

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
Bureau of Engineering
GEOTECHNICAL ENGINEERING GROUP

March 22, 2011
File No. 01-139
Supplemental Report

**SUPPLEMENTAL REPORT – SOIL REPORT UPDATE AND UPDATED SEISMIC
DESIGN PARAMETERS – AIR TREATMENT/ODOR CONTROL FACILITY –
MISSION ROAD AND JESSE STREET (651 SOUTH MISSION ROAD, TRACT 207,
LOT 2 AND 4, ARB 28, MODIFIER PT)
W.O. E2001442**

GEO FILE NO. 01-139

INTRODUCTION

The Geotechnical Engineering Group (GEO) is providing this report to update the previous soil reports and to provide updated seismic design parameters in accordance with the 2011 City of Los Angeles Building Code (2010 California Building Code). The recommendations presented herein are supplemental to the recommendations of the previous report dated October 26, 2001 and supplemental report dated January 18, 2006 and Los Angeles Department of Building and Safety (LADBS) letter of approval dated March 2, 2006 (Log # 48338-01).

In preparation of this supplemental report, we have reviewed the recommendations presented in the previous reports dated October 26, 2001 and supplemental report dated January 18, 2006. All previous recommendations are still applicable to the project except as specifically modified herein.

The seismic parameters presented herein were determined in accordance with Chapter 16 of the 2010 California Building Code (CBC) using the Java Ground Motion Parameter Calculator on the United States Geologic Survey website.

Table 1613.5.2 “Site Class Definitions” list six Site Classes (A through F). The Site Class is based on the average properties of the upper 100 feet of the soil and/or bedrock beneath the site. The appropriate Site Class is chosen by referencing the average shear wave velocity, average Standard Penetration Test (SPT) blow counts, and/or average undrained shear strength. In addition, the Site Class selection also considers profiles containing soft clay, peaty and/or highly organic clays, very high plasticity clays, very thick soft/medium clays, and soils vulnerable to failure or collapse under seismic loading such as liquefiable soils, quick and highly sensitive clays and collapsible weakly cemented soils. Based on data obtained from the borings and our analyses, Site Class C was selected for this site.

The mapped acceleration parameters S_s and S_1 , 0.2 and 1-second spectral response accelerations, were determined and used along with the Site Class to obtain the site

coefficients F_a and F_v . The maximum considered earthquake spectral response acceleration for short periods, S_{MS} , and at the 1.0-second period, S_{M1} , adjusted for Site Class effects were then calculated followed by the calculation of the design spectral response acceleration for short periods, S_{DS} , and at the 1.0-second period, S_{D1} . The values of T_O and T_S , in seconds, were then determined using the equations presented in the code to represent the beginning and end of the design response spectra peak.

The seismic parameter values for the site are summarized in Table 1, Seismic Design Parameters.

Table 1 – Seismic Design Parameters

Parameter	Value	2007 CBC Reference
Site Class	C	Table 1613.5.2
S_s	2.06	Figure 1613.5(3)
S_1	0.70	Figure 1613.5(4)
S_{MS}	2.06	Equation 16-37
S_{M1}	0.90	Equation 16-38
S_{DS}	1.37	Equation 16-39
S_{D1}	0.60	Equation 16-40
T_O (seconds)	0.09	Chapter 16
T_S (seconds)	0.44	Chapter 16

CLOSURE

If you have any questions about this report, please contact Patrick Schmidt at (213) 847-0535.

ORIGINAL SIGNED BY

Patrick J. Schmidt, GE 2260
 Geotechnical Engineer II

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