HVAC DESIGNS LTD.
375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2275
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: LAMBERT'S LANE PH.2 — DATE: Aug-19 — WINTER NATURAL AIR CHANGE RATE 0.261 — HEAT LOSS ΔT °F. 74 — CSA-F280-12
BUILDER: GREENPARK HOMES — LOT# 83342 — SUMMER NATURAL AIR CHANGE RATE 0.095 — HEAT GAIN ΔT °F. 11 — ENERGYSTAR
TYPE: KINMOUNT 11B SECTION — SQ.FT.: 2786

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH					WIC-3			ENS-2				
EXP. WALL			37			22			8			23			33			24			7					15			14				
CLG. HT.			9			8			8			9			9			9			8					8			8				
	FACTORS																																
GRS.WALL AREA	LOSS	GAIN	333			176			64			207			297			216			56					120			112				
GLAZING			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	8	148	121	8	148	121	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	16	297	242		
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0	22	408	896	40	742	1629	0	0	0	0	0	0			22	408	896	0	0	0		
SOUTH	18.6	24.1	24	445	578	0	0	0	0	0	0	0	0	0	18	334	433	42	779	1011	18	334	433			0	0	0	0	0	0		
WEST	18.6	40.7	24	445	977	16	297	651	0	0	0	0	0	0	0	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	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	0	0	0		
NET EXPOSED WALL	3.5	0.5	285	1002	148	152	535	79	56	197	29	185	651	96	239	840	125	174	612	91	38	134	20			98	345	51	96	338	50		
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	0			0	0	0	0	0	0		
EXPOSED CLG	1.3	0.6	336	421	197	120	150	67	96	120	54	184	231	103	160	201	89	328	411	183	126	158	70			75	94	42	196	246	109		
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	40	107	49	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	184	458	88	0	0	0	0	0	0	0	0	0			75	187	28	196	488	72		
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				2314			1130			466			1747			2224			1802			625					1033			1368				
SUB TOTAL HT GAIN					1861			918			204			1163			2323			1284			523					1016			474			
LEVEL FACTOR / MULTIPLIER			0.20	0.19		0.20	0.19		0.20	0.19		0.20	0.19		0.20	0.19		0.20	0.19		0.20	0.19				0.20	0.19		0.20	0.19			
AIR CHANGE HEAT LOSS				446			218			90			337			429			348			121					199			264				
AIR CHANGE HEAT GAIN					79			38			9			49			97			54			22					42			20			
DUCT LOSS				0			0			0			208			0			0			0					123			163				
DUCT GAIN					0			0			0			208			0			0			0					106			49			
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0		0			0		0	0		0			
HEAT GAIN APPLIANCES/LIGHTS					631			0			0			631			631			631			0					0			0			
TOTAL HT LOSS BTU/H				2760			1348			556			2293			2653			2150			746					1356			1795				
TOTAL HT GAIN x 1.3 BTU/H					4004			1244			276			2977			4278			2871			709					1514			706			

ROOM USE				LV/DN			KT/FM					W/R			FOY			MUD					WOB			BAS		
EXP. WALL				56			77					6			8			29					10			166		
CLG. HT.				10			10					10			10			12					9			9		
	FACTORS																											
GRS.WALL AREA	LOSS	GAIN		560			770					60			80			348					90			996		
GLAZING				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	0	0	0	0	0	8	148	121			0	0	0	0	0	0
EAST	18.6	40.7		48	890	1954	0	0	0			0	0	0	0	0	0	0	0	0			0	0	0	4	74	163
SOUTH	18.6	24.1		56	1039	1348	42	779	1011			0	0	0	0	0	0	0	0	0			0	0	0	8	148	193
WEST	18.6	40.7		0	0	0	84	1558	3420			0	0	0	0	0	0	0	0	0			0	0	0	8	148	326
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	0
DOORS	24.7	3.7		0	0	0	0	0	0			0	0	0	46	1134	168	20	493	73			20	493	73	20	493	73
NET EXPOSED WALL	3.5	0.5		456	1604	238	644	2265	336			60	211	31	34	120	18	320	1125	167			70	246	36	0	0	0
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	488	1750	259
EXPOSED CLG	1.3	0.6		0	0	0	0	0	0			0	0	0	0	0	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	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
BASEMENT/CRAWL HEAT LOSS					0			0					0			0			0							3254		
SLAB ON GRADE HEAT LOSS					0			0					0			0			0					75				
SUBTOTAL HT LOSS					3533			4602					211			1254			1767					815			5867		
SUB TOTAL HT GAIN						3540			4767					31			186			361					110			1014	
LEVEL FACTOR / MULTIPLIER				0.30	0.32		0.30	0.32				0.30	0.32		0.30	0.32		0.30	0.32							0.50	0.92		
AIR CHANGE HEAT LOSS					1143			1469					68			406			572							6129		
AIR CHANGE HEAT GAIN						148			199					1			8			15								47	
DUCT LOSS					0			0					0			0			0							0		
DUCT GAIN						0			0					0			0			0								0	
HEAT GAIN PEOPLE	240			0		0	0		0			0		0	0		0	0		0			0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS						631			631					0			0			631					0			631
TOTAL HT LOSS BTU/H					4676			6091					279			1659			2338					815			11998	
TOTAL HT GAIN x 1.3 BTU/H						5614			7275					42			252			1309					142			2198

TOTAL HEAT GAIN BTU/H: 35647 — TONS: 2.97 — LOSS DUE TO VENTILATION LOAD BTU/H: 1593 — STRUCTURAL HEAT LOSS: 43511 — TOTAL COMBINED HEAT LOSS BTU/H: 45104

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.

Michael O'Rourke

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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

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SITE NAME: LAMBERT'S LANE PH.2 — LOT 45
BUILDER: GREENPARK HOMES — TYPE: KINMOUNT 11B — DATE: Aug-19 — GFA: 2786 — LO# 83342

HEATING CFM	1131	COOLING CFM	1131	furnace pressure	0.6
TOTAL HEAT LOSS	43,511	TOTAL HEAT GAIN	35,411	furnace filter	0.05
AIR FLOW RATE CFM	25.99	AIR FLOW RATE CFM	31.94	a/c coil pressure	0.2
				available pressure for s/a & r/a	0.35

#GOODMAN
GMEC960603BNA 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	11	8	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

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	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	MBR	ENS-2	LV/DN	LV/DN	KT/FM	KT/FM	KT/FM	MUD	FOY	W/R	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.38	1.35	0.56	2.29	1.33	2.15	0.75	1.33	1.38	1.80	2.34	2.34	2.03	2.03	2.03	2.34	1.66	0.28	3.20	3.20	3.20	3.20
CFM PER RUN HEAT	36	35	14	60	34	56	19	34	36	47	61	61	53	53	53	61	43	7	83	83	83	83
RM GAIN MBH.	2.00	1.24	0.28	2.98	2.14	2.87	0.71	2.14	2.00	0.71	2.81	2.81	2.43	2.43	2.43	1.31	0.25	0.04	0.59	0.59	0.59	0.59
CFM PER RUN COOLING	64	40	9	95	68	92	23	68	64	23	90	90	77	77	77	42	8	1	19	19	19	19
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	27	54	36	46	47	17	37	59	32	50	22	40	38	8	33	39	14	20	22	37	32	18
EQUIVALENT LENGTH	190	160	160	190	170	170	190	170	160	190	160	140	160	160	130	150	170	190	150	150	140	160
TOTAL EFFECTIVE LENGTH	217	214	196	236	217	187	227	229	192	240	182	180	198	168	163	189	184	210	172	187	172	178
ADJUSTED PRESSURE	0.08	0.08	0.09	0.07	0.08	0.09	0.08	0.08	0.09	0.07	0.09	0.09	0.09	0.1	0.11	0.09	0.09	0.08	0.09	0.09	0.09	0.09
ROUND DUCT SIZE	5	5	4	6	6	6	4	6	5	5	6	6	5	5	5	5	4	4	6	6	6	6
HEATING VELOCITY (ft/min)	264	257	161	306	173	286	218	173	264	345	311	311	389	389	389	448	493	80	423	423	423	423
COOLING VELOCITY (ft/min)	470	294	103	484	347	469	264	347	470	169	459	459	565	565	565	308	92	11	97	97	97	97
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	D	D	A	A	B	B	A	C	B	B	A	D	C	C	D	B	B	C	D	A	B

RUN #	25
ROOM NAME	WIC-3
RM LOSS MBH.	1.36
CFM PER RUN HEAT	35
RM GAIN MBH.	1.51
CFM PER RUN COOLING	48
ADJUSTED PRESSURE	0.17
ACTUAL DUCT LGH.	42
EQUIVALENT LENGTH	160
TOTAL EFFECTIVE LENGTH	202
ADJUSTED PRESSURE	0.09
ROUND DUCT SIZE	5
HEATING VELOCITY (ft/min)	257
COOLING VELOCITY (ft/min)	352
OUTLET GRILL SIZE	3X10
TRUNK	A

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK A	307	0.07	9.3	12	x	8	461	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	659	0.07	12.4	18	x	8	659	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	225	0.09	7.8	8	x	8	506	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	246	0.08	8.3	8	x	8	554	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	471	0.08	10.6	14	x	8	606	TRUNK K	0	0.00	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

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	0	0.05	0	0	x	8	0
TRUNK X	936	0.05	15.4	28	x	8	602
TRUNK Y	0	0.05	0	0	x	8	0
TRUNK Z	480	0.05	12	16	x	8	540
DROP	1131	0.05	16.5	24	x	10	679

RETURN AIR #	1	2	3	4	5	6										BR
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR VOLUME	195	185	85	75	335	135	0	0	0	0	0	0	0	0	0	121
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
ACTUAL DUCT LGH.	54	20	37	60	16	32	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	100	145	225	230	135	185	0	0	0	0	0	0	0	0	0	140
TOTAL EFFECTIVE LH	154	165	262	290	151	217	1	1	1	1	1	1	1	1	1	154
ADJUSTED PRESSURE	0.10	0.09	0.06	0.05	0.10	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	7.2	7.2	6	6	8.8	6.8	0	0	0	0	0	0	0	0	0	6
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	14

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

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TYPE: KINMOUNT 11B — LO #: 83342
SITE NAME: LAMBERT'S LANE PH.2 — LOT 45

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	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
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 @ 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: [signature]
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, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669 [signature] MICHAEL O'ROURKE

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CSA F280-12 Residential Heat Loss and Heat Gain Calculations

Formula Sheet (For Air Leakage / Ventiliation Calculation)

LO#: 83342 Model: KINMOUNT 11B Builder: GREENPARK HOMES Date: 2019-08-06

Volume Calculation

House Volume

Level	Floor Area (ft^2)	Floor Height (ft)	Volume (ft^3)
Bsmt	1186	9	10674
First	1186	10	11860
Second	1600	8	12800
Third	0	9	0
Fourth	0	9	0
		Total:	35,334.0 ft^3
		Total:	1000.5 m^3

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.261
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

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

0.261 x 277.93 x 41 °C x 1.2 = 3593 W

= 12258 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.085 x 277.93 x 6 °C x 1.2 = 173 W

= 590 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 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h

6.2.7 Sensible heat Gain due to Ventilation

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

80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h

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

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

Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL_{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	12,258	6,682	0.917
2	0.3		11,366	0.324
3	0.2		12,710	0.193
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

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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: KINMOUNT 11B LOT 45 **BUILDER:** GREENPARK HOMES
SFQT: 2786 **LO#** 83342 **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 (ft^3):	35334.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft^2):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 54.0 ft	WIDTH: 34.0 ft	EXPOSED PERIMETER:	166.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	10.0 ft

THIS STRUCTURE IS DESIGNED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE

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	-

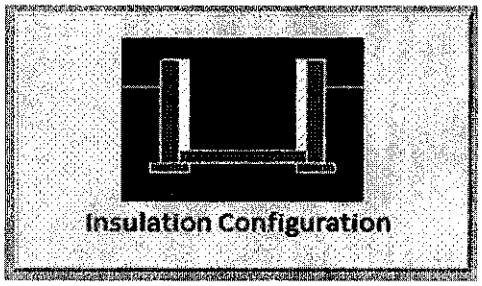
INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

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)

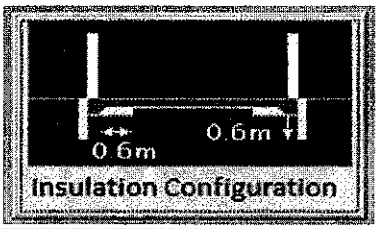
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	50.6	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.37	
Window Area (m^2):	1.9	
Door Area (m^2):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	**953**	

TYPE: KINMOUNT 11B LOT 45
LO# 83342

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

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):	**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: KINMOUNT 11B LOT 45

LO# 83342

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

Air Infiltration Residential Load Calculator

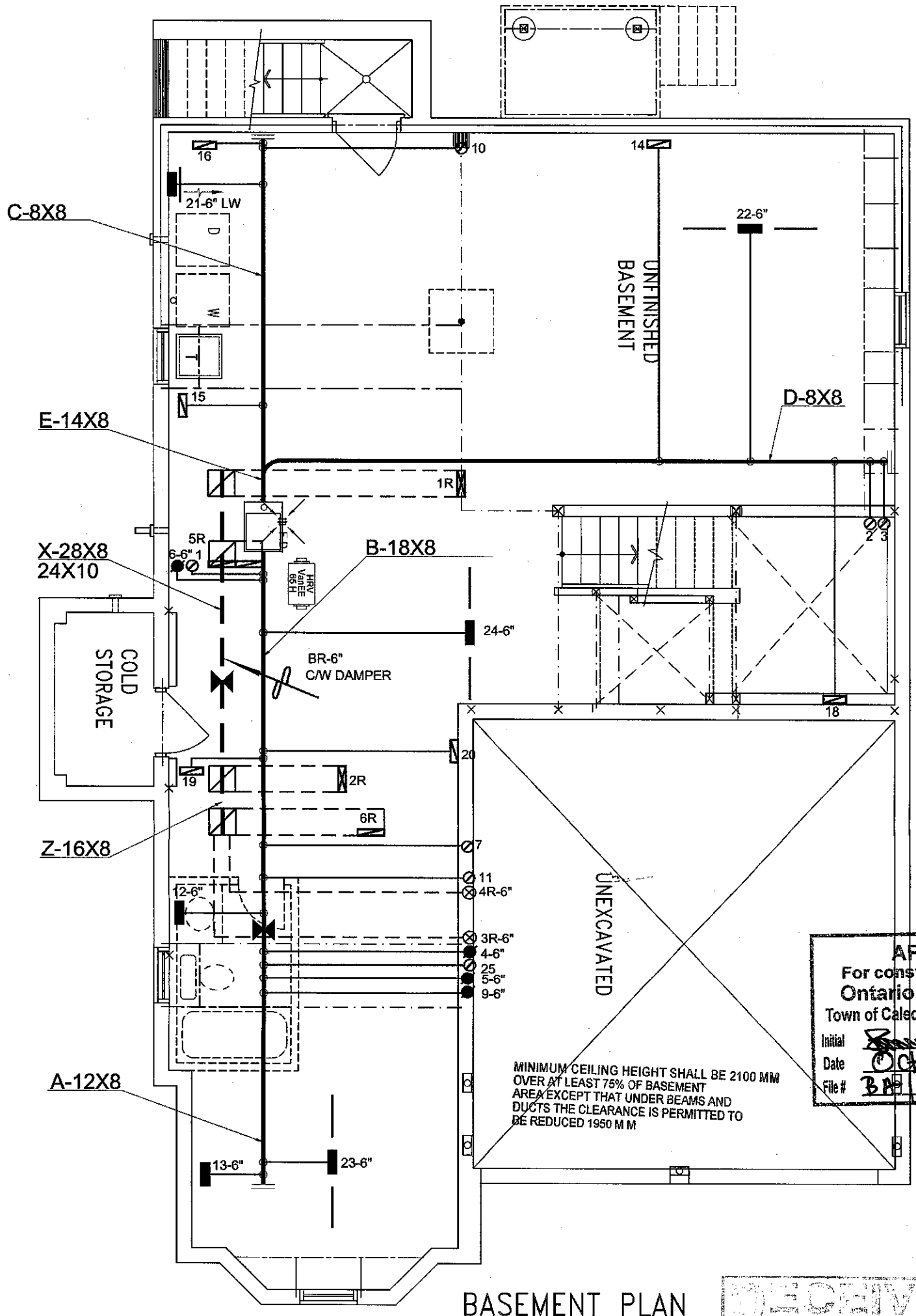
Supplemental tool for CAN/CSA-F280

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):	8.23
Building Configuration	
Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	1000.5
Air Leakage/Ventilation	
Air Tightness Type:	Energy Star Detached (2.5 ACH)
Custom BDT Data:	ELA @ 10 Pa. 934.0 cm^2
	2.50 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply: 37.5 / Total Exhaust: 37.5
Flue Size	
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Natural Infiltration Rates	
Heating Air Leakage Rate (ACH/H):	**0.261**
Cooling Air Leakage Rate (ACH/H):	**0.085**

TYPE: KINMOUNT 11B LOT 45

LO# 83342

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



APPROVED
For constuction as per the
Ontario Building Code
Town of Caledon Building Department
Initial SAPPUNAMY
Date OCT 10,2019
File # BP 19 0709

BASEMENT PLAN

RECEIVED
SEP 26 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

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, BCIN# 19669
HVAC DESIGNS LTD.

WUB
LOT-45
CSA-F280-12
ENERGY STAR

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	FLOOR 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.		

REVISIONS

Client
GREENPARK HOMES

Project Name
LAMBERT'S LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 45
KINMOUNT 11B 2786 sqft

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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.

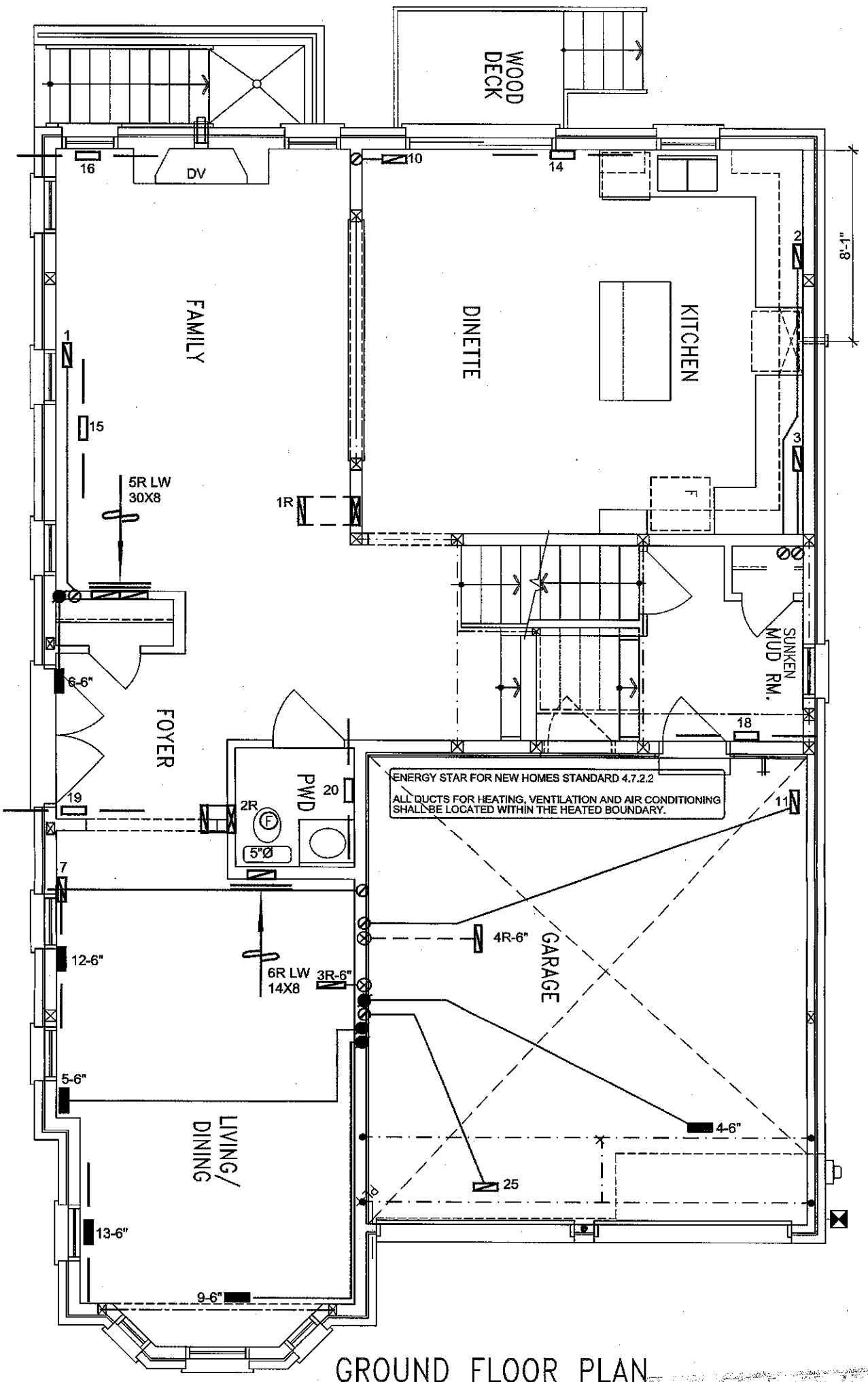
HEAT LOSS 45104 BTU/H	
UNIT DATA	
MAKE	GOODMAN
MODEL	GMEC960603BNA
INPUT	60 MBTU/H
OUTPUT	57.6 MBTU/H
COOLING	3.0 TONS
FAN SPEED	1131 cfm @ 0.5" w.c.

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	11	4	3
1ST FLOOR	8	2	2
BASEMENT	4	1	0

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

Sheet Title
BASEMENT HEATING LAYOUT

Date JULY/2019
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 83342



GROUND FLOOR PLAN

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, 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

RECEIVED
SEP 26 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.

WUB
LOT-45
CSA-F280-12
energy
ENERGY STAR

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—▭—	FLOOR SUPPLY AIR GRILLE	▬	6" SUPPLY AIR BOOT ABOVE	▭	14"x8" RETURN AIR GRILLE	▭	RETURN AIR STACK ABOVE
—▬—	FLOOR 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.		

REVISIONS

Client
GREENPARK HOMES

Project Name
LAMBERT'S LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 45
KINMOUNT 11B 2786 sqft

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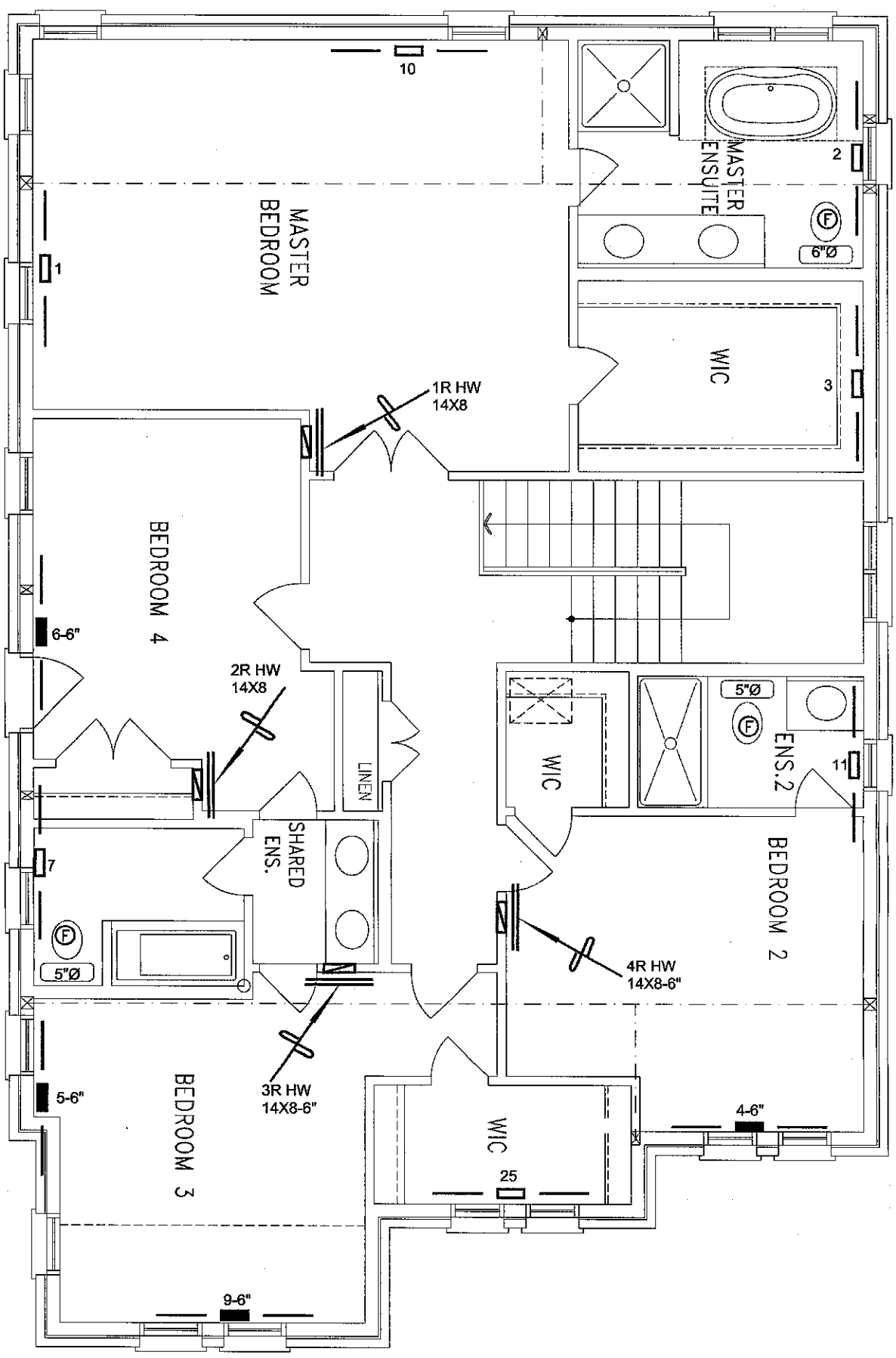
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date JULY/2019
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 83342



SECOND FLOOR PLAN

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.

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HVAC DESIGNS LTD.

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SEP 26 2019
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LOT-45
CSA-F280-12
energy
ENERGY STAR

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
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	FLOOR 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.		

REVISIONS

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Client
GREENPARK HOMES

Project Name
LAMBERT'S LANE HOME CORP PH 2
CALEDON, ONTARIO

LOT 45
KINMOUNT 11B 2786 sqft

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