

SITE NAME: LAMBERT'S LANE PH.2

BUILDER: GREENPARK HOMES

OPT 2ND FL

TYPE: PRESTON 2 WOB

GFA: 2835

DATE: Jun-19

LON 82667

WINTER NATURAL AIR CHANGE RATE 0.262

SUMMER NATURAL AIR CHANGE RATE 0.085

HEAT LOSS AT °F. 74

HEAT GAIN AT °F. 11

CSA-F280-12

ENERGYSSTAR

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-5	ENS-2	LIBR
FACTORS			31	24	6	12	31	22	7	12	7	10
GRS.WALL AREA	LOSS	GAIN	251	194	48	97	251	178	57	97	57	100
GLAZING	LOSS	GAIN										
NORTH	18.6	15.1	0	0	0	16	297	242	0	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	7	130	106	0
SOUTH	18.6	24.1	0	0	0	0	0	0	0	0	0	0
WEST	18.6	40.7	32	594	1303	14	260	570	0	0	0	0
SKYL.T.	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	219	769	114	180	633	94	48	171	25	81
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	234	293	130	143	179	80	102	128	57	204
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			1656		1072	298	337	2178	1224	546	782	418
SUB TOTAL HT GAIN			1547		744	82	398	1546	629	212	508	245
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
AIR CHANGE HEAT LOSS			390		252	70	197	513	288	128	179	98
AIR CHANGE HEAT GAIN			92		44	5	24	92	38	13	30	15
DUCT LOSS			0		0	0	0	269	0	67	0	0
DUCT GAIN			0		0	0	0	231	0	22	0	0
HEAT GAIN PEOPLE	240		2		480	0	0	1	240	0	1	240
HEAT GAIN APPLIANCES/LIGHTS			428		0	0	0	428	0	0	0	0
TOTAL HT LOSS BTU/H			2045		1324	369	1034	2960	1512	741	941	517
TOTAL HT GAIN x 1.3 BTU/H			3312		1024	113	1417	3298	1735	321	1568	894

ROOM USE	EXP. WALL	CLG. HT.	LIV	DIN	KIT	FAM	LAUN	WIR	FOY	MUD	WOB	BAS
FACTORS			11	12	34	35	42	12	34	23	41	135
GRS.WALL AREA	LOSS	GAIN	110	120	340	350	339	120	340	230	369	810
GLAZING	LOSS	GAIN										
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	0	0	0	0
SOUTH	18.6	24.1	0	0	0	0	0	0	0	0	0	0
WEST	18.6	40.7	0	0	0	56	1039	2280	34	631	1384	0
SKYL.T.	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	90	316	47	100	352	62	284	939	148	316
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			587		723	2038	1769	1973	542	2168	1232	542
SUB TOTAL HT GAIN			350		533	2428	1561	1529	261	321	183	2987
LEVEL FACTOR / MULTIPLIER	0.30	0.40		0.30	0.40	0.30	0.40	0.30	0.40	0.30	0.40	0.30
AIR CHANGE HEAT LOSS			274		288	811	704	464	216	863	490	11
AIR CHANGE HEAT GAIN			21		32	145	93	91	15	19	11	0
DUCT LOSS			0		0	0	0	0	0	0	0	0
DUCT GAIN			0		0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240		0		0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			428		428	428	428	428	0	0	0	0
TOTAL HT LOSS BTU/H			951		1010	2849	2473	2437	758	3031	1722	2967
TOTAL HT GAIN x 1.3 BTU/H			1039		1252	3902	2707	2663	346	443	808	1675

TOTAL HEAT GAIN BTU/H:

31160

TONS: 2.60

LOSS DUE TO VENTILATION LOAD BTU/H: 1911

STRUCTURAL HEAT LOSS: 41368

TOTAL COMBINED HEAT LOSS BTU/H: 43279

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BUILDER: GREENPARK HOMES

OPT 2ND FL.
TYPE: PRESTON 2 WOB

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HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 41,368 TOTAL HEAT GAIN 30,876
AIR FLOW RATE CFM 27.34 AIR FLOW RATE CFM 36.63

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	12	10	4
R/A	0	0	4	3	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

LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131

DESIGN CFM = 1131
CFM @ .5" E.S.P.

TEMPERATURE RISE 47 °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	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	ENS	MBR	WIC	BED-2	BED-3	BED-4	BATH	BED-3	MBR	ENS-2	LIV	DIN	KIT	KIT	FAM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.32	1.02	0.37	1.03	1.48	1.51	0.74	1.48	1.02	0.52	0.96	1.01	1.42	1.42	1.24	2.44	0.76	3.03	1.72	3.47	3.47	3.47	3.47
CFM PER RUN HEAT	36	28	10	28	40	41	20	40	28	14	26	28	39	39	34	67	21	83	47	95	95	95	95
RM GAIN MBH.	1.02	1.66	0.11	1.42	1.65	1.74	0.32	1.65	1.66	0.89	1.04	1.29	1.95	1.95	1.35	2.66	0.35	0.44	0.81	0.73	0.73	0.73	0.73
CFM PER RUN COOLING	38	61	4	52	60	64	12	60	61	33	38	47	71	71	50	98	13	16	30	27	27	27	27
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	0.16	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	52	59	38	46	55	46	46	64	45	41	34	27	39	29	34	51	60	53	31	49	44	25	54
EQUIVALENT LENGTH	150	180	160	210	190	190	190	190	190	210	210	190	170	140	190	190	190	190	170	160	220	220	210
TOTAL EFFECTIVE LENGTH	202	219	198	256	245	236	236	254	235	251	244	217	209	169	224	241	250	243	201	209	264	245	264
ADJUSTED PRESSURE	0.09	0.08	0.09	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.1	0.08	0.07	0.07	0.07	0.09	0.08	0.06	0.07	0.06
ROUND DUCT SIZE	4	5	4	5	5	5	4	5	5	4	4	5	5	5	5	6	4	6	5	6	6	6	6
HEATING VELOCITY (ft/min)	413	206	115	206	294	301	229	294	206	161	298	206	286	286	250	342	241	423	345	484	484	484	484
COOLING VELOCITY (ft/min)	436	448	46	382	441	470	138	441	448	379	436	345	521	521	367	500	149	82	220	138	138	138	138
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	D	C	D	B	A	B	A	A	C	B	B	B	C	C	C	A	A	A	B	D	C	B	A

RUN #	26	27	28
ROOM NAME	FAM	LIBR	BED-5
RM LOSS MBH.	1.24	0.79	0.94
CFM PER RUN HEAT	34	21	26
RM GAIN MBH.	1.35	1.08	1.57
CFM PER RUN COOLING	50	40	57
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH.	44	39	45
EQUIVALENT LENGTH	160	190	160
TOTAL EFFECTIVE LENGTH	204	229	205
ADJUSTED PRESSURE	0.08	0.08	0.08
ROUND DUCT SIZE	5	4	5
HEATING VELOCITY (ft/min)	250	241	191
COOLING VELOCITY (ft/min)	367	459	419
OUTLET GRILL SIZE	3X10	3X10	3X10
TRUNK	C	B	D

SUPPLY AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	366	0.06	10.3	12
TRUNK B	666	0.06	12.9	20
TRUNK C	297	0.06	9.6	12
TRUNK D	464	0.06	11.3	16
TRUNK E	1130	0.06	15.8	28
TRUNK F	0	0.00	0	0

RETURN AIR TRUNK SIZE

TRUNK	STATIC	ROUND	RECT	VELOCITY
CFM	PRESS.	DUCT	DUCT	(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
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	450	0.05	11.7	16
TRUNK Z	0	0.05	0	0
DROP	1131	0.05	16.5	24

RETURN AIR #	1	2	3	4	5	6	7																		
	0	0	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	155	155	85	85	135	145	185	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	0.15
ACTUAL DUCT LGH.	45	42	66	69	60	39	39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	180	175	185	185	265	145	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	225	217	251	254	325	184	184	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.07	0.06	0.06	0.05	0.08	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	14.80
ROUND DUCT SIZE	7.2	7.2	6	6	7.5	6.8	7.5	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	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	X	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	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

LO # 82867
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	4 @ 10.6 cfm	42.4 cfm
Other Rooms	8 @ 10.6 cfm	84.8 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 Ventil. Capacity	95.4	cfm
Required Supplemental Capacity	116.6	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
95.4 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
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	☒ 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:	June-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: 19869 *Michael O'Rourke* MICHAEL O'ROURKE

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

LO#: 82667

Model: PRESTON 2 WOB

Builder: GREENPARK HOMES

Date: 07/06/2019

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1300	9	11700
First	1300	10	13000
Second	1535	8	12407.405
Third	0	9	0
Fourth	0	9	0
Total:			37,107.4 ft ³
Total:			1050.8 m ³

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
6.2.6 Sensible Gain due to Air Leakage

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

$$0.262 \times 291.88 \times 41^\circ\text{C} \times 1.2 = 3781 \text{ W}$$

$$= 12900 \text{ Btu/h}$$

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

$$0.085 \times 291.88 \times 6^\circ\text{C} \times 1.2 = 182 \text{ W}$$

$$= 621 \text{ Btu/h}$$

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

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

$$95 \text{ CFM} \times 74^\circ\text{F} \times 1.08 \times 0.25 = 1911 \text{ Btu/h}$$

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

$$95 \text{ CFM} \times 11^\circ\text{F} \times 1.08 \times 0.25 = 283 \text{ Btu/h}$$

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

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

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	12,900	7,447	0.866
2	0.3		9,720	0.398
3	0.2		10,965	0.235
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

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: PRESTON 2 WOB	OPT 2ND FL	BUILDER: GREENPARK HOMES
SFQT: 2835	LO# 82667	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

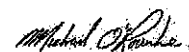
ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	37107.4	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.45	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 57.0 ft	WIDTH: 31.0 ft	EXPOSED PERIMETER:	135.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	41.0 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	-

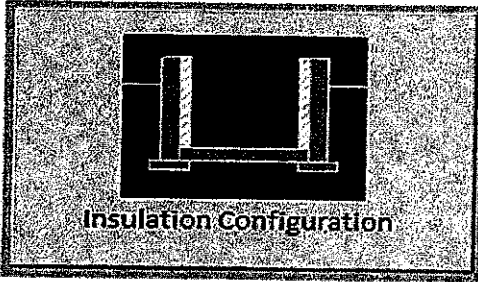
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

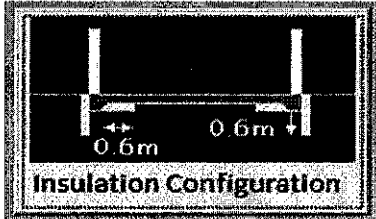
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.4	
Exposed Perimeter (m):	41.1	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.53	
Window Area (m ²):	0.8	
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):		702

TYPE: PRESTON 2 WOB
LO# 82667

OPT 2ND FL

Residential Slab on Grade 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):	1.5	
Width (m):	9.4	
Exposed Perimeter (m):	12.5	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		159

TYPE: PRESTON 2 WOB
LO# 82667

OPT 2ND FL

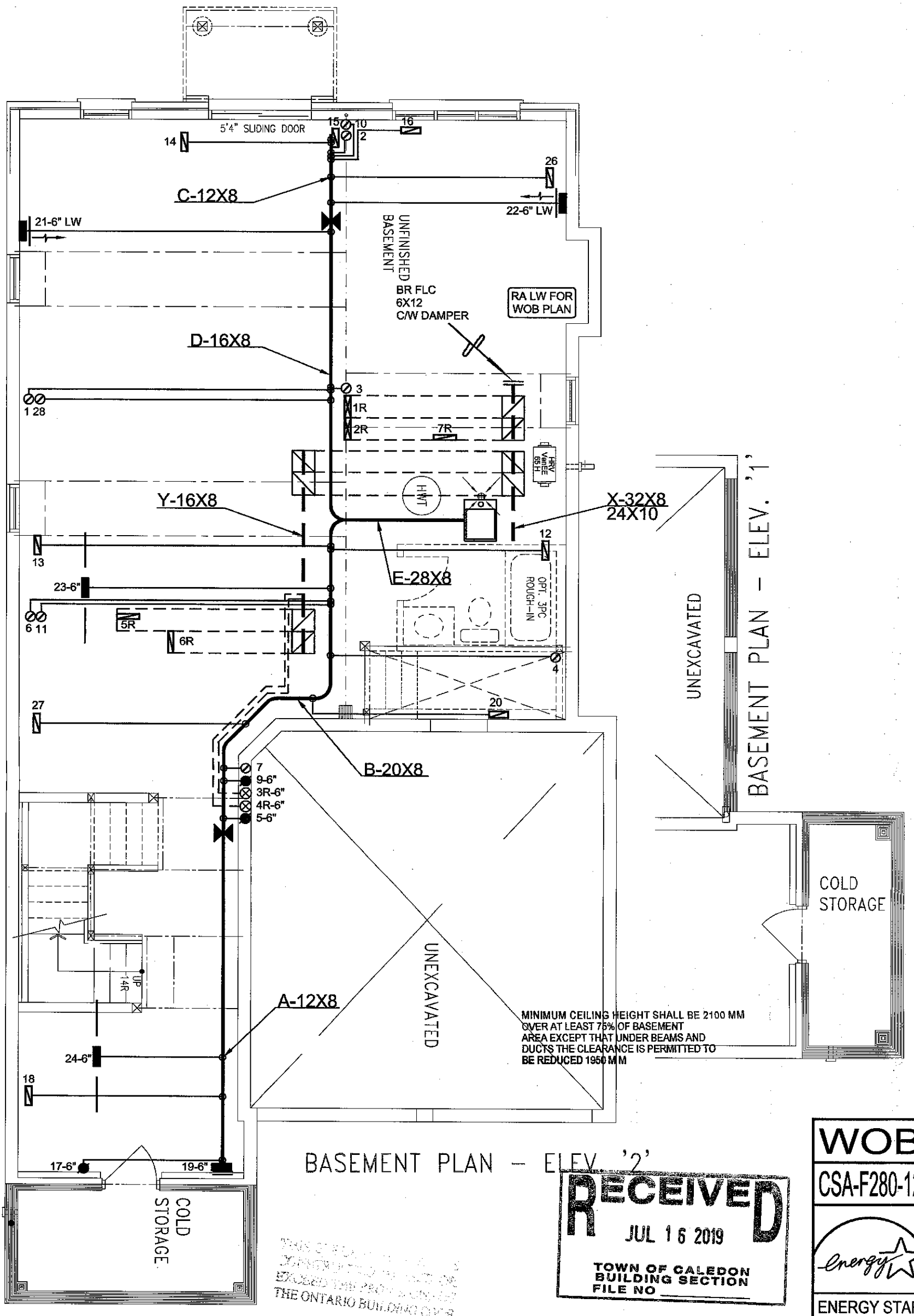
Air Infiltration Residential Load Calculator

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):	8.25		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1050.8		
Air Leakage/Ventilation			
Air Tightness Type:	Energy Star Detached (2.5 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	980.9 cm ²	
	2.50	ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust	
	45.0	45.0	
Flue Size			
Flue #:	#1	#2	#3 #4
Diameter (mm):	0	0	0 0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.262		
Cooling Air Leakage Rate (ACH/H):	0.085		

TYPE: PRESTON 2 WOB
LO# 82667

OPT 2ND FL



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

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FILE NO

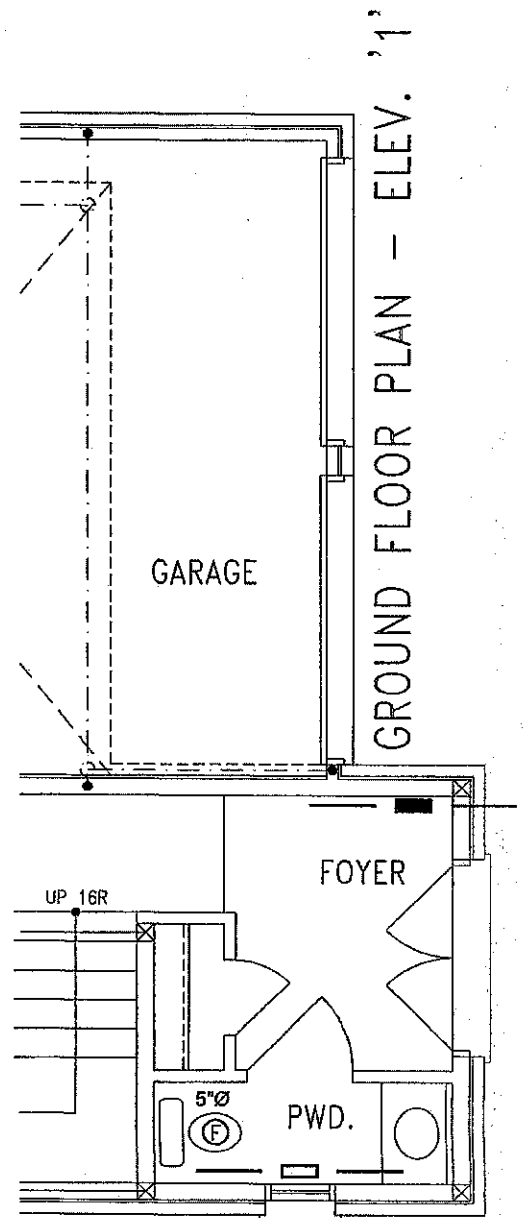
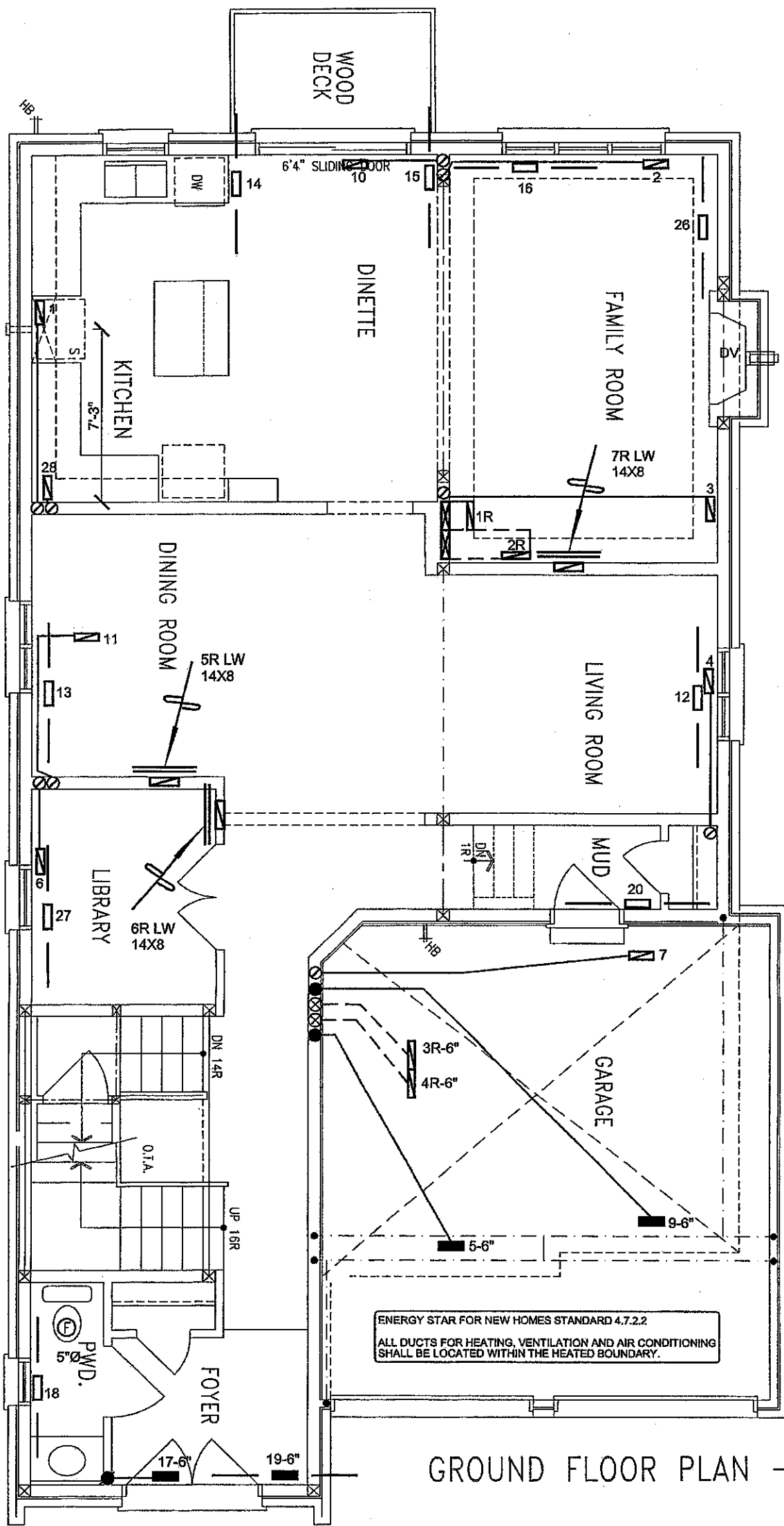
WOB
CSA-F280-12

ENERGY STAR

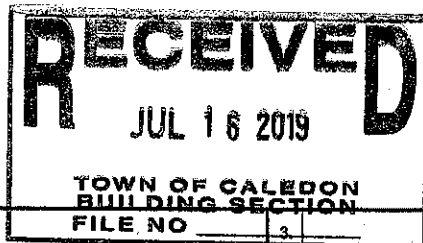
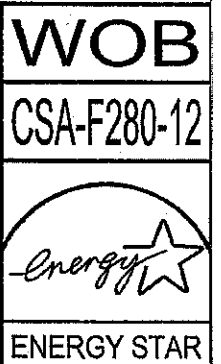
HVAC LEGEND							REVISIONS		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE	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

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Client	 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 43279 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
GREENPARK HOMES		MAKE	GOODMAN	3RD FLOOR				BASEMENT HEATING LAYOUT	
Project Name		MODEL	GMEC960603BNA-60	2ND FLOOR	12	4	3	Date FEB/2019	
LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO		INPUT	60 MBTU/H	1ST FLOOR	10	3	2	Scale 3/16" = 1'-0"	
OPT 2ND FL PRESTON 2 WOB 2835 sqft		OUTPUT	57.6 MBTU/H	BASEMENT	4	1	0	BCIN# 19669	
	COOLING	2.5 TONS	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				LO#	82667	
	FAN SPEED	1131 cfm @ 0.5" w.c.							



GROUND FLOOR PLAN - ELEV. '2'



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
HVAC DESIGNS LTD.

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

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

REVISIONS

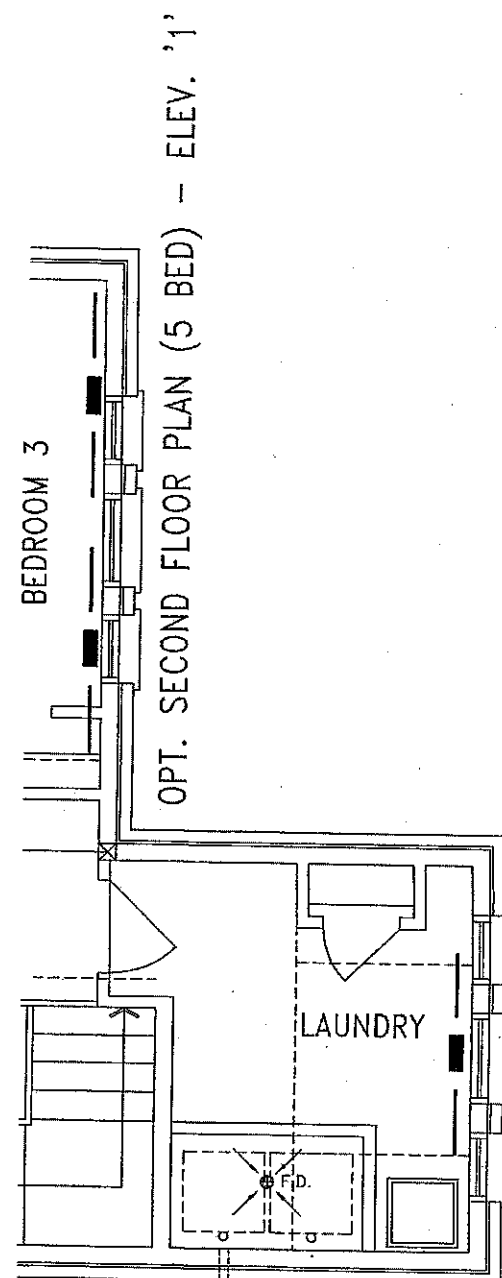
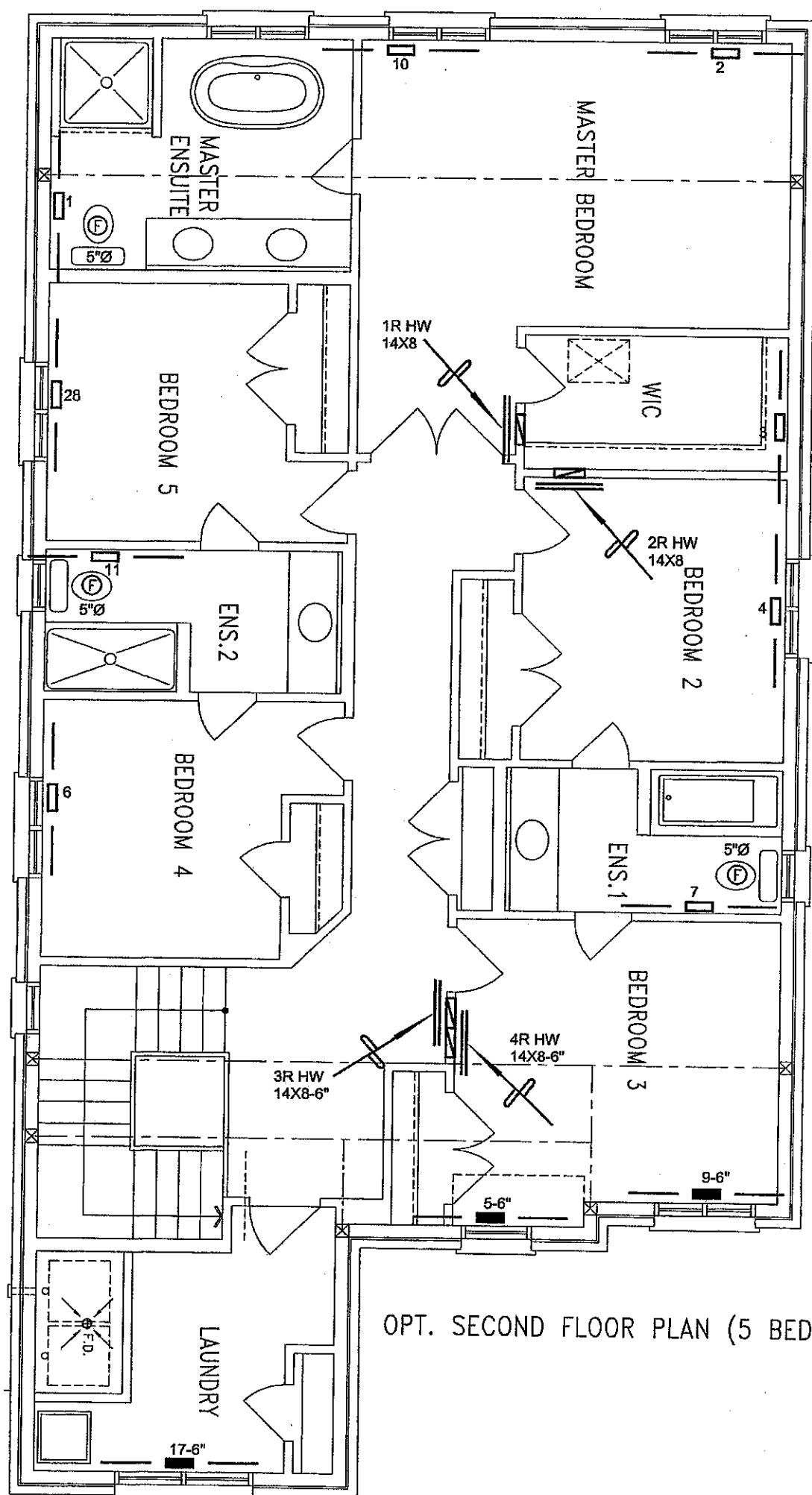
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Client
GREENPARK HOMES
Project Name
**LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO**
OPT 2ND FL
PRESTON 2 WOB 2835 sqft

HVAC DESIGNS LTD.
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 WAS
CONSTRUCTED TO MEET THE
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE

Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**
Date FEB/2019
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 82667



OPT. SECOND FLOOR PLAN (5 BED) - ELEV. '2'

MICHAEL O'ROURKE HAS REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.


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

Michael O'Rourke
Michael O'Rourke, BCINF 19669
IVAC DESIGNS LTD.

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JUL 16 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

WOB
CSA-F280-12

ENERGY STAR

HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x0" 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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GREENPARK HOMES

Project Name
LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

OPT 2ND FL
PRESTON 2 WOB 2835 sqft

HVAC DESIGNS LTD.

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

Sheet Title

**SECOND FLOOR
HEATING
LAYOUT**

Date FEB/2019

Scale $3/16" = 1'-0"$

BCIN# 19669

LO#	82667
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