Certificate of Design Application

From Designer: Hazen and Sawyer - Benjamin Levin

Date: 11/4/2015

Job Name: East End WWTF Aeration Upgrade

Address of Construction: 500 Marginal Way, Portland, ME

NOTE: No new buildings on project. Structural elements are non-loadbearing partitions and access platforms and supports for mechanical components within existing structures.

2009 International Building Code

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

Building Code & Year 2009 IBC Use Group Classification (s) U – Utility and Miscellaneous

Type of Construction Partitions - Type IA ; Platforms & supports - Type II-B

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2009 IBC No

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) 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
Platform in Aeration Tanks	– Dwg S06
Platform Between Sed. Tanks	– Dwg S13

Wind loads (1603.1.4, 1609) - (only apply to above grade pipe supports)

ASCE 7 Design option utilized (1609.1.1, 1609.6)

100 MPH Basic wind speed (1809.3)

Cat. III, I=1.15 Building category and wind importance Factor, table 1604.5, 1609.5)

C Wind exposure category (1609.4)

N/A Internal pressure coefficient (ASCE 7)

N/A Component and cladding pressures (1609.1.1, 1609.6.2.2)

N/A Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

Equiv. Lat'l Force Design option utilized (1614.1)

B Seismic use group ("Category")

0.324 / 0.123 Spectral response coefficients, S_{DS} & S_{D1} (1615.1)

D Site class (1615.1.5)

N/A Live load reduction

N/A Roof *live* loads (1603.1.2, 1607.11)

N/A Roof snow loads (1603.7.3, 1608)

50 PSF Ground snow load, P_g (1608.2)

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

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

1.10 If P_g > 10 psf, snow load importance fa

1.2 Roof thermal factor, C_t (1608.4)

N/A Sloped roof snowload, P_s (1608.4)

B Seismic design category (1616.3)

N/A Basic seismic force resisting system (1617

N/A Response modification coefficient, R_I and deflection amplification factor C_d (1617.

N/A Analysis procedure (1616.6, 1617.5)

N/A Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

N/A Flood Hazard area (1612.3)

N/A Elevation of structure

Other loads

N/A Concentrated loads (1607.4)

N/A Partition loads (1607.5)

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