SSI Analysis Methodology and Results of NI Buildings

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REVISION HISTORY

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0	December 2014	All	First Issue
1	February 2017	Pages iii, iv, vi, 7, 8, 9, 24, 25, A1, A39 through A74	The expression of generic soil profile is changed from low-strain soil profile to soil profile used in SSI analysis by response to RAI 182-8160, Question 03.07.01-4, Rev.1
		Pages 4, 6, 9, 10	The embedment depth of AB is clearly described by response to RAI 253-8300, Question 03.07.01-6
		Pages vi, 7, 8, 24, 25	The expression of “average” in shear wave velocity category is deleted, and the groundwater level used in the seismic analyses is clarified by response to RAI 253-8300, Question 03.07.01-8, Rev.2
		Pages iv, vi, 18, 19, 38	The comparison results of the story shear forces between THA and RSA are added by response to RAI 183-8197, Question 03.07.02-2, Rev.1
		Pages 1, 4, 16	A minimum seismic gap of 2 in. between RCB and AB is changed to 6 in., and the use of displacements obtained by removing the rigid basemat rotations is added by response to RAI 183-8197, Question 03.07.02-3
		Page 16	The description of consideration of RCS and hydrodynamic masses in the structural design is revised by response to RAI 226-8235, Question 03.07.02-5, Rev.1
		Page 20	The revision numbers of the referred documents in References are updated.
2	December 2017	Page iv, vii, viii, 1, 7, 8, 9, 10, 12, 13, 16, 17, 18, 25, 26, 27, 29, 30, 50, 55, 56, A19, A52, A73, B27 through B32, B71 through B82, D3 through D71, E5 through E14, E16 through E23, E25 through E30, E32 through E41,	The description, tables and figure related S5 soil profile are deleted by response to RAI 252-8299, Question 03.07.02-9, Rev.2.

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ABSTRACT

This technical report provides the soil-structure interaction analysis methodology and results for the APR1400 Nuclear Island structures. The Nuclear Island structures are the Reactor Containment Building and Auxiliary Building founded on a monolithic common basemat.

The eight generic site profile cases plus a fixed-base case are considered in the seismic analysis. The free-field site response analysis is performed for development of the free-field generic soil and rock dynamic properties to be used in the soil/rock modeling of the Nuclear Island structure soil-structure interaction analysis.

The soil-structure interaction analysis is performed using the SASSI analysis methodology and the associated SASSI computer program. The Direct Method (Flexible Volume Method) of SASSI substructuring is used in the soil-structure interaction analysis. For soil-structure interaction analysis of Nuclear Island structures, both uncracked and cracked concrete stiffness conditions are considered for each case of generic site profiles and the fixed-base case. The operating basis earthquake damping values in NRC Regulatory Guide 1.61, Revision 1, are used for the uncracked concrete condition, and the safe shutdown earthquake damping values are used for the cracked concrete condition.

The seismic response parameters generated from the fixed-base seismic response analysis are enveloped with the corresponding results of the seismic soil-structure interaction analysis performed for the eight generic site profile cases to produce the final enveloped maximum seismic response parameters for the APR1400 standard design.

The maximum seismic response absolute accelerations, relative displacements, and building structural forces and moments under the design-basis seismic ground motion input are used in the structural design of Nuclear Island structures. The in-structure response spectra for the seismic response motions are used in seismic analysis or qualification of the equipment, subsystems, and components housed in the Nuclear Island structures.

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ACRONYMS AND ABBREVIATIONS

APR1400	Advanced Power Reactor 1400
3-D	three-dimensional
AB	auxiliary building
AFW	auxiliary feed water
CLP	containment liner plate
CMS1+	control motion spectra 1+
CPB	compound building
CS	containment structure
CSDRS	certified seismic design response spectra
DOF	degrees of freedom
DRS	design response spectra
EDGB	emergency diesel generator building
E-W	east-west
FEM	finite element model
FHA	fuel handling area
ICI	in-core instrumentation
IRWST	in-containment refueling water storage tank
IS	internal structure
ISRS	in-structure response spectra
KEPCO	Korea Electric Power
NI	nuclear island
N-S	north-south
OBE	operating basis earthquake
PGA	peak ground acceleration
PSD	power spectral density
PSW	primary shield wall
PZR	pressurizer
RCB	reactor containment building
RCP	reactor coolant pump
RCS	reactor coolant system
RV	reactor vessel
SFG	structural fill granular
SG	steam generator
SRP	standard review plan

SRSS	square root of sum of squares
SSE	safe shutdown earthquake
SSI	soil-structure interaction
SSW	secondary shield wall
TGB	turbine generator building
ZPA	zero-period acceleration

1. INTRODUCTION

This technical report presents the soil-structure interaction (SSI) analysis methodologies and results for the nuclear island (NI) structures of the APR1400 standard plant. The seismic ground motion input, site conditions, dynamic models, and analysis methodology and procedures used in carrying out the seismic analysis are described in this report. The key analysis results are also presented.

The NI structures are the reactor containment building (RCB) and auxiliary building (AB), which are founded on a monolithic common basemat (References 1, 2). The RCB is structurally separated from the AB with a minimum seismic gap of 6 in above the common basemat. The RCB is a Seismic Category I structure that consists of a pre-stressed concrete cylindrical shell and hemispherical dome, and a reinforced concrete internal structure that are supported by a reinforced concrete mat foundation.

The AB wraps around the RCB leaving a space with a seismic gap above the common basemat. The AB is a Seismic Category I structure that consists of reinforced concrete shear walls and floor slabs which are lateral load-resisting systems and frames that support the vertical loads.

The NI seismic analysis described in this technical report provides the maximum seismic response (demand) parameters, which include maximum seismic response absolute accelerations, relative displacements, building structural forces, and moments under the design-basis seismic ground motion input for use in the structural design of NI structures. The analysis is also used to generate the in-structure response spectra (ISRS) for the seismic response motions which are used in seismic analysis or qualification of the equipment, subsystems, and components housed in the NI structures.

The seismic analysis of NI structures described in this report includes seismic soil-structure interaction (SSI) analyses of the RCB and AB supported on eight (8) generic site-profile cases including a fixed-base case analysis.

Since the RCB and AB share a common basemat, the seismic SSI analysis is performed for the combined NI structures (i.e., the combined RCB and AB supported on a common basemat foundation, References 3, 4). The SSI analysis is performed using the SASSI analysis methodology and the associated SASSI computer program (Reference 5). The Direct Method or the Flexible Volume Method of SASSI substructuring is used in the SSI analysis. The maximum seismic response parameters and ISRS generated from the fixed-base seismic response analysis case are enveloped with the corresponding results of the seismic SSI analysis performed for the eight generic site profile cases to produce the final enveloped maximum seismic response parameters and ISRS for the standard design.

This technical report consists of seven (7) sections. Section 1 provides an introductory note and background information. Section 2 describes design ground motion developed for seismic analysis of the APR1400. Section 3 presents a description of the NI structures. Section 4 describes the generic site profiles and site response analysis for the SSI analysis. Section 5 describes the SSI analysis for the NI structures. Section 6 provides the SSI analysis results of the NI structures. References cited in this technical report are listed in Section 7.

General arrangement drawing for NI structures, numerical data, and results are presented in Appendices A through G.

2. DESIGN GROUND MOTION

The basic seismic design input parameters used in the seismic analysis of the NI structures consist of (a) the design ground motion for the safe shutdown earthquake (SSE) and operating basis earthquake (OBE) conditions and (b) design time histories.

For the APR1400, the design ground motion for the SSE considered in the seismic design consists of two sets of ground motion parameters: (a) horizontal and vertical design (ground motion) response spectra anchored to a peak ground acceleration (PGA) of 0.3g, where g is the acceleration of gravity, and (b) horizontal and vertical design time histories associated with the design response spectra (DRS).

For the APR1400 design, the design ground motion for an OBE is set to one-third (1/3) of the SSE. Thus, in accordance with the NRC standard review plan (SRP) section 3.7.1 (Reference 6) guidelines, a seismic analysis or design for an OBE is not required. Only the design ground motion for the SSE is considered for the seismic analysis of the NI structures.

2.1 Design Response Spectra

The DRS for the SSE used for the APR1400 design, which are designated as “certified seismic design response spectra (CSDRS),” are DRS enhanced from the “CMS1+” DRS (Reference 7). The CMS1+ DRS are response spectra used for the APR1400 reference plant design, namely, the shin-kori nuclear power plant unit 3 and 4 in Korea. The “CMS1+” DRS is enhanced using design response spectral amplitude in a high frequency range from 25 to 40 Hz.

Recent seismic analyses performed for nuclear power plant structures constructed on central and eastern United States (CEUS) hard rock sites have been conducted with a high-frequency cut-off at 50 Hz. This practice is based on the guidelines in SRP Section 3.7.1 in which the minimum power spectral density (PSD) function for the horizontal spectrum for CEUS rock sites has a high-frequency cut-off at 50 Hz. It is also based on interim staff guidance 01 (ISG-01) (Reference 8). ISG-01, section 3, article 3.1.1, states that the range of high frequency motion to be transmitted covers a model refinement frequency of at least 50 Hz.

To comply with the 50 Hz cut-off-frequency guidelines, the frequency at which the APR1400 CSDRS converge to the PGA value (rigid cut-off frequency) is extended from 33 Hz for the NRC RG 1.60 DRS to 50 Hz (Reference 9). The spectral values for frequencies between 25 to 50 Hz are obtained by linear interpolation on a log-log scale from 1.3 times of the NRC RG 1.60 spectral values at 25 Hz and the PGA value of 0.3g at 50 Hz.

Figures 2-1 and 2-2 show the comparisons of the 5%-damped, horizontal and vertical APR1400 CSDRS, CMS1+ DRS, and NRC RG 1.60 DRS, respectively. The enhancement of spectral values in the high frequency range for the APR1400 CSDRS and CMS1+ DRS as compared to the NRC RG 1.60 DRS can be identified from the comparisons in the figures.

Based on the guidelines of SRP Section 3.7.1, the APR1400 CSDRS for different damping ratios are constructed using the response spectral amplification factors in Tables 1 and 2 of NRC RG 1.60. The horizontal and vertical APR1400 CSDRS for SSE that are constructed for spectral damping ratios of 2, 3, 4, 5, 7, and 10% used for design of the APR1400 are shown in Figures 2-3 and 2-4, respectively. The numerical values of spectral amplifications at the control frequencies are provided in Tables 2-1 and 2-2.

The APR1400 CSDRS for the SSE defined in the previous paragraph are response spectra for the free-field ground surface or hypothetical outcrop motion on top of the uppermost competent soil layer of the generic site profiles considered for the design.

2.2 Design Time Histories

The design time histories used for the seismic analysis of the NI structures are a single set of three-component (two horizontal designated as “H1” and “H2,” and one vertical designated “VT”) CSDRS-compatible acceleration time histories generated from a set of recorded actual earthquake accelerograms as the initial seed motion. The CSDRS-compatible acceleration time histories generated for the design of the APR1400 satisfy the response-spectrum and PSD enveloping guidelines and the acceptance criteria of SRP, Section 3.7.1, Option 1 – Single Set of Time Histories, Approach 1. Details of the development of the APR1400 CSDRS-compatible design time histories are described in the technical report “Seismic Design Bases” (Reference 10).

The design acceleration time histories that are compatible with the APR1400 CSDRS for damping ratios of 2, 3, 4, 5, 7, and 10% are shown in Figures 2-5, 2-6, and 2-7, for H1, H2 and VT components, respectively. Component H1 is applied in the E-W (global X) direction; component H2 is applied in the N-S (global Y) direction; and component VT is applied in the vertical (global Z) direction.

The cross-correlation coefficients of the generated time histories are verified. The cross-correlation coefficients for the generated three-component time histories are as follows:

$$\rho_{XY} = 0.032, \qquad \rho_{XZ} = 0.079 \quad \text{and} \quad \rho_{YZ} = 0.029$$

Where X, Y, and Z are the three global directions.

Because the three cross-correlation coefficients are less than 0.16 as specified in SRP 3.7.1 Section 3.7.1, it is concluded that these components are statistically independent.

3. DESCRIPTION OF NI STRUCTURES

This section contains a description of the NI structures. The NI structures are classified as safety-related Seismic Category I structures. The RCB and AB are separate from each other above the basemat and have a minimum 6 in seismic gap between them. In the plant layout, the AB wraps around the RCB. The finished grade of the plant is at El. 98’-8”. The top of the NI common basemat is at El. 55’-0”. Thus, the exterior walls of the AB are embedded to a depth of 43’-8” below the finished grade of the plant. The thickness of the NI reinforced concrete basemat is nominally 10 ft. The methodology and results used to develop the finite element models (FEMs) for the APR1400 NI structures are presented in Technical Report APR1400-E-S-NR-14002-P, “Finite Element Seismic Models for SSI Analyses of the NI Buildings” (Reference 11).

3.1 Description of RCB Structures

The RCB of the APR1400 is a safety-related Seismic Category I structure and comprises the following three concrete sub-structures:

- Containment structure (CS)
- Primary shield wall (PSW)
- Secondary shield wall (SSW)

The CS is also referred to as a pre-stressed concrete containment vessel. The PSW and SSW are combined to form the reinforced concrete internal structure (IS) and are the supporting structures for the reactor coolant system (RCS).

The CS and IS are separated by a 2 in gap and are connected only at their basemat at El. 78’-0”. There is no interaction between the two structures except through the common basemat.

3.1.1 Containment Structure

The CS is a cylindrical post-tensioned shell with 4.5 ft thick walls. The dome is hemispherical with 4 ft thick walls. The intersection of the cylindrical and hemispherical shapes is called the spring-line and is at El. 254’-6”.

The CS has four openings, as follows:

- Each opening has a diameter of 11.16 ft.

Two of the openings are the north side, and two are on the east side.

- The personnel emergency exit airlock opening (one on the north side and one on the east side) is at center El. 103’-9” and azimuth 280°.
- The personnel access airlock opening (one on the north side and one on the east side) is at center El. 159’-9” and azimuth 234°.

The CS also has one equipment hatch opening.

- The opening is on the east side, has a 26 ft circular opening, and is at center El. 167’-6” and at azimuth 280°.

The CS has three 14 ft wide buttresses with thicknesses varying from 7.0 ft to 7.5 ft. The buttresses are

120 degrees apart. The first buttress starts at azimuth 30° from the north. The isometric view of CS is in Figure 3-1.

The CS cylindrical shell is supported on the RCB concrete foundation base at El. 78'-0". The interior of shell structure is lined with 0.25 in thick steel liner plate, which acts compositely with the CS.

A polar crane is supported by the CS shell ring beam at El. 241'-0". Polar crane bridge girders and a trolley system are supported by an inner steel ring beam with a 71.62 ft radius that is offset by approximately 5.6 ft from the CS shell centerline using steel corbels (brackets).

3.1.2 Primary Shield Wall

The IS consists of two parts: the primary shield wall (PSW) and secondary shield wall (SSW). The IS is supported by the concrete basemat extending from El. 45'-0" to El. 78'-0". Figure 3-2 is an isometric view of the IS.

The PSW is a concrete rectangular block with an area of 61'-8" x 37'-6" and extends from El. 69'-0" to El. 130'-0". The PSW supports two E-W walls with variable thicknesses, which extend from the top of the rectangular block at El. 130'-0" up to a top elevation of 191'-0". The PSW has a 24 ft diameter opening that houses the Reactor Vessel on the east side. The west side of the PSW houses the in-core instrumentation (ICI) cavity.

The top of the concrete for the ICI cavity is at El. 106'-6" on the west side. The refueling pool is at El. 114'-0" on the east side between the PSW and SSW. The concrete block has six openings, each with a 6 ft diameter, which allow the hot and cold legs to penetrate the rectangular block that connects to the reactor vessel. Inside the concrete pedestal support, there is a reactor cavity (pit) below the reactor vessel that extends from El. 69'-0" to El. 78'-0".

3.1.3 Secondary Shield Wall

The SSW has a cylindrical perimeter wall with a 51 ft radius (at the centerline) that protects the PSW. The SSW is 4 ft thick from top to bottom. The SSW acts as the primary supporting structure for the connecting slabs that span from the PSW to SSW and from the SSW to CS.

The connecting slabs are located at El. 114'-0", 136'-6" and 156'-0" (operating deck). The space between the SSW and PSW between at El. 78'-0" and El. 100'-0" is filled with a ring of concrete. The ring of concrete has a radius of 51 ft and is penetrated by the rectangular block of the PSW.

The major components of the SSW are:

- In-containment refueling water storage tank (IRWST)
- Pressurizer (PZR) shaft

The IRWST is an annular cylindrical tank that is 26 ft wide and 22 ft high and has 3 ft thick exterior walls. The tank is separated from the CS by a 2 in gap and is supported on top of the basemat. The tank roof slab is supporting the IS slabs above, which creates a vertical load path to the basemat.

The PZR structure is located at the North-West corner and is made of four (4) 2.75 ft thick concrete walls forming a square that extends to El. 200'-0". The PZR walls are 21 ft long and are directly supported by both the Secondary and Primary Shield Walls.

3.1.4 Reactor Coolant System

The major RCS components are listed below and shown in Figure 3-3:

- Reactor vessel (RV) , which is supported by four columns and the PSW
- Two (2) steam generators (SG), which are supported horizontally by the PSW and SSW and vertically at the base by concrete pedestals at El. 112'-10"
- Four (4) reactor coolant pumps (RCP), which are supported laterally on beams spanning from the PSW to SSW (at two elevations) and vertically (gravity) on a concrete pedestal at El. 103'-0"
- The PZR, which is supported laterally by its own encasement walls (shaft) and vertically by a concrete slab at its base

3.2 Description of AB Structure

The auxiliary building (AB) is a safety-related Seismic Category I structure with an embedment depth of 53'-8". It encloses the RCB in the center without a structural connection except at the common basemat.

The AB is a rectangular, reinforced concrete structure. The building includes the electrical and control areas, main steam valve house, chemical and volume control system areas, emergency diesel generator area, fuel handling area, spent fuel pool, cask loading pit, refueling canal, and auxiliary feed water (AFW) tanks.

The AB is bordered on the west by the turbine generator building (TGB), on part of the south side by the compound building (CPB), and on part of the east side by the emergency diesel generator building (EDGB). The gaps between the AB and TGB, between the AB and CPB, and between the AB and EDGB are 3 ft. Gaps below the finished grade of the plant are backfilled with compacted structural fill granular (SFG).

The AB structure comprises reinforced concrete shear walls in the E-W and N-S directions for lateral load resistance and a composite of reinforced concrete walls and slabs with main columns and girders for vertical load resistance.

Figure 3-4 is an isometric view of the AB structure. For simplification of the soil layers used in the SSI analysis, the embedment depth of 53'-6" is considered in the SASSI model of the AB structure.

4. GENERIC SITE PROFILES AND SITE RESPONSE ANALYSIS

The APR1400 standard plant design considers that the plant is supported by various generic site profiles. Eight (8) generic site profiles and one fixed-base support condition are considered. The eight generic site profiles are horizontally layered sites with site shear wave velocities that vary from soft to medium to firm soil sites and from soft to medium to hard rock sites. A free-field site response analysis is performed for each low-strain site profile to develop the free-field-site-response generic soil/rock dynamic properties to be used as input for the seismic SSI analysis of the NI structures.

The eight generic site profiles and the free-field site response analyses are described in the following subsections.

4.1 Low-strain Site Profiles

The eight (8) low-strain site profiles considered for the APR1400 standard plant design are divided among six (6) site-layering categories (Site-Layering Categories A through F) with site-layer thicknesses and depths from the ground surface as follows:

Site-Layering Category	Layer Thickness (ft)	Layer Depth Range (ft)
A	55	0 ~ 55
B	45	55 ~ 100
C	100	100 ~ 200
D	300	200 ~ 500
E	500	500 ~ 1000
F	Infinite	Halfspace > 1000

In addition to the six (6) site-layering categories, five (5) shear-wave-velocity categories (P1 through P5) are considered. The categories and associated shear-wave-velocity values are as follows:

Shear-Wave-Velocity Category	Shear Wave Velocity (ft/sec)
P1	1,200
P2	2,000
P3	4,000
P4	6,000
P5	9,200

The site soil/rock material unit weight (weight density), Poisson's ratio, and types of shear-strain-dependent modulus-degradation and damping-value-variation curves for the soil/rock material (sand, soft rock, and rock) considered for categories P1 through P5 are provided in Table 4-1.

The eight (8) low-strain site profiles considered for the APR1400 standard plant design are designated as S1 through S4 and S6 through S9, and are developed with combinations of the site-layering categories A through F and the shear-wave-velocity categories P1 through P5, as shown in Table 4-2. Figure 4-1 shows the low-strain shear wave velocity profiles versus depth for the eight (8) low-strain site profiles considered.

The compression wave velocity profiles versus depths for the eight (8) low-strain site profiles are derived from the low-strain shear wave velocity profiles and their corresponding Poisson's ratios shown in Table 4-1 using the following formula:

$$V_p = \sqrt{\frac{2(1-\nu)}{1-2\nu}}\ V_s \tag{4-1}$$

Where

V_s = Shear wave velocity,

V_p = Compression wave velocity

ν = Poisson's ratio.

The shear-strain-dependent, soil/rock-modulus-degradation and damping-value variation curves for the soil/rock materials considered for the eight low-strain site profiles are shown in Figure 4-2 (sand), Figure 4-3 (soft rock), and Figure 4-4 (rock). The curves for sand, as shown in Figure 4-2, adopt the sand curves in an EPRI report (Reference 12). The curves for soft rock, as shown in Figure 4-3, adopt the curves for soft rock in Silva's report (Reference 13). The curves for rock considered, as shown in Figure 4-4, adopt the curves for rock used in the SHAKE computer program (References 14, 15).

4.2 Backfill Material

For the APR1400 standard plant, backfill material used for backfill adjacent to the Seismic Category I structures is SFG. In accordance with the APR1400 Design Criteria Manual (Reference 16), the reference low-strain dynamic shear modulus (G_{max}) of SFG in units of kg/cm^2 (1 kg/cm^2 = 2.0439 kip/ft^2 or ksf) is derived as follows:

$$G_{max} = 2{,}000 \times \sqrt{\sigma_m} \tag{4-2}$$

Where

σ_m = Mean confining pressure in kg/cm^2.

The total and saturated weight densities (unit weights) of SFG are 137 and 140 pcf, respectively, and the dynamic Poison's ratio is 0.33.

For the standard design, the reference shear-strain-dependent modulus-degradation and damping-value-variation curves for the SFG considered are shown in Figure 4-5.

4.3 Groundwater Table Elevation

For the APR1400 standard plant design, the design groundwater level is 2 ft below the ground surface at El. 96'-8". In the seismic analyses of seismic Category I structures, the extreme groundwater level is considered at the ground surface at El. 98'-8" to induce more conservative analysis results. If the compression wave velocity (V_p) of subgrade soil computed from the low-strain shear wave velocity and Poisson's ratio using Eq. (4-1) has a value less than the V_p of water (4,800 ft/sec), the V_p value of the soil is considered to be not less than 4,800 ft/sec.

4.4 Free-field Site Response Analysis

Horizontal free-field site response analyses are conducted using the eight (8) low-strain site profiles S1 through S4 and S6 through S9, and subjected to the free-field seismic ground motion input at the ground surface at El. 98'-8". The free-field seismic ground motion input are the CSDRS-compatible acceleration

time histories H1 and H2 applied in the plant E-W and N-S directions, respectively.

For each low-strain site profile, a horizontal free-field site response analysis is performed for H1 (E-W) and H2 (N-S) time history inputs using the SHAKE computer program (References 14, 15). The shear-strain-compatible shear wave velocity profiles obtained from the analyses using H1 and H2 seismic inputs are then averaged to produce the averaged shear-strain-compatible shear-wave-velocity profile for each generic site profile. The averaged shear-strain-compatible shear-wave-velocity profiles obtained for S1 through S4 and S6 through S9 are the free-field generic site profiles used to develop the seismic SSI analysis models.

For the free-field site response analysis for each low-strain site profile, a low-strain soil column model is developed for use in the SHAKE analysis. The SHAKE soil column models are developed to pass vertically propagating plane seismic shear waves up to a cut-off frequency of at least 50 Hz. The SHAKE soil column models developed for all eight (8) low-strain site profiles are tabulated in Appendix A, Tables A-1 through A-9. The averaged shear-strain-compatible shear-wave-velocity profiles obtained from the SHAKE soil column analyses and the associated compression-wave-velocity profiles for all eight generic site profiles are tabulated in Appendix A, Tables A-10 through A-18.

Using the averaged shear-strain-compatible shear wave velocity profiles as tabulated in Appendix A, Tables A-10 through A-18, the free-field site response amplification (transfer) function computed for the horizontal ground surface motion relative to the horizontal outcrop motion of top of the half space for profiles S1 through S4 and S6 through S9 is plotted, as shown in Figure 4-6.

The fundamental horizontal site frequencies for profiles S1 through S4 and S6 through S9, as shown in Figure 4-6, are tabulated in Table 4-3 and plotted in Figure 4-7. As indicated in Table 4-3 and Figure 4-7, the fundamental horizontal site frequencies for profiles S1 through S4 and S6 through S9 range from 1.27 to 12 Hz. The site frequencies form an approximate log linear site-frequency-versus-site-profile-case straight line. Hence, profiles S1 through S4 and S6 through S9 represent a wide range of site frequencies from soft soil sites to hard rock sites.

The dynamic properties for the free-field generic site profiles S1 through S4 and S6 through S9, given in Appendix A, Tables A-10 through -18, are the properties that are used to develop the free-field soil/rock models for the SSI analyses of the NI structures.

4.5 Strain-Compatible Dynamic Properties of Backfill

For the SFG backfill material that is used next to the exterior walls of Seismic Category I structures from the ground surface to an embedment depth of 53.5 ft, the low-strain shear-wave-velocity profiles are obtained from the low-strain shear modulus, G_{max}, values computed from Eq. (4-2). The compression-wave-velocity profile of SFG associated with the low-strain shear-wave-velocity profile is derived from the low-strain shear-wave-velocity profile and Poisson's ratio of SFG, which is equal to 0.33. Because the SFG backfill is below the maximum design groundwater table elevation at the ground surface, the derived compression wave velocity values that are less than the compression wave velocity of water (4,800 ft/sec) are replaced by a value of 4,800 ft/sec.

The shear-strain-compatible shear-wave-velocity profiles for the SFG backfill are obtained from the computed low-strain shear-wave-velocity profiles and the shear-modulus-degradation and damping-variation curves shown in Figure 4-5, using the averaged horizontal shear strains computed from the free-field site response analyses for the generic site profiles S1 through S4 and S6 through S9. The profiles computed for the generic site profiles S1 through S4 and S6 through S9 are tabulated in Appendix A, Tables A-19 through A-27.

The dynamic properties of SFG computed for the generic site profiles S1 through S4 and S6 through S9, which are given in Appendix A, Tables A-19 through A-27, are the properties that are used to develop the SFG backfill models for the SSI analyses of the NI structures.

5. SOIL-STRUCTURE INTERACTION ANALYSIS

For the design of the APR1400 RCB and AB, seismic SSI analyses are performed for the NI structures that are supported on a common basemat. The SSI analyses are performed for all eight (8) generic site profiles S1 through S4 and S6 through S9 and one analysis case with a rigid uniform halfspace supporting medium that simulates the fixed-base analysis case (S10).

Both uncracked and cracked concrete stiffness cases are considered in the SSI analyses (References 17, 18, 19). For the uncracked concrete stiffness cases, the SSI cases that are analyzed are designated as S1U through S4U and S6U through S10U. For the cracked concrete stiffness cases, the SSI analysis cases are designated as S1C through S4C and S6C through S10C.

5.1 SSI Analysis Methodology and Computer Program

For the APR1400 standard plant design, seismic SSI analyses are performed using the 3-D finite-element SASSI analysis methodology (Reference 5) and the associated SASSI computer program (Reference 20). Because the NI structures of the APR1400 standard plant are embedded in site soil/rock media to a depth of 53.7 ft below the finished grade of the plant, the seismic SSI analyses performed using SASSI explicitly consider the 53.5 ft embedment effect on the seismic response. Following the SASSI analysis methodology, the foundation embedment is considered in the SASSI analysis using the Direct (or Flexible Volume) Method of substructuring.

Since the Direct Method is adopted for the SASSI analyses of 53.5 ft embedded NI structures, which are modeled using FEMs, the resulting SASSI analysis models developed for the SASSI analyses contain a large number of dynamic degrees of freedom (DOF) along with a large number of SSI nodal DOF below grade. As a result, in order to generate seismic SSI responses for all 18 analysis cases described above within a reasonable computer solution time, the current available Fast Solver Version of the ACS-SASSI computer program (Reference 20) which has large capacity is adopted to perform the SASSI computations.

5.2 Soil-Structure Interaction Models

The SSI analysis models developed for the APR1400 NI structures consist of three substructure models: a free-field site model, an excavated soil volume model, and a structure model including the backfill model.

Free-Field Site Models

The SASSI free-field site models are the same as the shear-strain-compatible free-field site models obtained from the free-field site response analyses described in Section 4.0. The dynamic soil/rock properties used for the SASSI site models are the average shear-strain-compatible soil/rock dynamic properties shown in Appendix A, Tables A-10 through A-18, for the generic site profiles S1 through S4 and S6 through S9. The layering configuration of the SASSI free-field site models is maintained for all eight (8) site profiles. The maximum wave passage frequencies resulting from the layering configuration of the free-field site model for site profiles S1 through S4 and S6 through S9 are listed in Table 5-1. As indicated in Table 5-1, the maximum wave passage frequencies of the model vary approximately from 18 to 119 Hz.

Excavated Soil Volume Models

The NI structure site is excavated to El. 42’-0”, which is 3 ft below the bottom of the NI structure basemat. Three-dimensional (3-D) solid elements are used to model the excavated soil volume. The FEM developed for the excavated soil volume of the NI structure foundation, including the over excavation for the backfill, is shown in Figure 5-1. This model configuration is maintained for the eight (8) generic site profile S1 through S4 and S6 through S9. The model contains a total of 9,254 nodes. Each node has three (3) dynamic DOF. The model consists of five (5) horizontal soil/rock layers from the ground surface at El. 98’-8”. The actual ground surface elevation in the model is taken at El. 98’-6” down to the bottom of

the basemat at El. 45’-0” plus a sixth (6th) soil/rock layer of 3 ft thickness from El. 45’-0” down to El. 42’-0”. The extra excavated soil/rock layer accommodates the lean concrete backfill beneath the basemat

Structure Model of NI Structures and Backfill

The structure model for the NI structures is the SASSI FEM obtained from conversion of the ANSYS coarse-mesh FEM (Reference 21) developed for the RCB and AB as described in Technical Report APR1400-E-S-NR-14002-P, “Finite Element Seismic Models for SSI Analyses of the NI Buildings” (Reference 11). The configuration of the combined SASSI FEM for the RCB and AB supported on the common basemat is shown in Figure 5-2.

The gap between the sidewalls of the site excavation pit and the exterior walls of the AB and the 3 ft wide gap between the AB and the adjacent CPB on the west side and the TGB on the south side are backfilled with compacted SFG. Under the NI common basemat, a layer of lean concrete approximately 3 ft thick is backfilled between the bottom of the basemat and the base of the soil/rock excavation pit. The material properties of the lean concrete backfill are presented in Table 5-2.

The SFG and lean concrete backfill in the SASSI structure model are modeled using 3-D solid elements. The configuration of the FEM developed for the SFG and lean concrete backfill is shown in Figure 5-3.

Complete SASSI Model for the NI Structures

The complete SASSI model is plotted in Figure 5-4. The model is composed of the free-field site model without the excavated soil volume model, as shown in Figure 5-1, and the addition of the combined structure model of RCB and AB, as shown in Figure 5-2, and the structure model of the SFG and lean concrete backfill, as shown in Figure 5-3.

The SASSI model for the NI structures has the following attributes:

Total number of nodes	=	32,778
Total number of interaction nodes	=	9,254
Total number of solid elements	=	35,113
Total number of shell elements	=	17,976
Total number of beam elements	=	4,039
Total number of spring elements	=	1,906

SASSI model data are coded using the Fast Solver Version of the ACS-SASSI computer program (Reference 20).

5.3 Seismic Input Motions for SSI Analysis

The seismic input to the SASSI model of the NI structures is the statistically independent, three-component (H1, H2, and VT) set of CSDRS-compatible design acceleration time histories. The seismic input is prescribed at the control motion elevation for the APR1400 standard plant, which is at ground surface El. 98’-8”.

The horizontal H1 and H2 time histories are input in the global X (E-W) and Y (N-S) directions, respectively, and the vertical VT time history is input in the global z (vertical) direction.

5.4 Seismic SSI Analysis Cases

To provide the seismic response parameters needed for the design of the APR1400 NI structures, seismic SSI analyses are performed for a total of eighteen (18) cases. The eighteen cases include nine (9) uncracked concrete stiffness cases for the eight (8) generic site profiles, designated as Cases S1U through S4U and S6U through S9U, including a fixed-base analysis case designated Case S10U. The remaining nine (9) cases include eight (8) cracked concrete stiffness cases for the same eight (8) generic site profiles, designated as Cases S1C through S4C and S6C through S9C plus a fixed-base analysis case designated as Case S10C. The eighteen (18) SASSI analysis cases are summarized in Table 5-3.

For each of the eighteen (18) SSI analysis cases, an SASSI analysis is performed for the three (3) directions of seismic input: (a) horizontal E-W direction with the seismic input of the H1 time history, (b) horizontal N-S direction with the seismic input of the H2 time history, and (c) vertical direction with the seismic input of the VT time history. Thus, fifty four (54) SASSI analyses are conducted to generate the seismic response parameters needed for the design.

Because of the different seismic-wave-passage cut-off frequencies and the different SSI system frequencies for each site profile case considered, the number of frequencies within the seismic-wave-passage cut-off frequency used for each SASSI analysis case varies. The total number of frequencies analyzed for the analysis cases are summarized in Table 5-4.

6. SEISMIC ANALYSIS RESULTS

Results of the SASSI analyses for the SSE obtained from the eighteen (18) analysis cases described in Subsection 5.4 are post-processed to generate the maximum seismic response parameters of interest for the design. The response parameters consist primarily of maximum structural forces and moments, in-structure response spectra (ISRS), maximum displacements relative to free field and basemat, and maximum seismic response accelerations. Post-processing procedures used to generate such maximum seismic response parameters and summaries of results generated from the post-processing are presented in this section.

The seismic response parameters described above are, in general, generated for each of the eighteen (18) analysis cases considered. The results of all eighteen (18) analysis cases are then enveloped to produce the eighteen-analysis-cases-enveloped seismic response parameters.

Because the SASSI analyses for each analysis case are performed separately for the three (3) directions (E-W, N-S, and vertical) of seismic input, the maximum seismic response parameters of interest are firstly generated from the results of SASSI analyses obtained for the individual direction of seismic input. Then, the maximum seismic response parameters of interest due to the combined three (3) directions of seismic input are combined using the square-root-of-the-sum-of-squares (SRSS) combination rule.

6.1 Structural Response Forces and Moments

The maximum seismic global building response structural forces (axial and shear forces) and moments (torsional and overturning moments) are generated from the SASSI analysis results for the 9 cracked concrete stiffness analysis cases for use in the structural design. Because the SASSI models used in the analysis are FEMs, the procedure for generating the maximum global building response forces and moments for each of the 9 cracked concrete stiffness analysis cases follows the post-processing steps described below.

(1) For the building forces and moments at a specific elevation, designated by the symbol *"l,"* of a specific freestanding structure, designated by the symbol *"k,"* a cross-section of the structure *"k"* is made at the elevation *"l."* The specific structure *"k"* for the RCB represents one of the freestanding structures in the RCB, namely, the CS, PSW, and SSW of the IS. For the AB, which is a structurally integrated freestanding structure, the specific structure *"k"* refers to the AB structure itself.

(2) For the specific freestanding structure *"k,"* the mass sub-matrix, designated by the symbol $\left[m_{kl}\right]$, that is associated with the subset of nodal DOFs of the nodes in the SASSI FEM for the structure *"k"* above the cross-section *"l,"* is generated from the SASSI mass matrix $\left[m\right]$ for the NI structures.

(3) The SASSI analysis results can be expressed in terms of a vector of absolute acceleration transfer function for all nodal DOFs in the SASSI FEM for the NI structures, computed at a specific calculated frequency " f_j ," due to the seismic input direction *"p,"* *p* = X (E-W), Y (N-S), and Z (vertical). This vector is designated by the symbol $\left\{H^a\left(f_j\right)\right\}_p$. Based on the vector $\left\{H^a\left(f_j\right)\right\}_p$, a sub-vector of absolute acceleration transfer function, designated as $\left\{H^a_{kl}\left(f_j\right)\right\}_p$, can be extracted for the nodal DOFs of all nodes above the cross-section *"l"* in the structure *"k."*

(4) The seismic response inertia load sub-vector associated with the nodal DOFs of all nodes above the structure cross-section *"l"* in the structure *"k,"* designated as $\left\{H^I_{kl}\left(f_j\right)\right\}_p$, can be

computed by multiplying the mass sub-matrix $\left[m_{kl}\right]$ by the seismic absolute acceleration transfer function sub-vector $\left\{H_{kl}^{a}\left(f_{j}\right)\right\}_{p}$, i.e.,

$$\left\{H_{kl}^{I}\left(f_{j}\right)\right\}_{p} = \left[m_{kl}\right]\left\{H_{kl}^{a}\left(f_{j}\right)\right\}_{p} \qquad (6\text{-}1)$$

(5) The transfer function of seismic response building (axial or shear) force in the direction *"q,"* *q* = X (E-W), Y (N-S), and Z (vertical), due to seismic input in direction *"p,"* *p* = X, Y, and Z, designated by the symbol $V_{kl}^{q}\left(f_{j}\right)_{p}$, can be computed by multiplying the seismic response inertia load sub-vector $\left\{H_{kl}^{I}\left(f_{j}\right)\right\}_{p}$ by a rigid-body translation sub-vector in direction *"q"* due to seismic input in the direction *"p,"* designated as $\left\{R_{kl}^{q}\right\}_{p}$, i.e.,

$$V_{kl}^{q}\left(f_{j}\right)_{p} = \left\{R_{kl}^{q}\right\}_{p}^{T} \left\{H_{kl}^{I}\left(f_{j}\right)\right\}_{p} \quad q = \text{X, Y, Z} \qquad (6\text{-}2)$$

where $\left\{R_{kl}^{q}\right\}_{p}^{T}$ is the transpose of the sub-vector $\left\{R_{kl}^{q}\right\}_{p}$. The sub-vector $\left\{R_{kl}^{q}\right\}_{p}$ contains vector coefficients with the value 1 for each nodal DOF in the direction *"q"* and the value of 0 for all other DOFs.

(6) The transfer function of seismic response building (torsional or overturning) moment about the coordinate axis *"q,"* *q* = X, Y, and Z, due to seismic input in direction *"p,"* *p* = X, Y, and Z, designated by the symbol $M_{kl}^{q}\left(f_{j}\right)_{p}$, can be computed by multiplying the seismic response inertia load sub-vector $\left\{H_{kl}^{I}\left(f_{j}\right)\right\}_{p}$ by a rigid-body rotation sub-vector of moment arms r_{q}^{i} about the axis *"q"* between the nodal DOF *"i"* relative to a designated point *"o"* on the plane of the structure cross-section *"l"* due to the seismic input in the *"p"* direction, designated as $\left\{R_{\theta kl}^{q}\right\}_{p}$, i.e.,

$$M_{kl}^{q}\left(f_{j}\right)_{p} = \left\{R_{\theta kl}^{q}\right\}_{p}^{T} \left\{H_{kl}^{I}\left(f_{j}\right)\right\}_{p} \qquad q = \text{X, Y, Z} \qquad (6\text{-}3)$$

where $\left\{R_{\theta kl}^{q}\right\}_{p}^{T}$ is the transpose of the sub-vector $\left\{R_{\theta kl}^{q}\right\}_{p}$. The sub-vector $\left\{R_{\theta kl}^{q}\right\}_{p}$ contains vector coefficients with the moment arm r_{q}^{i} relative to the point *"o"* for each nodal translation DOF *"i"* rotating about the coordinate axis *"q,"* the value of 1 for all nodal rotation DOFs rotating about the axis "q," and the value of 0 for all other DOFs.

(7) The structure force and moment transfer functions, $V_{kl}^{q}\left(f_{j}\right)_{p}$ and $M_{kl}^{q}\left(f_{j}\right)_{p}$, obtained from Eqs. (6-2) and (6-3) at each calculated frequency f_{j}, are interpolated and then convolved with the seismic input time history in the direction *"p"* to generate the time histories of building (axial and shear) forces and (torsional and overturning) moments. The maximum forces and moments, designated as $\left(V_{kl\,\max}^{q}\right)_{p}$ and $\left(M_{kl\,\max}^{q}\right)_{p}$ for the structure *"k"* at the structure cross-section *"l"* due to the seismic input in direction *"p"* are obtained as the maximum values of the time histories.

(8) The maximum structure forces and moments for the structure *"k"* at the structure cross-section *"l"* due to the seismic input in direction *"p"* obtained in Step (7) above are combined, using SRSS combination rule, to generate the maximum forces and moments due to the seismic inputs in all three (3) directions.

(9) Steps (1) through (8) are repeated for all structure cross-sections of interest of all freestanding structures in the NI structures.

(10) From Step (2) described above, the total mass of the structure *"k"* above the structure cross-section *"l"* in the direction *"q"* due to seismic input in the direction *"p,"* designated as $\left(m_{kl}^{t}\right)_{p}^{q}$, can be computed from the mass sub-matrix $\left[m_{kl}\right]$ and the rigid-body translation sub-vector $\left\{R_{kl}^{q}\right\}_{p}$, as defined in Step (5), as follows:

$$\left(m_{kl}^{t}\right)_{p}^{q} = \left\{R_{kl}^{q}\right\}_{p}^{T} \left[m_{kl}\right] \qquad p,\, q = \text{X, Y, Z} \qquad (6\text{-}4)$$

(11) The tributary mass of the structure *"k"* between the structure cross-sections "(*l* -1)" and *"l"* in the direction *"q"* due to seismic input in the direction *"p,"* designated as $\left(\Delta m_{kl}^{t}\right)_{p}^{q}$, can be computed as

$$\left(\Delta m_{kl}^{t}\right)_{p}^{q} = \left(m_{kl}^{t}\right)_{p}^{q} - \left(m_{k(l-1)}^{t}\right)_{p}^{q} \qquad p,\, q = \text{X, Y, Z} \qquad (6\text{-}5)$$

(12) From Step (7), the differential maximum building structure (axial and shear) forces in the structure *"k"* above the structure cross-section *"l"* in the direction *"q"* due to seismic input in the direction *"p,"* designated as $\left(\Delta V_{kl\,\max}^{q}\right)_{p}$, can be computed from the maximum build forces computed at the cross-sections "(*l* -1)" and *"l"* as follows:

$$\left(\Delta V_{kl\,\max}^{q}\right)_{p} = \left(V_{kl\,\max}^{q}\right)_{p} - \left(V_{k(l-1)\max}^{q}\right)_{p} \qquad \text{p, q = X, Y, Z} \qquad (6\text{-}6)$$

(13) From the tributary mass $\left(\Delta m_{kl}^{t}\right)_{p}^{q}$, computed from Step (11) using Eq. (6-5), and the differential maximum building structure (axial and shear) forces $\left(\Delta V_{kl\,\max}^{q}\right)_{p}$, computed from Step (12) using Eq. (6-6), the equivalent seismic response acceleration, designated as $\left(a_{kl}\right)_{p}^{q}$, of the structure *"k"* between the cross-sections "(*l* -1)" and *"l"* in the direction *"q"* due to seismic input in the direction *"p,"* can be derived as follows:

$$\left(a_{kl}\right)_{p}^{q} = \left(\Delta V_{kl\,\max}^{q}\right)_{p} / \left(\Delta m_{kl}^{t}\right)_{p}^{q} \qquad p,\, q = \text{X, Y, Z} \qquad (6\text{-}7)$$

The equivalent acceleration $\left(a_{kl}\right)_{p}^{q}$ computed from Eq. (6-7) is the acceleration to be used for structural design. The application of the equivalent acceleration so derived will produce the maximum seismic response building (axial and shear) forces computed from Step (7) described above.

Following the steps described above, the maximum building seismic response (axial and shear) forces and (torsional and overturning) moments, along with the equivalent maximum seismic response accelerations derived from the maximum building seismic response forces for structural design, are

computed at various designated elevations for the RCB (CS, PSW, and SSW) and AB. The results of each of the nine (9) cracked-concrete SASSI analysis cases and the envelopes of the results for the nine (9) cases are tabulated and plotted in Appendix B of this report.

The calculations of the maximum building seismic response forces and moments described above have included all building masses except the RCS masses and the convective (sloshing) hydrodynamic masses for the first and second horizontal sloshing modes of IRWST and the horizontal sloshing mode of AFW and FHA tanks. However, for the structural design of the reactor containment building, the RCS model and hydrodynamic masses of the IRWST are included in the structural analysis model, and the separate response spectrum analysis using ISRS obtained from SSI analysis is performed in order to obtain maximum structural design forces and moments associated with seismic load. Also, for the structural design of the auxiliary building, the impulsive mode over the water level for the AFW and FHA tanks as hydrodynamic masses are included in the structural analysis model, and the equivalent static analysis using equivalent accelerations computed from the building story shear forces of SSI analysis is performed to obtain the structural design forces and moments.

6.2 In-Structure Response Spectra

The SASSI analysis output-acceleration-response time histories obtained for each analysis case at selected nodal points of the SASSI FEM on the designated elevations of RCB (i.e., CS, PSW, and SSW) and AB are used to compute the ISRS. The ISRS are computed for constant spectral damping values of 2, 3, 4, 5, 7, and 10%.

The selected nodal points on each of the designated structure elevations in the RCB are summarized in five tables: Table 6-1 for the CS, Table 6-2 for the polar crane at El. 241’-0” of the CS, Table 6-3 for PSW, Table 6-4 for SSW, and Table 6-5 for the slabs in the RCB for the vertical slab response only. The selected nodal points on each designated floor area of each designated floor elevation in the AB are summarized in Tables 6-6 and 6-7. Table 6-6 lists the selected nodal points on each designated floor area at the shear wall locations of each designated floor elevation for which ISRS for seismic response motions in all three directions, X (E-W), Y (N-S), and Z (vertical), are generated. Table 6-7 lists the selected nodal points on the floor slabs of each designated floor area of each designated floor elevation for which ISRS for the vertical (Z) seismic response motions are generated. The locations of the selected nodes on the designated elevations are shown on plots in Appendix C of this report.

The ISRS generated for each analysis case at all selected nodal points on each designated structure elevation are firstly enveloped to generate the enveloped ISRS for the elevation and are then widened by ± 15% in frequency (Reference 22). The enveloped and widened ISRS for each elevation generated for all six (6) constant damping values are generated for each individual SASSI analysis case. The ISRS generated are finally enveloped for all eighteen (18) cases. The ISRS curves that are generated are plotted in the figures shown in Appendix D.

6.3 Maximum Seismic Response Relative Displacements

Two (2) sets of maximum seismic response relative displacements are generated for the RCB and AB from the SASSI analysis results for all eighteen (18) SASSI analysis cases. The first set consists of the displacements relative to the free-field ground surface. The second set consists of the displacements relative to the basemat. For the RCB, the second set consists of the displacements relative to the region of basemat under the RCB footprint. Because of the massive concrete pedestal in the lower portion of the internal structure, the basemat under the RCB footprint is rigid and responds almost as a rigid basemat. Thus, the second set of displacements relative to the basemat is obtained from the first set of relative displacements with respect to the free-field ground surface by removing the rigid basemat rotations computed for the region of basemat under the RCB footprint. The displacements obtained by removing the rigid basemat rotations are used in the design of piping and pipe supports in the reactor internal system. For the AB, the second set of displacements relative to the basemat is obtained from the first set

of relative displacements with respect to the free-field ground surface by subtracting the basemat displacements at the containment centerline relative to the free-field ground surface from the first set of relative displacements.

For the first set of relative displacements, which are displacements relative to the free-field ground surface, the post-processing procedure used to generate these displacements for the selected nodal points on the designated structure elevations are as follows:

(1) For each selected nodal point *"i"* on each designated structure elevation *"l,"* the acceleration response transfer function computed at a calculated frequency f_j in the *"q"* direction due to the seismic input in the *"p"* direction, designated by the symbol $\left(H^a\left(f_j\right)\right)_p^q$, is used to compute the transfer function of displacement relative to the free-field ground surface, designated by the symbol $\left(H^d\left(f_j\right)\right)_p^q$, using the following equation:

$$\left(H^d\left(f_j\right)\right)_p^q = -\left(\left(H^a\left(f_j\right)\right)_p^q - 1\right) \;/\; \left(2\pi f_j\right)^2 \qquad \text{(6-8)}$$

The computed relative displacement transfer function $\left(H^d\left(f_j\right)\right)_p^q$ at the calculated frequencies is then interpolated and convolved with the seismic input acceleration time history to obtain the time history of displacement relative to the free-field ground surface in the *"q"* direction due to the seismic input in the *"p"* direction, designated by $d_p^q(t)$.

(2) The maximum displacement in the "q" direction relative to the free-field ground surface due to the seismic input in the "p" direction, designated as $d_{p\max}^q$, is obtained as the maximum absolute value of the time history $d_p^q(t)$. The maximum relative displacement in the "q" direction due to the seismic input in all three directions, i.e., p = X, Y, Z, designated by the symbol $d_{\max}^q$, is obtained by combining the maximum relative displacements due to the inputs in all three directions using the SRSS combination rule, i.e.,

$$d_{\max}^q = \sqrt{\left(d_{X\max}^q\right)^2 + \left(d_{Y\max}^q\right)^2 + \left(d_{Z\max}^q\right)^2} \qquad \text{(6-9)}$$

(3) The maximum relative displacement $d_{\max}^q$ obtained from Eq. (6-9) for all selected nodes *"i"* on a designated elevation *"l"* in the structure *"k"* are enveloped to generate the enveloped maximum relative displacement in the direction *"q."*

The enveloped maximum relative displacements generated from Step (3) above for all designated elevations in the RCB and AB for each of the eighteen SASSI analysis cases are tabulated in Appendix E.

To remove the rigid RCB basemat rotation from the displacements relative to the free-field ground surface, the basemat rotation about a global coordinate axis *"p," p* = X or Y, located at the center of the containment on top of the basemat, designated as point *"o,"* is computed first. The basemat rotation is calculated using the following steps:

(4) Two points designated as A and B on top of the basemat in the orthogonal direction to the coordinate axis *"q"* with the horizontal distance "D" between A and B are selected. The

transfer functions of the vertical displacements at points A and B at the calculated frequency f_j, designated as $H_Z^d\left(f_j\right)_q^A$ and $H_Z^d\left(f_j\right)_q^B$, can be computed using Eq. (6-8).

(5) The basemat rotation about the coordinate axis *"q"* due to seismic input in the direction *"p,"* designated by the symbol $R_{\theta q}^p\left(f_j\right)$, can be computed as follows:

$$R_{\theta q}^p\left(f_j\right) = \left[H_Z^d\left(f_j\right)_q^A - H_Z^d\left(f_j\right)_q^B \right] / \mathrm{D} \tag{6-10}$$

(6) For a designated nodal point *"i"* on a designated structure elevation *"l"* with height h_l, the transfer function of displacement relative to the basemat, designated as $H_b^d\left(f_j\right)_p^q$, can be computed from the transfer function of displacement relative to the free-field ground surface $H^d\left(f_j\right)_p^q$ computed at frequency f_j as follows:

$$H_b^d\left(f_j\right)_p^q = H^d\left(f_j\right)_p^q - R_{\theta q}^p\left(f_j\right) \times h_l \tag{6-11}$$

(7) The transfer function of displacement relative to the basemat $H_b^d\left(f_j\right)_p^q$ computed from Eq. (6-11) at calculated frequency f_j can be interpolated and convolved with the seismic input time history in the direction *"p"* to generate the response time history $d_{bp}^q(t)$, from which the maximum absolute response value can be obtained, designated as $d_{bp\ \max}^q$. The maximum displacements relative to the basemat generated for the seismic input in all three directions can be combined using the SRSS combination rule to obtain the maximum displacements relative to the basemat due to all three directions of input, designated as $d_{b\ \max}^q$.

(8) The maximum displacements relative to the basemat $d_{b\ \max}^q$ generated for all nodal points on each designated elevation *"l"* are enveloped to give the enveloped maximum displacement relative to the basemat for the designated elevation for the response direction *"q."*

The maximum displacements relative to the basemat obtained from Step (8) above for all designated elevations in the RCB are tabulated in Appendix E in a format that is similar to that for the maximum displacements relative to the free-field ground surface.

6.4 Maximum Seismic Response Accelerations

The maximum seismic response absolute accelerations obtained as the zero period acceleration (ZPA) values for the designated structure elevations in the RCB and AB, for eighteen (18) individual SASSI analysis cases, are tabulated in Appendix F. The ZPA values tabulated for each designated elevation in the tables in Appendix G are the values enveloped of the ZPA values obtained for all selected nodes on that elevation.

6.5 Comparison of Story Shear Forces between THA (ACS SASSI Analysis) and RSA Results

The response spectrum analysis (RSA) is used to compute the seismic design forces of the CS and IS in

the RCB using the in-structure response spectra at the top of the basemat generated from the seismic SSI analysis. To demonstrate approximate equivalency between the time-history analysis (THA) method based on complex frequency response method used in the SSI analysis and the RSA method, the story shear forces obtained from the two methods are compared and provided in Table 6-8. As indicated in the comparison results in Table 6-8, the story shear forces obtained from the RSA method are generally greater than those obtained from the THA method.

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21. Computer Program, "ANSYS", User Manual Version 14.0, ANSYS, Inc., October 2011.

22. Regulatory Guide 1.122, "Development of Floor Design Response Spectra for Seismic Design of Floor-supported Equipment or Components," Rev. 1, U.S. Nuclear Regulatory Commission, February 1978.

Table 2-1

APR1400 Certified Seismic Design Response Spectra – Horizontal

Damping Ratio (%)	Amplification Factor for Control Points						
	0.1 Hz	0.2 Hz	0.25 Hz	2.5 Hz	9 Hz	25 Hz	50 Hz
2	0.0276	0.111	0.171	1.275	1.062	0.511	0.300
3	0.0254	0.102	0.159	1.125	0.939	0.498	0.300
4	0.0238	0.096	0.147	1.020	0.852	0.487	0.300
5	0.0226	0.090	0.141	0.939	0.783	0.479	0.300
7	0.0207	0.084	0.129	0.816	0.681	0.464	0.300
10	0.0188	0.075	0.117	0.684	0.570	0.447	0.300

Table 2-2

APR1400 Certified Seismic Design Response Spectra – Vertical

Damping Ratio (%)	Amplification Factor for Control Points						
	0.1 Hz	**0.2 Hz**	**0.25 Hz**	**3.5 Hz**	**9 Hz**	**25 Hz**	**50 Hz**
2	0.0184	0.075	0.114	1.215	1.062	0.511	0.300
3	0.0170	0.069	0.105	1.074	0.939	0.498	0.300
4	0.0159	0.063	0.099	0.972	0.852	0.487	0.300
5	0.0151	0.060	0.093	0.894	0.783	0.479	0.300
7	0.0138	0.057	0.087	0.777	0.681	0.464	0.300
10	0.0125	0.051	0.078	0.651	0.570	0.447	0.300

Table 4-1

Dynamic Properties of Low-strain Soil/Rock Materials for Site Shear-Wave-Velocity Categories P1 through P5

Shear Wave-Velocity Categories	Shear Wave-Velocity (ft/sec)	Soil/Rock Unit Weight (lb/ft3)	Poisson's Ratio (ν)	Degradation Curve type (EPRI)
P1	1,200	125	0.40	Sand
P2	2,000	130	0.38	Sand
P3	4,000	135	0.35	Soft Rock
P4	6,000	145	0.33	Rock
P5	9,200	155	0.33	Rock

Table 4-2

Site Layering and Shear-Wave-Velocity Categories Considered for Eight Low-strain Site Profiles

Layer Site Category Depth from Ground Surface (ft)	Generic Soil Profile No.							
	S1	S2	S3	S4	S6	S7	S8	S9
	Shear-Wave-Velocity No.							
A **0 ~ 50 ft**	P1	P1	P2	P2	P2	P2	P4	P4
B **50 ~ 100 ft**	P1	P1	P2	P2	P3	P3	P4	P4
C **100 ~ 200 ft**	P1	P2	P2	P3	P3	P4	P4	P5
D **200 ~ 500 ft**	P2	P3	P3	P4	P5	P5	P5	P5
E **500 ~ 1,000 ft**	P3	P4	P5	P5	P5	P5	P5	P5
F **> 1,000 ft**	P5	P5	P5	P5	P5	P5	P5	P5

Table 4-3

Fundamental Horizontal Site Frequencies of Eight Generic Site Profiles Considered for APR1400

Generic Site Profile No.	Fundamental Horizontal Frequency (Hz)
S1	1.27
S2	1.81
S3	2.39
S4	3.42
S6	5.71
S7	6.54
S8	8.59
S9	12.01

Table 5-1

Maximum Wave-Passage Frequencies of SASSI Site Models for Eight Generic Site Profiles Considered for APR1400

Generic Site Profile Case	Averaged Shear Wave Velocity For 98'-6" (30 m) Depth (ft/sec)	Average Soil Layer Thickness (ft)	Maximum Wave-Passage Frequency (Hz)
S1	1,191	11	21.7
S2	995	11	18.1
S3	2,188	11	39.8
S4	1,866	11	33.9
S6	3,239	11	58.9
S7	2,801	11	50.9
S8	6,528	11	118.7
S9	4,796	11	87.2

Table 5-2

Material Properties of Lean Concrete

Material	Design Strength (psi)	Modulus of Elasticity (ksf)	Poisson's Ratio ν	Unit Weight γ (pcf)
Lean Concrete	2,000	367,000	0.17	137

Table 5-3

SASSI Analysis Case Identification

Concrete Stiffness Cases	Generic Site Profile Cases								
	S1	S2	S3	S4	S6	S7	S8	S9	S10
Uncracked	S1U	S2U	S3U	S4U	S6U	S7U	S8U	S9U	S10U
Cracked	S1C	S2C	S3C	S4C	S6C	S7C	S8C	S9C	S10C

Table 5-4

Total Number of Frequencies Analyzed and Highest Frequency Analyzed

Analysis Case	Uncracked Concrete Cases								
	S1U	S2U	S3U	S4U	S6U	S7U	S8U	S9U	S10U
Number of Frequencies Analyzed	71	70	94	89	109	103	117	116	117
Analysis Cut-off Frequency (Hz)	20.07	20.07	41.09	35.23	59.01	50.61	71.01	71.01	71.01
Analysis Case	Cracked Concrete Cases								
	S1C	S2C	S3C	S4C	S6C	S7C	S8C	S9C	S10C
Number of Frequencies Analyzed	70	70	94	89	109	103	117	116	117
Analysis Cut-off Frequency (Hz)	20.07	20.07	41.09	35.23	59.01	50.61	71.01	71.01	71.01

Table 6-1

Selected Nodal Points on Designated Structure Elevations of Containment Structure for Generation of ISRS

Elevation (ft)	Identification	SASSI Node Numbers
78.00	CS base at interface with concrete pedestal	13663, 13704, 13694, 13699, 13679, 13674,13682
89.75	CS shell	16623, 16577, 16581, 16589, 16593, 16599, 16612, 16618
103.75	CS shell	19988, 20015, 20016, 20025, 20030, 20037, 20011, 19992
117.75	Top ring at lower personnel airlock	22008, 22035, 22039, 21995, 22005, 22020, 22013, 22021
123.62	CS shell	23504, 23512, 23511, 23539, 23531, 23530, 23510, 23503
131.56	CS shell	24933, 24948, 24979, 24983, 24961, 24943, 24966, 24935
159.75	Bottom ring at equipment hatch	28225, 28234, 28229, 28226, 28202, 28232, 27207, 28242
180.00	Top ring at equipment hatch and upper personnel airlock	29872, 29828, 29842, 29868, 29852, 29851, 29773, 29652
195.50	Top of thickened portion at equipment hatch	30897, 30910, 30895, 30912, 30931, 30879, 30927, 30926
215.96	CS shell	31554, 31556, 31580, 31584, 31542, 31555, 31588, 31548
241.00	Polar crane plane elevation	31860, 31845, 31852, 31788, 31786, 31828, 31885, 31824
254.50	CS spring line	31939, 31943,31968, 31931, 31949, 31969, 31941, 31974
274.49	Dome	32045, 32083, 32040, 32062, 32046, 32065, 32059, 32051
301.53	Dome	32242, 32237, 32245, 32248, 32238, 32220, 32206, 32225
328.42	Dome	32494, 32496, 32497, 32495
331.75	Dome apex	32522

Table 6-2

Selected Nodal Points on Designated Structure Elevations of Polar Crane at El. 241’-0” for Generation of ISRS

Elevation (ft)	Identification	SASSI Node Numbers
241.00	Intersection of ring beam and main crane girders	31906,31840,31870,31831
241.00	Polar crane main girders at cross beams locations	31853,31871,31807,31805
241.00	Ends (stiffened) of main polar crane girders	31799,31869

Table 6-3

Selected Nodal Points on Designated Structure Elevations of Primary Shield Wall for Generation of ISRS

Elevation (ft)	Identification	SASSI Node Numbers
66.00	4 corners at RV pit walls (bottom)	11362, 11363, 11368, 11371
78.00	4 corners at RV pit walls (top)	13581, 13585, 13586, 13595
100.00	Top of concrete pedestal	19674, 19341, 19665, 19354, 19194, 19275, 19375, 19265, 19189, 19168
106.50	Refueling pool walls	20363, 20255, 20352, 20265, 20367, 20333, 20285, 20198, 20300, 20256
114.00	Reactor pool walls & RV at bottom of hot and cold legs	21555, 21497, 21458, 21495, 21504, 21758, 21411, 21483, 21482, 21382,21551
130.00	Top of reactor massive concrete block	24815, 24817, 24842, 24819, 24672, 24665, 24658, 24806, 24719, 24778, 24785
136.50	-	25241, 25246, 25277, 25288, 25296, 25202, 25254
156.00	Operating deck	28097, 28124, 27764, 27264, 27607, 28039, 28007, 27886
191.00(a)	PSW top elevation	30362, 30316, 30351, 30305, 30333, 30357
191.00(b)	PZR corners	30307, 30352

Table 6-4

Selected Nodal Points on Designated Structure Elevations of Secondary Shield Wall for Generation of ISRS

Elevation (ft)	Identification	SASSI Node Numbers
78.00	SSW at concrete pedestal bottom	13318, 13328, 13338, 13349, 13353, 13323, 13333, 13345
100.00 (a)	SSW at interface with the concrete pedestal top	19698, 19712, 19334, 19724, 19719, 19705, 19717, 19729
78 - 100.00 (b)	IRWST tank walls	13270,13299,19263, 19239, 17151, 15192, 17196, 15387, 17160, 15201
106.50	Reactor pool walls	20383, 20181, 20182, 20395, 20389, 20185, 20175, 20399
114.00	Refueling pool walls	21613, 21385, 21642, 21632, 21621, 21751, 21766, 21636
130.00	Top of the massive concrete block	24610, 24752, 24720, 24631, 24618, 24814, 24695, 24640
136.50	-	25193, 25280, 25249, 25205, 25199, 25273, 25293, 25219
156.00	Operating deck	27225, 27761, 27280, 27466, 27387, 27237, 27224, 27768
191.00	Top elevation of SSW	30301, 30323, 30331, 30298, 30299, 30341

Table 6-5

Selected Nodal Points on Designated Slabs in Reactor Containment Building for Generation of Vertical ISRS

Elevation (ft)	Identification	SASSI Node Numbers
156.00	RCB slabs at S-W corner (RV head storage)	27913, 27921, 27934
125.00	Top of slabs at RCB west side	23580, 23588, 23591, 23592
114.00	Slab supporting heavy fan (RCB west side)	21522 ,21525, 21527, 21529, 21530, 21541
111.00	Bottom of refueling pool (RCB east side)	21105, 21115, 21126, 21128, 21130, 21132
106.50	Bottom of reactor pool (RCB west side)	20210, 20211, 20219, 20220
100.00	Slab at pedestals of the reactor drain tank (RCB west side)	19616, 19623, 19626, 19632, 19634, 19638
66.00	RV pit slab (bottom)	11354, 11355, 11358, 11359

Table 6-6

Selected Nodal Points at Shear Wall Locations on Designated Floor Elevations of Auxiliary Building for Generation of ISRS

Floor Elevation	Floor Identification	SASSI Model Node Numbers
55'-0"	Basemat	10600, 10642, 10647, 10715, 10717, 10751, 10803, 10806, 10863, 10876, 10884, 10936, 10942, 10946, 11021, 11025
68'-0"	Intermediate Floor, Areas 2 & 4	11376, 11393, 11397, 11402, 11417, 11422, 11502, 11529, 11579, 11583, 11614, 11651, 11656, 11668, 11678, 11725, 11862, 11865
78'-0"	Intermediate Floor	12248, 12278, 12319, 12327, 12415, 12438, 12491, 12509, 12517, 12543, 12641, 12651, 12679, 12819, 12823, 12875
100'-0"	Ground Floor	18085, 18140, 18165, 18173, 18289, 18382, 18488, 18496, 18526, 18532, 18632, 18692, 18812, 18820, 18856, 18950
120'-0"	Second Floor	22101, 22273, 22385, 22453, 22467, 22511, 22593, 22599, 22636, 22687, 22767, 22805, 22846, 22914, 22951, 23082
137'-6"	Third Floor	25316, 25320, 25334, 25348, 25350, 25390, 25440, 25529, 25565, 25618, 25665, 25927, 25940, 25956
156'-0"	Fourth Floor	27250, 27256, 27273, 27281, 27453, 27474, 27546, 27660, 27666, 27739, 27791, 27791, 27804, 27817
174-'0"	Fifth Floor	29074, 29186, 29206, 29227, 29275, 29303, 29316, 29368, 29380, 29473, 29475, 29624, 29642
195'-0"	Sixth Floor Areas 1 and 3	30375, 30443, 30542, 30545, 30556, 30557, 30590, 30837
195'-0"	Main Control Room Roof	30399, 30403, 30680
216'-9"	Roof at Area 2	31592, 31626, 31632
213'-0"	Penthouse Roof at Areas 1 & 3	31235, 31241, 31256
213'-6"	Fuel Handling Area	31421, 31470, 31519, 31525
195'-0"	Sixth Floor Area 2, Fuel Handling Area	30369, 30536, 30754, 30762, 30854
100'-0"	Ground Floor Area 2, Fuel Handling Area	18680, 18914, 18974
114'-0"	Intermediate Floor Area 2, Fuel Handling Area	21680, 21693, 21770
120'-0"	Second Floor Area 2, Fuel Handling Area	22818, 22824, 23108
137'-6"	Third Floor Area 2, Fuel Handling Area	25514, 25516, 25623
156'-0"	Fourth Floor Area 2, Fuel Handling Area	27432, 27838, 28027

Table 6-7

Selected Nodal Points on Floor-Slab Panels on Designated Floor Elevations of Auxiliary Building for Generation of Vertical ISRS

Floor Elevation	Floor Slab Identification	SASSI Model Node Numbers
55'-0"	Basemat	9501,9579,9604,9709, 9743,9861,9905
68'-0"	Intermediate Floor, Upper Basemat, Area 2&4	11454,11486,11430, 11448,11509,11520, 11527,11791,11804, 11945,11947,11949, 11970,11987,11992
78'-0"	Upper Basemat	12325,12364,12398,12435,12448,12473, 12477,12497,12524,12529,12547,12608, 12687,12699,12713,12732,12746,12773, 12797,12817,12868,12885,12894,12898, 12929,12933,12955,12961,13014,13030, 13116,13122,13128,13156,13163,13175, 13184,13186,13203,13232,13244
100'-0"	Ground Floor	18163,18183,18187,18218,18264,18268,18302,18325,18378,18431,18460, 18470,18557,18582,18603,18608,18638,18676,18680,18700,18702,18717, 18750,18766,18796,18827,18852,18871,18879,18913,18914,18944,18954, 18974,18987,19024,19035,19039,19049,19051,19056,19062,19066,19068, 19076,19095,19105,19111,19120,19133
120'-0"	Second Floor	22462,22483,22496,22518,22545,22559,22572,22585,22659,22669,22737, 22764,22769,22776,22835,22881,22919,22928,22936,22949,22968,22995, 23024,23036,23063,23076,23080,23091,23119,23148,23180,23194,23237, 23265
137'-6"	Third Floor	25423,25434,25523,25577,25583,25614,25616,25633,25650,25687,25715, 25765,25783,25791,25794,25809,25815,25821,25830,25841,25913,25936, 25961,26010,26065,26082,26086,26089,26122,26125,26130,26135,26141, 26168,26169
156'-0"	Fourth Floor	27317,27325,27343,27423,27488,27516,27551,27582,27620,27656,27693, 27750,27760,27779,27785,27798,27802,27813,27822,27833,27880,27892, 27895,27896,27904,27910,27926,27968,27974,27980,28020,28023,28036, 28088,28108,28119
174-'0"	Fifth Floor	29069,29086,29099,29137,29148,29235,29247,29250,29255,29294,29328, 29363,29393,29411,29426,29494,29502,29541,29563,2957129576,29580, 29608
195'-0"	Roof at Area 1 & 3 Roof at Main Control Room	30367,30393,30416,30417,30550,30587,30597,30604,30621,30631,30651, 30667,30771,30860,30597,30604
216'-9"	Roof at Area 2	31620,31647,31701
213'-0"	Penthouse Roof at Area 1 & 3	31294,31306
213'-6"	Fuel Handling Area Roof	31477,31527
195'-0"	Roof at Area 2	30462,30751
100'-0"	Ground Floor, Fuel Handling Area, Area 2	18676,18700,18913
114'-0"	Spent Fuel Pool Bottom Slab, Area 2	21699,21731,21738

Table 6-8

Comparison of Story Shear Forces between THA and RSA Methods

Structure	Elevation (ft)	Story Shear Force (kips)						Difference Ratio (b/a)		
		THA Method (a)			RSA Method (b)					
		Fx	Fy	Fz	Fx	Fy	Fz	Fx	Fy	Fz
CS	307.50	11954	12241	11689	11901	12855	15346	1.00	1.05	1.31
	281.00	23050	23652	21865	23785	25697	29413	1.03	1.09	1.35
	254.50	30470	31470	28875	33974	36713	41720	1.12	1.17	1.44
	241.00	34593	35860	32942	38645	41774	47816	1.12	1.16	1.45
	220.00	45434	47225	41715	47353	51106	59609	1.04	1.08	1.43
	200.00	51174	53268	48421	52462	56667	66986	1.03	1.06	1.38
	178.00	55865	58228	54609	57699	62448	74805	1.03	1.07	1.37
	156.00	59594	62051	59996	61757	66790	80814	1.04	1.08	1.35
	136.00	61628	65537	63572	66018	71405	87120	1.07	1.09	1.37
	125.00	62546	67161	64893	67211	72710	88878	1.07	1.08	1.37
	114.00	64974	70071	67263	68705	74329	91092	1.06	1.06	1.35
	100.00	66601	72022	69076	69685	75374	92542	1.05	1.05	1.34
	78.00	67954	73819	70984	70311	76021	93534	1.03	1.03	1.32
IS	191.00	241	264	139	533	574	331	2.21	2.17	2.38
	156.00	7466	9499	5140	12507	10218	13281	1.68	1.08	2.58
	136.50	15585	12707	12917	19687	15713	19331	1.26	1.24	1.50
	130.00	18693	14400	16558	23305	19028	23162	1.25	1.32	1.40
	114.00	22481	16947	21329	30378	25947	30014	1.35	1.53	1.41
	100.00	25806	20022	26346	36058	30668	34014	1.40	1.53	1.29
	78.00	34098	31075	39020	47110	39472	41051	1.38	1.27	1.05
	66.00	34529	31630	39613	47434	39816	41728	1.37	1.26	1.05

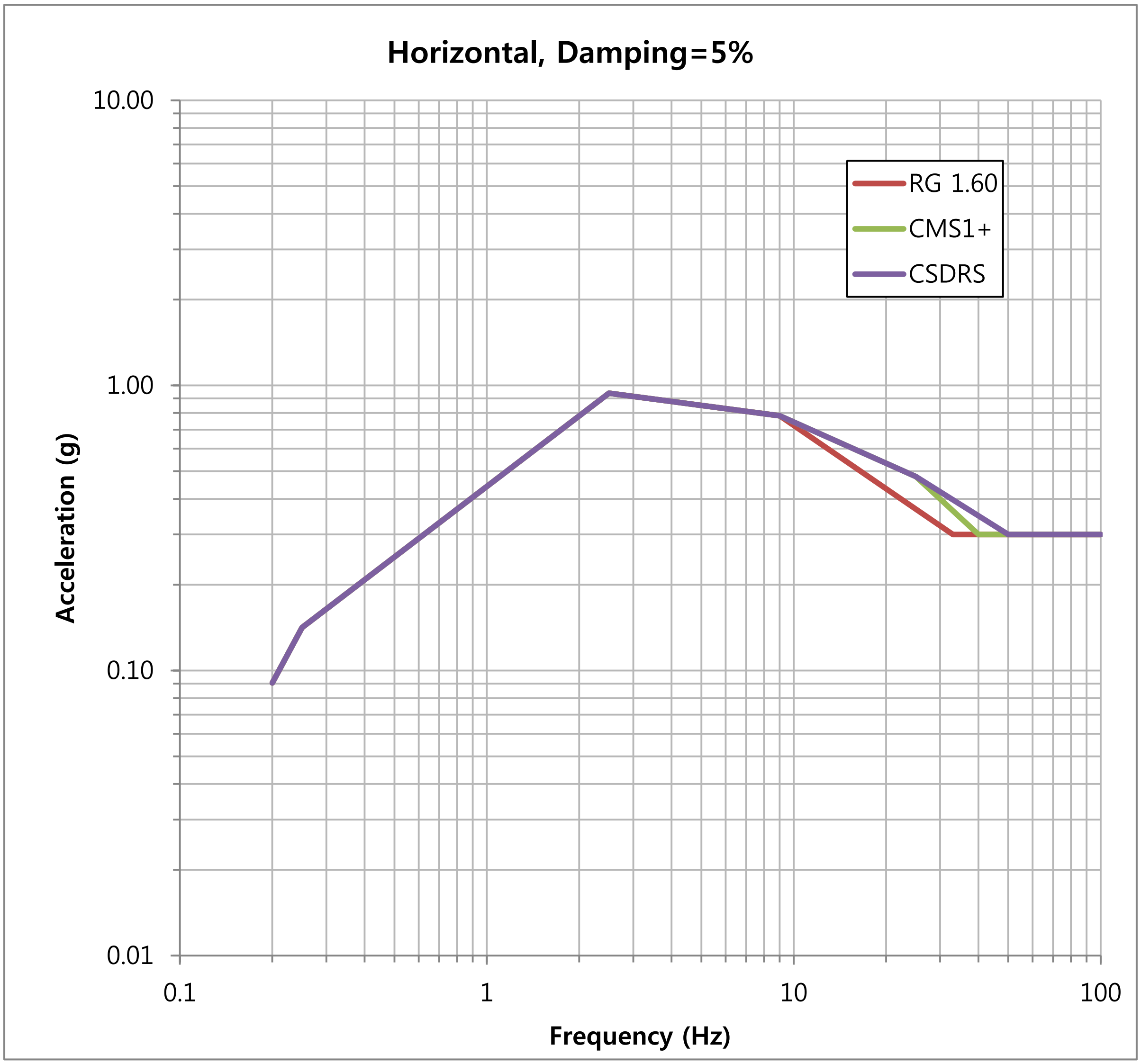

Figure 2-1 Comparison of 5%-Damped APR1400 CSDRS, CMS1+ DRS, and RG 1.60 DRS - Horizontal

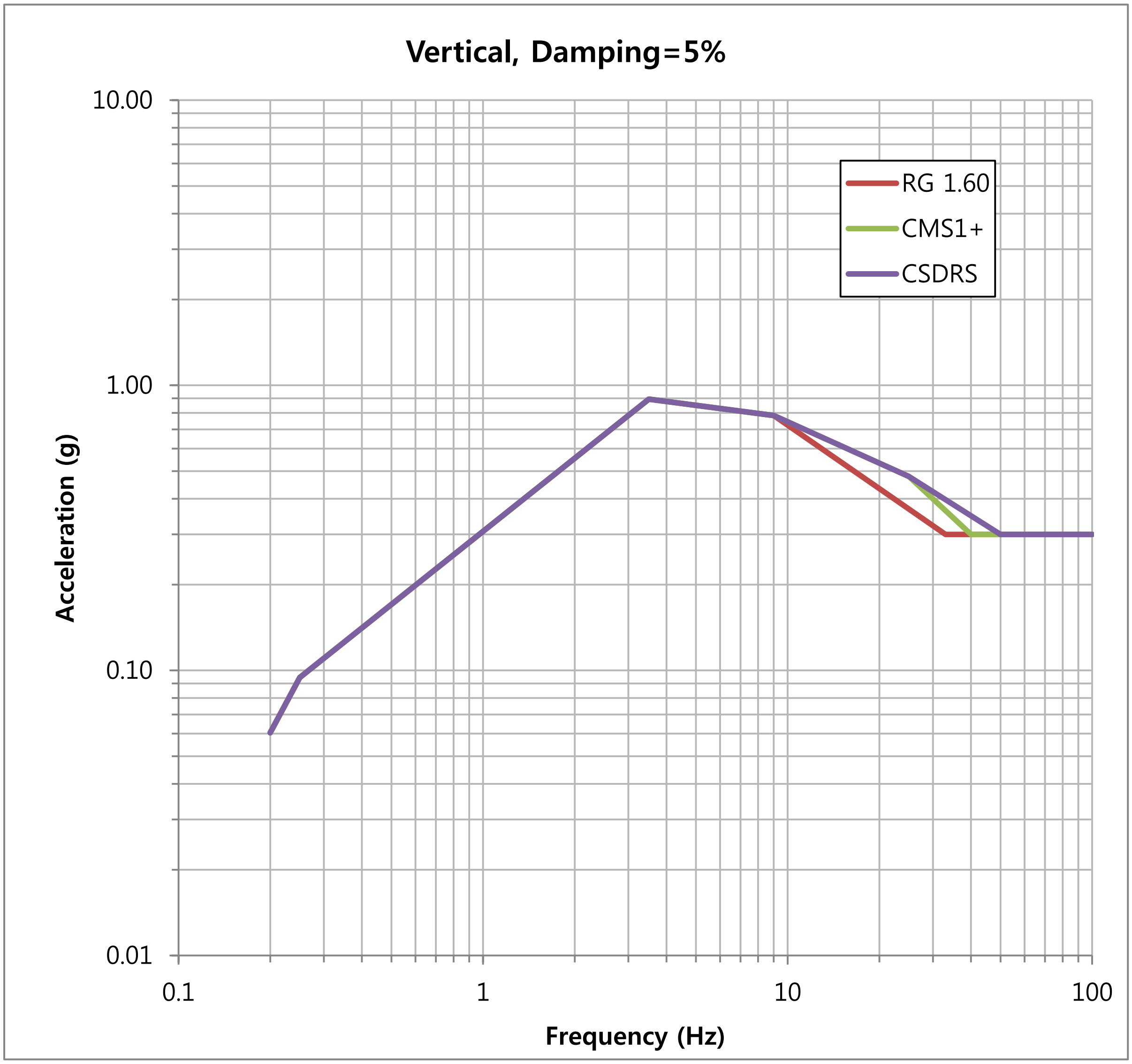

Figure 2-2 Comparison of 5%-Damped APR1400 CSDRS, CMS1+ DRS, and RG 1.60 DRS - Vertical

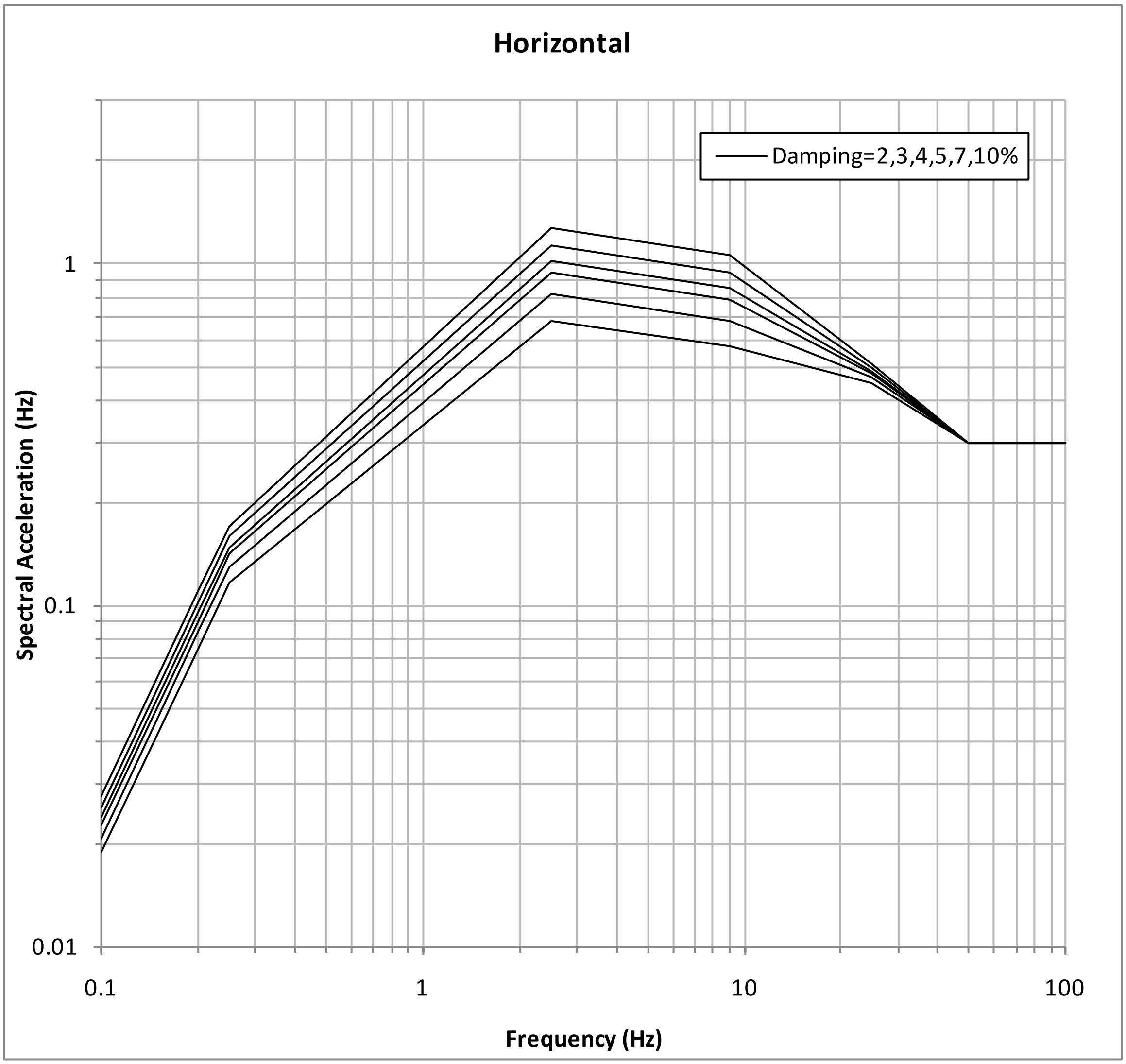

Figure 2-3 APR1400 Certified Seismic Design Response Spectra – Horizontal

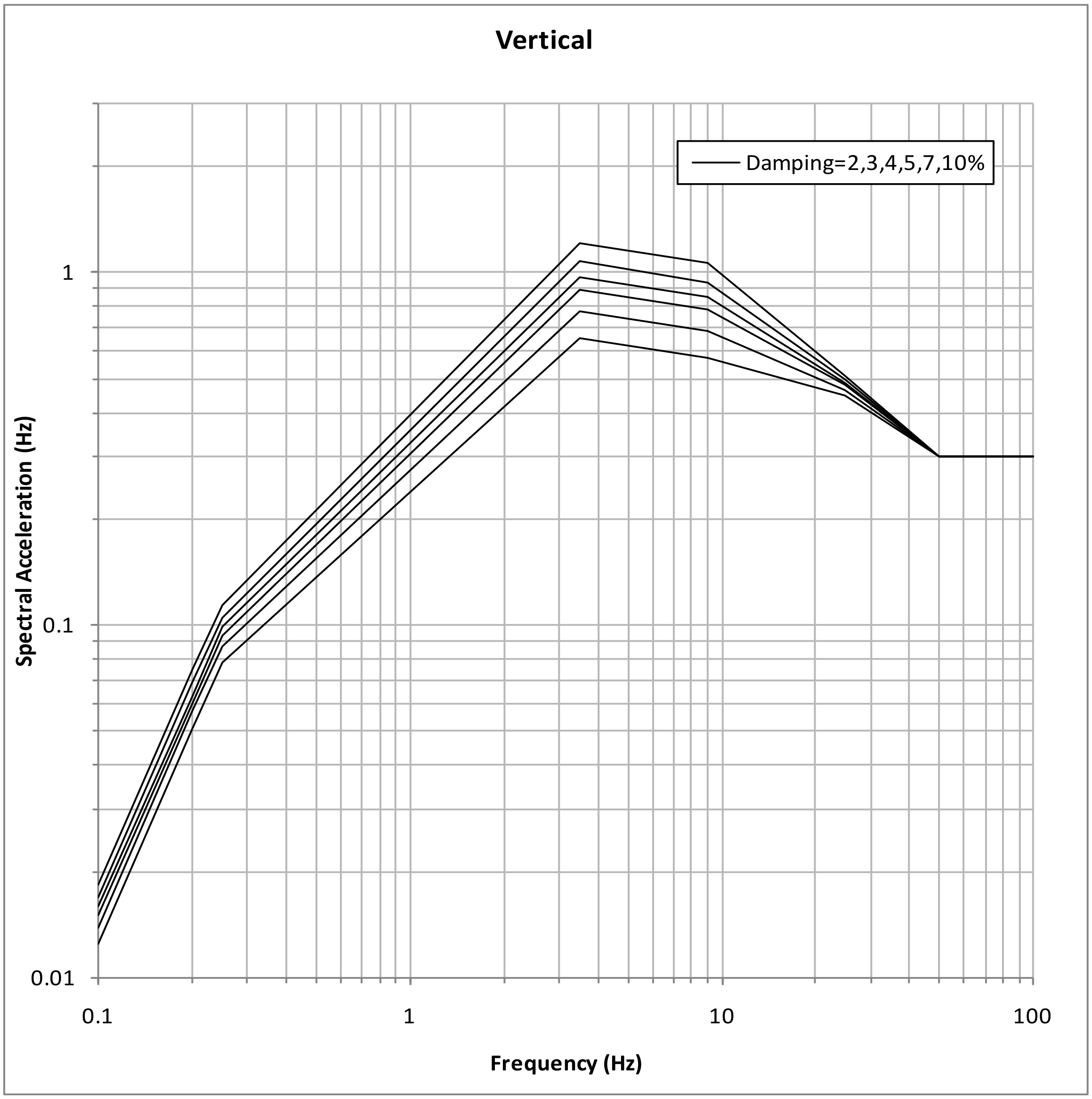

Figure 2-4 APR1400 Certified Seismic Design Response Spectra – Vertical

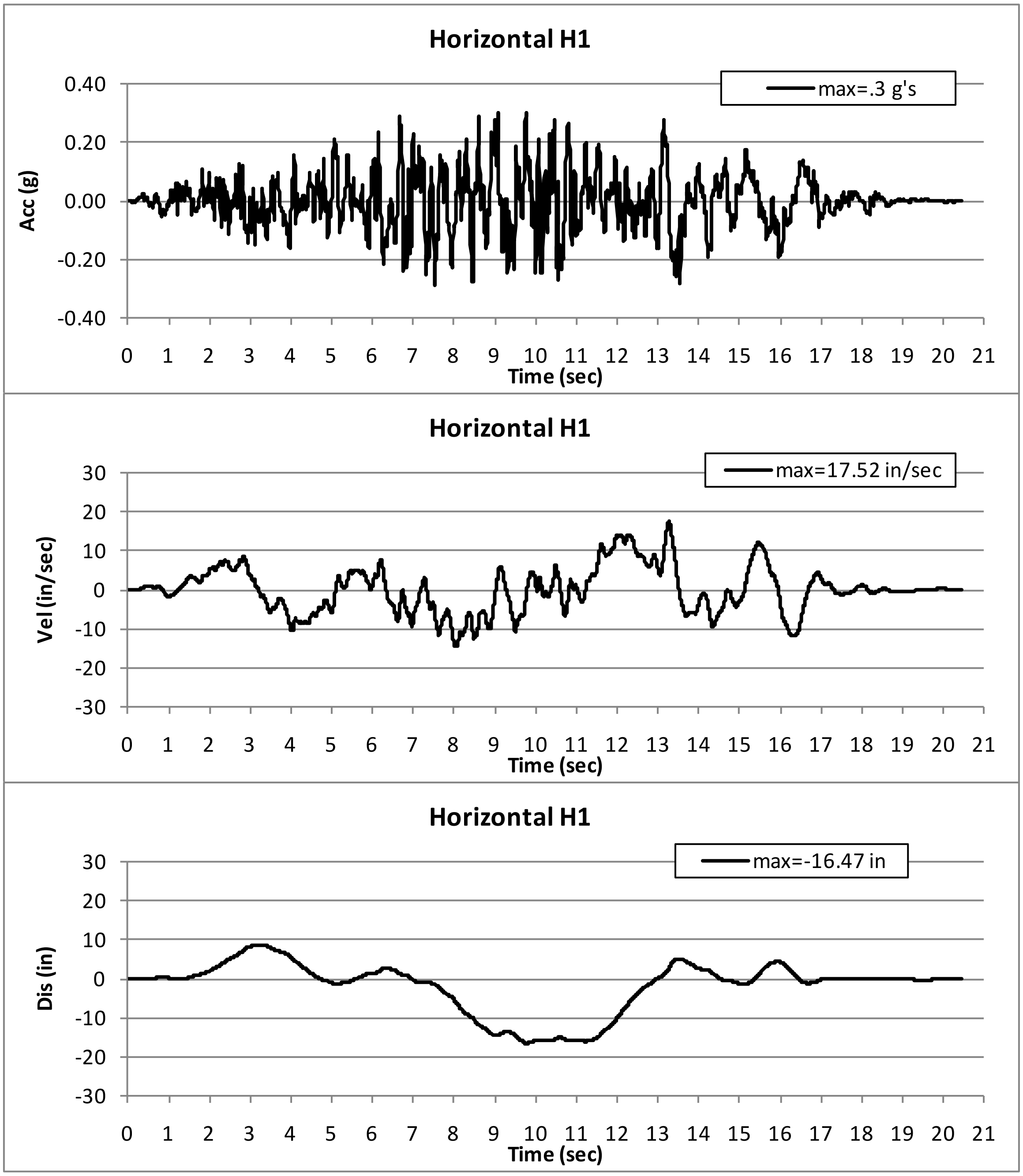

Figure 2-5 Generated CSDRS–Compatible Design Acceleration, Velocity, and Displacement Time Histories – Horizontal H1 Component

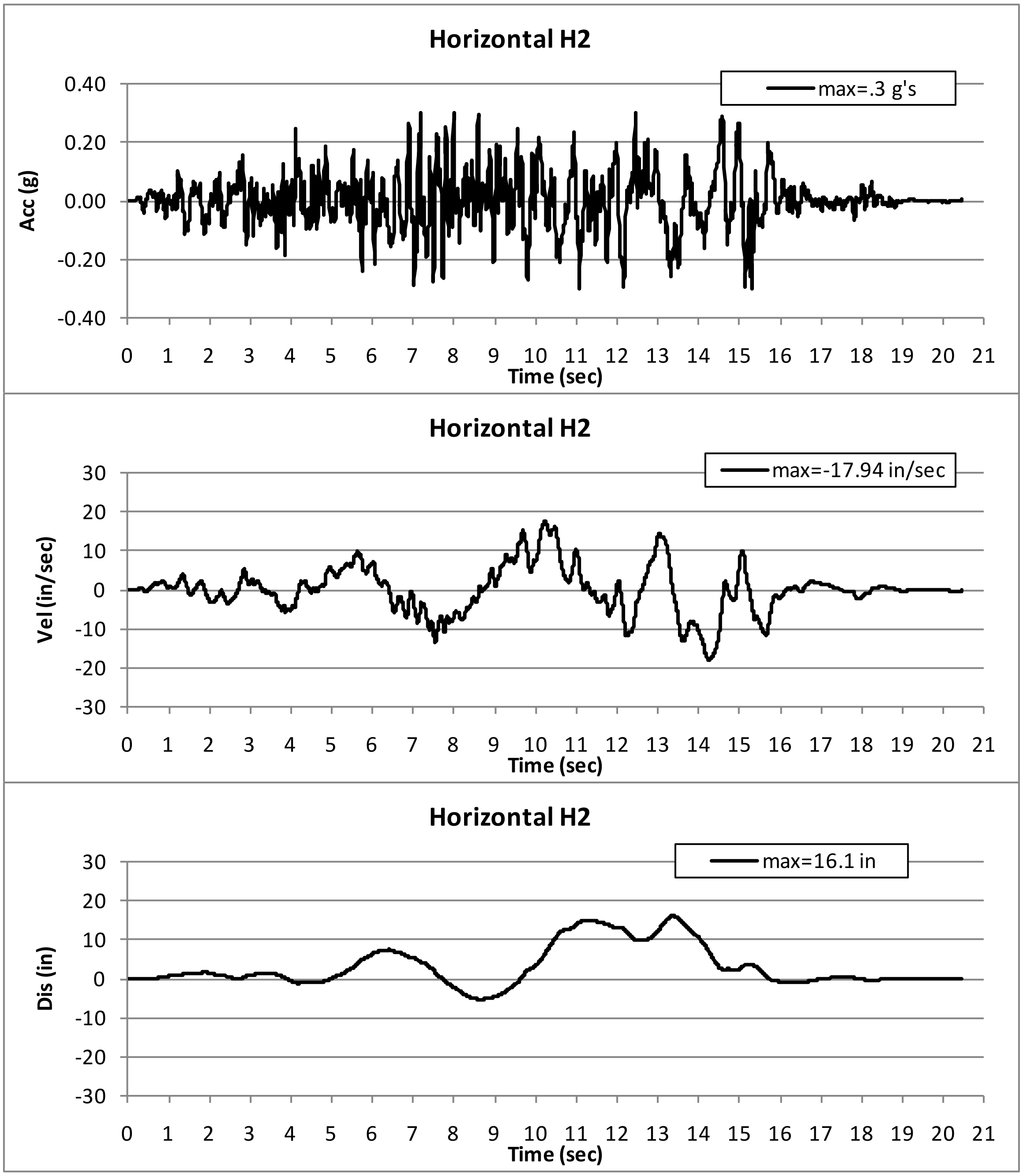

Figure 2-6 Generated CSDRS–Compatible Design Acceleration, Velocity, and Displacement Time Histories – Horizontal H2 Component

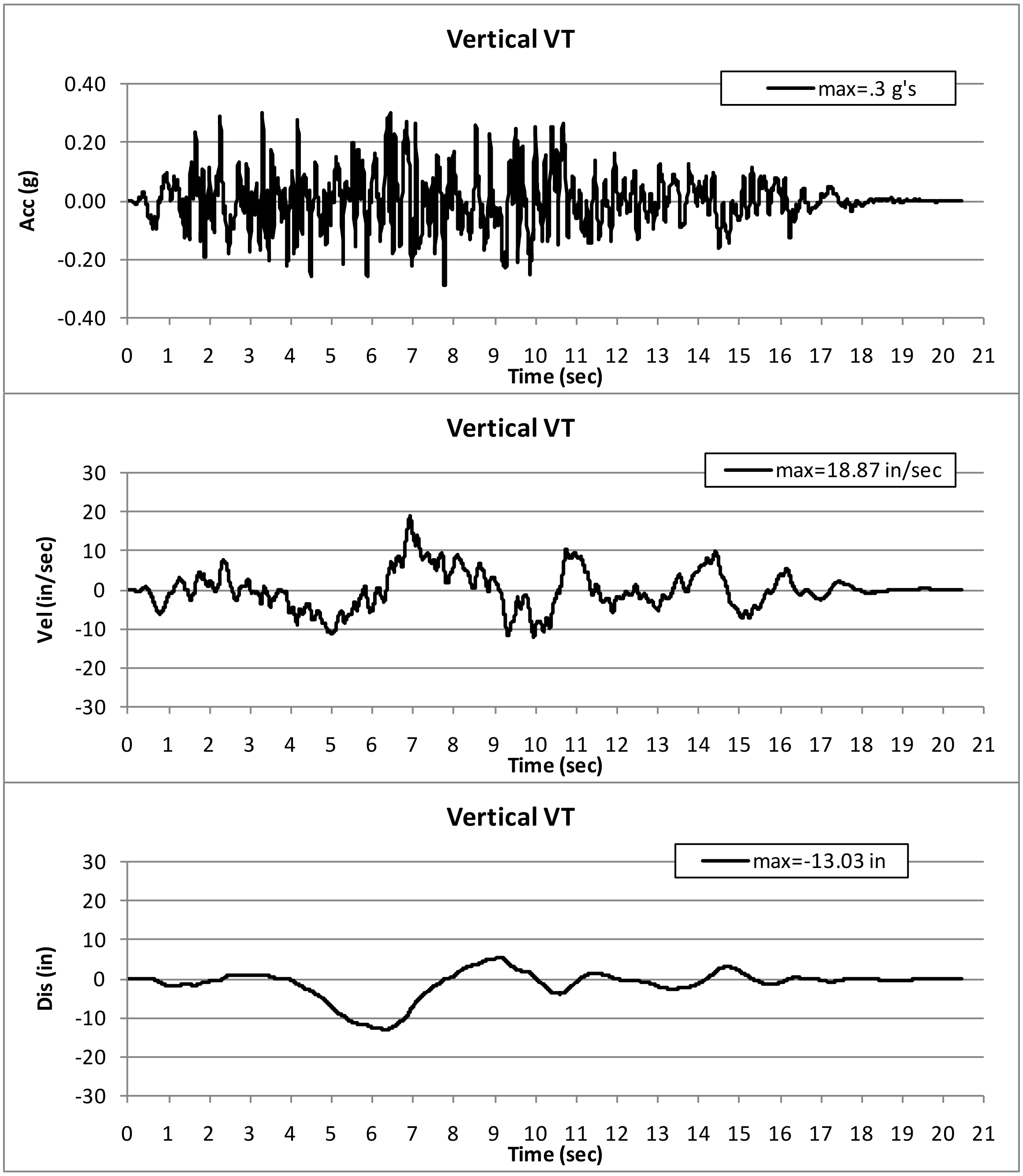

Figure 2-7 Generated CSDRS–Compatible Design Acceleration, Velocity, and Displacement Time Histories – Vertical VT Component

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Figure 3-1 Isometric View of Containment Structure

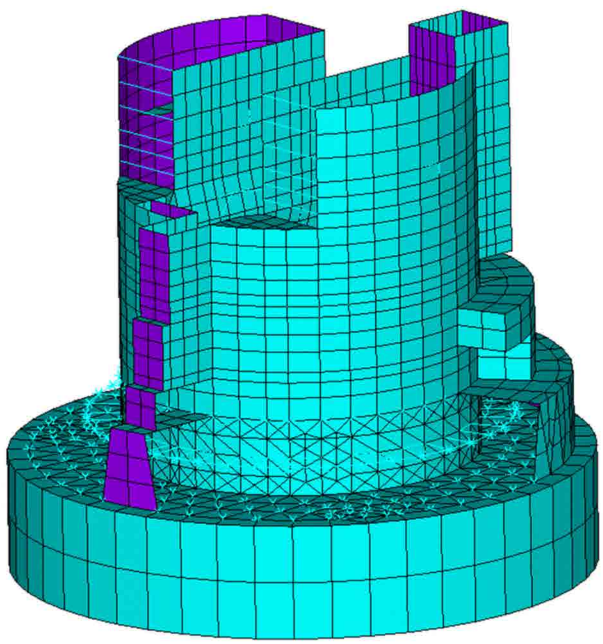

Figure 3-2 Isometric View of Internal Structure

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Figure 3-3 Reactor Coolant System Overview

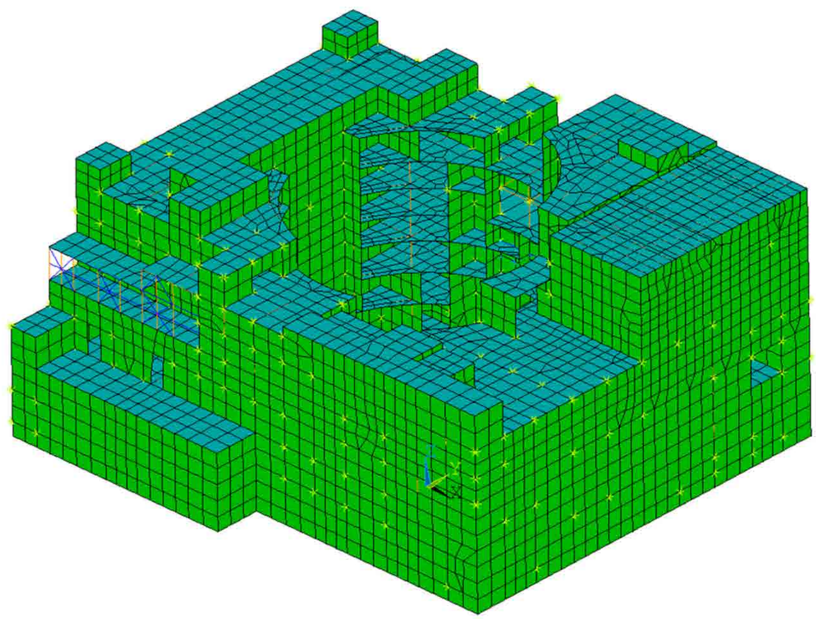

Figure 3-4 Isometric View of Auxiliary Building

APR1400 - Generic Soil Profiles

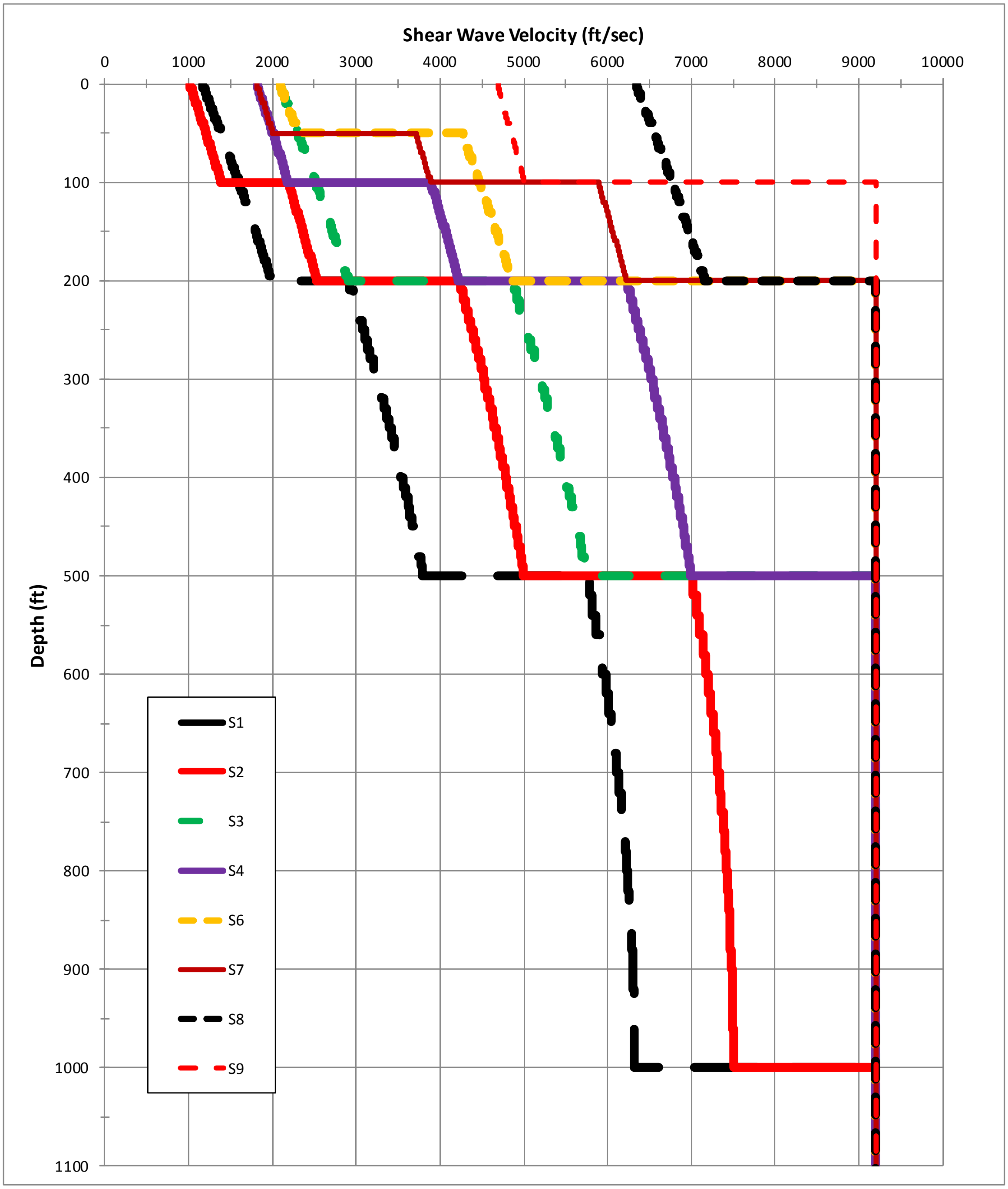

Figure 4-1 Low-Strain Shear Wave Velocity Profiles vs. Depth for Eight Generic Site Profiles Considered for APR1400

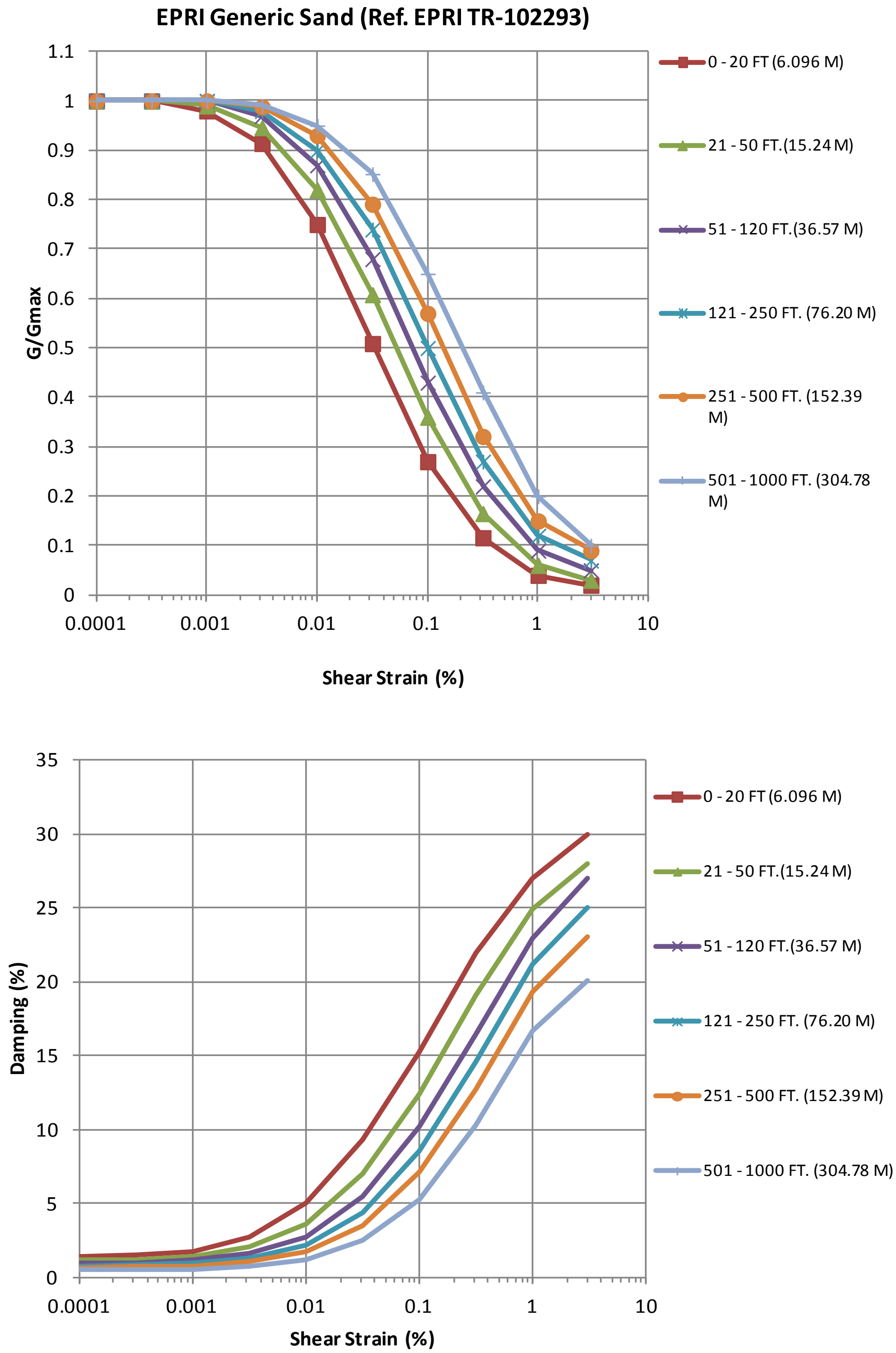

Figure 4-2 Shear-Modulus-Degradation and Damping-Value Variation Curves for Sand Considered for APR1400

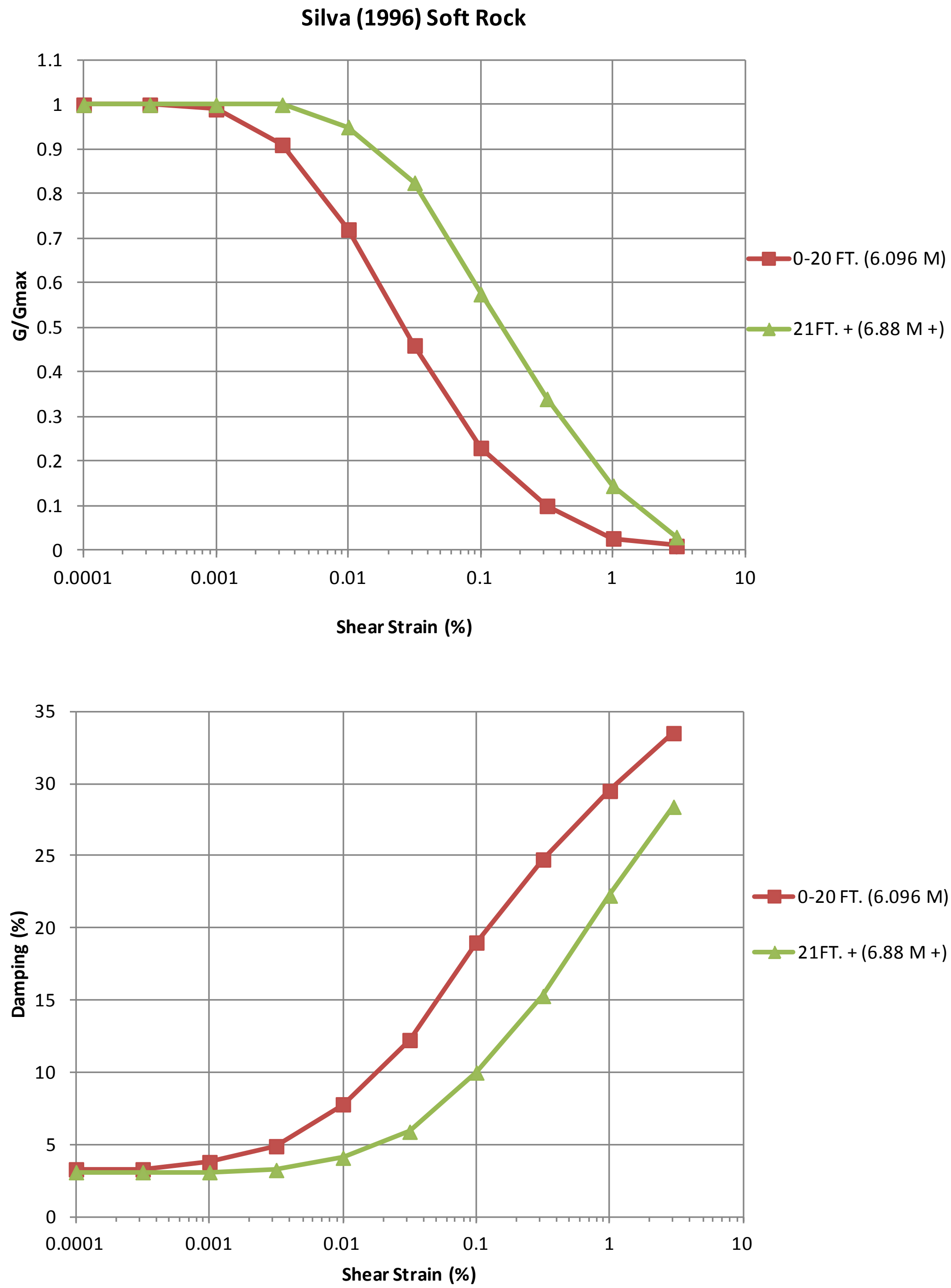

Figure 4-3 Shear-Modulus-Degradation and Damping-Value Variation Curves for Soft Rock Considered for APR1400

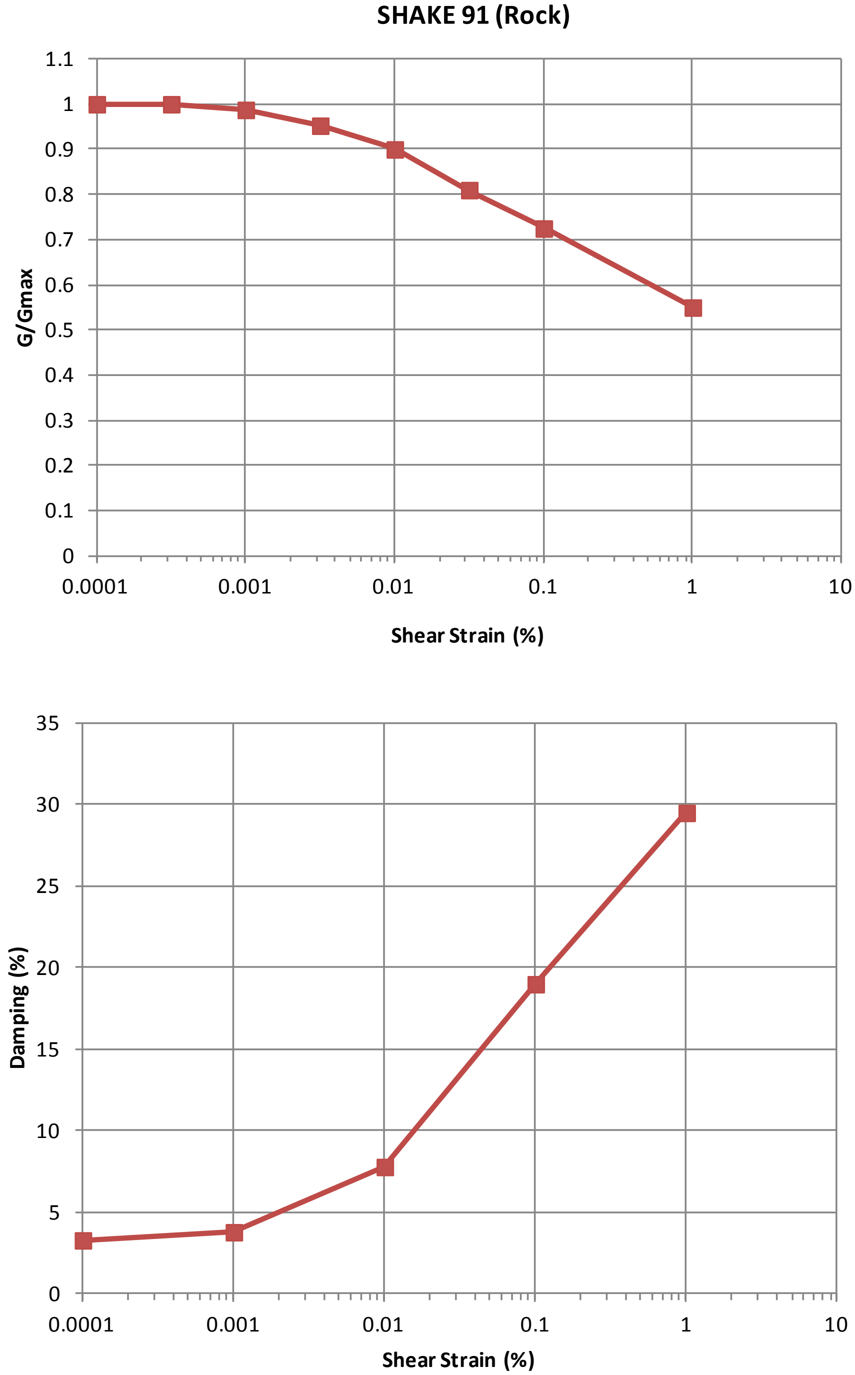

Figure 4-4 Shear-Modulus-Degradation and Damping-Value Variation Curves for Rock Considered for APR1400

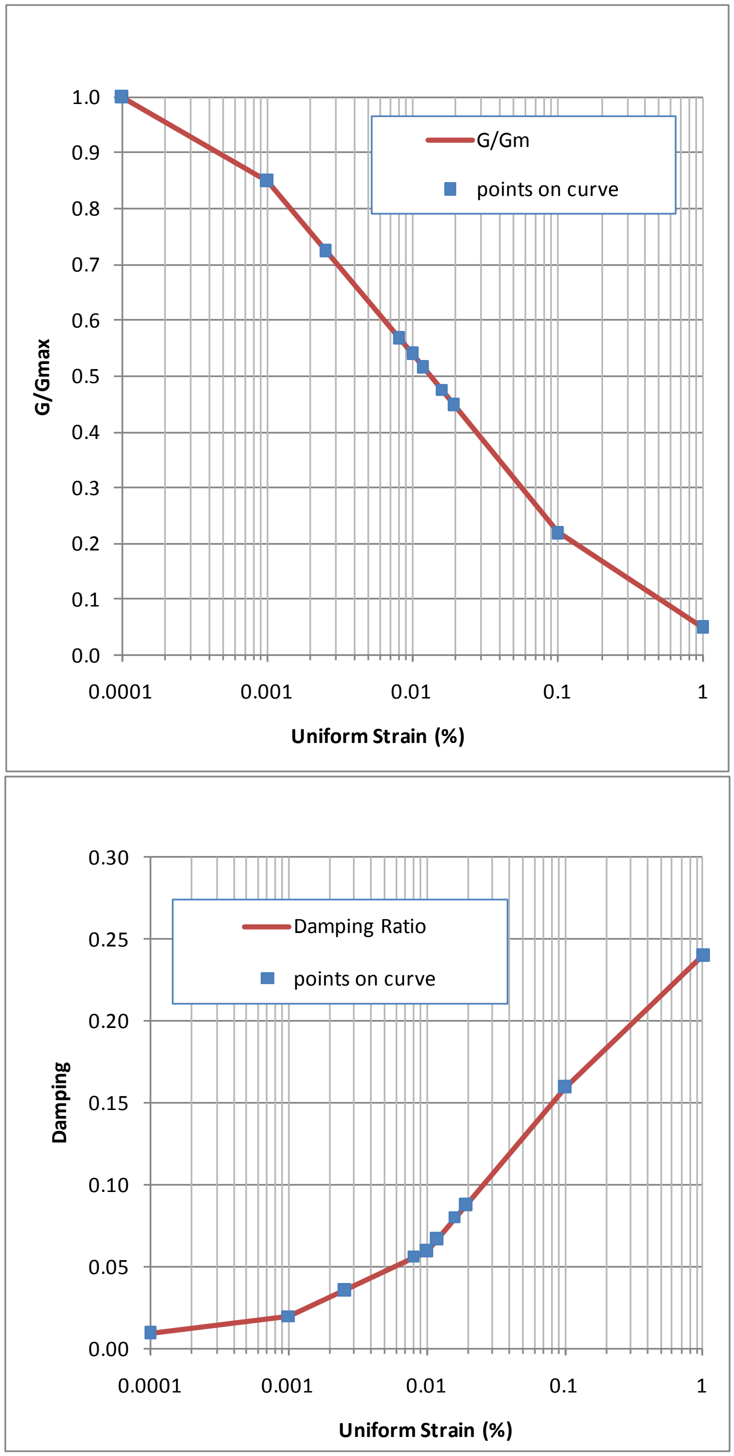

Figure 4-5 Shear-Modulus-Degradation and Damping-Value Variation Curves for Structural Fill Granular Considered for APR1400

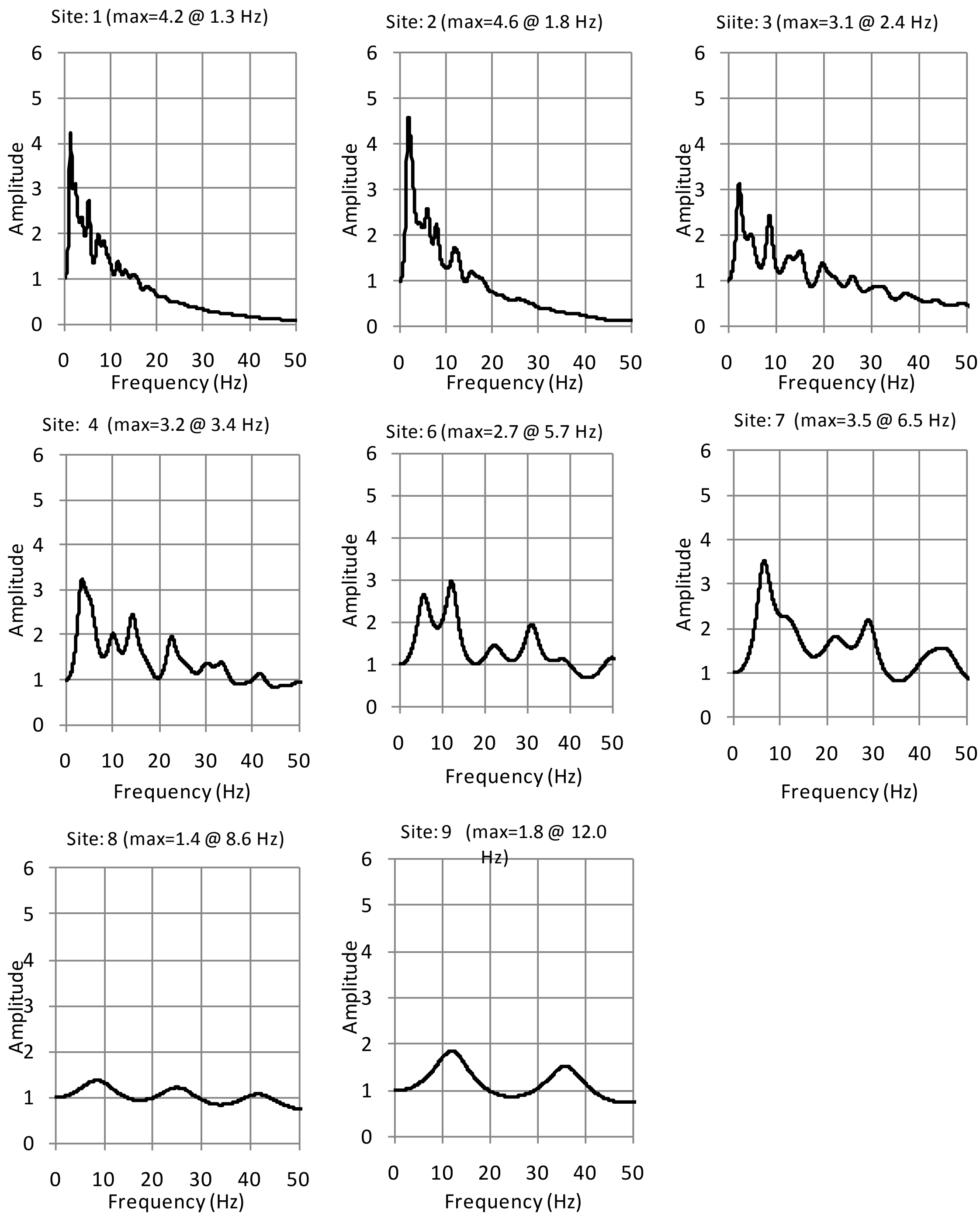

Figure 4-6 Horizontal Site Response Transfer Functions of Surface Motion Relative to Outcrop Motion on top of Halfspace for Eight Generic Site Profiles Considered for APR1400

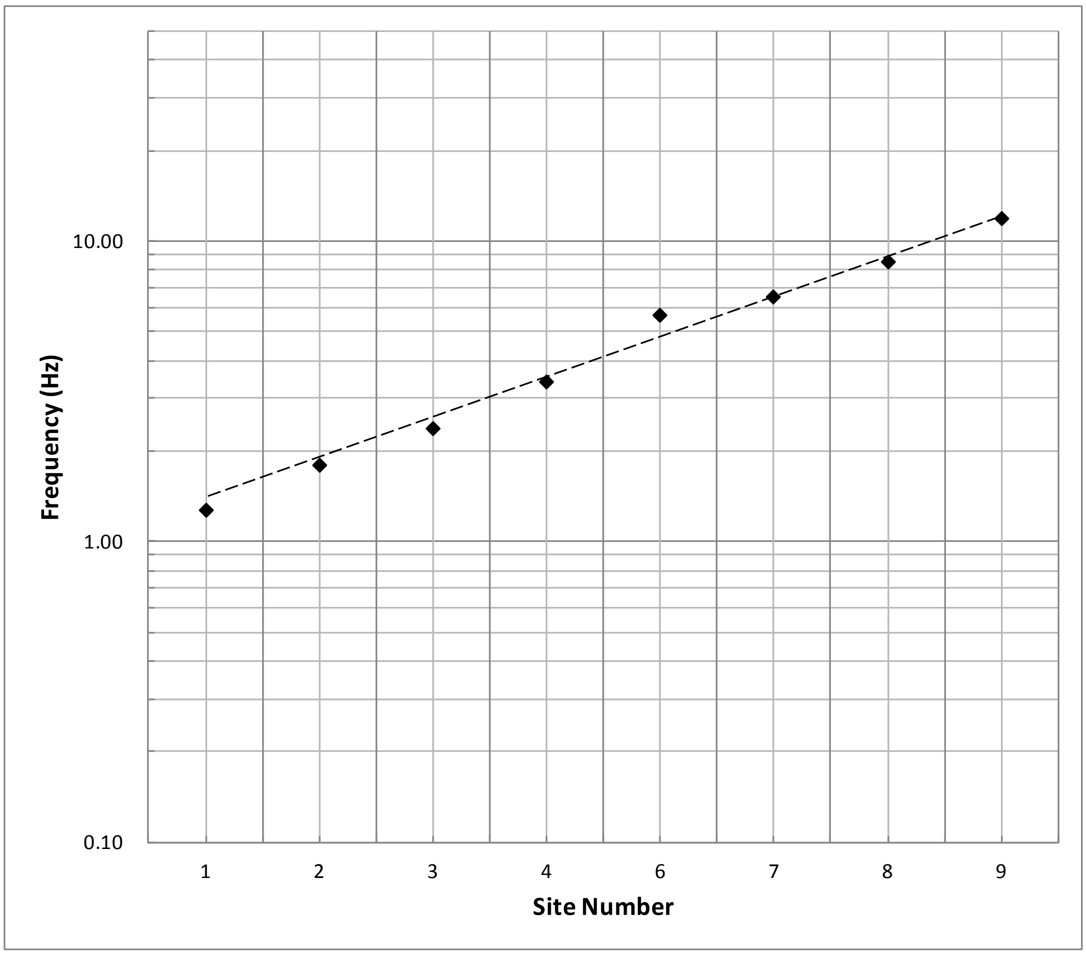

Figure 4-7 Plot of Fundamental Horizontal Site Frequencies vs. Generic Site Profile Numbers

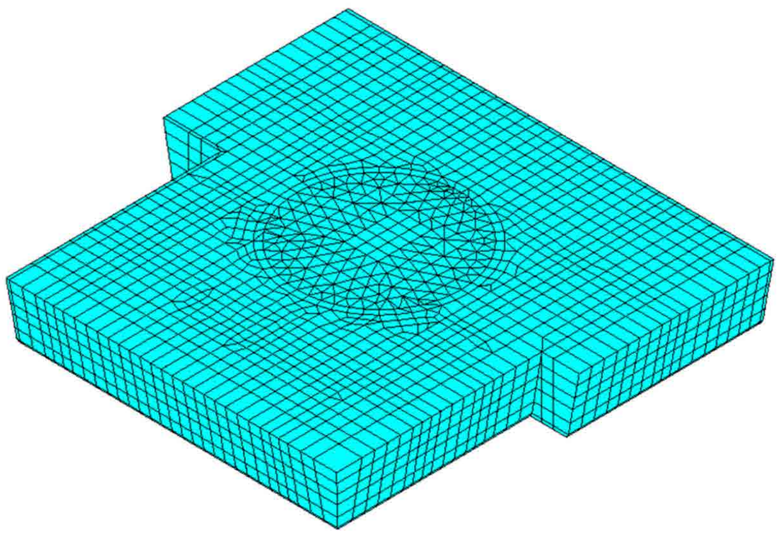

Figure 5-1 Configuration of SASSI FEM of Excavated Soil Volume of APR1400 NI Structure Foundation

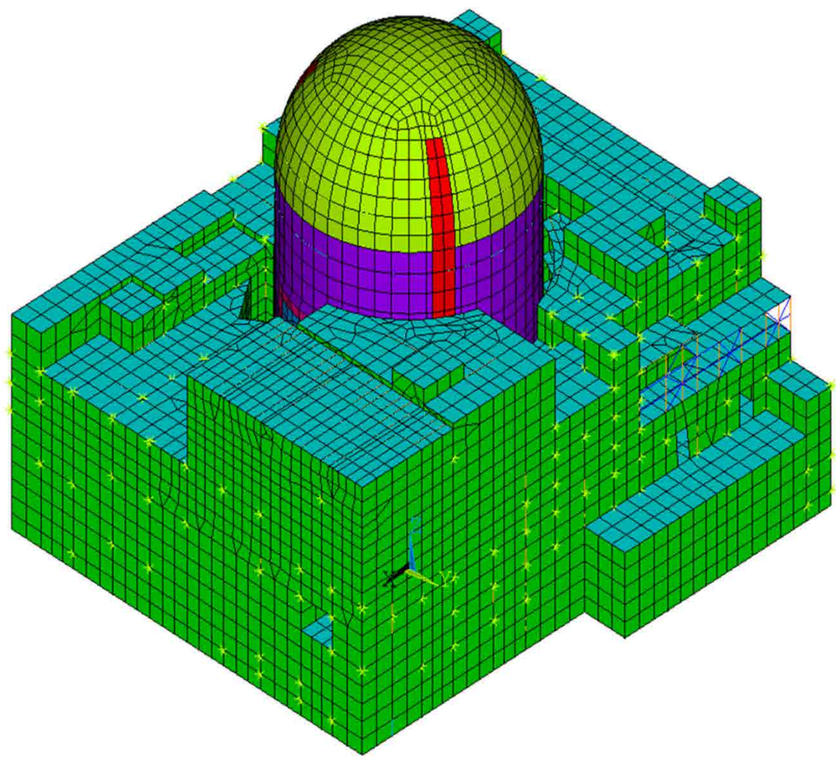

Figure 5-2 Configuration of SASSI FEM of APR1400 NI Structures

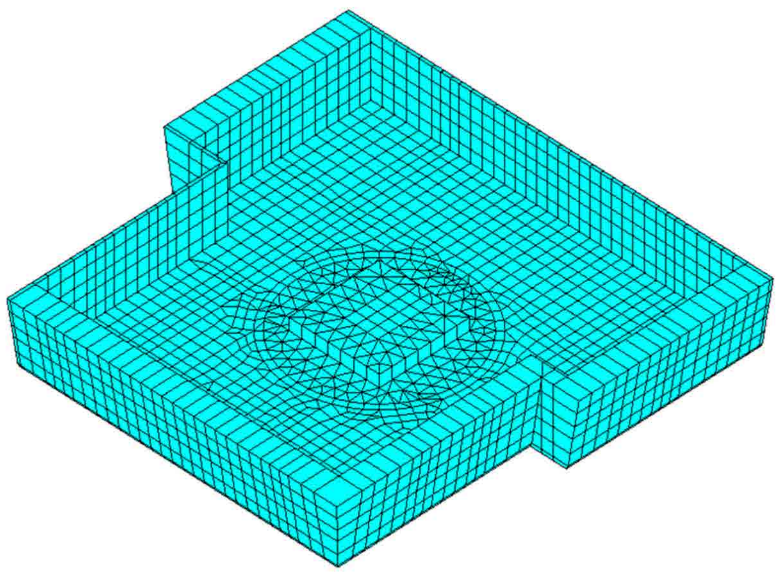

Figure 5-3 Configuration of SASSI FEM of the SFG and Lean Concrete Backfill of APR1400 NI Structures

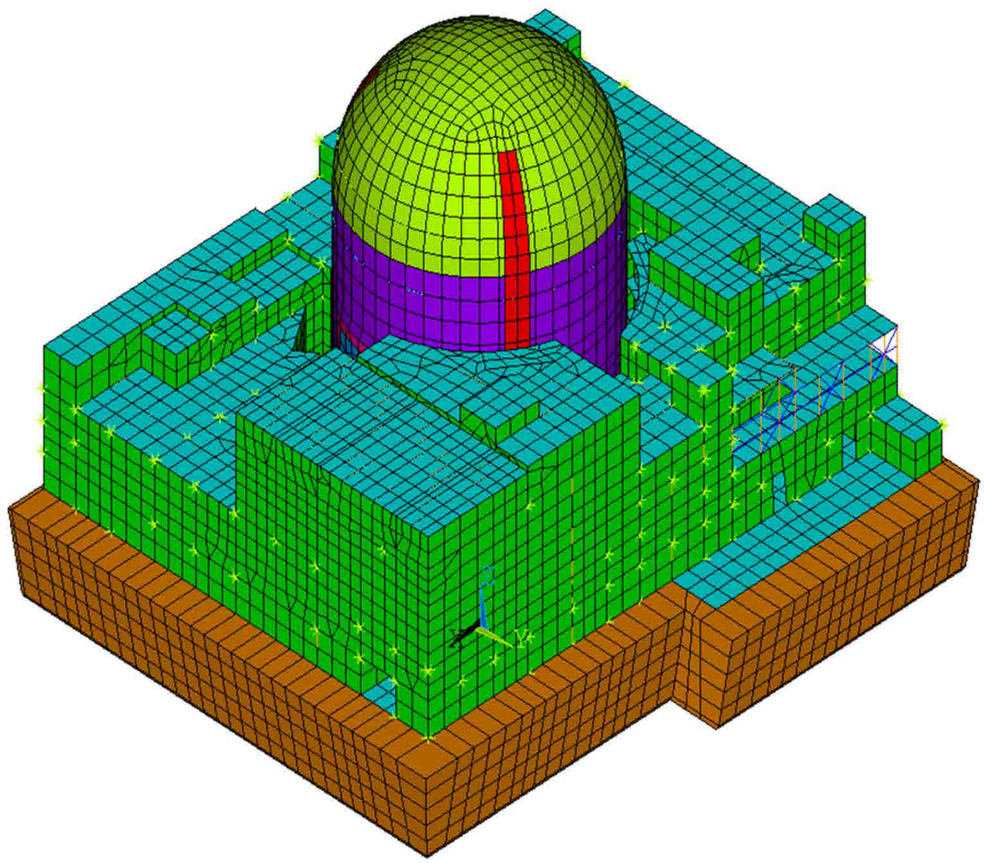

Figure 5-4 Configuration of the Complete SASSI FEM of SSI System of APR1400 NI Structures

APPENDIX A

DYNAMIC PROPERTIES OF FREE-FIELD SITE PROFILES AND BACKFILL

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Table A-1 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S01

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity V_s (fps)	Compression Wave Velocity V_p [1)] (fps)	Poisson's Ratio
1	Sand	5	0	5	0.125	1,173	2,873	0.40
2		5	5	10	0.125	1,196	2,929	0.40
3		5	10	15	0.125	1,219	2,985	0.40
4		5	15	20	0.125	1,241	3,040	0.40
5		5	20	25	0.125	1,264	3,095	0.40
6		5	25	30	0.125	1,286	3,150	0.40
7		5	30	35	0.125	1,308	3,204	0.40
8		5	35	40	0.125	1,330	3,259	0.40
9		5	40	45	0.125	1,352	3,313	0.40
10		5	45	50	0.125	1,374	3,366	0.40
11		5	50	55	0.125	1,396	3,420	0.40
12		5	55	60	0.125	1,418	3,473	0.40
13		5	60	65	0.125	1,439	3,526	0.40
14		5	65	70	0.125	1,461	3,578	0.40
15		5	70	75	0.125	1,482	3,630	0.40
16		5	75	80	0.125	1,503	3,682	0.40
17		5	80	85	0.125	1,524	3,734	0.40
18		5	85	90	0.125	1,545	3,785	0.40
19		5	90	95	0.125	1,566	3,837	0.40
20		5	95	100	0.125	1,587	3,887	0.40
21		5	100	105	0.125	1,608	3,938	0.40
22		5	105	110	0.125	1,628	3,988	0.40
23		5	110	115	0.125	1,649	4,038	0.40
24		5	115	120	0.125	1,669	4,088	0.40
25		5	120	125	0.125	1,689	4,137	0.40
26		5	125	130	0.125	1,709	4,187	0.40
27		5	130	135	0.125	1,729	4,235	0.40
28		5	135	140	0.125	1,749	4,284	0.40
29		5	140	145	0.125	1,769	4,332	0.40
30		5	145	150	0.125	1,788	4,380	0.40

Table A-1 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
31	Sand	5	150	155	0.125	1,808	4,428	0.40
32		5	155	160	0.125	1,827	4,476	0.40
33		5	160	165	0.125	1,846	4,523	0.40
34		5	165	170	0.125	1,866	4,570	0.40
35		5	170	175	0.125	1,885	4,616	0.40
36		5	175	180	0.125	1,904	4,663	0.40
37		5	180	185	0.125	1,922	4,709	0.40
38		5	185	190	0.125	1,941	4,754	0.40
39		5	190	195	0.125	1,960	4,800	0.40
40		5	195	200	0.125	1,978	4,845	0.40
41		10	200	210	0.130	2,926	6,650	0.38
42		10	210	220	0.130	2,962	6,732	0.38
43		10	220	230	0.130	2,998	6,813	0.38
44		10	230	240	0.130	3,033	6,894	0.38
45		10	240	250	0.130	3,068	6,973	0.38
46		10	250	260	0.130	3,102	7,051	0.38
47		10	260	270	0.130	3,136	7,128	0.38
48		10	270	280	0.130	3,169	7,204	0.38
49		10	280	290	0.130	3,202	7,279	0.38
50		10	290	300	0.130	3,235	7,353	0.38
51		10	300	310	0.130	3,267	7,426	0.38
52		10	310	320	0.130	3,299	7,498	0.38
53		10	320	330	0.130	3,330	7,569	0.38
54		10	330	340	0.130	3,361	7,639	0.38
55		10	340	350	0.130	3,391	7,707	0.38
56		10	350	360	0.130	3,421	7,775	0.38
57		10	360	370	0.130	3,450	7,842	0.38
58		10	370	380	0.130	3,479	7,907	0.38
59		10	380	390	0.130	3,507	7,972	0.38
60		10	390	400	0.130	3,535	8,035	0.38

Table A-1 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp 1) (fps)	Poisson's Ratio
61	Sand	10	400	410	0.130	3,563	8,098	0.38
62		10	410	420	0.130	3,590	8,159	0.38
63		10	420	430	0.130	3,616	8,220	0.38
64		10	430	440	0.130	3,642	8,279	0.38
65		10	440	450	0.130	3,668	8,337	0.38
66		10	450	460	0.130	3,693	8,395	0.38
67		10	460	470	0.130	3,718	8,451	0.38
68		10	470	480	0.130	3,742	8,506	0.38
69		10	480	490	0.130	3,766	8,560	0.38
70		10	490	500	0.130	3,789	8,613	0.38
71	Soft Rock	20	500	520	0.135	5,778	12,029	0.35
72		20	520	540	0.135	5,822	12,120	0.35
73		20	540	560	0.135	5,864	12,208	0.35
74		20	560	580	0.135	5,905	12,292	0.35
75		20	580	600	0.135	5,943	12,372	0.35
76		20	600	620	0.135	5,980	12,448	0.35
77		20	620	640	0.135	6,014	12,520	0.35
78		20	640	660	0.135	6,047	12,588	0.35
79		20	660	680	0.135	6,078	12,653	0.35
80		20	680	700	0.135	6,108	12,714	0.35
81		20	700	720	0.135	6,135	12,771	0.35
82		20	720	740	0.135	6,160	12,824	0.35
83		20	740	760	0.135	6,184	12,873	0.35
84		20	760	780	0.135	6,206	12,919	0.35
85		20	780	800	0.135	6,226	12,960	0.35
86		20	800	820	0.135	6,244	12,998	0.35
87		20	820	840	0.135	6,261	13,032	0.35
88		20	840	860	0.135	6,275	13,062	0.35
89		20	860	880	0.135	6,288	13,089	0.35
90		20	880	900	0.135	6,298	13,111	0.35

Table A-1 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp (fps)	Poisson's Ratio
91	Soft Rock	20	900	920	0.135	6,307	13,130	0.35
92		20	920	940	0.135	6,315	13,145	0.35
93		20	940	960	0.135	6,320	13,156	0.35
94		20	960	980	0.135	6,323	13,163	0.35
95		20	980	1,000	0.135	6,325	13,166	0.35
96	Rock		1,000	0	0.155	9,200	18,264	0.33

Note

1) The values of compression wave velocity, Vp, are for unsaturated soil.
   If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-2 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S02

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp1) (fps)	Poisson's Ratio
1	Sand	5	0	5	0.125	1,020	2,498	0.40
2		5	5	10	0.125	1,040	2,547	0.40
3		5	10	15	0.125	1,060	2,595	0.40
4		5	15	20	0.125	1,079	2,644	0.40
5		5	20	25	0.125	1,099	2,691	0.40
6		5	25	30	0.125	1,118	2,739	0.40
7		5	30	35	0.125	1,138	2,786	0.40
8		5	35	40	0.125	1,157	2,834	0.40
9		5	40	45	0.125	1,176	2,881	0.40
10		5	45	50	0.125	1,195	2,927	0.40
11		5	50	55	0.125	1,214	2,974	0.40
12		5	55	60	0.125	1,233	3,020	0.40
13		5	60	65	0.125	1,252	3,066	0.40
14		5	65	70	0.125	1,270	3,111	0.40
15		5	70	75	0.125	1,289	3,157	0.40
16		5	75	80	0.125	1,307	3,202	0.40
17		5	80	85	0.125	1,326	3,247	0.40
18		5	85	90	0.125	1,344	3,292	0.40
19		5	90	95	0.125	1,362	3,336	0.40
20		5	95	100	0.125	1,380	3,380	0.40
21		5	100	105	0.130	2,198	4,996	0.38
22		5	105	110	0.130	2,216	5,037	0.38
23		5	110	115	0.130	2,234	5,077	0.38
24		5	115	120	0.130	2,251	5,117	0.38
25		5	120	125	0.130	2,269	5,157	0.38
26		5	125	130	0.130	2,286	5,197	0.38
27		5	130	135	0.130	2,304	5,236	0.38
28		5	135	140	0.130	2,321	5,275	0.38
29		5	140	145	0.130	2,338	5,314	0.38
30		5	145	150	0.130	2,355	5,353	0.38

Table A-2 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
31	Sand	5	150	155	0.130	2,372	5,392	0.38
32		5	155	160	0.130	2,389	5,430	0.38
33		5	160	165	0.130	2,406	5,468	0.38
34		5	165	170	0.130	2,422	5,506	0.38
35		5	170	175	0.130	2,439	5,543	0.38
36		5	175	180	0.130	2,455	5,581	0.38
37		5	180	185	0.130	2,472	5,618	0.38
38		5	185	190	0.130	2,488	5,655	0.38
39		5	190	195	0.130	2,504	5,692	0.38
40		5	195	200	0.130	2,520	5,728	0.38
41	Soft Rock	10	200	210	0.135	4,244	8,834	0.35
42		10	210	220	0.135	4,275	8,900	0.35
43		10	220	230	0.135	4,307	8,965	0.35
44		10	230	240	0.135	4,337	9,029	0.35
45		10	240	250	0.135	4,368	9,092	0.35
46		10	250	260	0.135	4,397	9,154	0.35
47		10	260	270	0.135	4,427	9,215	0.35
48		10	270	280	0.135	4,456	9,276	0.35
49		10	280	290	0.135	4,485	9,336	0.35
50		10	290	300	0.135	4,513	9,395	0.35
51		10	300	310	0.135	4,541	9,453	0.35
52		10	310	320	0.135	4,568	9,510	0.35
53		10	320	330	0.135	4,596	9,566	0.35
54		10	330	340	0.135	4,622	9,622	0.35
55		10	340	350	0.135	4,649	9,677	0.35
56		10	350	360	0.135	4,674	9,731	0.35
57		10	360	370	0.135	4,700	9,784	0.35
58		10	370	380	0.135	4,725	9,836	0.35
59		10	380	390	0.135	4,750	9,887	0.35
60		10	390	400	0.135	4,774	9,938	0.35

Table A-2 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
61	Soft Rock	10	400	410	0.135	4,798	9,988	0.35
62		10	410	420	0.135	4,821	10,037	0.35
63		10	420	430	0.135	4,845	10,085	0.35
64		10	430	440	0.135	4,867	10,132	0.35
65		10	440	450	0.135	4,890	10,178	0.35
66		10	450	460	0.135	4,911	10,224	0.35
67		10	460	470	0.135	4,933	10,269	0.35
68		10	470	480	0.135	4,954	10,313	0.35
69		10	480	490	0.135	4,975	10,356	0.35
70		10	490	500	0.135	4,995	10,398	0.35
71	Rock	20	500	520	0.145	7,025	13,946	0.33
72		20	520	540	0.145	7,063	14,022	0.33
73		20	540	560	0.145	7,100	14,094	0.33
74		20	560	580	0.145	7,135	14,164	0.33
75		20	580	600	0.145	7,168	14,230	0.33
76		20	600	620	0.145	7,200	14,293	0.33
77		20	620	640	0.145	7,230	14,353	0.33
78		20	640	660	0.145	7,259	14,410	0.33
79		20	660	680	0.145	7,286	14,463	0.33
80		20	680	700	0.145	7,311	14,514	0.33
81		20	700	720	0.145	7,335	14,561	0.33
82		20	720	740	0.145	7,357	14,605	0.33
83		20	740	760	0.145	7,378	14,646	0.33
84		20	760	780	0.145	7,397	14,684	0.33
85		20	780	800	0.145	7,414	14,718	0.33
86		20	800	820	0.145	7,430	14,750	0.33
87		20	820	840	0.145	7,444	14,778	0.33
88		20	840	860	0.145	7,457	14,803	0.33
89		20	860	880	0.145	7,468	14,825	0.33
90		20	880	900	0.145	7,477	14,843	0.33

Table A-2 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp 1) (fps)	Poisson's Ratio
91	Rock	20	900	920	0.145	7,485	14,859	0.33
92		20	920	940	0.145	7,491	14,871	0.33
93		20	940	960	0.145	7,496	14,880	0.33
94		20	960	980	0.145	7,499	14,886	0.33
95		20	980	1,000	0.145	7,500	14,889	0.33
96			1,000	0	0.155	9,200	18,264	0.33

Note

1) The values of compression wave velocity, Vp, are for unsaturated soil.
   If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-3 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S03

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp1) (fps)	Poisson's Ratio
1	Sand	5	0	5	0.130	2,090	4,800	0.38
2		5	5	10	0.130	2,090	4,809	0.38
3		5	10	15	0.130	2,081	4,861	0.38
4		5	15	20	0.130	2,082	4,912	0.38
5		5	20	25	0.130	2,126	4,963	0.38
6		5	25	30	0.130	2,129	5,014	0.38
7		5	30	35	0.130	2,130	5,065	0.38
8		5	35	40	0.130	2,134	5,115	0.38
9		5	40	45	0.130	2,140	5,165	0.38
10		5	45	50	0.130	2,148	5,215	0.38
11		5	50	55	0.130	2,213	5,264	0.38
12		5	55	60	0.130	2,226	5,314	0.38
13		5	60	65	0.130	2,241	5,363	0.38
14		5	65	70	0.130	2,255	5,412	0.38
15		5	70	75	0.130	2,270	5,460	0.38
16		5	75	80	0.130	2,285	5,508	0.38
17		5	80	85	0.130	2,300	5,556	0.38
18		5	85	90	0.130	2,315	5,604	0.38
19		5	90	95	0.130	2,331	5,651	0.38
20		5	95	100	0.130	2,345	5,699	0.38
21		5	100	105	0.130	2,358	5,745	0.38
22		5	105	110	0.130	2,372	5,792	0.38
23		5	110	115	0.130	2,386	5,839	0.38
24		5	115	120	0.130	2,400	5,885	0.38
25		5	120	125	0.130	2,466	5,931	0.38
26		5	125	130	0.130	2,482	5,976	0.38
27		5	130	135	0.130	2,498	6,021	0.38
28		5	135	140	0.130	2,514	6,067	0.38
29		5	140	145	0.130	2,530	6,111	0.38
30		5	145	150	0.130	2,546	6,156	0.38

Table A-3 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
31	Sand	5	150	155	0.130	2,562	6,200	0.38
32		5	155	160	0.130	2,578	6,244	0.38
33		5	160	165	0.130	2,594	6,288	0.38
34		5	165	170	0.130	2,609	6,332	0.38
35		5	170	175	0.130	2,624	6,375	0.38
36		5	175	180	0.130	2,640	6,418	0.38
37		5	180	185	0.130	2,655	6,461	0.38
38		5	185	190	0.130	2,670	6,503	0.38
39		5	190	195	0.130	2,685	6,545	0.38
40		5	195	200	0.130	2,700	6,587	0.38
41	Soft Rock	10	200	210	0.135	4,860	10,160	0.38
42		10	210	220	0.135	4,893	10,235	0.38
43		10	220	230	0.135	4,926	10,309	0.38
44		10	230	240	0.135	4,959	10,383	0.38
45		10	240	250	0.135	4,991	10,455	0.38
46		10	250	260	0.135	5,023	10,527	0.38
47		10	260	270	0.135	5,055	10,598	0.38
48		10	270	280	0.135	5,087	10,667	0.38
49		10	280	290	0.135	5,117	10,736	0.38
50		10	290	300	0.135	5,147	10,804	0.38
51		10	300	310	0.135	5,178	10,871	0.38
52		10	310	320	0.135	5,207	10,936	0.38
53		10	320	330	0.135	5,322	11,190	0.38
54		10	330	340	0.135	5,349	11,251	0.38
55		10	340	350	0.135	5,377	11,311	0.38
56		10	350	360	0.135	5,403	11,370	0.38
57		10	360	370	0.135	5,430	11,429	0.38
58		10	370	380	0.135	5,456	11,486	0.38
59		10	380	390	0.135	5,481	11,542	0.38
60		10	390	400	0.135	5,506	11,597	0.38

Table A-3 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp1) (fps)	Poisson's Ratio
61	Soft Rock	10	400	410	0.135	5,530	11,652	0.38
62		10	410	420	0.135	5,554	11,705	0.38
63		10	420	430	0.135	5,577	11,757	0.38
64		10	430	440	0.135	5,601	11,809	0.38
65		10	440	450	0.135	5,624	11,859	0.38
66		10	450	460	0.135	5,646	11,909	0.38
67		10	460	470	0.135	5,668	11,958	0.38
68		10	470	480	0.135	9,200	18,264	0.38
69		10	480	490	0.135	9,200	18,264	0.38
70		10	490	500	0.135	9,200	18,264	0.38
71	Rock	20	500	520	0.155	9,200	18,264	0.38
72		20	520	540	0.155	9,200	18,264	0.38
73		20	540	560	0.155	9,200	18,264	0.38
74		20	560	580	0.155	9,200	18,264	0.38
75		20	580	600	0.155	9,200	18,264	0.38
76		20	600	620	0.155	9,200	18,264	0.38
77		20	620	640	0.155	9,200	18,264	0.38
78		20	640	660	0.155	9,200	18,264	0.38
79		20	660	680	0.155	9,200	18,264	0.38
80		20	680	700	0.155	9,200	18,264	0.38
81		20	700	720	0.155	9,200	18,264	0.35
82		20	720	740	0.155	9,200	18,264	0.35
83		20	740	760	0.155	9,200	18,264	0.35
84		20	760	780	0.155	9,200	18,264	0.35
85		20	780	800	0.155	9,200	18,264	0.35
86		20	800	820	0.155	9,200	18,264	0.35
87		20	820	840	0.155	9,200	18,264	0.35
88		20	840	860	0.155	9,200	18,264	0.35
89		20	860	880	0.155	9,200	18,264	0.35
90		20	880	900	0.155	9,200	18,264	0.35

Table A-3 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1] (fps)	Poisson's Ratio
91	Rock	20	900	920	0.155	9,200	18,264	0.35
92		20	920	940	0.155	9,200	18,264	0.35
93		20	940	960	0.155	9,200	18,264	0.35
94		20	960	980	0.155	9,200	18,264	0.35
95		20	980	1,000	0.155	9,200	18,264	0.35
96			1,000	0	0.155	9,200	18,264	0.35

Note

1) The values of compression wave velocity, Vp, are for unsaturated soil.
If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-4 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S04

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
1	Sand	5	0	5	0.130	1,820	4,137	0.38
2		5	5	10	0.130	1,840	4,182	0.38
3		5	10	15	0.130	1,860	4,227	0.38
4		5	15	20	0.130	1,879	4,272	0.38
5		5	20	25	0.130	1,899	4,316	0.38
6		5	25	30	0.130	1,918	4,360	0.38
7		5	30	35	0.130	1,938	4,404	0.38
8		5	35	40	0.130	1,957	4,448	0.38
9		5	40	45	0.130	1,976	4,491	0.38
10		5	45	50	0.130	1,995	4,535	0.38
11		5	50	55	0.130	2,014	4,578	0.38
12		5	55	60	0.130	2,033	4,621	0.38
13		5	60	65	0.130	2,052	4,663	0.38
14		5	65	70	0.130	2,070	4,706	0.38
15		5	70	75	0.130	2,089	4,748	0.38
16		5	75	80	0.130	2,107	4,790	0.38
17		5	80	85	0.130	2,126	4,831	0.38
18		5	85	90	0.130	2,144	4,873	0.38
19		5	90	95	0.130	2,162	4,914	0.38
20		5	95	100	0.130	2,180	4,955	0.38
21	Soft Rock	5	100	105	0.135	3,898	8,114	0.35
22		5	105	110	0.135	3,916	8,151	0.35
23		5	110	115	0.135	3,934	8,188	0.35
24		5	115	120	0.135	3,951	8,225	0.35
25		5	120	125	0.135	3,969	8,262	0.35
26		5	125	130	0.135	3,986	8,298	0.35
27		5	130	135	0.135	4,004	8,334	0.35
28		5	135	140	0.135	4,021	8,370	0.35
29		5	140	145	0.135	4,038	8,406	0.35
30		5	145	150	0.135	4,055	8,441	0.35

Table A-4 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
31	Soft Rock	5	150	155	0.135	4,072	8,476	0.35
32		5	155	160	0.135	4,089	8,512	0.35
33		5	160	165	0.135	4,106	8,546	0.35
34		5	165	170	0.135	4,122	8,581	0.35
35		5	170	175	0.135	4,139	8,616	0.35
36		5	175	180	0.135	4,155	8,650	0.35
37		5	180	185	0.135	4,172	8,684	0.35
38		5	185	190	0.135	4,188	8,718	0.35
39		5	190	195	0.135	4,204	8,751	0.35
40		5	195	200	0.135	4,220	8,785	0.35
41	Rock	10	200	210	0.145	6,244	12,396	0.33
42		10	210	220	0.145	6,275	12,458	0.33
43		10	220	230	0.145	6,307	12,520	0.33
44		10	230	240	0.145	6,337	12,581	0.33
45		10	240	250	0.145	6,368	12,641	0.33
46		10	250	260	0.145	6,397	12,700	0.33
47		10	260	270	0.145	6,427	12,759	0.33
48		10	270	280	0.145	6,456	12,817	0.33
49		10	280	290	0.145	6,485	12,874	0.33
50		10	290	300	0.145	6,513	12,930	0.33
51		10	300	310	0.145	6,541	12,985	0.33
52		10	310	320	0.145	6,568	13,040	0.33
53		10	320	330	0.145	6,596	13,094	0.33
54		10	330	340	0.145	6,622	13,147	0.33
55		10	340	350	0.145	6,649	13,199	0.33
56		10	350	360	0.145	6,674	13,250	0.33
57		10	360	370	0.145	6,700	13,301	0.33
58		10	370	380	0.145	6,725	13,351	0.33
59		10	380	390	0.145	6,750	13,400	0.33
60		10	390	400	0.145	6,774	13,448	0.33

Table A-4 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp 1) (fps)	Poisson's Ratio
61	Rock	10	400	410	0.145	6,798	13,495	0.33
62		10	410	420	0.145	6,821	13,542	0.33
63		10	420	430	0.145	6,845	13,588	0.33
64		10	430	440	0.145	6,867	13,633	0.33
65		10	440	450	0.145	6,890	13,677	0.33
66		10	450	460	0.145	6,911	13,721	0.33
67		10	460	470	0.145	6,933	13,763	0.33
68		10	470	480	0.145	6,954	13,805	0.33
69		10	480	490	0.145	6,975	13,846	0.33
70		10	490	500	0.145	6,995	13,887	0.33
71		20	500	520	0.155	9,200	18,264	0.33
72		20	520	540	0.155	9,200	18,264	0.33
73		20	540	560	0.155	9,200	18,264	0.33
74		20	560	580	0.155	9,200	18,264	0.33
75		20	580	600	0.155	9,200	18,264	0.33
76		20	600	620	0.155	9,200	18,264	0.33
77		20	620	640	0.155	9,200	18,264	0.33
78		20	640	660	0.155	9,200	18,264	0.33
79		20	660	680	0.155	9,200	18,264	0.33
80		20	680	700	0.155	9,200	18,264	0.33
81		20	700	720	0.155	9,200	18,264	0.33
82		20	720	740	0.155	9,200	18,264	0.33
83		20	740	760	0.155	9,200	18,264	0.33
84		20	760	780	0.155	9,200	18,264	0.33
85		20	780	800	0.155	9,200	18,264	0.33
86		20	800	820	0.155	9,200	18,264	0.33
87		20	820	840	0.155	9,200	18,264	0.33
88		20	840	860	0.155	9,200	18,264	0.33
89		20	860	880	0.155	9,200	18,264	0.33
90		20	880	900	0.155	9,200	18,264	0.33

Table A-4 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp 1) (fps)	Poisson's Ratio
91	Rock	20	900	920	0.155	9,200	18,264	0.33
92		20	920	940	0.155	9,200	18,264	0.33
93		20	940	960	0.155	9,200	18,264	0.33
94		20	960	980	0.155	9,200	18,264	0.33
95		20	980	1,000	0.155	9,200	18,264	0.33
96			1,000	0	0.155	9,200	18,264	0.33

Note

1) The values of compression wave velocity, Vp, are for unsaturated soil.
   If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-5

Deleted

Table A-6 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S06

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
1	Sand	5	0	5	0.130	2,093	4,757	0.38
2		5	5	10	0.130	2,116	4,809	0.38
3		5	10	15	0.130	2,139	4,861	0.38
4		5	15	20	0.130	2,161	4,912	0.38
5		5	20	25	0.130	2,184	4,963	0.38
6		5	25	30	0.130	2,206	5,014	0.38
7		5	30	35	0.130	2,228	5,065	0.38
8		5	35	40	0.130	2,250	5,115	0.38
9		5	40	45	0.130	2,272	5,165	0.38
10		5	45	50	0.130	2,294	5,215	0.38
11	Soft Rock	5	50	55	0.135	4,271	8,891	0.35
12		5	55	60	0.135	4,293	8,936	0.35
13		5	60	65	0.135	4,314	8,981	0.35
14		5	65	70	0.135	4,336	9,026	0.35
15		5	70	75	0.135	4,357	9,070	0.35
16		5	75	80	0.135	4,378	9,114	0.35
17		5	80	85	0.135	4,399	9,158	0.35
18		5	85	90	0.135	4,420	9,202	0.35
19		5	90	95	0.135	4,441	9,245	0.35
20		5	95	100	0.135	4,462	9,288	0.35
21		5	100	105	0.135	4,483	9,331	0.35
22		5	105	110	0.135	4,503	9,374	0.35
23		5	110	115	0.135	4,524	9,417	0.35
24		5	115	120	0.135	4,544	9,459	0.35
25		5	120	125	0.135	4,564	9,501	0.35
26		5	125	130	0.135	4,584	9,543	0.35
27		5	130	135	0.135	4,604	9,584	0.35
28		5	135	140	0.135	4,624	9,626	0.35
29		5	140	145	0.135	4,644	9,667	0.35
30		5	145	150	0.135	4,663	9,707	0.35

Table A-6 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp 1) (fps)	Poisson's Ratio
31	Soft Rock	5	150	155	0.135	4,683	9,748	0.35
32		5	155	160	0.135	4,702	9,788	0.35
33		5	160	165	0.135	4,721	9,828	0.35
34		5	165	170	0.135	4,741	9,868	0.35
35		5	170	175	0.135	4,760	9,908	0.35
36		5	175	180	0.135	4,779	9,947	0.35
37		5	180	185	0.135	4,797	9,986	0.35
38		5	185	190	0.135	4,816	10,025	0.35
39		5	190	195	0.135	4,835	10,064	0.35
40		5	195	200	0.135	4,853	10,102	0.35
41	Rock	10	200	210	0.155	9,200	18,264	0.33
42		10	210	220	0.155	9,200	18,264	0.33
43		10	220	230	0.155	9,200	18,264	0.33
44		10	230	240	0.155	9,200	18,264	0.33
45		10	240	250	0.155	9,200	18,264	0.33
46		10	250	260	0.155	9,200	18,264	0.33
47		10	260	270	0.155	9,200	18,264	0.33
48		10	270	280	0.155	9,200	18,264	0.33
49		10	280	290	0.155	9,200	18,264	0.33
50		10	290	300	0.155	9,200	18,264	0.33
51		10	300	310	0.155	9,200	18,264	0.33
52		10	310	320	0.155	9,200	18,264	0.33
53		10	320	330	0.155	9,200	18,264	0.33
54		10	330	340	0.155	9,200	18,264	0.33
55		10	340	350	0.155	9,200	18,264	0.33
56		10	350	360	0.155	9,200	18,264	0.33
57		10	360	370	0.155	9,200	18,264	0.33
58		10	370	380	0.155	9,200	18,264	0.33
59		10	380	390	0.155	9,200	18,264	0.33
60		10	390	400	0.155	9,200	18,264	0.33

Table A-6 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp 1) (fps)	Poisson's Ratio
61	Rock	10	400	410	0.155	9,200	18,264	0.33
62		10	410	420	0.155	9,200	18,264	0.33
63		10	420	430	0.155	9,200	18,264	0.33
64		10	430	440	0.155	9,200	18,264	0.33
65		10	440	450	0.155	9,200	18,264	0.33
66		10	450	460	0.155	9,200	18,264	0.33
67		10	460	470	0.155	9,200	18,264	0.33
68		10	470	480	0.155	9,200	18,264	0.33
69		10	480	490	0.155	9,200	18,264	0.33
70		10	490	500	0.155	9,200	18,264	0.33
71	Rock	20	500	520	0.155	9,200	18,264	0.33
72		20	520	540	0.155	9,200	18,264	0.33
73		20	540	560	0.155	9,200	18,264	0.33
74		20	560	580	0.155	9,200	18,264	0.33
75		20	580	600	0.155	9,200	18,264	0.33
76		20	600	620	0.155	9,200	18,264	0.33
77		20	620	640	0.155	9,200	18,264	0.33
78		20	640	660	0.155	9,200	18,264	0.33
79		20	660	680	0.155	9,200	18,264	0.33
80		20	680	700	0.155	9,200	18,264	0.33
81		20	700	720	0.155	9,200	18,264	0.33
82		20	720	740	0.155	9,200	18,264	0.33
83		20	740	760	0.155	9,200	18,264	0.33
84		20	760	780	0.155	9,200	18,264	0.33
85		20	780	800	0.155	9,200	18,264	0.33
86		20	800	820	0.155	9,200	18,264	0.33
87		20	820	840	0.155	9,200	18,264	0.33
88		20	840	860	0.155	9,200	18,264	0.33
89		20	860	880	0.155	9,200	18,264	0.33
90		20	880	900	0.155	9,200	18,264	0.33

Table A-6 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
91	Rock	20	900	920	0.155	9,200	18,264	0.33
92		20	920	940	0.155	9,200	18,264	0.33
93		20	940	960	0.155	9,200	18,264	0.33
94		20	960	980	0.155	9,200	18,264	0.33
95		20	980	1,000	0.155	9,200	18,264	0.33
96			1,000	0	0.155	9,200	18,264	0.33

Note

1) The values of compression wave velocity, Vp, are for unsaturated soil.
   If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-7 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S07

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
1	Sand	5	0	5	0.130	1,820	4,137	0.38
2		5	5	10	0.130	1,840	4,182	0.38
3		5	10	15	0.130	1,860	4,227	0.38
4		5	15	20	0.130	1,879	4,272	0.38
5		5	20	25	0.130	1,899	4,316	0.38
6		5	25	30	0.130	1,918	4,360	0.38
7		5	30	35	0.130	1,938	4,404	0.38
8		5	35	40	0.130	1,957	4,448	0.38
9		5	40	45	0.130	1,976	4,491	0.38
10		5	45	50	0.130	1,995	4,535	0.38
11	Soft Rock	5	50	55	0.135	3,714	7,731	0.35
12		5	55	60	0.135	3,733	7,770	0.35
13		5	60	65	0.135	3,752	7,810	0.35
14		5	65	70	0.135	3,770	7,848	0.35
15		5	70	75	0.135	3,789	7,887	0.35
16		5	75	80	0.135	3,807	7,925	0.35
17		5	80	85	0.135	3,826	7,964	0.35
18		5	85	90	0.135	3,844	8,002	0.35
19		5	90	95	0.135	3,862	8,039	0.35
20		5	95	100	0.135	3,880	8,077	0.35
21	Rock	5	100	105	0.145	5,898	11,709	0.33
22		5	105	110	0.145	5,916	11,744	0.33
23		5	110	115	0.145	5,934	11,780	0.33
24		5	115	120	0.145	5,951	11,815	0.33
25		5	120	125	0.145	5,969	11,849	0.33
26		5	125	130	0.145	5,986	11,884	0.33
27		5	130	135	0.145	6,004	11,919	0.33
28		5	135	140	0.145	6,021	11,953	0.33
29		5	140	145	0.145	6,038	11,987	0.33
30		5	145	150	0.145	6,055	12,021	0.33

Table A-7 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
31	Rock	5	150	155	0.145	6,072	12,054	0.33
32		5	155	160	0.145	6,089	12,088	0.33
33		5	160	165	0.145	6,106	12,121	0.33
34		5	165	170	0.145	6,122	12,154	0.33
35		5	170	175	0.145	6,139	12,187	0.33
36		5	175	180	0.145	6,155	12,220	0.33
37		5	180	185	0.145	6,172	12,252	0.33
38		5	185	190	0.145	6,188	12,284	0.33
39		5	190	195	0.145	6,204	12,316	0.33
40		5	195	200	0.145	6,220	12,348	0.33
41		10	200	210	0.155	9,200	18,264	0.33
42		10	210	220	0.155	9,200	18,264	0.33
43		10	220	230	0.155	9,200	18,264	0.33
44		10	230	240	0.155	9,200	18,264	0.33
45		10	240	250	0.155	9,200	18,264	0.33
46		10	250	260	0.155	9,200	18,264	0.33
47		10	260	270	0.155	9,200	18,264	0.33
48		10	270	280	0.155	9,200	18,264	0.33
49		10	280	290	0.155	9,200	18,264	0.33
50		10	290	300	0.155	9,200	18,264	0.33
51		10	300	310	0.155	9,200	18,264	0.33
52		10	310	320	0.155	9,200	18,264	0.33
53		10	320	330	0.155	9,200	18,264	0.33
54		10	330	340	0.155	9,200	18,264	0.33
55		10	340	350	0.155	9,200	18,264	0.33
56		10	350	360	0.155	9,200	18,264	0.33
57		10	360	370	0.155	9,200	18,264	0.33
58		10	370	380	0.155	9,200	18,264	0.33
59		10	380	390	0.155	9,200	18,264	0.33
60		10	390	400	0.155	9,200	18,264	0.33

Table A-7 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
61	Rock	10	400	410	0.155	9,200	18,264	0.33
62		10	410	420	0.155	9,200	18,264	0.33
63		10	420	430	0.155	9,200	18,264	0.33
64		10	430	440	0.155	9,200	18,264	0.33
65		10	440	450	0.155	9,200	18,264	0.33
66		10	450	460	0.155	9,200	18,264	0.33
67		10	460	470	0.155	9,200	18,264	0.33
68		10	470	480	0.155	9,200	18,264	0.33
69		10	480	490	0.155	9,200	18,264	0.33
70		10	490	500	0.155	9,200	18,264	0.33
71		20	500	520	0.155	9,200	18,264	0.33
72		20	520	540	0.155	9,200	18,264	0.33
73		20	540	560	0.155	9,200	18,264	0.33
74		20	560	580	0.155	9,200	18,264	0.33
75		20	580	600	0.155	9,200	18,264	0.33
76		20	600	620	0.155	9,200	18,264	0.33
77		20	620	640	0.155	9,200	18,264	0.33
78		20	640	660	0.155	9,200	18,264	0.33
79		20	660	680	0.155	9,200	18,264	0.33
80		20	680	700	0.155	9,200	18,264	0.33
81		20	700	720	0.155	9,200	18,264	0.33
82		20	720	740	0.155	9,200	18,264	0.33
83		20	740	760	0.155	9,200	18,264	0.33
84		20	760	780	0.155	9,200	18,264	0.33
85		20	780	800	0.155	9,200	18,264	0.33
86		20	800	820	0.155	9,200	18,264	0.33
87		20	820	840	0.155	9,200	18,264	0.33
88		20	840	860	0.155	9,200	18,264	0.33
89		20	860	880	0.155	9,200	18,264	0.33
90		20	880	900	0.155	9,200	18,264	0.33

Table A-7 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
91	Rock	20	900	920	0.155	9,200	18,264	0.33
92		20	920	940	0.155	9,200	18,264	0.33
93		20	940	960	0.155	9,200	18,264	0.33
94		20	960	980	0.155	9,200	18,264	0.33
95		20	980	1,000	0.155	9,200	18,264	0.33
96			1,000	0	0.155	9,200	18,264	0.33

Note

1) The values of compression wave velocity, Vp, are for unsaturated soil.
If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-8 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S08

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
1	Rock	5	0	5	0.145	6,348	12,602	0.33
2		5	5	10	0.145	6,371	12,648	0.33
3		5	10	15	0.145	6,394	12,693	0.33
4		5	15	20	0.145	6,416	12,738	0.33
5		5	20	25	0.145	6,439	12,782	0.33
6		5	25	30	0.145	6,461	12,827	0.33
7		5	30	35	0.145	6,483	12,871	0.33
8		5	35	40	0.145	6,505	12,915	0.33
9		5	40	45	0.145	6,527	12,958	0.33
10		5	45	50	0.145	6,549	13,002	0.33
11		5	50	55	0.145	6,571	13,045	0.33
12		5	55	60	0.145	6,593	13,088	0.33
13		5	60	65	0.145	6,614	13,131	0.33
14		5	65	70	0.145	6,636	13,174	0.33
15		5	70	75	0.145	6,657	13,216	0.33
16		5	75	80	0.145	6,678	13,258	0.33
17		5	80	85	0.145	6,699	13,300	0.33
18		5	85	90	0.145	6,720	13,342	0.33
19		5	90	95	0.145	6,741	13,383	0.33
20		5	95	100	0.145	6,762	13,424	0.33
21		5	100	105	0.145	6,783	13,465	0.33
22		5	105	110	0.145	6,803	13,506	0.33
23		5	110	115	0.145	6,824	13,546	0.33
24		5	115	120	0.145	6,844	13,587	0.33
25		5	120	125	0.145	6,864	13,627	0.33
26		5	125	130	0.145	6,884	13,667	0.33
27		5	130	135	0.145	6,904	13,706	0.33
28		5	135	140	0.145	6,924	13,746	0.33
29		5	140	145	0.145	6,944	13,785	0.33
30		5	145	150	0.145	6,963	13,824	0.33

Table A-8 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
31	Rock	5	150	155	0.145	6,983	13,862	0.33
32		5	155	160	0.145	7,002	13,901	0.33
33		5	160	165	0.145	7,021	13,939	0.33
34		5	165	170	0.145	7,041	13,977	0.33
35		5	170	175	0.145	7,060	14,015	0.33
36		5	175	180	0.145	7,079	14,053	0.33
37		5	180	185	0.145	7,097	14,090	0.33
38		5	185	190	0.145	7,116	14,127	0.33
39		5	190	195	0.145	7,135	14,164	0.33
40		5	195	200	0.145	7,153	14,200	0.33
41		10	200	210	0.155	9,200	18,264	0.33
42		10	210	220	0.155	9,200	18,264	0.33
43		10	220	230	0.155	9,200	18,264	0.33
44		10	230	240	0.155	9,200	18,264	0.33
45		10	240	250	0.155	9,200	18,264	0.33
46		10	250	260	0.155	9,200	18,264	0.33
47		10	260	270	0.155	9,200	18,264	0.33
48		10	270	280	0.155	9,200	18,264	0.33
49		10	280	290	0.155	9,200	18,264	0.33
50		10	290	300	0.155	9,200	18,264	0.33
51		10	300	310	0.155	9,200	18,264	0.33
52		10	310	320	0.155	9,200	18,264	0.33
53		10	320	330	0.155	9,200	18,264	0.33
54		10	330	340	0.155	9,200	18,264	0.33
55		10	340	350	0.155	9,200	18,264	0.33
56		10	350	360	0.155	9,200	18,264	0.33
57		10	360	370	0.155	9,200	18,264	0.33
58		10	370	380	0.155	9,200	18,264	0.33
59		10	380	390	0.155	9,200	18,264	0.33
60		10	390	400	0.155	9,200	18,264	0.33

Table A-8 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
61	Rock	10	400	410	0.155	9,200	18,264	0.33
62		10	410	420	0.155	9,200	18,264	0.33
63		10	420	430	0.155	9,200	18,264	0.33
64		10	430	440	0.155	9,200	18,264	0.33
65		10	440	450	0.155	9,200	18,264	0.33
66		10	450	460	0.155	9,200	18,264	0.33
67		10	460	470	0.155	9,200	18,264	0.33
68		10	470	480	0.155	9,200	18,264	0.33
69		10	480	490	0.155	9,200	18,264	0.33
70		10	490	500	0.155	9,200	18,264	0.33
71		20	500	520	0.155	9,200	18,264	0.33
72		20	520	540	0.155	9,200	18,264	0.33
73		20	540	560	0.155	9,200	18,264	0.33
74		20	560	580	0.155	9,200	18,264	0.33
75		20	580	600	0.155	9,200	18,264	0.33
76		20	600	620	0.155	9,200	18,264	0.33
77		20	620	640	0.155	9,200	18,264	0.33
78		20	640	660	0.155	9,200	18,264	0.33
79		20	660	680	0.155	9,200	18,264	0.33
80		20	680	700	0.155	9,200	18,264	0.33
81		20	700	720	0.155	9,200	18,264	0.33
82		20	720	740	0.155	9,200	18,264	0.33
83		20	740	760	0.155	9,200	18,264	0.33
84		20	760	780	0.155	9,200	18,264	0.33
85		20	780	800	0.155	9,200	18,264	0.33
86		20	800	820	0.155	9,200	18,264	0.33
87		20	820	840	0.155	9,200	18,264	0.33
88		20	840	860	0.155	9,200	18,264	0.33
89		20	860	880	0.155	9,200	18,264	0.33
90		20	880	900	0.155	9,200	18,264	0.33

Table A-8 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1] (fps)	Poisson's Ratio
91	Rock	20	900	920	0.155	9,200	18,264	0.33
92		20	920	940	0.155	9,200	18,264	0.33
93		20	940	960	0.155	9,200	18,264	0.33
94		20	960	980	0.155	9,200	18,264	0.33
95		20	980	1,000	0.155	9,200	18,264	0.33
96			1,000	0	0.155	9,200	18,264	0.33

<u>Note</u>

1) The values of compression wave velocity, Vp, are for unsaturated soil.
   If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-9 (1 of 4)

Soil Column Model and Low-Strain Dynamic Properies For Site Profile S09

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
1	Rock	5	0	5	0.145	4,692	9,315	0.33
2		5	5	10	0.145	4,709	9,348	0.33
3		5	10	15	0.145	4,726	9,382	0.33
4		5	15	20	0.145	4,742	9,415	0.33
5		5	20	25	0.145	4,759	9,448	0.33
6		5	25	30	0.145	4,776	9,481	0.33
7		5	30	35	0.145	4,792	9,513	0.33
8		5	35	40	0.145	4,808	9,546	0.33
9		5	40	45	0.145	4,825	9,578	0.33
10		5	45	50	0.145	4,841	9,610	0.33
11		5	50	55	0.145	4,857	9,642	0.33
12		5	55	60	0.145	4,873	9,674	0.33
13		5	60	65	0.145	4,889	9,706	0.33
14		5	65	70	0.145	4,905	9,737	0.33
15		5	70	75	0.145	4,920	9,768	0.33
16		5	75	80	0.145	4,936	9,799	0.33
17		5	80	85	0.145	4,952	9,830	0.33
18		5	85	90	0.145	4,967	9,861	0.33
19		5	90	95	0.145	4,983	9,892	0.33
20		5	95	100	0.145	4,998	9,922	0.33
21		5	100	105	0.155	9,200	18,264	0.33
22		5	105	110	0.155	9,200	18,264	0.33
23		5	110	115	0.155	9,200	18,264	0.33
24		5	115	120	0.155	9,200	18,264	0.33
25		5	120	125	0.155	9,200	18,264	0.33
26		5	125	130	0.155	9,200	18,264	0.33
27		5	130	135	0.155	9,200	18,264	0.33
28		5	135	140	0.155	9,200	18,264	0.33
29		5	140	145	0.155	9,200	18,264	0.33
30		5	145	150	0.155	9,200	18,264	0.33

Table A-9 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
31	Rock	5	150	155	0.155	9,200	18,264	0.33
32		5	155	160	0.155	9,200	18,264	0.33
33		5	160	165	0.155	9,200	18,264	0.33
34		5	165	170	0.155	9,200	18,264	0.33
35		5	170	175	0.155	9,200	18,264	0.33
36		5	175	180	0.155	9,200	18,264	0.33
37		5	180	185	0.155	9,200	18,264	0.33
38		5	185	190	0.155	9,200	18,264	0.33
39		5	190	195	0.155	9,200	18,264	0.33
40		5	195	200	0.155	9,200	18,264	0.33
41		10	200	210	0.155	9,200	18,264	0.33
42		10	210	220	0.155	9,200	18,264	0.33
43		10	220	230	0.155	9,200	18,264	0.33
44		10	230	240	0.155	9,200	18,264	0.33
45		10	240	250	0.155	9,200	18,264	0.33
46		10	250	260	0.155	9,200	18,264	0.33
47		10	260	270	0.155	9,200	18,264	0.33
48		10	270	280	0.155	9,200	18,264	0.33
49		10	280	290	0.155	9,200	18,264	0.33
50		10	290	300	0.155	9,200	18,264	0.33
51		10	300	310	0.155	9,200	18,264	0.33
52		10	310	320	0.155	9,200	18,264	0.33
53		10	320	330	0.155	9,200	18,264	0.33
54		10	330	340	0.155	9,200	18,264	0.33
55		10	340	350	0.155	9,200	18,264	0.33
56		10	350	360	0.155	9,200	18,264	0.33
57		10	360	370	0.155	9,200	18,264	0.33
58		10	370	380	0.155	9,200	18,264	0.33
59		10	380	390	0.155	9,200	18,264	0.33
60		10	390	400	0.155	9,200	18,264	0.33

Table A-9 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp[1)] (fps)	Poisson's Ratio
61	Rock	10	400	410	0.155	9,200	18,264	0.33
62		10	410	420	0.155	9,200	18,264	0.33
63		10	420	430	0.155	9,200	18,264	0.33
64		10	430	440	0.155	9,200	18,264	0.33
65		10	440	450	0.155	9,200	18,264	0.33
66		10	450	460	0.155	9,200	18,264	0.33
67		10	460	470	0.155	9,200	18,264	0.33
68		10	470	480	0.155	9,200	18,264	0.33
69		10	480	490	0.155	9,200	18,264	0.33
70		10	490	500	0.155	9,200	18,264	0.33
71		20	500	520	0.155	9,200	18,264	0.33
72		20	520	540	0.155	9,200	18,264	0.33
73		20	540	560	0.155	9,200	18,264	0.33
74		20	560	580	0.155	9,200	18,264	0.33
75		20	580	600	0.155	9,200	18,264	0.33
76		20	600	620	0.155	9,200	18,264	0.33
77		20	620	640	0.155	9,200	18,264	0.33
78		20	640	660	0.155	9,200	18,264	0.33
79		20	660	680	0.155	9,200	18,264	0.33
80		20	680	700	0.155	9,200	18,264	0.33
81		20	700	720	0.155	9,200	18,264	0.33
82		20	720	740	0.155	9,200	18,264	0.33
83		20	740	760	0.155	9,200	18,264	0.33
84		20	760	780	0.155	9,200	18,264	0.33
85		20	780	800	0.155	9,200	18,264	0.33
86		20	800	820	0.155	9,200	18,264	0.33
87		20	820	840	0.155	9,200	18,264	0.33
88		20	840	860	0.155	9,200	18,264	0.33
89		20	860	880	0.155	9,200	18,264	0.33
90		20	880	900	0.155	9,200	18,264	0.33

Table A-9 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Depth Layer Top (ft)	Depth Layer Bottom (ft)	Weight Density (kcf)	Shear Wave Velocity Vs (fps)	Compression Wave Velocity Vp 1) (fps)	Poisson's Ratio
91	Rock	20	900	920	0.155	9,200	18,264	0.33
92		20	920	940	0.155	9,200	18,264	0.33
93		20	940	960	0.155	9,200	18,264	0.33
94		20	960	980	0.155	9,200	18,264	0.33
95		20	980	1,000	0.155	9,200	18,264	0.33
96			1,000	0	0.155	9,200	18,264	0.33

Note

1) The values of compression wave velocity, Vp, are for unsaturated soil.
If the soil is saturated, a minimum compression wave velocity of 4,800 ft/sec (the speed of sound in water) is used.

Table A-10 (1 of 4)

Generic Site Profile S01 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.125	0.020	1,155	4,800	0.47
2		5	0.125	0.031	1,132	4,800	0.47
3		5	0.125	0.041	1,102	4,800	0.47
4		5	0.125	0.048	1,087	4,800	0.47
5		5	0.125	0.037	1,142	4,800	0.47
6		5	0.125	0.042	1,138	4,800	0.47
7		5	0.125	0.046	1,138	4,800	0.47
8		5	0.125	0.050	1,141	4,800	0.47
9		5	0.125	0.053	1,144	4,800	0.47
10		5	0.125	0.056	1,149	4,800	0.47
11		5	0.125	0.043	1,224	4,800	0.47
12		5	0.125	0.044	1,234	4,800	0.46
13		5	0.125	0.046	1,246	4,800	0.46
14		5	0.125	0.047	1,257	4,800	0.46
15		5	0.125	0.047	1,271	4,800	0.46
16		5	0.125	0.048	1,285	4,800	0.46
17		5	0.125	0.048	1,299	4,800	0.46
18		5	0.125	0.049	1,314	4,800	0.46
19		5	0.125	0.050	1,328	4,800	0.46
20		5	0.125	0.050	1,342	4,800	0.46
21		5	0.125	0.050	1,357	4,800	0.46
22		5	0.125	0.051	1,373	4,800	0.46
23		5	0.125	0.051	1,389	4,800	0.45
24		5	0.125	0.051	1,406	4,800	0.45
25		5	0.125	0.039	1,489	4,800	0.45
26		5	0.125	0.039	1,506	4,800	0.45
27		5	0.125	0.039	1,523	4,800	0.44
28		5	0.125	0.039	1,540	4,800	0.44
29		5	0.125	0.039	1,556	4,800	0.44
30		5	0.125	0.039	1,573	4,800	0.44

Table A-10 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.125	0.039	1,590	4,800	0.44
32		5	0.125	0.039	1,608	4,800	0.44
33		5	0.125	0.039	1,625	4,800	0.44
34		5	0.125	0.039	1,642	4,800	0.43
35		5	0.125	0.039	1,659	4,800	0.43
36		5	0.125	0.039	1,676	4,800	0.43
37		5	0.125	0.039	1,692	4,800	0.43
38		5	0.125	0.039	1,709	4,800	0.43
39		5	0.125	0.039	1,725	4,800	0.43
40		5	0.125	0.039	1,742	4,845	0.43
41		10	0.130	0.022	2,780	6,650	0.39
42		10	0.130	0.022	2,814	6,732	0.39
43		10	0.130	0.022	2,845	6,813	0.39
44		10	0.130	0.023	2,876	6,894	0.39
45		10	0.130	0.023	2,907	6,973	0.39
46		10	0.130	0.018	2,992	7,051	0.39
47		10	0.130	0.019	3,022	7,128	0.39
48		10	0.130	0.019	3,053	7,204	0.39
49		10	0.130	0.019	3,083	7,279	0.39
50		10	0.130	0.019	3,113	7,353	0.39
51		10	0.130	0.019	3,142	7,426	0.39
52		10	0.130	0.019	3,172	7,498	0.39
53		10	0.130	0.019	3,200	7,569	0.39
54		10	0.130	0.019	3,229	7,639	0.39
55		10	0.130	0.019	3,258	7,707	0.39
56		10	0.130	0.019	3,286	7,775	0.39
57		10	0.130	0.019	3,314	7,842	0.39
58		10	0.130	0.019	3,342	7,907	0.39
59		10	0.130	0.019	3,369	7,972	0.39
60		10	0.130	0.019	3,396	8,035	0.39

Table A-10 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	Sand	10	0.130	0.019	3,423	8,098	0.39
62		10	0.130	0.019	3,449	8,159	0.39
63		10	0.130	0.019	3,475	8,220	0.39
64		10	0.130	0.019	3,501	8,279	0.39
65		10	0.130	0.019	3,526	8,337	0.39
66		10	0.130	0.019	3,550	8,395	0.39
67		10	0.130	0.019	3,574	8,451	0.39
68		10	0.130	0.019	3,598	8,506	0.39
69		10	0.130	0.019	3,621	8,560	0.39
70		10	0.130	0.019	3,644	8,613	0.39
71	Soft Rock	20	0.135	0.035	5,748	12,029	0.35
72		20	0.135	0.035	5,792	12,120	0.35
73		20	0.135	0.035	5,833	12,208	0.35
74		20	0.135	0.035	5,872	12,292	0.35
75		20	0.135	0.035	5,909	12,372	0.35
76		20	0.135	0.035	5,944	12,448	0.35
77		20	0.135	0.035	5,978	12,520	0.35
78		20	0.135	0.035	6,009	12,588	0.35
79		20	0.135	0.035	6,038	12,653	0.35
80		20	0.135	0.035	6,066	12,714	0.35
81		20	0.135	0.035	6,092	12,771	0.35
82		20	0.135	0.035	6,115	12,824	0.35
83		20	0.135	0.035	6,136	12,873	0.35
84		20	0.135	0.036	6,157	12,919	0.35
85		20	0.135	0.036	6,175	12,960	0.35
86		20	0.135	0.036	6,191	12,998	0.35
87		20	0.135	0.036	6,206	13,032	0.35
88		20	0.135	0.036	6,218	13,062	0.35
89		20	0.135	0.036	6,229	13,089	0.35
90		20	0.135	0.036	6,238	13,111	0.35

Table A-10 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.135	0.036	6,245	13,130	0.35
92		20	0.135	0.036	6,251	13,145	0.35
93		20	0.135	0.036	6,254	13,156	0.35
94		20	0.135	0.036	6,256	13,163	0.35
95		20	0.135	0.037	6,255	13,166	0.35
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-11 (1 of 4)

Generic Site Profile S02 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.125	0.022	996	4,800	0.48
2		5	0.125	0.037	958	4,800	0.48
3		5	0.125	0.048	930	4,800	0.48
4		5	0.125	0.059	902	4,800	0.48
5		5	0.125	0.047	954	4,800	0.48
6		5	0.125	0.052	950	4,800	0.48
7		5	0.125	0.056	948	4,800	0.48
8		5	0.125	0.061	947	4,800	0.48
9		5	0.125	0.064	948	4,800	0.48
10		5	0.125	0.067	950	4,800	0.48
11		5	0.125	0.051	1,025	4,800	0.48
12		5	0.125	0.052	1,034	4,800	0.48
13		5	0.125	0.053	1,044	4,800	0.48
14		5	0.125	0.054	1,054	4,800	0.47
15		5	0.125	0.055	1,065	4,800	0.47
16		5	0.125	0.056	1,075	4,800	0.47
17		5	0.125	0.057	1,086	4,800	0.47
18		5	0.125	0.057	1,098	4,800	0.47
19		5	0.125	0.058	1,110	4,800	0.47
20		5	0.125	0.059	1,123	4,800	0.47
21		5	0.125	0.029	2,044	4,996	0.40
22		5	0.125	0.030	2,055	5,037	0.40
23		5	0.125	0.031	2,065	5,077	0.40
24		5	0.125	0.031	2,074	5,117	0.40
25		5	0.125	0.024	2,134	5,157	0.40
26		5	0.125	0.025	2,147	5,197	0.40
27		5	0.125	0.025	2,160	5,236	0.40
28		5	0.125	0.025	2,174	5,275	0.40
29		5	0.125	0.026	2,188	5,314	0.40
30		5	0.125	0.026	2,202	5,353	0.40

Table A-11 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.125	0.026	2,216	5,392	0.4
32		5	0.125	0.026	2,229	5,430	0.4
33		5	0.125	0.027	2,242	5,468	0.4
34		5	0.125	0.027	2,255	5,506	0.4
35		5	0.125	0.027	2,267	5,543	0.4
36		5	0.125	0.027	2,280	5,581	0.4
37		5	0.125	0.027	2,293	5,618	0.4
38		5	0.125	0.028	2,306	5,655	0.4
39		5	0.125	0.028	2,319	5,692	0.4
40		5	0.125	0.028	2,332	5,728	0.4
41		10	0.130	0.035	4,219	8,834	0.35
42		10	0.130	0.035	4,248	8,900	0.35
43		10	0.130	0.035	4,277	8,965	0.35
44		10	0.130	0.035	4,305	9,029	0.35
45		10	0.130	0.036	4,333	9,092	0.35
46		10	0.130	0.036	4,361	9,154	0.35
47		10	0.130	0.036	4,387	9,215	0.35
48		10	0.130	0.036	4,413	9,276	0.35
49		10	0.130	0.036	4,440	9,336	0.35
50		10	0.130	0.036	4,466	9,395	0.35
51		10	0.130	0.036	4,492	9,453	0.35
52		10	0.130	0.037	4,517	9,510	0.35
53		10	0.130	0.037	4,542	9,566	0.35
54		10	0.130	0.037	4,567	9,622	0.35
55		10	0.130	0.037	4,592	9,677	0.35
56		10	0.130	0.037	4,616	9,731	0.35
57		10	0.130	0.037	4,639	9,784	0.35
58		10	0.130	0.037	4,663	9,836	0.36
59		10	0.130	0.037	4,686	9,887	0.36
60		10	0.130	0.037	4,709	9,938	0.36

Table A-11 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	sand	10	0.130	0.037	4,732	9,988	0.36
62		10	0.130	0.038	4,754	10,037	0.36
63		10	0.130	0.038	4,776	10,085	0.36
64		10	0.130	0.038	4,797	10,132	0.36
65		10	0.130	0.038	4,819	10,178	0.36
66		10	0.130	0.038	4,839	10,224	0.36
67		10	0.130	0.038	4,859	10,269	0.36
68		10	0.130	0.038	4,879	10,313	0.36
69		10	0.130	0.038	4,898	10,356	0.36
70		10	0.130	0.038	4,918	10,398	0.36
71	Soft Rock	20	0.135	0.012	6,847	13,946	0.34
72		20	0.135	0.012	6,881	14,022	0.34
73		20	0.135	0.012	6,914	14,094	0.34
74		20	0.135	0.012	6,945	14,164	0.34
75		20	0.135	0.012	6,976	14,230	0.34
76		20	0.135	0.012	7,004	14,293	0.34
77		20	0.135	0.012	7,032	14,353	0.34
78		20	0.135	0.012	7,057	14,410	0.34
79		20	0.135	0.012	7,081	14,463	0.34
80		20	0.135	0.012	7,103	14,514	0.34
81		20	0.135	0.012	7,124	14,561	0.34
82		20	0.135	0.012	7,143	14,605	0.34
83		20	0.135	0.012	7,162	14,646	0.34
84		20	0.135	0.012	7,178	14,684	0.34
85		20	0.135	0.012	7,191	14,718	0.34
86		20	0.135	0.012	7,203	14,750	0.34
87		20	0.135	0.013	7,214	14,778	0.34
88		20	0.135	0.013	7,223	14,803	0.34
89		20	0.135	0.013	7,232	14,825	0.34
90		20	0.135	0.013	7,238	14,843	0.34

Table A-11 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.135	0.013	7,244	14,859	0.34
92		20	0.135	0.013	7,247	14,871	0.34
93		20	0.135	0.013	7,250	14,880	0.34
94		20	0.135	0.013	7,250	14,886	0.34
95		20	0.135	0.013	7,249	14,889	0.34
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-12 (1 of 4)

Generic Site Profile S03 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.130	0.015	2,090	4,800	0.38
2		5	0.130	0.019	2,090	4,809	0.38
3		5	0.130	0.023	2,081	4,861	0.39
4		5	0.130	0.026	2,082	4,912	0.39
5		5	0.130	0.021	2,126	4,963	0.39
6		5	0.130	0.023	2,129	5,014	0.39
7		5	0.130	0.025	2,130	5,065	0.39
8		5	0.130	0.027	2,134	5,115	0.39
9		5	0.130	0.028	2,140	5,165	0.40
10		5	0.130	0.030	2,148	5,215	0.40
11		5	0.130	0.024	2,213	5,264	0.39
12		5	0.130	0.024	2,226	5,314	0.39
13		5	0.130	0.025	2,241	5,363	0.39
14		5	0.130	0.025	2,255	5,412	0.39
15		5	0.130	0.026	2,270	5,460	0.40
16		5	0.130	0.026	2,285	5,508	0.40
17		5	0.130	0.026	2,300	5,556	0.40
18		5	0.130	0.027	2,315	5,604	0.40
19		5	0.130	0.027	2,331	5,651	0.40
20		5	0.130	0.028	2,345	5,699	0.40
21		5	0.130	0.029	2,358	5,745	0.40
22		5	0.130	0.029	2,372	5,792	0.40
23		5	0.130	0.029	2,386	5,839	0.40
24		5	0.130	0.030	2,400	5,885	0.40
25		5	0.130	0.023	2,466	5,931	0.40
26		5	0.130	0.024	2,482	5,976	0.40
27		5	0.130	0.024	2,498	6,021	0.40
28		5	0.130	0.024	2,514	6,067	0.40
29		5	0.130	0.024	2,530	6,111	0.40
30		5	0.130	0.025	2,546	6,156	0.40

Table A-12 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.130	0.025	2,562	6,200	0.40
32		5	0.130	0.025	2,578	6,244	0.40
33		5	0.130	0.025	2,594	6,288	0.40
34		5	0.130	0.025	2,609	6,332	0.40
35		5	0.130	0.026	2,624	6,375	0.40
36		5	0.130	0.026	2,640	6,418	0.40
37		5	0.130	0.026	2,655	6,461	0.40
38		5	0.130	0.026	2,670	6,503	0.40
39		5	0.130	0.026	2,685	6,545	0.40
40		5	0.130	0.026	2,700	6,587	0.40
41		10	0.135	0.034	4,860	10,160	0.35
42		10	0.135	0.034	4,893	10,235	0.35
43		10	0.135	0.034	4,926	10,309	0.35
44		10	0.135	0.035	4,959	10,383	0.35
45		10	0.135	0.035	4,991	10,455	0.35
46		10	0.135	0.035	5,023	10,527	0.35
47		10	0.135	0.035	5,055	10,598	0.35
48		10	0.135	0.035	5,087	10,667	0.35
49		10	0.135	0.035	5,117	10,736	0.35
50		10	0.135	0.035	5,147	10,804	0.35
51		10	0.135	0.036	5,178	10,871	0.35
52		10	0.135	0.036	5,207	10,936	0.35
53		10	0.135	0.036	5,237	11,001	0.35
54		10	0.135	0.036	5,266	11,065	0.35
55		10	0.135	0.036	5,294	11,128	0.35
56		10	0.135	0.036	5,322	11,190	0.35
57		10	0.135	0.036	5,349	11,251	0.35
58		10	0.135	0.036	5,377	11,311	0.35
59		10	0.135	0.036	5,403	11,370	0.35
60		10	0.135	0.036	5,430	11,429	0.35

Table A-12 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	Sand	10	0.135	0.036	5,456	11,486	0.35
62		10	0.135	0.036	5,481	11,542	0.35
63		10	0.135	0.037	5,506	11,597	0.35
64		10	0.135	0.037	5,530	11,652	0.35
65		10	0.135	0.037	5,554	11,705	0.35
66		10	0.135	0.037	5,577	11,757	0.35
67		10	0.135	0.037	5,601	11,809	0.35
68		10	0.135	0.037	5,624	11,859	0.35
69		10	0.135	0.037	5,646	11,909	0.36
70		10	0.135	0.037	5,668	11,958	0.36
71	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
72		20	0.155	0.010	9,200	18,264	0.33
73		20	0.155	0.010	9,200	18,264	0.33
74		20	0.155	0.010	9,200	18,264	0.33
75		20	0.155	0.010	9,200	18,264	0.33
76		20	0.155	0.010	9,200	18,264	0.33
77		20	0.155	0.010	9,200	18,264	0.33
78		20	0.155	0.010	9,200	18,264	0.33
79		20	0.155	0.010	9,200	18,264	0.33
80		20	0.155	0.010	9,200	18,264	0.33
81		20	0.155	0.010	9,200	18,264	0.33
82		20	0.155	0.010	9,200	18,264	0.33
83		20	0.155	0.010	9,200	18,264	0.33
84		20	0.155	0.010	9,200	18,264	0.33
85		20	0.155	0.010	9,200	18,264	0.33
86		20	0.155	0.010	9,200	18,264	0.33
87		20	0.155	0.010	9,200	18,264	0.33
88		20	0.155	0.010	9,200	18,264	0.33
89		20	0.155	0.010	9,200	18,264	0.33
90		20	0.155	0.010	9,200	18,264	0.33

Table A-12 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
92		20	0.155	0.010	9,200	18,264	0.33
93		20	0.155	0.010	9,200	18,264	0.33
94		20	0.155	0.010	9,200	18,264	0.33
95		20	0.155	0.010	9,200	18,264	0.33
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-13 (1 of 4)

Generic Site Profile S04 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.130	0.016	1,813	4,800	0.42
2		5	0.130	0.021	1,802	4,800	0.42
3		5	0.130	0.026	1,794	4,800	0.42
4		5	0.130	0.029	1,790	4,800	0.42
5		5	0.130	0.025	1,820	4,800	0.42
6		5	0.130	0.027	1,817	4,800	0.42
7		5	0.130	0.029	1,818	4,800	0.42
8		5	0.130	0.031	1,820	4,800	0.42
9		5	0.130	0.033	1,826	4,800	0.42
10		5	0.130	0.034	1,832	4,800	0.41
11		5	0.130	0.026	1,898	4,800	0.41
12		5	0.130	0.027	1,909	4,800	0.41
13		5	0.130	0.027	1,921	4,800	0.40
14		5	0.130	0.029	1,930	4,800	0.40
15		5	0.130	0.029	1,939	4,800	0.40
16		5	0.130	0.030	1,949	4,800	0.40
17		5	0.130	0.032	1,958	4,831	0.40
18		5	0.130	0.033	1,967	4,873	0.40
19		5	0.130	0.033	1,975	4,914	0.40
20		5	0.130	0.034	1,984	4,955	0.40
21		5	0.135	0.033	3,892	8,114	0.35
22		5	0.135	0.034	3,908	8,151	0.35
23		5	0.135	0.034	3,922	8,188	0.35
24		5	0.135	0.034	3,937	8,225	0.35
25		5	0.135	0.034	3,953	8,262	0.35
26		5	0.135	0.035	3,968	8,298	0.35
27		5	0.135	0.035	3,983	8,334	0.35
28		5	0.135	0.035	3,998	8,370	0.35
29		5	0.135	0.035	4,013	8,406	0.35
30		5	0.135	0.035	4,027	8,441	0.35

Table A-13 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.135	0.035	4,042	8,476	0.35
32		5	0.135	0.036	4,057	8,512	0.35
33		5	0.135	0.036	4,072	8,546	0.35
34		5	0.135	0.036	4,087	8,581	0.35
35		5	0.135	0.036	4,102	8,616	0.35
36		5	0.135	0.036	4,116	8,650	0.35
37		5	0.135	0.036	4,131	8,684	0.35
38		5	0.135	0.036	4,145	8,718	0.35
39		5	0.135	0.036	4,160	8,751	0.35
40		5	0.135	0.037	4,175	8,785	0.35
41		10	0.145	0.011	6,120	12,396	0.34
42		10	0.145	0.011	6,147	12,458	0.34
43		10	0.145	0.011	6,173	12,520	0.34
44		10	0.145	0.011	6,200	12,581	0.34
45		10	0.145	0.011	6,225	12,641	0.34
46		10	0.145	0.011	6,252	12,700	0.34
47		10	0.145	0.011	6,278	12,759	0.34
48		10	0.145	0.011	6,303	12,817	0.34
49		10	0.145	0.011	6,328	12,874	0.34
50		10	0.145	0.011	6,353	12,930	0.34
51		10	0.145	0.012	6,378	12,985	0.34
52		10	0.145	0.012	6,401	13,040	0.34
53		10	0.145	0.012	6,425	13,094	0.34
54		10	0.145	0.012	6,449	13,147	0.34
55		10	0.145	0.012	6,472	13,199	0.34
56		10	0.145	0.012	6,494	13,250	0.34
57		10	0.145	0.012	6,516	13,301	0.34
58		10	0.145	0.012	6,538	13,351	0.34
59		10	0.145	0.012	6,559	13,400	0.34
60		10	0.145	0.012	6,580	13,448	0.34

Table A-13 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	Sand	10	0.145	0.012	6,601	13,495	0.34
62		10	0.145	0.012	6,621	13,542	0.34
63		10	0.145	0.012	6,641	13,588	0.34
64		10	0.145	0.012	6,661	13,633	0.34
65		10	0.145	0.012	6,681	13,677	0.34
66		10	0.145	0.012	6,700	13,721	0.34
67		10	0.145	0.012	6,719	13,763	0.34
68		10	0.145	0.012	6,737	13,805	0.34
69		10	0.145	0.012	6,755	13,846	0.34
70		10	0.145	0.012	6,773	13,887	0.34
71	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
72		20	0.155	0.010	9,200	18,264	0.33
73		20	0.155	0.010	9,200	18,264	0.33
74		20	0.155	0.010	9,200	18,264	0.33
75		20	0.155	0.010	9,200	18,264	0.33
76		20	0.155	0.010	9,200	18,264	0.33
77		20	0.155	0.010	9,200	18,264	0.33
78		20	0.155	0.010	9,200	18,264	0.33
79		20	0.155	0.010	9,200	18,264	0.33
80		20	0.155	0.010	9,200	18,264	0.33
81		20	0.155	0.010	9,200	18,264	0.33
82		20	0.155	0.010	9,200	18,264	0.33
83		20	0.155	0.010	9,200	18,264	0.33
84		20	0.155	0.010	9,200	18,264	0.33
85		20	0.155	0.010	9,200	18,264	0.33
86		20	0.155	0.010	9,200	18,264	0.33
87		20	0.155	0.010	9,200	18,264	0.33
88		20	0.155	0.010	9,200	18,264	0.33
89		20	0.155	0.010	9,200	18,264	0.33
90		20	0.155	0.010	9,200	18,264	0.33

Table A-13 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
92		20	0.155	0.010	9,200	18,264	0.33
93		20	0.155	0.010	9,200	18,264	0.33
94		20	0.155	0.010	9,200	18,264	0.33
95		20	0.155	0.010	9,200	18,264	0.33
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-14

Deleted

Table A-15 (1 of 4)

Generic Site Profile S06 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.130	0.015	2,090	4,800	0.38
2		5	0.130	0.019	2,090	4,809	0.38
3		5	0.130	0.023	2,081	4,861	0.39
4		5	0.130	0.026	2,082	4,912	0.39
5		5	0.130	0.021	2,126	4,963	0.39
6		5	0.130	0.023	2,129	5,014	0.39
7		5	0.130	0.025	2,130	5,065	0.39
8		5	0.130	0.027	2,134	5,115	0.39
9		5	0.130	0.028	2,140	5,165	0.40
10		5	0.130	0.030	2,148	5,215	0.40
011		5	0.135	0.032	4,271	8,891	0.35
12		5	0.135	0.032	4,293	8,936	0.35
13		5	0.135	0.032	4,314	8,981	0.35
14		5	0.135	0.032	4,336	9,026	0.35
15		5	0.135	0.032	4,357	9,070	0.35
16		5	0.135	0.032	4,378	9,114	0.35
17		5	0.135	0.032	4,399	9,158	0.35
18		5	0.135	0.032	4,420	9,202	0.35
19		5	0.135	0.032	4,441	9,245	0.35
20		5	0.135	0.032	4,462	9,288	0.35
21		5	0.135	0.032	4,483	9,331	0.35
22		5	0.135	0.032	4,503	9,374	0.35
23		5	0.135	0.032	4,524	9,417	0.35
24		5	0.135	0.033	4,543	9,459	0.35
25		5	0.135	0.033	4,561	9,501	0.35
26		5	0.135	0.033	4,580	9,543	0.35
27		5	0.135	0.033	4,598	9,584	0.35
28		5	0.135	0.033	4,617	9,626	0.35
29		5	0.135	0.034	4,634	9,667	0.35
30		5	0.135	0.034	4,651	9,707	0.35

Table A-15 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.135	0.034	4,668	9,748	0.35
32		5	0.135	0.034	4,685	9,788	0.35
33		5	0.135	0.034	4,702	9,828	0.35
34		5	0.135	0.034	4,719	9,868	0.35
35		5	0.135	0.035	4,736	9,908	0.35
36		5	0.135	0.035	4,753	9,947	0.35
37		5	0.135	0.035	4,770	9,986	0.35
38		5	0.135	0.035	4,786	10,025	0.35
39		5	0.135	0.035	4,803	10,064	0.35
40		5	0.135	0.035	4,820	10,102	0.35
41		10	0.155	0.010	9,200	18,264	0.33
42		10	0.155	0.010	9,200	18,264	0.33
43		10	0.155	0.010	9,200	18,264	0.33
44		10	0.155	0.010	9,200	18,264	0.33
45		10	0.155	0.010	9,200	18,264	0.33
46		10	0.155	0.010	9,200	18,264	0.33
47		10	0.155	0.010	9,200	18,264	0.33
48		10	0.155	0.010	9,200	18,264	0.33
49		10	0.155	0.010	9,200	18,264	0.33
50		10	0.155	0.010	9,200	18,264	0.33
51		10	0.155	0.010	9,200	18,264	0.33
52		10	0.155	0.010	9,200	18,264	0.33
53		10	0.155	0.010	9,200	18,264	0.33
54		10	0.155	0.010	9,200	18,264	0.33
55		10	0.155	0.010	9,200	18,264	0.33
56		10	0.155	0.010	9,200	18,264	0.33
57		10	0.155	0.010	9,200	18,264	0.33
58		10	0.155	0.010	9,200	18,264	0.33
59		10	0.155	0.010	9,200	18,264	0.33
60		10	0.155	0.010	9,200	18,264	0.33

Table A-15 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	Sand	10	0.155	0.010	9,200	18,264	0.33
62		10	0.155	0.010	9,200	18,264	0.33
63		10	0.155	0.010	9,200	18,264	0.33
64		10	0.155	0.010	9,200	18,264	0.33
65		10	0.155	0.010	9,200	18,264	0.33
66		10	0.155	0.010	9,200	18,264	0.33
67		10	0.155	0.010	9,200	18,264	0.33
68		10	0.155	0.010	9,200	18,264	0.33
69		10	0.155	0.010	9,200	18,264	0.33
70		10	0.155	0.010	9,200	18,264	0.33
71	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
72		20	0.155	0.010	9,200	18,264	0.33
73		20	0.155	0.010	9,200	18,264	0.33
74		20	0.155	0.010	9,200	18,264	0.33
75		20	0.155	0.010	9,200	18,264	0.33
76		20	0.155	0.010	9,200	18,264	0.33
77		20	0.155	0.010	9,200	18,264	0.33
78		20	0.155	0.010	9,200	18,264	0.33
79		20	0.155	0.010	9,200	18,264	0.33
80		20	0.155	0.010	9,200	18,264	0.33
81		20	0.155	0.010	9,200	18,264	0.33
82		20	0.155	0.010	9,200	18,264	0.33
83		20	0.155	0.010	9,200	18,264	0.33
84		20	0.155	0.010	9,200	18,264	0.33
85		20	0.155	0.010	9,200	18,264	0.33
86		20	0.155	0.010	9,200	18,264	0.33
87		20	0.155	0.010	9,200	18,264	0.33
88		20	0.155	0.010	9,200	18,264	0.33
89		20	0.155	0.010	9,200	18,264	0.33
90		20	0.155	0.010	9,200	18,264	0.33

Table A-15 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
92		20	0.155	0.010	9,200	18,264	0.33
93		20	0.155	0.010	9,200	18,264	0.33
94		20	0.155	0.010	9,200	18,264	0.33
95		20	0.155	0.010	9,200	18,264	0.33
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-16 (1 of 4)

Generic Site Profile S07 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.130	0.016	1,813	4,800	0.42
2		5	0.130	0.021	1,802	4,800	0.42
3		5	0.130	0.026	1,794	4,800	0.42
4		5	0.130	0.029	1,790	4,800	0.42
5		5	0.130	0.025	1,820	4,800	0.42
6		5	0.130	0.027	1,817	4,800	0.42
7		5	0.130	0.029	1,818	4,800	0.42
8		5	0.130	0.031	1,820	4,800	0.42
9		5	0.130	0.033	1,826	4,800	0.42
10		5	0.130	0.034	1,832	4,800	0.41
11		5	0.135	0.032	3,714	7,731	0.35
12		5	0.135	0.032	3,733	7,770	0.35
13		5	0.135	0.032	3,752	7,810	0.35
14		5	0.135	0.032	3,770	7,848	0.35
15		5	0.135	0.032	3,789	7,887	0.35
16		5	0.135	0.032	3,807	7,925	0.35
17		5	0.135	0.033	3,825	7,964	0.35
18		5	0.135	0.033	3,841	8,002	0.35
19		5	0.135	0.033	3,858	8,039	0.35
20		5	0.135	0.033	3,874	8,077	0.35
21		5	0.145	0.009	5,826	11,709	0.34
22		5	0.145	0.010	5,839	11,744	0.34
23		5	0.145	0.010	5,853	11,780	0.34
24		5	0.145	0.010	5,866	11,815	0.34
25		5	0.145	0.010	5,880	11,849	0.34
26		5	0.145	0.010	5,894	11,884	0.34
27		5	0.145	0.010	5,907	11,919	0.34
28		5	0.145	0.010	5,921	11,953	0.34
29		5	0.145	0.010	5,935	11,987	0.34
30		5	0.145	0.010	5,949	12,021	0.34

Table A-16 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.145	0.010	5,962	12,054	0.34
32		5	0.145	0.011	5,976	12,088	0.34
33		5	0.145	0.011	5,990	12,121	0.34
34		5	0.145	0.011	6,004	12,154	0.34
35		5	0.145	0.011	6,018	12,187	0.34
36		5	0.145	0.011	6,031	12,220	0.34
37		5	0.145	0.011	6,045	12,252	0.34
38		5	0.145	0.011	6,059	12,284	0.34
39		5	0.145	0.011	6,073	12,316	0.34
40		5	0.145	0.011	6,086	12,348	0.34
41		10	0.155	0.010	9,200	18,264	0.33
42		10	0.155	0.010	9,200	18,264	0.33
43		10	0.155	0.010	9,200	18,264	0.33
44		10	0.155	0.010	9,200	18,264	0.33
45		10	0.155	0.010	9,200	18,264	0.33
46		10	0.155	0.010	9,200	18,264	0.33
47		10	0.155	0.010	9,200	18,264	0.33
48		10	0.155	0.010	9,200	18,264	0.33
49		10	0.155	0.010	9,200	18,264	0.33
50		10	0.155	0.010	9,200	18,264	0.33
51		10	0.155	0.010	9,200	18,264	0.33
52		10	0.155	0.010	9,200	18,264	0.33
53		10	0.155	0.010	9,200	18,264	0.33
54		10	0.155	0.010	9,200	18,264	0.33
55		10	0.155	0.010	9,200	18,264	0.33
56		10	0.155	0.010	9,200	18,264	0.33
57		10	0.155	0.010	9,200	18,264	0.33
58		10	0.155	0.010	9,200	18,264	0.33
59		10	0.155	0.010	9,200	18,264	0.33
60		10	0.155	0.010	9,200	18,264	0.33

Table A-16 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	Sand	10	0.155	0.010	9,200	18,264	0.33
62		10	0.155	0.010	9,200	18,264	0.33
63		10	0.155	0.010	9,200	18,264	0.33
64		10	0.155	0.010	9,200	18,264	0.33
65		10	0.155	0.010	9,200	18,264	0.33
66		10	0.155	0.010	9,200	18,264	0.33
67		10	0.155	0.010	9,200	18,264	0.33
68		10	0.155	0.010	9,200	18,264	0.33
69		10	0.155	0.010	9,200	18,264	0.33
70		10	0.155	0.010	9,200	18,264	0.33
71	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
72		20	0.155	0.010	9,200	18,264	0.33
73		20	0.155	0.010	9,200	18,264	0.33
74		20	0.155	0.010	9,200	18,264	0.33
75		20	0.155	0.010	9,200	18,264	0.33
76		20	0.155	0.010	9,200	18,264	0.33
77		20	0.155	0.010	9,200	18,264	0.33
78		20	0.155	0.010	9,200	18,264	0.33
79		20	0.155	0.010	9,200	18,264	0.33
80		20	0.155	0.010	9,200	18,264	0.33
81		20	0.155	0.010	9,200	18,264	0.33
82		20	0.155	0.010	9,200	18,264	0.33
83		20	0.155	0.010	9,200	18,264	0.33
84		20	0.155	0.010	9,200	18,264	0.33
85		20	0.155	0.010	9,200	18,264	0.33
86		20	0.155	0.010	9,200	18,264	0.33
87		20	0.155	0.010	9,200	18,264	0.33
88		20	0.155	0.010	9,200	18,264	0.33
89		20	0.155	0.010	9,200	18,264	0.33
90		20	0.155	0.010	9,200	18,264	0.33

Table A-16 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
92		20	0.155	0.010	9,200	18,264	0.33
93		20	0.155	0.010	9,200	18,264	0.33
94		20	0.155	0.010	9,200	18,264	0.33
95		20	0.155	0.010	9,200	18,264	0.33
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-17 (1 of 4)

Generic Site Profile S08 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.145	0.002	6,348	12,602	0.33
2		5	0.145	0.004	6,371	12,648	0.33
3		5	0.145	0.005	6,394	12,693	0.33
4		5	0.145	0.006	6,416	12,738	0.33
5		5	0.145	0.006	6,435	12,782	0.33
6		5	0.145	0.006	6,450	12,827	0.33
7		5	0.145	0.007	6,467	12,871	0.33
8		5	0.145	0.007	6,485	12,915	0.33
9		5	0.145	0.007	6,503	12,958	0.33
10		5	0.145	0.007	6,521	13,002	0.33
11		5	0.145	0.008	6,540	13,045	0.33
12		5	0.145	0.008	6,559	13,088	0.33
13		5	0.145	0.008	6,578	13,131	0.33
14		5	0.145	0.008	6,597	13,174	0.33
15		5	0.145	0.008	6,616	13,216	0.33
16		5	0.145	0.008	6,631	13,258	0.33
17		5	0.145	0.008	6,646	13,300	0.33
18		5	0.145	0.009	6,662	13,342	0.33
19		5	0.145	0.009	6,677	13,383	0.33
20		5	0.145	0.009	6,692	13,424	0.33
21		5	0.145	0.009	6,708	13,465	0.33
22		5	0.145	0.009	6,724	13,506	0.34
23		5	0.145	0.009	6,740	13,546	0.34
24		5	0.145	0.009	6,756	13,587	0.34
25		5	0.145	0.009	6,773	13,627	0.34
26		5	0.145	0.010	6,788	13,667	0.34
27		5	0.145	0.010	6,805	13,706	0.34
28		5	0.145	0.010	6,821	13,746	0.34
29		5	0.145	0.010	6,837	13,785	0.34
30		5	0.145	0.010	6,854	13,824	0.34

Table A-17 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.145	0.010	6,869	13,862	0.34
32		5	0.145	0.010	6,886	13,901	0.34
33		5	0.145	0.010	6,902	13,939	0.34
34		5	0.145	0.010	6,918	13,977	0.34
35		5	0.145	0.010	6,935	14,015	0.34
36		5	0.145	0.010	6,951	14,053	0.34
37		5	0.145	0.010	6,967	14,090	0.34
38		5	0.145	0.010	6,983	14,127	0.34
39		5	0.145	0.011	7,000	14,164	0.34
40		5	0.145	0.011	7,015	14,200	0.34
41		10	0.155	0.010	9,200	18,264	0.33
42		10	0.155	0.010	9,200	18,264	0.33
43		10	0.155	0.010	9,200	18,264	0.33
44		10	0.155	0.010	9,200	18,264	0.33
45		10	0.155	0.010	9,200	18,264	0.33
46		10	0.155	0.010	9,200	18,264	0.33
47		10	0.155	0.010	9,200	18,264	0.33
48		10	0.155	0.010	9,200	18,264	0.33
49		10	0.155	0.010	9,200	18,264	0.33
50		10	0.155	0.010	9,200	18,264	0.33
51		10	0.155	0.010	9,200	18,264	0.33
52		10	0.155	0.010	9,200	18,264	0.33
53		10	0.155	0.010	9,200	18,264	0.33
54		10	0.155	0.010	9,200	18,264	0.33
55		10	0.155	0.010	9,200	18,264	0.33
56		10	0.155	0.010	9,200	18,264	0.33
57		10	0.155	0.010	9,200	18,264	0.33
58		10	0.155	0.010	9,200	18,264	0.33
59		10	0.155	0.010	9,200	18,264	0.33
60		10	0.155	0.010	9,200	18,264	0.33

Table A-17 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	Sand	10	0.155	0.010	9,200	18,264	0.33
62		10	0.155	0.010	9,200	18,264	0.33
63		10	0.155	0.010	9,200	18,264	0.33
64		10	0.155	0.010	9,200	18,264	0.33
65		10	0.155	0.010	9,200	18,264	0.33
66		10	0.155	0.010	9,200	18,264	0.33
67		10	0.155	0.010	9,200	18,264	0.33
68		10	0.155	0.010	9,200	18,264	0.33
69		10	0.155	0.010	9,200	18,264	0.33
70		10	0.155	0.010	9,200	18,264	0.33
71	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
72		20	0.155	0.010	9,200	18,264	0.33
73		20	0.155	0.010	9,200	18,264	0.33
74		20	0.155	0.010	9,200	18,264	0.33
75		20	0.155	0.010	9,200	18,264	0.33
76		20	0.155	0.010	9,200	18,264	0.33
77		20	0.155	0.010	9,200	18,264	0.33
78		20	0.155	0.010	9,200	18,264	0.33
79		20	0.155	0.010	9,200	18,264	0.33
80		20	0.155	0.010	9,200	18,264	0.33
81		20	0.155	0.010	9,200	18,264	0.33
82		20	0.155	0.010	9,200	18,264	0.33
83		20	0.155	0.010	9,200	18,264	0.33
84		20	0.155	0.010	9,200	18,264	0.33
85		20	0.155	0.010	9,200	18,264	0.33
86		20	0.155	0.010	9,200	18,264	0.33
87		20	0.155	0.010	9,200	18,264	0.33
88		20	0.155	0.010	9,200	18,264	0.33
89		20	0.155	0.010	9,200	18,264	0.33
90		20	0.155	0.010	9,200	18,264	0.33

Table A-17 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
92		20	0.155	0.010	9,200	18,264	0.33
93		20	0.155	0.010	9,200	18,264	0.33
94		20	0.155	0.010	9,200	18,264	0.33
95		20	0.155	0.010	9,200	18,264	0.33
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-18 (1 of 4)

Generic Site Profile S09 Used in SSI Analysis

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
1	Sand	5	0.145	0.003	4,692	9,315	0.33
2		5	0.145	0.005	4,709	9,348	0.33
3		5	0.145	0.006	4,722	9,382	0.33
4		5	0.145	0.007	4,730	9,415	0.33
5		5	0.145	0.007	4,741	9,448	0.33
6		5	0.145	0.008	4,753	9,481	0.33
7		5	0.145	0.008	4,765	9,513	0.33
8		5	0.145	0.008	4,778	9,546	0.33
9		5	0.145	0.008	4,785	9,578	0.33
10		5	0.145	0.009	4,793	9,610	0.33
11		5	0.145	0.009	4,802	9,642	0.34
12		5	0.145	0.009	4,811	9,674	0.34
13		5	0.145	0.009	4,821	9,706	0.34
14		5	0.145	0.010	4,832	9,737	0.34
15		5	0.145	0.010	4,842	9,768	0.34
16		5	0.145	0.010	4,853	9,799	0.34
17		5	0.145	0.010	4,864	9,830	0.34
18		5	0.145	0.010	4,875	9,861	0.34
19		5	0.145	0.011	4,886	9,892	0.34
20		5	0.145	0.011	4,897	9,922	0.34
21		5	0.155	0.010	9,200	18,264	0.33
22		5	0.155	0.010	9,200	18,264	0.33
23		5	0.155	0.010	9,200	18,264	0.33
24		5	0.155	0.010	9,200	18,264	0.33
25		5	0.155	0.010	9,200	18,264	0.33
26		5	0.155	0.010	9,200	18,264	0.33
27		5	0.155	0.010	9,200	18,264	0.33
28		5	0.155	0.010	9,200	18,264	0.33
29		5	0.155	0.010	9,200	18,264	0.33
30		5	0.155	0.010	9,200	18,264	0.33

Table A-18 (2 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
31	Sand	5	0.155	0.010	9,200	18,264	0.33
32		5	0.155	0.010	9,200	18,264	0.33
33		5	0.155	0.010	9,200	18,264	0.33
34		5	0.155	0.010	9,200	18,264	0.33
35		5	0.155	0.010	9,200	18,264	0.33
36		5	0.155	0.010	9,200	18,264	0.33
37		5	0.155	0.010	9,200	18,264	0.33
38		5	0.155	0.010	9,200	18,264	0.33
39		5	0.155	0.010	9,200	18,264	0.33
40		5	0.155	0.010	9,200	18,264	0.33
41		10	0.155	0.010	9,200	18,264	0.33
42		10	0.155	0.010	9,200	18,264	0.33
43		10	0.155	0.010	9,200	18,264	0.33
44		10	0.155	0.010	9,200	18,264	0.33
45		10	0.155	0.010	9,200	18,264	0.33
46		10	0.155	0.010	9,200	18,264	0.33
47		10	0.155	0.010	9,200	18,264	0.33
48		10	0.155	0.010	9,200	18,264	0.33
49		10	0.155	0.010	9,200	18,264	0.33
50		10	0.155	0.010	9,200	18,264	0.33
51		10	0.155	0.010	9,200	18,264	0.33
52		10	0.155	0.010	9,200	18,264	0.33
53		10	0.155	0.010	9,200	18,264	0.33
54		10	0.155	0.010	9,200	18,264	0.33
55		10	0.155	0.010	9,200	18,264	0.33
56		10	0.155	0.010	9,200	18,264	0.33
57		10	0.155	0.010	9,200	18,264	0.33
58		10	0.155	0.010	9,200	18,264	0.33
59		10	0.155	0.010	9,200	18,264	0.33
60		10	0.155	0.010	9,200	18,264	0.33

Table A-18 (3 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
61	Sand	10	0.155	0.010	9,200	18,264	0.33
62		10	0.155	0.010	9,200	18,264	0.33
63		10	0.155	0.010	9,200	18,264	0.33
64		10	0.155	0.010	9,200	18,264	0.33
65		10	0.155	0.010	9,200	18,264	0.33
66		10	0.155	0.010	9,200	18,264	0.33
67		10	0.155	0.010	9,200	18,264	0.33
68		10	0.155	0.010	9,200	18,264	0.33
69		10	0.155	0.010	9,200	18,264	0.33
70		10	0.155	0.010	9,200	18,264	0.33
71	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
72		20	0.155	0.010	9,200	18,264	0.33
73		20	0.155	0.010	9,200	18,264	0.33
74		20	0.155	0.010	9,200	18,264	0.33
75		20	0.155	0.010	9,200	18,264	0.33
76		20	0.155	0.010	9,200	18,264	0.33
77		20	0.155	0.010	9,200	18,264	0.33
78		20	0.155	0.010	9,200	18,264	0.33
79		20	0.155	0.010	9,200	18,264	0.33
80		20	0.155	0.010	9,200	18,264	0.33
81		20	0.155	0.010	9,200	18,264	0.33
82		20	0.155	0.010	9,200	18,264	0.33
83		20	0.155	0.010	9,200	18,264	0.33
84		20	0.155	0.010	9,200	18,264	0.33
85		20	0.155	0.010	9,200	18,264	0.33
86		20	0.155	0.010	9,200	18,264	0.33
87		20	0.155	0.010	9,200	18,264	0.33
88		20	0.155	0.010	9,200	18,264	0.33
89		20	0.155	0.010	9,200	18,264	0.33
90		20	0.155	0.010	9,200	18,264	0.33

Table A-18 (4 of 4)

Layer No.	Soil Type	Thickness (ft)	Weight Density (kcf)	Damping	Avg Strain-Compatible Vs (fps)	Vp (fps)	Poisson's Ratio
91	Soft Rock	20	0.155	0.010	9,200	18,264	0.33
92		20	0.155	0.010	9,200	18,264	0.33
93		20	0.155	0.010	9,200	18,264	0.33
94		20	0.155	0.010	9,200	18,264	0.33
95		20	0.155	0.010	9,200	18,264	0.33
96	Rock		0.155	0.004	9,200	18,264	0.33

Table A-19

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S01

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp[1)] (ft/sec)	Vs (ft/sec)	Vp[2)] (ft/sec)	Damping
1	10.5	0.137	620	4800	530	2690	0.036
2	11.0	0.137	820	4800	620	3160	0.056
3	10.0	0.137	930	4800	620	3160	0.060
4	12.0	0.137	1013	4800	700	3560	0.060
5	10.0	0.137	1081	4800	720	3690	0.060

Note

1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.
2) Strain-compatible Vp is limited by Poisson’s ratio of 0.48.

Table A-20

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S02

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp(1) (ft/sec)	Vs (ft/sec)	Vp(2) (ft/sec)	Damping
1	10.5	0.137	620	4800	510	2610	0.042
2	11.0	0.137	820	4800	590	3010	0.060
3	10.0	0.137	930	4800	640	3250	0.060
4	12.0	0.137	1013	4800	660	3370	0.060
5	10.0	0.137	1081	4800	680	3480	0.060

Note

(1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.
(2) Strain-compatible Vp is limited by Poisson's ratio of 0.48.

Table A-21

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S03

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp(1) (ft/sec)	Vs (ft/sec)	Vp(2) (ft/sec)	Damping
1	10.5	0.137	620	4800	580	2950	0.019
2	11.0	0.137	820	4800	710	3600	0.034
3	10.0	0.137	930	4800	770	3920	0.042
4	12.0	0.137	1013	4800	810	4120	0.047
5	10.0	0.137	1081	4800	840	4300	0.051

Note

(1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.
(2) Strain-compatible Vp is limited by Poisson’s ratio of 0.48.

Table A-22

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S04

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp(1) (ft/sec)	Vs (ft/sec)	Vp(2) (ft/sec)	Damping
1	10.5	0.137	620	4800	570	2910	0.020
2	11.0	0.137	820	4800	690	3500	0.039
3	10.0	0.137	930	4800	740	3790	0.047
4	12.0	0.137	1013	4800	780	3990	0.053
5	10.0	0.137	1081	4800	820	4160	0.056

Note

(1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.

(2) Strain-compatible Vp is limited by Poisson's ratio of 0.48.

Table A-23

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Table A-24

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S06

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp(1) (ft/sec)	Vs (ft/sec)	Vp(2) (ft/sec)	Damping
1	10.5	0.137	620	4800	580	2950	0.019
2	11.0	0.137	820	4800	710	3600	0.034
3	10.0	0.137	930	4800	770	3920	0.042
4	12.0	0.137	1013	4800	810	4120	0.047
5	10.0	0.137	1081	4800	860	4380	0.048

Note

(1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.

(2) Strain-compatible Vp is limited by Poisson’s ratio of 0.48.

Table A-25

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S07

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp(1) (ft/sec)	Vs (ft/sec)	Vp(2) (ft/sec)	Damping
1	10.5	0.137	620	4800	570	2910	0.020
2	11.0	0.137	820	4800	690	3500	0.039
3	10.0	0.137	930	4800	740	3790	0.047
4	12.0	0.137	1013	4800	780	3990	0.053
5	10.0	0.137	1081	4800	830	4240	0.053

Note

(1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.

(2) Strain-compatible Vp is limited by Poisson's ratio of 0.48.

Table A-26

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S08

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp(1) (ft/sec)	Vs (ft/sec)	Vp(2) (ft/sec)	Damping
1	10.5	0.137	620	4800	620	3160	0.010
2	11.0	0.137	820	4800	800	4050	0.014
3	10.0	0.137	930	4800	890	4520	0.016
4	12.0	0.137	1013	4800	960	4800	0.017
5	10.0	0.137	1081	4800	1010	4800	0.018

Note

(1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.

(2) Strain-compatible Vp is limited by Poisson’s ratio of 0.48.

Table A-27

Backfill Low-Strain & Strain-Compatible Properties for SASSI for Site Profile S09

SASSI Layer	Thickness (ft)	Density (kcf)	Low Strain		Strain-Compatible		
			Vs (ft/sec)	Vp(1) (ft/sec)	Vs (ft/sec)	Vp(2) (ft/sec)	Damping
1	10.5	0.137	620	4800	610	3120	0.012
2	11.0	0.137	820	4800	780	3970	0.017
3	10.0	0.137	930	4800	870	4430	0.019
4	12.0	0.137	1013	4800	930	4760	0.020
5	10.0	0.137	1081	4800	980	4800	0.024

Note

(1) Since soil is saturated, Vp of 4800 ft/sec is used for low-strain soil.

(2) Strain-compatible Vp is limited by Poisson’s ratio of 0.48.

APPENDIX B

STRUCTURAL RESPONSE FORCES AND MOMENTS OF NI STRUCTURES

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Table B-1 CASE01C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S01C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	7.86E+03	7.64E+03	4.91E+03	1.08E+05	1.11E+05	6.91E+03
2	CS: CUT AT EL. 281'	281	1.52E+04	1.46E+04	9.52E+03	4.49E+05	4.59E+05	2.39E+04
3	CS: CUT AT EL. 254.5'	254.5	2.00E+04	1.93E+04	1.28E+04	9.61E+05	9.89E+05	3.94E+04
4	CS: CUT AT EL. 241'	241	2.27E+04	2.22E+04	1.48E+04	1.29E+06	1.33E+06	4.87E+04
5	CS: CUT AT EL. 220'	220	2.94E+04	2.99E+04	1.92E+04	2.00E+06	2.02E+06	7.41E+04
6	CS: CUT AT EL. 200'	200	3.33E+04	3.44E+04	2.26E+04	2.70E+06	2.70E+06	8.88E+04
7	CS: CUT AT EL. 178'	178	3.67E+04	3.83E+04	2.59E+04	3.55E+06	3.53E+06	1.02E+05
8	CS: CUT AT EL. 156'	156	3.97E+04	4.12E+04	2.89E+04	4.48E+06	4.42E+06	1.13E+05
9	CS: CUT AT EL. 136'	136	4.17E+04	4.28E+04	3.11E+04	5.36E+06	5.27E+06	1.19E+05
10	CS: CUT AT EL. 130'	130	4.25E+04	4.33E+04	3.19E+04	5.63E+06	5.53E+06	1.22E+05
11	CS: CUT AT EL. 125'	125	4.25E+04	4.33E+04	3.19E+04	5.85E+06	5.74E+06	1.22E+05
12	CS: CUT AT EL. 114'	114	4.39E+04	4.47E+04	3.35E+04	6.36E+06	6.25E+06	1.27E+05
13	CS: CUT AT EL. 100'	100	4.49E+04	4.57E+04	3.47E+04	7.01E+06	6.89E+06	1.30E+05
14	CS: CUT AT EL. 78'	78	4.57E+04	4.65E+04	3.58E+04	8.02E+06	7.90E+06	1.32E+05
15	PSW: CUT AT EL. 156'	156	1.28E+03	2.40E+03	7.98E+02	5.62E+04	2.68E+04	2.76E+04
16	PSW: CUT AT EL. 136.5'	136.5	3.20E+03	3.16E+03	2.29E+03	1.06E+05	1.02E+05	4.45E+04
17	PSW: CUT AT EL. 130'	130	3.92E+03	3.69E+03	2.94E+03	1.23E+05	1.39E+05	5.05E+04
18	PSW: CUT AT EL. 114'	114	5.43E+03	4.91E+03	4.44E+03	1.86E+05	2.39E+05	6.71E+04
19	PSW: CUT AT EL. 100'	100	6.82E+03	6.27E+03	6.02E+03	2.64E+05	3.47E+05	8.21E+04
20	PSW: CUT AT EL. 78'	78	8.06E+03	7.72E+03	7.75E+03	4.13E+05	5.14E+05	7.14E+04
21	PSW: CUT AT EL. 66'	66	8.35E+03	8.07E+03	8.18E+03	5.05E+05	6.14E+05	6.77E+04
22	SSW: CUT AT EL. 191'	191	1.10E+02	1.15E+02	6.02E+01	2.21E+03	2.97E+03	4.34E+03
23	SSW: CUT AT EL. 156'	156	2.73E+03	2.67E+03	1.56E+03	8.47E+04	7.79E+04	2.87E+04
24	SSW: CUT AT EL. 136.5'	136.5	5.88E+03	4.44E+03	3.83E+03	1.75E+05	2.22E+05	4.65E+04
25	SSW: CUT AT EL. 130'	130	7.23E+03	5.55E+03	5.01E+03	2.11E+05	2.90E+05	5.86E+04
26	SSW: CUT AT EL. 114'	114	8.32E+03	6.51E+03	6.07E+03	2.94E+05	4.18E+05	7.04E+04
27	SSW: CUT AT EL. 100'	100	9.43E+03	7.59E+03	7.30E+03	3.97E+05	5.59E+05	8.23E+04
28	SSW: CUT AT EL. 78'	78	1.49E+04	1.37E+04	1.38E+04	6.80E+05	9.15E+05	9.36E+04

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-2 CASE01C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S01C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	2.064E+03	2.380E+03	1.474E+03	1.467E+05	1.084E+05	2.089E+05
30	AB-EAST: CUT AT EL. 213'	213	5.206E+03	5.113E+03	4.309E+03	3.529E+05	5.382E+05	5.952E+05
31	AB-EAST: CUT AT EL. 195'	195	6.854E+03	6.833E+03	5.356E+03	4.905E+05	6.815E+05	7.952E+05
32	AB-WEST: CUT AT EL. 195'	195	3.378E+03	2.606E+03	2.567E+03	6.510E+04	2.788E+05	2.422E+05
33	AB: CUT AT EL. 174'	174	2.579E+04	2.412E+04	1.957E+04	1.084E+06	1.237E+06	8.413E+05
34	AB: CUT AT EL. 156'	156	4.204E+04	4.130E+04	3.580E+04	1.922E+06	2.354E+06	1.247E+06
35	AB: CUT AT EL. 137.5'	137.5	6.378E+04	6.579E+04	5.759E+04	3.169E+06	3.797E+06	1.556E+06
36	AB: CUT AT EL. 120'	120	8.562E+04	9.278E+04	8.139E+04	4.816E+06	5.590E+06	1.933E+06
37	AB: CUT AT EL. 98.5'	98.5	1.091E+05	1.213E+05	1.072E+05	7.287E+06	8.149E+06	2.325E+06
38	AB: CUT AT EL. 77'	77	1.367E+05	1.507E+05	1.384E+05	1.070E+07	1.103E+07	2.476E+06
39	AB: CUT AT EL. 67'	67	1.528E+05	1.667E+05	1.579E+05	1.250E+07	1.253E+07	2.552E+06
40	AB: CUT AT EL. 55'	55	1.647E+05	1.761E+05	1.703E+05	1.473E+07	1.433E+07	2.623E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-3 CASE01C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S01C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	7.86E+03	7.64E+03	4.91E+03	0.90	0.88	0.57
CS: 2	281	307.5	7.29E+03	7.00E+03	4.61E+03	0.81	0.77	0.51
CS: 3	254.5	281	4.85E+03	4.68E+03	3.32E+03	0.71	0.68	0.48
CS: 4	241	254.5	2.65E+03	2.89E+03	1.96E+03	0.64	0.69	0.47
CS: 5	220	241	6.74E+03	7.73E+03	4.43E+03	0.57	0.66	0.38
CS: 6	200	220	3.88E+03	4.49E+03	3.42E+03	0.48	0.55	0.42
CS: 7	178	200	3.45E+03	3.88E+03	3.28E+03	0.41	0.46	0.39
CS: 8	156	178	2.96E+03	2.93E+03	3.00E+03	0.35	0.35	0.35
CS: 9	136	156	2.02E+03	1.59E+03	2.14E+03	0.30	0.23	0.32
CS: 10	130	136	7.57E+02	5.00E+02	8.23E+02	0.27	0.18	0.29
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	1.40E+03	1.34E+03	1.58E+03	0.24	0.23	0.27
CS: 13	100	114	1.01E+03	1.02E+03	1.21E+03	0.20	0.20	0.24
CS: 14	78	100	8.30E+02	8.11E+02	1.16E+03	0.14	0.14	0.20
PSW: 1	156	191	1.28E+03	2.40E+03	7.98E+02	0.47	0.80	0.29
PSW: 2	136.5	156	1.92E+03	7.53E+02	1.49E+03	0.38	0.15	0.29
PSW: 3	130	136.5	7.21E+02	5.32E+02	6.53E+02	0.33	0.24	0.30
PSW: 4	114	130	1.51E+03	1.23E+03	1.50E+03	0.29	0.24	0.29
PSW: 5	100	114	1.38E+03	1.35E+03	1.58E+03	0.25	0.24	0.28
PSW: 6	78	100	1.25E+03	1.45E+03	1.73E+03	0.19	0.22	0.27
PSW: 7	66	78	2.89E+02	3.50E+02	4.32E+02	0.17	0.21	0.26
SSW: 1	191	200	1.10E+02	1.15E+02	6.02E+01	0.72	0.75	0.39
SSW: 2	156	191	2.62E+03	2.56E+03	1.50E+03	0.55	0.51	0.31
SSW: 3	136.5	156	3.15E+03	1.76E+03	2.27E+03	0.41	0.23	0.30
SSW: 4	130	136.5	1.34E+03	1.11E+03	1.18E+03	0.34	0.28	0.30
SSW: 5	114	130	1.09E+03	9.63E+02	1.06E+03	0.30	0.27	0.29
SSW: 6	100	114	1.11E+03	1.07E+03	1.24E+03	0.25	0.25	0.28
SSW: 7	78	100	5.43E+03	6.11E+03	6.46E+03	0.20	0.23	0.26

Notes
1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-4 CASE01C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S01C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	2.064E+03	2.380E+03	1.474E+03	0.53	0.61	0.38
AB-FHA: 2	213	213.5	3.142E+03	2.732E+03	2.835E+03	0.54	0.48	0.49
AB-FHA: 3	195	213	1.648E+03	1.720E+03	1.047E+03	0.49	0.51	0.31
AB-MCR: 1	195	213	3.378E+03	2.606E+03	2.567E+03	0.49	0.38	0.37
AB: 1	174	195	1.556E+04	1.468E+04	1.164E+04	0.40	0.38	0.30
AB: 2	156	174	1.625E+04	1.718E+04	1.624E+04	0.35	0.37	0.35
AB: 3	137.5	156	2.174E+04	2.448E+04	2.179E+04	0.31	0.35	0.32
AB: 4	120	137.5	2.184E+04	2.699E+04	2.380E+04	0.27	0.33	0.30
AB: 5	98.5	120	2.349E+04	2.851E+04	2.579E+04	0.26	0.31	0.28
AB: 6	77	98.5	2.761E+04	2.943E+04	3.122E+04	0.24	0.26	0.26
AB: 7	67	77	1.604E+04	1.602E+04	1.946E+04	0.22	0.22	0.27
AB: 8	55	67	1.195E+04	9.385E+03	1.240E+04	0.25	0.20	0.26

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-5 CASE01C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S01C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	0.90	0.88	0.57
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	0.81	0.77	0.51
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	0.71	0.68	0.48
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.64	0.69	0.47
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.57	0.66	0.38
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.48	0.55	0.42
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.41	0.46	0.39
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.35	0.35	0.35
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.30	0.23	0.32
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.27	0.18	0.29
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.24	0.23	0.27
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.20	0.20	0.24
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.14	0.14	0.20
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.47	0.80	0.29
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.38	0.15	0.29
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.33	0.24	0.30
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.29	0.24	0.29
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.25	0.24	0.28
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.19	0.22	0.27
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.17	0.21	0.26
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	0.72	0.75	0.39
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.55	0.51	0.31
SSW: 3	136.5	156	7.60E+03	7.59E+03	7.59E+03	0.41	0.23	0.30
SSW: 4	130	136.5	3.96E+03	3.97E+03	3.97E+03	0.34	0.28	0.30
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.30	0.27	0.29
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.25	0.25	0.28
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.20	0.23	0.26
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ΔWx, ΔWy, ΔWz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-6 CASE01C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S01C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.53	0.61	0.38
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	0.54	0.48	0.49
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.49	0.51	0.31
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	0.49	0.38	0.37
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.40	0.38	0.30
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.35	0.37	0.35
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.31	0.35	0.32
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.27	0.33	0.30
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.26	0.31	0.28
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.24	0.26	0.26
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.22	0.22	0.27
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.25	0.20	0.26
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-7 CASE02C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S02C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	7.24E+03	7.54E+03	5.47E+03	1.06E+05	1.02E+05	7.69E+03
2	CS: CUT AT EL. 281'	281	1.40E+04	1.45E+04	1.07E+04	4.41E+05	4.20E+05	2.66E+04
3	CS: CUT AT EL. 254.5'	254.5	1.84E+04	1.90E+04	1.44E+04	9.47E+05	9.07E+05	4.37E+04
4	CS: CUT AT EL. 241'	241	2.09E+04	2.14E+04	1.66E+04	1.27E+06	1.22E+06	5.40E+04
5	CS: CUT AT EL. 220'	220	2.72E+04	2.81E+04	2.18E+04	1.90E+06	1.85E+06	8.05E+04
6	CS: CUT AT EL. 200'	200	3.09E+04	3.23E+04	2.57E+04	2.55E+06	2.48E+06	9.67E+04
7	CS: CUT AT EL. 178'	178	3.42E+04	3.60E+04	2.94E+04	3.33E+06	3.25E+06	1.12E+05
8	CS: CUT AT EL. 156'	156	3.70E+04	3.89E+04	3.28E+04	4.21E+06	4.07E+06	1.24E+05
9	CS: CUT AT EL. 136'	136	3.89E+04	4.06E+04	3.53E+04	5.04E+06	4.85E+06	1.31E+05
10	CS: CUT AT EL. 130'	130	3.95E+04	4.14E+04	3.63E+04	5.31E+06	5.10E+06	1.34E+05
11	CS: CUT AT EL. 125'	125	3.95E+04	4.14E+04	3.63E+04	5.50E+06	5.29E+06	1.34E+05
12	CS: CUT AT EL. 114'	114	4.08E+04	4.28E+04	3.81E+04	5.99E+06	5.76E+06	1.39E+05
13	CS: CUT AT EL. 100'	100	4.17E+04	4.38E+04	3.96E+04	6.60E+06	6.35E+06	1.42E+05
14	CS: CUT AT EL. 78'	78	4.25E+04	4.45E+04	4.11E+04	7.56E+06	7.30E+06	1.44E+05
15	PSW: CUT AT EL. 156'	156	1.33E+03	2.13E+03	8.86E+02	4.72E+04	2.77E+04	2.37E+04
16	PSW: CUT AT EL. 136.5'	136.5	3.35E+03	3.16E+03	2.56E+03	9.97E+04	1.05E+05	4.13E+04
17	PSW: CUT AT EL. 130'	130	4.12E+03	3.83E+03	3.28E+03	1.20E+05	1.44E+05	5.17E+04
18	PSW: CUT AT EL. 114'	114	5.76E+03	5.34E+03	4.97E+03	1.83E+05	2.49E+05	7.44E+04
19	PSW: CUT AT EL. 100'	100	7.30E+03	6.82E+03	6.77E+03	2.73E+05	3.62E+05	9.05E+04
20	PSW: CUT AT EL. 78'	78	8.72E+03	8.35E+03	8.77E+03	4.43E+05	5.40E+05	7.90E+04
21	PSW: CUT AT EL. 66'	66	9.03E+03	8.71E+03	9.28E+03	5.47E+05	6.48E+05	7.53E+04
22	SSW: CUT AT EL. 191'	191	1.10E+02	1.16E+02	6.17E+01	2.33E+03	2.91E+03	4.66E+03
23	SSW: CUT AT EL. 156'	156	2.87E+03	2.41E+03	1.69E+03	8.24E+04	7.40E+04	2.90E+04
24	SSW: CUT AT EL. 136.5'	136.5	6.24E+03	4.90E+03	4.21E+03	1.91E+05	2.13E+05	4.54E+04
25	SSW: CUT AT EL. 130'	130	7.70E+03	6.11E+03	5.52E+03	2.38E+05	2.80E+05	5.85E+04
26	SSW: CUT AT EL. 114'	114	8.90E+03	7.15E+03	6.70E+03	3.40E+05	4.29E+05	7.12E+04
27	SSW: CUT AT EL. 100'	100	1.01E+04	8.31E+03	8.10E+03	4.39E+05	5.85E+05	8.43E+04
28	SSW: CUT AT EL. 78'	78	1.64E+04	1.48E+04	1.57E+04	7.49E+05	9.65E+05	9.25E+04

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-8 CASE02C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S02C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	1.971E+03	2.449E+03	1.537E+03	1.506E+05	1.149E+05	2.358E+05
30	AB-EAST: CUT AT EL. 213'	213	5.046E+03	4.972E+03	4.525E+03	3.735E+05	5.660E+05	6.167E+05
31	AB-EAST: CUT AT EL. 195'	195	6.599E+03	6.592E+03	5.626E+03	5.252E+05	7.247E+05	8.222E+05
32	AB-WEST: CUT AT EL. 195'	195	3.474E+03	2.636E+03	2.535E+03	7.510E+04	2.765E+05	2.427E+05
33	AB: CUT AT EL. 174'	174	2.605E+04	2.292E+04	2.074E+04	1.214E+06	1.382E+06	9.198E+05
34	AB: CUT AT EL. 156'	156	4.285E+04	3.933E+04	3.656E+04	2.132E+06	2.495E+06	1.192E+06
35	AB: CUT AT EL. 137.5'	137.5	6.495E+04	6.222E+04	5.903E+04	3.471E+06	3.996E+06	1.402E+06
36	AB: CUT AT EL. 120'	120	8.799E+04	8.735E+04	8.404E+04	5.225E+06	5.703E+06	1.604E+06
37	AB: CUT AT EL. 98.5'	98.5	1.112E+05	1.140E+05	1.123E+05	7.663E+06	8.271E+06	1.899E+06
38	AB: CUT AT EL. 77'	77	1.352E+05	1.413E+05	1.486E+05	1.061E+07	1.156E+07	2.028E+06
39	AB: CUT AT EL. 67'	67	1.485E+05	1.555E+05	1.695E+05	1.218E+07	1.331E+07	2.194E+06
40	AB: CUT AT EL. 55'	55	1.557E+05	1.635E+05	1.829E+05	1.404E+07	1.540E+07	2.337E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-9 CASE02C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S02C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	7.24E+03	7.54E+03	5.47E+03	0.83	0.87	0.63
CS: 2	281	307.5	6.73E+03	6.91E+03	5.18E+03	0.74	0.76	0.57
CS: 3	254.5	281	4.47E+03	4.52E+03	3.72E+03	0.65	0.66	0.54
CS: 4	241	254.5	2.48E+03	2.41E+03	2.20E+03	0.60	0.58	0.53
CS: 5	220	241	6.30E+03	6.70E+03	5.25E+03	0.54	0.57	0.45
CS: 6	200	220	3.67E+03	4.27E+03	3.86E+03	0.45	0.53	0.48
CS: 7	178	200	3.30E+03	3.71E+03	3.72E+03	0.39	0.44	0.44
CS: 8	156	178	2.79E+03	2.85E+03	3.43E+03	0.33	0.34	0.41
CS: 9	136	156	1.87E+03	1.72E+03	2.48E+03	0.28	0.25	0.37
CS: 10	130	136	6.89E+02	7.89E+02	9.61E+02	0.24	0.28	0.34
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	1.28E+03	1.43E+03	1.85E+03	0.22	0.24	0.32
CS: 13	100	114	9.23E+02	9.64E+02	1.44E+03	0.18	0.19	0.28
CS: 14	78	100	7.78E+02	7.46E+02	1.60E+03	0.13	0.13	0.27
PSW: 1	156	191	1.33E+03	2.13E+03	8.86E+02	0.49	0.71	0.33
PSW: 2	136.5	156	2.02E+03	1.03E+03	1.67E+03	0.40	0.20	0.33
PSW: 3	130	136.5	7.73E+02	6.78E+02	7.28E+02	0.35	0.31	0.33
PSW: 4	114	130	1.64E+03	1.50E+03	1.69E+03	0.32	0.29	0.32
PSW: 5	100	114	1.53E+03	1.48E+03	1.80E+03	0.27	0.26	0.32
PSW: 6	78	100	1.42E+03	1.53E+03	2.00E+03	0.22	0.24	0.31
PSW: 7	66	78	3.08E+02	3.63E+02	5.10E+02	0.19	0.22	0.31
SSW: 1	191	200	1.10E+02	1.16E+02	6.17E+01	0.72	0.75	0.40
SSW: 2	156	191	2.76E+03	2.29E+03	1.63E+03	0.58	0.46	0.34
SSW: 3	136.5	156	3.37E+03	2.48E+03	2.52E+03	0.44	0.33	0.33
SSW: 4	130	136.5	1.46E+03	1.22E+03	1.31E+03	0.37	0.31	0.33
SSW: 5	114	130	1.20E+03	1.04E+03	1.18E+03	0.33	0.29	0.32
SSW: 6	100	114	1.25E+03	1.16E+03	1.39E+03	0.29	0.26	0.32
SSW: 7	78	100	6.21E+03	6.48E+03	7.63E+03	0.23	0.24	0.30

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-10 CASE02C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S02C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	1.971E+03	2.449E+03	1.537E+03	0.51	0.63	0.39
AB-FHA: 2	213	213.5	3.074E+03	2.523E+03	2.988E+03	0.53	0.44	0.52
AB-FHA: 3	195	213	1.553E+03	1.620E+03	1.101E+03	0.46	0.48	0.33
AB-MCR: 1	195	213	3.474E+03	2.636E+03	2.535E+03	0.51	0.38	0.37
AB: 1	174	195	1.598E+04	1.369E+04	1.257E+04	0.41	0.35	0.32
AB: 2	156	174	1.680E+04	1.641E+04	1.582E+04	0.36	0.35	0.34
AB: 3	137.5	156	2.209E+04	2.289E+04	2.247E+04	0.32	0.33	0.33
AB: 4	120	137.5	2.305E+04	2.514E+04	2.501E+04	0.28	0.31	0.31
AB: 5	98.5	120	2.323E+04	2.661E+04	2.829E+04	0.25	0.29	0.31
AB: 6	77	98.5	2.403E+04	2.731E+04	3.623E+04	0.21	0.24	0.30
AB: 7	67	77	1.327E+04	1.425E+04	2.098E+04	0.18	0.20	0.29
AB: 8	55	67	7.147E+03	8.014E+03	1.333E+04	0.15	0.17	0.28

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-11 CASE02C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S02C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	0.83	0.87	0.63
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	0.74	0.76	0.57
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	0.65	0.66	0.54
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.60	0.58	0.53
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.54	0.57	0.45
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.45	0.53	0.48
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.39	0.44	0.44
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.33	0.34	0.41
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.28	0.25	0.37
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.24	0.28	0.34
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.22	0.24	0.32
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.18	0.19	0.28
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.13	0.13	0.27
		∑ =	9.18E+04	9.18E+04	9.18E+04			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.49	0.71	0.33
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.40	0.20	0.33
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.35	0.31	0.33
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.32	0.29	0.32
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.27	0.26	0.32
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.22	0.24	0.31
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.19	0.22	0.31
		∑ =	2.90E+04	2.92E+04	2.90E+04			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	0.72	0.75	0.40
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.58	0.46	0.34
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.44	0.33	0.33
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.37	0.31	0.33
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.33	0.29	0.32
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.29	0.26	0.32
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.23	0.24	0.30
		∑ =	5.16E+04	5.19E+04	4.97E+04			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ΔWx, ΔWy, ΔWz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-12 CASE02C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S02C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.51	0.63	0.39
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	0.53	0.44	0.52
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.46	0.48	0.33
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	0.51	0.38	0.37
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.41	0.35	0.32
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.36	0.35	0.34
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.32	0.33	0.33
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.28	0.31	0.31
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.25	0.29	0.31
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.21	0.24	0.30
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.18	0.20	0.29
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.15	0.17	0.28
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-13 CASE03C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S03C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	1.03E+04	1.05E+04	5.12E+03	1.50E+05	1.49E+05	1.07E+04
2	CS: CUT AT EL. 281'	281	1.99E+04	2.03E+04	1.00E+04	6.14E+05	6.08E+05	3.52E+04
3	CS: CUT AT EL. 254.5'	254.5	2.65E+04	2.68E+04	1.35E+04	1.32E+06	1.30E+06	5.58E+04
4	CS: CUT AT EL. 241'	241	3.02E+04	3.03E+04	1.56E+04	1.77E+06	1.75E+06	6.75E+04
5	CS: CUT AT EL. 220'	220	3.96E+04	3.96E+04	2.06E+04	2.68E+06	2.67E+06	9.57E+04
6	CS: CUT AT EL. 200'	200	4.50E+04	4.49E+04	2.42E+04	3.61E+06	3.58E+06	1.15E+05
7	CS: CUT AT EL. 178'	178	4.96E+04	4.94E+04	2.76E+04	4.71E+06	4.69E+06	1.33E+05
8	CS: CUT AT EL. 156'	156	5.37E+04	5.30E+04	3.09E+04	5.89E+06	5.87E+06	1.52E+05
9	CS: CUT AT EL. 136'	136	5.64E+04	5.51E+04	3.31E+04	7.00E+06	7.01E+06	1.64E+05
10	CS: CUT AT EL. 130'	130	5.74E+04	5.57E+04	3.40E+04	7.35E+06	7.37E+06	1.69E+05
11	CS: CUT AT EL. 125'	125	5.74E+04	5.57E+04	3.40E+04	7.62E+06	7.65E+06	1.69E+05
12	CS: CUT AT EL. 114'	114	5.97E+04	5.70E+04	3.57E+04	8.27E+06	8.33E+06	1.77E+05
13	CS: CUT AT EL. 100'	100	6.16E+04	5.78E+04	3.70E+04	9.09E+06	9.19E+06	1.83E+05
14	CS: CUT AT EL. 78'	78	6.33E+04	5.92E+04	3.84E+04	1.04E+07	1.06E+07	1.86E+05
15	PSW: CUT AT EL. 156'	156	1.25E+03	2.38E+03	9.82E+02	5.42E+04	2.71E+04	2.94E+04
16	PSW: CUT AT EL. 136.5'	136.5	3.11E+03	2.99E+03	2.81E+03	1.09E+05	1.05E+05	5.01E+04
17	PSW: CUT AT EL. 130'	130	3.79E+03	3.62E+03	3.61E+03	1.29E+05	1.44E+05	6.62E+04
18	PSW: CUT AT EL. 114'	114	5.14E+03	4.99E+03	5.46E+03	1.80E+05	2.42E+05	9.07E+04
19	PSW: CUT AT EL. 100'	100	6.75E+03	6.39E+03	7.44E+03	2.51E+05	3.43E+05	1.08E+05
20	PSW: CUT AT EL. 78'	78	8.44E+03	8.00E+03	9.64E+03	3.99E+05	4.89E+05	9.65E+04
21	PSW: CUT AT EL. 66'	66	8.84E+03	8.40E+03	1.02E+04	4.93E+05	5.74E+05	9.27E+04
22	SSW: CUT AT EL. 191'	191	1.15E+02	1.53E+02	7.58E+01	2.79E+03	3.46E+03	5.45E+03
23	SSW: CUT AT EL. 156'	156	2.92E+03	2.64E+03	1.92E+03	9.08E+04	8.18E+04	3.71E+04
24	SSW: CUT AT EL. 136.5'	136.5	6.25E+03	4.86E+03	4.73E+03	2.12E+05	2.35E+05	5.47E+04
25	SSW: CUT AT EL. 130'	130	7.55E+03	6.03E+03	6.18E+03	2.64E+05	3.08E+05	6.61E+04
26	SSW: CUT AT EL. 114'	114	8.56E+03	7.05E+03	7.49E+03	3.73E+05	4.56E+05	7.82E+04
27	SSW: CUT AT EL. 100'	100	9.73E+03	8.15E+03	9.01E+03	4.76E+05	6.09E+05	9.29E+04
28	SSW: CUT AT EL. 78'	78	1.57E+04	1.49E+04	1.74E+04	7.21E+05	9.33E+05	1.02E+05

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-14 CASE03C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S03C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	2.432E+03	2.768E+03	1.627E+03	1.597E+05	1.197E+05	3.036E+05
30	AB-EAST: CUT AT EL. 213'	213	6.186E+03	5.601E+03	4.834E+03	3.978E+05	6.335E+05	7.574E+05
31	AB-EAST: CUT AT EL. 195'	195	8.076E+03	7.436E+03	5.970E+03	5.378E+05	7.798E+05	1.010E+06
32	AB-WEST: CUT AT EL. 195'	195	5.612E+03	3.703E+03	2.681E+03	1.188E+05	2.937E+05	3.299E+05
33	AB: CUT AT EL. 174'	174	3.309E+04	2.853E+04	2.066E+04	1.358E+06	1.396E+06	1.400E+06
34	AB: CUT AT EL. 156'	156	5.348E+04	4.901E+04	3.655E+04	2.460E+06	2.595E+06	2.079E+06
35	AB: CUT AT EL. 137.5'	137.5	8.212E+04	7.531E+04	5.884E+04	3.822E+06	4.188E+06	2.652E+06
36	AB: CUT AT EL. 120'	120	1.113E+05	1.040E+05	8.430E+04	5.755E+06	6.126E+06	3.229E+06
37	AB: CUT AT EL. 98.5'	98.5	1.400E+05	1.345E+05	1.127E+05	8.574E+06	9.041E+06	3.872E+06
38	AB: CUT AT EL. 77'	77	1.687E+05	1.694E+05	1.491E+05	1.221E+07	1.277E+07	4.296E+06
39	AB: CUT AT EL. 67'	67	1.854E+05	1.894E+05	1.705E+05	1.410E+07	1.476E+07	4.527E+06
40	AB: CUT AT EL. 55'	55	1.958E+05	2.016E+05	1.840E+05	1.636E+07	1.723E+07	4.612E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-15 CASE03C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S03C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	1.03E+04	1.05E+04	5.12E+03	1.18	1.21	0.59
CS: 2	281	307.5	9.61E+03	9.83E+03	4.88E+03	1.06	1.09	0.54
CS: 3	254.5	281	6.58E+03	6.49E+03	3.52E+03	0.96	0.95	0.51
CS: 4	241	254.5	3.68E+03	3.51E+03	2.07E+03	0.89	0.84	0.50
CS: 5	220	241	9.42E+03	9.33E+03	5.00E+03	0.80	0.80	0.43
CS: 6	200	220	5.37E+03	5.27E+03	3.62E+03	0.66	0.65	0.45
CS: 7	178	200	4.67E+03	4.51E+03	3.46E+03	0.56	0.54	0.41
CS: 8	156	178	4.03E+03	3.64E+03	3.21E+03	0.48	0.43	0.38
CS: 9	136	156	2.70E+03	2.04E+03	2.29E+03	0.40	0.30	0.34
CS: 10	130	136	1.06E+03	6.59E+02	8.84E+02	0.37	0.23	0.31
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	2.30E+03	1.20E+03	1.69E+03	0.39	0.21	0.29
CS: 13	100	114	1.85E+03	8.66E+02	1.31E+03	0.36	0.17	0.25
CS: 14	78	100	1.73E+03	1.41E+03	1.36E+03	0.30	0.24	0.23
PSW: 1	156	191	1.25E+03	2.38E+03	9.82E+02	0.46	0.80	0.36
PSW: 2	136.5	156	1.86E+03	6.10E+02	1.83E+03	0.37	0.12	0.36
PSW: 3	130	136.5	6.84E+02	6.30E+02	7.99E+02	0.31	0.29	0.36
PSW: 4	114	130	1.35E+03	1.37E+03	1.85E+03	0.26	0.26	0.36
PSW: 5	100	114	1.60E+03	1.40E+03	1.97E+03	0.29	0.25	0.35
PSW: 6	78	100	1.69E+03	1.61E+03	2.20E+03	0.26	0.25	0.34
PSW: 7	66	78	4.04E+02	3.99E+02	5.64E+02	0.24	0.24	0.34
SSW: 1	191	200	1.15E+02	1.53E+02	7.58E+01	0.75	1.00	0.49
SSW: 2	156	191	2.80E+03	2.48E+03	1.84E+03	0.59	0.49	0.39
SSW: 3	136.5	156	3.33E+03	2.22E+03	2.81E+03	0.44	0.29	0.37
SSW: 4	130	136.5	1.30E+03	1.17E+03	1.46E+03	0.33	0.29	0.37
SSW: 5	114	130	1.00E+03	1.02E+03	1.30E+03	0.28	0.28	0.36
SSW: 6	100	114	1.17E+03	1.10E+03	1.53E+03	0.27	0.25	0.35
SSW: 7	78	100	6.02E+03	6.72E+03	8.42E+03	0.22	0.25	0.33

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-16 CASE03C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S03C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	2.432E+03	2.768E+03	1.627E+03	0.62	0.71	0.42
AB-FHA: 2	213	213.5	3.754E+03	2.834E+03	3.207E+03	0.64	0.50	0.56
AB-FHA: 3	195	213	1.890E+03	1.834E+03	1.136E+03	0.56	0.54	0.34
AB-MCR: 1	195	213	5.612E+03	3.703E+03	2.681E+03	0.82	0.54	0.39
AB: 1	174	195	1.940E+04	1.739E+04	1.200E+04	0.50	0.45	0.31
AB: 2	156	174	2.039E+04	2.048E+04	1.589E+04	0.43	0.44	0.34
AB: 3	137.5	156	2.864E+04	2.630E+04	2.229E+04	0.41	0.38	0.32
AB: 4	120	137.5	2.914E+04	2.873E+04	2.546E+04	0.36	0.35	0.32
AB: 5	98.5	120	2.871E+04	3.043E+04	2.835E+04	0.31	0.33	0.31
AB: 6	77	98.5	2.874E+04	3.496E+04	3.643E+04	0.25	0.31	0.30
AB: 7	67	77	1.672E+04	1.996E+04	2.137E+04	0.23	0.27	0.29
AB: 8	55	67	1.037E+04	1.219E+04	1.354E+04	0.22	0.25	0.28

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-17 CASE03C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S03C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	1.18	1.21	0.59
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	1.06	1.09	0.54
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	0.96	0.95	0.51
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.89	0.84	0.50
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.80	0.80	0.43
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.66	0.65	0.45
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.56	0.54	0.41
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.48	0.43	0.38
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.40	0.30	0.34
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.37	0.23	0.31
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.39	0.21	0.29
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.36	0.17	0.25
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.30	0.24	0.23
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.46	0.80	0.36
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.37	0.12	0.36
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.31	0.29	0.36
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.26	0.26	0.36
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.29	0.25	0.35
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.26	0.25	0.34
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.24	0.24	0.34
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	0.75	1.00	0.49
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.59	0.49	0.39
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.44	0.29	0.37
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.33	0.29	0.37
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.28	0.28	0.36
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.27	0.25	0.35
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.22	0.25	0.33
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes

1. ∆Wj = ∆MAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ∆Wj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ∆Wx, ∆Wy, ∆Wz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-18 CASE03C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S03C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.62	0.71	0.42
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	0.64	0.50	0.56
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.56	0.54	0.34
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	0.82	0.54	0.39
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.50	0.45	0.31
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.43	0.44	0.34
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.41	0.38	0.32
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.36	0.35	0.32
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.31	0.33	0.31
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.25	0.31	0.30
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.23	0.27	0.29
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.22	0.25	0.28
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-19 CASE04C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S04C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	1.04E+04	9.78E+03	4.95E+03	1.40E+05	1.51E+05	1.12E+04
2	CS: CUT AT EL. 281'	281	2.01E+04	1.90E+04	9.30E+03	5.74E+05	6.19E+05	3.73E+04
3	CS: CUT AT EL. 254.5'	254.5	2.68E+04	2.52E+04	1.23E+04	1.24E+06	1.33E+06	6.02E+04
4	CS: CUT AT EL. 241'	241	3.05E+04	2.86E+04	1.40E+04	1.66E+06	1.78E+06	7.39E+04
5	CS: CUT AT EL. 220'	220	4.01E+04	3.77E+04	1.92E+04	2.52E+06	2.72E+06	1.03E+05
6	CS: CUT AT EL. 200'	200	4.57E+04	4.30E+04	2.27E+04	3.40E+06	3.66E+06	1.25E+05
7	CS: CUT AT EL. 178'	178	5.06E+04	4.76E+04	2.61E+04	4.46E+06	4.79E+06	1.43E+05
8	CS: CUT AT EL. 156'	156	5.47E+04	5.15E+04	2.94E+04	5.60E+06	6.00E+06	1.64E+05
9	CS: CUT AT EL. 136'	136	5.73E+04	5.37E+04	3.20E+04	6.68E+06	7.16E+06	1.78E+05
10	CS: CUT AT EL. 130'	130	5.83E+04	5.45E+04	3.30E+04	7.01E+06	7.52E+06	1.84E+05
11	CS: CUT AT EL. 125'	125	5.83E+04	5.45E+04	3.30E+04	7.28E+06	7.81E+06	1.84E+05
12	CS: CUT AT EL. 114'	114	6.00E+04	5.57E+04	3.51E+04	7.91E+06	8.49E+06	1.93E+05
13	CS: CUT AT EL. 100'	100	6.14E+04	5.64E+04	3.68E+04	8.70E+06	9.36E+06	1.99E+05
14	CS: CUT AT EL. 78'	78	6.31E+04	5.68E+04	3.86E+04	9.96E+06	1.07E+07	2.04E+05
15	PSW: CUT AT EL. 156'	156	1.20E+03	2.09E+03	9.99E+02	5.11E+04	2.71E+04	2.72E+04
16	PSW: CUT AT EL. 136.5'	136.5	2.95E+03	3.04E+03	2.87E+03	8.58E+04	1.05E+05	5.11E+04
17	PSW: CUT AT EL. 130'	130	3.59E+03	3.78E+03	3.70E+03	1.01E+05	1.43E+05	6.84E+04
18	PSW: CUT AT EL. 114'	114	4.92E+03	5.40E+03	5.60E+03	1.75E+05	2.37E+05	9.45E+04
19	PSW: CUT AT EL. 100'	100	6.17E+03	7.03E+03	7.63E+03	2.67E+05	3.28E+05	1.14E+05
20	PSW: CUT AT EL. 78'	78	7.69E+03	8.75E+03	9.89E+03	4.44E+05	4.61E+05	1.01E+05
21	PSW: CUT AT EL. 66'	66	8.10E+03	9.17E+03	1.05E+04	5.52E+05	5.41E+05	9.65E+04
22	SSW: CUT AT EL. 191'	191	1.14E+02	1.49E+02	7.38E+01	2.66E+03	3.50E+03	5.32E+03
23	SSW: CUT AT EL. 156'	156	2.89E+03	2.71E+03	1.89E+03	9.18E+04	8.13E+04	3.77E+04
24	SSW: CUT AT EL. 136.5'	136.5	6.14E+03	5.08E+03	4.73E+03	2.00E+05	2.31E+05	5.60E+04
25	SSW: CUT AT EL. 130'	130	7.45E+03	6.35E+03	6.21E+03	2.49E+05	3.02E+05	6.81E+04
26	SSW: CUT AT EL. 114'	114	8.52E+03	7.46E+03	7.55E+03	3.52E+05	4.36E+05	7.90E+04
27	SSW: CUT AT EL. 100'	100	9.57E+03	8.66E+03	9.13E+03	4.54E+05	5.79E+05	9.24E+04
28	SSW: CUT AT EL. 78'	78	1.45E+04	1.56E+04	1.79E+04	7.68E+05	8.88E+05	1.01E+05

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-20 CASE04C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S04C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	2.492E+03	3.112E+03	1.711E+03	1.604E+05	1.254E+05	2.994E+05
30	AB-EAST: CUT AT EL. 213'	213	6.285E+03	6.430E+03	5.237E+03	4.153E+05	6.731E+05	7.785E+05
31	AB-EAST: CUT AT EL. 195'	195	8.314E+03	8.565E+03	6.248E+03	5.466E+05	8.227E+05	1.028E+06
32	AB-WEST: CUT AT EL. 195'	195	4.896E+03	3.679E+03	2.705E+03	8.974E+04	2.905E+05	3.337E+05
33	AB: CUT AT EL. 174'	174	3.313E+04	3.107E+04	2.248E+04	1.341E+06	1.236E+06	1.225E+06
34	AB: CUT AT EL. 156'	156	5.507E+04	5.247E+04	3.957E+04	2.492E+06	2.396E+06	1.784E+06
35	AB: CUT AT EL. 137.5'	137.5	8.403E+04	7.896E+04	6.362E+04	4.076E+06	3.860E+06	2.333E+06
36	AB: CUT AT EL. 120'	120	1.140E+05	1.110E+05	9.148E+04	6.094E+06	5.912E+06	2.898E+06
37	AB: CUT AT EL. 98.5'	98.5	1.438E+05	1.450E+05	1.221E+05	8.900E+06	9.118E+06	3.575E+06
38	AB: CUT AT EL. 77'	77	1.745E+05	1.820E+05	1.612E+05	1.258E+07	1.290E+07	3.935E+06
39	AB: CUT AT EL. 67'	67	1.929E+05	2.028E+05	1.841E+05	1.448E+07	1.493E+07	4.192E+06
40	AB: CUT AT EL. 55'	55	2.045E+05	2.152E+05	1.988E+05	1.709E+07	1.745E+07	4.303E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-21 CASE04C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S04C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	1.04E+04	9.78E+03	4.95E+03	1.20	1.13	0.57
CS: 2	281	307.5	9.72E+03	9.21E+03	4.35E+03	1.07	1.02	0.48
CS: 3	254.5	281	6.67E+03	6.17E+03	3.00E+03	0.97	0.90	0.44
CS: 4	241	254.5	3.75E+03	3.42E+03	1.75E+03	0.90	0.82	0.42
CS: 5	220	241	9.60E+03	9.11E+03	5.19E+03	0.82	0.78	0.44
CS: 6	200	220	5.59E+03	5.27E+03	3.44E+03	0.69	0.65	0.42
CS: 7	178	200	4.85E+03	4.67E+03	3.44E+03	0.58	0.56	0.41
CS: 8	156	178	4.11E+03	3.82E+03	3.33E+03	0.48	0.45	0.39
CS: 9	136	156	2.66E+03	2.24E+03	2.54E+03	0.39	0.33	0.37
CS: 10	130	136	9.63E+02	7.88E+02	1.03E+03	0.34	0.28	0.36
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	1.73E+03	1.23E+03	2.06E+03	0.30	0.21	0.35
CS: 13	100	114	1.39E+03	6.67E+02	1.73E+03	0.27	0.13	0.34
CS: 14	78	100	1.70E+03	3.77E+02	1.85E+03	0.29	0.06	0.32
PSW: 1	156	191	1.20E+03	2.09E+03	9.99E+02	0.44	0.70	0.37
PSW: 2	136.5	156	1.74E+03	9.53E+02	1.87E+03	0.34	0.19	0.37
PSW: 3	130	136.5	6.48E+02	7.39E+02	8.23E+02	0.29	0.33	0.37
PSW: 4	114	130	1.33E+03	1.63E+03	1.90E+03	0.26	0.31	0.37
PSW: 5	100	114	1.25E+03	1.63E+03	2.03E+03	0.22	0.29	0.36
PSW: 6	78	100	1.52E+03	1.71E+03	2.26E+03	0.23	0.26	0.35
PSW: 7	66	78	4.13E+02	4.24E+02	5.72E+02	0.25	0.26	0.34
SSW: 1	191	200	1.14E+02	1.49E+02	7.38E+01	0.74	0.97	0.48
SSW: 2	156	191	2.78E+03	2.56E+03	1.82E+03	0.58	0.51	0.38
SSW: 3	136.5	156	3.24E+03	2.37E+03	2.84E+03	0.43	0.31	0.37
SSW: 4	130	136.5	1.31E+03	1.27E+03	1.48E+03	0.33	0.32	0.37
SSW: 5	114	130	1.07E+03	1.10E+03	1.34E+03	0.29	0.31	0.37
SSW: 6	100	114	1.06E+03	1.20E+03	1.59E+03	0.24	0.27	0.36
SSW: 7	78	100	4.93E+03	6.99E+03	8.74E+03	0.18	0.26	0.35

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-22 CASE04C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S04C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	2.492E+03	3.112E+03	1.711E+03	0.64	0.80	0.44
AB-FHA: 2	213	213.5	3.793E+03	3.318E+03	3.526E+03	0.65	0.58	0.61
AB-FHA: 3	195	213	2.028E+03	2.135E+03	1.011E+03	0.60	0.63	0.30
AB-MCR: 1	195	213	4.896E+03	3.679E+03	2.705E+03	0.71	0.54	0.39
AB: 1	174	195	1.992E+04	1.882E+04	1.352E+04	0.51	0.49	0.35
AB: 2	156	174	2.194E+04	2.141E+04	1.709E+04	0.47	0.46	0.36
AB: 3	137.5	156	2.896E+04	2.649E+04	2.405E+04	0.41	0.38	0.35
AB: 4	120	137.5	2.997E+04	3.201E+04	2.786E+04	0.37	0.39	0.35
AB: 5	98.5	120	2.975E+04	3.406E+04	3.058E+04	0.32	0.37	0.33
AB: 6	77	98.5	3.071E+04	3.696E+04	3.911E+04	0.27	0.33	0.32
AB: 7	67	77	1.840E+04	2.079E+04	2.295E+04	0.25	0.28	0.31
AB: 8	55	67	1.160E+04	1.243E+04	1.463E+04	0.24	0.26	0.31

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-23 CASE04C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S04C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	1.20	1.13	0.57
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	1.07	1.02	0.48
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	0.97	0.90	0.44
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.90	0.82	0.42
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.82	0.78	0.44
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.69	0.65	0.42
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.58	0.56	0.41
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.48	0.45	0.39
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.39	0.33	0.37
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.34	0.28	0.36
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.30	0.21	0.35
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.27	0.13	0.34
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.29	0.06	0.32
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.44	0.70	0.37
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.34	0.19	0.37
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.29	0.33	0.37
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.26	0.31	0.37
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.22	0.29	0.36
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.23	0.26	0.35
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.25	0.26	0.34
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	0.74	0.97	0.48
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.58	0.51	0.38
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.43	0.31	0.37
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.33	0.32	0.37
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.29	0.31	0.37
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.24	0.27	0.36
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.18	0.26	0.35
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes

1. ∆Wj = ∆MAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ∆Wj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ∆Wx, ∆Wy, ∆Wz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-24 CASE04C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S04C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.64	0.80	0.44
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	0.65	0.58	0.61
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.60	0.63	0.30
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	0.71	0.54	0.39
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.51	0.49	0.35
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.47	0.46	0.36
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.41	0.38	0.35
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.37	0.39	0.35
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.32	0.37	0.33
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.27	0.33	0.32
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.25	0.28	0.31
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.24	0.26	0.31
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-25

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Table B-26

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Table B-27

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Table B-28

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Table B-29

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Table B-30

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Table B-31 CASE06C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S06C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	1.01E+04	1.09E+04	5.51E+03	1.53E+05	1.44E+05	1.01E+04
2	CS: CUT AT EL. 281'	281	1.96E+04	2.13E+04	1.06E+04	6.35E+05	5.93E+05	3.09E+04
3	CS: CUT AT EL. 254.5'	254.5	2.62E+04	2.85E+04	1.41E+04	1.37E+06	1.28E+06	4.54E+04
4	CS: CUT AT EL. 241'	241	2.99E+04	3.26E+04	1.62E+04	1.84E+06	1.72E+06	5.29E+04
5	CS: CUT AT EL. 220'	220	3.97E+04	4.32E+04	2.16E+04	2.81E+06	2.65E+06	6.68E+04
6	CS: CUT AT EL. 200'	200	4.57E+04	4.95E+04	2.53E+04	3.82E+06	3.58E+06	7.15E+04
7	CS: CUT AT EL. 178'	178	5.13E+04	5.54E+04	2.90E+04	5.04E+06	4.72E+06	7.52E+04
8	CS: CUT AT EL. 156'	156	5.62E+04	6.08E+04	3.24E+04	6.37E+06	5.96E+06	7.64E+04
9	CS: CUT AT EL. 136'	136	5.93E+04	6.47E+04	3.49E+04	7.65E+06	7.15E+06	8.24E+04
10	CS: CUT AT EL. 130'	130	6.03E+04	6.61E+04	3.59E+04	8.05E+06	7.53E+06	8.51E+04
11	CS: CUT AT EL. 125'	125	6.03E+04	6.61E+04	3.59E+04	8.38E+06	7.83E+06	8.51E+04
12	CS: CUT AT EL. 114'	114	6.19E+04	6.86E+04	3.79E+04	9.14E+06	8.53E+06	8.98E+04
13	CS: CUT AT EL. 100'	100	6.28E+04	7.03E+04	3.96E+04	1.01E+07	9.42E+06	9.29E+04
14	CS: CUT AT EL. 78'	78	6.35E+04	7.19E+04	4.13E+04	1.17E+07	1.08E+07	9.62E+04
15	PSW: CUT AT EL. 156'	156	1.14E+03	2.49E+03	1.21E+03	5.81E+04	2.40E+04	3.37E+04
16	PSW: CUT AT EL. 136.5'	136.5	2.94E+03	3.69E+03	3.44E+03	1.15E+05	9.50E+04	5.55E+04
17	PSW: CUT AT EL. 130'	130	3.64E+03	4.20E+03	4.41E+03	1.41E+05	1.30E+05	6.84E+04
18	PSW: CUT AT EL. 114'	114	5.15E+03	5.48E+03	6.65E+03	2.17E+05	2.12E+05	8.91E+04
19	PSW: CUT AT EL. 100'	100	6.62E+03	6.79E+03	9.03E+03	2.96E+05	3.09E+05	1.03E+05
20	PSW: CUT AT EL. 78'	78	8.20E+03	8.53E+03	1.17E+04	4.53E+05	4.63E+05	9.59E+04
21	PSW: CUT AT EL. 66'	66	8.62E+03	8.98E+03	1.23E+04	5.54E+05	5.62E+05	9.33E+04
22	SSW: CUT AT EL. 191'	191	1.10E+02	1.32E+02	8.94E+01	2.82E+03	3.74E+03	5.09E+03
23	SSW: CUT AT EL. 156'	156	2.69E+03	3.13E+03	2.48E+03	1.09E+05	7.12E+04	3.29E+04
24	SSW: CUT AT EL. 136.5'	136.5	5.77E+03	5.35E+03	6.01E+03	2.40E+05	1.97E+05	4.93E+04
25	SSW: CUT AT EL. 130'	130	7.10E+03	6.50E+03	7.80E+03	2.94E+05	2.58E+05	6.16E+04
26	SSW: CUT AT EL. 114'	114	8.19E+03	7.49E+03	9.39E+03	3.94E+05	3.90E+05	7.67E+04
27	SSW: CUT AT EL. 100'	100	9.30E+03	8.54E+03	1.13E+04	4.79E+05	5.28E+05	9.40E+04
28	SSW: CUT AT EL. 78'	78	1.56E+04	1.59E+04	2.07E+04	7.48E+05	8.43E+05	1.09E+05

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-32 CASE06C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S06C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	3.183E+03	3.466E+03	1.737E+03	1.749E+05	1.236E+05	3.644E+05
30	AB-EAST: CUT AT EL. 213'	213	8.189E+03	7.010E+03	4.946E+03	3.971E+05	6.471E+05	9.205E+05
31	AB-EAST: CUT AT EL. 195'	195	1.079E+04	9.338E+03	5.937E+03	5.622E+05	8.103E+05	1.225E+06
32	AB-WEST: CUT AT EL. 195'	195	6.914E+03	4.069E+03	3.291E+03	9.679E+04	3.568E+05	3.672E+05
33	AB: CUT AT EL. 174'	174	4.322E+04	3.481E+04	2.430E+04	1.488E+06	1.475E+06	1.630E+06
34	AB: CUT AT EL. 156'	156	6.788E+04	6.010E+04	4.323E+04	2.849E+06	2.804E+06	2.274E+06
35	AB: CUT AT EL. 137.5'	137.5	1.010E+05	9.078E+04	6.897E+04	4.699E+06	4.561E+06	2.697E+06
36	AB: CUT AT EL. 120'	120	1.371E+05	1.211E+05	9.768E+04	7.083E+06	6.992E+06	3.210E+06
37	AB: CUT AT EL. 98.5'	98.5	1.728E+05	1.517E+05	1.283E+05	1.034E+07	1.075E+07	3.869E+06
38	AB: CUT AT EL. 77'	77	2.070E+05	1.819E+05	1.647E+05	1.396E+07	1.522E+07	4.315E+06
39	AB: CUT AT EL. 67'	67	2.263E+05	1.973E+05	1.851E+05	1.581E+07	1.756E+07	4.551E+06
40	AB: CUT AT EL. 55'	55	2.382E+05	2.073E+05	1.974E+05	1.806E+07	2.045E+07	4.666E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-33 CASE06C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S06C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	1.01E+04	1.09E+04	5.51E+03	1.16	1.26	0.63
CS: 2	281	307.5	9.55E+03	1.04E+04	5.06E+03	1.06	1.15	0.56
CS: 3	254.5	281	6.55E+03	7.21E+03	3.55E+03	0.95	1.05	0.52
CS: 4	241	254.5	3.76E+03	4.05E+03	2.08E+03	0.90	0.97	0.50
CS: 5	220	241	9.74E+03	1.07E+04	5.44E+03	0.83	0.91	0.46
CS: 6	200	220	5.99E+03	6.26E+03	3.71E+03	0.74	0.77	0.46
CS: 7	178	200	5.69E+03	5.89E+03	3.62E+03	0.68	0.70	0.43
CS: 8	156	178	4.89E+03	5.44E+03	3.41E+03	0.58	0.64	0.40
CS: 9	136	156	3.03E+03	3.84E+03	2.53E+03	0.45	0.57	0.37
CS: 10	130	136	1.02E+03	1.41E+03	1.02E+03	0.36	0.50	0.36
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	1.62E+03	2.46E+03	2.00E+03	0.28	0.42	0.34
CS: 13	100	114	9.15E+02	1.79E+03	1.63E+03	0.18	0.35	0.32
CS: 14	78	100	6.63E+02	1.59E+03	1.69E+03	0.11	0.27	0.29
PSW: 1	156	191	1.14E+03	2.49E+03	1.21E+03	0.42	0.83	0.45
PSW: 2	136.5	156	1.80E+03	1.20E+03	2.23E+03	0.35	0.24	0.44
PSW: 3	130	136.5	7.00E+02	5.11E+02	9.69E+02	0.32	0.23	0.44
PSW: 4	114	130	1.51E+03	1.29E+03	2.24E+03	0.29	0.25	0.43
PSW: 5	100	114	1.47E+03	1.31E+03	2.38E+03	0.26	0.23	0.42
PSW: 6	78	100	1.59E+03	1.73E+03	2.65E+03	0.24	0.27	0.41
PSW: 7	66	78	4.21E+02	4.56E+02	6.50E+02	0.25	0.28	0.39
SSW: 1	191	200	1.10E+02	1.32E+02	8.94E+01	0.72	0.86	0.58
SSW: 2	156	191	2.58E+03	3.00E+03	2.39E+03	0.54	0.60	0.50
SSW: 3	136.5	156	3.08E+03	2.21E+03	3.53E+03	0.41	0.29	0.47
SSW: 4	130	136.5	1.33E+03	1.15E+03	1.79E+03	0.34	0.29	0.45
SSW: 5	114	130	1.09E+03	9.90E+02	1.60E+03	0.30	0.27	0.44
SSW: 6	100	114	1.10E+03	1.05E+03	1.86E+03	0.25	0.24	0.42
SSW: 7	78	100	6.34E+03	7.33E+03	9.46E+03	0.23	0.27	0.38

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-34 CASE06C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S06C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.183E+03	3.466E+03	1.737E+03	0.82	0.89	0.45
AB-FHA: 2	213	213.5	5.006E+03	3.544E+03	3.209E+03	0.86	0.62	0.56
AB-FHA: 3	195	213	2.600E+03	2.328E+03	9.908E+02	0.77	0.69	0.29
AB-MCR: 1	195	213	6.914E+03	4.069E+03	3.291E+03	1.01	0.59	0.48
AB: 1	174	195	2.552E+04	2.141E+04	1.508E+04	0.66	0.55	0.39
AB: 2	156	174	2.466E+04	2.529E+04	1.893E+04	0.53	0.54	0.40
AB: 3	137.5	156	3.313E+04	3.068E+04	2.574E+04	0.47	0.44	0.37
AB: 4	120	137.5	3.610E+04	3.029E+04	2.871E+04	0.45	0.37	0.36
AB: 5	98.5	120	3.571E+04	3.063E+04	3.060E+04	0.39	0.33	0.34
AB: 6	77	98.5	3.421E+04	3.020E+04	3.645E+04	0.30	0.27	0.30
AB: 7	67	77	1.927E+04	1.537E+04	2.036E+04	0.26	0.21	0.28
AB: 8	55	67	1.187E+04	1.003E+04	1.233E+04	0.25	0.21	0.26

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-35 CASE06C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S06C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	1.16	1.26	0.63
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	1.06	1.15	0.56
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	0.95	1.05	0.52
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.90	0.97	0.50
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.83	0.91	0.46
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.74	0.77	0.46
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.68	0.70	0.43
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.58	0.64	0.40
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.45	0.57	0.37
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.36	0.50	0.36
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.28	0.42	0.34
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.18	0.35	0.32
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.11	0.27	0.29
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.42	0.83	0.45
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.35	0.24	0.44
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.32	0.23	0.44
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.29	0.25	0.43
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.26	0.23	0.42
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.24	0.27	0.41
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.25	0.28	0.39
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	0.72	0.86	0.58
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.54	0.60	0.50
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.41	0.29	0.47
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.34	0.29	0.45
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.30	0.27	0.44
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.25	0.24	0.42
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.23	0.27	0.38
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes
1. ∆Wj = ∆MAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ∆Wj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ∆Wx, ∆Wy, ∆Wz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-36 CASE06C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S06C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.82	0.89	0.45
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	0.86	0.62	0.56
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.77	0.69	0.29
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	1.01	0.59	0.48
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.66	0.55	0.39
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.53	0.54	0.40
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.47	0.44	0.37
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.45	0.37	0.36
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.39	0.33	0.34
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.30	0.27	0.30
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.26	0.21	0.28
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.25	0.21	0.26
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-37 CASE07C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S07C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	9.93E+03	1.09E+04	6.31E+03	1.55E+05	1.44E+05	9.28E+03
2	CS: CUT AT EL. 281'	281	1.93E+04	2.09E+04	1.18E+04	6.43E+05	5.89E+05	2.85E+04
3	CS: CUT AT EL. 254.5'	254.5	2.57E+04	2.80E+04	1.55E+04	1.38E+06	1.26E+06	4.32E+04
4	CS: CUT AT EL. 241'	241	2.94E+04	3.19E+04	1.78E+04	1.85E+06	1.70E+06	5.06E+04
5	CS: CUT AT EL. 220'	220	3.89E+04	4.24E+04	2.34E+04	2.81E+06	2.61E+06	6.53E+04
6	CS: CUT AT EL. 200'	200	4.49E+04	4.87E+04	2.76E+04	3.78E+06	3.52E+06	7.05E+04
7	CS: CUT AT EL. 178'	178	5.06E+04	5.46E+04	3.17E+04	4.96E+06	4.64E+06	7.55E+04
8	CS: CUT AT EL. 156'	156	5.54E+04	6.01E+04	3.56E+04	6.27E+06	5.86E+06	7.63E+04
9	CS: CUT AT EL. 136'	136	5.85E+04	6.38E+04	3.84E+04	7.53E+06	7.03E+06	8.28E+04
10	CS: CUT AT EL. 130'	130	5.95E+04	6.52E+04	3.95E+04	7.93E+06	7.40E+06	8.60E+04
11	CS: CUT AT EL. 125'	125	5.95E+04	6.52E+04	3.95E+04	8.25E+06	7.70E+06	8.60E+04
12	CS: CUT AT EL. 114'	114	6.11E+04	6.75E+04	4.17E+04	9.01E+06	8.39E+06	9.23E+04
13	CS: CUT AT EL. 100'	100	6.20E+04	6.92E+04	4.36E+04	9.99E+06	9.27E+06	9.59E+04
14	CS: CUT AT EL. 78'	78	6.25E+04	7.07E+04	4.55E+04	1.15E+07	1.06E+07	9.97E+04
15	PSW: CUT AT EL. 156'	156	1.06E+03	2.37E+03	1.15E+03	5.50E+04	2.19E+04	2.90E+04
16	PSW: CUT AT EL. 136.5'	136.5	2.71E+03	3.43E+03	3.25E+03	1.03E+05	8.57E+04	5.23E+04
17	PSW: CUT AT EL. 130'	130	3.35E+03	4.01E+03	4.16E+03	1.27E+05	1.17E+05	6.81E+04
18	PSW: CUT AT EL. 114'	114	4.69E+03	5.20E+03	6.27E+03	2.00E+05	1.97E+05	9.10E+04
19	PSW: CUT AT EL. 100'	100	6.00E+03	6.53E+03	8.51E+03	2.80E+05	2.85E+05	1.06E+05
20	PSW: CUT AT EL. 78'	78	7.57E+03	8.32E+03	1.10E+04	4.27E+05	4.25E+05	9.93E+04
21	PSW: CUT AT EL. 66'	66	7.96E+03	8.77E+03	1.16E+04	5.16E+05	5.14E+05	9.70E+04
22	SSW: CUT AT EL. 191'	191	9.95E+01	1.37E+02	8.48E+01	2.55E+03	3.52E+03	5.46E+03
23	SSW: CUT AT EL. 156'	156	2.24E+03	2.91E+03	2.31E+03	1.02E+05	6.76E+04	3.21E+04
24	SSW: CUT AT EL. 136.5'	136.5	4.90E+03	5.09E+03	5.58E+03	2.32E+05	1.81E+05	4.72E+04
25	SSW: CUT AT EL. 130'	130	6.07E+03	6.15E+03	7.24E+03	2.85E+05	2.33E+05	6.16E+04
26	SSW: CUT AT EL. 114'	114	7.04E+03	7.05E+03	8.72E+03	3.79E+05	3.32E+05	7.79E+04
27	SSW: CUT AT EL. 100'	100	8.08E+03	8.00E+03	1.04E+04	4.80E+05	4.52E+05	9.51E+04
28	SSW: CUT AT EL. 78'	78	1.46E+04	1.55E+04	1.96E+04	7.08E+05	7.33E+05	1.13E+05

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-38 CASE07C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S07C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	3.308E+03	3.708E+03	1.715E+03	1.759E+05	1.228E+05	3.778E+05
30	AB-EAST: CUT AT EL. 213'	213	8.390E+03	7.613E+03	5.015E+03	4.070E+05	6.416E+05	9.608E+05
31	AB-EAST: CUT AT EL. 195'	195	1.107E+04	1.014E+04	6.064E+03	5.853E+05	8.221E+05	1.274E+06
32	AB-WEST: CUT AT EL. 195'	195	6.641E+03	4.404E+03	3.307E+03	9.943E+04	3.542E+05	3.984E+05
33	AB: CUT AT EL. 174'	174	4.436E+04	3.823E+04	2.463E+04	1.558E+06	1.559E+06	1.545E+06
34	AB: CUT AT EL. 156'	156	6.992E+04	6.654E+04	4.394E+04	3.000E+06	2.981E+06	2.133E+06
35	AB: CUT AT EL. 137.5'	137.5	1.026E+05	1.003E+05	7.082E+04	5.026E+06	5.043E+06	2.630E+06
36	AB: CUT AT EL. 120'	120	1.385E+05	1.330E+05	1.001E+05	7.637E+06	7.575E+06	3.231E+06
37	AB: CUT AT EL. 98.5'	98.5	1.738E+05	1.657E+05	1.313E+05	1.124E+07	1.136E+07	3.886E+06
38	AB: CUT AT EL. 77'	77	2.077E+05	1.969E+05	1.684E+05	1.526E+07	1.553E+07	4.337E+06
39	AB: CUT AT EL. 67'	67	2.272E+05	2.115E+05	1.890E+05	1.724E+07	1.783E+07	4.497E+06
40	AB: CUT AT EL. 55'	55	2.391E+05	2.195E+05	2.015E+05	1.979E+07	2.077E+07	4.594E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-39 CASE07C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S07C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	9.93E+03	1.09E+04	6.31E+03	1.14	1.25	0.73
CS: 2	281	307.5	9.36E+03	1.01E+04	5.46E+03	1.03	1.12	0.60
CS: 3	254.5	281	6.43E+03	7.02E+03	3.77E+03	0.94	1.02	0.55
CS: 4	241	254.5	3.66E+03	3.94E+03	2.21E+03	0.88	0.95	0.53
CS: 5	220	241	9.55E+03	1.05E+04	5.69E+03	0.81	0.90	0.48
CS: 6	200	220	5.98E+03	6.26E+03	4.17E+03	0.74	0.77	0.51
CS: 7	178	200	5.65E+03	5.95E+03	4.10E+03	0.67	0.71	0.49
CS: 8	156	178	4.88E+03	5.45E+03	3.85E+03	0.58	0.64	0.45
CS: 9	136	156	3.03E+03	3.75E+03	2.81E+03	0.45	0.55	0.42
CS: 10	130	136	9.75E+02	1.34E+03	1.09E+03	0.34	0.48	0.39
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	1.60E+03	2.36E+03	2.21E+03	0.27	0.40	0.38
CS: 13	100	114	9.10E+02	1.67E+03	1.88E+03	0.18	0.32	0.37
CS: 14	78	100	5.37E+02	1.50E+03	1.98E+03	0.09	0.26	0.34
PSW: 1	156	191	1.06E+03	2.37E+03	1.15E+03	0.39	0.79	0.42
PSW: 2	136.5	156	1.65E+03	1.07E+03	2.10E+03	0.33	0.21	0.41
PSW: 3	130	136.5	6.38E+02	5.80E+02	9.08E+02	0.29	0.26	0.41
PSW: 4	114	130	1.34E+03	1.19E+03	2.11E+03	0.26	0.23	0.40
PSW: 5	100	114	1.31E+03	1.33E+03	2.25E+03	0.23	0.24	0.40
PSW: 6	78	100	1.57E+03	1.79E+03	2.51E+03	0.24	0.28	0.39
PSW: 7	66	78	3.93E+02	4.52E+02	6.00E+02	0.24	0.27	0.36
SSW: 1	191	200	9.95E+01	1.37E+02	8.48E+01	0.65	0.89	0.55
SSW: 2	156	191	2.14E+03	2.78E+03	2.22E+03	0.45	0.55	0.47
SSW: 3	136.5	156	2.66E+03	2.18E+03	3.27E+03	0.35	0.29	0.43
SSW: 4	130	136.5	1.17E+03	1.06E+03	1.66E+03	0.29	0.27	0.42
SSW: 5	114	130	9.69E+02	9.01E+02	1.48E+03	0.27	0.25	0.41
SSW: 6	100	114	1.04E+03	9.47E+02	1.72E+03	0.24	0.22	0.39
SSW: 7	78	100	6.52E+03	7.50E+03	9.16E+03	0.24	0.28	0.36

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-40 CASE07C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S07C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.308E+03	3.708E+03	1.715E+03	0.85	0.95	0.44
AB-FHA: 2	213	213.5	5.082E+03	3.905E+03	3.300E+03	0.87	0.69	0.58
AB-FHA: 3	195	213	2.681E+03	2.527E+03	1.049E+03	0.80	0.75	0.31
AB-MCR: 1	195	213	6.641E+03	4.404E+03	3.307E+03	0.97	0.64	0.48
AB: 1	174	195	2.665E+04	2.369E+04	1.526E+04	0.69	0.61	0.39
AB: 2	156	174	2.557E+04	2.831E+04	1.931E+04	0.55	0.60	0.41
AB: 3	137.5	156	3.267E+04	3.373E+04	2.688E+04	0.47	0.48	0.39
AB: 4	120	137.5	3.590E+04	3.277E+04	2.928E+04	0.44	0.40	0.37
AB: 5	98.5	120	3.530E+04	3.269E+04	3.121E+04	0.38	0.35	0.34
AB: 6	77	98.5	3.395E+04	3.116E+04	3.709E+04	0.30	0.27	0.31
AB: 7	67	77	1.943E+04	1.461E+04	2.063E+04	0.27	0.20	0.28
AB: 8	55	67	1.193E+04	7.950E+03	1.244E+04	0.25	0.17	0.26

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-41 CASE07C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S07C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	1.14	1.25	0.73
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	1.03	1.12	0.60
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	0.94	1.02	0.55
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.88	0.95	0.53
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.81	0.90	0.48
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.74	0.77	0.51
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.67	0.71	0.49
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.58	0.64	0.45
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.45	0.55	0.42
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.34	0.48	0.39
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.27	0.40	0.38
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.18	0.32	0.37
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.09	0.26	0.34
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.39	0.79	0.42
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.33	0.21	0.41
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.29	0.26	0.41
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.26	0.23	0.40
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.23	0.24	0.40
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.24	0.28	0.39
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.24	0.27	0.36
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	0.65	0.89	0.55
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.45	0.55	0.47
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.35	0.29	0.43
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.29	0.27	0.42
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.27	0.25	0.41
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.24	0.22	0.39
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.24	0.28	0.36
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes

1. ∆Wj = ∆MAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ∆Wj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ∆Wx, ∆Wy, ∆Wz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-42 CASE07C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S07C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.85	0.95	0.44
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	0.87	0.69	0.58
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.80	0.75	0.31
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	0.97	0.64	0.48
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.69	0.61	0.39
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.55	0.60	0.41
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.47	0.48	0.39
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.44	0.40	0.37
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.38	0.35	0.34
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.30	0.27	0.31
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.27	0.20	0.28
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.25	0.17	0.26
		∑ =	**562445**	**564395**	**567535**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-43 CASE08C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S08C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	1.12E+04	1.22E+04	8.91E+03	1.76E+05	1.64E+05	9.71E+03
2	CS: CUT AT EL. 281'	281	2.20E+04	2.37E+04	1.68E+04	7.28E+05	6.67E+05	2.79E+04
3	CS: CUT AT EL. 254.5'	254.5	2.95E+04	3.15E+04	2.24E+04	1.56E+06	1.43E+06	3.79E+04
4	CS: CUT AT EL. 241'	241	3.37E+04	3.59E+04	2.57E+04	2.10E+06	1.93E+06	4.08E+04
5	CS: CUT AT EL. 220'	220	4.45E+04	4.72E+04	3.30E+04	3.22E+06	2.95E+06	4.15E+04
6	CS: CUT AT EL. 200'	200	5.01E+04	5.33E+04	3.87E+04	4.33E+06	3.98E+06	3.99E+04
7	CS: CUT AT EL. 178'	178	5.44E+04	5.82E+04	4.39E+04	5.63E+06	5.20E+06	4.26E+04
8	CS: CUT AT EL. 156'	156	5.81E+04	6.21E+04	4.86E+04	7.02E+06	6.50E+06	4.28E+04
9	CS: CUT AT EL. 136'	136	6.13E+04	6.49E+04	5.17E+04	8.31E+06	7.71E+06	4.45E+04
10	CS: CUT AT EL. 130'	130	6.25E+04	6.60E+04	5.29E+04	8.71E+06	8.09E+06	4.42E+04
11	CS: CUT AT EL. 125'	125	6.25E+04	6.60E+04	5.29E+04	9.04E+06	8.40E+06	4.42E+04
12	CS: CUT AT EL. 114'	114	6.50E+04	6.88E+04	5.50E+04	9.78E+06	9.12E+06	4.35E+04
13	CS: CUT AT EL. 100'	100	6.66E+04	7.09E+04	5.65E+04	1.07E+07	1.00E+07	4.30E+04
14	CS: CUT AT EL. 78'	78	6.76E+04	7.25E+04	5.79E+04	1.22E+07	1.15E+07	4.29E+04
15	PSW: CUT AT EL. 156'	156	1.88E+03	3.78E+03	1.46E+03	9.03E+04	4.20E+04	4.55E+04
16	PSW: CUT AT EL. 136.5'	136.5	4.57E+03	4.91E+03	4.15E+03	1.73E+05	1.51E+05	8.07E+04
17	PSW: CUT AT EL. 130'	130	5.52E+03	5.20E+03	5.31E+03	2.06E+05	2.06E+05	9.70E+04
18	PSW: CUT AT EL. 114'	114	7.45E+03	6.72E+03	7.85E+03	2.94E+05	3.48E+05	1.17E+05
19	PSW: CUT AT EL. 100'	100	9.33E+03	8.51E+03	1.04E+04	3.78E+05	4.92E+05	1.30E+05
20	PSW: CUT AT EL. 78'	78	1.12E+04	1.07E+04	1.29E+04	5.65E+05	7.08E+05	1.26E+05
21	PSW: CUT AT EL. 66'	66	1.16E+04	1.12E+04	1.35E+04	6.85E+05	8.40E+05	1.26E+05
22	SSW: CUT AT EL. 191'	191	1.92E+02	2.23E+02	1.22E+02	3.79E+03	5.52E+03	8.67E+03
23	SSW: CUT AT EL. 156'	156	4.47E+03	4.24E+03	3.13E+03	1.28E+05	1.26E+05	6.07E+04
24	SSW: CUT AT EL. 136.5'	136.5	9.28E+03	6.96E+03	7.51E+03	2.97E+05	3.34E+05	8.52E+04
25	SSW: CUT AT EL. 130'	130	1.12E+04	8.07E+03	9.68E+03	3.67E+05	4.31E+05	9.88E+04
26	SSW: CUT AT EL. 114'	114	1.28E+04	9.20E+03	1.16E+04	4.92E+05	6.45E+05	1.13E+05
27	SSW: CUT AT EL. 100'	100	1.45E+04	1.04E+04	1.37E+04	6.36E+05	8.64E+05	1.28E+05
28	SSW: CUT AT EL. 78'	78	2.23E+04	1.97E+04	2.34E+04	9.36E+05	1.35E+06	1.44E+05

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-44 CASE08C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S08C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	3.543E+03	4.964E+03	1.922E+03	1.781E+05	1.446E+05	4.239E+05
30	AB-EAST: CUT AT EL. 213'	213	9.548E+03	9.028E+03	4.958E+03	4.099E+05	6.300E+05	1.007E+06
31	AB-EAST: CUT AT EL. 195'	195	1.242E+04	1.191E+04	6.021E+03	5.774E+05	7.629E+05	1.306E+06
32	AB-WEST: CUT AT EL. 195'	195	8.381E+03	6.645E+03	3.773E+03	1.844E+05	3.869E+05	5.440E+05
33	AB: CUT AT EL. 174'	174	5.059E+04	5.116E+04	2.574E+04	1.829E+06	1.579E+06	1.494E+06
34	AB: CUT AT EL. 156'	156	7.661E+04	8.455E+04	4.590E+04	3.514E+06	3.164E+06	2.475E+06
35	AB: CUT AT EL. 137.5'	137.5	1.028E+05	1.170E+05	7.299E+04	5.681E+06	4.979E+06	3.015E+06
36	AB: CUT AT EL. 120'	120	1.270E+05	1.489E+05	1.040E+05	8.328E+06	7.144E+06	3.619E+06
37	AB: CUT AT EL. 98.5'	98.5	1.517E+05	1.728E+05	1.368E+05	1.180E+07	1.025E+07	4.050E+06
38	AB: CUT AT EL. 77'	77	1.785E+05	1.924E+05	1.760E+05	1.538E+07	1.356E+07	4.353E+06
39	AB: CUT AT EL. 67'	67	1.984E+05	2.096E+05	1.977E+05	1.707E+07	1.531E+07	4.497E+06
40	AB: CUT AT EL. 55'	55	2.107E+05	2.208E+05	2.103E+05	1.906E+07	1.738E+07	4.560E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-45 CASE08C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S08C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	1.12E+04	1.22E+04	8.91E+03	1.29	1.41	1.03
CS: 2	281	307.5	1.08E+04	1.14E+04	7.92E+03	1.19	1.26	0.88
CS: 3	254.5	281	7.49E+03	7.82E+03	5.61E+03	1.09	1.14	0.82
CS: 4	241	254.5	4.20E+03	4.39E+03	3.30E+03	1.01	1.06	0.79
CS: 5	220	241	1.08E+04	1.14E+04	7.29E+03	0.92	0.97	0.62
CS: 6	200	220	5.60E+03	6.04E+03	5.62E+03	0.69	0.75	0.69
CS: 7	178	200	4.39E+03	4.96E+03	5.26E+03	0.52	0.59	0.63
CS: 8	156	178	3.62E+03	3.82E+03	4.65E+03	0.43	0.45	0.55
CS: 9	136	156	3.23E+03	2.82E+03	3.13E+03	0.48	0.42	0.46
CS: 10	130	136	1.27E+03	1.12E+03	1.16E+03	0.45	0.40	0.41
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	2.43E+03	2.79E+03	2.12E+03	0.42	0.48	0.36
CS: 13	100	114	1.63E+03	2.07E+03	1.50E+03	0.32	0.40	0.29
CS: 14	78	100	1.01E+03	1.64E+03	1.42E+03	0.17	0.28	0.24
PSW: 1	156	191	1.88E+03	3.78E+03	1.46E+03	0.69	1.27	0.54
PSW: 2	136.5	156	2.70E+03	1.12E+03	2.69E+03	0.53	0.22	0.53
PSW: 3	130	136.5	9.49E+02	2.97E+02	1.16E+03	0.43	0.13	0.53
PSW: 4	114	130	1.93E+03	1.52E+03	2.53E+03	0.37	0.29	0.49
PSW: 5	100	114	1.88E+03	1.79E+03	2.55E+03	0.33	0.32	0.45
PSW: 6	78	100	1.83E+03	2.15E+03	2.49E+03	0.28	0.33	0.38
PSW: 7	66	78	3.93E+02	5.50E+02	5.88E+02	0.24	0.33	0.35
SSW: 1	191	200	1.92E+02	2.23E+02	1.22E+02	1.25	1.45	0.79
SSW: 2	156	191	4.28E+03	4.02E+03	3.01E+03	0.90	0.80	0.63
SSW: 3	136.5	156	4.81E+03	2.72E+03	4.38E+03	0.63	0.36	0.58
SSW: 4	130	136.5	1.90E+03	1.10E+03	2.17E+03	0.48	0.28	0.55
SSW: 5	114	130	1.61E+03	1.13E+03	1.89E+03	0.44	0.31	0.52
SSW: 6	100	114	1.75E+03	1.16E+03	2.15E+03	0.40	0.27	0.49
SSW: 7	78	100	7.75E+03	9.30E+03	9.71E+03	0.29	0.34	0.39

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-46 CASE08C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S08C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.543E+03	4.964E+03	1.922E+03	0.91	1.27	0.49
AB-FHA: 2	213	213.5	6.005E+03	4.064E+03	3.036E+03	1.03	0.72	0.53
AB-FHA: 3	195	213	2.871E+03	2.886E+03	1.063E+03	0.85	0.86	0.32
AB-MCR: 1	195	213	8.381E+03	6.645E+03	3.773E+03	1.22	0.97	0.55
AB: 1	174	195	2.979E+04	3.260E+04	1.594E+04	0.77	0.84	0.41
AB: 2	156	174	2.602E+04	3.338E+04	2.017E+04	0.55	0.71	0.43
AB: 3	137.5	156	2.619E+04	3.241E+04	2.709E+04	0.37	0.46	0.39
AB: 4	120	137.5	2.418E+04	3.199E+04	3.097E+04	0.30	0.39	0.39
AB: 5	98.5	120	2.475E+04	2.387E+04	3.289E+04	0.27	0.26	0.36
AB: 6	77	98.5	2.673E+04	1.957E+04	3.915E+04	0.24	0.17	0.32
AB: 7	67	77	1.992E+04	1.725E+04	2.167E+04	0.27	0.24	0.30
AB: 8	55	67	1.237E+04	1.114E+04	1.262E+04	0.26	0.23	0.26

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-47 CASE08C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S08C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	1.29	1.41	1.03
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	1.19	1.26	0.88
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	1.09	1.14	0.82
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	1.01	1.06	0.79
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.92	0.97	0.62
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.69	0.75	0.69
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.52	0.59	0.63
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.43	0.45	0.55
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.48	0.42	0.46
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.45	0.40	0.41
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.42	0.48	0.36
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.32	0.40	0.29
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.17	0.28	0.24
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.69	1.27	0.54
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.53	0.22	0.53
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.43	0.13	0.53
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.37	0.29	0.49
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.33	0.32	0.45
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.28	0.33	0.38
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.24	0.33	0.35
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	1.25	1.45	0.79
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.90	0.80	0.63
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.63	0.36	0.58
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.48	0.28	0.55
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.44	0.31	0.52
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.40	0.27	0.49
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.29	0.34	0.39
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes

1. ∆Wj = ∆MAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ∆Wj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ∆Wx, ∆Wy, ∆Wz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-48 CASE08C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S08C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.91	1.27	0.49
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	1.03	0.72	0.53
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.85	0.86	0.32
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	1.22	0.97	0.55
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.77	0.84	0.41
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.55	0.71	0.43
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.37	0.46	0.39
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.30	0.39	0.39
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.27	0.26	0.36
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.24	0.17	0.32
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.27	0.24	0.30
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.26	0.23	0.26
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-49 CASE09C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S09C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	1.10E+04	1.20E+04	8.75E+03	1.71E+05	1.54E+05	1.13E+04
2	CS: CUT AT EL. 281'	281	2.14E+04	2.31E+04	1.66E+04	7.08E+05	6.30E+05	3.05E+04
3	CS: CUT AT EL. 254.5'	254.5	2.87E+04	3.07E+04	2.22E+04	1.52E+06	1.37E+06	3.99E+04
4	CS: CUT AT EL. 241'	241	3.27E+04	3.49E+04	2.55E+04	2.04E+06	1.85E+06	4.20E+04
5	CS: CUT AT EL. 220'	220	4.30E+04	4.59E+04	3.28E+04	3.12E+06	2.84E+06	4.17E+04
6	CS: CUT AT EL. 200'	200	4.83E+04	5.17E+04	3.85E+04	4.18E+06	3.83E+06	4.19E+04
7	CS: CUT AT EL. 178'	178	5.27E+04	5.65E+04	4.38E+04	5.44E+06	5.01E+06	5.30E+04
8	CS: CUT AT EL. 156'	156	5.73E+04	6.08E+04	4.85E+04	6.77E+06	6.27E+06	5.63E+04
9	CS: CUT AT EL. 136'	136	6.07E+04	6.42E+04	5.17E+04	8.02E+06	7.49E+06	5.72E+04
10	CS: CUT AT EL. 130'	130	6.19E+04	6.56E+04	5.29E+04	8.41E+06	7.87E+06	5.62E+04
11	CS: CUT AT EL. 125'	125	6.19E+04	6.56E+04	5.29E+04	8.73E+06	8.18E+06	5.62E+04
12	CS: CUT AT EL. 114'	114	6.42E+04	6.86E+04	5.51E+04	9.46E+06	8.91E+06	5.24E+04
13	CS: CUT AT EL. 100'	100	6.57E+04	7.05E+04	5.72E+04	1.04E+07	9.84E+06	5.04E+04
14	CS: CUT AT EL. 78'	78	6.64E+04	7.20E+04	5.93E+04	1.20E+07	1.13E+07	5.04E+04
15	PSW: CUT AT EL. 156'	156	1.74E+03	3.59E+03	1.26E+03	8.50E+04	3.65E+04	4.44E+04
16	PSW: CUT AT EL. 136.5'	136.5	4.34E+03	4.78E+03	3.62E+03	1.65E+05	1.35E+05	7.21E+04
17	PSW: CUT AT EL. 130'	130	5.30E+03	5.14E+03	4.65E+03	1.97E+05	1.86E+05	8.60E+04
18	PSW: CUT AT EL. 114'	114	7.37E+03	6.63E+03	6.94E+03	2.84E+05	3.18E+05	1.02E+05
19	PSW: CUT AT EL. 100'	100	9.31E+03	8.52E+03	9.27E+03	3.69E+05	4.54E+05	1.18E+05
20	PSW: CUT AT EL. 78'	78	1.10E+04	1.10E+04	1.17E+04	5.52E+05	6.72E+05	1.12E+05
21	PSW: CUT AT EL. 66'	66	1.14E+04	1.15E+04	1.23E+04	6.64E+05	8.07E+05	1.12E+05
22	SSW: CUT AT EL. 191'	191	1.71E+02	2.06E+02	1.17E+02	3.54E+03	4.84E+03	9.01E+03
23	SSW: CUT AT EL. 156'	156	4.18E+03	3.96E+03	2.78E+03	1.43E+05	1.10E+05	5.49E+04
24	SSW: CUT AT EL. 136.5'	136.5	8.86E+03	6.71E+03	6.66E+03	3.28E+05	3.04E+05	7.33E+04
25	SSW: CUT AT EL. 130'	130	1.08E+04	7.75E+03	8.62E+03	4.01E+05	3.94E+05	8.69E+04
26	SSW: CUT AT EL. 114'	114	1.24E+04	8.85E+03	1.04E+04	5.15E+05	5.97E+05	1.02E+05
27	SSW: CUT AT EL. 100'	100	1.41E+04	9.98E+03	1.23E+04	6.18E+05	8.11E+05	1.15E+05
28	SSW: CUT AT EL. 78'	78	2.16E+04	2.00E+04	2.17E+04	8.99E+05	1.30E+06	1.35E+05

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-50 CASE09C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S09C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	3.581E+03	4.126E+03	1.947E+03	1.955E+05	1.374E+05	4.003E+05
30	AB-EAST: CUT AT EL. 213'	213	9.709E+03	7.555E+03	4.973E+03	4.063E+05	6.328E+05	9.028E+05
31	AB-EAST: CUT AT EL. 195'	195	1.262E+04	1.002E+04	6.054E+03	5.837E+05	7.839E+05	1.167E+06
32	AB-WEST: CUT AT EL. 195'	195	8.149E+03	5.961E+03	3.860E+03	1.564E+05	3.976E+05	4.770E+05
33	AB: CUT AT EL. 174'	174	5.076E+04	4.390E+04	2.624E+04	1.637E+06	1.705E+06	1.896E+06
34	AB: CUT AT EL. 156'	156	7.695E+04	7.372E+04	4.657E+04	3.119E+06	3.352E+06	2.986E+06
35	AB: CUT AT EL. 137.5'	137.5	1.040E+05	1.017E+05	7.409E+04	4.975E+06	5.356E+06	3.683E+06
36	AB: CUT AT EL. 120'	120	1.284E+05	1.344E+05	1.051E+05	7.233E+06	7.723E+06	4.453E+06
37	AB: CUT AT EL. 98.5'	98.5	1.519E+05	1.652E+05	1.380E+05	1.017E+07	1.110E+07	4.983E+06
38	AB: CUT AT EL. 77'	77	1.849E+05	1.897E+05	1.769E+05	1.352E+07	1.475E+07	5.440E+06
39	AB: CUT AT EL. 67'	67	2.042E+05	2.040E+05	1.981E+05	1.546E+07	1.663E+07	5.680E+06
40	AB: CUT AT EL. 55'	55	2.166E+05	2.132E+05	2.104E+05	1.793E+07	1.884E+07	5.749E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-51 CASE09C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S09C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	1.10E+04	1.20E+04	8.75E+03	1.27	1.38	1.01
CS: 2	281	307.5	1.04E+04	1.11E+04	7.81E+03	1.15	1.23	0.86
CS: 3	254.5	281	7.20E+03	7.59E+03	5.61E+03	1.05	1.11	0.82
CS: 4	241	254.5	4.03E+03	4.25E+03	3.32E+03	0.97	1.02	0.80
CS: 5	220	241	1.03E+04	1.10E+04	7.35E+03	0.88	0.94	0.63
CS: 6	200	220	5.36E+03	5.81E+03	5.68E+03	0.66	0.72	0.70
CS: 7	178	200	4.35E+03	4.80E+03	5.32E+03	0.52	0.57	0.64
CS: 8	156	178	4.57E+03	4.30E+03	4.70E+03	0.54	0.51	0.56
CS: 9	136	156	3.46E+03	3.33E+03	3.17E+03	0.51	0.49	0.47
CS: 10	130	136	1.22E+03	1.48E+03	1.17E+03	0.43	0.52	0.41
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	2.28E+03	2.91E+03	2.20E+03	0.39	0.50	0.38
CS: 13	100	114	1.44E+03	1.93E+03	2.10E+03	0.28	0.38	0.41
CS: 14	78	100	7.90E+02	1.53E+03	2.08E+03	0.14	0.26	0.36
PSW: 1	156	191	1.74E+03	3.59E+03	1.26E+03	0.64	1.20	0.46
PSW: 2	136.5	156	2.60E+03	1.19E+03	2.36E+03	0.51	0.23	0.46
PSW: 3	130	136.5	9.59E+02	3.61E+02	1.03E+03	0.44	0.16	0.47
PSW: 4	114	130	2.07E+03	1.49E+03	2.29E+03	0.40	0.29	0.44
PSW: 5	100	114	1.95E+03	1.89E+03	2.33E+03	0.35	0.34	0.41
PSW: 6	78	100	1.69E+03	2.44E+03	2.40E+03	0.26	0.38	0.37
PSW: 7	66	78	3.80E+02	5.55E+02	5.83E+02	0.23	0.34	0.35
SSW: 1	191	200	1.71E+02	2.06E+02	1.17E+02	1.11	1.34	0.76
SSW: 2	156	191	4.01E+03	3.75E+03	2.67E+03	0.84	0.75	0.56
SSW: 3	136.5	156	4.67E+03	2.75E+03	3.88E+03	0.62	0.36	0.51
SSW: 4	130	136.5	1.94E+03	1.04E+03	1.96E+03	0.49	0.26	0.49
SSW: 5	114	130	1.62E+03	1.11E+03	1.73E+03	0.45	0.31	0.48
SSW: 6	100	114	1.71E+03	1.13E+03	1.99E+03	0.39	0.26	0.45
SSW: 7	78	100	7.48E+03	9.99E+03	9.39E+03	0.28	0.37	0.37

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-52 CASE09C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S09C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.581E+03	4.126E+03	1.947E+03	0.92	1.06	0.50
AB-FHA: 2	213	213.5	6.128E+03	3.429E+03	3.026E+03	1.05	0.60	0.53
AB-FHA: 3	195	213	2.915E+03	2.464E+03	1.081E+03	0.87	0.73	0.32
AB-MCR: 1	195	213	8.149E+03	5.961E+03	3.860E+03	1.19	0.87	0.56
AB: 1	174	195	2.999E+04	2.792E+04	1.633E+04	0.77	0.72	0.42
AB: 2	156	174	2.619E+04	2.982E+04	2.033E+04	0.56	0.64	0.43
AB: 3	137.5	156	2.706E+04	2.796E+04	2.751E+04	0.39	0.40	0.40
AB: 4	120	137.5	2.440E+04	3.275E+04	3.104E+04	0.30	0.40	0.39
AB: 5	98.5	120	2.352E+04	3.074E+04	3.287E+04	0.26	0.33	0.36
AB: 6	77	98.5	3.295E+04	2.456E+04	3.889E+04	0.29	0.22	0.32
AB: 7	67	77	1.937E+04	1.424E+04	2.117E+04	0.26	0.20	0.29
AB: 8	55	67	1.232E+04	9.246E+03	1.237E+04	0.26	0.19	0.26

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-53 CASE09C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S09C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	1.27	1.38	1.01
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	1.15	1.23	0.86
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	1.05	1.11	0.82
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.97	1.02	0.80
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.88	0.94	0.63
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.66	0.72	0.70
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.52	0.57	0.64
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.54	0.51	0.56
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.51	0.49	0.47
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.43	0.52	0.41
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.39	0.50	0.38
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.28	0.38	0.41
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.14	0.26	0.36
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.64	1.20	0.46
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.51	0.23	0.46
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.44	0.16	0.47
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.40	0.29	0.44
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.35	0.34	0.41
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.26	0.38	0.37
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.23	0.34	0.35
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	1.11	1.34	0.76
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	0.84	0.75	0.56
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.62	0.36	0.51
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.49	0.26	0.49
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.45	0.31	0.48
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.39	0.26	0.45
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.28	0.37	0.37
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes

1. ∆Wj = ∆MAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ∆Wj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ∆Wx, ∆Wy, ∆Wz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-54 CASE09C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S09C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	0.92	1.06	0.50
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	1.05	0.60	0.53
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	0.87	0.73	0.32
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	1.19	0.87	0.56
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	0.77	0.72	0.42
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.56	0.64	0.43
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.39	0.40	0.40
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.30	0.40	0.39
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.26	0.33	0.36
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.29	0.22	0.32
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.26	0.20	0.29
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.26	0.19	0.26
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-55 CASE10C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for RCB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S10C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
1	CS: CUT AT EL. 307.5'	307.5	1.20E+04	1.20E+04	1.17E+04	1.76E+05	1.78E+05	6.77E+03
2	CS: CUT AT EL. 281'	281	2.30E+04	2.32E+04	2.19E+04	7.22E+05	7.24E+05	1.48E+04
3	CS: CUT AT EL. 254.5'	254.5	3.05E+04	3.07E+04	2.89E+04	1.54E+06	1.54E+06	2.15E+04
4	CS: CUT AT EL. 241'	241	3.46E+04	3.48E+04	3.29E+04	2.07E+06	2.07E+06	2.48E+04
5	CS: CUT AT EL. 220'	220	4.54E+04	4.55E+04	4.17E+04	3.16E+06	3.12E+06	3.62E+04
6	CS: CUT AT EL. 200'	200	5.12E+04	5.12E+04	4.84E+04	4.23E+06	4.18E+06	3.83E+04
7	CS: CUT AT EL. 178'	178	5.59E+04	5.60E+04	5.46E+04	5.50E+06	5.46E+06	3.46E+04
8	CS: CUT AT EL. 156'	156	5.96E+04	5.95E+04	6.00E+04	6.85E+06	6.80E+06	3.63E+04
9	CS: CUT AT EL. 136'	136	6.16E+04	6.14E+04	6.36E+04	8.11E+06	8.05E+06	3.97E+04
10	CS: CUT AT EL. 130'	130	6.23E+04	6.20E+04	6.49E+04	8.50E+06	8.44E+06	4.05E+04
11	CS: CUT AT EL. 125'	125	6.23E+04	6.20E+04	6.49E+04	8.81E+06	8.75E+06	4.05E+04
12	CS: CUT AT EL. 114'	114	6.44E+04	6.30E+04	6.73E+04	9.54E+06	9.46E+06	3.93E+04
13	CS: CUT AT EL. 100'	100	6.63E+04	6.35E+04	6.91E+04	1.04E+07	1.04E+07	4.18E+04
14	CS: CUT AT EL. 78'	78	6.80E+04	6.53E+04	7.10E+04	1.18E+07	1.18E+07	4.38E+04
15	PSW: CUT AT EL. 156'	156	2.21E+03	4.33E+03	1.63E+03	1.04E+05	5.27E+04	5.21E+04
16	PSW: CUT AT EL. 136.5'	136.5	5.14E+03	5.07E+03	4.60E+03	1.88E+05	1.88E+05	9.74E+04
17	PSW: CUT AT EL. 130'	130	6.24E+03	5.76E+03	5.86E+03	2.14E+05	2.54E+05	1.18E+05
18	PSW: CUT AT EL. 114'	114	8.53E+03	7.18E+03	8.58E+03	2.98E+05	4.09E+05	1.42E+05
19	PSW: CUT AT EL. 100'	100	1.05E+04	8.98E+03	1.13E+04	3.99E+05	5.53E+05	1.57E+05
20	PSW: CUT AT EL. 78'	78	1.18E+04	1.09E+04	1.39E+04	5.92E+05	7.70E+05	1.53E+05
21	PSW: CUT AT EL. 66'	66	1.22E+04	1.13E+04	1.44E+04	7.24E+05	9.09E+05	1.52E+05
22	SSW: CUT AT EL. 191'	191	2.41E+02	2.64E+02	1.39E+02	4.40E+03	6.69E+03	1.00E+04
23	SSW: CUT AT EL. 156'	156	5.26E+03	5.17E+03	3.51E+03	1.58E+05	1.62E+05	7.57E+04
24	SSW: CUT AT EL. 136.5'	136.5	1.04E+04	7.64E+03	8.32E+03	3.26E+05	4.25E+05	1.15E+05
25	SSW: CUT AT EL. 130'	130	1.24E+04	8.64E+03	1.07E+04	3.87E+05	5.44E+05	1.31E+05
26	SSW: CUT AT EL. 114'	114	1.39E+04	9.77E+03	1.27E+04	5.31E+05	7.64E+05	1.47E+05
27	SSW: CUT AT EL. 100'	100	1.53E+04	1.10E+04	1.51E+04	6.85E+05	9.77E+05	1.63E+05
28	SSW: CUT AT EL. 78'	78	2.20E+04	2.01E+04	2.52E+04	9.99E+05	1.46E+06	1.81E+05

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-56 CASE10C (CRACKED)

Seismic Forces and Moments at Each Floor from SASSI Analysis for AB (SRSS)

APR1400-RCBAB-B2-R6(0928)-S10C			SRSS - SEISMIC SHEAR FORCE AND MOMENT (kips,ft)					
ID #	DESCRIPTION	ELEVATION (ft)	Fx	Fy	Fz	Mx	My	Mz
29	AB-EAST: CUT AT EL. 213.5'	213.5	5.425E+03	7.174E+03	2.920E+03	3.142E+05	1.980E+05	6.371E+05
30	AB-EAST: CUT AT EL. 213'	213	1.479E+04	1.313E+04	5.504E+03	4.782E+05	7.113E+05	1.502E+06
31	AB-EAST: CUT AT EL. 195'	195	1.926E+04	1.740E+04	6.656E+03	7.653E+05	9.458E+05	1.981E+06
32	AB-WEST: CUT AT EL. 195'	195	1.017E+04	7.661E+03	5.262E+03	1.709E+05	5.506E+05	7.065E+05
33	AB: CUT AT EL. 174'	174	6.823E+04	6.636E+04	3.074E+04	2.431E+06	2.519E+06	2.257E+06
34	AB: CUT AT EL. 156'	156	1.016E+05	1.114E+05	5.452E+04	4.762E+06	4.780E+06	3.154E+06
35	AB: CUT AT EL. 137.5'	137.5	1.433E+05	1.653E+05	8.873E+04	7.929E+06	7.730E+06	3.595E+06
36	AB: CUT AT EL. 120'	120	1.933E+05	2.226E+05	1.249E+05	1.201E+07	1.120E+07	4.348E+06
37	AB: CUT AT EL. 98.5'	98.5	2.402E+05	2.826E+05	1.629E+05	1.811E+07	1.660E+07	5.503E+06
38	AB: CUT AT EL. 77'	77	2.772E+05	3.359E+05	2.038E+05	2.511E+07	2.251E+07	6.211E+06
39	AB: CUT AT EL. 67'	67	2.932E+05	3.586E+05	2.259E+05	2.840E+07	2.543E+07	6.478E+06
40	AB: CUT AT EL. 55'	55	3.009E+05	3.696E+05	2.383E+05	3.239E+07	2.892E+07	6.597E+06

Notes

1. Fi = SRSS(Max(Fi/x) , Max(Fi/y) , Max(Fi/z)) - (kips)
2. Mi = SRSS(Max(Mi/x) , Max(Mi/y) , Max(Mi/z)) - (kips-ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a seismic ground motion in the j direction. - (kips-ft)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-57 CASE10C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for RCB

APR1400-RCBAB-B2-R6(0928)-S10C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	1.20E+04	1.20E+04	1.17E+04	1.38	1.38	1.35
CS: 2	281	307.5	1.11E+04	1.12E+04	1.02E+04	1.23	1.23	1.12
CS: 3	254.5	281	7.42E+03	7.49E+03	7.01E+03	1.08	1.09	1.02
CS: 4	241	254.5	4.12E+03	4.13E+03	4.07E+03	0.99	0.99	0.98
CS: 5	220	241	1.08E+04	1.07E+04	8.77E+03	0.92	0.91	0.75
CS: 6	200	220	5.74E+03	5.72E+03	6.71E+03	0.71	0.71	0.83
CS: 7	178	200	4.69E+03	4.78E+03	6.19E+03	0.56	0.57	0.74
CS: 8	156	178	3.73E+03	3.50E+03	5.39E+03	0.44	0.41	0.64
CS: 9	136	156	2.03E+03	1.95E+03	3.58E+03	0.30	0.29	0.53
CS: 10	130	136	6.39E+02	6.07E+02	1.32E+03	0.23	0.21	0.47
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	2.16E+03	9.48E+02	2.37E+03	0.37	0.16	0.41
CS: 13	100	114	1.87E+03	5.23E+02	1.81E+03	0.36	0.10	0.35
CS: 14	78	100	1.66E+03	1.77E+03	1.91E+03	0.29	0.30	0.33
PSW: 1	156	191	2.21E+03	4.33E+03	1.63E+03	0.81	1.45	0.60
PSW: 2	136.5	156	2.93E+03	7.43E+02	2.97E+03	0.58	0.15	0.58
PSW: 3	130	136.5	1.11E+03	6.86E+02	1.26E+03	0.50	0.31	0.57
PSW: 4	114	130	2.29E+03	1.42E+03	2.72E+03	0.44	0.27	0.52
PSW: 5	100	114	1.95E+03	1.80E+03	2.70E+03	0.35	0.32	0.48
PSW: 6	78	100	1.32E+03	1.87E+03	2.58E+03	0.20	0.29	0.40
PSW: 7	66	78	4.30E+02	4.61E+02	5.92E+02	0.26	0.28	0.36
SSW: 1	191	200	2.41E+02	2.64E+02	1.39E+02	1.57	1.72	0.91
SSW: 2	156	191	5.02E+03	4.91E+03	3.37E+03	1.05	0.97	0.71
SSW: 3	136.5	156	5.19E+03	2.47E+03	4.81E+03	0.68	0.32	0.63
SSW: 4	130	136.5	2.00E+03	1.01E+03	2.38E+03	0.50	0.25	0.60
SSW: 5	114	130	1.50E+03	1.12E+03	2.05E+03	0.41	0.31	0.57
SSW: 6	100	114	1.37E+03	1.27E+03	2.32E+03	0.31	0.29	0.53
SSW: 7	78	100	6.71E+03	9.07E+03	1.01E+04	0.25	0.33	0.40

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. Equivalent accelerations for CS: 11 are not available because the building weight of the CS between elevations 125' and 130' is zero.

Table B-58 CASE10C (CRACKED)

Total Equivalent Seismic Inertia Force and Acceleration for AB

APR1400-RCBAB-B2-R6(0928)-S10C			BUILDING SEISMIC EQUIVALENT ACCELERATIONS - SRSS (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔFx (kips)	ΔFy (kips)	ΔFz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
AB-FHA: 1	213.5	226.5	5.425E+03	7.174E+03	2.920E+03	1.39	1.84	0.75
AB-FHA: 2	213	213.5	9.362E+03	5.953E+03	2.584E+03	1.60	1.05	0.45
AB-FHA: 3	195	213	4.476E+03	4.274E+03	1.152E+03	1.33	1.27	0.34
AB-MCR: 1	195	213	1.017E+04	7.661E+03	5.262E+03	1.48	1.12	0.77
AB: 1	174	195	3.880E+04	4.130E+04	1.882E+04	1.00	1.07	0.49
AB: 2	156	174	3.335E+04	4.505E+04	2.378E+04	0.71	0.96	0.51
AB: 3	137.5	156	4.169E+04	5.389E+04	3.422E+04	0.60	0.77	0.50
AB: 4	120	137.5	5.003E+04	5.727E+04	3.613E+04	0.62	0.71	0.45
AB: 5	98.5	120	4.689E+04	5.999E+04	3.803E+04	0.51	0.64	0.42
AB: 6	77	98.5	3.705E+04	5.338E+04	4.087E+04	0.33	0.47	0.34
AB: 7	67	77	1.601E+04	2.269E+04	2.217E+04	0.22	0.31	0.30
AB: 8	55	67	7.662E+03	1.097E+04	1.234E+04	0.16	0.23	0.26

Notes

1. ΔFj = The absolute difference in calculated SRSS shear values of Fj from the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a seismic ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔFj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-59 CASE10C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for RCB

APR1400-RCBAB-B2-R6(0928)-S10C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	Acc. X (g)	Acc. Y (g)	Acc. Z (g)
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	1.38	1.38	1.35
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	1.23	1.23	1.12
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	1.08	1.09	1.02
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	0.99	0.99	0.98
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	0.92	0.91	0.75
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	0.71	0.71	0.83
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	0.56	0.57	0.74
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	0.44	0.41	0.64
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	0.30	0.29	0.53
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	0.23	0.21	0.47
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	N/A	N/A	N/A
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	0.37	0.16	0.41
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	0.36	0.10	0.35
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	0.29	0.30	0.33
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**			
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	0.81	1.45	0.60
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	0.58	0.15	0.58
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	0.50	0.31	0.57
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	0.44	0.27	0.52
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	0.35	0.32	0.48
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	0.20	0.29	0.40
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	0.26	0.28	0.36
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**			
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	1.57	1.72	0.91
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	1.05	0.97	0.71
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	0.68	0.32	0.63
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	0.50	0.25	0.60
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	0.41	0.31	0.57
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	0.31	0.29	0.53
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	0.25	0.33	0.40
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**			

Notes

1. ∆Wj = ∆MAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ∆Wj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and verticaly upward directions respectively.
6. Moments are calculated about the geometric center of the PCCV.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.
11. ∆Wx, ∆Wy, ∆Wz are from Table B-67.
12. Equivalent accelerations for CS: 11 are not available bacause the building weight of the CS between elevation 125' and 130' is zero.

Table B-60 CASE10C (CRACKED)

Total Equivalent Weight and Seismic Acceleration Summary for AB

APR1400-RCBAB-B2-R6(0928)-S10C			BUILDING SEISMIC EQUIVALENT WEIGHT AND ACCELERATION SUMMARY TABLE					
ID #	**BOTTOM EL. (ft)**	**TOP EL. (ft)**	**ΔWx (kips)**	**ΔWy (kips)**	**ΔWz (kips)**	**Acc. X (g)**	**Acc. Y (g)**	**Acc. Z (g)**
AB-FHA: 1	213.5	226.5	3.895E+03	3.895E+03	3.895E+03	1.39	1.84	0.75
AB-FHA: 2	213	213.5	5.834E+03	5.677E+03	5.735E+03	1.60	1.05	0.45
AB-FHA: 3	195	213	3.361E+03	3.368E+03	3.370E+03	1.33	1.27	0.34
		∑ =	**13090**	**12940**	**13000**			
AB-MCR: 1	195	213	6.865E+03	6.865E+03	6.865E+03	1.48	1.12	0.77
		∑ =	**6865**	**6865**	**6865**			
AB: 1	174	195	3.876E+04	3.876E+04	3.875E+04	1.00	1.07	0.49
AB: 2	156	174	4.689E+04	4.684E+04	4.689E+04	0.71	0.96	0.51
AB: 3	137.5	156	6.990E+04	7.000E+04	6.880E+04	0.60	0.77	0.50
AB: 4	120	137.5	8.100E+04	8.110E+04	8.010E+04	0.62	0.71	0.45
AB: 5	98.5	120	9.210E+04	9.330E+04	9.130E+04	0.51	0.64	0.42
AB: 6	77	98.5	1.128E+05	1.135E+05	1.208E+05	0.33	0.47	0.34
AB: 7	67	77	7.310E+04	7.300E+04	7.310E+04	0.22	0.31	0.30
AB: 8	55	67	4.790E+04	4.790E+04	4.780E+04	0.16	0.23	0.26
		∑ =	**562450**	**564400**	**567540**			

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. Acc. j = The equivalent acceleration in the j direction calculated between the top and bottom listed elevations. - (g)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-61 (CRACKED)

Static Forces and Moments at Each Floor from SASSI Analysis for RCB (X-Direction)

APR1400-RCBAB-B2-R6(0928)-S10C			X-DIRECTION STATIC SHEAR FORCE AND MOMENT (kips, kips-ft)					
ID #	DESCRIPTION	ELEVATION (ft)	MAX(Fx/x)	MAX(Fy/x)	MAX(Fz/x)	MAX(Mx/x)	MAX(My/x)	MAX(Mz/x)
1	CS: CUT AT EL. 307.5'	307.5	8.69E+03	2.00E-04	2.70E-04	-2.03E-03	9.73E+04	-1.38E+01
2	CS: CUT AT EL. 281'	281	1.77E+04	4.18E-04	5.42E-04	-9.16E-03	4.31E+05	-1.38E+01
3	CS: CUT AT EL. 254.5'	254.5	2.46E+04	5.99E-04	7.39E-04	-2.20E-02	1.00E+06	-1.37E+01
4	CS: CUT AT EL. 241'	241	2.88E+04	7.22E-04	8.59E-04	-3.10E-02	1.39E+06	-1.37E+01
5	CS: CUT AT EL. 220'	220	4.05E+04	-2.62E-03	2.17E-03	2.27E-03	2.19E+06	7.30E+03
6	CS: CUT AT EL. 200'	200	4.86E+04	-2.35E-03	2.39E-03	5.25E-02	3.08E+06	7.13E+03
7	CS: CUT AT EL. 178'	178	5.70E+04	-2.10E-03	5.02E-04	1.35E-01	4.23E+06	1.25E+04
8	CS: CUT AT EL. 156'	156	6.54E+04	-2.01E-03	1.40E-03	1.58E-01	5.57E+06	8.77E+03
9	CS: CUT AT EL. 136'	136	7.22E+04	-2.02E-03	-1.39E-03	1.91E-01	6.93E+06	6.90E+03
10	CS: CUT AT EL. 130'	130	7.50E+04	-2.04E-03	-1.35E-03	2.02E-01	7.37E+06	6.89E+03
11	CS: CUT AT EL. 125'	125	7.50E+04	-2.04E-03	-1.35E-03	2.12E-01	7.74E+06	6.89E+03
12	CS: CUT AT EL. 114'	114	8.09E+04	-2.04E-03	-7.78E-04	2.28E-01	8.61E+06	5.05E+03
13	CS: CUT AT EL. 100'	100	8.60E+04	-2.08E-03	-1.31E-03	2.64E-01	9.76E+06	7.20E+03
14	CS: CUT AT EL. 78'	78	9.18E+04	-2.09E-03	-1.70E-03	3.16E-01	1.17E+07	9.58E+03
15	PSW: CUT AT EL. 156'	156	2.71E+03	3.58E-04	6.00E-05	-9.79E-03	4.86E+04	3.38E+02
16	PSW: CUT AT EL. 136.5'	136.5	7.80E+03	5.28E-04	-1.28E-03	-3.40E-02	1.63E+05	-1.03E+04
17	PSW: CUT AT EL. 130'	130	1.00E+04	5.82E-04	-2.06E-03	-4.86E-02	2.25E+05	-1.94E+04
18	PSW: CUT AT EL. 114'	114	1.52E+04	6.91E-04	-3.26E-03	-7.39E-02	4.39E+05	-3.16E+04
19	PSW: CUT AT EL. 100'	100	2.08E+04	7.40E-04	-4.17E-03	-9.46E-02	7.06E+05	-4.09E+04
20	PSW: CUT AT EL. 78'	78	2.73E+04	7.06E-04	-3.24E-03	-1.11E-01	1.25E+06	-4.08E+04
21	PSW: CUT AT EL. 66'	66	2.90E+04	7.02E-04	-3.05E-03	-1.19E-01	1.59E+06	-4.08E+04
22	SSW: CUT AT EL. 191'	191	1.54E+02	-8.21E-05	1.71E-04	5.60E-03	1.38E+03	-4.29E+03
23	SSW: CUT AT EL. 156'	156	4.91E+03	9.13E-05	1.71E-03	4.03E-02	9.57E+04	-3.48E+04
24	SSW: CUT AT EL. 136.5'	136.5	1.25E+04	1.79E-04	3.35E-03	6.80E-02	3.07E+05	-3.47E+04
25	SSW: CUT AT EL. 130'	130	1.65E+04	4.15E-04	4.50E-03	9.25E-02	4.08E+05	-4.42E+04
26	SSW: CUT AT EL. 114'	114	2.01E+04	5.73E-04	5.40E-03	1.08E-01	7.09E+05	-6.76E+04
27	SSW: CUT AT EL. 100'	100	2.45E+04	5.93E-04	6.39E-03	1.19E-01	1.04E+06	-8.85E+04
28	SSW: CUT AT EL. 78'	78	5.16E+04	4.47E-04	6.90E-03	1.23E-01	1.98E+06	-1.20E+05

Notes

1. X-DIRECTION STATIC SHEAR FORCE AND MOMENT DATA IS RETRIEVED FROM: STATIC_S10C_X.OUT
2. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
3. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a 1g ground motion in the j direction. - (kips-ft)
4. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
5. Moments are calculated about the geometric center of the CS.
6. Moments and Forces due to RCS elements are not included.
7. Hydrodynamic impulsive masses are included.
8. Hydrodynamic convective masses are not included.
9. Accidental Torsion is not included within the calculations.

Table B-62 (CRACKED)

Static Forces and Moments at Each Floor from SASSI Analysis for RCB (Y-Direction)

APR1400-RCBAB-B2-R6(0928)-S10C			Y-DIRECTION STATIC SHEAR FORCE AND MOMENT (kips, kips-ft)					
ID #	DESCRIPTION	ELEVATION (ft)	MAX(Fx/y)	MAX(Fy/y)	MAX(Fz/y)	MAX(Mx/y)	MAX(My/y)	MAX(Mz/y)
1	CS: CUT AT EL. 307.5'	307.5	1.26E-04	8.69E+03	1.19E-05	-9.73E+04	3.38E-04	1.57E+01
2	CS: CUT AT EL. 281'	281	2.71E-04	1.77E+04	3.70E-05	-4.31E+05	3.70E-03	1.63E+01
3	CS: CUT AT EL. 254.5'	254.5	3.78E-04	2.46E+04	6.12E-05	-1.00E+06	1.15E-02	1.67E+01
4	CS: CUT AT EL. 241'	241	4.58E-04	2.88E+04	7.16E-05	-1.39E+06	1.70E-02	1.65E+01
5	CS: CUT AT EL. 220'	220	-2.43E-03	4.05E+04	8.12E-04	-2.19E+06	-1.18E-02	-1.15E+04
6	CS: CUT AT EL. 200'	200	-2.25E-03	4.86E+04	8.09E-04	-3.08E+06	-5.92E-02	-1.13E+04
7	CS: CUT AT EL. 178'	178	-2.13E-03	5.70E+04	1.25E-03	-4.23E+06	-1.39E-01	1.41E+04
8	CS: CUT AT EL. 156'	156	-2.05E-03	6.54E+04	9.66E-04	-5.57E+06	-1.64E-01	4.49E+03
9	CS: CUT AT EL. 136'	136	-2.14E-03	7.22E+04	7.92E-04	-6.93E+06	-1.99E-01	5.01E+04
10	CS: CUT AT EL. 130'	130	-2.17E-03	7.50E+04	7.81E-04	-7.37E+06	-2.12E-01	5.03E+04
11	CS: CUT AT EL. 125'	125	-2.17E-03	7.50E+04	7.81E-04	-7.74E+06	-2.23E-01	5.03E+04
12	CS: CUT AT EL. 114'	114	-2.16E-03	8.09E+04	6.77E-04	-8.61E+06	-2.40E-01	4.00E+04
13	CS: CUT AT EL. 100'	100	-2.24E-03	8.60E+04	7.68E-04	-9.76E+06	-2.78E-01	5.20E+04
14	CS: CUT AT EL. 78'	78	-2.29E-03	9.18E+04	8.34E-04	-1.17E+07	-3.34E-01	6.55E+04
15	PSW: CUT AT EL. 156'	156	-1.22E-04	2.99E+03	1.46E-04	-5.37E+04	-1.94E-03	1.12E+04
16	PSW: CUT AT EL. 136.5'	136.5	-6.07E-04	8.08E+03	-3.64E-05	-1.74E+05	1.14E-02	8.98E+04
17	PSW: CUT AT EL. 130'	130	-6.86E-04	1.03E+04	-2.18E-04	-2.37E+05	2.11E-02	1.34E+05
18	PSW: CUT AT EL. 114'	114	-7.40E-04	1.55E+04	-4.52E-04	-4.56E+05	3.04E-02	2.06E+05
19	PSW: CUT AT EL. 100'	100	-7.34E-04	2.11E+04	-6.18E-04	-7.27E+05	3.54E-02	2.63E+05
20	PSW: CUT AT EL. 78'	78	-7.93E-04	2.76E+04	-5.13E-04	-1.27E+06	1.87E-02	2.13E+05
21	PSW: CUT AT EL. 66'	66	-7.99E-04	2.92E+04	-5.00E-04	-1.62E+06	9.27E-03	1.95E+05
22	SSW: CUT AT EL. 191'	191	7.08E-05	1.54E+02	-1.42E-04	-1.38E+03	-4.57E-03	-5.72E+03
23	SSW: CUT AT EL. 156'	156	3.35E-04	5.19E+03	-1.68E-03	-1.01E+05	-4.00E-02	-5.31E+04
24	SSW: CUT AT EL. 136.5'	136.5	5.98E-04	1.28E+04	-2.26E-03	-3.18E+05	-6.30E-02	-1.10E+05
25	SSW: CUT AT EL. 130'	130	7.06E-04	1.68E+04	-2.84E-03	-4.20E+05	-8.83E-02	-1.52E+05
26	SSW: CUT AT EL. 114'	114	7.39E-04	2.04E+04	-3.65E-03	-7.26E+05	-1.06E-01	-1.94E+05
27	SSW: CUT AT EL. 100'	100	8.16E-04	2.48E+04	-4.31E-03	-1.06E+06	-1.15E-01	-2.41E+05
28	SSW: CUT AT EL. 78'	78	7.46E-04	5.19E+04	-4.98E-03	-2.01E+06	-1.09E-01	-2.49E+05

Notes

1. Y-DIRECTION STATIC SHEAR FORCE AND MOMENT DATA IS RETRIEVED FROM: STATIC_S10C_Y.OUT
2. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
3. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a 1g ground motion in the j direction. - (kips-ft)
4. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
5. Moments are calculated about the geometric center of the CS.
6. Moments and Forces due to RCS elements are not included.
7. Hydrodynamic impulsive masses are included.
8. Hydrodynamic convective masses are not included.
9. Accidental Torsion is not included within the calculations.

Table B-63 (CRACKED)

Static Forces and Moments at Each Floor from SASSI Analysis for RCB (Z-Direction)

APR1400-RCBAB-B2-R6(0928)-S10C			Z-DIRECTION STATIC SHEAR FORCE AND MOMENT (kips, kips-ft)					
ID #	DESCRIPTION	ELEVATION (ft)	MAX(Fx/z)	MAX(Fy/z)	MAX(Fz/z)	MAX(Mx/z)	MAX(My/z)	MAX(Mz/z)
1	CS: CUT AT EL. 307.5'	307.5	-1.58E-04	1.26E-05	8.68E+03	1.38E+01	-1.57E+01	6.15E-05
2	CS: CUT AT EL. 281'	281	-3.10E-04	1.76E-05	1.77E+04	1.38E+01	-1.63E+01	2.23E-04
3	CS: CUT AT EL. 254.5'	254.5	-4.24E-04	1.68E-05	2.46E+04	1.38E+01	-1.67E+01	3.85E-04
4	CS: CUT AT EL. 241'	241	-4.94E-04	1.27E-05	2.88E+04	1.38E+01	-1.65E+01	4.86E-04
5	CS: CUT AT EL. 220'	220	-5.87E-04	-5.91E-05	4.05E+04	-7.30E+03	1.15E+04	8.91E-04
6	CS: CUT AT EL. 200'	200	-6.58E-04	-7.48E-05	4.86E+04	-7.13E+03	1.13E+04	1.06E-03
7	CS: CUT AT EL. 178'	178	-7.63E-04	-8.26E-05	5.70E+04	-1.25E+04	-1.41E+04	1.51E-03
8	CS: CUT AT EL. 156'	156	-8.74E-04	-9.98E-05	6.54E+04	-8.77E+03	-4.49E+03	1.63E-03
9	CS: CUT AT EL. 136'	136	-9.65E-04	-1.24E-04	7.22E+04	-6.90E+03	-5.01E+04	1.69E-03
10	CS: CUT AT EL. 130'	130	-9.72E-04	-1.32E-04	7.50E+04	-6.89E+03	-5.03E+04	1.73E-03
11	CS: CUT AT EL. 125'	125	-9.72E-04	-1.32E-04	7.50E+04	-6.89E+03	-5.03E+04	1.73E-03
12	CS: CUT AT EL. 114'	114	-9.72E-04	-1.51E-04	8.09E+04	-5.05E+03	-4.00E+04	1.79E-03
13	CS: CUT AT EL. 100'	100	-1.01E-03	-1.57E-04	8.60E+04	-7.20E+03	-5.20E+04	1.87E-03
14	CS: CUT AT EL. 78'	78	-1.04E-03	-1.62E-04	9.18E+04	-9.58E+03	-6.55E+04	1.92E-03
15	PSW: CUT AT EL. 156'	156	8.38E-05	-2.51E-04	2.71E+03	-3.38E+02	-2.82E+03	-2.19E-04
16	PSW: CUT AT EL. 136.5'	136.5	2.39E-05	-5.51E-04	7.80E+03	1.03E+04	-8.14E+04	-3.06E-03
17	PSW: CUT AT EL. 130'	130	1.83E-05	-6.39E-04	1.00E+04	1.94E+04	-1.25E+05	-4.60E-03
18	PSW: CUT AT EL. 114'	114	4.95E-05	-7.87E-04	1.52E+04	3.16E+04	-1.98E+05	-7.10E-03
19	PSW: CUT AT EL. 100'	100	9.26E-05	-8.71E-04	2.08E+04	4.09E+04	-2.55E+05	-8.69E-03
20	PSW: CUT AT EL. 78'	78	9.55E-05	-8.98E-04	2.73E+04	4.08E+04	-2.05E+05	-8.51E-03
21	PSW: CUT AT EL. 66'	66	1.01E-04	-8.99E-04	2.90E+04	4.08E+04	-1.87E+05	-8.49E-03
22	SSW: CUT AT EL. 191'	191	3.30E-05	-7.72E-05	1.54E+02	4.29E+03	5.72E+03	1.89E-03
23	SSW: CUT AT EL. 156'	156	4.55E-04	-6.32E-04	4.91E+03	3.48E+04	6.15E+04	4.78E-03
24	SSW: CUT AT EL. 136.5'	136.5	6.70E-04	-1.09E-03	1.25E+04	3.47E+04	1.18E+05	8.59E-03
25	SSW: CUT AT EL. 130'	130	7.41E-04	-1.25E-03	1.65E+04	4.42E+04	1.61E+05	9.94E-03
26	SSW: CUT AT EL. 114'	114	8.30E-04	-1.40E-03	2.01E+04	6.76E+04	2.03E+05	1.02E-02
27	SSW: CUT AT EL. 100'	100	9.23E-04	-1.48E-03	2.45E+04	8.85E+04	2.50E+05	1.04E-02
28	SSW: CUT AT EL. 78'	78	9.70E-04	-1.64E-03	4.97E+04	1.20E+05	2.61E+05	9.82E-03

Notes

1. Z-DIRECTION STATIC SHEAR FORCE AND MOMENT DATA IS RETRIEVED FROM: STATIC_S10C_Z.OUT
2. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
3. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a 1g ground motion in the j direction. - (kips-ft)
4. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
5. Moments are calculated about the geometric center of the CS.
6. Moments and Forces due to RCS elements are not included.
7. Hydrodynamic impulsive masses are included.
8. Hydrodynamic convective masses are not included.
9. Accidental Torsion is not included within the calculations.

Table B-64 (CRACKED)

Static Forces and Moments at Each Floor from SASSI Analysis for AB (X-Direction)

APR1400-RCBAB-B2-R6(0928)-S10C			X-DIRECTION STATIC SHEAR FORCE AND MOMENT (kips, kips-ft)					
ID #	DESCRIPTION	ELEVATION (ft)	MAX(Fx/x)	MAX(Fy/x)	MAX(Fz/x)	MAX(Mx/x)	MAX(My/x)	MAX(Mz/x)
29	AB-EAST: CUT AT EL. 213.5'	213.5	3.895E+03	3.558E-03	1.214E-03	5.661E-02	1.745E+04	-3.728E+05
30	AB-EAST: CUT AT EL. 213'	213	9.729E+03	1.529E-02	-6.194E-03	-6.597E-01	2.232E+04	-7.899E+05
31	AB-EAST: CUT AT EL. 195'	195	1.309E+04	2.021E-02	-8.468E-03	-1.239E+00	2.309E+05	-1.078E+06
32	AB-WEST: CUT AT EL. 195'	195	6.865E+03	-6.914E-04	1.168E-03	3.064E-02	9.881E+04	-1.278E+02
33	AB: CUT AT EL. 174'	174	5.871E+04	2.598E-02	-4.277E-03	-1.978E+00	1.388E+06	-1.694E+06
34	AB: CUT AT EL. 156'	156	1.056E+05	2.557E-02	3.337E-03	-2.371E+00	3.148E+06	-2.130E+06
35	AB: CUT AT EL. 137.5'	137.5	1.755E+05	2.972E-02	3.567E-03	-2.929E+00	6.156E+06	-2.228E+06
36	AB: CUT AT EL. 120'	120	2.565E+05	3.033E-02	5.607E-03	-3.390E+00	1.044E+07	-2.360E+06
37	AB: CUT AT EL. 98.5'	98.5	3.486E+05	3.292E-02	6.493E-03	-4.039E+00	1.758E+07	-2.661E+06
38	AB: CUT AT EL. 77'	77	4.614E+05	3.411E-02	1.018E-02	-4.690E+00	2.717E+07	-2.724E+06
39	AB: CUT AT EL. 67'	67	5.345E+05	3.484E-02	9.998E-03	-5.062E+00	3.251E+07	-2.600E+06
40	AB: CUT AT EL. 55'	55	5.824E+05	3.520E-02	9.728E-03	-5.497E+00	3.950E+07	-2.530E+06

Notes

1. X-DIRECTION STATIC SHEAR FORCE AND MOMENT DATA IS RETRIEVED FROM: STATIC_S10C_X.OUT
2. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
3. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a 1g ground motion in the j direction. - (kips-ft)
4. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
5. Moments are calculated about the geometric center of the CS.
6. Moments and Forces due to RCS elements are not included.
7. Hydrodynamic impulsive masses are included.
8. Hydrodynamic convective masses are not included.
9. Accidental Torsion is not included within the calculations.

Table B-65 (CRACKED)

Static Forces and Moments at Each Floor from SASSI Analysis for AB (Y-Direction)

APR1400-RCBAB-B2-R6(0928)-S10C			Y-DIRECTION STATIC SHEAR FORCE AND MOMENT (kips, kips-ft)					
ID #	DESCRIPTION	ELEVATION (ft)	MAX(Fx/y)	MAX(Fy/y)	MAX(Fz/y)	MAX(Mx/y)	MAX(My/y)	MAX(Mz/y)
29	AB-EAST: CUT AT EL. 213.5'	213.5	4.564E-03	3.895E+03	-1.095E-03	-1.745E+04	1.241E-01	2.823E+05
30	AB-EAST: CUT AT EL. 213'	213	7.488E-03	9.572E+03	-5.108E-03	-2.224E+04	7.221E-01	1.096E+06
31	AB-EAST: CUT AT EL. 195'	195	1.043E-02	1.294E+04	-7.685E-03	-2.280E+05	1.212E+00	1.499E+06
32	AB-WEST: CUT AT EL. 195'	195	1.308E-03	6.865E+03	-1.560E-05	-9.881E+04	1.681E-02	-7.085E+05
33	AB: CUT AT EL. 174'	174	2.142E-02	5.856E+04	-1.036E-02	-1.382E+06	2.104E+00	-1.530E+05
34	AB: CUT AT EL. 156'	156	3.011E-02	1.054E+05	-1.204E-02	-3.139E+06	2.903E+00	-1.686E+06
35	AB: CUT AT EL. 137.5'	137.5	3.210E-02	1.754E+05	-1.032E-02	-6.144E+06	3.355E+00	-3.603E+05
36	AB: CUT AT EL. 120'	120	3.312E-02	2.565E+05	-1.001E-02	-1.043E+07	3.870E+00	5.839E+05
37	AB: CUT AT EL. 98.5'	98.5	3.385E-02	3.498E+05	-6.724E-03	-1.759E+07	4.182E+00	2.621E+06
38	AB: CUT AT EL. 77'	77	3.391E-02	4.633E+05	-7.407E-03	-2.722E+07	5.012E+00	2.410E+06
39	AB: CUT AT EL. 67'	67	3.457E-02	5.363E+05	-6.688E-03	-3.258E+07	5.258E+00	3.312E+06
40	AB: CUT AT EL. 55'	55	3.478E-02	5.842E+05	-6.499E-03	-3.959E+07	5.662E+00	3.955E+06

Notes

1. Y-DIRECTION STATIC SHEAR FORCE AND MOMENT DATA IS RETRIEVED FROM: STATIC_S10C_Y.OUT
2. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
3. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a 1g ground motion in the j direction. - (kips-ft)
4. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
5. Moments are calculated about the geometric center of the CS.
6. Moments and Forces due to RCS elements are not included.
7. Hydrodynamic impulsive masses are included.
8. Hydrodynamic convective masses are not included.
9. Accidental Torsion is not included within the calculations.

Table B-66 (CRACKED)

Static Forces and Moments at Each Floor from SASSI Analysis for AB (Z-Direction)

APR1400-RCBAB-B2-R6(0928)-S10C			Z-DIRECTION STATIC SHEAR FORCE AND MOMENT (kips, kips-ft)					
ID #	DESCRIPTION	ELEVATION (ft)	MAX(Fx/z)	MAX(Fy/z)	MAX(Fz/z)	MAX(Mx/z)	MAX(My/z)	MAX(Mz/z)
29	AB-EAST: CUT AT EL. 213.5'	213.5	3.712E-04	-1.179E-04	3.895E+03	3.727E+05	-2.823E+05	-3.501E-02
30	AB-EAST: CUT AT EL. 213'	213	1.476E-03	-1.593E-04	9.630E+03	7.829E+05	-1.104E+06	-9.716E-02
31	AB-EAST: CUT AT EL. 195'	195	1.841E-03	-2.046E-04	1.300E+04	1.071E+06	-1.507E+06	-1.146E-01
32	AB-WEST: CUT AT EL. 195'	195	-7.400E-04	-6.996E-06	6.865E+03	1.278E+02	7.085E+05	1.747E-03
33	AB: CUT AT EL. 174'	174	-5.775E-04	-4.960E-04	5.861E+04	1.687E+06	1.448E+05	-1.348E-01
34	AB: CUT AT EL. 156'	156	-1.473E-03	-8.364E-04	1.055E+05	2.123E+06	1.678E+06	-1.472E-01
35	AB: CUT AT EL. 137.5'	137.5	1.061E-03	-1.527E-03	1.743E+05	2.177E+06	4.891E+05	-1.222E-01
36	AB: CUT AT EL. 120'	120	3.335E-03	-1.900E-03	2.544E+05	2.267E+06	-3.181E+05	-1.029E-01
37	AB: CUT AT EL. 98.5'	98.5	4.279E-03	-2.551E-03	3.457E+05	2.697E+06	-2.894E+06	-1.361E-01
38	AB: CUT AT EL. 77'	77	4.132E-03	-2.992E-03	4.665E+05	2.759E+06	-2.523E+06	-1.785E-01
39	AB: CUT AT EL. 67'	67	4.257E-03	-3.033E-03	5.396E+05	2.636E+06	-3.425E+06	-1.784E-01
40	AB: CUT AT EL. 55'	55	4.239E-03	-2.994E-03	5.874E+05	2.565E+06	-4.068E+06	-1.695E-01

Notes

1. Z-DIRECTION STATIC SHEAR FORCE AND MOMENT DATA IS RETRIEVED FROM: STATIC_S10C_Z.OUT
2. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
3. MAX(Mi/j) = The Maximum Value of the Moment about the i direction due to a 1g ground motion in the j direction. - (kips-ft)
4. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
5. Moments are calculated about the geometric center of the CS.
6. Moments and Forces due to RCS elements are not included.
7. Hydrodynamic impulsive masses are included.
8. Hydrodynamic convective masses are not included.
9. Accidental Torsion is not included within the calculations.

Table B-67 (CRACKED)

Building Mass and Weight at Each Floor from SASSI Analysis for RCB

APR1400-RCBAB-B2-R6(0928)-S10C			BUILDING MASS AND WEIGHT - (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	ΔMASSx	ΔMASSy	ΔMASSz
CS: 1	307.5	331.75	8.69E+03	8.69E+03	8.68E+03	269.97	269.97	269.94
CS: 2	281	307.5	9.05E+03	9.05E+03	9.05E+03	281.16	281.16	281.19
CS: 3	254.5	281	6.86E+03	6.86E+03	6.86E+03	213.24	213.24	213.24
CS: 4	241	254.5	4.16E+03	4.16E+03	4.16E+03	129.31	129.31	129.31
CS: 5	220	241	1.17E+04	1.17E+04	1.17E+04	364.63	364.63	364.63
CS: 6	200	220	8.10E+03	8.10E+03	8.10E+03	251.79	251.79	251.79
CS: 7	178	200	8.38E+03	8.38E+03	8.38E+03	260.49	260.49	260.49
CS: 8	156	178	8.47E+03	8.47E+03	8.46E+03	263.29	263.29	262.98
CS: 9	136	156	6.76E+03	6.76E+03	6.77E+03	210.13	210.13	210.44
CS: 10	130	136	2.83E+03	2.83E+03	2.83E+03	87.97	87.97	87.97
CS: 11	125	130	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00
CS: 12	114	125	5.85E+03	5.85E+03	5.85E+03	181.85	181.85	181.85
CS: 13	100	114	5.14E+03	5.14E+03	5.14E+03	159.78	159.78	159.78
CS: 14	78	100	5.81E+03	5.81E+03	5.81E+03	180.60	180.60	180.60
		∑ =	**9.18E+04**	**9.18E+04**	**9.18E+04**	**2854.21**	**2854.21**	**2854.21**
PSW: 1	156	191	2.71E+03	2.99E+03	2.71E+03	84.27	92.85	84.27
PSW: 2	136.5	156	5.09E+03	5.09E+03	5.09E+03	158.16	158.16	158.16
PSW: 3	130	136.5	2.20E+03	2.21E+03	2.20E+03	68.42	68.54	68.42
PSW: 4	114	130	5.21E+03	5.20E+03	5.21E+03	161.95	161.64	161.95
PSW: 5	100	114	5.62E+03	5.63E+03	5.62E+03	174.70	175.01	174.70
PSW: 6	78	100	6.48E+03	6.48E+03	6.48E+03	201.43	201.43	201.43
PSW: 7	66	78	1.66E+03	1.65E+03	1.66E+03	51.60	51.29	51.60
		∑ =	**2.90E+04**	**2.92E+04**	**2.90E+04**	**900.53**	**908.92**	**900.53**
SSW: 1	191	200	1.54E+02	1.54E+02	1.54E+02	4.77	4.77	4.77
SSW: 2	156	191	4.76E+03	5.03E+03	4.76E+03	147.91	156.46	147.91
SSW: 3	136.5	156	7.59E+03	7.59E+03	7.59E+03	235.87	236.03	235.87
SSW: 4	130	136.5	3.97E+03	3.97E+03	3.97E+03	123.41	123.41	123.41
SSW: 5	114	130	3.63E+03	3.62E+03	3.63E+03	112.84	112.53	112.84
SSW: 6	100	114	4.38E+03	4.38E+03	4.38E+03	136.15	136.15	136.15
SSW: 7	78	100	2.71E+04	2.71E+04	2.52E+04	842.40	842.71	783.96
		∑ =	**5.16E+04**	**5.19E+04**	**4.97E+04**	**1603.36**	**1612.06**	**1544.92**

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. ΔMASSj = The absolute Mass in the j direction between the top and bottom elevations. - (kips * sec^2 / ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

Table B-68 (CRACKED)

Building Mass and Weight at Each Floor from SASSI Analysis for AB

APR1400-RCBAB-B2-R6(0928)-S10C			BUILDING MASS AND WEIGHT - (g = 32.17 ft/sec^2)					
ID #	BOTTOM EL. (ft)	TOP EL. (ft)	ΔWx (kips)	ΔWy (kips)	ΔWz (kips)	ΔMASSx	ΔMASSy	ΔMASSz
AB-FHA: 1	213.5	226.5	3895.00	3895.00	3895.00	121.08	121.08	121.08
AB-FHA: 2	213	213.5	5834.00	5677.00	5735.00	181.35	176.47	178.27
AB-FHA: 3	195	213	3361.00	3368.00	3370.00	104.48	104.69	104.76
		∑ =	**13090.00**	**12940.00**	**13000.00**	**406.90**	**402.24**	**404.10**
AB-MCR: 1	195	213	6865.00	6865.00	6865.00	213.40	213.40	213.40
		∑ =	**6865.00**	**6865.00**	**6865.00**	**213.40**	**213.40**	**213.40**
AB: 1	174	195	38755.00	38755.00	38745.00	1204.69	1204.69	1204.38
AB: 2	156	174	46890.00	46840.00	46890.00	1457.57	1456.01	1457.57
AB: 3	137.5	156	69900.00	70000.00	68800.00	2172.83	2175.94	2138.64
AB: 4	120	137.5	81000.00	81100.00	80100.00	2517.87	2520.98	2489.90
AB: 5	98.5	120	92100.00	93300.00	91300.00	2862.92	2900.22	2838.05
AB: 6	77	98.5	112800.00	113500.00	120800.00	3506.37	3528.13	3755.05
AB: 7	67	77	73100.00	73000.00	73100.00	2272.30	2269.19	2272.30
AB: 8	55	67	47900.00	47900.00	47800.00	1488.96	1488.96	1485.86
		∑ =	**562445.00**	**564395.00**	**567535.00**	**17483.53**	**17544.14**	**17641.75**

Notes

1. ΔWj = ΔMAX(Fj/j) = The absolute Weight in the j direction between the top and bottom elevations. - (kips)
2. ΔMASSj = The absolute Mass in the j direction between the top and bottom elevations. - (kips * sec^2 / ft)
3. MAX(Fi/j) = The Maximum Value of the Force in the i direction due to a 1g ground motion in the j direction. - (kips)
4. For the calculation of AB:1, ΔWj includes the differences from shear cuts with ID# 32 and ID# 31 (MCR and FHA structures)
5. The X,Y,Z axes point in the East, North, and vertically upward directions respectively.
6. Moments are calculated about the geometric center of the CS.
7. Moments and Forces due to RCS elements are not included.
8. Hydrodynamic impulsive masses are included.
9. Hydrodynamic convective masses are not included.
10. Accidental Torsion is not included within the calculations.

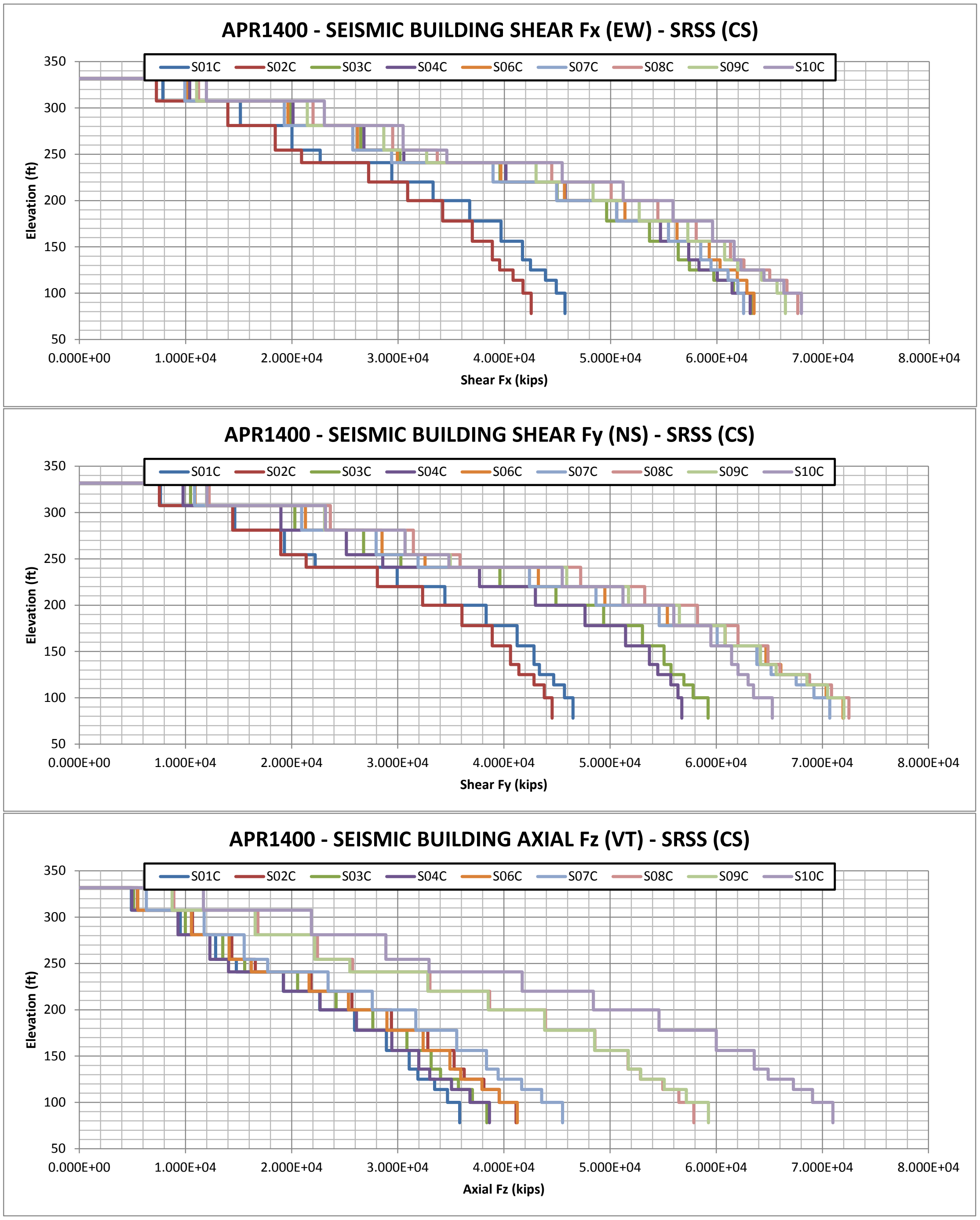


Figure B-1 Maximum Building Shear Forces in CS – All Soil Profiles with Cracked Concrete Condition

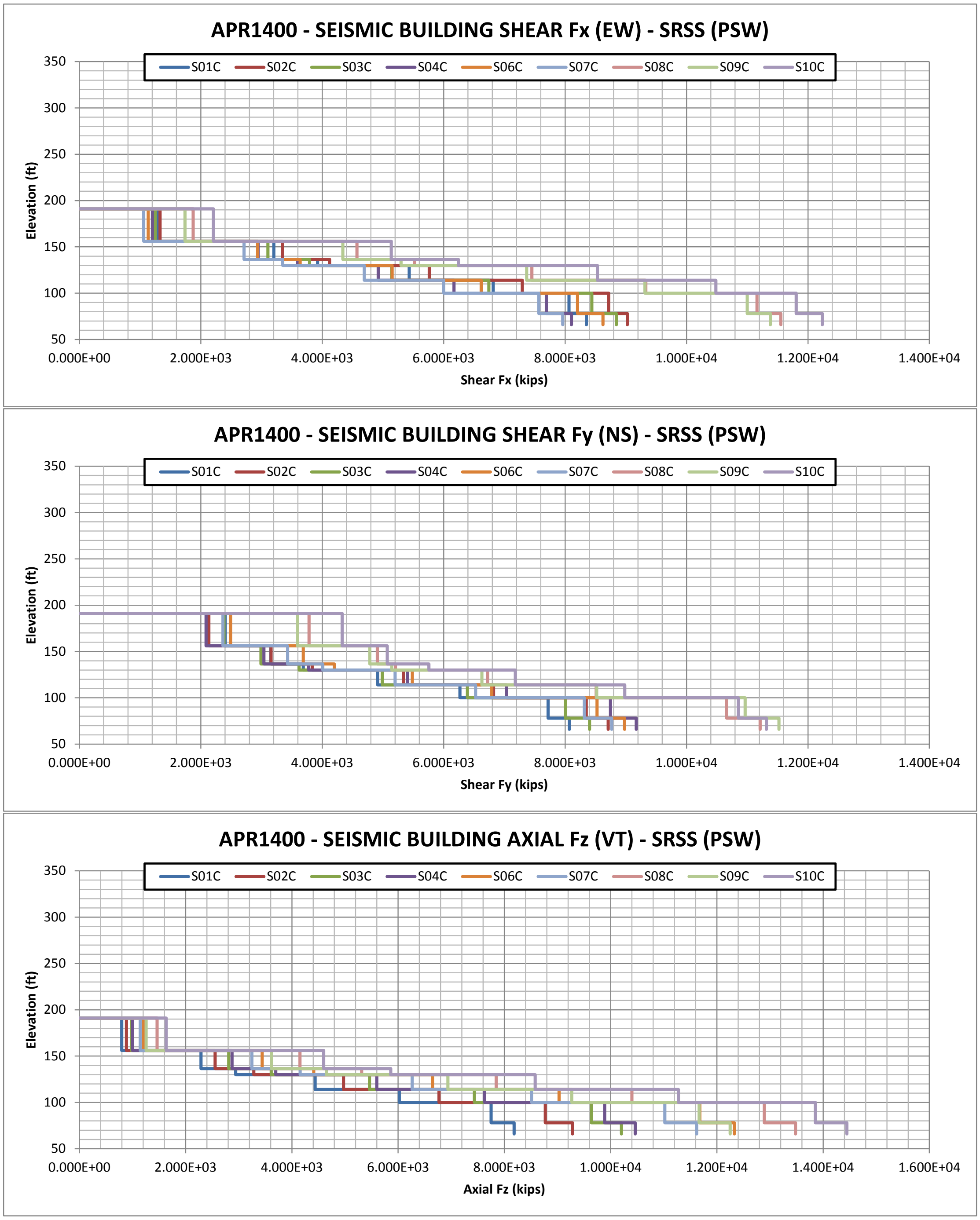


Figure B-2 Maximum Building Shear Forces in PSW – All Soil Profiles with Cracked Concrete Condition

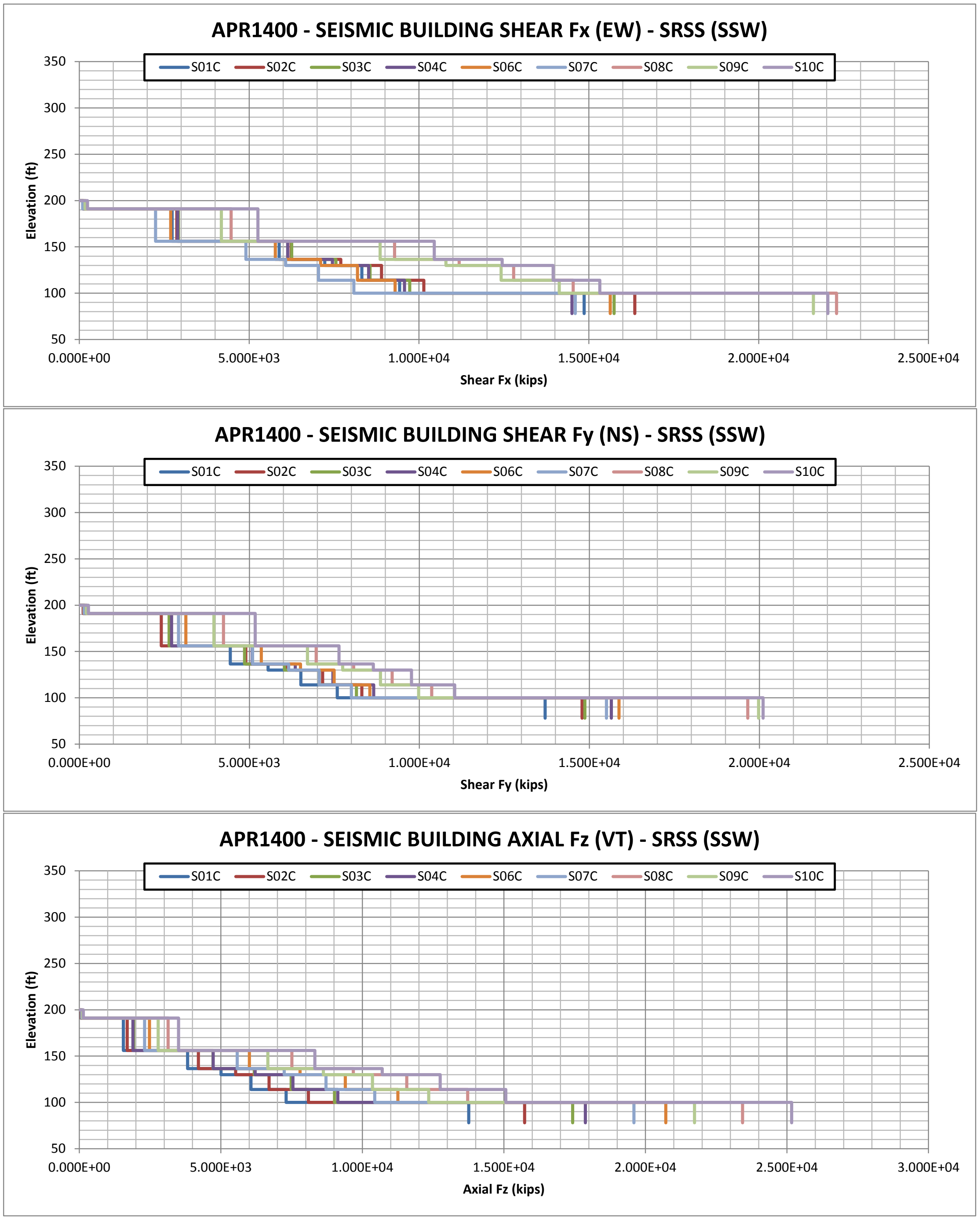


Figure B-3 Maximum Building Shear Forces in SSW – All Soil Profiles with Cracked Concrete Condition

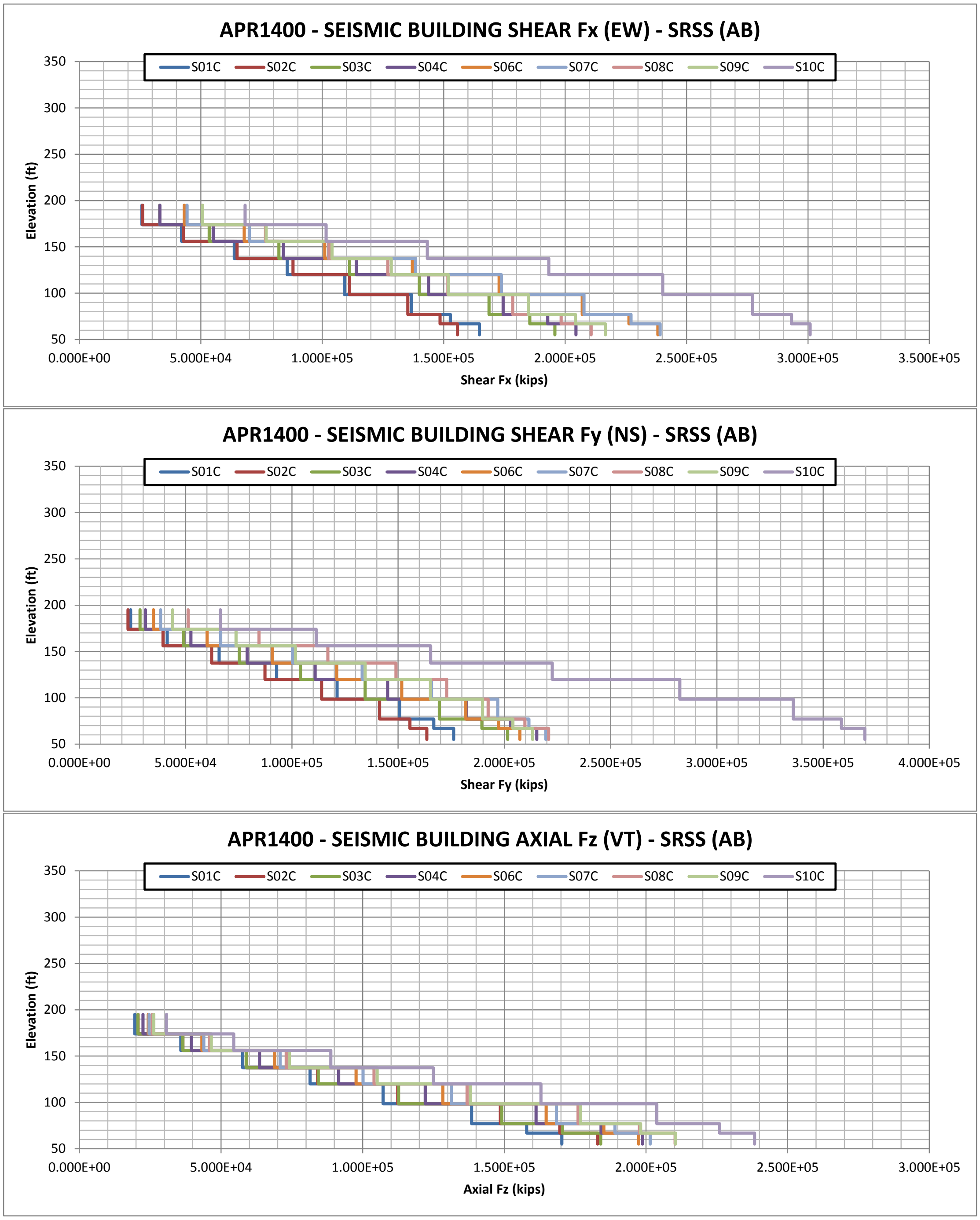


Figure B-4 Maximum Building Shear Forces in AB – All Soil Profiles with Cracked Concrete Condition

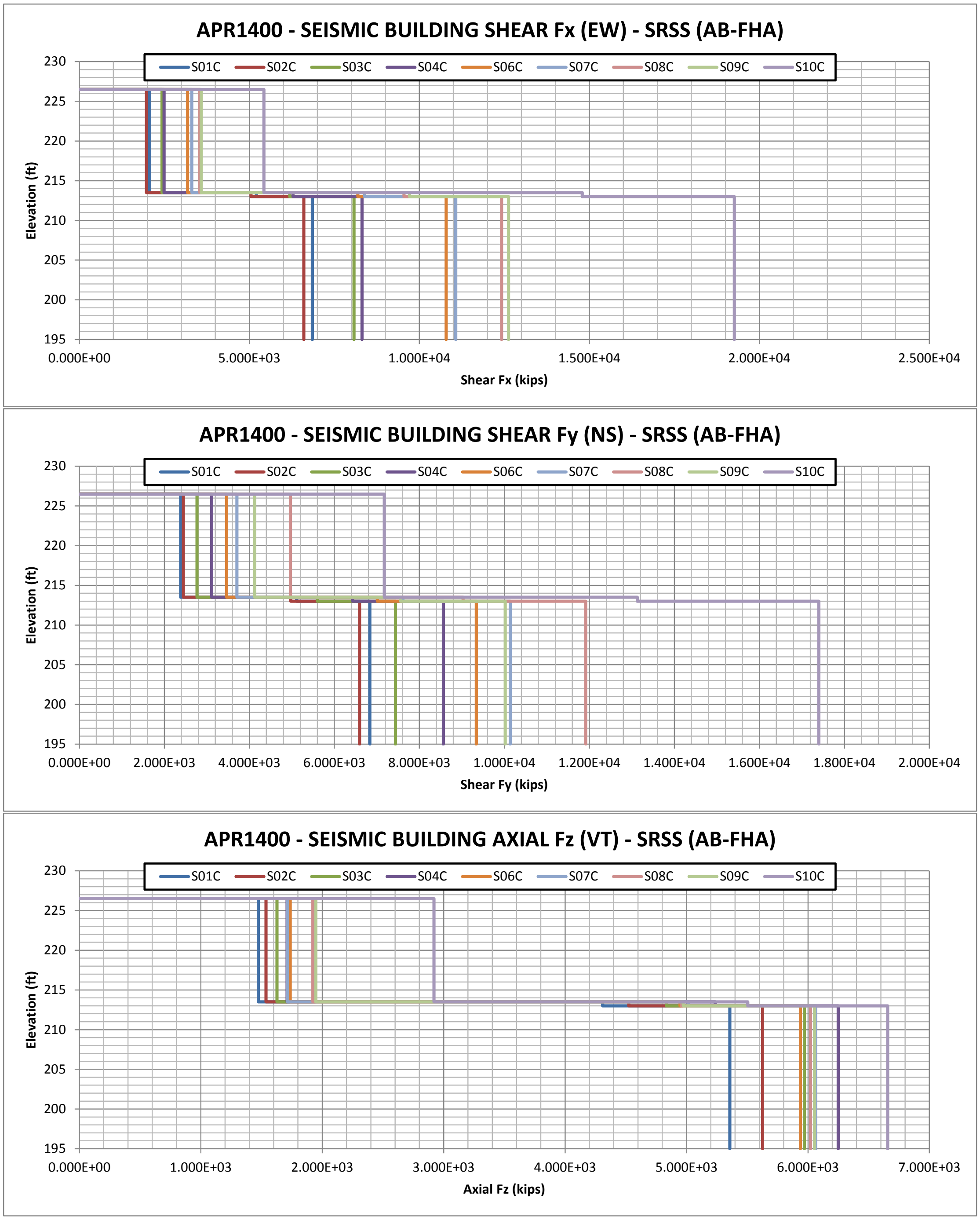
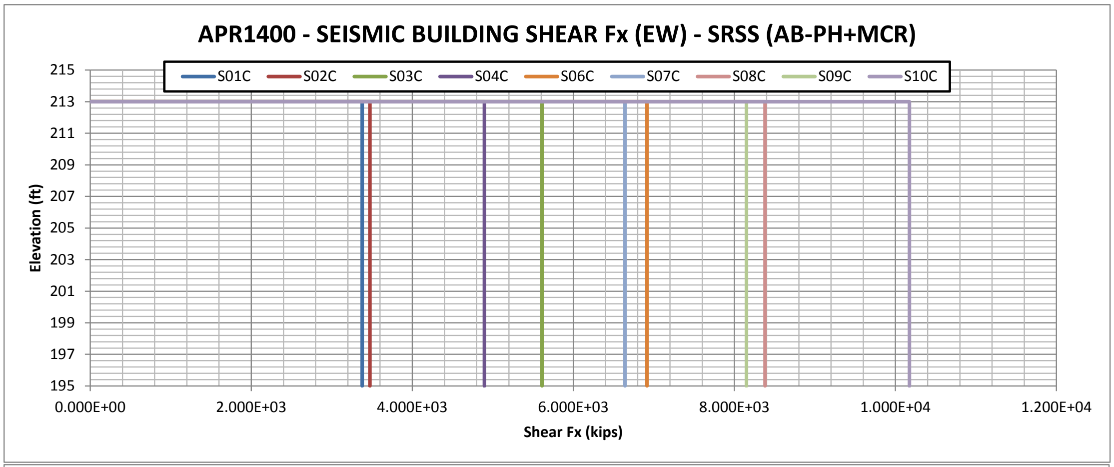
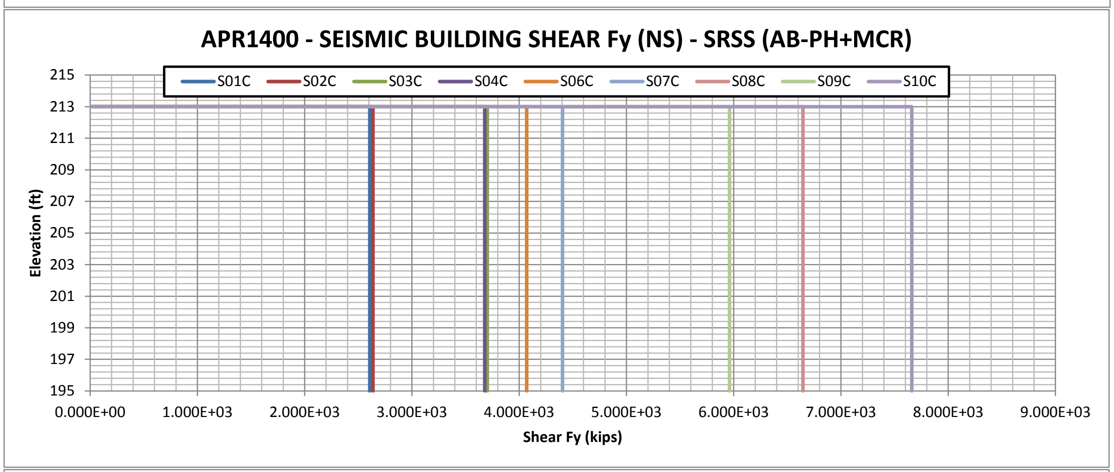


Figure B-5 Maximum Building Shear Forces in AB FHA Area – All Soil Profiles with Cracked Concrete Condition





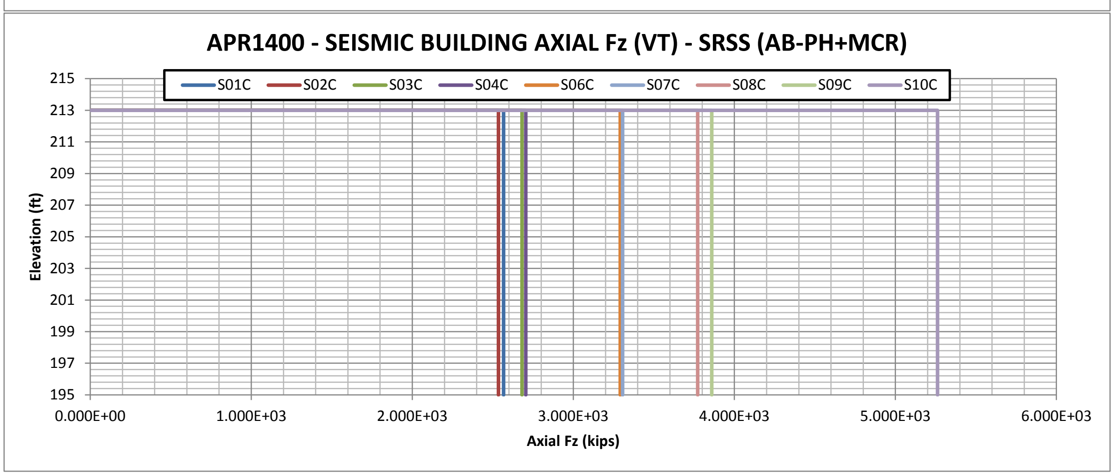


Figure B-6 Maximum Building Shear Forces in AB PH+MCR Areas – All Soil Profiles with Cracked Concrete Condition

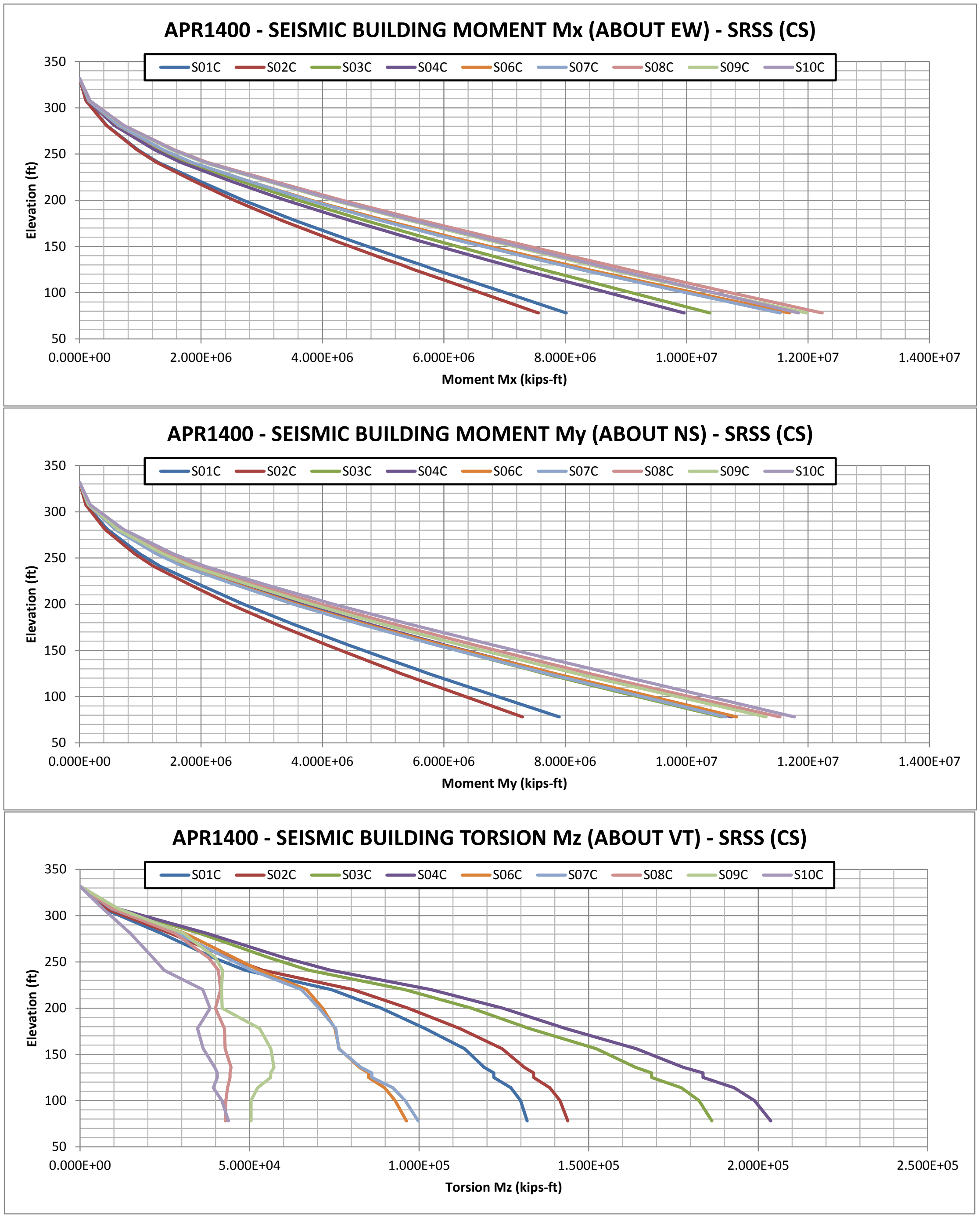


Figure B-7 Maximum Building Moments in CS – All Soil Profiles with Cracked Concrete Condition

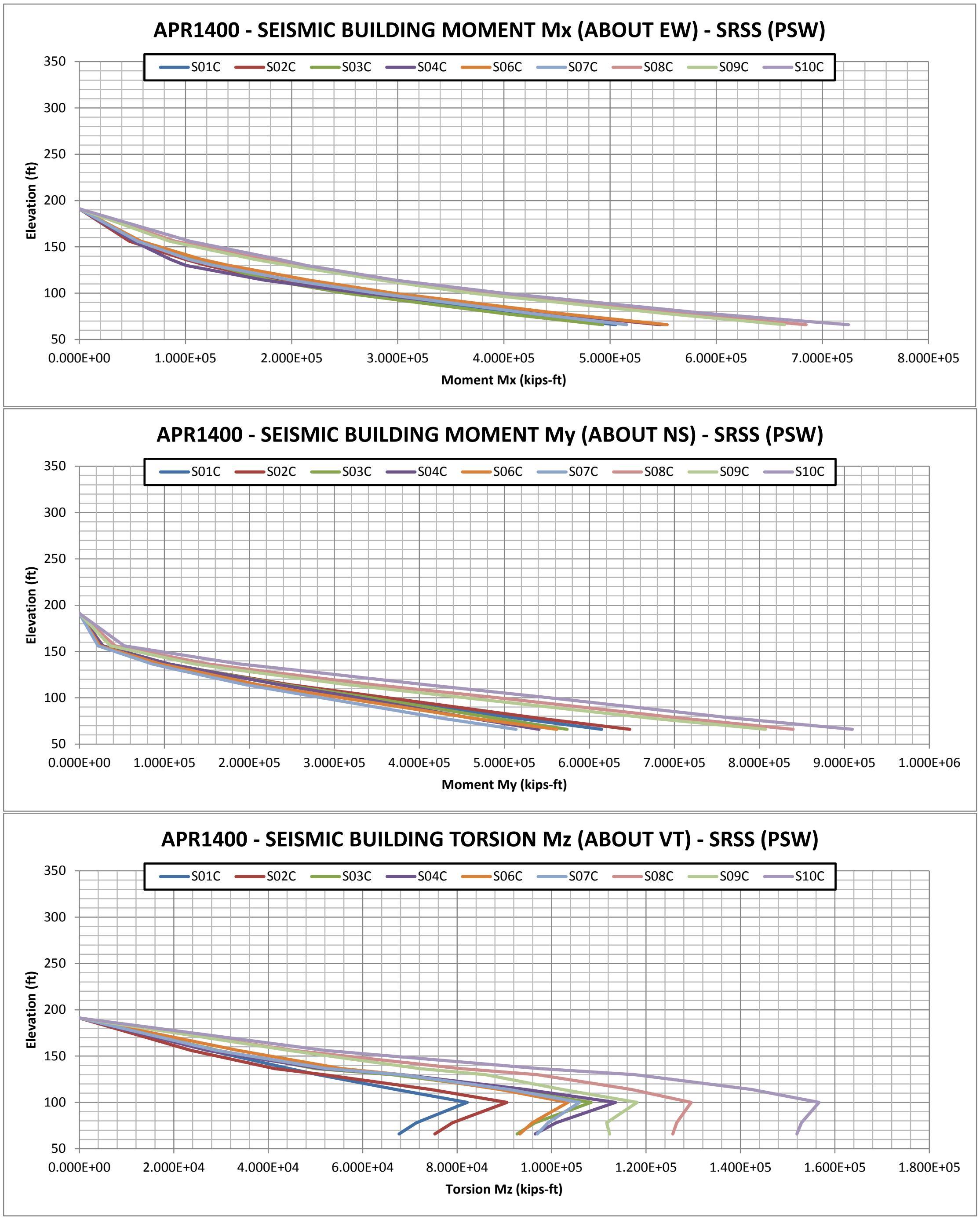


Figure B-8 Maximum Building Moments in PSW – All Soil Profiles with Cracked Concrete Condition

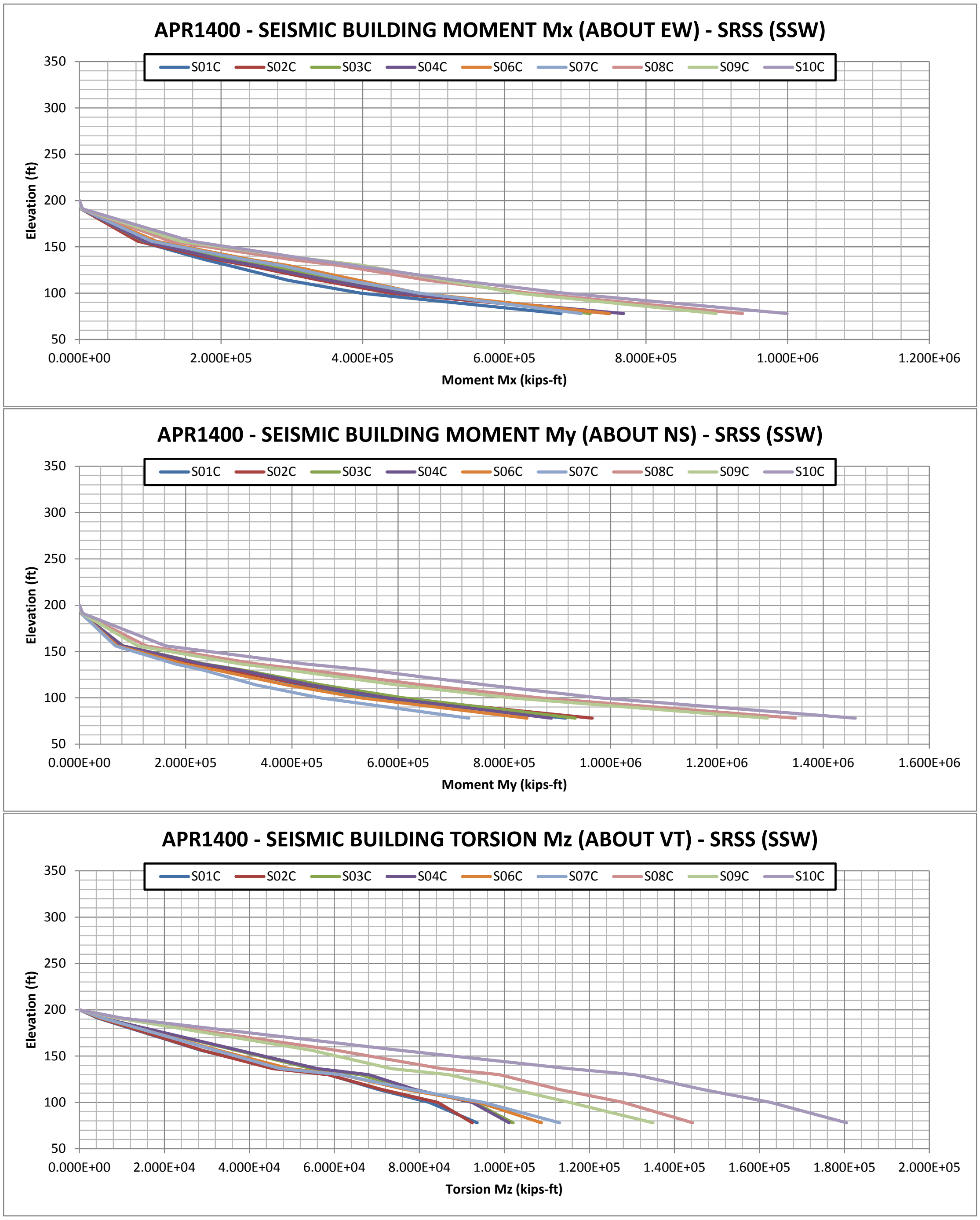


Figure B-9 Maximum Building Moments in SSW – All Soil Profiles with Cracked Concrete Condition

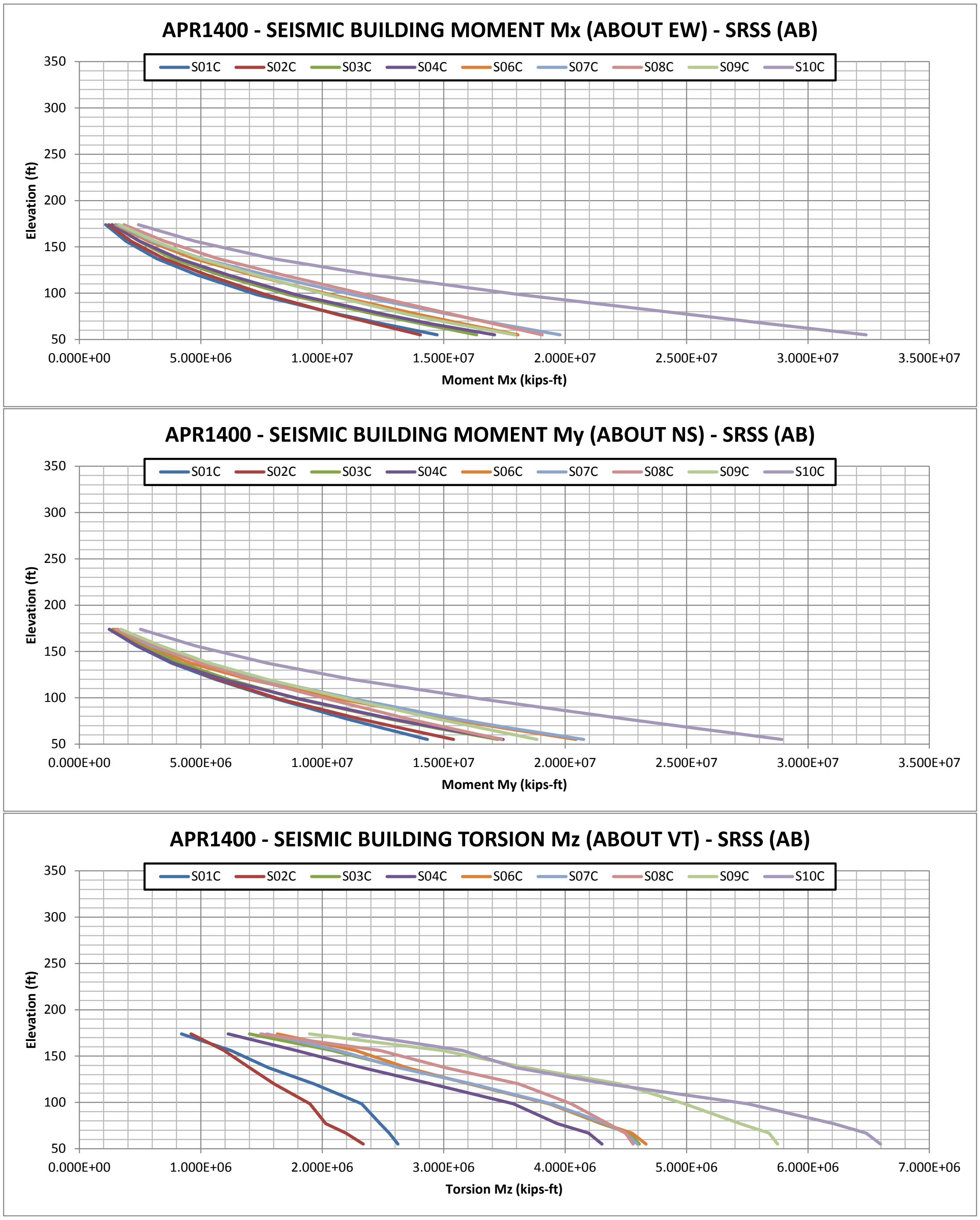


Figure B-10 Maximum Building Moments in AB – All Soil Profiles with Cracked Concrete Condition

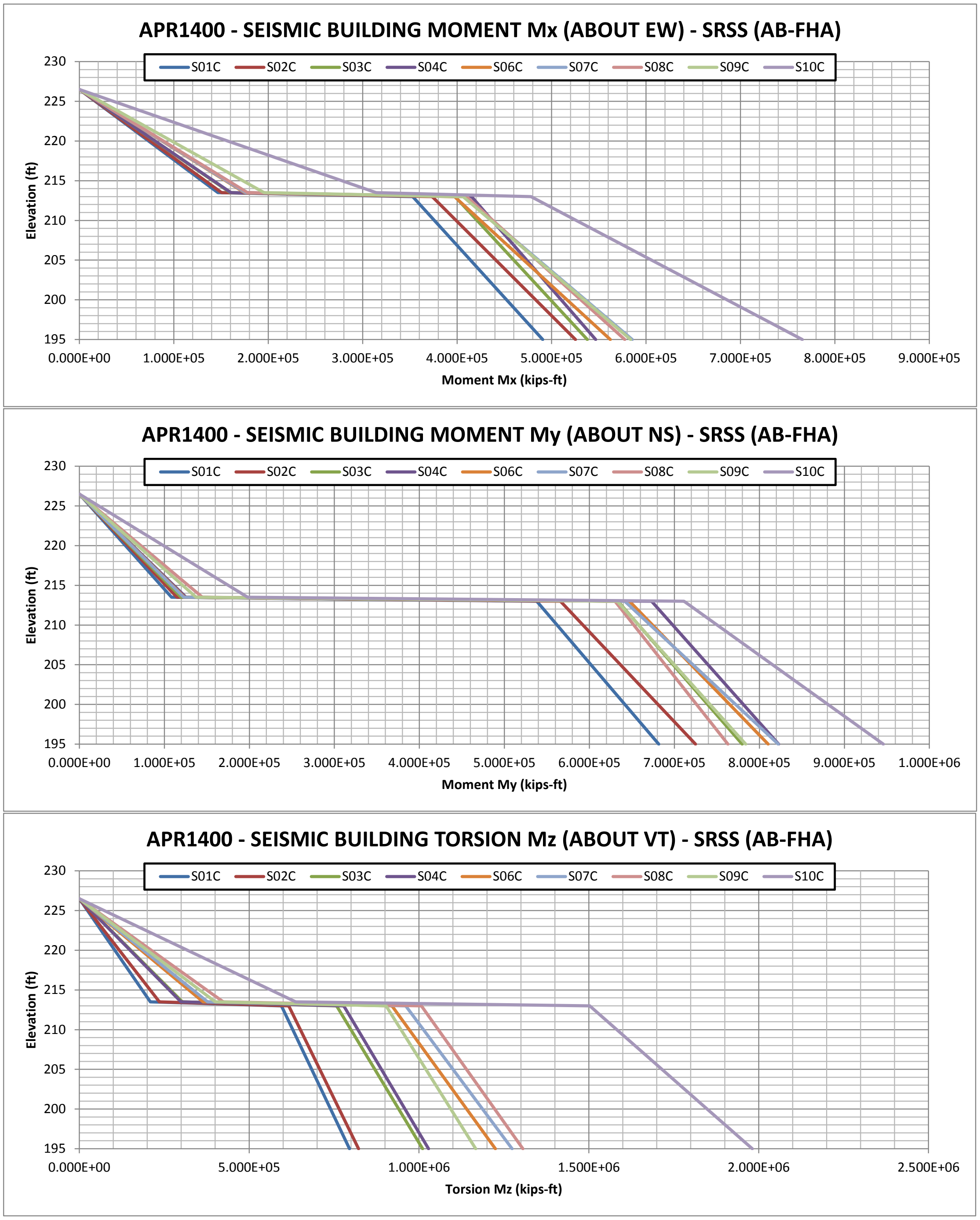


Figure B-11 Maximum Building Moments in AB FHA Area – All Soil Profiles with Cracked Concrete Condition

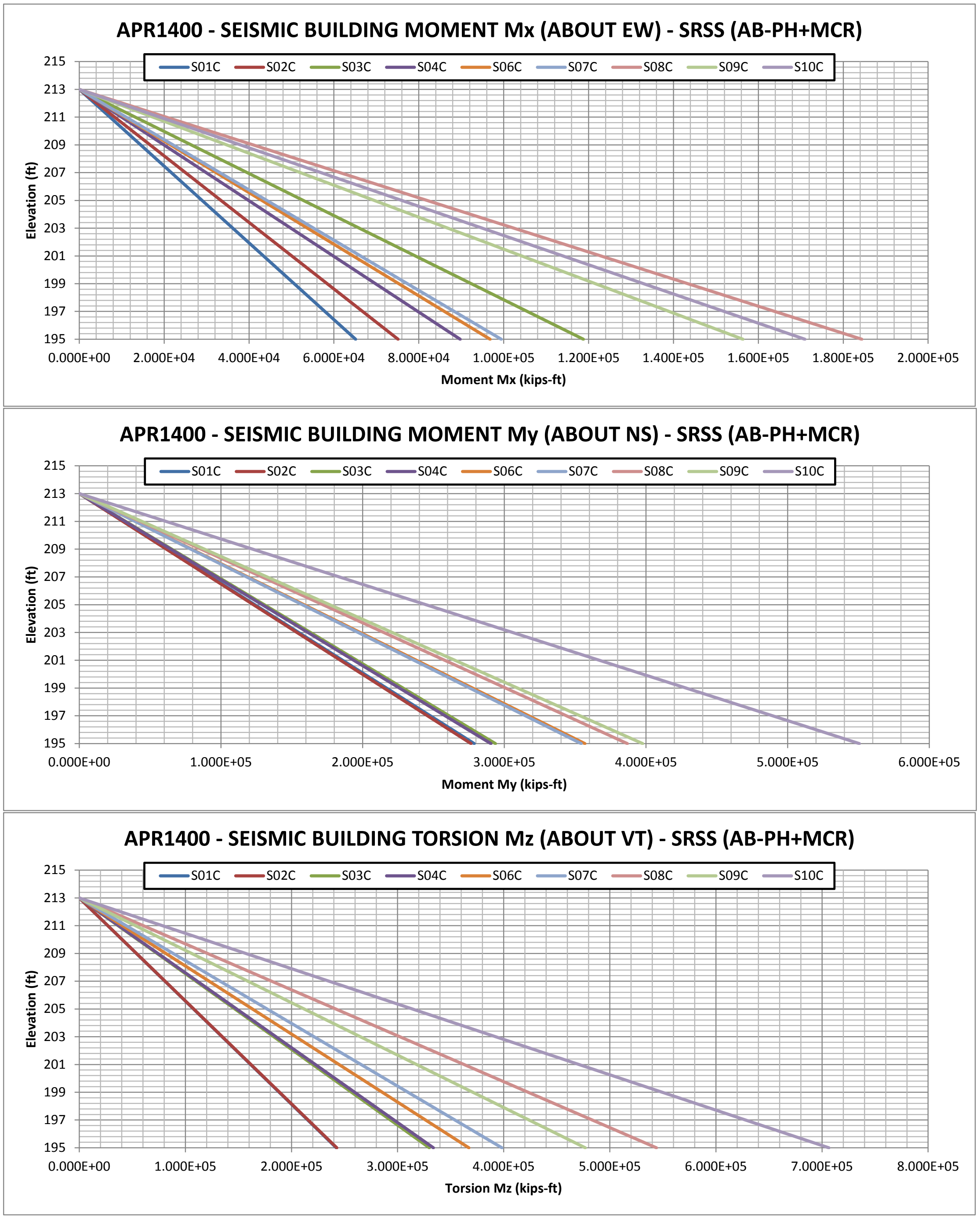


Figure B-12 Maximum Building Moments in AB PH+MCR Areas – All Soil Profiles with Cracked Concrete Condition

APPENDIX C

SELECTED NODES AND DESIGNATED STRUCTURE ELEVATIONS FOR GENERATION OF ISRS

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TS

Figure C-1 ISRS Node Locations Containment Structure El. 78’-0”

TS

Figure C-2 ISRS Node Locations Containment Structure El. 89'-0"

TS

Figure C-3 ISRS Node Locations Containment Structure El. 103’-9”

TS

Figure C-4 ISRS Node Locations Containment Structure El. 117'-9"

TS

Figure C-5 ISRS Node Locations Containment Structure El. 123’-7”

TS

Figure C-6 ISRS Node Locations Containment Structure El. 131'-7"

TS

Figure C-7 ISRS Node Locations Containment Structure El. 159'-9"

TS

Figure C-8 ISRS Node Locations Containment Structure El. 180'-0"

TS

Figure C-9 ISRS Node Locations Containment Structure El. 195'-6"

TS

Figure C-10 ISRS Node Locations Containment Structure El. 216'-0"

TS

Figure C-11 ISRS Node Locations Containment Structure El. 241'-0"

TS

Figure C-12 ISRS Node Locations Containment Structure El. 254’-6”

TS

Figure C-13 ISRS Node Locations Containment Structure El. 274'-6"

Non-Proprietary

TS

Figure C-14 ISRS Node Locations Containment Structure El. 301’-6”

TS

Figure C-15 ISRS Node Locations Containment Structure El. 328'-5"

TS

Figure C-16 ISRS Node Locations Containment Structure El. 331'-9"

TS

Figure C-17 ISRS Node Locations – PSW El. 66’-0”

TS

Figure C-18 ISRS Node Locations – PSW El. 78’-0”

TS

Figure C-19 ISRS Node Locations – PSW El. 100’-0”

TS

Figure C-20 ISRS Node Locations – PSW El. 106’-6”

TS

Figure C-21 ISRS Node Locations – PSW El. 114’-0”

TS

Figure C-22 ISRS Node Locations – PSW El. 130’-0”

TS

Figure C-23 ISRS Node Locations – PSW El. 136'-6"

TS

Figure C-24 ISRS Node Locations – PSW El. 156’-0”

TS

Figure C-25 ISRS Node Locations – PSW El. 191'-0" (a)

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Figure C-26 ISRS Node Locations – PSW El. 191’-0” (b)

TS

Figure C-27 ISRS Node Locations - SSW El. 78'-0"

TS

Figure C-28 ISRS Node Locations - SSW El. 100’-0” (a)

TS

Figure C-29 ISRS Node Locations – SSW El. 100’-0” & IRWST Tank Walls El. 78’-0” – El. 100’-0”

TS

Figure C-30 ISRS Node Locations – SSW El. 106’-6”

TS

Figure C-31 ISRS Node Locations - SSW El. 114'-0"

TS

Figure C-32 ISRS Node Locations – SSW El. 130'-0"

TS

Figure C-33 ISRS Node Locations – SSW El. 136'-6"

TS

Figure C-34 ISRS Node Locations – SSW El. 156'-0"

TS

Figure C-35 ISRS Node Locations – SSW El. 191’-0”

TS

Figure C-36 ISRS Node Locations - RCB Slab at CLP at El. 66'-0"

TS

Figure C-37 ISRS Node Locations – RCB IRWST Roof Slab at El. 100’-0”

TS

Figure C-38 ISRS Node Locations – RCB Reactor Pool at Slab El. 106’-6”

TS

Figure C-39 ISRS Node Locations – Bottom of Refueling Pool at Slab El. 111'-0"

TS

Figure C-40 ISRS Node Locations – RCB Slab at El. 114’-0”

TS

Figure C-41 ISRS Node Locations – RCB Slab at El. 125'-0"

TS

Figure C-42 ISRS Node Locations for RCB Slabs at El. 156'-0"

TS

Figure C-43 ISRS Node Locations for AB Shear Wall Response at Floor El. 55'-0" (1-F)

TS

Figure C-44 ISRS Node Locations for AB Shear Wall Response at Floor El. 68'-0" (1-M)

TS

Figure C-45 ISRS Node Locations for AB Shear Wall Response at Floor El. 77’-0” (2-F)

TS

Figure C-46 ISRS Node Locations for AB Shear Wall Response at Floor El. 100'-0" (3-F)

TS

Figure C-47 ISRS Node Locations for AB Shear Wall Response at Floor El. 120’-0” (4-F)

TS

Figure C-48 ISRS Node Locations for AB Shear Wall Response at Floor El. 137'-6" (5-F)

TS

Figure C-49 ISRS Node Locations for AB Shear Wall Response at Floor El. 156’-0” (6-F)

TS

Figure C-50 ISRS Node Locations for AB Shear Wall Response at Floor El. 174'-0" (7-F)

TS

Figure C-51 ISRS Node Locations for AB Shear Wall Response at Floor El. 195’-0” (8-1)

TS

Figure C-52 ISRS Node Locations for AB Shear Wall Response at Floor El. 195'-0" (8-M)

TS

Figure C-53 ISRS Node Locations for AB Shear Wall Response at Floor El. 216’-9” (8-2)

TS

Figure C-54 ISRS Node Locations for AB Shear Wall Response at Floor El. 213’-0” (8-3)

TS

Figure C-55 ISRS Node Locations for AB Shear Wall Response at Floor El. 213’-6” (8-4)

TS

Figure C-56 ISRS Node Locations for AB Shear Wall Response at Floor El. 195’-0” (8-5)

TS

Figure C-57 ISRS Node Locations for AB Shear Wall Response at Floor El. 100'-0" (3-H)

TS

Figure C-58 ISRS Node Locations for AB Shear Wall Response at Floor El. 114’-0” (3-M)

TS

Figure C-59 ISRS Node Locations for AB Shear Wall Response at Floor El. 120'-0" (4-H)

TS

Figure C-60 ISRS Node Locations for AB Shear Wall Response at Floor El. 137’-6” (5-H)

TS

Figure C-61 ISRS Node Locations for AB Shear Wall Response at Floor El. 156’-0” (6-H)

TS

Figure C-62 ISRS Node Locations for AB Floor Slab Response at Floor El. 55'-0" (1-F)

TS

Figure C-63 ISRS Node Locations for AB Floor Slab Response at Floor El. 68'-0" (1-M)

TS

Figure C-64 ISRS Node Locations for AB Floor Slab Response at Floor El. 78'-0" (2-F)

TS

Figure C-65 ISRS Node Locations for AB Floor Slab Response at Floor El. 100’-0” (3-F)

TS

Figure C-66 ISRS Node Locations for AB Floor Slab Response at Floor El. 120'-0" (4-F)

TS

Figure C-67 ISRS Node Locations for AB Floor Slab Response at Floor El. 137'-6" (5-F)

TS

Figure C-68 ISRS Node Locations for AB Floor Slab Response at Floor El. 156’-0” (6-F)

TS

Figure C-69 ISRS Node Locations for AB Floor Slab Response at Floor El. 174'-0" (7-F)

TS

Figure C-70 ISRS Node Locations for AB Floor Slab Response at Floor El. 195'-0" (8-1)

TS

Figure C-71 ISRS Node Locations for AB Floor Slab Response at Floor El. 195’-0” (8-M)

TS

Figure C-72 ISRS Node Locations for AB Floor Slab Response at Floor El. 216’-9” (8-2)

TS

Figure C-73 ISRS Node Locations for AB Floor Slab Response at Floor El. 213’-0” (8-3)

TS

Figure C-74 ISRS Node Locations for AB Floor Slab Response at Floor El. 213'-6" (8-4)

TS

Figure C-75 ISRS Node Locations for AB Floor Slab Response at Floor El. 195'-0" (8-5)

TS

Figure C-76 ISRS Node Locations for AB Floor Slab Response at Floor El. 100’-0” (3-H)

TS

Figure C-77 ISRS Node Locations for AB Floor Slab Response at Floor El. 114'-0" (3-M)

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APPENDIX D

CONSTANT DAMPING IN-STRUCTURE RESPONSE SPECTRA OF NI STRUCTURES

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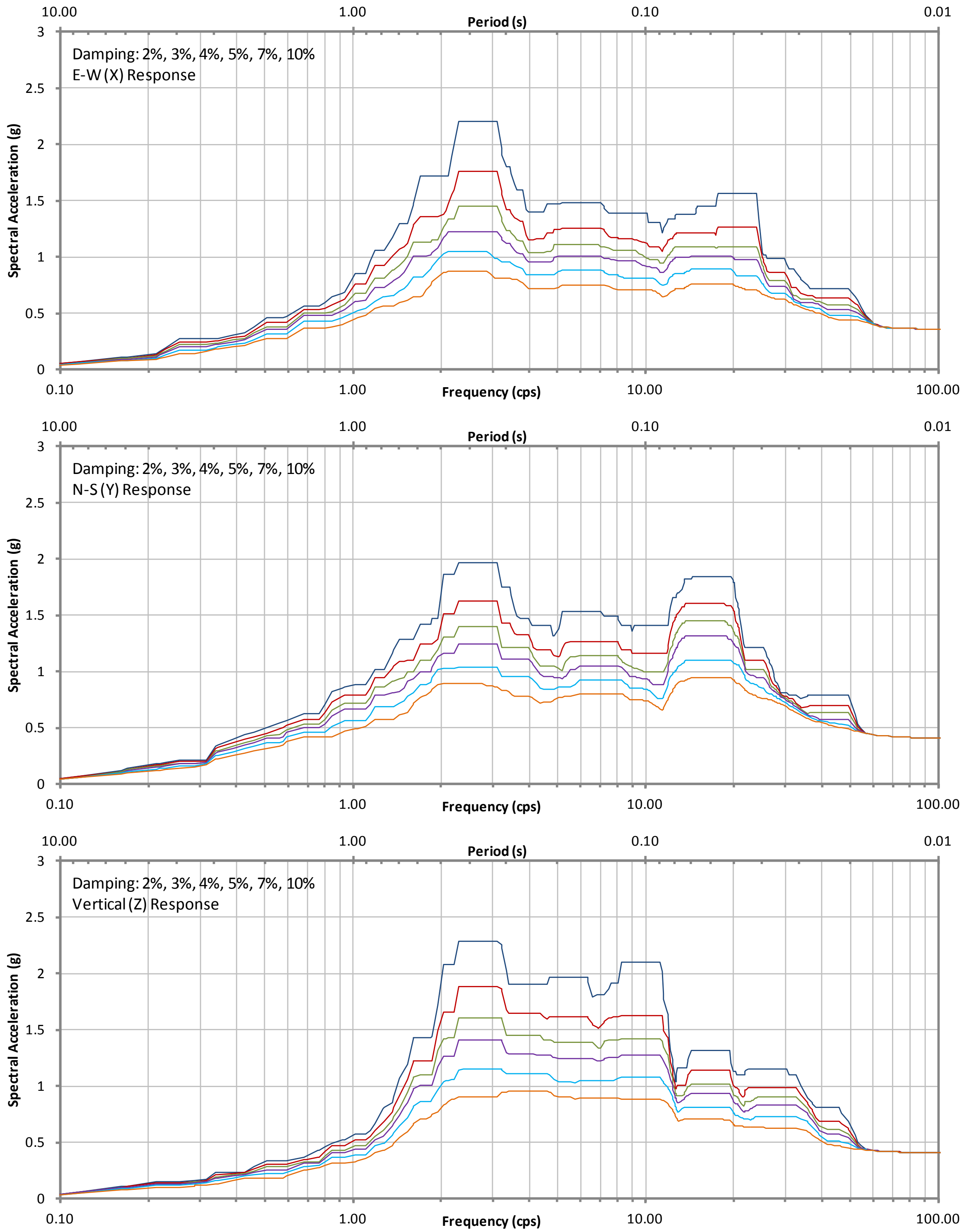


Figure D-1 ISRS for RCB General (CS78) at El. 78'-0", Multiple Damping, Envelope of All Cases

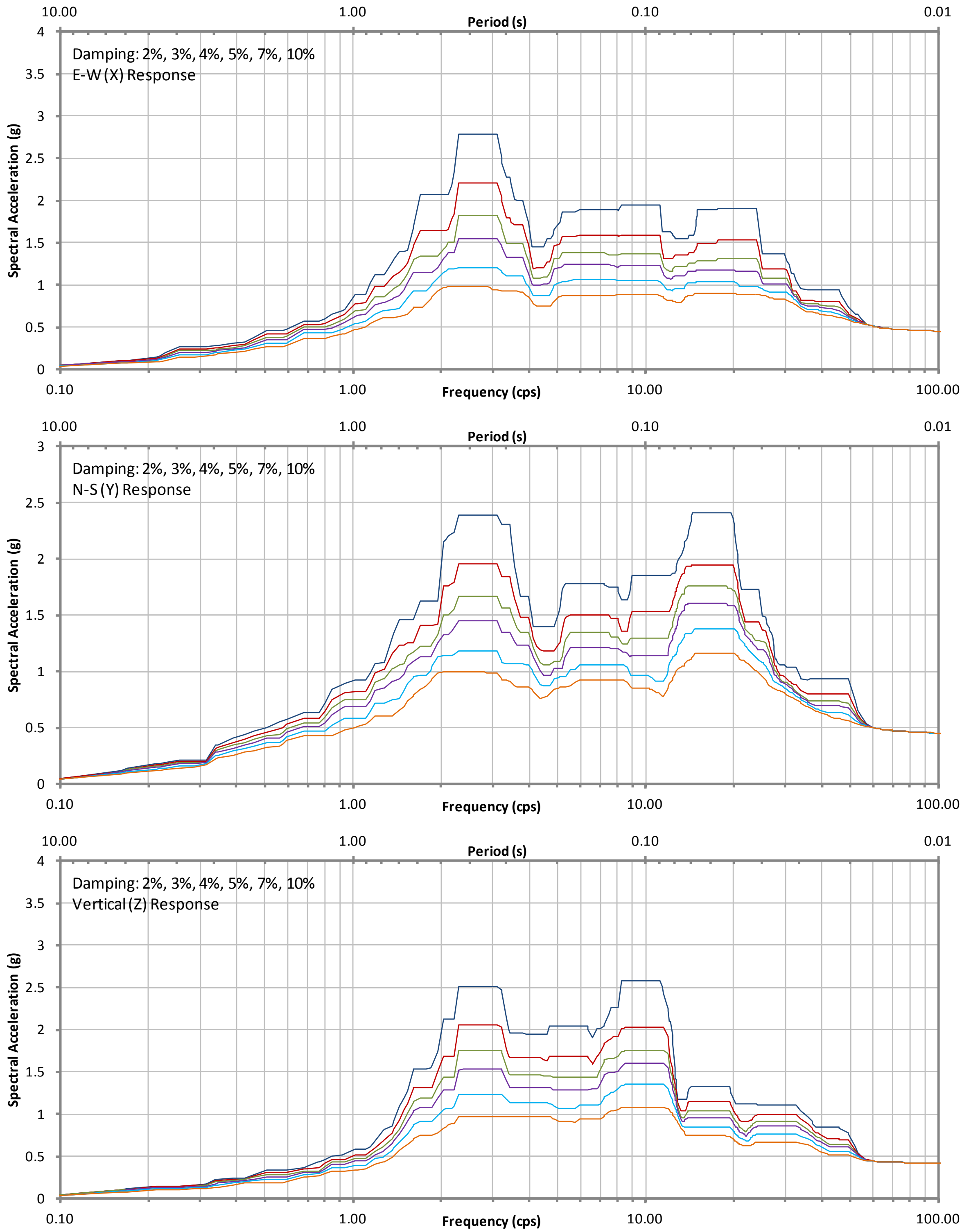


Figure D-2 ISRS for RCB General (CS90) at El. 90'-0", Multiple Damping, Envelope of All Cases

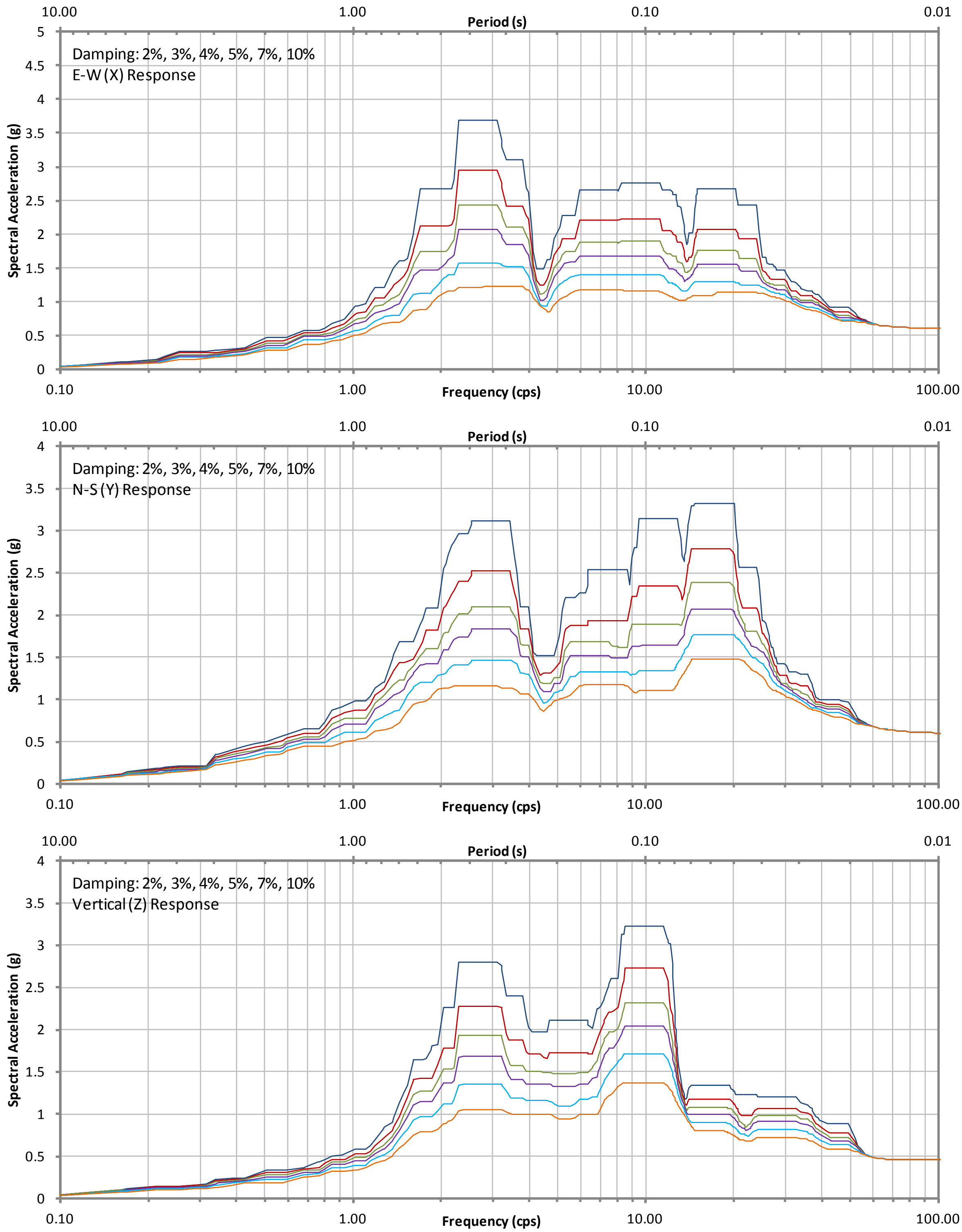


Figure D-3 ISRS for RCB General (CS104) at El. 104’-0”, Multiple Damping, Envelope of All Cases

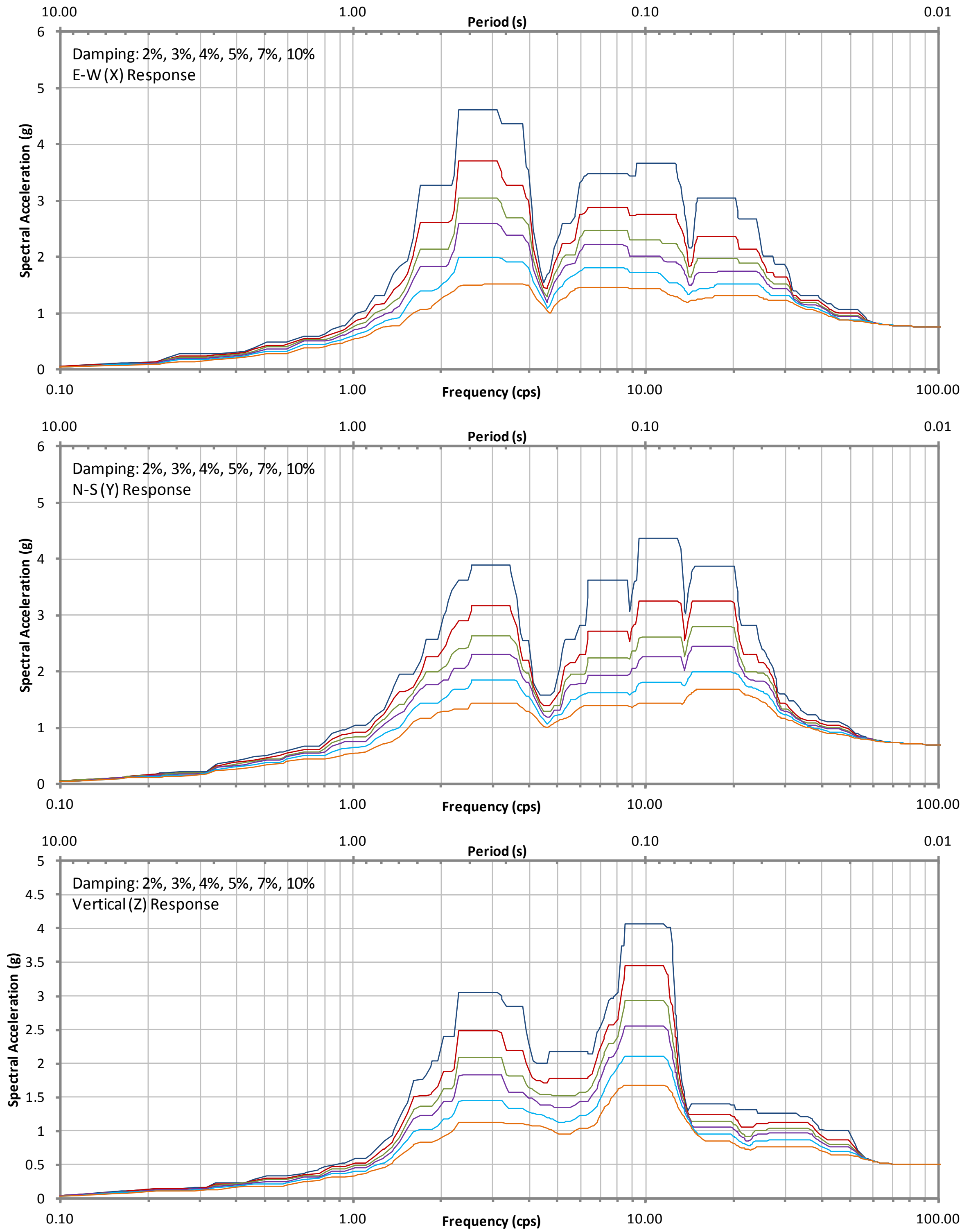


Figure D-4 ISRS for RCB General (CS118) at El. 118'-0", Multiple Damping, Envelope of All Cases

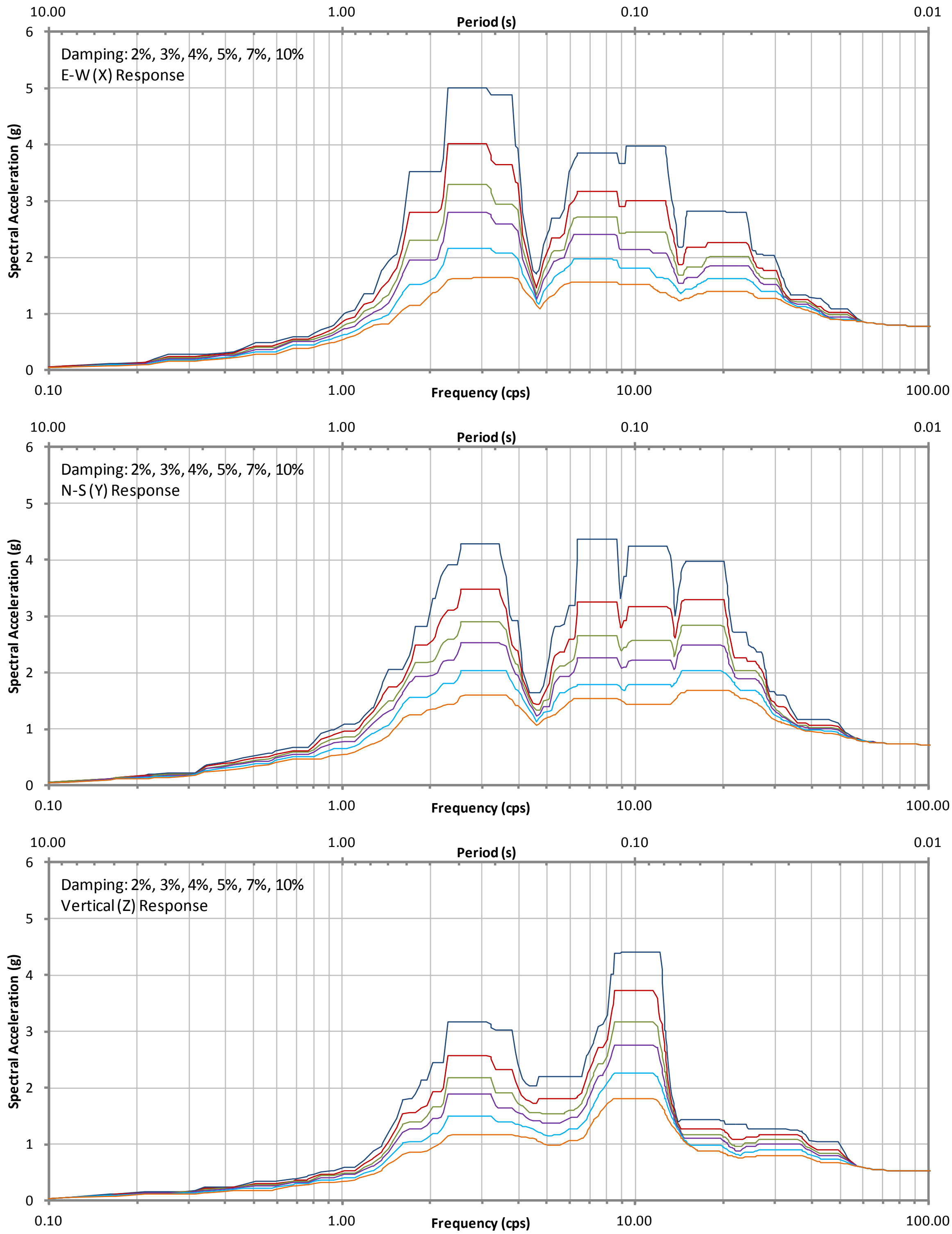


Figure D-5 ISRS for RCB General (CS124) at El. 124'-0", Multiple Damping, Envelope of All Cases

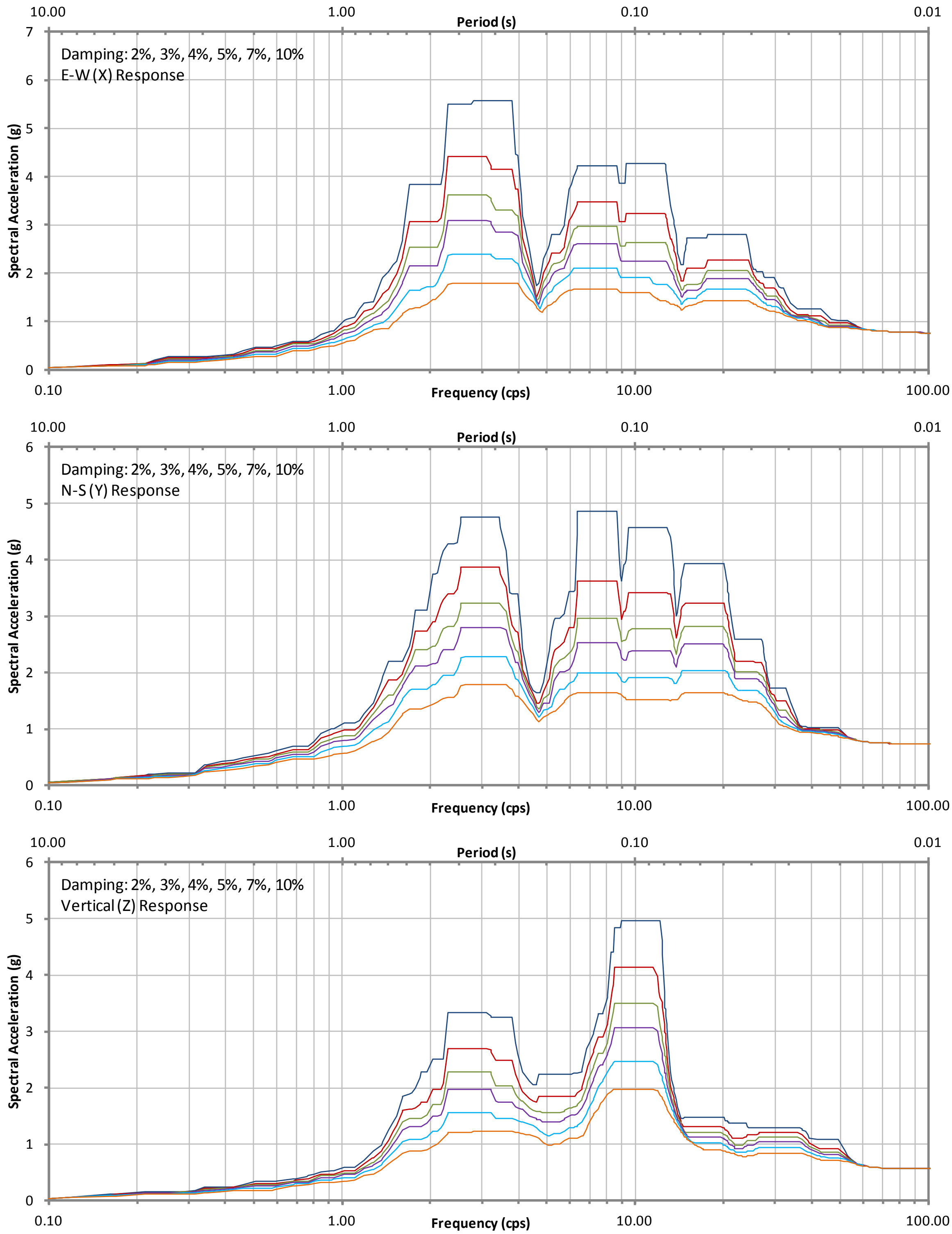


Figure D-6 ISRS for RCB General (CS132) at El. 132'-0", Multiple Damping, Envelope of All Cases

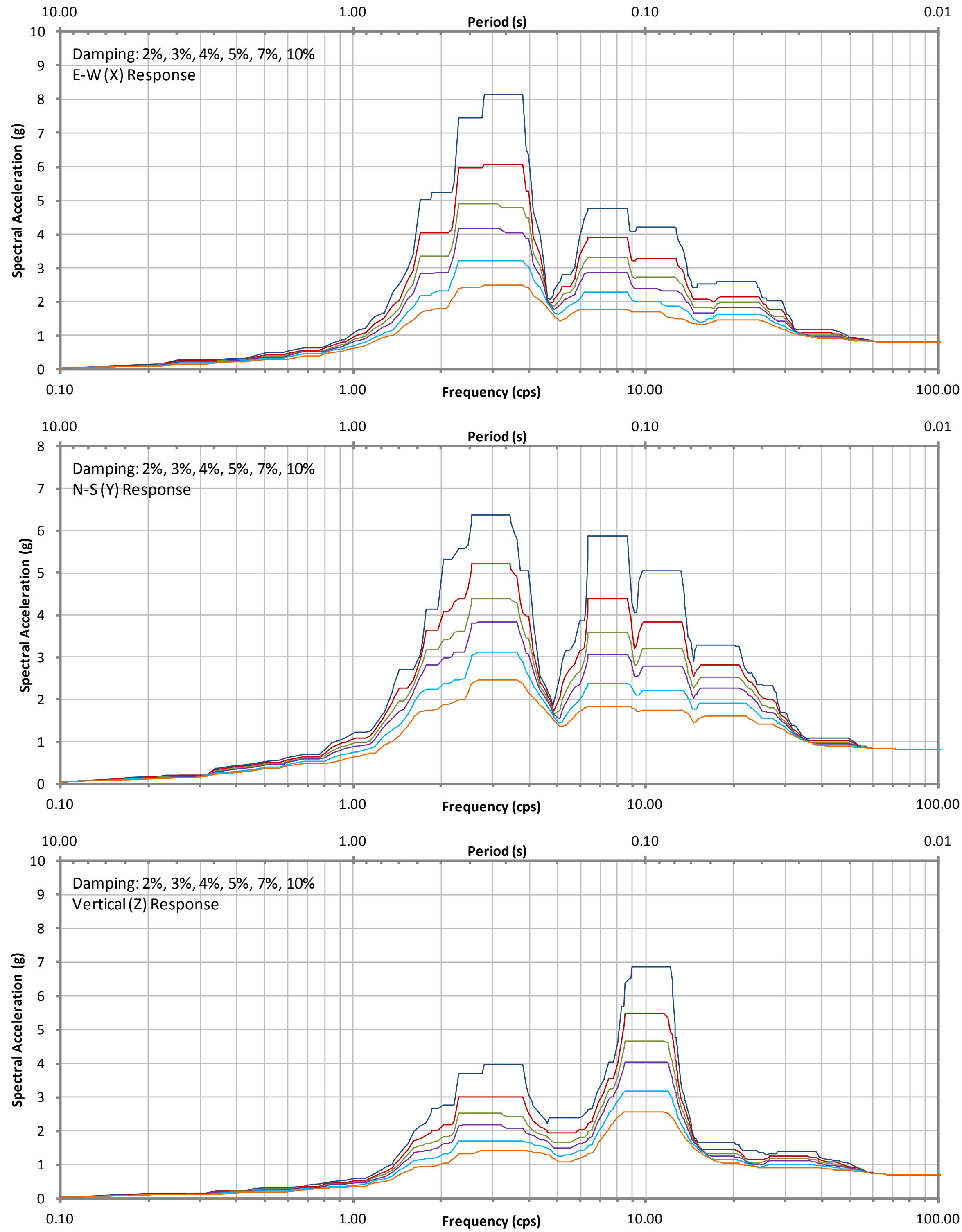


Figure D-7 ISRS for RCB General (CS160) at El. 160'-0", Multiple Damping, Envelope of All Cases

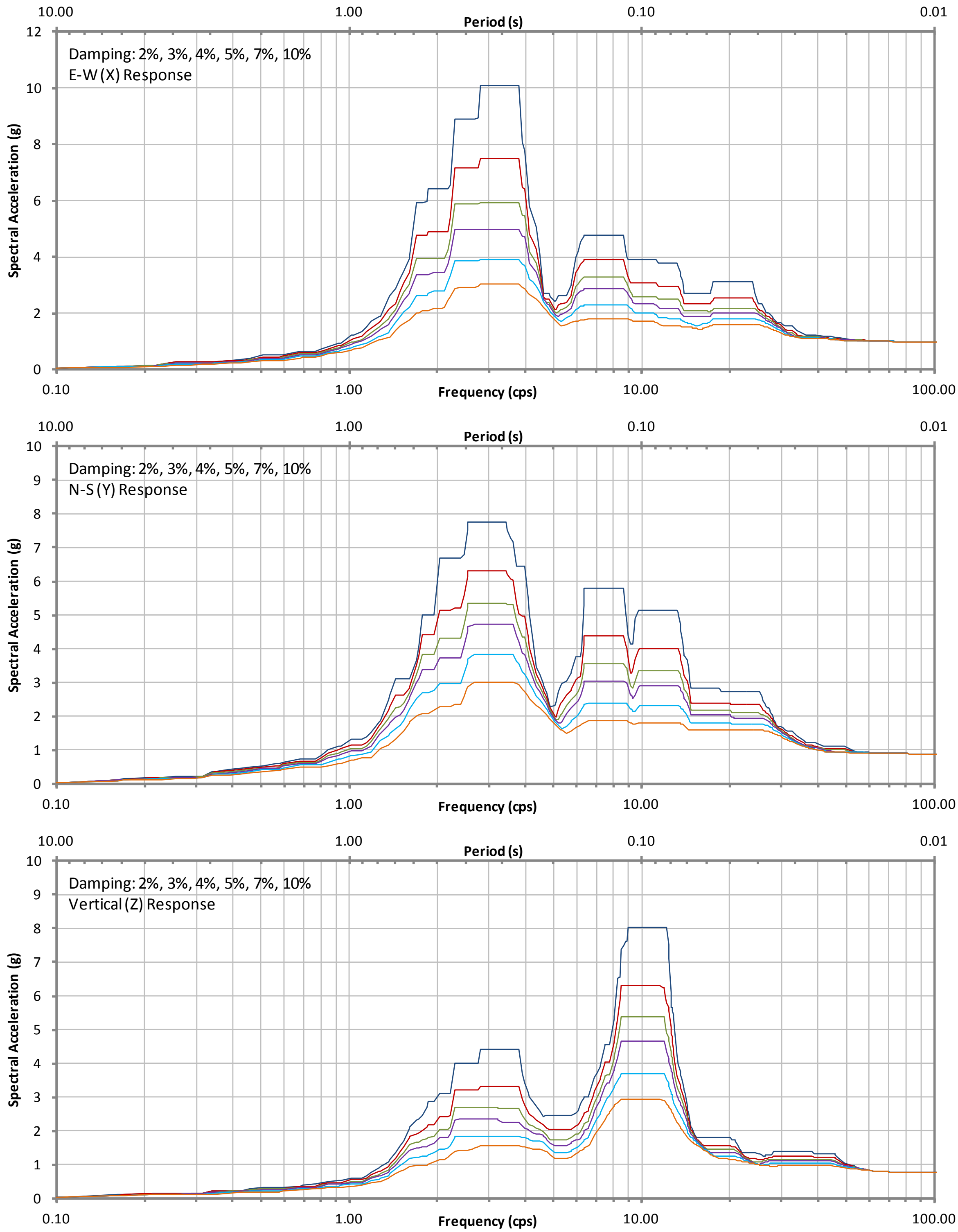


Figure D-8 ISRS for RCB General (CS180) at El. 180'-0", Multiple Damping, Envelope of All Cases

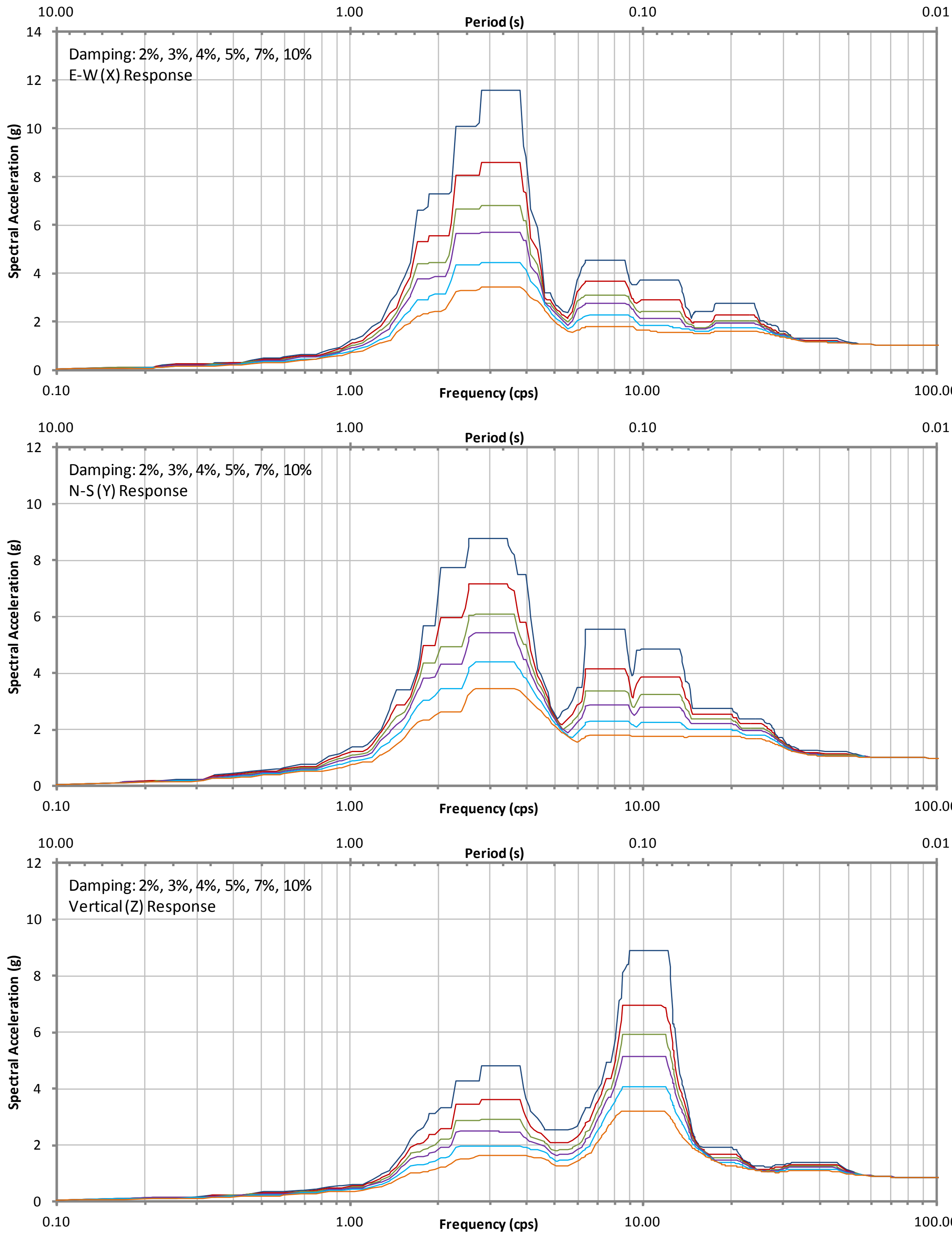


Figure D-9 ISRS for RCB General (CS196) at El. 196’-0”, Multiple Damping, Envelope of All Cases

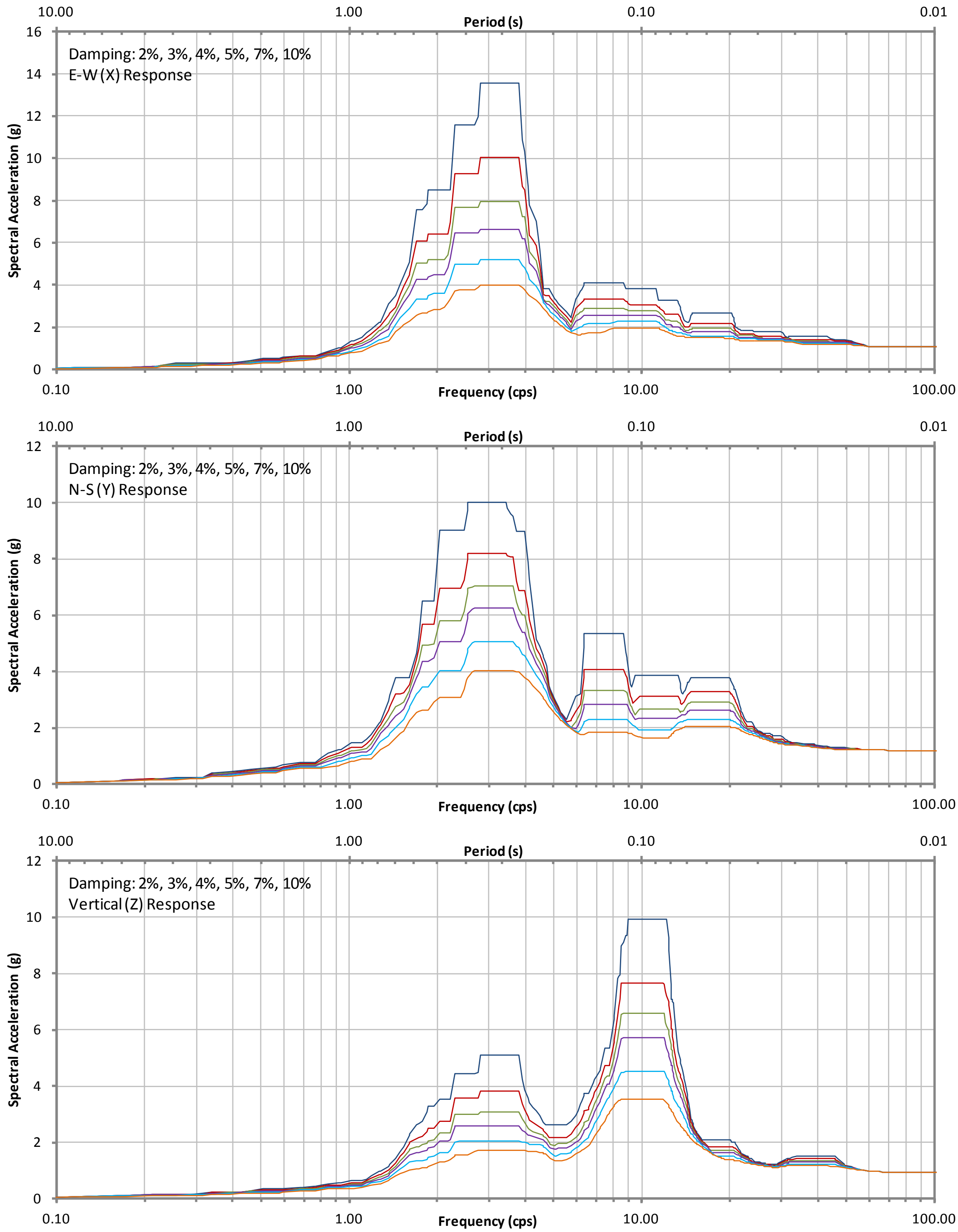


Figure D-10 ISRS for RCB General (CS216) at El. 216'-0", Multiple Damping, Envelope of All Cases

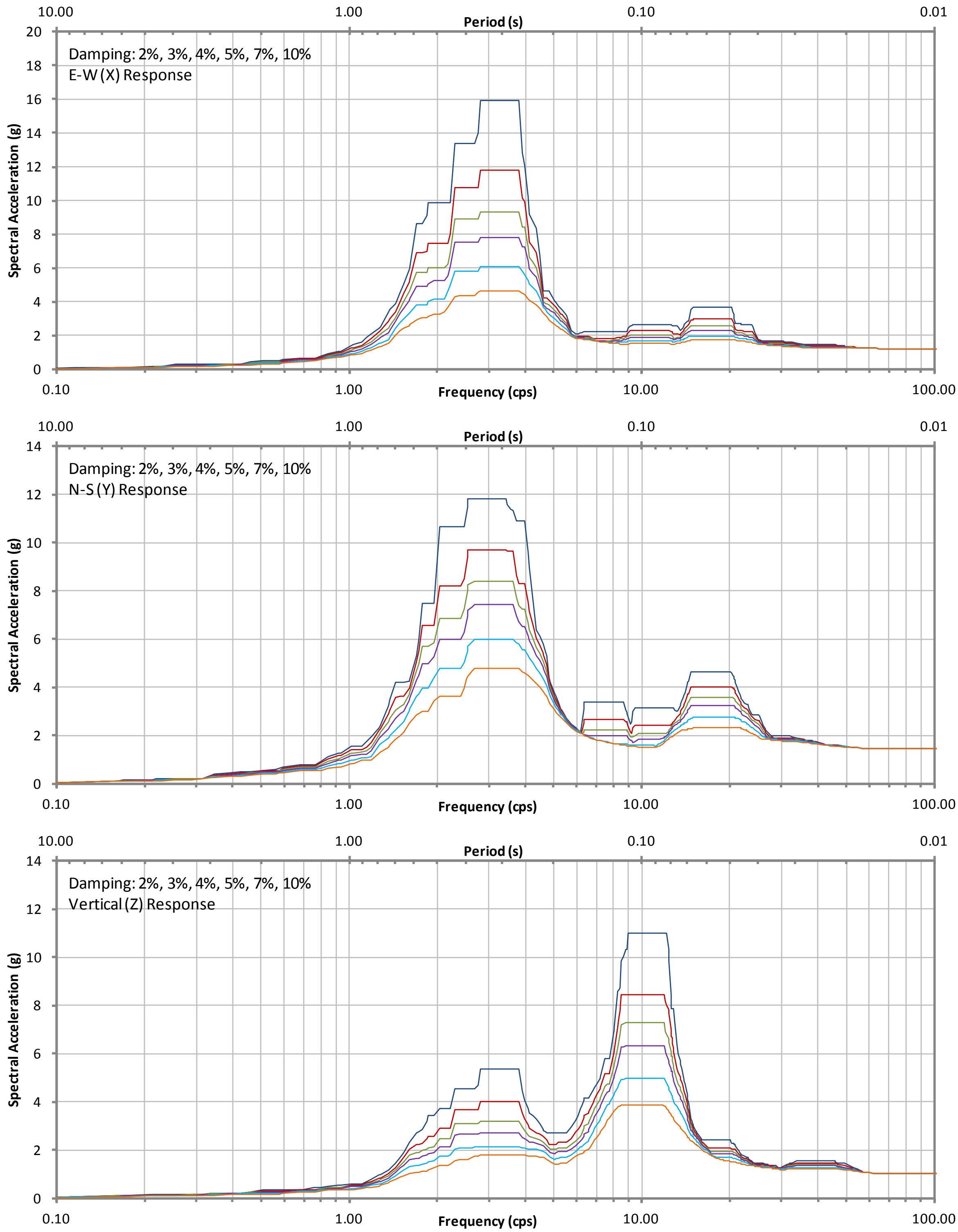


Figure D-11 ISRS for RCB General (CS241) at El. 241'-0", Multiple Damping, Envelope of All Cases

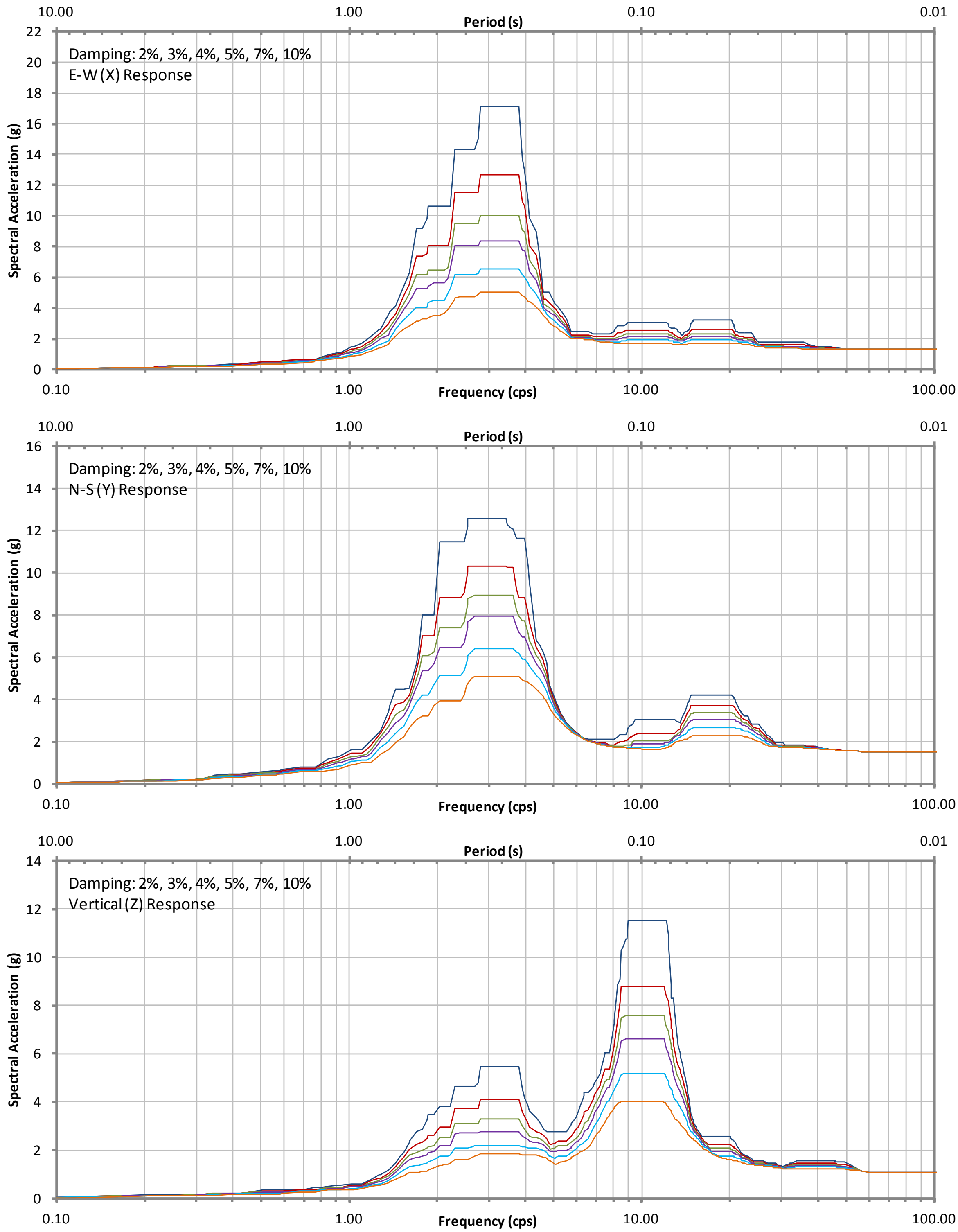


Figure D-12 ISRS for RCB General (CS255) at El. 255'-0", Multiple Damping, Envelope of All Cases

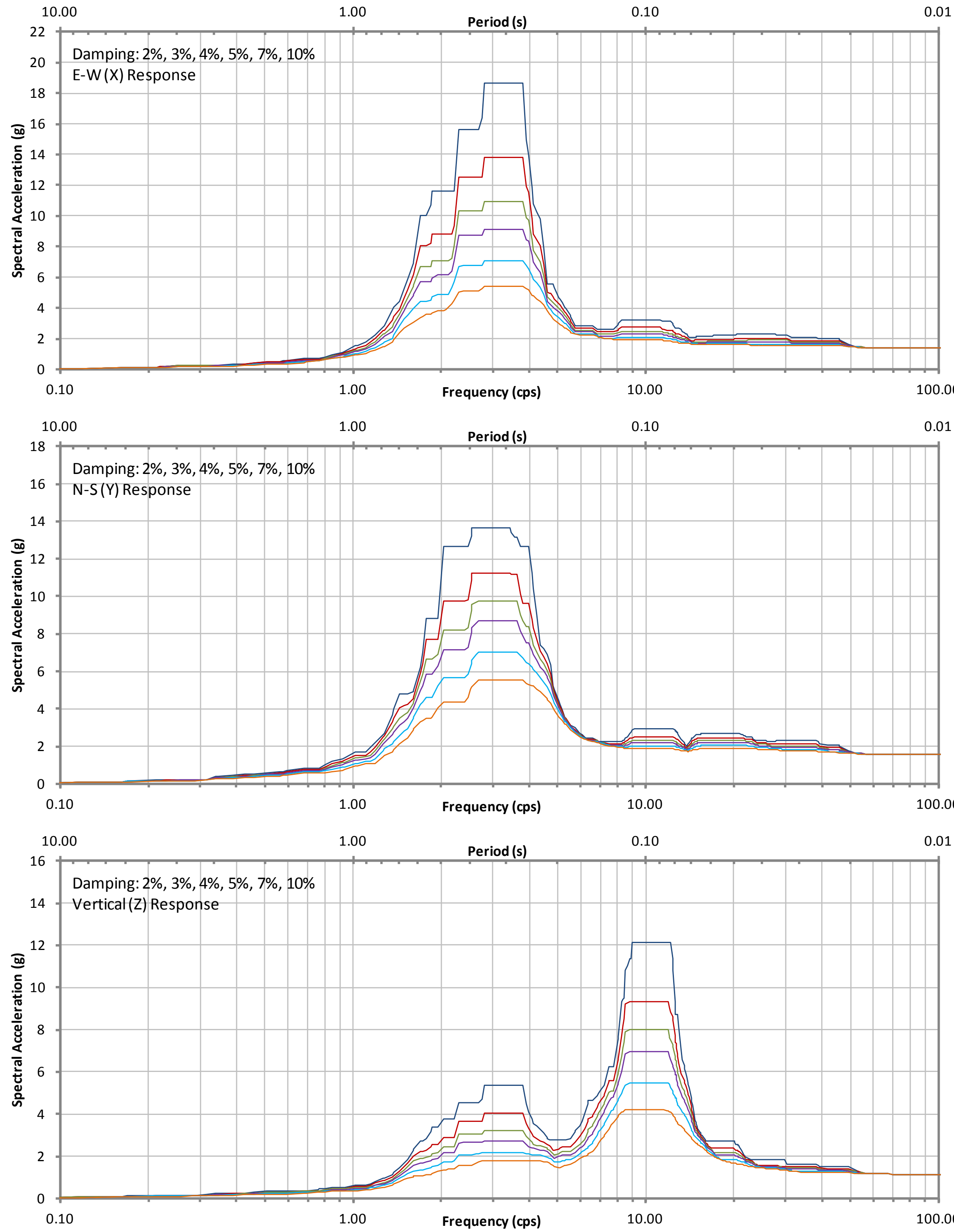


Figure D-13 ISRS for RCB General (CS275) at El. 275'-0", Multiple Damping, Envelope of All Cases

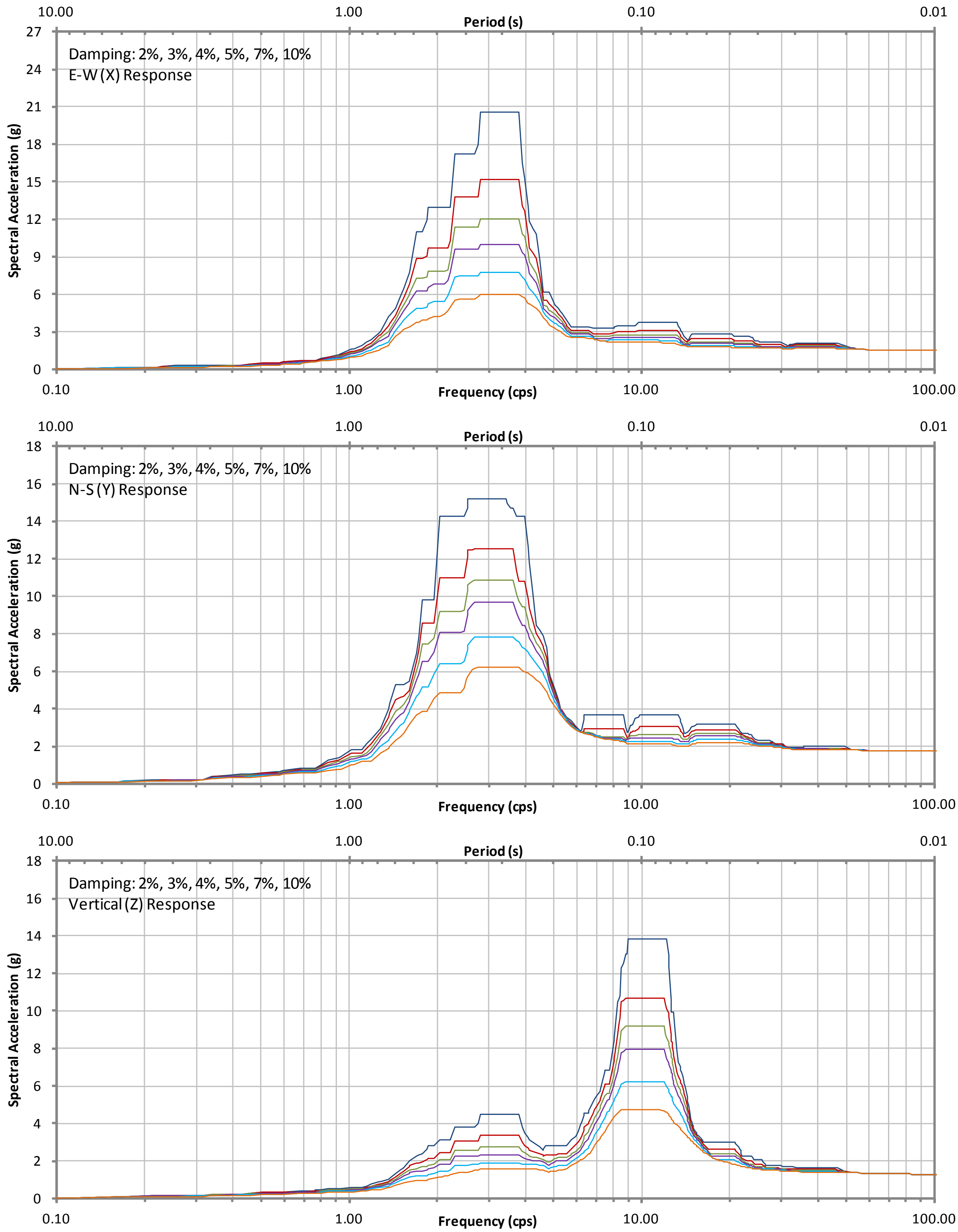


Figure D-14 ISRS for RCB General (CS302) at El. 302'-0", Multiple Damping, Envelope of All Cases

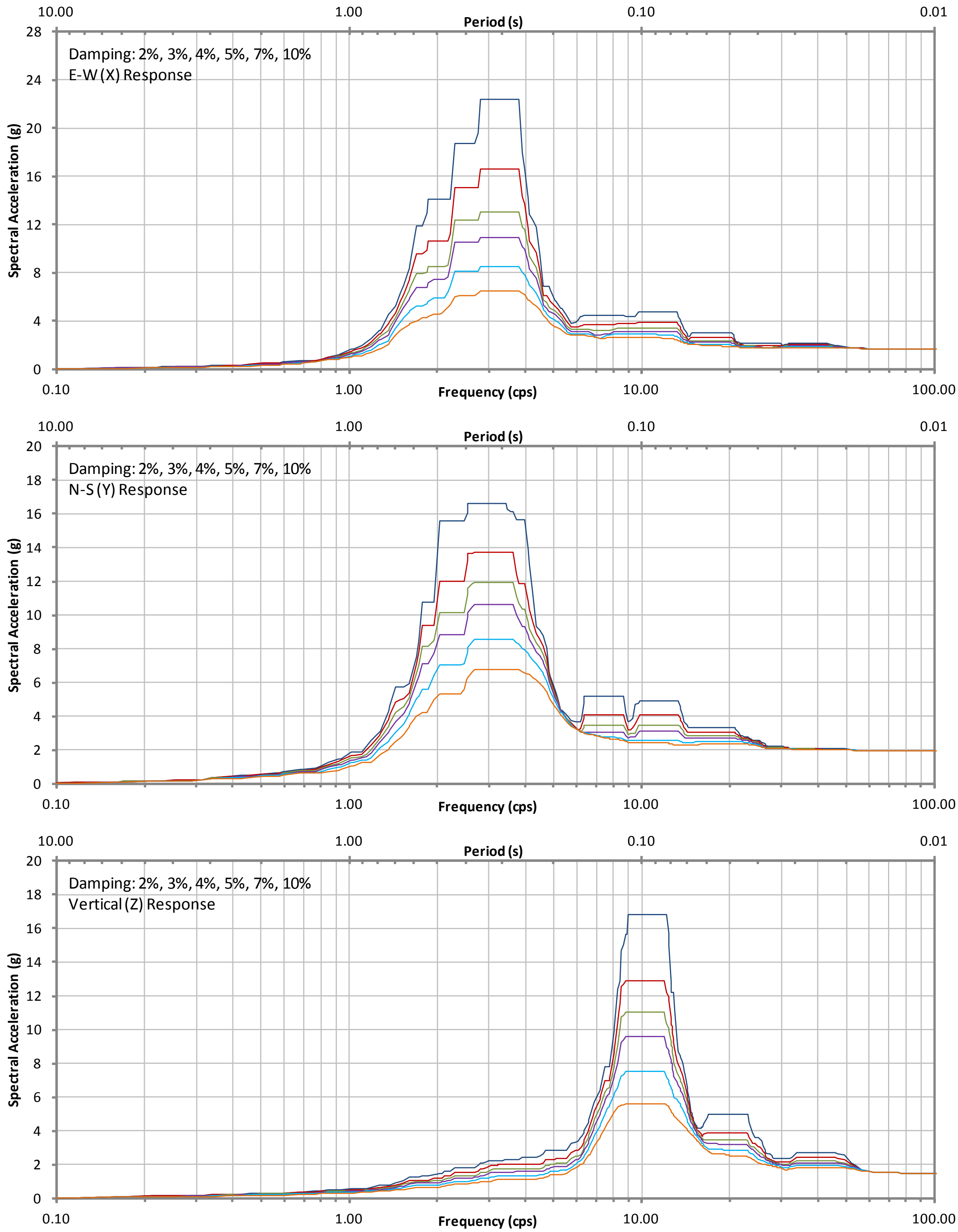


Figure D-15 ISRS for RCB General (CS328) at El. 328'-0", Multiple Damping, Envelope of All Cases

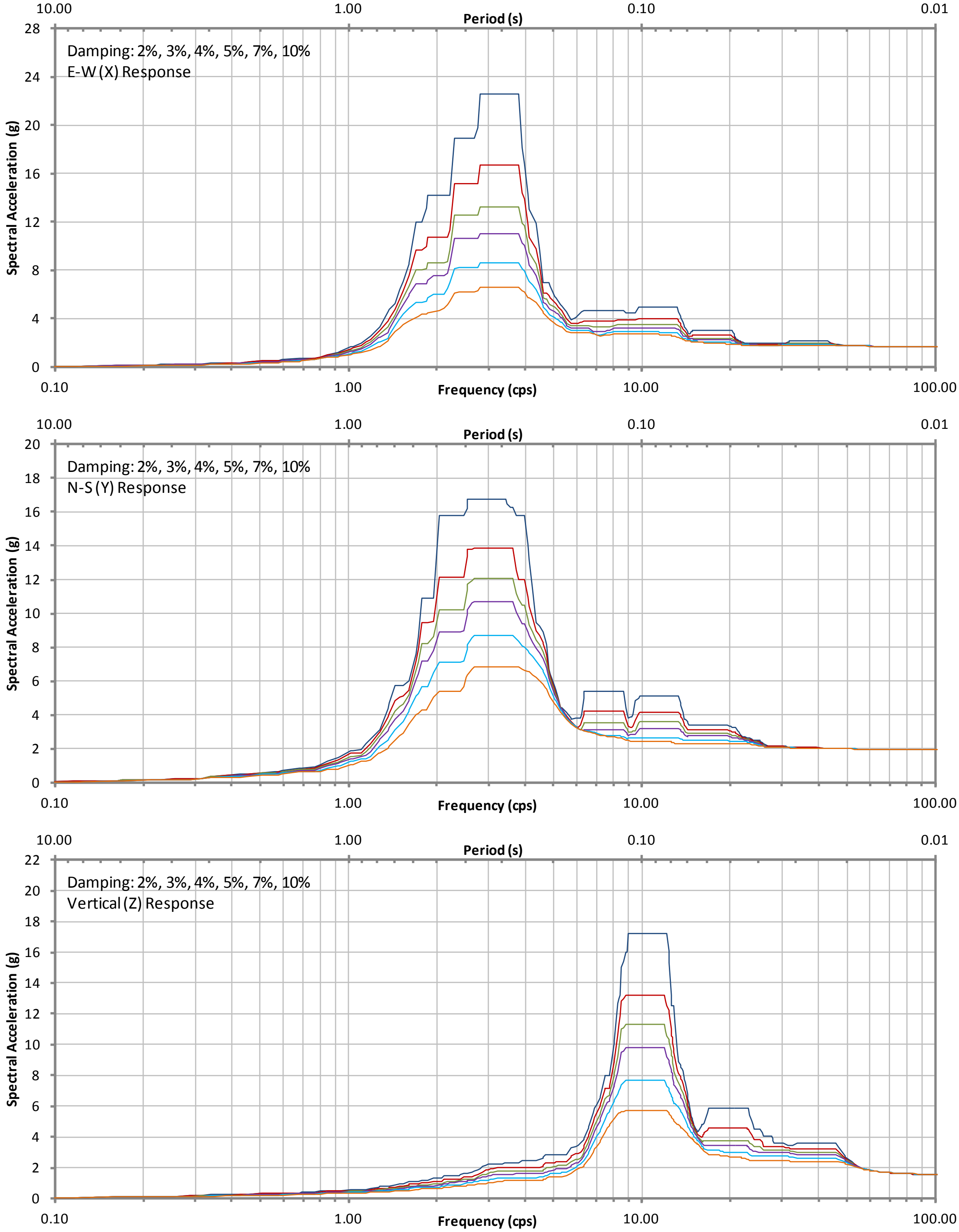


Figure D-16 ISRS for RCB General (CS332) at El. 332'-0", Multiple Damping, Envelope of All Cases

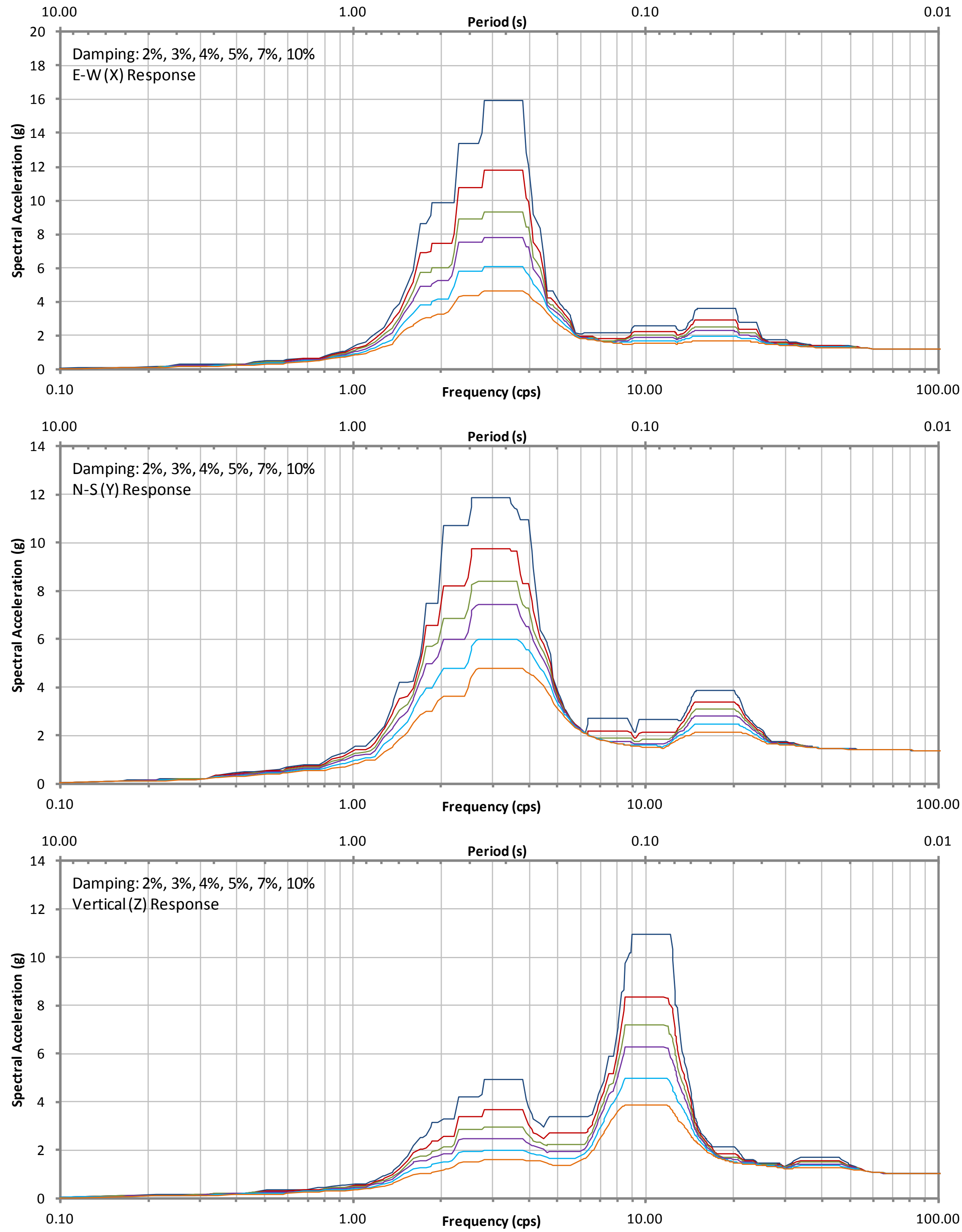
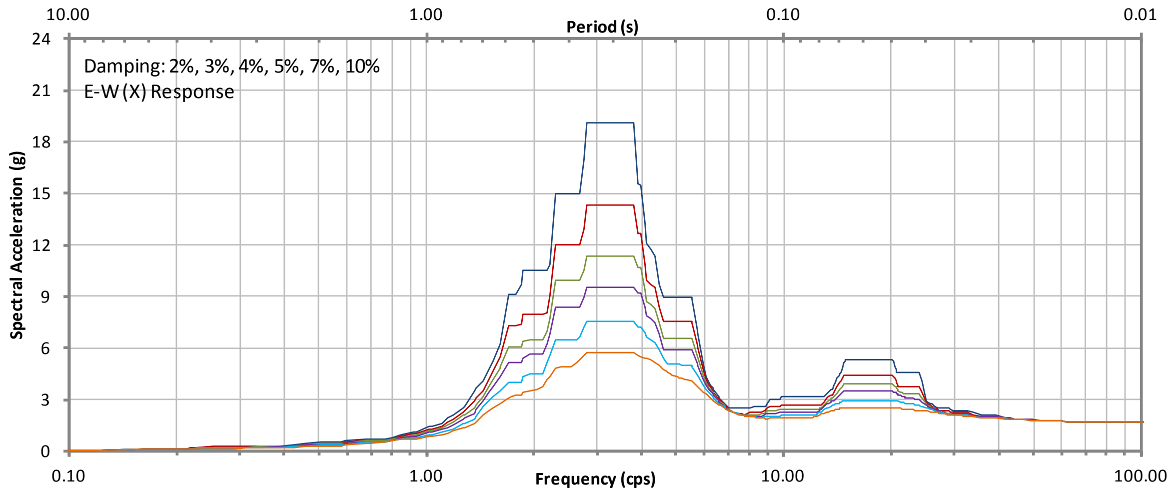
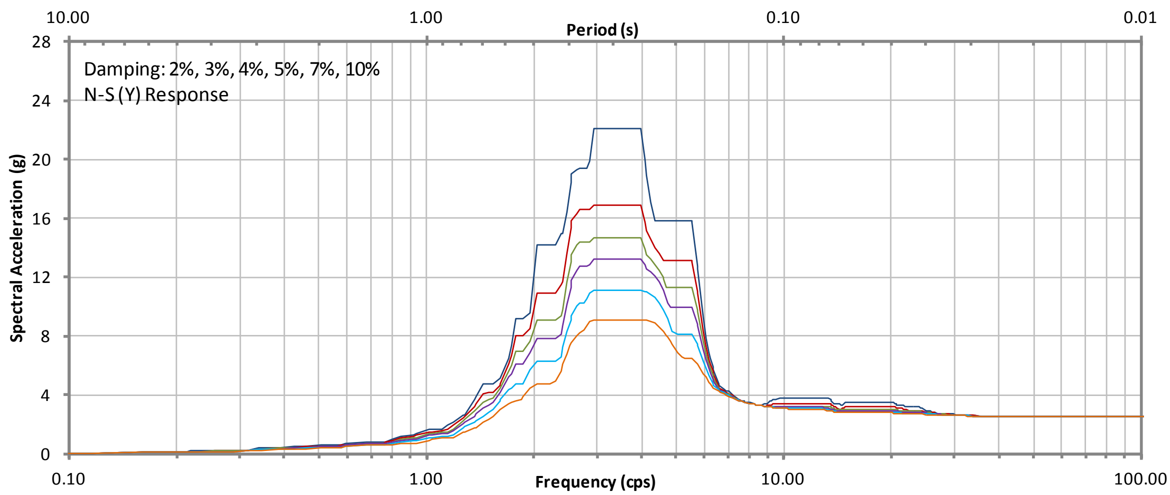


Figure D-17 ISRS for RCB General (PC01241) at El. 241'-0", Multiple Damping, Envelope of All Cases





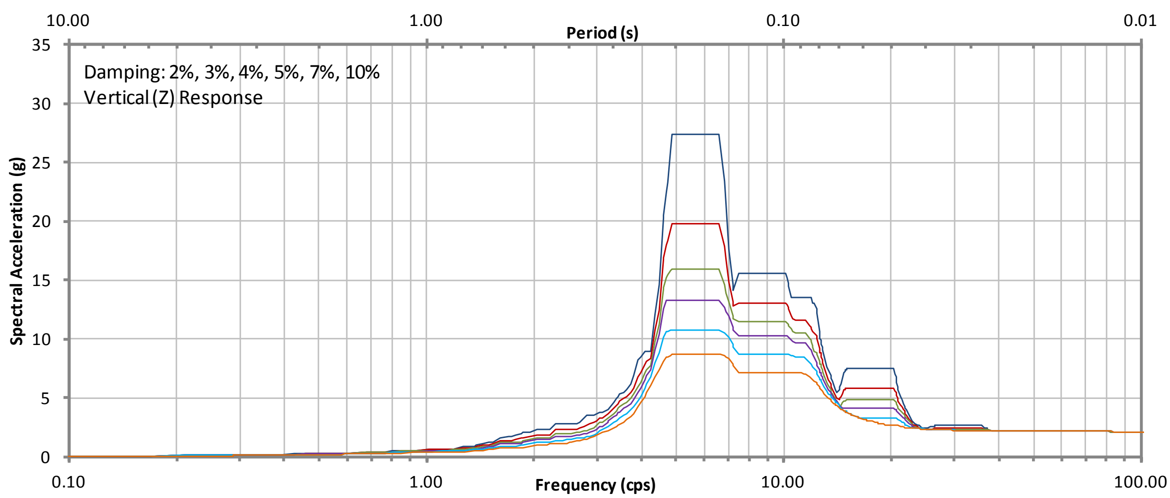
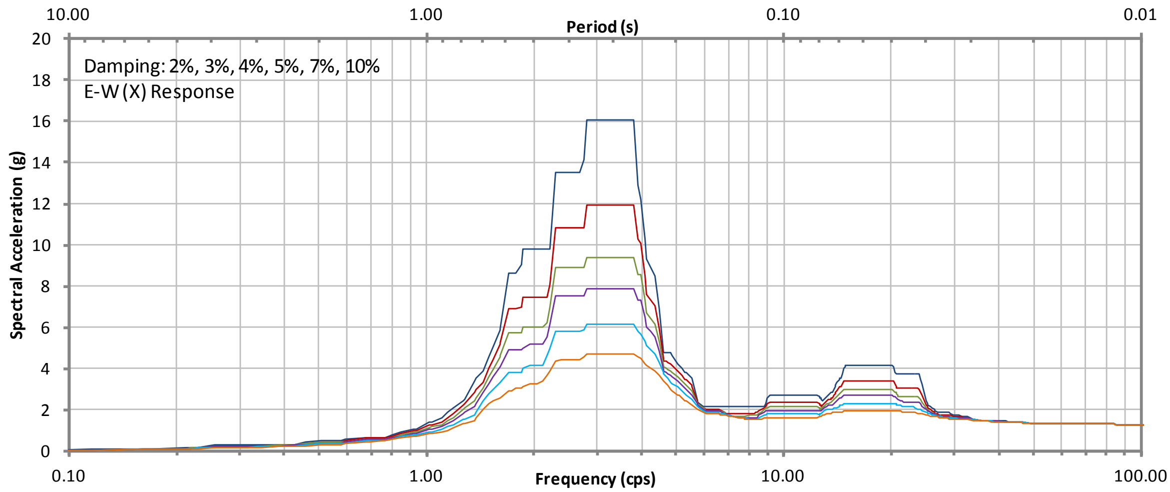
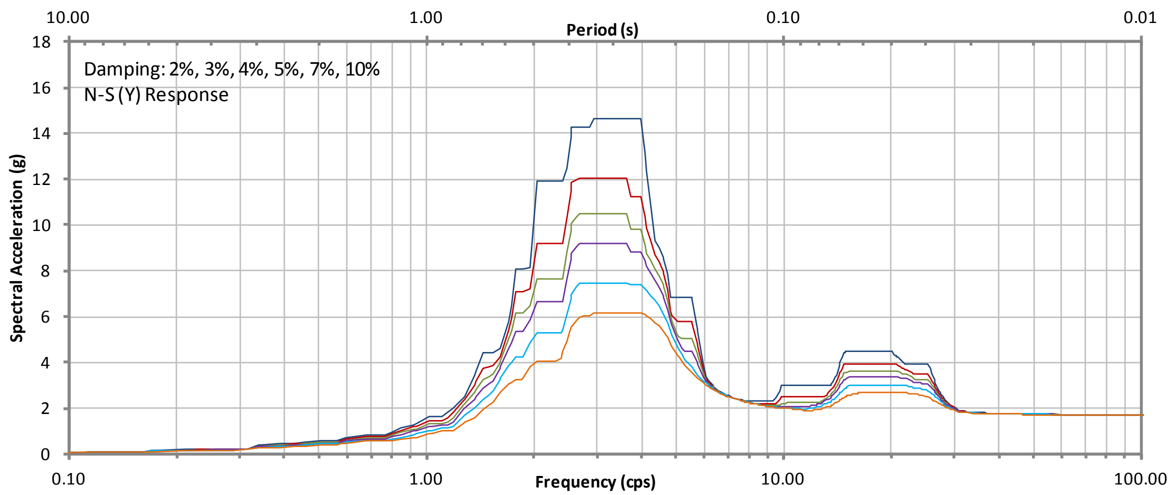


Figure D-18 ISRS for RCB General (PC02241) at El. 241'-0", Multiple Damping, Envelope of All Cases





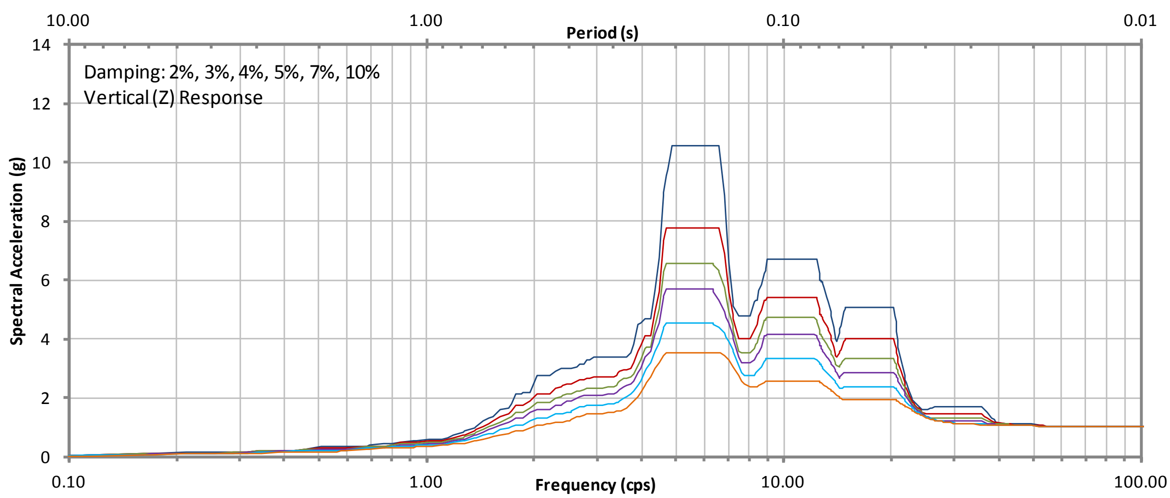


Figure D-19 ISRS for RCB General (PC03241) at El. 241’-0”, Multiple Damping, Envelope of All Cases

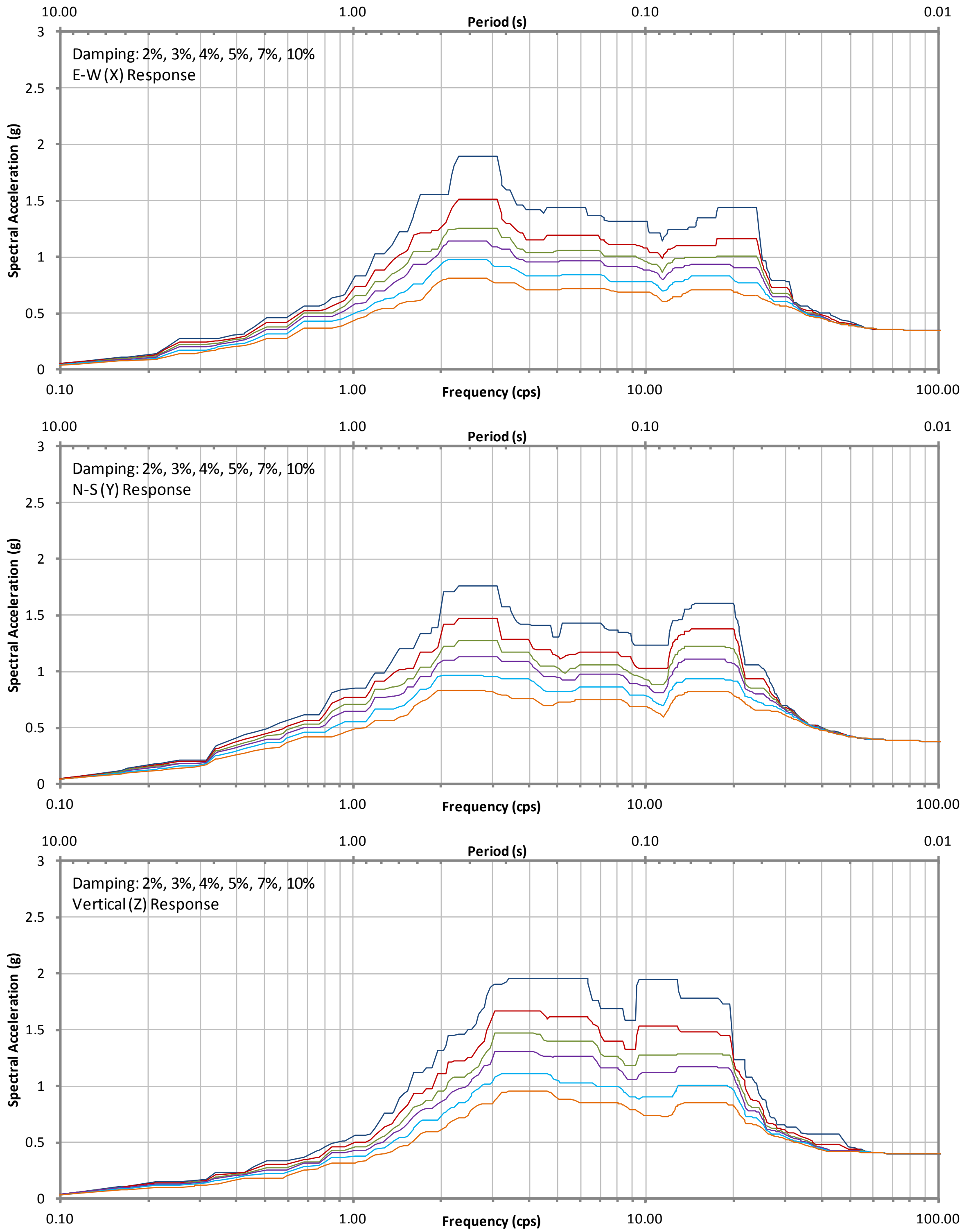


Figure D-20 ISRS for RCB General (PSW66) at El. 66'-0", Multiple Damping, Envelope of All Cases

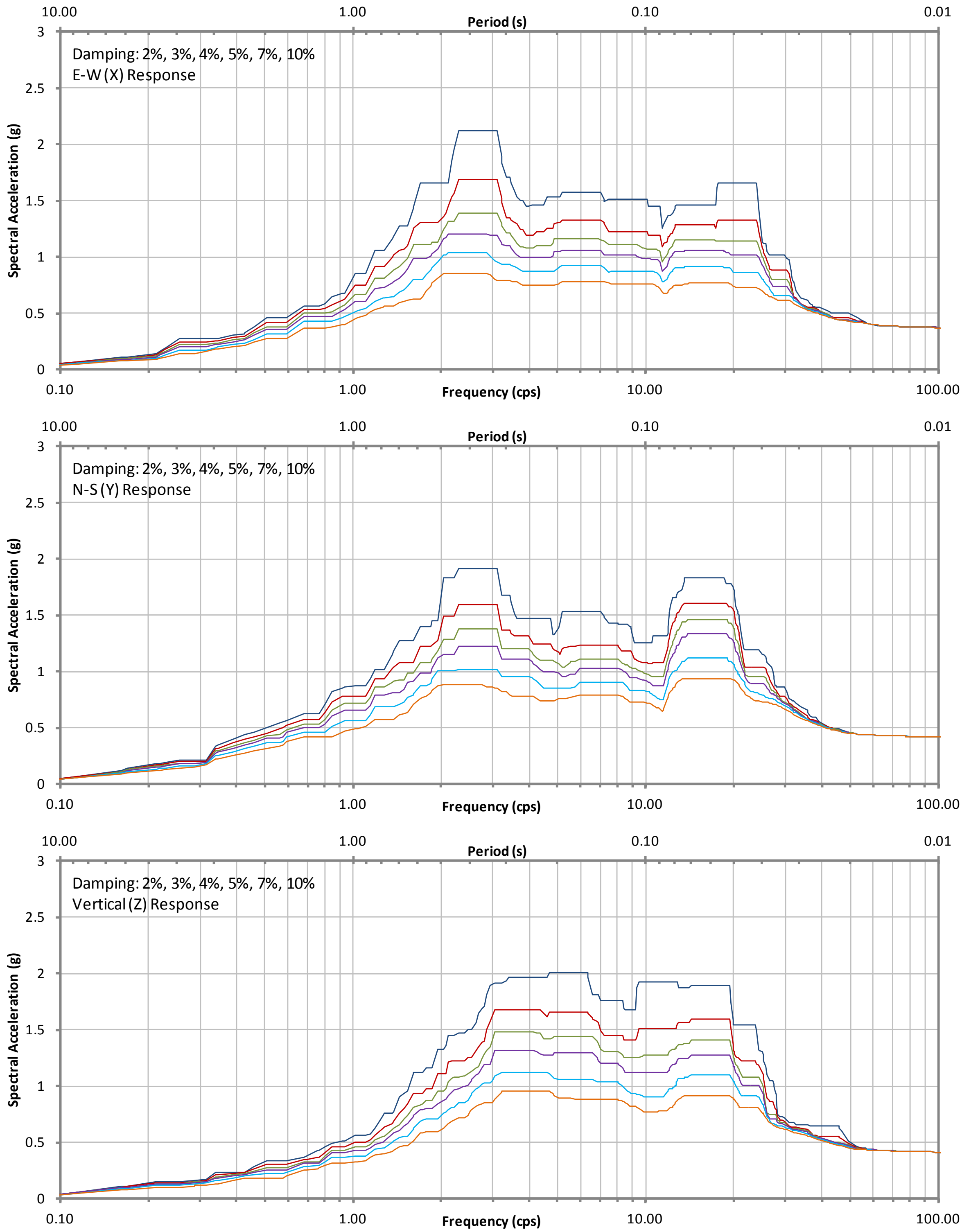


Figure D-21 ISRS for RCB General (PSW78) at El. 78'-0", Multiple Damping, Envelope of All Cases

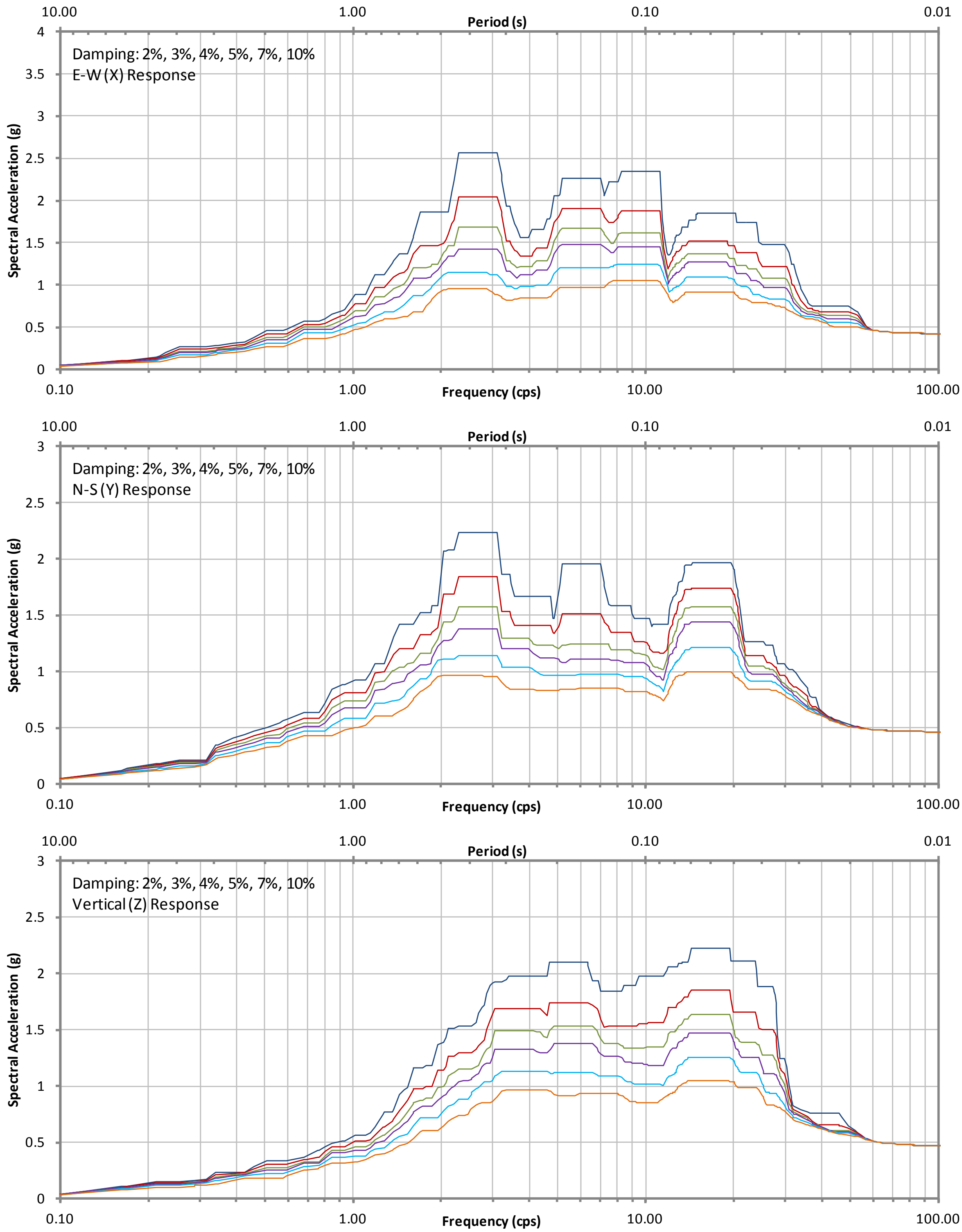


Figure D-22 ISRS for RCB General (PSW100) at El. 100'-0", Multiple Damping, Envelope of All Cases

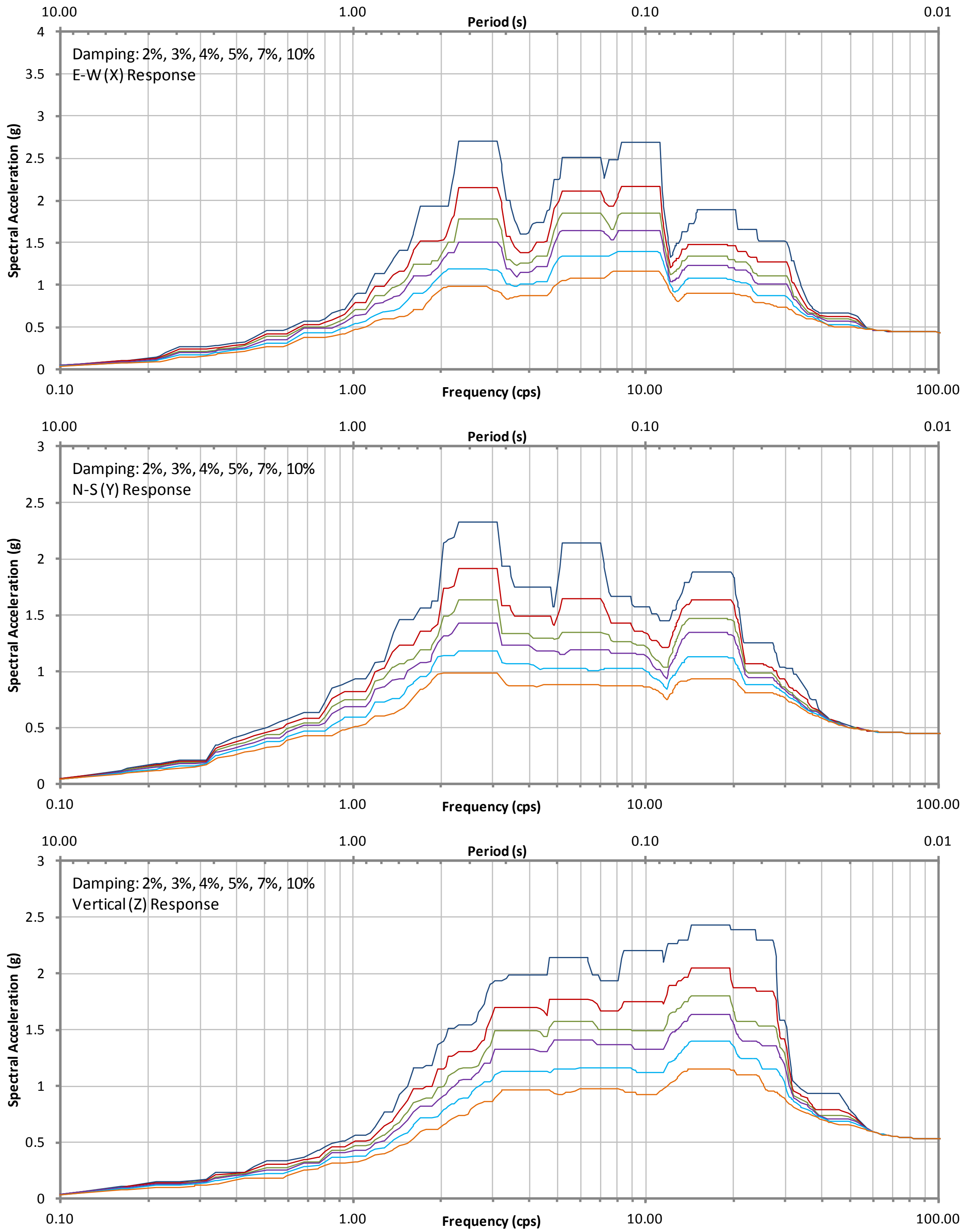


Figure D-23 ISRS for RCB General (PSW107) at El. 107'-0", Multiple Damping, Envelope of All Cases

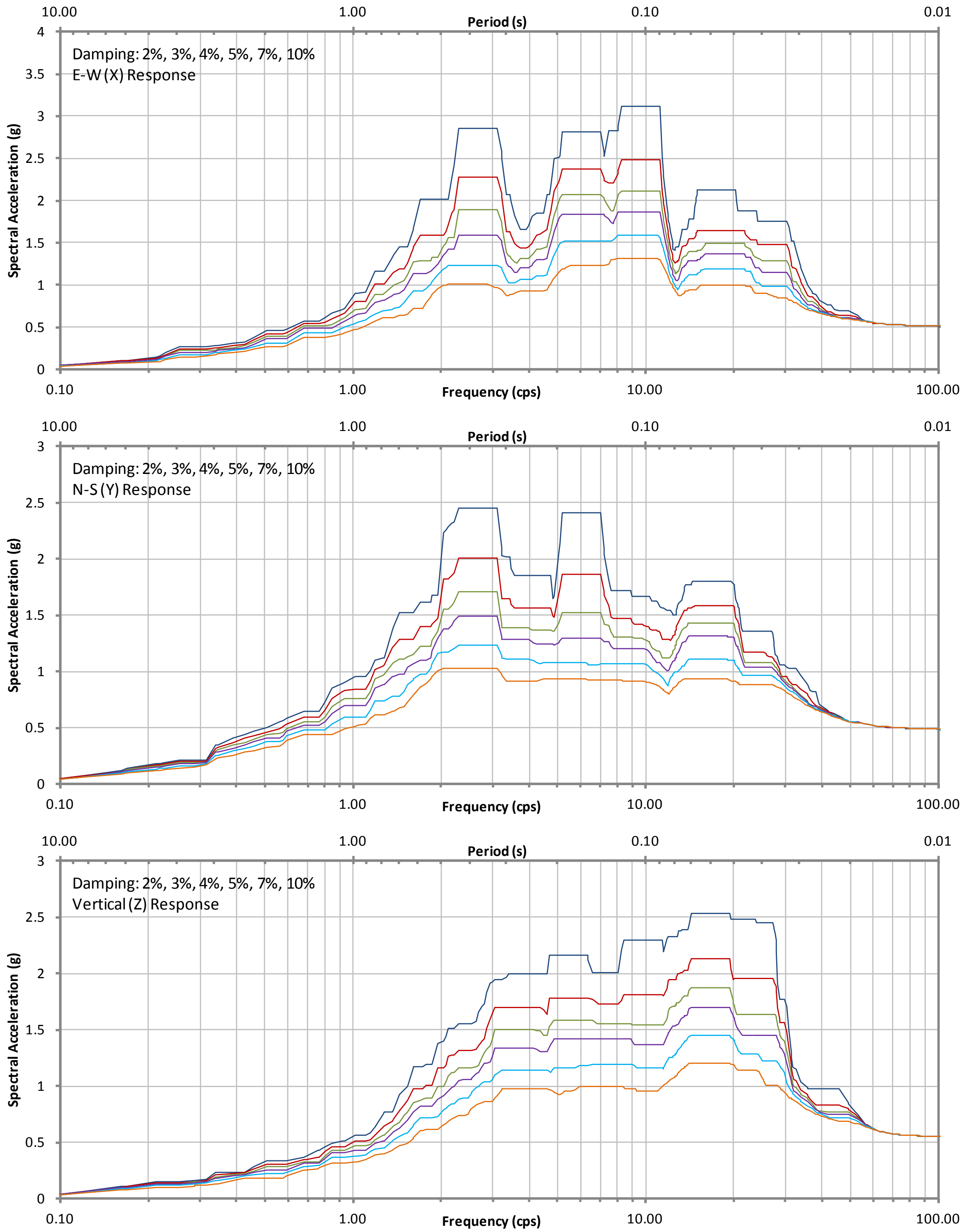


Figure D-24 ISRS for RCB General (PSW114) at El. 114'-0", Multiple Damping, Envelope of All Cases

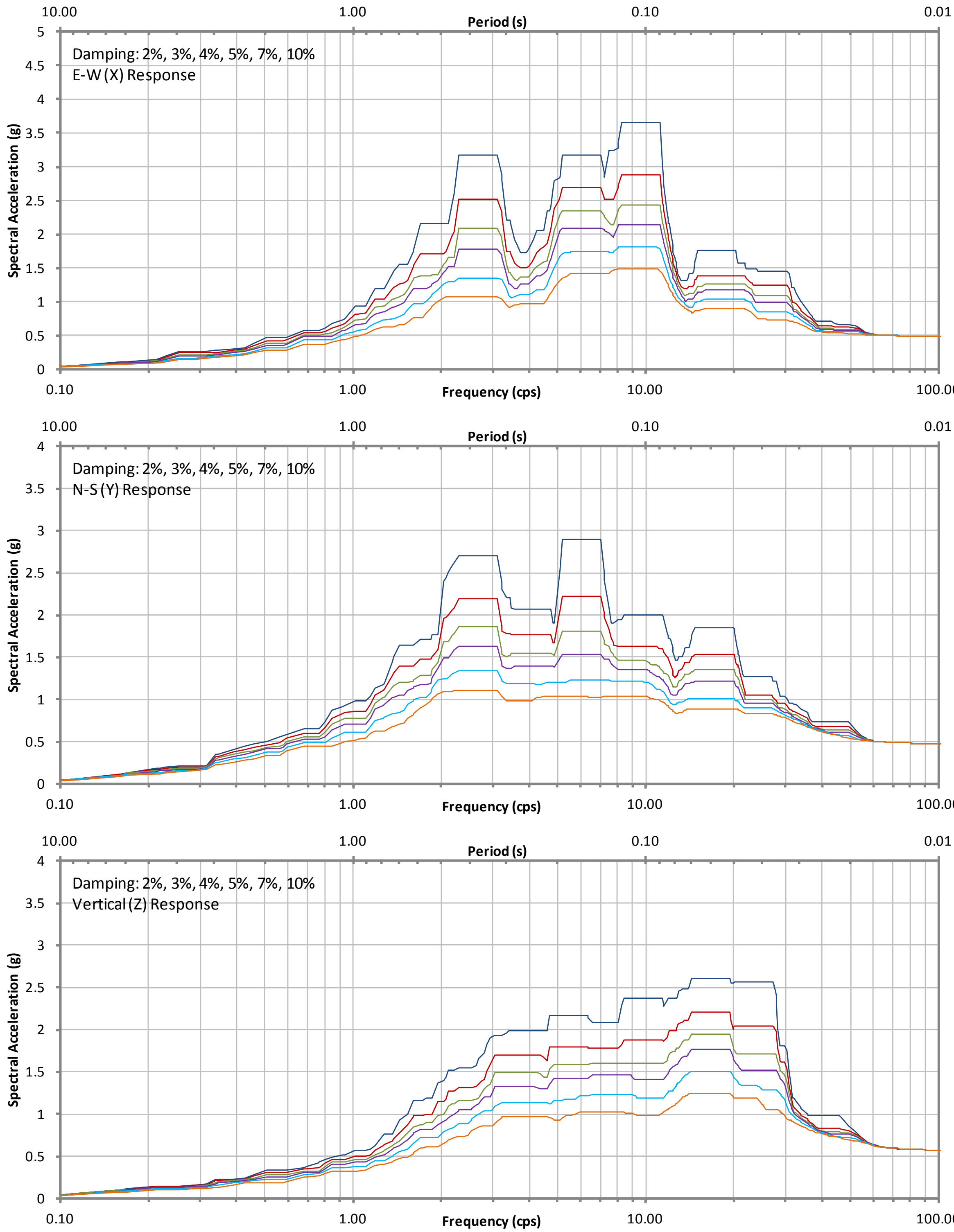


Figure D-25 ISRS for RCB General (PSW130) at El. 130'-0", Multiple Damping, Envelope of All Cases

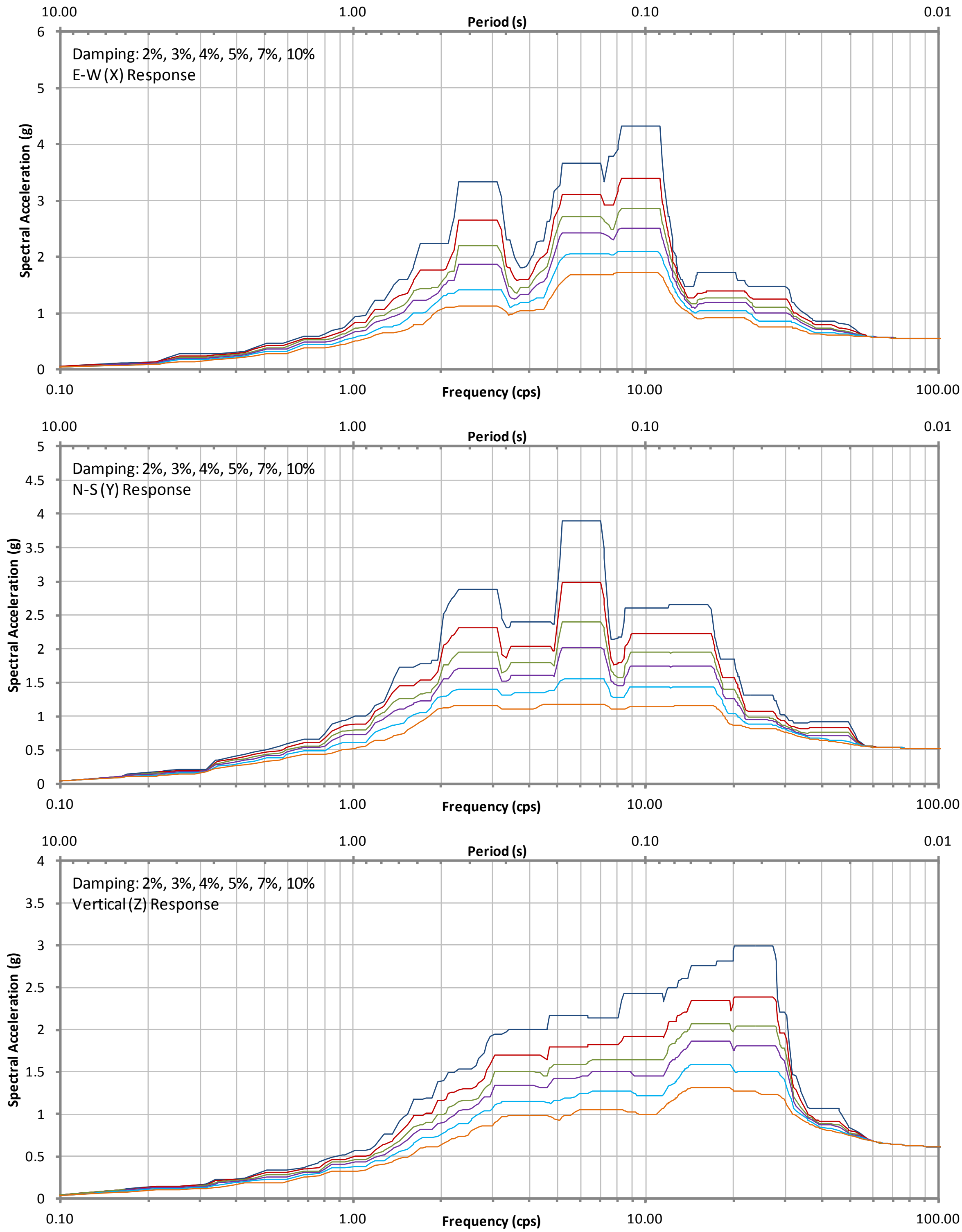


Figure D-26 ISRS for RCB General (PSW137) at El. 137'-0", Multiple Damping, Envelope of All Cases

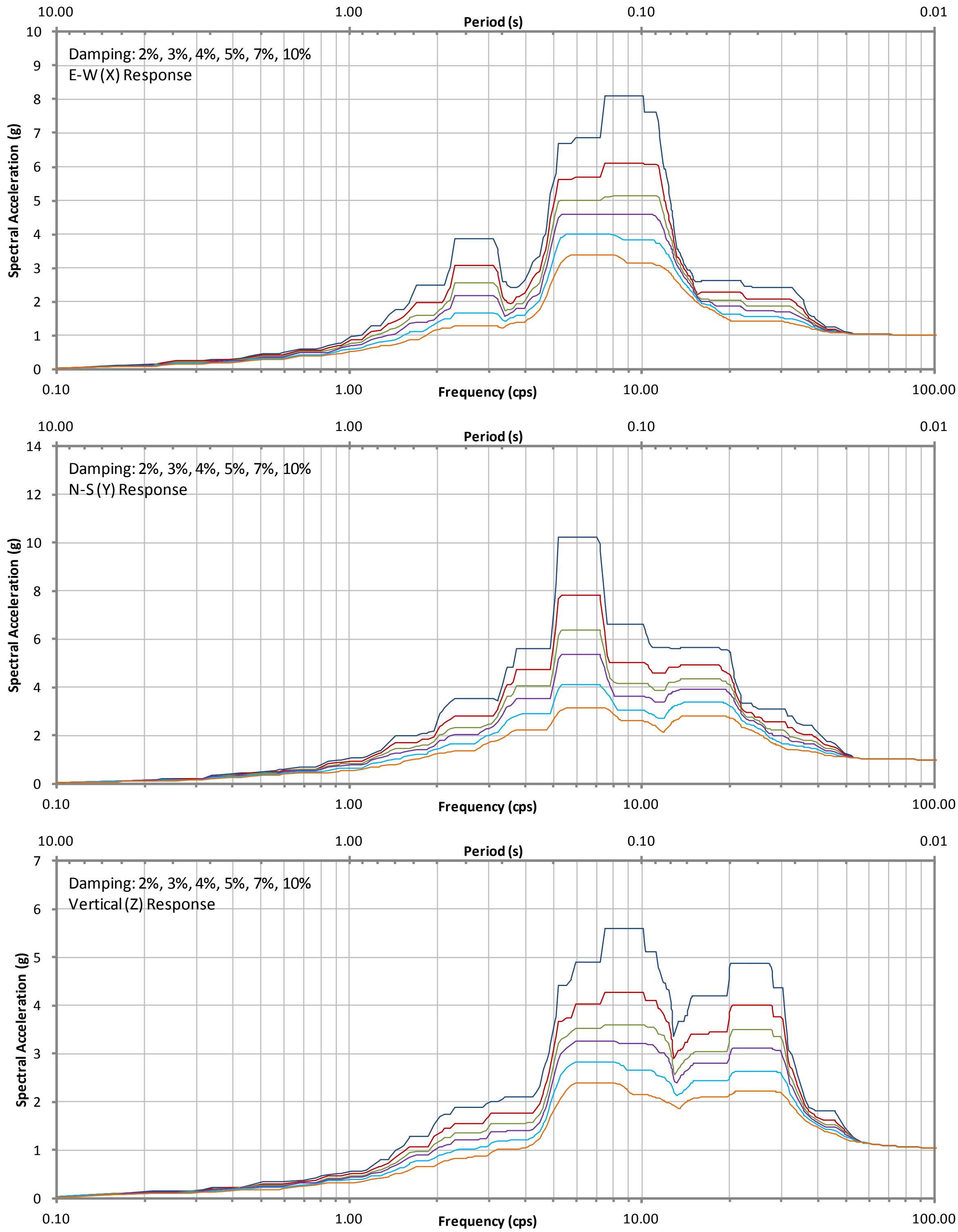
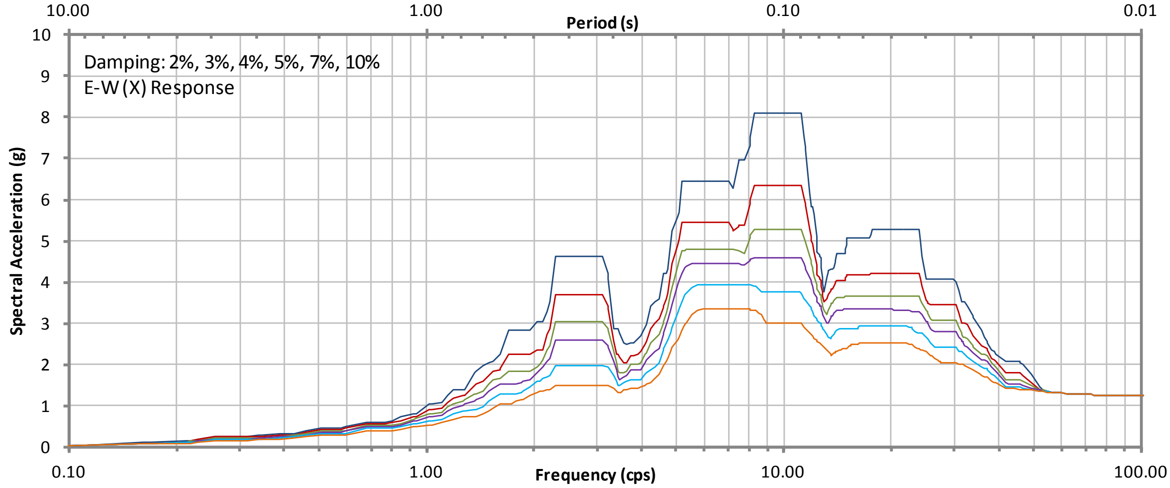
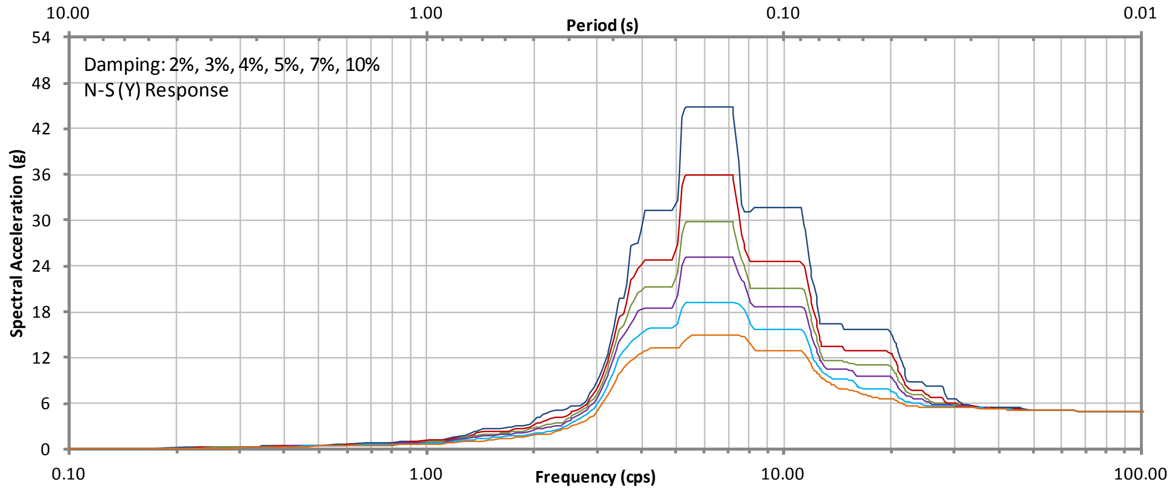


Figure D-27 ISRS for RCB General (PSW156) at El. 156'-0", Multiple Damping, Envelope of All Cases





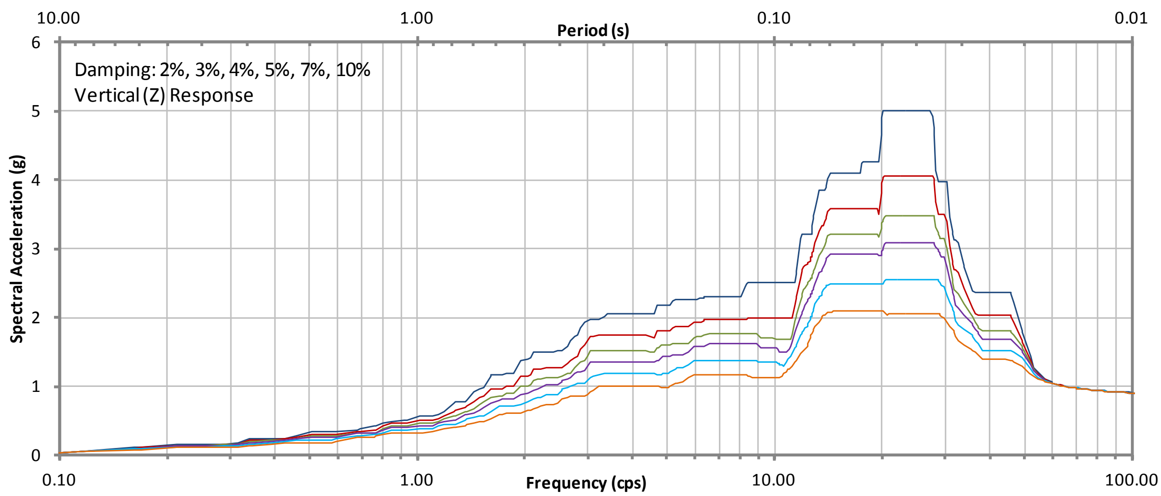


Figure D-28 ISRS for RCB General (PSW191a) at El. 191'-0", Multiple Damping, Envelope of All Cases

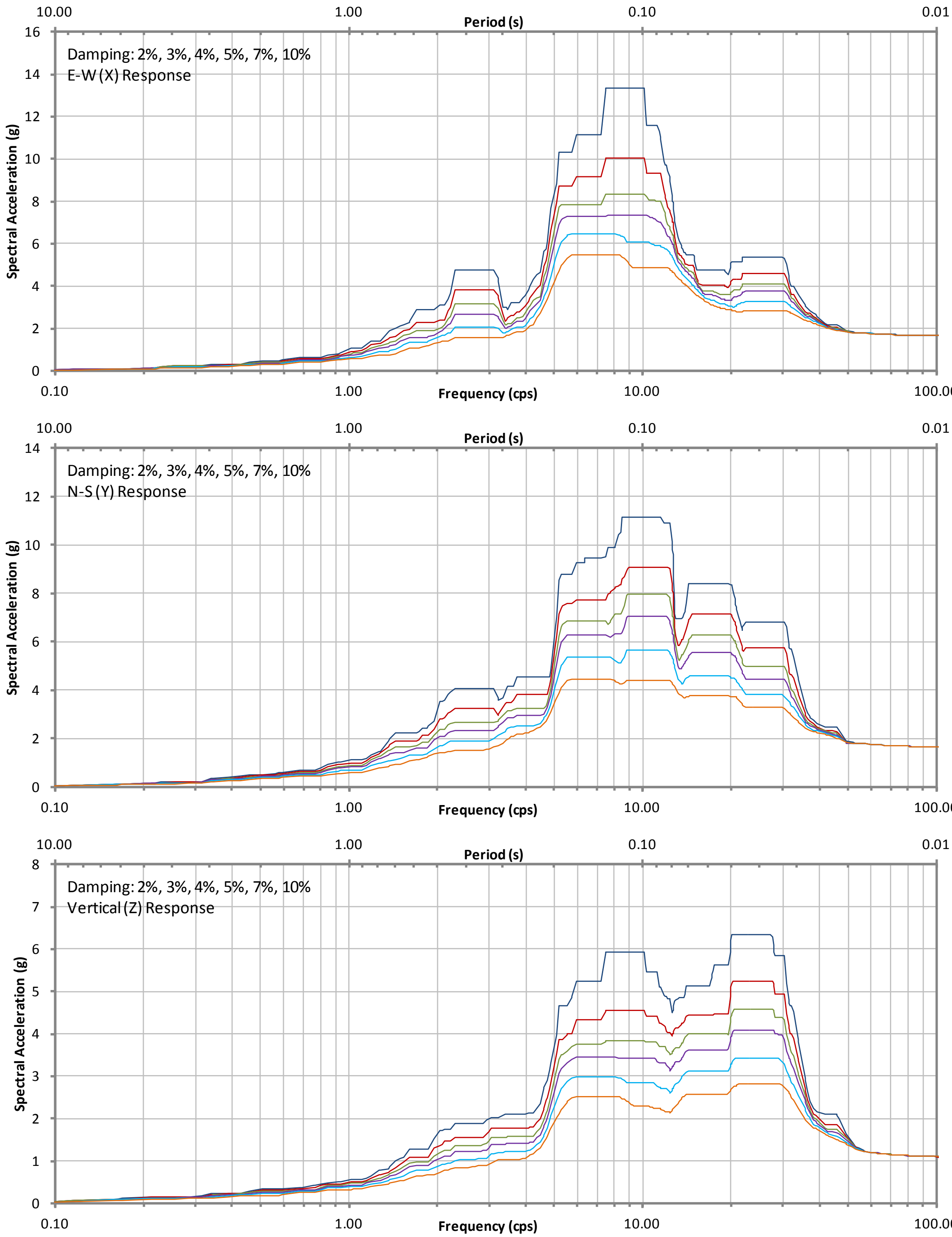


Figure D-29 ISRS for RCB General (PSW191b) at El. 191'-0", Multiple Damping, Envelope of All Cases

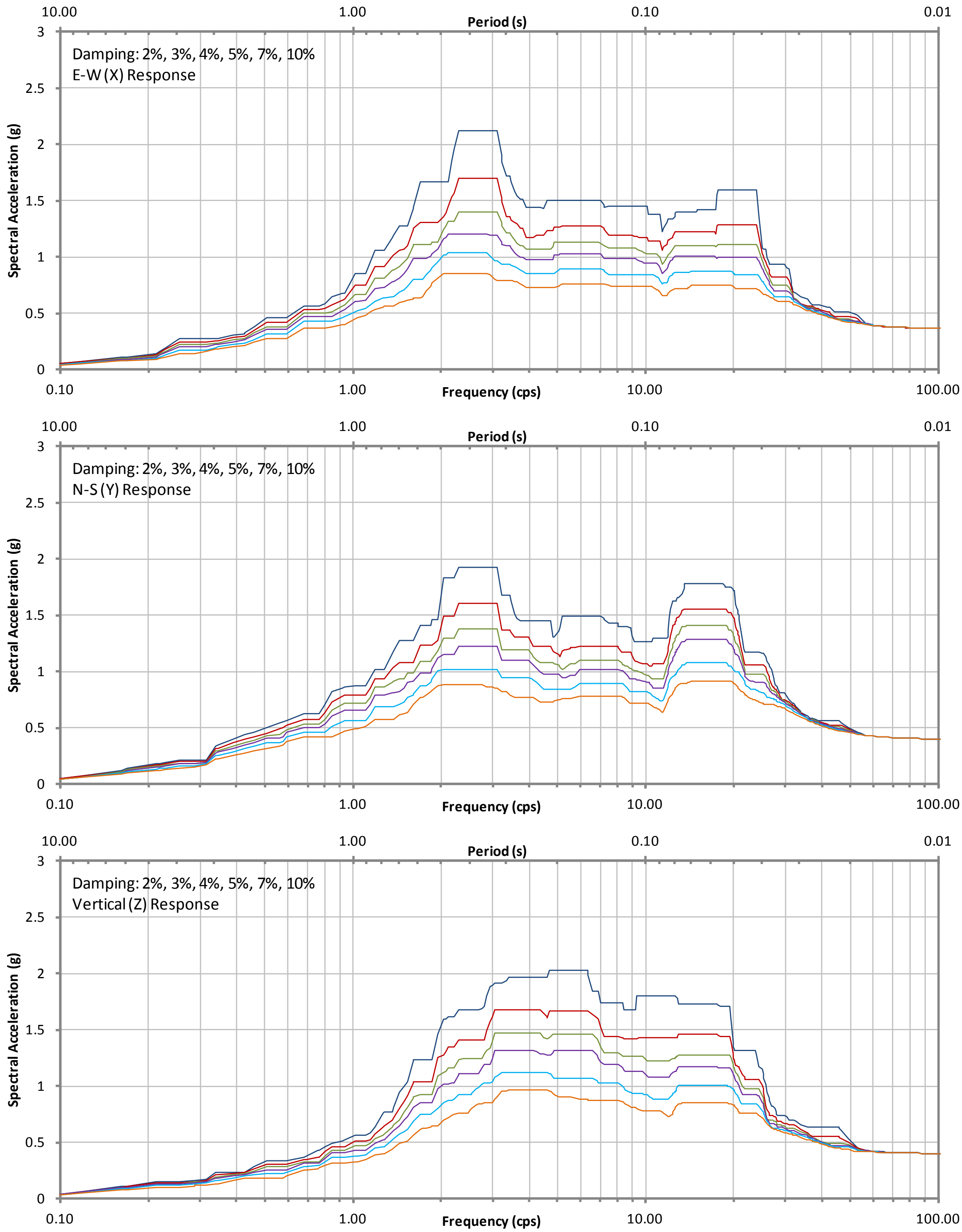


Figure D-30 ISRS for RCB General (SSW78) at El. 78'-0", Multiple Damping, Envelope of All Cases

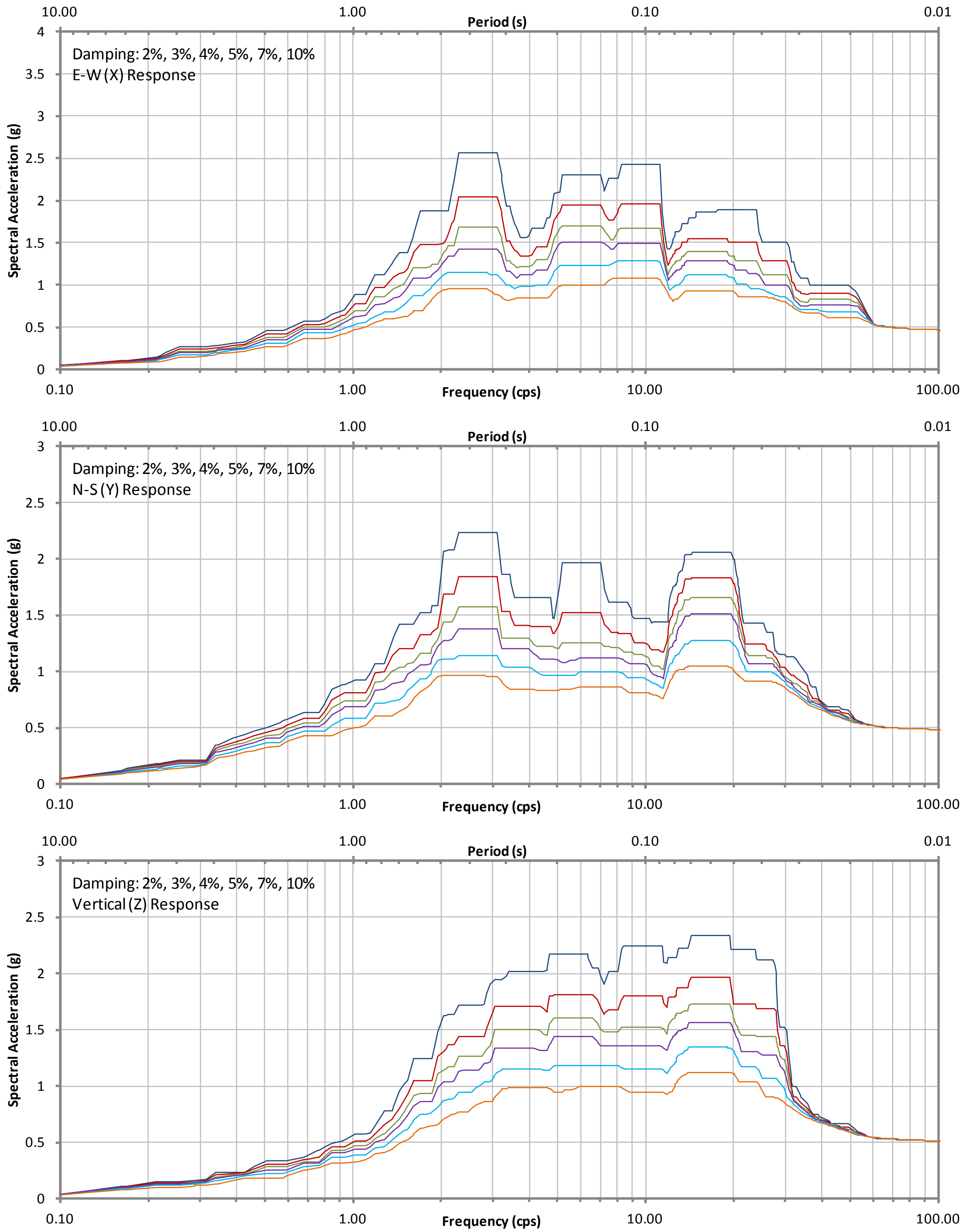
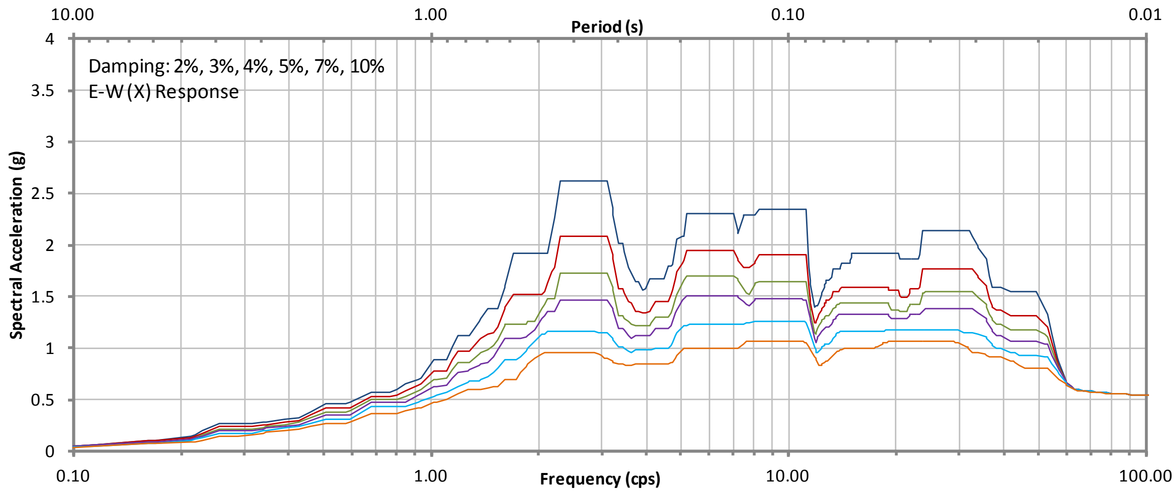
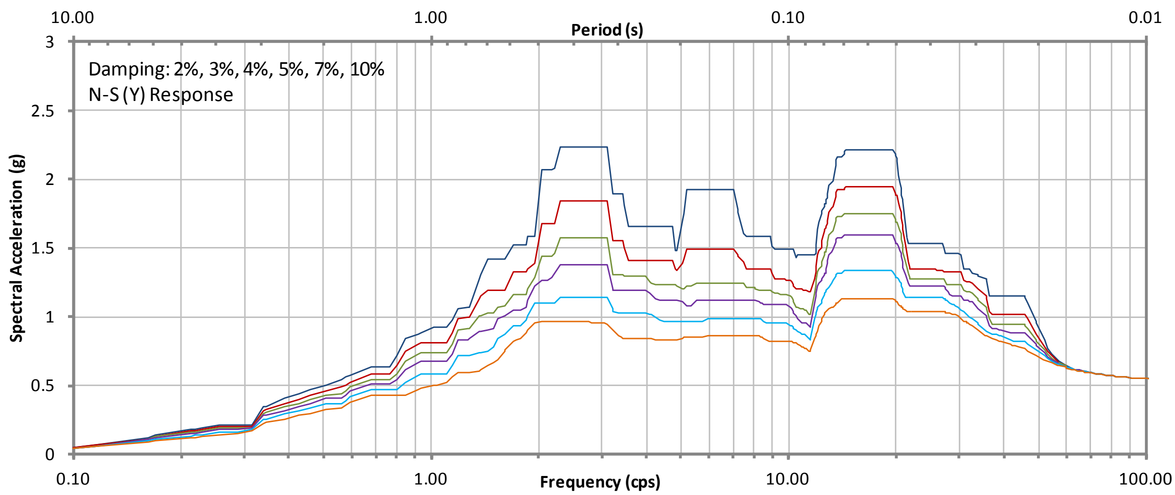


Figure D-31 ISRS for RCB General (SSW100a) at El. 100'-0", Multiple Damping, Envelope of All Cases





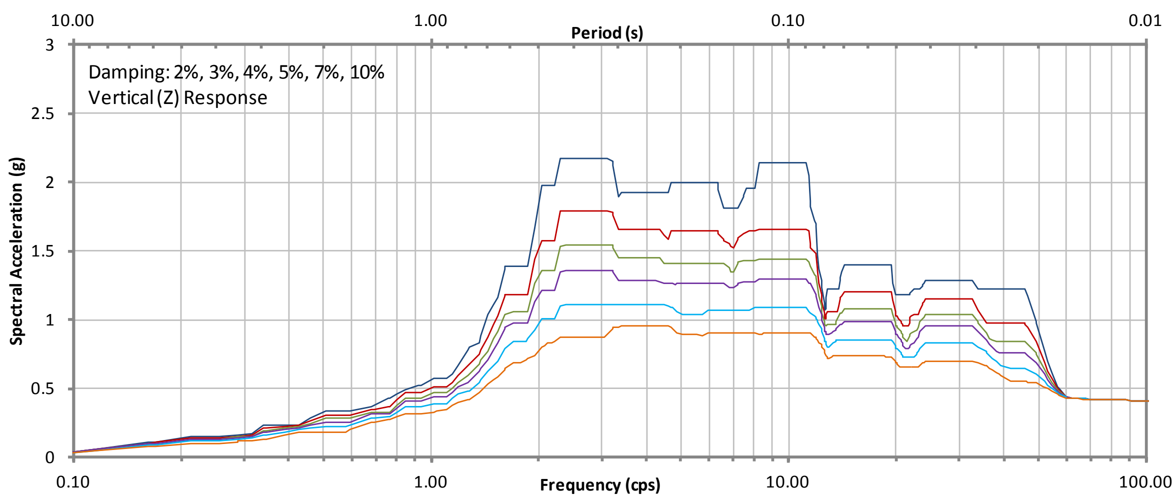


Figure D-32 ISRS for RCB General (SSW100b) at El. 100’-0”, Multiple Damping, Envelope of All Cases

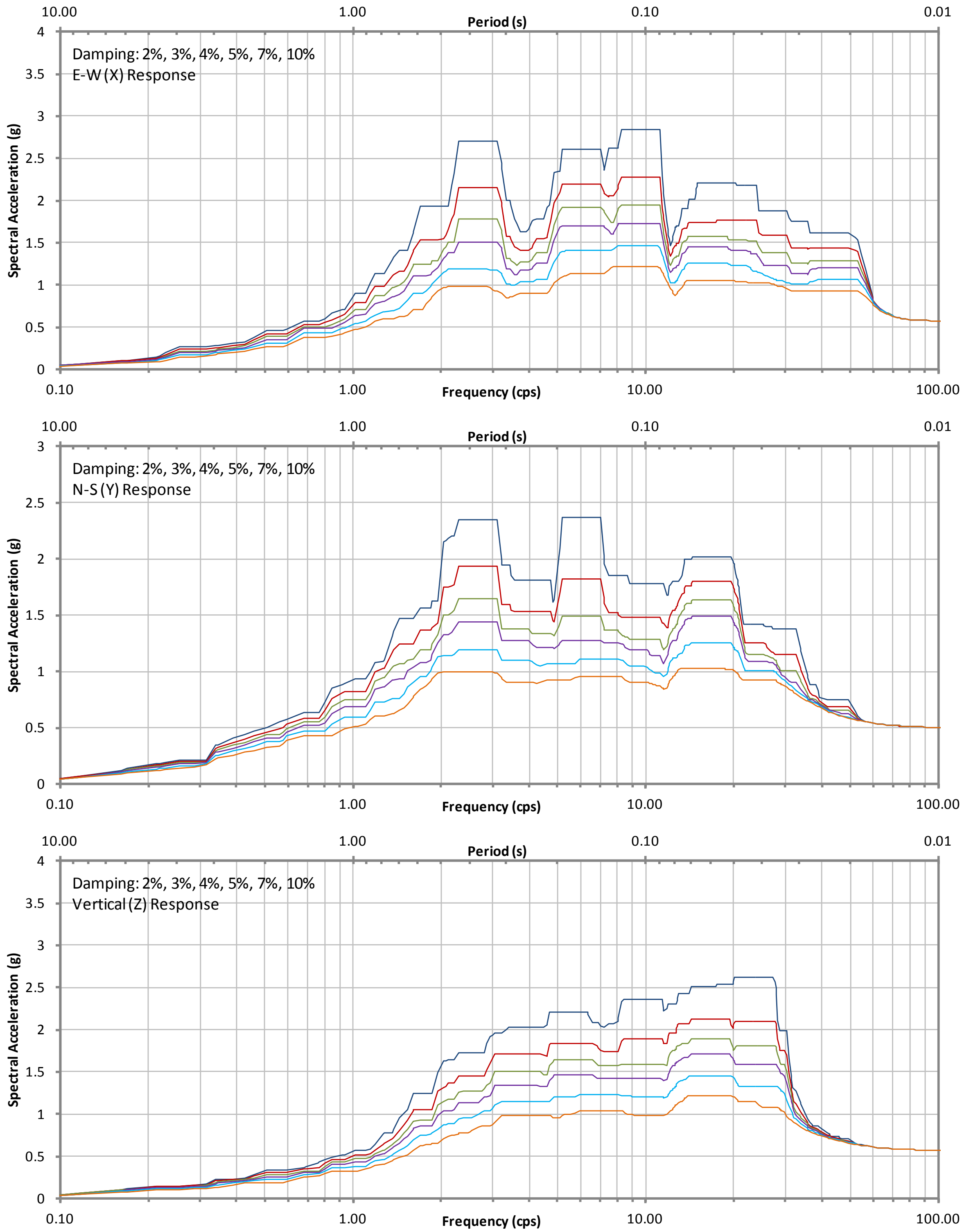


Figure D-33 ISRS for RCB General (SSW107) at El. 107'-0", Multiple Damping, Envelope of All Cases

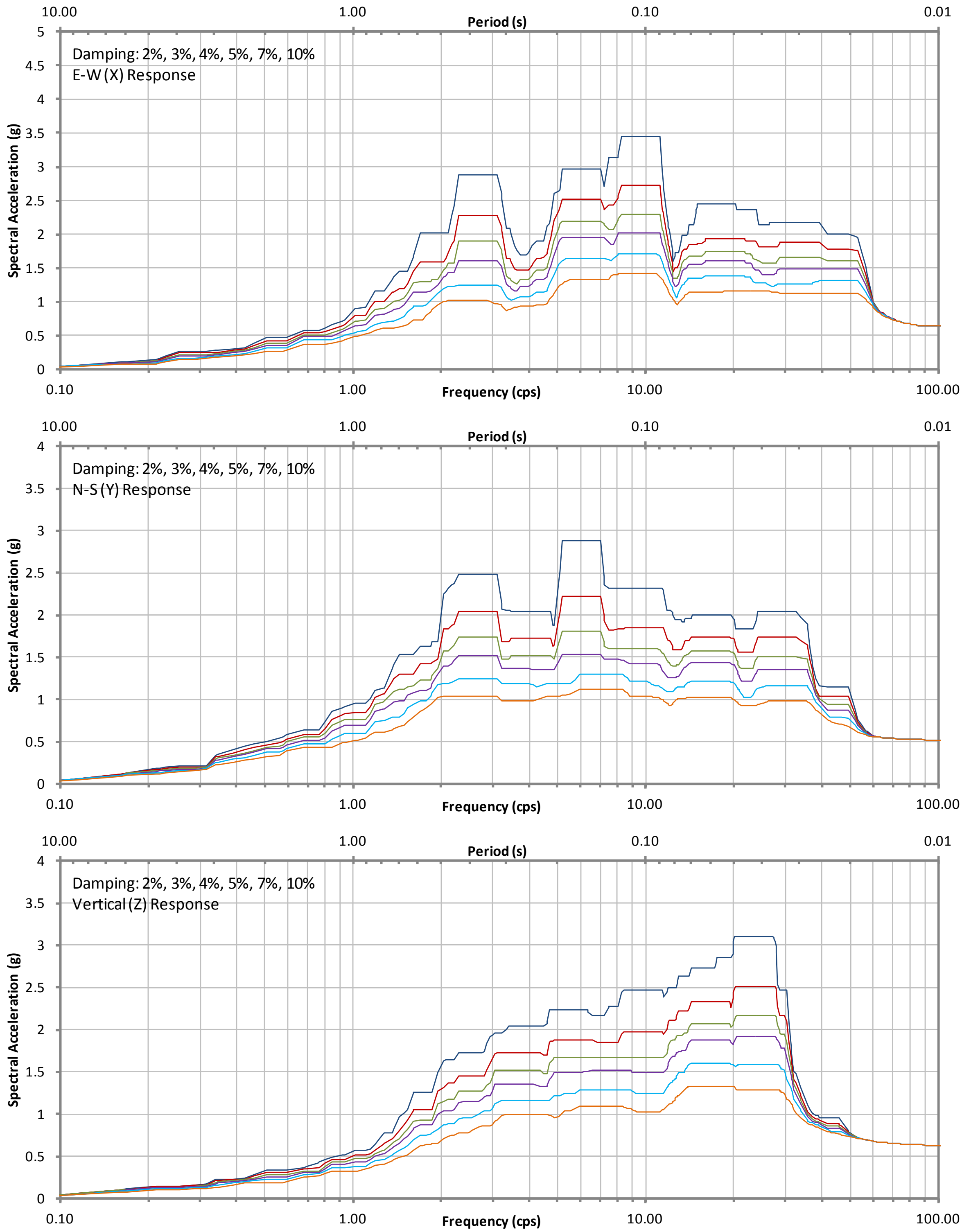


Figure D-34 ISRS for RCB General (SSW114) at El. 114'-0", Multiple Damping, Envelope of All Cases

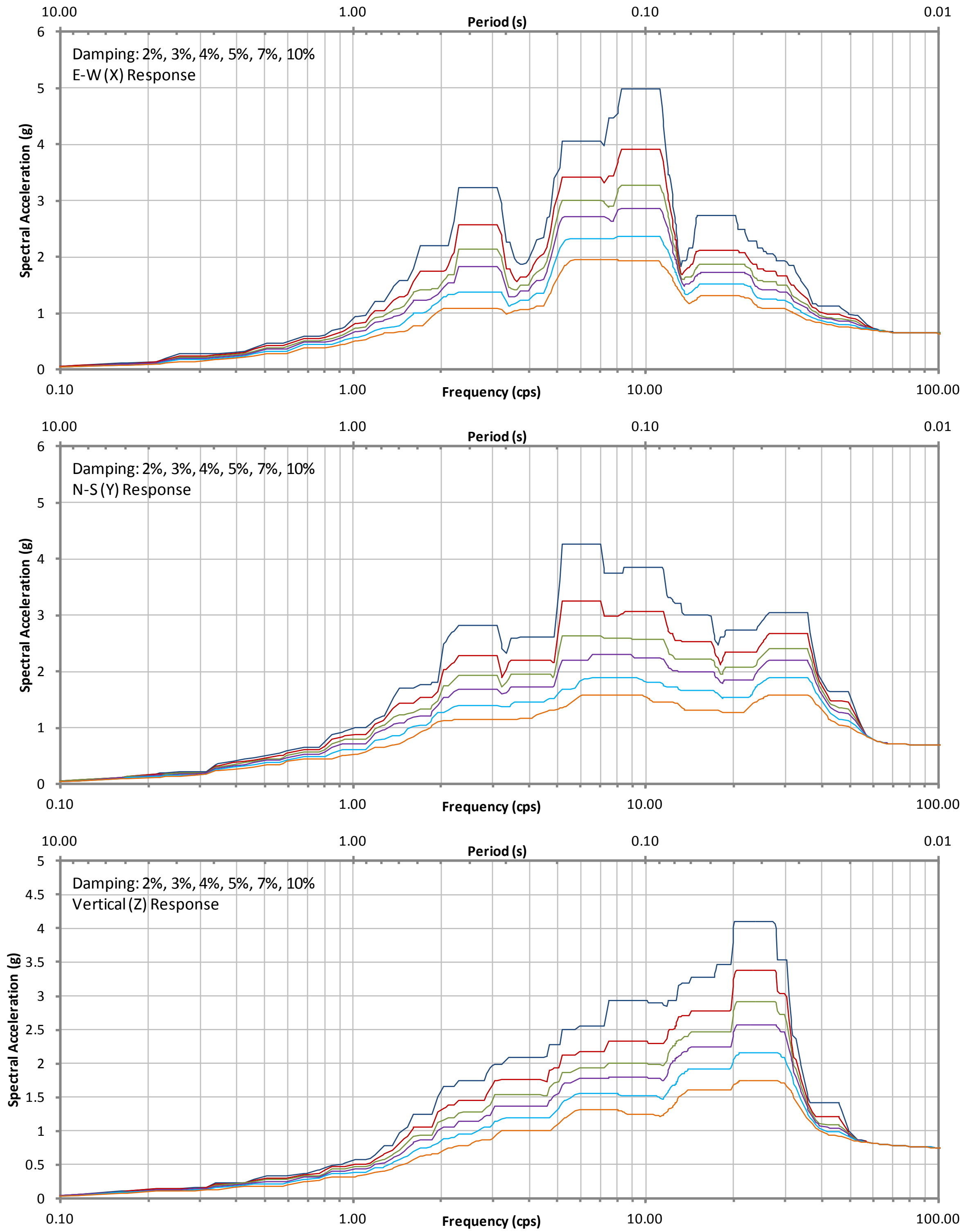


Figure D-35 ISRS for RCB General (SSW130) at El. 130'-0", Multiple Damping, Envelope of All Cases

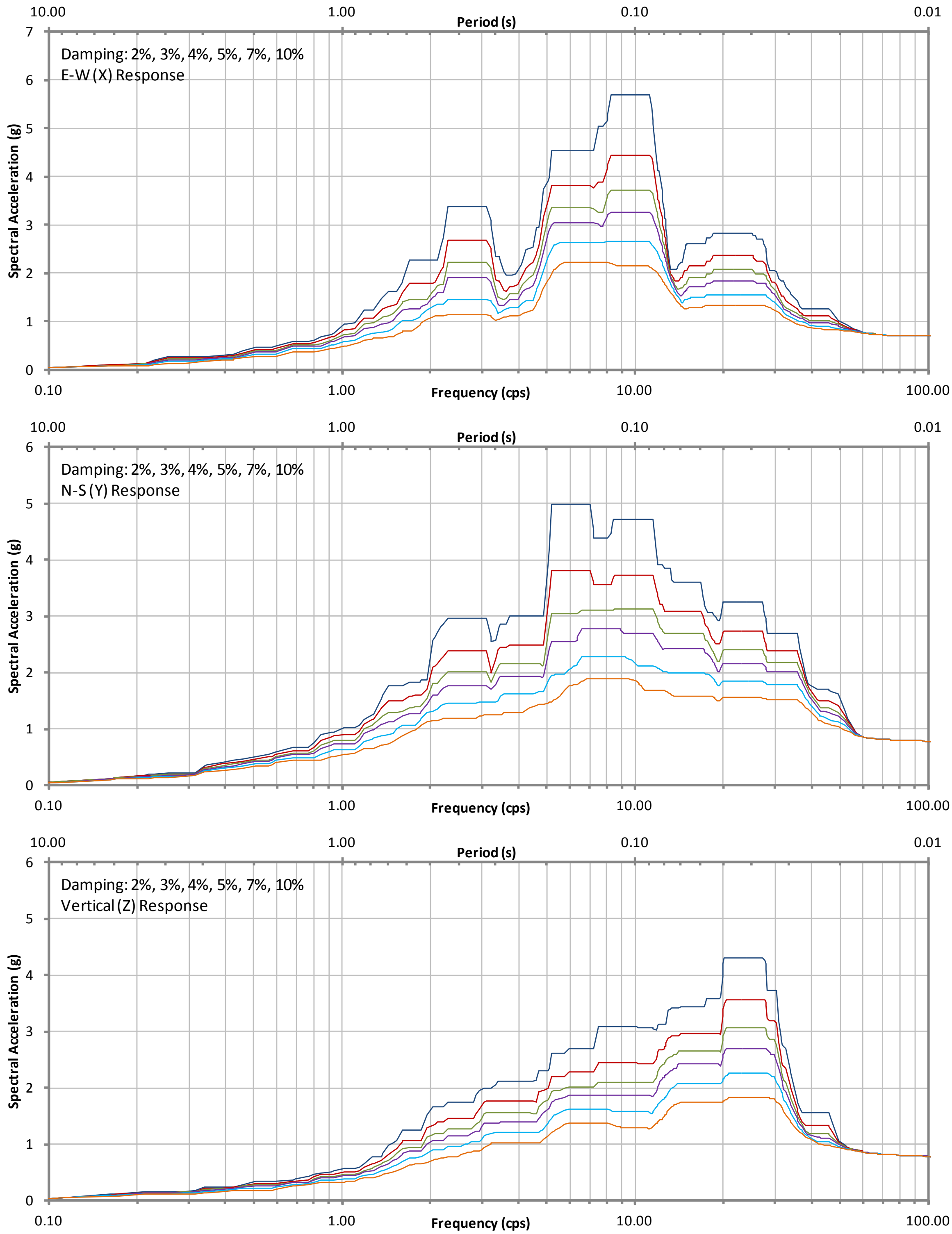
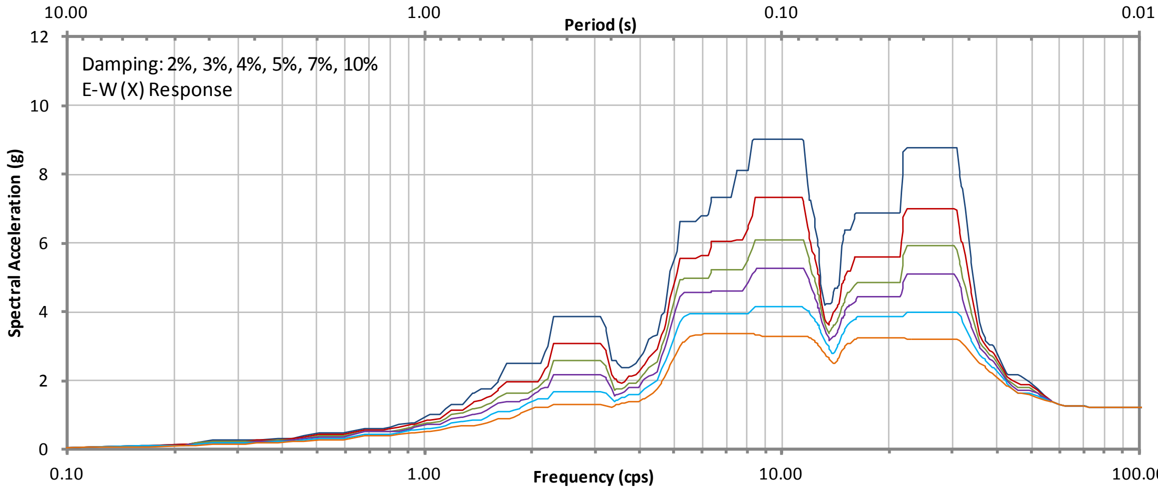
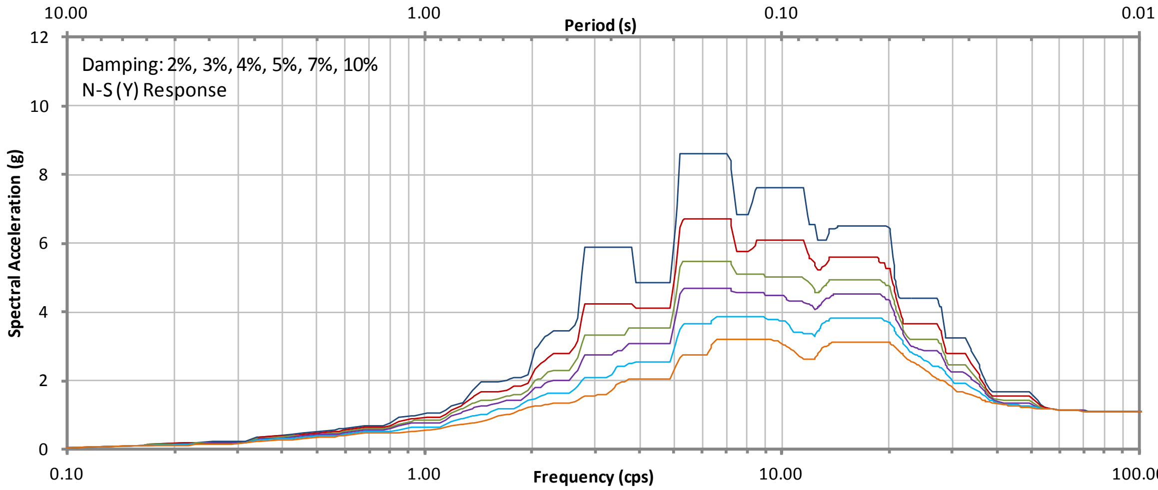


Figure D-36 ISRS for RCB General (SSW137) at El. 137’-0”, Multiple Damping, Envelope of All Cases





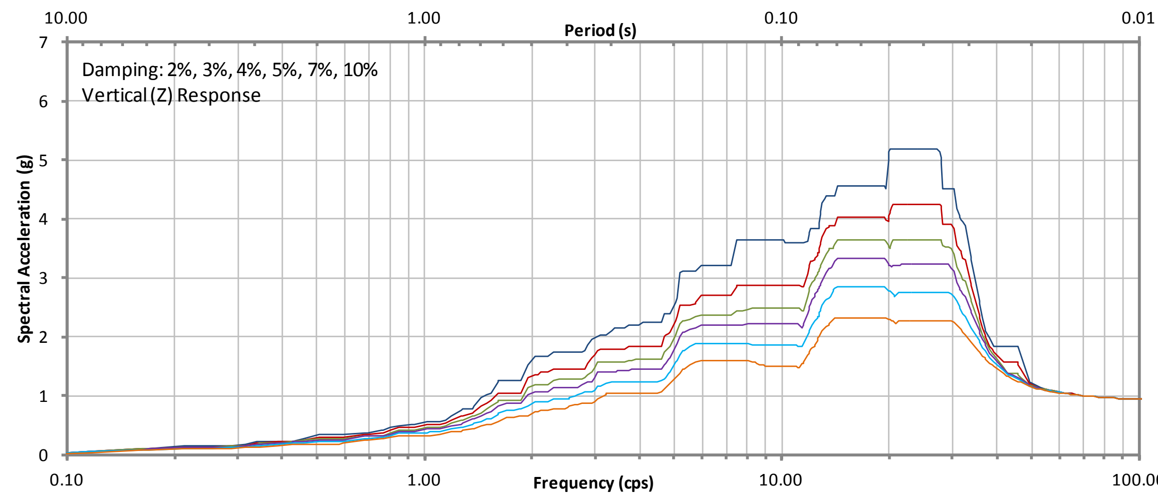


Figure D-37 ISRS for RCB General (SSW156) at El. 156'-0", Multiple Damping, Envelope of All Cases

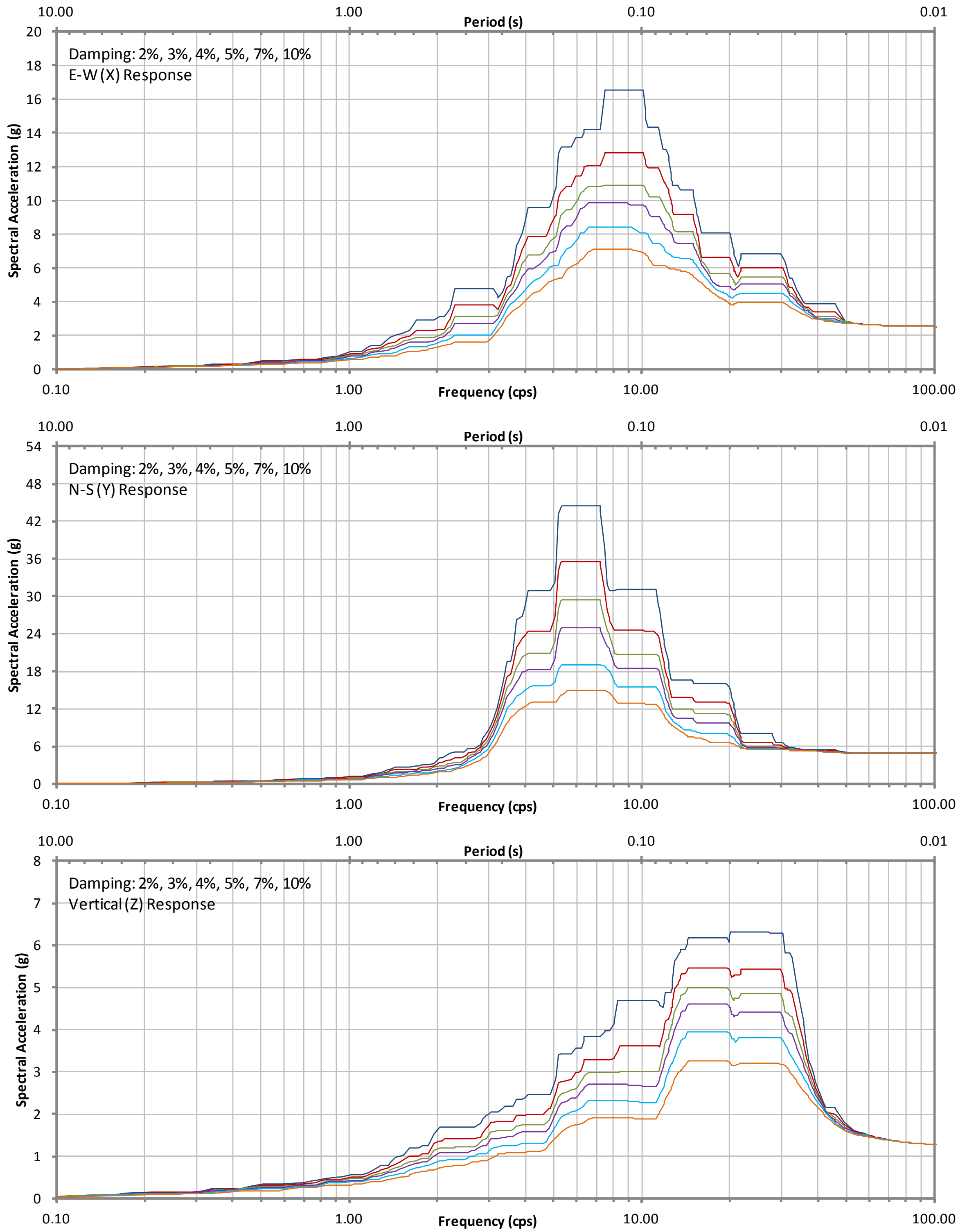


Figure D-38 ISRS for RCB General (SSW191) at El. 191’-0”, Multiple Damping, Envelope of All Cases

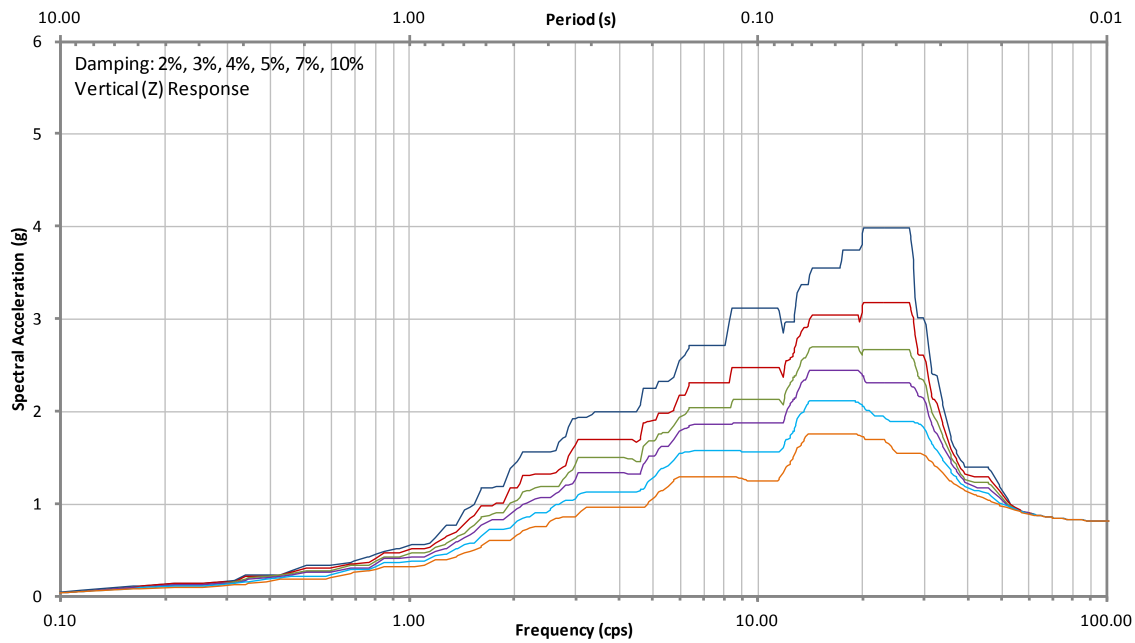


Figure D-39 ISRS for RCB Slab (SL156) at El. 156'-0", Multiple Damping, Envelope of All Cases

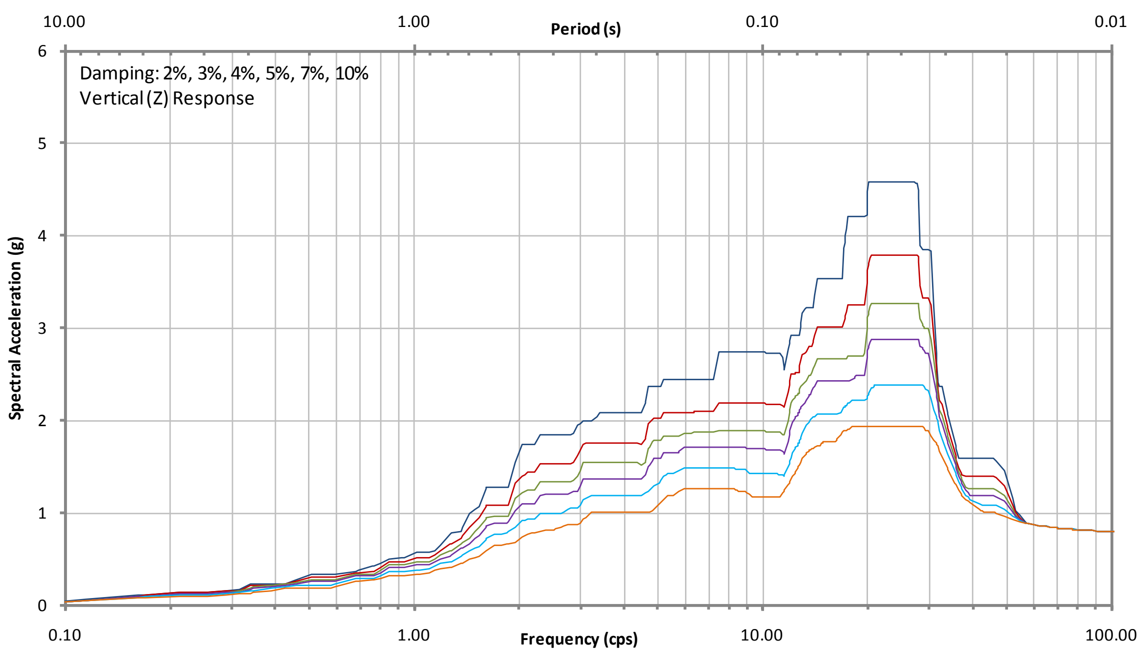


Figure D-40 ISRS for RCB Slab (SL125) at El. 125'-0", Multiple Damping, Envelope of All Cases

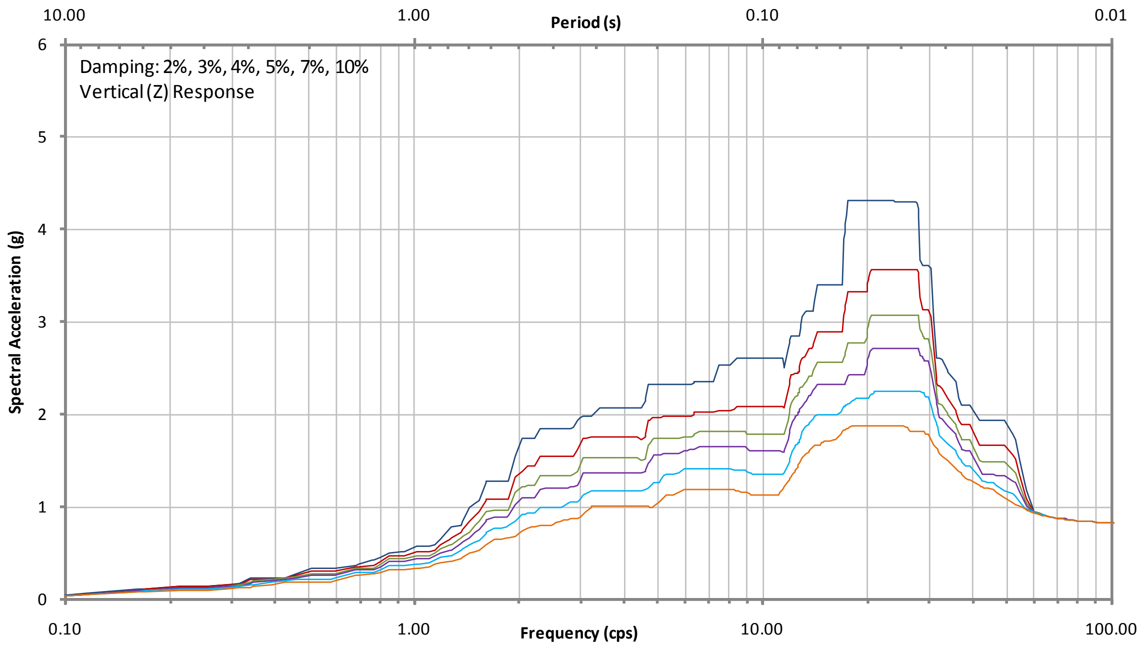


Figure D-41 ISRS for RCB Slab (SL114) at El. 114'-0", Multiple Damping, Envelope of All Cases

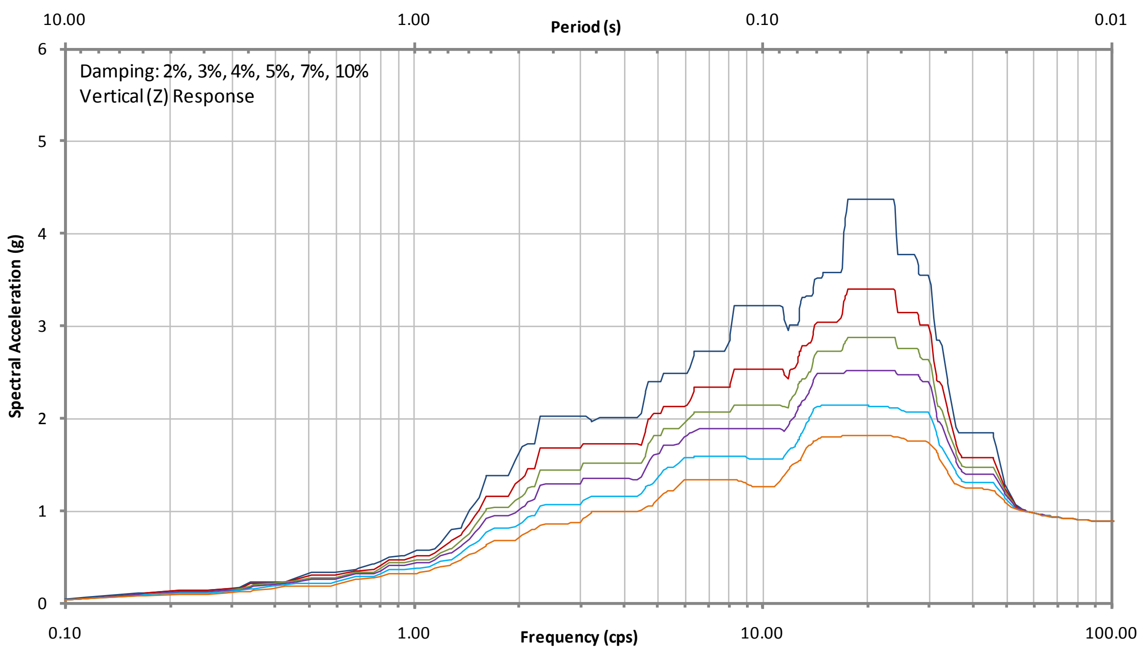


Figure D-42 ISRS for RCB Slab (SL111) at El. 111'-0", Multiple Damping, Envelope of All Cases

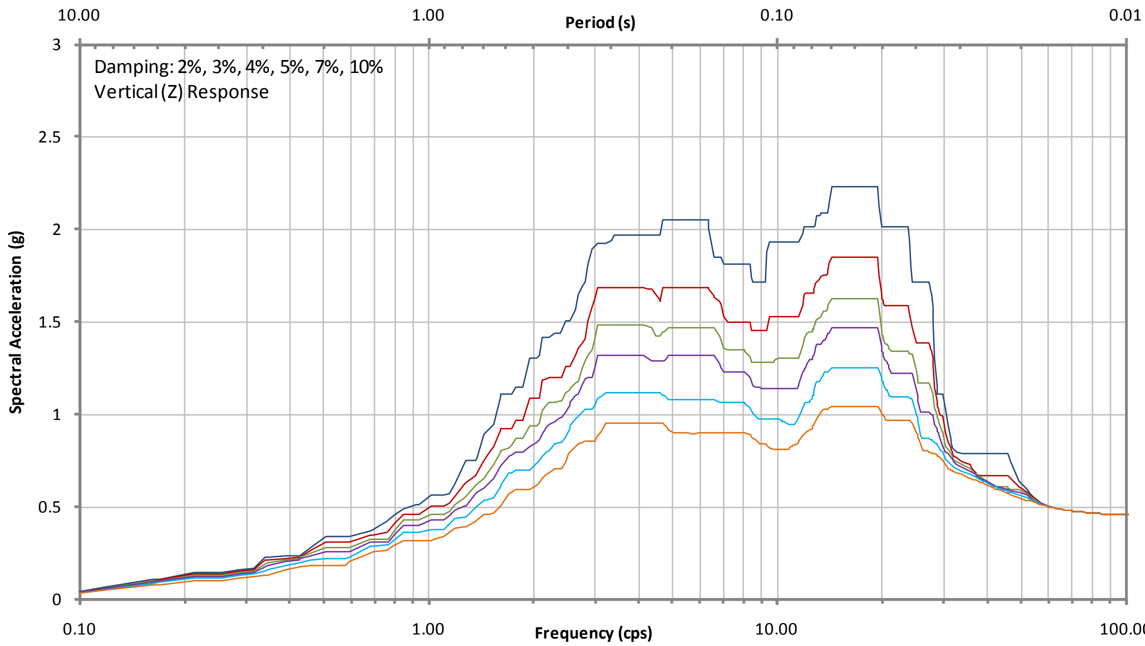


Figure D-43 ISRS for RCB Slab (SL107) at El. 107'-0", Multiple Damping, Envelope of All Cases

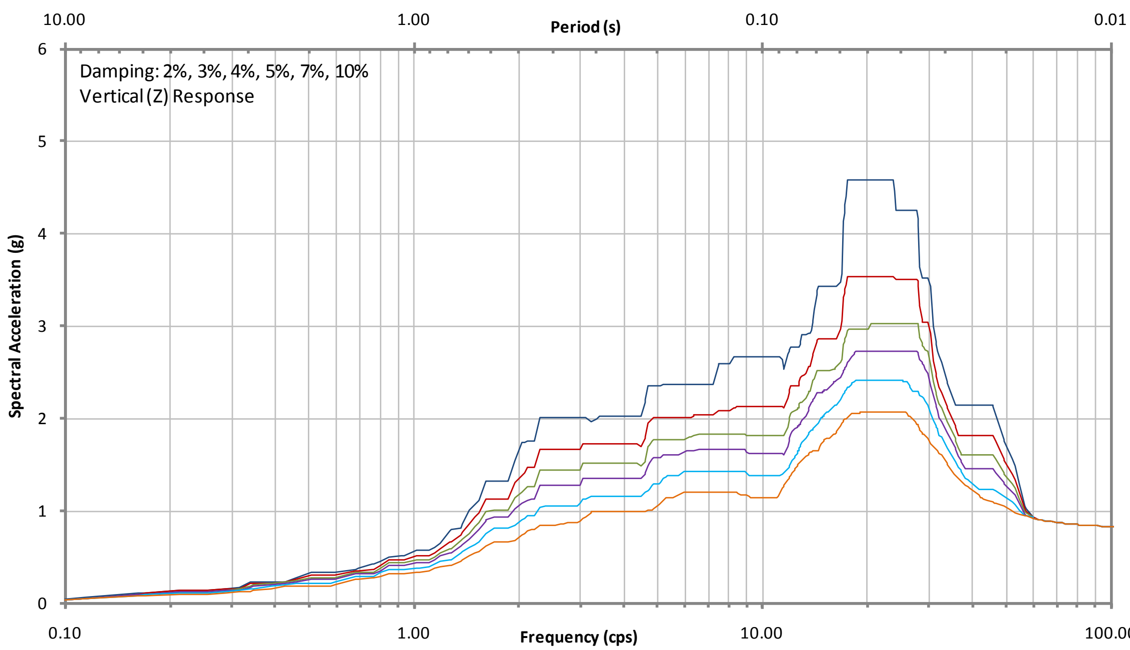


Figure D-44 ISRS for RCB Slab (SL100) at El. 100'-0", Multiple Damping, Envelope of All Cases

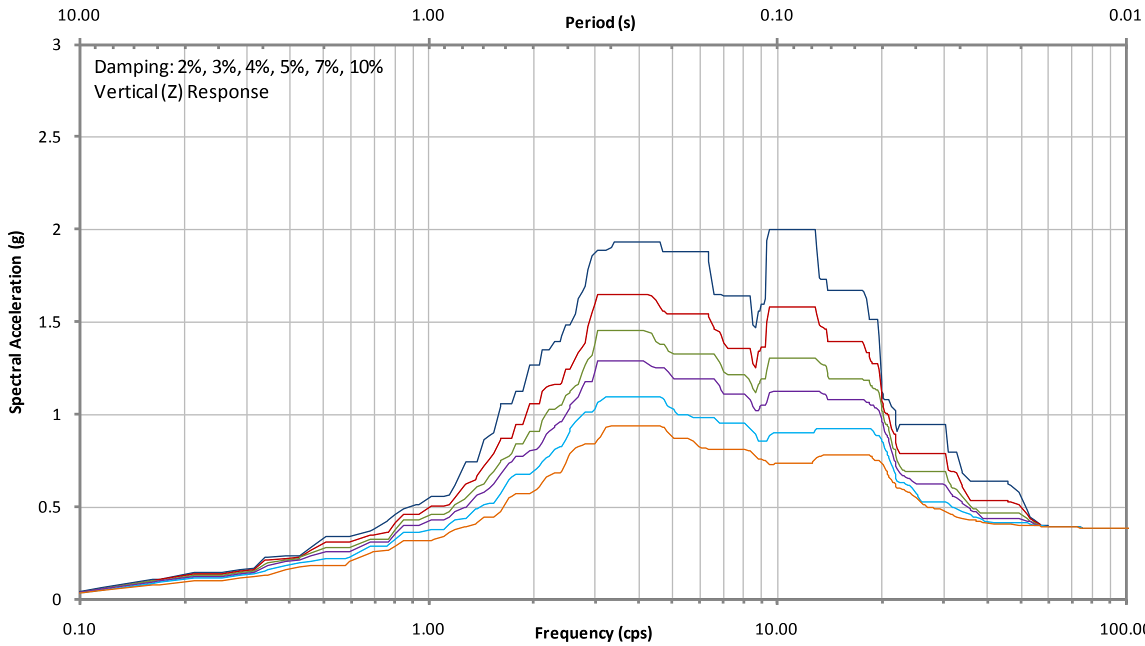


Figure D-45 ISRS for RCB Slab (SL66) at El. 66'-0", Multiple Damping, Envelope of All Cases

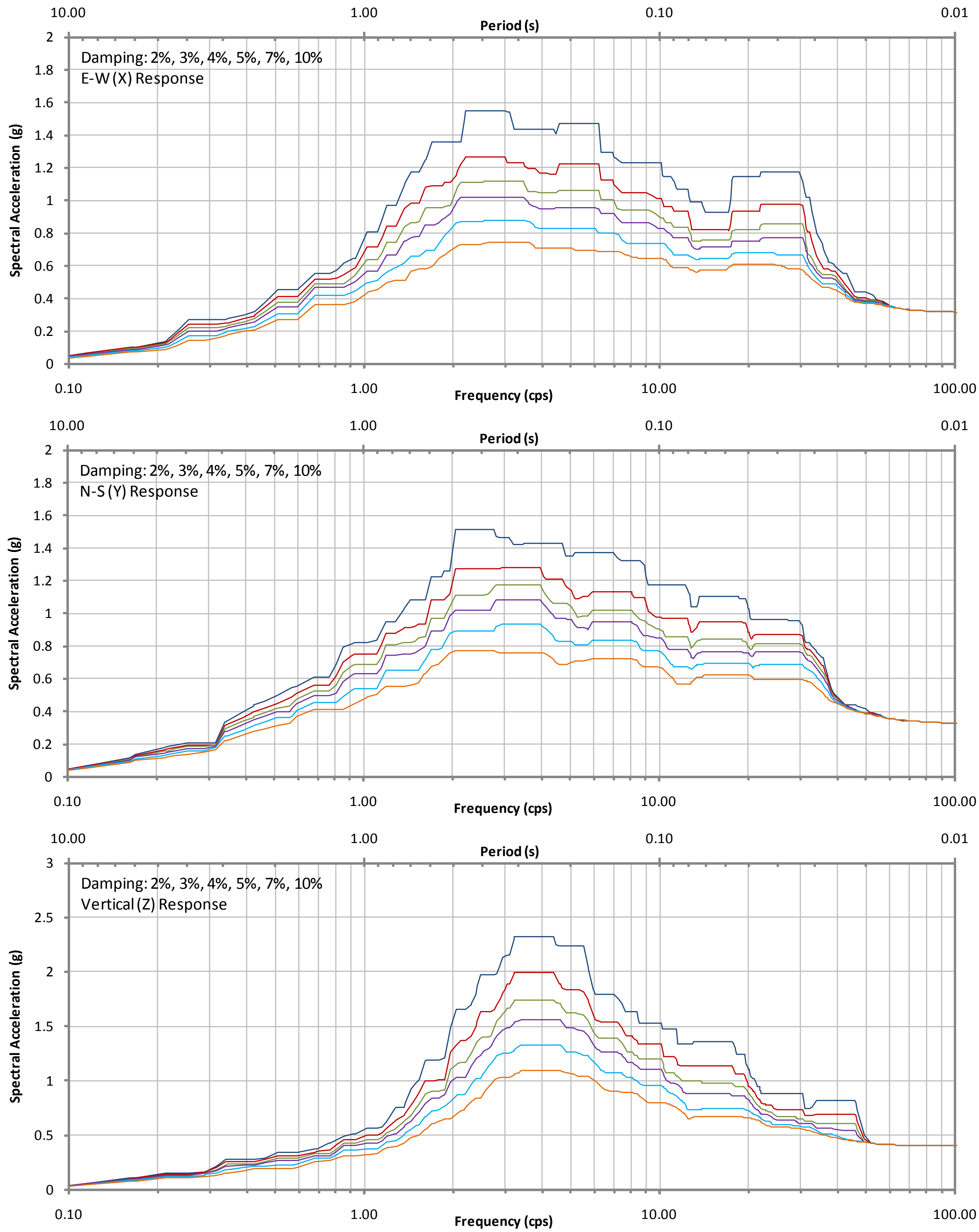


Figure D-46 ISRS for AB Shear Walls (1-F) at El. 55’-0”, Multiple Damping, Envelope of All Cases

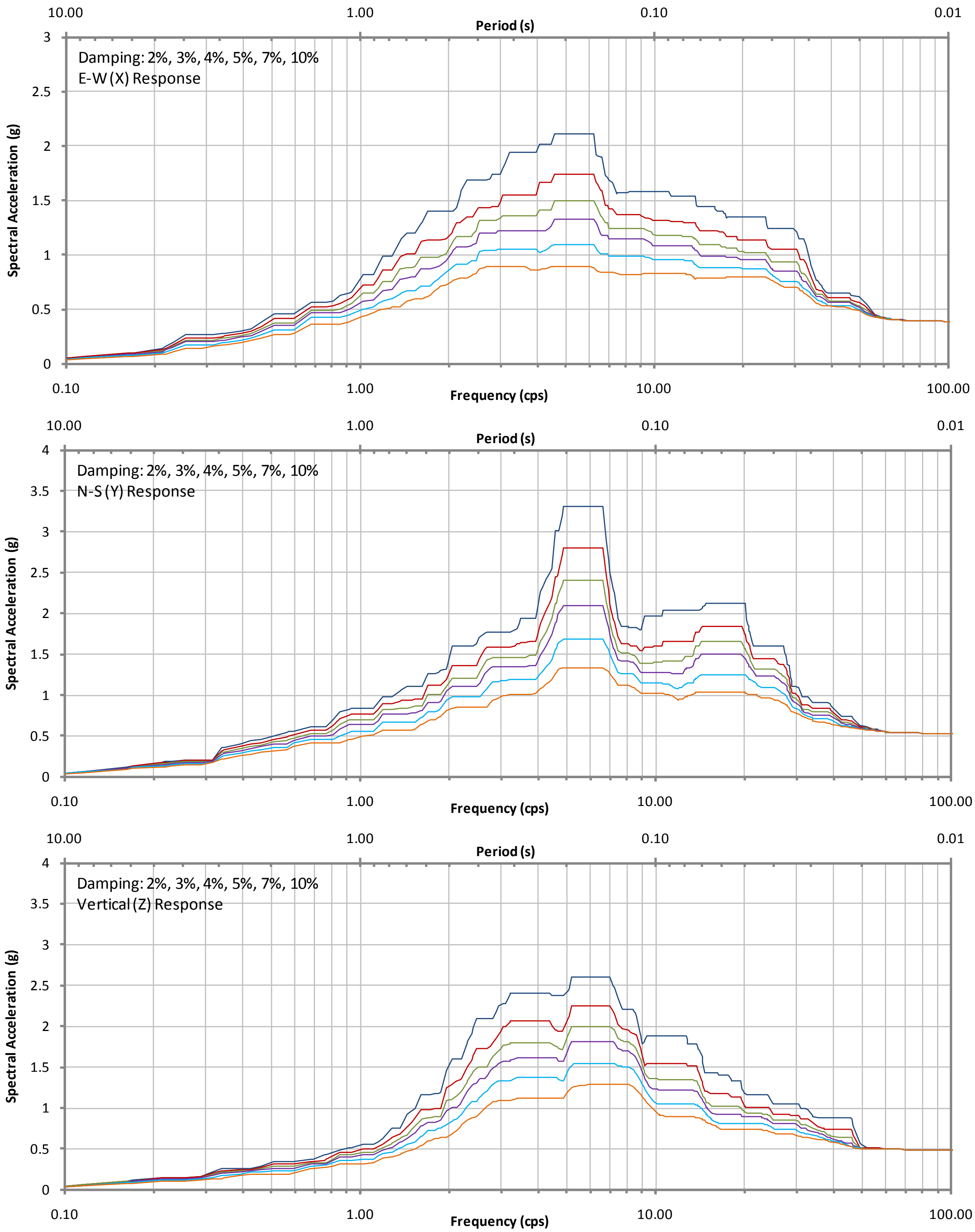
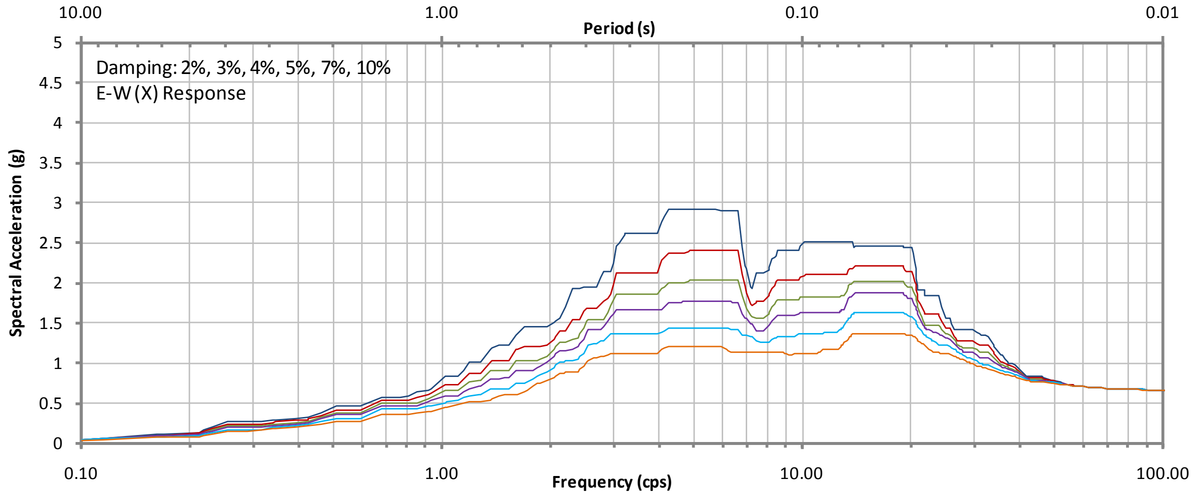
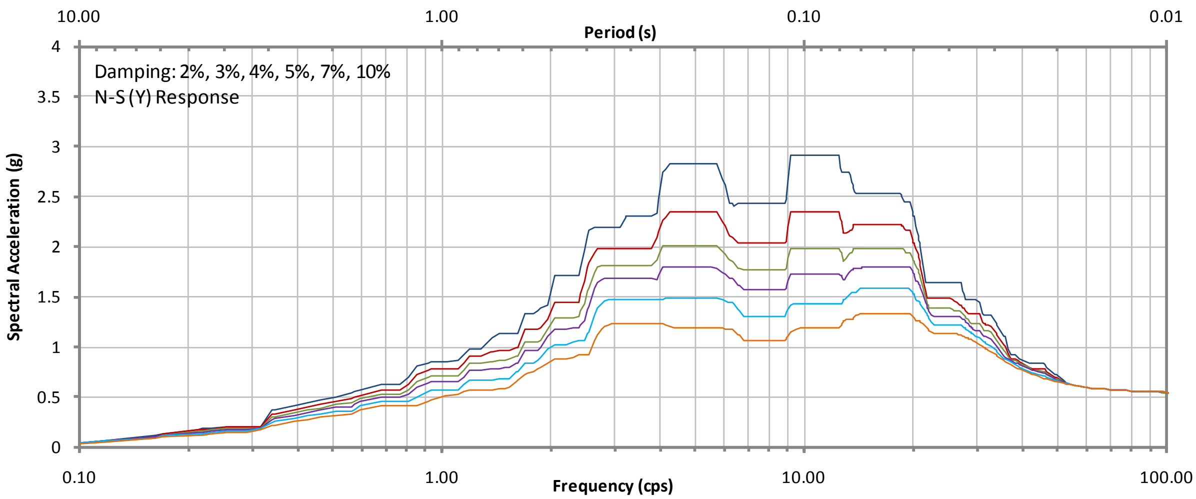


Figure D-47 ISRS for AB Shear Walls (1-M) at El. 68'-0", Multiple Damping, Envelope of All Cases





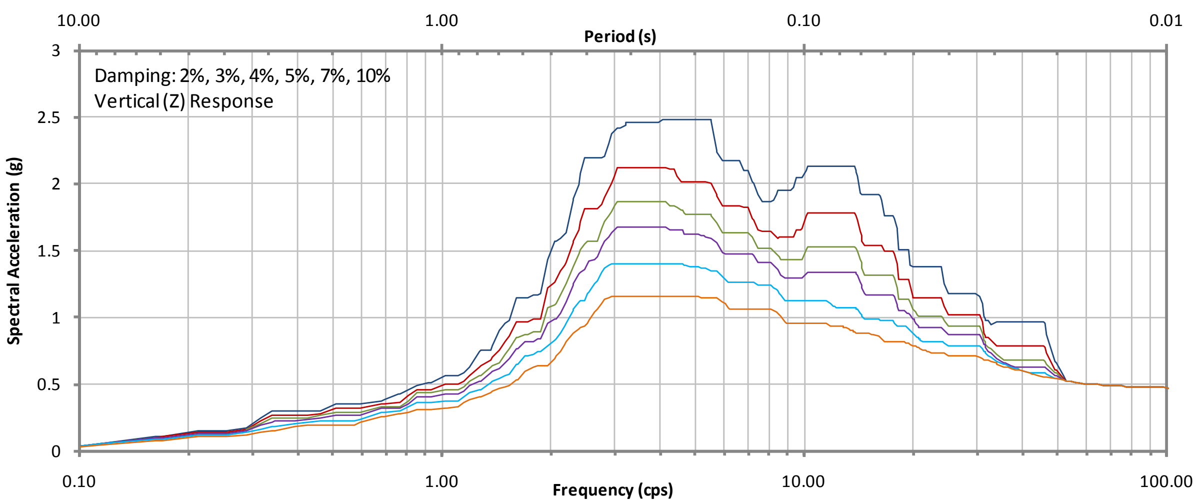


Figure D-48 ISRS for AB Shear Walls (2-F) at El. 78'-0", Multiple Damping, Envelope of All Cases

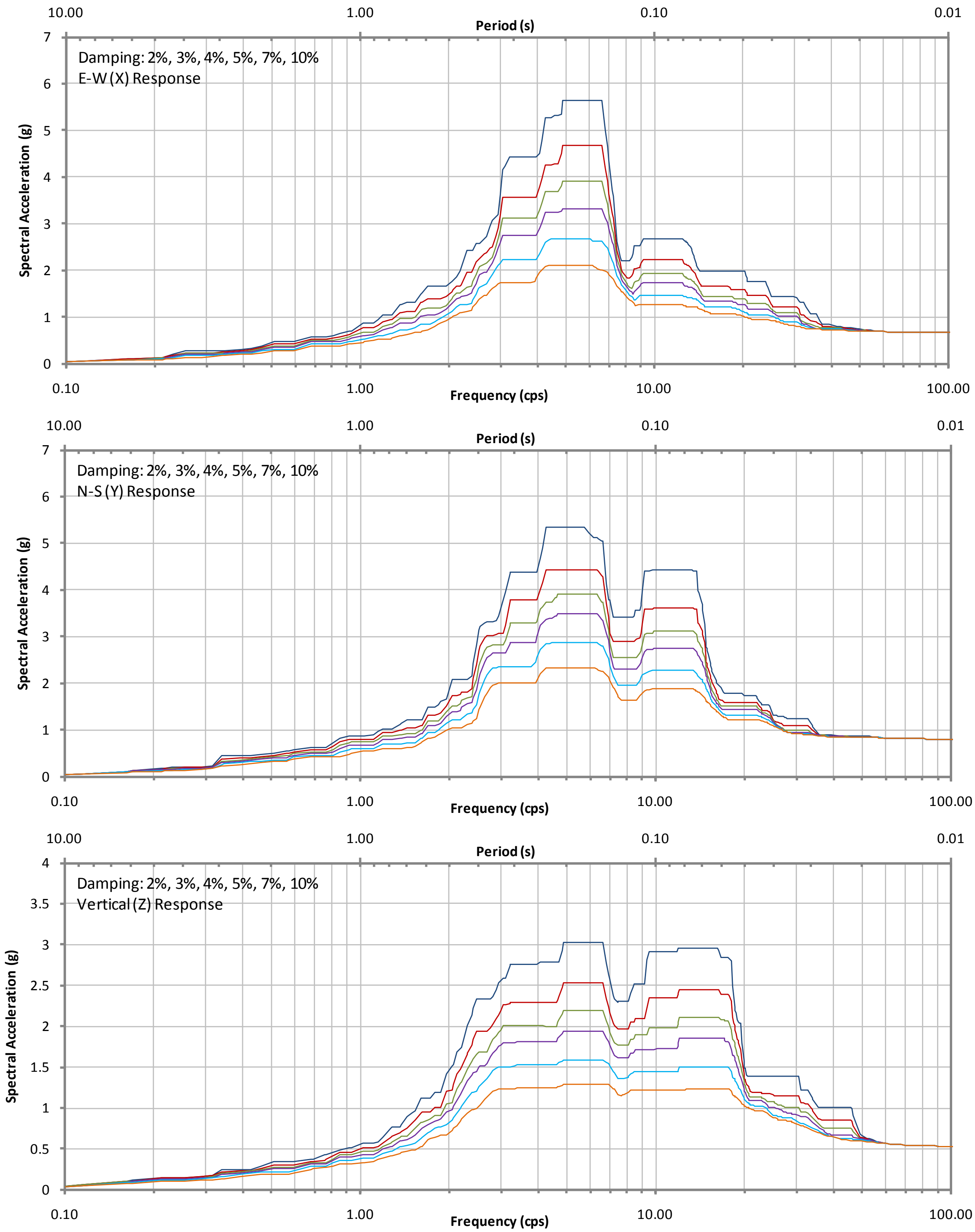


Figure D-49 ISRS for AB Shear Walls (3-F) at El. 100'-0", Multiple Damping, Envelope of All Cases

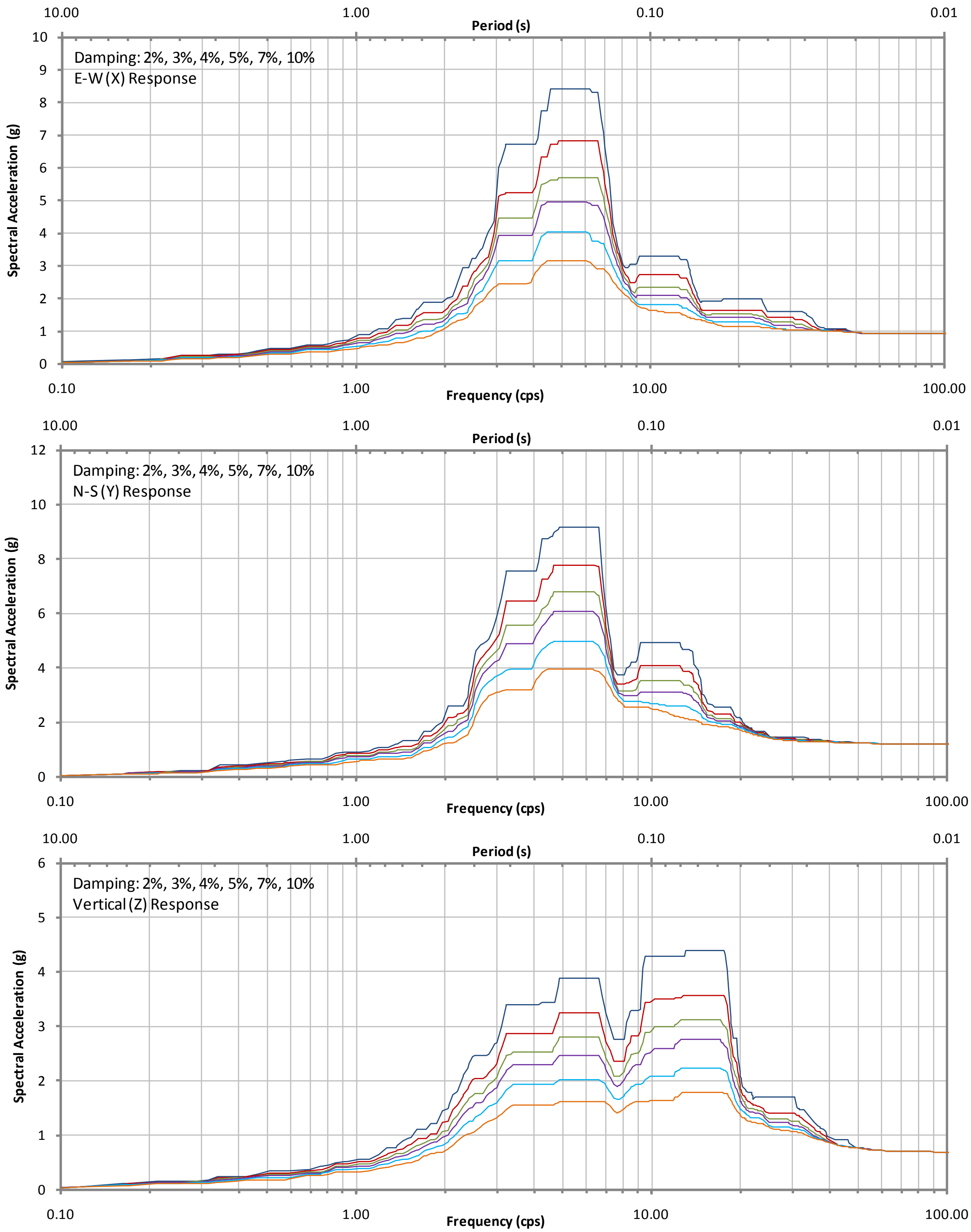


Figure D-50 ISRS for AB Shear Walls (4-F) at El. 120'-0", Multiple Damping, Envelope of All Cases

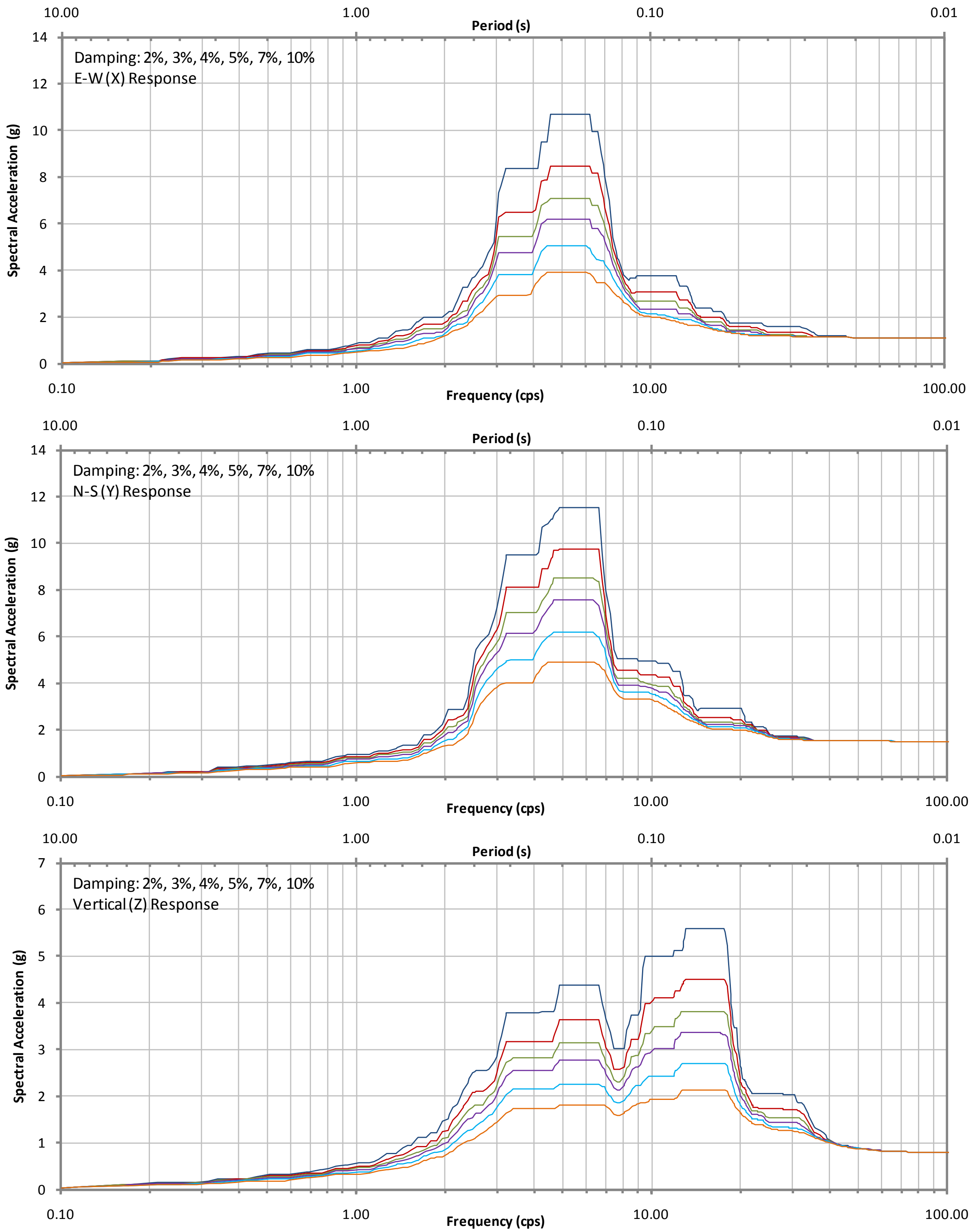


Figure D-51 ISRS for AB Shear Walls (5-F) at El. 137'-6", Multiple Damping, Envelope of All Cases

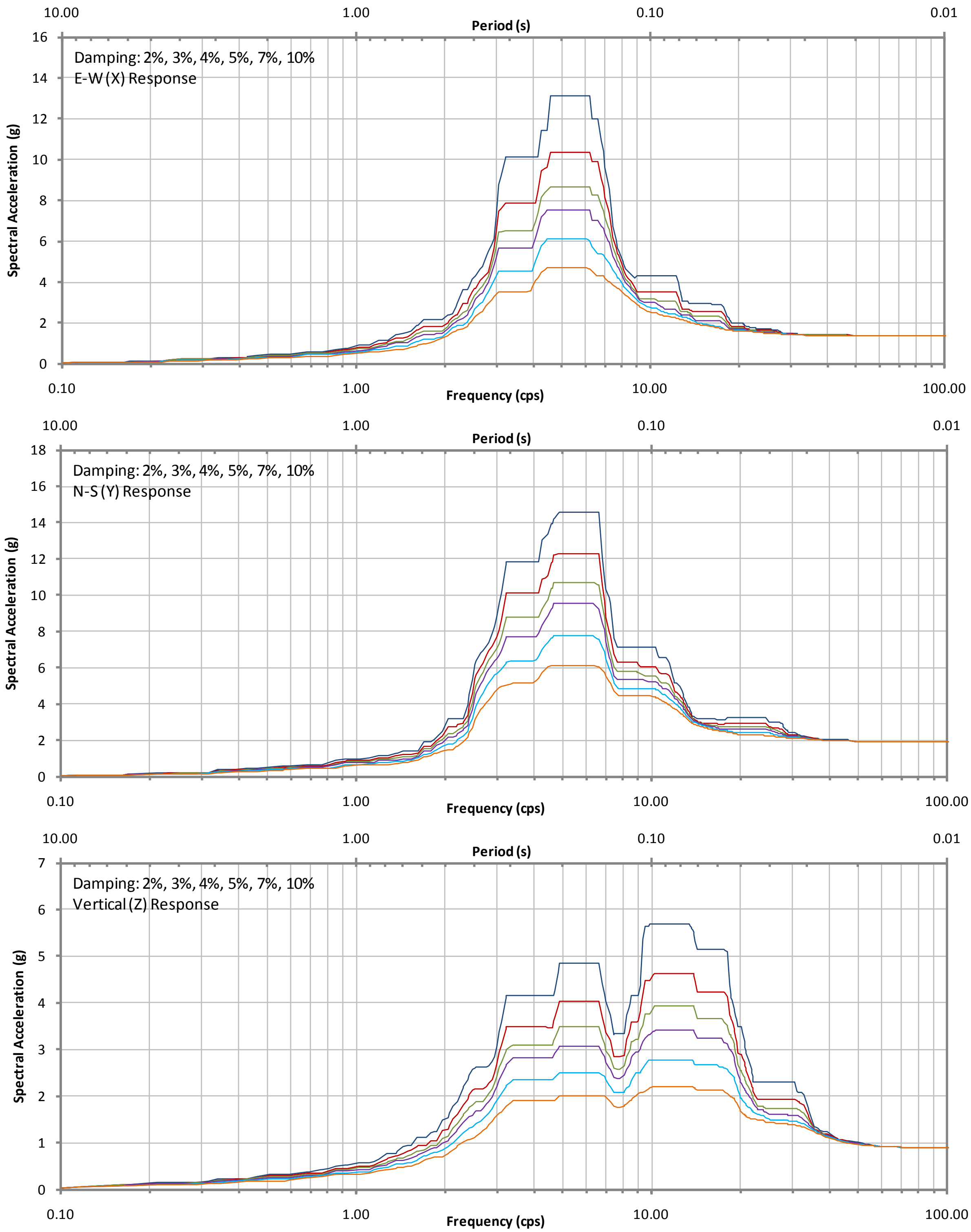


Figure D-52 ISRS for AB Shear Walls (6-F) at El. 156'-0", Multiple Damping, Envelope of All Cases

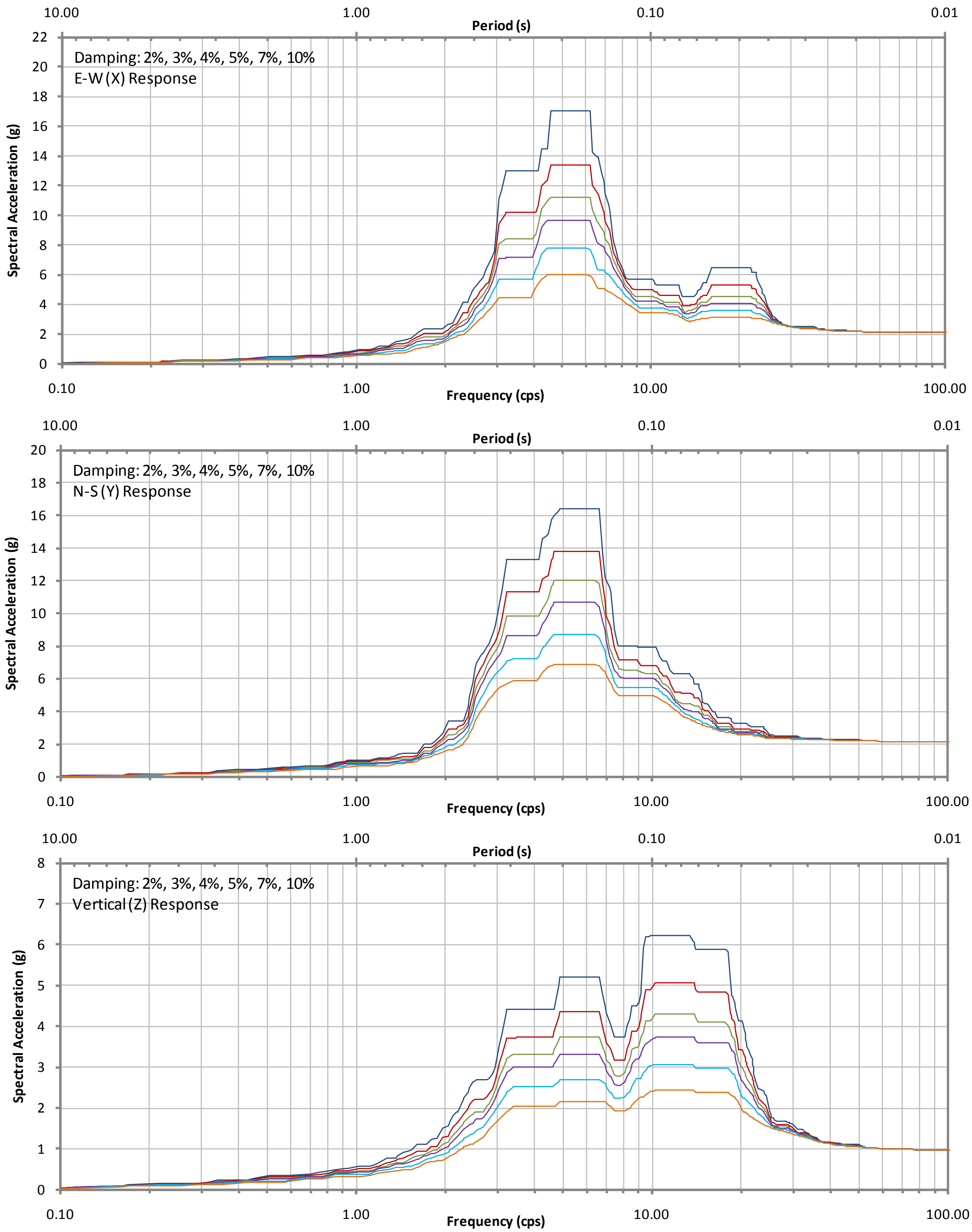


Figure D-53 ISRS for AB Shear Walls (7-F) at El. 174'-0", Multiple Damping, Envelope of All Cases

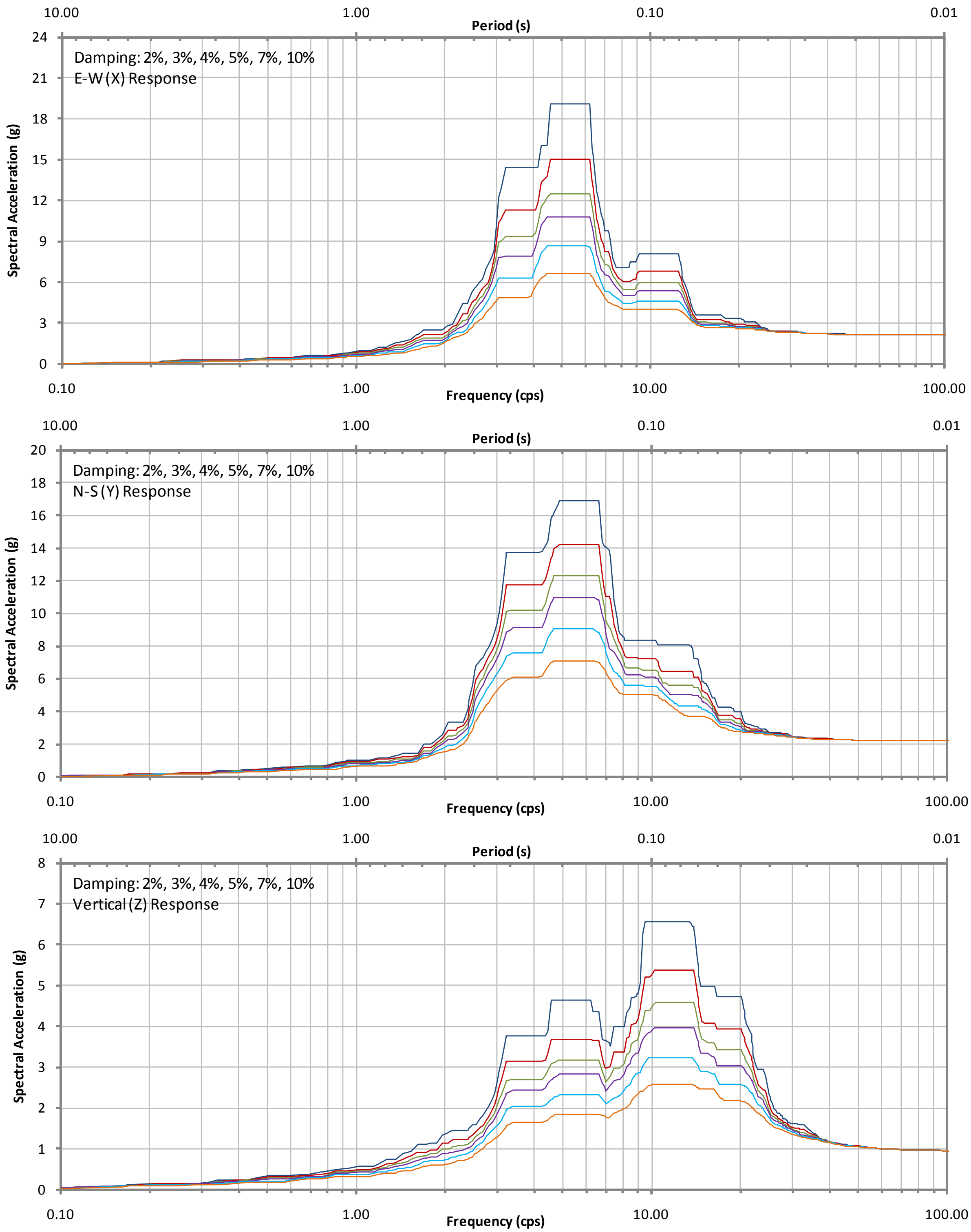


Figure D-54 ISRS for AB Shear Walls (8-1) at El. 195'-0", Multiple Damping, Envelope of All Cases

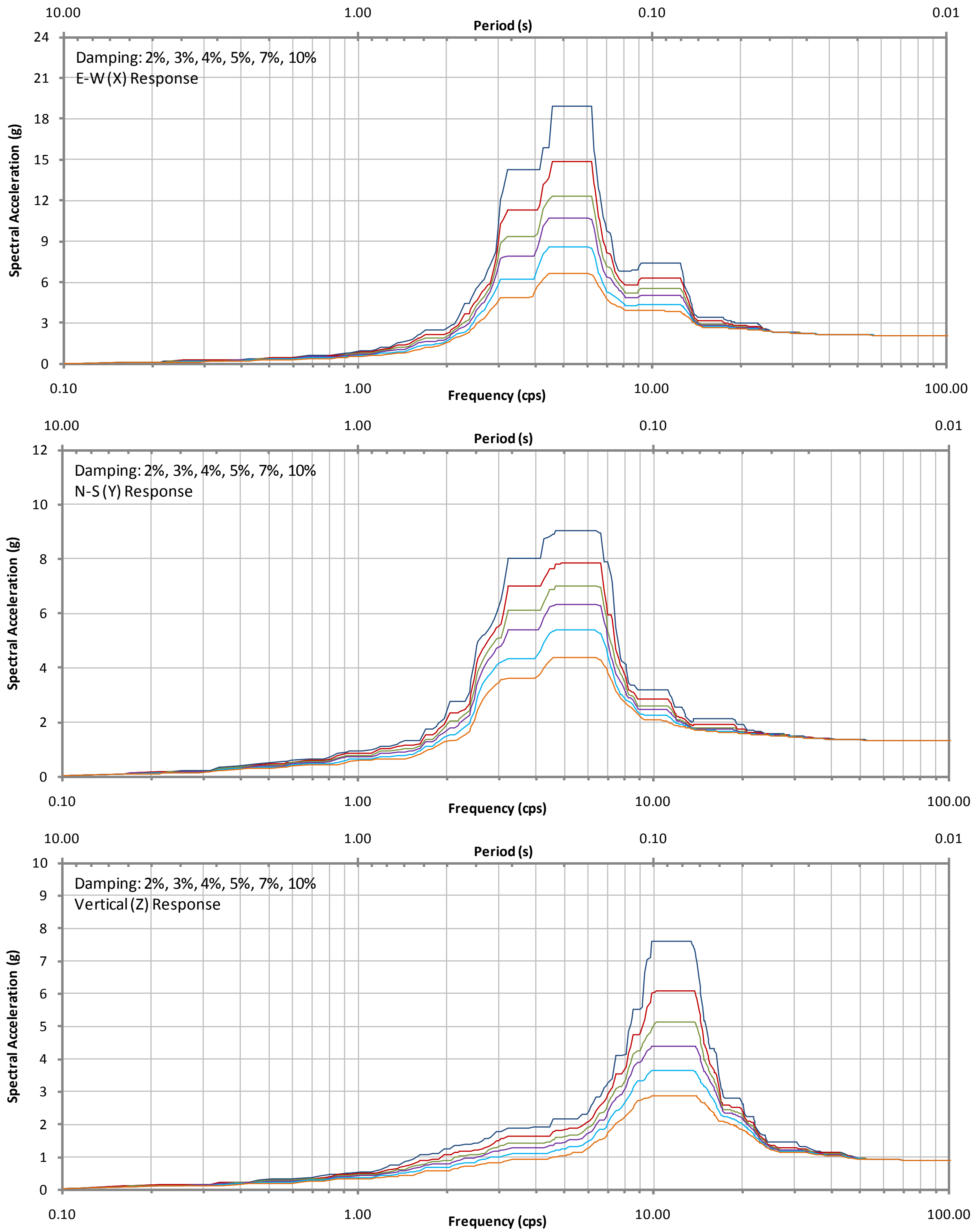


Figure D-55 ISRS for AB Shear Walls (8-M) at El. 195’-0”, Multiple Damping, Envelope of All Cases

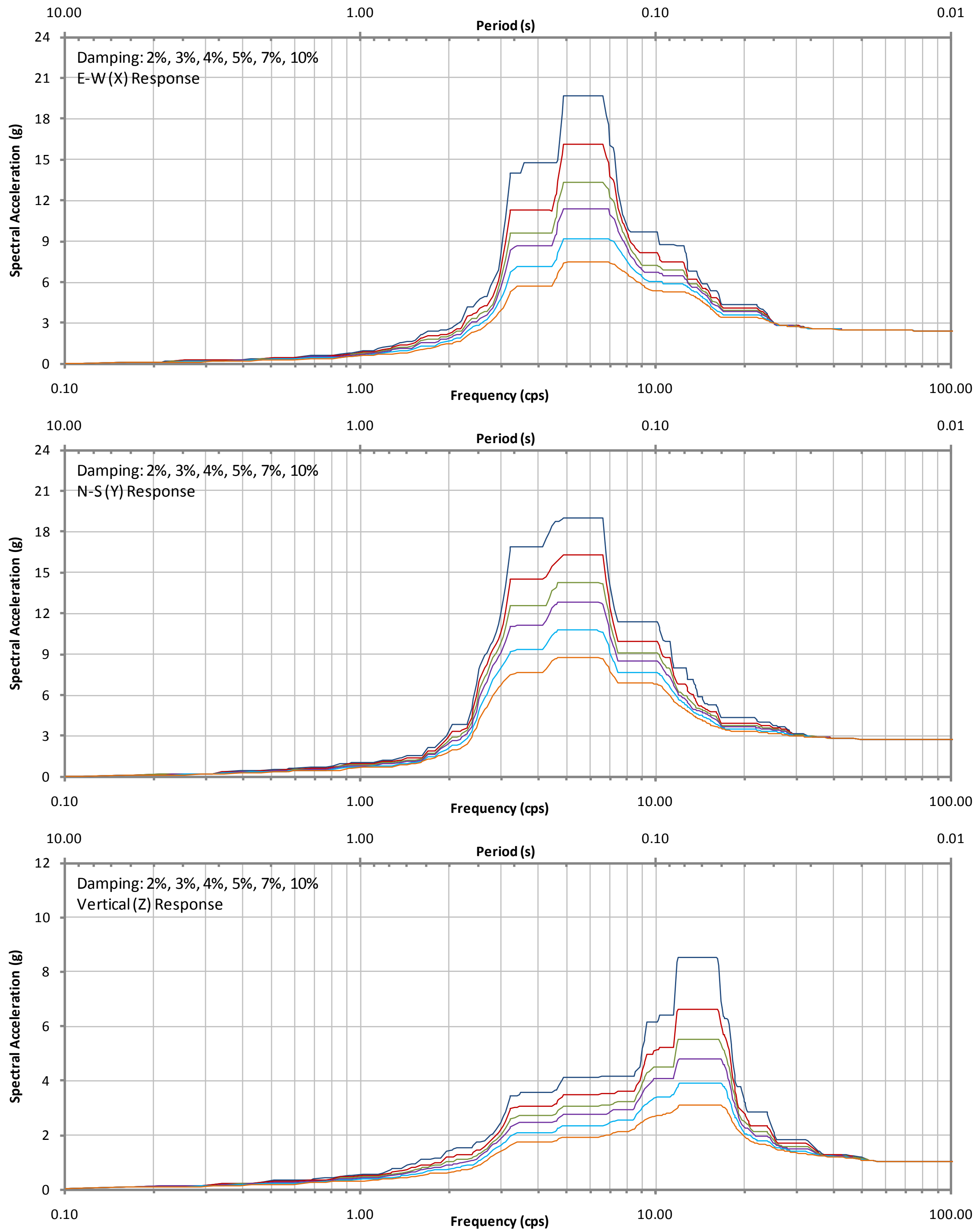


Figure D-56 ISRS for AB Shear Walls (8-2) at El. 216'-9", Multiple Damping, Envelope of All Cases

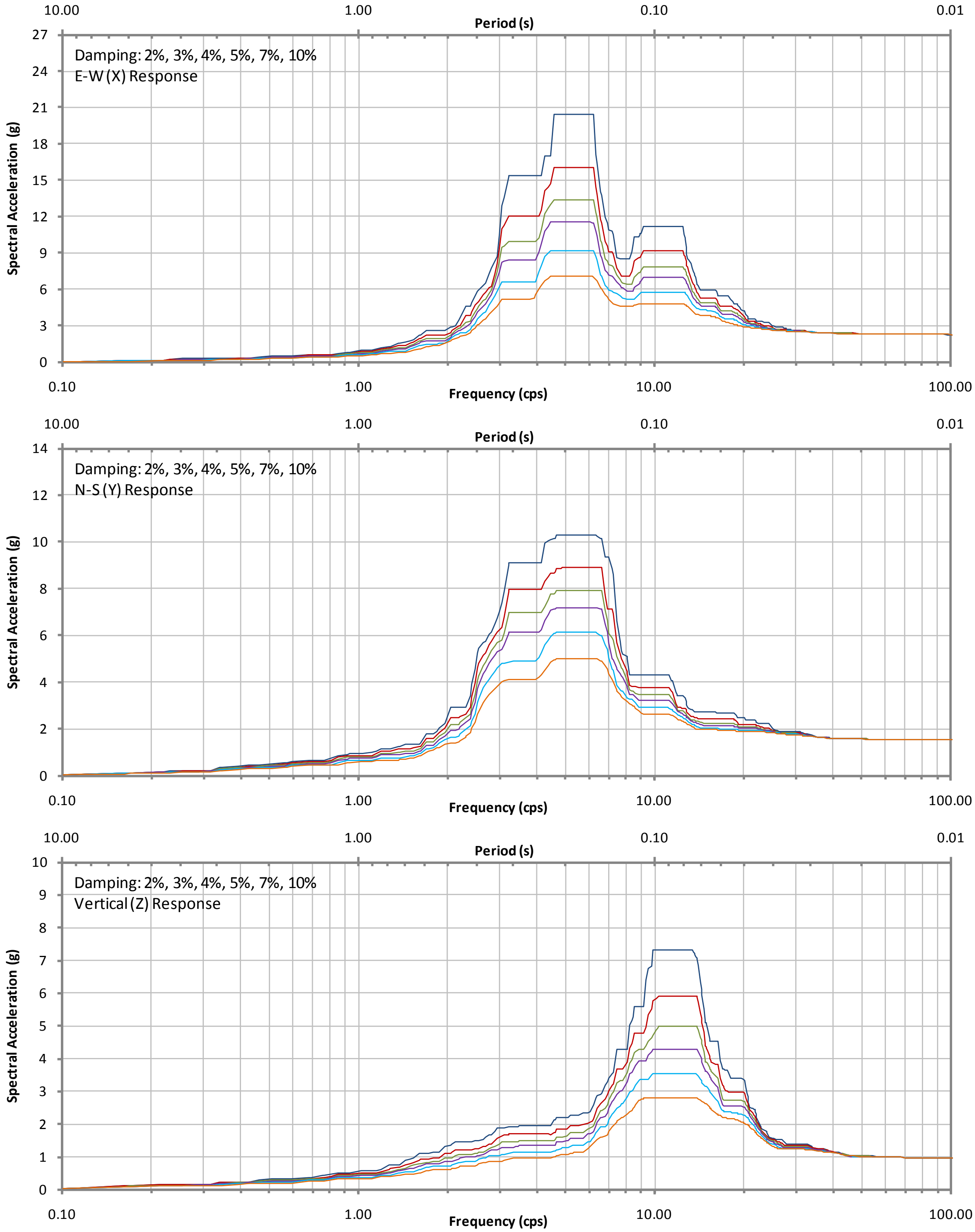


Figure D-57 ISRS for AB Shear Walls (8-3) at El. 213'-0", Multiple Damping, Envelope of All Cases

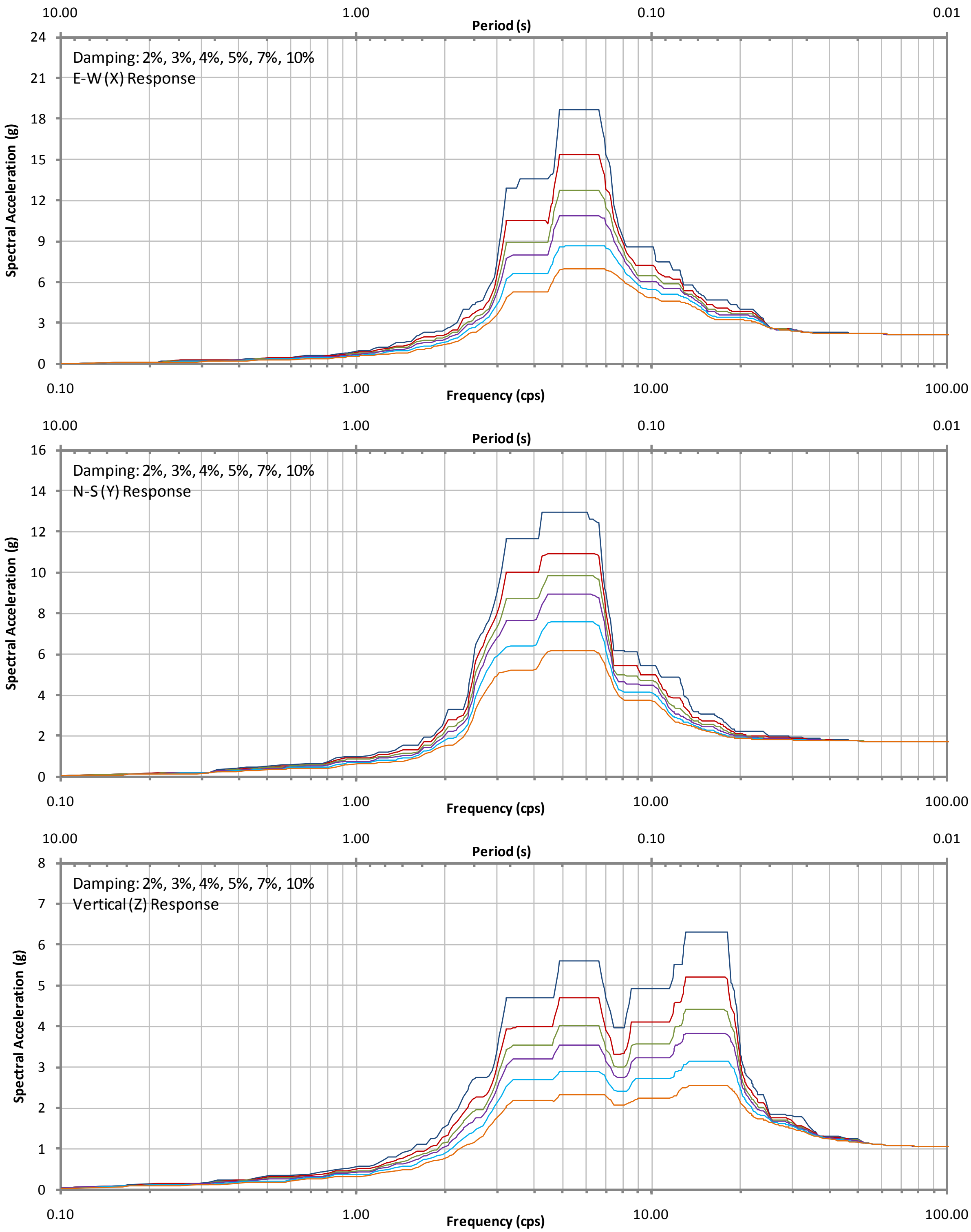


Figure D-58 ISRS for AB Shear Walls (8-4) at El. 213'-6", Multiple Damping, Envelope of All Cases

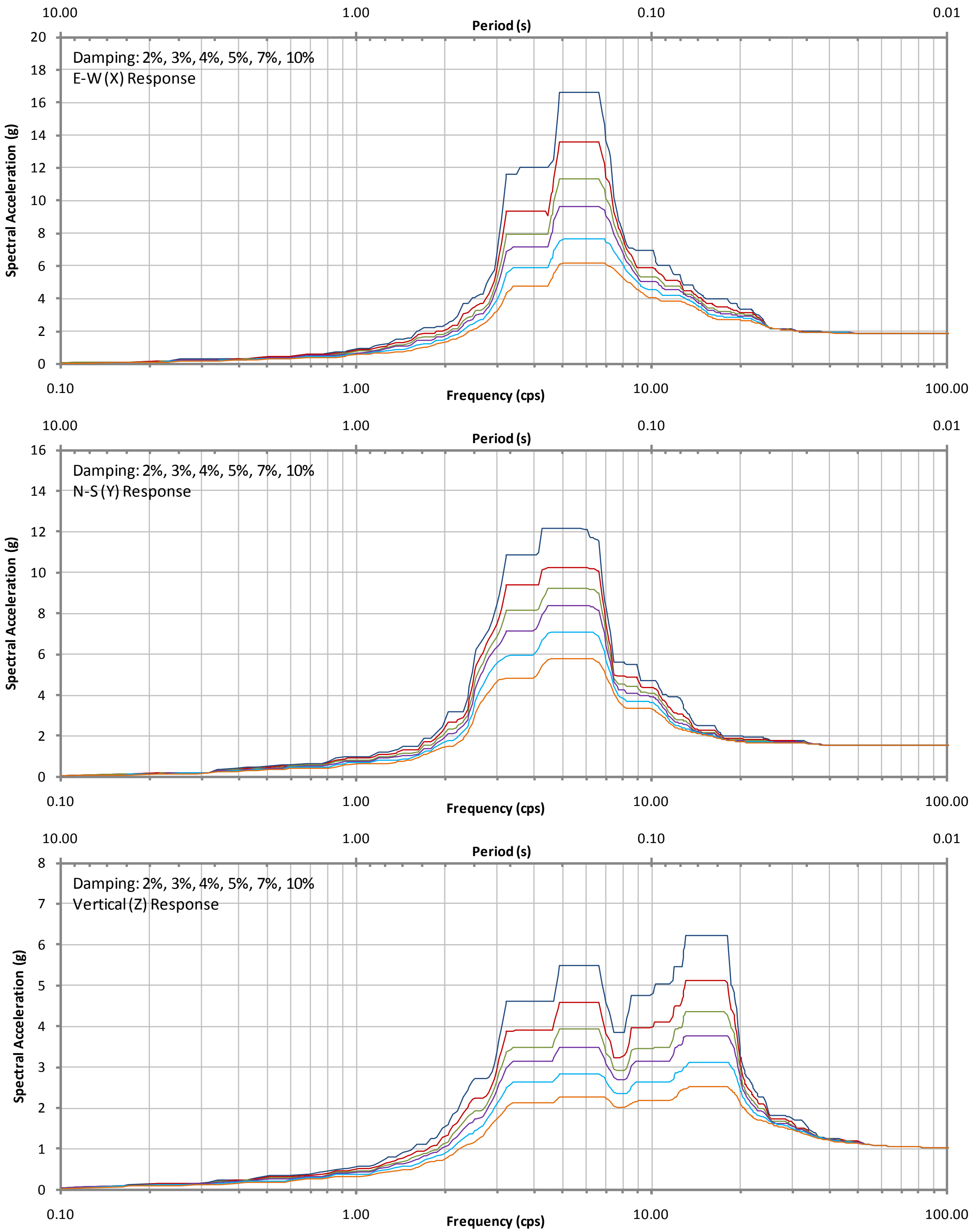


Figure D-59 ISRS for AB Shear Walls (8-5) at El. 195'-0", Multiple Damping, Envelope of All Cases

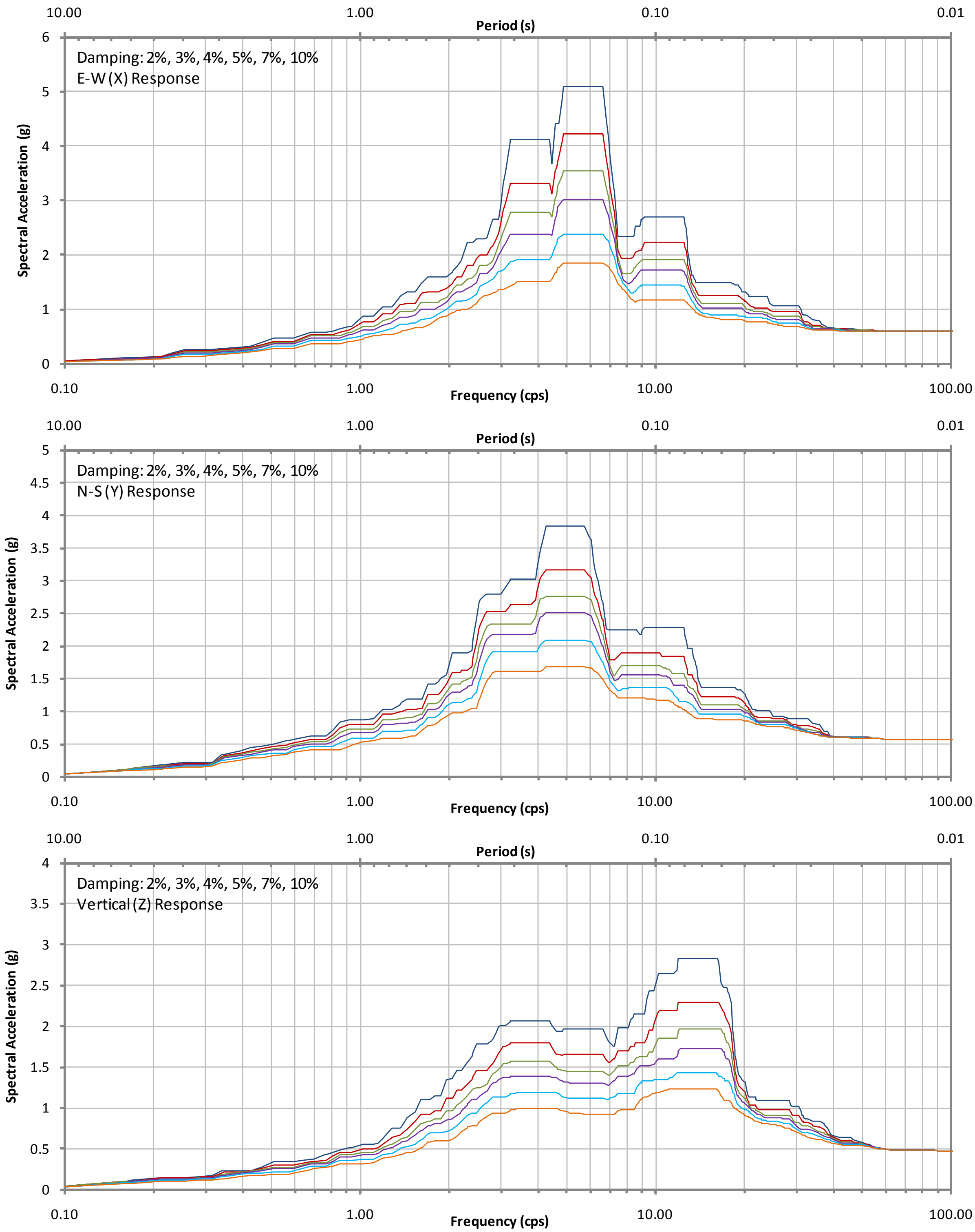


Figure D-60 ISRS for AB Shear Walls (3-H) at El. 100'-0", Multiple Damping, Envelope of All Cases

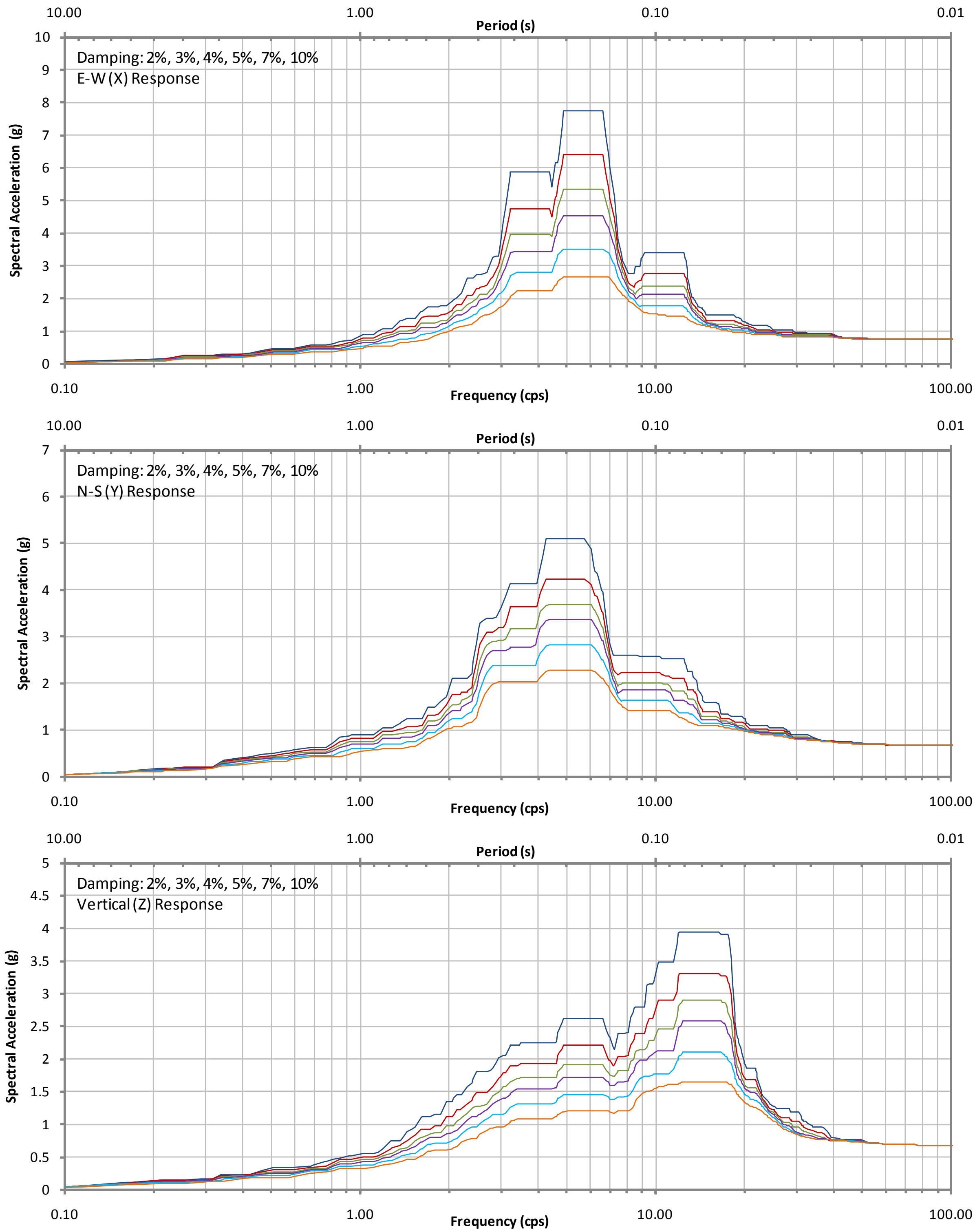


Figure D-61 ISRS for AB Shear Walls (3-M) at El. 114'-0", Multiple Damping, Envelope of All Cases

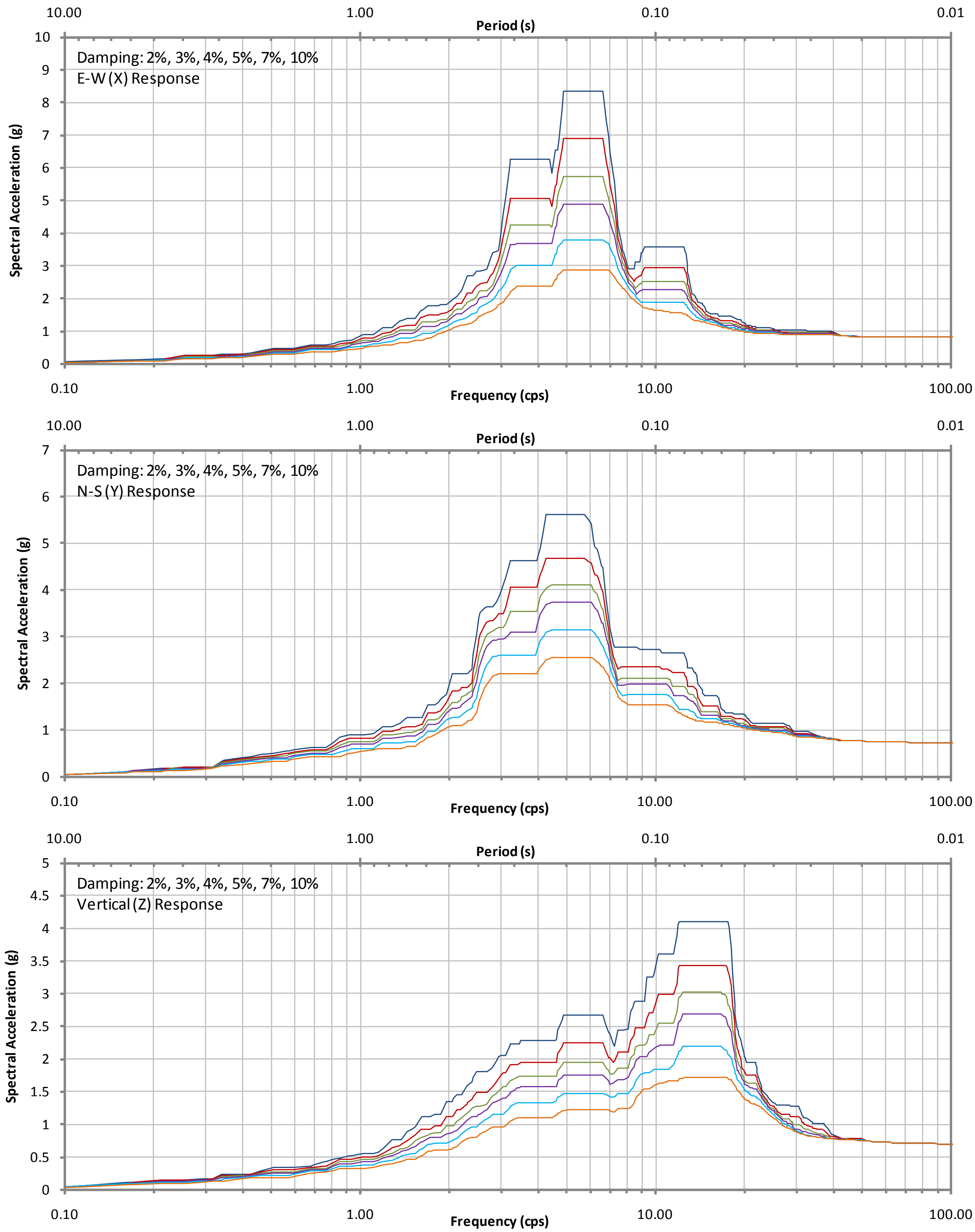


Figure D-62 ISRS for AB Shear Walls (4-H) at El. 120’-0”, Multiple Damping, Envelope of All Cases

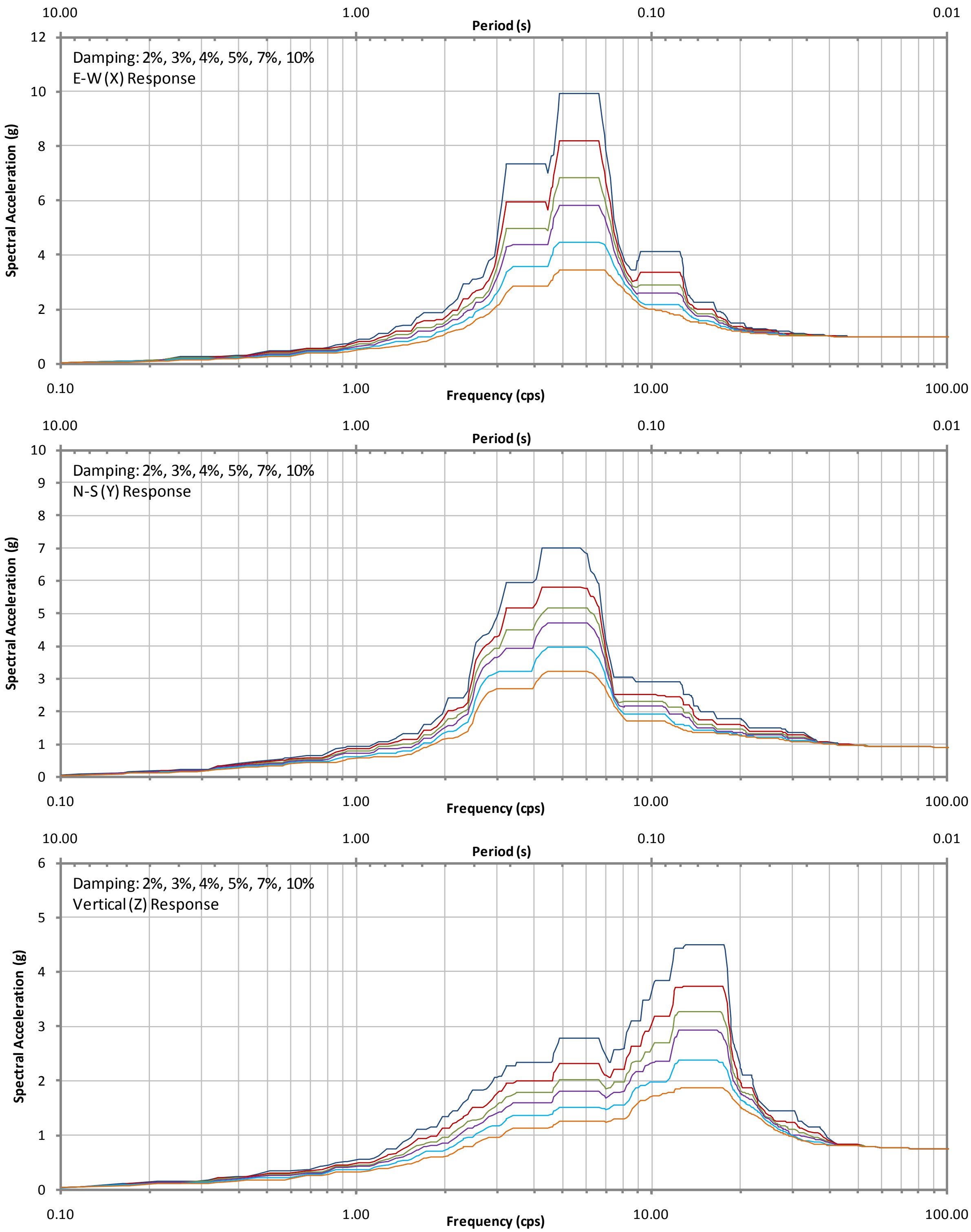


Figure D-63 ISRS for AB Shear Walls (5-H) at El. 137'-6", Multiple Damping, Envelope of All Cases

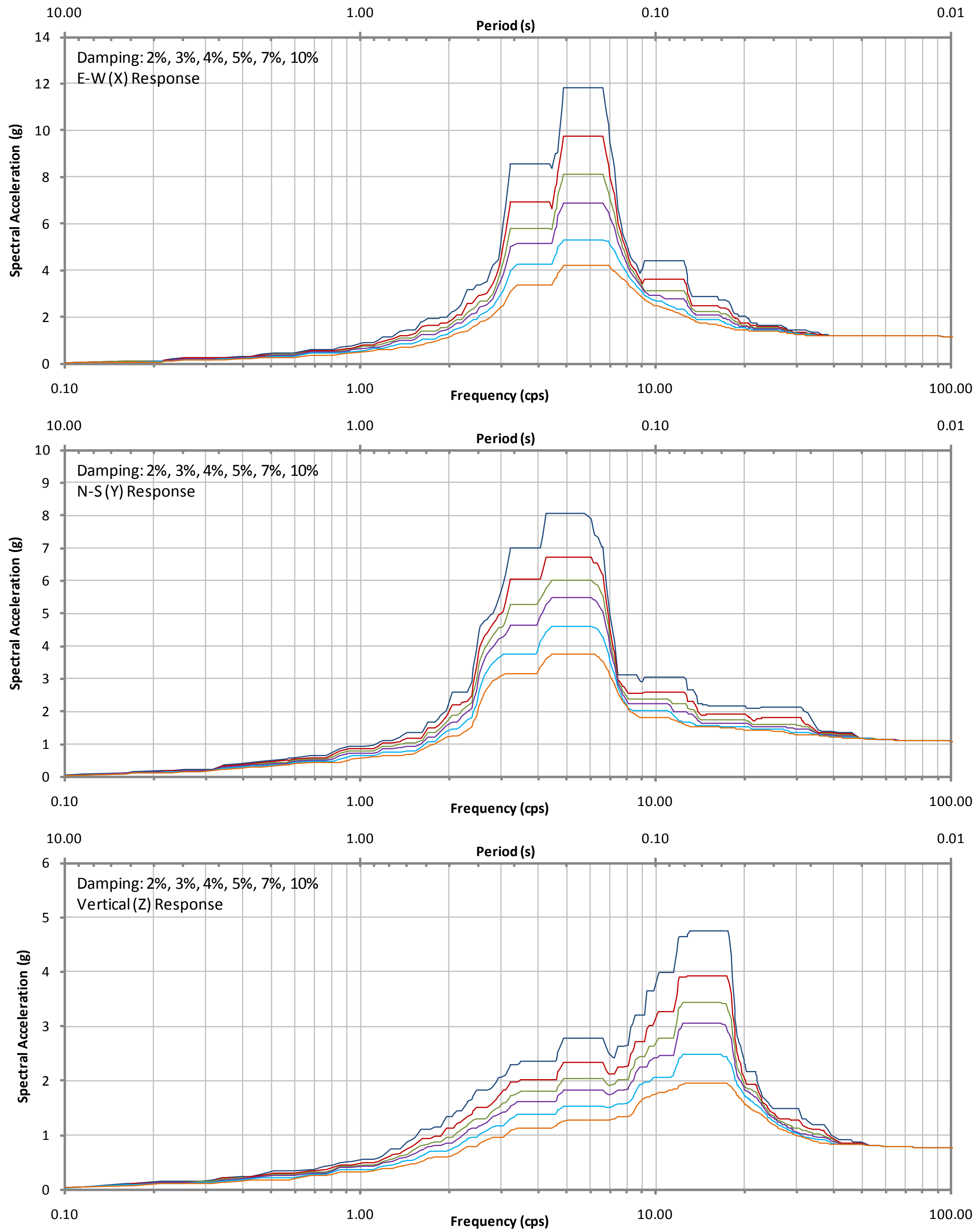


Figure D-64 ISRS for AB Shear Walls (6-H) at El. 156'-0", Multiple Damping, Envelope of All Cases

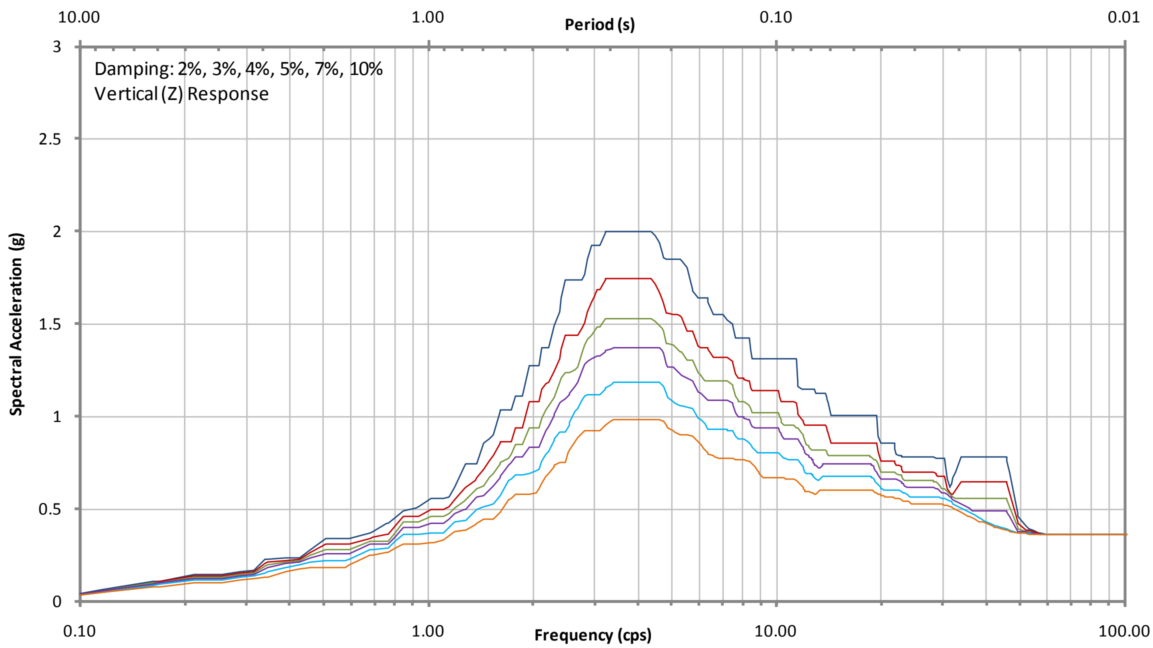


Figure D-65 ISRS for AB Floor Panels (1-F) at El. 55'-0", Multiple Damping, Envelope of All Cases

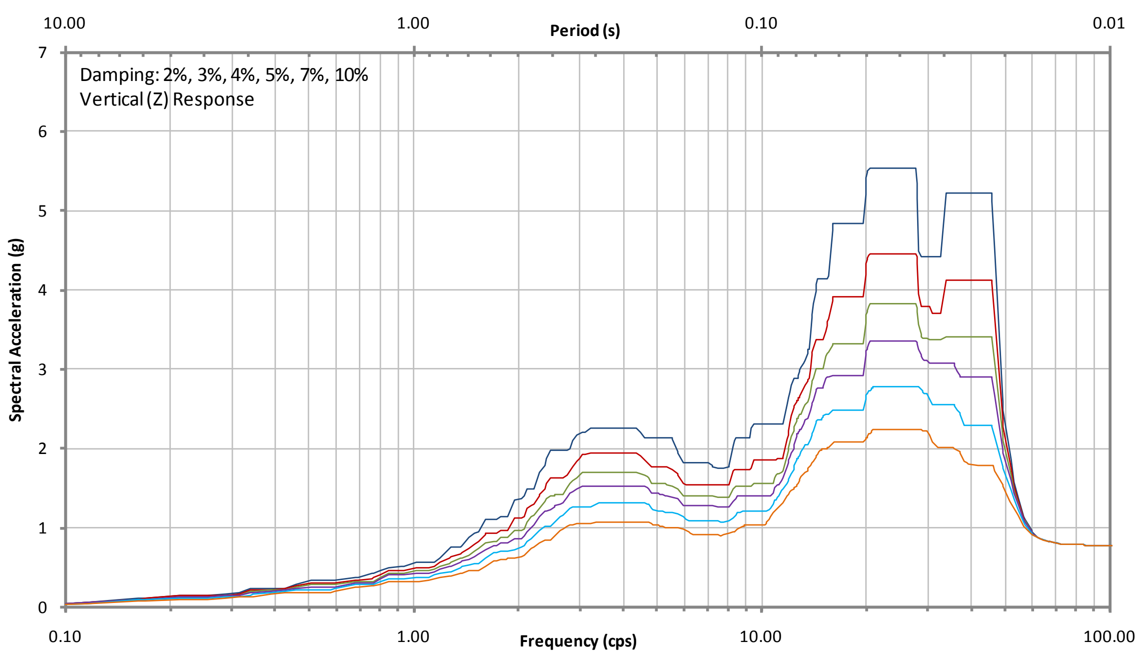


Figure D-66 ISRS for AB Floor Panels (1-M) at El. 68'-0", Multiple Damping, Envelope of All Cases

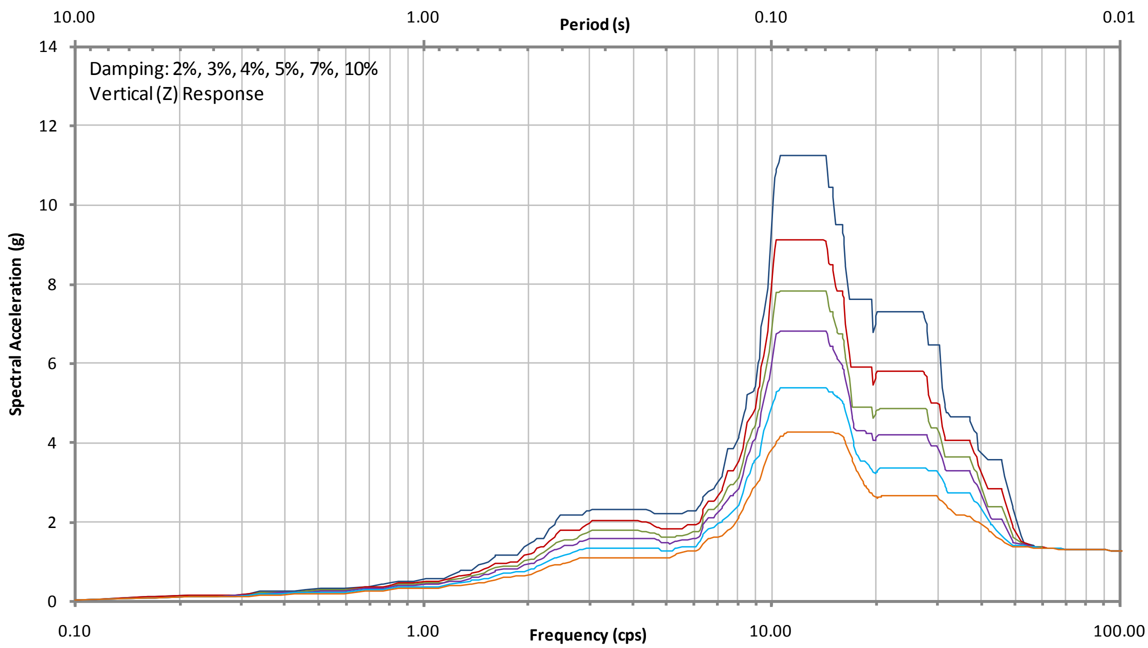


Figure D-67 ISRS for AB Floor Panels (2-F) at El. 78'-0", Multiple Damping, Envelope of All Cases

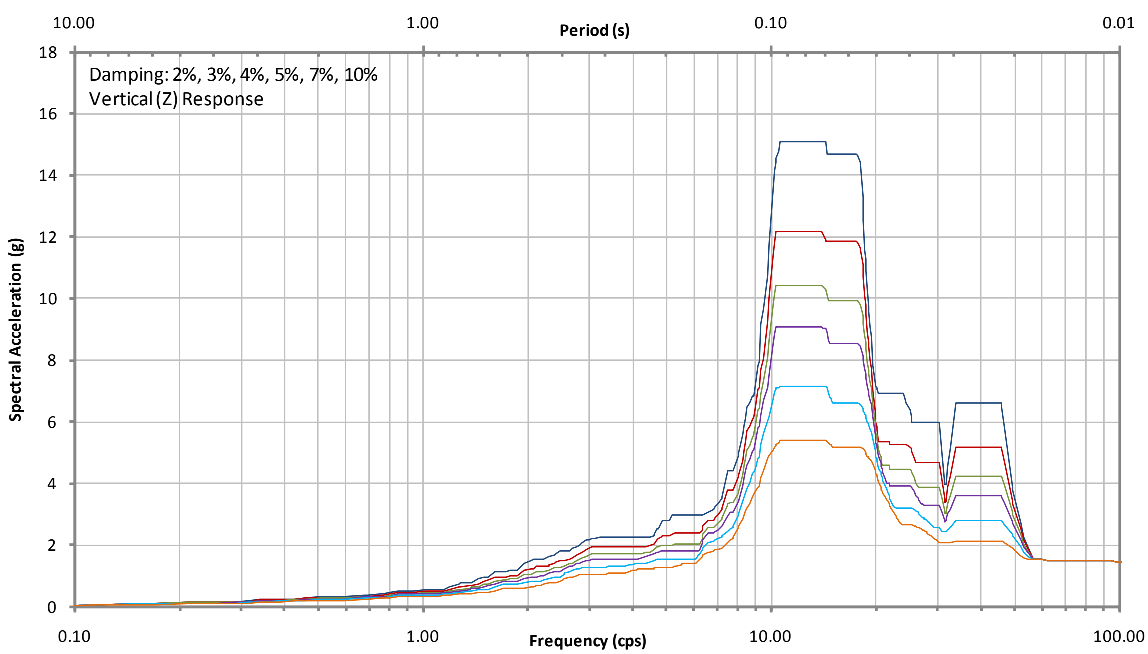


Figure D-68 ISRS for AB Floor Panels (3-F) at El. 100'-0", Multiple Damping, Envelope of All Cases

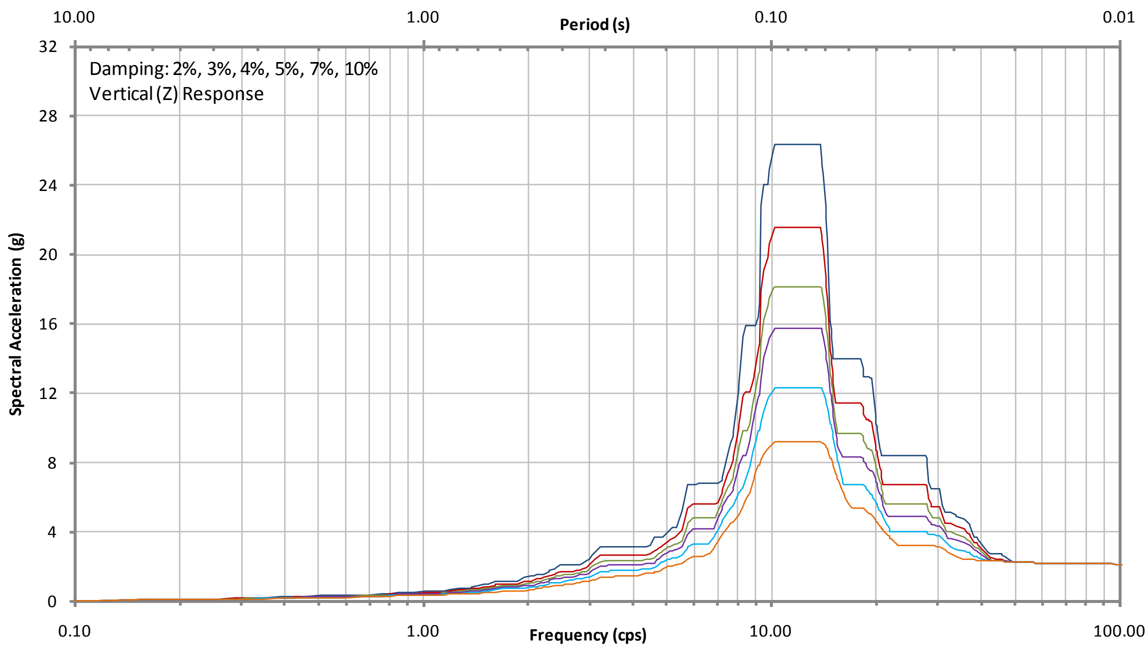


Figure D-69 ISRS for AB Floor Panels (4-F) at El. 120’-0”, Multiple Damping, Envelope of All Cases

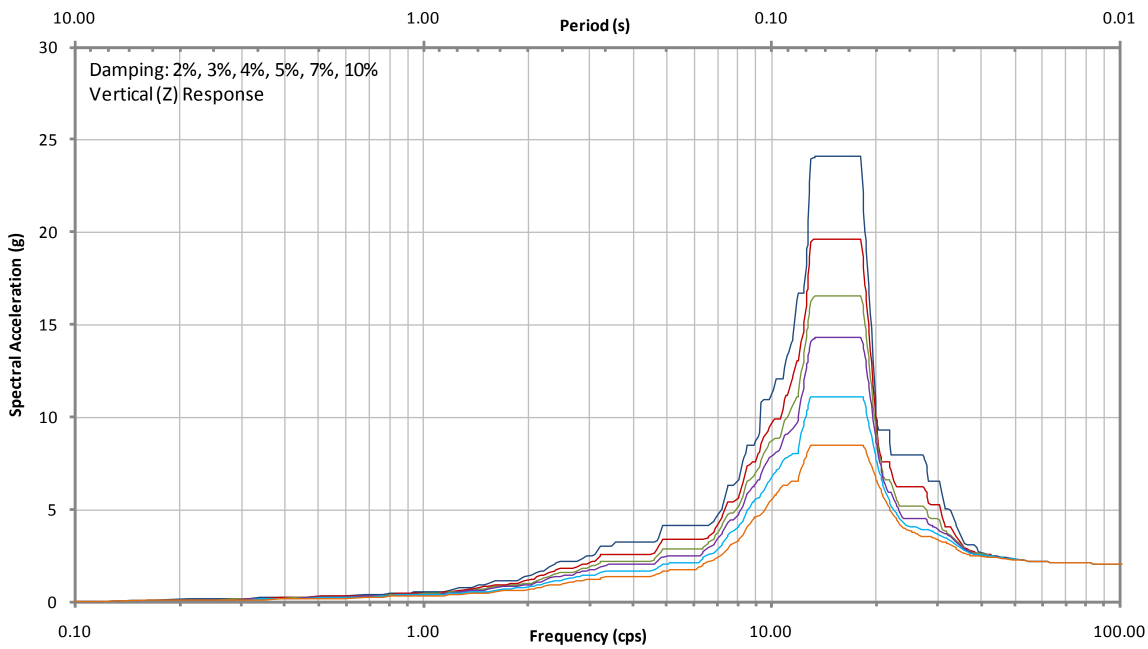


Figure D-70 ISRS for AB Floor Panels (5-F) at El. 137’-6”, Multiple Damping, Envelope of All Cases

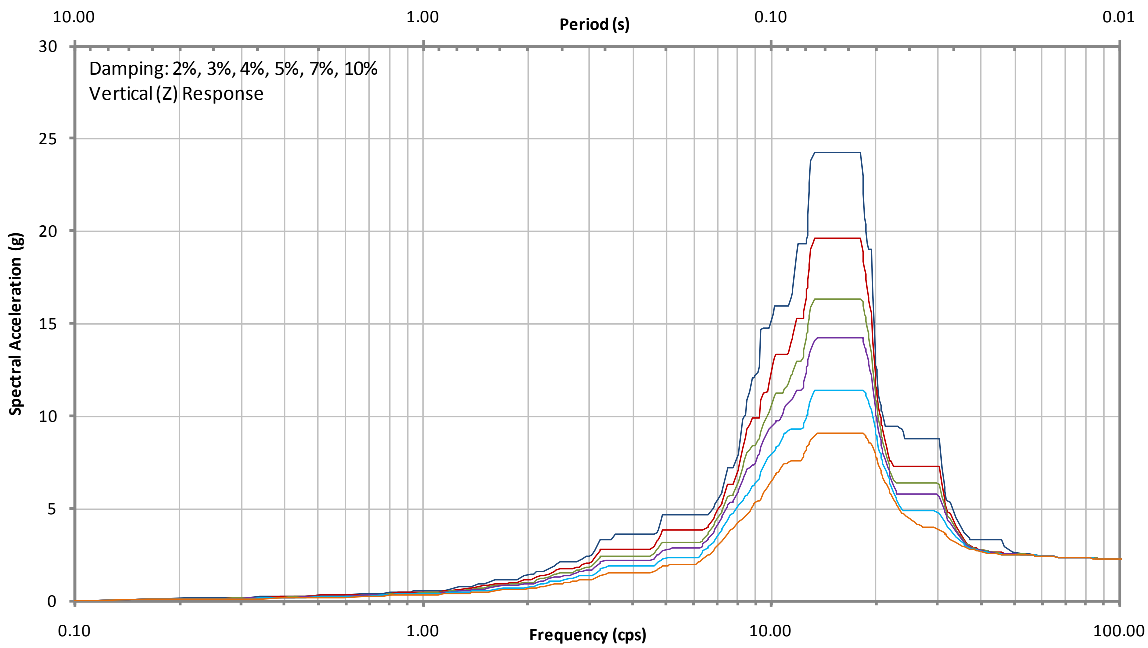


Figure D-71 ISRS for AB Floor Panels (6-F) at El. 156’-0”, Multiple Damping, Envelope of All Cases

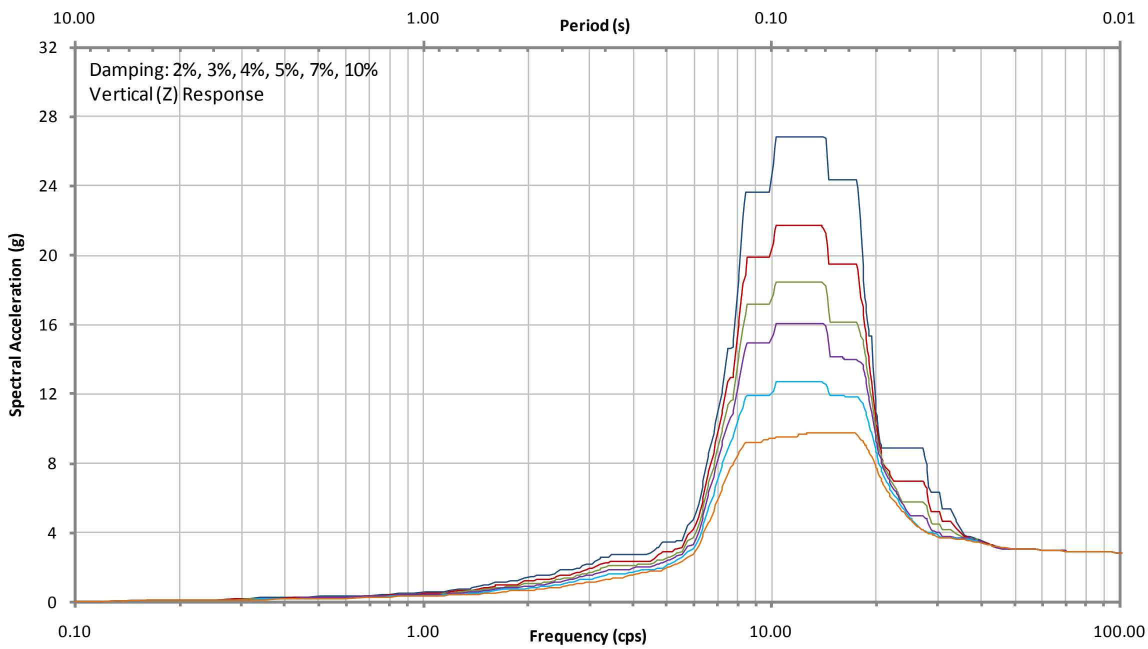


Figure D-72 ISRS for AB Floor Panels (7-F) at El. 174’-0”, Multiple Damping, Envelope of All Cases

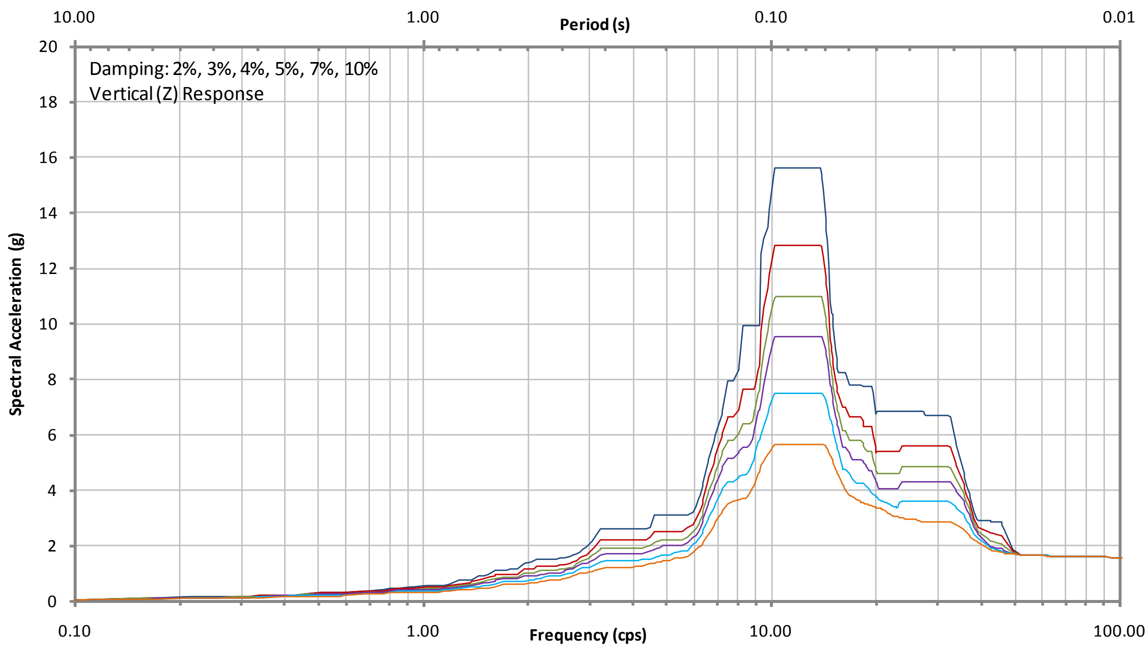


Figure D-73 ISRS for AB Floor Panels (8-1) at El. 195'-0", Multiple Damping, Envelope of All Cases

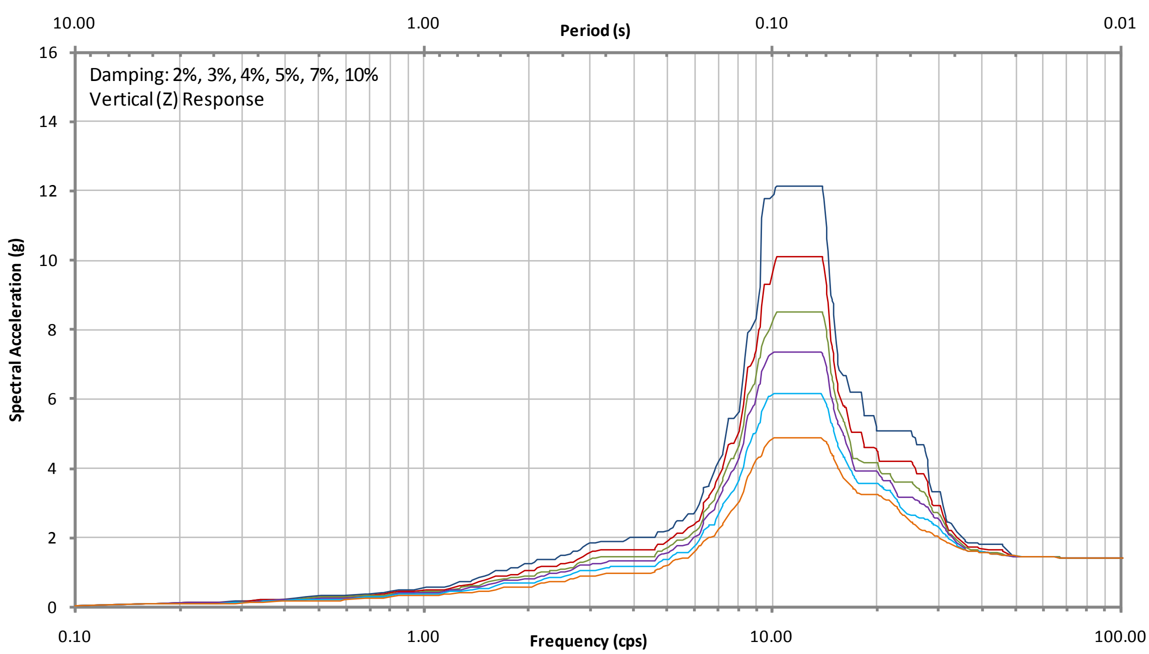


Figure D-74 ISRS for AB Floor Panels (8-M) at El. 195'-0", Multiple Damping, Envelope of All Cases

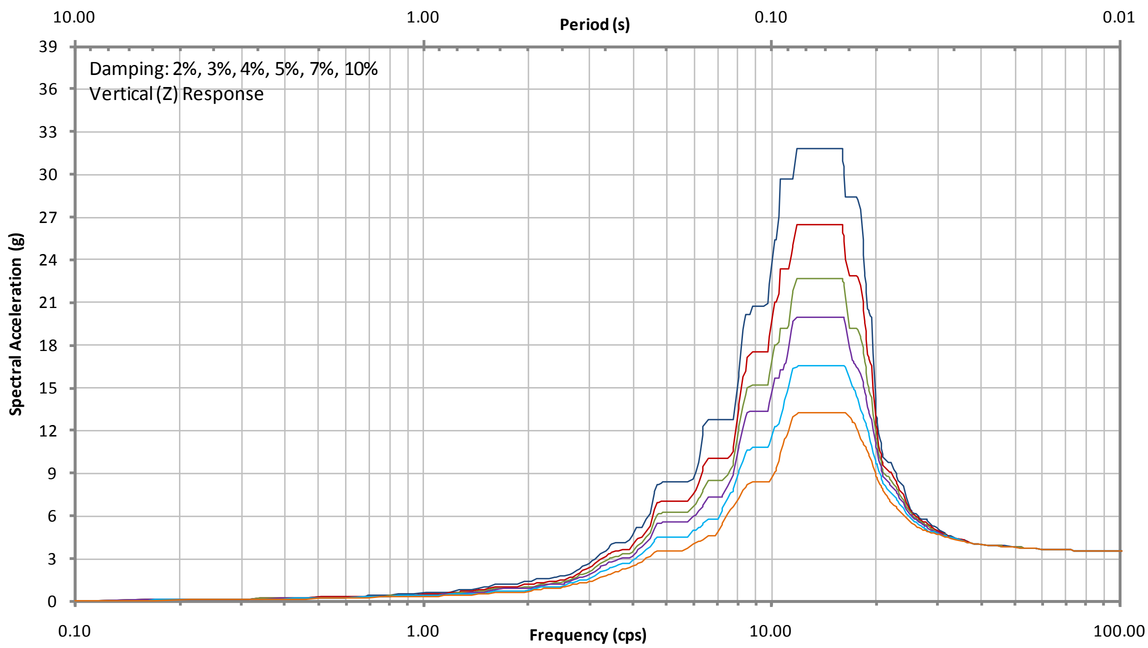


Figure D-75 ISRS for AB Floor Panels (8-2) at El. 216'-9", Multiple Damping, Envelope of All Cases

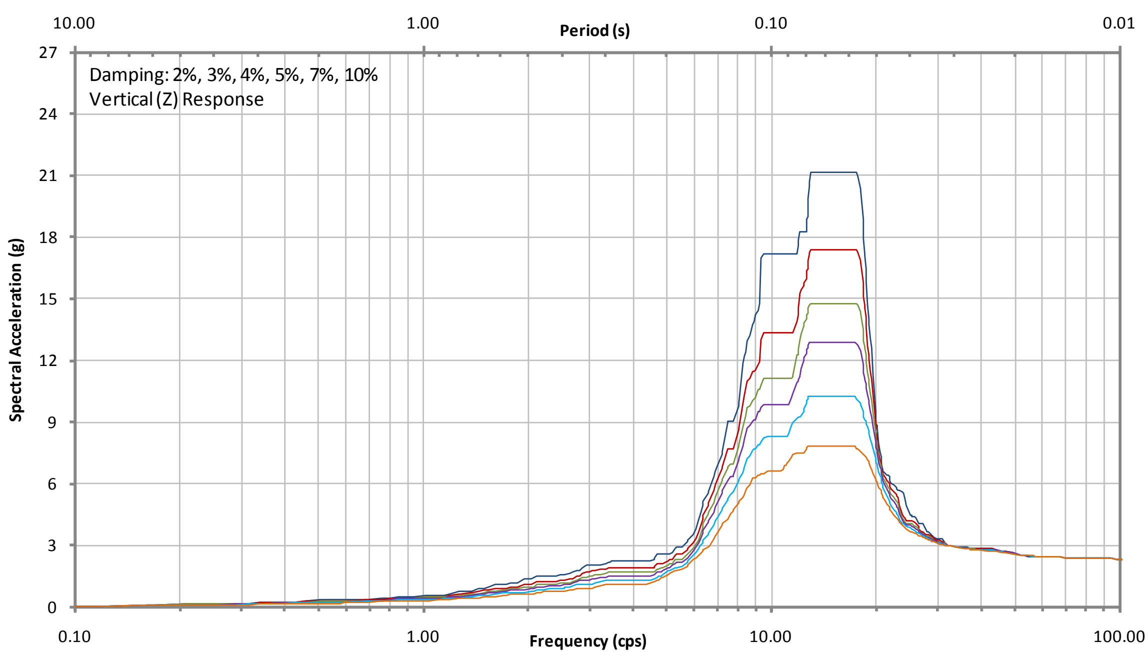


Figure D-76 ISRS for AB Floor Panels (8-3) at El. 213'-0", Multiple Damping, Envelope of All Cases

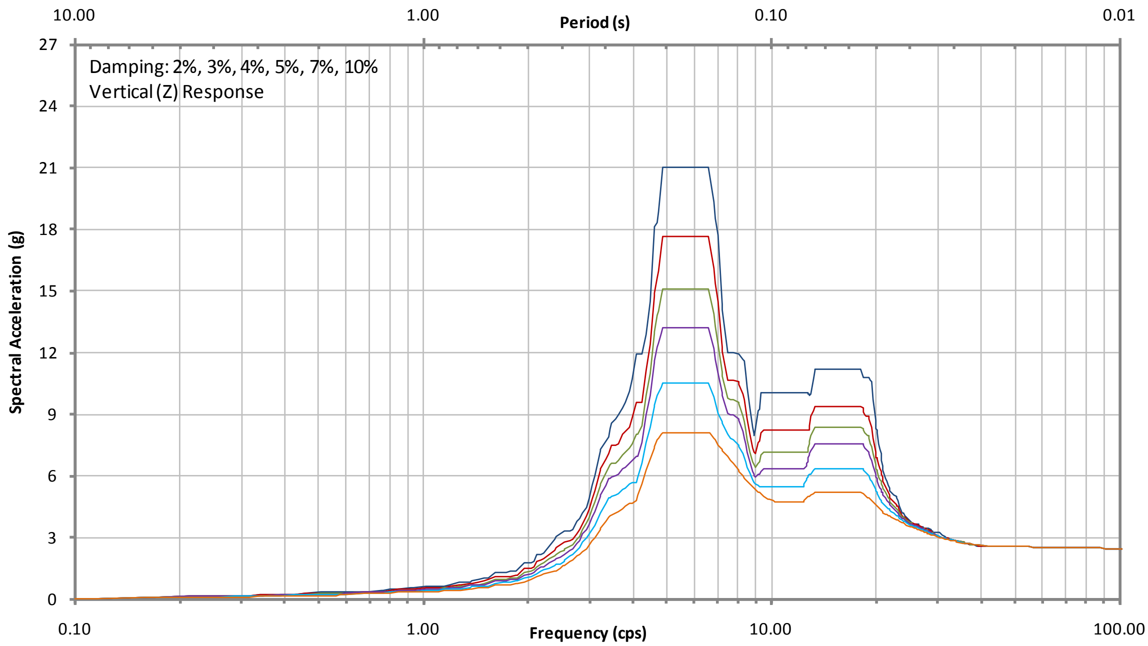


Figure D-77 ISRS for AB Floor Panels (8-4) at El. 213'-6", Multiple Damping, Envelope of All Cases

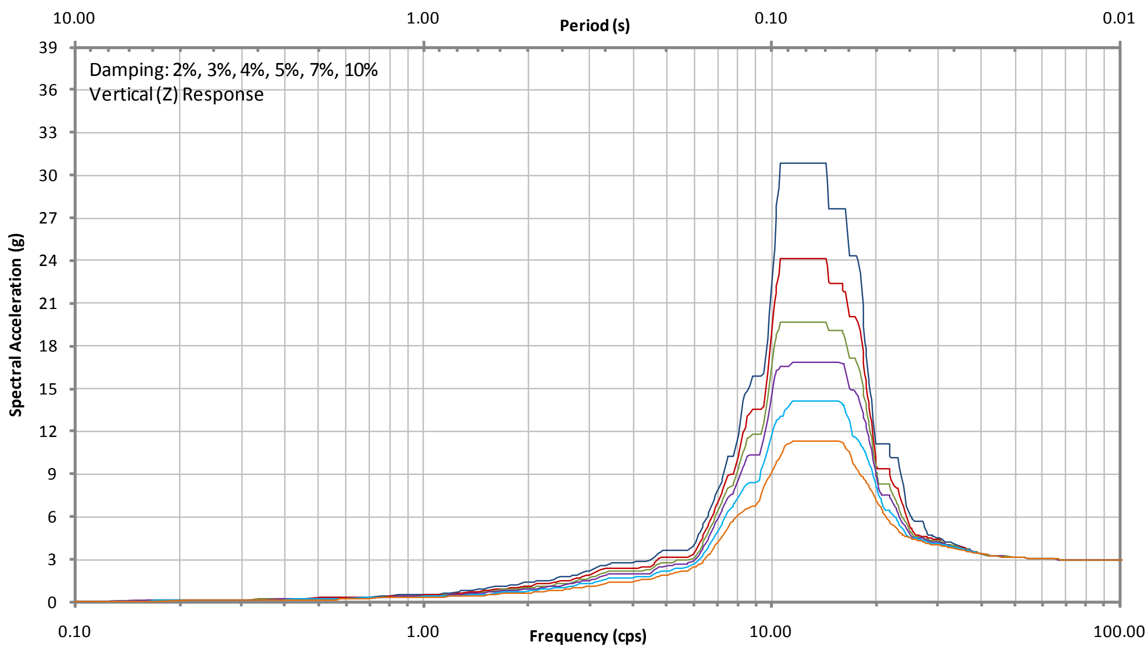


Figure D-78 ISRS for AB Floor Panels (8-5) at El. 195'-0", Multiple Damping, Envelope of All Cases

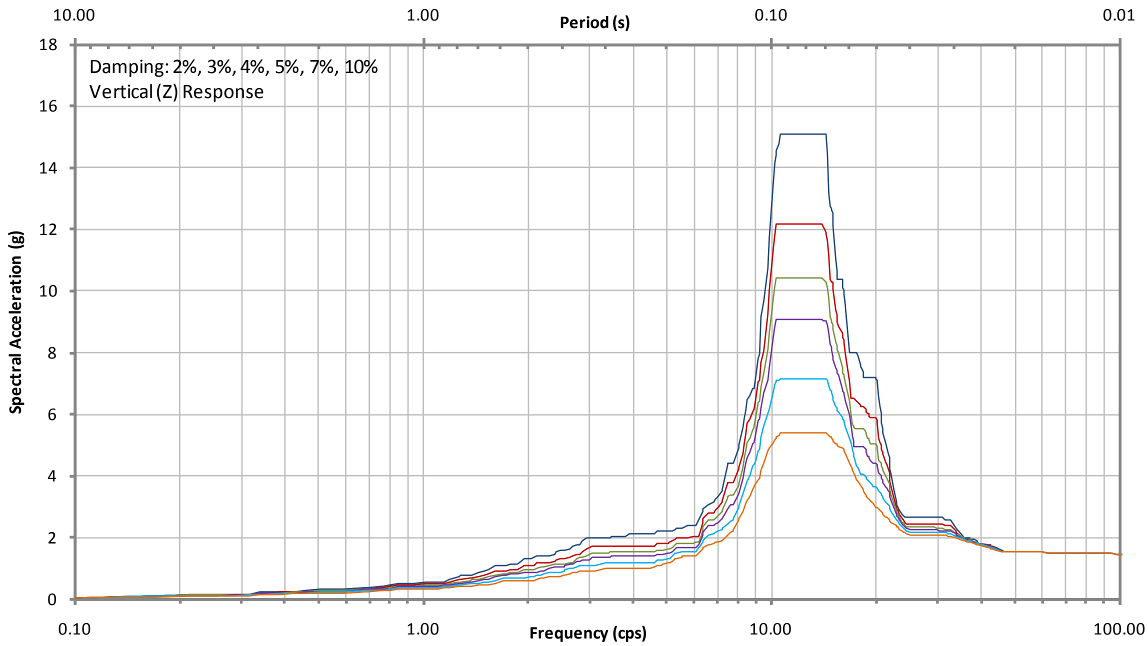


Figure D-79 ISRS for AB Floor Panels (3-H) at El. 100'-0", Multiple Damping, Envelope of All Cases

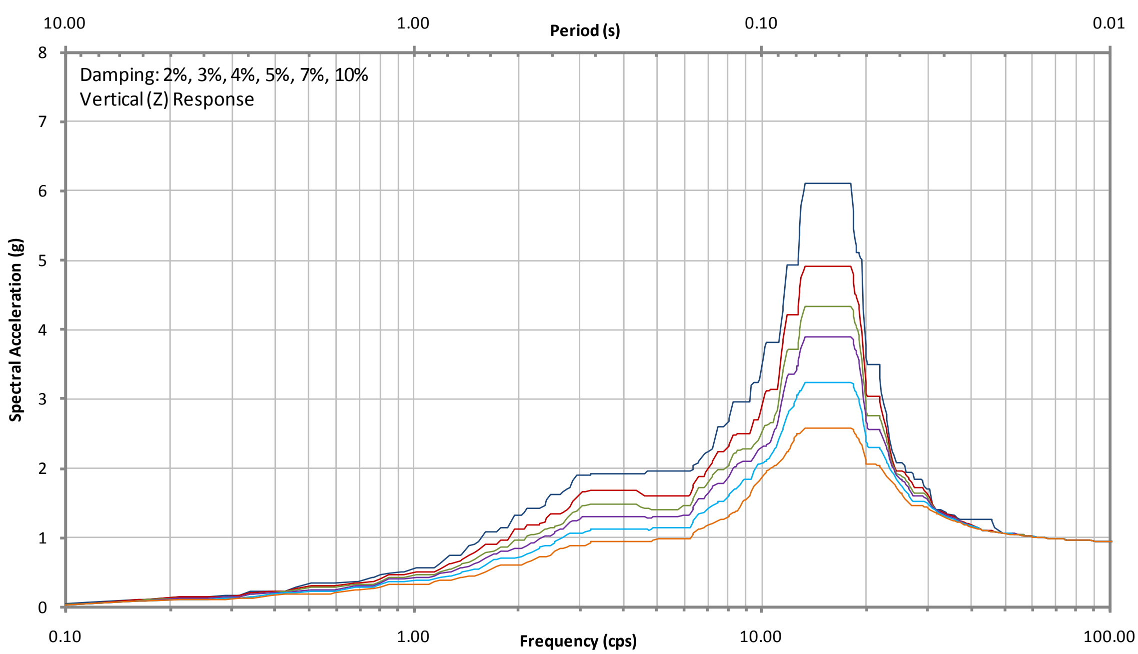


Figure D-80 ISRS for AB Floor Panels (3-M) at El. 114'-0", Multiple Damping, Envelope of All Cases

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APPENDIX E

MAXIMUM SEISMIC RESPONSE RELATIVE DISPLACEMENTS OF NI STRUCTURES

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APPENDIX E.1

MAXIMUM DISPLACEMENTS RELATIVE TO FREE-FIELD FOR RCB

Table E.1-1

RCB, Maximum Displacements (in.) Relative to Free Field – X (EW) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.2514	0.1794	0.3125	0.1630	0.1540	0.1740	0.1371	0.1635	0.0828	0.0752	0.0844	0.0777	0.0599	0.0548	0.0647	0.0598	0.0395	0.0256
CS90	89.75'	0.3311	0.2295	0.3809	0.1841	0.2355	0.2411	0.2108	0.2259	0.1609	0.1193	0.1530	0.1147	0.1502	0.1136	0.1502	0.1150	0.1270	0.0749
CS104	103.75'	0.4474	0.3144	0.4779	0.2399	0.3880	0.3453	0.3627	0.3200	0.2995	0.2121	0.2880	0.1959	0.2953	0.2048	0.2932	0.2007	0.2649	0.1543
CS118	117.75'	0.5672	0.4074	0.5753	0.2968	0.5385	0.4485	0.5122	0.4150	0.4347	0.3025	0.4208	0.2845	0.4369	0.2934	0.4343	0.2849	0.3978	0.2318
CS124	123.62'	0.6167	0.4465	0.6150	0.3253	0.5995	0.4881	0.5723	0.4540	0.4895	0.3393	0.4746	0.3205	0.4935	0.3287	0.4907	0.3186	0.4503	0.2627
CS132	131.56'	0.6835	0.4990	0.6687	0.3640	0.6814	0.5438	0.6525	0.5067	0.5631	0.3877	0.5467	0.3678	0.5679	0.3770	0.5653	0.3635	0.5194	0.3037
CS160	159.75'	0.9284	0.6904	0.8773	0.5045	0.9738	0.7422	0.9448	0.6931	0.8304	0.5617	0.8093	0.5383	0.8322	0.5520	0.8315	0.5286	0.7707	0.4522
CS180	180.0'	1.1173	0.8334	1.0365	0.6087	1.1881	0.8879	1.1607	0.8328	1.0270	0.6887	1.0030	0.6634	1.0281	0.6817	1.0259	0.6521	0.9682	0.5631
CS196	195.5'	1.2627	0.9452	1.1592	0.6924	1.3512	0.9992	1.3305	0.9402	1.1758	0.7864	1.1506	0.7595	1.1812	0.7822	1.1764	0.7477	1.1247	0.6491
CS216	215.96'	1.4570	1.0918	1.3292	0.8039	1.5670	1.1450	1.5537	1.0820	1.3718	0.9162	1.3438	0.8879	1.3834	0.9135	1.3726	0.8751	1.3332	0.7638
CS241	241'	1.6869	1.2715	1.5378	0.9367	1.8260	1.3236	1.8179	1.2544	1.6020	1.0700	1.5693	1.0351	1.6238	1.0740	1.6073	1.0306	1.5721	0.9125
CS255	254.5'	1.8041	1.3638	1.6423	1.0038	1.9611	1.4139	1.9541	1.3397	1.7195	1.1441	1.6841	1.1098	1.7459	1.1518	1.7278	1.1068	1.6909	0.9914
CS275	274.49'	1.9723	1.4940	1.7927	1.1002	2.1543	1.5347	2.1476	1.4559	1.8842	1.2488	1.8480	1.2140	1.9156	1.2537	1.8965	1.2067	1.8619	1.0855
CS302	301.53'	2.1812	1.6587	1.9779	1.2219	2.3885	1.6880	2.3820	1.6023	2.0834	1.3771	2.0449	1.3411	2.1202	1.3803	2.1009	1.3300	2.0633	1.1983
CS332	331.75'	2.4049	1.8391	2.1751	1.3554	2.6352	1.8587	2.6305	1.7643	2.2947	1.5172	2.2531	1.4789	2.3326	1.5195	2.3120	1.4660	2.2744	1.3225
PCO1241	241'	1.6846	1.2706	1.5347	0.9358	1.8231	1.3216	1.8149	1.2533	1.5990	1.0688	1.5663	1.0356	1.6204	1.0730	1.6039	1.0302	1.5684	0.9117
PCO2241	241'	1.7935	1.3761	1.6247	1.0258	1.9383	1.4841	1.9343	1.4276	1.7328	1.2793	1.6971	1.2432	1.7655	1.3320	1.7435	1.2713	1.7189	1.1463
PCO3241	241'	1.6811	1.2746	1.5341	0.9403	1.8157	1.3301	1.8063	1.2652	1.5900	1.0811	1.5579	1.0500	1.6081	1.0839	1.5928	1.0432	1.5549	0.9223
PSW66	66'	0.2250	0.1539	0.2773	0.1605	0.1135	0.1367	0.0982	0.1290	0.0548	0.0586	0.0567	0.0620	0.0288	0.0325	0.0339	0.0363	0.0092	0.0073
PSW78	78'	0.2478	0.1777	0.3079	0.1625	0.1350	0.1643	0.1186	0.1526	0.0642	0.0662	0.0665	0.0697	0.0404	0.0435	0.0462	0.0482	0.0195	0.0143
PSW100	100'	0.3212	0.2327	0.3665	0.1825	0.1840	0.2156	0.1548	0.1983	0.0826	0.0797	0.0762	0.0801	0.0706	0.0639	0.0754	0.0707	0.0461	0.0304
PSW107	106.5'	0.3433	0.2516	0.3841	0.1942	0.2025	0.2309	0.1707	0.2118	0.0910	0.0868	0.0843	0.0833	0.0809	0.0700	0.0860	0.0776	0.0561	0.0345
PSW114	114.0'	0.3693	0.2742	0.4048	0.2080	0.2243	0.2487	0.1911	0.2275	0.1007	0.0951	0.0935	0.0913	0.0934	0.0775	0.0992	0.0858	0.0674	0.0405
PSW130	130.0'	0.4220	0.3262	0.4457	0.2354	0.2647	0.2852	0.2298	0.2592	0.1174	0.1135	0.1095	0.1063	0.1096	0.0894	0.1161	0.0995	0.0812	0.0482
PSW137	136.5'	0.4461	0.3509	0.4651	0.2485	0.2872	0.3024	0.2515	0.2745	0.1295	0.1250	0.1209	0.1154	0.1279	0.1007	0.1342	0.1095	0.0996	0.0567
PSW156	156.0'	0.5315	0.4369	0.5366	0.2962	0.3703	0.3571	0.3322	0.3267	0.1784	0.1634	0.1678	0.1470	0.2360	0.1524	0.2374	0.1561	0.2156	0.1182
PSW191a	191.0'	0.6365	0.5527	0.6166	0.3775	0.4576	0.4326	0.4080	0.3910	0.2099	0.2015	0.2000	0.1816	0.2396	0.1726	0.2438	0.1747	0.2110	0.1082
PSW191b	191.0'	0.6695	0.5764	0.6513	0.3967	0.4909	0.4656	0.4477	0.4103	0.2602	0.2185	0.2296	0.1973	0.3582	0.2195	0.3544	0.2182	0.3437	0.1921
SSW78	78.0'	0.2472	0.1771	0.3079	0.1626	0.1380	0.1656	0.1216	0.1544	0.0670	0.0676	0.0694	0.0710	0.0419	0.0443	0.0483	0.0495	0.0213	0.0147
SSW100a	100.0'	0.3214	0.2328	0.3668	0.1829	0.1852	0.2165	0.1561	0.1992	0.0833	0.0804	0.0777	0.0807	0.0722	0.0645	0.0770	0.0713	0.0482	0.0310
SSW100b	100.0'	0.3258	0.2356	0.3722	0.1843	0.1947	0.2255	0.1704	0.2080	0.1009	0.0899	0.0967	0.0894	0.0804	0.0752	0.0857	0.0815	0.0567	0.0385
SSW107	106.5'	0.3443	0.2526	0.3860	0.1954	0.2048	0.2327	0.1735	0.2136	0.0931	0.0884	0.0867	0.0847	0.0842	0.0720	0.0896	0.0797	0.0595	0.0377
SSW114	114.0'	0.3708	0.2756	0.4072	0.2094	0.2271	0.2509	0.1938	0.2298	0.1038	0.0970	0.0967	0.0933	0.0993	0.0800	0.1043	0.0889	0.0743	0.0460
SSW130	130.0'	0.4291	0.3328	0.4536	0.2400	0.2772	0.2906	0.2419	0.2652	0.1287	0.1210	0.1201	0.1128	0.1401	0.1016	0.1448	0.1106	0.1140	0.0675
SSW137	136.5'	0.4524	0.3572	0.4726	0.2524	0.2981	0.3068	0.2620	0.2803	0.1392	0.1310	0.1299	0.1211	0.1572	0.1119	0.1618	0.1198	0.1310	0.0769
SSW156	156.0'	0.5302	0.4364	0.5359	0.2958	0.3690	0.3573	0.3310	0.3268	0.1767	0.1635	0.1662	0.1475	0.2309	0.1526	0.2330	0.1559	0.2095	0.1198
SSW191	191.0'	0.7319	0.5884	0.7000	0.4053	0.5821	0.4976	0.5106	0.4493	0.3696	0.2464	0.3310	0.2225	0.5178	0.2916	0.4970	0.2826	0.5718	0.3039

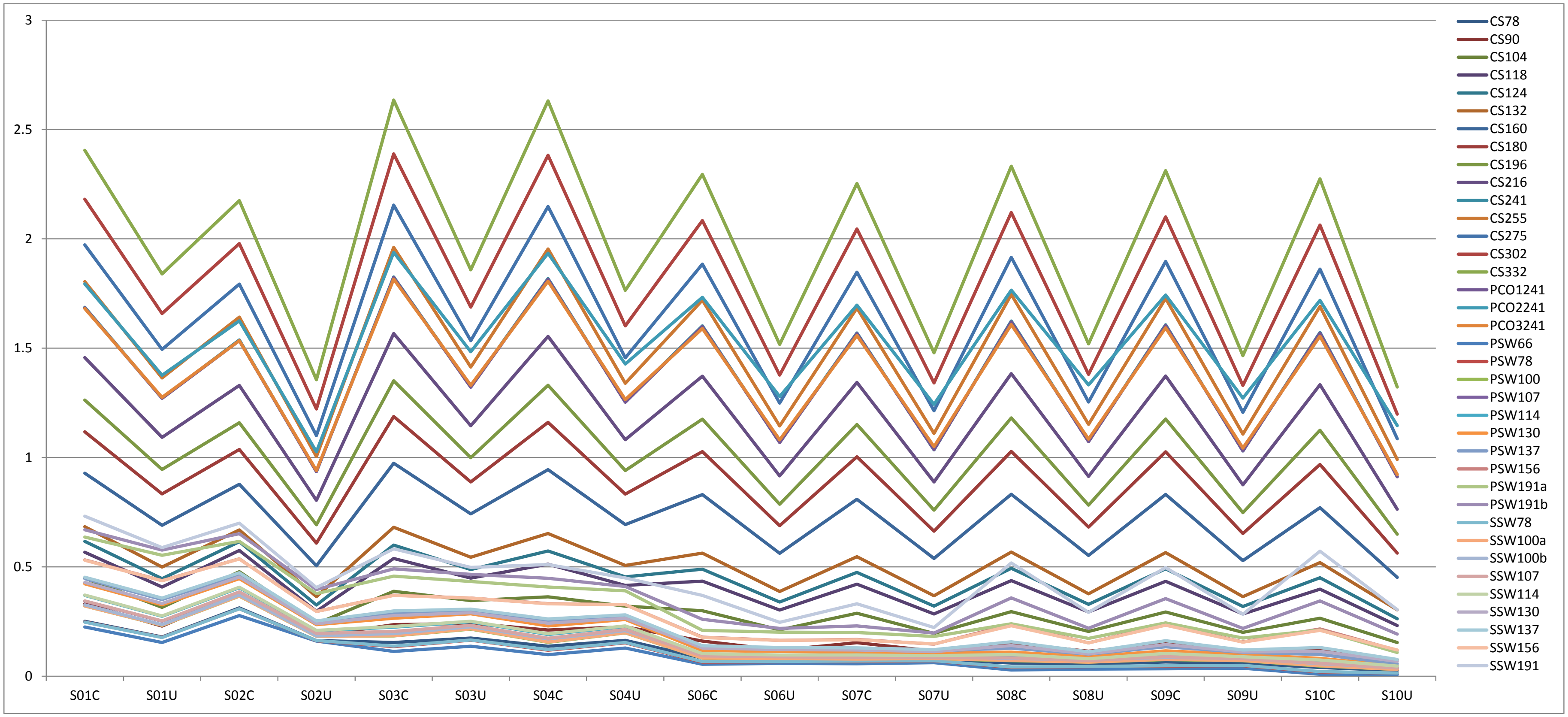

Figure E.1-1 RCB, Maximum Displacements (in.) Relative to Free Field – X (EW) Direction

Table E.1-2

RCB, Maximum Displacements (in.) Relative to Free Field – Y (NS) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.2593	0.2252	0.2775	0.2108	0.1687	0.1639	0.1440	0.1413	0.0835	0.0946	0.0825	0.0934	0.0590	0.0549	0.0654	0.0631	0.0385	0.0271
CS90	89.75'	0.3214	0.2762	0.3281	0.2345	0.2553	0.2332	0.2271	0.2103	0.1740	0.1439	0.1718	0.1415	0.1656	0.1194	0.1653	0.1257	0.1339	0.0888
CS104	103.75'	0.4474	0.3580	0.4184	0.2711	0.3950	0.3251	0.3427	0.3025	0.3076	0.2325	0.2969	0.2266	0.3135	0.2093	0.3114	0.2119	0.2669	0.1769
CS118	117.75'	0.5705	0.4423	0.5319	0.3331	0.5313	0.4168	0.4720	0.3932	0.4376	0.3122	0.4203	0.3038	0.4428	0.2906	0.4412	0.2960	0.3804	0.2544
CS124	123.62'	0.6262	0.4785	0.5823	0.3657	0.5962	0.4589	0.5329	0.4340	0.5013	0.3518	0.4839	0.3424	0.4930	0.3288	0.4966	0.3376	0.4233	0.2895
CS132	131.56'	0.6962	0.5387	0.6459	0.4137	0.6731	0.5114	0.6061	0.4853	0.5788	0.3998	0.5602	0.3886	0.5670	0.3795	0.5714	0.3878	0.4884	0.3349
CS160	159.75'	0.9413	0.7486	0.8716	0.5719	0.9439	0.6956	0.8664	0.6650	0.8434	0.5688	0.8220	0.5507	0.8207	0.5548	0.8260	0.5659	0.7287	0.4934
CS180	180.0'	1.1472	0.9127	1.0554	0.6941	1.1720	0.8449	1.0829	0.8110	1.0669	0.7065	1.0433	0.6820	1.0421	0.6966	1.0421	0.7146	0.9421	0.6270
CS196	195.5'	1.2941	1.0327	1.1916	0.7828	1.3405	0.9556	1.2429	0.9179	1.2287	0.8129	1.2033	0.7831	1.2050	0.8058	1.2058	0.8208	1.0987	0.7321
CS216	215.96'	1.4816	1.1848	1.3599	0.8948	1.5543	1.0937	1.4452	1.0534	1.4309	0.9527	1.4035	0.9167	1.4093	0.9595	1.4064	0.9742	1.2953	0.8745
CS241	241'	1.7096	1.3722	1.5607	1.0316	1.8108	1.2723	1.6885	1.2340	1.6836	1.1405	1.6515	1.0958	1.6730	1.1580	1.6634	1.1755	1.5486	1.0605
CS255	254.5'	1.8284	1.4742	1.6653	1.1059	1.9473	1.3627	1.8178	1.3198	1.8062	1.2189	1.7736	1.1702	1.7989	1.2379	1.7877	1.2567	1.6706	1.1333
CS275	274.49'	2.0092	1.6189	1.8079	1.2110	2.1533	1.4965	2.0125	1.4446	1.9923	1.3305	1.9582	1.2771	1.9906	1.3440	1.9749	1.3694	1.8535	1.2300
CS302	301.53'	2.2438	1.8089	2.0231	1.3484	2.4192	1.6675	2.2602	1.6123	2.2359	1.4920	2.1992	1.4317	2.2378	1.5073	2.2198	1.5361	2.0899	1.3780
CS332	331.75'	2.4870	2.0107	2.2517	1.4943	2.6822	1.8488	2.5079	1.7859	2.4758	1.6553	2.4370	1.5880	2.4803	1.6711	2.4590	1.7031	2.3200	1.5282
PCO1241	241'	1.7102	1.3696	1.5530	1.0299	1.8107	1.2749	1.6890	1.2368	1.6837	1.1439	1.6521	1.0992	1.6735	1.1613	1.6637	1.1787	1.5486	1.0646
PCO2241	241'	2.0213	1.7682	1.8226	1.3527	2.2333	1.8262	2.0899	1.8081	2.1856	1.9584	2.1465	1.8776	2.2218	2.0946	2.1946	2.0884	2.1031	2.0633
PCO3241	241'	1.8217	1.5002	1.6382	1.1388	1.9605	1.4569	1.8321	1.4364	1.8608	1.4248	1.8263	1.3672	1.8672	1.4839	1.8507	1.4926	1.7427	1.4077
PSW66	66'	0.2250	0.2000	0.2489	0.1957	0.1279	0.1275	0.1063	0.1069	0.0506	0.0747	0.0535	0.0748	0.0292	0.0325	0.0325	0.0385	0.0087	0.0067
PSW78	78'	0.2498	0.2216	0.2679	0.2058	0.1554	0.1555	0.1312	0.1336	0.0628	0.0838	0.0630	0.0834	0.0398	0.0410	0.0437	0.0483	0.0173	0.0119
PSW100	100'	0.2979	0.2766	0.3024	0.2285	0.2067	0.2096	0.1772	0.1853	0.0831	0.0984	0.0826	0.0968	0.0609	0.0551	0.0657	0.0630	0.0346	0.0227
PSW107	106.5'	0.3251	0.2977	0.3124	0.2382	0.2231	0.2260	0.1933	0.2011	0.0917	0.1028	0.0892	0.1003	0.0700	0.0593	0.0741	0.0675	0.0438	0.0287
PSW114	114.0'	0.3552	0.3246	0.3240	0.2498	0.2421	0.2472	0.2097	0.2209	0.1005	0.1081	0.0968	0.1054	0.0784	0.0638	0.0825	0.0730	0.0522	0.0350
PSW130	130.0'	0.4194	0.3774	0.3758	0.2739	0.2827	0.2873	0.2469	0.2602	0.1207	0.1192	0.1162	0.1198	0.0977	0.0784	0.1027	0.0876	0.0734	0.0492
PSW137	136.5'	0.4462	0.4086	0.4062	0.2911	0.3083	0.3144	0.2661	0.2850	0.1371	0.1316	0.1303	0.1262	0.1179	0.0932	0.1238	0.1069	0.1013	0.0696
PSW156	156.0'	0.5734	0.5263	0.5300	0.3846	0.4593	0.4214	0.3951	0.3890	0.2433	0.2238	0.2312	0.1998	0.3013	0.2098	0.2958	0.2232	0.3009	0.1974
PSW191a	191.0'	1.1787	0.9429	1.0953	0.7022	1.0424	0.8007	0.9099	0.7268	1.0637	0.6356	0.9510	0.5550	1.4969	0.7815	1.4551	0.7594	1.5788	0.9274
PSW191b	191.0'	0.7190	0.6449	0.6117	0.4759	0.5419	0.4752	0.4770	0.4421	0.2663	0.2206	0.2547	0.2023	0.3320	0.1998	0.3231	0.2136	0.3284	0.1906
SSW78	78.0'	0.2520	0.2233	0.2705	0.2085	0.1577	0.1578	0.1329	0.1350	0.0654	0.0861	0.0650	0.0852	0.0412	0.0426	0.0469	0.0508	0.0181	0.0135
SSW100a	100.0'	0.2974	0.2781	0.3033	0.2308	0.2064	0.2106	0.1769	0.1856	0.0838	0.0993	0.0833	0.0978	0.0612	0.0564	0.0662	0.0645	0.0346	0.0227
SSW100b	100.0'	0.2988	0.2738	0.3023	0.2249	0.2075	0.2082	0.1801	0.1857	0.0952	0.1029	0.0938	0.1020	0.0713	0.0644	0.0758	0.0725	0.0455	0.0312
SSW107	106.5'	0.3247	0.3002	0.3130	0.2410	0.2232	0.2284	0.1937	0.2039	0.0937	0.1037	0.0899	0.1016	0.0739	0.0609	0.0784	0.0693	0.0504	0.0350
SSW114	114.0'	0.3588	0.3266	0.3312	0.2514	0.2479	0.2520	0.2155	0.2265	0.1084	0.1089	0.1036	0.1062	0.0908	0.0727	0.0947	0.0797	0.0714	0.0497
SSW130	130.0'	0.4300	0.3896	0.3956	0.2806	0.3062	0.3033	0.2642	0.2755	0.1452	0.1316	0.1374	0.1229	0.1329	0.1020	0.1329	0.1136	0.1198	0.0863
SSW137	136.5'	0.4573	0.4164	0.4231	0.2961	0.3333	0.3246	0.2873	0.2959	0.1623	0.1454	0.1536	0.1332	0.1567	0.1145	0.1561	0.1287	0.1435	0.1042
SSW156	156.0'	0.5675	0.5065	0.5251	0.3713	0.4322	0.4066	0.3710	0.3715	0.2298	0.2107	0.2185	0.1901	0.2528	0.1807	0.2449	0.2347	0.2771	0.1841
SSW191	191.0'	1.1731	0.9386	1.0902	0.6988	1.0350	0.7968	0.9038	0.7235	1.0538	0.6310	0.9431	0.5511	1.4809	0.7739	1.4399	0.7527	1.5570	0.9202

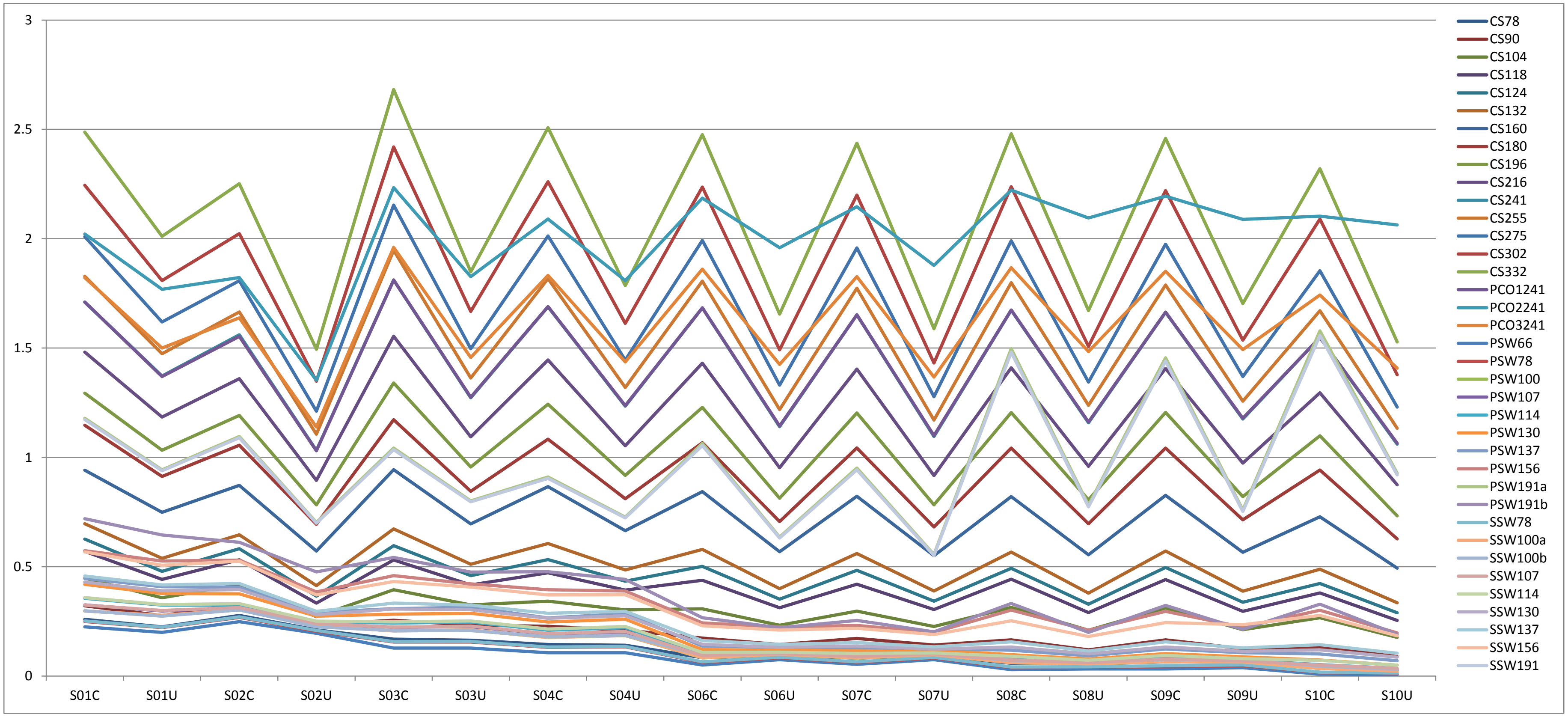

Figure E.1-2 RCB, Maximum Displacements (in.) Relative to Free Field – Y (NS) Direction

Table E.1-3

RCB, Maximum Displacements (in.) Relative to Free Field – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.3296	0.3252	0.2801	0.2302	0.2426	0.2155	0.2195	0.1948	0.1242	0.1112	0.1234	0.1084	0.0912	0.0761	0.1018	0.0869	0.0582	0.0392
CS90	89.75'	0.3439	0.3285	0.2951	0.2368	0.2756	0.2300	0.2548	0.2116	0.1727	0.1372	0.1716	0.1334	0.1442	0.1087	0.1521	0.1166	0.1127	0.0769
CS104	103.75'	0.3803	0.3525	0.3286	0.2559	0.3273	0.2611	0.3082	0.2422	0.2341	0.1734	0.2325	0.1675	0.2084	0.1507	0.2153	0.1584	0.1755	0.1187
CS118	117.75'	0.4147	0.3784	0.3605	0.2746	0.3757	0.2898	0.3554	0.2709	0.2903	0.2084	0.2883	0.2004	0.2675	0.1895	0.2732	0.1971	0.2334	0.1573
CS124	123.62'	0.4274	0.3886	0.3726	0.2814	0.3960	0.3003	0.3764	0.2825	0.3122	0.2221	0.3100	0.2136	0.2907	0.2047	0.2959	0.2122	0.2554	0.1724
CS132	131.56'	0.4451	0.4017	0.3908	0.2918	0.4208	0.3147	0.4039	0.2972	0.3403	0.2397	0.3378	0.2304	0.3202	0.2242	0.3249	0.2316	0.2853	0.1918
CS160	159.75'	0.5011	0.4411	0.4470	0.3233	0.4963	0.3618	0.4764	0.3429	0.4252	0.2938	0.4222	0.2822	0.4106	0.2843	0.4131	0.2918	0.3788	0.2516
CS180	180.0'	0.5342	0.4636	0.4788	0.3411	0.5423	0.3893	0.5220	0.3702	0.4743	0.3252	0.4706	0.3121	0.4639	0.3193	0.4641	0.3262	0.4335	0.2866
CS196	195.5'	0.5553	0.4779	0.4990	0.3523	0.5724	0.4074	0.5684	0.3884	0.5052	0.3452	0.5013	0.3312	0.4978	0.3412	0.4967	0.3488	0.4682	0.3094
CS216	215.96'	0.5779	0.4932	0.5223	0.3640	0.6048	0.4269	0.5969	0.4082	0.5379	0.3667	0.5338	0.3517	0.5341	0.3649	0.5313	0.3732	0.5050	0.3339
CS241	241'	0.5987	0.5068	0.5444	0.3744	0.6342	0.4449	0.6244	0.4262	0.5666	0.3868	0.5623	0.3710	0.5666	0.3864	0.5621	0.3950	0.5380	0.3559
CS255	254.5'	0.6068	0.5121	0.5567	0.3783	0.6455	0.4519	0.6347	0.4334	0.5775	0.3949	0.5731	0.3788	0.5792	0.3952	0.5739	0.4036	0.5514	0.3647
CS275	274.49'	0.5914	0.4992	0.5416	0.3694	0.6299	0.4415	0.6203	0.4236	0.5652	0.3872	0.5609	0.3715	0.5686	0.3888	0.5625	0.3967	0.5413	0.3604
CS302	301.53'	0.4898	0.4161	0.4506	0.3112	0.5159	0.3656	0.5117	0.3495	0.4647	0.3218	0.4620	0.3101	0.4706	0.3257	0.4652	0.3319	0.4489	0.3063
CS332	331.75'	0.1267	0.1180	0.1419	0.1181	0.1064	0.0951	0.0942	0.0856	0.0867	0.0779	0.0923	0.0911	0.1151	0.1124	0.1156	0.1138	0.1360	0.1269
PCO1241	241'	0.5400	0.4426	0.4836	0.3309	0.5731	0.4051	0.5732	0.3862	0.5063	0.3442	0.5026	0.3337	0.5111	0.3446	0.5079	0.3439	0.4938	0.3059
PCO2241	241'	0.4368	0.4163	0.3780	0.3623	0.4981	0.4864	0.6792	0.6450	0.6033	0.5617	0.5848	0.5392	0.5583	0.5212	0.5534	0.5206	0.5274	0.4959
PCO3241	241'	0.4516	0.3867	0.4112	0.3048	0.4924	0.3755	0.5080	0.3964	0.4568	0.3486	0.4514	0.3353	0.4540	0.3423	0.4495	0.3438	0.4414	0.3112
PSW66	66'	0.1620	0.1531	0.1356	0.1157	0.0984	0.0971	0.0859	0.0825	0.0369	0.0400	0.0343	0.0366	0.0206	0.0215	0.0225	0.0237	0.0075	0.0057
PSW78	78'	0.1630	0.1533	0.1378	0.1163	0.1020	0.0988	0.0894	0.0842	0.0399	0.0420	0.0379	0.0387	0.0255	0.0242	0.0279	0.0266	0.0145	0.0091
PSW100	100'	0.1895	0.1787	0.1647	0.1347	0.1267	0.1196	0.1122	0.1036	0.0522	0.0538	0.0504	0.0505	0.0433	0.0361	0.0459	0.0383	0.0334	0.0187
PSW107	106.5'	0.1932	0.1809	0.1687	0.1368	0.1307	0.1224	0.1158	0.1062	0.0552	0.0561	0.0535	0.0528	0.0489	0.0394	0.0513	0.0411	0.0412	0.0239
PSW114	114.0'	0.1943	0.1815	0.1698	0.1374	0.1319	0.1232	0.1169	0.1070	0.0562	0.0567	0.0545	0.0535	0.0510	0.0404	0.0529	0.0421	0.0439	0.0253
PSW130	130.0'	0.1949	0.1818	0.1704	0.1377	0.1325	0.1236	0.1176	0.1074	0.0567	0.0571	0.0551	0.0540	0.0534	0.0412	0.0550	0.0431	0.0466	0.0267
PSW137	136.5'	0.1930	0.1782	0.1711	0.1308	0.1253	0.1160	0.1120	0.1006	0.0544	0.0540	0.0529	0.0514	0.0534	0.0403	0.0549	0.0417	0.0476	0.0267
PSW156	156.0'	0.2858	0.2619	0.2576	0.1954	0.2049	0.1844	0.1851	0.1657	0.1118	0.0876	0.0978	0.0840	0.1385	0.0812	0.1369	0.0834	0.1364	0.0735
PSW191a	191.0'	0.1950	0.1760	0.1729	0.1326	0.1281	0.1153	0.1153	0.1037	0.0642	0.0604	0.0618	0.0566	0.0724	0.0500	0.0710	0.0524	0.0744	0.0439
PSW191b	191.0'	0.2883	0.2636	0.2610	0.1969	0.2088	0.1861	0.1893	0.1675	0.1167	0.0887	0.1021	0.0852	0.1461	0.0835	0.1441	0.0857	0.1456	0.0791
SSW78	78.0'	0.2178	0.2155	0.1863	0.1545	0.1377	0.1305	0.1228	0.1167	0.0539	0.0559	0.0525	0.0542	0.0316	0.0330	0.0354	0.0376	0.0190	0.0130
SSW100a	100.0'	0.2274	0.2251	0.2014	0.1634	0.1492	0.1395	0.1327	0.1255	0.0598	0.0620	0.0587	0.0597	0.0525	0.0436	0.0557	0.0466	0.0414	0.0238
SSW100b	100.0'	0.2923	0.2971	0.2495	0.2095	0.2159	0.1956	0.1991	0.1762	0.1166	0.1001	0.1160	0.0974	0.0865	0.0711	0.0952	0.0778	0.0574	0.0386
SSW107	106.5'	0.2289	0.2282	0.2031	0.1663	0.1509	0.1422	0.1367	0.1286	0.0631	0.0646	0.0612	0.0608	0.0564	0.0455	0.0594	0.0482	0.0459	0.0299
SSW114	114.0'	0.2309	0.2295	0.2044	0.1674	0.1541	0.1441	0.1386	0.1299	0.0657	0.0662	0.0639	0.0622	0.0610	0.0474	0.0628	0.0496	0.0527	0.0324
SSW130	130.0'	0.2348	0.2358	0.2087	0.1728	0.1639	0.1500	0.1484	0.1361	0.0748	0.0739	0.0719	0.0685	0.0792	0.0532	0.0795	0.0567	0.0737	0.0449
SSW137	136.5'	0.2361	0.2380	0.2103	0.1747	0.1678	0.1523	0.1519	0.1383	0.0772	0.0766	0.0751	0.0709	0.0832	0.0549	0.0834	0.0598	0.0782	0.0493
SSW156	156.0'	0.2446	0.2435	0.2184	0.1793	0.1776	0.1585	0.1610	0.1440	0.0865	0.0839	0.0832	0.0772	0.0986	0.0628	0.0980	0.0692	0.0959	0.0611
SSW191	191.0'	0.2492	0.2460	0.2230	0.1814	0.1824	0.1615	0.1653	0.1467	0.0913	0.0875	0.0874	0.0803	0.1078	0.0678	0.1068	0.0740	0.1119	0.0672

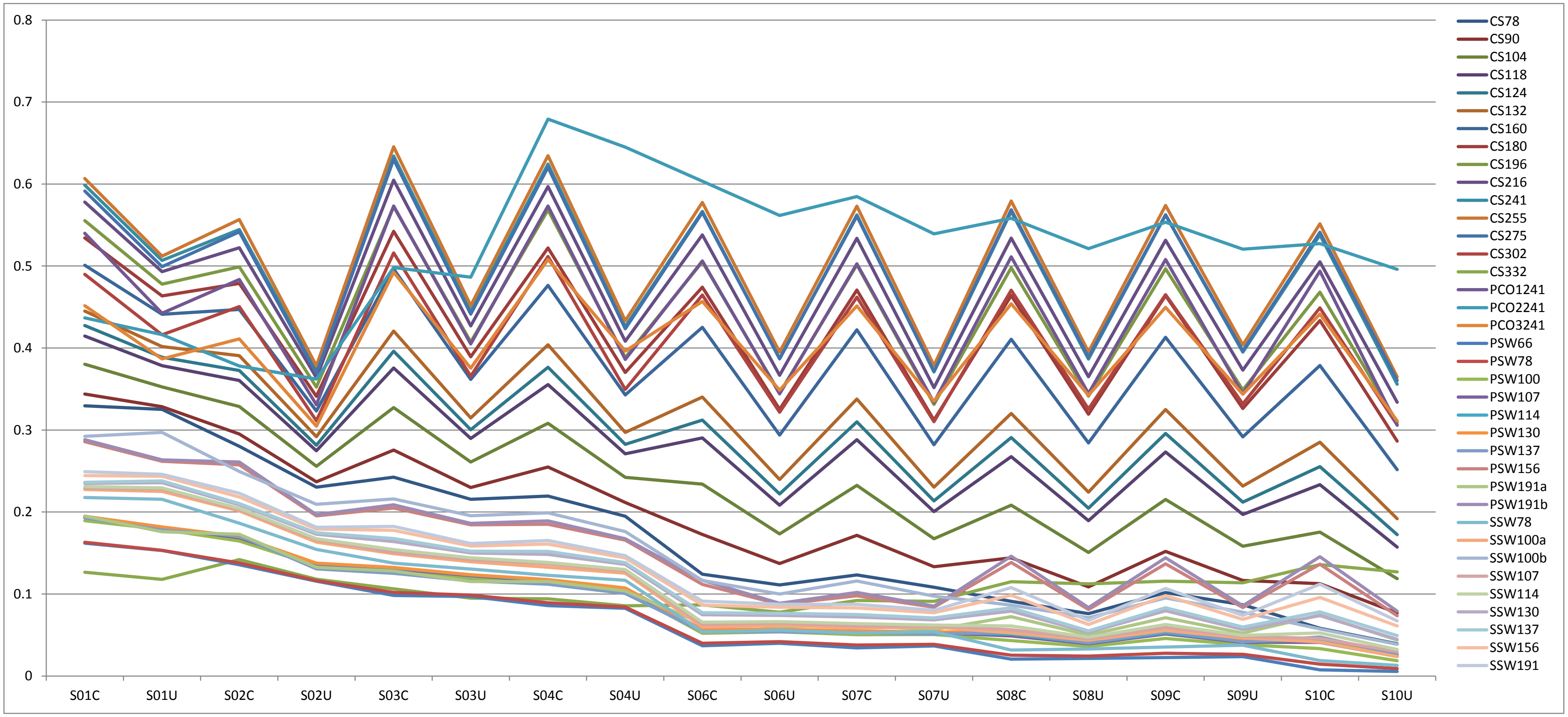

Figure E.1- 3 RCB, Maximum Displacements (in.) Relative to Free Field – Z (VT) Direction

Table E.1-4

Maximum Displacements (in.) of RCB Slabs Relative to Free Field – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
SL125	125.0'	0.2581	0.2589	0.2274	0.1907	0.1845	0.1688	0.1664	0.1529	0.0826	0.0801	0.0808	0.0751	0.0790	0.0591	0.0793	0.0619	0.0712	0.0446
SL114	114.0'	0.2553	0.2571	0.2241	0.1891	0.1813	0.1670	0.1636	0.1510	0.0803	0.0785	0.0783	0.0736	0.0731	0.0574	0.0749	0.0598	0.0650	0.0412
SL111	111.0'	0.2876	0.2614	0.2545	0.1881	0.1983	0.1757	0.1779	0.1552	0.0895	0.0861	0.0885	0.0826	0.0823	0.0665	0.0835	0.0690	0.0714	0.0383
SL106.5	106.5'	0.1508	0.1379	0.1277	0.1070	0.0949	0.0897	0.0832	0.0767	0.0399	0.0406	0.0379	0.0380	0.0308	0.0267	0.0325	0.0275	0.0228	0.0130
SL100	100.0'	0.2738	0.2646	0.2418	0.1947	0.1991	0.1828	0.1797	0.1614	0.0913	0.0875	0.0894	0.0838	0.0786	0.0649	0.0818	0.0685	0.0668	0.0396
SL66	66.0'	0.1097	0.0978	0.0884	0.0784	0.0531	0.0505	0.0433	0.0421	0.0221	0.0215	0.0174	0.0170	0.0093	0.0091	0.0085	0.0090	0.0012	0.0013

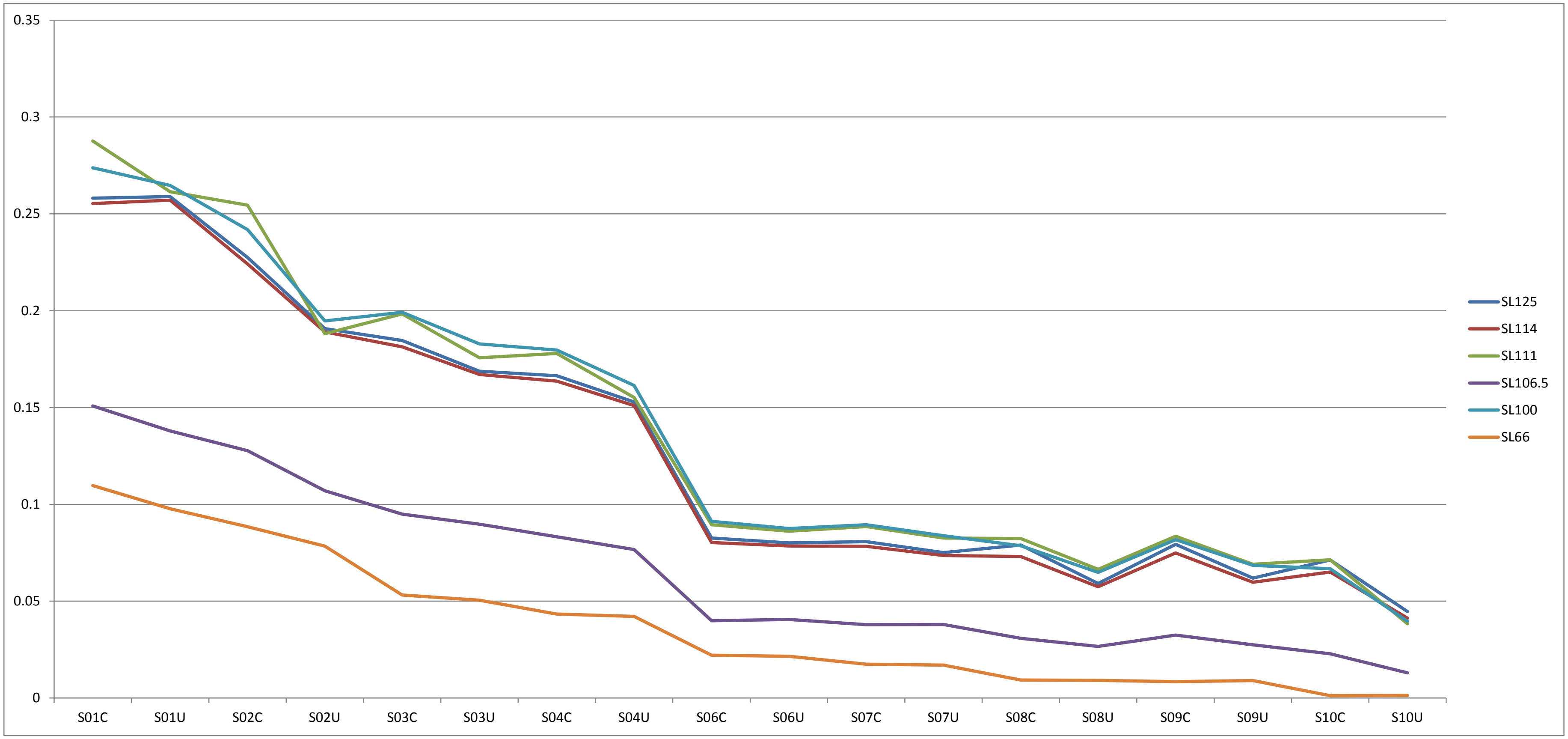

Figure E.1- 4 Maximum Displacements (in.) of RCB Slabs Relative to Free Field – Z (VT) Direction

Table E.1-5

Maximum Displacements (in.) of Basemat Node 10537 Relative to Free Field – Z (VT) Direction

Node	Direction	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
10537	X	0.2071	0.1470	0.2515	0.1512	0.0949	0.1122	0.0831	0.1071	0.0464	0.0525	0.0520	0.0562	0.0195	0.0250	0.0228	0.0269	0.0024	0.0026
10537	Y	0.2022	0.1820	0.2307	0.1894	0.1025	0.1016	0.0920	0.0912	0.0441	0.0670	0.0509	0.0684	0.0191	0.0252	0.0229	0.0297	0.0027	0.0025
10537	Z	0.1056	0.0926	0.0839	0.0756	0.0499	0.0472	0.0402	0.0388	0.0216	0.0208	0.0164	0.0163	0.0085	0.0089	0.0077	0.0080	0.0016	0.0016

Note

Coordinates of Node 10537 are (-3.154', 5.223', 55.0') where X=East, Y=North, Z=Vertical upward.

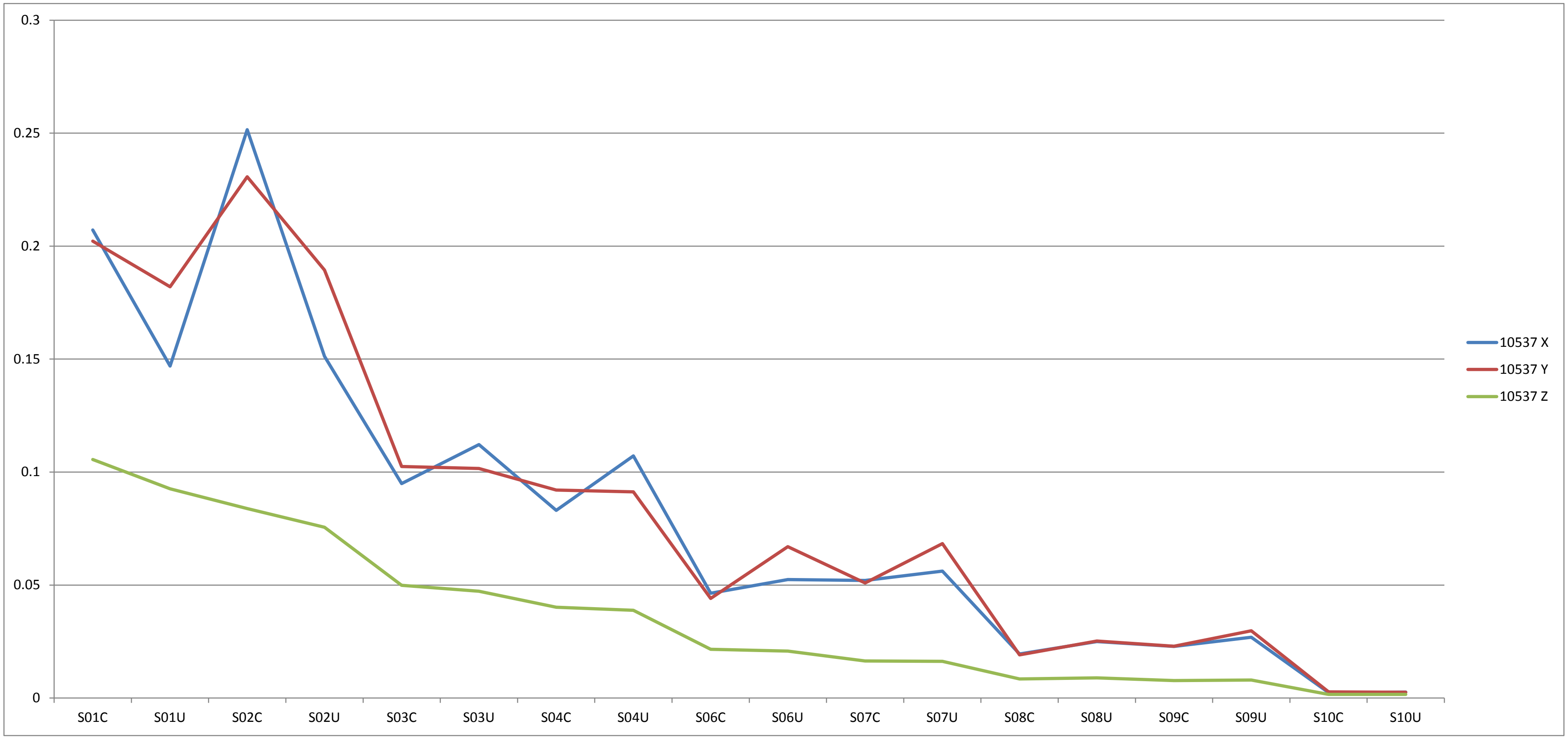

Figure E.1-5 Maximum Displacements (in.) of Basemat Node 10537 Relative to Free Field – Z (VT) Direction

APPENDIX E.2

MAXIMUM DISPLACEMENTS RELATIVE TO THE BASEMAT FOR RCB (INCLUDING BASEMAT RO TATION)

Table E.2-1

RCB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – X (EW) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.0906	0.0842	0.0788	0.0643	0.0782	0.0639	0.0752	0.0600	0.0494	0.0397	0.0494	0.0400	0.0455	0.0302	0.0463	0.0339	0.0394	0.0241
CS90	89.75'	0.1800	0.1532	0.1555	0.1172	0.1806	0.1305	0.1774	0.1226	0.1366	0.0985	0.1343	0.0969	0.1368	0.0897	0.1356	0.0898	0.1270	0.0738
CS104	103.75'	0.3150	0.2514	0.2743	0.1935	0.3372	0.2338	0.3340	0.2172	0.2752	0.1923	0.2698	0.1891	0.2819	0.1819	0.2790	0.1770	0.2645	0.1533
CS118	117.75'	0.4370	0.3470	0.3865	0.2716	0.4908	0.3369	0.4845	0.3121	0.4113	0.2828	0.4043	0.2777	0.4230	0.2723	0.4190	0.2628	0.3977	0.2308
CS124	123.62'	0.4892	0.3876	0.4333	0.3032	0.5520	0.3768	0.5446	0.3505	0.4662	0.3196	0.4586	0.3136	0.4796	0.3085	0.4754	0.2972	0.4502	0.2616
CS132	131.56'	0.5593	0.4421	0.4961	0.3455	0.6339	0.4326	0.6244	0.4032	0.5401	0.3680	0.5311	0.3606	0.5540	0.3568	0.5500	0.3434	0.5193	0.3027
CS160	159.75'	0.8098	0.6384	0.7263	0.4961	0.9273	0.6315	0.9150	0.5903	0.8070	0.5419	0.7937	0.5311	0.8180	0.5318	0.8146	0.5097	0.7707	0.4512
CS180	180.0'	0.9999	0.7832	0.8932	0.6063	1.1415	0.7773	1.1308	0.7308	1.0036	0.6690	0.9859	0.6560	1.0142	0.6615	1.0090	0.6331	0.9684	0.5621
CS196	195.5'	1.1460	0.8952	1.0239	0.6904	1.3047	0.8886	1.3006	0.8393	1.1523	0.7666	1.1332	0.7522	1.1673	0.7620	1.1595	0.7287	1.1249	0.6481
CS216	215.96'	1.3400	1.0414	1.2003	0.8014	1.5198	1.0344	1.5239	0.9828	1.3483	0.8965	1.3264	0.8806	1.3698	0.8932	1.3573	0.8561	1.3334	0.7628
CS241	241'	1.5712	1.2210	1.4103	0.9339	1.7752	1.2129	1.7880	1.1576	1.5785	1.0503	1.5519	1.0276	1.6104	1.0537	1.5920	1.0089	1.5723	0.9115
CS255	254.5'	1.6931	1.3130	1.5184	1.0009	1.9104	1.3040	1.9243	1.2484	1.6960	1.1243	1.6667	1.1024	1.7325	1.1315	1.7125	1.0836	1.6912	0.9904
CS275	274.49'	1.8711	1.4426	1.6746	1.0970	2.1035	1.4300	2.1183	1.3687	1.8607	1.2292	1.8306	1.2065	1.9022	1.2333	1.8812	1.1834	1.8622	1.0846
CS302	301.53'	2.0887	1.6069	1.8662	1.2188	2.3377	1.5873	2.3529	1.5191	2.0599	1.3573	2.0274	1.3337	2.1068	1.3599	2.0856	1.3065	2.0635	1.1973
CS332	331.75'	2.3169	1.7877	2.0682	1.3525	2.5845	1.7602	2.6010	1.6847	2.2712	1.4975	2.2356	1.4715	2.3192	1.4992	2.2967	1.4409	2.2746	1.3215
PCO1241	241'	1.5696	1.2203	1.4081	0.9330	1.7724	1.2109	1.7850	1.1569	1.5755	1.0491	1.5489	1.0281	1.6070	1.0527	1.5886	1.0083	1.5687	0.9107
PCO2241	241'	1.6486	1.3314	1.4822	1.0214	1.8879	1.3805	1.9045	1.3299	1.7096	1.2599	1.6798	1.2353	1.7521	1.3131	1.7284	1.2507	1.7191	1.1455
PCO3241	241'	1.5655	1.2254	1.4042	0.9369	1.7649	1.2219	1.7766	1.1695	1.5665	1.0607	1.5404	1.0425	1.5947	1.0637	1.5775	1.0189	1.5551	0.9214
PSW66	66'	0.0396	0.0381	0.0346	0.0330	0.0291	0.0263	0.0279	0.0237	0.0137	0.0127	0.0137	0.0144	0.0125	0.0079	0.0125	0.0102	0.0090	0.0063
PSW78	78'	0.0853	0.0792	0.0734	0.0578	0.0631	0.0559	0.0602	0.0498	0.0302	0.0278	0.0303	0.0284	0.0256	0.0191	0.0262	0.0225	0.0195	0.0134
PSW100	100'	0.1741	0.1599	0.1539	0.1160	0.1282	0.1139	0.1195	0.1012	0.0585	0.0566	0.0578	0.0557	0.0559	0.0415	0.0569	0.0457	0.0464	0.0295
PSW107	106.5'	0.2015	0.1843	0.1785	0.1333	0.1474	0.1315	0.1372	0.1169	0.0668	0.0654	0.0656	0.0640	0.0663	0.0487	0.0675	0.0526	0.0563	0.0335
PSW114	114.0'	0.2337	0.2126	0.2076	0.1539	0.1704	0.1521	0.1578	0.1349	0.0764	0.0754	0.0748	0.0736	0.0786	0.0572	0.0805	0.0611	0.0676	0.0396
PSW130	130.0'	0.2952	0.2699	0.2618	0.1944	0.2137	0.1922	0.1957	0.1698	0.0930	0.0940	0.0908	0.0912	0.0948	0.0707	0.0975	0.0753	0.0814	0.0472
PSW137	136.5'	0.3268	0.2962	0.2916	0.2136	0.2382	0.2124	0.2172	0.1881	0.1054	0.1055	0.1029	0.1019	0.1132	0.0826	0.1158	0.0867	0.0998	0.0557
PSW156	156.0'	0.4515	0.3860	0.4087	0.2813	0.3184	0.2885	0.2979	0.2588	0.1673	0.1438	0.1500	0.1390	0.2201	0.1347	0.2186	0.1393	0.2157	0.1173
PSW191a	191.0'	0.5719	0.5059	0.5108	0.3657	0.4110	0.3678	0.3743	0.3252	0.1869	0.1820	0.1847	0.1749	0.2251	0.1546	0.2258	0.1596	0.2112	0.1071
PSW191b	191.0'	0.6315	0.5291	0.5751	0.3855	0.4416	0.4024	0.4136	0.3610	0.2539	0.1990	0.2176	0.1913	0.3426	0.2023	0.3354	0.2048	0.3435	0.1914
SSW78	78.0'	0.0843	0.0797	0.0730	0.0589	0.0635	0.0568	0.0608	0.0511	0.0319	0.0289	0.0321	0.0295	0.0272	0.0198	0.0282	0.0237	0.0213	0.0138
SSW100a	100.0'	0.1754	0.1604	0.1549	0.1162	0.1292	0.1142	0.1205	0.1017	0.0594	0.0573	0.0586	0.0563	0.0577	0.0424	0.0586	0.0462	0.0484	0.0301
SSW100b	100.0'	0.1730	0.1617	0.1531	0.1187	0.1391	0.1195	0.1321	0.1071	0.0770	0.0661	0.0761	0.0647	0.0660	0.0510	0.0672	0.0563	0.0566	0.0377
SSW107	106.5'	0.2039	0.1854	0.1808	0.1349	0.1492	0.1334	0.1403	0.1191	0.0693	0.0667	0.0686	0.0650	0.0693	0.0503	0.0708	0.0546	0.0597	0.0368
SSW114	114.0'	0.2362	0.2142	0.2109	0.1560	0.1734	0.1547	0.1607	0.1381	0.0799	0.0774	0.0786	0.0752	0.0845	0.0595	0.0856	0.0644	0.0746	0.0451
SSW130	130.0'	0.3115	0.2774	0.2799	0.2020	0.2264	0.2024	0.2078	0.1807	0.1044	0.1017	0.1013	0.0979	0.1254	0.0835	0.1258	0.0894	0.1141	0.0665
SSW137	136.5'	0.3424	0.3034	0.3086	0.2211	0.2485	0.2222	0.2280	0.1986	0.1150	0.1115	0.1119	0.1073	0.1425	0.0939	0.1426	0.1001	0.1312	0.0760
SSW156	156.0'	0.4492	0.3854	0.4063	0.2812	0.3184	0.2881	0.2967	0.2584	0.1642	0.1439	0.1494	0.1391	0.2152	0.1348	0.2142	0.1397	0.2097	0.1189
SSW191	191.0'	0.6630	0.5396	0.6075	0.3993	0.5419	0.4281	0.4801	0.4071	0.3679	0.2307	0.3312	0.2168	0.5094	0.2791	0.4868	0.2631	0.5712	0.3032

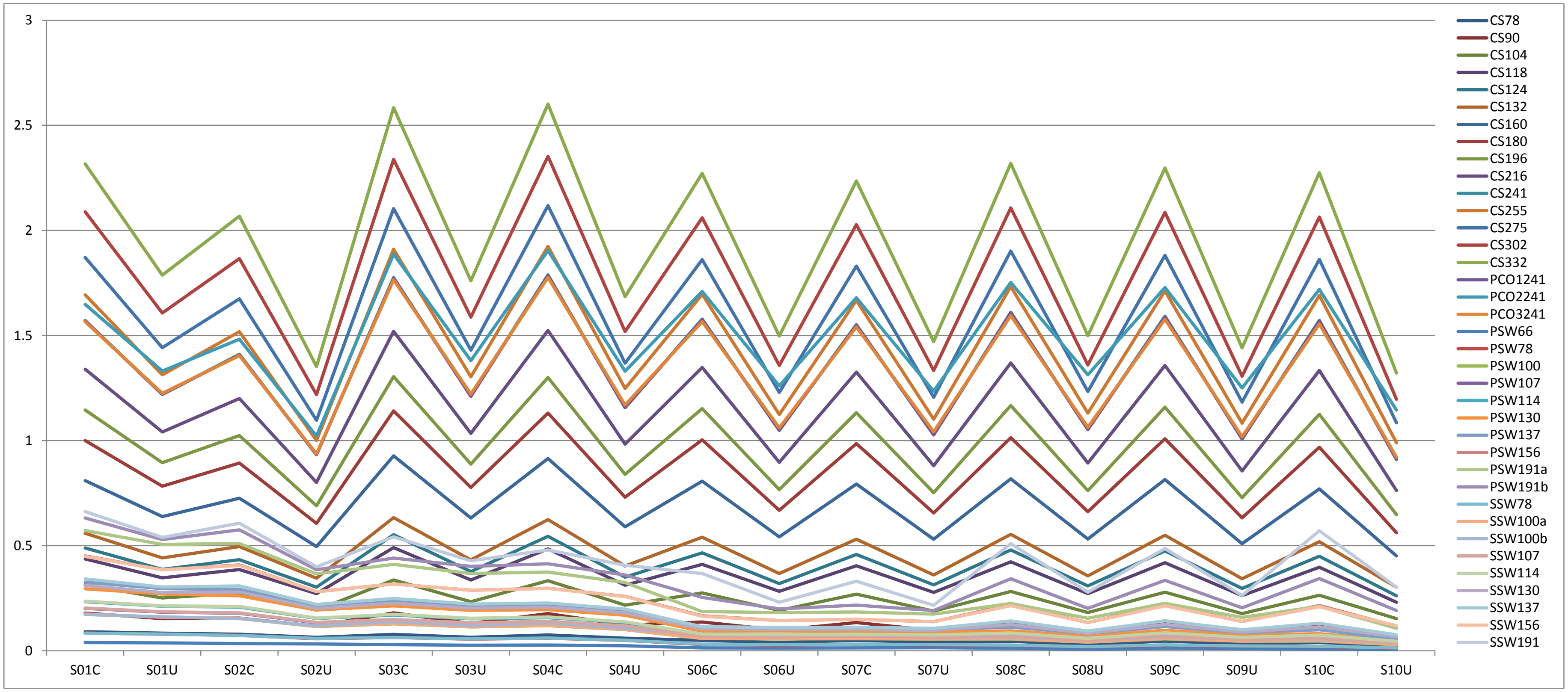

Figure E.2- 1 RCB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – X (EW) Direction

Table E.2-2

RCB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Y (NS) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.0955	0.0965	0.0822	0.0740	0.0749	0.0656	0.0705	0.0615	0.0532	0.0378	0.0532	0.0392	0.0499	0.0302	0.0506	0.0335	0.0391	0.0260
CS90	89.75'	0.1962	0.1818	0.1725	0.1410	0.1815	0.1380	0.1688	0.1323	0.1594	0.1018	0.1570	0.0997	0.1557	0.0952	0.1558	0.0960	0.1341	0.0876
CS104	103.75'	0.3239	0.2926	0.2901	0.2209	0.3228	0.2354	0.3012	0.2258	0.3068	0.1906	0.3019	0.1849	0.3039	0.1852	0.3025	0.1823	0.2672	0.1756
CS118	117.75'	0.4501	0.4005	0.4058	0.3008	0.4593	0.3302	0.4320	0.3177	0.4368	0.2705	0.4303	0.2623	0.4337	0.2665	0.4327	0.2671	0.3806	0.2530
CS124	123.62'	0.5070	0.4469	0.4586	0.3333	0.5243	0.3733	0.4932	0.3588	0.5006	0.3103	0.4941	0.3012	0.4839	0.3045	0.4882	0.3087	0.4236	0.2883
CS132	131.56'	0.5775	0.5075	0.5241	0.3814	0.6011	0.4264	0.5678	0.4103	0.5781	0.3585	0.5708	0.3476	0.5579	0.3547	0.5630	0.3589	0.4886	0.3336
CS160	159.75'	0.8233	0.7176	0.7490	0.5396	0.8712	0.6117	0.8290	0.5901	0.8427	0.5282	0.8329	0.5103	0.8111	0.5299	0.8175	0.5368	0.7292	0.4921
CS180	180.0'	1.0205	0.8814	0.9326	0.6619	1.0991	0.7590	1.0460	0.7359	1.0662	0.6657	1.0542	0.6414	1.0323	0.6718	1.0336	0.6855	0.9422	0.6257
CS196	195.5'	1.1661	1.0013	1.0691	0.7506	1.2676	0.8699	1.2055	0.8427	1.2279	0.7722	1.2142	0.7426	1.1945	0.7810	1.1970	0.7917	1.0988	0.7308
CS216	215.96'	1.3538	1.1533	1.2369	0.8626	1.4815	1.0090	1.4066	0.9781	1.4302	0.9120	1.4144	0.8756	1.3988	0.9346	1.3971	0.9452	1.2954	0.8732
CS241	241'	1.5842	1.3398	1.4378	0.9994	1.7381	1.1894	1.6499	1.1575	1.6828	1.0995	1.6624	1.0539	1.6625	1.1332	1.6542	1.1459	1.5487	1.0592
CS255	254.5'	1.7035	1.4414	1.5428	1.0737	1.8747	1.2742	1.7787	1.2434	1.8055	1.1775	1.7845	1.1279	1.7884	1.2131	1.7785	1.2271	1.6707	1.1320
CS275	274.49'	1.8871	1.5850	1.6963	1.1787	2.0807	1.4058	1.9726	1.3681	1.9916	1.2879	1.9691	1.2340	1.9796	1.3192	1.9649	1.3399	1.8537	1.2287
CS302	301.53'	2.1240	1.7741	1.9054	1.3161	2.3466	1.5769	2.2202	1.5358	2.2351	1.4494	2.2101	1.3886	2.2267	1.4822	2.2096	1.5065	2.0900	1.3767
CS332	331.75'	2.3667	1.9752	2.1375	1.4620	2.6096	1.7579	2.4680	1.7094	2.4751	1.6127	2.4479	1.5449	2.4691	1.6459	2.4488	1.6735	2.3202	1.5269
PCO1241	241'	1.5847	1.3372	1.4300	0.9977	1.7381	1.1922	1.6506	1.1603	1.6830	1.1029	1.6630	1.0573	1.6630	1.1365	1.6544	1.1491	1.5487	1.0633
PCO2241	241'	1.8980	1.7299	1.7169	1.3208	2.1608	1.7712	2.0508	1.7325	2.1849	1.9184	2.1573	1.8364	2.2107	2.0699	2.1845	2.0594	2.1033	2.0620
PCO3241	241'	1.6956	1.4645	1.5319	1.1066	1.8878	1.3930	1.7934	1.3603	1.8601	1.3841	1.8372	1.3251	1.8567	1.4589	1.8415	1.4632	1.7429	1.4063
PSW66	66'	0.0419	0.0435	0.0355	0.0325	0.0282	0.0278	0.0262	0.0258	0.0150	0.0118	0.0156	0.0164	0.0149	0.0079	0.0139	0.0092	0.0083	0.0055
PSW78	78'	0.0871	0.0906	0.0743	0.0667	0.0609	0.0575	0.0551	0.0535	0.0321	0.0254	0.0328	0.0276	0.0271	0.0172	0.0281	0.0195	0.0177	0.0109
PSW100	100'	0.1732	0.1825	0.1506	0.1341	0.1227	0.1147	0.1117	0.1069	0.0616	0.0527	0.0622	0.0518	0.0473	0.0337	0.0495	0.0398	0.0343	0.0225
PSW107	106.5'	0.2002	0.2103	0.1743	0.1528	0.1425	0.1328	0.1313	0.1230	0.0705	0.0625	0.0706	0.0604	0.0564	0.0409	0.0584	0.0476	0.0432	0.0285
PSW114	114.0'	0.2304	0.2449	0.2034	0.1786	0.1642	0.1542	0.1520	0.1433	0.0795	0.0726	0.0795	0.0706	0.0648	0.0479	0.0674	0.0550	0.0517	0.0348
PSW130	130.0'	0.2946	0.3119	0.2622	0.2245	0.2124	0.1973	0.1980	0.1832	0.1001	0.0951	0.0996	0.0908	0.0841	0.0636	0.0880	0.0720	0.0729	0.0491
PSW137	136.5'	0.3240	0.3499	0.2970	0.2531	0.2399	0.2242	0.2238	0.2085	0.1182	0.1140	0.1164	0.1088	0.1036	0.0789	0.1073	0.0903	0.1010	0.0692
PSW156	156.0'	0.4838	0.4832	0.4400	0.3519	0.3938	0.3371	0.3635	0.3147	0.2219	0.2107	0.2145	0.1938	0.2946	0.1966	0.2885	0.2062	0.3011	0.1971
PSW191a	191.0'	1.0851	0.8854	0.9998	0.6591	1.0071	0.7226	0.8952	0.6548	1.0566	0.6199	0.9454	0.5503	1.4890	0.7686	1.4476	0.7424	1.5790	0.9270
PSW191b	191.0'	0.5951	0.6136	0.5555	0.4437	0.4808	0.3972	0.4401	0.3726	0.2515	0.2131	0.2487	0.2018	0.3209	0.1909	0.3089	0.1993	0.3289	0.1904
SSW78	78.0'	0.0883	0.0939	0.0766	0.0714	0.0619	0.0599	0.0573	0.0554	0.0345	0.0270	0.0349	0.0298	0.0287	0.0187	0.0301	0.0212	0.0187	0.0126
SSW100a	100.0'	0.1728	0.1842	0.1509	0.1363	0.1230	0.1160	0.1114	0.1073	0.0631	0.0528	0.0634	0.0520	0.0482	0.0336	0.0509	0.0396	0.0343	0.0226
SSW100b	100.0'	0.1743	0.1792	0.1500	0.1297	0.1274	0.1153	0.1155	0.1066	0.0727	0.0550	0.0725	0.0544	0.0624	0.0403	0.0647	0.0439	0.0461	0.0301
SSW107	106.5'	0.2002	0.2134	0.1784	0.1569	0.1436	0.1354	0.1336	0.1256	0.0720	0.0652	0.0721	0.0630	0.0602	0.0444	0.0625	0.0497	0.0500	0.0350
SSW114	114.0'	0.2347	0.2494	0.2141	0.1816	0.1732	0.1617	0.1608	0.1489	0.0864	0.0805	0.0853	0.0775	0.0772	0.0580	0.0800	0.0642	0.0711	0.0497
SSW130	130.0'	0.3103	0.3294	0.2894	0.2394	0.2375	0.2170	0.2210	0.1993	0.1264	0.1148	0.1247	0.1090	0.1245	0.0872	0.1217	0.0971	0.1195	0.0863
SSW137	136.5'	0.3423	0.3622	0.3206	0.2629	0.2656	0.2403	0.2470	0.2206	0.1427	0.1301	0.1413	0.1228	0.1475	0.0997	0.1443	0.1122	0.1433	0.1041
SSW156	156.0'	0.4658	0.4672	0.4261	0.3393	0.3636	0.3194	0.3377	0.2951	0.2086	0.1955	0.2019	0.1822	0.2483	0.1676	0.2377	0.2267	0.2767	0.1836
SSW191	191.0'	1.0790	0.8814	0.9943	0.6559	0.9996	0.7184	0.8891	0.6515	1.0467	0.6154	0.9375	0.5463	1.4730	0.7611	1.4323	0.7357	1.5572	0.9197

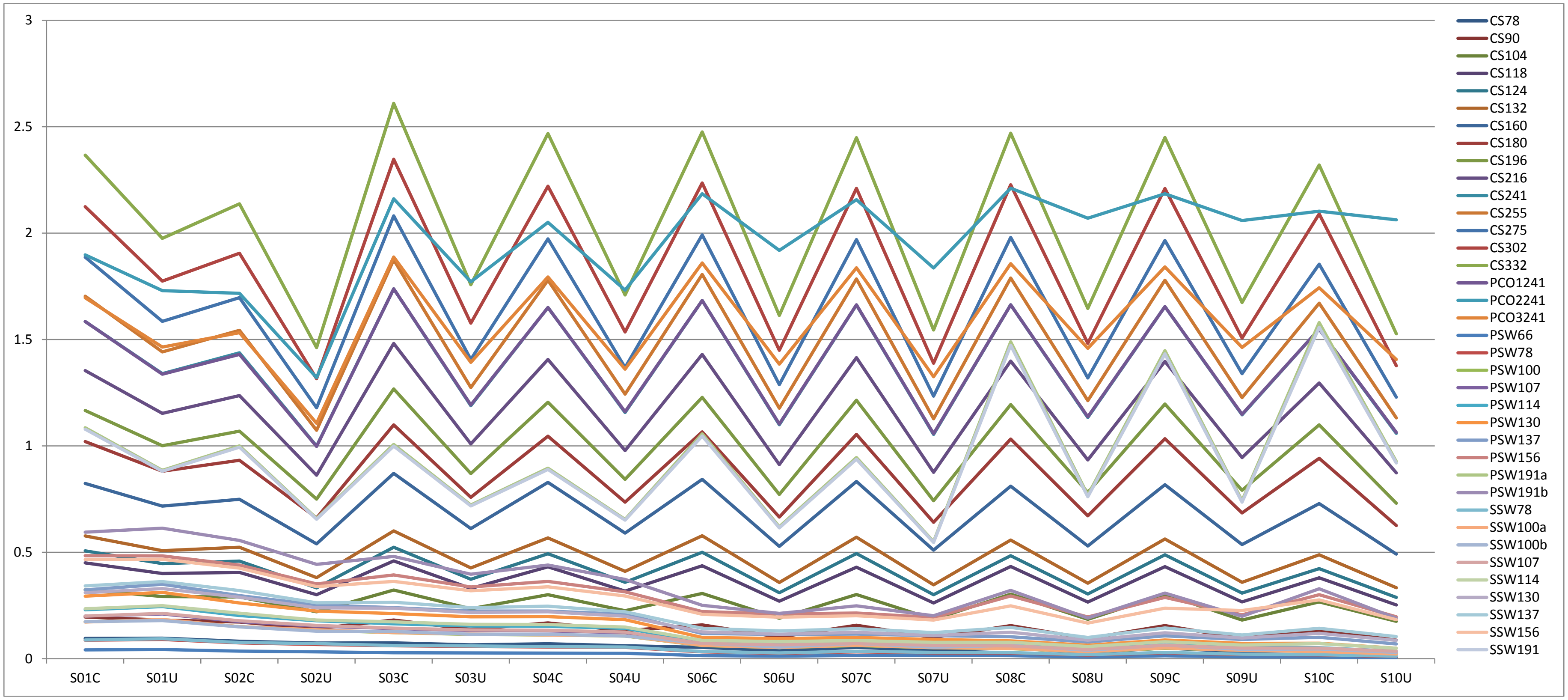

Figure E.2- 2 RCB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Y (NS) Direction

Table E.2-3

RCB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.3291	0.3322	0.2798	0.2336	0.2485	0.2244	0.2254	0.2022	0.1250	0.1138	0.1242	0.1110	0.0904	0.0769	0.1017	0.0877	0.0584	0.0392
CS90	89.75'	0.3429	0.3367	0.2952	0.2402	0.2817	0.2375	0.2592	0.2192	0.1741	0.1398	0.1727	0.1357	0.1436	0.1091	0.1519	0.1175	0.1129	0.0763
CS104	103.75'	0.3807	0.3613	0.3289	0.2593	0.3339	0.2675	0.3110	0.2497	0.2356	0.1750	0.2337	0.1688	0.2080	0.1511	0.2144	0.1586	0.1754	0.1179
CS118	117.75'	0.4161	0.3874	0.3615	0.2781	0.3825	0.2957	0.3591	0.2784	0.2919	0.2100	0.2895	0.2018	0.2671	0.1898	0.2724	0.1973	0.2334	0.1564
CS124	123.62'	0.4290	0.3978	0.3753	0.2848	0.4027	0.3070	0.3817	0.2893	0.3138	0.2237	0.3112	0.2149	0.2903	0.2050	0.2950	0.2124	0.2548	0.1715
CS132	131.56'	0.4480	0.4111	0.3934	0.2953	0.4274	0.3214	0.4065	0.3040	0.3419	0.2412	0.3391	0.2316	0.3198	0.2245	0.3241	0.2317	0.2849	0.1910
CS160	159.75'	0.5062	0.4509	0.4484	0.3265	0.5029	0.3660	0.4824	0.3494	0.4269	0.2953	0.4234	0.2833	0.4103	0.2846	0.4122	0.2918	0.3784	0.2516
CS180	180.0'	0.5396	0.4735	0.4802	0.3439	0.5454	0.3909	0.5235	0.3748	0.4752	0.3266	0.4713	0.3132	0.4627	0.3195	0.4633	0.3259	0.4331	0.2870
CS196	195.5'	0.5607	0.4877	0.5004	0.3548	0.5745	0.4075	0.5704	0.3914	0.5055	0.3465	0.5013	0.3322	0.4963	0.3414	0.4959	0.3482	0.4678	0.3098
CS216	215.96'	0.5835	0.5026	0.5219	0.3663	0.6057	0.4253	0.5985	0.4090	0.5377	0.3680	0.5332	0.3527	0.5326	0.3648	0.5305	0.3720	0.5046	0.3343
CS241	241'	0.6043	0.5164	0.5405	0.3769	0.6342	0.4416	0.6260	0.4251	0.5668	0.3880	0.5621	0.3718	0.5652	0.3865	0.5613	0.3940	0.5384	0.3563
CS255	254.5'	0.6124	0.5220	0.5611	0.3811	0.6454	0.4482	0.6363	0.4317	0.5782	0.3961	0.5733	0.3796	0.5784	0.3954	0.5730	0.4030	0.5518	0.3651
CS275	274.49'	0.5967	0.5086	0.5423	0.3715	0.6302	0.4380	0.6218	0.4220	0.5657	0.3883	0.5608	0.3721	0.5675	0.3889	0.5616	0.3956	0.5417	0.3607
CS302	301.53'	0.4929	0.4229	0.4487	0.3098	0.5183	0.3637	0.5120	0.3504	0.4645	0.3225	0.4610	0.3099	0.4685	0.3251	0.4639	0.3295	0.4491	0.3066
CS332	331.75'	0.0739	0.0719	0.0774	0.0716	0.0755	0.0676	0.0645	0.0632	0.0739	0.0667	0.0777	0.0768	0.1079	0.1055	0.1090	0.1069	0.1349	0.1258
PCO1241	241'	0.5372	0.4478	0.4781	0.3261	0.5719	0.4010	0.5739	0.3844	0.5062	0.3439	0.5023	0.3333	0.5101	0.3436	0.5062	0.3427	0.4935	0.3054
PCO2241	241'	0.4144	0.3932	0.3622	0.3362	0.4640	0.4535	0.6719	0.6409	0.5977	0.5563	0.5822	0.5374	0.5560	0.5183	0.5511	0.5179	0.5268	0.4953
PCO3241	241'	0.4486	0.3861	0.4017	0.2904	0.4821	0.3661	0.5064	0.3970	0.4542	0.3456	0.4507	0.3347	0.4527	0.3407	0.4476	0.3419	0.4410	0.3106
PSW66	66'	0.1274	0.1305	0.1104	0.0901	0.0837	0.0825	0.0759	0.0726	0.0288	0.0331	0.0286	0.0322	0.0170	0.0181	0.0184	0.0204	0.0078	0.0057
PSW78	78'	0.1292	0.1310	0.1123	0.0906	0.0867	0.0840	0.0790	0.0741	0.0317	0.0351	0.0317	0.0341	0.0220	0.0207	0.0238	0.0229	0.0147	0.0092
PSW100	100'	0.1613	0.1592	0.1415	0.1111	0.1117	0.1047	0.1021	0.0930	0.0443	0.0470	0.0442	0.0456	0.0410	0.0324	0.0425	0.0345	0.0337	0.0190
PSW107	106.5'	0.1670	0.1626	0.1476	0.1144	0.1174	0.1081	0.1076	0.0964	0.0481	0.0504	0.0479	0.0486	0.0469	0.0361	0.0480	0.0385	0.0414	0.0240
PSW114	114.0'	0.1685	0.1635	0.1492	0.1152	0.1189	0.1090	0.1090	0.0973	0.0492	0.0512	0.0489	0.0493	0.0487	0.0373	0.0502	0.0396	0.0442	0.0255
PSW130	130.0'	0.1701	0.1643	0.1508	0.1160	0.1204	0.1098	0.1104	0.0981	0.0502	0.0520	0.0499	0.0501	0.0511	0.0386	0.0524	0.0408	0.0469	0.0269
PSW137	136.5'	0.1616	0.1505	0.1438	0.1065	0.1144	0.1039	0.1038	0.0917	0.0492	0.0494	0.0489	0.0477	0.0512	0.0377	0.0521	0.0399	0.0479	0.0269
PSW156	156.0'	0.2548	0.2279	0.2316	0.1659	0.1839	0.1627	0.1688	0.1484	0.1055	0.0796	0.0927	0.0776	0.1374	0.0780	0.1340	0.0804	0.1367	0.0738
PSW191a	191.0'	0.1755	0.1674	0.1598	0.1208	0.1272	0.1190	0.1142	0.1058	0.0618	0.0603	0.0605	0.0568	0.0726	0.0491	0.0717	0.0520	0.0739	0.0441
PSW191b	191.0'	0.2573	0.2296	0.2350	0.1674	0.1878	0.1643	0.1728	0.1501	0.1104	0.0807	0.0970	0.0790	0.1450	0.0808	0.1412	0.0828	0.1458	0.0794
SSW78	78.0'	0.2061	0.2155	0.1781	0.1506	0.1381	0.1355	0.1248	0.1208	0.0519	0.0555	0.0517	0.0544	0.0306	0.0328	0.0356	0.0383	0.0186	0.0129
SSW100a	100.0'	0.2152	0.2247	0.1903	0.1586	0.1478	0.1421	0.1336	0.1272	0.0575	0.0617	0.0571	0.0595	0.0512	0.0435	0.0554	0.0464	0.0415	0.0240
SSW100b	100.0'	0.2782	0.2820	0.2366	0.1943	0.2114	0.1898	0.1926	0.1714	0.1121	0.0985	0.1113	0.0961	0.0846	0.0702	0.0937	0.0765	0.0575	0.0392
SSW107	106.5'	0.2174	0.2275	0.1933	0.1609	0.1505	0.1440	0.1362	0.1294	0.0593	0.0634	0.0589	0.0607	0.0544	0.0453	0.0578	0.0480	0.0463	0.0301
SSW114	114.0'	0.2199	0.2286	0.1968	0.1619	0.1533	0.1459	0.1389	0.1309	0.0614	0.0652	0.0606	0.0625	0.0599	0.0468	0.0599	0.0494	0.0528	0.0326
SSW130	130.0'	0.2245	0.2337	0.2023	0.1660	0.1578	0.1492	0.1460	0.1353	0.0676	0.0687	0.0665	0.0652	0.0783	0.0500	0.0766	0.0539	0.0738	0.0451
SSW137	136.5'	0.2260	0.2356	0.2040	0.1675	0.1610	0.1500	0.1492	0.1372	0.0706	0.0708	0.0697	0.0663	0.0824	0.0518	0.0805	0.0574	0.0784	0.0496
SSW156	156.0'	0.2279	0.2411	0.2040	0.1719	0.1701	0.1542	0.1579	0.1427	0.0801	0.0772	0.0779	0.0717	0.0975	0.0614	0.0951	0.0670	0.0956	0.0614
SSW191	191.0'	0.2325	0.2440	0.2083	0.1740	0.1746	0.1574	0.1621	0.1457	0.0850	0.0804	0.0822	0.0745	0.1070	0.0665	0.1040	0.0719	0.1114	0.0674

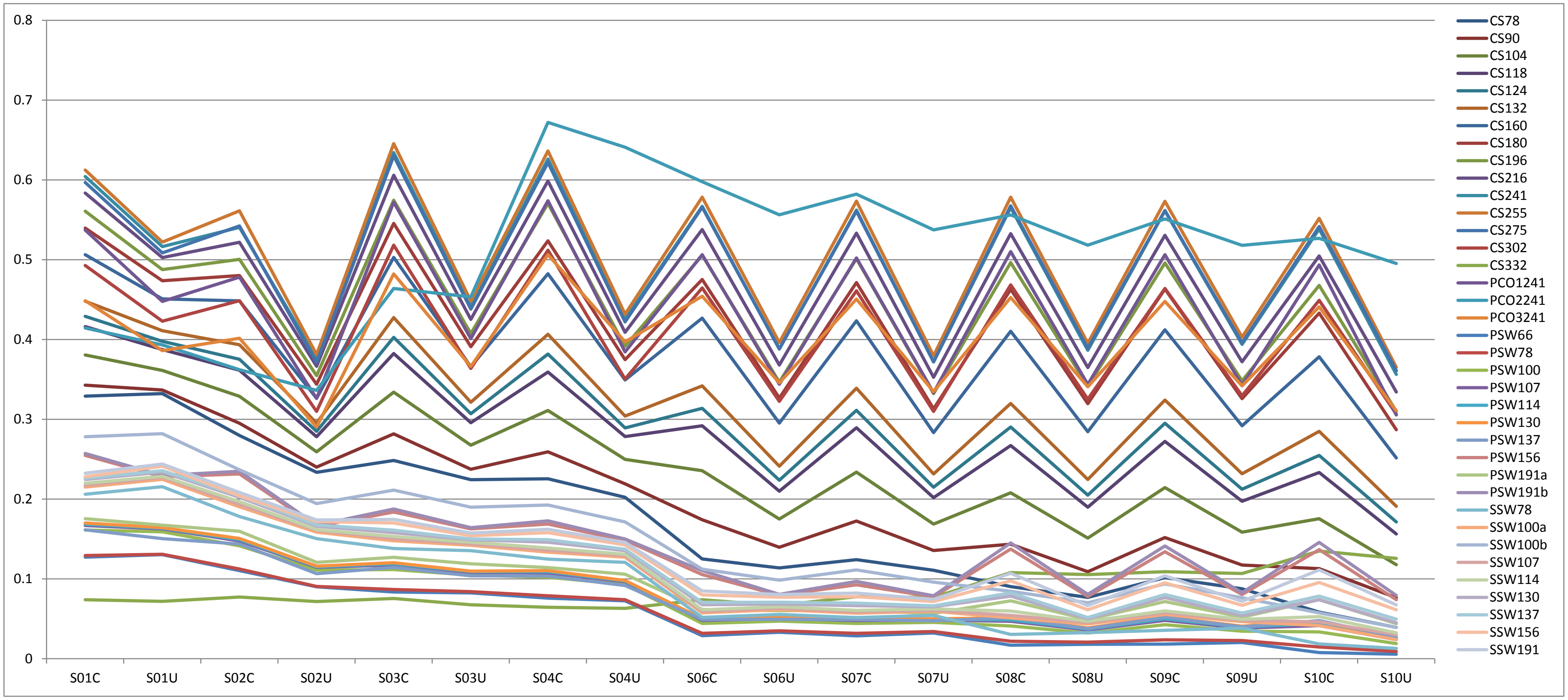

Figure E.2-3 RCB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

Table E.2-4

Maximum Displacements (in.) of RCB Slabs Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
SL125	125.0'	0.2199	0.2213	0.1953	0.1596	0.1623	0.1446	0.1482	0.1338	0.0754	0.0717	0.0748	0.0678	0.0784	0.0558	0.0766	0.0588	0.0715	0.0449
SL114	114.0'	0.2215	0.2195	0.1947	0.1580	0.1599	0.1449	0.1466	0.1320	0.0730	0.0706	0.0723	0.0682	0.0724	0.0541	0.0718	0.0565	0.0652	0.0414
SL111	111.0'	0.2713	0.2466	0.2389	0.1742	0.1947	0.1741	0.1755	0.1528	0.0879	0.0855	0.0873	0.0824	0.0825	0.0663	0.0845	0.0688	0.0710	0.0379
SL106.5	106.5'	0.1042	0.0982	0.0914	0.0691	0.0729	0.0678	0.0659	0.0592	0.0305	0.0312	0.0304	0.0305	0.0277	0.0224	0.0285	0.0235	0.0231	0.0132
SL100	100.0'	0.2474	0.2367	0.2165	0.1668	0.1835	0.1637	0.1688	0.1448	0.0860	0.0828	0.0848	0.0800	0.0772	0.0618	0.0787	0.0647	0.0671	0.0399
SL66	66.0'	0.0516	0.0546	0.0446	0.0383	0.0320	0.0332	0.0283	0.0292	0.0092	0.0117	0.0089	0.0111	0.0045	0.0040	0.0045	0.0058	0.0015	0.0012

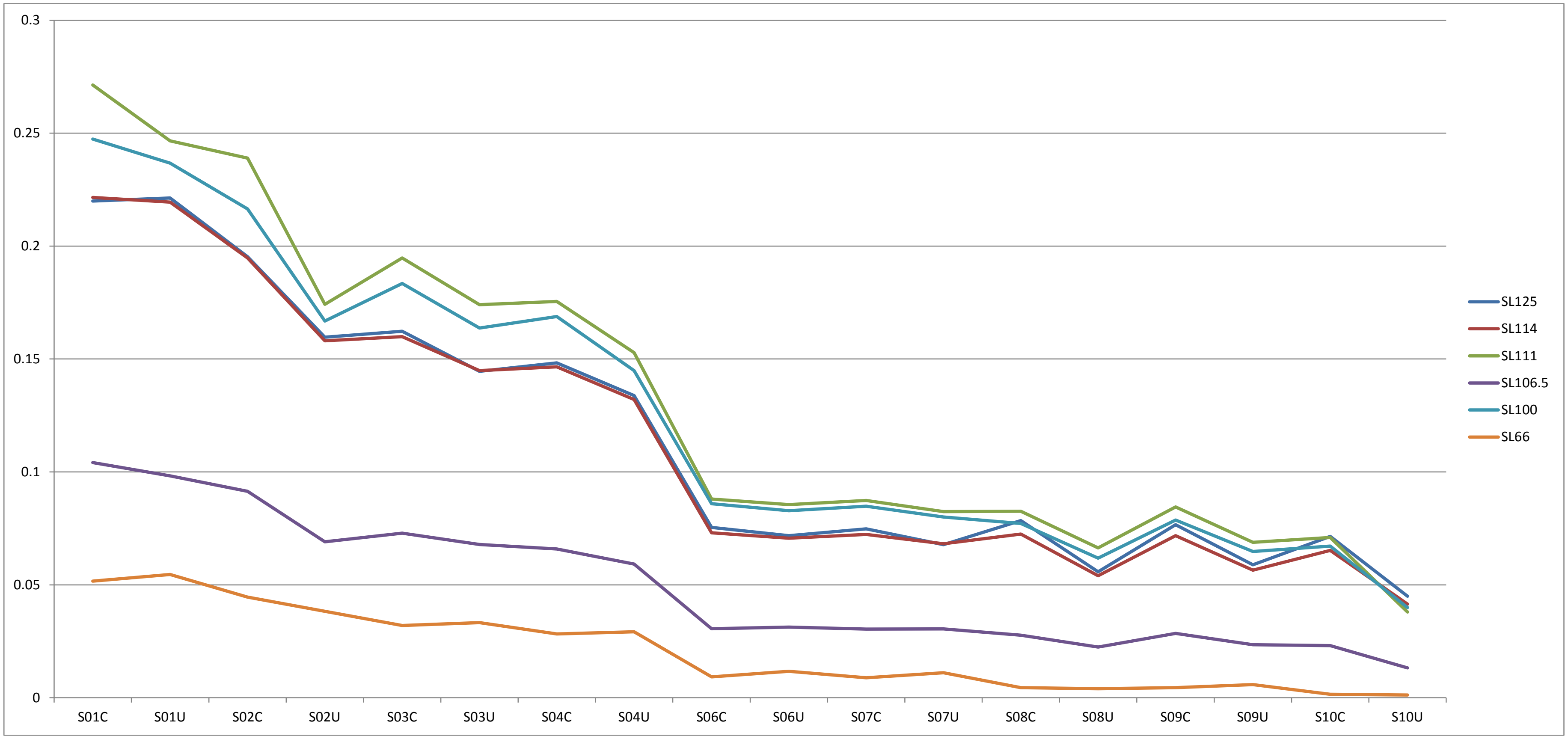

Figure E.2-4 Maximum Displacements (in.) of RCB Slabs Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

APPENDIX E.3

MAXIMUM DISPLACEMENTS RELATIVE TO THE BASEMAT FOR RCB (NOT INCLUDING BASEMAT ROTATION)

Table E.3-1

RCB, Maximum Displacements (in.) Relative to Basemat (not including Basemat Rotation) – X (EW) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.0086	0.0073	0.0081	0.0069	0.0081	0.0057	0.0078	0.0058	0.0059	0.0041	0.0060	0.0123	0.0053	0.0030	0.0049	0.0038	0.0054	0.0030
CS90	89.75'	0.0582	0.0383	0.0551	0.0330	0.0770	0.0468	0.0785	0.0452	0.0758	0.0482	0.0739	0.0489	0.0827	0.0517	0.0800	0.0481	0.0836	0.0474
CS104	103.75'	0.1475	0.0903	0.1355	0.0777	0.1964	0.1160	0.2000	0.1105	0.1959	0.1248	0.1915	0.1232	0.2137	0.1321	0.2077	0.1233	0.2128	0.1216
CS118	117.75'	0.2245	0.1421	0.2111	0.1242	0.3118	0.1865	0.3162	0.1774	0.3137	0.1982	0.3082	0.1952	0.3411	0.2109	0.3325	0.1964	0.3370	0.1936
CS124	123.62'	0.2578	0.1637	0.2424	0.1424	0.3574	0.2123	0.3618	0.2047	0.3611	0.2279	0.3550	0.2242	0.3917	0.2421	0.3825	0.2254	0.3862	0.2222
CS132	131.56'	0.3023	0.1924	0.2841	0.1667	0.4181	0.2495	0.4219	0.2416	0.4244	0.2666	0.4172	0.2618	0.4582	0.2838	0.4485	0.2644	0.4502	0.2601
CS160	159.75'	0.4618	0.2951	0.4384	0.2532	0.6369	0.3817	0.6414	0.3710	0.6541	0.4062	0.6432	0.3987	0.6949	0.4352	0.6829	0.4049	0.6825	0.3972
CS180	180.0'	0.5870	0.3708	0.5510	0.3172	0.7973	0.4799	0.8068	0.4699	0.8233	0.5086	0.8092	0.4997	0.8701	0.5479	0.8553	0.5098	0.8671	0.5000
CS196	195.5'	0.6834	0.4307	0.6403	0.3661	0.9192	0.5547	0.9380	0.5466	0.9515	0.5873	0.9355	0.5774	1.0073	0.6353	0.9889	0.5912	1.0137	0.5797
CS216	215.96'	0.8124	0.5098	0.7626	0.4310	1.0799	0.6550	1.1102	0.6483	1.1204	0.6922	1.1018	0.6816	1.1890	0.7492	1.1634	0.6998	1.2091	0.6862
CS241	241'	0.9641	0.6037	0.9066	0.5062	1.2733	0.7881	1.3123	0.7696	1.3174	0.8154	1.2947	0.7989	1.4033	0.8886	1.3706	0.8297	1.4318	0.8256
CS255	254.5'	1.0419	0.6493	0.9786	0.5426	1.3725	0.8533	1.4150	0.8320	1.4170	0.8729	1.3918	0.8576	1.5117	0.9549	1.4763	0.8920	1.5420	0.8991
CS275	274.49'	1.1563	0.7128	1.0826	0.5935	1.5128	0.9348	1.5593	0.9109	1.5552	0.9533	1.5297	0.9380	1.6612	1.0398	1.6231	0.9734	1.7001	0.9854
CS302	301.53'	1.2874	0.7885	1.2038	0.6564	1.6758	1.0319	1.7267	1.0057	1.7185	1.0484	1.6913	1.0329	1.8385	1.1437	1.7980	1.0718	1.8841	1.0872
CS332	331.75'	1.4188	0.8694	1.3259	0.7224	1.8421	1.1375	1.8997	1.1092	1.8898	1.1518	1.8602	1.1350	2.0203	1.2575	1.9760	1.1786	2.0757	1.1994
PCO1241	241'	0.9623	0.6030	0.9042	0.5056	1.2704	0.7881	1.3092	0.7688	1.3143	0.8142	1.2917	0.7993	1.3998	0.8875	1.3672	0.8291	1.4282	0.8247
PCO2241	241'	1.0494	0.7231	0.9835	0.6010	1.3883	0.9731	1.4313	0.9546	1.4513	1.0466	1.4255	1.0213	1.5478	1.1597	1.5098	1.0842	1.5803	1.0681
PCO3241	241'	0.9595	0.6103	0.8999	0.5114	1.2629	0.8017	1.3008	0.7805	1.3051	0.8283	1.2830	0.8149	1.3876	0.8992	1.3561	0.8402	1.4146	0.8361
PSW66	66'	0.0882	0.0820	0.0727	0.0622	0.0770	0.0623	0.0736	0.0565	0.0484	0.0389	0.0481	0.0389	0.0432	0.0313	0.0456	0.0327	0.0361	0.0217
PSW78	78'	0.0106	0.0069	0.0090	0.0050	0.0149	0.0078	0.0156	0.0074	0.0190	0.0093	0.0181	0.0123	0.0207	0.0134	0.0205	0.0126	0.0208	0.0127
PSW100	100'	0.0185	0.0164	0.0207	0.0137	0.0302	0.0180	0.0322	0.0168	0.0335	0.0153	0.0311	0.0164	0.0355	0.0249	0.0364	0.0229	0.0403	0.0288
PSW107	106.5'	0.0221	0.0198	0.0268	0.0166	0.0351	0.0209	0.0376	0.0196	0.0376	0.0174	0.0353	0.0184	0.0427	0.0292	0.0425	0.0268	0.0486	0.0334
PSW114	114.0'	0.0287	0.0246	0.0345	0.0206	0.0417	0.0269	0.0449	0.0235	0.0437	0.0200	0.0404	0.0208	0.0517	0.0350	0.0514	0.0320	0.0586	0.0405
PSW130	130.0'	0.0366	0.0311	0.0431	0.0258	0.0505	0.0314	0.0545	0.0296	0.0539	0.0249	0.0500	0.0248	0.0632	0.0437	0.0624	0.0404	0.0712	0.0494
PSW137	136.5'	0.0465	0.0373	0.0544	0.0313	0.0573	0.0373	0.0622	0.0347	0.0605	0.0282	0.0558	0.0296	0.0756	0.0513	0.0728	0.0474	0.0850	0.0578
PSW156	156.0'	0.1106	0.0748	0.1198	0.0602	0.1239	0.0698	0.1250	0.0668	0.1125	0.0576	0.1011	0.0613	0.1669	0.1027	0.1552	0.0930	0.1840	0.1200
PSW191a	191.0'	0.1122	0.0788	0.1209	0.0641	0.1141	0.0748	0.1197	0.0697	0.1183	0.0564	0.1090	0.0597	0.1689	0.1032	0.1565	0.0975	0.1776	0.1169
PSW191b	191.0'	0.1786	0.1189	0.1923	0.0946	0.1981	0.1108	0.2003	0.1090	0.1765	0.0942	0.1541	0.0991	0.2724	0.1697	0.2512	0.1526	0.3067	0.1919
SSW78	78.0'	0.0096	0.0054	0.0092	0.0048	0.0135	0.0079	0.0134	0.0076	0.0159	0.0090	0.0160	0.0128	0.0179	0.0113	0.0176	0.0108	0.0181	0.0108
SSW100a	100.0'	0.0183	0.0168	0.0220	0.0141	0.0307	0.0181	0.0328	0.0169	0.0335	0.0153	0.0311	0.0170	0.0365	0.0252	0.0371	0.0231	0.0419	0.0293
SSW100b	100.0'	0.0222	0.0175	0.0265	0.0148	0.0251	0.0153	0.0276	0.0146	0.0306	0.0161	0.0297	0.0165	0.0349	0.0230	0.0348	0.0207	0.0368	0.0262
SSW107	106.5'	0.0246	0.0214	0.0295	0.0178	0.0380	0.0222	0.0403	0.0209	0.0393	0.0180	0.0364	0.0193	0.0454	0.0311	0.0458	0.0285	0.0517	0.0364
SSW114	114.0'	0.0313	0.0268	0.0373	0.0219	0.0447	0.0274	0.0475	0.0261	0.0459	0.0215	0.0420	0.0231	0.0559	0.0387	0.0548	0.0355	0.0624	0.0456
SSW130	130.0'	0.0540	0.0418	0.0617	0.0341	0.0660	0.0412	0.0676	0.0387	0.0625	0.0310	0.0579	0.0335	0.0876	0.0579	0.0846	0.0530	0.0966	0.0684
SSW137	136.5'	0.0631	0.0481	0.0719	0.0393	0.0758	0.0468	0.0766	0.0440	0.0707	0.0356	0.0654	0.0382	0.1016	0.0663	0.0976	0.0607	0.1122	0.0781
SSW156	156.0'	0.1076	0.0742	0.1177	0.0602	0.1205	0.0694	0.1220	0.0665	0.1101	0.0573	0.0990	0.0608	0.1621	0.1015	0.1506	0.0919	0.1777	0.1197
SSW191	191.0'	0.3165	0.1691	0.3015	0.1362	0.3412	0.1732	0.3029	0.1992	0.3386	0.1437	0.2984	0.1373	0.4948	0.2339	0.4680	0.2125	0.5564	0.3153

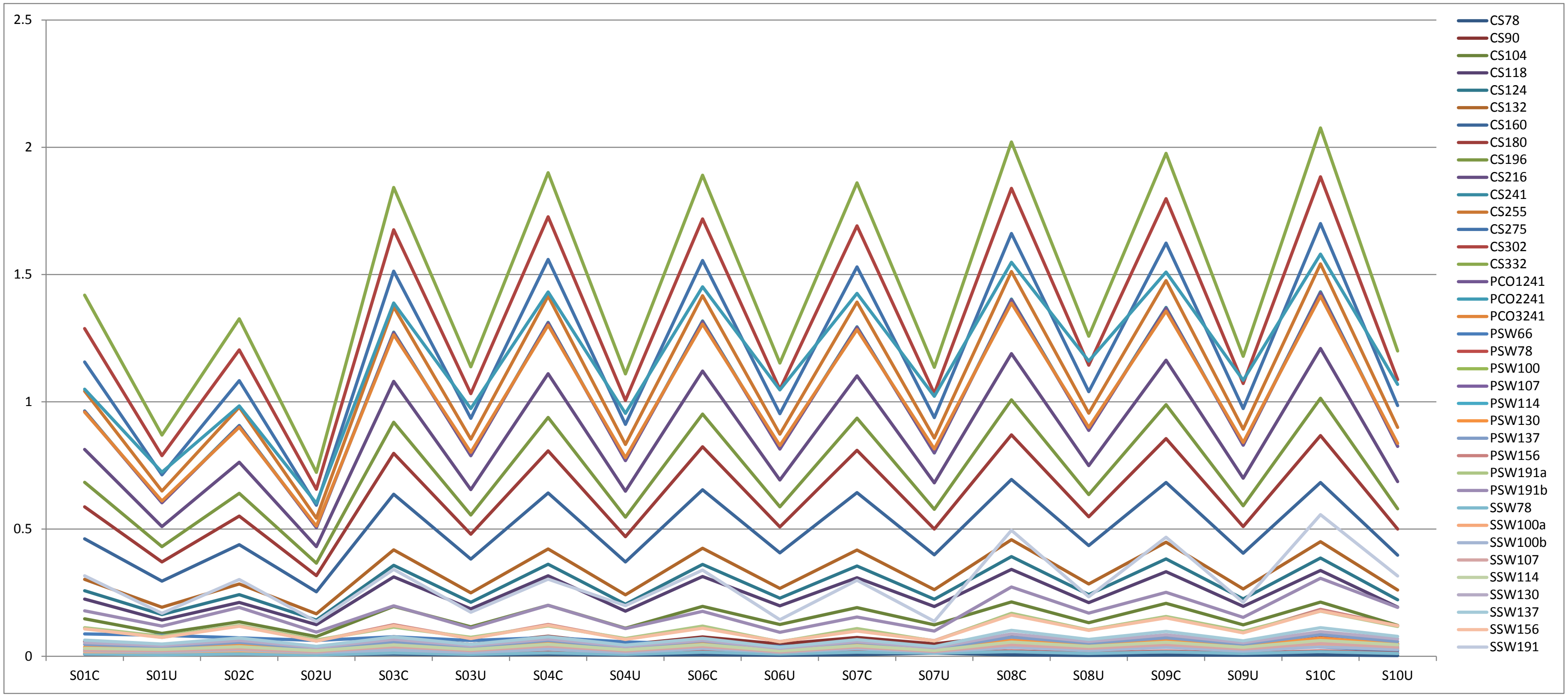

Figure E.3-1 RCB, Maximum Displacements (in.) Relative to Basemat (not including Basemat Rotation) – X (EW) Direction

Table E.3-2

RCB, Maximum Displacements (in.) Relative to Basemat (not including Basemat Rotation) – Y (NW) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.0092	0.0079	0.0088	0.0074	0.0082	0.0061	0.0079	0.0057	0.0059	0.0038	0.0059	0.0145	0.0054	0.0034	0.0054	0.0039	0.0058	0.0033
CS90	89.75'	0.0651	0.0450	0.0593	0.0393	0.0787	0.0492	0.0754	0.0482	0.0921	0.0517	0.0898	0.0513	0.0972	0.0564	0.0946	0.0535	0.0912	0.0584
CS104	103.75'	0.1431	0.1058	0.1368	0.0865	0.1844	0.1146	0.1762	0.1125	0.2194	0.1231	0.2148	0.1192	0.2305	0.1341	0.2246	0.1263	0.2158	0.1401
CS118	117.75'	0.2203	0.1632	0.2117	0.1316	0.2841	0.1772	0.2744	0.1747	0.3293	0.1855	0.3236	0.1791	0.3457	0.2033	0.3384	0.1969	0.3208	0.2111
CS124	123.62'	0.2568	0.1892	0.2476	0.1507	0.3338	0.2069	0.3221	0.2045	0.3843	0.2175	0.3786	0.2107	0.3897	0.2361	0.3870	0.2329	0.3602	0.2437
CS132	131.56'	0.2995	0.2210	0.2896	0.1789	0.3897	0.2415	0.3785	0.2394	0.4504	0.2558	0.4439	0.2475	0.4554	0.2798	0.4528	0.2753	0.4198	0.2855
CS160	159.75'	0.4491	0.3286	0.4309	0.2656	0.5858	0.3614	0.5746	0.3588	0.6741	0.3901	0.6656	0.3759	0.6792	0.4307	0.6741	0.4258	0.6441	0.4310
CS180	180.0'	0.5867	0.4194	0.5536	0.3374	0.7609	0.4617	0.7443	0.4574	0.8683	0.5022	0.8576	0.4822	0.8784	0.5552	0.8663	0.5546	0.8453	0.5553
CS196	195.5'	0.6815	0.4833	0.6440	0.3877	0.8891	0.5368	0.8681	0.5313	1.0076	0.5891	0.9954	0.5646	1.0246	0.6517	1.0116	0.6458	0.9924	0.6533
CS216	215.96'	0.7991	0.5611	0.7514	0.4491	1.0494	0.6283	1.0223	0.6231	1.1801	0.7055	1.1664	0.6757	1.2074	0.7880	1.1876	0.7808	1.1764	0.7863
CS241	241'	0.9460	0.6585	0.8784	0.5282	1.2422	0.7540	1.2105	0.7516	1.3983	0.8618	1.3804	0.8239	1.4461	0.9659	1.4168	0.9571	1.4152	0.9608
CS255	254.5'	1.0199	0.7121	0.9435	0.5665	1.3421	0.8076	1.3062	0.8081	1.5015	0.9230	1.4832	0.8814	1.5583	1.0341	1.5253	1.0248	1.5290	1.0274
CS275	274.49'	1.1318	0.7855	1.0435	0.6218	1.4970	0.8865	1.4559	0.8874	1.6580	1.0087	1.6385	0.9634	1.7291	1.1235	1.6884	1.1175	1.6991	1.1148
CS302	301.53'	1.2719	0.8817	1.1733	0.6969	1.6914	0.9957	1.6416	0.9967	1.8627	1.1366	1.8409	1.0852	1.9481	1.2640	1.9017	1.2578	1.9192	1.2504
CS332	331.75'	1.4100	0.9779	1.3169	0.7723	1.8754	1.1014	1.8200	1.1050	2.0591	1.2624	2.0356	1.2052	2.1590	1.4021	2.1056	1.3956	2.1313	1.3866
PCO1241	241'	0.9468	0.6608	0.8762	0.5307	1.2430	0.7569	1.2111	0.7545	1.3985	0.8652	1.3810	0.8273	1.4466	0.9691	1.4171	0.9603	1.4153	0.9649
PCO2241	241'	1.2641	1.0688	1.1661	0.8590	1.6683	1.3422	1.6141	1.3309	1.9016	1.6849	1.8764	1.6103	1.9972	1.9063	1.9492	1.8730	1.9706	1.9661
PCO3241	241'	1.0591	0.7970	0.9783	0.6455	1.3935	0.9596	1.3543	0.9556	1.5758	1.1477	1.5554	1.0962	1.6405	1.2935	1.6044	1.2749	1.6096	1.3085
PSW66	66'	0.0917	0.0905	0.0779	0.0635	0.0753	0.0626	0.0685	0.0579	0.0539	0.0396	0.0532	0.0396	0.0469	0.0327	0.0503	0.0353	0.0367	0.0251
PSW78	78'	0.0064	0.0040	0.0070	0.0028	0.0125	0.0052	0.0123	0.0064	0.0209	0.0114	0.0206	0.0160	0.0234	0.0146	0.0233	0.0143	0.0236	0.0149
PSW100	100'	0.0199	0.0134	0.0214	0.0146	0.0249	0.0099	0.0260	0.0103	0.0346	0.0189	0.0342	0.0208	0.0400	0.0232	0.0398	0.0229	0.0381	0.0280
PSW107	106.5'	0.0258	0.0196	0.0290	0.0191	0.0301	0.0151	0.0313	0.0154	0.0400	0.0212	0.0392	0.0226	0.0471	0.0274	0.0470	0.0259	0.0454	0.0326
PSW114	114.0'	0.0324	0.0251	0.0362	0.0244	0.0391	0.0188	0.0397	0.0194	0.0489	0.0251	0.0474	0.0257	0.0580	0.0340	0.0578	0.0311	0.0577	0.0408
PSW130	130.0'	0.0475	0.0376	0.0532	0.0349	0.0521	0.0283	0.0525	0.0295	0.0622	0.0293	0.0599	0.0306	0.0765	0.0431	0.0758	0.0402	0.0785	0.0509
PSW137	136.5'	0.0627	0.0461	0.0693	0.0402	0.0702	0.0363	0.0704	0.0371	0.0849	0.0365	0.0824	0.0375	0.1018	0.0591	0.0993	0.0523	0.1071	0.0704
PSW156	156.0'	0.1712	0.1234	0.1802	0.1059	0.1830	0.1106	0.1487	0.1087	0.1998	0.0996	0.1854	0.0850	0.2752	0.1561	0.2705	0.1455	0.2854	0.2098
PSW191a	191.0'	0.9652	0.4428	0.8784	0.3643	0.9596	0.4998	0.7927	0.5183	1.0326	0.4753	0.9263	0.4100	1.4870	0.7234	1.4552	0.6701	1.6062	0.9348
PSW191b	191.0'	0.1876	0.1253	0.2092	0.1103	0.2088	0.1286	0.1861	0.1311	0.2094	0.1047	0.1993	0.1006	0.2875	0.1587	0.2717	0.1534	0.3123	0.1762
SSW78	78.0'	0.0082	0.0050	0.0085	0.0044	0.0128	0.0069	0.0130	0.0073	0.0182	0.0104	0.0181	0.0163	0.0208	0.0129	0.0210	0.0127	0.0203	0.0130
SSW100a	100.0'	0.0192	0.0129	0.0209	0.0142	0.0255	0.0104	0.0268	0.0110	0.0363	0.0205	0.0361	0.0228	0.0400	0.0241	0.0400	0.0240	0.0377	0.0289
SSW100b	100.0'	0.0198	0.0151	0.0211	0.0159	0.0229	0.0111	0.0238	0.0110	0.0313	0.0157	0.0298	0.0173	0.0367	0.0211	0.0364	0.0200	0.0355	0.0252
SSW107	106.5'	0.0290	0.0201	0.0327	0.0195	0.0339	0.0167	0.0349	0.0172	0.0432	0.0232	0.0419	0.0249	0.0510	0.0297	0.0507	0.0279	0.0536	0.0369
SSW114	114.0'	0.0425	0.0306	0.0476	0.0289	0.0477	0.0262	0.0476	0.0270	0.0577	0.0264	0.0558	0.0276	0.0693	0.0391	0.0667	0.0353	0.0739	0.0482
SSW130	130.0'	0.0737	0.0531	0.0820	0.0476	0.0767	0.0475	0.0758	0.0487	0.0940	0.0393	0.0904	0.0391	0.1118	0.0636	0.1085	0.0579	0.1218	0.0768
SSW137	136.5'	0.0864	0.0629	0.0977	0.0557	0.0895	0.0579	0.0893	0.0588	0.1102	0.0478	0.1062	0.0446	0.1376	0.0740	0.1339	0.0682	0.1478	0.0932
SSW156	156.0'	0.1481	0.1011	0.1604	0.0874	0.1596	0.0963	0.1452	0.0966	0.1905	0.0835	0.1722	0.0737	0.2683	0.1323	0.2571	0.2126	0.2858	0.1632
SSW191	191.0'	0.9540	0.4385	0.8692	0.3607	0.9490	0.4957	0.7816	0.5130	1.0215	0.4707	0.9154	0.4059	1.4750	0.7160	1.4426	0.6636	1.5844	0.9252

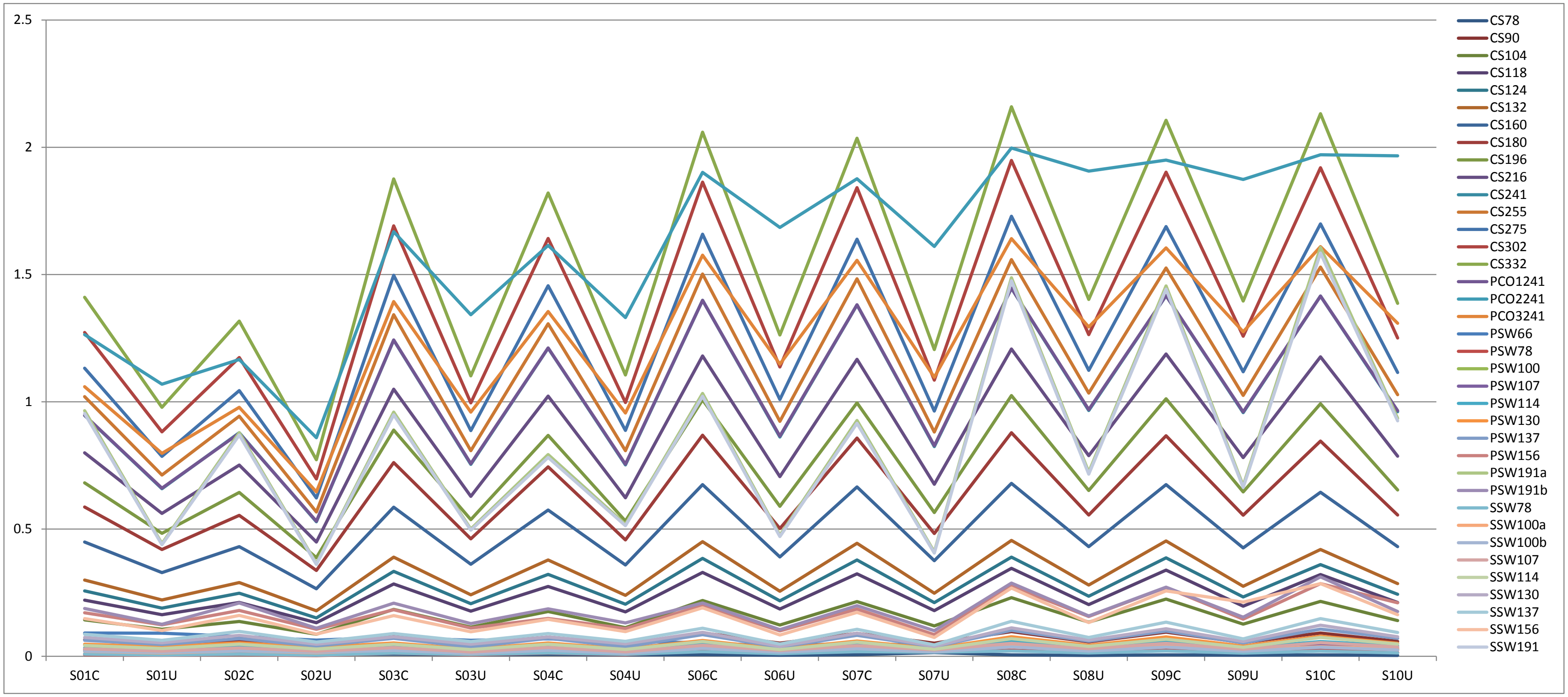

Figure E.3- 2 RCB, Maximum Displacements (in.) Relative to Basemat (not including Basemat Rotation) – Y (NS) Direction

Table E.3-3

RCB, Maximum Displacements (in.) Relative to Basemat (not including Basemat Rotation) – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
CS78	78'	0.0202	0.0186	0.0198	0.0152	0.0146	0.0137	0.0155	0.0144	0.0073	0.0072	0.0080	0.0109	0.0048	0.0047	0.0066	0.0071	0.0046	0.0028
CS90	89.75'	0.0553	0.0408	0.0524	0.0348	0.0639	0.0424	0.0650	0.0420	0.0623	0.0403	0.0623	0.0408	0.0632	0.0418	0.0636	0.0424	0.0644	0.0409
CS104	103.75'	0.0940	0.0656	0.0888	0.0542	0.1174	0.0743	0.1186	0.0729	0.1216	0.0756	0.1208	0.0751	0.1259	0.0828	0.1245	0.0818	0.1273	0.0827
CS118	117.75'	0.1310	0.0894	0.1230	0.0734	0.1667	0.1038	0.1678	0.1018	0.1779	0.1103	0.1765	0.1068	0.1851	0.1216	0.1817	0.1205	0.1854	0.1213
CS124	123.62'	0.1457	0.0990	0.1357	0.0802	0.1846	0.1148	0.1849	0.1140	0.1999	0.1241	0.1983	0.1191	0.2083	0.1368	0.2044	0.1356	0.2074	0.1364
CS132	131.56'	0.1644	0.1126	0.1531	0.0901	0.2094	0.1296	0.2098	0.1288	0.2279	0.1417	0.2261	0.1359	0.2378	0.1563	0.2333	0.1550	0.2372	0.1558
CS160	159.75'	0.2221	0.1539	0.2075	0.1222	0.2876	0.1754	0.2859	0.1743	0.3129	0.1959	0.3104	0.1876	0.3286	0.2165	0.3215	0.2151	0.3293	0.2156
CS180	180.0'	0.2580	0.1776	0.2395	0.1405	0.3343	0.2023	0.3315	0.2024	0.3612	0.2273	0.3583	0.2176	0.3812	0.2516	0.3721	0.2502	0.3840	0.2503
CS196	195.5'	0.2815	0.1926	0.2642	0.1521	0.3644	0.2269	0.3722	0.2215	0.3920	0.2473	0.3890	0.2371	0.4155	0.2737	0.4045	0.2728	0.4188	0.2732
CS216	215.96'	0.3051	0.2085	0.2874	0.1644	0.3968	0.2441	0.4008	0.2404	0.4247	0.2688	0.4214	0.2579	0.4522	0.2979	0.4392	0.2971	0.4556	0.2976
CS241	241'	0.3273	0.2226	0.3065	0.1757	0.4262	0.2610	0.4284	0.2586	0.4533	0.2889	0.4499	0.2767	0.4850	0.3196	0.4702	0.3190	0.4880	0.3197
CS255	254.5'	0.3359	0.2281	0.3185	0.1804	0.4375	0.2675	0.4387	0.2656	0.4643	0.2971	0.4607	0.2841	0.4978	0.3281	0.4827	0.3276	0.5014	0.3285
CS275	274.49'	0.3299	0.2245	0.3105	0.1775	0.4287	0.2633	0.4307	0.2613	0.4556	0.2926	0.4520	0.2798	0.4896	0.3238	0.4744	0.3231	0.4937	0.3254
CS302	301.53'	0.2713	0.1877	0.2555	0.1500	0.3487	0.2196	0.3543	0.2161	0.3739	0.2436	0.3716	0.2342	0.4047	0.2717	0.3917	0.2711	0.4101	0.2774
CS332	331.75'	0.0571	0.0574	0.0649	0.0642	0.0618	0.0589	0.0564	0.0556	0.0662	0.0618	0.0695	0.0732	0.0977	0.0987	0.0968	0.0996	0.1253	0.1201
PCO1241	241'	0.2963	0.1949	0.2756	0.1578	0.3825	0.2379	0.3914	0.2336	0.4055	0.2550	0.4027	0.2476	0.4357	0.2816	0.4248	0.2746	0.4474	0.2741
PCO2241	241'	0.3578	0.3455	0.3073	0.3128	0.4328	0.4268	0.6435	0.6192	0.5838	0.5459	0.5682	0.5264	0.5424	0.5094	0.5365	0.5075	0.5187	0.4905
PCO3241	241'	0.2642	0.2067	0.2482	0.1755	0.3413	0.2495	0.3900	0.3074	0.3831	0.2902	0.3801	0.2811	0.4000	0.3011	0.3898	0.2976	0.4081	0.2909
PSW66	66'	0.0189	0.0154	0.0191	0.0145	0.0227	0.0138	0.0214	0.0126	0.0255	0.0147	0.0251	0.0155	0.0280	0.0188	0.0287	0.0193	0.0256	0.0153
PSW78	78'	0.0190	0.0152	0.0191	0.0141	0.0220	0.0141	0.0211	0.0130	0.0247	0.0132	0.0241	0.0142	0.0268	0.0182	0.0265	0.0183	0.0246	0.0150
PSW100	100'	0.0271	0.0212	0.0261	0.0180	0.0274	0.0192	0.0286	0.0180	0.0303	0.0155	0.0288	0.0158	0.0335	0.0230	0.0327	0.0224	0.0353	0.0237
PSW107	106.5'	0.0308	0.0238	0.0299	0.0200	0.0299	0.0214	0.0313	0.0203	0.0322	0.0163	0.0306	0.0170	0.0386	0.0255	0.0373	0.0248	0.0414	0.0267
PSW114	114.0'	0.0319	0.0245	0.0320	0.0205	0.0308	0.0221	0.0323	0.0212	0.0330	0.0165	0.0313	0.0174	0.0404	0.0264	0.0390	0.0258	0.0433	0.0279
PSW130	130.0'	0.0324	0.0248	0.0327	0.0209	0.0319	0.0229	0.0333	0.0220	0.0338	0.0167	0.0320	0.0177	0.0421	0.0276	0.0409	0.0268	0.0453	0.0292
PSW137	136.5'	0.0323	0.0243	0.0340	0.0204	0.0315	0.0229	0.0325	0.0220	0.0328	0.0166	0.0305	0.0179	0.0420	0.0273	0.0403	0.0264	0.0445	0.0288
PSW156	156.0'	0.0826	0.0553	0.0817	0.0456	0.0868	0.0508	0.0853	0.0509	0.0754	0.0438	0.0662	0.0441	0.1168	0.0734	0.1119	0.0668	0.1314	0.0797
PSW191a	191.0'	0.0478	0.0329	0.0491	0.0279	0.0442	0.0281	0.0407	0.0277	0.0488	0.0240	0.0431	0.0228	0.0686	0.0371	0.0658	0.0354	0.0706	0.0454
PSW191b	191.0'	0.0872	0.0572	0.0864	0.0472	0.0927	0.0535	0.0907	0.0538	0.0801	0.0468	0.0710	0.0472	0.1254	0.0777	0.1200	0.0709	0.1405	0.0851
SSW78	78.0'	0.0194	0.0157	0.0215	0.0145	0.0247	0.0153	0.0248	0.0138	0.0301	0.0175	0.0298	0.0190	0.0349	0.0218	0.0352	0.0224	0.0303	0.0189
SSW100a	100.0'	0.0311	0.0247	0.0352	0.0215	0.0322	0.0223	0.0340	0.0206	0.0359	0.0183	0.0351	0.0197	0.0430	0.0273	0.0428	0.0265	0.0428	0.0294
SSW100b	100.0'	0.0129	0.0090	0.0139	0.0083	0.0110	0.0082	0.0116	0.0083	0.0087	0.0056	0.0085	0.0095	0.0090	0.0060	0.0092	0.0060	0.0087	0.0069
SSW107	106.5'	0.0346	0.0271	0.0407	0.0243	0.0361	0.0237	0.0355	0.0220	0.0397	0.0190	0.0389	0.0204	0.0498	0.0301	0.0480	0.0290	0.0498	0.0331
SSW114	114.0'	0.0389	0.0294	0.0429	0.0255	0.0388	0.0250	0.0390	0.0246	0.0417	0.0208	0.0410	0.0223	0.0527	0.0336	0.0511	0.0320	0.0549	0.0360
SSW130	130.0'	0.0501	0.0361	0.0541	0.0313	0.0500	0.0313	0.0492	0.0315	0.0543	0.0260	0.0516	0.0272	0.0681	0.0430	0.0678	0.0400	0.0728	0.0457
SSW137	136.5'	0.0526	0.0376	0.0582	0.0332	0.0529	0.0329	0.0514	0.0330	0.0595	0.0271	0.0559	0.0283	0.0752	0.0450	0.0747	0.0418	0.0768	0.0478
SSW156	156.0'	0.0617	0.0436	0.0690	0.0386	0.0635	0.0385	0.0597	0.0389	0.0750	0.0321	0.0682	0.0329	0.0957	0.0527	0.0944	0.0491	0.0981	0.0590
SSW191	191.0'	0.0677	0.0468	0.0748	0.0412	0.0700	0.0419	0.0654	0.0426	0.0836	0.0362	0.0762	0.0365	0.1071	0.0569	0.1053	0.0533	0.1119	0.0661

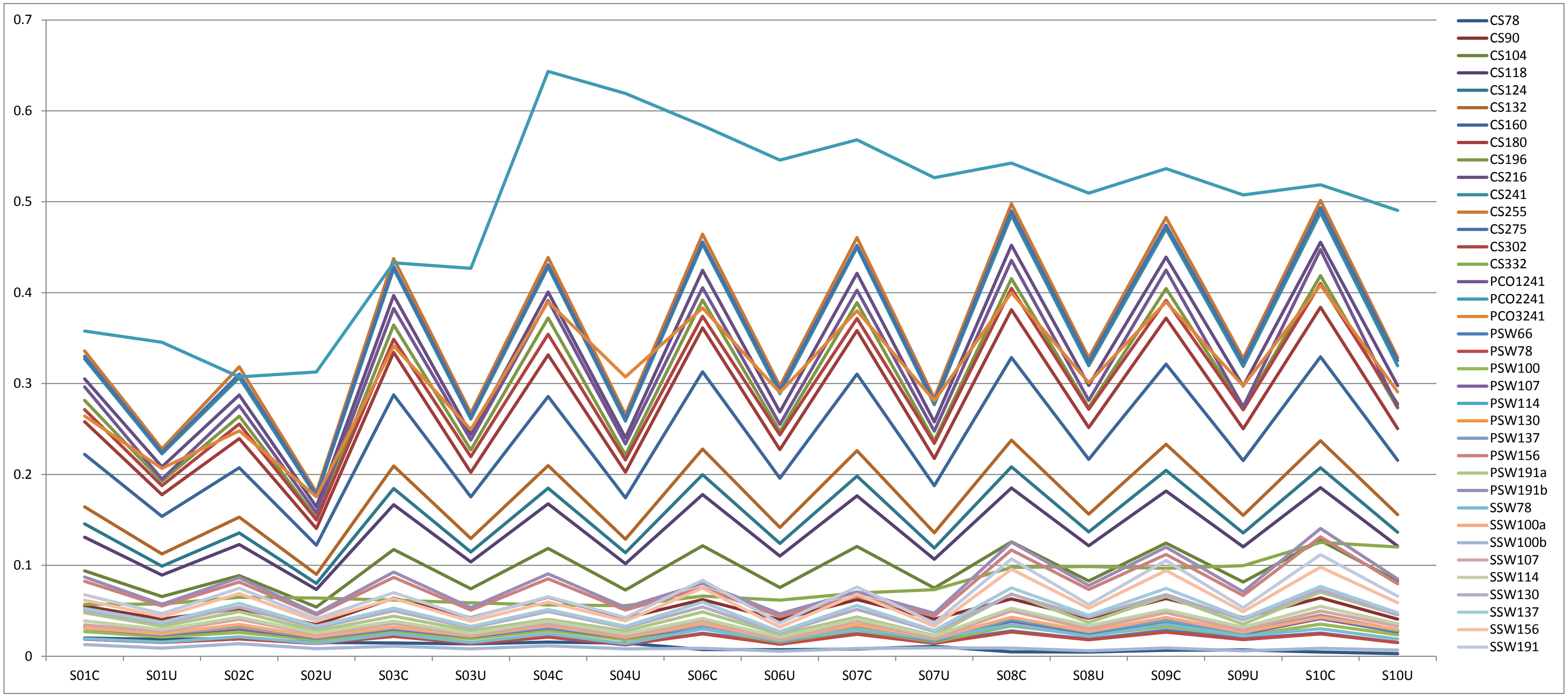

Figure E.3-3 RCB, Maximum Displacements (in.) Relative to Basemat (not including Basemat Rotation) – Z (VT) Direction

APPENDIX E.4

MAXIMUM DISPLACEMENTS RELATIVE TO FREE-FIELD FOR AB

Table E.4-1

AB, Maximum Displacements (in.) Relative to Free Field – X (EW) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
1-F	55'-0"	0.1821	0.1405	0.2145	0.1452	0.0748	0.0803	0.0871	0.0810	0.0519	0.0411	0.0550	0.0472	0.0130	0.0145	0.0205	0.0196	0.0062	0.0054
1-M	68'-0"	0.1639	0.1281	0.2001	0.1360	0.0935	0.0767	0.1014	0.0793	0.0729	0.0445	0.0775	0.0469	0.0343	0.0210	0.0370	0.0517	0.0652	0.0434
2-F	78'-0"	0.1542	0.1199	0.1867	0.1317	0.1034	0.0799	0.1054	0.0780	0.0981	0.0556	0.0939	0.0499	0.0443	0.0308	0.0565	0.0376	0.1340	0.0881
3-F	100'-0"	0.1568	0.1149	0.1759	0.1194	0.2223	0.1066	0.2240	0.0866	0.2737	0.1073	0.2192	0.0878	0.1991	0.0717	0.1413	0.0692	0.2902	0.1915
4-F	120'-0"	0.2193	0.1297	0.1884	0.1200	0.2674	0.1356	0.2671	0.1100	0.3468	0.1472	0.2880	0.1402	0.1862	0.1121	0.2024	0.1259	0.4545	0.2997
5-F	137'-6"	0.2639	0.1428	0.2033	0.1327	0.3141	0.1598	0.3124	0.1327	0.4116	0.1768	0.3461	0.1784	0.2678	0.1587	0.2858	0.1739	0.5714	0.3779
6-F	156'-0"	0.3246	0.1596	0.2419	0.1507	0.3810	0.1924	0.3747	0.1633	0.4862	0.2194	0.4330	0.2185	0.3661	0.2115	0.3838	0.2276	0.6892	0.4641
7-F	174-'0"	0.3637	0.1848	0.3271	0.1692	0.4440	0.2342	0.4774	0.2146	0.5691	0.2855	0.5745	0.2802	0.5431	0.3024	0.5564	0.3177	0.8781	0.6125
8-1	195'-0"	0.3866	0.2013	0.3764	0.1849	0.5000	0.2702	0.5350	0.2473	0.6502	0.3229	0.6520	0.3156	0.6368	0.3491	0.6479	0.3613	0.9534	0.6788
8-M	195'-0"	0.3968	0.2025	0.3790	0.1865	0.5041	0.2664	0.5393	0.2455	0.6389	0.3202	0.6421	0.3161	0.6217	0.3408	0.6335	0.3562	0.9430	0.6706
8-2	216'-9"	0.4989	0.2224	0.4347	0.2193	0.5902	0.3131	0.5935	0.2795	0.7304	0.3562	0.6780	0.3311	0.5145	0.3141	0.5647	0.2995	1.0721	0.6036
8-3	213'-0"	0.4269	0.2176	0.4106	0.2018	0.5488	0.2940	0.5748	0.2707	0.7060	0.3454	0.7026	0.3395	0.7030	0.3874	0.7129	0.3911	1.0364	0.7266
8-4	213'-6"	0.4746	0.2076	0.3969	0.2099	0.5489	0.2867	0.5461	0.2596	0.7010	0.3283	0.6312	0.2997	0.4375	0.2743	0.4805	0.2586	0.9702	0.5544
8-5	195'-0"	0.4244	0.1910	0.3413	0.1909	0.4920	0.2554	0.4879	0.2292	0.6344	0.2907	0.5627	0.2643	0.3737	0.2342	0.4055	0.2213	0.8506	0.4838
3-H	100'-0"	0.1553	0.1160	0.1624	0.1125	0.1993	0.0986	0.1898	0.0820	0.2315	0.1062	0.1844	0.0954	0.0764	0.0476	0.0842	0.0490	0.2322	0.1376
3-M	114'-0"	0.2116	0.1270	0.1690	0.1171	0.2646	0.1305	0.2605	0.1048	0.3332	0.1459	0.2766	0.1306	0.1362	0.0833	0.1488	0.0802	0.3617	0.2133
4-H	120'-0"	0.2287	0.1312	0.1784	0.1217	0.2818	0.1392	0.2773	0.1129	0.3567	0.1568	0.2979	0.1407	0.1496	0.0923	0.1635	0.0885	0.3920	0.2309
5-H	137'-6"	0.2755	0.1443	0.2038	0.1341	0.3283	0.1637	0.3231	0.1359	0.4183	0.1864	0.3557	0.1678	0.1864	0.1178	0.2037	0.1122	0.4768	0.2776
6-H	156'-0"	0.3232	0.1585	0.2331	0.1499	0.3787	0.1909	0.3722	0.1622	0.4830	0.2178	0.4168	0.1952	0.2328	0.1495	0.2513	0.1415	0.5780	0.3327

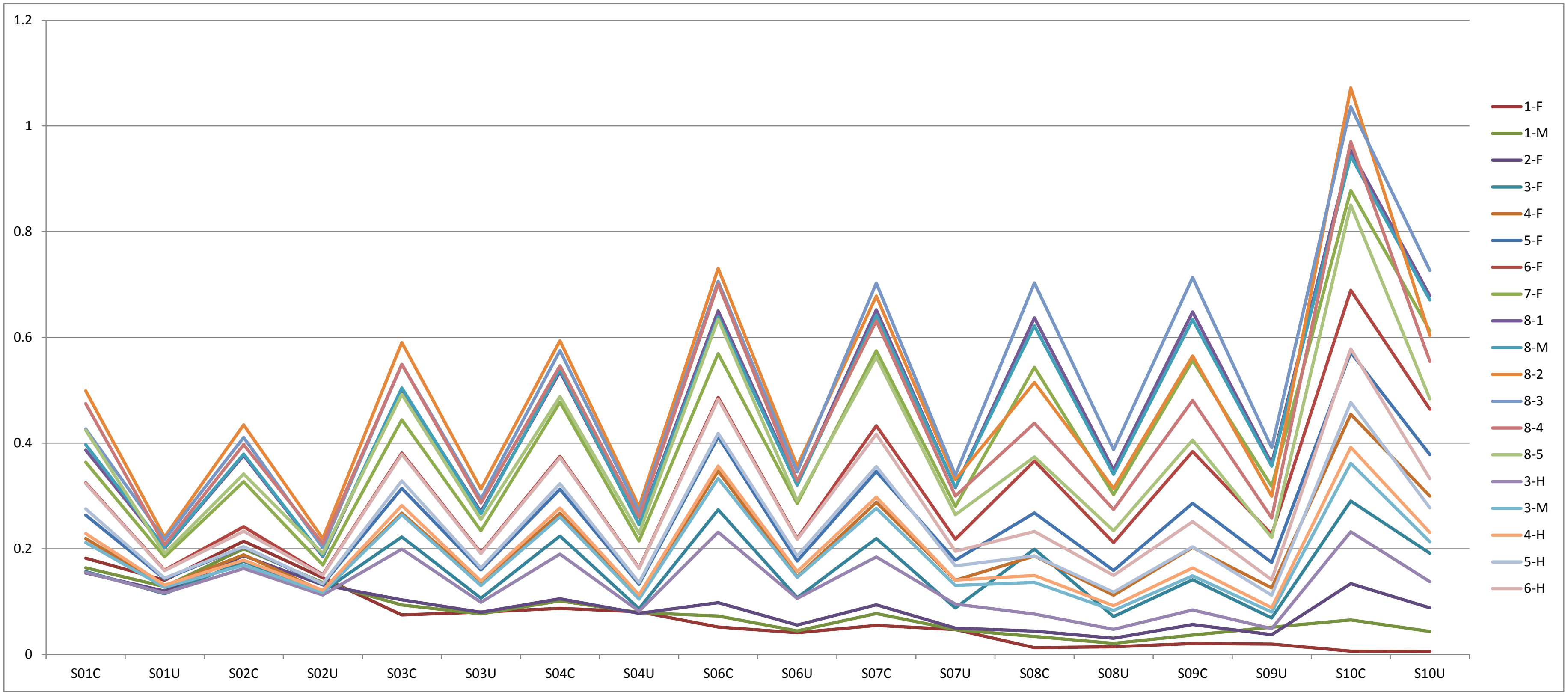

Figure E.4- 1 AB, Maximum Displacements (in.) Relative to Free Field – X (EW) Direction

Table E.4-2

AB, Maximum Displacements (in.) Relative to Free Field – Y (NS) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
1-F	55'-0"	0.1675	0.1621	0.2023	0.1799	0.0850	0.0732	0.0886	0.0803	0.0479	0.0599	0.0579	0.0586	0.0159	0.0158	0.0222	0.0272	0.0063	0.0061
1-M	68'-0"	0.1397	0.1443	0.1742	0.1635	0.0949	0.0799	0.1043	0.0792	0.0617	0.0734	0.0645	0.0681	0.0449	0.0264	0.0411	0.0313	0.0821	0.0458
2-F	78'-0"	0.1192	0.1324	0.1547	0.1550	0.1310	0.0997	0.1224	0.0732	0.0951	0.0883	0.0853	0.0776	0.0597	0.0746	0.0865	0.0735	0.1686	0.0895
3-F	100'-0"	0.1537	0.1362	0.1504	0.1444	0.2272	0.1292	0.2090	0.0954	0.2087	0.1387	0.1952	0.1293	0.1403	0.1257	0.1839	0.1444	0.3759	0.1967
4-F	120'-0"	0.2165	0.1486	0.2021	0.1452	0.3056	0.1697	0.3027	0.1424	0.3270	0.2133	0.3195	0.2021	0.2560	0.1625	0.2592	0.1674	0.6409	0.3458
5-F	137'-6"	0.2795	0.1603	0.2429	0.1628	0.3576	0.1994	0.3644	0.1721	0.3967	0.2567	0.4015	0.2518	0.3572	0.2130	0.3561	0.2264	0.7891	0.4345
6-F	156'-0"	0.3494	0.1747	0.3027	0.1831	0.4164	0.2343	0.4374	0.2065	0.4799	0.3089	0.4981	0.3070	0.4920	0.2847	0.4841	0.3016	0.9553	0.5474
7-F	174-'0"	0.4102	0.1945	0.3471	0.1986	0.4505	0.2569	0.4867	0.2285	0.5343	0.3420	0.5559	0.3390	0.5756	0.3329	0.5668	0.3481	1.0474	0.6090
8-1	195'-0"	0.3448	0.1841	0.3311	0.1980	0.4780	0.2444	0.4838	0.2127	0.5465	0.3199	0.5885	0.3099	0.6678	0.3787	0.6634	0.3798	0.9853	0.6251
8-M	195'-0"	0.2497	0.1734	0.2461	0.1668	0.2996	0.1827	0.3206	0.1444	0.3372	0.2076	0.3681	0.1987	0.3739	0.2128	0.3525	0.2086	0.6664	0.3825
8-2	216'-9"	0.5771	0.2608	0.5022	0.2418	0.5897	0.3452	0.6447	0.3055	0.7187	0.4555	0.7252	0.4338	0.6455	0.3846	0.6159	0.4103	1.3225	0.7965
8-3	213'-0"	0.2852	0.1879	0.2743	0.1827	0.3478	0.2058	0.3705	0.1654	0.3922	0.2396	0.4289	0.2280	0.4546	0.2557	0.4265	0.2498	0.7551	0.4416
8-4	213'-6"	0.5158	0.2419	0.4295	0.2210	0.5099	0.2855	0.5359	0.2648	0.5699	0.3429	0.5811	0.3463	0.4573	0.2496	0.4270	0.3048	0.9650	0.5550
8-5	195'-0"	0.4718	0.2214	0.3927	0.2086	0.4796	0.2667	0.4980	0.2466	0.5316	0.3197	0.5411	0.3234	0.4260	0.2313	0.3994	0.2818	0.9072	0.5150
3-H	100'-0"	0.1444	0.1352	0.1428	0.1337	0.1819	0.1083	0.1721	0.0889	0.1625	0.1098	0.1494	0.1036	0.0712	0.0485	0.0877	0.0752	0.2648	0.1386
3-M	114'-0"	0.1833	0.1433	0.1690	0.1377	0.2230	0.1288	0.2160	0.1098	0.2134	0.1404	0.2071	0.1346	0.1190	0.0707	0.1359	0.1077	0.3716	0.1945
4-H	120'-0"	0.2021	0.1470	0.1806	0.1420	0.2419	0.1388	0.2361	0.1195	0.2377	0.1536	0.2323	0.1477	0.1402	0.0815	0.1550	0.1185	0.4151	0.2171
5-H	137'-6"	0.2558	0.1589	0.2141	0.1546	0.2945	0.1655	0.2906	0.1462	0.3019	0.1888	0.2982	0.1832	0.1974	0.1113	0.2072	0.1449	0.5259	0.2766
6-H	156'-0"	0.3050	0.1717	0.2524	0.1671	0.3363	0.1890	0.3365	0.1693	0.3514	0.2173	0.3518	0.2126	0.2465	0.1372	0.2504	0.1742	0.6106	0.3277

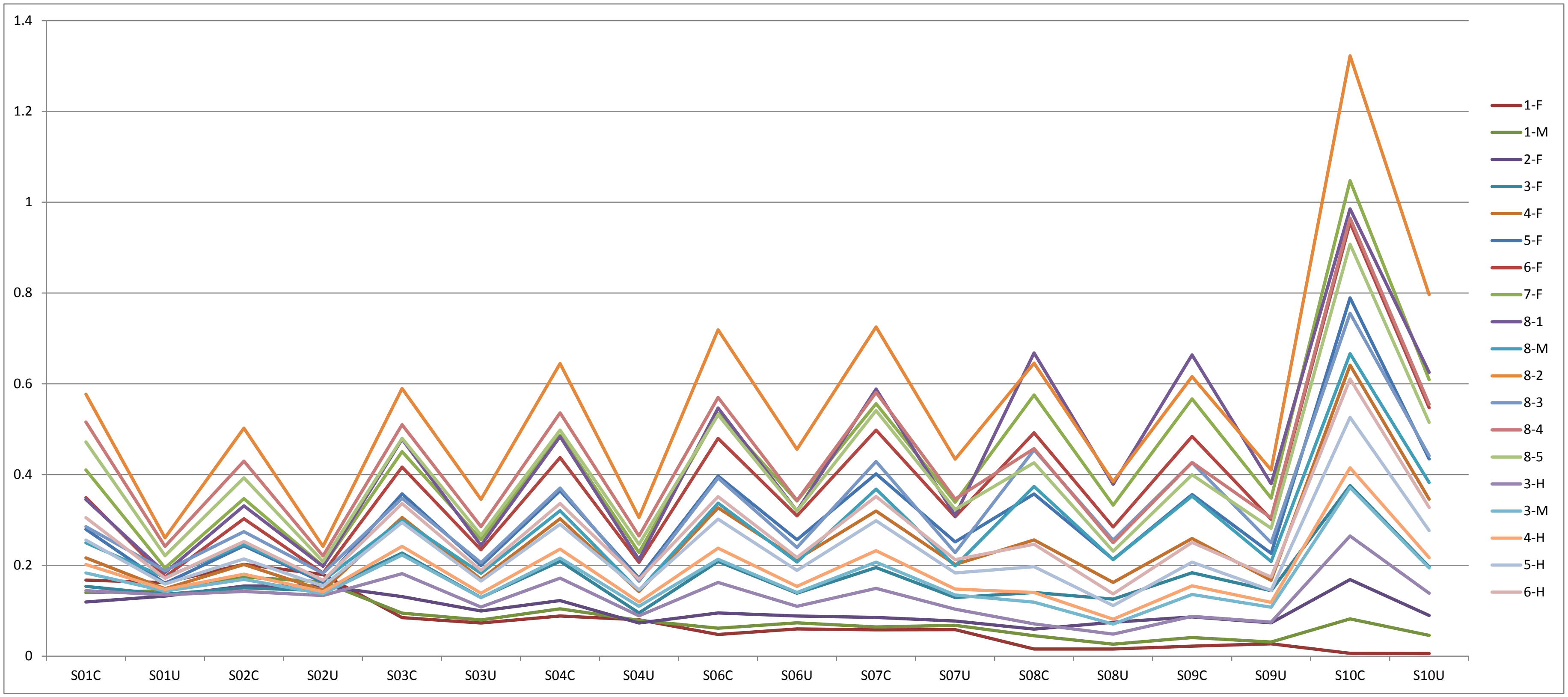

Figure E.4-2 AB, Maximum Displacements (in.) Relative to Free Field – Y (NS) Direction

Table E.4-3

AB, Maximum Displacements (in.) Relative to Free Field – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
1-F	55'-0"	0.2476	0.2218	0.1934	0.1560	0.1479	0.1262	0.1329	0.1041	0.0928	0.0696	0.0769	0.0624	0.0208	0.0241	0.0235	0.0271	0.0122	0.0112
1-M	68'-0"	0.2746	0.2072	0.2154	0.1639	0.1819	0.1359	0.1678	0.1106	0.1458	0.0862	0.1172	0.0814	0.0254	0.0246	0.0262	0.0280	0.0771	0.0435
2-F	78'-0"	0.2925	0.1973	0.2353	0.1698	0.2019	0.1437	0.1871	0.1144	0.1386	0.0851	0.1346	0.0869	0.0357	0.0288	0.0382	0.0309	0.1173	0.0641
3-F	100'-0"	0.3265	0.1979	0.2635	0.1819	0.2140	0.1526	0.2305	0.1330	0.1773	0.1066	0.2046	0.1139	0.1203	0.0427	0.0750	0.0429	0.1837	0.1004
4-F	120'-0"	0.3422	0.2038	0.2827	0.1900	0.2264	0.1629	0.2425	0.1427	0.2074	0.1231	0.2232	0.1290	0.0794	0.0501	0.0884	0.0558	0.2410	0.1345
5-F	137'-6"	0.3522	0.2067	0.2956	0.1954	0.2405	0.1713	0.2545	0.1503	0.2275	0.1330	0.2397	0.1394	0.1043	0.0613	0.1076	0.0658	0.2714	0.1531
6-F	156'-0"	0.3627	0.2093	0.3079	0.2005	0.2540	0.1791	0.2669	0.1574	0.2462	0.1424	0.2565	0.1497	0.1294	0.0782	0.1297	0.0834	0.3012	0.1704
7-F	174-'0"	0.3718	0.2113	0.3171	0.2044	0.2639	0.1849	0.2766	0.1626	0.2599	0.1497	0.2695	0.1573	0.1506	0.0891	0.1515	0.0939	0.3241	0.1829
8-1	195'-0"	0.1656	0.1638	0.1748	0.1168	0.1558	0.1098	0.1342	0.0887	0.1367	0.0895	0.1426	0.0834	0.1649	0.0942	0.1640	0.0991	0.2281	0.1576
8-M	195'-0"	0.1277	0.1254	0.0910	0.0861	0.0714	0.0774	0.0624	0.0570	0.0710	0.0533	0.0686	0.0488	0.0799	0.0578	0.0802	0.0603	0.0887	0.0825
8-2	216'-9"	0.1876	0.1766	0.1503	0.1262	0.1470	0.1147	0.1164	0.0919	0.1300	0.0836	0.1375	0.0832	0.1546	0.0862	0.1445	0.1045	0.2450	0.1601
8-3	213'-0"	0.1603	0.1570	0.1254	0.1118	0.0931	0.1037	0.0710	0.0759	0.0734	0.0554	0.0703	0.0515	0.0830	0.0592	0.0822	0.0607	0.0905	0.0808
8-4	213'-6"	0.3820	0.2134	0.3269	0.2084	0.2743	0.1909	0.2873	0.1680	0.2741	0.1570	0.2833	0.1652	0.1674	0.0871	0.1542	0.0878	0.3469	0.1943
8-5	195'-0"	0.3792	0.2128	0.3242	0.2073	0.2714	0.1892	0.2843	0.1666	0.2700	0.1551	0.2794	0.1631	0.1619	0.0848	0.1501	0.0859	0.3408	0.1912
3-H	100'-0"	0.2004	0.1573	0.1516	0.1237	0.1195	0.1010	0.1079	0.0758	0.0851	0.0612	0.0829	0.0579	0.0514	0.0343	0.0463	0.0351	0.0989	0.0533
3-M	114'-0"	0.2058	0.1533	0.1566	0.1261	0.1253	0.1041	0.1143	0.0786	0.0921	0.0650	0.0934	0.0617	0.0871	0.0531	0.0768	0.0550	0.1354	0.0791
4-H	120'-0"	0.2072	0.1537	0.1582	0.1269	0.1272	0.1052	0.1160	0.0794	0.0939	0.0661	0.0947	0.0629	0.0897	0.0545	0.0792	0.0562	0.1381	0.0807
5-H	137'-6"	0.2100	0.1550	0.1615	0.1285	0.1311	0.1073	0.1198	0.0811	0.0983	0.0685	0.0987	0.0652	0.0944	0.0574	0.0842	0.0588	0.1435	0.0838
6-H	156'-0"	0.2106	0.1550	0.1625	0.1290	0.1323	0.1078	0.1209	0.0816	0.1000	0.0693	0.1004	0.0660	0.0968	0.0586	0.0860	0.0605	0.1450	0.0856

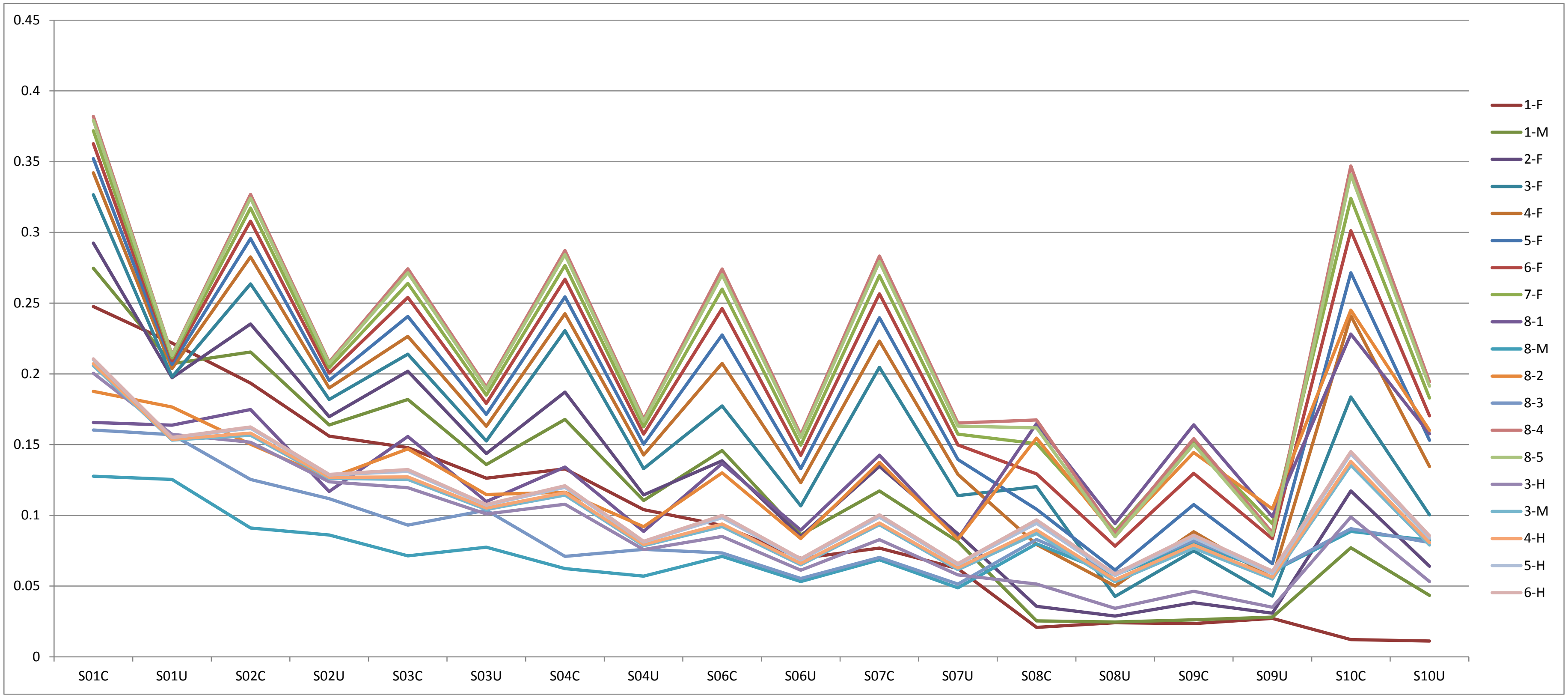

Figure E.4-3 AB, Maximum Displacements (in.) Relative to Free Field – Z (VT) Direction

Table E.4-4

Maximum Displacements (in.) of AB Slabs Relative to Free Field – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
1-F	55'-0"	0.1875	0.1540	0.1400	0.1220	0.0999	0.0905	0.0799	0.0688	0.0318	0.0346	0.0279	0.0344	0.0087	0.0095	0.0095	0.0103	0.0045	0.0037
1-M	68'-0"	0.2420	0.1694	0.1918	0.1476	0.1453	0.1148	0.1320	0.0934	0.1045	0.0696	0.0975	0.0641	0.0199	0.0195	0.0185	0.0193	0.0398	0.0248
2-F	78'-0"	0.2785	0.1867	0.2123	0.1543	0.1521	0.1197	0.1379	0.1043	0.1244	0.0791	0.1169	0.0769	0.0699	0.0341	0.0701	0.0335	0.0868	0.0453
3-F	100'-0"	0.2127	0.1812	0.1891	0.1492	0.1494	0.1269	0.1900	0.1295	0.1104	0.0634	0.1422	0.0822	0.0822	0.0519	0.0809	0.0501	0.1306	0.0760
4-F	120'-0"	0.2612	0.1852	0.1982	0.1587	0.1862	0.1387	0.1813	0.1127	0.1932	0.1119	0.1881	0.1189	0.1834	0.1365	0.1896	0.1407	0.2220	0.1744
5-F	137'-6"	0.2923	0.1848	0.2410	0.1692	0.1969	0.1459	0.1943	0.1240	0.1710	0.1047	0.1743	0.1069	0.1307	0.0786	0.1246	0.0753	0.2111	0.1197
6-F	156'-0"	0.2648	0.1817	0.2120	0.1557	0.1751	0.1322	0.1631	0.1100	0.1522	0.0911	0.1571	0.0933	0.1525	0.0912	0.1474	0.0865	0.2447	0.1398
7-F	174-'0"	0.2090	0.1794	0.1793	0.1349	0.1942	0.1315	0.1672	0.1096	0.1491	0.1043	0.1672	0.1013	0.2276	0.1260	0.2270	0.1280	0.2691	0.1863
8-1	195'-0"	0.1821	0.1692	0.1490	0.1185	0.1219	0.1118	0.1034	0.0876	0.1028	0.0754	0.1043	0.0748	0.1355	0.0887	0.1280	0.0894	0.1542	0.1092
8-M	195'-0"	0.1278	0.1258	0.0967	0.0887	0.0793	0.0762	0.0711	0.0596	0.0792	0.0559	0.0762	0.0514	0.0856	0.0601	0.0857	0.0641	0.1148	0.0827
8-2	216'-9"	0.2191	0.1983	0.1936	0.1738	0.1960	0.1624	0.2430	0.1580	0.2443	0.1779	0.2609	0.1823	0.3289	0.2195	0.2943	0.2158	0.3587	0.2847
8-3	213'-0"	0.1686	0.1749	0.1381	0.1195	0.1385	0.1108	0.1049	0.0946	0.1042	0.0815	0.1006	0.0752	0.1492	0.1135	0.1391	0.1094	0.1688	0.1469
8-4	213'-6"	0.4991	0.4105	0.4801	0.3785	0.5120	0.4149	0.5093	0.4558	0.4959	0.4770	0.5090	0.4664	0.4621	0.4262	0.4534	0.4487	0.6278	0.6290
8-5	195'-0"	0.2077	0.1810	0.1618	0.1357	0.1503	0.1161	0.1380	0.0990	0.1329	0.0962	0.1544	0.0957	0.1856	0.1417	0.1684	0.1343	0.2360	0.1978
3-H	100'-0"	0.1517	0.1490	0.1143	0.1063	0.0895	0.0913	0.0693	0.0608	0.0634	0.0429	0.0632	0.0384	0.0822	0.0404	0.0809	0.0380	0.1041	0.0555
3-M	114'-0"	0.1544	0.1492	0.1124	0.1084	0.0918	0.0923	0.0683	0.0623	0.0576	0.0433	0.0544	0.0392	0.0519	0.0351	0.0476	0.0381	0.0806	0.0496

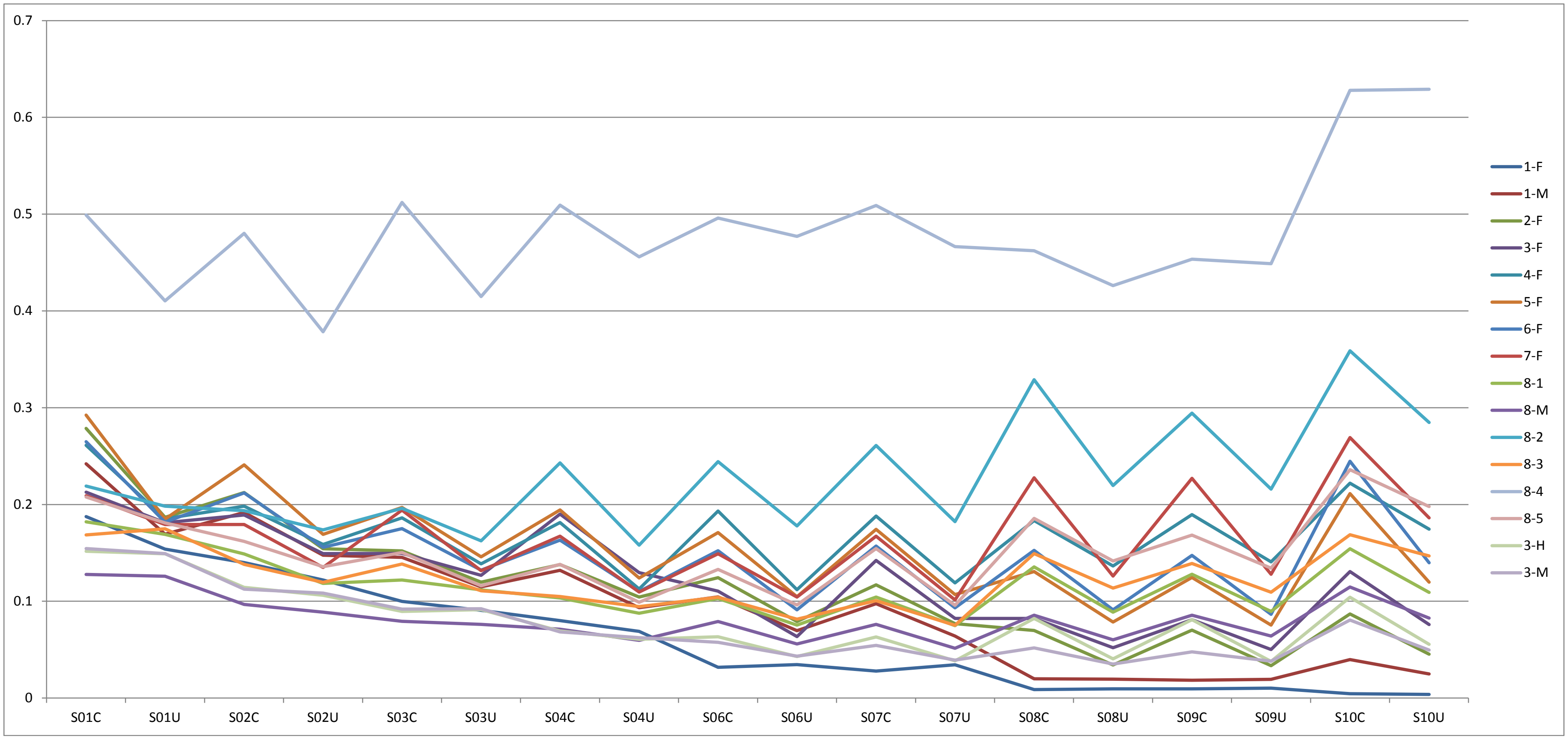

Figure E.4-4 Maximum Displacements (in.) of AB Slabs Relative to Free Field – Z (VT) Direction

Table E.4-5

Maximum Displacements (in.) of Basemat Node 10537 Relative to Free Field

Node	Direction	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
10537	X	0.2071	0.1470	0.2515	0.1512	0.0949	0.1122	0.0831	0.1071	0.0464	0.0525	0.0520	0.0562	0.0195	0.0250	0.0228	0.0269	0.0024	0.0026
10537	Y	0.2022	0.1820	0.2307	0.1894	0.1025	0.1016	0.0920	0.0912	0.0441	0.0670	0.0509	0.0684	0.0191	0.0252	0.0229	0.0297	0.0027	0.0025
10537	Z	0.1056	0.0926	0.0839	0.0756	0.0499	0.0472	0.0402	0.0388	0.0216	0.0208	0.0164	0.0163	0.0085	0.0089	0.0077	0.0080	0.0016	0.0016

Note

Coordinates of Node 10537 are (-3.154’, 5.223’, 55.0’) where X=East, Y=North, Z=Vertical upward.

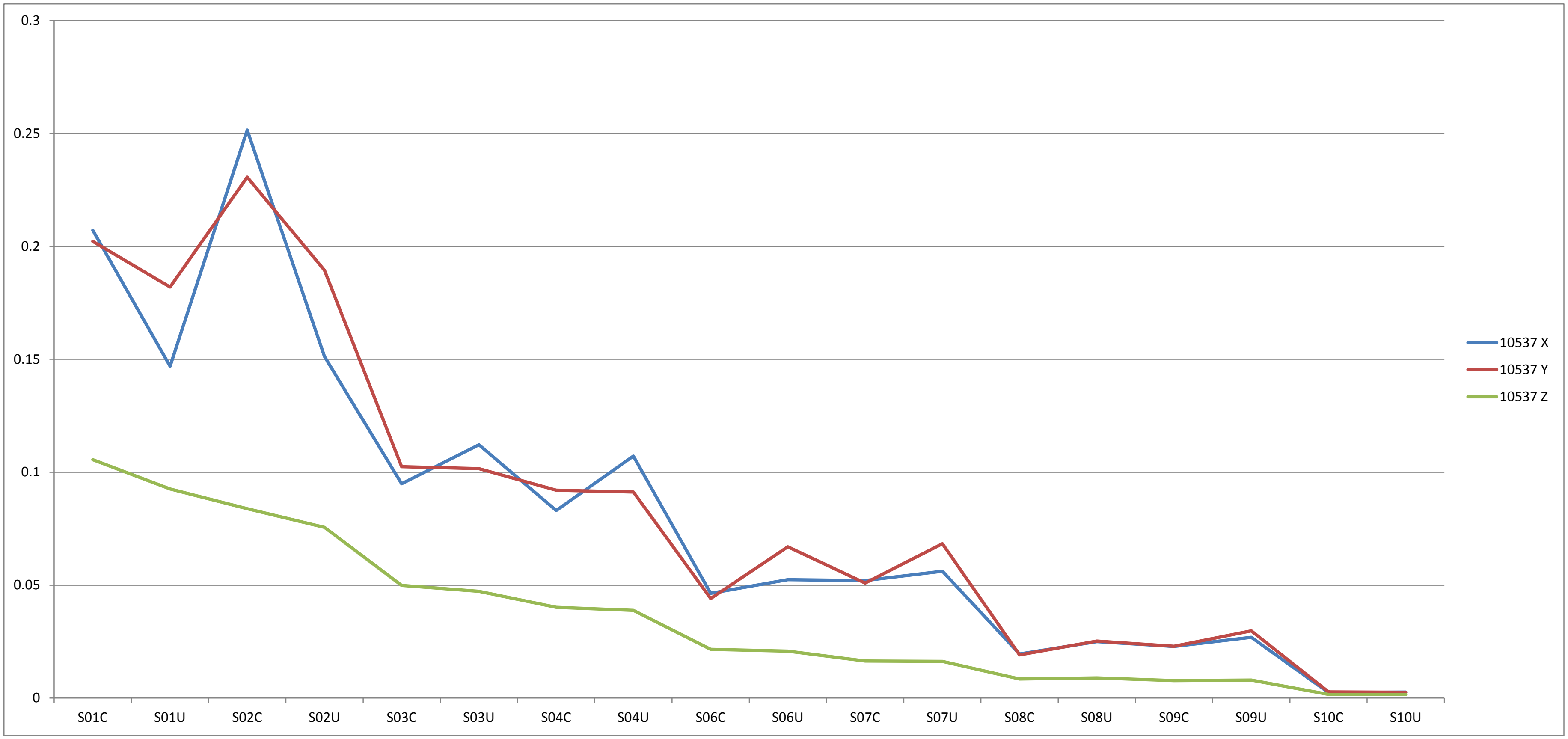

Figure E.4-5 Maximum Displacements (in.) of Basemat Node 10537 Relative to Free Field

APPENDIX E.5

MAXIMUM DISPLACEMENTS RELATIVE TO THE BASEMAT FOR AB (INCLUDING BASEMAT ROTATION)

Table E.5-1

AB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – X (EW) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
1-F	55'-0"	0.0818	0.0597	0.0857	0.0481	0.0589	0.0603	0.0533	0.0519	0.0333	0.0293	0.0310	0.0282	0.0237	0.0238	0.0254	0.0233	0.0049	0.0044
1-M	68'-0"	0.0931	0.0538	0.0982	0.0496	0.0900	0.0634	0.0591	0.0553	0.0530	0.0358	0.0472	0.0344	0.0303	0.0282	0.0315	0.0557	0.0645	0.0427
2-F	78'-0"	0.1160	0.0588	0.1114	0.0560	0.0857	0.0665	0.0833	0.0580	0.0920	0.0535	0.0800	0.0499	0.0403	0.0322	0.0517	0.0401	0.1333	0.0873
3-F	100'-0"	0.1680	0.0877	0.1613	0.0857	0.1855	0.1134	0.1975	0.0987	0.2688	0.1117	0.2244	0.0924	0.1979	0.0748	0.1379	0.0710	0.2882	0.1907
4-F	120'-0"	0.2396	0.1144	0.2241	0.1180	0.2506	0.1502	0.2502	0.1432	0.3430	0.1494	0.2943	0.1358	0.1838	0.1165	0.2019	0.1245	0.4525	0.2990
5-F	137'-6"	0.2845	0.1331	0.2727	0.1394	0.3006	0.1772	0.2965	0.1708	0.4077	0.1781	0.3530	0.1707	0.2655	0.1632	0.2853	0.1725	0.5694	0.3772
6-F	156'-0"	0.3464	0.1618	0.3323	0.1657	0.3693	0.2111	0.3620	0.2034	0.4823	0.2149	0.4277	0.2099	0.3638	0.2159	0.3834	0.2262	0.6872	0.4634
7-F	174-'0"	0.4003	0.1822	0.4204	0.1978	0.4600	0.2473	0.4701	0.2424	0.5514	0.2818	0.5614	0.2723	0.5403	0.3067	0.5564	0.3151	0.8761	0.6119
8-1	195'-0"	0.4463	0.1999	0.4712	0.2228	0.5132	0.2756	0.5266	0.2695	0.6325	0.3174	0.6357	0.3057	0.6340	0.3508	0.6480	0.3582	0.9516	0.6782
8-M	195'-0"	0.4438	0.2034	0.4700	0.2210	0.5137	0.2732	0.5286	0.2670	0.6212	0.3133	0.6261	0.3062	0.6189	0.3441	0.6336	0.3531	0.9410	0.6700
8-2	216'-9"	0.5355	0.2425	0.5385	0.2683	0.5807	0.3194	0.5705	0.3083	0.7264	0.3424	0.6847	0.3270	0.5112	0.3182	0.5620	0.3015	1.0706	0.6025
8-3	213'-0"	0.4785	0.2183	0.5041	0.2398	0.5480	0.2972	0.5608	0.2886	0.6899	0.3418	0.6863	0.3325	0.7003	0.3823	0.7130	0.3835	1.0344	0.7259
8-4	213'-6"	0.5059	0.2359	0.5032	0.2524	0.5398	0.3085	0.5254	0.3012	0.6970	0.3236	0.6381	0.3052	0.4366	0.2784	0.4754	0.2606	0.9695	0.5534
8-5	195'-0"	0.4499	0.2117	0.4478	0.2241	0.4829	0.2777	0.4701	0.2708	0.6305	0.2894	0.5695	0.2705	0.3728	0.2383	0.4003	0.2234	0.8499	0.4828
3-H	100'-0"	0.1718	0.0869	0.1636	0.0818	0.1773	0.0987	0.1678	0.0953	0.2274	0.0967	0.1906	0.0918	0.0704	0.0517	0.0805	0.0459	0.2316	0.1367
3-M	114'-0"	0.2327	0.1082	0.2129	0.1113	0.2462	0.1404	0.2394	0.1335	0.3293	0.1396	0.2831	0.1286	0.1279	0.0873	0.1392	0.0798	0.3610	0.2124
4-H	120'-0"	0.2500	0.1156	0.2303	0.1197	0.2648	0.1512	0.2568	0.1438	0.3528	0.1504	0.3046	0.1390	0.1410	0.0963	0.1534	0.0883	0.3913	0.2300
5-H	137'-6"	0.2974	0.1372	0.2789	0.1430	0.3143	0.1797	0.3041	0.1724	0.4145	0.1803	0.3626	0.1673	0.1789	0.1218	0.1925	0.1127	0.4761	0.2768
6-H	156'-0"	0.3451	0.1612	0.3301	0.1655	0.3670	0.2099	0.3534	0.2023	0.4790	0.2129	0.4237	0.1978	0.2313	0.1538	0.2469	0.1435	0.5774	0.3318

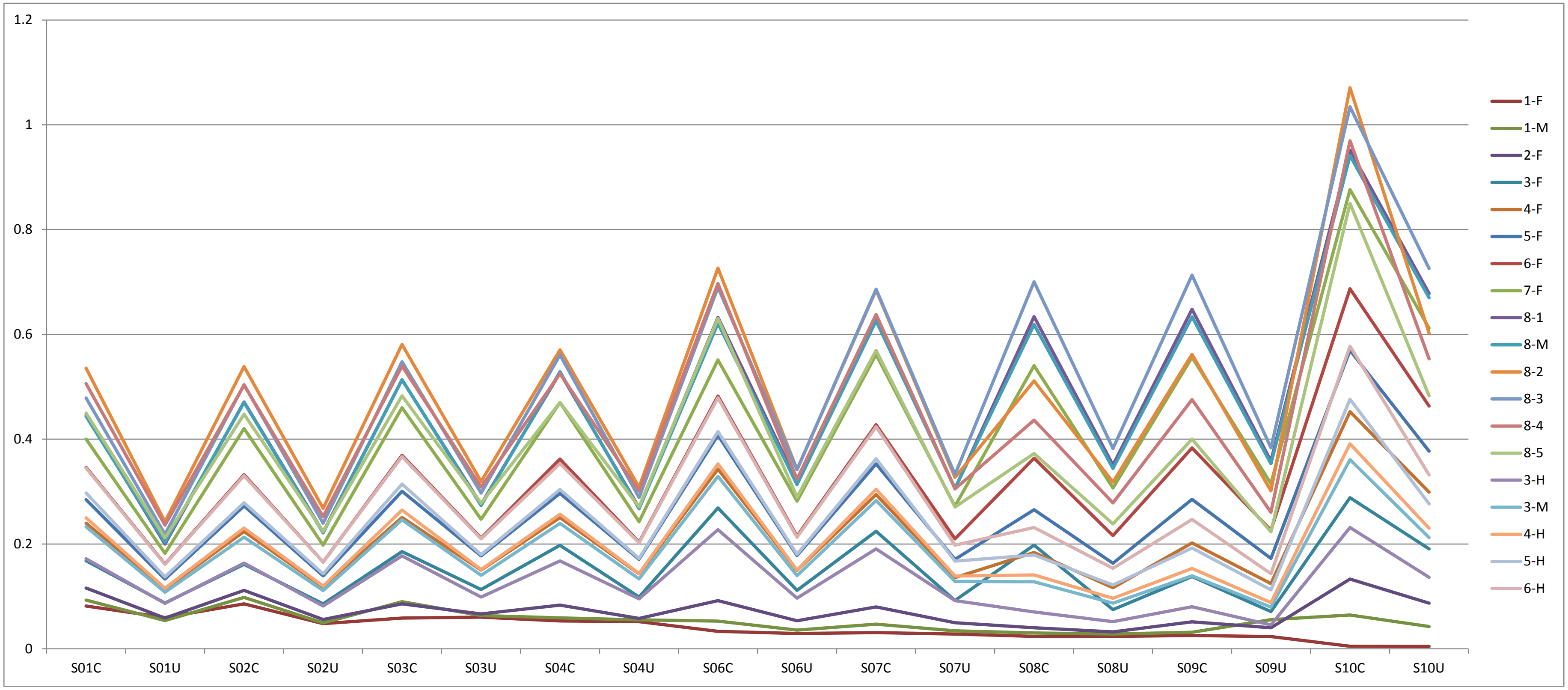

Figure E.5-1 AB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – X (EW) Direction

Table E.5-2

AB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Y (NS) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
1-F	55'-0"	0.0762	0.0664	0.0690	0.0573	0.0611	0.0569	0.0542	0.0469	0.0358	0.0350	0.0327	0.0352	0.0219	0.0236	0.0289	0.0279	0.0050	0.0050
1-M	68'-0"	0.0990	0.0639	0.0829	0.0623	0.0687	0.0576	0.0616	0.0577	0.0470	0.0483	0.0462	0.0513	0.0325	0.0303	0.0325	0.0340	0.0808	0.0448
2-F	78'-0"	0.1212	0.0712	0.1067	0.0788	0.0916	0.0796	0.0832	0.0773	0.0749	0.0651	0.0731	0.0670	0.0528	0.0798	0.0774	0.0581	0.1674	0.0892
3-F	100'-0"	0.2035	0.1063	0.1836	0.1073	0.1689	0.1405	0.1700	0.1269	0.1946	0.1146	0.1866	0.1143	0.1305	0.1335	0.1806	0.1232	0.3747	0.1943
4-F	120'-0"	0.3056	0.1512	0.2787	0.1544	0.2834	0.1915	0.2730	0.1781	0.3084	0.1725	0.3163	0.1731	0.2508	0.1506	0.2534	0.1508	0.6397	0.3435
5-F	137'-6"	0.3711	0.1782	0.3355	0.1779	0.3506	0.2226	0.3379	0.2094	0.3817	0.2177	0.3996	0.2211	0.3516	0.2010	0.3465	0.2100	0.7879	0.4321
6-F	156'-0"	0.4399	0.2064	0.3985	0.2029	0.4327	0.2564	0.4102	0.2437	0.4672	0.2719	0.4972	0.2748	0.4855	0.2728	0.4767	0.2853	0.9541	0.5451
7-F	174-'0"	0.4874	0.2257	0.4390	0.2202	0.4808	0.2768	0.4542	0.2640	0.5224	0.3057	0.5550	0.3056	0.5692	0.3211	0.5570	0.3321	1.0461	0.6067
8-1	195'-0"	0.4500	0.2194	0.4163	0.2178	0.5074	0.2662	0.4795	0.2494	0.5429	0.2938	0.5781	0.2788	0.6580	0.3666	0.6502	0.3632	0.9842	0.6228
8-M	195'-0"	0.3205	0.1677	0.3072	0.1673	0.3195	0.1790	0.3085	0.1629	0.3333	0.1749	0.3648	0.1728	0.3647	0.1997	0.3397	0.1910	0.6651	0.3812
8-2	216'-9"	0.6678	0.2935	0.5831	0.3005	0.5578	0.3572	0.6105	0.3504	0.7068	0.4296	0.7228	0.4056	0.6346	0.3730	0.6065	0.4047	1.3213	0.7943
8-3	213'-0"	0.3559	0.1897	0.3402	0.1816	0.3659	0.2009	0.3578	0.1816	0.3884	0.2054	0.4192	0.2018	0.4442	0.2426	0.4123	0.2322	0.7538	0.4401
8-4	213'-6"	0.5933	0.2604	0.5107	0.2540	0.4692	0.3009	0.5109	0.3006	0.5583	0.3172	0.5801	0.3194	0.4471	0.2372	0.4205	0.2877	0.9637	0.5527
8-5	195'-0"	0.5491	0.2410	0.4742	0.2341	0.4391	0.2818	0.4752	0.2815	0.5199	0.2939	0.5401	0.2963	0.4159	0.2189	0.3929	0.2647	0.9060	0.5128
3-H	100'-0"	0.1884	0.0942	0.1628	0.0970	0.1318	0.1093	0.1328	0.1109	0.1511	0.0838	0.1470	0.0865	0.0678	0.0539	0.0833	0.0629	0.2636	0.1373
3-M	114'-0"	0.2455	0.1189	0.2116	0.1199	0.1786	0.1357	0.1848	0.1364	0.2016	0.1092	0.2055	0.1116	0.1140	0.0770	0.1293	0.0888	0.3703	0.1932
4-H	120'-0"	0.2675	0.1285	0.2311	0.1295	0.1993	0.1471	0.2069	0.1476	0.2262	0.1203	0.2309	0.1223	0.1344	0.0863	0.1485	0.0991	0.4138	0.2158
5-H	137'-6"	0.3277	0.1541	0.2826	0.1537	0.2531	0.1774	0.2648	0.1769	0.2904	0.1519	0.2972	0.1567	0.1915	0.1114	0.2008	0.1275	0.5246	0.2751
6-H	156'-0"	0.3786	0.1759	0.3260	0.1740	0.2962	0.2013	0.3122	0.2000	0.3401	0.1802	0.3508	0.1854	0.2394	0.1323	0.2440	0.1569	0.6093	0.3254

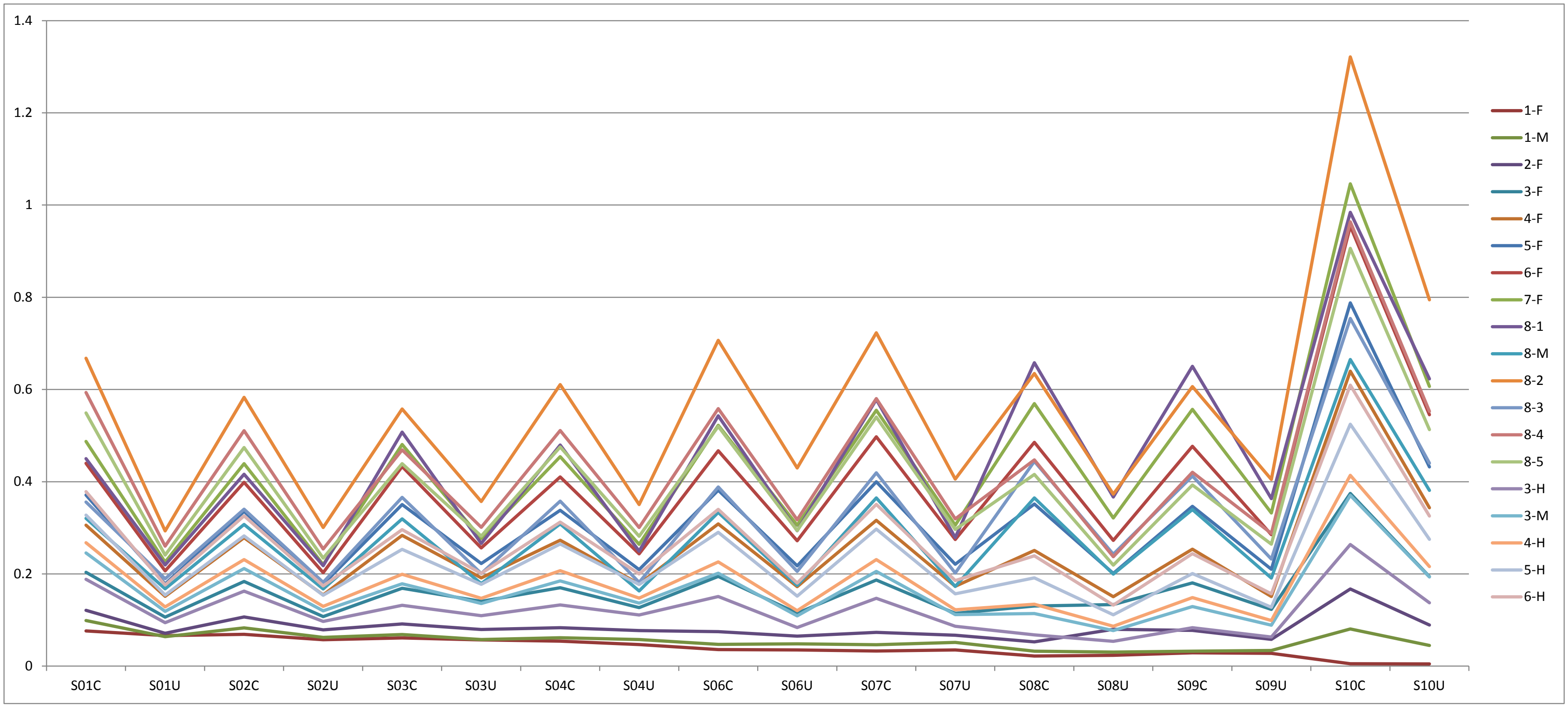

Figure E.5-2 AB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Y (NS) Direction

Table E.5-3

AB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
55'-0"	0.2525	0.2262	0.2007	0.1594	0.1472	0.1295	0.1336	0.1091	0.0934	0.0695	0.0780	0.0617	0.0191	0.0246	0.0223	0.0266	0.0122	0.0116
68'-0"	0.2790	0.2112	0.2222	0.1664	0.1799	0.1387	0.1679	0.1169	0.1468	0.0857	0.1181	0.0805	0.0231	0.0224	0.0243	0.0251	0.0772	0.0439
78'-0"	0.2966	0.2008	0.2418	0.1718	0.2006	0.1452	0.1864	0.1203	0.1395	0.0844	0.1354	0.0861	0.0339	0.0269	0.0363	0.0280	0.1174	0.0644
100'-0"	0.3302	0.1904	0.2699	0.1834	0.2107	0.1534	0.2299	0.1380	0.1781	0.1058	0.2052	0.1128	0.1211	0.0426	0.0745	0.0413	0.1838	0.1009
120'-0"	0.3458	0.1964	0.2888	0.1910	0.2230	0.1640	0.2416	0.1458	0.2080	0.1226	0.2237	0.1277	0.0792	0.0495	0.0879	0.0556	0.2409	0.1350
137'-6"	0.3560	0.1995	0.3018	0.1962	0.2370	0.1721	0.2533	0.1523	0.2281	0.1333	0.2401	0.1381	0.1051	0.0617	0.1074	0.0657	0.2714	0.1536
156'-0"	0.3666	0.2022	0.3141	0.2013	0.2505	0.1796	0.2655	0.1586	0.2468	0.1433	0.2569	0.1483	0.1302	0.0764	0.1286	0.0814	0.3011	0.1709
174-'0"	0.3751	0.2045	0.3236	0.2052	0.2604	0.1851	0.2753	0.1633	0.2605	0.1506	0.2698	0.1558	0.1505	0.0872	0.1505	0.0920	0.3240	0.1833
195'-0"	0.1661	0.1627	0.1778	0.1181	0.1578	0.1057	0.1349	0.0890	0.1357	0.0855	0.1407	0.0806	0.1641	0.0925	0.1631	0.0975	0.2280	0.1575
195'-0"	0.1116	0.1129	0.0932	0.0829	0.0703	0.0705	0.0567	0.0496	0.0657	0.0455	0.0646	0.0438	0.0781	0.0550	0.0786	0.0573	0.0881	0.0817
216'-9"	0.1720	0.1477	0.1406	0.1030	0.1312	0.0957	0.1113	0.0852	0.1283	0.0815	0.1360	0.0806	0.1535	0.0856	0.1440	0.1028	0.2452	0.1595
213'-0"	0.1264	0.1326	0.0969	0.0897	0.0772	0.0882	0.0600	0.0635	0.0682	0.0479	0.0655	0.0448	0.0807	0.0564	0.0803	0.0583	0.0899	0.0799
213'-6"	0.3854	0.2070	0.3336	0.2094	0.2710	0.1907	0.2865	0.1682	0.2748	0.1578	0.2838	0.1637	0.1684	0.0876	0.1541	0.0879	0.3468	0.1947
195'-0"	0.3825	0.2063	0.3308	0.2082	0.2680	0.1892	0.2833	0.1669	0.2707	0.1559	0.2798	0.1615	0.1628	0.0853	0.1500	0.0860	0.3407	0.1917
100'-0"	0.1988	0.1425	0.1505	0.1159	0.1137	0.0992	0.1058	0.0779	0.0850	0.0594	0.0829	0.0567	0.0499	0.0338	0.0450	0.0353	0.0989	0.0533
114'-0"	0.2035	0.1383	0.1554	0.1176	0.1192	0.1017	0.1120	0.0804	0.0920	0.0632	0.0913	0.0604	0.0858	0.0527	0.0758	0.0547	0.1353	0.0783
120'-0"	0.2049	0.1381	0.1569	0.1181	0.1210	0.1027	0.1136	0.0812	0.0938	0.0643	0.0935	0.0616	0.0883	0.0541	0.0781	0.0559	0.1380	0.0799
137'-6"	0.2077	0.1383	0.1603	0.1194	0.1249	0.1045	0.1174	0.0828	0.0983	0.0667	0.0987	0.0640	0.0931	0.0570	0.0830	0.0584	0.1433	0.0831
156'-0"	0.2084	0.1385	0.1613	0.1198	0.1261	0.1049	0.1185	0.0833	0.1000	0.0675	0.1004	0.0647	0.0954	0.0582	0.0848	0.0602	0.1449	0.0849

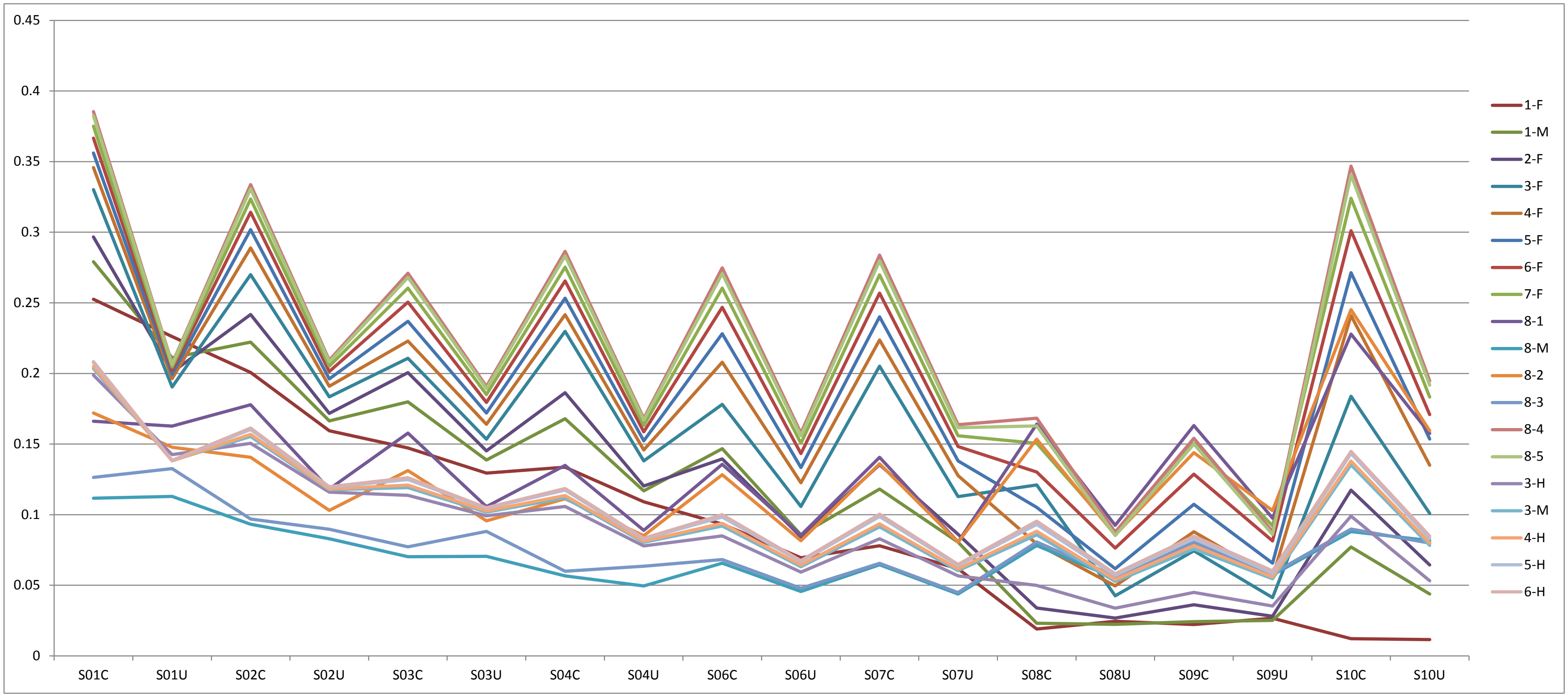

Figure E.5-3 AB, Maximum Displacements (in.) Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

Table E.5-4

Maximum Displacements (in.) of AB Slabs Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

Floor Label	Floor Elevation	S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U	S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
1-F	55'-0"	0.1864	0.1378	0.1429	0.1183	0.0966	0.0944	0.0798	0.0696	0.0333	0.0343	0.0296	0.0336	0.0111	0.0110	0.0103	0.0112	0.0047	0.0042
1-M	68'-0"	0.2446	0.1593	0.1966	0.1484	0.1418	0.1173	0.1317	0.0966	0.1049	0.0686	0.0982	0.0631	0.0194	0.0195	0.0185	0.0200	0.0398	0.0252
2-F	78'-0"	0.2804	0.1949	0.2172	0.1545	0.1493	0.1213	0.1381	0.1045	0.1252	0.0780	0.1177	0.0759	0.0672	0.0343	0.0674	0.0309	0.0859	0.0458
3-F	100'-0"	0.2154	0.1863	0.1924	0.1479	0.1431	0.1243	0.1879	0.1329	0.1107	0.0627	0.1425	0.0872	0.0783	0.0514	0.0767	0.0496	0.1304	0.0754
4-F	120'-0"	0.2581	0.1771	0.2004	0.1391	0.1649	0.1215	0.1535	0.1002	0.1844	0.1007	0.1833	0.1076	0.1814	0.1312	0.1874	0.1353	0.2217	0.1741
5-F	137'-6"	0.2947	0.1767	0.2454	0.1677	0.1917	0.1448	0.1924	0.1235	0.1714	0.1041	0.1743	0.1053	0.1293	0.0781	0.1234	0.0747	0.2111	0.1193
6-F	156'-0"	0.2622	0.1769	0.2160	0.1493	0.1653	0.1282	0.1594	0.1064	0.1495	0.0877	0.1551	0.0907	0.1511	0.0901	0.1462	0.0858	0.2447	0.1395
7-F	174-'0"	0.1974	0.1671	0.1766	0.1250	0.1897	0.1219	0.1621	0.1036	0.1386	0.1013	0.1557	0.0956	0.2221	0.1207	0.2209	0.1231	0.2679	0.1858
8-1	195'-0"	0.1486	0.1590	0.1417	0.1083	0.1154	0.0996	0.0970	0.0780	0.0958	0.0739	0.1001	0.0719	0.1341	0.0847	0.1261	0.0856	0.1540	0.1081
8-M	195'-0"	0.1161	0.1153	0.1038	0.0835	0.0747	0.0715	0.0664	0.0525	0.0748	0.0472	0.0697	0.0462	0.0820	0.0583	0.0827	0.0596	0.1139	0.0818
8-2	216'-9"	0.2115	0.1776	0.1554	0.1381	0.1776	0.1456	0.2186	0.1328	0.2367	0.1728	0.2535	0.1715	0.3244	0.2176	0.2904	0.2117	0.3583	0.2844
8-3	213'-0"	0.1633	0.1704	0.1374	0.1204	0.1309	0.1123	0.1081	0.0954	0.0939	0.0849	0.0929	0.0781	0.1424	0.1097	0.1335	0.1063	0.1680	0.1458
8-4	213'-6"	0.4811	0.3819	0.4565	0.3737	0.4900	0.3968	0.4940	0.4345	0.4917	0.4732	0.5056	0.4652	0.4618	0.4229	0.4523	0.4457	0.6279	0.6291
8-5	195'-0"	0.1842	0.1536	0.1546	0.1150	0.1324	0.0991	0.1304	0.0867	0.1248	0.0899	0.1454	0.0897	0.1814	0.1370	0.1643	0.1300	0.2353	0.1973
3-H	100'-0"	0.1426	0.1305	0.0985	0.0874	0.0736	0.0820	0.0571	0.0547	0.0563	0.0359	0.0580	0.0335	0.0780	0.0404	0.0767	0.0382	0.1032	0.0549
3-M	114'-0"	0.1468	0.1311	0.1026	0.0902	0.0782	0.0836	0.0649	0.0564	0.0560	0.0426	0.0528	0.0383	0.0501	0.0346	0.0460	0.0379	0.0802	0.0487

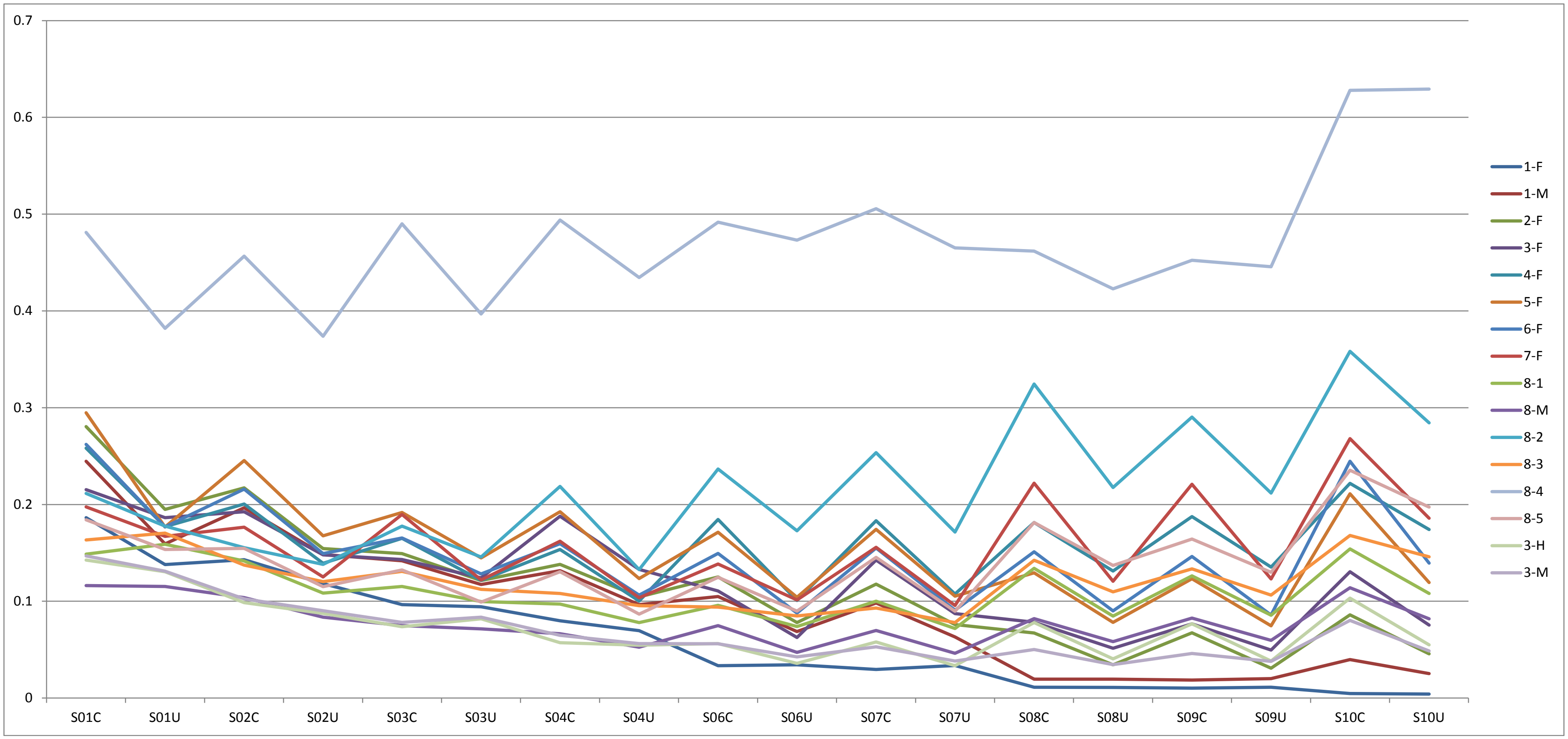

Figure E.5-4 Maximum Displacements (in.) of AB Slabs Relative to Basemat (including Basemat Rotation) – Z (VT) Direction

APPENDIX F

MAXIMUM SEISMIC RESPONSE ACCELERATIONS OF NI STRUCTURES

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APPENDIX F.1

RCB STRUCTURE WALLS – SUMMARY OF ZPA

Table F.1-1 (1 of 3)

RCB Structure ZPA – S01 – S04

RCB Response Spectra			S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U
Envelope	Direction	Elevation	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)
CS78	X	78	0.282	0.305	0.292	0.301	0.311	0.353	0.290	0.337
CS78	Y	78	0.251	0.289	0.254	0.286	0.312	0.320	0.299	0.310
CS78	Z	78	0.322	0.323	0.343	0.339	0.356	0.357	0.353	0.369
CS90	X	90	0.302	0.336	0.308	0.322	0.359	0.385	0.332	0.367
CS90	Y	90	0.269	0.326	0.271	0.315	0.347	0.370	0.335	0.341
CS90	Z	90	0.331	0.335	0.351	0.346	0.364	0.368	0.375	0.374
CS104	X	104	0.326	0.376	0.332	0.345	0.415	0.427	0.393	0.418
CS104	Y	104	0.300	0.380	0.300	0.358	0.408	0.455	0.382	0.418
CS104	Z	104	0.347	0.352	0.367	0.362	0.378	0.386	0.394	0.390
CS118	X	118	0.367	0.406	0.382	0.382	0.468	0.519	0.446	0.507
CS118	Y	118	0.331	0.449	0.321	0.409	0.471	0.529	0.440	0.483
CS118	Z	118	0.363	0.369	0.389	0.378	0.397	0.405	0.411	0.412
CS124	X	124	0.383	0.419	0.396	0.395	0.486	0.554	0.463	0.540
CS124	Y	124	0.341	0.471	0.335	0.427	0.492	0.553	0.464	0.506
CS124	Z	124	0.369	0.376	0.398	0.384	0.404	0.412	0.418	0.421
CS132	X	132	0.400	0.435	0.407	0.414	0.505	0.589	0.484	0.582
CS132	Y	132	0.353	0.507	0.351	0.456	0.517	0.580	0.497	0.532
CS132	Z	132	0.378	0.385	0.409	0.393	0.415	0.422	0.428	0.433
CS160	X	160	0.451	0.535	0.448	0.485	0.599	0.674	0.568	0.684
CS160	Y	160	0.440	0.626	0.417	0.545	0.627	0.664	0.614	0.597
CS160	Z	160	0.403	0.415	0.448	0.421	0.457	0.460	0.459	0.475
CS180	X	180	0.499	0.605	0.470	0.538	0.680	0.730	0.655	0.729
CS180	Y	180	0.524	0.704	0.498	0.602	0.693	0.724	0.683	0.695
CS180	Z	180	0.433	0.447	0.475	0.458	0.491	0.493	0.490	0.503
CS196	X	196	0.531	0.655	0.497	0.573	0.720	0.803	0.707	0.771
CS196	Y	196	0.586	0.753	0.556	0.636	0.716	0.803	0.706	0.769
CS196	Z	196	0.462	0.473	0.501	0.485	0.518	0.523	0.510	0.523
CS216	X	216	0.570	0.721	0.546	0.618	0.761	0.894	0.773	0.883
CS216	Y	216	0.631	0.803	0.597	0.666	0.754	0.887	0.752	0.852
CS216	Z	216	0.490	0.505	0.533	0.520	0.554	0.554	0.532	0.541
CS241	X	241	0.647	0.807	0.605	0.676	0.868	1.031	0.883	1.013
CS241	Y	241	0.708	0.871	0.655	0.712	0.872	1.005	0.858	0.978
CS241	Z	241	0.526	0.540	0.572	0.557	0.590	0.588	0.556	0.561
CS255	X	255	0.697	0.852	0.657	0.709	0.939	1.117	0.957	1.069
CS255	Y	255	0.756	0.916	0.693	0.743	0.933	1.069	0.906	1.060
CS255	Z	255	0.542	0.555	0.588	0.573	0.606	0.602	0.565	0.572
CS275	X	275	0.762	0.917	0.707	0.753	1.043	1.205	1.048	1.168
CS275	Y	275	0.770	0.975	0.696	0.755	1.028	1.155	0.973	1.150
CS275	Z	275	0.556	0.565	0.603	0.587	0.616	0.608	0.569	0.584
CS302	X	302	0.867	1.029	0.801	0.845	1.130	1.339	1.138	1.297
CS302	Y	302	0.826	1.096	0.791	0.834	1.160	1.261	1.083	1.273
CS302	Z	302	0.577	0.591	0.631	0.617	0.636	0.619	0.600	0.605

Table F.1-2 (2 of 3)

RCB Response Spectra			S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U
Envelope	Direction	Elevation	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)
CS328	X	328	0.943	1.127	0.867	0.911	1.234	1.472	1.244	1.428
CS328	Y	328	0.923	1.211	0.892	0.918	1.258	1.386	1.176	1.379
CS328	Z	328	0.619	0.661	0.660	0.676	0.633	0.640	0.661	0.631
CS332	X	332	0.951	1.138	0.874	0.918	1.249	1.488	1.261	1.445
CS332	Y	332	0.930	1.224	0.899	0.928	1.271	1.400	1.187	1.391
CS332	Z	332	0.627	0.671	0.661	0.685	0.677	0.654	0.743	0.692
PC01241	X	241	0.647	0.808	0.607	0.678	0.866	1.027	0.879	1.021
PC01241	Y	241	0.689	0.873	0.637	0.714	0.852	1.006	0.836	0.978
PC01241	Z	241	0.522	0.525	0.570	0.555	0.576	0.590	0.585	0.586
PC02241	X	241	0.715	0.900	0.627	0.731	0.932	1.163	0.940	1.180
PC02241	Y	241	0.783	1.035	0.705	0.886	1.016	1.453	0.950	1.427
PC02241	Z	241	1.161	1.080	1.101	0.978	1.361	1.351	2.153	1.967
PC03241	X	241	0.635	0.827	0.599	0.692	0.868	1.053	0.880	1.068
PC03241	Y	241	0.724	0.910	0.665	0.745	0.913	1.150	0.879	1.129
PC03241	Z	241	0.588	0.618	0.551	0.583	0.756	0.766	1.035	1.000
PSW66	X	66	0.262	0.279	0.271	0.281	0.276	0.327	0.266	0.314
PSW66	Y	66	0.239	0.266	0.240	0.267	0.278	0.293	0.280	0.298
PSW66	Z	66	0.289	0.287	0.324	0.313	0.358	0.335	0.362	0.336
PSW78	X	78	0.277	0.293	0.285	0.290	0.294	0.346	0.271	0.330
PSW78	Y	78	0.240	0.284	0.240	0.283	0.282	0.305	0.282	0.307
PSW78	Z	78	0.290	0.292	0.323	0.315	0.360	0.338	0.370	0.338
PSW100	X	100	0.291	0.317	0.300	0.308	0.320	0.378	0.294	0.357
PSW100	Y	100	0.243	0.319	0.252	0.309	0.302	0.340	0.285	0.323
PSW100	Z	100	0.314	0.320	0.340	0.330	0.382	0.366	0.391	0.363
PSW107	X	107	0.291	0.326	0.300	0.316	0.322	0.384	0.296	0.360
PSW107	Y	107	0.250	0.329	0.260	0.317	0.303	0.351	0.289	0.329
PSW107	Z	107	0.326	0.330	0.348	0.336	0.394	0.378	0.403	0.375
PSW114	X	114	0.295	0.339	0.305	0.325	0.336	0.397	0.310	0.370
PSW114	Y	114	0.255	0.345	0.273	0.329	0.313	0.361	0.302	0.335
PSW114	Z	114	0.329	0.333	0.351	0.338	0.397	0.382	0.407	0.379
PSW130	X	130	0.307	0.362	0.334	0.342	0.318	0.391	0.293	0.368
PSW130	Y	130	0.275	0.373	0.295	0.347	0.328	0.383	0.317	0.351
PSW130	Z	130	0.332	0.335	0.352	0.340	0.400	0.384	0.411	0.381
PSW137	X	137	0.336	0.381	0.362	0.352	0.332	0.403	0.308	0.392
PSW137	Y	137	0.289	0.392	0.316	0.363	0.338	0.397	0.366	0.359
PSW137	Z	137	0.333	0.335	0.357	0.341	0.401	0.385	0.411	0.382
PSW156	X	156	0.513	0.549	0.541	0.446	0.615	0.567	0.608	0.549
PSW156	Y	156	0.433	0.507	0.416	0.439	0.515	0.557	0.511	0.534
PSW156	Z	156	0.468	0.452	0.472	0.440	0.575	0.546	0.557	0.520
PSW191a	X	191	0.570	0.641	0.585	0.499	0.568	0.625	0.575	0.599
PSW191a	Y	191	2.583	2.004	2.245	1.713	2.775	2.414	2.695	2.829
PSW191a	Z	191	0.354	0.343	0.373	0.351	0.447	0.409	0.438	0.408
PSW191b	X	191	0.755	0.815	0.760	0.624	0.855	0.829	0.883	0.838
PSW191b	Y	191	0.683	0.714	0.665	0.625	0.890	0.903	0.851	0.974
PSW191b	Z	191	0.488	0.464	0.491	0.455	0.604	0.566	0.584	0.539

Table F.1-3 (3 of 3)

RCB Response Spectra			S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U
Envelope	Direction	Elevation	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)
SSW78	X	78	0.275	0.297	0.285	0.294	0.298	0.347	0.273	0.331
SSW78	Y	78	0.241	0.285	0.244	0.283	0.284	0.309	0.284	0.307
SSW78	Z	78	0.300	0.303	0.328	0.319	0.363	0.339	0.374	0.347
SSW100a	X	100	0.293	0.317	0.302	0.309	0.327	0.380	0.300	0.360
SSW100a	Y	100	0.243	0.322	0.253	0.312	0.304	0.341	0.288	0.325
SSW100a	Z	100	0.332	0.334	0.356	0.336	0.399	0.377	0.407	0.373
SSW100b	X	100	0.296	0.317	0.306	0.309	0.346	0.386	0.323	0.369
SSW100b	Y	100	0.249	0.319	0.255	0.307	0.307	0.344	0.299	0.325
SSW100b	Z	100	0.322	0.319	0.340	0.334	0.347	0.349	0.350	0.348
SSW107	X	107	0.300	0.329	0.310	0.318	0.347	0.398	0.316	0.374
SSW107	Y	107	0.254	0.334	0.268	0.323	0.308	0.354	0.295	0.332
SSW107	Z	107	0.340	0.341	0.363	0.341	0.407	0.384	0.416	0.380
SSW114	X	114	0.305	0.343	0.315	0.328	0.361	0.407	0.329	0.383
SSW114	Y	114	0.273	0.350	0.284	0.333	0.327	0.389	0.321	0.350
SSW114	Z	114	0.350	0.348	0.371	0.347	0.416	0.395	0.428	0.388
SSW130	X	130	0.353	0.382	0.382	0.352	0.389	0.420	0.372	0.400
SSW130	Y	130	0.305	0.388	0.321	0.364	0.356	0.462	0.373	0.417
SSW130	Z	130	0.365	0.362	0.389	0.363	0.446	0.424	0.459	0.415
SSW137	X	137	0.383	0.414	0.413	0.362	0.423	0.438	0.411	0.426
SSW137	Y	137	0.318	0.408	0.339	0.378	0.379	0.494	0.390	0.448
SSW137	Z	137	0.371	0.367	0.396	0.366	0.456	0.431	0.473	0.422
SSW156	X	156	0.503	0.550	0.530	0.453	0.587	0.560	0.585	0.543
SSW156	Y	156	0.426	0.490	0.426	0.431	0.521	0.584	0.548	0.588
SSW156	Z	156	0.401	0.385	0.428	0.382	0.499	0.466	0.517	0.449
SSW191	X	191	1.095	1.112	1.065	0.916	1.293	1.146	1.399	1.281
SSW191	Y	191	2.545	2.000	2.209	1.690	2.730	2.392	2.648	2.801
SSW191	Z	191	0.442	0.395	0.475	0.395	0.615	0.566	0.609	0.526

Table F.1-4 (1 of 3)

RCB Structure ZPA – S06 – S10

RCB Response Spectra			S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
Envelope	Direction	Elevation	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)
CS78	X	78	0.286	0.332	0.293	0.318	0.326	0.346	0.334	0.349	0.329	0.313
CS78	Y	78	0.284	0.312	0.292	0.306	0.351	0.356	0.390	0.396	0.343	0.326
CS78	Z	78	0.333	0.362	0.342	0.357	0.373	0.357	0.398	0.372	0.334	0.327
CS90	X	90	0.325	0.383	0.331	0.377	0.403	0.394	0.443	0.391	0.427	0.380
CS90	Y	90	0.316	0.349	0.313	0.341	0.390	0.404	0.423	0.443	0.410	0.435
CS90	Z	90	0.347	0.382	0.361	0.380	0.397	0.384	0.416	0.394	0.360	0.346
CS104	X	104	0.368	0.470	0.374	0.471	0.496	0.529	0.513	0.504	0.588	0.492
CS104	Y	104	0.406	0.404	0.405	0.393	0.535	0.477	0.520	0.489	0.552	0.581
CS104	Z	104	0.361	0.403	0.390	0.416	0.429	0.424	0.452	0.429	0.422	0.414
CS118	X	118	0.413	0.540	0.417	0.541	0.599	0.620	0.566	0.573	0.719	0.663
CS118	Y	118	0.491	0.458	0.489	0.444	0.637	0.589	0.612	0.608	0.682	0.658
CS118	Z	118	0.380	0.428	0.422	0.453	0.470	0.471	0.493	0.484	0.495	0.476
CS124	X	124	0.435	0.564	0.452	0.564	0.621	0.643	0.598	0.601	0.761	0.705
CS124	Y	124	0.515	0.484	0.516	0.467	0.679	0.637	0.640	0.647	0.705	0.674
CS124	Z	124	0.389	0.439	0.434	0.468	0.487	0.492	0.511	0.508	0.525	0.501
CS132	X	132	0.479	0.610	0.500	0.603	0.640	0.679	0.612	0.637	0.746	0.726
CS132	Y	132	0.546	0.510	0.549	0.490	0.704	0.650	0.663	0.679	0.721	0.681
CS132	Z	132	0.406	0.457	0.450	0.492	0.513	0.521	0.537	0.541	0.563	0.532
CS160	X	160	0.636	0.757	0.645	0.744	0.703	0.807	0.700	0.763	0.687	0.790
CS160	Y	160	0.686	0.616	0.671	0.612	0.784	0.764	0.757	0.776	0.805	0.742
CS160	Z	160	0.460	0.529	0.503	0.565	0.602	0.639	0.626	0.669	0.692	0.659
CS180	X	180	0.726	0.851	0.728	0.838	0.774	0.884	0.780	0.835	0.736	0.943
CS180	Y	180	0.757	0.758	0.738	0.747	0.783	0.842	0.776	0.879	0.785	0.798
CS180	Z	180	0.496	0.574	0.548	0.620	0.668	0.717	0.686	0.750	0.776	0.748
CS196	X	196	0.762	0.909	0.759	0.894	0.797	0.922	0.805	0.858	0.794	1.026
CS196	Y	196	0.801	0.846	0.784	0.824	0.831	0.951	0.832	0.983	0.800	0.899
CS196	Z	196	0.524	0.607	0.579	0.659	0.724	0.777	0.734	0.808	0.844	0.823
CS216	X	216	0.799	0.994	0.785	0.981	0.839	1.061	0.803	0.985	0.888	1.048
CS216	Y	216	0.887	0.956	0.869	0.934	0.909	1.115	0.932	1.160	0.869	1.038
CS216	Z	216	0.559	0.649	0.615	0.704	0.787	0.847	0.796	0.874	0.926	0.901
CS241	X	241	0.886	1.091	0.867	1.061	1.032	1.228	0.991	1.139	1.042	1.167
CS241	Y	241	0.950	1.173	0.944	1.127	1.001	1.357	0.978	1.439	0.955	1.258
CS241	Z	241	0.597	0.690	0.652	0.751	0.851	0.920	0.857	0.947	1.023	0.997
CS255	X	255	0.956	1.129	0.933	1.100	1.108	1.316	1.065	1.227	1.120	1.240
CS255	Y	255	1.000	1.228	0.994	1.172	1.104	1.447	1.066	1.484	1.051	1.375
CS255	Z	255	0.615	0.709	0.668	0.770	0.881	0.952	0.881	0.980	1.071	1.043
CS275	X	275	1.017	1.203	1.010	1.184	1.200	1.406	1.147	1.335	1.225	1.387
CS275	Y	275	1.110	1.361	1.083	1.287	1.213	1.506	1.191	1.522	1.182	1.514
CS275	Z	275	0.635	0.721	0.673	0.775	0.912	0.982	0.913	1.005	1.127	1.095
CS302	X	302	1.125	1.307	1.096	1.271	1.261	1.545	1.241	1.462	1.328	1.531
CS302	Y	302	1.209	1.564	1.190	1.479	1.331	1.685	1.299	1.738	1.317	1.638
CS302	Z	302	0.650	0.700	0.751	0.784	1.000	1.054	0.999	1.064	1.272	1.221
CS328	X	328	1.198	1.398	1.190	1.383	1.366	1.686	1.301	1.633	1.444	1.679
CS328	Y	328	1.309	1.718	1.303	1.652	1.469	1.842	1.441	1.893	1.451	1.833
CS328	Z	328	0.709	0.768	0.802	0.826	1.131	1.188	1.099	1.164	1.457	1.405

Table F.1-5 (2 of 3)

RCB Response Spectra			S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
Envelope	Direction	Elevation	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)
CS332	X	332	1.207	1.410	1.205	1.394	1.375	1.700	1.314	1.644	1.458	1.698
CS332	Y	332	1.318	1.729	1.315	1.665	1.484	1.845	1.455	1.901	1.466	1.846
CS332	Z	332	0.691	0.721	0.798	0.858	1.070	1.164	1.105	1.168	1.529	1.446
PC01241	X	241	0.883	1.087	0.863	1.061	1.031	1.225	0.992	1.139	1.038	1.176
PC01241	Y	241	0.950	1.171	0.938	1.118	1.004	1.351	0.977	1.383	0.951	1.262
PC01241	Z	241	0.559	0.645	0.658	0.706	0.829	0.884	0.833	0.899	1.015	0.960
PC02241	X	241	0.972	1.368	0.947	1.332	1.133	1.662	1.087	1.556	1.139	1.558
PC02241	Y	241	1.216	2.056	1.197	1.967	1.341	2.386	1.300	2.377	1.346	2.505
PC02241	Z	241	2.031	1.884	1.981	1.812	1.835	1.677	1.805	1.655	1.986	1.914
PC03241	X	241	0.886	1.122	0.867	1.106	1.016	1.282	0.982	1.213	1.011	1.286
PC03241	Y	241	1.033	1.436	1.028	1.363	1.129	1.712	1.095	1.699	1.073	1.686
PC03241	Z	241	0.859	0.894	0.850	0.883	0.890	0.985	0.873	0.970	0.917	1.003
PSW66	X	66	0.260	0.308	0.271	0.300	0.289	0.326	0.308	0.333	0.302	0.304
PSW66	Y	66	0.278	0.299	0.284	0.294	0.331	0.337	0.356	0.367	0.311	0.305
PSW66	Z	66	0.386	0.392	0.373	0.372	0.343	0.350	0.336	0.342	0.322	0.313
PSW78	X	78	0.272	0.324	0.292	0.316	0.314	0.347	0.340	0.360	0.334	0.322
PSW78	Y	78	0.281	0.307	0.287	0.302	0.379	0.351	0.412	0.389	0.359	0.337
PSW78	Z	78	0.406	0.401	0.388	0.382	0.380	0.366	0.374	0.354	0.377	0.339
PSW100	X	100	0.294	0.346	0.311	0.336	0.371	0.358	0.375	0.379	0.413	0.395
PSW100	Y	100	0.291	0.322	0.290	0.316	0.434	0.375	0.447	0.407	0.441	0.389
PSW100	Z	100	0.430	0.430	0.410	0.413	0.438	0.426	0.428	0.419	0.466	0.448
PSW107	X	107	0.293	0.352	0.306	0.340	0.368	0.359	0.374	0.366	0.433	0.422
PSW107	Y	107	0.296	0.326	0.292	0.322	0.428	0.375	0.441	0.391	0.435	0.396
PSW107	Z	107	0.451	0.446	0.431	0.429	0.476	0.466	0.462	0.453	0.519	0.504
PSW114	X	114	0.320	0.362	0.315	0.347	0.411	0.380	0.409	0.364	0.504	0.461
PSW114	Y	114	0.300	0.336	0.294	0.334	0.453	0.371	0.466	0.367	0.467	0.381
PSW114	Z	114	0.458	0.451	0.437	0.434	0.498	0.480	0.475	0.466	0.544	0.522
PSW130	X	130	0.305	0.361	0.282	0.343	0.406	0.421	0.409	0.404	0.459	0.488
PSW130	Y	130	0.310	0.345	0.302	0.342	0.436	0.387	0.439	0.369	0.455	0.445
PSW130	Z	130	0.462	0.454	0.441	0.437	0.509	0.489	0.489	0.474	0.561	0.533
PSW137	X	137	0.323	0.363	0.297	0.359	0.456	0.495	0.463	0.462	0.539	0.536
PSW137	Y	137	0.339	0.374	0.342	0.373	0.442	0.450	0.446	0.430	0.483	0.518
PSW137	Z	137	0.469	0.460	0.447	0.442	0.539	0.522	0.504	0.501	0.600	0.572
PSW156	X	156	0.579	0.478	0.469	0.494	0.868	0.735	0.819	0.711	1.011	0.959
PSW156	Y	156	0.550	0.614	0.563	0.584	0.788	0.895	0.734	0.917	0.927	0.993
PSW156	Z	156	0.607	0.632	0.577	0.621	0.829	0.881	0.791	0.821	1.019	0.971
PSW191a	X	191	0.549	0.523	0.517	0.567	0.986	0.966	0.917	0.899	1.218	1.004
PSW191a	Y	191	2.821	1.969	2.391	1.993	4.211	3.461	3.898	2.997	4.937	4.458
PSW191a	Z	191	0.557	0.515	0.538	0.485	0.816	0.699	0.779	0.642	0.880	0.792
PSW191b	X	191	0.829	0.820	0.707	0.814	1.399	1.344	1.306	1.210	1.647	1.619
PSW191b	Y	191	0.786	0.806	0.797	0.933	1.271	1.380	1.211	1.283	1.481	1.629
PSW191b	Z	191	0.687	0.656	0.664	0.648	0.987	0.917	0.970	0.859	1.068	1.035
SSW78	X	78	0.277	0.325	0.282	0.313	0.301	0.345	0.330	0.350	0.321	0.314
SSW78	Y	78	0.280	0.307	0.287	0.302	0.352	0.352	0.387	0.391	0.334	0.325
SSW78	Z	78	0.395	0.395	0.377	0.375	0.364	0.359	0.366	0.353	0.353	0.328
SSW100a	X	100	0.296	0.347	0.310	0.337	0.389	0.366	0.388	0.391	0.459	0.411
SSW100a	Y	100	0.295	0.327	0.290	0.322	0.462	0.370	0.472	0.403	0.474	0.384
SSW100a	Z	100	0.438	0.436	0.414	0.418	0.475	0.455	0.450	0.446	0.508	0.471

Table F.1-6 (3 of 3)

RCB Response Spectra			S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
Envelope	Direction	Elevation	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)
SSW100b	X	100	0.318	0.363	0.315	0.341	0.435	0.399	0.485	0.386	0.520	0.453
SSW100b	Y	100	0.324	0.319	0.294	0.313	0.488	0.375	0.521	0.410	0.533	0.391
SSW100b	Z	100	0.343	0.371	0.345	0.357	0.374	0.357	0.403	0.369	0.354	0.348
SSW107	X	107	0.337	0.363	0.337	0.349	0.445	0.388	0.442	0.419	0.543	0.520
SSW107	Y	107	0.302	0.334	0.297	0.330	0.476	0.378	0.488	0.397	0.493	0.399
SSW107	Z	107	0.450	0.449	0.427	0.431	0.507	0.492	0.490	0.484	0.562	0.519
SSW114	X	114	0.352	0.372	0.336	0.355	0.479	0.429	0.467	0.431	0.613	0.595
SSW114	Y	114	0.341	0.353	0.323	0.350	0.484	0.436	0.501	0.411	0.501	0.478
SSW114	Z	114	0.469	0.462	0.440	0.445	0.551	0.534	0.526	0.527	0.616	0.569
SSW130	X	130	0.381	0.379	0.330	0.383	0.574	0.557	0.559	0.522	0.604	0.631
SSW130	Y	130	0.412	0.401	0.387	0.404	0.535	0.562	0.558	0.546	0.632	0.677
SSW130	Z	130	0.525	0.510	0.494	0.488	0.645	0.642	0.627	0.631	0.722	0.669
SSW137	X	137	0.411	0.406	0.353	0.415	0.627	0.616	0.611	0.581	0.659	0.690
SSW137	Y	137	0.411	0.429	0.383	0.422	0.580	0.605	0.573	0.590	0.730	0.772
SSW137	Z	137	0.551	0.528	0.521	0.505	0.680	0.677	0.675	0.672	0.748	0.721
SSW156	X	156	0.550	0.508	0.458	0.543	0.904	0.851	0.857	0.801	1.182	1.072
SSW156	Y	156	0.585	0.619	0.605	0.650	0.817	1.006	0.788	1.042	1.024	1.073
SSW156	Z	156	0.626	0.611	0.599	0.598	0.820	0.825	0.821	0.835	0.906	0.886
SSW191	X	191	1.354	0.946	1.184	1.042	1.939	1.652	1.691	1.549	2.524	2.276
SSW191	Y	191	2.758	1.953	2.358	1.977	4.134	3.428	3.821	2.968	4.846	4.419
SSW191	Z	191	0.780	0.740	0.778	0.731	1.055	1.032	1.068	1.069	1.191	1.217

Table F.1-7 (1 of 3)

RCB Enveloped Structure ZPA

RCB Response Spectra			Envelope of All Soil Cases
Envelope	Direction	Elevation	ZPA (g)
CS78	X	78	0.353
CS78	Y	78	0.396
CS78	Z	78	0.398
CS90	X	90	0.443
CS90	Y	90	0.443
CS90	Z	90	0.416
CS104	X	104	0.588
CS104	Y	104	0.581
CS104	Z	104	0.452
CS118	X	118	0.719
CS118	Y	118	0.682
CS118	Z	118	0.495
CS124	X	124	0.761
CS124	Y	124	0.705
CS124	Z	124	0.525
CS132	X	132	0.746
CS132	Y	132	0.721
CS132	Z	132	0.563
CS160	X	160	0.807
CS160	Y	160	0.805
CS160	Z	160	0.692
CS180	X	180	0.943
CS180	Y	180	0.879
CS180	Z	180	0.776
CS196	X	196	1.026
CS196	Y	196	0.983
CS196	Z	196	0.844
CS216	X	216	1.061
CS216	Y	216	1.160
CS216	Z	216	0.926
CS241	X	241	1.228
CS241	Y	241	1.439
CS241	Z	241	1.023
CS255	X	255	1.316
CS255	Y	255	1.484
CS255	Z	255	1.071
CS275	X	275	1.406
CS275	Y	275	1.522
CS275	Z	275	1.127
CS302	X	302	1.545
CS302	Y	302	1.738
CS302	Z	302	1.272
CS328	X	328	1.686
CS328	Y	328	1.893
CS328	Z	328	1.457

Table F.1-8 (2 of 3)

RCB Response Spectra			Envelope of All Soil Cases
Envelope	Direction	Elevation	ZPA (g)
CS332	X	332	1.700
CS332	Y	332	1.901
CS332	Z	332	1.529
PC01241	X	241	1.225
PC01241	Y	241	1.383
PC01241	Z	241	1.015
PC02241	X	241	1.662
PC02241	Y	241	2.505
PC02241	Z	241	2.153
PC03241	X	241	1.286
PC03241	Y	241	1.712
PC03241	Z	241	1.035
PSW66	X	66	0.333
PSW66	Y	66	0.367
PSW66	Z	66	0.392
PSW78	X	78	0.360
PSW78	Y	78	0.412
PSW78	Z	78	0.406
PSW100	X	100	0.413
PSW100	Y	100	0.447
PSW100	Z	100	0.466
PSW107	X	107	0.433
PSW107	Y	107	0.441
PSW107	Z	107	0.519
PSW114	X	114	0.504
PSW114	Y	114	0.467
PSW114	Z	114	0.544
PSW130	X	130	0.488
PSW130	Y	130	0.455
PSW130	Z	130	0.561
PSW137	X	137	0.539
PSW137	Y	137	0.518
PSW137	Z	137	0.600
PSW156	X	156	1.011
PSW156	Y	156	0.993
PSW156	Z	156	1.019
PSW191a	X	191	1.218
PSW191a	Y	191	4.937
PSW191a	Z	191	0.880
PSW191b	X	191	1.647
PSW191b	Y	191	1.629
PSW191b	Z	191	1.068
SSW78	X	78	0.350
SSW78	Y	78	0.391
SSW78	Z	78	0.395
SSW100a	X	100	0.459
SSW100a	Y	100	0.474
SSW100a	Z	100	0.508

Table F.1-9 (3 of 3)

RCB Response Spectra			Envelope of All Soil Cases
Envelope	Direction	Elevation	ZPA (g)
SSW100b	X	100	0.520
SSW100b	Y	100	0.533
SSW100b	Z	100	0.403
SSW107	X	107	0.543
SSW107	Y	107	0.493
SSW107	Z	107	0.562
SSW114	X	114	0.613
SSW114	Y	114	0.501
SSW114	Z	114	0.616
SSW130	X	130	0.631
SSW130	Y	130	0.677
SSW130	Z	130	0.722
SSW137	X	137	0.690
SSW137	Y	137	0.772
SSW137	Z	137	0.748
SSW156	X	156	1.182
SSW156	Y	156	1.073
SSW156	Z	156	0.906
SSW191	X	191	2.524
SSW191	Y	191	4.846
SSW191	Z	191	1.217

APPENDIX F.2

RCB STRUCTURE SLABS – SUMMARY OF ZPA

Table F.2- 1

RCB Slabs ZPA – S01 – S04

RCB Slabs Response Spectra			S01C	S01U	S02C	S02U	S03C	S03U	S04C	S04U
Envelope	Direction	Elevation	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)	ZPA (g)
SL156	Z	156	0.373	0.367	0.388	0.367	0.449	0.425	0.451	0.422
SL125	Z	125	0.383	0.380	0.386	0.367	0.448	0.433	0.460	0.416
SL114	Z	114	0.380	0.372	0.380	0.363	0.445	0.423	0.459	0.406
SL111	Z	111	0.408	0.373	0.426	0.368	0.459	0.425	0.486	0.416
SL107	Z	107	0.296	0.298	0.325	0.319	0.365	0.348	0.375	0.349
SL100	Z	100	0.389	0.381	0.384	0.366	0.451	0.430	0.465	0.412
SL66	Z	66	0.279	0.278	0.327	0.321	0.365	0.333	0.351	0.332

Table F.2- 2

RCB Slabs ZPA – S06 – S10

RCB Slabs Response Spectra			S06C	S06U	S07C	S07U	S08C	S08U	S09C	S09U	S10C	S10U
Envelope	**Direction**	**Elevation**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**	**ZPA (g)**
SL156	Z	156	0.573	0.522	0.529	0.489	0.725	0.649	0.719	0.623	0.796	0.726
SL125	Z	125	0.573	0.522	0.529	0.489	0.725	0.646	0.719	0.623	0.768	0.678
SL114	Z	114	0.562	0.509	0.514	0.476	0.727	0.614	0.700	0.607	0.780	0.687
SL111	Z	111	0.570	0.517	0.537	0.495	0.786	0.711	0.740	0.657	0.858	0.792
SL107	Z	107	0.428	0.425	0.406	0.404	0.421	0.406	0.408	0.395	0.452	0.429
SL100	Z	100	0.560	0.489	0.515	0.476	0.735	0.638	0.732	0.595	0.800	0.688
SL66	Z	66	0.367	0.381	0.357	0.362	0.312	0.327	0.317	0.326	0.302	0.301

Table F.2- 3

RCB Slabs Enveloped ZPAs

RCB Slabs Response Spectras			Envelope of All Soil Cases
Envelope	Direction	Elevation	ZPA (g)
SL156	Z	156	0.796
SL125	Z	125	0.768
SL114	Z	114	0.780
SL111	Z	111	0.858
SL107	Z	107	0.452
SL100	Z	100	0.800
SL66	Z	66	0.381

APPENDIX F.3

AB STRUCTURE WALLS – SUMMARY OF ZPA

Table F.3-1 (1 of 2)

AB Structure ZPA of Uncracked SSI Cases

AB Shear Wall Response Locations/Direction			AB Shear Wall ZPA (g) of Uncracked SSI Cases								
Floor Panels for Shear Wall ISRS Envelop	Elev (ft)	Dir[1)]	S01U	S02U	S03U	S04U	S06U	S07U	S08U	S09U	S10U
1-F	55	X	0.231	0.245	0.279	0.276	0.277	0.276	0.286	0.282	0.301
1-F	55	Y	0.252	0.247	0.280	0.287	0.288	0.283	0.295	0.299	0.296
1-F	55	Z	0.330	0.385	0.402	0.386	0.322	0.317	0.317	0.323	0.305
1-M	68	X	0.232	0.247	0.279	0.277	0.290	0.290	0.301	0.385	0.368
1-M	68	Y	0.267	0.261	0.295	0.307	0.328	0.309	0.306	0.357	0.370
1-M	68	Z	0.340	0.397	0.424	0.402	0.351	0.345	0.333	0.329	0.353
2-F	78	X	0.236	0.250	0.302	0.295	0.306	0.304	0.338	0.418	0.441
2-F	78	Y	0.282	0.277	0.312	0.330	0.337	0.333	0.343	0.442	0.466
2-F	78	Z	0.352	0.409	0.468	0.413	0.356	0.358	0.349	0.337	0.399
3-F	100	X	0.249	0.250	0.360	0.333	0.379	0.371	0.373	0.398	0.677
3-F	100	Y	0.324	0.311	0.391	0.384	0.404	0.405	0.580	0.588	0.801
3-F	100	Z	0.372	0.434	0.441	0.452	0.412	0.416	0.448	0.397	0.526
4-F	120	X	0.286	0.279	0.419	0.378	0.445	0.448	0.495	0.525	0.932
4-F	120	Y	0.323	0.312	0.426	0.399	0.504	0.478	0.652	0.641	1.190
4-F	120	Z	0.411	0.463	0.471	0.489	0.475	0.468	0.472	0.472	0.687
5-F	137.5	X	0.320	0.318	0.469	0.425	0.527	0.522	0.612	0.620	1.093
5-F	137.5	Y	0.347	0.329	0.520	0.491	0.685	0.628	0.809	0.850	1.499
5-F	137.5	Z	0.440	0.482	0.500	0.520	0.516	0.505	0.535	0.521	0.794
6-F	156	X	0.361	0.362	0.528	0.484	0.626	0.609	0.774	0.792	1.340
6-F	156	Y	0.431	0.403	0.701	0.686	0.890	0.808	1.166	1.165	1.905
6-F	156	Z	0.466	0.500	0.538	0.561	0.555	0.544	0.599	0.638	0.892
7-F	174	X	0.463	0.448	0.750	0.684	0.929	0.860	1.253	1.172	2.085
7-F	174	Y	0.472	0.440	0.768	0.751	0.989	0.890	1.408	1.379	2.126
7-F	174	Z	0.485	0.517	0.569	0.591	0.583	0.568	0.684	0.718	0.963
8-1	195	X	0.439	0.453	0.784	0.719	0.921	0.873	1.398	1.329	2.099
8-1	195	Y	0.500	0.485	0.830	0.767	1.001	0.906	1.564	1.450	2.187
8-1	195	Z	0.496	0.507	0.572	0.595	0.575	0.546	0.739	0.778	0.931
8-M	195	X	0.429	0.440	0.774	0.707	0.903	0.895	1.341	1.282	2.067
8-M	195	Y	0.309	0.296	0.433	0.397	0.553	0.512	0.760	0.722	1.312
8-M	195	Z	0.457	0.437	0.454	0.439	0.528	0.509	0.593	0.598	0.884

Table F.3-2 (2 of 2)

AB Shear Wall Response Locations/Direction			AB Shear Wall ZPA (g) of Uncracked SSI Cases								
Floor Panels for Shear Wall ISRS Envelop	Elev (ft)	Dir[1)]	S01U	S02U	S03U	S04U	S06U	S07U	S08U	S09U	S10U
8-2	216.8	X	0.622	0.580	0.848	0.805	0.980	0.978	1.333	1.273	2.423
8-2	216.8	Y	0.604	0.598	0.890	0.935	1.359	1.310	1.608	1.613	2.688
8-2	216.8	Z	0.393	0.428	0.470	0.465	0.527	0.533	0.698	0.707	1.003
8-3	213	X	0.566	0.556	0.877	0.831	1.016	1.051	1.664	1.573	2.262
8-3	213	Y	0.332	0.340	0.511	0.446	0.643	0.606	0.934	0.849	1.530
8-3	213	Z	0.463	0.454	0.462	0.447	0.520	0.496	0.673	0.676	0.941
8-4	213.5	X	0.552	0.529	0.808	0.767	0.927	0.885	1.168	1.119	2.154
8-4	213.5	Y	0.405	0.402	0.600	0.647	0.921	0.929	0.943	1.025	1.702
8-4	213.5	Z	0.502	0.535	0.600	0.619	0.611	0.595	0.612	0.639	1.035
8-5	195	X	0.471	0.477	0.719	0.682	0.827	0.783	0.987	0.949	1.826
8-5	195	Y	0.369	0.366	0.545	0.578	0.845	0.851	0.852	0.952	1.520
8-5	195	Z	0.498	0.530	0.592	0.612	0.604	0.589	0.597	0.623	1.013
3-H	100	X	0.244	0.244	0.347	0.342	0.363	0.365	0.346	0.342	0.589
3-H	100	Y	0.285	0.260	0.308	0.333	0.362	0.361	0.336	0.388	0.557
3-H	100	Z	0.316	0.364	0.346	0.368	0.341	0.344	0.394	0.372	0.470
3-M	114	X	0.284	0.264	0.400	0.376	0.441	0.444	0.435	0.400	0.754
3-M	114	Y	0.299	0.271	0.348	0.351	0.389	0.388	0.369	0.473	0.669
3-M	114	Z	0.337	0.370	0.359	0.373	0.387	0.386	0.485	0.439	0.670
4-H	120	X	0.295	0.276	0.413	0.390	0.459	0.464	0.460	0.426	0.809
4-H	120	Y	0.304	0.276	0.361	0.356	0.403	0.398	0.385	0.499	0.726
4-H	120	Z	0.342	0.373	0.363	0.375	0.392	0.392	0.494	0.445	0.693
5-H	137.5	X	0.322	0.314	0.461	0.421	0.522	0.516	0.524	0.512	0.967
5-H	137.5	Y	0.315	0.289	0.394	0.380	0.463	0.442	0.469	0.559	0.905
5-H	137.5	Z	0.353	0.385	0.373	0.379	0.404	0.405	0.509	0.454	0.737
6-H	156	X	0.356	0.356	0.514	0.477	0.603	0.576	0.616	0.607	1.173
6-H	156	Y	0.323	0.298	0.440	0.421	0.511	0.498	0.567	0.672	1.081
6-H	156	Z	0.359	0.391	0.379	0.382	0.410	0.412	0.513	0.458	0.756

Note

1) X=EW, Y=NS, Z=Vert

Table F.3-3 (1 of 2)

AB Structure ZPA of Cracked SSI Cases

AB Shear Wall Response Locations/Direction			AB Shear Wall ZPA (g) of SSI Cracked Cases								
Floor Panels for Shear Wall ISRS Envelop	Elev (ft)	Dir[1)]	S01C	S02C	S03C	S04C	S06C	S07C	S08C	S09C	S10C
1-F	55	X	0.249	0.259	0.281	0.287	0.272	0.268	0.304	0.304	0.296
1-F	55	Y	0.250	0.236	0.289	0.274	0.279	0.276	0.302	0.314	0.294
1-F	55	Z	0.343	0.348	0.343	0.339	0.314	0.299	0.315	0.322	0.305
1-M	68	X	0.260	0.263	0.303	0.300	0.298	0.286	0.299	0.298	0.320
1-M	68	Y	0.271	0.252	0.297	0.297	0.321	0.295	0.305	0.326	0.346
1-M	68	Z	0.362	0.362	0.363	0.362	0.345	0.327	0.335	0.338	0.348
2-F	78	X	0.270	0.269	0.306	0.313	0.297	0.299	0.343	0.315	0.401
2-F	78	Y	0.286	0.271	0.309	0.321	0.328	0.322	0.339	0.382	0.419
2-F	78	Z	0.378	0.380	0.395	0.378	0.381	0.346	0.349	0.356	0.393
3-F	100	X	0.300	0.271	0.331	0.364	0.420	0.395	0.466	0.408	0.538
3-F	100	Y	0.323	0.307	0.372	0.394	0.386	0.391	0.506	0.479	0.686
3-F	100	Z	0.399	0.404	0.407	0.407	0.399	0.434	0.398	0.448	0.526
4-F	120	X	0.316	0.306	0.384	0.404	0.499	0.480	0.486	0.460	0.740
4-F	120	Y	0.378	0.357	0.496	0.497	0.596	0.603	0.596	0.618	1.035
4-F	120	Z	0.431	0.439	0.445	0.436	0.449	0.473	0.459	0.430	0.651
5-F	137.5	X	0.347	0.350	0.464	0.465	0.597	0.600	0.563	0.543	0.895
5-F	137.5	Y	0.417	0.390	0.605	0.587	0.712	0.723	0.808	0.768	1.206
5-F	137.5	Z	0.458	0.465	0.478	0.465	0.492	0.514	0.483	0.481	0.728
6-F	156	X	0.398	0.400	0.541	0.532	0.703	0.708	0.705	0.707	1.032
6-F	156	Y	0.534	0.476	0.687	0.670	0.815	0.843	1.174	1.118	1.469
6-F	156	Z	0.485	0.491	0.521	0.521	0.538	0.553	0.609	0.586	0.811
7-F	174	X	0.503	0.508	0.823	0.720	0.979	0.945	1.198	1.162	1.522
7-F	174	Y	0.619	0.543	0.853	0.787	0.929	0.943	1.467	1.349	1.716
7-F	174	Z	0.505	0.515	0.570	0.578	0.574	0.584	0.702	0.657	0.873
8-1	195	X	0.524	0.548	0.898	0.771	1.103	1.046	1.357	1.289	1.652
8-1	195	Y	0.629	0.564	0.949	0.946	1.041	1.073	1.660	1.567	1.766
8-1	195	Z	0.527	0.526	0.600	0.616	0.574	0.542	0.772	0.708	0.845
8-M	195	X	0.515	0.534	0.865	0.740	1.070	1.017	1.320	1.253	1.586
8-M	195	Y	0.360	0.350	0.494	0.492	0.554	0.602	0.817	0.731	0.989
8-M	195	Z	0.402	0.380	0.435	0.429	0.523	0.509	0.565	0.560	0.800

Table F.3-4 (2 of 2)

AB Shear Wall Response Locations/Direction			AB Shear Wall ZPA (g) of SSI Cracked Cases								
Floor Panels for Shear Wall ISRS Envelop	Elev (ft)	Dir[1)]	S01C	S02C	S03C	S04C	S06C	S07C	S08C	S09C	S10C
8-2	216.8	X	0.608	0.650	0.812	0.780	1.020	1.040	1.324	1.345	2.164
8-2	216.8	Y	0.746	0.773	0.835	0.941	1.056	1.088	1.550	1.412	2.287
8-2	216.8	Z	0.417	0.423	0.458	0.491	0.507	0.512	0.729	0.615	0.852
8-3	213	X	0.637	0.640	1.078	0.939	1.279	1.195	1.535	1.465	1.938
8-3	213	Y	0.401	0.397	0.570	0.561	0.623	0.676	1.003	0.881	1.161
8-3	213	Z	0.431	0.406	0.450	0.434	0.523	0.510	0.597	0.583	0.787
8-4	213.5	X	0.578	0.618	0.691	0.687	0.905	0.891	1.104	1.155	1.931
8-4	213.5	Y	0.544	0.530	0.588	0.678	0.766	0.838	0.982	0.789	1.399
8-4	213.5	Z	0.527	0.541	0.592	0.582	0.612	0.619	0.631	0.633	0.941
8-5	195	X	0.521	0.542	0.601	0.626	0.815	0.803	0.940	0.972	1.656
8-5	195	Y	0.514	0.485	0.534	0.620	0.711	0.784	0.910	0.717	1.275
8-5	195	Z	0.521	0.534	0.583	0.571	0.602	0.609	0.616	0.619	0.924
3-H	100	X	0.286	0.264	0.335	0.353	0.394	0.372	0.403	0.367	0.492
3-H	100	Y	0.282	0.261	0.318	0.333	0.326	0.324	0.364	0.374	0.527
3-H	100	Z	0.323	0.346	0.347	0.354	0.336	0.346	0.385	0.365	0.457
3-M	114	X	0.315	0.290	0.368	0.367	0.483	0.453	0.429	0.440	0.635
3-M	114	Y	0.322	0.291	0.357	0.376	0.361	0.368	0.402	0.402	0.632
3-M	114	Z	0.335	0.355	0.357	0.366	0.370	0.378	0.491	0.435	0.641
4-H	120	X	0.325	0.306	0.384	0.381	0.505	0.477	0.450	0.456	0.675
4-H	120	Y	0.335	0.302	0.370	0.392	0.376	0.396	0.411	0.410	0.683
4-H	120	Z	0.342	0.360	0.360	0.368	0.375	0.384	0.503	0.442	0.663
5-H	137.5	X	0.359	0.352	0.429	0.431	0.566	0.541	0.532	0.508	0.801
5-H	137.5	Y	0.374	0.338	0.405	0.435	0.436	0.467	0.496	0.499	0.810
5-H	137.5	Z	0.363	0.372	0.367	0.373	0.388	0.398	0.523	0.451	0.702
6-H	156	X	0.396	0.399	0.480	0.481	0.628	0.631	0.624	0.598	1.003
6-H	156	Y	0.409	0.370	0.436	0.470	0.486	0.528	0.603	0.680	0.949
6-H	156	Z	0.373	0.378	0.370	0.376	0.392	0.407	0.534	0.453	0.718

Note

1) X=EW, Y=NS, Z=Vert

Table F.3-5 (1 of 2)

AB Structure ZPA, Envelope of All SSI Cases

AB Shear Wall Response Locations/Direction			Envelope of All SSI Cases
Floor Panels for Shear Wall ISRS Envelop	Elevation (ft)	Direction[1)]	ZPA (g)
1-F	55	X	0.304
1-F	55	Y	0.314
1-F	55	Z	0.402
1-M	68	X	0.385
1-M	68	Y	0.370
1-M	68	Z	0.424
2-F	78	X	0.441
2-F	78	Y	0.466
2-F	78	Z	0.468
3-F	100	X	0.677
3-F	100	Y	0.801
3-F	100	Z	0.526
4-F	120	X	0.932
4-F	120	Y	1.190
4-F	120	Z	0.687
5-F	137.5	X	1.093
5-F	137.5	Y	1.499
5-F	137.5	Z	0.794
6-F	156	X	1.340
6-F	156	Y	1.905
6-F	156	Z	0.892
7-F	174	X	2.085
7-F	174	Y	2.126
7-F	174	Z	0.963
8-1	195	X	2.099
8-1	195	Y	2.187
8-1	195	Z	0.931
8-M	195	X	2.067
8-M	195	Y	1.312
8-M	195	Z	0.884

Table F.3-6 (2 of 2)

AB Shear Wall Response Locations/Direction			Envelope of All SSI Cases
Floor Panels for Shear Wall ISRS Envelop	Elevation (ft)	Direction[1)]	ZPA (g)
8-2	216.75	X	2.423
8-2	216.75	Y	2.688
8-2	216.75	Z	1.003
8-3	213	X	2.262
8-3	213	Y	1.530
8-3	213	Z	0.941
8-4	213.5	X	2.154
8-4	213.5	Y	1.702
8-4	213.5	Z	1.035
8-5	195	X	1.826
8-5	195	Y	1.520
8-5	195	Z	1.013
3-H	100	X	0.589
3-H	100	Y	0.557
3-H	100	Z	0.470
3-M	114	X	0.754
3-M	114	Y	0.669
3-M	114	Z	0.670
4-H	120	X	0.809
4-H	120	Y	0.726
4-H	120	Z	0.693
5-H	137.5	X	0.967
5-H	137.5	Y	0.905
5-H	137.5	Z	0.737
6-H	156	X	1.173
6-H	156	Y	1.081
6-H	156	Z	0.756

Note

1) X=EW, Y=NS, Z=Vert

APPENDIX F.4

AB STRUCTURE SLABS – SUMMARY OF ZPA

Table F.4-1

AB Slabs ZPA of Uncracked SSI Cases

AB Floor Response Locations/Direction			AB Floor ZPA (g) of SSI Uncracked Cases								
Floor Panels for Floor Slab ISRS Envelop	Elev (ft)	Dir[1)]	S01U	S02U	S03U	S04U	S06U	S07U	S08U	S09U	S10U
1-F	55	Z	0.298	0.352	0.342	0.359	0.296	0.292	0.302	0.307	0.303
1-M	68	Z	0.343	0.387	0.481	0.438	0.480	0.427	0.666	0.573	0.678
2-F	78	Z	0.658	0.649	0.816	0.795	0.667	0.792	0.835	0.742	0.858
3-F	100	Z	0.735	0.752	0.958	0.956	0.907	0.850	0.804	0.847	1.170
4-F	120	Z	0.792	0.826	0.920	0.912	0.877	0.900	1.112	1.146	1.541
5-F	137.5	Z	0.729	0.765	0.765	0.754	0.798	0.787	1.089	1.070	1.974
6-F	156	Z	0.952	0.997	1.180	1.166	1.063	1.065	1.369	1.221	1.917
7-F	174	Z	0.994	1.035	1.147	1.142	1.095	1.050	1.803	1.644	2.830
8-1	195	Z	0.631	0.639	0.756	0.775	0.696	0.659	1.016	1.047	1.449
8-M	195	Z	0.631	0.614	0.756	0.775	0.676	0.613	0.943	0.932	1.126
8-2	216.75	Z	1.201	1.249	1.219	1.250	1.284	1.274	2.257	2.066	3.477
8-3	213	Z	0.908	0.843	0.945	0.873	1.077	1.022	1.675	1.560	2.326
8-4	213.5	Z	1.304	1.250	1.435	1.509	1.756	1.694	1.689	1.841	2.443
8-5	195	Z	0.952	0.920	0.956	0.979	0.962	0.919	1.952	1.701	2.884
3-H	100	Z	0.478	0.459	0.570	0.554	0.544	0.546	0.804	0.712	1.170
3-M	114	Z	0.353	0.381	0.380	0.387	0.408	0.411	0.534	0.478	0.677

Note

1) Z=Vertical

Table F.4-2

AB Slabs ZPA of Cracked SSI Cases

AB Floor Response Locations/Direction			AB Floor ZPA (g) of SSI Cracked Cases								
Floor Panels for Floor Slab ISRS Envelop	Elev (ft)	Dir[1)]	S01C	S02C	S03C	S04C	S06C	S07C	S08C	S09C	S10C
1-F	55	Z	0.303	0.330	0.309	0.324	0.290	0.284	0.296	0.300	0.306
1-M	68	Z	0.371	0.389	0.545	0.550	0.549	0.600	0.569	0.526	0.749
2-F	78	Z	0.589	0.576	0.554	0.559	0.570	0.576	0.994	1.026	1.267
3-F	100	Z	0.808	0.749	0.895	0.902	0.782	0.835	1.071	0.993	1.452
4-F	120	Z	0.933	0.854	0.875	0.814	0.973	0.866	1.208	1.246	2.107
5-F	137.5	Z	0.970	0.891	0.934	0.956	0.957	0.915	1.358	1.275	1.968
6-F	156	Z	1.084	1.105	1.062	0.986	0.982	0.924	1.531	1.449	2.241
7-F	174	Z	1.126	1.124	1.409	1.259	1.214	1.281	1.855	1.818	2.528
8-1	195	Z	0.804	0.783	0.808	0.844	0.771	0.726	1.103	0.983	1.543
8-M	195	Z	0.804	0.783	0.792	0.844	0.762	0.721	0.961	0.913	1.389
8-2	216.75	Z	0.973	0.892	1.090	1.158	1.268	1.387	1.798	1.708	2.529
8-3	213	Z	0.835	0.827	0.926	0.866	0.906	0.826	1.551	1.405	1.920
8-4	213.5	Z	1.026	1.055	1.288	1.298	1.273	1.274	1.346	1.320	1.716
8-5	195	Z	0.928	1.058	0.902	0.850	0.974	1.091	1.414	1.403	2.283
3-H	100	Z	0.601	0.550	0.529	0.511	0.611	0.643	1.071	0.993	1.452
3-M	114	Z	0.429	0.413	0.455	0.469	0.484	0.440	0.666	0.562	0.926

Note

1) Z=Vertical

Table F.4-3

AB Slabs ZPA, Envelope of All SSI Cases

AB Floor Response Locations/Direction			**Envelope of All SSI Cases**
Floor Panels for Floor Slab ISRS Envelop	**Elevation (ft)**	**Direction[1)]**	**ZPA (g)**
1-F	55	Z	0.359
1-M	68	Z	0.749
2-F	78	Z	1.267
3-F	100	Z	1.452
4-F	120	Z	2.107
5-F	137.5	Z	1.974
6-F	156	Z	2.241
7-F	174	Z	2.830
8-1	195	Z	1.543
8-M	195	Z	1.389
8-2	216.75	Z	3.477
8-3	213	Z	2.326
8-4	213.5	Z	2.443
8-5	195	Z	2.884
3-H	100	Z	1.452
3-M	114	Z	0.926

Note

1) Z=Vertical

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