Certificate of Design Application

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

From Designer: Becker Structural Engineers, Inc.

Date:

Job Name: Mixed Use Development Parking Deck

Address of Construction: York and High Streets, Portland, Maine

2009 International Building Code

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

Building Code & Year IBC 2009 Use Group Classification (s) _____

Type of Construction IIB

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2009 IRC Yes

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

Supervisory alarm System? Yes Geotechnical/Soils report required? (See Section 1802.2) Yes

Structural Design Calculations

If Requested — 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
Stairs	100 psf
Vehicle Parking	40 psf

Wind loads (1603.1.4, 1609)

Simplified Procedure — Design option utilized (1609.1.1, 1609.6)

100 — Basic wind speed (1809.3)

Iw = 1.0 — Building category and wind importance Factor, I_w table 1604.5, 1609.5)

C — Wind exposure category (1609.4)

NA-below grade — Internal pressure coefficient (ASCE 7)

NA-below grade — Component and cladding pressures (1609.1.1, 1609.6.2.2)

NA-below grade — Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

Equivalent Lateral Force — Design option utilized (1614.1)

B — Seismic use group ("Category")

0.324,0.123 — Spectral response coefficients, SDs & SD1 (1615.1)

D — Site class (1615.1.5)

NA - One elevated deck. — Live load reduction

40 psf Parking — Roof *live* loads (1603.1.2, 1607.11)

51 psf — Roof snow loads (1603.7.3, 1608)

60 — Ground snow load, P_g (1608.2)

51 — 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

1.1 — Roof thermal factor, C_t (1608.4)

NA — Sloped roof snowload, P_s (1608.4)

B — Seismic design category (1616.3)

Ordinary CIP Walls — Basic seismic force resisting system (1617.6.2)

4 — Response modification coefficient, R_f and deflection amplification factor C_d (1617.6.2)

Equivalent Lateral Force — Analysis procedure (1616.6, 1617.5)

270 kips — Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

NA — Flood Hazard area (1612.3)

Grade Level approx 30' — Elevation of structure

Other loads

3000lb wheel load — Concentrated loads (1607.4)

NA — Partition loads (1607.5)

6000lb vehicle barrier — Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404