

SITE NAME: LAMBERT'S LANE PH.2

BUILDER: GREENPARK HOMES

TYPE: HORIZON 3E

GFA: 1780

 DATE: Feb-19
 LOST \$1375

WINTER NATURAL AIR CHANGE RATE 0.282

HEAT LOSS AT °F. 74

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.088

HEAT GAIN AT °F. 11

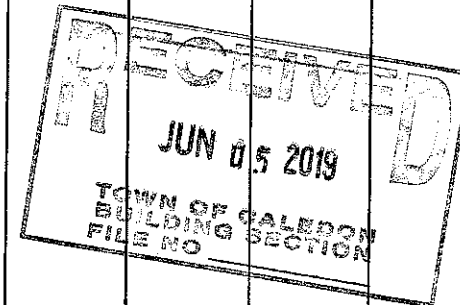
ENERGYSAR

ROOM USE		MBR		ENS		WIC		BED-3		BED-2		BATH		SUMMER NATURAL AIR CHANGE RATE 0.088		HEAT LOSS AT F. 14		HEAT GAIN AT F. 11		ENERGYSTAR	
EXP. WALL		28		6		7		13		29		6									
CLG. HT.		9		9		9		9		10		9									
FACTORS																					
GRS.WALL AREA		252		64		63		117		276		64									
LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN									
GLAZING																					
NORTH		18.6	10.1	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	0	0	0	0	0	0	0	0	0	0
SOUTH		18.6	24.1	0	0	0	0	0	0	18	297	691	24	445	977	0	0	0	0	0	0
WEST		18.6	40.7	29	538	1181	11	204	448	0	0	0	0	0	0	6	111	144	0	0	0
SKYL.T.		31.2	99.9	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
NET EXPOSED WALL		3.5	0.5	223	784	116	43	151	22	63	222	33	101	385	63	252	884	131	48	169	25
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
EXPOSED CLG		1.3	0.6	195	244	109	78	98	43	147	184	82	180	226	100	174	218	97	126	158	70
NO ATTIC EXPOSED CLG		2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	24	64	29	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
BASEMENT/CRAWL HEAT LOSS				0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS				1967		453		406		678		1612			438			240			
SUB TOTAL HT GAIN					1408		614		115		804		1284								
LEVEL FACTOR / MULTIPLIER		0.20	0.35		0.20	0.35		0.20	0.35		0.20	0.35		0.20	0.35						
AIR CHANGE HEAT LOSS				547		158		142		306		563			0.20	0.35		163			
AIR CHANGE HEAT GAIN					90		33		7		52		79					15			
DUCT LOSS				0		0		0		0		0						0			
DUCT GAIN				0		0		0		0		0						0			
HEAT GAIN PEOPLE		240		2	480	0	0	0	0	1	240	1	240					0			
HEAT GAIN APPLIANCES/LIGHTS					565	0	0	0	0		565		565					0			
TOTAL HT LOSS BTU/H				2113		611		547		1184		2176						591			
TOTAL HT GAIN x 1.3 BTU/H				3304		711		169		2160		2754						332			

RECEIVED

JUN 05 2019

TOWN OF CALEDON
BUILDING SECTION
FILE NO



ROOM USE			LV/DN				KTGR				WIR		FOY										BAS	
EXP. WALL			33				43				7		6										90	
CLG. HT.			10				10				10		11										9	
FACTORS																								
GRS.WALL AREA	LOSS	GAIN																						
GLAZING			330				430				70		65										540	
			LOSS		GAIN		LOSS		GAIN		LOSS		GAIN								LOSS		GAIN	
NORTH	18.6	15.1	0	0	0		0	0	0		0	0	0	0	0							15	278	227
EAST	18.6	40.7	41	751	1668		0	0	0		0	0	0	7	130	285						0	0	0
SOUTH	18.6	24.1	17	315	409		0	0	0		11	204	285	0	0	0						0	0	0
WEST	18.6	40.7	0	0	0		43	798	1761		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		24	592	38		0	0	0	0	0	0						0	0	0
NET EXPOSED WALL	3.5	0.5	272	957	142		363	1277	189		0	0	0	20	493	73						20	493	73
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0		0	0	0		59	207	31	39	137	20						0	0	0
EXPOSED CLG	1.3	0.6	0	0	0		0	0	0		0	0	0	0	0	0						270	949	141
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	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	0	0						0	0	0
SUBTOTAL HT LOSS			2032				2666				412		760										2907	
SUB TOTAL HT GAIN					2220				2028				295		378								4627	
LEVEL FACTOR / MULTIPLIER	0.30		0.48				0.30		0.48		0.30		0.48										441	
AIR CHANGE HEAT LOSS			971				1273				197		363										0.56 1.01 4672	
AIR CHANGE HEAT GAIN					143				130				24										28	
DUCT LOSS			0				0				0		0										0	
DUCT GAIN			0				0				0		0										0	
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0								0	
HEAT GAIN APPLIANCES/LIGHTS					565		0		565		0		0		0								0	
TOTAL HT LOSS BTU/H			3083				3939				608		1123										565	
TOTAL HT GAIN x 1.3 BTU/H			3807				3540				409		524										9298	
THIS STRUCTURE MUST BE CONSTRUCTED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE																								
1345																								

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

TOTAL HEAT GAIN BTU/H:

19222

TONS: 1.60

LOSS DUE TO VENTILATION LOAD BTU/H: 1274

STRUCTURAL HEAT LOSS: 25193

TOTAL COMBINED HEAT LOSS BTU/H: 26467

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

TYPE: HORIZON 3E

DATE: Feb-19

GFA: 1780 LO# 81376

LO# 81376

HEATING CFM	557	COOLING CFM	557
TOTAL HEAT LOSS	25.193	TOTAL HEAT GAIN	19.043
AIR FLOW RATE CFM	22.11	AIR FLOW RATE CFM	29.25

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

#GOODMAN
GMEC960302BNA 30

AFUE = 96 %
INPUT (BTU/H) = 30,000
OUTPUT (BTU/H) = 28,800

DESIGN CFM = 557
CFM @ .6" E.S.P.

TEMPERATURE RISE 48 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	7	5	3
R/A	0	0	2	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5"Ø unless noted otherwise on layout.

plenum pressure s/a	0.18
max s/a dif press. loss	0.03
min adjusted pressure s/a	0.15

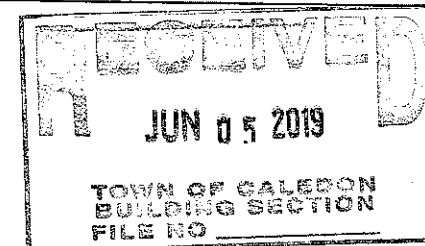
r/a pressure	0.17
r/a grille press. Loss	0.02
adjusted pressure r/a	0.15

LOW	
MEDLOW	
MEDIUM	
MEDIUM HIGH	557
HIGH	895

Run #	1	2	3	4	6	7	10	13	14	15	HIGH	895	TEMPERATURE RISE	48	°F
ROOM NAME	MBR	ENS	WIC	BED-3	BED-2	BATH	MBR	LV/DN	KT/GR	KT/GR	18	19	21	22	24
RM LOSS MBH.	1.06	0.61	0.55	1.18	2.17	0.59	1.06	3.00	1.97	1.97	W/R	FOY	BAS	BAS	BAS
CFM PER RUN HEAT	23	14	12	26	48	13	23	66	44	44	0.61	1.12	3.10	3.10	3.10
RM GAIN MBH.	1.65	0.71	0.16	2.16	2.75	0.33	1.65	3.81	1.77	1.77	13	25	69	69	69
CFM PER RUN COOLING	48	21	5	63	81	10	48	111	52	52	0.41	0.52	0.45	0.45	0.45
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.15	0.17	0.17	12	15	13	13	13
ACTUAL DUCT LGH.	35	46	29	52	45	31	43	30	20	27	0.17	0.17	0.17	0.17	0.17
EQUVALENT LENGTH	170	110	210	160	190	190	190	100	170	110	14	34	26	17	22
TOTAL EFFECTIVE LENGTH	205	156	239	212	235	221	233	130	190	137	170	130	100	120	110
ADJUSTED PRESSURE	0.08	0.11	0.07	0.08	0.07	0.08	0.07	0.12	0.09	0.13	184	164	126	137	132
ROUND DUCT SIZE	5	4	4	5	6	4	5	6	5	4	0.09	0.1	0.14	0.13	0.13
HEATING VELOCITY (f/min)	169	161	138	191	245	149	169	337	323	505	4	4	5	5	5
COOLING VELOCITY (f/min)	352	241	57	463	413	115	352	566	392	597	149	287	507	507	507
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	138	172	95	95	95
TRUNK	A	A	B	B	B	B	A	B	A	A	3X10	3X10	3X10	3X10	3X10

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														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	299	0.07	9.2	10	X	8	538		TRUNK G	0	0.00	0	0	X	8	0	TRUNK O	0	0.06	0	0	X	8	0			
TRUNK B	259	0.07	8.7	10	X	8	466		TRUNK H	0	0.00	0	0	X	8	0	TRUNK P	0	0.06	0	0	X	8	0			
TRUNK C	0	0.00	0	0	X	8	0		TRUNK I	0	0.00	0	0	X	8	0	TRUNK Q	0	0.06	0	0	X	8	0			
TRUNK D	0	0.00	0	0	X	8	0		TRUNK J	0	0.00	0	0	X	8	0	TRUNK R	0	0.06	0	0	X	8	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			
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			
																	TRUNK U	0	0.06	0	0	X	8	0			
																	TRUNK V	0	0.06	0	0	X	8	0			
																	TRUNK W	0	0.06	0	0	X	8	0			
RETURN AIR #	1	2	3	4											BR												
AIR VOLUME	140	85	85	145	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	102											
ACTUAL DUCT LGH.	34	49	22	23	1	1	1	1	1	1	1	1	1	1	1	14											
EQUIVALENT LENGTH	150	185	145	190	0	0	0	0	0	0	0	0	0	0	0	135											
TOTAL EFFECTIVE LH	184	234	167	213	1	1	1	1	1	1	1	1	1	1	1	149											
ADJUSTED PRESSURE	0.08	0.06	0.09	0.07	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	6.7	6	5.4	7	0	0	0	0	0	0	0	0	0	0	0	5.6											
INLET GRILL SIZE	8	8	8	8	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											
INLET GRILL SIZE	14	14	14	14	0	0	0	0	0	0	0	0	0	0	0	14											

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

LO # 81376

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 5 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	2 @ 10.6 cfm	21.2 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	3 @ 10.6 cfm	31.8 cfm
Table 9.32.3.A.	TOTAL	148.4 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		63.6 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	148.4	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	84.8	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
63.6 cfm	3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
63.6 CFM	X 74 F	X 1.08	X	0.25

SUPPLEMENTAL FANS		PANASONIC
Location	Model	cfm HVI Sones
ENS	FV-05-11VK1	60 ✓ 0.3
BATH	FV-05-11VK1	60 ✓ 0.3
W/R	FV-05-11VK1	60 ✓ 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:	February-19

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.3 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#: 81376

Model: HORIZON 3E

Builder: GREENPARK HOMES

Date: 2019-02-05

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	890	9	8010
First	890	10	8900
Second	890	9	8010
Third	0	9	0
Fourth	0	9	0
Total:			24,920.0 ft³
Total:			705.7 m³

WINTER NATURAL AIR CHANGE RATE	0.282
SUMMER NATURAL AIR CHANGE RATE	0.088

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
6.2.6 Sensible Gain due to Air Leakage

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

0.282 x 196.02 x 41 °C x 1.2 = 2738 W

= 9343 Btu/h

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

= 0.088 x 196.02 x 6 °C x 1.2 = 127 W

= 434 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation
6.2.7 Sensible heat Gain due to Ventilation

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

64 CFM x 74 °F x 1.08 x 0.25 = 1274 Btu/h

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

64 CFM x 11 °F x 1.08 x 0.25 = 189 Btu/h

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{alrr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve} + HL_{bgcleve})\}$$

Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{level})
1	0.5	9,343	4,627	1.010
2	0.3		5,870	0.478
3	0.2		5,353	0.349
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 HLairv = 0

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

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** HORIZON 3E**SFQT:** 1780**LO#** 81376**BUILDER:** GREENPARK HOMES**SITE:** LAMBERT'S LANE PH.2**DESIGN ASSUMPTIONS**

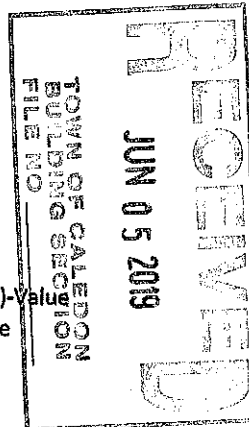
HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.00	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	24920.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
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: 44.0 ft	WIDTH: 21.0 ft	EXPOSED PERIMETER:	90.0 ft

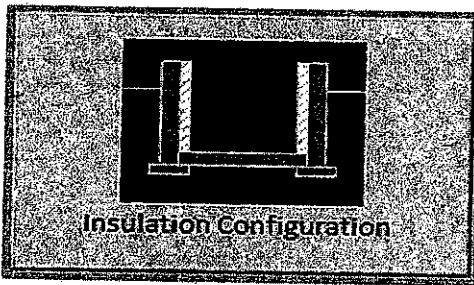
2012 OBC - COMPLIANCE PACKAGE

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	-
S 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):	13.4	 Insulation Configuration
Floor Width (m):	6.4	
Exposed Perimeter (m):	27.4	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.4	
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):	852	

TYPE: HORIZON 3E

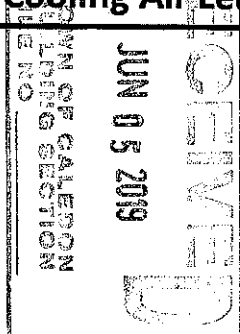
LO# 81376

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

Air Infiltration Residential Load Calculator

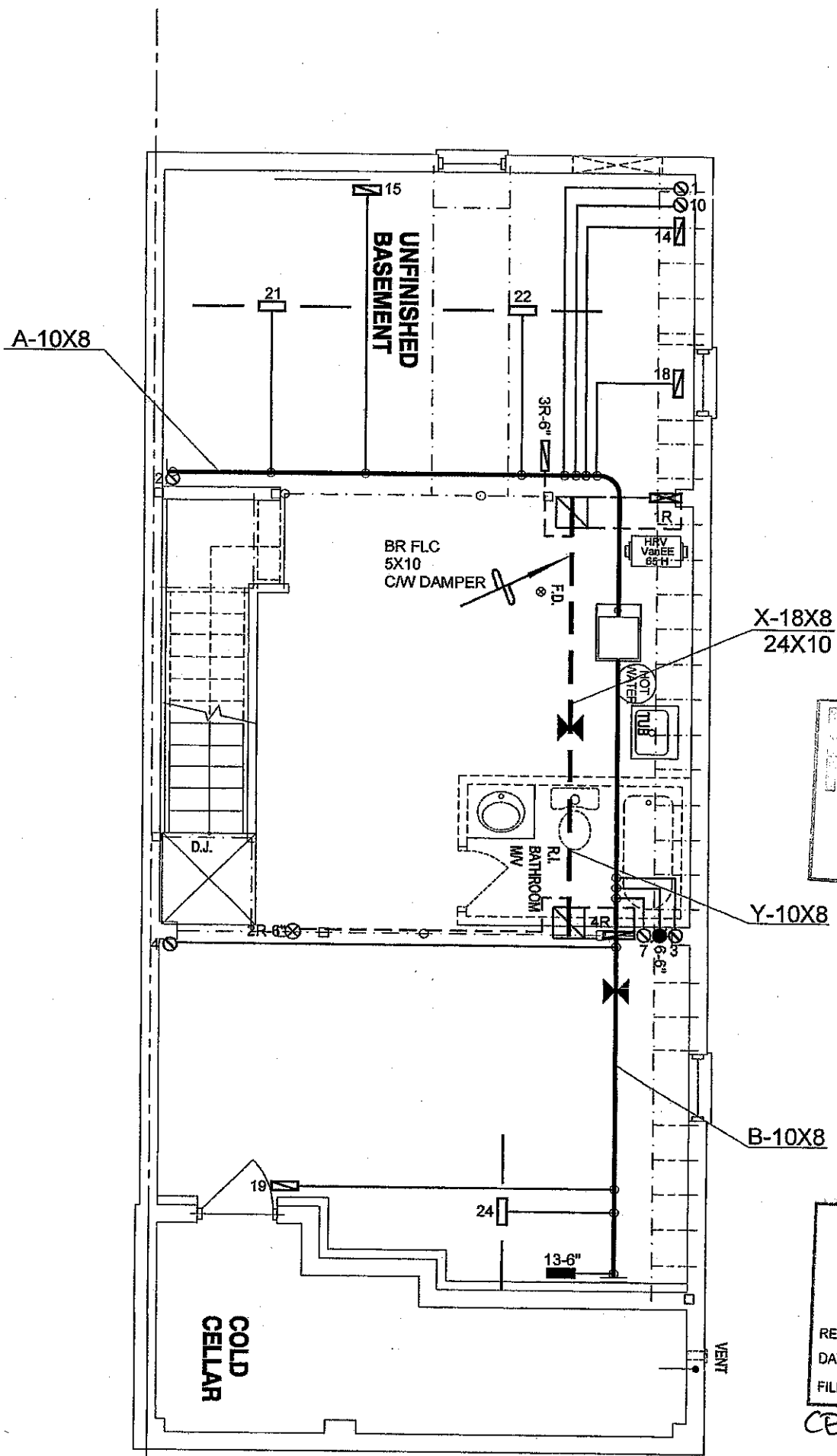
Supplemental tool for CAN/CSA-F280

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:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	705.7			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	790.5 cm ²		
	3.00	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	30.0	30.0		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.282			
Cooling Air Leakage Rate (ACH/H):	0.088			



TYPE: HORIZON 3E

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



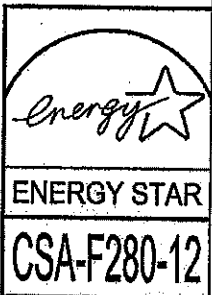
RECEIVED
JUN 05 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.

CERTIFIED MODEL
PRE-APPROVED
FOR PERMIT APPLICATION AS PER THE
ONTARIO BUILDING CODE
TOWN OF CALEDON BUILDING DIVISION
REVIEWED BY [Signature] (SA)
DATE June 3, 2019
FILE # CMD-1000038
CELEBRATION (192)

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

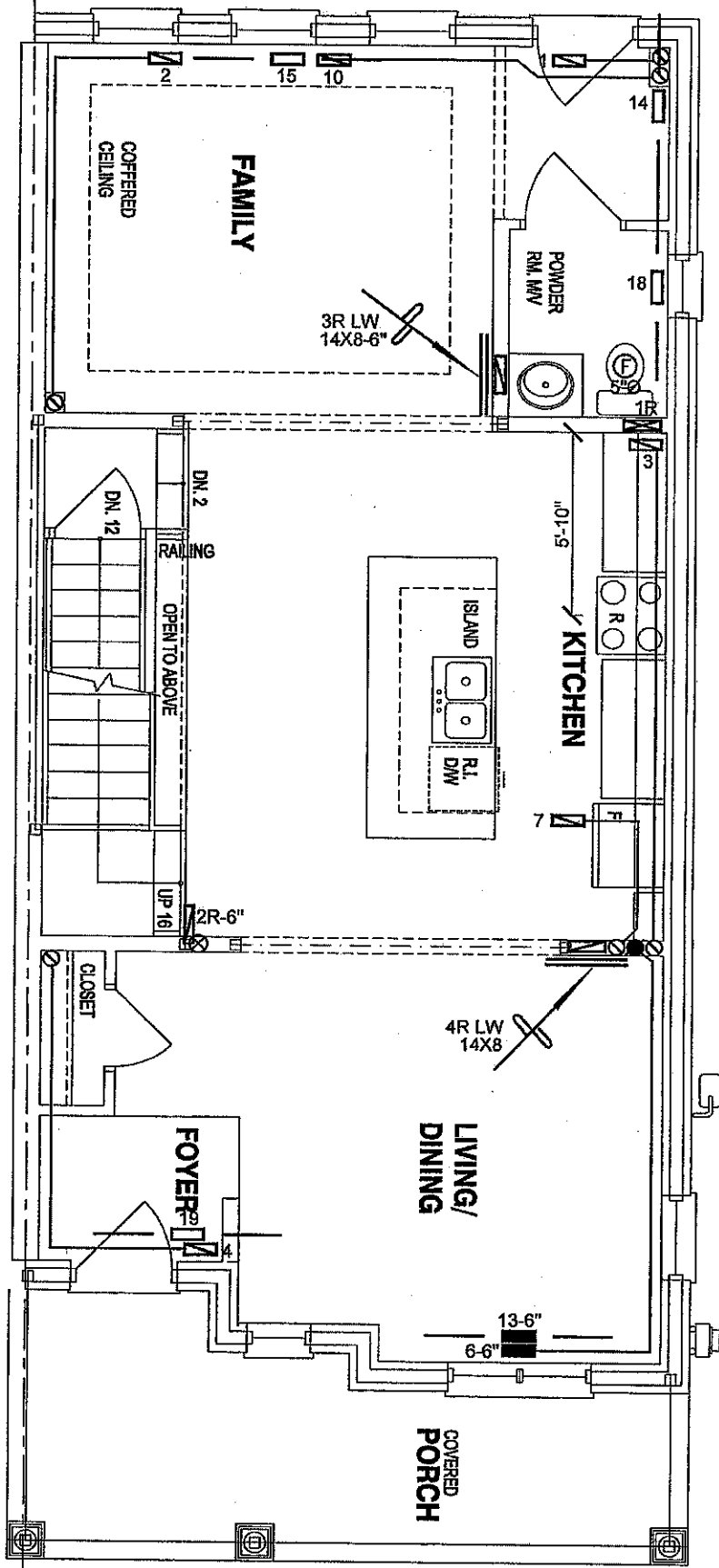
ELEV-1 & 2

APPLICANT COPY

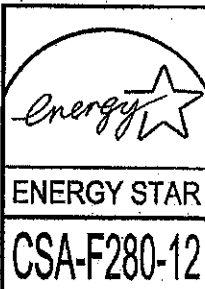


I MICHAEL O'ROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 32.1 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		8" 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
	SUPPLY AIR BOOT ABOVE		8" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	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.								REVISIONS	
Client								Sheet Title	
GREENPARK HOMES								BASEMENT HEATING LAYOUT	
Project Name								Date	
LAMBERTS LANE HOME CORP PH 2								FEB/2019	
CALEDON, ONTARIO								Scale	
HORIZON 3E 1780 sqft								3/16" = 1'-0"	
HVAC DESIGNS LTD.								BCIN# 19669	
375 Finley Ave - Suite 202 - Ajax, Ontario								LO# 81376	
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375									
Email: info@hvacdsgns.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 26467 BTU/H				# OF RUNS S/A R/A FANS					
UNIT DATA				3RD FLOOR					
MAKE GOODMAN				2ND FLOOR					
MODEL GMEC960302BNA				1ST FLOOR					
INPUT 30 MBTU/H				BASEMENT					
OUTPUT 28.8 MBTU/H				ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5/8 UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A					
COOLING 1.5 TONS									
FAN SPEED 557 cfm @ 0.6" w.c.									



ELEV-1 & 2



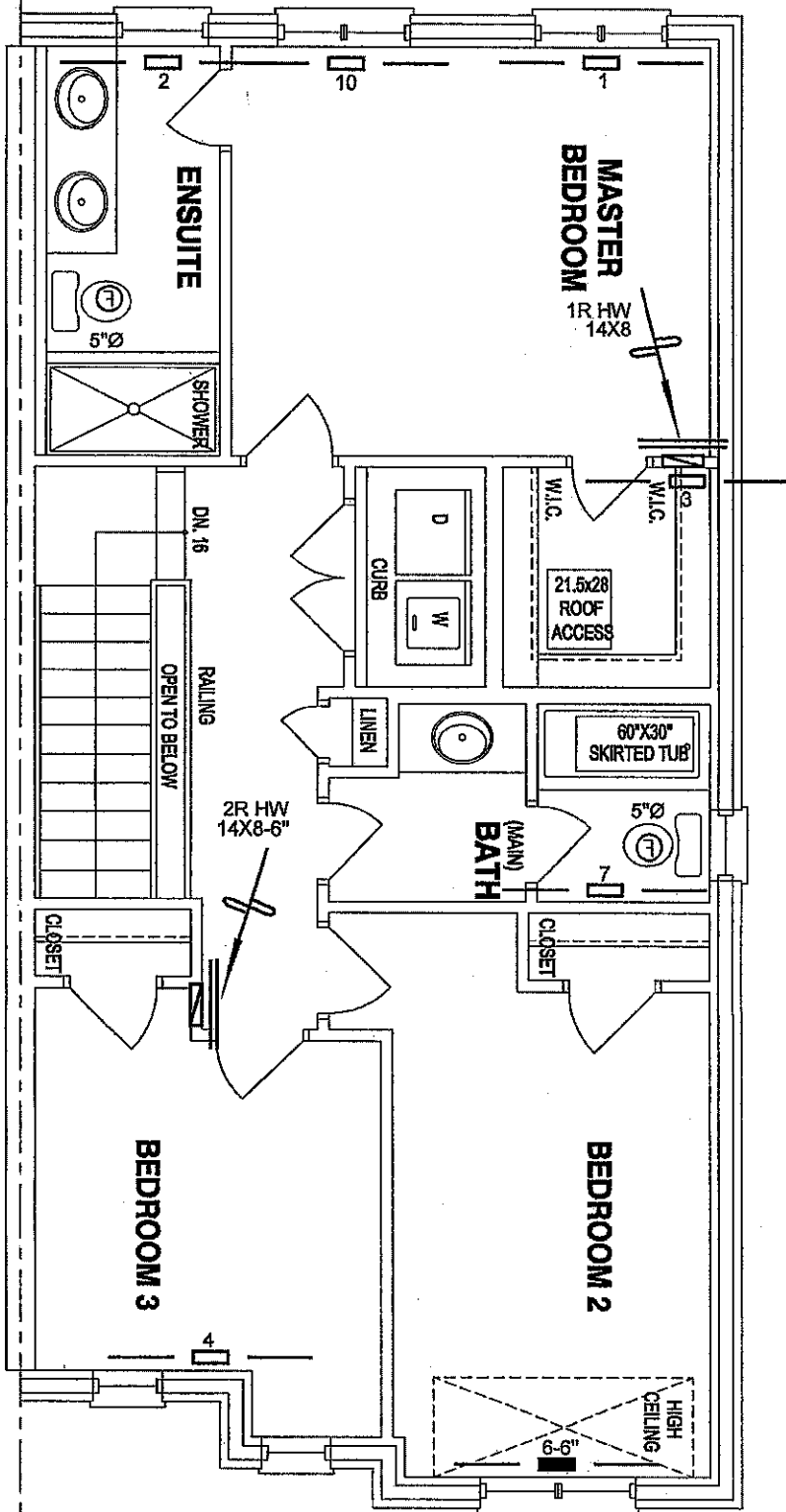
I MICHAEL O'DRISKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 32.5 OF THE BUILDING CODE.

Michael O'Driscoll
HVAC DESIGNS LTD.

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

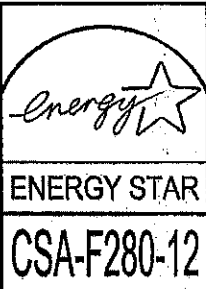
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS 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		 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 FEB/2019	Scale 3/16" = 1'-0"
HORIZON 3E		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.		BCIN# 19669	
1780 sqft				LO#	81376



ELEV-1 & 2

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, 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		

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**

HORIZON 3E 1780 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.

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

Sheet Title	
SECOND FLOOR HEATING LAYOUT	
Date	FEB/2019
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	81376