

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Dec 06 2023
PER: 
CHIEF BUILDING OFFICIAL

MHP 23018

ROOM USE			LV/DN				KT/FM				LAUN		PWD		FOY								WOD		S			
EXP. WALL			33				68				26		5		33								52		152			
CLG. HT.			10				10				12		10		10								9					
FACTORS																												
GRS.WALL AREA	LOSS	GAIN	330				680				312		50		330								468		1198			
GLAZING			LOSS	GAIN			LOSS	GAIN			LOSS	GAIN	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		8	166	124	0	0	0	0	0	0	0	0	0	0	4	3	62		
EAST	20.8	41.0	0	0	0		0	0	0		0	0	0	0	0	0	29	603	1190	0	0	0	0	0	0	0		
SOUTH	20.8	24.4	38	789	927		0	0	0		0	0	0	10	208	244	0	0	0	0	0	0	8	6	195			
WEST	20.8	41.0	0	0	0		74	1537	3038		0	0	0	0	0	0	0	0	0	0	0	0	13	270	534	0		
SKYLT.	36.4	100.7	0	0	0		0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
DOORS	19.6	2.9	0	0	0		0	0	0		20	392	58	0	0	0	15	294	44	0	0	0	0	0	0	0		
NET EXPOSED WALL	4.4	0.8	292	1272	189		606	2640	391		284	1237	183	40	174	26	286	1246	185	0	0	0	0	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	299	1050	156	360	1265	188			
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	0		
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0		10	27	12		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	0		
BASEMENT/CRAWL HEAT LOSS					0				0				0			0			0							5684		
SLAB ON GRADE HEAT LOSS					0				0				0			0			0									
SUBTOTAL HT LOSS					2062				4205				1795			382			2142					1321			7590	
SUB TOTAL HT GAIN						1116								365			270			1419					689			503
LEVEL FACTOR / MULTIPLIER			0.30	0.50			0.30	0.50			0.30	0.50			0.30	0.50			0.30	0.50					0.50	1.00		
AIR CHANGE HEAT LOSS					1040			2121					906			193			1081									8901
AIR CHANGE HEAT GAIN					65			201					21			16			83									70
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	
HEAT GAIN APPLIANCES/LIGHTS					926			926					926			0			0					0			926	
TOTAL HT LOSS BTU/H					3102			6326					2701			575			3223					1321			16491	
TOTAL HT GAIN x 1.3 BTU/H					2739			5939					1707			371			1952					896			1948	

TOTAL HEAT GAIN BTU/H:	34764	TONS: 2.90	LOSS DUE TO VENTILATION LOAD BTU/H: 1593	STRUCTURAL HEAT LOSS: 51396	TOTAL COMBINED HEAT LOSS BTU/H: 52989
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Michael Kounhe

SITE NAME: ZADORRA ESTATES INC
BUILDER: GREENPARK HOMES

TYPE: PENROSE 1

DATE: Jul-22

GFA: 2936 LO# 97934

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 51,396 TOTAL HEAT GAIN 34,528
AIR FLOW RATE CFM 22.01 AIR FLOW RATE CFM 32.76furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35#GOODMAN
GMEC960603BNA 60AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	13	7	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 0.15FAN SPEED LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131DESIGN CFM = 1131
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

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	9	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	S-ENS	WIC-2	BED-2	MBR	ENS-3	BED-3	WIC-2	KT/FM	KT/FM	KT/FM	LAUN	PWD	FOY	LV/DN	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.52	2.43	0.94	2.41	1.50	1.47	0.68	0.25	2.41	1.52	0.78	1.50	0.25	2.11	2.11	2.11	2.70	0.57	3.22	3.10	4.45	4.45	4.45	4.45
CFM PER RUN HEAT	33	54	21	53	33	32	15	6	53	33	17	33	6	46	46	46	59	13	71	68	98	98	98	98
RM GAIN MBH.	2.14	1.78	0.19	2.90	1.86	2.32	0.46	0.05	2.90	2.14	0.33	1.86	0.05	1.98	1.98	1.98	1.71	0.37	1.95	2.74	0.71	0.71	0.71	0.71
CFM PER RUN COOLING	70	58	6	95	61	76	15	2	95	70	11	61	2	65	65	65	56	12	64	90	23	23	23	23
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	27	43	53	70	73	39	43	38	65	34	59	63	65	32	20	28	18	48	54	39	22	18	34	34
EQUIVALENT LENGTH	150	180	150	160	160	190	140	190	160	160	180	180	150	110	130	140	100	140	140	160	150	150	110	110
TOTAL EFFECTIVE LENGTH	177	223	203	230	233	229	183	228	225	194	239	243	215	142	150	168	118	188	194	199	172	168	144	144
ADJUSTED PRESSURE	0.1	0.08	0.08	0.07	0.07	0.08	0.09	0.08	0.07	0.09	0.07	0.07	0.08	0.12	0.11	0.1	0.15	0.09	0.09	0.08	0.09	0.1	0.11	0.11
ROUND DUCT SIZE	5	5	4	6	5	6	4	4	6	5	4	5	4	5	5	5	5	4	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	242	396	241	270	242	163	172	69	270	242	195	242	69	338	338	338	433	149	521	347	500	500	500	500
COOLING VELOCITY (ft/min)	514	426	69	484	448	388	172	23	484	514	126	448	23	477	477	477	411	138	470	459	117	117	117	117
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	A	D	D	C	C	D	E	D	C	A	C	B	C	A	A	A	E	B	B	C	A	A	D	B

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CHIEF BUILDING OFFICIALRUN #
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

MHP 23018

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	400	0.09	9.7	12	x	8	600	TRUNK G	0	0.00	0	0	x	8	0
TRUNK B	215	0.07	8.2	8	x	8	484	TRUNK H	0	0.00	0	0	x	8	0
TRUNK C	445	0.07	10.7	14	x	8	572	TRUNK I	0	0.00	0	0	x	8	0
TRUNK D	656	0.07	12.4	18	x	8	656	TRUNK J	0	0.00	0	0	x	8	0
TRUNK E	1131	0.07	15.2	26	x	8	783	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	STATIC	ROUND	RECT	VELOCITY		
	CFM	PRESS.	DUCT	DUCT			(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	1131	0.05	16.5	32	x	8	636
TRUNK Y	375	0.05	10.9	14	x	8	482
TRUNK Z	0	0.05	0	0	x	8	0
DROP	1131	0.05	16.5	24	x	10	679

RETURN AIR #	1	2	3	4	5	6	0	0	0	0	0	0	0	0	0	BR
AIR VOLUME	180	120	120	120	300	135	0	0	0	0	0	0	0	0	0	156
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.	50	71	73	42	26	44	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	135	195	175	215	220	230	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	185	266	248	257	246	274	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.08	0.06	0.06	0.06	0.06	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	7.4	6.8	6.8	6.8	9.6	7.5	0	0	0	0	0	0	0	0	0	6.6
INLET GRILL SIZE	8	8	8	8	8	8	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
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	14

TYPE: PENN ROSE 1
SITE NAME: ZADORRA ESTATES INC

MHP 23018

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	5 @ 10.6 cfm	53.0 cfm
Table 9.32.3.A.	TOTAL	180.2 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	180.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	100.7	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
79.5 cfm	☒ 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		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
S-ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-3	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE V150H		
150 cfm high	35 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:	
HRAI #	001820
Date:	July-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 97934		Model: PENROSE 1		Date: 7/5/2022																																																								
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr><td>Bsmt</td><td>1298</td><td>9</td><td>11682</td></tr> <tr><td>First</td><td>1298</td><td>10</td><td>12980</td></tr> <tr><td>Second</td><td>1638</td><td>9</td><td>14742</td></tr> <tr><td>Third</td><td>0</td><td>9</td><td>0</td></tr> <tr><td>Fourth</td><td>0</td><td>9</td><td>0</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>39,404.0 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>1115.8 m³</td></tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1298	9	11682	First	1298	10	12980	Second	1638	9	14742	Third	0	9	0	Fourth	0	9	0	Total:			39,404.0 ft³	Total:			1115.8 m³	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width:20%;">0.340</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.094</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-19</td> <td>41</td> <td>74</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.340	SUMMER NATURAL AIR CHANGE RATE	0.094	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-19	41	74	Summer DTDc	24	30	6	11
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5.2.3.1 Heat Loss due to Air Leakage $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.340 x 309.94 x 41 °C x 1.2 = 5217 W = 17801 Btu/h			6.2.6 Sensible Gain due to Air Leakage $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.094 x 309.94 x 6 °C x 1.2 = 213 W = 726 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)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clevel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.5</td><td rowspan="5" style="text-align: center;">17,801</td><td>8,911</td><td>0.999</td></tr> <tr><td>2</td><td>0.3</td><td>10,586</td><td>0.504</td></tr> <tr><td>3</td><td>0.2</td><td>13,308</td><td>0.268</td></tr> <tr><td>4</td><td>0</td><td>0</td><td>0.000</td></tr> <tr><td>5</td><td>0</td><td>0</td><td>0.000</td></tr> </tbody> </table> *HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0					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	17,801	8,911	0.999	2	0.3	10,586	0.504	3	0.2	13,308	0.268	4	0	0	0.000	5	0	0	0.000																														
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MHP 23018

Michael O'Rourke
BCIN# 19669

HEAT LOSS AND GAIN SUMMARY SHEET

MHP 23018

MODEL: PENROSE 1

SFQT: 2936

LO# 97934

BUILDER: GREENPARK HOMES

SITE: ZADORRA ESTATES INC

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
		WINDOW SHGC	0.50

BUILDING DATA

ATTACHMENT:	DETACHED	# 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):	39404.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.75	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 54.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	172.0 ft

2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement Walls Minimum RSI (R)-Value		20 ci	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		0.28	-
Skylights Maximum U-Value		0.49	-
Space Heating Equipment Minimum AFUE		96%	-
HRV/ERV Minimum Efficiency		75%	-
Domestic Hot Water Heater Minimum EF		0.8	-

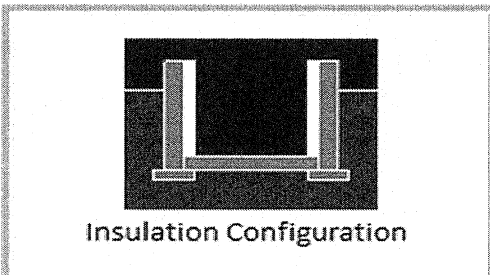
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Oshawa	
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):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.3	
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):		1665

TYPE: PENROSE 1
LO# 97934

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

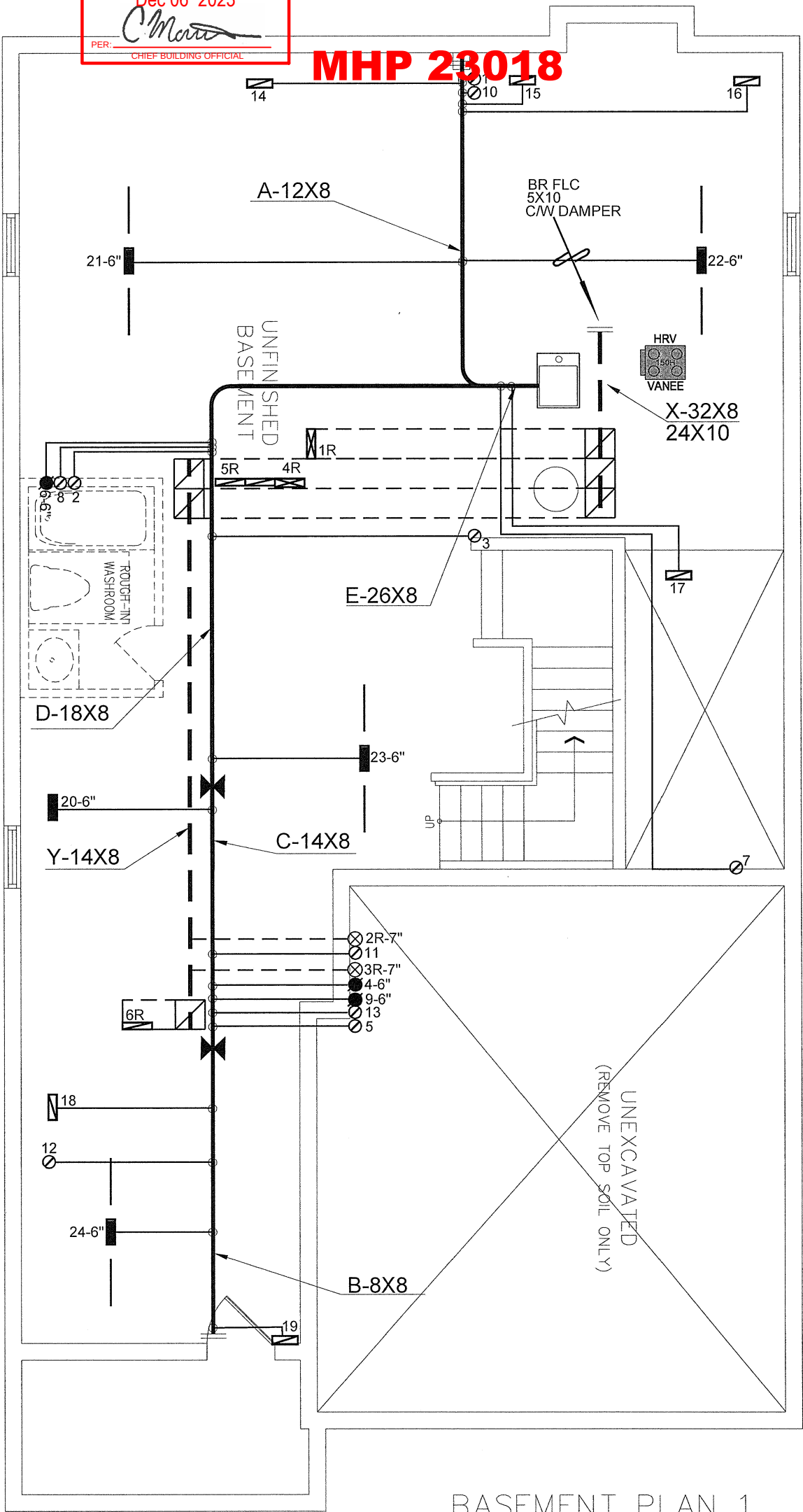
Weather Station Description				
Province:	Ontario			
Region:	Oshawa			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1115.8			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1487.4 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):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.094			

TYPE: PENROSE 1

LO# 97934

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Dec 06 2023
PER: *C. Morris*
CHIEF BUILDING OFFICIAL

MHP 23018



BASEMENT PLAN 1

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.

PACKAGE A1
CSA-F280-12

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"x8" 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	

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		 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 52989 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
GREENPARK HOMES			MAKE GOODMAN		3RD FLOOR			BASEMENT HEATING LAYOUT		
Project Name ZADORRA ESTATES INC OSHAWA, ONTARIO			MODEL GMEC960603BNA		2ND FLOOR	13	4			4
			INPUT 60 MBTU/H		1ST FLOOR	7	2			2
			OUTPUT 57.6 MBTU/H		BASEMENT	4	1	0	Date JULY/2022	
			COOLING 3.0 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				Scale 3/16" = 1'-0"	
			FAN SPEED 1131 cfm @ 0.6" w.c.						BCIN# 19669	
PENROSE 1 2926 sqft		LO# 97934								



CSA-F280-12

REVISIONS

ONTARIO BUILDING CODE.

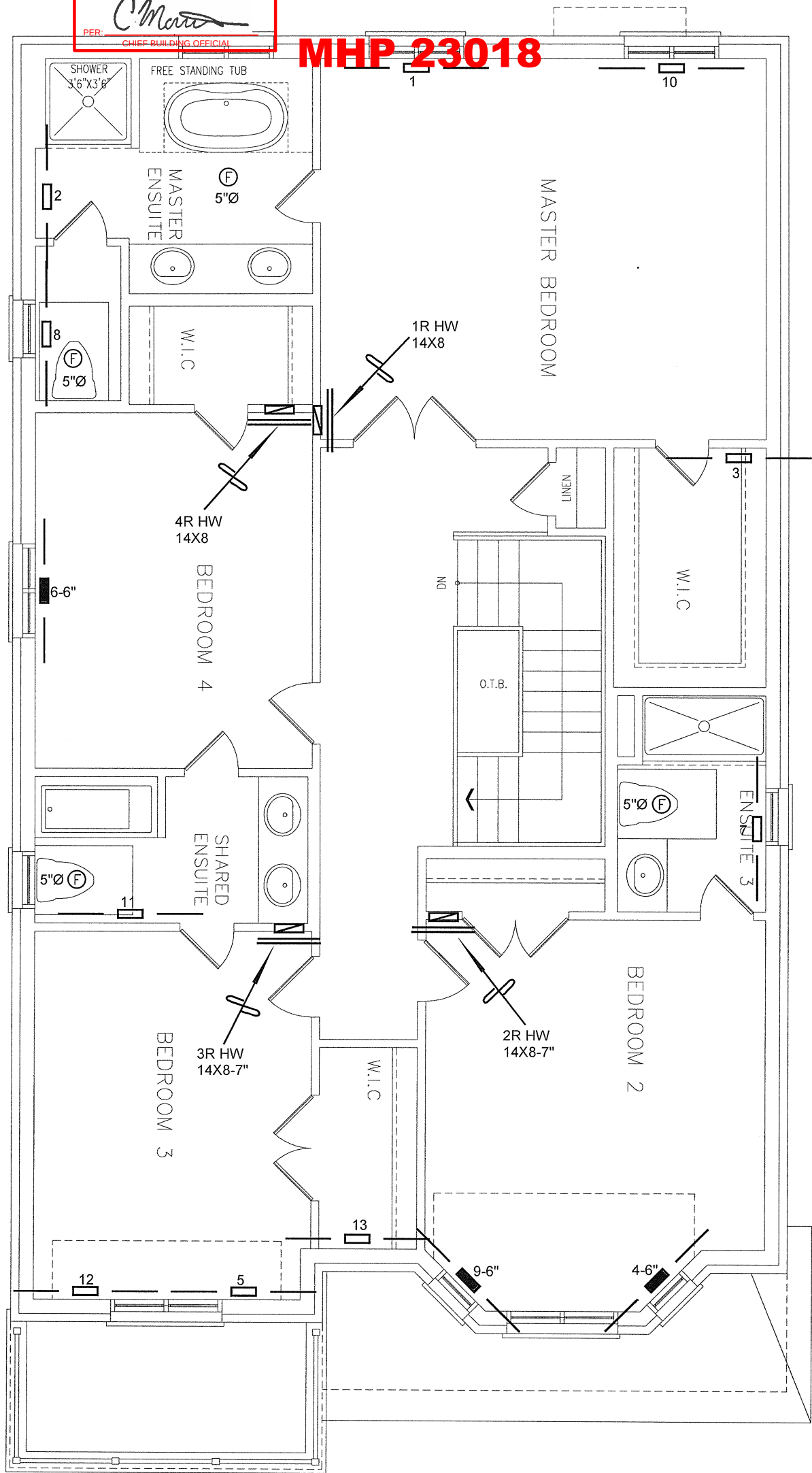
LO#	97934
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2926 sqft

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.

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
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Dec 06 2023
PER: *C. Morris*
CHIEF BUILDING OFFICIAL

MHP 23018



SECOND FLOOR PLAN 1

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.

PACKAGE A1
CSA-F280-12

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"x8" 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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Client
GREENPARK HOMES
Project Name
ZADORRA ESTATES INC
OSHAWA, ONTARIO
PENROSE 1 2926 sqft

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Sheet Title
SECOND FLOOR
HEATING
LAYOUT
Date
JULY/2022
Scale
3/16" = 1'-0"
BCIN# 19669
LO# 97934