

LOT 36R

 SITE NAME: MINNISALE HOMES CORP
 BUILDER: GREENPARK HOMES

TYPE: HEMLOCK 4

GFA: 1960

 DATE: Aug-18
 LOM: 79574

 WINTER NATURAL AIR CHANGE RATE: 0.367
 SUMMER NATURAL AIR CHANGE RATE: 0.115

 HEAT LOSS AT °F. 74
 HEAT GAIN AT °F. 11

 CSA-F280-12
 SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH				
29	9	9	29	9	9	29	32	16	8				
FACTORS													
GRS.WALL AREA	LOSS	GAIN	261	188	45	261	288	144	72				
GLAZING	LOSS	GAIN											
NORTH	20.8	15.5	0	0	0	0	0	0	0				
EAST	20.8	41.0	0	0	0	18	374	739	21	436	862	10	208
SOUTH	20.8	24.4	0	0	0	0	0	0	0	0	0	0	0
WEST	20.8	41.0	18	374	739	14	291	575	0	0	0	0	0
SKYL.T.	36.4	100.7	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
NET EXPOSED WALL	4.4	0.6	243	1069	187	166	723	107	45	196	29	243	1069
NET EXPOSED BMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	208	261	116	100	125	56	50	63	28	220	276
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	48	129
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS													
SLAB ON GRADE HEAT LOSS													
SUBTOTAL HT LOSS			1693		1139		259		2047		1854		1094
SUB TOTAL HT GAIN				1012		738		57		1069		1161	
LEVEL FACTOR / MULTIPLIER	0.20	0.29		0.20	0.29		0.20	0.29		0.20	0.29		0.20
AIR CHANGE HEAT LOSS			487		328		74		609		542		314
AIR CHANGE HEAT GAIN			66		48		4		70		76		52
DUCT LOSS			0		0		0		264		0		0
DUCT GAIN			0		0		0		179		0		0
HEAT GAIN PEOPLE	240		2	480	0	0	0	0	1	240	1	240	1
HEAT GAIN APPLIANCES/LIGHTS				411	0	0	0	0		411		411	
TOTAL HT LOSS BTU/H			2180		1467		333		2899		2426		1408
TOTAL HT GAIN x 1.3 BTU/H			2560		1022		79		2560		2455		1949

CITY OF BRAMPTON
BUILDING DIVISION
 REVIEWED BY: S. HANNA
JAN 21 2019
 ATTACHED NOTES ARE PART
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ROOM USE	EXP. WALL	CLG. HT.	LIV	DIN	KT/PM	LAUN	WIR	FOY	MUD				
39	10	10	39	21	47	7	5	11	8				
FACTORS													
GRS.WALL AREA	LOSS	GAIN	371	290	447	63	60	121	88				
GLAZING	LOSS	GAIN											
NORTH	20.8	15.5	0	0	0	0	0	0	0				
EAST	20.8	41.0	34	706	1396	0	0	0	3	62	123	0	0
SOUTH	20.8	24.4	0	0	0	23	478	861	0	0	0	0	0
WEST	20.8	41.0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	36.4	100.7	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
NET EXPOSED WALL	4.4	0.6	337	1466	217	177	769	114	348	1514	224	54	235
NET EXPOSED BMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	48	60	27	91	114
NO ATTIC EXPOSED CLG	2.7	1.2	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
BASEMENT/CRAWL HEAT LOSS													
SLAB ON GRADE HEAT LOSS													
SUBTOTAL HT LOSS			2173		1247		3791		536		243		1147
SUB TOTAL HT GAIN				1613		675		3642		305	43		497
LEVEL FACTOR / MULTIPLIER	0.20	0.43		0.20	0.43		0.20	0.43		0.20	0.43		0.20
AIR CHANGE HEAT LOSS			928		533		1581		154		104		490
AIR CHANGE HEAT GAIN			106		44		239		0		3		33
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
HEAT GAIN APPLIANCES/LIGHTS				411	411		411			411			411
TOTAL HT LOSS BTU/H			3101		1780		5282		690		347		1626
TOTAL HT GAIN x 1.3 BTU/H			2769		1479		5580		958		60		689

TOTAL HEAT GAIN BTU/H: 24812

TONS: 2.07

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 37747

TOTAL COMBINED HEAT LOSS BTU/H: 39340

SITE NAME: MINNISSALE HOMES CORP
BUILDER: GREENPARK HOMES

TYPE: HEMLOCK 4

DATE: Aug-18

GFA: 1960 LO# 79574

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 37,747 TOTAL HEAT GAIN 24,576
AIR FLOW RATE CFM 29.96 AIR FLOW RATE CFM 48.02

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

#GOODMAN
GMCE960603BNA 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	10	9	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	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	MBR	MUD	LIV	DIN	LIV	KT/FM	KT/FM	LAUN	W/R	FOY	KT/FM	BAS	BAS	BAS	BAS
RM LOSS MBH	1.09	1.47	0.33	1.45	2.43	1.41	0.72	1.45	1.09	1.13	1.55	1.78	1.55	1.76	1.76	0.69	0.35	1.64	1.76	3.09	3.09	3.09	3.09
CFM PER RUN HEAT	33	44	10	43	73	42	22	43	33	34	46	53	46	53	53	21	10	49	53	93	93	93	93
RM GAIN MBH	1.28	1.02	0.08	1.28	2.46	1.95	0.38	1.28	1.28	0.70	1.38	1.47	1.38	1.86	1.86	0.96	0.06	0.69	1.86	0.34	0.34	0.34	0.34
CFM PER RUN COOLING	59	47	4	59	113	90	17	59	59	32	64	68	64	86	86	44	3	32	86	16	16	16	16
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.15	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	46	57	52	27	35	32	29	5	53	38	29	10	30	34	42	20	38	19	37	25	42	11	24
EQUIVALENT LENGTH	120	130	120	150	160	170	180	160	150	150	180	170	190	140	140	190	120	180	150	150	130	170	170
TOTAL EFFECTIVE LENGTH	166	187	172	177	195	202	209	165	203	188	209	180	220	174	182	210	158	199	187	175	192	141	194
ADJUSTED PRESSURE	0.1	0.09	0.1	0.1	0.08	0.08	0.08	0.1	0.08	0.09	0.08	0.1	0.08	0.09	0.09	0.08	0.11	0.09	0.09	0.09	0.08	0.11	0.08
ROUND DUCT SIZE	5	4	4	5	6	6	4	5	5	4	5	5	5	6	6	4	4	4	6	6	6	6	6
HEATING VELOCITY (ft/min)	242	505	115	316	372	214	252	316	242	390	338	389	338	270	270	241	115	562	270	474	474	474	474
COOLING VELOCITY (ft/min)	433	539	46	433	576	459	195	433	433	367	470	499	470	438	438	505	34	367	438	82	82	82	82
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	B	B	E	D	D	E	E	A	B	D	E	D	A	B	E	B	D	B	A	B	E	D

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 (ft/min)
COOLING VELOCITY (ft/min)
OUTLET GRILL SIZE
TRUNK

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SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	212	0.08	7.8	8	477
TRUNK B	297	0.08	8.9	10	535
TRUNK C	509	0.08	10.9	14	654
TRUNK D	349	0.08	9.5	12	524
TRUNK E	624	0.08	11.8	16	702
TRUNK F	0	0.00	0	0	0

RETURN AIR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	BR
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181
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	37	49	23	21	46	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
EQUIVALENT LENGTH	140	175	135	235	225	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180
TOTAL EFFECTIVE LH	185	212	184	258	246	221	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	195
ADJUSTED PRESSURE	0.08	0.07	0.08	0.06	0.06	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.08
ROUND DUCT SIZE	6.6	6	5.8	7.5	10.4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.4
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	0	8
INLET GRILL SIZE	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	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK G	0	0.00	0	0	0
TRUNK H	0	0.00	0	0	0
TRUNK I	0	0.00	0	0	0
TRUNK J	0	0.00	0	0	0
TRUNK K	0	0.00	0	0	0
TRUNK L	0	0.00	0	0	0
TRUNK O	0	0.06	0	0	8
TRUNK P	0	0.06	0	0	8
TRUNK Q	0	0.06	0	0	8
TRUNK R	0	0.06	0	0	8
TRUNK S	0	0.06	0	0	8
TRUNK T	0	0.06	0	0	8
TRUNK U	0	0.06	0	0	8
TRUNK V	0	0.06	0	0	8
TRUNK W	0	0.06	0	0	8
TRUNK X	1131	0.06	15.8	30	8
TRUNK Y	285	0.06	9.4	10	8
TRUNK Z	0	0.06	0	0	8
DROP	1131	0.06	15.8	24	10

TYPE: HEMLOCK 4
SITE NAME: MINNISSALE HOMES CORP

LO # 79574

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	3 @ 21.2 cfm	63.6 cfm
Other Bedrooms	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	4 @ 10.6 cfm	42.4 cfm
Other Rooms	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A.	TOTAL	190.8 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		9.32.3.6.
Total Ventilation Capacity	190.8	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	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
W/R	FV-05-11VK1	50 ✓ 0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
155 cfm high	64 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township:	Plan:
Address:	
Roll #	Building Permit #

BUILDER:		GREENPARK HOMES
Name:		
Address:		
City:		
Telephone #:		

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>
HRAJ #	001820
Date:	August-18

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

LO#: 79574

Model: HEMLOCK 4

Builder: GREENPARK HOMES

Date: 8/7/2018

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	956	9	8604
First	956	10	9560
Second	1004	9	9036
Third	0	9	0
Fourth	0	9	0
Total:			27,200.0 ft³
Total:			770.2 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.367
SUMMER NATURAL AIR CHANGE RATE	0.115

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

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

0.367 x 213.95 x 41 °C x 1.2 = 3881 W
 = 13241 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

0.115 x 213.95 x 6 °C x 1.2 = 180 W
 = 615 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)

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

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	13,241	5,733	1.155
2	0.3		9,299	0.427
3	0.2		9,211	0.288
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 SHEETMODEL: HEMLOCK 4
SFQT: 1960

LO# 79574

BUILDER: GREENPARK HOMES
SITE: MINNISSALE HOMES CORP**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:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	27200.0	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: 50.0 ft	WIDTH: 26.0 ft	EXPOSED PERIMETER:	102.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component**

Ceiling with Attic Space Minimum RSI (R)-Value
Ceiling Without Attic Space Minimum RSI (R)-Value
Exposed Floor Minimum RSI (R)-Value
Walls Above Grade Minimum RSI (R)-Value
Basement Walls Minimum RSI (R)-Value
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
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value
Windows and Sliding Glass Doors Maximum U-Value
Skylights Maximum U-Value
Space Heating Equipment Minimum AFUE
HRV Minimum Efficiency
Domestic Hot Water Heater Minimum EF

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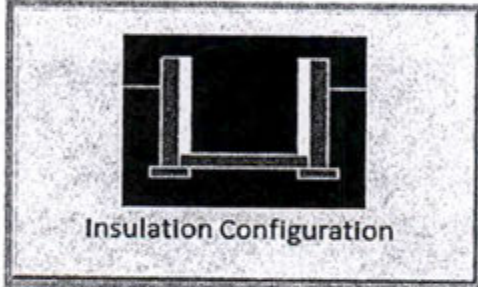
**Compliance Package
A1**

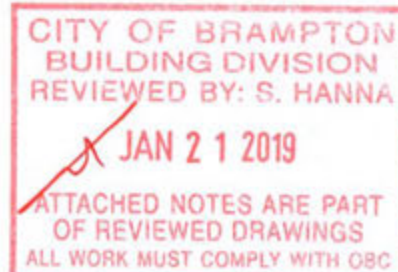
Nominal	Min. Eff.
60	59.22
31	27.65
31	29.80
22	17.03
20 ci	21.12
-	-
10	10
10	11.13
0.28	-
0.49	-
0.96	-
75%	-
0.8	-

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

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

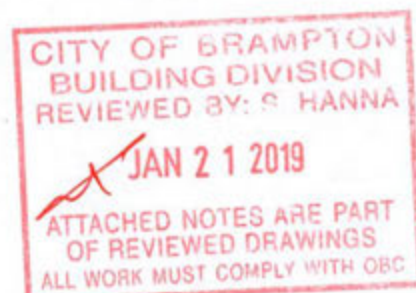
Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.2	 Insulation Configuration
Floor Width (m):	7.9	
Exposed Perimeter (m):	31.1	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.9	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	988	

TYPE: HEMLOCK 4
LO# 79574

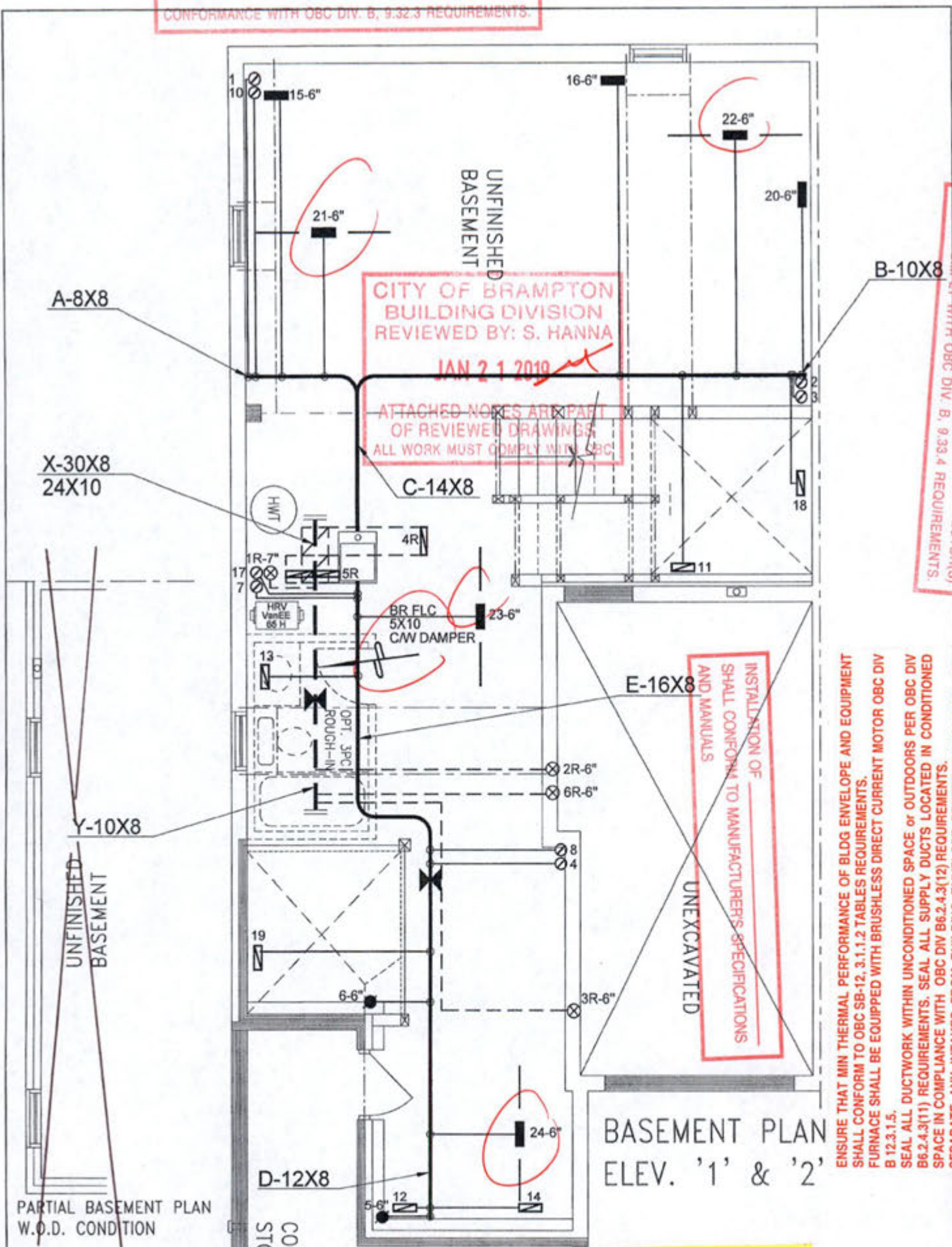
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.62			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	770.2			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa. 3.57	1026.7 cm ² 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):	0.367			
Cooling Air Leakage Rate (ACH/H):	0.115			

TYPE: HEMLOCK 4
LO# 79574

MECHANICAL VENTILATION SHALL BE PROVIDED IN CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.



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, BCIN# 19669
HVAC DESIGNS LTD.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	FLOOR SUPPLY AIR GRILLE 6" BOOT		6" SUPPLY AIR STACK FROM 2ND FLOOR		30" RETURN AIR GRILLE		RETURN AIR STACK 2ND FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2ND FLOOR		FRA-FLOOR RETURN AIR GRILLE		REDUCER

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client
GREENPARK HOMES
Project Name
MINNISALE HOMES CORP.
BRAMPTON, ONTARIO
HEMLOCK 4 1960 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@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 39340 BTU/H		# OF RUNS S/A R/A FANS			
UNIT DATA		3RD FLOOR			
MAKE	GOODMAN	2ND FLOOR		10	4 2
MODEL	GMEC960003BNA-60	1ST FLOOR		9	2 2
INPUT	60 MBTUH	BASEMENT		4	1 0
OUTPUT	57.6 MBTUH	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT			
COOLING	2.0 TONS				
FAN SPEED	1131 cfm @ 0.5" w.g.				

CSA-F280-12

PACKAGE A1

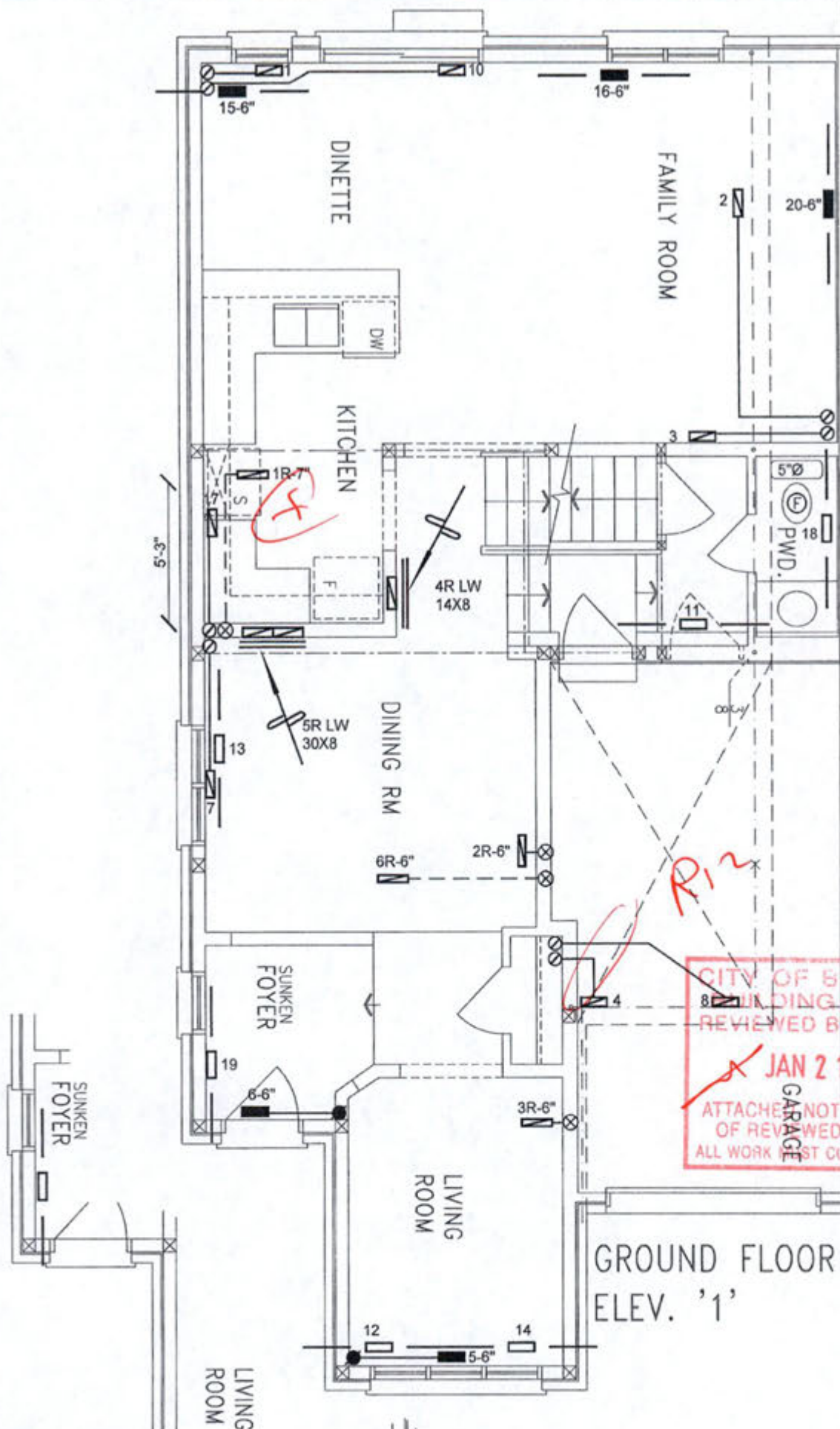
BASEMENT HEATING LAYOUT

Date: AUG/2018

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

BCIN# 19669

LO# 79574



THIS INSTALLATION OF A GAS FIREPLACE IS REGULATED UNDER THE T.S.S.A. BY C.S.A. B149.1 NATURAL GAS AND PROPANE INSTALLATION CODE CALL ENBRIDGE FOR INSPECTION AT 1-800-765-1314

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. HANNA
JAN 21 2019
ATTACHE NOTES ARE PART OF REVISED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

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.

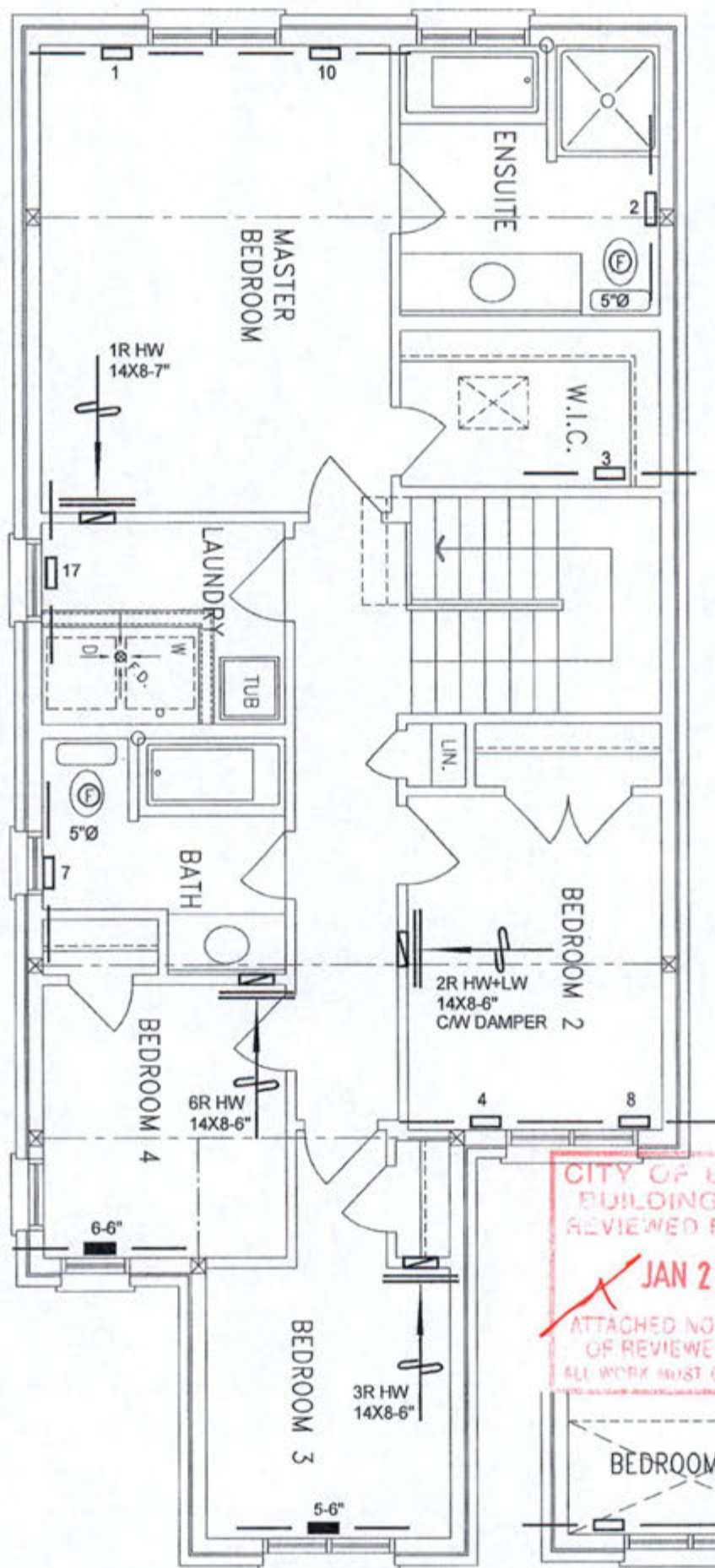
GROUND FLOOR PLAN
ELEV. '2'

CSA-F280-12
PACKAGE A1

HVAC LEGEND					
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14" RETURN AIR GRILLE
	FLOOR SUPPLY AIR GRILLE 8" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30" RETURN AIR GRILLE
	SUPPLY AIR BOOT ABOVE		8" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE
	RETURN AIR STACK ABOVE		RETURN AIR STACK 2nd FLOOR		REDUCER

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. & MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GREENPARK HOMES		 375 Finley Ave. Suite 202 - Ajax, Ontario L1B 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacedesigns.ca Web: www.hvacedesigns.ca Specializing in Residential Mechanical Design Services	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name MINNISALE HOMES CORP. BRAMPTON, ONTARIO LOT 36R HEMLOCK 4 1960 sqft			Date AUG/2018 Scale 3/16" = 1'-0" BCIN# 19669 LO# 79574	
		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.		



CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. HANNA
JAN 21 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
ALL WORK MUST COMPLY WITH OBC

SECOND FLOOR PLAN
ELEV. '1'

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

CSA-F280-12
PACKAGE A1

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
2.		
1.		

REVISIONS

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Client
GREENPARK HOMES
Project Name
MINNISALE HOMES CORP.
BRAMPTON, ONTARIO
LOT 36R
HEMLOCK 4 1960 sqft

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Sheet Title
**SECOND FLOOR
HEATING
LAYOUT**
Date
AUG/2018
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 79574