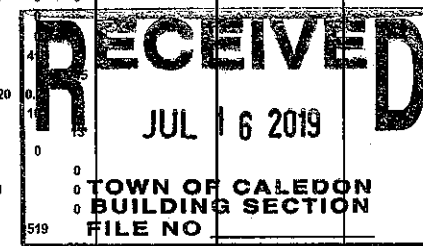


SITE NAME: LAMBERT'S LAKE PH.2				OPT 2ND FL				DATE: Jul-19				WINTER NATURAL AIR CHANGE RATE 0.242				HEAT LOSS AT °F. 74				CSA-F280-12							
BUILDER: GREENPARK HOMES				TYPE: PRESTON 3				GFA: 2920				LO# 81352				SUMMER NATURAL AIR CHANGE RATE 0.079				HEAT GAIN AT °F. 11				ENERGYSTAR			
ROOM USE		MBR		ENS		WIC		BED-2		BED-3		BED-4		BATH		WIC-3		BED-5		ENS-2							
EXP. WALL		34		23		10		14		26		12		7		30		11		7							
CLG. HT.		8		8		8		8		8		8		8		8		8		8							
FACTORS																											
GRS.WALL AREA		LOSS GAIN		275		186		81		113		210		97		57		242		89		57					
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN					
NORTH		18.6	15.1	0	0	0	0	0	0	0	16	297	242	0	0	0	7	130	106	0	0	0	0				
EAST		18.6	40.7	0	0	0	0	0	0	0	0	0	30	557	1222	0	0	0	0	0	0	0	0				
SOUTH		18.6	24.1	0	0	0	0	0	0	0	0	0	0	0	16	297	385	0	0	0	16	297	385				
WEST		18.6	40.7	32	594	1303	15	278	611	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
SKYLT.		31.2	99.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
DOORS		24.7	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
NET EXPOSED WALL		3.5	0.5	243	854	127	171	601	89	81	284	42	97	342	51	180	634	94	81	285	42	50	174	26			
NET EXPOSED BSMT WALL ABOVE GR		3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
EXPOSED CLG		1.3	0.6	288	361	161	110	138	61	60	75	33	238	298	133	209	262	117	192	241	107	119	149	66			
NO ATTIC EXPOSED CLG		2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
EXPOSED FLOOR		2.5	0.4	0	0	0	0	0	0	0	0	0	209	520	77	0	0	0	119	296	44	24	60	9			
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				1808				359		937		1972		822		750		973		732		0					
SUB TOTAL HT GAIN					1590		761		76		426		1509		534		242		162		503		4				
LEVEL FACTOR / MULTIPLIER		0.20	0.24			0.20	0.24		0.20	0.24		0.20	0.24		0.20	0.24		0.20	0.24		0.20	0.24					
AIR CHANGE HEAT LOSS				438			246		87		227		477		199		161		235		177		10				
AIR CHANGE HEAT GAIN					86		41		4		23		82		29		13		9		27		13				
DUCT LOSS				0		0		0		0		245		0		93		121		0		0					
DUCT GAIN				0		0		0		0		228		0		26		17		0		0					
HEAT GAIN PEOPLE		240		2	480	0	0	0	0	1	240	1	240	1	240	0	0	0	1	240	0	0	0				
HEAT GAIN APPLIANCES/LIGHTS					448		0		0		448		448		448		0		0		448		0				
TOTAL HT LOSS BTU/H				2246		1263		446		1163		2695		1021		1024		1329		910		519					
TOTAL HT GAIN x 1.3 BTU/H				3386		1043		104		1478		3259		1627		365		244		1584		356					

THIS STRUCTURE
CONSTRUCTED TO
EXCEED THE PROV
THE ONTARIO BUIL

RECEIVED
JUL 16 2019
TOWN OF CALEDONIA
BUILDING SECTION
FILE NO

THIS STRUCTURE MUST
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ROOM USE	EXP. WALL	CLG. HT.	LIBR	LV/DN	KIT	FAM	LAUN	WR	FOY	MUD	WOD	BAS
			10	18	36	36	0	9	46	24	19	180
			10	10	10	10	8	10	10	10	9	9
FACTORS			100		180		360		460		162	
GRS.WALL AREA	LOSS	GAIN	100		180		360		460		162	
GLAZING	LOSS	GAIN	100		180		360		460		162	
NORTH	18.6	15.1	20	371	303	0	0	0	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	58	1076	2362	0
SOUTH	18.6	24.1	0	0	0	40	742	963	0	0	0	0
WEST	18.6	40.7	0	0	0	0	0	0	0	0	0	0
SKYLT.	31.2	99.9	0	0	0	0	0	0	0	0	0	0
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	140	492	73	285	1002	149	336
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	84	105	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			652		1234		2393		1654		105	
SUB TOTAL HT GAIN				345		1036		2972		1164		47
LEVEL FACTOR / MULTIPLIER	0.30	0.32			0.30	0.32		0.30	0.32		0.30	0.32
AIR CHANGE HEAT LOSS			209		395		766		529		25	
AIR CHANGE HEAT GAIN				19		56		161		63		3
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	0	0
HEAT GAIN APPLIANCES/LIGHTS				448		448		448		448		448
TOTAL HT LOSS BTU/H			861		1630		3160		2183		131	
TOTAL HT GAIN x 1.3 BTU/H			1055		2002		4856		2178		647	

TOTAL HEAT GAIN BTU/H: 31269 TONS: 2.61 LOSS DUE TO VENTILATION LOAD BTU/H: 1911 STRUCTURAL HEAT LOSS: 42762 TOTAL COMBINED HEAT LOSS BTU/H: 44673

Michael O'Rourke

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

OPT 2ND FL
TYPE: PRESTON 3

DATE: Feb-19

GFA: 2920 LO# 81352

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 42,762 TOTAL HEAT GAIN 30,611
AIR FLOW RATE CFM 26.45 AIR FLOW RATE CFM 36.95

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

plenium pressure s/a 0.18
max s/a dlf press. loss 0.02
min adjusted pressure s/a 0.16

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

#GOODMAN
GMCC960603BNA 60
FAN SPEED LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131

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

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

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	9	4
R/A	0	0	4	3	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'0" 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	BED-5	BED-2	BED-3	BED-4	BATH	WIC-3	WIC	MBR	ENS-2	LIBR	LV/DN	KIT	KIT	FAM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.12	1.26	0.91	1.16	1.35	1.02	1.02	1.33	0.45	1.12	0.52	0.86	1.63	1.58	1.58	2.18	0.13	0.60	2.35	1.67	3.80	3.80	3.80	3.80
CFM PER RUN HEAT	30	33	24	31	36	27	27	35	12	30	14	23	43	42	42	58	3	16	62	44	101	101	101	101
RM GAIN MBH	1.69	1.04	1.27	1.48	1.63	1.62	0.36	0.24	0.10	1.69	0.33	1.05	2.00	2.32	2.32	2.17	0.65	0.35	1.91	0.84	0.50	0.50	0.50	0.50
CFM PER RUN COOLING	62	38	47	55	60	60	13	9	4	62	12	39	74	86	86	80	24	13	71	31	18	18	18	18
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	55	54	42	43	38	36	35	38	52	71	41	38	33	41	52	44	45	26	31	26	50	40	23	32
EQUIVALENT LENGTH	150	180	170	160	190	190	150	170	190	170	210	190	190	200	190	170	160	140	160	190	140	150	160	160
TOTAL EFFECTIVE LENGTH	205	234	212	203	228	228	225	188	222	261	211	248	223	231	252	234	215	186	171	186	240	180	173	192
ADJUSTED PRESSURE	0.08	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.08	0.07	0.08	0.07	0.08	0.07	0.06	0.07	0.08	0.09	0.1	0.09	0.07	0.09	0.09	0.08
ROUND DUCT SIZE	5	5	5	5	5	5	4	4	4	5	4	5	5	6	6	6	4	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	220	242	176	228	264	198	310	402	138	220	161	169	316	214	214	296	34	184	455	505	515	515	515	515
COOLING VELOCITY (ft/min)	455	279	345	404	441	441	149	103	46	455	138	286	543	438	438	408	275	149	521	356	92	92	92	92
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	B	B	C	E	E	E	E	B	B	E	B	C	A	A	A	B	E	D	C	A	B	C	D

RUN #	26	27
ROOM NAME	BED-3	FOY
RM LOSS MBH	1.35	2.35
CFM PER RUN HEAT	36	62
RM GAIN MBH	1.63	1.91
CFM PER RUN COOLING	60	71
ADJUSTED PRESSURE	0.17	0.17
ACTUAL DUCT LGH	44	21
EQUIVALENT LENGTH	170	160
TOTAL EFFECTIVE LENGTH	214	181
ADJUSTED PRESSURE	0.08	0.1
ROUND DUCT SIZE	5	5
HEATING VELOCITY (ft/min)	264	455
COOLING VELOCITY (ft/min)	441	521
OUTLET GRILL SIZE	3X10	3X10
TRUNK	E	D

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SUPPLY AIR TRUNK SIZE

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	273	0.06	9.3	12
TRUNK B	499	0.06	11.6	18
TRUNK C	718	0.06	13.3	22
TRUNK D	225	0.08	8	8
TRUNK E	416	0.08	10.1	12
TRUNK F	1134	0.06	15.8	28

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

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	115	155	95	125	135	155	155	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	76	45	44	52	40	43	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	245	185	135	175	250	225	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LENGTH	321	230	179	227	290	268	198	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.06	0.08	0.07	0.05	0.06	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7	7.5	5.8	6.7	7.5	7.5	7.2	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	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	14	14	14	14	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUNK	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0
TRUNK P	0	0.05	0	0
TRUNK Q	0	0.05	0	0
TRUNK R	0	0.05	0	0
TRUNK S	0	0.05	0	0
TRUNK T	0	0.05	0	0
TRUNK U	0	0.05	0	0
TRUNK V	0	0.05	0	0
TRUNK W	0	0.05	0	0
TRUNK X	1131	0.05	16.5	32
TRUNK Y	560	0.05	12.7	18
TRUNK Z	0	0.05	0	0
DROP	1131	0.05	16.5	24

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

LO # 81352
OPT 2ND FL

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	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	7 @ 10.6 cfm	74.2 cfm
Table 9.32.3.A.	TOTAL	212.0 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		95.4 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	212	cfm
Less Principal Ventll. Capacity	95.4	cfm
Required Supplemental Capacity	116.6	cfm

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

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

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
BATH	FV-05-11VK1	50	☒	0.3
ENS-2	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: 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:	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: 19669 *Michael O'Rourke* MICHAEL O'ROURKE

STRUCTUREMUST BE

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: PRESTON 3	OPT 2ND FL	BUILDER: GREENPARK HOMES
SFQT: 2920	LO# 81352	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):	37290.3	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:	5.5 ft
LENGTH: 60.0 ft	WIDTH: 30.0 ft	EXPOSED PERIMETER:	180.0 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

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THE ONTARIO BUILDING CODE*Michael O'Rourke*

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

LO#: 81352

Model: PRESTON 3

Builder: GREENPARK HOMES

Date: 7/12/2019

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1314	9	11169
First	1314	10	13140
Second	1606	8	12981.298
Third	0	9	0
Fourth	0	9	0
Total:			37,290.3 ft³
Total:			1055.9 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.242
SUMMER NATURAL AIR CHANGE RATE	0.079

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

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

0.242 x 293.32 x 41 °C x 1.2 = 3509 W

= 11974 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.079 x 293.32 x 6 °C x 1.2 = 169 W

= 577 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

95 CFM x 74 °F x 1.08 x 0.25 = 1911 Btu/h

6.2.7 Sensible heat Gain due to Ventilation

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

95 CFM x 11 °F x 1.08 x 0.25 = 283 Btu/h

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

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

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 / HL _{cleve})
1	0.5	11,974	9,216	0.650
2	0.3		11,218	0.320
3	0.2		9,895	0.242
4	0		0	0.000
5	0		0	0.000

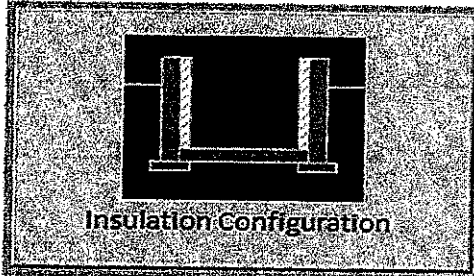
*HLairbv = Air leakage heat loss + ventilation heat loss

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

THIS STRUCTURE MUST
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Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	18.3	 Insulation Configuration
Floor Width (m):	9.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.68	
Window Area (m ²):	1.9	
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):	1833	

TYPE: PRESTON 3
LO# 81352THIS STRUCTURE MUST BE
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OPT 2ND FL

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):	7.34		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1055.9		
Air Leakage/Ventilation			
Air Tightness Type:	Energy Star Detached (2.5 ACH)		
Custom BDT Data:	ELA @ 10 Pa. 2.50	985.7 cm ² ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply 37.5	Total Exhaust 37.5	
Flue Size			
Flue #:	#1	#2	#3
Diameter (mm):	0	0	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.242		
Cooling Air Leakage Rate (ACH/H):	0.079		

TYPE: PRESTON 3
LO# 81352

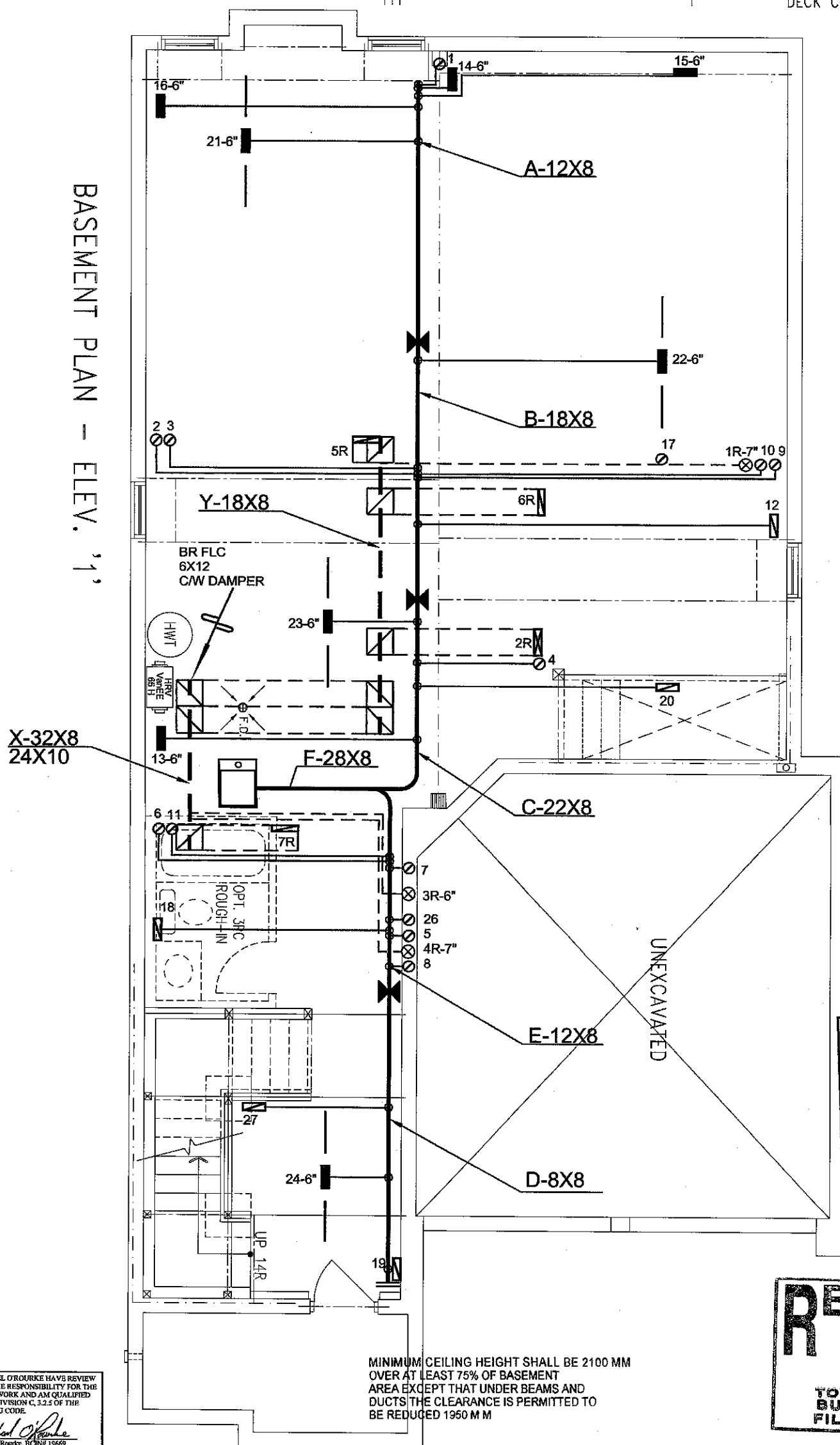
OPT 2ND FL

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BASEMENT PLAN - ELEV. '2'

BASEMENT PLAN - ELEV. '1



CERTIFIED MODEL
PRE-APPROVED
FOR PERMIT APPLICATION AS PER THE
ONTARIO BUILDING CODE
TOWN OF CALEDON BUILDING DIVISION

REVIEWED BY  SA
DATE July 25, 2019
FILE # C-MOD-PRSTON3 (550R OPT)

(ELEVATION 122)

RECEIVED
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TOWN OF CALEDON
BUILDING SECTION
FILE NO _____

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

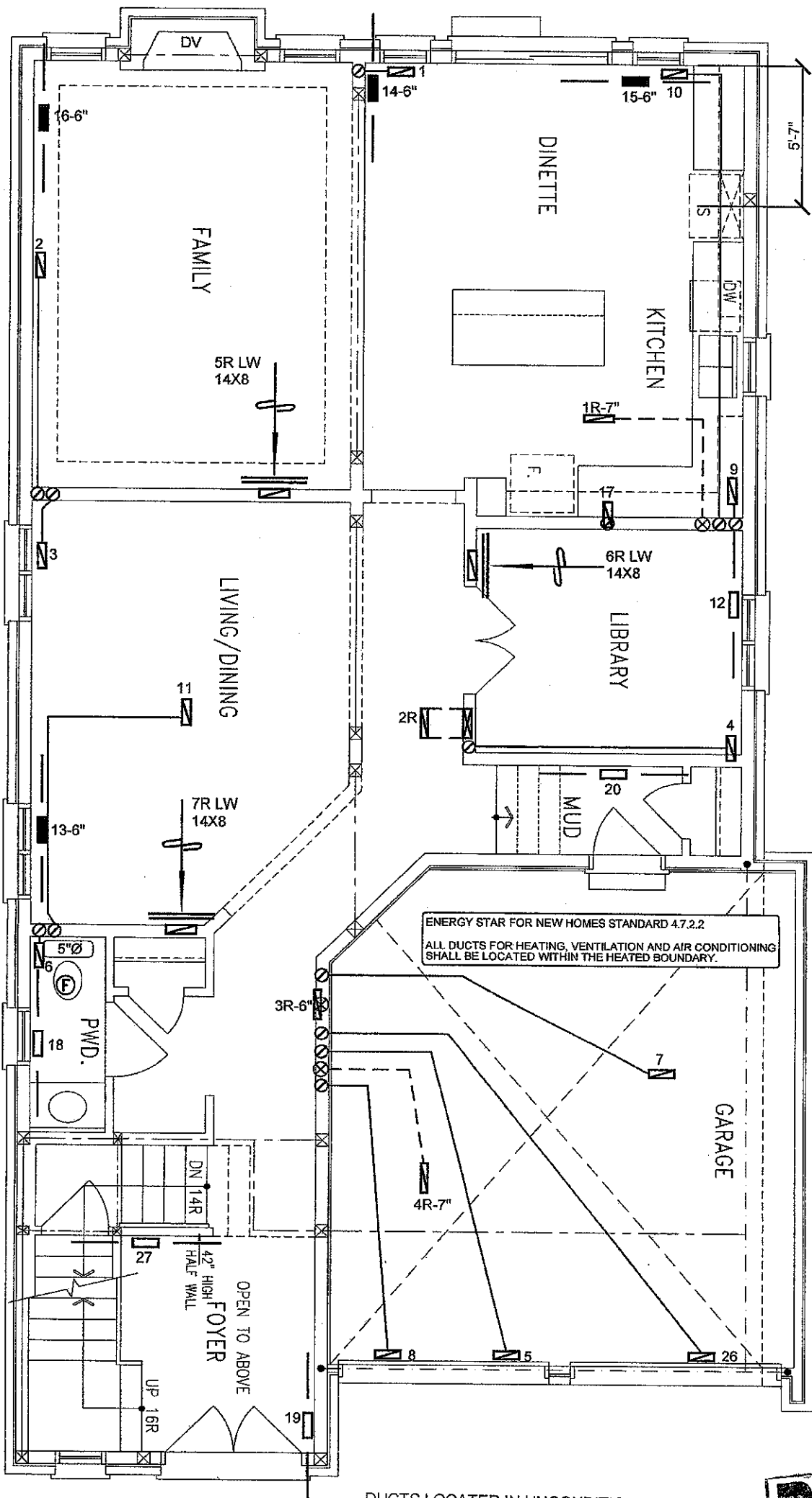
Michael O'Rourke, BCIN# 15669
MICHAELOROURKE.COM

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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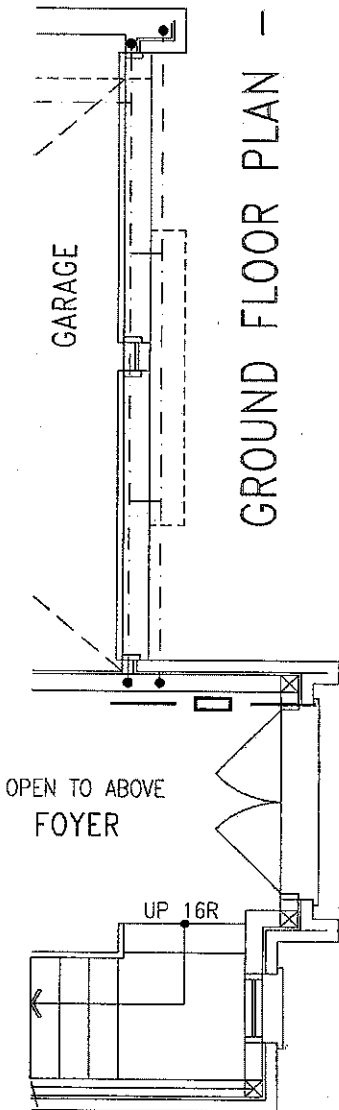
Client	HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services		HEAT LOSS 44673 BTU/H UNIT DATA	# OF RUNS S/A R/A FANS	Sheet Title	
GREENPARK HOMES	Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO OPT 2ND FL PRESTON 3 2920 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.	MAKE GOODMAN	3RD FLOOR	BASEMENT HEATING LAYOUT	
			MODEL GMEC960603BNA-60	2ND FLOOR		13 4 4
			INPUT 60 MBTU/H	1ST FLOOR		9 3 2
			OUTPUT 57.6 MBTU/H	BASEMENT	4 1 0	Date FEB/2019
			COOLING 2.5 TONS	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		
	FAN SPEED 1131 cfm @ 0.6" w.g.		BCIN# 19669			
			LO# 81352			

GROUND FLOOR PLAN - ELEV. '1'



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GROUND FLOOR PLAN - ELEV. '2'



I MICHAEL O'DRISKE HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.3.2.5 OF THE
BUILDING CODE.
Michael O'Driscoll
Michael O'Driscoll, BCIN# 19669
HVAC DESIGNS LTD.

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

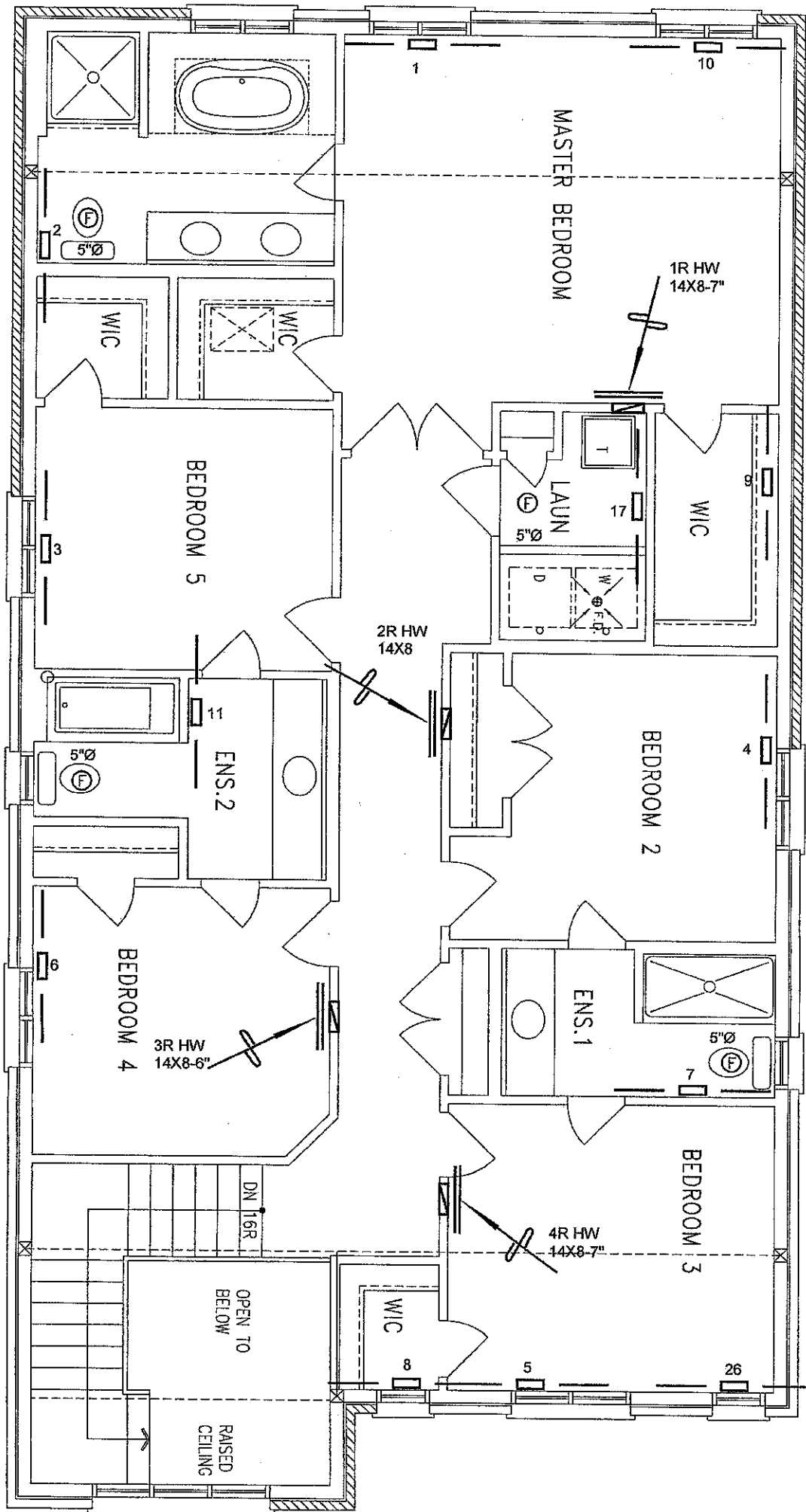
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BUILDING SECTION
FILE NO.

CSA-F280-12
Energy
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

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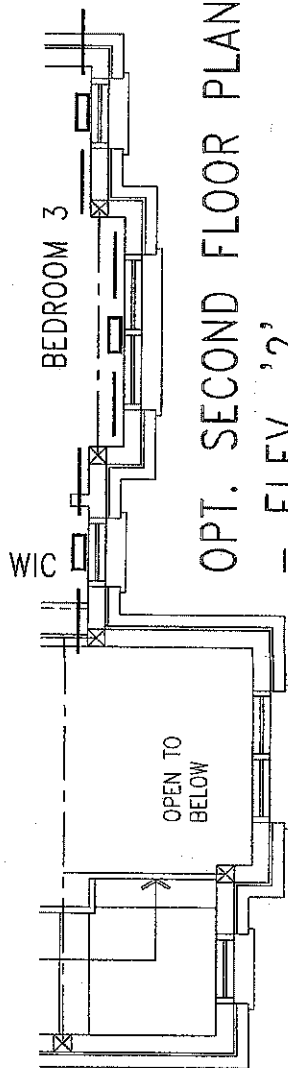
Client GREENPARK HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply 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	OPT 2ND FL PRESTON 3		Date FEB/2019	Scale 3/16" = 1'-0"
2920 sqft		BCIN# 19669		LO# 81352



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OPT. SECOND FLOOR PLAN (5 BED)

- ELEV. '2'



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BUILDING SECTION
FILE NO

CSA-F280-12



ENERGY STAR

OPT. SECOND FLOOR PLAN (5 BED)
- ELEV. '1'

I MICHAEL O'Rourke HAVE REVIEWED
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C.3.2.5 OF THE
BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, UCLING 19669
HVAC DESIGNS LTD.

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	3.	
	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.	
								No.	Description
									Date

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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	FEB/2019
LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO			Scale	3/16" = 1'-0"
OPT 2ND FL PRESTON 3		BCIN# 19669		
2920 sqft		LO#	81352	