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February 14, 2020

Job No. 644.1.13

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Report
Soil Engineering Consultation
and Report Update
Hotel Veranda
Calistoga, California

This report presents the results of our soil engineering consultation and report update for the proposed Hotel Veranda to be constructed at the former Gliderport site in Calistoga, California. The project site includes the following addresses: 1502, 1504, 1506, 1510 and 1522 Lincoln Avenue. We performed a soil investigation for the project and presented the results in a report titled "Report, Soil Investigation, Calistoga Hotel, 1506/1522 Lincoln Avenue, Calistoga, California" dated July 16, 2014. Our general recommendations included criteria for ground improvement and site grading to accommodate mat slab foundations or a system of driven pile foundations without ground improvement.

In our report, we assumed that the project would include a hotel structure up to three stories in height and a separate, two-story parking structure with a below grade lower level. We understand that the planned development has been revised since our soil investigation was performed, and the project will only include a two-story, wood-frame hotel structure. The planned hotel will be accessed by asphalt-paved driveway and parking areas and underground utilities. In-ground swimming pools are also planned within the courtyard east of the hotel structure. A revised site plan, showing our test boring locations from the soil investigation, is presented on the attached Plate 1.

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Based on our review of the soil investigation report, previous work on the property and a recent site observation, we judge that the recommendations in our soil investigation report would still be applicable to the proposed commercial construction. We have summarized below updated seismic design criteria in accordance with the 2019 California Building Code (CBC).

Seismic Design

Because of the presence of sandy soils that would be subject to liquefaction, the site can be classified as Site Class F, as described in Section 20.3.1 of American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI) Standard ASCE/SEI 7-16. The exception in Section 20.3.1 states that structures having fundamental periods of vibration less than or equal to 0.5 seconds located on liquefiable sites can utilize a site class based on Table 20.3-1. The approximate fundamental period for a two-story, wood-frame structure would be on the order of about 0.2 to 0.3 seconds. Accordingly, the following site-specific seismic ground motion parameters were determined in accordance with the procedures outlined in Chapter 21 of ASCE/SEI 7-16 for a Site Class D site (based on blowcount data). Detailed results of our site-specific ground motion hazard analysis are presented on the attached Plate 2.

2019 CBC Ground Motion Parameters

Site Class D

Mapped Spectral Response Accelerations:

S_s	1.758g
S_1	0.648g

Design Spectral Response Accelerations:

S_{DS}	1.153g
S_{D1}	1.102g

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We trust this provides the information needed at this time. If you have questions or wish to discuss this in more detail, please do not hesitate to contact us. The following plates are attached and complete this report.

Plate 1


Test Boring Location Plan
and Site Vicinity Map

Plate 2

Site-Specific Ground Motion
Hazard Analysis

Yours very truly,

REESE & ASSOCIATES



Joseph M. Mauney
Civil Engineer No. 85560

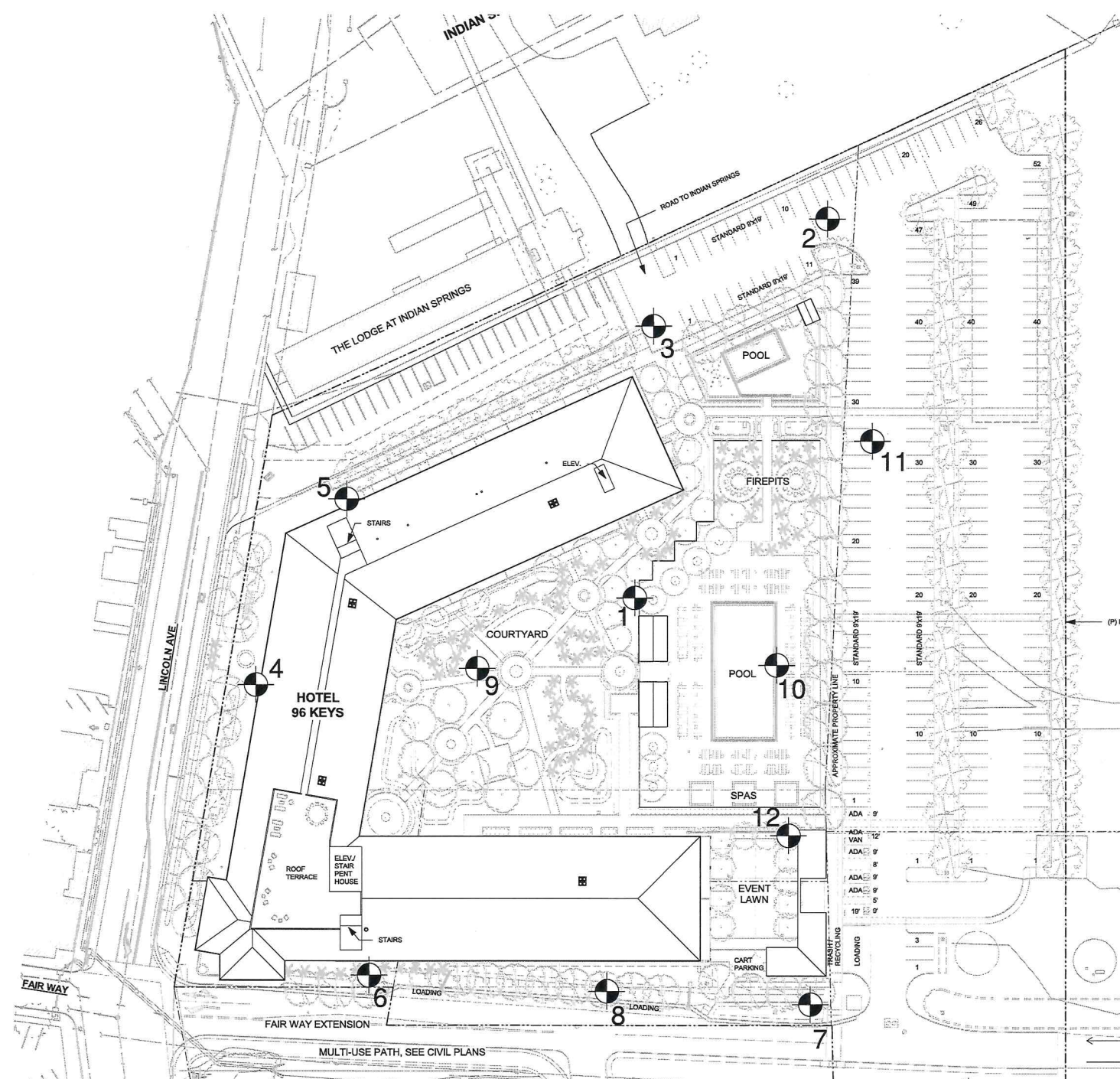


Jeffrey K. Reese
Civil Engineer No. 47753

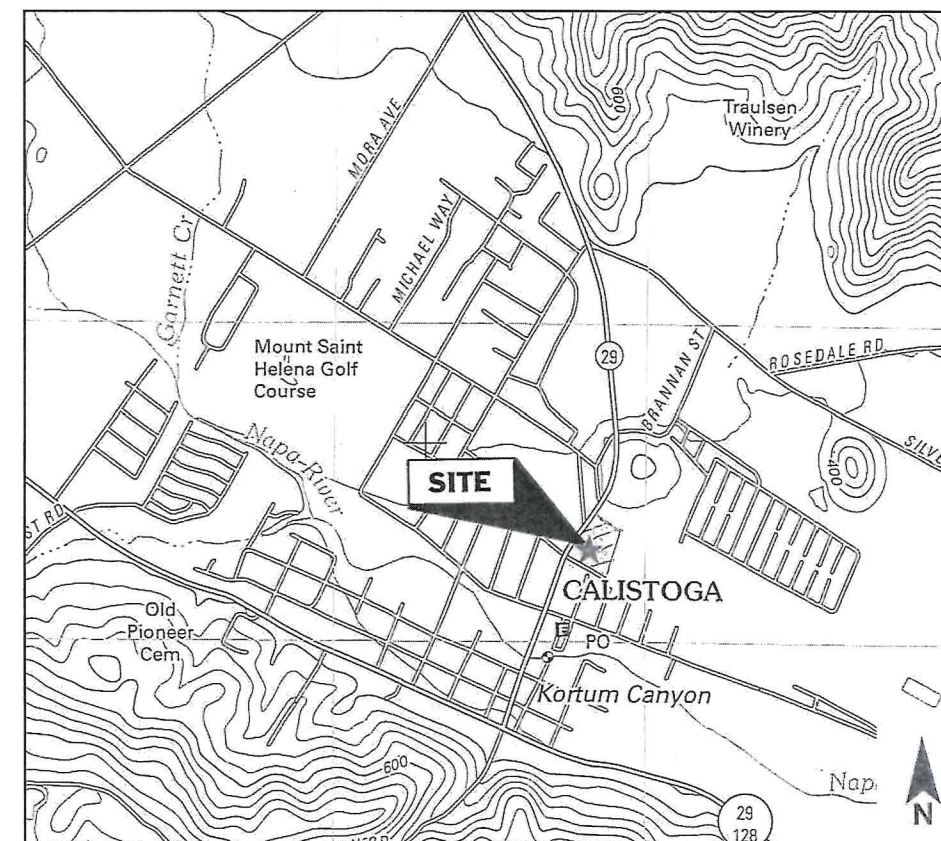


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● = Approximate Test Boring Location



Site Vicinity Map (No Scale)

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Date: 02-13-20

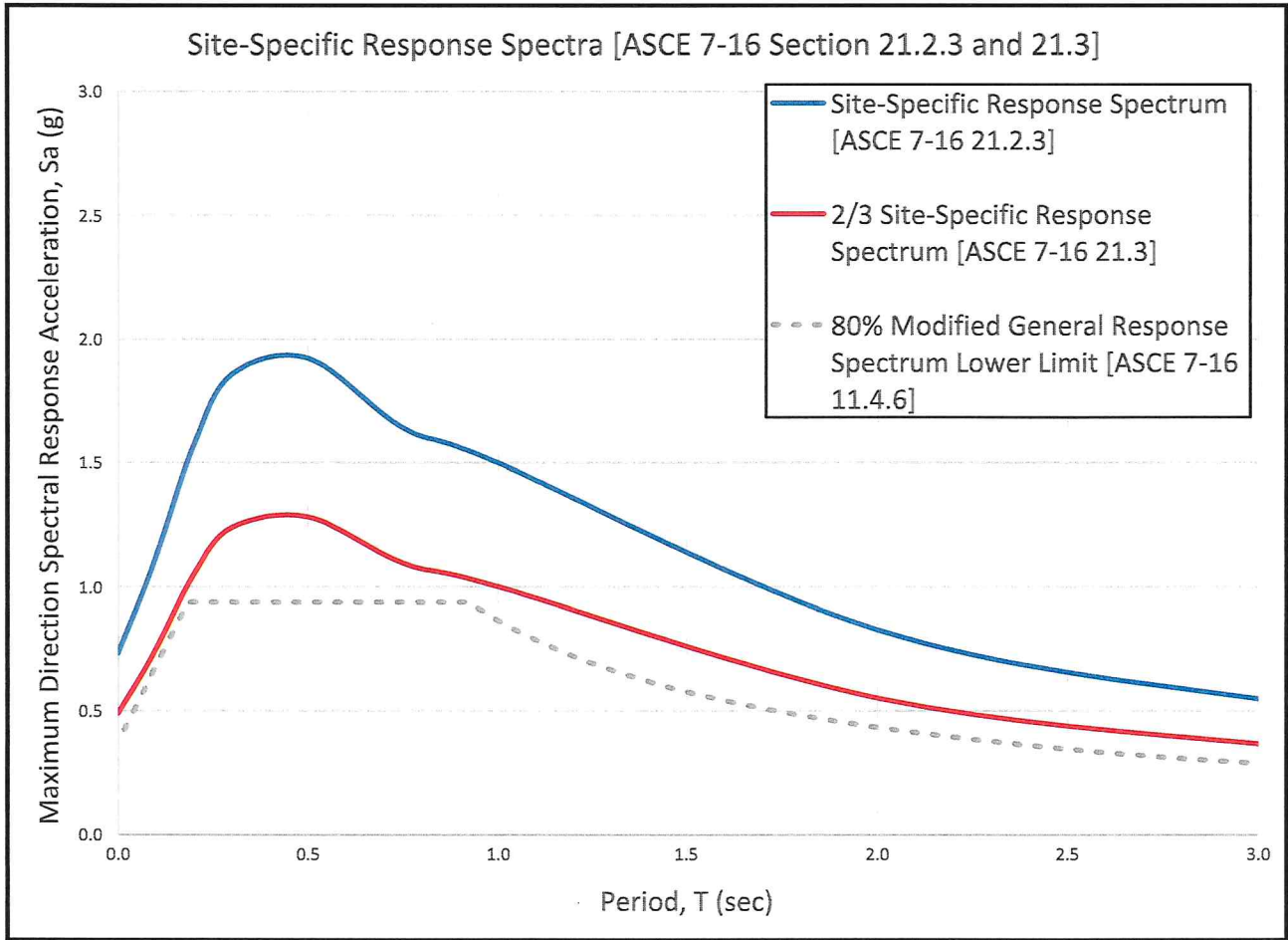
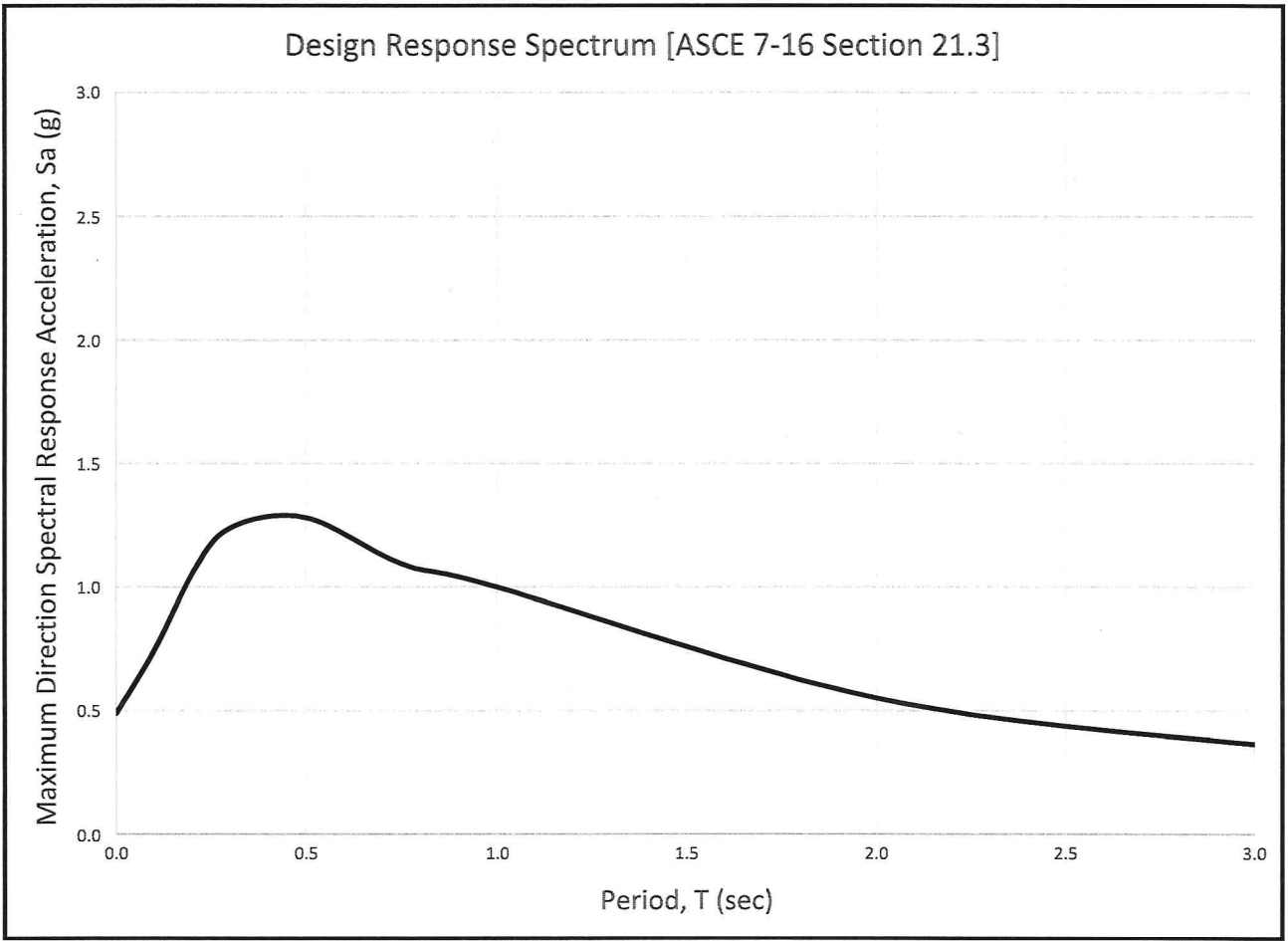
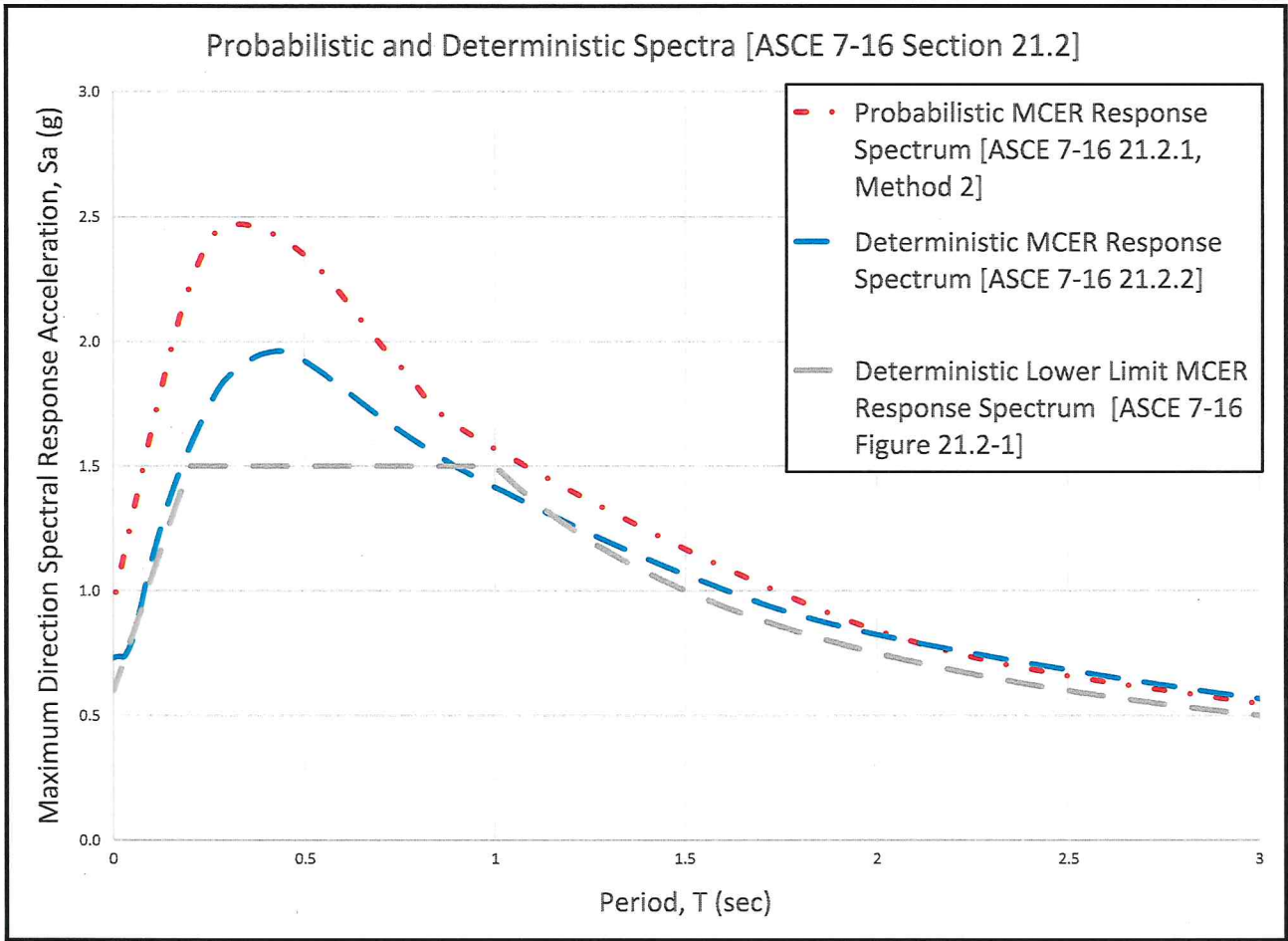
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TEST BORING LOCATION PLAN
AND SITE VICINITY MAP

HOTEL VERANDA
CALISTOGA, CALIFORNIA

PLATE

1



SUMMARY OF SITE-SPECIFIC GROUND MOTION HAZARD ANALYSIS							
Period [sec]	1% Collapse- in-50-years Probabilistic Spectrum [g]	Max Direction Scaled Probabilistic MCE _R Spectrum [g]	84th- Percentile Deterministic Spectrum [g]	Max Direction Scaled Deterministic MCE _R Spectrum [g]	Site-Specific MCE _R Spectrum [g]	80% Modified General Response Spectrum [g]	Design Response Spectrum [g]
0	0.795	0.946	0.616	0.733	0.733	0.375	0.488
0.1	1.373	1.634	0.939	1.118	1.118	0.680	0.745
0.2	1.833	2.218	1.302	1.575	1.575	0.938	1.050
0.3	2.020	2.464	1.523	1.858	1.858	0.938	1.239
0.5	1.908	2.347	1.563	1.922	1.922	0.938	1.281
0.75	1.533	1.901	1.323	1.641	1.641	0.938	1.094
1	1.264	1.567	1.142	1.416	1.500	0.864	1.000
2	0.679	0.842	0.666	0.826	0.826	0.432	0.551
3	0.438	0.548	0.454	0.568	0.548	0.288	0.365
4	0.310	0.391	0.322	0.406	0.391	0.216	0.260
5	0.234	0.295	0.237	0.298	0.295	0.173	0.197
S _{Ds} =		1.153 g	S _{D1} =		1.102 g	T _s = 0.955	
Latitude, Longitude: 38.58034 -122.57763							

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SITE-SPECIFIC GROUND MOTION
HAZARD ANALYSIS

HOTEL VERANDA
CALISTOGA, CALIFORNIA

PLATE

2