Certificate of Design Application

From Designer: Bruce W. MacLeod, PE

Date: 09/12/17

Job Name: Reconstruction of single family residence

Address of Construction: 23 Loraine Street

2009 International Residential Code

Construction project was designed to the building code criteria listed below:

Building Code & Year 2009 IRC Use Group Classification (s) Residential

Type of Construction V

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2009 IRC no

Is the Structure mixed use? no If yes, separated or non separated or non separated (section 302.3) _____

Supervisory alarm System? no Geotechnical/Soils report required? (See Section 1802.2) no

Structural Design Calculations

_____ Submitted for all structural members (106.1 – 106.11)

Design Loads on Construction Documents (1603)

Uniformly distributed floor live loads (7603.11, 1807)

Floor Area Use	Loads Shown
40 psf first floor	
30 psd 2nd flr sleeping rooms	

Wind loads (1603.1.4, 1609)

Per IRC Design option utilized (1609.1.1, 1609.6)

99 mph Basic wind speed (1809.3)

_____ Building category and wind importance Factor, I_w table 1604.5, 1609.5)

_____ Wind exposure category (1609.4)

_____ Internal pressure coefficient (ASCE 7)

_____ Component and cladding pressures (1609.1.1, 1609.6.2.2)

_____ Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

_____ Design option utilized (1614.1)

_____ Seismic use group ("Category")

_____ Spectral response coefficients, S_{DS} & S_{D1} (1615.1)

_____ Site class (1615.1.5)

_____ Live load reduction

Roof *live* loads (1603.1.2, 1607.11)

42psf + drift Roof snow loads (1603.7.3, 1608)

60 psf Ground snow load, P_g (1608.2) 42

42 psf If P_g > 10 psf, flat-roof snow load P_f

1.0 If P_g > 10 psf, snow exposure factor, C_e

1.0 If P_g > 10 psf, snow load importance factor, I_s

1.0 Roof thermal factor, C_t (1608.4)

_____ Sloped roof snowload, P_s (1608.4)

_____ Seismic design category (1616.3)

_____ Basic seismic force resisting system (1617.6.2)

_____ Response modification coefficient, R_I and deflection amplification factor C_d (1617.6.2)

_____ Analysis procedure (1616.6, 1617.5)

_____ Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

_____ Flood Hazard area (1612.3)

_____ Elevation of structure

Other loads

_____ Concentrated loads (1607.4)

_____ Partition loads (1607.5)

_____ Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404

Certificate of Design

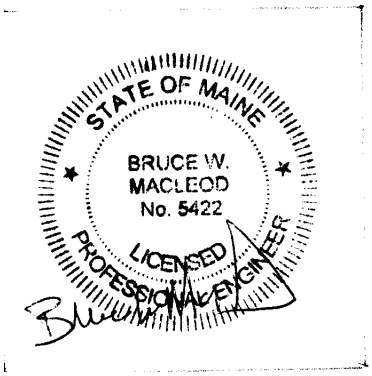
Date: 09/12/2017

From: Bruce W. MacLeod, PE

These plans and / or specifications covering construction work on:

23 LORAINE STREET

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the **2009 International Building Code** and local amendments.



Signature: Bruce W. MacLeod

Title: Professional Engineer

Firm: MacLeod Structural Engineers, PA

Address: 90 Bridge Street
Westbrook, Maine 04096

Phone: 207-839-0980

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov