

SITE NAME: MINNISALE HOMES CORP				LOT 16		DATE: Oct-18		WINTER NATURAL AIR CHANGE RATE 0.345		HEAT LOSS AT T° 74		CSA-P280-12			
BUILDER: GREENPARK HOMES				TYPE: MILLWOOD 2		GFA: 2654		LO# 89548		SUMMER NATURAL AIR CHANGE RATE 0.152		HEAT GAIN AT T° 11		SB-12 PACKAGE A1	
ROOM USE		MBR		ENS		BED-2		BED-3		BED-4		BATH		ENS-2	
EXP. WALL		34		29		26		33		11		10		15	
CLG. HT.		19		9		9		19		9		9		9	
FACTORS		340		261		234		339		90		90		138	
GRS.WALL AREA		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
GLAZING		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN	
NORTH		20.8 15.5 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 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
EAST		20.8 41.0 0 0 0 0 0 0		0 0 0 0 0 0		20 418 821 30 823 1231 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 0 0 0	
SOUTH		20.8 34.4 0 0 0 0 0 0		10 208 344 0 0 0 0 0 0		0 0 0 0 0 0		12 249 393 8 160 190 0 0 0 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
WEST		20.8 41.8 32 160 1314 12 249 483 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 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
SKYL.T.		38.4 108.7 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 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 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
NET EXPOSED WALL		4.4 0.8 308 1343 199 239 1041 154 214 372 138 340 1307 194 87 379 56 83 387 53 127 563 82 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 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
NET EXPOSED ROOF WALL ABOVE GR		3.2 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 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
EXPOSED CLG		1.3 0.6 240 351 160 284 260 114 165 267 92 196 244 100 220 276 123 176 121 98 168 210 94 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 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 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
EXPOSED FLOOR		2.6 0.4 0 0 0 0 0 0		0 0 0 0 0 0		163 411 91 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 0 0 0	
BASEMENT/CRAWL HEAT LOSS		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 0 0 0		0 0 0 0 0 0		0 0 0 0 0 0	
SLAB ON GRADE HEAT LOSS		0 0 0 0 0 0		0 0 0 0 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 0 0 0 0 0	
SUBTOTAL HT LOSS		2340 1669 0.20 0.25 693 118 0 0 240 206 1 240 1 24													

SITE NAME: MINNISALE HOMES CORP
BUILDER: GREENPARK HOMESLOT 16
TYPE: MILLWOOD 2

DATE: Oct-18

GFA: 2654 LO# 80548

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 47,499 TOTAL HEAT GAIN 29,553
AIR FLOW RATE CFM 23.81 AIR FLOW RATE CFM 38.27furnace pressure 0.8
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15#GOODMAN
GMEC90803BNA 80
FAN SPEED
LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600DESIGN CFM = 1131
CFM @ 3" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	7	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	4	5	6	7	8	9	10	11	12	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-2	LIV	KT/FM	KT/FM	KT/FM	STOR	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.48	2.20	1.35	1.43	1.13	0.93	1.35	1.43	1.48	1.86	3.25	2.38	2.38	2.38	1.32	1.04	2.93	1.72	3.87	3.87	3.87	3.87
CFM PER RUN HEAT	35	52	32	34	27	22	32	34	35	44	77	57	57	57	31	25	70	41	92	92	92	92
RM GAIN MBH	1.88	2.21	1.47	1.66	1.78	1.30	1.47	1.66	1.88	0.88	2.48	1.90	1.90	1.90	1.77	0.45	0.75	1.07	0.34	0.34	0.34	0.34
CFM PER RUN COOLING	72	85	58	64	68	50	58	64	72	25	95	73	73	73	68	17	29	41	13	13	13	13
ADJUSTED PRESSURE	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	55	54	48	33	15	37	47	47	45	38	15	48	44	49	39	39	29	32	39	39	20	10
EQUIVALENT LENGTH	190	180	140	140	180	110	140	160	150	140	120	130	110	140	130	140	90	160	150	180	110	150
TOTAL EFFECTIVE LENGTH	245	214	186	173	175	147	187	207	195	178	135	178	154	189	169	179	119	192	189	190	130	160
ADJUSTED PRESSURE	0.07	0.08	0.09	0.1	0.1	0.12	0.09	0.08	0.09	0.1	0.12	0.1	0.11	0.09	0.1	0.1	0.14	0.09	0.09	0.08	0.12	0.1
ROUND DUCT SIZE	8	8	5	5	5	4	5	5	6	4	8	5	5	5	5	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	178	265	235	250	198	252	235	250	178	505	383	419	419	419	228	287	514	470	469	469	469	469
COOLING VELOCITY (ft/min)	367	433	411	470	499	574	411	470	367	287	484	536	536	536	499	185	213	470	68	66	66	68
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	A	B	D	C	B	D	D	C	A	D	C	A	A	A	D	B	C	B	A	A	C	B

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												RETURN AIR TRUNK SIZE											
TRUNK	STATIC	ROUND	RECT	VELOCITY		TRUNK	STATIC	ROUND	RECT	VELOCITY		TRUNK	STATIC	ROUND	RECT	VELOCITY		TRUNK	STATIC	ROUND	RECT	VELOCITY	
CFM	PRESS.	DUCT	DUCT	(ft/min)	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)	(ft/min)
TRUNK A	425	0.07	10.5	14	x 8 546	TRUNK G	0	0.00	0	0	x 8 0	TRUNK O	0	0.07	0	0	x 8 0	TRUNK X	1131	0.07	15.2	30	x 8 679
TRUNK B	662	0.07	12.4	18	x 8 662	TRUNK H	0	0.00	0	0	x 8 0	TRUNK P	0	0.07	0	0	x 8 0	TRUNK Y	265	0.07	8.8	10	x 8 477
TRUNK C	307	0.08	8	10	x 8 553	TRUNK I	0	0.00	0	0	x 8 0	TRUNK Q	0	0.07	0	0	x 8 0	TRUNK Z	0	0.07	0	0	x 8 0
TRUNK D	468	0.08	10.8	14	x 8 802	TRUNK J	0	0.00	0	0	x 8 0	TRUNK R	0	0.07	0	0	x 8 0	DROP	1131	0.07	15.2	24	x 10 679
TRUNK E	0	0.00	0	0	x 8 0	TRUNK K	0	0.00	0	0	x 8 0	TRUNK S	0	0.07	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	TRUNK T	0	0.07	0	0	x 8 0						
												TRUNK U	0	0.07	0	0	x 8 0						
												TRUNK V	0	0.07	0	0	x 8 0						
												TRUNK W	0	0.07	0	0	x 8 0						
RETURN AIR #	1	2	3	4	5	6	0	0	0	0	0	BR											
AIR VOLUME	130	155	125	95	135	310	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											
ACTUAL DUCT LGH	58	43	42	48	38	15	1	1	1	1	1	17											
EQUIVALENT LENGTH	150	135	175	175	145	135	0	0	0	0	0	145											
TOTAL EFFECTIVE LH	208	178	217	223	183	150	1	1	1	1	1	162											
ADJUSTED PRESSURE	0.07	0.08	0.07	0.07	0.08	0.10	14.80	14.80	14.80	14.80	14.80	0.06											
ROUND DUCT SIZE	6.8	7	6.7	6	6.6	8.8	0	0	0	0	0	7.2											
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	8											
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X											
INLET GRILL SIZE	14	14	14	14	14	30	0	0	0	0	0	14											

TYPE: MILLWOOD 2
SITE NAME: MINNISALE HOMES CORP

LO #: 80549
LOT 16

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	@ 10.8 cfm	31.8	cfm
Kitchen & Bathrooms	5	@ 10.6 cfm	53	cfm
Other Rooms	6	@ 10.6 cfm	63.6	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 9.32.3.5		
Total Ventilation Capacity	190.8	cfm
Less Principal Vent. Capacity	79.5	cfm
Required Supplemental Capacity	111.3	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE 6SH	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 6SH		
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 #
CITY OF BRAMPTON BUILDING DIVISION REVIEWED NOV 27 2018 HVAC BY MONICA CHISAN	
BUILDER:	GREENPARK HOMES
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	October-18

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

LOW: 80549

Model: MILLWOOD 2

Builder: GREENPARK HOMES

Date: 10/31/2018

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1148	9	10332
First	1148	10	11480
Second	1506	8	12048
Third	0	9	0
Fourth	0	9	0
Total:			33,860.0 ft ³
Total:			958.8 m ³

WINTER NATURAL AIR CHANGE RATE	0.345
SUMMER NATURAL AIR CHANGE RATE	0.112

Design Temperature Difference

	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-19	41	74
Summer DTD _c	24	30	6	11

5.2.3.1 Heat Loss due to Air Leakage
6.2.6 Sensible Gain due to Air Leakage

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

$$0.345 \times 266.34 \times 41^\circ\text{C} \times 1.2 = 4540 \text{ W}$$

$$= 15489 \text{ Btu/h}$$

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

$$0.112 \times 266.34 \times 6^\circ\text{C} \times 1.2 = 219 \text{ W}$$

$$= 747 \text{ Btu/h}$$

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

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

$$80 \text{ CFM} \times 74^\circ\text{F} \times 1.08 \times 0.25 = 1593 \text{ Btu/h}$$

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

$$80 \text{ CFM} \times 11^\circ\text{F} \times 1.08 \times 0.25 = 236 \text{ Btu/h}$$

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

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

Level	Level Factor (LF)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{level})
1	0.5	15,489	7,720	1.003
2	0.3		11,442	0.406
3	0.2		12,313	0.252
4	0		0	0.000
5	0		0	0.000

*HL_{airbv} = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HL_{airbv} = 0

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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: MILLWOOD 2	LOT 16	BUILDER: GREENPARK HOMES
SFQT: 2654	LO# 80549	SITE: MINNISALE 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:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	SOUTH	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 (ft ³):	33860.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.65	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 46.0 ft	WIDTH: 31.0 ft	EXPOSED PERIMETER:	154.0 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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MONICA CRISAN

**Compliance Package
A1**

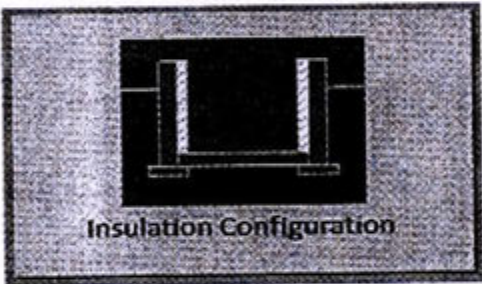
Nominal	Min. Eff.
60	59.22
31	27.65
31	29.80
22	17.03
20 cl	21.12
-	-
10	10
10	11.13
0.28	-
0.49	-
0.96	-
75%	-
0.8	-

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):	14.0	 Insulation Configuration
Floor Width (m):	9.4	
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):	1531	

TYPE: MILLWOOD 2
LO# 80549

LOT 16

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Air Infiltration Residential Load Calculator

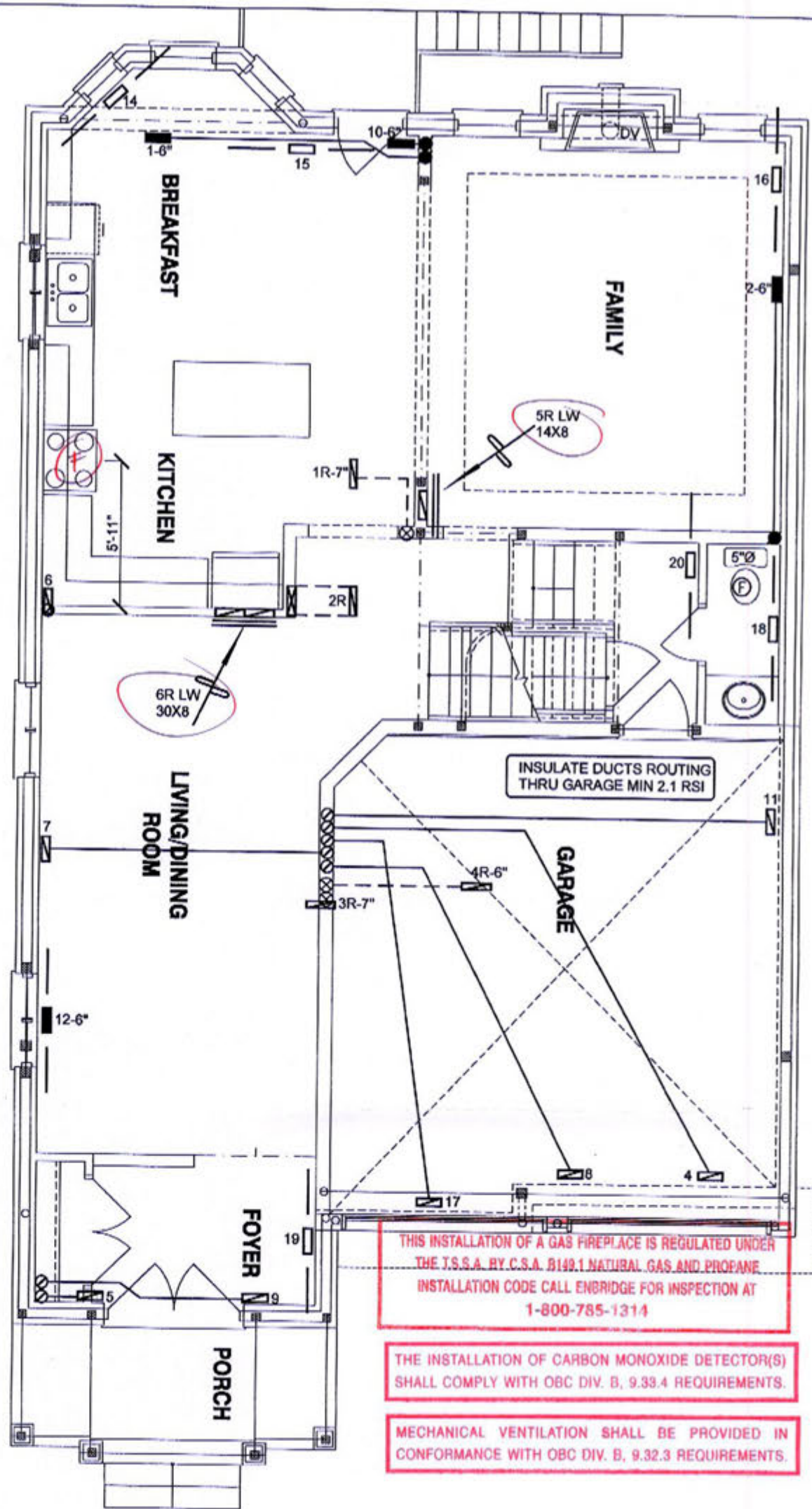
Supplemental tool for CAN/CSA-F280

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):	7.32		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	958.8		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1278.1 cm ²	
	3.57	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):	0.345		
Cooling Air Leakage Rate (ACH/H):	0.112		

TYPE: MILLWOOD 2
LO# 80549

LOT 16





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 1-800-785-1314

THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S) SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

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

LOT 16
CSA-F280-12
WOD PACKAGE A1

I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.1 OF THE BUILDING CODE.
Michael Orourek
MICHAEL OROURKE, BCMP 19669
HVAC DESIGNS LTD.

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.		

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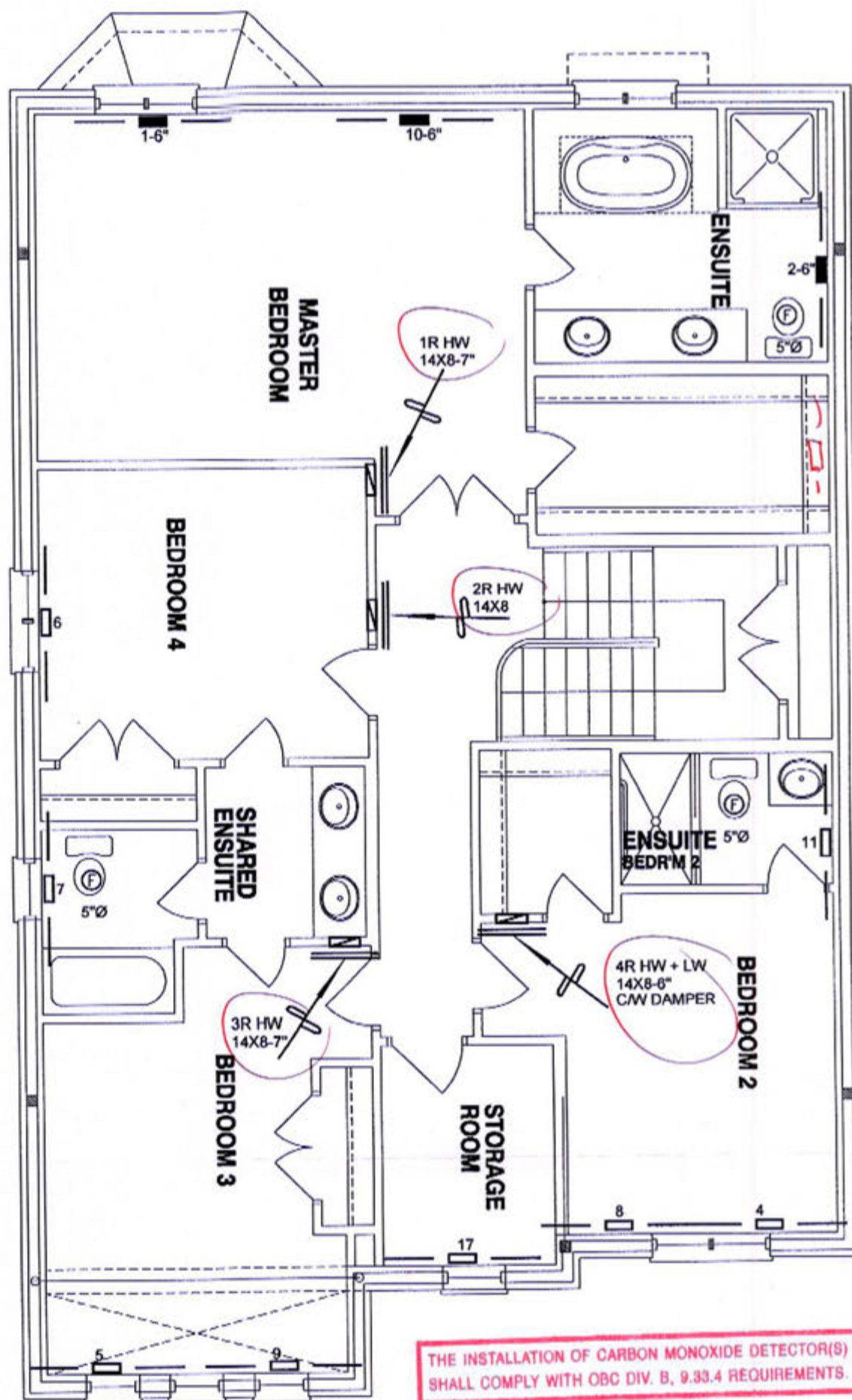
Client
GREENPARK HOMES
Project Name
MINNISALE HOMES CORP.
BRAMPTON, ONTARIO

LOT 16
MILLWOOD 2 2654 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.

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED
NOV 27 2018
HVAC BY
MONICA CRISAN

Sheet Title
FIRST FLOOR HEATING LAYOUT
Date
OCT/2018
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 80549



THE INSTALLATION OF CARBON MONOXIDE DETECTOR(S) SHALL COMPLY WITH OBC DIV. B, 9.33.4 REQUIREMENTS.

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

LOT 16
CSA-F280-12
WOD PACKAGE A1

I MICHAEL O'BRIEN HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.3.3 OF THE BUILDING CODE.

Michael O'Brien
Michael O'Brien, OCEM 19669
HVAC DESIGNS LTD.

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

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Client GREENPARK HOMES		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel: 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	CITY OF BRAMPTON BUILDING DIVISION REVIEWED NOV 27 2018 HVAC BY MONICA CRISAN	Sheet Title SECOND FLOOR HEATING LAYOUT		
Project Name MINNISALE HOMES CORP. BRAMPTON, ONTARIO				Date OCT/2018	Scale 3/16" = 1'-0"	
LOT 16 MILLWOOD 2 2654 sqft				BCIN# 19669		
				LO# 80549		