

ROOM USE	LIV	KT/FM	WIR	FOY	WOD	BAS
EXP. WALL	60	51	11	12	36	132
CLG. HT.	10	10	10	10	9	9
FACTORS						
GRS.WALL AREA	LOSS GAIN	510	110	120	324	1008
GLAZING	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
EAST	20.8 41.0 26 540 1067	50 1039 2052	0 0 0	3 62 123	0 0 0	0 0 0
SOUTH	20.8 24.4 21 436 512	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
WEST	20.8 41.0 0 0 0	46 956 1888	0 0 0	0 0 0	0 0 0	8 166 195
SKYLT.	36.4 100.7 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	20 493 73	20 493 73	20 493 73	0 0 0	0 0 0
NET EXPOSED WALL	4.4 0.6 553 2409 357	394 1717 254	90 392 58	97 423 63	0 0 0	20 493 73
NET EXPOSED BSMF 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
EXPOSED CLG	1.3 0.6 0 0 0	0 0 0	0 0 0	0 0 0	210 738 109	180 632 94
NO ATTIC EXPOSED CLG	2.7 1.2 0 0 0	55 148 66	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	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0
SUBTOTAL HT LOSS	3386	4352	885	978	862	4464
SUB TOTAL HT GAIN	1937	4334	131	259	356	5756
LEVEL FACTOR / MULTIPLIER	0.30 0.41	0.30 0.41	0.30 0.41	0.30 0.41	0.50 0.99	362
AIR CHANGE HEAT LOSS	1388	1784	363	401	6558	47
AIR CHANGE HEAT GAIN	126	282	9	17	0	0
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
HEAT GAIN APPLIANCES/LIGHTS	524	524	0	0	0	524
TOTAL HT LOSS BTU/H	4774	6135	1248	1379	862	12314
TOTAL HT GAIN x 1.3 BTU/H	3362	6681	182	358	462	1212

TOTAL COMBINED HEAT LOSS BTU/H: 40232

SITE NAME: MINNISSALE HOMES CORP
BUILDER: GREENPARK HOMES

OPT BED 4
TYPE: HEMLOCK 3

DATE: Aug-18

GFA: 1928 LO# 79573

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 38,640 TOTAL HEAT GAIN 24,638
AIR FLOW RATE CFM 29.27 AIR FLOW RATE CFM 45.9

furnace pressure 0.6
furnace filter 0.05
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 @ 0.1" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	7	4
R/A	0	0	3	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	10	12	13	14	15	16	17	18	19	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-2	BATH	BED-3	MBR	LIV	LIV	KT/FM	KT/FM	KT/FM	BED-4	W/R	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH	1.07	1.64	1.06	1.66	1.06	1.22	1.66	1.07	2.39	2.39	2.05	2.05	2.05	1.48	1.25	1.38	3.29	3.29	3.29	3.29
CFM PER RUN HEAT	31	48	31	49	31	36	49	31	70	70	60	60	60	43	37	40	96	96	96	96
RM GAIN MBH	1.35	1.05	1.26	1.62	1.26	0.77	1.62	1.35	1.68	1.68	2.23	2.23	2.23	2.08	0.18	0.36	0.42	0.42	0.42	0.42
CFM PER RUN COOLING	62	48	58	74	58	35	74	62	77	77	102	102	102	96	8	16	19	19	19	19
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	30	47	36	63	39	24	56	35	38	50	38	31	22	50	25	48	26	15	45	28
EQUIVALENT LENGTH	120	190	150	180	150	140	180	160	90	150	140	170	110	130	140	160	150	110	150	150
TOTAL EFFECTIVE LENGTH	150	237	186	243	189	164	236	195	128	200	178	201	132	180	165	208	176	125	195	178
ADJUSTED PRESSURE	0.11	0.07	0.09	0.07	0.09	0.1	0.07	0.09	0.13	0.09	0.09	0.08	0.12	0.09	0.1	0.08	0.09	0.13	0.08	0.09
ROUND DUCT SIZE	5	5	5	5	5	4	5	5	5	5	6	6	6	6	4	4	6	6	6	6
HEATING VELOCITY (F/min)	228	352	228	360	228	413	360	228	514	514	306	306	306	219	424	459	489	489	489	489
COOLING VELOCITY (F/min)	455	352	426	543	426	402	543	455	565	565	520	520	520	489	92	184	97	97	97	97
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	D	B	D	A	D	D	A	D	B	A	C	C	D	B	B	A	C	D	A	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 (F/min)	COOLING VELOCITY (F/min)	OUTLET GRILL SIZE	TRUNK
1	MBR	1.07	31	1.35	62	0.17	30	120	150	0.11	5	228	455	3X10	D
2	ENS	1.64	48	1.05	48	0.17	47	190	237	0.07	5	352	352	3X10	B
4	BED-2	1.06	31	1.26	58	0.17	36	150	186	0.09	5	228	426	3X10	D
5	BED-3	1.66	49	1.62	74	0.17	63	180	243	0.07	5	360	543	3X10	A
6	BED-2	1.06	31	1.26	58	0.17	39	150	189	0.09	5	228	426	3X10	D
7	BATH	1.22	36	0.77	35	0.17	24	140	164	0.1	4	413	402	3X10	D
8	BED-3	1.66	49	1.62	74	0.17	56	180	236	0.07	5	360	543	3X10	A
10	MBR	1.07	31	1.35	62	0.17	30	120	150	0.11	5	228	455	3X10	D
12	LIV	2.39	70	1.68	77	0.17	38	90	128	0.13	5	514	565	3X10	B
13	LIV	2.39	70	1.68	77	0.17	50	150	200	0.09	5	514	565	3X10	A
14	KT/FM	2.05	60	2.23	102	0.16	31	140	178	0.09	6	306	520	4X10	C
15	KT/FM	2.05	60	2.23	102	0.16	31	170	201	0.08	6	306	520	4X10	C
16	KT/FM	2.05	60	2.23	102	0.16	22	110	132	0.12	6	306	520	4X10	D
17	BED-4	1.48	43	2.08	96	0.16	50	130	180	0.09	6	219	489	4X10	B
18	W/R	1.25	37	0.18	8	0.17	25	140	165	0.1	4	424	92	3X10	B
19	FOY	1.38	40	0.36	16	0.17	48	160	208	0.08	4	459	184	3X10	A
21	BAS	3.29	96	0.42	19	0.16	26	150	176	0.09	6	489	97	4X10	C
22	BAS	3.29	96	0.42	19	0.16	15	110	125	0.13	6	489	97	4X10	D
23	BAS	3.29	96	0.42	19	0.16	45	150	195	0.08	6	489	97	4X10	A
24	BAS	3.29	96	0.42	19	0.16	28	150	178	0.09	6	489	97	4X10	B

SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE															
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (F/min)						TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (F/min)										
TRUNK A	304	0.07	9.3	10	X	8	547		TRUNK G	0	0.00	0	0	X	8	0		TRUNK O	0	0.05	0	0	X	8	0
TRUNK B	598	0.07	12	16	X	8	673		TRUNK H	0	0.00	0	0	X	8	0		TRUNK P	0	0.05	0	0	X	8	0
TRUNK C	216	0.08	7.9	8	X	8	486		TRUNK I	0	0.00	0	0	X	8	0		TRUNK Q	0	0.05	0	0	X	8	0
TRUNK D	1130	0.07	15.2	26	X	8	782		TRUNK J	0	0.00	0	0	X	8	0		TRUNK R	0	0.05	0	0	X	8	0
TRUNK E	0	0.00	0	0	X	8	0		TRUNK K	0	0.00	0	0	X	8	0		TRUNK S	0	0.05	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 #	1	2	3	4	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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TYPE: HEMLOCK 3
SITE NAME: MINNISSALE HOMES CORP

LO # 79573
OPT BED 4

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	4	@ 10.6 cfm	42.4	cfm
Other Rooms	4	@ 10.6 cfm	42.4	cfm
Table 9.32.3.A.		TOTAL	159	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	159	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	80.5	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
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 #: 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-18

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

LO#: 79573

Model: HEMLOCK 3

Builder: GREENPARK HOMES

Date: 8/3/2018

Volume Calculation
Air Change & Delta T Data
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	969	9	8721
First	959	10	9590
Second	959	9	8631
Third	0	9	0
Fourth	0	9	0
Total:			26,942.0 ft ³
Total:			762.9 m ³

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
6.2.6 Sensible Gain due to Air Leakage

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

$$0.367 \times 211.92 \times 41^\circ\text{C} \times 1.2 = 3844 \text{ W}$$

$$= 13116 \text{ Btu/h}$$

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

$$0.115 \times 211.92 \times 6^\circ\text{C} \times 1.2 = 179 \text{ W}$$

$$= 609 \text{ Btu/h}$$

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

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

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

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

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

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)	HLairbv 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	13,116	6,618	0.991
2	0.3		9,601	0.410
3	0.2		9,001	0.291
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

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: HEMLOCK 3	OPT BED 4	BUILDER: GREENPARK HOMES
SFQT: 1928	LO# 79573	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):	26942.0	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:	132.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****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	-

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

CITY OF CAMPTON
 BUILDING DIVISION
 REVIEWED BY: S. DESAI
 MAR 05 2019
 ATTACHED NOTES ARE PART
 OF REVIEWED DRAWINGS
 ALL WORK MUST COMPLY WITH U

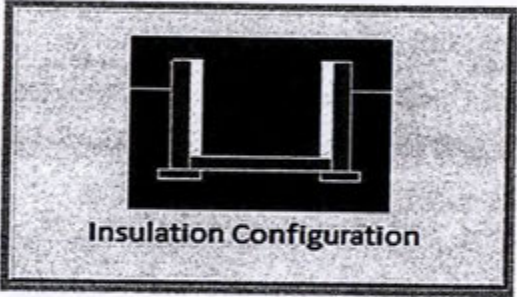
INDIVIDUAL BCIN: 19669

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):	40.2	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.3	
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):		1308

TYPE: HEMLOCK 3
LO# 79573

OPT BED 4



Air Infiltration Residential Load Calculator

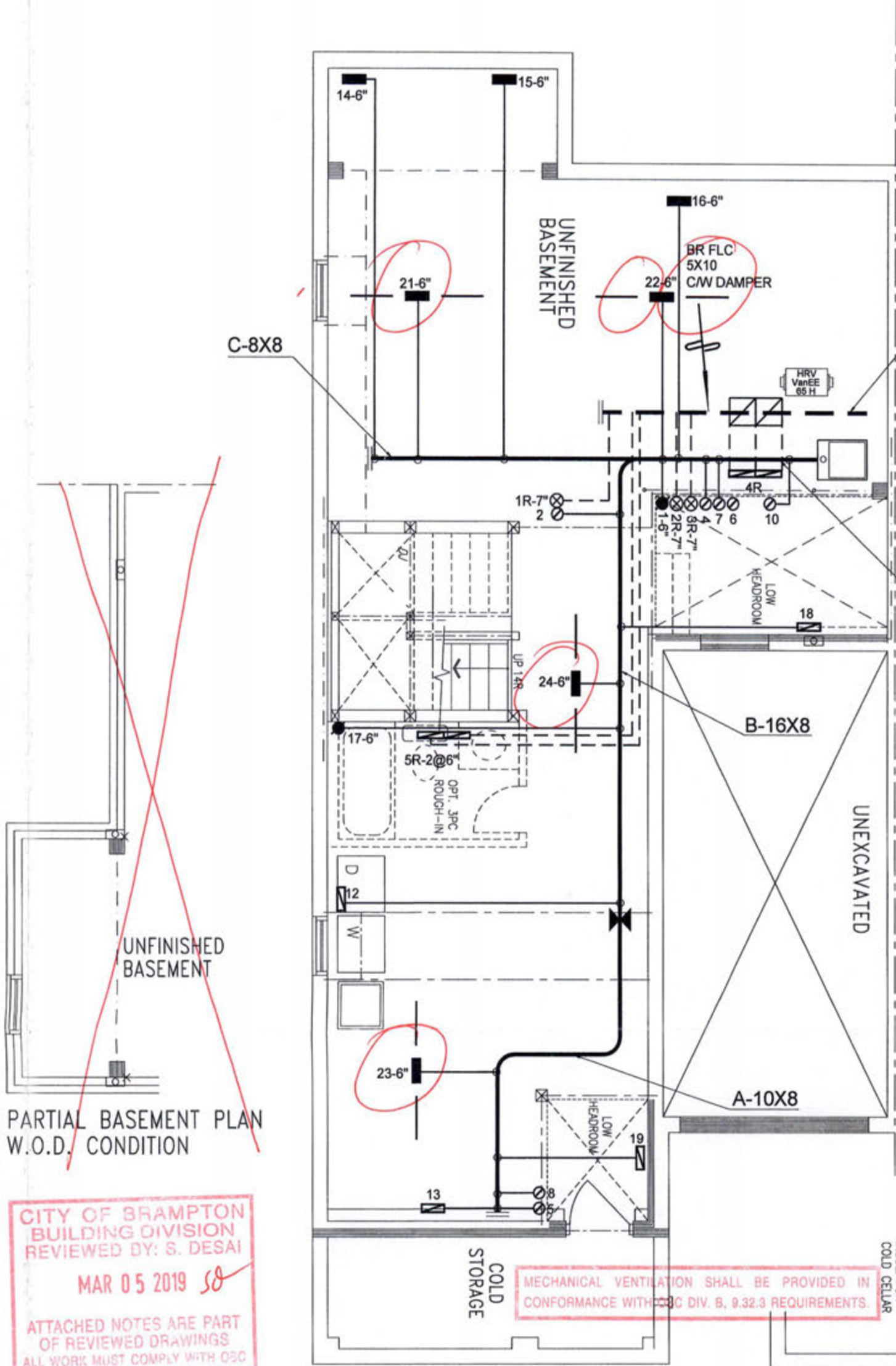
Supplemental tool for CAN/CSA-F280 -

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):	762.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1017.0 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):	0.367			
Cooling Air Leakage Rate (ACH/H):	0.115			

TYPE: HEMLOCK 3
LO# 79573

OPT BED 4





ENSURE THAT MIN THERMAL PERFORMANCE OF BLDG ENVELOPE AND EQUIPMENT SHALL CONFORM TO OBC S8-12, 3.1.2 TABLES REQUIREMENTS.
FURNACE SHALL BE EQUIPPED WITH BRUSHLESS DIRECT CURRENT MOTOR OBC DIV B 12.3.1.5.
SEAL ALL DUCTWORK WITHIN UNCONDITIONED SPACE or OUTDOORS PER OBC DIV B6.2.4.3(11) REQUIREMENTS. SEAL ALL SUPPLY DUCTS LOCATED IN CONDITIONED SPACE IN COMPLIANCE WITH OBC DIV B6.2.4.3(12) REQUIREMENTS.
SEPARATE ANY INTAKES FROM BUILDING ENVELOPE PENETRATIONS THAT ARE POTENTIAL SOURCES OF CONTAMINANTS (GAS VENTS, OIL FILL PIPES, etc. BY MIN 900mm (2FT 11IN) - OBC Div B 9.32.3.12.

INSTALLATION OF KITCHEN EXHAUST DUCT LARGER THAN 6" dia SHALL BE PRECEDED BY APPLICATION FOR REVISION OF DESIGN PER OBC PART 6 REQUIREMENTS. EXHAUST FAN SHALL DISCHARGE DIRECTLY TO OUTSIDE. CLOTHES DRYER EXHAUST SYSTEM SHALL COMPLY WITH OBC DIV B 9.32.1.2, 9.32.1.3 & 9.32.3 REQ'S. BALANCE THE RETURN AIRFLOW ON THE UPPER FLOOR TO MATCH THE SUPPLY.
WHEN HRV IS USED AS PRINCIPAL EXHAUST FAN, THE CONTROLLER SHALL BE WIRED TO THE HRV UNIT AND INTERCONNECTED TO THE FURNACE FAN. THE FURNACE BLOWER MUST BE IN OPERATION WHEN THE HRV IS IN OPERATION.
INSTALL ADDITIONAL SIA REGISTER AS REQUIRED IN ORDER TO ENSURE MIN 72degF UNDERCUT BY MIN 1" THE DOOR TO ANY ROOM WITHOUT RETURN AIR GRILLE. ENSURE RETURN AIR INTAKE SHALL BE CONNECTED TO THE MAIN R/A DUCT AT A HORIZONTAL DISTANCE OF MIN 6FT FROM THE CASING OF THE UNIT (HRAI DIGEST).

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
MAR 05 2019
ATTACHED NOTES ARE PART
OF REVIEWED DRAWINGS
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MECHANICAL VENTILATION SHALL BE PROVIDED IN
CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS.

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

A HEAT RECOVERY VENTILATOR SHALL BE INSTALLED IN
COMPLIANCE WITH OBC DIV. B, 6.2.1.6, 9.32.3.6(3), 9.32.3.11
AND HRAI DIGEST REQUIREMENTS.

INSTALLATION OF HVAC EQUIP.
SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS
AND MANUALS

CSA-F280-12
PACKAGE A1

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.

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No.	Description

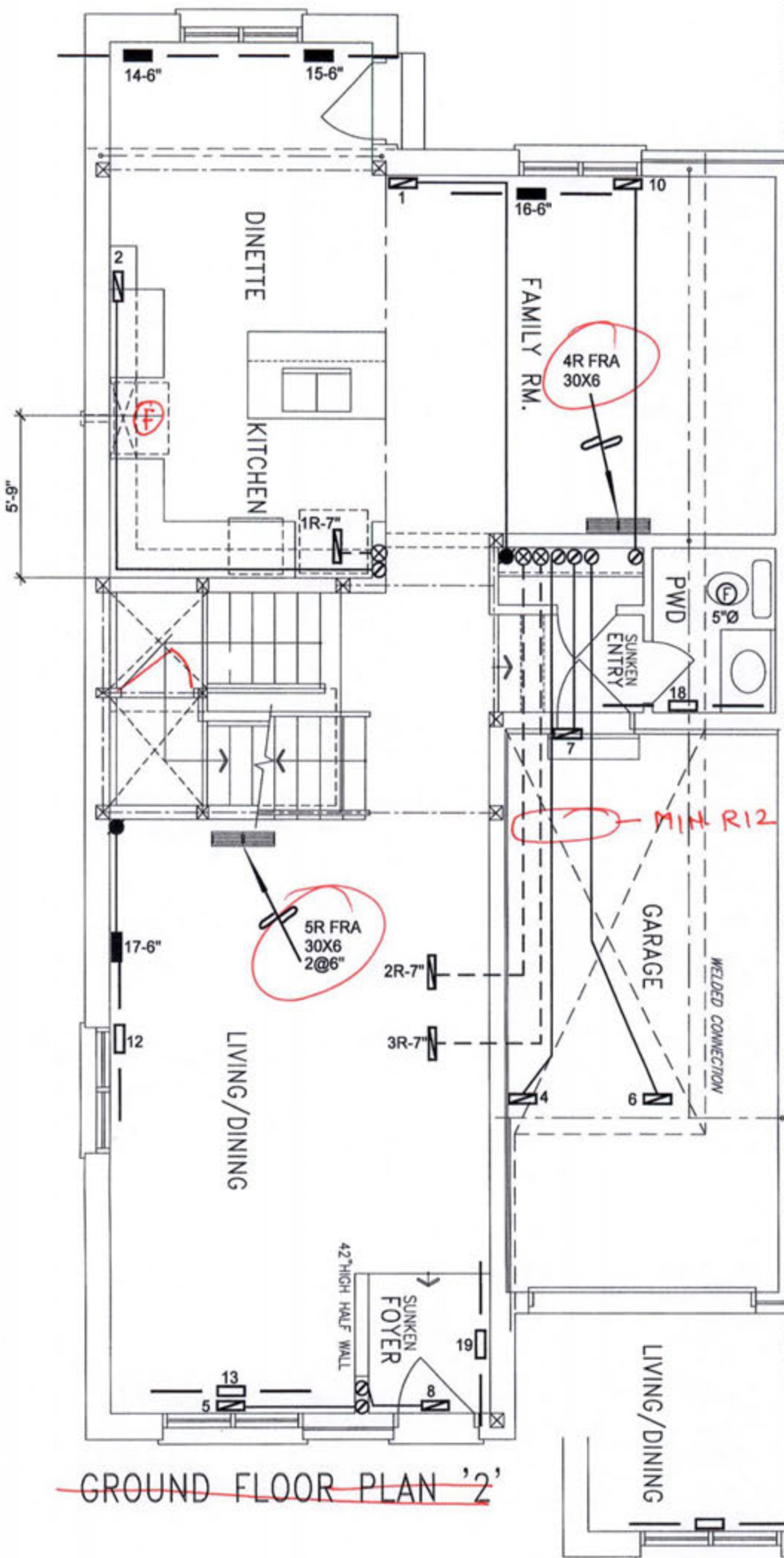
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ONTARIO BUILDING CODE.

Client
GREENPARK HOMES
Project Name
**MINNISALE HOMES CORP
BRAMPTON, ONTARIO**
**OPT 4 BED
HEMLOCK 3** 1928 sqft

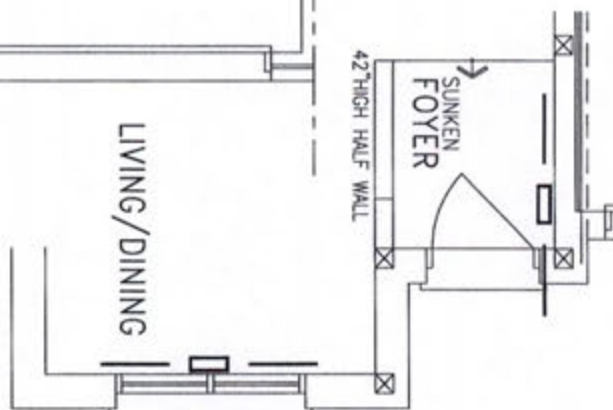
HVACDESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
Web: www.hvacdesigns.ca
Specializing in Residential Mechanical Design Services
Installation to comply with the latest Ontario Building Code. All supply
branch 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 40232 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		
MAKE	GOODMAN	3RD FLOOR		
MODEL	GMEC90603BNA-60	2ND FLOOR	9	3 2
INPUT	60 MBTUH	1ST FLOOR	7	2 2
OUTPUT	57.6 MBTUH	BASEMENT	4	1 0
COOLING	2.0 TONS	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		
FAN SPEED	1131 cfm @ 0.5" w.c.			

Sheet Title
**BASEMENT
HEATING
LAYOUT**
Date
AUG/2018
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 79573



GROUND FLOOR PLAN '2'



GROUND FLOOR PLAN '1'

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED BY: S. DESAI
MAR 05 2019
ATTACHED NOTES ARE PART
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MECHANICAL VENTILATION SHALL BE PROVIDED IN
CONFORMANCE WITH OBC DIV. B, 9.32.3 REQUIREMENTS

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

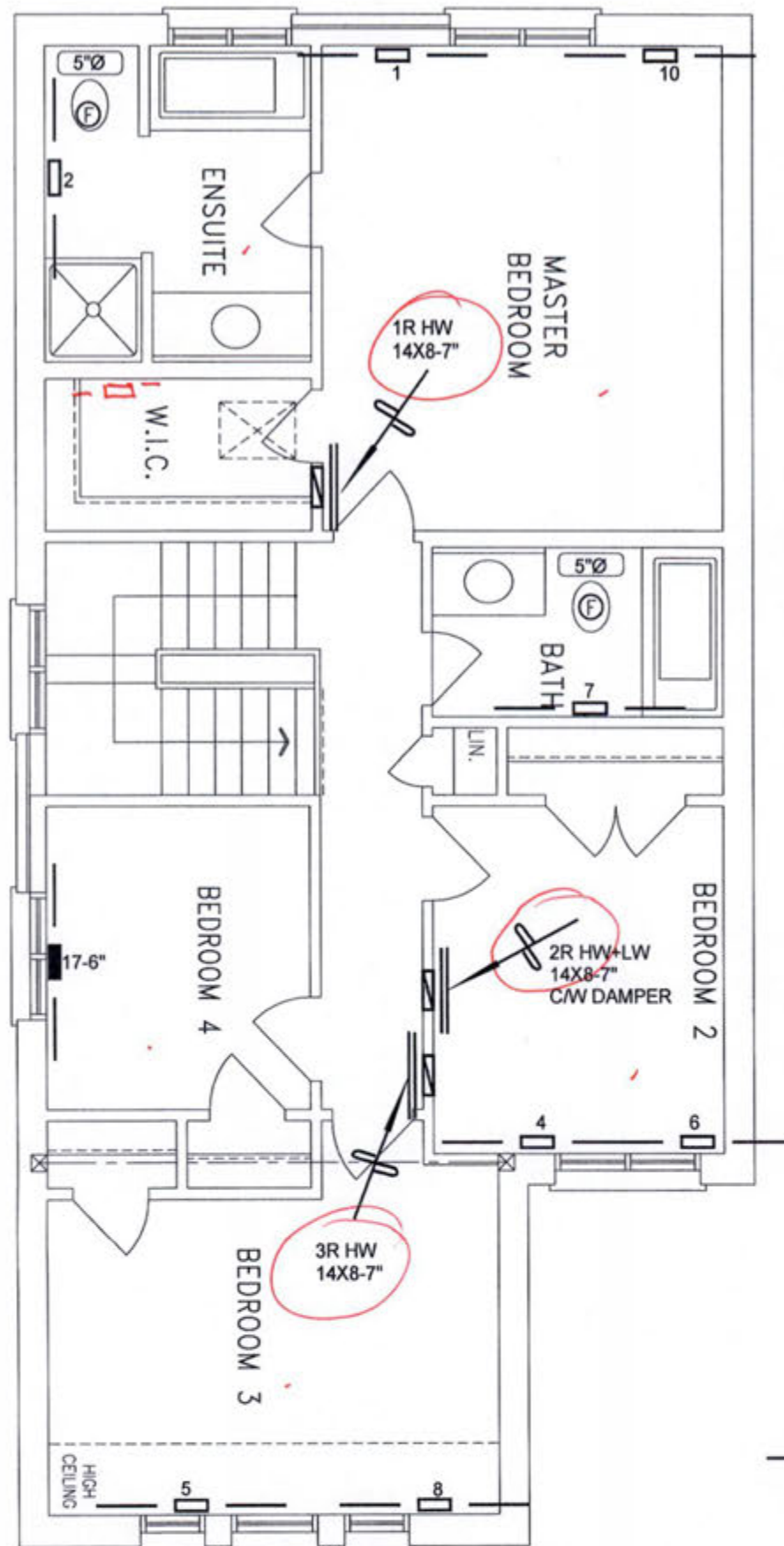
CSA-F280-12
PACKAGE A1

I MICHAEL O'BROCK HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.3.5 OF THE
BUILDING CODE.
Michael O'Brock
Michael O'Brock, BCMA 1969
HVAC DESIGNS LTD.

HVAC LEGEND								REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Date
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	3.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	2.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE		REDUCER	1.	

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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.	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name MINNISALE HOMES CORP BRAMPTON, ONTARIO			Date AUG/2018	
OPT 4 BED HEMLOCK 3			Scale 3/16" = 1'-0"	
1928 sqft			BCIN# 19669	
			LO#	79573



~~OPTIONAL SECOND FLOOR PLAN '2'~~
~~(4 BEDROOM)~~

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

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

OPTIONAL SECOND FLOOR PLAN '1'
(4 BEDROOM)

CSA-F280-12
PACKAGE A1

I MICHAEL O'BRIEN HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 1.1.3 OF THE BUILDING CODE.
Michael O'Brien, OCEM 1968
HVAC DESIGNS LTD.

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

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Project Name MINNISALE HOMES CORP BRAMPTON, ONTARIO			Date AUG/2018	
OPT 4 BED HEMLOCK 3			Scale 3/16" = 1'-0"	
1928 sqft			BCIN# 19669	
			LO#	79573