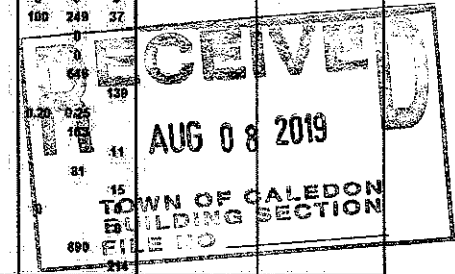


SITE NAME: LAMBERT'S LANE PH2		LOT 34		DATE: Aug-19		WINTER NATURAL AIR CHANGE RATE 0.268		HEAT LOSS AT °F. 74		CSA-F280-12	
BUILDER: GREENPARK HOMES		TYPE: BARTON 4		GFA: 2710		SUMMER NATURAL AIR CHANGE RATE 0.087		HEAT GAIN AT °F. 11		ENERGYSTAR	
ROOM USE		MSR	ENS	WIC	BED-2	BED-3	BED-4	BATH		ENS-2	
EXP. WALL		33	23	7	12	27	38	12		8	
CLG. HT.		8	9	9	9	9	8	9		9	
FACTORS											
GRS. WALL AREA	LOSS GAIN	297	207	63	108	243	342	168		72	
GLAZING	LOSS GAIN									LOSS GAIN	
NORTH	18.6 14.4	0 0 0	8 148 115	0 0 0	18 324 269	0 0 0	0 0 0	0 0 0		0 0 0	
EAST	18.6 38.5	0 0 0	0 0 0	0 0 0	0 0 0	30 557 1156	23 427 887	0 0 0		0 0 0	
SOUTH	18.6 22.8	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	8 148 183	15 278 343		0 0 0	
WEST	18.6 38.5	32 494 1234	14 260 540	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		0 0 0	
SKYLT.	31.2 98.9	0 0 0	0 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 0		0 0 0	
NET EXPOSED WALL	3.5 0.5	285 832 138	185 651 96	83 222 33	90 318 47	213 749 111	311 1094 182	83 327 48		72 253 38	
NET EXPOSED INT. 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 0		0 0 0	
EXPOSED CLG	1.3 0.6	282 353 157	145 182 51	76 95 42	200 251 111	215 269 120	212 265 118	100 125 56		115 144 84	
NO ATTIC EXPOSED CLG	2.7 1.2	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	25 87 30	0 0 0		0 0 0	
EXPOSED FLOOR	2.5 0.4	0 0 0	0 0 0	0 0 0	0 0 0	215 535 78	0 0 0	0 0 0		100 249 37	
BASEMENT CRAWL HEAT LOSS		0	0	0	0	0	0	0		0	
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0		0	
SUBTOTAL HT LOSS		1879	1240	317	901	2110	2901	731		640	
SUB TOTAL HT GAIN		1529	832	75	418	1467	1379	447		138	
LEVEL FACTOR / MULTIPLIER	0.20 0.25		0.20 0.25	0.20 0.25	0.20 0.25	0.20 0.25	0.20 0.25	0.20 0.25		0.20 0.25	
AIR CHANGE HEAT LOSS		473	312	80	227	531	504	184		163	
AIR CHANGE HEAT GAIN		121	66	6	33	116	106	35		11	
DUCT LOSS		0	0	0	0	284	0	0		31	
DUCT GAIN		0	0	0	0	237	0	0		15	
HEAT GAIN PEOPLE	240	2	480	0	0	240	1	240		0	
HEAT GAIN APPLIANCES/LIGHTS		551	0	0	0	551	551	551		0	
TOTAL HT LOSS - BTU/H		2352	1553	397	1128	2908	2505	915		890	
TOTAL HT GAIN x 1.3 BTU/H		3485	1168	105	1815	3394	2963	627		214	



ROOM USE		PAN	DIN	KITCH	LAUN	PWD	FOY	MUD		WOB	BAS
EXP. WALL		33	32	48	7	12	40	9		10	166
CLG. HT.		10	10	10	8	10	10	11		8	9
FACTORS											
GRS. WALL AREA	LOSS GAIN	330	320	490	63	120	400	99		90	998
GLAZING	LOSS GAIN									LOSS GAIN	LOSS GAIN
NORTH	18.6 14.4	0 0 0	0 0 0	50 928 722	0 0 0	0 0 0	0 0 0	0 0 0		0 0 0	15 278 216
EAST	18.6 38.5	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	5 93 193	0 0 0		0 0 0	0 0 0
SOUTH	18.6 22.8	0 0 0	24 445 548	0 0 0	7 130 169	7 130 180	0 0 0	0 0 0		0 0 0	0 0 0
WEST	18.6 38.5	26 482 1002	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		0 0 0	0 0 0
SKYLT.	31.2 98.9	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 0 0
DOORS	24.7 3.7	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	40 986 146	20 493 73		20 493 73	20 493 73
NET EXPOSED WALL	3.5 0.5	304 1069 158	286 1041 154	430 1512 224	56 197 29	113 397 59	355 1248 185	78 278 41		70 246 36	0 0 0
NET EXPOSED INT. 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 0		0 0 0	488 1750 250
EXPOSED CLG	1.3 0.6	0 0 0	0 0 0	0 0 0	90 113 50	0 0 0	0 0 0	0 0 0		0 0 0	0 0 0
NO ATTIC EXPOSED CLG	2.7 1.2	10 27 12	0 0 0	0 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	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	2849
SLAB ON GRADE HEAT LOSS		0	0	0	0	0	0	0		75	5369
SUBTOTAL HT LOSS		1578	1486	2440	440	527	2327	771		815	549
SUB TOTAL HT GAIN		1173	763	948	238	218	524	114		410	549
LEVEL FACTOR / MULTIPLIER	0.30 0.42		0.30 0.42	0.30 0.42	0.20 0.25	0.30 0.42	0.30 0.42	0.30 0.42		0.50 1.04	
AIR CHANGE HEAT LOSS		678	631	1036	111	224	888	327		0	6460
AIR CHANGE HEAT GAIN		83	56	75	18	17	41	9		0	52
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		551	551	551	0	551	0	0		0	551
TOTAL HT LOSS - BTU/H		2248	2117	3475	550	751	3315	1099		815	11829
TOTAL HT GAIN x 1.3 BTU/H		2361	1702	2043	452	307	735	160		142	1489

TOTAL HEAT GAIN BTU/H: 23808

TONS: 1.98

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 38843

TOTAL COMBINED HEAT LOSS BTU/H: 48435

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.

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

MICHAEL O'ROURKE

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

LOT 34
TYPE: BARTON 4

DATE: Aug-19

GFA: 2710

LO#: 83341

HEATING CFM 1131
TOTAL HEAT LOSS 38,843
AIR FLOW RATE CFM 29.12

COOLING CFM 1131
TOTAL HEAT GAIN 23,572
AIR FLOW RATE CFM 47.98

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

plenum pressure s/a 0.18
max s/a diff 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

#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 @ .5" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	7	4
R/A	0	0	4	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 6"Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	BED-4	MBR	ENS-2	FAM	DIN	KT/BR	KT/BR	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.18	1.55	0.40	1.13	1.45	1.25	0.91	1.45	1.25	1.18	0.89	2.25	2.12	1.74	1.74	0.55	0.75	3.32	1.10	3.16	3.16	3.16	3.16
CFM PER RUN HEAT	34	45	12	33	42	36	27	42	36	34	26	65	62	51	51	16	22	97	32	92	92	92	92
RM GAIN MBH	1.74	1.17	0.11	1.61	1.70	1.48	0.63	1.70	1.48	1.74	0.21	2.36	1.70	1.02	1.02	1.05	0.31	0.74	0.16	0.41	0.41	0.41	0.41
CFM PER RUN COOLING	84	56	5	77	81	71	30	81	71	84	10	113	82	49	49	50	15	35	8	20	20	20	20
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.17	0.16	0.17	0.15	0.16	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	53	59	30	25	56	73	43	54	68	45	45	46	29	36	44	29	48	47	25	50	45	24	50
EQUIVALENT LENGTH	160	190	130	150	140	180	180	130	180	150	150	160	170	130	140	190	150	130	160	100	110	120	140
TOTAL EFFECTIVE LENGTH	213	249	160	175	196	253	223	184	248	195	195	206	199	166	184	219	198	177	185	150	155	144	190
ADJUSTED PRESSURE	0.08	0.07	0.11	0.1	0.08	0.07	0.08	0.09	0.07	0.08	0.09	0.07	0.08	0.1	0.09	0.08	0.09	0.09	0.09	0.11	0.1	0.11	0.09
ROUND DUCT SIZE	6	5	4	6	6	4	6	6	6	6	4	6	6	5	5	5	4	6	4	6	6	6	6
HEATING VELOCITY (fpm)	173	330	138	168	214	184	310	214	184	173	298	331	316	374	374	117	252	495	367	469	469	469	469
COOLING VELOCITY (fpm)	428	411	57	393	413	362	344	413	362	428	115	576	418	360	360	367	172	178	92	102	102	102	102
OUTLET GRILL SIZE	4X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	A	B	B	D	C	D	D	C	A	D	B	D	A	A	D	C	C	D	B	B	B	C

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 (fpm)	COOLING VELOCITY (fpm)	OUTLET GRILL SIZE	TRUNK
1	MBR	1.18	34	1.74	84	0.16	53	160	213	0.08	6	173	428	4X10	A
2	ENS	1.55	45	1.17	56	0.17	59	190	249	0.07	5	330	411	3X10	A
3	WIC	0.40	12	0.11	5	0.17	30	130	160	0.11	4	138	57	3X10	B
4	BED-2	1.13	33	1.61	77	0.17	25	150	175	0.1	6	168	393	4X10	B
5	BED-3	1.45	42	1.70	81	0.16	56	140	196	0.08	6	214	413	4X10	D
6	BED-4	1.25	36	1.48	71	0.17	73	180	253	0.07	4	184	362	4X10	C
7	BATH	0.91	27	0.63	30	0.17	43	180	223	0.08	6	310	344	3X10	D
8	BED-3	1.45	42	1.70	81	0.16	54	180	248	0.09	6	214	362	4X10	D
9	BED-4	1.25	36	1.48	71	0.17	68	180	195	0.07	6	184	428	4X10	C
10	MBR	1.18	34	1.74	84	0.16	45	150	195	0.08	6	173	115	3X10	A
11	ENS-2	0.89	26	0.21	10	0.17	45	150	195	0.09	4	298	576	4X10	D
12	FAM	2.25	65	2.36	113	0.15	29	160	206	0.07	6	331	418	4X10	B
13	DIN	2.12	62	1.70	82	0.16	36	170	199	0.08	6	316	360	4X10	D
14	KT/BR	1.74	51	1.02	49	0.17	44	130	166	0.1	5	374	360	3X10	A
15	KT/BR	1.74	51	1.02	49	0.17	44	140	184	0.09	5	374	360	3X10	A
17	LAUN	0.55	16	1.05	50	0.17	29	190	219	0.08	5	117	367	3X10	D
18	PWD	0.75	22	0.31	15	0.17	48	150	198	0.09	4	252	172	3X10	C
19	FOY	3.32	97	0.74	35	0.16	47	130	177	0.09	6	495	92	4X10	C
20	MUD	1.10	32	0.16	8	0.17	25	160	185	0.09	4	367	102	3X10	D
21	BAS	3.16	92	0.41	20	0.16	45	100	155	0.11	6	469	102	4X10	B
22	BAS	3.16	92	0.41	20	0.16	45	110	144	0.1	6	469	102	4X10	B
23	BAS	3.16	92	0.41	20	0.16	45	120	190	0.11	6	469	102	4X10	B
24	BAS	3.16	92	0.41	20	0.16	45	140	190	0.09	6	469	102	4X10	C

SUPPLY AIR TRUNK SIZE												RETURN AIR TRUNK SIZE											
TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (fpm)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (fpm)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (fpm)						
TRUNK A	215	0.07	8.2	10	387	TRUNK G	0	0.00	0	0	0	TRUNK O	0	0.05	0	0	0						
TRUNK B	601	0.07	12	16	676	TRUNK H	0	0.00	0	0	0	TRUNK P	0	0.05	0	0	0						
TRUNK C	283	0.07	9	10	509	TRUNK I	0	0.00	0	0	0	TRUNK Q	0	0.05	0	0	0						
TRUNK D	530	0.07	11.4	16	596	TRUNK J	0	0.00	0	0	0	TRUNK R	0	0.05	0	0	0						
TRUNK E	1131	0.07	15.2	26	783	TRUNK K	0	0.00	0	0	0	TRUNK S	0	0.05	0	0	0						
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK T	0	0.05	0	0	0						

RETURN AIR #	1	2	3	4	5	6											BR						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR VOLUME	135	135	125	115	365	75	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
ACTUAL DUCT LGH	41	37	61	83	43	49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	145	135	185	225	150	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	186	172	248	288	193	279	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.08	0.09	0.06	0.05	0.08	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
ROUND DUCT SIZE	8.6	6.4	6.9	7	9.6	8	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
	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

TRUNK W	0	0.05	0	0	x	0	0
TRUNK X	1131	0.05	16.5	32	x	8	638
TRUNK Y	500	0.05	12.2	18	x	8	500
TRUNK Z	315	0.05	10.2	12	x	8	473
DROP	1131	0.05	16.5	24	x	10	679

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EXCEEDING THE PROVISIONS OF
THE ONTARIO BUILDING CODE

TYPE: BARTON 4
SITE NAME: LAMBERT'S LANE PH.2

LO # 83341
LOT 34

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY
COMBUSTION APPLIANCES 9.32.3.1(1)
a) ☒ Direct vent (sealed combustion) only
b) ☐ Positive venting induced draft (except fireplaces)
c) ☐ Natural draft, B-vent or induced draft gas fireplace
d) ☐ Solid Fuel (including fireplaces)
e) ☐ No Combustion Appliances

HEATING SYSTEM
☒ Forced Air ☐ Non Forced Air
☐ Electric Space Heat

HOUSE TYPE 9.32.1(2)
☒ I Type a) or b) appliance only, no solid fuel
☐ II Type I except with solid fuel (including fireplaces)
☐ III Any Type c) appliance
☐ IV Type I, or II with electric space heat
☐ Other: Type I, II or IV no forced air

SYSTEM DESIGN OPTIONS O.N.H.W.P.
☐ 1 Exhaust only/Forced Air System
☐ 2 HRV with Ducting/Forced Air System
☒ 3 HRV Simplified/connected to forced air system
☐ 4 HRV with Ducting/non forced air system
☐ Part 6 Design

TOTAL VENTILATION CAPACITY 9.32.3.3(1)

Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	5	@ 10.6 cfm	53	cfm
Other Rooms	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A			TOTAL	169.6 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED 9.32.3.4(1)

1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	169.6	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	90.1	cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	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
PWD	FV-05-11VK1	50	✓	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.
Model: VANEE 65H
155 cfm high 64 cfm low
75 % Sensible Efficiency @ 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: *Michael O'Rourke*
HRAI #: 001820
Date: August 19

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.6 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19889 *Michael O'Rourke* MICHAEL O'ROURKE

THIS STRUCTURE MUST BE
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: BARTON 4	LOT 34	BUILDER: GREENPARK HOMES
SFQT: 2710	LO# 83341	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):	36340.0	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: 60.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	166.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	10.0 ft

2012 OBC - COMPLIANCE PACKAGE		Compliance Package	
Component		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

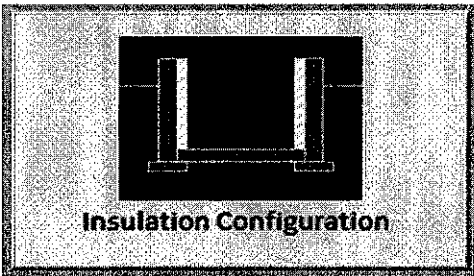
MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

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

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):	8.5	
Exposed Perimeter (m):	50.6	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.37	
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):		835

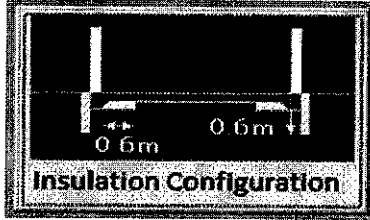
TYPE: BARTON 4
LO# 83341

LOT 34

THIS STRUCTURE MUST BE
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THE ONTARIO BUILDING CODE

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	 Insulation Configuration
Width (m):	3.0	
Exposed Perimeter (m):	3.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		22

TYPE: BARTON 4
LO# 83341

LOT 34

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THE ONTARIO BUILDING CODE

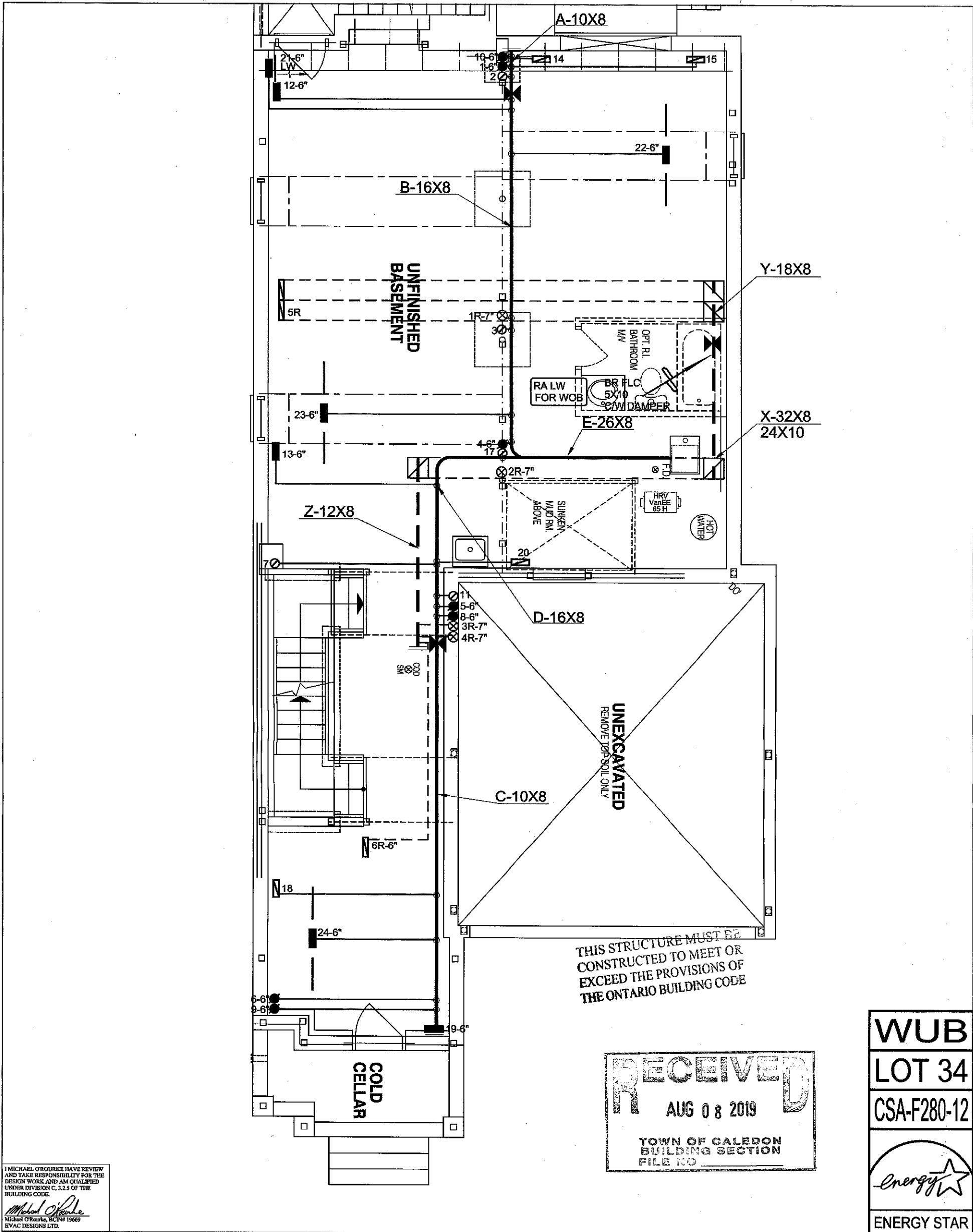
Air Infiltration Residential Load Calculator

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):	1029.0			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		960.6 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: BARTON 4
LO# 83341

LOT 34



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

WUB

LOT 34

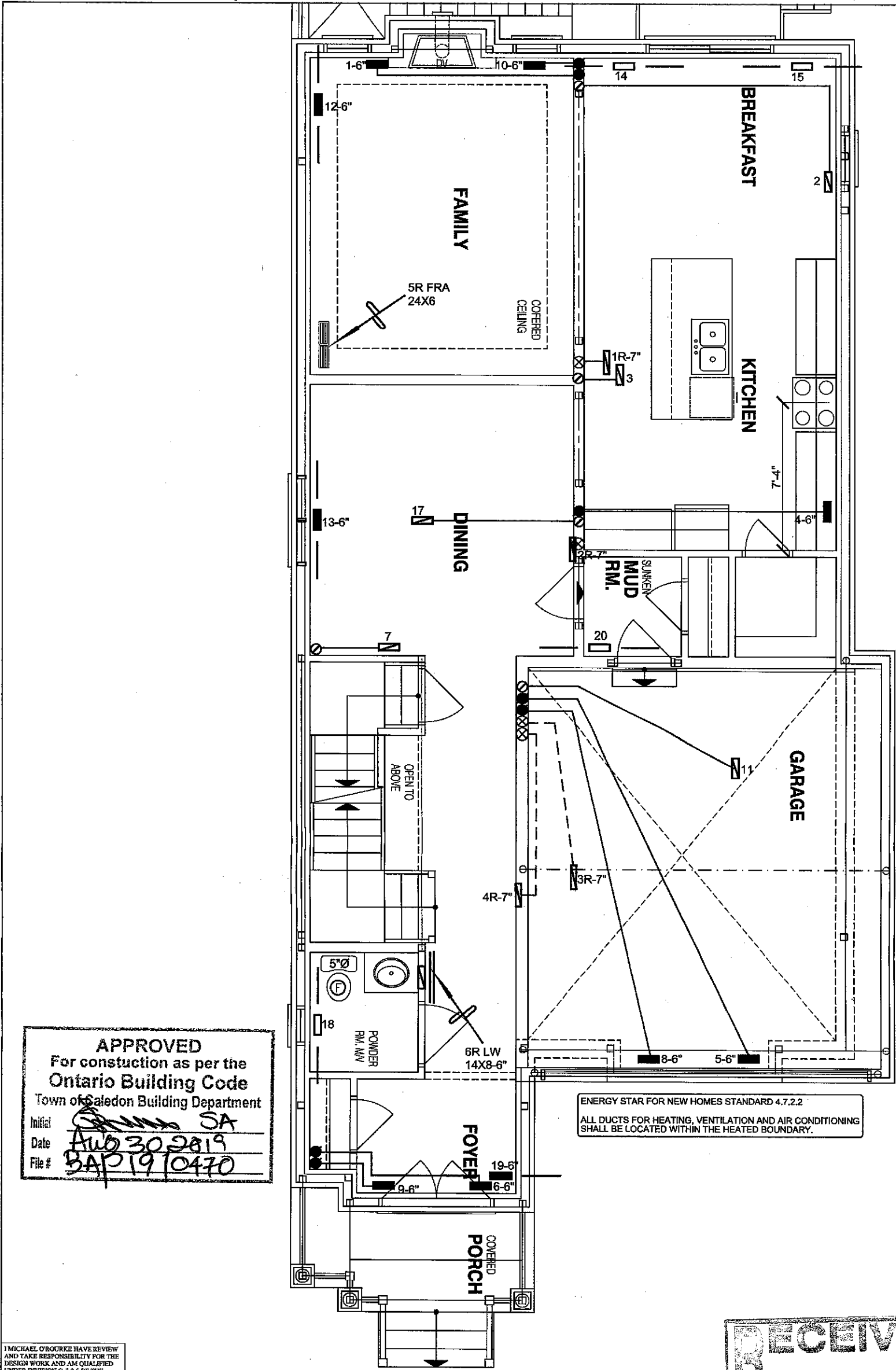
CSA-F280-12

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"x6" 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	
								REVISIONS	

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Client GREENPARK HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services 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 40435 BTU/H		# OF RUNS S/A R/A FANS		Sheet Title	
Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO			UNIT DATA		3RD FLOOR			BASEMENT HEATING LAYOUT
			MAKE GOODMAN		2ND FLOOR 12 4 3			
			MODEL GMEC960603BNA		1ST FLOOR 7 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"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A			
			COOLING 2.0 TONS					
			FAN SPEED 1131 cfm @ 0.5" w.g.					
LOT 34 BARTON 4		2710 sqft		Date JULY/2019		Scale 3/16" = 1'-0"		
				BCIN# 19669		LO# 83341		



APPROVED
For construction as per the
Ontario Building Code
Town of Caledon Building Department
Initial SA
Date AUG 30 2019
File # BAP 19 10470

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

ENERGY STAR FOR NEW HOMES STANDARD 4.7.2.2
ALL DUCTS FOR HEATING, VENTILATION AND AIR CONDITIONING
SHALL BE LOCATED WITHIN THE HEATED BOUNDARY.

WUB

LOT 34

CSA-F280-12

ENERGY STAR

RECEIVED
AUG 08 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO. 3.

HVAC LEGEND							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		8" 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		
No.	Description	Date

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Client

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 34
BARTON 4

2710 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
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THE ONTARIO BUILDING CODE

Sheet Title

FIRST FLOOR
HEATING
LAYOUT

Date

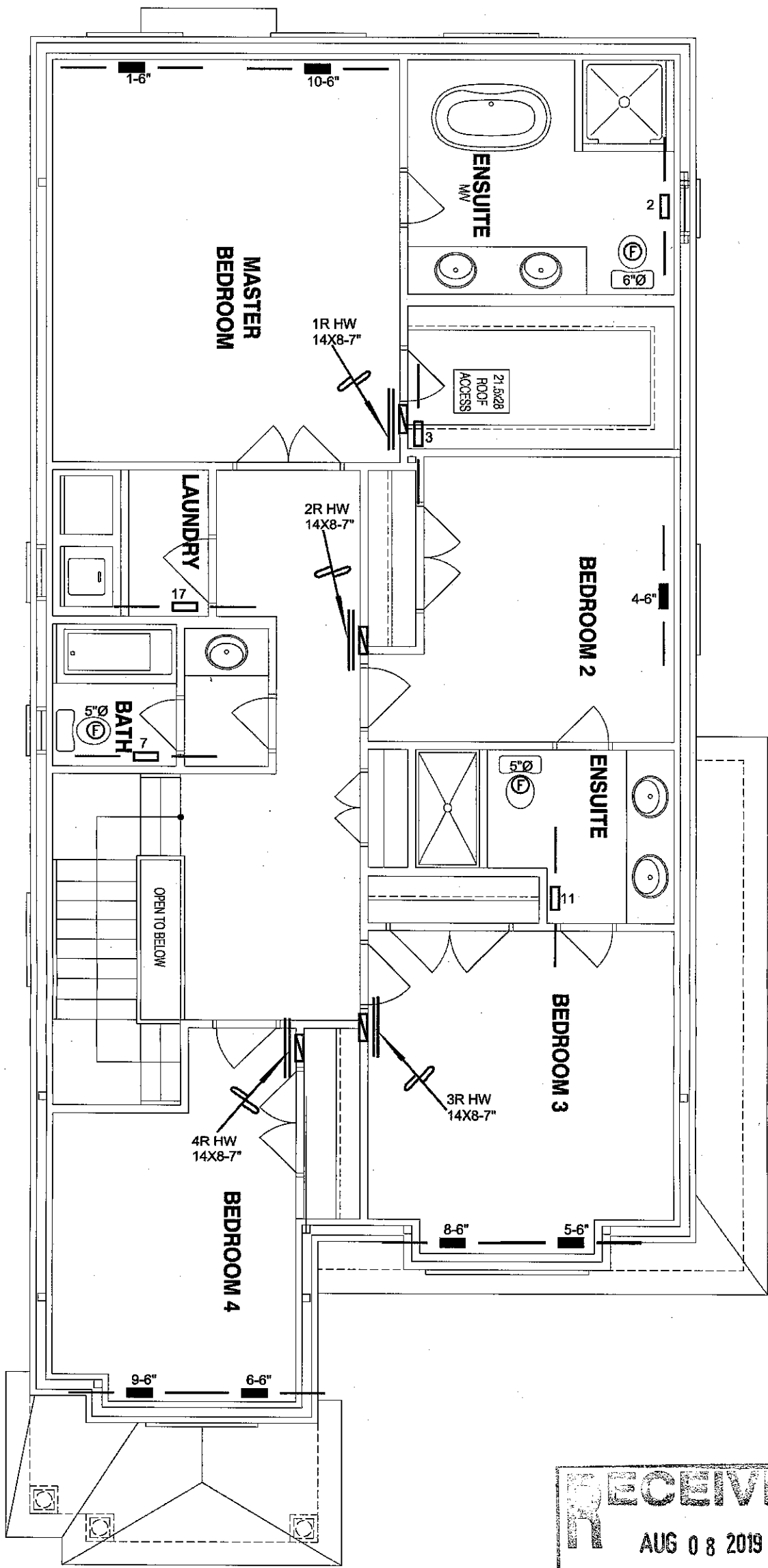
JULY/2019

Scale

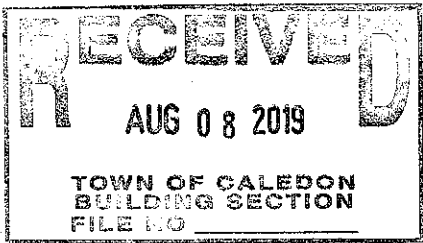
3/16" = 1'-0"

BCIN# 19669

LO# 83341



I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 12.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.



WUB

LOT 34

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"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Client

GREENPARK HOMES

Project Name

LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 34
BARTON 4

2710 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
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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.

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Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

JULY/2019

Scale

3/16" = 1'-0"

BCIN# 19669

LO# 83341