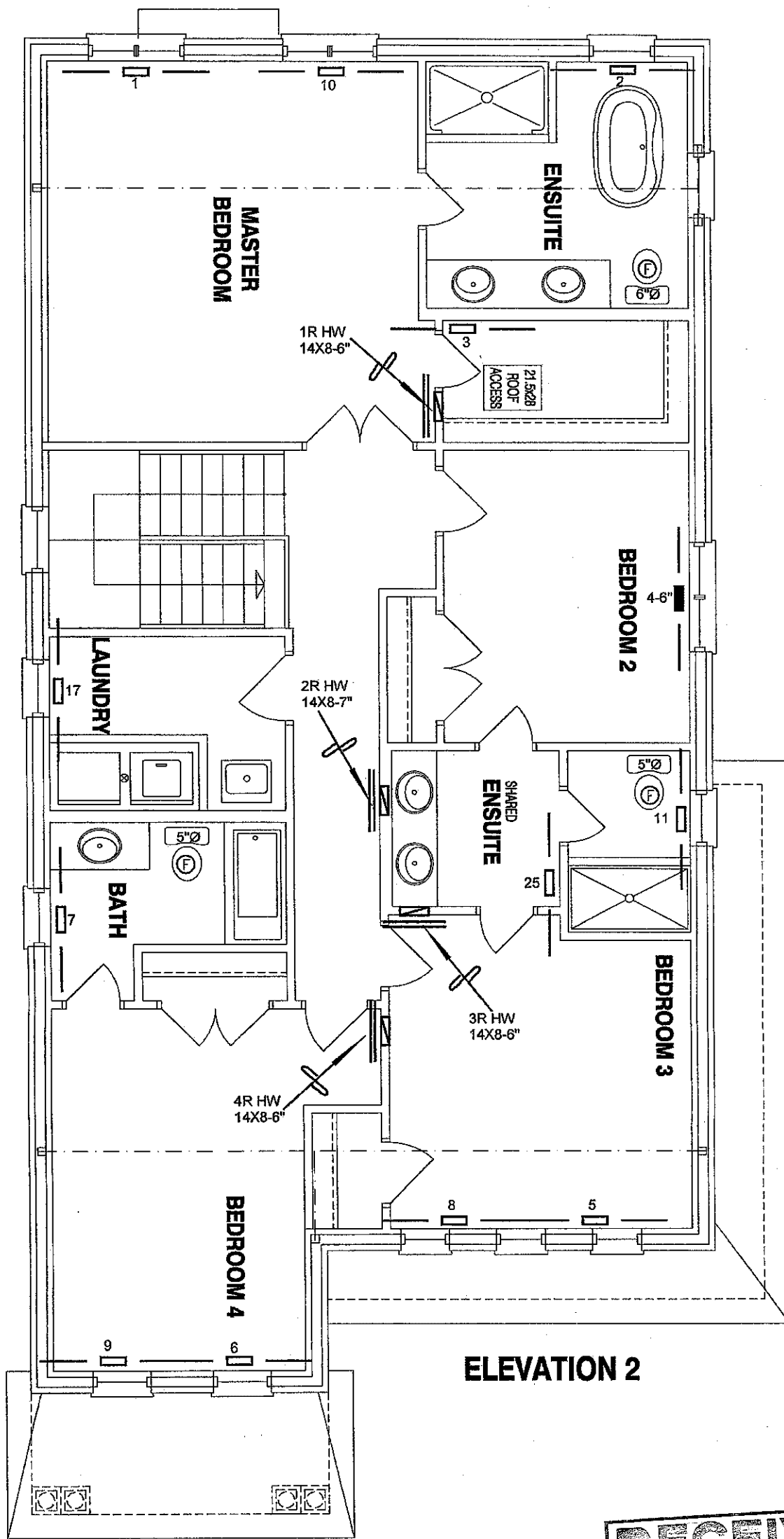


I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.9.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	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		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	THIS STRUCTURE MUST BE CONSTRUCTED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO				Date JULY/2019	Scale 3/16" = 1'-0"
LOT 5 BARTON 3		BCIN# 19669			
2635 sqft		Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.		LO#	83033



ELEVATION 2

THIS STRUCTURE MUST BE
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THE ONTARIO BUILDING CODE

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.

RECEIVED
AUG 08 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO _____

LOT 5

CSA-F280-12

ENERGY STAR

HVAC LEGEND						3.		
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	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
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Client
GREENPARK HOMES

Project Name
LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 5
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@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.

Sheet Title
SECOND FLOOR
HEATING
LAYOUT

Date
JULY/2019

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 83033