HVAC DESIGNS LTD.

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2
Tel: 905.619.2300 Fax: 905.619.2375
Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SITE NAME: LAMBERT'S LANE PH.2 — DATE: Feb-19 — WINTER NATURAL AIR CHANGE RATE 0.227 — HEAT LOSS ΔT °F. 74 — CSA-F280-12
BUILDER: GREENPARK HOMES — TYPE: KINMOUNT 11B — GFA: 2839 — LO# 81361 — SUMMER NATURAL AIR CHANGE RATE 0.074 — HEAT GAIN ΔT °F. 11 — ENERGYSTAR

ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			BATH					WIC-2			ENS-2				
EXP. WALL			37			22			8			23			33			24			7					15			14				
CLG. HT.			10			9			9			10			10			10			9					9			9				
	FACTORS																															
GRS.WALL AREA	LOSS	GAIN	370			198			72			230			330			240			63					135			126				
GLAZING				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	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0		
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0	22	408	896	40	742	1629	8	148	326	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	34	631	818	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	8	148	326	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	322	1132	168	182	640	95	72	253	38	208	731	108	272	957	142	190	668	99	45	158	23			113	397	59	126	443	66		
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	187	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	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	184	458	68	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			2444			1087			374			1828			2340			2007			650					1086			1177				
SUB TOTAL HT GAIN					1910			813			91			1175			2341			1752			527				1624			247		
LEVEL FACTOR / MULTIPLIER			0.20	0.18		0.20	0.18		0.20	0.18		0.20	0.18		0.20	0.18		0.20	0.18		0.20	0.18				0.20	0.18		0.20	0.18			
AIR CHANGE HEAT LOSS			431			192			66			322			413			354			115					191			207				
AIR CHANGE HEAT GAIN					75			32			4			46			91			68			21				40			10		
DUCT LOSS			0			0			0			216			0			0			0					128			138				
DUCT GAIN					0			0			0			211			0			0			0				106			26		
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					647			0			0			647			647			647			0				0			0		
TOTAL HT LOSS BTU/H			2875			1279			439			2366			2753			2361			765					1405			1523				
TOTAL HT GAIN x 1.3 BTU/H					4045			1098			123			3014			4316			3520			712				1522			367		

ROOM USE				DIN			KT/FM						W/R			FOY			MUD						BAS		
EXP. WALL				56			77						6			8			29						176		
CLG. HT.				10			10						10			10			12						9		
	FACTORS																										
GRS.WALL AREA	LOSS	GAIN		560			770						60			80			348						1056		
GLAZING				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	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					4	74	163
SOUTH	18.6	24.1	56	1039	1348	42	779	1011				0	0	0	22	408	529	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					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
DOORS	24.7	3.7	0	0	0	0	0	0				0	0	0	24	592	88	40	986	146					20	493	73
NET EXPOSED WALL	3.5	0.5	456	1604	238	644	2265	336				60	211	31	34	120	18	308	1083	161					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					528	1855	275
EXPOSED CLG	1.3	0.6	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
EXPOSED FLOOR	2.5	0.4	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						5106		
SLAB ON GRADE HEAT LOSS				0			0						0			0			0								
SUBTOTAL HT LOSS				3533			4602						211			1119			2069						8825		
SUB TOTAL HT GAIN					3540			4767						31			635			307							1029
LEVEL FACTOR / MULTIPLIER			0.30	0.30		0.30	0.30					0.30	0.30		0.30	0.30		0.30	0.30						0.50	0.65	
AIR CHANGE HEAT LOSS				1052			1371						63			333			616						5726		
AIR CHANGE HEAT GAIN					138			186						1			25			12							40
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
HEAT GAIN APPLIANCES/LIGHTS					647			647						0			0			647							647
TOTAL HT LOSS BTU/H				4585			5973						274			1453			2685						14651		
TOTAL HT GAIN x 1.3 BTU/H					5623			7280						42			858			1256							2232

TOTAL HEAT GAIN BTU/H: 36243 — TONS: 3.02 — LOSS DUE TO VENTILATION LOAD BTU/H: 1593 — STRUCTURAL HEAT LOSS: 45285 — TOTAL COMBINED HEAT LOSS BTU/H: 46878

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

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

RECEIVED JUN 25 2019 TOWN OF CALEDON BUILDING SECTION FILE NO

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

TYPE: KINMOUNT 11B DATE: Feb-19 GFA: 2839 LO# 81361

HEATING CFM	1131	COOLING CFM	1131
TOTAL HEAT LOSS	45,285	TOTAL HEAT GAIN	36,007
AIR FLOW RATE CFM	24.98	AIR FLOW RATE CFM	31.41

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 dif 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
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

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	DIN	DIN	KT/FM	KT/FM	KT/FM	MUD	FOY	W/R	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.44	1.28	0.44	2.37	1.38	2.36	0.76	1.38	1.44	1.52	2.29	2.29	1.99	1.99	1.99	2.69	1.45	0.27	3.64	3.64	3.64	3.64
CFM PER RUN HEAT	36	32	11	59	34	59	19	34	36	38	57	57	50	50	50	67	36	7	91	91	91	91
RM GAIN MBH.	2.02	1.10	0.12	3.01	2.16	3.52	0.71	2.16	2.02	0.37	2.81	2.81	2.43	2.43	2.43	1.26	0.86	0.04	0.56	0.56	0.56	0.56
CFM PER RUN COOLING	64	35	4	95	68	111	22	68	64	12	88	88	76	76	76	39	27	1	18	18	18	18
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.15	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	0.08	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	4	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	367	126	301	173	301	218	173	264	279	291	291	367	367	367	492	413	80	464	464	464	464
COOLING VELOCITY (ft/min)	470	402	46	484	347	566	252	347	470	88	449	449	558	558	558	286	310	11	92	92	92	92
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-2
RM LOSS MBH.	1.41
CFM PER RUN HEAT	35
RM GAIN MBH.	1.52
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

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TOWN OF CALEDON
BUILDING SECTION
FILE NO

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	310	0.07	9.4	10	x	8	558	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	653	0.07	12.4	18	x	8	653	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	227	0.09	7.8	8	x	8	511	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	251	0.08	8.4	8	x	8	565	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	478	0.08	10.6	14	x	8	615	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	0.06	0	0	x	8	0
TRUNK P	0	0.06	0	0	x	8	0
TRUNK Q	0	0.06	0	0	x	8	0
TRUNK R	0	0.06	0	0	x	8	0
TRUNK S	0	0.06	0	0	x	8	0
TRUNK T	0	0.06	0	0	x	8	0
TRUNK U	0	0.06	0	0	x	8	0
TRUNK V	0	0.06	0	0	x	8	0
TRUNK W	0	0.06	0	0	x	8	0
TRUNK X	966	0.06	14.9	26	x	8	669
TRUNK Y	165	0.06	7.7	8	x	8	371
TRUNK Z	460	0.06	11.3	14	x	8	591
DROP	1131	0.06	15.8	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	165	165	85	75	340	135	0	0	0	0	0	0	0	0	0	166
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	150	145	205	195	135	160	0	0	0	0	0	0	0	0	0	175
TOTAL EFFECTIVE LH	204	165	242	255	151	192	1	1	1	1	1	1	1	1	1	189
ADJUSTED PRESSURE	0.07	0.09	0.06	0.06	0.10	0.08	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.08
ROUND DUCT SIZE	7.4	6.9	6	5.7	8.9	6.6	0	0	0	0	0	0	0	0	0	7.2
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

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Michael O'Rourke - INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

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TYPE: KINMOUNT 11B LO # 81361
SITE NAME: LAMBERT'S LANE PH.2

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	2	@ 10.6 cfm	21.2	cfm
Table 9.32.3.A.		TOTAL	148.4	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	148.4	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	68.9	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

Location	Model	cfm	HVI	Sones
		PANASONIC		
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: Michael O'Rourke.
HRAI # 001820
Date: February-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

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CSA F280-12 Residential Heat Loss and Heat Gain Calculations

Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 81361 Model: KINMOUNT 11B Builder: GREENPARK HOMES Date: 01/02/2019

Volume Calculation

House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1239	9	11151
First	1239	10	12390
Second	1600	9	14400
Third	0	9	0
Fourth	0	9	0
		Total:	37,941.0 ft³
		Total:	1074.4 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.227
SUMMER NATURAL AIR CHANGE RATE	0.074

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

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

0.227 x 298.44 x 41 °C x 1.2 = 3356 W

= 11452 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.074 x 298.44 x 6 °C x 1.2 = 162 W

= 552 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_{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	11,452	8,825	0.649
2	0.3		11,534	0.298
3	0.2		12,993	0.176
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

HVAC DESIGNS LTD.
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: KINMOUNT 11B **BUILDER:** GREENPARK HOMES
SFQT: 2839 **LO#** 81361 **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):	37941.0	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:	176.0 ft

THIS STRUCTURE MUST BE CONSTRUCTED 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

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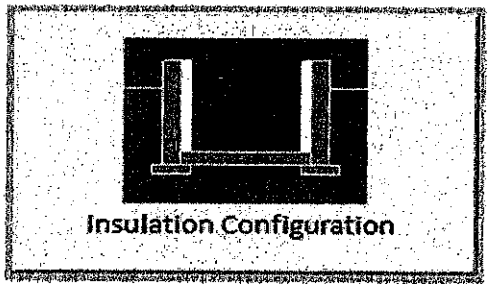
TOWN OF CALEDON
BUILDING SECTION
FILE NO

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):	16.5	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
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):	**1789**	

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TYPE: KINMOUNT 11B
LO# 81361

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):	6.71	
Building Configuration		
Type:	Detached	
Number of Stories:	Two	
Foundation:	Full	
House Volume (m^3):	1074.4	
Air Leakage/Ventilation		
Air Tightness Type:	Energy Star Detached (2.5 ACH)	
Custom BDT Data:	ELA @ 10 Pa.	1002.9 cm^2
	2.50	ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust
	37.5	37.5

Flue Size					
Flue #:	#1	#2	#3	#4	
Diameter (mm):	0	0	0	0	

Natural Infiltration Rates	
Heating Air Leakage Rate (ACH/H):	**0.227**
Cooling Air Leakage Rate (ACH/H):	**0.074**

TYPE: KINMOUNT 11B
LO# 81361

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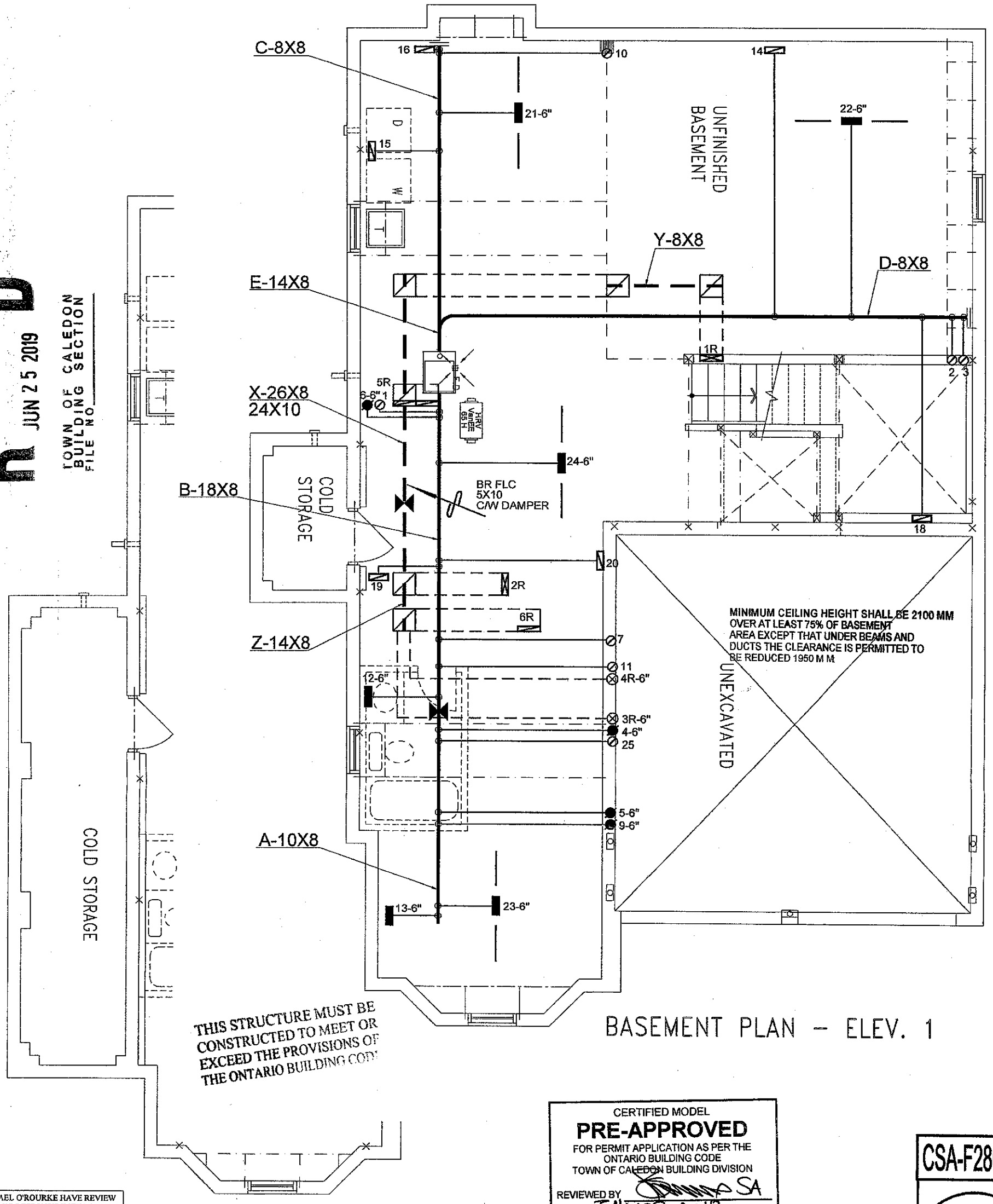
FILE NO.



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BASEMENT PLAN – ELEV. 1

BASEMENT PLAN – ELEV. 2

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.

CERTIFIED MODEL
PRE-APPROVED
FOR PERMIT APPLICATION AS PER THE ONTARIO BUILDING CODE
TOWN OF CALEDON BUILDING DIVISION
REVIEWED BY SA
DATE JULY 09, 2019
FILE # CMOD-KINMOUNT 11B
(ELEVATION 1 & 2)

CSA-F280-12
ENERGY STAR

NOTE: STOP DUCT 3' IF COLD CELLAR DOOR IS INSTALLED

ALL RETURN AIR PARTITIONS 6"

HVAC DESIGNS LTD. MUST BE CONSULTED WITH REGARDS TO ANY KITCHEN EXHAUST FAN THAT EXCEEDS 700 CFM. THIS MAY RESULT IN THE DEPRESSURIZATION OF THE DWELLING.

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

KINMOUNT 11B 2839 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 46878 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 @ 0.6" w.c.

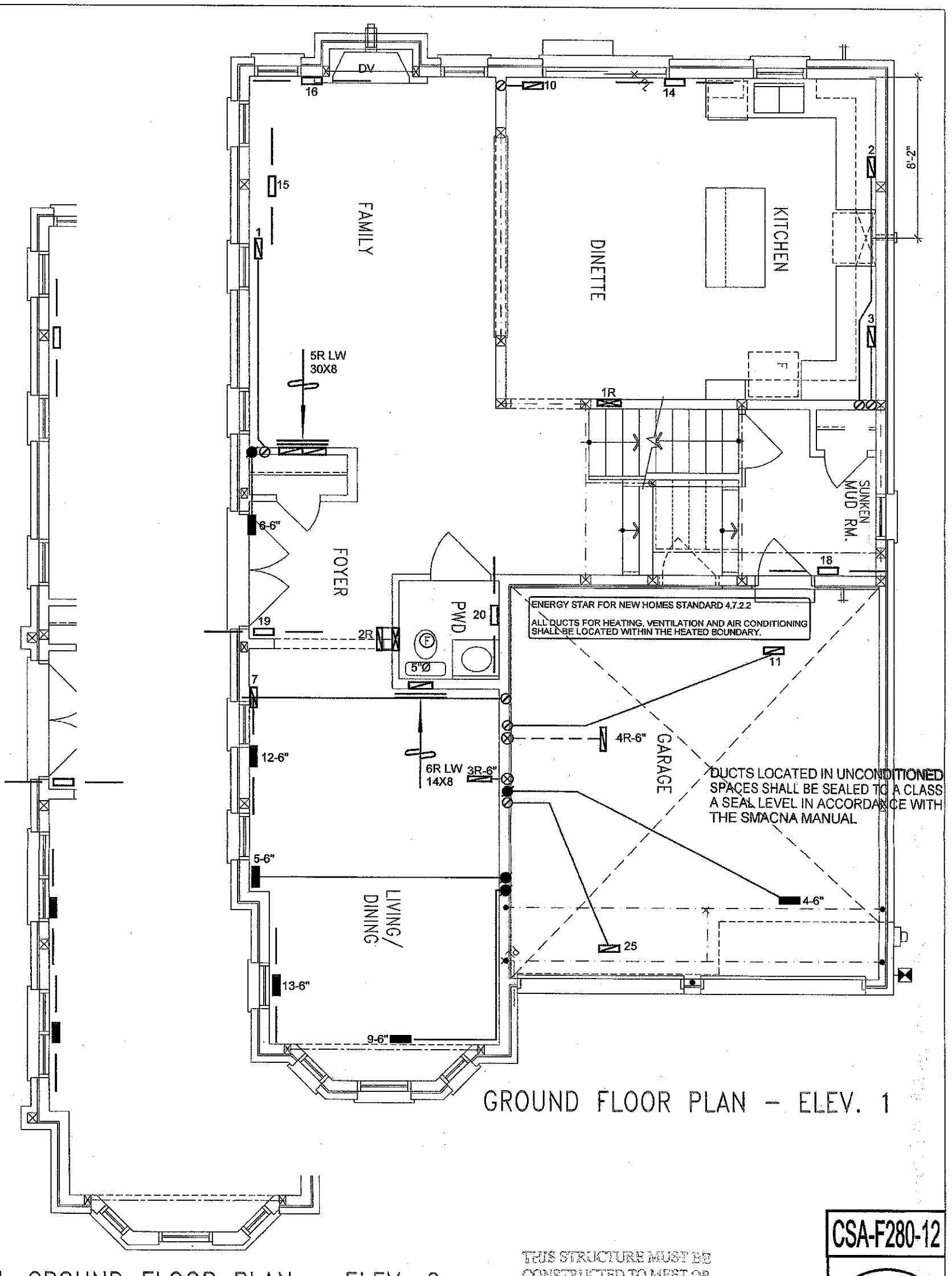
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	11	4	3
1ST FLOOR	8	2	2
BASEMENT	4	1	0

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	FEB/2019
Scale	3/16" = 1'-0"
	BCIN# 19669
LO#	81361

APPLICANT COPY



GROUND FLOOR PLAN – ELEV. 1

GROUND FLOOR PLAN – ELEV. 2

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

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CSA-F280-12

ENERGY STAR

ALL RETURN AIR PARTITIONS 6"

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

No.	Description	Date
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REVISIONS

Client
GREENPARK HOMES

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

KINMOUNT 11B 2839 sqft

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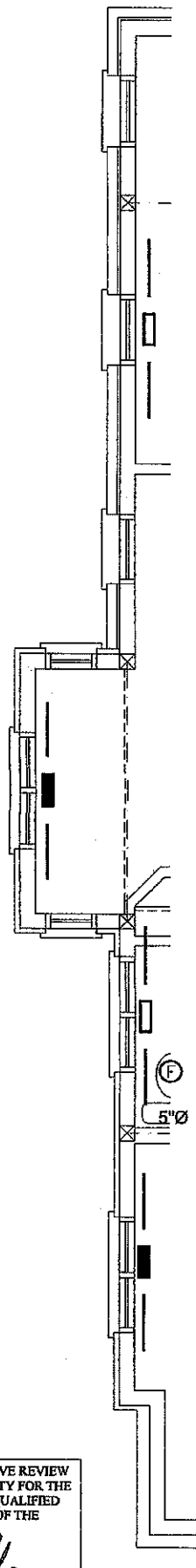
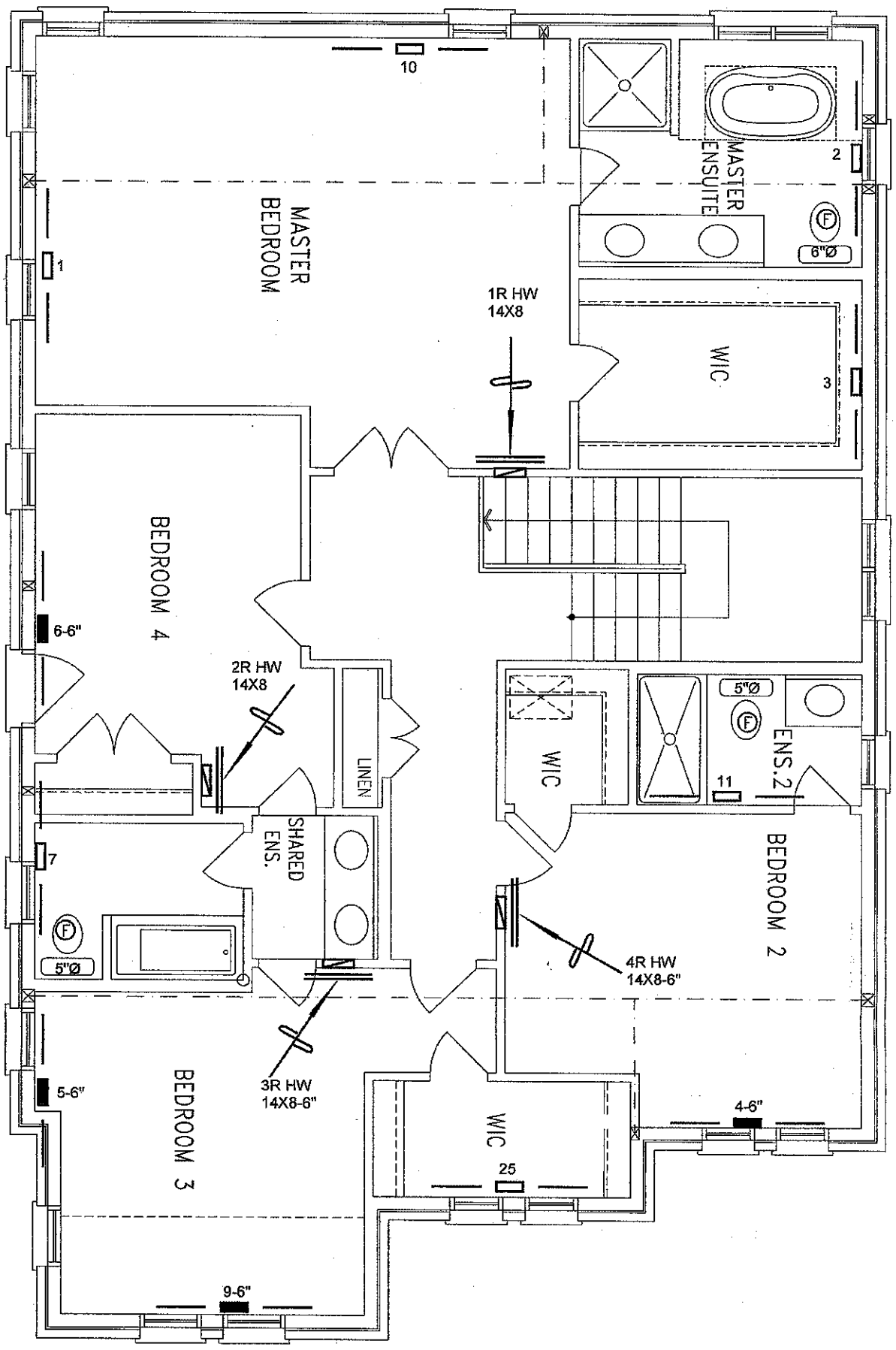
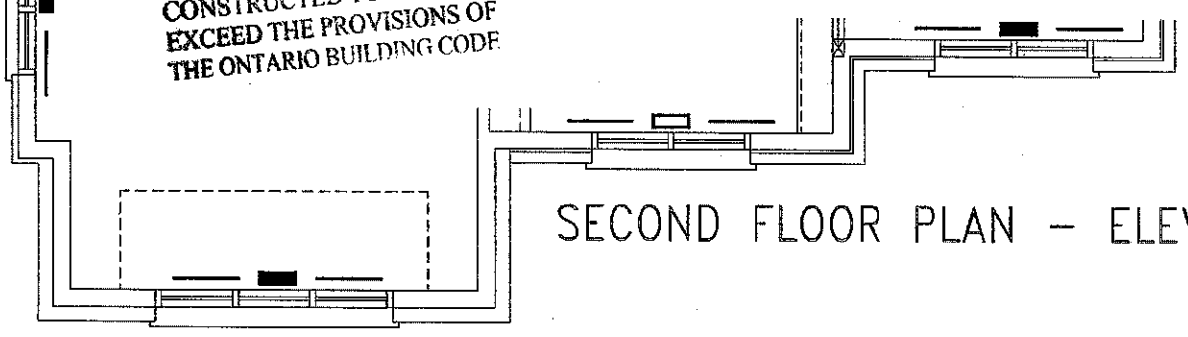
Sheet Title
FIRST FLOOR HEATING LAYOUT

Date FEB/2019
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 81361





SECOND FLOOR PLAN – ELEV. 1



SECOND FLOOR PLAN – ELEV. 2

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CSA-F280-12

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