

SITE NAME: LAMBERT'S LANE PH.2

BUILDER: GREENPARK HOMES

LOT 64 TYPE: BRESTON-14 GFA: 2759 DATE: Aug-19 LO#: 82909

WINTER NATURAL AIR CHANGE RATE 0.262

HEAT LOSS AT °F. 74

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.085

HEAT GAIN AT °F. 11

ENERGYSTAR

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	S-ENS
			31	24	5	33	28	15	6	7	6
			8	8	8	8	8	8	8	8	8
GRS.WALL AREA	LOSS	GAIN	251	194	40	267	226	121	48	57	48
GLAZING	LOSS	GAIN									
NORTH	18.6	15.1	0	0	0	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0
SOUTH	18.6	24.1	0	0	0	0	0	0	0	0	0
WEST	18.6	40.7	40	742	1629	20	371	481	9	167	217
SKYLT.	31.2	99.9	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	211	740	110	154	542	80	40	142	21
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	230	288	128	153	192	85	75	94	42
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1771	1475	236	2429	1927	1060	526	427	740
SUB TOTAL HT GAIN			1867	1461	63	2038	2299	682	603	283	458
LEVEL FACTOR / MULTIPLIER	0.20	0.22									
AIR CHANGE HEAT LOSS	393			327	52	539	427	235	117	95	164
AIR CHANGE HEAT GAIN		79		62	3	87	98	29	26	12	20
DUCT LOSS		0		0	0	297	0	0	0	0	90
DUCT GAIN		0		0	0	287	0	0	0	0	48
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0	0
HEAT GAIN APPLIANCES/LIGHTS			506	0	0	506	506	506	0	0	0
TOTAL HT LOSS BTU/H			2163	1802	288	3264	2355	1295	643	522	994
TOTAL HT GAIN x 1.3 BTU/H			3812	1980	85	4105	4085	1894	818	383	683

ROOM USE	EXP. WALL	CLG. HT.	DIN	FAM	KT/BR	LIB	LAUN	WR	FOY	MUD	WOB	BAS
			12	31	37	38	7	14	12	22	12	158
			10	10	10	10	8	10	10	11	9	9
GRS.WALL AREA	LOSS	GAIN	120	310	370	380	57	140	120	242	108	948
GLAZING	LOSS	GAIN										
NORTH	18.6	15.1	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
SOUTH	18.6	24.1	40	742	963	27	501	850	0	0	0	0
WEST	18.6	40.7	0	0	0	32	594	1303	45	835	1832	0
SKYLT.	31.2	99.9	0	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	80	281	42	251	883	131	325	1143	169	300
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	0	0	0	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			1023	1977	1978	2539	584	703	1267	1274	82	2755
SUB TOTAL HT GAIN			1004	2084	2002	2748	324	403	188	189	906	5191
LEVEL FACTOR / MULTIPLIER	0.30	0.35										
AIR CHANGE HEAT LOSS	354			683	684	878	132	243	438	440	8	6199
AIR CHANGE HEAT GAIN		43		89	85	117	14	17	8	8	0	37
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			506	506	506	506	506	506	0	0	0	508
TOTAL HT LOSS BTU/H			1377	2860	2661	3417	725	946	1705	1714	906	11390
TOTAL HT GAIN x 1.3 BTU/H			2019	3482	3371	4382	1097	546	255	256	159	1686

TOTAL HEAT GAIN BTU/H:

35333

TONS: 2.94

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 40829

TOTAL COMBINED HEAT LOSS BTU/H: 42422

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

LOT 64
TYPE: PRESTON 11

DATE: Aug-19

GFA: 2759 LO# 82909

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 40,829 TOTAL HEAT GAIN 35,096
AIR FLOW RATE CFM 27.7 AIR FLOW RATE CFM 32.23

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

#GOODMAN
GMEC960603BNA 60

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	10	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

FAN SPEED LOW
MEDLOW
MEDIUM
MEDIUM HIGH

DESIGN CFM = 1131
CFM @ .6" E.S.P.

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5"x10" 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	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	WIC-2	S-ENS	MBR	S-ENS	DIN	FAM	KT/BR	KT/BR	LIB	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.08	1.80	0.29	1.63	1.18	1.29	0.64	0.52	0.50	1.08	0.50	1.38	1.33	1.33	1.33	1.71	0.73	0.95	1.71	1.71	3.07	3.07	3.07	3.07
CFM PER RUN HEAT	30	50	8	45	33	36	18	14	14	30	14	38	37	37	37	47	20	26	47	47	85	85	85	85
RM GAIN MBH	1.91	1.98	0.09	2.05	2.04	1.89	0.82	0.38	0.34	1.91	0.34	2.02	1.74	1.69	1.69	2.19	1.10	0.55	0.25	0.26	0.46	0.46	0.46	0.46
CFM PER RUN COOLING	61	64	3	66	66	61	26	12	11	61	11	65	56	54	54	71	35	18	8	8	15	15	15	15
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	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	38	45	30	56	53	44	36	42	44	44	50	24	43	25	36	43	21	31	28	15	35	21	23	37
EQUIVALENT LENGTH	120	160	120	150	180	180	140	170	120	140	130	110	170	110	110	110	120	180	170	110	160	120	150	120
TOTAL EFFECTIVE LENGTH	158	205	150	206	233	224	176	212	164	184	180	134	213	135	146	153	141	211	198	125	195	141	173	157
ADJUSTED PRESSURE	0.11	0.08	0.11	0.08	0.07	0.08	0.1	0.08	0.1	0.09	0.1	0.13	0.08	0.13	0.12	0.11	0.12	0.08	0.09	0.14	0.08	0.11	0.09	0.1
ROUND DUCT SIZE	5	5	4	5	6	5	4	4	4	5	4	5	5	5	5	5	4	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	220	367	92	330	168	264	207	161	161	220	161	279	272	272	272	345	229	298	345	539	433	433	433	433
COOLING VELOCITY (ft/min)	448	470	34	485	337	448	298	138	126	448	126	477	411	396	396	521	402	207	59	92	76	76	76	76
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	E	B	A	D	C	B	B	D	D	E	D	B	B	E	A	C	A	D	D	A	B	A	B	C

RUN #	25	26	27	28
ROOM NAME	BED-2	BED-3	LIB	FAM
RM LOSS MBH	1.63	1.18	1.71	1.33
CFM PER RUN HEAT	45	33	47	37
RM GAIN MBH	2.05	2.04	2.19	1.74
CFM PER RUN COOLING	66	66	71	56
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH	55	51	41	35
EQUIVALENT LENGTH	140	170	110	140
TOTAL EFFECTIVE LENGTH	195	221	151	175
ADJUSTED PRESSURE	0.09	0.08	0.11	0.1
ROUND DUCT SIZE	5	6	5	5
HEATING VELOCITY (ft/min)	330	168	345	272
COOLING VELOCITY (ft/min)	485	337	521	411
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10
TRUNK	D	C	C	B

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE													
TRUNK	STATIC	ROUND	RECT			VELOCITY	TRUNK	STATIC	ROUND	RECT			VELOCITY	TRUNK	STATIC	ROUND	RECT			VELOCITY			
CFM	PRESS.	DUCT	DUCT			(ft/min)	CFM	PRESS.	DUCT	DUCT			(ft/min)	CFM	PRESS.	DUCT	DUCT			(ft/min)			
TRUNK A	197	0.11	7	8	x	8	443	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	386	0.08	9.8	12	x	8	579	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	245	0.07	8.6	8	x	8	551	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	450	0.07	10.8	14	x	8	579	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	933	0.07	14.1	24	x	8	700	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	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	0.05	0	0	x	8	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	145	130	115	135	330	115	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	39	33	58	59	29	42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	135	195	235	145	190	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	174	228	293	204	219	282	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.09	0.06	0.05	0.07	0.07	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6.6	7	7	6.8	9.6	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
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: PRESTON 11
SITE NAME: LAMBERT'S LANE PH.2

LO # 82909
LOT 64

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	74 F	1.08	0.25

SUPPLEMENTAL FANS		PANASONIC	
Location	Model	cfm	Sones
ENS	FV-05-11VK1	50	✓ 0.3
ENS-2	FV-05-11VK1	50	✓ 0.3
S-ENS	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	64 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:	June-19

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: PRESTON 11	LOT 64	BUILDER: GREENPARK HOMES
SFQT: 2759	LO# 82909	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):	37071.0	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: 54.0 ft	WIDTH: 31.0 ft	EXPOSED PERIMETER:	158.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	12.0 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



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

LO#: 82909

Model: PRESTON 11

Builder: GREENPARK HOMES

Date: 8/1/2019

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1224	9	11016
First	1224	10	12240
Second	1535	8	12407.405
Third	0	9	0
Fourth	0	9	0
Total:			35,663.4 ft ³
Total:			1009.9 m ³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.262
SUMMER NATURAL AIR CHANGE RATE	0.085

Design Temperature Difference				
	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-19	41	74
Summer DTDc	24	30	6	11

5.2.3.1 Heat Loss due to Air Leakage

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

$$0.262 \times 280.52 \times 41^\circ\text{C} \times 1.2 = 3634 \text{ W}$$

$$= 12398 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

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

$$0.085 \times 280.52 \times 6^\circ\text{C} \times 1.2 = 175 \text{ W}$$

$$= 597 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

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

6.2.7 Sensible heat Gain due to Ventilation

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

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

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

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

Level	Level Factor (LF)	HLairve 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	12,398	6,097	1.017
2	0.3		10,761	0.346
3	0.2		11,185	0.222
4	0		0	0.000
5	0		0	0.000

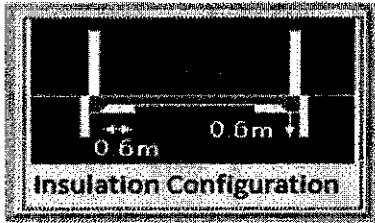
*HLairbv = Air leakage heat loss + ventilation heat loss

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

THESE CALCULATIONS
 WERE CONDUCTED TO MEET THE
 REQUIREMENTS OF THE
 ONTARIO BUILDING CODE

Residential Slab Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

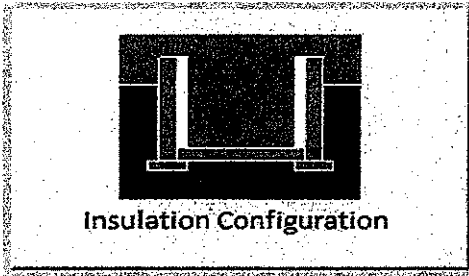
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	0.3	 Insulation Configuration
Width (m):	3.7	
Exposed Perimeter (m):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		24

TYPE: PRESTON 11
 LO# 82909

LOT 64

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):	3.4	 Insulation Configuration
Floor Width (m):	9.4	
Exposed Perimeter (m):	48.2	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.29	
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):		807

TYPE: PRESTON 11
LO# 82909

LOT 64

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

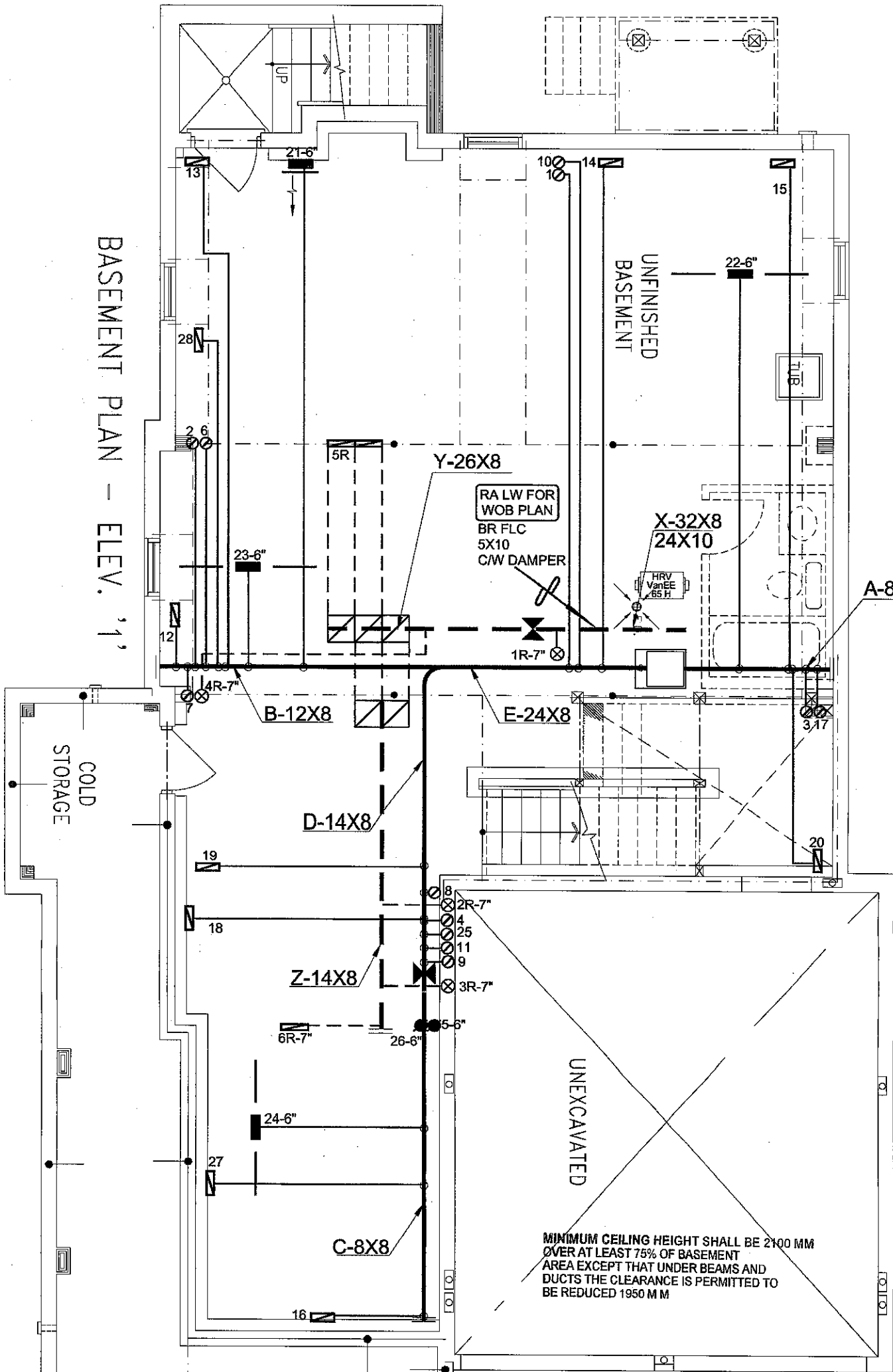
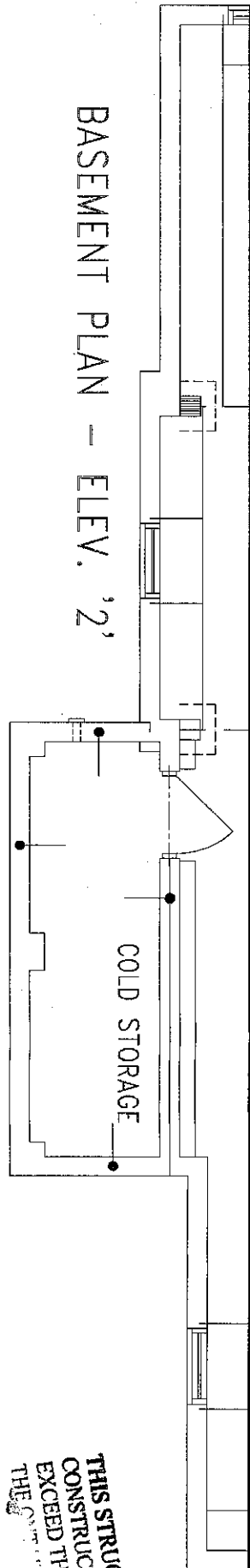
Weather Station Description			
Province:	Ontario		
Region:	Brampton		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	8.53		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1049.7		
Air Leakage/Ventilation			
Air Tightness Type:	Energy Star Detached (2.5 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	979.9 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		

TYPE: PRESTON 11
LO# 82909

LOT 64

BASEMENT PLAN - ELEV. '2'

BASEMENT PLAN - ELEV. '1'



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

APPROVED
For construction as per the
Ontario Building Code
Town of Caledon Building Department
Initial *[Signature]*
Date *Oct 09 2019*
File # *BA 19 0704*

RECEIVED
SEP 26 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

CSA-F280-12



WOB

ENERGY STAR

HVAC LEGEND

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
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE		REDUCER

No.	Description	Date
3.		
2.		
1.		
No.		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client
GREENPARK HOMES
Project Name
**LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO**

**LOT 64
PRESTON 11** **2759 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

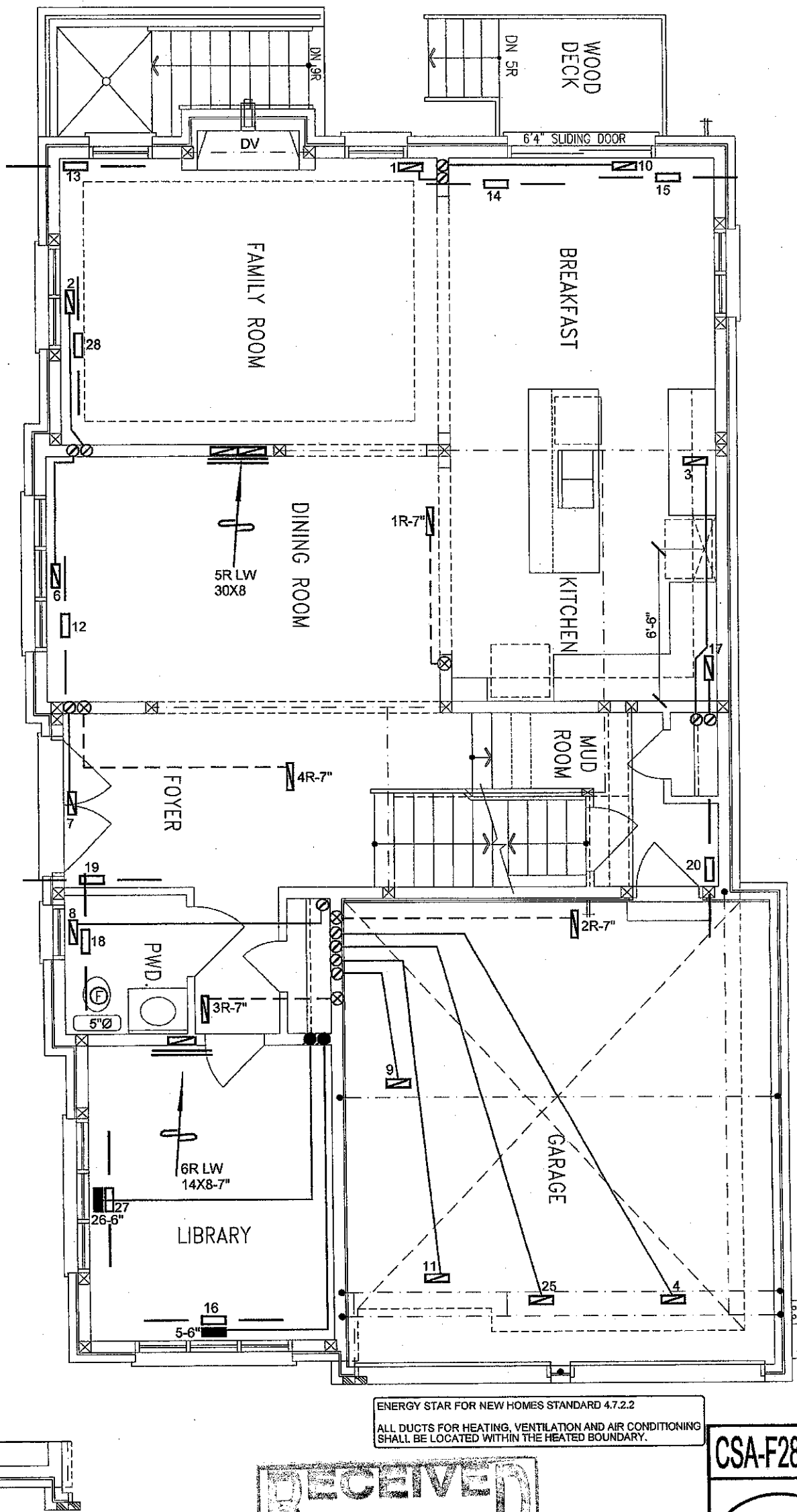
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

HEAT LOSS	42422 BTU/H	# OF RUNS	S/A	R/A	FANS
UNIT DATA		3RD FLOOR			
MAKE	GOODMAN	2ND FLOOR	14	4	3
MODEL	GMEC960603BNA	1ST FLOOR	10	2	2
INPUT	60 MBTU/H	BASEMENT	4	1	0
OUTPUT	57.6 MBTU/H	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			
COOLING	3.0 TONS				
FAN SPEED	1131 cfm @ 0.6" w.g.				

Sheet Title	BASEMENT HEATING LAYOUT
Date	JUNE/2019
Scale	3/16" = 1'-0"
BCIN#	19669
LO#	82909

GROUND FLOOR PLAN - ELEV. '2'

GROUND FLOOR PLAN - ELEV. '1'



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

I MICHAEL OROURKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 12.3 OF THE
BUILDING CODE
Michael O'Rourke
Michael O'Rourke, BSCM 19669
HVAC DESIGNS LTD.

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

RECEIVED
SEP 26 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

CSA-F280-12

ENERGY STAR

WOB

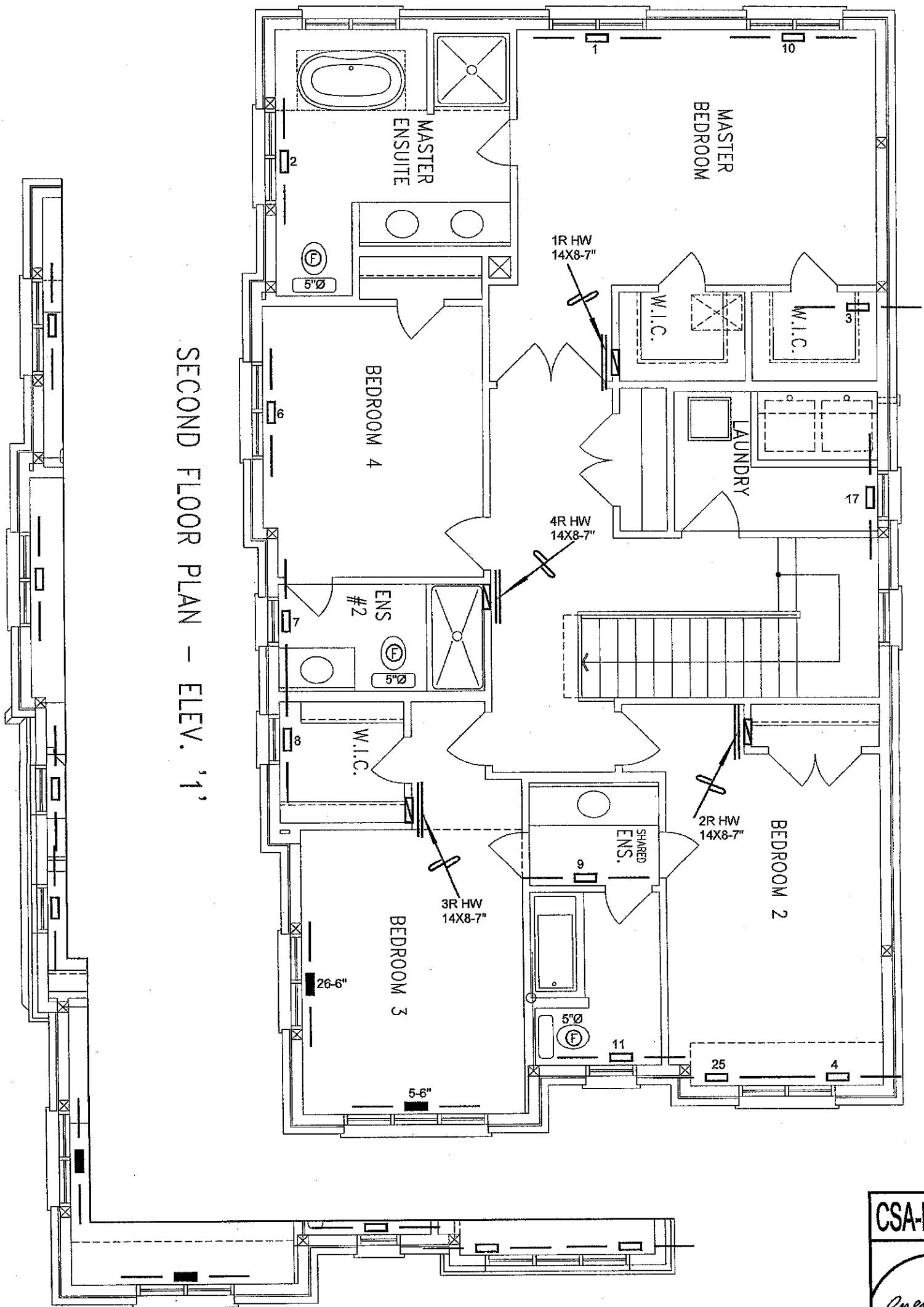
HVAC LEGEND								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK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

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@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 FIRST FLOOR HEATING LAYOUT	
Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO	LOT 64 PRESTON 11		Date JUNE/2019	Scale 3/16" = 1'-0"
2759 sqft		BCIN# 19669		LO# 82909

SECOND FLOOR PLAN - ELEV. '2'

SECOND FLOOR PLAN - ELEV. '1'



NO FILE NO
SECTION
BUILDING
DATE 02.02.2019

I MICHAEL O'BROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C.3.2.3 OF THE BUILDING CODE.
Michael O'Brourke
Michael O'Brourke, BCIN 19669
HVAC DESIGNS LTD.

CSA-F280-12


ENERGY STAR

WOB

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
	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**

LOT 64
PRESTON 11 2759 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.

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

Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**

Date
JUNE/2019

Scale
3/16" = 1'-0"

BCIN# 19669

LO# 82909