SFMTA
Presidio Division Building

Seismic Analysis and Evaluation Report

December 5, 2017

Prepared for:

San Francisco Municipal Transportation Authority

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Table of Contents

1 Executive Summary

1.1 Project Description

The San Francisco Public Works (SFPW) has contracted with STRUCTUS, Inc. to analyze and evaluate the seismic force resistance capabilities of an existing building structure, the Presidio Division Building of the San Francisco Municipal Transportation Authority (SFMTA).

Structural configuration, and material and geometric properties used in our analyses are based on our review of the background documents and the result of our site investigations.

Our analyses and evaluation of the subject structure, based on the publication "ASCE 41-13, Seismic Evaluation and Retrofit of Existing Buildings", has shown that the building is seismically deficient and cannot meet the ASCE 41-13's seismic performance goals for Life Safety when subjected to BSE-1 level earthquake forces and for Collapse Prevention when subjected to BSE-2 level earthquake forces. Both earthquake levels are defined in paragraph 5.1B2 of this report.

The primary lateral load resisting system is concrete shear wall with spandrels in both longitudinal and transverse directions. The second floor office and roof is L-shaped and much reduced in footprint and the structures. Due to the lack of shear walls in east-west direction below the second floor and in north-south direction at the second floor office structure, moment frame action is particularly pronounced in the existing concrete beam and column system. Flexural and shear deficiencies were found in substantial number of shear wall piers and spandrels at all levels. While many of the deficiencies governed by flexural yielding, quite a few are governed by shear yielding, which would result in non-ductile behavior of such elements. In addition, deficiencies were found in critical lateral load transferring elements such as collectors and drag struts and diaphragm, and non-ductile behavior is expected in these elements during a strong seismic event, particularly the collectors and drag struts where high DCR of 7.2 was found. Furthermore, it is worth noting that many existing concrete columns exhibited very high DCR ratios due to the frame action mobilized through high lateral drift and will likely suffer severe damage to partial collapse due to strong-beam-weak-column behavior during a major seismic event.

One particular concern is the lack of positive connection through reinforced dowels between the original construction and the addition. It is conceivable that during a strong seismic event, the structures can be separated and result in severe damage and partial structural collapse.

Based on the analytical result for the structure and the SHR standard (See Appendix E) per San Francisco Department of Public Works, we recommend the structure be assigned a **SHR-4** risk category.

Please note the Seismic strengthening or retrofit needed to address the deficiencies identified in this report has not been explored because the authorized scope of this initial study is limited to analysis and evaluation of the subject structure.

1.2 Analysis and Evaluation Approach

The subject structure has been modeled and analyzed for their response to various appropriate combinations of lateral and gravity forces per ASCE 41-13, using the CSI's ETABS computer program. Structural deficiencies resulting from these forces have been identified and documented in Section 5 of this report and in Appendix B.

The following structural elements are deficient in their ability to meet the performance objectives listed above.

Buildings	Deficient Element(s)
Presidio Division Building	Concrete shear wall piers, spandrels, collectors, columns, diaphragm slabs

Also, see Section 5 and Appendix B of this report for Demand/Capacity Ratios (DCRs) of existing structural components found to be deficient.

1.3 Conclusions and Recommendations

The analysis and evaluation results have shown that the subject building has structural components with Design Capacity Ratios (DCRs) greater than 1.0, and in some cases significantly greater than 1.0. The building is expected to sustain significant structural damage during a BSE-2E level earthquake event will not meet the structural performance goal of Collapse Prevention for BSE-2E level earthquake forces. Therefore, the building is deemed inadequate.

We recommend that SFMTA explores possible seismic retrofit options based on its operational needs, budget, and schedule constraints. To help SFMTA through that process, STRUCTUS, Inc. will prepare, under a separate contract service order (CSO) an Alternative Analysis Report (ARA) which will explore various alternatives that will address the seismic deficiencies identified in this report.

2 Project Description

2.1 The Objectives for Contract Service Order #ES15-ST-07 (CSO-7) are as follows:

A. Identify and confirm Seismic Performance goals.
B. Analyze and evaluate the Presidio Division Building, for its seismic vulnerability when subjected to the Seismic Performance goal earthquakes.
C. Prepare a report to summarize results and findings of the analyses and evaluations.

2.2 Context for the Project (Need)

The Presidio Division Building is part of SFMTA's bus maintenance facilities. The SFPW project manager has directed STRUCTUS, Inc. to use, as the seismic performance goals, Life Safety for BSE-1 level earthquake forces and Collapse Prevention for BSE-2 level earthquake forces. In addition, Seismic Hazard Risk (SHR) category per San Francisco Department of Public Works will be recommended to the building.

2.3 CSO - Summary

This Contract Service Order, CSO-7, covers the initial phase of investigation work to be performed on this subject structure. This initial phase focuses on the investigation of the selected structure to determine its seismic vulnerability and if seismic strengthening or retrofit is required to meet the Seismic Performance goals. If the building is determined to be deficient, the preparation of an Alternative Analysis Report (AAR) and a Conceptual Engineering Report (CER) will be undertaken during subsequent CSOs.

2.4 Scope of Work

As identified in the CSO-7 proposal, the scope of this seismic evaluation and analysis study includes the following work components:

A. Management and Coordination of Consultant Services
B. Review of Background Documents – primarily record drawings and existing geotechnical reports and memoranda related to, or near, the buildings to be evaluated provided if any
C. Review of Previous Seismic Evaluation and Analysis Reports- if provided (none provided)
D. Performance of Site Investigation
E. Performance of Seismic Evaluation and Preparation of a Summary Report

Please refer to the CSO-7 STRUCTUS, Inc. authorized for additional details and deliverables.

2.5 Project Team

The Project Team for CSO-7 consists of members of the engineering staff of STRUCTUS, Inc.

3 Existing Building

3.1 Description of Existing Building

Presidio Division Building

The Presidio Division Building is located in San Francisco, bounded by Euclid Avenue to the north, Geary Blvd to the south, Masonic Avenue (formerly Josephine Street) to the west and Presidio Avenue to the east. Presidio Division Building is sited against Geary Blvd, Presidio Avenue and Masonic Avenue; and set back from Euclid Avenue.
The building was originally constructed circa 1912 primarily as a single-story concrete structure with a partial basement along the east side of the building, and a two-story clock tower at the south-east corner. The building footprint is approximately 276 feet by 229 feet in plan. The roof and floor framing consisted of one-way slabs over beams, supported by girders and concrete columns and walls bearing on shallow concrete footings. The ground floor construction consisted of slabs on grade, except where maintenance pits exist.

The main roof construction included many large, continuous skylights running in north-south direction, likely needed to provide natural light to service shops below.

In 1914, the building was partially demolished and an addition was constructed on the north side of the original building. The 1914 demolition scope included substantial removal of great portions of the original (1912) north wall, between eight bays of existing columns. Thus, approximately more than 200 ft. of concrete wall was demolished with substantial reduction of lateral force resisting capacity without any mitigating measures.

The 1914 addition was a two-story structure, approximately 276 feet by 146 feet in plan and constructed on the north side of the 1912 building. Th addition was founded at much deeper than the 1912 building, thus, the second floor of the 1914 construction is approximately at the same level as the 1912 first floor, and the roof of the 1914 construction is approximately at the same level as the main roof of the 1912 construction.

The 1914 addition was constructed tight against the 1912 building without an expansion joint or seismic joint, nor was the addition connected to the 1912 building with reinforcing dowels.

Per drawings dated April 8, 1949, as a result of mass excavation between the north end of the 1914 addition and Euclid Avenue to create the Presideo Bus Storage Yard, the existing north wall of the 1914 addition was substantially demolished over nine column bays for large openings at the ground floor to provide access between the yard and the shops. In addition, two bays of interior concrete walls and a column (between columns 42 and 44) were removed and re-supported with steel plate girders and four new steel columns on newer footings. As a result of the aforementioned demolition, the lateral force resisting system for the 1914 addition was significantly reduced without any mitigating measure. At the north wall, “weak story” or “soft story” was created since the existing second floor concrete walls became discontinuous over the substantially demolished first floor walls.

Furthermore, as a part of the above described renovation, a column (column 30) at the ground floor was removed and the second floor re-supported by two steel plate girders and four new steel columns.

Per drawings dated December 7, 1949, a partial second floor, a new mezzanine floor and an elevator penthouse were added on the top of the 1912 building along the east side of the building. In addition, a portion of the existing first floor framing (over the basement) was demolished and reconstructed. The partial second floor and the mezzanine floor additions, as well as the partial first floor reconstruction were all constructed with concrete fill over metal decking, supported by steel beams, girders and columns. Four new interior steel columns were introduced to support the new mezzanine floor for storage occupancy (125 psf live load). The new columns were founded on newer shallow spread footings.
The current structure is approximately 276 ft. by 375 ft. in plan and is primarily serving as a bus inspection/maintenance facility equipped with jacking pits and lifts, and shops supplemented by training and office facilities.

The building retains soil along Masonic Avenue, and is partially retaining soil along Presidio Ave as the street ascends from north to south.

Vertical Load Carrying System

1. As indicated in the existing construction documents, the foundation for the building consists of reinforced concrete shallow spread footings, with individual footings under columns and strip footings under walls.
2. Reinforced concrete is the primary structural system for the entire building, with structural steel framing used only for the mezzanine floor addition, the partial first floor

re-construction, and the second floor addition in 1949, on east side of the building. Typical framing system at the roof and floor levels consists of one-way concrete slabs supported by concrete beams, girders, columns or walls.

Lateral Force Resisting System

1. The lateral force resisting system of the building consists of reinforced concrete roof diaphragms and reinforced floor diaphragms supported by concrete shear walls, beams and columns.
2. The building is actually consisting of two individual structures abutting each other without a seismic joint or positive connection via reinforcing dowels.
3. The floor construction for the mezzanine floor addition, the partial first floor re-construction, and the second floor addition in 1949 were nominally connected to the existing concrete walls with ¾" diameter ledger angle bolts at 3'-0" on center.

4 Approach to Analysis and Evaluation of Existing Building

4.1 Introduction

STRUCTUS Inc. chose ASCE 41-13 to be the evaluation standard for the subject building. This study follows the evaluation approach and criteria defined therein. SFPW has confirmed Seismic Performance goals of Life Safety for BSE-1 level earthquake forces and Collapse Prevention for BSE-2 level earthquake forces as the appropriate structural performance criteria for the structures selected for seismic evaluation.

4.2 Existing Building Analysis Approach

A. General Modeling Approach

STRUCTUS, Inc. has created a composite three-dimensional computer model of the structures for the building selected for seismic evaluation.

The model has been subjected to various combinations of loading conditions, including gravity and seismic forces and, where appropriate, seismic increment of soil loading and retained soil forces

Refer to Section 5 for a more comprehensive description.

B. Kinematic Interaction and Radiation Damping Soil-Structure Interaction Effects

"Kinematic Interaction and Radiation Damping Soil-Structure Interaction Effects" as defined by ASCE 41-13 Chapter 8, Article 8.5 have been investigated for possible reduction of spectral acceleration as allowed by ASCE 41-13. Base Slab Averaging and Embedment described in ASCE 41-13 8.5.1.1 and 8.5.1.2 respectively could reduce acceleration considerably in the short period range for the project structure if the structure were founded on Site Class C or D soil. We have assumed the Site Class is D, which is the default site classification of ASCE 41-13.

C. Soil Spring (Subgrade Modulus) Sensitivity

Per ASCE 41-13 8.4.2, where foundation components are modeled explicitly, as they are in of this study, the analysis shall be performed using both the upper and lower bound stiffness of the expected soil spring values. The same section of ASCE 41-13 and its Figure 8.1(a) further defines the upper bound value as two times the expected value and the lower bound value as on-half of the expected value.

In general, we have found that the lower bound values of the soil springs govern for the analysis and result in maximum demands caused by a structural period shift to a slightly longer period due to the presence of softer (lower bound) soil springs. This shift in structural periods results in reduction of the effects of Base Slab Averaging such that the combination of using lower bound soil springs combined with Base Slab Averaging is nearly equivalent to using expected values of soils springs without consideration of Base Slab Averaging.

D. Specific Modeling Approach

The following assumptions and modeling conditions are employed in the seismic analysis and evaluation of the existing building:

The model for this building does include equivalent soil springs for vertical and lateral supports at the foundations because the building is on a stepped foundation and a model with pinned restraints at the upper level foundation would not represent an appropriate seismic response of the building. Kinematic interaction and radial damping were considered for this building using USGS mapped seismic spectrum and linear dynamic procedure.

E. Modeling of Material and Stiffness Modification

Refer to Appendix A for material properties and stiffness modification factors

1. Material strengths listed in the record drawings
2. Material property expected strength factors
3. Concrete shell elements stiffness modification factors
4. Typical shell element legends
5. Property/stiffness modification factors

F. Modeling and Analysis Documentation

Refer to Appendix D for Computer Modeling and Analysis Documentation

5 Analysis and Evaluation of Existing Building

5.1 Analysis of Existing Building

A. Review of Geologic and Seismological Data – Not available and not applicable

B. Seismic Performance Criteria and Design Earthquake

1. Seismic Performance Criteria

Non-critical structures

Seismic Hazard Level:	*BSE-1E & BSE-2E*
Target Building Performance Level:	*Life Safety Performance Level (3-B) for BSE-1E* *Collapse Prevention Performance Level (5-D) for BSE-2E*
Analysis Procedure:	Linear Dynamic Procedure (LDP)
Seismic Loads:	Site Response Spectra from USGS for LDP, and Equivalent Static Force for LSP

2. Design Earthquake

For typical non-critical existing buildings, BSE-1E and BSE-2E shall be used per ASCE 41-13. BSE-1E level earthquake is one with a 20% probability of being exceeded by a larger earthquake over a period of 50 years. The larger magnitude BSE-2E earthquake is one with only a 5% probability of exceedance in 50 years.

5.2 Seismic Assessment

A. Computer Program Used

A three dimensional model of the Presidio Division Building has been analyzed using CSI's ETABS (v15.2.0) computer program for structural analysis.

B. Assessment Approach

1. General

The concrete floors are modeled as semi-rigid diaphragm and analyzed with finite stiffness, based on as-built geometry and assumed/specified material properties.

For linear dynamic procedure (LDP), lateral loading is applied to the building models using a modal response spectrum analysis with 90% minimum mass participation and CQC (Complete Quadratic Combination) modal combination.

Design forces are applied using the following load combinations per ASCE 41-13§ 7.5.2.1.

Q_E= Action caused by the response to the selected Seismic Hazard Level. Multiplied by C_1C_2 since Response Spectrum Analysis is used per § 7.4.2.3.1. C_1C_2 is per Table 7-3.

Q_G= Action caused by gravity loads.

The action due to design gravity loads: $Q_G = 1.1\ (Q_D + Q_L)$

$Q_G = 0.9\ Q_D$

Q_D= Action due to design dead loads.

Q_L= Action due to design live loads.

Deformation-Controlled Design Actions: $Q_{UD} = Q_G \pm Q_E$

Force-Controlled Design Actions: $Q_{UF} = Q_G \pm Q_E / (C_1C_2\ J)$

J = 2.0 for Life Safety Performance Level.

J = 1.0 for Immediate Occupancy Performance Level or in any case where the force contributing to Q_{UF} are delivered by components of the lateral force resisting system that remain elastic.

Component demand-capacity ratios (DCR) are determined using the following acceptance criteria per ASCE 41-13 § 7.5.2.2

Deformation-Controlled Actions: $m\ \kappa\ Q_{CE} > Q_{UD}$

m = Component capacity modification factor to account for expected ductility associated with this action at the selected Structural Performance Level. m factors are variable and specified in Chapters 8 through 12 and 14.

Q_{CE} = Expected strength of component deformation controlled action of an element at the deformation level under consideration. Q_{CE}, the expected strength, shall be determined considering all coexisting actions on the component under the loading condition by procedures specified in Chapters 8 through 14.

κ = Knowledge factor, per Table 6-1. Since no material testing data available, following factors taken.

0.75, where material information is not available from existing drawings.

0.90, where material information is available from existing drawings.

Force-Controlled Actions: $\kappa\ Q_{CL} > Q_{UF}$

Q_{CL} = Lower-bound strength of a force-controlled action of an element at the deformation level under consideration. Q_{CL}, the lower-bound strength, shall be determined considering all coexisting actions on the component under the loading condition by procedures specified in Chapters 8 through 12 and 14.

2. DCRs for BSE-1E vs. BSE-2E

DCRs for BSE-2E typically control over DCRs for BSE-1E for the following reasons:

a. Demands or Q_{UD} due to EQ BSE-1E are 2/3 Q_{UD} due to EQ BSE-2E, since BSE-1E response spectrum is 2/3 of BSE-2E.

b. C_1C_2@ BSE-1E = 1.0 and C_1C_2 @ BSE-2E = 1.1 (based on higher m-factor per (c) below)

c. m-factors at Life Safety (LS) performance level as compared with m-factor at Collapse Prevention (CP) performance level for shear walls (without confined boundary zones) and for shear wall coupling beams (spandrels with non-conforming transverse reinforcement) are between 2.5 vs.4 and 2 vs. 3; and between 1.8 vs.2.5 and 1.2/1.5 respectively per ASCE 41-13 Table 10-21 and Table 10-22.

d. Since Q_{UD} due to gravity load case does not govern, and the seismic load cases and associated m-factors govern for all important components of the seismic resisting system, then Max. DCR @ BSE-1E = [2/3 * 1.1/1.2 Q_{UD}] / [2.5/4 * 1.0 Q_{CE}] = $\pm$0.97 DCR @ BSE-2E for walls controlled by flexure. DCR @ BSE-1E = [2/3 * 1.0/1.1 Q_{UD}] / [1.8/2.5 * 1.0 Q_{CE}] = $\pm$ 0.84 DCR @ BSE-2E for walls controlled by shear.

In conclusion, DCRs for BSE-1E ground motions do not govern based on the above, and therefore are not checked in this evaluation. DCRs presented in this evaluation are based on BSE-2E earthquake ground motion.

C. General Discussion on Structural Component Evaluation

1. Shear Walls

Per ASCE 41-31, the shear walls are classified as either controlled by flexure or controlled by shear. Shear walls having aspect ratios (height/length) of over 3.0 were classified as controlled by flexure, while shear walls having aspect ratios (height/length) of less than 1.5 were classified as controlled by shear.

Demand Capacity ratios for shear walls have been calculated using the ETABS program as post processor. The “m” values were interpolated based on maximum axial stress, [(As-As’)+P]/(tw Lw fc’) and maximum shear stress, V/(tw Lw fc’) from Table 10-21 or Table 10-22 of ASCE 41-13.

2. Diaphragms

Roof and floor slab diaphragms have been evaluated similarly to shear walls.

Capacities for diaphragms have been hand calculated. The appropriate "m" values were picked from Table 10-22 of ASCE 41-13, where [(As-As')+P]/(tw Lw fc') was assumed larger than 0.05, resulting in the minimum m value.

3. Concrete Collectors and Columns (Axial Members)

Columns and collectors have sufficient splices as indicated in the background documents and are not controlled by inadequate splices, or condition iv in Table 10-9 of ASCE 41-13. Conditions i, ii, iii in table 10-8 of ASCE 41-13 apply.

Axial and shear capacities for collectors and columns have been hand calculated. The "m" values were interpolated based on maximum axial stress, P/(Ag fc') and existing rebar of ties area to element width, ρ =Av/(bw s) from Table 10-9 mentioned above.

Biaxial bending of the columns or collectors was evaluated as a deformation controlled action. Axial vs. moment (PM) capacities for columns were computer calculated using ETABS post processor.

4. Foundation

Per ASCE 41-13. expected bearing capacity, qc for spread footing or mat foundation is 3 q allow, where q allow is the allowable bearing pressures specified on available soil report for gravity design of shallow foundations (dead plus live loads).

The demand over capacity of foundation is equal to f / (mk qc). The "m" values were interpolated based on critical contact area over footing area, Ac/Af of flexible foundation per table 8-3 of ASCE 41-13.

D. Seismic Assessment Findings:

1. Summary of Findings:

Refer to Appendix B for a more detailed description and location of deficient structural components and the DCRs. See Appendix C for engineering calculations determining capacities of existing structural components.

i. Significant torsional response is found based on the structural displacement values from the analysis. However, the building meets ASCE 41-13 7.2.3.2.2 requirements and is does not have extreme torsional irregularity. Amplification to the torsional response was applied in the analysis per ASCE 41-13.

ii. In the north-south direction, flexural and shear deficiencies were found in narrow shear wall piers and spandrels along lines 1, 4 and 12 at all

levels;

1. At the basement floor, only one narrow shear wall pier (located in line 1) was found deficient with a DCR of 2.3 for flexure and 1.8 for shear, while most of the spandrel beams (located at line 1) are deficient with a maximum DCR of 3.1 for flexure and 1.4 for shear.
2. At the first floor, deficiencies were found in several shear walls and spandrels along line 1 and 4. In the deficient shear walls, the maximum DCR is 2.9 for flexure and 2.7 for shear, and in the deficient spandrels, the maximum DCR is 4.1 for flexure and 4.5 for shear.
3. At the mezzanine floor, deficiencies were found in several shear walls and spandrels along line 1, 2 and 12. In the deficient shear walls, the maximum DCR is 1.9 for flexure and 2.3 for shear, and in the deficient spandrels, the maximum DCR is 4.1 for flexure.
4. At the second floor, deficiencies were found in several shear walls along line 4 and 12 and spandrels along line 1, 4, and 12. In the deficient shear walls, the maximum DCR is 3.3 for flexure and 2.2 for shear, and in the deficient spandrels, the maximum DCR is 4.1 for flexural and 3.6 for shear.

iii. In the east-west direction, flexural and shear deficiencies were also found in shear wall piers and spandrels along line A, D, J, P, and U at all levels;

1. At the basement floor, narrow shear wall piers (located in line U and U1) were found deficient with a maximum DCR of 5.4 for flexure and 2.3 for shear, while several spandrel beams along line A, U, and U1 are deficient with a maximum DCR of 4.4 for flexure and 4.2 for shear.
2. At the first floor, deficiencies were found in several shear walls and spandrels along line A, D and P. In the deficient shear walls, the maximum DCR is 7.9 for flexure and 4.2 for shear, and in the deficient spandrels, the maximum DCR is 5.1 for flexure and 4.2 for shear.
3. At the mezzanine floor, deficiencies were found in several shear walls and spandrels along line A, D and P. In the deficient shear walls, the maximum DCR is 8.6 for flexure and 3.2 for shear, and in the deficient spandrels, the maximum DCR is 4.9 for flexure and 4.3 for shear.
4. At the second level, deficiencies were found in one shear walls along line D and spandrels along line A, D, and J. In the deficient shear wall, the DCR is 2.8 for flexure and 1.6 for shear, and in the deficient spandrels, the maximum DCR is 7.0 for flexural and 3.5 for shear.

iv. It is worth noting that due to the lack of concrete shear walls and large lateral floor drift particularly between line A and P in east-west direction at basement, first, and mezzanine floor, and between line 5 and 11 north-south direction at the second floor, the frame action is pronounced in the concrete beams and columns. While most of the concrete beams are large and provide sufficient strength for the flexural load demand due to the frame action, many columns located along line 1 through 12 are found deficient for combined check of axial and bending (PM) demands. The maximum DCR is 5.5 (located at line A and 12).

v. Deficiencies in axial load capacity were found in many concrete collector beams running north-south direction at the first floor between line 1 and 10 and running east-west direction at second floor between line A and P. The maximum DCR is 7.2 (located at Line D at the second floor).

vi. Deficiencies in shear were also found in concrete floor diaphragms; at the ground floor, concrete diaphragm along line 4 and 12 in east-west direction with a maximum DCR of 1.3; at the mezzanine floor, diaphragms adjacent to openings along line A and D with a maximum DCR of 3.7; at the second floor, diaphragms adjacent to line A, B, C, D, J, N, and P with a maximum DCR of 4.3; and at the office roof, diaphragms between line 4 and 7, 10.5 and 12, and d and J with a maximum DCR of 2.4. It is found that the second floor/main roof portion of the diaphragm is adequate in the east-west direction due to the heavier east-west slab reinforcing, and the less demanding earthquake ground motion that is predominantly in the fault-normal direction.

vii. Foundation and soil pressure are found to be adequate.

2. Findings of Seismic Assessment

Refer to Appendix B for a summary of findings of seismic deficiencies from the assessment of the existing structure.

E. Limitations

1. Limited Geotechnical Information
The geotechnical parameters used in modeling and analysis were based on ASCE 41-13 default values.

2. Modeling and Analysis
Linear dynamic analyses were performed.

6. Conclusions and Recommendations

6.1 Conclusions

The Presidio Division Building selected for seismic evaluation has been confirmed by SFPW to require seismic performance classification of Life Safety for BSE-1E and Collapse Prevention for BSE-2E. The building has been evaluated against seismic performance goals as stated above and in Section 5.1.B.

As there is no geotechnical engineer engaged for this project, the STRUCTUS, Inc. seismic assessment model for the building has incorporated design parameters (such as soil springs and allowable soil bearing pressure) from default values per ASCE 41-13.

We have found that the analysis model for the building with upper bound soil spring values (i.e. 200% of the expected sub-grade modulus values per ASCE 41-13) result in maximum demands due to lengthening of the fundamental periods of the structures evaluated and thereby the increased spectral demands.

We have demonstrated that BSE-2E controls over BSE-1E for evaluation of demand vs. capacity ratios or DCRs. Therefore, the building was evaluated based on BSE-2E demands for Collapse Prevention structural performance.

Structural elements with DCRs greater than 1.0 are deemed to be deficient for Collapse Prevention performance for BSE-2E events, and for Life Safety performance for BSE- 1E events.

The analysis and evaluation results have shown that both selected buildings have structural components with DCRs greater than 1.0, and some components have DCRs significantly greater than 1.0. The building is deemed inadequate in meeting the structural performance goal of Collapse Prevention for BSE-2E level earthquake forces; and therefore, the building is deemed inadequate in meeting seismic performance goal as required by SFPW for non-critical facilities.

is anticipated that during a BSE-2E level seismic event, the entire structure will suffer major damage, where structural and nonstructural damage would pose appreciable life hazards to occupants, and the building will have to be vacated during repairs, or possibly cannot be repaired due to the extend and/or economic considerations. In addition, the upper level Body Shop structure will potentially suffer partial collapse such that repairs would not be feasible.

6.2 Recommendations

We recommend that SFMTA explore seismic retrofit options based on its operational needs, budget, and schedule constraints, and consider AAR (Alternative Analysis Report) and CER (Conceptual Engineering Report) level of work as the next level of efforts to explore various alternatives, with input from mechanical, electrical, plumbing (MEP) and instrumentation engineers, architects, and SFMTA staff who are familiar with buildings' operational needs, site constraints and budget/scheduling requirements to address the seismic deficiencies identified in this report, prior to the development of Detailed Design.

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Appendix A

Material Properties of Existing Buildings

Unless indicated on existing drawings, the lower-bound material properties are to be assumed as follows:

Materials Lower-Bound Strengths per ASCE 41-13 section 10.2.2.5						
Bldg No.	**Description**	**Year Built**	**Material Per**	**f'_{cL} (psi)**	**f_{yL} (psi)**	**K(knowledge factor)**
	Potrero Bus Yard (original)	**1914**	**Existing Drawings**	**2,000**	**33,000**	**0.75**
	Potrero Bus Yard - Rehabilitation	**1949**	**Existing Drawings**	**2,000**	**33,000**	**0.75**
	Potrero Bus Yard - Seismic Strengthening	**1989**	**Existing Drawings**	**4,000**	**60,000**	**1.0**

Table 10-1. Factors to Translate Lower-Bound Material Properties to Expected Strength Material Properties

Material Property	Factor
Concrete compressive strength	1.50
Reinforcing steel tensile and yield strength	1.25
Connector steel yield strength	1.50

Shell elements are modeled using the effective stiffness values per ASCE 41-13:

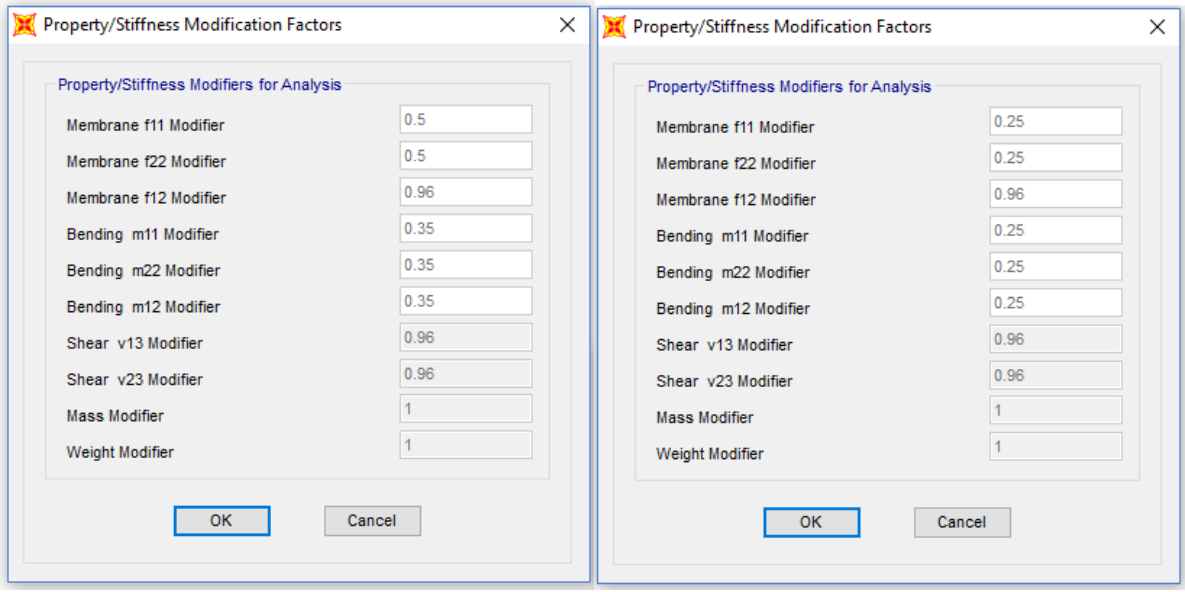
Table 10-5. Effective Stiffness Values

Component	Flexural Rigidity	Shear Rigidity	Axial Rigidity
Beams—nonprestressed[a]	$0.3E_cI_g$	$0.4E_cA_w$	—
Beams—prestressed[a]	E_cI_g	$0.4E_cA_w$	—
Columns with compression caused by design gravity loads $\geq 0.5A_gf_c'$	$0.7E_cI_g$	$0.4E_cA_w$	E_cA_g
Columns with compression caused by design gravity loads $\leq 0.1A_gf_c'$ or with tension	$0.3E_cI_g$	$0.4E_cA_w$	E_cA_g (compression) E_cA_s (tension)
Beam–column joints	Refer to Section 10.4.2.2.1		E_cA_g
Flat slabs—nonprestressed	Refer to Section 10.4.4.2	$0.4E_cA_g$	—
Flat slabs—prestressed	Refer to Section 10.4.4.2	$0.4E_cA_g$	—
Walls-cracked[b]	$0.5E_cA_g$	$0.4E_cA_w$	E_cA_g (compression) E_cA_s (tension)

Shell Element Definitions in SAP2000/ ETABS (Walls-Slabs-Mat Foundations):

Type:	Shell-Thin (default)
Material Angle:	0 (default)
Thickness:	Both Membrane and Bending Available with Actual Thickness

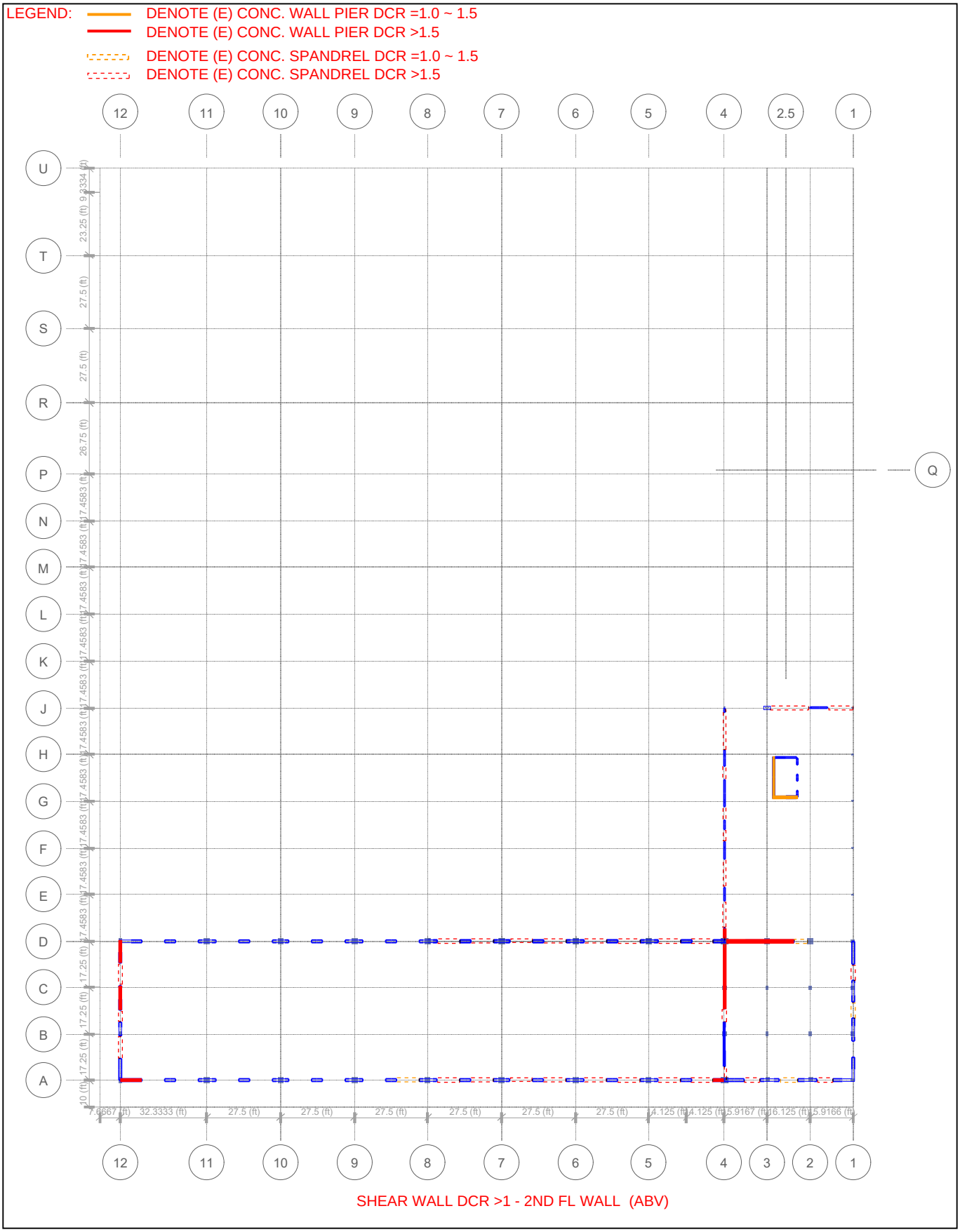
The following section property modifiers are applied in SAP2000/ ETABS for Wall and Slab/ Mat respectively:



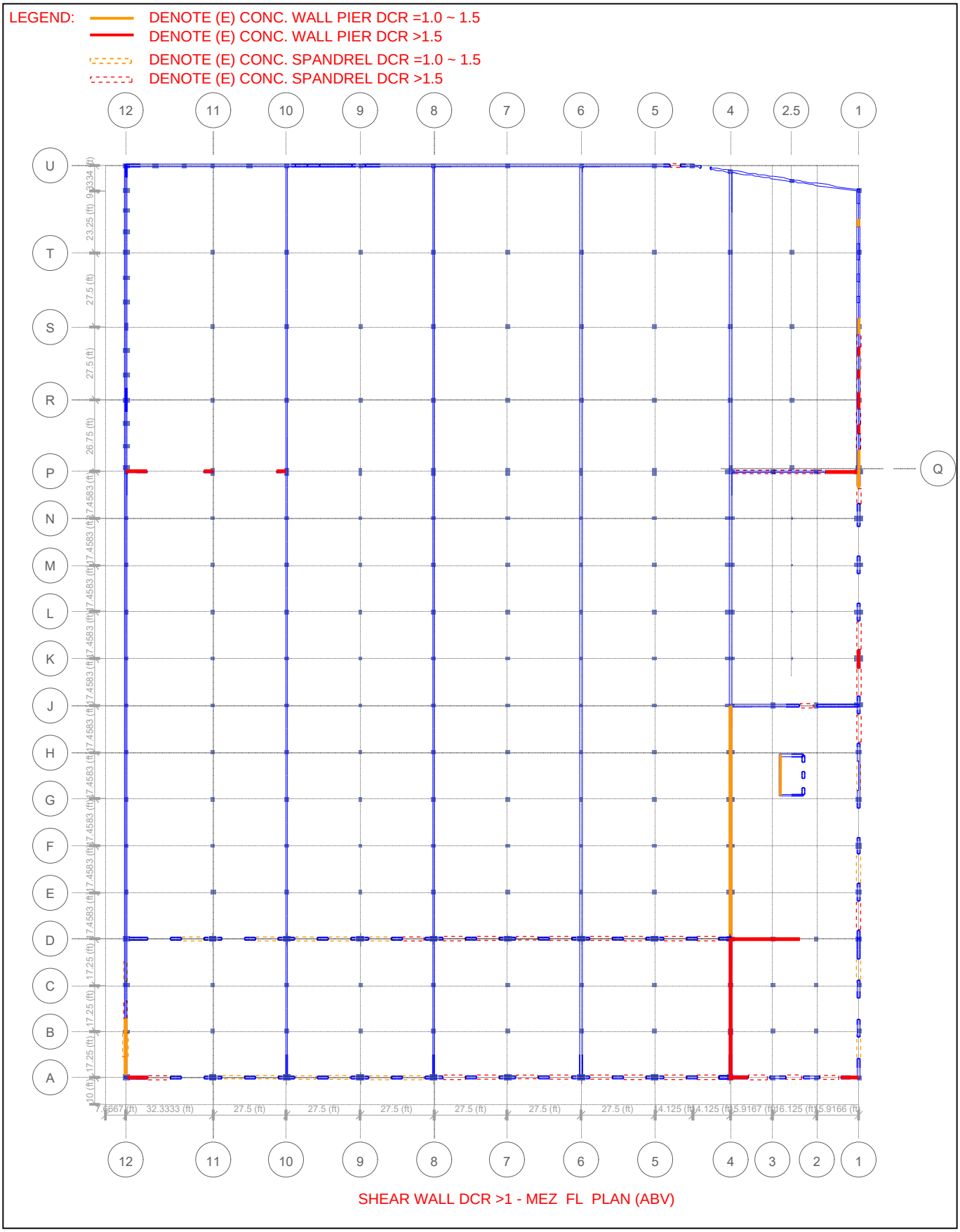
STRUCTUS

Appendix B

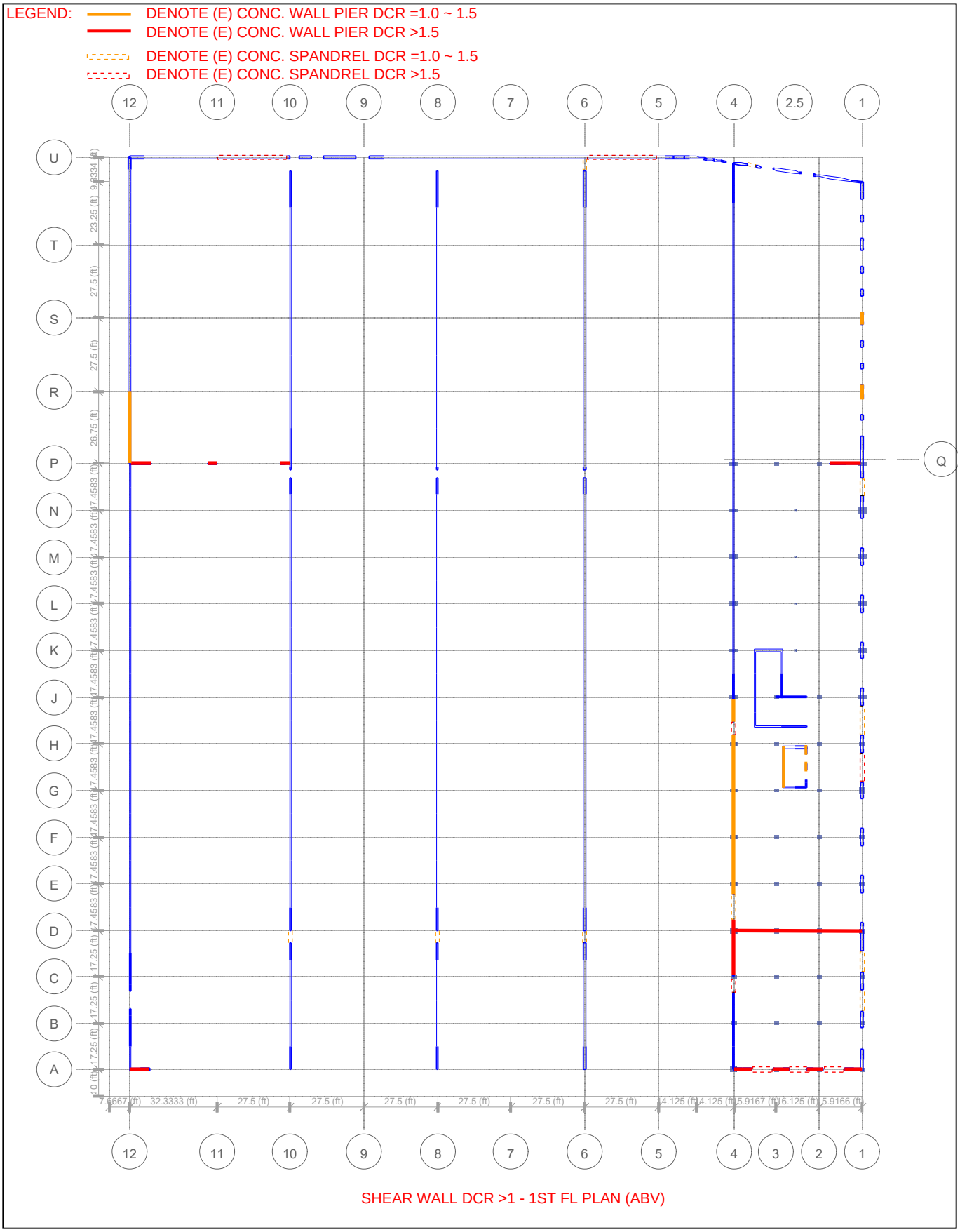
Evaluation Summary of Deficient Structural Components DCRs



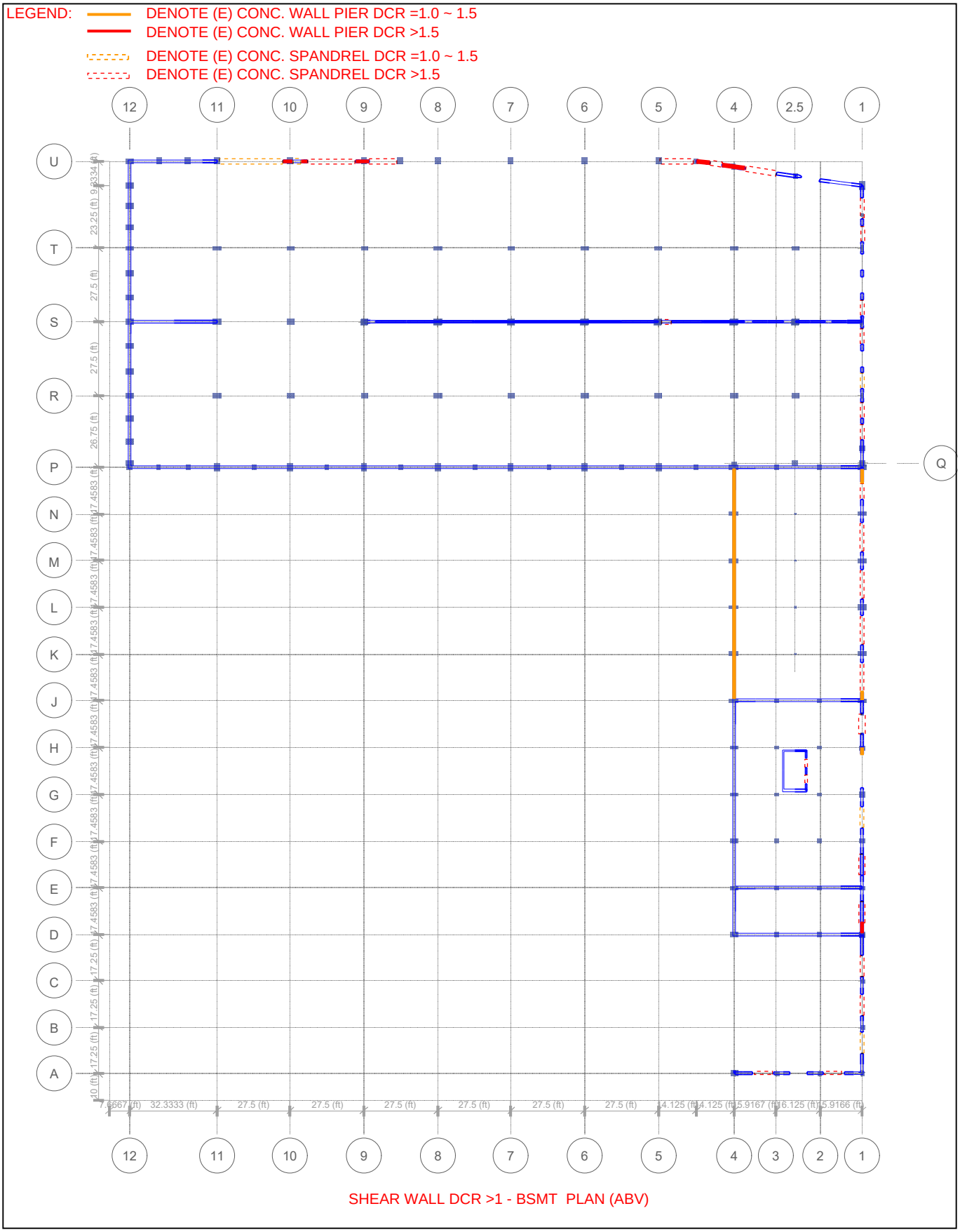
1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - RefPl LR - Z = 292.59 (ft)



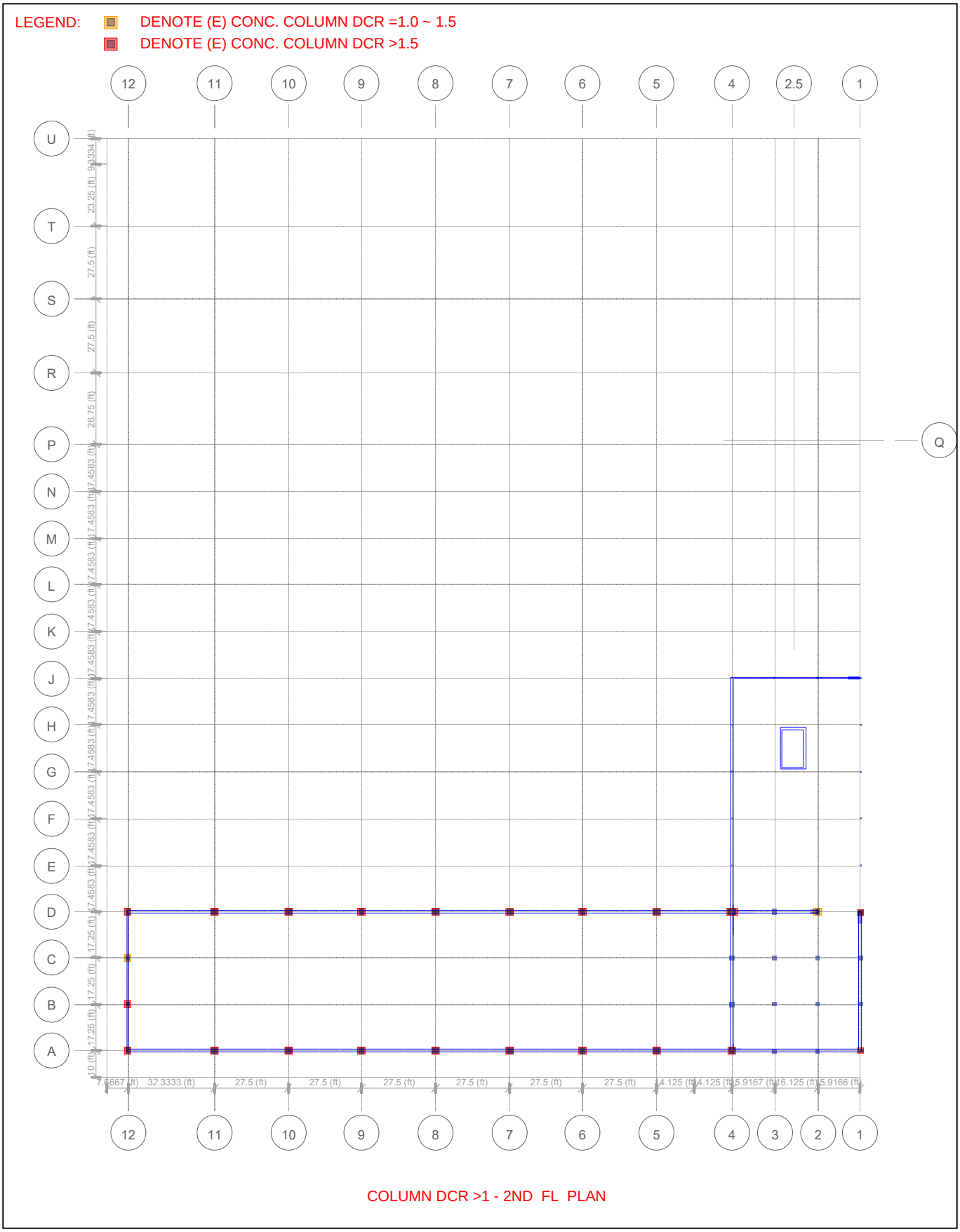
1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - RefPl L2 - Z = 276.14 (ft)



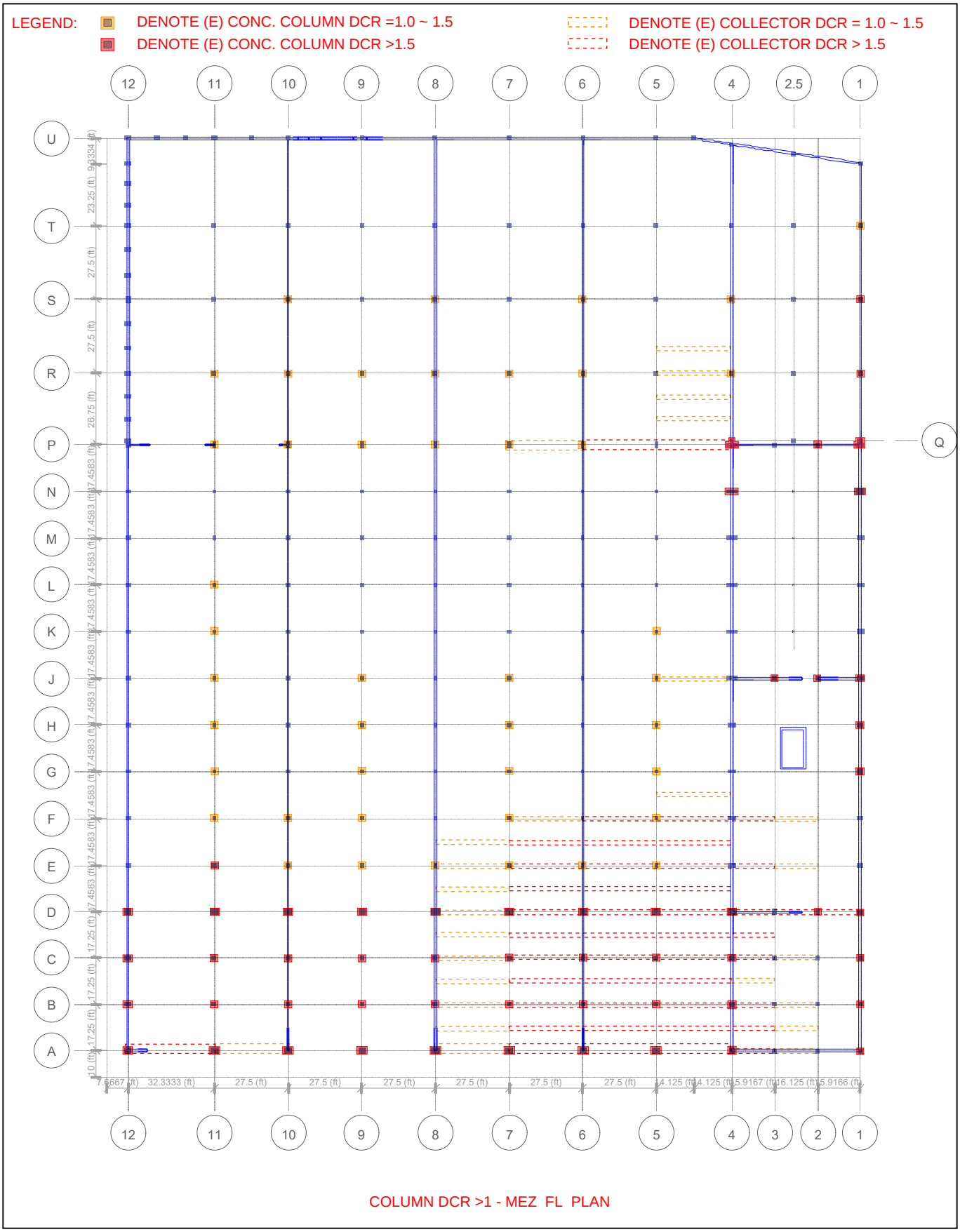
1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - RefPl LM - Z = 269.46 (ft)



1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - RefPl L1 - Z = 253.66 (ft)

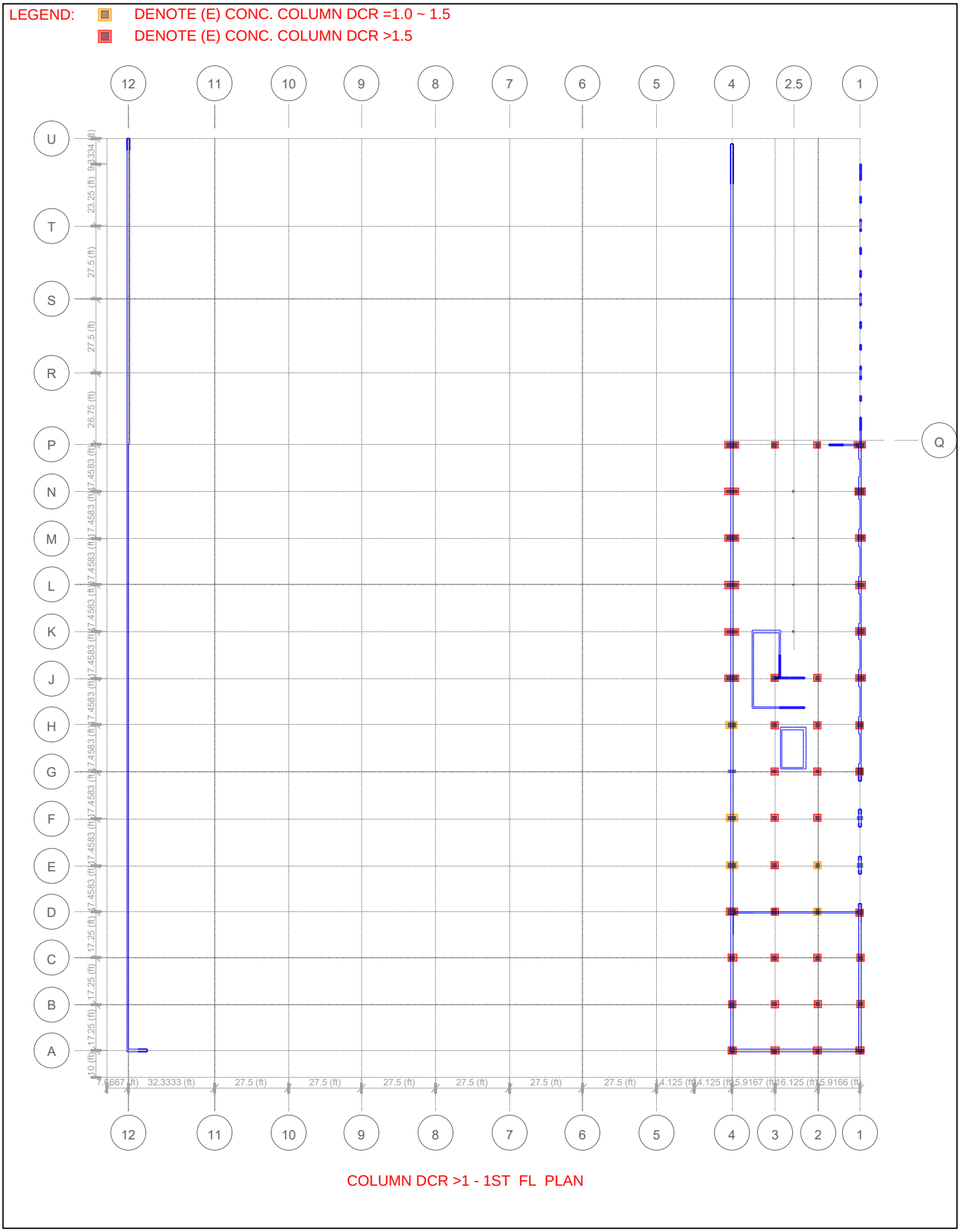


COLUMN DCR >1 - 2ND FL PLAN

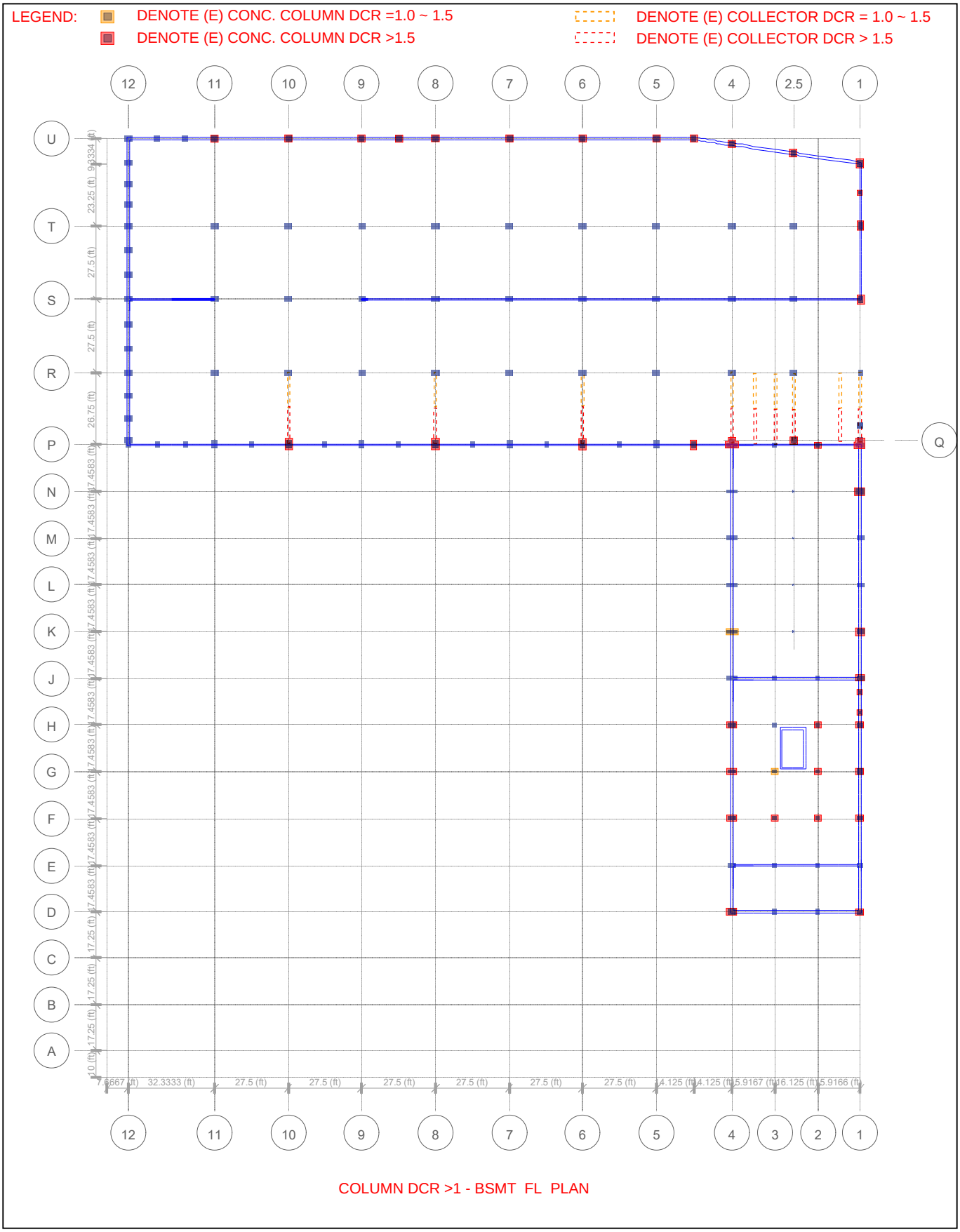


COLUMN DCR >1 - MEZ FL PLAN

1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - 2ND - Z = 285.34 (ft)

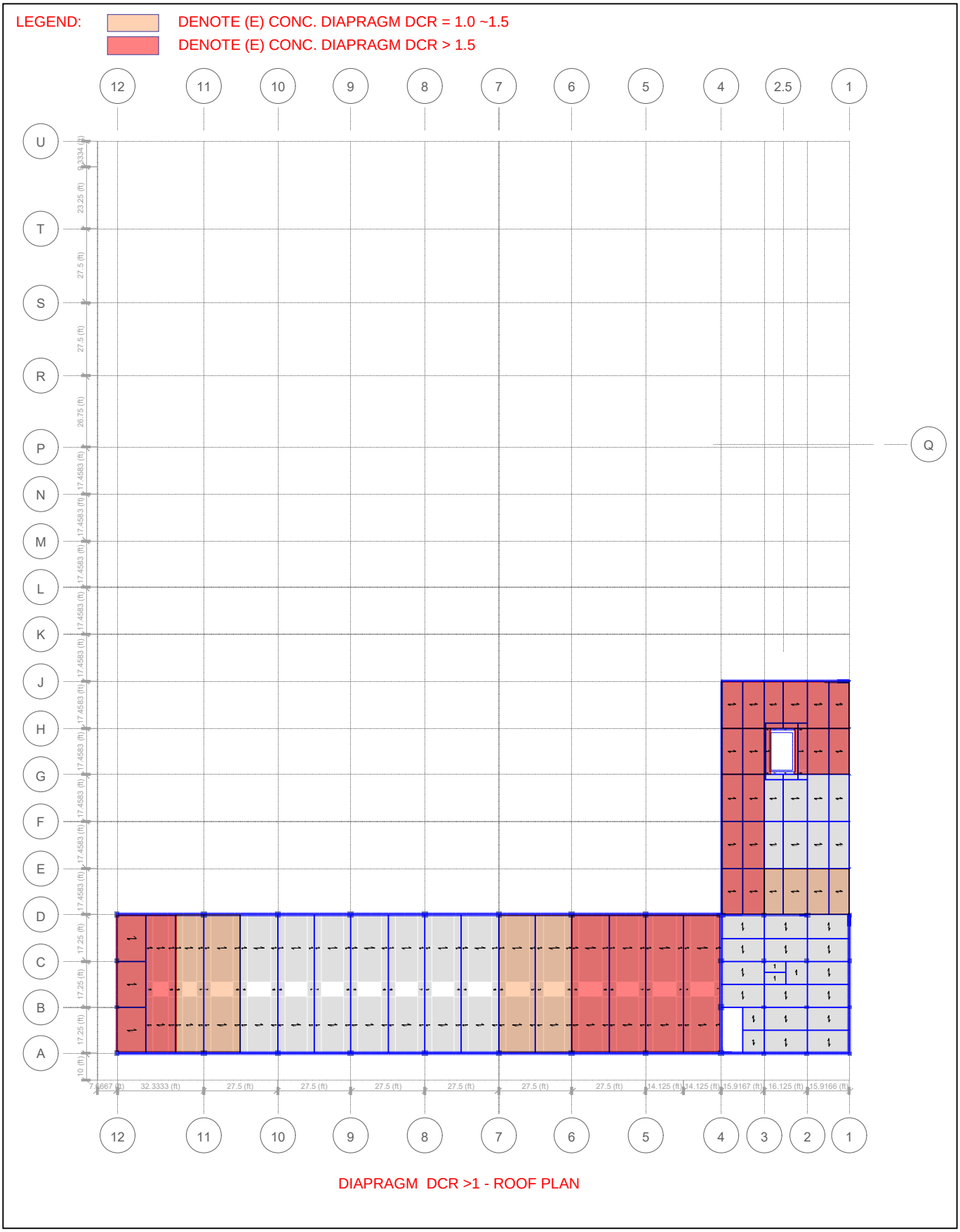


COLUMN DCR >1 - 1ST FL PLAN

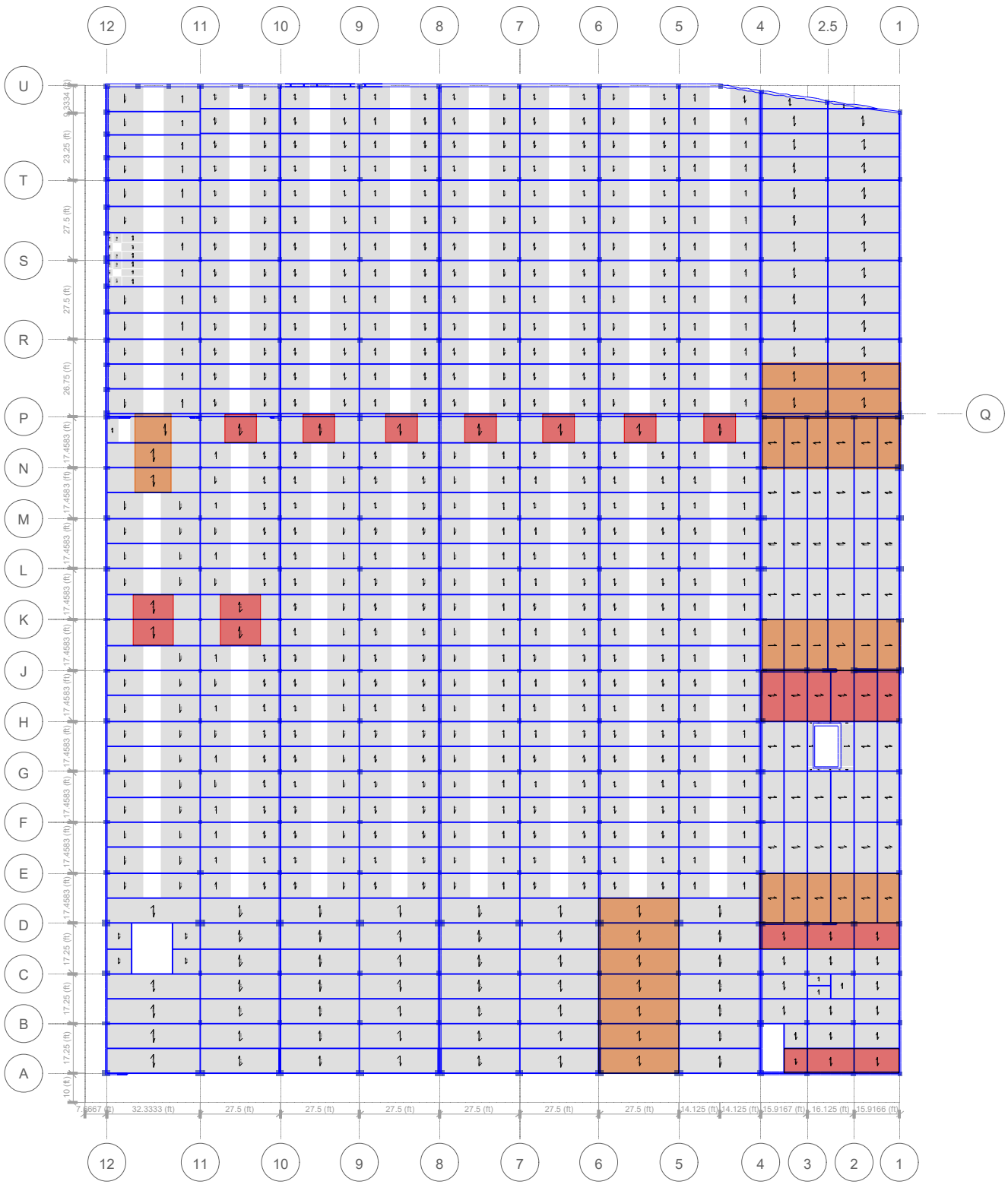


COLUMN DCR >1 - BSMT FL PLAN

1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - 1ST - Z = 262.53 (ft)

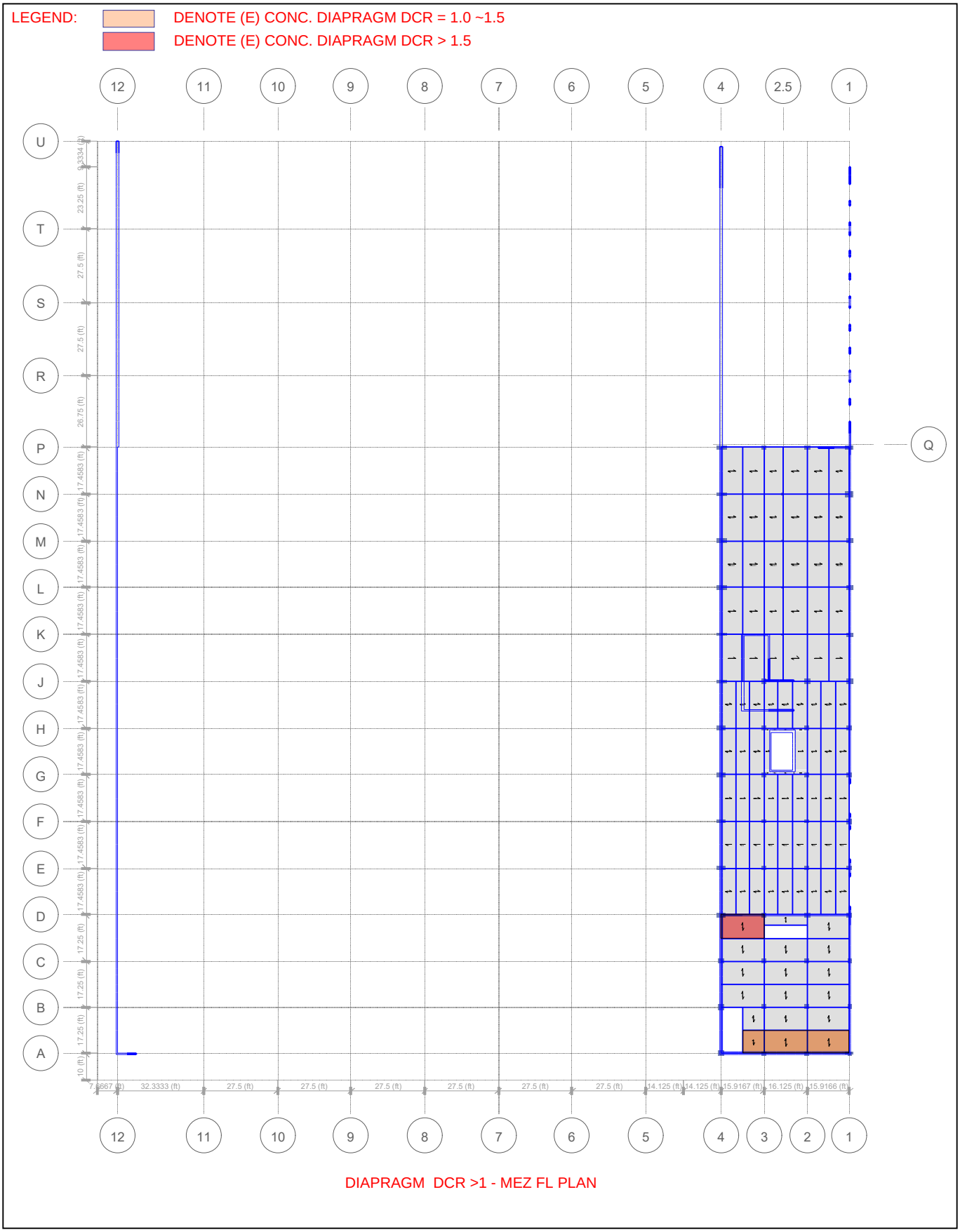


1532-7 Presidio Bus Yard-LBS-4.EDB Plan View - ROOF - Z = 302.93 (ft)



DIAPRAGM DCR >1 - 2ND FL PLAN

1532-7 Presidio Bus Yard-LBS-4.EDB Plan View - 2ND - Z = 285.34 (ft)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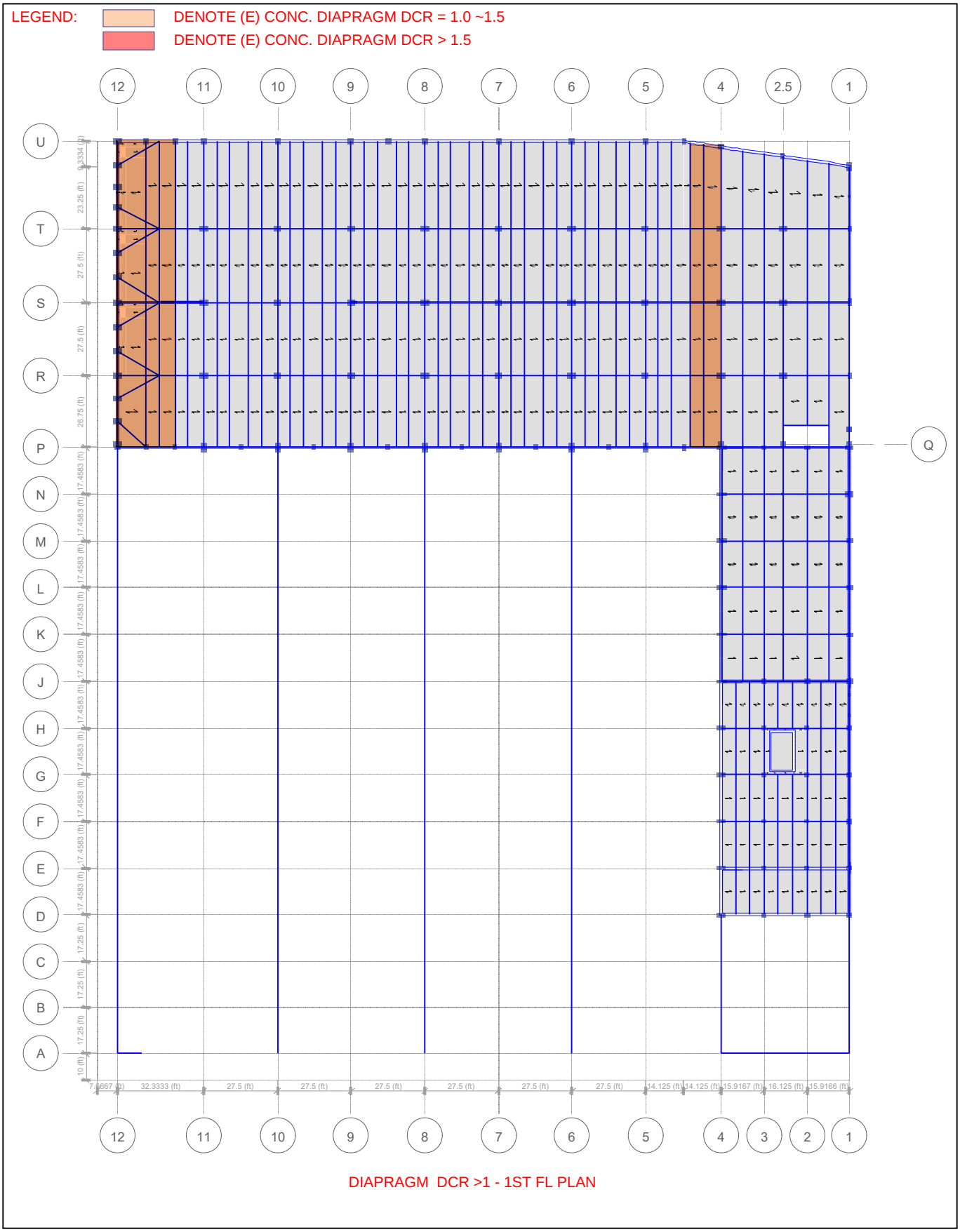
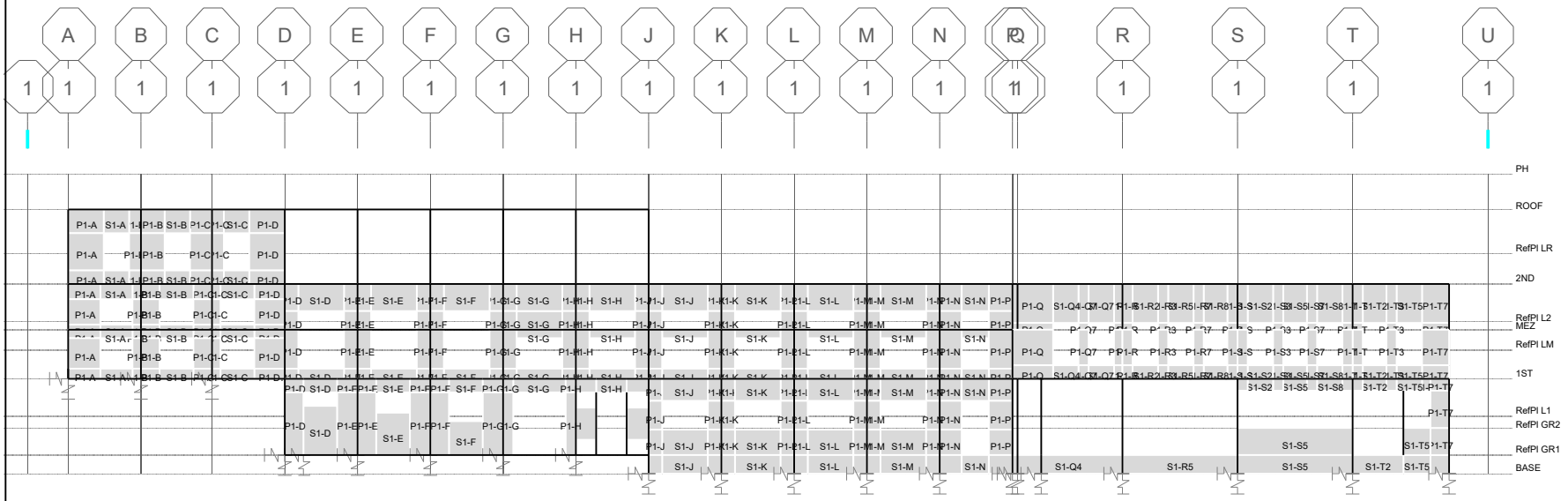


DIAPRAGM DCR >1 - 1ST FL PLAN

1532-7 Presidio Bus Yard-LBS-4.EDB Plan View - 1ST - Z = 262.53 (ft)

WALL PIER ID AND SPANDREL ID
SEE APPENDIX C FOR DCR VALUES

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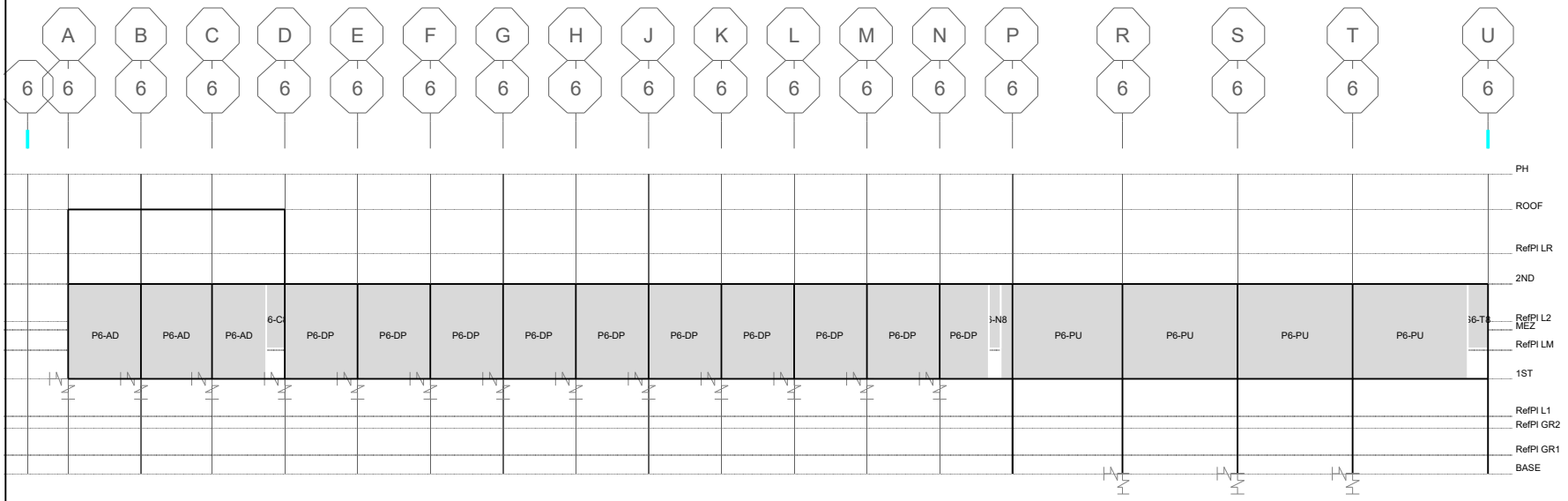
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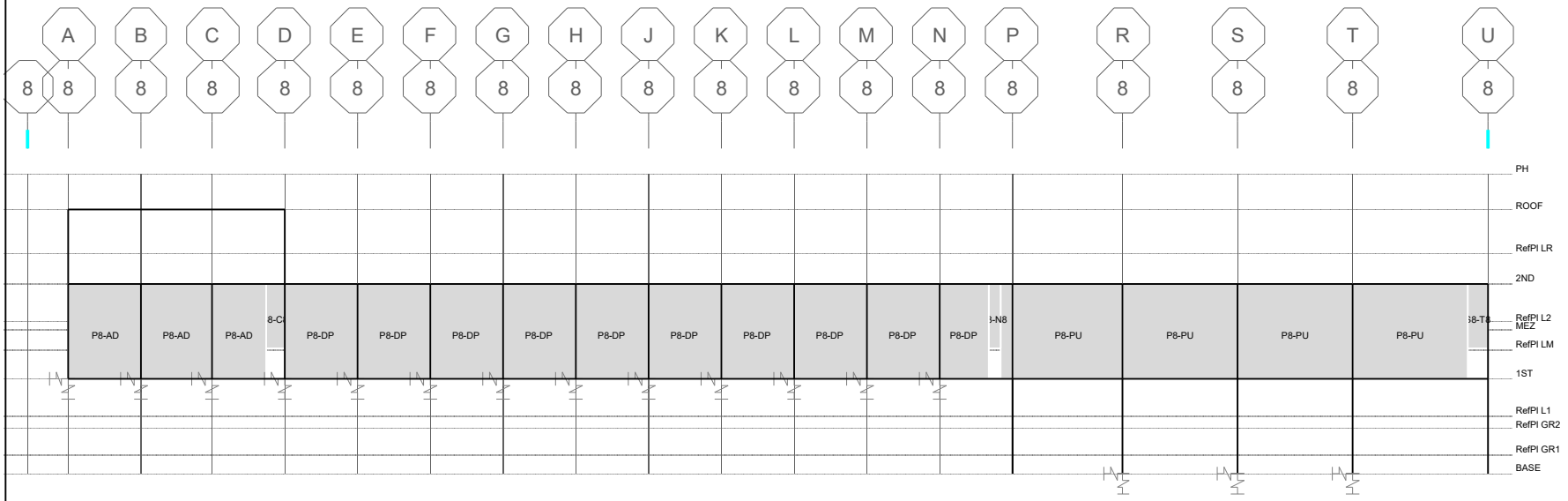
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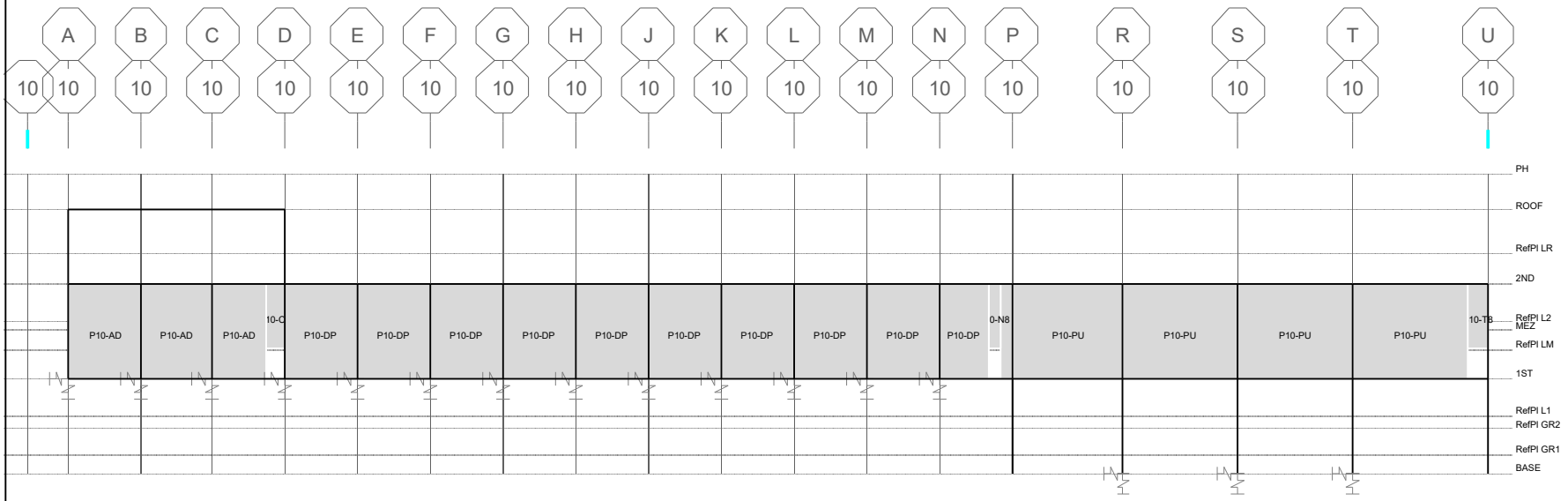
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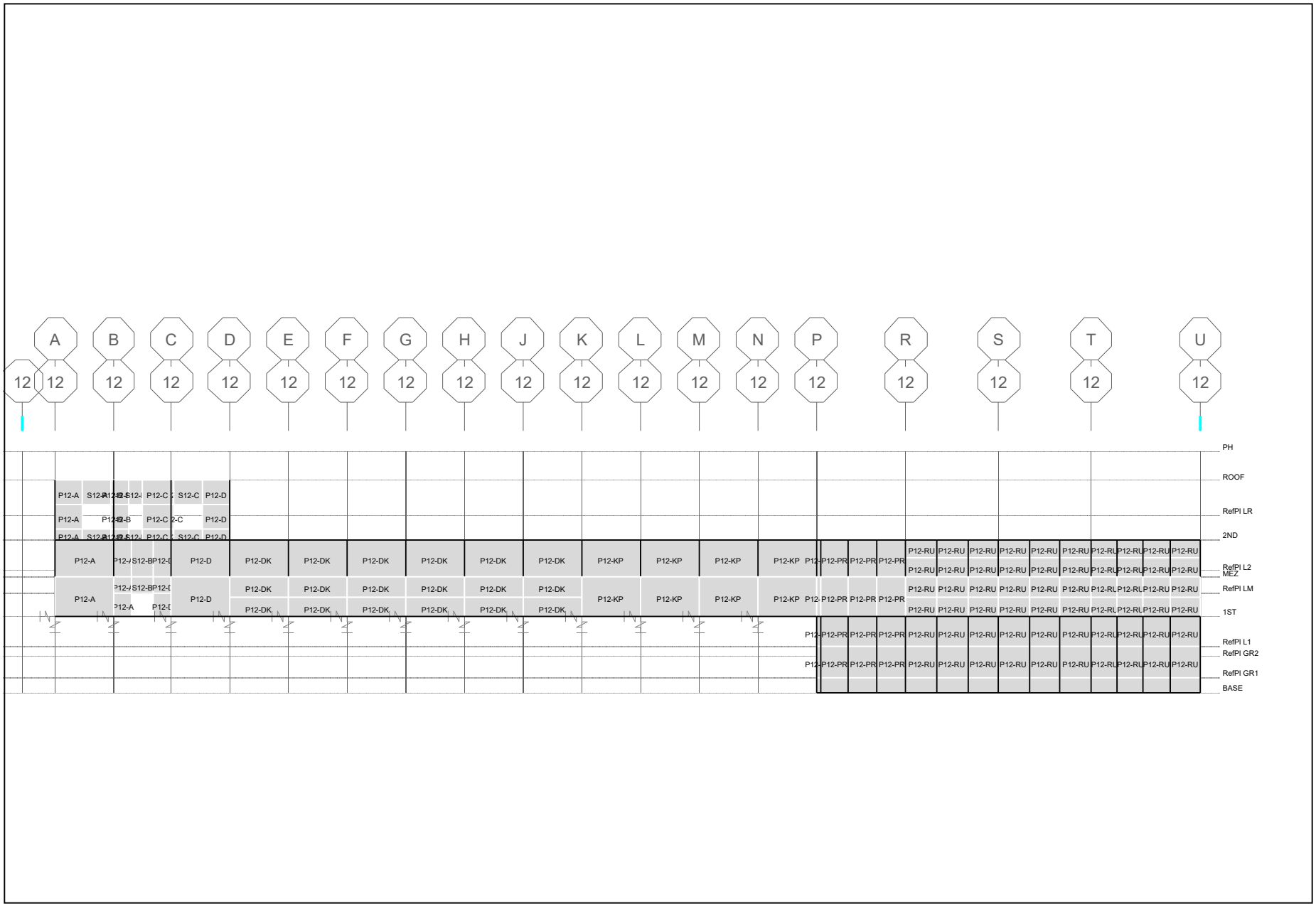
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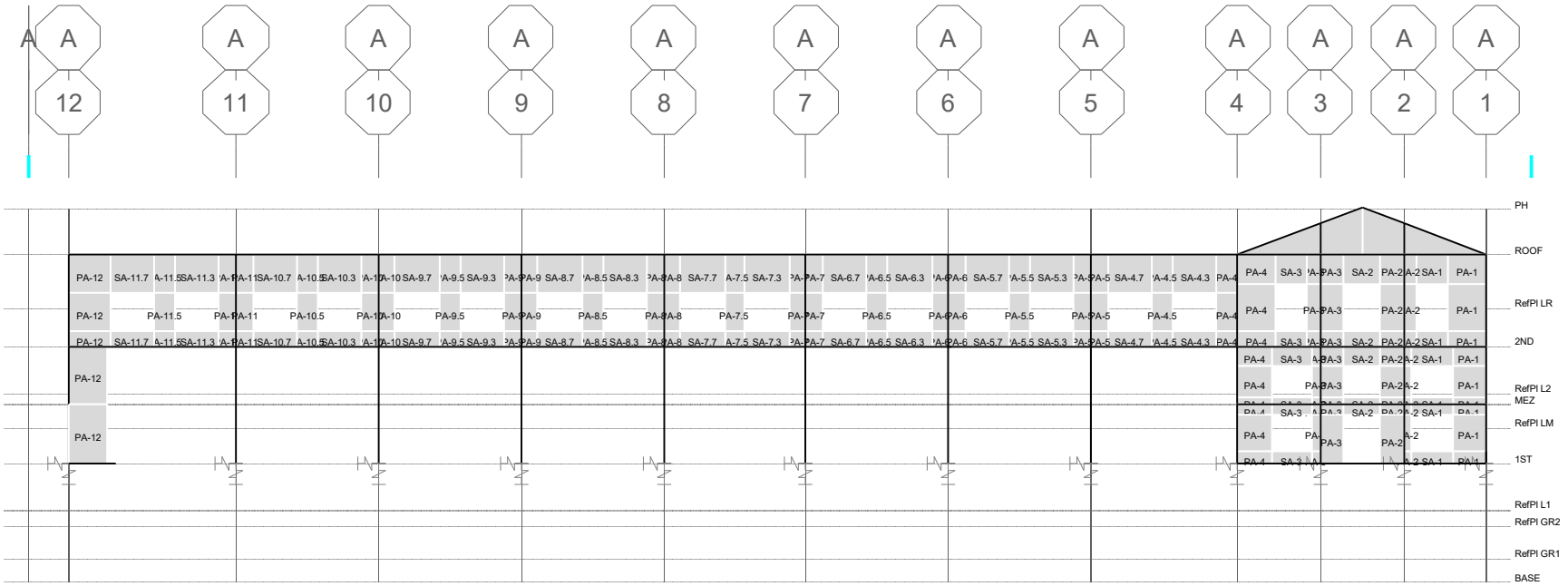
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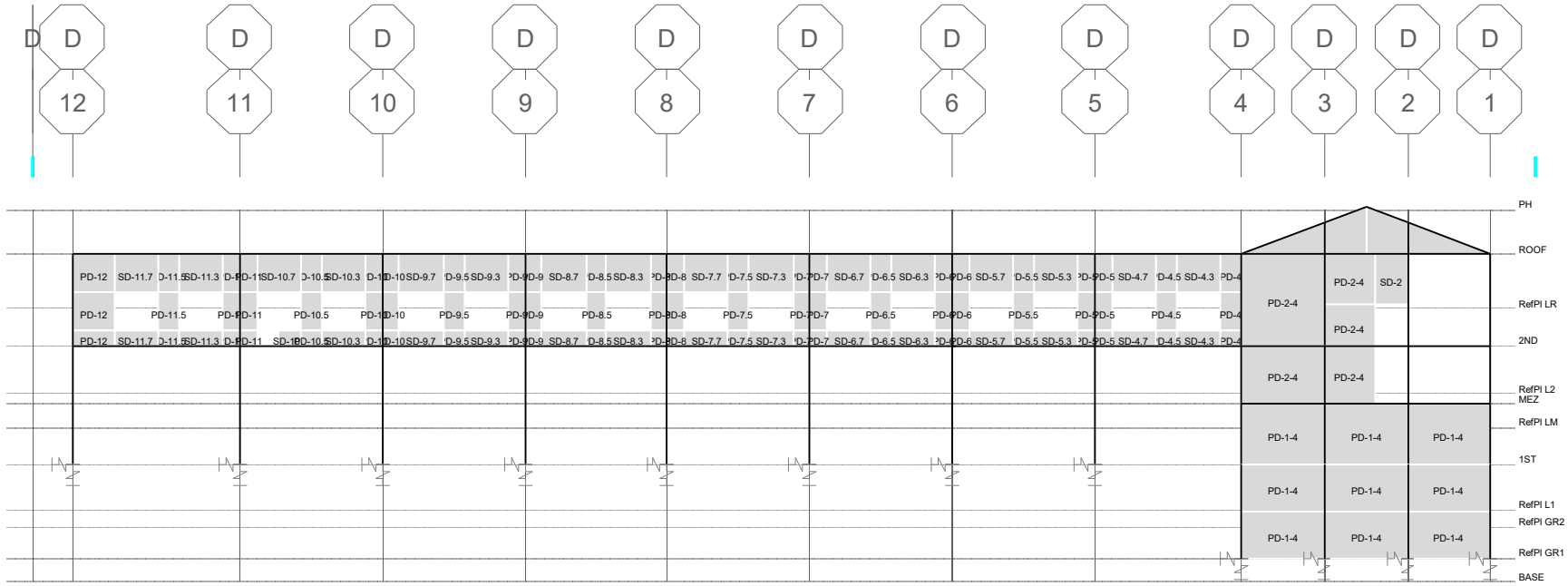
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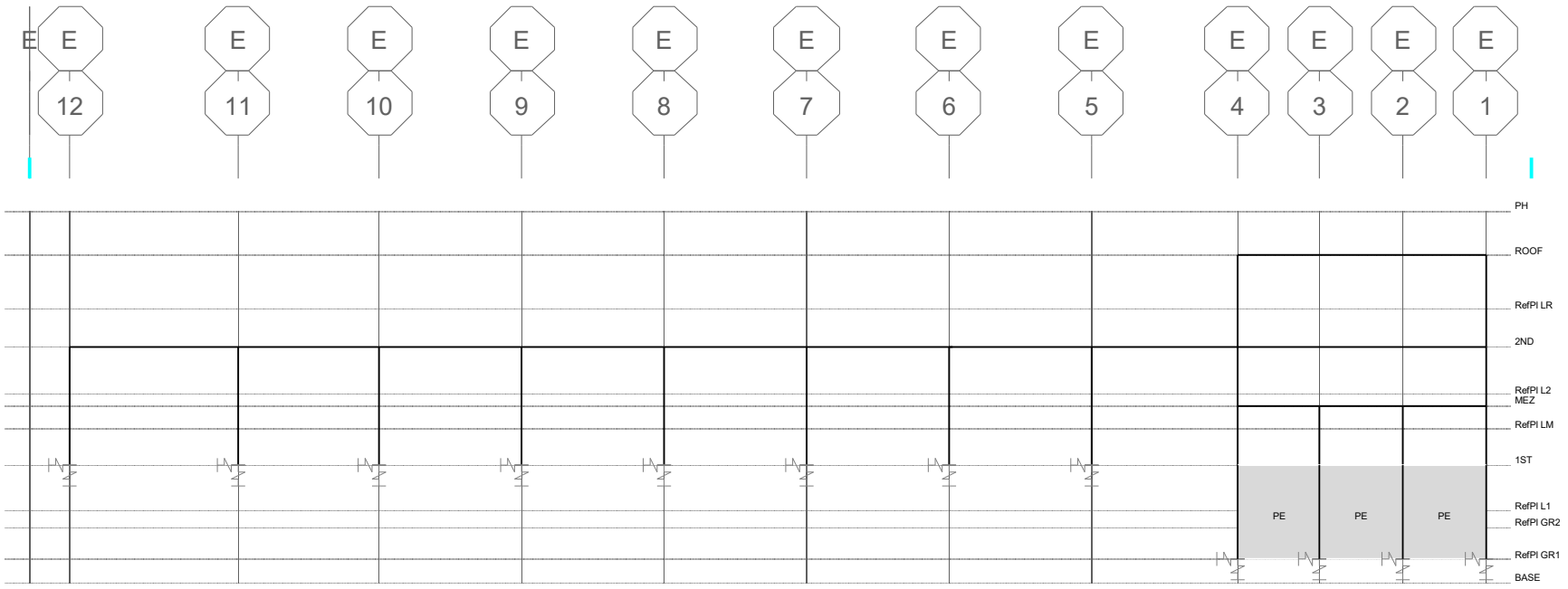
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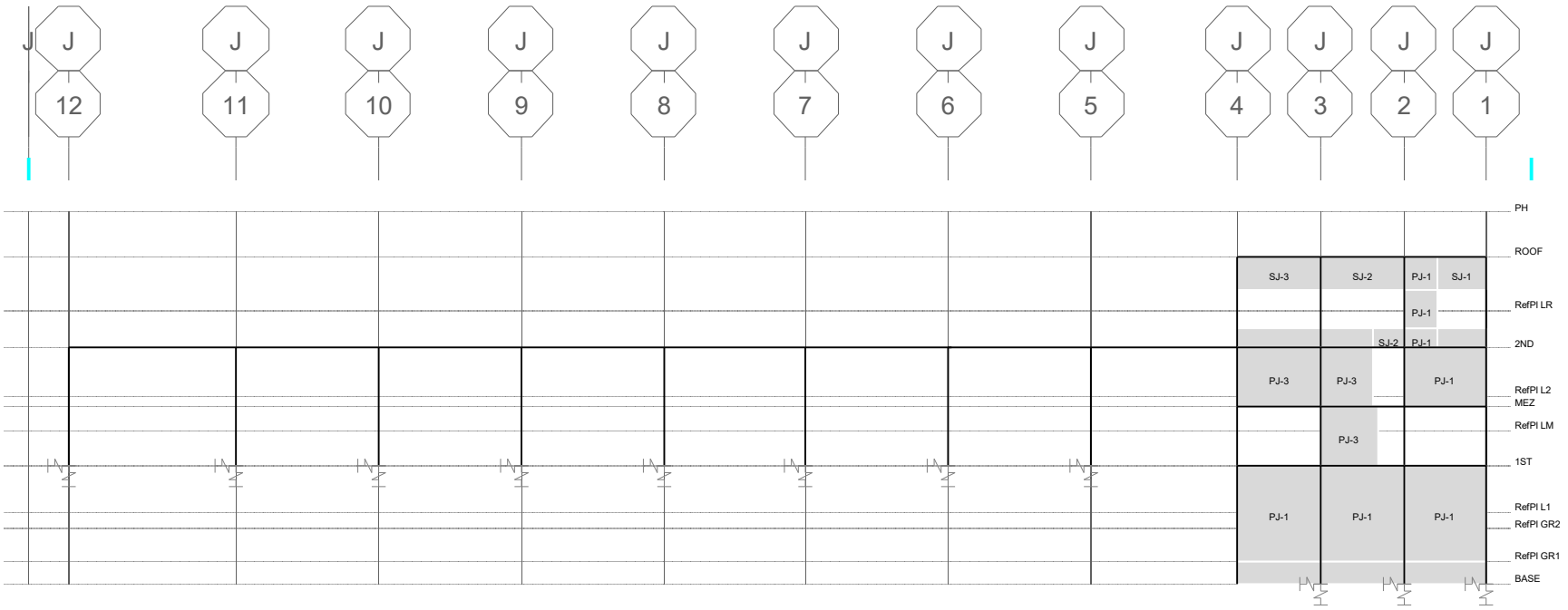
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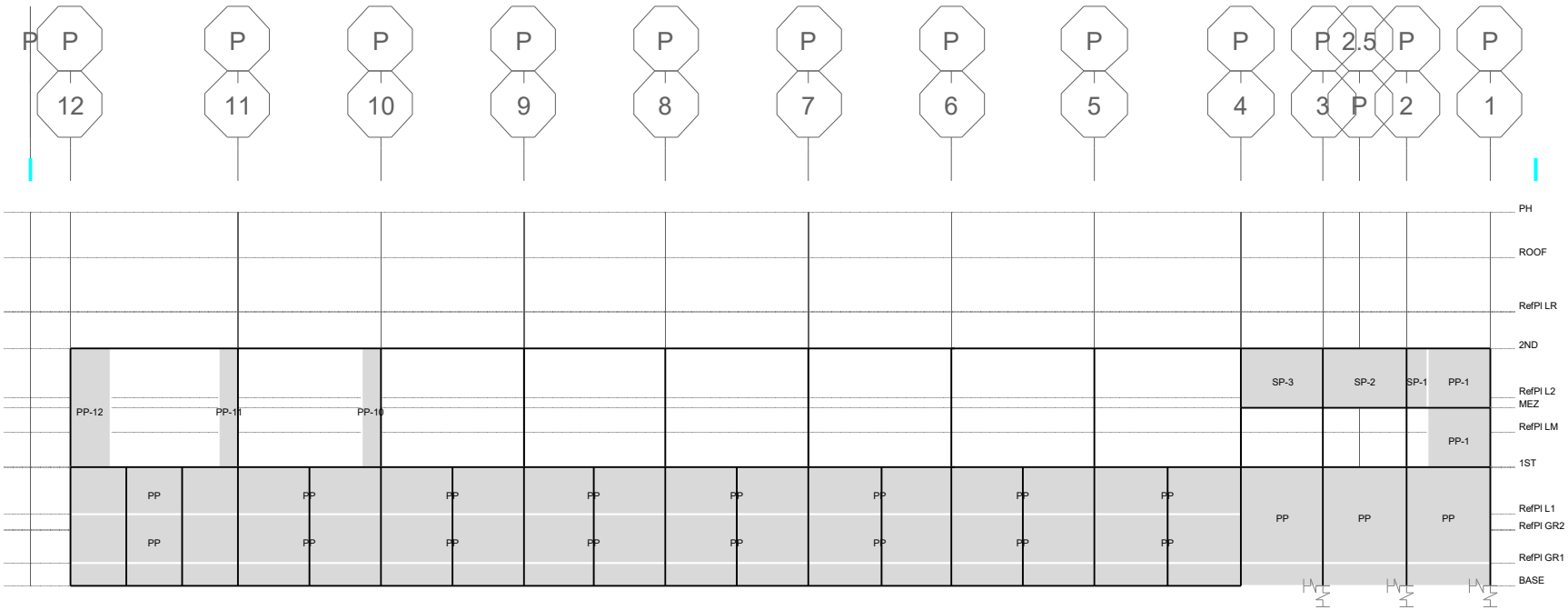
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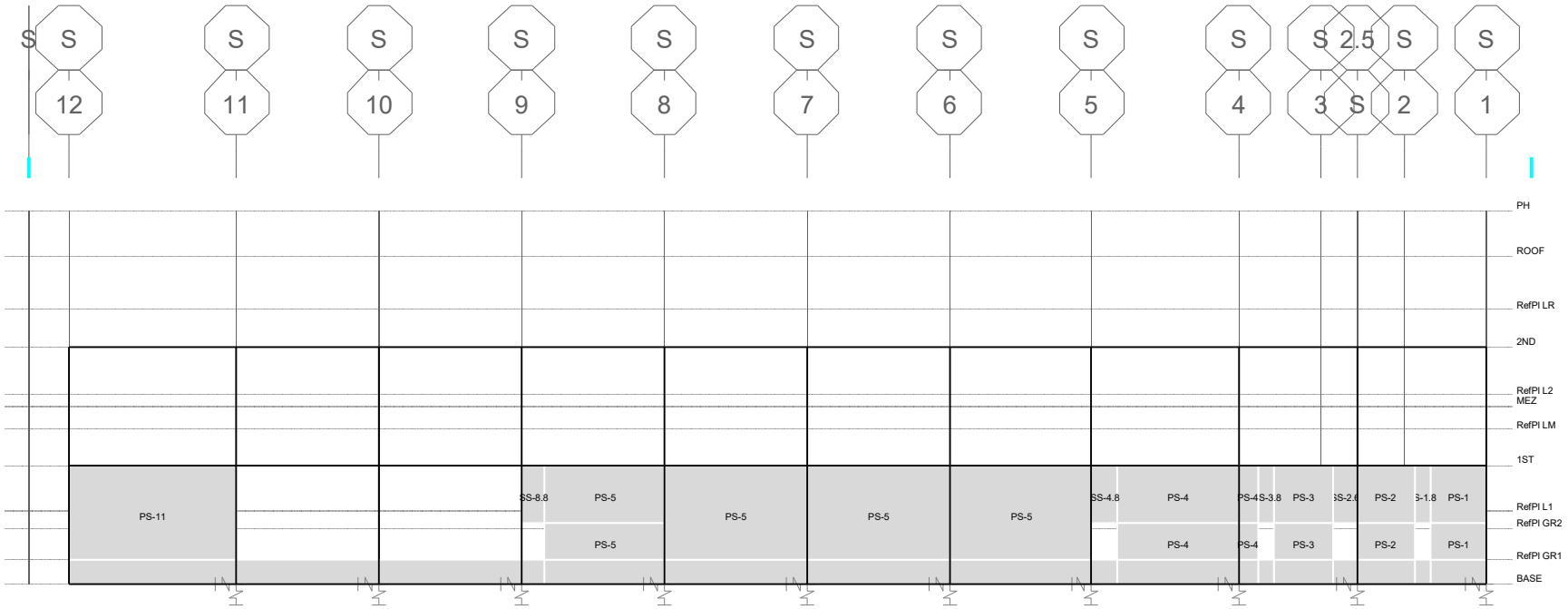
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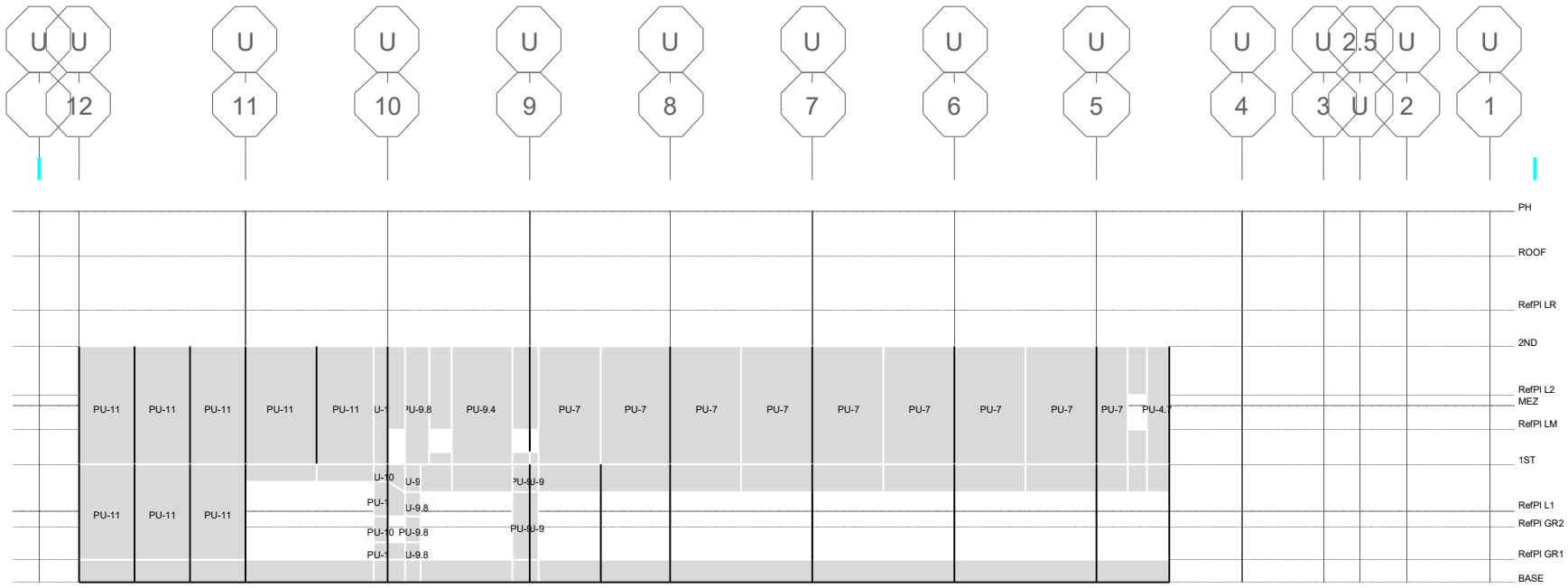
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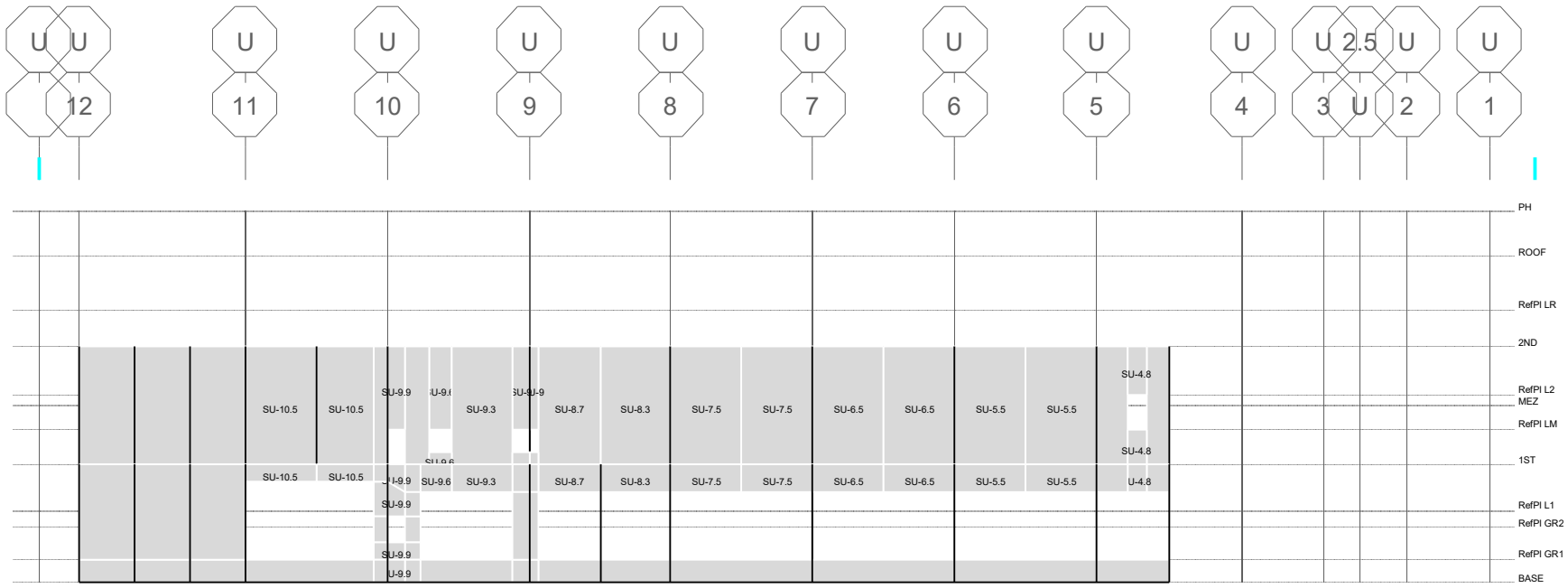
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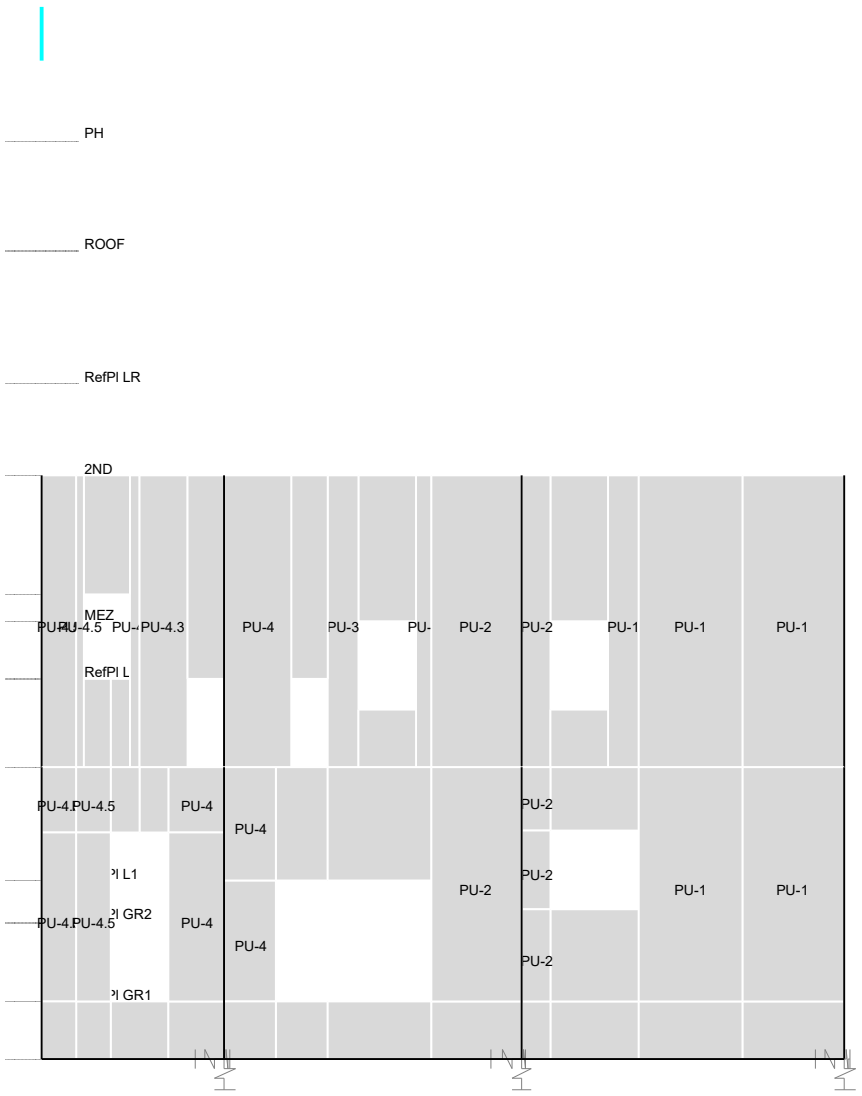
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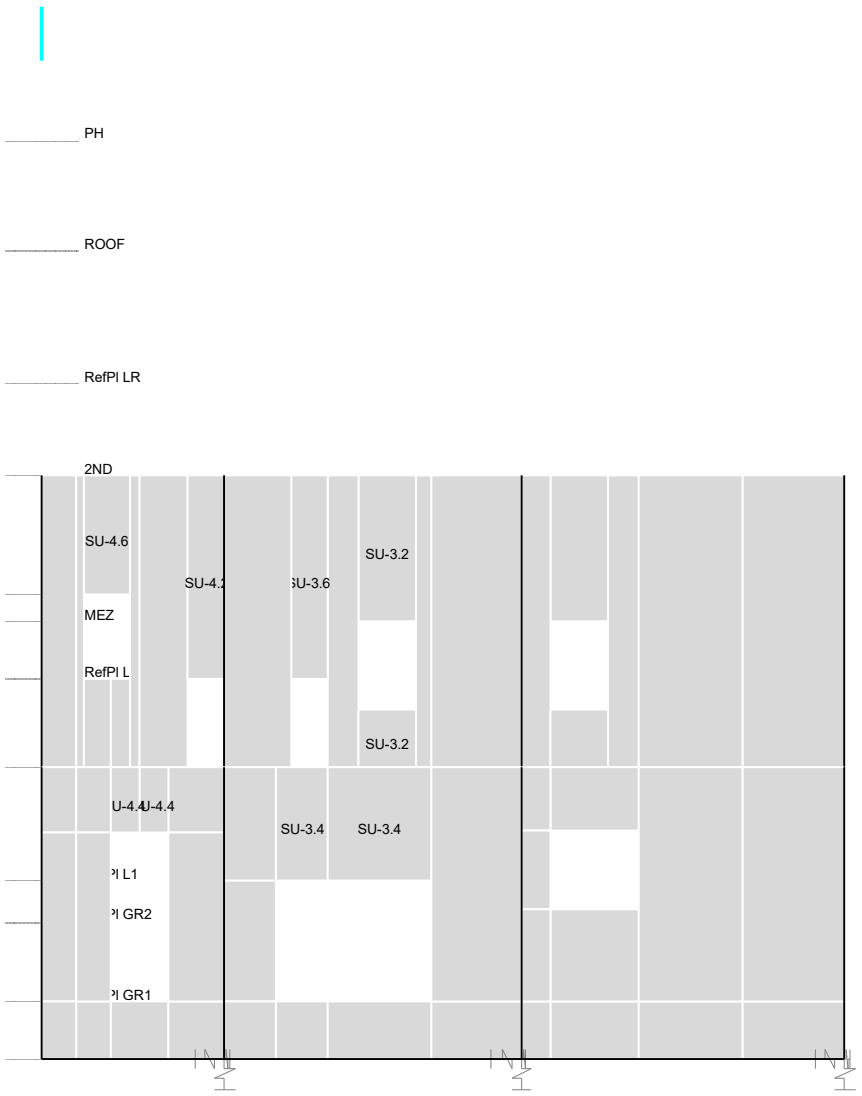
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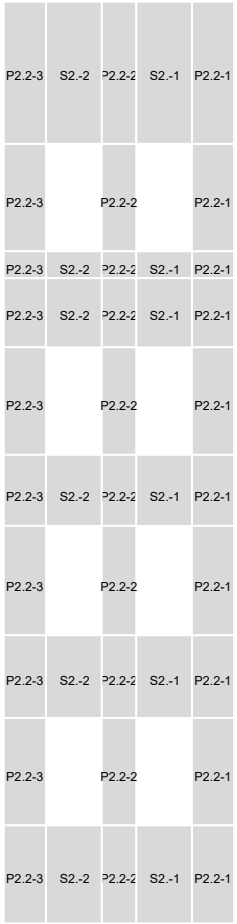
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P2.2-3 S2.-2 P2.2-2 S2.-1 P2.2-1
P2.2-3 P2.2-2 P2.2-1
P2.2-3 S2.-2 P2.2-2 S2.-1 P2.2-1
P2.2-3 P2.2-2 P2.2-1
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P2.2-3 P2.2-2 P2.2-1
P2.2-3 S2.-2 P2.2-2 S2.-1 P2.2-1

STRUCTUS

Appendix C

Engineering Calculations

Eartquake Level hazard, BSE-2E

Shear Wall DCR Check (Evaluation):

Shear Wall Pier Summary - ACI 318-14

d = 0.80

a = d-[(d^2-2M/(0.85 f'c tw)]$^{1/2}$ < 0.4 Lw

Shear: 1912 1949

1.5 f_c' = 3 3.75 (ksi)

1.25 f_y = 50 50 (ksi)

H bar = V bar per dwg. notes

DCR = V/[{α_c (f_c')$^{1/2}$+ρ_t f_y} A_{cv}]

k = 0.75 for 1912 ~ A15Gr33

0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Pier Label	Edge Rebar	End Rebar	Spacing	D/C Ratio		P	V	M	Lw	tw	hw	hw / Lw	c = 1.25 a	As (along Lw-c)	As' (along c)	[(As-As')fy+P] / (tw lw f'c)	V / [tw lw (f'c)$^{1/2}$]	α_c	Vc	H rebar	Rebar Spc.	Vs	m_{CP} (Table 10-21)	m_{CP} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	WALL PIER
M	V					in		1949	kip	kip	k-ft	in	in	ft		in	in^2	in^2				kip			kip			10-	FLEXURE		SHEAR	
				A15Gr40 (for all walls in etabs)				Alteration															#3=3/8#									
		2ND	P10-AD	3/8#	3/4#	18	0.22		-564	1040	6255	567	8	22.81	0.48	10.2	13.0	0.2	0.09	4.19	3	745	# 3	18	443	3.86	3	22	0.10	OK.	0.39	OK.	
		2ND	P10-DP	3/8#	3/4#	18	0.09		-903	3454	25110	2027	8	22.81	0.14	11.4	47.0	0.3	0.07	3.89	3	2665	# 3	18	1584	4	3	22	0.04	OK.	0.36	OK.	
		2ND	P10-PU	3/8#	3/4#	18	2.25		-284	936	19561	1312	8	22.81	0.21	13.8	30.3	0.3	0.06	1.63	3	1725	# 3	18	1025	4	3	22	1.00	N.G.	0.15	OK.	
1.5		2ND	P12-A	3/8#	3/4#	18	3.38		-634	263	3660	272	8	11.34	0.50	12.7	6.0	0.3	0.14	2.21	3	357	# 3	18	212	3.45	3	22	1.50	N.G.	0.21	OK.	
		MEZ	P12-A	3/8#	3/4#	18	1.14		-491	360	1887	272	8	11.47	0.51	6.5	6.2	0.2	0.12	3.03	3	357	# 3	18	212	3.71	3	22	0.51	OK.	0.28	OK.	
		ROOF	P12-A	3/8#	3/4#	18	1.58		-269	227	696	96	8	17.59	2.20	6.9	2.1	0.2	0.16	5.40	2.53	107	# 3	18	75	2.51	3	21	0.84	OK.	0.66	OK.	
	1.8	ROOF	P12-B	3/8#	3/4#	18	1		-24	210	406	63	8	17.59	3.35	6.2	1.3	0.1	0.05	7.61	2	55	# 1	18	5	2.5	3	21	0.53	OK.	1.85	N.G.	
2.2	1.3	ROOF	P12-C	3/8#	3/4#	18	3.75		-277	479	1846	111	8	17.59	1.90	16.5	2.2	0.4	0.14	9.85	2.73	133	# 3	18	87	2.31	3	21	2.17	N.G.	1.26	N.G.	
		2ND	P12-D	3/8#	3/4#	18	1.6		-266	182	696	272	8	11.34	0.50	2.4	6.3	0.1	0.09	1.53	3	357	# 3	18	212	4	3	22	0.71	OK.	0.14	OK.	
		MEZ	P12-D	3/8#	3/4#	18	0.29		-309	304	696	272	8	11.47	0.51	2.4	6.3	0.1	0.10	2.56	3	357	# 3	18	212	4	3	22	0.13	OK.	0.24	OK.	
3.2	2.2	ROOF	P12-D	3/8#	3/4#	18	4.67		-407	586	1787	96	8	17.59	2.20	19.0	1.8	0.4	0.21	13.93	2.53	107	# 3	18	75	1.97	3	21	3.16	N.G.	2.18	N.G.	
		2ND	P12-DK	3/8#	3/4#	18	1.71		-779	3794	30332	1257	8	11.34	0.11	22.4	28.8	0.5	0.07	6.89	3	1652	# 3	18	982	2.5	3	22	0.76	OK.	0.64	OK.	
		MEZ	P12-DK	3/8#	3/4#	18	0.11		-593	3859	19054	1257	8	11.47	0.11	14.0	29.0	0.3	0.07	7.01	3	1652	# 3	18	982	2.5	3	22	0.05	OK.	0.65	OK.	
		2ND	P12-KP	3/8#	3/4#	18	1.66		-310	2082	8741	838	8	11.34	0.16	9.6	19.3	0.2	0.06	5.67	3	1102	# 3	18	655	2.75	3	22	0.74	OK.	0.53	OK.	
		MEZ	P12-KP	3/8#	3/4#	18	0.98		-465	2195	12082	838	8	11.47	0.16	13.4	19.2	0.3	0.07	5.98	3	1102	# 3	18	655	2.52	3	22	0.44	OK.	0.56	OK.	
		1ST	P12-PR	3/8#	3/4#	12	0.6		-447	1343	6121	321	12	18.28	0.68	11.9	7.2	0.3	0.07	6.37	3	633	# 3	12	376	2.5	3	22	0.27	OK.	0.59	OK.	
		2ND	P12-PR	3/8#	3/4#	12	1.04		-235	495	2548	321	12	11.34	0.42	4.9	7.4	0.1	0.05	2.35	3	633	# 3	12	376	4	3	22	0.46	OK.	0.22	OK.	
1.5		MEZ	P12-PR	3/8#	3/4#	12	3.27		-508	600	4951	321	12	11.47	0.43	9.6	7.3	0.2	0.07	2.84	3	633	# 3	12	376	4	3	22	1.45	N.G.	0.26	OK.	
		1ST	P12-RU	3/8#	3/4#	12	0.69		-865	3609	14184	1051	12	18.28	0.21	8.3	24.3	0.2	0.05	5.22	3	2072	# 3	12	1232	3.08	3	22	0.31	OK.	0.49	OK.	
		2ND	P12-RU	3/8#	3/4#	12	0.52		-394	692	2956	1051	12	11.34	0.13	1.7	24.5	0.0	0.04	1.00	3	2072	# 3	12	1232	4	3	22	0.23	OK.	0.09	OK.	
		MEZ	P12-RU	3/8#	3/4#	12	2.25		-515	972	6610	1051	12	11.47	0.13	3.9	24.4	0.1	0.05	1.41	3	2072	# 3	12	1232	4	3	22	1.00	N.G.	0.13	OK.	
		2ND	P1-A	3/8#	3/4#	14	1.68		-289	222	442	89	10	11.34	1.54	3.8	2.0	0.1	0.14	4.58	2.97	144	# 3	14	89	3.08	3	21	0.73	OK.	0.41	OK.	
		MEZ	P1-A	3/8#	3/4#	14	1.93		-232	193	542	89	10	11.47	1.56	4.6	2.0	0.1	0.12	3.98	2.96	144	# 3	14	89	3.7	3	21	0.69	OK.	0.30	OK.	
		ROOF	P1-A	3/8#	3/4#	12	1.17		-214	63	252	101	12	17.59	2.10	1.5	2.3	0.0	0.09	0.95	2.6	172	# 3	12	118	4	3	21	0.39	OK.	0.07	OK.	
		2ND	P1-B	3/8#	3/4#	14	0.94		-126	65	250	78	10	11.34	1.74	2.4	1.8	0.1	0.09	1.52	2.84	121	# 3	14	78	4	3	21	0.31	OK.	0.11	OK.	
		MEZ	P1-B	3/8#	3/4#	14	1.08		-186	96	580	78	10	11.47	1.76	5.7	1.7	0.1	0.11	2.25	2.82	121	# 3	14	78	3.83	3	21	0.38	OK.	0.17	OK.	
		ROOF	P1-B	3/8#	3/4#	12	0.33		-63	43	264	102	12	17.59	2.07	1.6	2.3	0.0	0.05	0.64	2.62	176	# 3	12	120	4	3	21	0.11	OK.	0.05	OK.	
		2ND	P1-C	3/8#	3/4#	14	0.67		-122	49	215	78	10	11.34	1.74	2.1	1.8	0.0	0.09	1.15	2.84	121	# 3	14	78	4	3	21	0.22	OK.	0.08	OK.	
		MEZ	P1-C	3/8#	3/4#	14	1.59		-196	89	634	78	10	11.47	1.76	6.2	1.7	0.1	0.12	2.08	2.82	121	# 3	14	78	3.78	3	21	0.56	OK.	0.16	OK.	
		ROOF	P1-C	3/8#	3/4#	12	0.68		-105	65	482	102	12	17.59	2.07	2.9	2.3	0.1	0.06	0.97	2.62	176	# 3	12	120	4	3	21	0.23	OK.	0.07	OK.	
2.3	1.8	1ST	P1-D	3/8#	3/4#	12	3.97		-258	448	1212	57	12	18.28	3.87	15.1	1.0	0.4	0.14	12.01	2	75	# 3	12	67	2.29	3	21	2.31	N.G.	1.85	N.G.	
		2ND	P1-D	3/8#	3/4#	14	1.69		-243	196	575	127	10	11.34	1.07	3.4	2.9	0.1	0.10	2.81	3	209	# 3	14	128	3.99	3	22	0.75	OK.	0.26	OK.	
		MEZ	P1-D	3/8#	3/4#	14	2.19		-229	450	1661	127	10	11.47	1.08	10.0	2.7	0.2	0.09	6.46	3	209	# 3	14	128	2.5	3	22	0.97	OK.	0.59	OK.	
		ROOF	P1-D	3/8#	3/4#	12	0.83		-118	161	629	101	12	17.59	2.10	3.9	2.3	0.1	0.06	2.44	2.6	172	# 3	12	118	4	3	21	0.28	OK.	0.19	OK.	
		1ST	P1-E	3/8#	3/4#	12	1.19		-155	434	1430	114	12	18.28	1.93	8.0	2.5	0.2	0.07	5.82	2.71	202	# 3	12	133	2.64	3	21	0.60	OK.	0.65	OK.	
	1.1	2ND	P1-E	3/8#	3/4#	14	1.11		-49	404	617	77	10	11.34	1.76	6.1	1.7	0.1	0.05	9.52	2.83	120	# 3	14	78	2.5	3	21	0.59	OK.	1.09	N.G.	
		MEZ	P1-E	3/8#	3/4#	14	0.77		-47	175	731	77	10	11.47	1.78	7.3	1.6	0.2	0.05	4.12	2.82	120	# 3	14	78	3.91	3	21	0.26	OK.	0.30	OK.	
		1ST	P1-F	3/8#	3/4#	12	0.85		-191	320	1275	114	12	18.28	1.93	7.1	2.5	0.2	0.08	4.29	2.71	202	# 3	12	133	3.78	3	21	0.30	OK.	0.34	OK.	

Eartquake Level hazard, BSE-2E

Shear Wall DCR Check (Evaluation):

Shear Wall Pier Summary - ACI 318-14

d = 0.80

a = d-[(d²-2M/(0.85 f'c tw)]^1/2 < 0.4 Lw

Shear: 1912 1949

1.5 f'c = 3 3.75 (ksi)

1.25 fy = 50 50 (ksi)

H bar = V bar per dwg. notes

DCR = V/[{αc (f'c)^1/2+ρt fy} Acv]

k = 0.75 for 1912 ~ A15Gr33

0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Pier Label	Edge Rebar	End Rebar	Spacing	D/C Ratio		P	V	M	Lw	tw	hw	hw / Lw	c = 1.25 a	As (along Lw-c)	As' (along c)	[(As-As')fy+P] / (tw lw f'c')	V / [tw lw (f'c')^1/2]	αc	Vc	H rebar	Rebar Spc.	Vs	mCP (Table 10-21)	mCP (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	WALL PIER
M	V					in		1949	kip	kip	k-ft	in	in	ft		in	in²	in²				kip			kip			10-	FLEXURE		SHEAR	
				A15Gr40 (for all walls in etabs)				Alteration															#3=3/8#									
		2ND	P1-F	3/8#	3/4#	14	0.86		-48	331	473	77	10	11.34	1.76	4.6	1.7	0.1	0.05	7.80	2.83	120	# 3	14	78	2.5	3	21	0.46	OK.	0.89	OK.	
		MEZ	P1-F	3/8#	3/4#	14	0.86		-51	197	878	77	10	11.47	1.78	8.8	1.6	0.2	0.05	4.64	2.82	120	# 3	14	78	3.52	3	21	0.33	OK.	0.38	OK.	
		1ST	P1-G	3/8#	3/4#	12	0.91		-194	156	728	87	12	18.28	2.54	5.3	1.9	0.1	0.09	2.74	2.31	131	# 3	12	101	4	3	21	0.30	OK.	0.22	OK.	
		2ND	P1-G	3/8#	3/4#	14	0.66		-104	177	310	77	10	11.34	1.76	3.0	1.7	0.1	0.08	4.17	2.83	120	# 3	14	78	3.87	3	21	0.23	OK.	0.31	OK.	
		MEZ	P1-G	3/8#	3/4#	14	1.84		-160	239	1111	77	10	11.47	1.78	11.4	1.5	0.3	0.10	5.63	2.82	120	# 3	14	78	2.78	3	21	0.88	OK.	0.58	OK.	
1.7	1.7	1ST	P1-H	3/8#	3/4#	12	2.88		-137	217	450	30	12	18.28	7.37	11.5	0.4	0.3	0.14	11.10	2	39	# 3	12	35	2.32	3	21	1.65	N.G.	1.68	N.G.	
		2ND	P1-H	3/8#	3/4#	12	1.13		-94	408	526	77	12	11.34	1.76	4.3	1.7	0.1	0.06	8.01	2.83	144	# 3	12	91	2.5	3	21	0.60	OK.	0.93	OK.	
		MEZ	P1-H	3/8#	3/4#	12	1.8		-99	212	904	77	12	11.47	1.78	7.5	1.6	0.2	0.06	4.16	2.82	143	# 3	12	91	3.88	3	21	0.62	OK.	0.31	OK.	
1.8	1.5	1ST	P1-J	3/8#	3/4#	12	3.25		-142	264	564	39	12	18.28	5.66	10.3	0.7	0.2	0.12	10.36	2	51	# 3	12	45	2.41	3	21	1.79	N.G.	1.51	N.G.	
		2ND	P1-J	3/8#	3/4#	14	0.58		-79	282	228	78	10	11.34	1.76	2.2	1.8	0.1	0.07	6.64	2.83	120	# 3	14	78	2.5	3	21	0.31	OK.	0.76	OK.	
		MEZ	P1-J	3/8#	3/4#	14	2.09		-213	99	636	78	10	11.47	1.78	6.3	1.7	0.1	0.12	2.33	2.82	120	# 3	14	78	3.68	3	21	0.76	OK.	0.18	OK.	
		1ST	P1-K	3/8#	3/4#	12	0.99		-51	105	547	78	12	18.28	2.83	4.5	1.7	0.1	0.05	2.06	2.11	108	# 3	12	91	4	3	21	0.33	OK.	0.18	OK.	
	1.5	2ND	P1-K	3/8#	3/4#	14	1.43		-46	571	670	78	10	11.34	1.76	6.6	1.7	0.2	0.05	13.45	2.83	120	# 3	14	78	2.5	3	21	0.76	OK.	1.54	N.G.	
		MEZ	P1-K	3/8#	3/4#	14	1.39		-36	72	746	78	10	11.47	1.78	7.4	1.6	0.2	0.05	1.70	2.82	120	# 3	14	78	4	3	21	0.46	OK.	0.12	OK.	
		1ST	P1-L	3/8#	3/4#	12	0.68		-50	91	412	78	12	18.28	2.83	3.3	1.7	0.1	0.05	1.79	2.11	108	# 3	12	91	4	3	21	0.23	OK.	0.15	OK.	
		2ND	P1-L	3/8#	3/4#	14	1.05		-27	365	527	78	10	11.34	1.76	5.2	1.7	0.1	0.05	8.60	2.83	120	# 3	14	78	2.5	3	21	0.56	OK.	0.98	OK.	
		MEZ	P1-L	3/8#	3/4#	14	1.29		-40	80	647	78	10	11.47	1.78	6.4	1.7	0.1	0.05	1.88	2.82	120	# 3	14	78	4	3	21	0.43	OK.	0.14	OK.	
		1ST	P1-M	3/8#	3/4#	12	0.8		-63	99	467	78	12	18.28	2.83	3.8	1.7	0.1	0.05	1.94	2.11	108	# 3	12	91	4	3	21	0.27	OK.	0.17	OK.	
		2ND	P1-M	3/8#	3/4#	14	0.96		-33	213	464	78	10	11.34	1.76	4.5	1.7	0.1	0.05	5.02	2.83	120	# 3	14	78	3.24	3	21	0.40	OK.	0.44	OK.	
		MEZ	P1-M	3/8#	3/4#	14	1.14		-29	87	621	78	10	11.47	1.78	6.1	1.7	0.1	0.05	2.05	2.82	120	# 3	14	78	4	3	21	0.38	OK.	0.15	OK.	
		1ST	P1-N	3/8#	3/4#	12	2.36		-178	297	190	105	12	18.28	2.08	1.1	2.4	0.0	0.08	4.29	2.61	181	# 3	12	123	3.78	3	21	0.83	OK.	0.34	OK.	
		2ND	P1-N	3/8#	3/4#	14	1.09		-119	286	478	105	10	11.34	1.29	3.4	2.4	0.1	0.07	4.96	3	173	# 3	14	106	3.28	3	22	0.48	OK.	0.46	OK.	
		MEZ	P1-N	3/8#	3/4#	14	1.79		-126	157	1136	105	10	11.47	1.31	8.3	2.3	0.2	0.07	2.72	3	173	# 3	14	106	4	3	22	0.80	OK.	0.25	OK.	
2.1	1.1	1ST	P1-P	3/8#	3/4#	12	3.8		-209	349	1302	66	12	18.28	3.30	13.3	1.2	0.3	0.11	7.98	2	87	# 3	12	78	2.47	3	21	2.05	N.G.	1.14	N.G.	
1.3		2ND	P1-P	3/8#	3/4#	14	2.37		-183	222	588	66	10	11.34	2.05	6.9	1.4	0.2	0.12	6.09	2.64	96	# 3	14	67	2.39	3	21	1.32	N.G.	0.76	OK.	
1.0		MEZ	P1-P	3/8#	3/4#	14	2.35		-268	136	342	66	10	11.47	2.07	3.9	1.5	0.1	0.17	3.73	2.62	95	# 3	14	67	3.08	3	21	1.02	N.G.	0.36	OK.	
1.2		2ND	P1-Q	3/8#	3/4#	18	2.76		-444	518	670	120	8	11.34	1.13	5.2	2.7	0.1	0.20	9.86	3	158	# 3	18	94	2.01	3	22	1.23	N.G.	0.92	OK.	
	1.0	MEZ	P1-Q	3/8#	3/4#	18	1.59		-223	581	1640	120	8	11.47	1.15	13.3	2.5	0.3	0.12	11.06	3	158	# 3	18	94	2.42	3	22	0.71	OK.	1.03	N.G.	
1.1	2.3	2ND	P1-Q7	3/8#	3/4#	18	2.1		-41	211	476	29	8	22.81	9.44	14.5	0.3	0.3	0.06	16.60	2	25	# 3	18	23	2.5	3	21	1.12	N.G.	2.34	N.G.	
		MEZ	P1-Q7	3/8#	3/4#	18	0.37		-41	80	244	29	8	11.47	4.75	9.2	0.5	0.2	0.08	6.30	2	25	# 3	18	23	2.5	3	21	0.20	OK.	0.89	OK.	
1.7	2.0	2ND	P1-R	3/8#	3/4#	18	3.18		-49	341	880	56	8	22.81	4.90	17.1	0.9	0.4	0.06	13.93	2	49	# 3	18	44	2.5	3	21	1.70	N.G.	1.96	N.G.	
	1.4	MEZ	P1-R	3/8#	3/4#	18	0.4		-43	270	926	56	8	11.47	2.46	18.2	0.9	0.4	0.05	11.03	2.36	58	# 3	18	44	2.5	3	21	0.21	OK.	1.42	N.G.	
1.3	1.7	2ND	P1-R3	3/8#	3/4#	18	2.52		-66	151	340	29	8	22.81	9.44	14.3	0.3	0.3	0.10	11.88	2	25	# 3	18	23	2.5	3	21	1.34	N.G.	1.68	N.G.	
		MEZ	P1-R3	3/8#	3/4#	18	0.93		-66	85	266	29	8	11.47	4.75	10.2	0.4	0.2	0.11	6.69	2	25	# 3	18	23	2.45	3	21	0.51	OK.	0.96	OK.	
1.3	1.7	2ND	P1-R7	3/8#	3/4#	18	2.38		-58	156	353	29	8	22.81	9.44	14.5	0.3	0.3	0.08	12.28	2	25	# 3	18	23	2.5	3	21	1.27	N.G.	1.73	N.G.	
		MEZ	P1-R7	3/8#	3/4#	18	0.78		-58	83	257	29	8	11.47	4.75	9.8	0.4	0.2	0.10	6.53	2	25	# 3	18	23	2.5	3	21	0.42	OK.	0.92	OK.	
1.4	1.5	2ND	P1-S	3/8#	3/4#	18	2.61		-81	269	696	56	8	22.81	4.90	12.9	1.0	0.3	0.09	10.99	2	49	# 3	18	44	2.5	3	21	1.39	N.G.	1.55	N.G.	
	1.1	MEZ	P1-S	3/8#	3/4#	18	0.64		-36	211	732	56	8	11.47	2.46	13.7	1.0	0.3	0.05	8.62	2.36	58	# 3	18	44	2.5	3	21	0.34	OK.	1.11	N.G.	

Eartquake Level hazard, BSE-2E

Shear Wall DCR Check (Evaluation):

Shear Wall Pier Summary - ACI 318-14

d = 0.80

a = d-[(d^2-2M/(0.85 f'c tw)]$^{1/2}$ < 0.4 Lw

Shear: 1912 1949

1.5 f_c' = 3 3.75 (ksi)

1.25 f_y = 50 50 (ksi)

H bar = V bar per dwg. notes

DCR = V/[{α_c (f_c')$^{1/2}$+ρ_t f_y} A_{cv}]

k = 0.75 for 1912 ~ A15Gr33

0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Pier Label	Edge Rebar	End Rebar	Spacing	D/C Ratio		P	V	M	Lw	tw	hw	hw / Lw	c = 1.25 a	As (along Lw-c)	As' (along c)	[(As-As')fy+P] / (tw lw f'c)	V / [tw lw (f'c)$^{1/2}$]	α_c	Vc	H rebar	Rebar Spc.	Vs	m_{CP} (Table 10-21)	m_{CP} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	WALL PIER
M	V					in		1949	kip	kip	k-ft	in	in	ft		in	in^2	in^2				kip			kip			10-	FLEXURE		SHEAR	
				A15Gr40 (for all walls in etabs)				Alteration															#3=3/8#									
1.0	1.1	2ND	P1-S3	3/8#	3/4#	18	1.88		-64	96	217	29	8	22.81	9.44	8.0	0.5	0.2	0.11	7.55	2	25	# 3	18	23	2.43	3	21	1.03	N.G.	1.10	N.G.	
		MEZ	P1-S3	3/8#	3/4#	18	0.73		-64	60	186	29	8	11.47	4.75	6.6	0.5	0.2	0.12	4.72	2	25	# 3	18	23	3.27	3	21	0.30	OK.	0.51	OK.	
	1.0	2ND	P1-S7	3/8#	3/4#	18	1.37		-28	93	209	29	8	22.81	9.44	7.6	0.5	0.2	0.06	7.32	2	25	# 3	18	23	2.5	3	21	0.73	OK.	1.03	N.G.	
		MEZ	P1-S7	3/8#	3/4#	18	0.53		-16	52	161	29	8	11.47	4.75	5.7	0.5	0.1	0.05	4.09	2	25	# 3	18	23	3.93	3	21	0.18	OK.	0.37	OK.	
	1.0	2ND	P1-T	3/8#	3/4#	18	1.7		-39	181	449	56	8	22.81	4.90	8.0	1.1	0.2	0.06	7.39	2	49	# 3	18	44	2.5	3	21	0.91	OK.	1.04	N.G.	
		MEZ	P1-T	3/8#	3/4#	18	0.73		-24	143	474	56	8	11.47	2.46	8.4	1.1	0.2	0.05	5.84	2.36	58	# 3	18	44	2.62	3	21	0.37	OK.	0.72	OK.	
1.3	1.2	2ND	P1-T3	3/8#	3/4#	18	1.77		-150	78	175	29	8	22.81	9.44	6.2	0.5	0.1	0.24	6.14	2	25	# 3	18	23	1.78	3	21	1.32	N.G.	1.21	N.G.	
		MEZ	P1-T3	3/8#	3/4#	18	0.85		-150	40	118	29	8	11.47	4.75	4.0	0.6	0.1	0.25	3.15	2	25	# 3	18	23	2	3	21	0.57	OK.	0.55	OK.	
		1ST	P1-T7	3/8#	3/4#	12	0.45		-198	43	221	54	12	18.28	4.06	2.6	1.2	0.1	0.13	1.21	2	71	# 3	12	63	3.58	3	21	0.17	OK.	0.12	OK.	
		2ND	P1-T7	3/8#	3/4#	18	1.57		-238	190	328	78	8	22.81	3.51	4.0	1.7	0.1	0.17	5.56	2	68	# 3	18	61	2.34	3	21	0.89	OK.	0.84	OK.	
2.6		MEZ	P1-T7	3/8#	3/4#	18	3.68		-373	196	731	78	8	11.47	1.77	9.2	1.6	0.2	0.24	5.74	2.82	96	# 3	18	61	1.86	3	21	2.63	N.G.	0.89	OK.	
		1ST	P2.2-1	#4	#7	12	0.72	1949	-284	62	112	33	12	18.28	6.65	1.7	1.0	0.1	0.28	2.86	2	48	# 4	12	54	2	3	21	0.40	OK.	0.34	OK.	
		2ND	P2.2-1	#4	#7	12	1.36	1949	-178	62	400	33	12	11.34	4.12	6.6	0.9	0.2	0.18	2.86	2	48	# 4	12	54	2.97	3	21	0.51	OK.	0.23	OK.	
		MEZ	P2.2-1	#4	#7	12	1.94	1949	-196	53	125	33	12	11.47	4.17	1.9	1.0	0.1	0.21	2.44	2	48	# 4	12	54	2.59	3	21	0.83	OK.	0.22	OK.	
		ROOF	P2.2-1	#4	#7	12	1.77	1949	-210	76	300	33	12	17.59	6.40	4.8	0.9	0.2	0.21	3.50	2	48	# 4	12	54	2.54	3	21	0.77	OK.	0.32	OK.	
		1ST	P2.2-2	#4	#7	12	1.05	1949	-94	102	450	27	12	18.28	8.12	10.0	0.6	0.3	0.11	5.75	2	40	# 4	12	44	2.64	3	21	0.44	OK.	0.51	OK.	
		2ND	P2.2-2	#4	#7	12	1.59	1949	-203	33	95	27	12	11.34	5.04	1.8	0.8	0.1	0.25	1.86	2	40	# 4	12	44	2.01	3	21	0.88	OK.	0.22	OK.	
1.3		MEZ	P2.2-2	#4	#7	12	2.41	1949	-250	28	93	27	12	11.47	5.10	1.8	0.8	0.1	0.30	1.58	2	40	# 4	12	44	2	3	21	1.34	N.G.	0.19	OK.	
		ROOF	P2.2-2	#4	#7	12	0.71	1949	-83	66	139	27	12	17.59	7.82	2.6	0.8	0.1	0.12	3.72	2	40	# 4	12	44	3.7	3	21	0.21	OK.	0.24	OK.	
		1ST	P2.2-3	#4	#7	12	0.41	1949	-164	51	85	33	12	18.28	6.65	1.3	1.1	0.0	0.18	2.35	2	48	# 4	12	54	2.92	3	21	0.16	OK.	0.19	OK.	
1.1		2ND	P2.2-3	#4	#7	12	1.98	1949	-306	72	203	33	12	11.34	4.12	3.2	1.0	0.1	0.29	3.32	2	48	# 4	12	54	2	3	21	1.10	N.G.	0.39	OK.	
1.4		MEZ	P2.2-3	#4	#7	12	2.6	1949	-349	51	114	33	12	11.47	4.17	1.7	1.0	0.1	0.34	2.35	2	48	# 4	12	54	2	3	21	1.44	N.G.	0.28	OK.	
		ROOF	P2.2-3	#4	#7	12	0.71	1949	-62	20	53	33	12	17.59	6.40	0.8	1.1	0.0	0.10	0.92	2	48	# 4	12	54	4	3	21	0.20	OK.	0.05	OK.	
		1ST	P2.7	#4	#7	12	1.72	1949	-1936	615	7981	177	12	18.28	1.24	23.7	5.1	0.8	0.34	5.29	3	390	# 4	12	289	1.84	3	22	0.64	OK.	0.34	OK.	
1.4		2ND	P2.7	#4	#7	12	3.73	1949	-1487	748	500	177	12	11.34	0.77	1.4	5.9	0.0	0.28	6.43	3	390	# 4	12	289	1.75	3	22	1.38	N.G.	0.41	OK.	
1.5		MEZ	P2.7	#4	#7	12	3.94	1949	-1857	546	7283	177	12	11.47	0.78	21.5	5.2	0.7	0.33	4.69	3	390	# 4	12	289	1.91	3	22	1.46	N.G.	0.30	OK.	
1.3		ROOF	P2.7	#4	#7	12	3.54	1949	-924	268	250	177	12	17.59	1.19	0.7	5.9	0.0	0.19	2.30	3	390	# 4	12	289	2.79	3	22	1.31	N.G.	0.15	OK.	
1.9		2ND	P4-AD	3/8#	3/4#	18	4.27		-1517	1606	12918	621	8	11.34	0.22	19.4	14.0	0.5	0.15	5.90	3	816	# 3	18	485	2.32	3	22	1.90	N.G.	0.55	OK.	
		MEZ	P4-B	3/8#	3/4#	18	1.51		-911	1219	8165	344	8	11.47	0.40	22.6	7.5	0.5	0.15	8.09	3	452	# 3	18	269	2.24	3	22	0.67	OK.	0.75	OK.	
		ROOF	P4-B	3/8#	3/4#	18	1.87		-305	924	3534	201	8	17.59	1.05	16.9	4.3	0.4	0.10	10.49	3	264	# 3	18	157	2.48	3	22	0.83	OK.	0.97	OK.	
2.1	1.6	MEZ	P4-C	3/8#	3/4#	18	4.64		-370	1553	5388	207	8	11.47	0.66	25.5	4.2	0.6	0.11	17.12	3	272	# 3	18	162	2.44	3	22	2.06	N.G.	1.59	N.G.	
1.9	1.2	ROOF	P4-C	3/8#	3/4#	18	4.2		-833	1758	8461	300	8	17.59	0.70	27.2	6.4	0.6	0.16	13.37	3	394	# 3	18	234	2.22	3	22	1.87	N.G.	1.24	N.G.	
2.9	2.7	MEZ	P4-D	3/8#	3/4#	18	3.77		-265	265	465	45	8	11.47	3.08	10.9	0.8	0.3	0.27	13.51	2	39	# 3	18	35	1.75	3	21	2.87	N.G.	2.72	N.G.	
3.4	1.2	ROOF	P4-D	#4	#4	20	6.01	1949	-193	218	664	58	7	17.59	3.64	10.6	1.6	0.4	0.21	9.81	2	50	# 4	20	57	1.96	3	21	3.41	N.G.	1.16	N.G.	
		1ST	P4-DJ	3/8#	3/4#	12	0.49		-821	3677	32338	1048	12	18.28	0.21	19.1	24.0	0.4	0.05	5.34	3	2065	# 3	12	1228	2.99	3	22	0.22	OK.	0.50	OK.	
	1.2	2ND	P4-DJ	3/8#	3/4#	18	1.96		-1282	5956	33554	1048	8	11.34	0.13	29.9	23.7	0.7	0.10	12.98	3	1377	# 3	18	818	2.5	3	22	0.87	OK.	1.21	N.G.	
	1.4	MEZ	P4-DJ	3/8#	3/4#	18	1.95		-670	4666	26758	711	8	11.47	0.19	35.5	15.8	0.8	0.08	14.98	3	935	# 3	18	555	2.5	3	22	0.87	OK.	1.39	N.G.	
		ROOF	P4-E	#4	#4	20	1.18	1949	-37	30	176	62	7	17.59	3.40	2.4	2.0	0.1	0.10	1.26	2	53	# 4	20	61	3.98	3	21	0.33	OK.	0.07	OK.	

Eartquake Level hazard, BSE-2E

Shear Wall DCR Check (Evaluation):

Shear Wall Pier Summary - ACI 318-14

d = 0.80

a = d-[(d^2-2M/(0.85 f'c tw)]$^{1/2}$ < 0.4 Lw

Shear: 1912 1949

1.5 f_c' = 3 3.75 (ksi)

1.25 f_y = 50 50 (ksi)

H bar = V bar per dwg. notes

DCR = V/[{α_c (f_c')$^{1/2}$+ρ_t f_y} A_{cv}]

k = 0.75 for 1912 ~ A15Gr33

0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Pier Label	Edge Rebar	End Rebar	Spacing	D/C Ratio		P	V	M	Lw	tw	hw	hw / Lw	c = 1.25 a	As (along Lw-c)	As' (along c)	[(As-As')fy+P] / (tw lw f'c)	V / [tw lw (f'c)$^{1/2}$]	α_c	Vc	H rebar	Rebar Spc.	Vs	m_{CP} (Table 10-21)	m_{CP} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	WALL PIER
						in		1949	kip	kip	k-ft	in	in	ft		in	in^2	in^2				kip			kip				10-	FLEXURE		SHEAR	
				A15Gr40 (for all walls in etabs)				Alteration															#3=3/8#										
		ROOF	P4-F	#4	#4	20	2.32	1949	-97	53	467	78	7	17.59	2.71	5.2	2.4	0.2	0.13	1.77	2.2	73	# 4	20	77	3.63	3	21	0.71	OK.	0.11	OK.	
		ROOF	P4-F5	#4	#4	20	1.11	1949	-23	63	247	42	7	17.59	5.03	5.3	1.2	0.2	0.09	3.91	2	36	# 4	20	41	4	3	21	0.31	OK.	0.23	OK.	
1.1		ROOF	P4-G	#4	#4	20	2.41	1949	-70	294	1581	118	7	17.59	1.79	11.9	3.5	0.4	0.09	6.50	2.81	142	# 4	20	116	2.5	3	21	1.07	N.G.	0.51	OK.	
		ROOF	P4-H	#4	#4	20	2.44	1949	-192	59	399	73	7	17.59	2.89	4.7	2.3	0.2	0.19	2.11	2.07	65	# 4	20	72	2.74	3	21	0.99	OK.	0.18	OK.	
1.3	1.4	MEZ	P4-J	3/8#	3/4#	18	2.96		-607	721	2114	112	8	11.47	1.23	19.0	2.2	0.4	0.26	14.71	3	147	# 3	18	87	1.75	3	22	1.32	N.G.	1.37	N.G.	
		ROOF	P4-J	#4	#4	20	2.16	1949	-32	24	69	23	7	17.59	9.38	2.8	0.7	0.1	0.13	2.78	2	19	# 4	20	22	3.63	3	21	0.66	OK.	0.18	OK.	
	1.3	1ST	P4-JP	3/8#	3/4#	12	0.96		-2947	9451	37914	1048	12	18.28	0.21	22.4	23.9	0.5	0.11	13.73	3	2065	# 3	12	1228	2.45	3	22	0.43	OK.	1.28	N.G.	
		2ND	P4-JP	3/8#	3/4#	18	1.17		-769	1991	8362	1048	8	11.34	0.13	7.4	24.3	0.2	0.08	4.34	3	1377	# 3	18	818	3.75	3	22	0.52	OK.	0.40	OK.	
		MEZ	P4-JP	3/8#	3/4#	18	1.44		-1592	4099	18999	1048	8	11.47	0.13	16.8	24.0	0.4	0.11	8.93	3	1377	# 3	18	818	2.45	3	22	0.64	OK.	0.83	OK.	
		2ND	P4-PU	3/8#	3/4#	18	0.99		-490	2639	17742	1347	8	22.81	0.20	12.2	31.1	0.3	0.06	4.47	3	1770	# 3	18	1052	3.65	3	22	0.44	OK.	0.42	OK.	
1.0		MEZ	P4-PU	3/8#	3/4#	18	2.33		-460	2426	24603	1347	8	11.47	0.10	16.9	31.0	0.4	0.06	4.11	3	1770	# 3	18	1052	3.92	3	22	1.04	N.G.	0.38	OK.	
		2ND	P6-AD	3/8#	3/4#	18	0.36		-639	1171	5923	567	8	22.81	0.48	9.7	13.0	0.2	0.09	4.71	3	745	# 3	18	443	3.47	3	22	0.16	OK.	0.44	OK.	
		2ND	P6-DP	3/8#	3/4#	18	0.2		-1133	3521	24124	2027	8	22.81	0.14	11.0	47.0	0.3	0.07	3.96	3	2665	# 3	18	1584	4	3	22	0.09	OK.	0.37	OK.	
1.1		2ND	P6-PU	3/8#	3/4#	18	2.4		-266	605	26243	1312	8	22.81	0.21	18.5	30.2	0.4	0.06	1.05	3	1725	# 3	18	1025	4	3	22	1.07	N.G.	0.10	OK.	
		2ND	P8-AD	3/8#	3/4#	18	0.18		-571	1185	7411	567	8	22.81	0.48	12.1	12.9	0.3	0.09	4.77	3	745	# 3	18	443	3.42	3	22	0.08	OK.	0.44	OK.	
		2ND	P8-DP	3/8#	3/4#	18	0.08		-928	3290	22914	2027	8	22.81	0.14	10.4	47.1	0.2	0.07	3.70	3	2665	# 3	18	1584	4	3	22	0.04	OK.	0.34	OK.	
1.0		2ND	P8-PU	3/8#	3/4#	18	2.32		-334	428	20773	1312	8	22.81	0.21	14.6	30.3	0.3	0.06	0.74	3	1725	# 3	18	1025	4	3	22	1.03	N.G.	0.07	OK.	
2.5		2ND	PA-1	3/8#	3/4#	14	3.38		-651	230	761	78	10	11.34	1.75	7.6	1.6	0.2	0.31	5.40	2.83	121	# 3	14	78	1.82	3	21	2.47	N.G.	0.85	OK.	
2.2	1.8	MEZ	PA-1	3/8#	3/4#	14	3.06		-456	495	1313	78	10	11.47	1.77	13.6	1.5	0.3	0.22	11.62	2.82	120	# 3	14	78	1.9	3	21	2.15	N.G.	1.76	N.G.	
		ROOF	PA-1	3/8#	3/4#	12	2.04		-239	235	793	90	12	17.59	2.35	5.6	2.0	0.1	0.10	3.98	2.43	143	# 3	12	105	3.97	3	21	0.69	OK.	0.32	OK.	
		ROOF	PA-10	3/8#	3/4#	12	0.6		-41	97	280	78	12	17.59	2.71	2.2	1.8	0.1	0.05	1.89	2.2	113	# 3	12	91	4	3	21	0.20	OK.	0.16	OK.	
		ROOF	PA-10.5	3/8#	3/4#	12	0.48		-19	29	106	48	12	17.59	4.40	1.4	1.1	0.0	0.04	0.92	2	63	# 3	12	56	4	3	21	0.16	OK.	0.08	OK.	
		ROOF	PA-11	3/8#	3/4#	12	0.61		-27	91	362	78	12	17.59	2.71	2.9	1.8	0.1	0.04	1.78	2.2	113	# 3	12	91	4	3	21	0.20	OK.	0.15	OK.	
		ROOF	PA-11.5	3/8#	3/4#	12	0.82		-71	65	111	48	12	17.59	4.40	1.4	1.1	0.0	0.07	2.06	2	63	# 3	12	56	4	3	21	0.27	OK.	0.18	OK.	
7.4	3.1	2ND	PA-12	3/8#	3/4#	18	9.76		-2055	601	5007	88	8	22.81	3.11	44.0	1.0	1.0	0.97	15.59	2	77	# 3	18	69	1.75	3	21	7.44	N.G.	3.14	N.G.	
3.0	2.5	MEZ	PA-12	3/8#	3/4#	18	3.93		-871	594	2882	88	8	11.47	1.56	38.5	1.2	0.9	0.42	15.40	2.96	114	# 3	18	69	1.75	3	21	2.99	N.G.	2.48	N.G.	
8.3	2.3	ROOF	PA-12	3/8#	3/4#	12	10.94		-1458	816	2926	97	12	17.59	2.18	20.7	1.8	0.5	0.44	12.80	2.55	163	# 3	12	114	1.75	3	21	8.34	N.G.	2.25	N.G.	
		2ND	PA-2	3/8#	3/4#	14	0.97		-313	43	864	72	10	11.34	1.89	9.4	1.5	0.2	0.17	1.09	2.74	108	# 3	14	72	3.02	3	21	0.43	OK.	0.11	OK.	
7.7	2.1	MEZ	PA-2	3/8#	3/4#	14	10.17		-680	499	2989	72	10	11.47	1.91	36.0	0.8	0.8	0.31	12.65	2.73	107	# 3	14	72	1.75	3	21	7.75	N.G.	2.11	N.G.	
		ROOF	PA-2	3/8#	3/4#	12	1.32		-147	70	513	84	12	17.59	2.51	3.8	1.9	0.1	0.08	1.27	2.32	128	# 3	12	98	4	3	21	0.44	OK.	0.10	OK.	
		2ND	PA-3	3/8#	3/4#	14	1.44		-319	102	1033	72	10	11.34	1.89	11.5	1.4	0.3	0.17	2.59	2.74	108	# 3	14	72	3.01	3	21	0.64	OK.	0.25	OK.	
7.9	2.1	MEZ	PA-3	3/8#	3/4#	14	10.43		-763	502	3154	72	10	11.47	1.91	36.0	0.8	0.8	0.35	12.73	2.73	107	# 3	14	72	1.75	3	21	7.95	N.G.	2.13	N.G.	
		ROOF	PA-3	3/8#	3/4#	12	1.72		-168	94	694	84	12	17.59	2.51	5.2	1.8	0.1	0.08	1.70	2.32	128	# 3	12	98	4	3	21	0.57	OK.	0.14	OK.	
3.3	2.2	2ND	PA-4	3/8#	3/4#	14	4.33		-688	586	1732	78	10	11.34	1.75	18.6	1.4	0.4	0.32	13.76	2.83	121	# 3	14	78	1.75	3	21	3.30	N.G.	2.25	N.G.	
2.1	1.2	MEZ	PA-4	3/8#	3/4#	14	3.44		-326	398	1329	78	10	11.47	1.77	13.8	1.5	0.3	0.16	9.35	2.82	120	# 3	14	78	2.18	3	21	2.11	N.G.	1.23	N.G.	
2.0		ROOF	PA-4	3/8#	3/4#	12	3.44		-524	583	2253	138	12	17.59	1.53	10.4	3.0	0.2	0.13	6.44	2.98	270	# 3	12	161	2.33	3	21	1.97	N.G.	0.77	OK.	
		ROOF	PA-4.5	3/8#	3/4#	12	0.91		-54	165	302	48	12	17.59	4.40	4.0	1.0	0.1	0.06	5.23	2	63	# 3	12	56	3.08	3	21	0.39	OK.	0.60	OK.	
		ROOF	PA-5	3/8#	3/4#	12	0.63		-42	94	391	78	12	17.59	2.71	3.1	1.7	0.1	0.04	1.83	2.2	113	# 3	12	91	4	3	21	0.21	OK.	0.15	OK.	

Eartquake Level hazard, BSE-2E

Shear Wall DCR Check (Evaluation):

Shear Wall Pier Summary - ACI 318-14

d = 0.80

a = d-[(d^2-2M/(0.85 f'c tw)]$^{1/2}$ < 0.4 Lw

Shear: 1912 1949

1.5 f_c' = 3 3.75 (ksi)

1.25 f_y = 50 50 (ksi)

H bar = V bar per dwg. notes

DCR = V/[{α_c (f_c')$^{1/2}$+ρ_t f_y} A_{cv}]

k = 0.75 for 1912 ~ A15Gr33

0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Pier Label	Edge Rebar	End Rebar	Spacing	D/C Ratio		P	V	M	Lw	tw	hw	hw / Lw	c = 1.25 a	As (along Lw-c)	As' (along c)	[(As-As')fy+P] / (tw lw f'c)	V / [tw lw (f'c)$^{1/2}$]	α_c	Vc	H rebar	Rebar Spc.	Vs	m_{CP} (Table 10-21)	m_{CP} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	WALL PIER
						in		1949	kip	kip	k-ft	in	in	ft		in	in^2	in^2						kip					10-	FLEXURE		SHEAR	
				A15Gr40 (for all walls in etabs)				Alteration															#3=3/8#									
		ROOF	PA-5.5	3/8#	3/4#	12	0.62		-15	103	163	48	12	17.59	4.40	2.1	1.1	0.0	0.04	3.26	2	63	# 3	12	56	4	3	21	0.21	OK.	0.29	OK.	
		ROOF	PA-6	3/8#	3/4#	12	0.47		-48	137	140	78	12	17.59	2.71	1.1	1.8	0.0	0.05	2.67	2.2	113	# 3	12	91	4	3	21	0.16	OK.	0.22	OK.	
		ROOF	PA-6.5	3/8#	3/4#	12	0.47		-15	69	125	48	12	17.59	4.40	1.6	1.1	0.0	0.04	2.19	2	63	# 3	12	56	4	3	21	0.16	OK.	0.19	OK.	
		ROOF	PA-7	3/8#	3/4#	12	0.24		-20	115	132	78	12	17.59	2.71	1.0	1.8	0.0	0.04	2.24	2.2	113	# 3	12	91	4	3	21	0.08	OK.	0.19	OK.	
		ROOF	PA-7.5	3/8#	3/4#	12	0.5		-17	54	100	48	12	17.59	4.40	1.3	1.1	0.0	0.04	1.71	2	63	# 3	12	56	4	3	21	0.17	OK.	0.15	OK.	
		ROOF	PA-8	3/8#	3/4#	12	0.59		-47	115	207	78	12	17.59	2.71	1.6	1.8	0.0	0.05	2.24	2.2	113	# 3	12	91	4	3	21	0.20	OK.	0.19	OK.	
		ROOF	PA-8.5	3/8#	3/4#	12	0.52		-17	42	85	48	12	17.59	4.40	1.1	1.1	0.0	0.04	1.33	2	63	# 3	12	56	4	3	21	0.17	OK.	0.12	OK.	
		ROOF	PA-9	3/8#	3/4#	12	0.37		-24	113	245	78	12	17.59	2.71	1.9	1.8	0.0	0.04	2.20	2.2	113	# 3	12	91	4	3	21	0.12	OK.	0.18	OK.	
		ROOF	PA-9.5	3/8#	3/4#	12	0.46		-16	37	77	48	12	17.59	4.40	1.0	1.1	0.0	0.04	1.17	2	63	# 3	12	56	4	3	21	0.15	OK.	0.10	OK.	
		ROOF	PD-10	3/8#	3/4#	12	0.93		-36	137	544	78	12	17.59	2.71	4.4	1.7	0.1	0.04	2.67	2.2	113	# 3	12	91	4	3	21	0.31	OK.	0.22	OK.	
		ROOF	PD-10.5	3/8#	3/4#	12	0.56		-32	56	37	48	12	17.59	4.40	0.5	1.1	0.0	0.05	1.78	2	63	# 3	12	56	4	3	21	0.19	OK.	0.16	OK.	
		ROOF	PD-11	3/8#	3/4#	12	0.84		-41	56	445	78	12	17.59	2.71	3.6	1.7	0.1	0.04	1.09	2.2	113	# 3	12	91	4	3	21	0.28	OK.	0.09	OK.	
		ROOF	PD-11.5	3/8#	3/4#	12	0.6		-27	35	81	48	12	17.59	4.40	1.0	1.1	0.0	0.05	1.11	2	63	# 3	12	56	4	3	21	0.20	OK.	0.10	OK.	
		ROOF	PD-12	3/8#	3/4#	12	1.98		-300	159	686	97	12	17.59	2.18	4.4	2.2	0.1	0.12	2.49	2.55	163	# 3	12	114	3.8	3	21	0.70	OK.	0.20	OK.	
		1ST	PD-1-4	3/8#	3/4#	12	1.05		-1143	3098	20673	576	12	18.28	0.38	22.4	12.9	0.5	0.09	8.19	3	1135	# 3	12	674	2.5	3	22	0.47	OK.	0.76	OK.	
	2.0	MEZ	PD-1-4	3/8#	3/4#	18	2.2		-1396	5322	21944	576	8	11.47	0.24	36.2	12.6	0.8	0.14	21.10	3	757	# 3	18	450	2.28	3	22	0.98	OK.	1.96	N.G.	
2.9	3.9	2ND	PD-2-4	3/8#	3/4#	18	6.43		-1047	5756	29625	312	8	11.34	0.44	105.0	4.8	2.5	0.16	42.14	3	410	# 3	18	244	2.22	3	22	2.86	N.G.	3.92	N.G.	
2.8	1.6	ROOF	PD-2-4	3/8#	3/4#	14	6.22		-672	2909	24143	312	10	17.59	0.68	63.4	5.8	1.5	0.09	17.04	3	512	# 3	14	313	2.5	3	22	2.76	N.G.	1.57	N.G.	
		ROOF	PD-4	3/8#	3/4#	12	0.48		-64	155	293	48	12	17.59	4.40	3.9	1.0	0.1	0.06	4.91	2	63	# 3	12	56	3.32	3	21	0.19	OK.	0.52	OK.	
	1.0	ROOF	PD-4.5	3/8#	3/4#	12	0.69		-68	231	353	48	12	17.59	4.40	4.7	1.0	0.1	0.07	7.32	2	63	# 3	12	56	2.5	3	21	0.37	OK.	1.03	N.G.	
		ROOF	PD-5	3/8#	3/4#	12	0.38		-37	208	249	78	12	17.59	2.71	2.0	1.8	0.0	0.04	4.06	2.2	113	# 3	12	91	3.96	3	21	0.13	OK.	0.34	OK.	
		ROOF	PD-5.5	3/8#	3/4#	12	0.48		-15	176	130	48	12	17.59	4.40	1.7	1.1	0.0	0.04	5.58	2	63	# 3	12	56	2.82	3	21	0.23	OK.	0.70	OK.	
		ROOF	PD-6	3/8#	3/4#	12	0.59		-52	217	288	78	12	17.59	2.71	2.3	1.8	0.1	0.05	4.23	2.2	113	# 3	12	91	3.83	3	21	0.21	OK.	0.37	OK.	
		ROOF	PD-6.5	3/8#	3/4#	12	0.5		-16	87	85	48	12	17.59	4.40	1.1	1.1	0.0	0.04	2.76	2	63	# 3	12	56	4	3	21	0.17	OK.	0.24	OK.	
		ROOF	PD-7	3/8#	3/4#	12	0.65		-24	168	395	78	12	17.59	2.71	3.2	1.7	0.1	0.04	3.28	2.2	113	# 3	12	91	4	3	21	0.22	OK.	0.27	OK.	
		ROOF	PD-7.5	3/8#	3/4#	12	0.53		-17	66	68	48	12	17.59	4.40	0.9	1.1	0.0	0.04	2.09	2	63	# 3	12	56	4	3	21	0.18	OK.	0.18	OK.	
		ROOF	PD-8	3/8#	3/4#	12	0.76		-41	164	480	78	12	17.59	2.71	3.9	1.7	0.1	0.04	3.20	2.2	113	# 3	12	91	4	3	21	0.25	OK.	0.27	OK.	
		ROOF	PD-8.5	3/8#	3/4#	12	0.54		-17	49	60	48	12	17.59	4.40	0.8	1.1	0.0	0.04	1.55	2	63	# 3	12	56	4	3	21	0.18	OK.	0.14	OK.	
		ROOF	PD-9	3/8#	3/4#	12	0.83		-26	155	512	78	12	17.59	2.71	4.1	1.7	0.1	0.04	3.02	2.2	113	# 3	12	91	4	3	21	0.28	OK.	0.25	OK.	
		ROOF	PD-9.5	3/8#	3/4#	12	0.51		-16	39	55	48	12	17.59	4.40	0.7	1.1	0.0	0.04	1.24	2	63	# 3	12	56	4	3	21	0.17	OK.	0.11	OK.	
		1ST	PE	3/8#	3/4#	12	1.17		-466	1689	16207	576	12	18.28	0.38	17.5	13.0	0.4	0.05	4.47	3	1135	# 3	12	674	3.65	3	22	0.52	OK.	0.41	OK.	
		1ST	PG.2	#4	#7	12	0.75	1949	-474	502	2347	105	12	18.28	2.09	11.6	3.1	0.4	0.16	7.27	2.61	201	# 4	12	172	2.19	3	21	0.38	OK.	0.68	OK.	
		2ND	PG.2	#4	#7	12	2.23	1949	-484	177	3221	105	12	11.34	1.30	16.3	3.0	0.5	0.16	2.56	3	231	# 4	12	172	3.2	3	22	0.83	OK.	0.16	OK.	
1.0		MEZ	PG.2	#4	#7	12	2.77	1949	-650	112	2352	105	12	11.47	1.31	11.6	3.1	0.4	0.21	1.62	3	231	# 4	12	172	2.56	3	22	1.03	N.G.	0.10	OK.	
1.5		ROOF	PG.2	#4	#7	12	3.35	1949	-142	458	3206	105	12	17.59	2.01	16.2	3.0	0.5	0.07	6.64	2.66	205	# 4	12	172	2.5	3	21	1.49	N.G.	0.54	OK.	
		1ST	PG.8	#4	#7	12	0.7	1949	-742	454	3087	105	12	18.28	2.09	15.6	3.0	0.5	0.23	6.58	2.61	201	# 4	12	172	1.86	3	21	0.42	OK.	0.73	OK.	
		2ND	PG.8	#4	#7	12	2.69	1949	-524	286	1414	105	12	11.34	1.30	6.8	3.3	0.2	0.18	4.14	3	231	# 4	12	172	2.89	3	22	1.00	OK.	0.26	OK.	
		MEZ	PG.8	#4	#7	12	2.39	1949	-524	139	1105	105	12	11.47	1.31	5.3	3.3	0.2	0.18	2.01	3	231	# 4	12	172	2.93	3	22	0.89	OK.	0.13	OK.	

Eartquake Level hazard, BSE-2E

Shear Wall DCR Check (Evaluation):

Shear Wall Pier Summary - ACI 318-14

d = 0.80

a = d-[(d^2-2M/(0.85 f'c tw)]$^{1/2}$ < 0.4 Lw

Shear: 1912 1949

1.5 f_c' = 3 3.75 (ksi)

1.25 f_y = 50 50 (ksi)

H bar = V bar per dwg. notes

DCR = V/[{α_c (f_c')$^{1/2}$+ρ_t f_y} A_{cv}]

k = 0.75 for 1912 ~ A15Gr33

0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Pier Label	Edge Rebar	End Rebar	Spacing	D/C Ratio		P	V	M	Lw	tw	hw	hw / Lw	c = 1.25 a	As (along Lw-c)	As' (along c)	[(As-As')fy+P] / (tw lw f'c)	V / [tw lw (f'c)$^{1/2}$]	α_c	Vc	H rebar	Rebar Spc.	Vs	m_{CP} (Table 10-21)	m_{CP} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	WALL PIER
						in		1949	kip	kip	k-ft	in	in	ft		in	in^2	in^2				kip			kip			10-		FLEXURE		SHEAR	
				A15Gr40 (for all walls in etabs)				Alteration															#3=3/8#										
		ROOF	PG.8	#4	#7	12	1.84	1949	-353	156	774	105	12	17.59	2.01	3.7	3.4	0.1	0.14	2.26	2.66	205	# 4	12	172	3.51	3	21	0.58	OK.	0.13	OK.	
		1ST	PJ-1	3/8#	3/4#	12	2.05		-871	2608	22851	576	12	18.28	0.38	24.9	12.8	0.6	0.07	6.89	3	1135	# 3	12	674	2.5	3	22	0.91	OK.	0.64	OK.	
		2ND	PJ-1	3/8#	3/4#	12	1.84		-330	1173	3933	191	12	11.34	0.71	13.1	4.2	0.3	0.08	9.34	3	377	# 3	12	224	2.5	3	22	0.82	OK.	0.87	OK.	
		ROOF	PJ-1	#4	#4	20	2.17	1949	-86	173	587	80	7	17.59	2.64	6.4	2.5	0.2	0.12	5.64	2.24	77	# 4	20	79	2.65	3	21	0.91	OK.	0.47	OK.	
		2ND	PJ-3	3/8#	3/4#	12	1.5		-623	1541	10775	312	12	11.34	0.44	22.0	6.8	0.5	0.08	7.52	3	615	# 3	12	365	2.5	3	22	0.67	OK.	0.70	OK.	
		1ST	PP	3/8#	3/4#	18	0.72		-2839	7997	364253	3283	8	18.28	0.07	103.6	74.2	2.4	0.08	5.56	3	4315	# 3	18	2564	2.83	3	22	0.32	OK.	0.52	OK.	
1.8		2ND	PP-1	3/8#	3/4#	18	4.16		-659	207	1030	143	8	11.34	0.95	6.8	3.2	0.2	0.24	3.30	3	188	# 3	18	112	2.19	3	22	1.85	N.G.	0.31	OK.	
6.4	4.2	MEZ	PP-1	3/8#	3/4#	18	14.42		-1084	2843	11231	143	8	11.47	0.96	71.6	1.7	1.7	0.32	45.29	3	188	# 3	18	112	1.75	3	22	6.41	N.G.	4.21	N.G.	
4.1	1.3	2ND	PP-10	3/8#	3/4#	18	5.35		-385	120	580	42	8	22.81	6.52	15.6	0.6	0.4	0.39	6.52	2	37	# 3	18	33	1.75	3	21	4.08	N.G.	1.31	N.G.	
4.1	1.3	2ND	PP-11	3/8#	3/4#	18	5.34		-384	117	577	42	8	22.81	6.52	15.5	0.6	0.4	0.39	6.36	2	37	# 3	18	33	1.75	3	21	4.07	N.G.	1.28	N.G.	
8.6	2.2	2ND	PP-12	3/8#	3/4#	18	11.26		-1208	474	3178	96	8	22.81	2.85	37.9	1.4	0.9	0.53	11.27	2.1	88	# 3	18	75	1.75	3	21	8.58	N.G.	2.21	N.G.	
		1ST	PS-1	3/8#	3/4#	18	0.18		-119	99	303	132	8	18.28	1.66	2.1	3.0	0.0	0.08	1.71	2.89	167	# 3	18	103	4	3	21	0.06	OK.	0.12	OK.	
		1ST	PS-11	3/8#	3/4#	18	1.28		-510	686	2901	388	8	18.28	0.57	6.9	8.9	0.2	0.10	4.03	3	510	# 3	18	303	3.95	3	22	0.57	OK.	0.37	OK.	
		1ST	PS-2	3/8#	3/4#	18	0.25		-97	115	326	132	8	18.28	1.66	2.3	3.0	0.1	0.08	1.99	2.89	167	# 3	18	103	4	3	21	0.08	OK.	0.14	OK.	
		1ST	PS-3	3/8#	3/4#	18	0.54		-75	163	687	137	8	18.28	1.60	4.7	3.1	0.1	0.07	2.71	2.94	177	# 3	18	107	4	3	21	0.18	OK.	0.19	OK.	
		1ST	PS-4	3/8#	3/4#	18	0.74		-340	871	3499	328	8	18.28	0.67	9.9	7.4	0.2	0.09	6.05	3	432	# 3	18	257	2.5	3	22	0.33	OK.	0.56	OK.	
		1ST	PS-5	3/8#	3/4#	18	0.38		-969	3795	13596	1266	8	18.28	0.17	9.9	29.3	0.2	0.08	6.84	3	1664	# 3	18	989	2.5	3	22	0.17	OK.	0.64	OK.	
		1ST	PU-1	3/8#	3/4#	12	0.76		-414	364	1424	193	12	18.28	1.14	4.6	4.4	0.1	0.09	2.87	3	381	# 3	12	226	4	3	22	0.34	OK.	0.27	OK.	
		2ND	PU-1	3/8#	3/4#	18	2.24		-474	257	2540	222	8	22.81	1.23	10.8	4.9	0.3	0.13	2.64	3	292	# 3	18	174	3.56	3	22	1.00	OK.	0.25	OK.	
3.3	1.6	1ST	PU-10	3/8#	3/4#	12	4.31		-300	154	362	30	12	18.28	7.31	8.6	0.5	0.2	0.29	7.81	2	39	# 3	12	35	1.75	3	21	3.28	N.G.	1.57	N.G.	
		1ST	PU-11	3/8#	3/4#	12	0.68		-440	1824	7586	388	12	18.28	0.57	12.2	8.8	0.3	0.06	7.15	3	765	# 3	12	455	2.5	3	22	0.30	OK.	0.66	OK.	
		2ND	PU-11	3/8#	3/4#	18	0.52		-282	889	5410	718	8	22.81	0.38	7.0	16.6	0.2	0.06	2.83	3	944	# 3	18	561	4	3	22	0.23	OK.	0.26	OK.	
		1ST	PU-2	3/8#	3/4#	12	1.24		-143	327	1213	113	12	18.28	1.94	6.8	2.5	0.2	0.06	4.40	2.71	201	# 3	12	132	3.7	3	21	0.45	OK.	0.35	OK.	
		2ND	PU-2	3/8#	3/4#	18	0.48		-63	211	633	126	8	22.81	2.17	4.7	2.8	0.1	0.07	3.83	2.55	141	# 3	18	98	4	3	21	0.16	OK.	0.29	OK.	
		2ND	PU-3	3/8#	3/4#	18	0.48		-20	60	163	29	8	22.81	9.45	5.7	0.5	0.1	0.06	4.73	2	25	# 3	18	23	3.46	3	21	0.19	OK.	0.48	OK.	
2.1	1.0	1ST	PU-4	3/8#	3/4#	12	3.94		-183	547	3209	102	12	18.28	2.15	21.6	1.9	0.5	0.07	8.17	2.56	172	# 3	12	119	2.5	3	21	2.10	N.G.	1.00	N.G.	
		2ND	PU-4	3/8#	3/4#	18	1.16		-50	138	398	62	8	22.81	4.41	6.2	1.3	0.1	0.07	5.07	2	54	# 3	18	48	3.2	3	21	0.48	OK.	0.56	OK.	
		2ND	PU-4.3	3/8#	3/4#	18	0.96		-48	77	205	54	8	22.81	5.09	3.6	1.2	0.1	0.08	3.27	2	47	# 3	18	42	4	3	21	0.32	OK.	0.29	OK.	
5.4	2.3	1ST	PU-4.5	3/8#	3/4#	12	7.03		-659	476	1778	64	12	18.28	3.41	20.1	1.0	0.5	0.30	11.27	2	84	# 3	12	75	1.75	3	21	5.36	N.G.	2.27	N.G.	
		2ND	PU-4.5	3/8#	3/4#	18	0.52		-28	40	83	39	8	22.81	7.02	2.0	0.9	0.0	0.07	2.34	2	34	# 3	18	30	4	3	21	0.17	OK.	0.21	OK.	
		2ND	PU-4.7	3/8#	3/4#	18	0.93		-128	123	257	54	8	22.81	5.07	4.6	1.2	0.1	0.14	5.20	2	47	# 3	18	42	2.77	3	21	0.45	OK.	0.66	OK.	
		2ND	PU-7	3/8#	3/4#	18	1.77		-366	2183	17641	1370	8	22.81	0.20	11.9	31.7	0.3	0.06	3.64	3	1800	# 3	18	1070	4	3	22	0.79	OK.	0.34	OK.	
4.7	1.8	1ST	PU-9	3/8#	3/4#	12	7.82		-345	450	2282	60	12	18.28	3.66	30.0	0.7	0.7	0.16	11.41	2	79	# 3	12	70	2.2	3	21	4.74	N.G.	1.83	N.G.	
		2ND	PU-9.4	3/8#	3/4#	18	1.6		-91	330	1011	141	8	22.81	1.94	6.8	3.1	0.2	0.07	5.34	2.71	167	# 3	18	110	2.99	3	21	0.71	OK.	0.53	OK.	
3.2	1.1	1ST	PU-9.8	3/8#	3/4#	12	4.35		-444	130	459	36	12	18.28	6.09	8.9	0.6	0.2	0.36	5.49	2	47	# 3	12	42	1.81	3	21	3.20	N.G.	1.07	N.G.	
		2ND	PU-9.8	3/8#	3/4#	18	1.3		-125	59	156	54	8	22.81	5.07	2.7	1.2	0.1	0.14	2.49	2	47	# 3	18	42	3.46	3	21	0.50	OK.	0.25	OK.	
																													X-DIR DCR Max=		8.58		4.21	
																													Y-DIR DCR Max=		3.41		2.72	

Eartquake Level hazard, BSE-2E Shear 1912 1949 (trim + web bars) d=0.9 Lw DCR/mk = [V/(Vc+Vs)] / mk

Spandrel Reinf. Check/ DCR (Evaluation): f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2 1949: Deformed bar k = 0.75 for 1912 ~ A15Gr33

Shear Wall Spandrel Summary - ACI 318-14 f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2 1912: Square bar k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	DCR $_{(max T/B)}$	V /(tw lw $(fc')^{1/2}$)	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
M	V				kip-ft	kip-ft	kip	Alteration	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
1.3		ROOF	SA-1	Left	-697	681	233		12	67	72	1.1	1.12	1.54	1.83	383	1.82	5.28	3	126	# 3	12	79	3.1	1.86	22	1.31	N.G.	0.82	OK.	
2.0	1.2	ROOF	SA-1	Right	-846	837	286		12	67	72	1.1	1.12	1.54	1.83	383	2.21	6.49	3	126	# 3	12	79	2.5	1.5	22	1.97	N.G.	1.24	N.G.	
		ROOF	SA-2	Left	-457	494	195		12	67	84	1.3	1.12	1.54	1.83	383	1.29	4.42	3	126	# 3	12	79	3.81	2.29	22	0.75	OK.	0.55	OK.	
		ROOF	SA-2	Right	-530	461	214		12	67	84	1.3	1.12	1.54	1.83	383	1.39	4.85	3	126	# 3	12	79	3.46	2.07	22	0.89	OK.	0.67	OK.	
4.9	3.2	ROOF	SA-3	Left	-2051	2114	741		12	67	72	1.1	1.12	1.54	1.83	383	5.52	16.81	3	126	# 3	12	79	2.5	1.5	22	4.91	N.G.	3.21	N.G.	
4.1	2.3	ROOF	SA-3	Right	-1762	1638	521		12	67	72	1.1	1.12	1.54	1.83	383	4.60	11.82	3	126	# 3	12	79	2.5	1.5	22	4.09	N.G.	2.26	N.G.	
3.7	3.0	ROOF	SA-4.3	Left	-1875	2254	918		12	88	102	1.2	1.12	1.68	1.83	548	4.11	15.86	3	168	# 3	12	103	2.5	1.5	22	3.66	N.G.	3.01	N.G.	
6.1	2.5	ROOF	SA-4.3	Right	-3759	3230	772		12	88	102	1.2	1.12	1.68	1.83	548	6.86	13.34	3	168	# 3	12	103	2.5	1.5	22	6.10	N.G.	2.53	N.G.	
		ROOF	S1-A	Left	-559	543	153		12	67	72	1.1	1.12	1.54	1.83	383	1.46	3.47	3	126	# 3	12	79	4.61	2.76	22	0.70	OK.	0.36	OK.	
		ROOF	S1-A	Right	-510	512	126		12	67	72	1.1	1.12	1.54	1.83	383	1.34	2.86	3	126	# 3	12	79	5	3	22	0.59	OK.	0.27	OK.	
		ROOF	S1-B	Left	-646	428	197		12	67	72	1.1	1.12	1.54	1.83	383	1.69	4.47	3	126	# 3	12	79	3.78	2.27	22	0.99	OK.	0.57	OK.	
		ROOF	S1-B	Right	-412	601	167		12	67	72	1.1	1.12	1.54	1.83	383	1.57	3.79	3	126	# 3	12	79	4.34	2.61	22	0.80	OK.	0.42	OK.	
2.6	1.6	ROOF	S1-C	Left	-1122	716	360		12	67	72	1.1	1.12	1.54	1.83	383	2.93	8.17	3	126	# 3	12	79	2.5	1.5	22	2.61	N.G.	1.56	N.G.	
2.7	1.6	ROOF	S1-C	Right	-786	1166	359		12	67	72	1.1	1.12	1.54	1.83	383	3.05	8.14	3	126	# 3	12	79	2.5	1.5	22	2.71	N.G.	1.56	N.G.	
1.2	1.1	ROOF	SJ-1	Left	-1165	1021	287	1949	8	76	111	1.5	1.2	2.47	2.35	697	1.67	7.66	3	108	# 4	18	83	2.5	1.5	22	1.24	N.G.	1.11	N.G.	
		ROOF	SJ-1	Right	-513	561	249	1949	8	76	111	1.5	1.2	2.47	2.35	697	0.81	6.65	3	108	# 4	18	83	2.5	1.5	22	0.60	OK.	0.96	OK.	
		ROOF	SJ-2	Left	-664	568	225	1949	7	76	194	2.5	0.6	1.36	1.34	387	1.72	6.87	2	63	# 4	20	75	2.5	1.5	21	0.76	OK.	0.72	OK.	
1.5		ROOF	SJ-2	Right	-1202	1298	230	1949	7	76	194	2.5	0.6	1.36	1.34	387	3.35	7.02	2	63	# 4	20	75	2.5	1.5	21	1.49	N.G.	0.74	OK.	
		ROOF	SJ-3	Left	-64	19	41	1949	7	76	191	2.5	0.6	1.36	1.34	387	0.16	1.25	2	63	# 4	20	75	5	3	21	0.04	OK.	0.07	OK.	
		ROOF	SJ-3	Right	-232	193	44	1949	7	76	191	2.5	0.6	1.36	1.34	387	0.60	1.34	2	63	# 4	20	75	5	3	21	0.13	OK.	0.07	OK.	
1.7	1.3	ROOF	S12-A	Left	-835	944	260		8	88	102	1.2	1.12	1.49	2.75	484	1.95	6.74	3	112	# 3	18	69	2.5	1.5	22	1.73	N.G.	1.28	N.G.	
1.5	1.3	ROOF	S12-A	Right	-819	720	269		8	88	102	1.2	1.12	1.49	2.75	484	1.69	6.97	3	112	# 3	18	69	2.5	1.5	22	1.50	N.G.	1.32	N.G.	
	2.5	ROOF	S12-B	Left	-517	495	504		8	88	51	0.6	1.12	1.49	2.75	484	1.07	13.06	3	112	# 3	18	69	2.5	1.5	22	0.95	OK.	2.48	N.G.	
1.8	2.4	ROOF	S12-B	Right	-972	950	494		8	88	51	0.6	1.12	1.49	2.75	484	2.01	12.80	3	112	# 3	18	69	2.5	1.5	22	1.78	N.G.	2.43	N.G.	
3.5	3.0	ROOF	S12-C	Left	-1893	1872	616		8	88	102	1.2	1.12	1.49	2.75	484	3.91	15.96	3	112	# 3	18	69	2.5	1.5	22	3.47	N.G.	3.03	N.G.	
4.1	3.0	ROOF	S12-C	Right	-2202	2223	615		8	88	102	1.2	1.12	1.49	2.75	484	4.59	15.93	3	112	# 3	18	69	2.5	1.5	22	4.08	N.G.	3.03	N.G.	
1.3	1.8	ROOF	S4-A	Left	-1128	1063	525		8	124	60	0.5	1.12	1.64	2.75	756	1.49	9.66	3	159	# 3	18	97	2.5	1.5	22	1.33	N.G.	1.82	N.G.	
1.7	1.8	ROOF	S4-A	Right	-1314	1482	519		8	124	60	0.5	1.12	1.64	2.75	756	1.96	9.55	3	159	# 3	18	97	2.5	1.5	22	1.74	N.G.	1.80	N.G.	
2.4	2.6	ROOF	S4-B	Left	-2039	1700	755		8	124	60	0.5	1.12	1.64	2.75	756	2.70	13.89	3	159	# 3	18	97	2.5	1.5	22	2.40	N.G.	2.62	N.G.	
2.4	2.7	ROOF	S4-B	Right	-1769	2066	772		8	124	60	0.5	1.12	1.64	2.75	756	2.73	14.20	3	159	# 3	18	97	2.5	1.5	22	2.43	N.G.	2.68	N.G.	
1.2		ROOF	S4-D	Left	-695	690	213	1949	7	57	123	2.2	0.6	1.17	1.34	248	2.81	8.70	2	46	# 4	20	56	2.5	1.5	21	1.25	N.G.	0.92	OK.	
1.3		ROOF	S4-D	Right	-711	696	214	1949	7	57	123	2.2	0.6	1.17	1.34	248	2.87	8.74	2	46	# 4	20	56	2.5	1.5	21	1.28	N.G.	0.93	OK.	
1.1		ROOF	S4-E	Left	-528	631	195	1949	7	57	123	2.2	0.6	1.17	1.34	248	2.55	7.96	2	46	# 4	20	56	2.5	1.5	21	1.13	N.G.	0.85	OK.	
1.2		ROOF	S4-E	Right	-682	557	201	1949	7	57	123	2.2	0.6	1.17	1.34	248	2.76	8.21	2	46	# 4	20	56	2.5	1.5	21	1.22	N.G.	0.87	OK.	
2.4	1.6	ROOF	S4-F2	Left	-598	788	270	1949	7	57	60	1.1	0.6	1.17	1.34	248	3.18	11.03	3	70	# 4	20	56	2.5	1.5	22	2.36	N.G.	1.59	N.G.	
1.7	1.6	ROOF	S4-F2	Right	-569	426	272	1949	7	57	60	1.1	0.6	1.17	1.34	248	2.30	11.11	3	70	# 4	20	56	2.5	1.5	22	1.70	N.G.	1.60	N.G.	
1.9	1.8	ROOF	S4-F7	Left	-480	621	308	1949	7	57	60	1.1	0.6	1.17	1.34	248	2.51	12.58	3	70	# 4	20	56	2.5	1.5	22	1.86	N.G.	1.82	N.G.	
2.8	1.4	ROOF	S4-F7	Right	-925	703	236	1949	7	57	60	1.1	0.6	1.17	1.34	248	3.74	9.64	3	70	# 4	20	56	2.5	1.5	22	2.77	N.G.	1.39	N.G.	
2.7	2.1	ROOF	S4-G	Left	-655	900	361	1949	7	57	60	1.1	0.6	1.17	1.34	248	3.64	14.74	3	70	# 4	20	56	2.5	1.5	22	2.69	N.G.	2.13	N.G.	
2.7	1.5	ROOF	S4-G	Right	-911	646	259	1949	7	57	60	1.1	0.6	1.17	1.34	248	3.68	10.58	3	70	# 4	20	56	2.5	1.5	22	2.72	N.G.	1.53	N.G.	

Eartquake Level hazard, BSE-2E Shear 1912 1949 (trim + web bars) d=0.9 Lw DCR/mk = [V/(Vc+Vs)] / mk

Spandrel Reinf. Check/ DCR (Evaluation): f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2 1949: Deformed bar k = 0.75 for 1912 ~ A15Gr33

Shear Wall Spandrel Summary - ACI 318-14 f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2 1912: Square bar k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(t_w l_w (f_c')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cr} (Table 10-21)	m_{cr} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
					kip-ft	kip-ft	kip	Alteration	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
		ROOF	S4-H	Left	-266	372	83	1949	7	57	168	2.9	0.6	1.17	1.34	248	1.50	3.39	2	46	# 4	20	56	4.68	2.81	21	0.36	OK.	0.19	OK.	
		ROOF	S4-H	Right	-283	181	93	1949	7	57	168	2.9	0.6	1.17	1.34	248	1.14	3.80	2	46	# 4	20	56	4.33	2.6	21	0.29	OK.	0.23	OK.	
4.2	2.5	ROOF	SA-4.7	Left	-2483	2562	753		12	88	102	1.2	1.12	1.68	1.83	548	4.68	13.01	3	168	# 3	12	103	2.5	1.5	22	4.16	N.G.	2.47	N.G.	
4.0	2.3	ROOF	SA-4.7	Right	-2480	2414	715		12	88	102	1.2	1.12	1.68	1.83	548	4.53	12.35	3	168	# 3	12	103	2.5	1.5	22	4.02	N.G.	2.35	N.G.	
3.0	1.7	ROOF	SA-5.3	Left	-1685	1871	526		12	88	102	1.2	1.12	1.68	1.83	548	3.41	9.09	3	168	# 3	12	103	2.5	1.5	22	3.04	N.G.	1.73	N.G.	
3.3	1.9	ROOF	SA-5.3	Right	-2045	1851	580		12	88	102	1.2	1.12	1.68	1.83	548	3.73	10.02	3	168	# 3	12	103	2.5	1.5	22	3.32	N.G.	1.90	N.G.	
3.3	1.9	ROOF	SA-5.7	Left	-2021	1813	586		12	88	102	1.2	1.12	1.68	1.83	548	3.69	10.12	3	168	# 3	12	103	2.5	1.5	22	3.28	N.G.	1.92	N.G.	
3.0	1.8	ROOF	SA-5.7	Right	-1703	1834	548		12	88	102	1.2	1.12	1.68	1.83	548	3.35	9.47	3	168	# 3	12	103	2.5	1.5	22	2.98	N.G.	1.80	N.G.	
2.2	1.2	ROOF	SA-6.3	Left	-1036	1349	358		12	88	102	1.2	1.12	1.68	1.83	548	2.46	6.18	3	168	# 3	12	103	2.5	1.5	22	2.19	N.G.	1.17	N.G.	
2.2	1.3	ROOF	SA-6.3	Right	-1357	961	399		12	88	102	1.2	1.12	1.68	1.83	548	2.48	6.89	3	168	# 3	12	103	2.5	1.5	22	2.20	N.G.	1.31	N.G.	
1.9	1.1	ROOF	SA-6.7	Left	-1154	1161	348		12	88	102	1.2	1.12	1.68	1.83	548	2.12	6.01	3	168	# 3	12	103	2.5	1.5	22	1.88	N.G.	1.14	N.G.	
1.6		ROOF	SA-6.7	Right	-1139	1148	317		12	88	102	1.2	1.12	1.68	1.83	548	2.10	5.48	3	168	# 3	12	103	2.94	1.76	22	1.59	N.G.	0.89	OK.	
1.1		ROOF	SA-7.3	Left	-913	1015	261		12	88	102	1.2	1.12	1.68	1.83	548	1.85	4.51	3	168	# 3	12	103	3.74	2.25	22	1.10	N.G.	0.57	OK.	
1.2		ROOF	SA-7.3	Right	-969	885	296		12	88	102	1.2	1.12	1.68	1.83	548	1.77	5.11	3	168	# 3	12	103	3.24	1.94	22	1.21	N.G.	0.75	OK.	
1.7	1.0	ROOF	SA-7.7	Left	-1121	809	332		12	88	102	1.2	1.12	1.68	1.83	548	2.05	5.73	3	168	# 3	12	103	2.72	1.63	22	1.67	N.G.	1.00	N.G.	
1.4		ROOF	SA-7.7	Right	-840	1053	305		12	88	102	1.2	1.12	1.68	1.83	548	1.92	5.27	3	168	# 3	12	103	3.11	1.87	22	1.37	N.G.	0.80	OK.	
		ROOF	SA-8.3	Left	-579	866	221		12	88	102	1.2	1.12	1.68	1.83	548	1.58	3.82	3	168	# 3	12	103	4.32	2.59	22	0.81	OK.	0.42	OK.	
		ROOF	SA-8.3	Right	-809	420	252		12	88	102	1.2	1.12	1.68	1.83	548	1.48	4.35	3	168	# 3	12	103	3.87	2.32	22	0.85	OK.	0.53	OK.	
		ROOF	SA-8.7	Left	-631	618	199		12	88	102	1.2	1.12	1.68	1.83	548	1.15	3.44	3	168	# 3	12	103	4.64	2.78	22	0.55	OK.	0.35	OK.	
		ROOF	SA-8.7	Right	-675	698	172		12	88	102	1.2	1.12	1.68	1.83	548	1.27	2.97	3	168	# 3	12	103	5	3	22	0.57	OK.	0.28	OK.	
		ROOF	SA-9.3	Left	-627	777	192		12	88	102	1.2	1.12	1.68	1.83	548	1.42	3.32	3	168	# 3	12	103	4.74	2.84	22	0.67	OK.	0.33	OK.	
		ROOF	SA-9.3	Right	-690	542	220		12	88	102	1.2	1.12	1.68	1.83	548	1.26	3.80	3	168	# 3	12	103	4.33	2.6	22	0.65	OK.	0.42	OK.	
		ROOF	SA-9.7	Left	-746	505	228		12	88	102	1.2	1.12	1.68	1.83	548	1.36	3.94	3	168	# 3	12	103	4.22	2.53	22	0.72	OK.	0.44	OK.	
		ROOF	SA-9.7	Right	-577	746	204		12	88	102	1.2	1.12	1.68	1.83	548	1.36	3.52	3	168	# 3	12	103	4.56	2.74	22	0.66	OK.	0.37	OK.	
		ROOF	SA-10.3	Left	-371	617	167		12	88	102	1.2	1.12	1.68	1.83	548	1.13	2.88	3	168	# 3	12	103	5	3	22	0.50	OK.	0.27	OK.	
		ROOF	SA-10.3	Right	-586	255	189		12	88	102	1.2	1.12	1.68	1.83	548	1.07	3.26	3	168	# 3	12	103	4.78	2.87	22	0.50	OK.	0.32	OK.	
		ROOF	SA-10.7	Left	-486	429	147		12	88	102	1.2	1.12	1.68	1.83	548	0.89	2.54	3	168	# 3	12	103	5	3	22	0.39	OK.	0.24	OK.	
		ROOF	SA-10.7	Right	-421	476	131		12	88	102	1.2	1.12	1.68	1.83	548	0.87	2.26	3	168	# 3	12	103	5	3	22	0.39	OK.	0.21	OK.	
		ROOF	SA-11.3	Left	-678	746	181		12	88	102	1.2	1.12	1.68	1.83	548	1.36	3.13	3	168	# 3	12	103	4.89	2.94	22	0.62	OK.	0.30	OK.	
		ROOF	SA-11.3	Right	-492	399	204		12	88	102	1.2	1.12	1.68	1.83	548	0.90	3.52	3	168	# 3	12	103	4.56	2.74	22	0.44	OK.	0.37	OK.	
		ROOF	SA-11.7	Left	-498	125	151		12	88	102	1.2	1.12	1.68	1.83	548	0.91	2.61	3	168	# 3	12	103	5	3	22	0.40	OK.	0.25	OK.	
		ROOF	SA-11.7	Right	-173	423	101		12	88	102	1.2	1.12	1.68	1.83	548	0.77	1.74	3	168	# 3	12	103	5	3	22	0.34	OK.	0.17	OK.	
4.2	3.5	ROOF	SD-4.3	Left	-2370	2568	1075		12	88	102	1.2	1.12	1.68	1.83	548	4.69	18.57	3	168	# 3	12	103	2.5	1.5	22	4.17	N.G.	3.53	N.G.	
7.0	3.3	ROOF	SD-4.3	Right	-4313	4100	996		12	88	102	1.2	1.12	1.68	1.83	548	7.87	17.20	3	168	# 3	12	103	2.5	1.5	22	7.00	N.G.	3.27	N.G.	
5.0	2.8	ROOF	SD-4.7	Left	-3070	2870	861		12	88	102	1.2	1.12	1.68	1.83	548	5.60	14.87	3	168	# 3	12	103	2.5	1.5	22	4.98	N.G.	2.82	N.G.	
4.8	2.9	ROOF	SD-4.7	Right	-2807	2976	896		12	88	102	1.2	1.12	1.68	1.83	548	5.43	15.48	3	168	# 3	12	103	2.5	1.5	22	4.83	N.G.	2.94	N.G.	
3.5	2.0	ROOF	SD-5.3	Left	-2137	2133	610		12	88	102	1.2	1.12	1.68	1.83	548	3.90	10.54	3	168	# 3	12	103	2.5	1.5	22	3.47	N.G.	2.00	N.G.	
3.9	2.1	ROOF	SD-5.3	Right	-2356	2391	647		12	88	102	1.2	1.12	1.68	1.83	548	4.36	11.18	3	168	# 3	12	103	2.5	1.5	22	3.88	N.G.	2.12	N.G.	
4.3	2.0	ROOF	SD-5.7	Left	-2633	2136	607		12	88	102	1.2	1.12	1.68	1.83	548	4.81	10.49	3	168	# 3	12	103	2.5	1.5	22	4.27	N.G.	1.99	N.G.	
3.7	2.4	ROOF	SD-5.7	Right	-1988	2302	730		12	88	102	1.2	1.12	1.68	1.83	548	4.20	12.61	3	168	# 3	12	103	2.5	1.5	22	3.74	N.G.	2.39	N.G.	

Eartquake Level hazard, BSE-2E

Spandrel Reinf. Check/ DCR (Evaluation):

Shear Wall Spandrel Summary - ACI 318-14

Shear 1912 1949 (trim + web bars) d=0.9 Lw

f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2

f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2

DCR/mk = [V/(Vc+Vs)] / mk

1949: Deformed bar

1912: Square bar

k = 0.75 for 1912 ~ A15Gr33

k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
					kip-ft	kip-ft	kip		in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
								Alteration																							
1.5		ROOF	SD-6.3	Left	-894	1216	297		12	88	102	1.2	1.12	1.68	1.83	548	2.22	5.13	3	168	# 3	12	103	3.22	1.93	22	1.53	N.G.	0.76	OK.	
1.8	1.1	ROOF	SD-6.3	Right	-1137	681	340		12	88	102	1.2	1.12	1.68	1.83	548	2.08	5.87	3	168	# 3	12	103	2.61	1.56	22	1.77	N.G.	1.07	N.G.	
1.2		ROOF	SD-6.7	Left	-938	943	294		12	88	102	1.2	1.12	1.68	1.83	548	1.72	5.08	3	168	# 3	12	103	3.27	1.96	22	1.17	N.G.	0.74	OK.	
1.1		ROOF	SD-6.7	Right	-1004	998	266		12	88	102	1.2	1.12	1.68	1.83	548	1.83	4.59	3	168	# 3	12	103	3.67	2.2	22	1.11	N.G.	0.59	OK.	
		ROOF	SD-7.3	Left	-763	855	212		12	88	102	1.2	1.12	1.68	1.83	548	1.56	3.66	3	168	# 3	12	103	4.45	2.67	22	0.78	OK.	0.39	OK.	
		ROOF	SD-7.3	Right	-791	735	245		12	88	102	1.2	1.12	1.68	1.83	548	1.44	4.23	3	168	# 3	12	103	3.97	2.38	22	0.81	OK.	0.51	OK.	
1.2		ROOF	SD-7.7	Left	-957	573	293		12	88	102	1.2	1.12	1.68	1.83	548	1.75	5.06	3	168	# 3	12	103	3.28	1.97	22	1.18	N.G.	0.73	OK.	
1.0		ROOF	SD-7.7	Right	-679	915	269		12	88	102	1.2	1.12	1.68	1.83	548	1.67	4.65	3	168	# 3	12	103	3.63	2.18	22	1.02	N.G.	0.61	OK.	
		ROOF	SD-8.3	Left	-379	723	180		12	88	102	1.2	1.12	1.68	1.83	548	1.32	3.11	3	168	# 3	12	103	4.91	2.95	22	0.60	OK.	0.30	OK.	
		ROOF	SD-8.3	Right	-645	177	208		12	88	102	1.2	1.12	1.68	1.83	548	1.18	3.59	3	168	# 3	12	103	4.51	2.7	22	0.58	OK.	0.38	OK.	
		ROOF	SD-8.7	Left	-392	428	137		12	88	102	1.2	1.12	1.68	1.83	548	0.78	2.37	3	168	# 3	12	103	5	3	22	0.35	OK.	0.22	OK.	
		ROOF	SD-8.7	Right	-512	502	125		12	88	102	1.2	1.12	1.68	1.83	548	0.93	2.16	3	168	# 3	12	103	5	3	22	0.42	OK.	0.21	OK.	
		ROOF	SD-9.3	Left	-422	518	107		12	88	102	1.2	1.12	1.68	1.83	548	0.95	1.85	3	168	# 3	12	103	5	3	22	0.42	OK.	0.18	OK.	
		ROOF	SD-9.3	Right	-361	312	133		12	88	102	1.2	1.12	1.68	1.83	548	0.66	2.30	3	168	# 3	12	103	5	3	22	0.29	OK.	0.22	OK.	
		ROOF	SD-9.7	Left	-516	146	172		12	88	102	1.2	1.12	1.68	1.83	548	0.94	2.97	3	168	# 3	12	103	5	3	22	0.42	OK.	0.28	OK.	
		ROOF	SD-9.7	Right	-329	575	149		12	88	102	1.2	1.12	1.68	1.83	548	1.05	2.57	3	168	# 3	12	103	5	3	22	0.47	OK.	0.24	OK.	
		ROOF	SD-10.3	Left	-205	478	156		12	88	102	1.2	1.12	1.68	1.83	548	0.87	2.69	3	168	# 3	12	103	5	3	22	0.39	OK.	0.26	OK.	
		ROOF	SD-10.3	Right	-593	225	180		12	88	102	1.2	1.12	1.68	1.83	548	1.08	3.11	3	168	# 3	12	103	4.91	2.95	22	0.49	OK.	0.30	OK.	
		ROOF	SD-10.7	Left	-461	407	157		12	88	102	1.2	1.12	1.68	1.83	548	0.84	2.71	3	168	# 3	12	103	5	3	22	0.37	OK.	0.26	OK.	
		ROOF	SD-10.7	Right	-479	539	137		12	88	102	1.2	1.12	1.68	1.83	548	0.98	2.37	3	168	# 3	12	103	5	3	22	0.44	OK.	0.22	OK.	
		ROOF	SD-11.3	Left	-240	245	129		12	88	102	1.2	1.12	1.68	1.83	548	0.45	2.23	3	168	# 3	12	103	5	3	22	0.20	OK.	0.21	OK.	
		ROOF	SD-11.3	Right	-339	340	125		12	88	102	1.2	1.12	1.68	1.83	548	0.62	2.16	3	168	# 3	12	103	5	3	22	0.28	OK.	0.21	OK.	
		ROOF	SD-11.7	Left	-663	183	228		12	88	102	1.2	1.12	1.68	1.83	548	1.21	3.94	3	168	# 3	12	103	4.22	2.53	22	0.64	OK.	0.44	OK.	
		ROOF	SD-11.7	Right	-210	554	175		12	88	102	1.2	1.12	1.68	1.83	548	1.01	3.02	3	168	# 3	12	103	4.98	2.99	22	0.45	OK.	0.29	OK.	
		ROOF	SD-2	Left	-529	717	336		10	115	73	0.6	1.12	1.74	2.20	741	0.97	5.35	3	183	# 3	14	115	3.04	1.82	22	0.71	OK.	0.82	OK.	
		ROOF	SD-2	Right	-510	374	320		10	115	73	0.6	1.12	1.74	2.20	741	0.69	5.10	3	183	# 3	14	115	3.25	1.95	22	0.47	OK.	0.73	OK.	
		ROOF	S2.-1	Left	-541	519	287	1949	8	108	42	0.4	1.2	3.00	2.35	1202	0.45	5.42	3	154	# 4	18	118	2.98	1.79	22	0.28	OK.	0.65	OK.	
		ROOF	S2.-1	Right	-140	239	283	1949	8	108	42	0.4	1.2	3.00	2.35	1202	0.20	5.34	3	154	# 4	18	118	3.05	1.83	22	0.12	OK.	0.63	OK.	
		ROOF	S2.-2	Left	-113	164	177	1949	8	108	42	0.4	1.2	3.00	2.35	1202	0.14	3.34	3	154	# 4	18	118	4.72	2.83	22	0.05	OK.	0.26	OK.	
		ROOF	S2.-2	Right	-413	453	204	1949	8	108	42	0.4	1.2	3.00	2.35	1202	0.38	3.85	3	154	# 4	18	118	4.29	2.57	22	0.16	OK.	0.32	OK.	
2.1	2.2	2ND	SA-1	Left	-954	961	396		10	48	96	2.0	1.12	1.38	2.20	242	3.97	15.06	2	49	# 3	14	48	2.5	1.5	21	2.12	N.G.	2.17	N.G.	
2.8	2.5	2ND	SA-1	Right	-1249	1156	465		10	48	96	2.0	1.12	1.38	2.20	242	5.16	17.69	2	49	# 3	14	48	2.5	1.5	21	2.75	N.G.	2.54	N.G.	
2.4	1.8	2ND	SA-2	Left	-1126	1308	413		10.9	84	84	1.0	1.12	1.58	2.02	490	2.67	8.27	3	145	# 3	20	59	2.5	1.5	22	2.37	N.G.	1.80	N.G.	
2.5	1.9	2ND	SA-2	Right	-1387	1178	428		10.9	84	84	1.0	1.12	1.58	2.02	490	2.83	8.57	3	145	# 3	20	59	2.5	1.5	22	2.52	N.G.	1.87	N.G.	
4.7	4.0	2ND	SA-3	Left	-1983	2125	734		10	48	96	2.0	1.12	1.38	2.20	242	8.77	27.92	2	49	# 3	14	48	2.5	1.5	21	4.68	N.G.	4.01	N.G.	
3.5	2.7	2ND	SA-3	Right	-1591	1363	495		10	48	96	2.0	1.12	1.38	2.20	242	6.57	18.83	2	49	# 3	14	48	2.5	1.5	21	3.50	N.G.	2.71	N.G.	
3.0	2.2	2ND	SA-4.3	Left	-875	991	360		12	36	102	2.8	1.12	1.35	1.83	177	5.60	15.21	2	43	# 3	12	42	2.5	1.5	21	2.99	N.G.	2.24	N.G.	
3.0	1.8	2ND	SA-4.3	Right	-986	840	295		12	36	102	2.8	1.12	1.35	1.83	177	5.58	12.47	2	43	# 3	12	42	2.5	1.5	21	2.97	N.G.	1.84	N.G.	
1.4	1.4	2ND	S1-A	Left	-614	568	254		10	48	96	2.0	1.12	1.38	2.20	242	2.54	9.66	2	49	# 3	14	48	2.5	1.5	21	1.35	N.G.	1.39	N.G.	
	1.2	2ND	S1-A	Right	-362	316	212		10	48	96	2.0	1.12	1.38	2.20	242	1.49	8.06	2	49	# 3	14	48	2.5	1.5	21	0.80	OK.	1.16	N.G.	

Eartquake Level hazard, BSE-2E Shear 1912 1949 (trim + web bars) d=0.9 Lw DCR/mk = [V/(Vc+Vs)] / mk

Spandrel Reinf. Check/ DCR (Evaluation): f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2 1949: Deformed bar k = 0.75 for 1912 ~ A15Gr33

Shear Wall Spandrel Summary - ACI 318-14 f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2 1912: Square bar k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max\ T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
M	V				kip-ft	kip-ft	kip	Alteration	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
		2ND	S1-B	Left	-295	200	139		10	48	96	2.0	1.12	1.38	2.20	242	1.22	5.29	2	49	# 3	14	48	3.09	1.86	21	0.53	OK.	0.61	OK.	
		2ND	S1-B	Right	-171	151	112		10	48	96	2.0	1.12	1.38	2.20	242	0.70	4.26	2	49	# 3	14	48	3.95	2.37	21	0.24	OK.	0.39	OK.	
	1.4	2ND	S1-C	Left	-344	185	248		10	48	96	2.0	1.12	1.38	2.20	242	1.42	9.43	2	49	# 3	14	48	2.5	1.5	21	0.76	OK.	1.36	N.G.	
	1.0	2ND	S1-C	Right	-298	369	190		10	48	96	2.0	1.12	1.38	2.20	242	1.52	7.23	2	49	# 3	14	48	2.5	1.5	21	0.81	OK.	1.04	N.G.	
1.3		2ND	S1-D	Left	-1121	903	253		10	79	132	1.7	1.12	1.55	2.20	452	2.48	5.84	2.662	111	# 3	14	79	2.63	1.58	21	1.26	N.G.	0.67	OK.	
		2ND	S1-D	Right	-844	989	233		10	79	132	1.7	1.12	1.55	2.20	452	2.19	5.38	2.662	111	# 3	14	79	3.02	1.81	21	0.97	OK.	0.54	OK.	
		2ND	S1-E	Left	-892	757	225		10	79	132	1.7	1.12	1.55	2.20	452	1.97	5.19	2.662	111	# 3	14	79	3.17	1.9	21	0.83	OK.	0.50	OK.	
		2ND	S1-E	Right	-762	851	204		10	79	132	1.7	1.12	1.55	2.20	452	1.88	4.71	2.662	111	# 3	14	79	3.58	2.15	21	0.70	OK.	0.40	OK.	
		2ND	S1-F	Left	-670	556	195		10	79	132	1.7	1.12	1.55	2.20	452	1.48	4.50	2.662	111	# 3	14	79	3.75	2.25	21	0.53	OK.	0.36	OK.	
		2ND	S1-F	Right	-598	662	174		10	79	132	1.7	1.12	1.55	2.20	452	1.46	4.02	2.662	111	# 3	14	79	4.15	2.49	21	0.47	OK.	0.29	OK.	
1.1	1.1	2ND	S1-G	Left	-957	877	383		10	79	132	1.7	1.12	1.55	2.20	452	2.12	8.84	2.662	111	# 3	14	79	2.5	1.5	21	1.13	N.G.	1.07	N.G.	
		2ND	S1-G	Right	-796	811	346		10	79	132	1.7	1.12	1.55	2.20	452	1.79	7.99	2.662	111	# 3	14	79	2.5	1.5	21	0.96	OK.	0.97	OK.	
2.1	1.3	2ND	S1-H	Left	-1778	1419	452		10	79	132	1.7	1.12	1.55	2.20	452	3.93	10.44	2.662	111	# 3	14	79	2.5	1.5	21	2.10	N.G.	1.27	N.G.	
2.2	1.2	2ND	S1-H	Right	-1544	1853	434		10	79	132	1.7	1.12	1.55	2.20	452	4.10	10.02	2.662	111	# 3	14	79	2.5	1.5	21	2.18	N.G.	1.22	N.G.	
2.2	1.3	2ND	S1-J	Left	-1840	1846	462		10	79	132	1.7	1.12	1.55	2.20	452	4.08	10.67	2.662	111	# 3	14	79	2.5	1.5	21	2.18	N.G.	1.29	N.G.	
2.0	1.3	2ND	S1-J	Right	-1669	1654	457		10	79	132	1.7	1.12	1.55	2.20	452	3.69	10.55	2.662	111	# 3	14	79	2.5	1.5	21	1.97	N.G.	1.28	N.G.	
1.2		2ND	S1-K	Left	-994	997	270		10	79	132	1.7	1.12	1.55	2.20	452	2.20	6.23	2.662	111	# 3	14	79	2.5	1.5	21	1.18	N.G.	0.76	OK.	
1.3		2ND	S1-K	Right	-1093	1059	275		10	79	132	1.7	1.12	1.55	2.20	452	2.42	6.35	2.662	111	# 3	14	79	2.5	1.5	21	1.29	N.G.	0.77	OK.	
		2ND	S1-L	Left	-649	654	180		10	79	132	1.7	1.12	1.55	2.20	452	1.45	4.16	2.662	111	# 3	14	79	4.04	2.42	21	0.48	OK.	0.31	OK.	
		2ND	S1-L	Right	-749	710	188		10	79	132	1.7	1.12	1.55	2.20	452	1.66	4.34	2.662	111	# 3	14	79	3.88	2.33	21	0.57	OK.	0.34	OK.	
		2ND	S1-M	Left	-371	388	106		10	79	132	1.7	1.12	1.55	2.20	452	0.86	2.45	2.662	111	# 3	14	79	5	3	21	0.23	OK.	0.15	OK.	
		2ND	S1-M	Right	-473	420	119		10	79	132	1.7	1.12	1.55	2.20	452	1.05	2.75	2.662	111	# 3	14	79	5	3	21	0.28	OK.	0.17	OK.	
1.5	1.5	2ND	S1-N	Left	-669	751	338		10	79	77	1.0	1.12	1.55	2.20	452	1.66	7.80	3	125	# 3	14	79	2.5	1.5	22	1.48	N.G.	1.47	N.G.	
1.7	1.5	2ND	S1-N	Right	-867	771	348		10	79	77	1.0	1.12	1.55	2.20	452	1.92	8.03	3	125	# 3	14	79	2.5	1.5	22	1.70	N.G.	1.51	N.G.	
2.7	1.7	2ND	S1-Q4	Left	-2008	1921	455		8	113	72	0.6	1.12	1.60	2.75	665	3.02	9.21	3	144	# 3	18	88	2.5	1.5	22	2.68	N.G.	1.74	N.G.	
	1.9	2ND	S1-Q4	Right	-415	475	495		8	113	72	0.6	1.12	1.60	2.75	665	0.71	10.02	3	144	# 3	18	88	2.5	1.5	22	0.63	OK.	1.89	N.G.	
1.6	1.7	2ND	S1-Q7	Left	-1176	1211	435		8	113	72	0.6	1.12	1.60	2.75	665	1.82	8.81	3	144	# 3	18	88	2.5	1.5	22	1.62	N.G.	1.66	N.G.	
1.9	1.7	2ND	S1-Q7	Right	-1458	1438	456		8	113	72	0.6	1.12	1.60	2.75	665	2.19	9.23	3	144	# 3	18	88	2.5	1.5	22	1.95	N.G.	1.74	N.G.	
1.0		2ND	S1-R2	Left	-960	862	259		8	113	72	0.6	1.12	1.60	2.75	665	1.44	5.24	3	144	# 3	18	88	3.13	1.88	22	1.02	N.G.	0.79	OK.	
		2ND	S1-R2	Right	-386	495	244		8	113	72	0.6	1.12	1.60	2.75	665	0.74	4.94	3	144	# 3	18	88	3.38	2.03	22	0.49	OK.	0.69	OK.	
	1.1	2ND	S1-R5	Left	-538	589	289		8	113	72	0.6	1.12	1.60	2.75	665	0.88	5.85	3	144	# 3	18	88	2.62	1.57	22	0.75	OK.	1.05	N.G.	
1.1	1.1	2ND	S1-R5	Right	-845	841	296		8	113	72	0.6	1.12	1.60	2.75	665	1.27	5.99	3	144	# 3	18	88	2.51	1.5	22	1.13	N.G.	1.13	N.G.	
		2ND	S1-R8	Left	-112	234	271		8	113	72	0.6	1.12	1.60	2.75	665	0.35	5.49	3	144	# 3	18	88	2.93	1.76	22	0.27	OK.	0.89	OK.	
1.6	1.0	2ND	S1-R8	Right	-1303	1093	285		8	113	72	0.6	1.12	1.60	2.75	665	1.96	5.77	3	144	# 3	18	88	2.69	1.61	22	1.62	N.G.	1.01	N.G.	
		2ND	S1-S2	Left	-476	201	148		8	113	72	0.6	1.12	1.60	2.75	665	0.71	3.00	3	144	# 3	18	88	5	3	22	0.32	OK.	0.28	OK.	
		2ND	S1-S2	Right	-172	327	136		8	113	72	0.6	1.12	1.60	2.75	665	0.49	2.75	3	144	# 3	18	88	5	3	22	0.22	OK.	0.26	OK.	
		2ND	S1-S5	Left	-296	276	177		8	113	72	0.6	1.12	1.60	2.75	665	0.44	3.58	3	144	# 3	18	88	4.51	2.71	22	0.22	OK.	0.38	OK.	
		2ND	S1-S5	Right	-499	588	169		8	113	72	0.6	1.12	1.60	2.75	665	0.88	3.42	3	144	# 3	18	88	4.65	2.79	22	0.42	OK.	0.35	OK.	
		2ND	S1-S8	Left	-104	196	161		8	113	72	0.6	1.12	1.60	2.75	665	0.29	3.26	3	144	# 3	18	88	4.78	2.87	22	0.14	OK.	0.32	OK.	
		2ND	S1-S8	Right	-725	725	173		8	113	72	0.6	1.12	1.60	2.75	665	1.09	3.50	3	144	# 3	18	88	4.58	2.75	22	0.53	OK.	0.36	OK.	

Eartquake Level hazard, BSE-2E Shear 1912 1949 (trim + web bars) d=0.9 Lw DCR/mk = [V/(Vc+Vs)] / mk

Spandrel Reinf. Check/ DCR (Evaluation): f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2 1949: Deformed bar k = 0.75 for 1912 ~ A15Gr33

Shear Wall Spandrel Summary - ACI 318-14 f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2 1912: Square bar k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949 Alteration	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cr} (Table 10-21)	m_{cr} (Table 10-22)	Table used	FLEXURE DCR/mk	FLEXURE Status	SHEAR DCR/mk	SHEAR Status	SPANDREL
					kip-ft	kip-ft	kip		in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-					
1.2	2.2	2ND	SJ-2	Left	-492	442	314		7	45	73	1.6	1.12	1.36	3.14	219	2.25	18.35	2.741	44	# 3	20	31	2.5	1.5	21	1.20	N.G.	2.23	N.G.	
2.2	2.9	2ND	SJ-2	Right	-802	909	411		7	45	73	1.6	1.12	1.36	3.14	219	4.15	24.01	2.741	44	# 3	20	31	2.5	1.5	21	2.21	N.G.	2.92	N.G.	
		2ND	SU-3.2	Left	-192	262	283		8	136	55	0.4	1.12	1.69	2.75	855	0.31	4.75	3	175	# 3	18	106	3.54	2.13	22	0.19	OK.	0.63	OK.	
		2ND	SU-3.2	Right	-706	568	289		8	136	55	0.4	1.12	1.69	2.75	855	0.83	4.85	3	175	# 3	18	106	3.46	2.08	22	0.53	OK.	0.66	OK.	
	1.1	2ND	S12-A	Left	-140	144	120		8	36	102	2.8	1.12	1.27	2.75	164	0.87	7.61	2	29	# 3	18	28	2.5	1.5	21	0.47	OK.	1.12	N.G.	
		2ND	S12-A	Right	-152	155	61		8	36	102	2.8	1.12	1.27	2.75	164	0.94	3.87	2	29	# 3	18	28	4.28	2.57	21	0.29	OK.	0.33	OK.	
2.7	3.5	2ND	S12-B	Left	-797	831	371		8	36	89	2.5	1.12	1.27	2.75	164	5.05	23.52	2	29	# 3	18	28	2.5	1.5	21	2.69	N.G.	3.47	N.G.	
4.1		2ND	S12-B	Right	-1199	1253	102		8	36	89	2.5	1.12	1.27	2.75	164	7.62	6.47	2	29	# 3	18	28	2.5	1.5	21	4.06	N.G.	0.95	OK.	
		2ND	S12-C	Left	-210	223	80		8	36	102	2.8	1.12	1.27	2.75	164	1.36	5.07	2	29	# 3	18	28	3.27	1.96	21	0.55	OK.	0.57	OK.	
1.0	2.4	2ND	S12-C	Right	-322	317	260		8	36	102	2.8	1.12	1.27	2.75	164	1.96	16.48	2	29	# 3	18	28	2.5	1.5	21	1.04	N.G.	2.43	N.G.	
		2ND	S1-T2	Left	-515	523	161		8	113	72	0.6	1.12	1.60	2.75	665	0.79	3.26	3	144	# 3	18	88	4.78	2.87	22	0.37	OK.	0.32	OK.	
		2ND	S1-T2	Right	-551	635	176		8	113	72	0.6	1.12	1.60	2.75	665	0.95	3.56	3	144	# 3	18	88	4.53	2.72	22	0.47	OK.	0.37	OK.	
		2ND	S1-T5	Left	-155	228	151		8	113	72	0.6	1.12	1.60	2.75	665	0.34	3.06	3	144	# 3	18	88	4.95	2.97	22	0.15	OK.	0.29	OK.	
		2ND	S1-T5	Right	-649	564	171		8	113	72	0.6	1.12	1.60	2.75	665	0.98	3.46	3	144	# 3	18	88	4.61	2.77	22	0.47	OK.	0.35	OK.	
1.4	3.4	2ND	S4-D	Left	-806	901	645		7	66	123	1.9	1.12	1.48	3.14	356	2.53	25.50	2.27	55	# 3	20	46	2.5	1.5	21	1.35	N.G.	3.40	N.G.	
	1.5	2ND	S4-D	Right	-633	635	276		7	66	123	1.9	1.12	1.48	3.14	356	1.78	10.91	2.27	55	# 3	20	46	2.5	1.5	21	0.95	OK.	1.45	N.G.	
1.3	1.6	2ND	S4-E	Left	-670	839	306		7	66	123	1.9	1.12	1.48	3.14	356	2.36	12.10	2.27	55	# 3	20	46	2.5	1.5	21	1.26	N.G.	1.61	N.G.	
	1.2	2ND	S4-E	Right	-593	527	230		7	66	123	1.9	1.12	1.48	3.14	356	1.67	9.09	2.27	55	# 3	20	46	2.5	1.5	21	0.89	OK.	1.21	N.G.	
2.5	3.1	2ND	S4-F2	Left	-753	999	411		7	66	60	0.9	1.12	1.48	3.14	356	2.81	16.25	3	72	# 3	20	46	2.5	1.5	22	2.49	N.G.	3.08	N.G.	
1.8	3.0	2ND	S4-F2	Right	-716	553	397		7	66	60	0.9	1.12	1.48	3.14	356	2.01	15.70	3	72	# 3	20	46	2.5	1.5	22	1.79	N.G.	2.97	N.G.	
1.8	3.6	2ND	S4-F7	Left	-501	701	481		7	66	60	0.9	1.12	1.48	3.14	356	1.97	19.02	3	72	# 3	20	46	2.5	1.5	22	1.75	N.G.	3.60	N.G.	
2.4	2.4	2ND	S4-F7	Right	-955	745	315		7	66	60	0.9	1.12	1.48	3.14	356	2.68	12.46	3	72	# 3	20	46	2.5	1.5	22	2.38	N.G.	2.36	N.G.	
2.9	3.2	2ND	S4-G	Left	-834	1153	433		7	66	60	0.9	1.12	1.48	3.14	356	3.24	17.12	3	72	# 3	20	46	2.5	1.5	22	2.88	N.G.	3.24	N.G.	
2.4	3.1	2ND	S4-G	Right	-971	712	415		7	66	60	0.9	1.12	1.48	3.14	356	2.73	16.41	3	72	# 3	20	46	2.5	1.5	22	2.43	N.G.	3.11	N.G.	
1.1	1.6	2ND	S4-H	Left	-494	758	292		7	66	168	2.5	1.12	1.48	3.14	356	2.13	11.55	2	48	# 3	20	46	2.5	1.5	21	1.14	N.G.	1.65	N.G.	
		2ND	S4-H	Right	-335	235	115		7	66	168	2.5	1.12	1.48	3.14	356	0.94	4.55	2	48	# 3	20	46	3.71	2.23	21	0.34	OK.	0.44	OK.	
3.5	2.7	2ND	SA-4.7	Left	-1106	1149	431		12	36	102	2.8	1.12	1.35	1.83	177	6.50	18.22	2	43	# 3	12	42	2.5	1.5	21	3.47	N.G.	2.69	N.G.	
3.3	2.8	2ND	SA-4.7	Right	-1085	1016	443		12	36	102	2.8	1.12	1.35	1.83	177	6.13	18.72	2	43	# 3	12	42	2.5	1.5	21	3.27	N.G.	2.76	N.G.	
2.3	2.4	2ND	SA-5.3	Left	-723	774	390		12	36	102	2.8	1.12	1.35	1.83	177	4.38	16.48	2	43	# 3	12	42	2.5	1.5	21	2.34	N.G.	2.43	N.G.	
2.9	2.1	2ND	SA-5.3	Right	-962	876	341		12	36	102	2.8	1.12	1.35	1.83	177	5.44	14.41	2	43	# 3	12	42	2.5	1.5	21	2.90	N.G.	2.13	N.G.	
2.5	2.0	2ND	SA-5.7	Left	-824	800	322		12	36	102	2.8	1.12	1.35	1.83	177	4.66	13.61	2	43	# 3	12	42	2.5	1.5	21	2.48	N.G.	2.01	N.G.	
2.2	2.2	2ND	SA-5.7	Right	-717	723	356		12	36	102	2.8	1.12	1.35	1.83	177	4.09	15.05	2	43	# 3	12	42	2.5	1.5	21	2.18	N.G.	2.22	N.G.	
1.7	1.8	2ND	SA-6.3	Left	-462	550	291		12	36	102	2.8	1.12	1.35	1.83	177	3.11	12.30	2	43	# 3	12	42	2.5	1.5	21	1.66	N.G.	1.81	N.G.	
2.1	1.4	2ND	SA-6.3	Right	-690	574	230		12	36	102	2.8	1.12	1.35	1.83	177	3.90	9.72	2	43	# 3	12	42	2.5	1.5	21	2.08	N.G.	1.43	N.G.	
1.7	1.5	2ND	SA-6.7	Left	-565	571	235		12	36	102	2.8	1.12	1.35	1.83	177	3.23	9.93	2	43	# 3	12	42	2.5	1.5	21	1.72	N.G.	1.46	N.G.	
1.5	1.5	2ND	SA-6.7	Right	-499	469	248		12	36	102	2.8	1.12	1.35	1.83	177	2.82	10.48	2	43	# 3	12	42	2.5	1.5	21	1.50	N.G.	1.55	N.G.	
1.3	1.4	2ND	SA-7.3	Left	-418	435	231		12	36	102	2.8	1.12	1.35	1.83	177	2.46	9.76	2	43	# 3	12	42	2.5	1.5	21	1.31	N.G.	1.44	N.G.	
1.6	1.4	2ND	SA-7.3	Right	-536	488	225		12	36	102	2.8	1.12	1.35	1.83	177	3.03	9.51	2	43	# 3	12	42	2.5	1.5	21	1.62	N.G.	1.40	N.G.	
1.5	1.3	2ND	SA-7.7	Left	-499	442	214		12	36	102	2.8	1.12	1.35	1.83	177	2.82	9.04	2	43	# 3	12	42	2.5	1.5	21	1.51	N.G.	1.33	N.G.	
1.3	1.4	2ND	SA-7.7	Right	-391	429	223		12	36	102	2.8	1.12	1.35	1.83	177	2.42	9.42	2	43	# 3	12	42	2.5	1.5	21	1.29	N.G.	1.39	N.G.	

Eartquake Level hazard, BSE-2E Shear 1912 1949 (trim + web bars) d=0.9 Lw DCR/mk = [V/(Vc+Vs)] / mk

Spandrel Reinf. Check/ DCR (Evaluation): f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2 1949: Deformed bar k = 0.75 for 1912 ~ A15Gr33

Shear Wall Spandrel Summary - ACI 318-14 f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2 1912: Square bar k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
M	V				kip-ft	kip-ft	kip	Alteration	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
1.2	1.2	2ND	SA-8.3	Left	-313	392	199		12	36	102	2.8	1.12	1.35	1.83	177	2.22	8.41	2	43	# 3	12	42	2.5	1.5	21	1.18	N.G.	1.24	N.G.	
1.4	1.2	2ND	SA-8.3	Right	-456	352	192		12	36	102	2.8	1.12	1.35	1.83	177	2.58	8.11	2	43	# 3	12	42	2.5	1.5	21	1.38	N.G.	1.20	N.G.	
1.2	1.0	2ND	SA-8.7	Left	-380	383	161		12	36	102	2.8	1.12	1.35	1.83	177	2.17	6.80	2	43	# 3	12	42	2.5	1.5	21	1.16	N.G.	1.00	N.G.	
1.1	1.1	2ND	SA-8.7	Right	-350	323	184		12	36	102	2.8	1.12	1.35	1.83	177	1.98	7.78	2	43	# 3	12	42	2.5	1.5	21	1.06	N.G.	1.15	N.G.	
1.1	1.1	2ND	SA-9.3	Left	-322	355	177		12	36	102	2.8	1.12	1.35	1.83	177	2.01	7.48	2	43	# 3	12	42	2.5	1.5	21	1.07	N.G.	1.10	N.G.	
1.2	1.1	2ND	SA-9.3	Right	-410	345	173		12	36	102	2.8	1.12	1.35	1.83	177	2.32	7.31	2	43	# 3	12	42	2.5	1.5	21	1.24	N.G.	1.08	N.G.	
1.2	1.0	2ND	SA-9.7	Left	-396	354	168		12	36	102	2.8	1.12	1.35	1.83	177	2.24	7.10	2	43	# 3	12	42	2.5	1.5	21	1.19	N.G.	1.05	N.G.	
1.1	1.1	2ND	SA-9.7	Right	-329	349	174		12	36	102	2.8	1.12	1.35	1.83	177	1.97	7.35	2	43	# 3	12	42	2.5	1.5	21	1.05	N.G.	1.08	N.G.	
		2ND	SA-10.3	Left	-250	311	143		12	36	102	2.8	1.12	1.35	1.83	177	1.76	6.04	2	43	# 3	12	42	2.5	1.5	21	0.94	OK.	0.89	OK.	
		2ND	SA-10.3	Right	-308	221	135		12	36	102	2.8	1.12	1.35	1.83	177	1.74	5.71	2	43	# 3	12	42	2.75	1.65	21	0.85	OK.	0.77	OK.	
		2ND	SA-10.7	Left	-279	267	124		12	36	102	2.8	1.12	1.35	1.83	177	1.58	5.24	2	43	# 3	12	42	3.13	1.88	21	0.67	OK.	0.62	OK.	
		2ND	SA-10.7	Right	-308	285	141		12	36	102	2.8	1.12	1.35	1.83	177	1.74	5.96	2	43	# 3	12	42	2.53	1.52	21	0.92	OK.	0.87	OK.	
		2ND	SA-11.3	Left	-231	238	99		12	36	102	2.8	1.12	1.35	1.83	177	1.34	4.18	2	43	# 3	12	42	4.01	2.41	21	0.45	OK.	0.38	OK.	
		2ND	SA-11.3	Right	-258	217	98		12	36	102	2.8	1.12	1.35	1.83	177	1.46	4.14	2	43	# 3	12	42	4.05	2.43	21	0.48	OK.	0.38	OK.	
1.7	1.5	2ND	SA-11.7	Left	-548	468	237		12	36	102	2.8	1.12	1.35	1.83	177	3.10	10.02	2	43	# 3	12	42	2.5	1.5	21	1.65	N.G.	1.48	N.G.	
2.3	1.9	2ND	SA-11.7	Right	-731	753	298		12	36	102	2.8	1.12	1.35	1.83	177	4.26	12.59	2	43	# 3	12	42	2.5	1.5	21	2.27	N.G.	1.86	N.G.	
3.3	2.1	2ND	SD-4.3	Left	-1052	1090	336		12	36	102	2.8	1.12	1.35	1.83	177	6.16	14.20	2	43	# 3	12	42	2.5	1.5	21	3.29	N.G.	2.09	N.G.	
4.3	2.0	2ND	SD-4.3	Right	-1411	1350	313		12	36	102	2.8	1.12	1.35	1.83	177	7.98	13.23	2	43	# 3	12	42	2.5	1.5	21	4.26	N.G.	1.95	N.G.	
4.9	3.1	2ND	SD-4.7	Left	-1621	1556	497		12	36	102	2.8	1.12	1.35	1.83	177	9.17	21.00	2	43	# 3	12	42	2.5	1.5	21	4.89	N.G.	3.10	N.G.	
4.3	3.2	2ND	SD-4.7	Right	-1402	1426	520		12	36	102	2.8	1.12	1.35	1.83	177	8.06	21.98	2	43	# 3	12	42	2.5	1.5	21	4.30	N.G.	3.24	N.G.	
2.8	2.6	2ND	SD-5.3	Left	-939	925	420		12	36	102	2.8	1.12	1.35	1.83	177	5.31	17.75	2	43	# 3	12	42	2.5	1.5	21	2.83	N.G.	2.62	N.G.	
3.9	2.6	2ND	SD-5.3	Right	-1302	1304	424		12	36	102	2.8	1.12	1.35	1.83	177	7.37	17.92	2	43	# 3	12	42	2.5	1.5	21	3.93	N.G.	2.64	N.G.	
3.7	2.2	2ND	SD-5.7	Left	-1218	1106	360		12	36	102	2.8	1.12	1.35	1.83	177	6.89	15.21	2	43	# 3	12	42	2.5	1.5	21	3.67	N.G.	2.24	N.G.	
2.7	2.5	2ND	SD-5.7	Right	-812	881	400		12	36	102	2.8	1.12	1.35	1.83	177	4.98	16.91	2	43	# 3	12	42	2.5	1.5	21	2.66	N.G.	2.49	N.G.	
1.7	1.6	2ND	SD-6.3	Left	-456	550	257		12	36	102	2.8	1.12	1.35	1.83	177	3.11	10.86	2	43	# 3	12	42	2.5	1.5	21	1.66	N.G.	1.60	N.G.	
2.5	1.4	2ND	SD-6.3	Right	-825	696	220		12	36	102	2.8	1.12	1.35	1.83	177	4.67	9.30	2	43	# 3	12	42	2.5	1.5	21	2.49	N.G.	1.37	N.G.	
2.0	1.3	2ND	SD-6.7	Left	-651	659	211		12	36	102	2.8	1.12	1.35	1.83	177	3.73	8.92	2	43	# 3	12	42	2.5	1.5	21	1.99	N.G.	1.32	N.G.	
1.3	1.4	2ND	SD-6.7	Right	-433	401	220		12	36	102	2.8	1.12	1.35	1.83	177	2.45	9.30	2	43	# 3	12	42	2.5	1.5	21	1.31	N.G.	1.37	N.G.	
1.2	1.1	2ND	SD-7.3	Left	-360	384	184		12	36	102	2.8	1.12	1.35	1.83	177	2.17	7.78	2	43	# 3	12	42	2.5	1.5	21	1.16	N.G.	1.15	N.G.	
1.8	1.2	2ND	SD-7.3	Right	-612	562	194		12	36	102	2.8	1.12	1.35	1.83	177	3.46	8.20	2	43	# 3	12	42	2.5	1.5	21	1.84	N.G.	1.21	N.G.	
1.8	1.2	2ND	SD-7.7	Left	-590	513	190		12	36	102	2.8	1.12	1.35	1.83	177	3.33	8.03	2	43	# 3	12	42	2.5	1.5	21	1.78	N.G.	1.18	N.G.	
1.1	1.1	2ND	SD-7.7	Right	-336	379	177		12	36	102	2.8	1.12	1.35	1.83	177	2.14	7.48	2	43	# 3	12	42	2.5	1.5	21	1.14	N.G.	1.10	N.G.	
1.0		2ND	SD-8.3	Left	-228	336	152		12	36	102	2.8	1.12	1.35	1.83	177	1.90	6.42	2	43	# 3	12	42	2.5	1.5	21	1.01	N.G.	0.95	OK.	
1.6	1.0	2ND	SD-8.3	Right	-529	384	167		12	36	102	2.8	1.12	1.35	1.83	177	2.99	7.06	2	43	# 3	12	42	2.5	1.5	21	1.60	N.G.	1.04	N.G.	
1.1		2ND	SD-8.7	Left	-417	433	130		12	36	102	2.8	1.12	1.35	1.83	177	2.45	5.49	2	43	# 3	12	42	2.92	1.75	21	1.12	N.G.	0.69	OK.	
		2ND	SD-8.7	Right	-273	235	140		12	36	102	2.8	1.12	1.35	1.83	177	1.54	5.92	2	43	# 3	12	42	2.57	1.54	21	0.80	OK.	0.85	OK.	
		2ND	SD-9.3	Left	-199	233	120		12	36	102	2.8	1.12	1.35	1.83	177	1.32	5.07	2	43	# 3	12	42	3.27	1.96	21	0.54	OK.	0.57	OK.	
1.2		2ND	SD-9.3	Right	-431	380	133		12	36	102	2.8	1.12	1.35	1.83	177	2.44	5.62	2	43	# 3	12	42	2.82	1.69	21	1.15	N.G.	0.74	OK.	
1.4		2ND	SD-9.7	Left	-448	367	143		12	36	102	2.8	1.12	1.35	1.83	177	2.54	6.04	2	43	# 3	12	42	2.5	1.5	21	1.35	N.G.	0.89	OK.	
		2ND	SD-9.7	Right	-195	236	128		12	36	102	2.8	1.12	1.35	1.83	177	1.34	5.41	2	43	# 3	12	42	2.99	1.8	21	0.60	OK.	0.67	OK.	

Eartquake Level hazard, BSE-2E
Spandrel Reinf. Check/ DCR (Evaluation):
Shear Wall Spandrel Summary - ACI 318-14

Shear 1912 1949 (trim + web bars) d=0.9 Lw
f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2
f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2

DCR/mk = [V/(Vc+Vs)] / mk
1949: Deformed bar
1912: Square bar

k = 0.75 for 1912 ~ A15Gr33
k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949 Alteration	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail 1.12	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk FLEXURE	Status	DCR/mk SHEAR	Status	SPANDREL
					kip-ft	kip-ft	kip		in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-					
		2ND	SD-10.3	Left	-190	274	120		12	36	102	2.8	1.12	1.35	1.83	177	1.55	5.07	2	43	# 3	12	42	3.27	1.96	21	0.63	OK.	0.57	OK.	
1.1		2ND	SD-10.3	Right	-410	304	132		12	36	102	2.8	1.12	1.35	1.83	177	2.32	5.58	2	43	# 3	12	42	2.85	1.71	21	1.08	N.G.	0.72	OK.	
		2ND	SD-10.7	Left	-71	86	74		12	36	51	1.4	1.12	1.35	1.83	177	0.48	3.13	3	65	# 3	12	42	4.89	2.94	22	0.22	OK.	0.31	OK.	
		2ND	SD-10.7	Right	-119	94	73		12	36	51	1.4	1.12	1.35	1.83	177	0.67	3.09	3	65	# 3	12	42	4.93	2.96	22	0.30	OK.	0.31	OK.	
		2ND	SD-11.3	Left	-271	282	130		12	36	102	2.8	1.12	1.35	1.83	177	1.59	5.49	2	43	# 3	12	42	2.92	1.75	21	0.73	OK.	0.69	OK.	
1.1		2ND	SD-11.3	Right	-431	397	125		12	36	102	2.8	1.12	1.35	1.83	177	2.44	5.28	2	43	# 3	12	42	3.1	1.86	21	1.05	N.G.	0.63	OK.	
		2ND	SD-11.7	Left	-206	62	78		12	36	102	2.8	1.12	1.35	1.83	177	1.17	3.30	2	43	# 3	12	42	4.75	2.85	21	0.33	OK.	0.26	OK.	
		2ND	SD-11.7	Right	-98	168	83		12	36	102	2.8	1.12	1.35	1.83	177	0.95	3.51	2	43	# 3	12	42	4.58	2.75	21	0.28	OK.	0.28	OK.	
		2ND	SU-4.6	Left	-1012	763	113		8	110	44	0.4	1.12	1.59	2.75	648	1.56	2.34	3	141	# 3	18	86	5	3	22	0.69	OK.	0.22	OK.	
		2ND	SU-4.6	Right	-221	260	108		8	110	44	0.4	1.12	1.59	2.75	648	0.40	2.23	3	141	# 3	18	86	5	3	22	0.18	OK.	0.21	OK.	
		2ND	SU-4.8	Left	-381	397	268		8	110	45	0.4	1.12	1.59	2.75	648	0.61	5.54	3	141	# 3	18	86	2.88	1.73	22	0.47	OK.	0.91	OK.	
		2ND	SU-4.8	Right	-665	530	271		8	110	45	0.4	1.12	1.59	2.75	648	1.03	5.60	3	141	# 3	18	86	2.83	1.7	22	0.81	OK.	0.94	OK.	
		2ND	S2.-1	Left	-218	182	131	1949	8	73	42	0.6	1.2	2.41	2.35	648	0.34	3.67	3	103	# 4	18	79	4.44	2.66	22	0.14	OK.	0.30	OK.	
		2ND	S2.-1	Right	-153	185	135	1949	8	73	42	0.6	1.2	2.41	2.35	648	0.28	3.78	3	103	# 4	18	79	4.35	2.61	22	0.12	OK.	0.32	OK.	
		2ND	S2.-2	Left	-281	238	69	1949	8	73	42	0.6	1.2	2.41	2.35	648	0.43	1.93	3	103	# 4	18	79	5	3	22	0.16	OK.	0.14	OK.	
		2ND	S2.-2	Right	-187	175	76	1949	8	73	42	0.6	1.2	2.41	2.35	648	0.29	2.13	3	103	# 4	18	79	5	3	22	0.11	OK.	0.15	OK.	
2.1	3.8	2ND	SP-1	Left	-2048	1762	1201		8	136	48	0.4	1.12	1.69	2.75	855	2.39	20.14	3	175	# 3	18	106	2.5	1.5	22	2.13	N.G.	3.80	N.G.	
3.5	4.3	2ND	SP-1	Right	-3036	3383	1359		8	136	48	0.4	1.12	1.69	2.75	855	3.96	22.79	3	175	# 3	18	106	2.5	1.5	22	3.52	N.G.	4.30	N.G.	
3.0	3.3	2ND	SP-2	Left	-2921	2575	1054		8	136	194	1.4	1.12	1.69	2.75	855	3.42	17.68	3	175	# 3	18	106	2.5	1.5	22	3.04	N.G.	3.33	N.G.	
3.5	3.7	2ND	SP-2	Right	-3179	3407	1165		8	136	194	1.4	1.12	1.69	2.75	855	3.99	19.54	3	175	# 3	18	106	2.5	1.5	22	3.54	N.G.	3.68	N.G.	
3.9	3.9	2ND	SP-3	Left	-3795	3658	1219		8	136	191	1.4	1.12	1.69	2.75	855	4.44	20.44	3	175	# 3	18	106	2.5	1.5	22	3.95	N.G.	3.85	N.G.	
3.5	3.9	2ND	SP-3	Right	-3383	3340	1234		8	136	191	1.4	1.12	1.69	2.75	855	3.96	20.70	3	175	# 3	18	106	2.5	1.5	22	3.52	N.G.	3.90	N.G.	
3.4	2.1	MEZ	SA-1	Left	-1159	1212	310		10	40	96	2.4	1.12	1.34	2.20	193	6.29	14.25	2	40	# 3	14	40	2.5	1.5	21	3.35	N.G.	2.06	N.G.	
3.4	2.0	MEZ	SA-1	Right	-1230	1156	305		10	40	96	2.4	1.12	1.34	2.20	193	6.38	14.02	2	40	# 3	14	40	2.5	1.5	21	3.40	N.G.	2.03	N.G.	
5.1	4.8	MEZ	SA-2	Left	-1718	1846	719		10	40	84	2.1	1.12	1.34	2.20	193	9.57	33.04	2	40	# 3	14	40	2.5	1.5	21	5.11	N.G.	4.79	N.G.	
5.1	4.4	MEZ	SA-2	Right	-1831	1689	667		10	40	84	2.1	1.12	1.34	2.20	193	9.50	30.65	2	40	# 3	14	40	2.5	1.5	21	5.06	N.G.	4.44	N.G.	
4.4	3.5	MEZ	SA-3	Left	-1443	1578	523		10	40	96	2.4	1.12	1.34	2.20	193	8.19	24.04	2	40	# 3	14	40	2.5	1.5	21	4.37	N.G.	3.48	N.G.	
4.2	2.7	MEZ	SA-3	Right	-1533	1375	399		10	40	96	2.4	1.12	1.34	2.20	193	7.95	18.34	2	40	# 3	14	40	2.5	1.5	21	4.24	N.G.	2.66	N.G.	
		MEZ	S1-A	Left	-360	329	125		10	40	96	2.4	1.12	1.34	2.20	193	1.87	5.75	2	40	# 3	14	40	2.71	1.63	21	0.92	OK.	0.77	OK.	
		MEZ	S1-A	Right	-354	353	105		10	40	96	2.4	1.12	1.34	2.20	193	1.83	4.83	2	40	# 3	14	40	3.48	2.09	21	0.70	OK.	0.50	OK.	
1.4		MEZ	S1-B	Left	-495	412	132		10	40	96	2.4	1.12	1.34	2.20	193	2.57	6.07	2	40	# 3	14	40	2.5	1.5	21	1.37	N.G.	0.88	OK.	
1.1		MEZ	S1-B	Right	-419	472	120		10	40	96	2.4	1.12	1.34	2.20	193	2.45	5.52	2	40	# 3	14	40	2.9	1.74	21	1.12	N.G.	0.69	OK.	
1.3		MEZ	S1-C	Left	-484	344	141		10	40	96	2.4	1.12	1.34	2.20	193	2.51	6.48	2	40	# 3	14	40	2.5	1.5	21	1.34	N.G.	0.94	OK.	
1.2		MEZ	S1-C	Right	-332	437	144		10	40	96	2.4	1.12	1.34	2.20	193	2.27	6.62	2	40	# 3	14	40	2.5	1.5	21	1.21	N.G.	0.96	OK.	
1.6	1.6	MEZ	S1-G	Left	-1367	1186	370		6	79	132	1.7	1.12	1.55	3.66	445	3.07	14.30	2.646	66	# 3	20	55	2.5	1.5	21	1.64	N.G.	1.63	N.G.	
1.7	1.9	MEZ	S1-G	Right	-1253	1396	437		6	79	132	1.7	1.12	1.55	3.66	445	3.14	16.89	2.646	66	# 3	20	55	2.5	1.5	21	1.67	N.G.	1.92	N.G.	
1.0	1.2	MEZ	S1-H	Left	-176	132	63		6	22	132	6.1	1.12	1.24	3.66	91	1.93	8.83	2	12	# 3	20	15	2.5	1.5	21	1.03	N.G.	1.22	N.G.	
	1.1	MEZ	S1-H	Right	-133	153	55		6	22	132	6.1	1.12	1.24	3.66	91	1.68	7.71	2	12	# 3	20	15	2.5	1.5	21	0.89	OK.	1.06	N.G.	
		MEZ	S1-J	Left	-149	134	43		6	22	132	6.1	1.12	1.24	3.66	91	1.63	6.02	2	12	# 3	20	15	2.5	1.5	21	0.87	OK.	0.83	OK.	
		MEZ	S1-J	Right	-144	142	41		6	22	132	6.1	1.12	1.24	3.66	91	1.58	5.74	2	12	# 3	20	15	2.71	1.63	21	0.77	OK.	0.73	OK.	

Eartquake Level hazard, BSE-2E

Spandrel Reinf. Check/ DCR (Evaluation):

Shear Wall Spandrel Summary - ACI 318-14

Shear 1912 1949 (trim + web bars) d=0.9 Lw

f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2

f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2

DCR/mk = [V/(Vc+Vs)] / mk

1949: Deformed bar

1912: Square bar

k = 0.75 for 1912 ~ A15Gr33

k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
					kip-ft	kip-ft	kip	Alteration	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
		MEZ	S1-K	Left	-141	135	40		6	22	132	6.1	1.12	1.24	3.66	91	1.55	5.60	2	12	# 3	20	15	2.83	1.7	21	0.73	OK.	0.68	OK.	
		MEZ	S1-K	Right	-142	132	41		6	22	132	6.1	1.12	1.24	3.66	91	1.56	5.74	2	12	# 3	20	15	2.71	1.63	21	0.77	OK.	0.73	OK.	
		MEZ	S1-L	Left	-102	97	29		6	22	132	6.1	1.12	1.24	3.66	91	1.12	4.06	2	12	# 3	20	15	4.11	2.47	21	0.36	OK.	0.34	OK.	
		MEZ	S1-L	Right	-106	94	31		6	22	132	6.1	1.12	1.24	3.66	91	1.16	4.34	2	12	# 3	20	15	3.88	2.33	21	0.40	OK.	0.39	OK.	
		MEZ	S1-M	Left	-81	77	24		6	22	132	6.1	1.12	1.24	3.66	91	0.89	3.36	2	12	# 3	20	15	4.7	2.82	21	0.25	OK.	0.25	OK.	
		MEZ	S1-M	Right	-86	74	25		6	22	132	6.1	1.12	1.24	3.66	91	0.94	3.50	2	12	# 3	20	15	4.58	2.75	21	0.27	OK.	0.26	OK.	
	1.3	MEZ	S1-N	Left	-131	135	65		6	22	77	3.5	1.12	1.24	3.66	91	1.48	9.11	2	12	# 3	20	15	2.5	1.5	21	0.79	OK.	1.26	N.G.	
	1.3	MEZ	S1-N	Right	-139	129	67		6	22	77	3.5	1.12	1.24	3.66	91	1.52	9.39	2	12	# 3	20	15	2.5	1.5	21	0.81	OK.	1.30	N.G.	
		MEZ	SU-3.6	Left	-1711	1643	380		8	191	34	0.2	1.12	1.92	2.75	1364	1.25	4.55	3	247	# 3	18	149	3.71	2.22	22	0.75	OK.	0.58	OK.	
		MEZ	SU-3.6	Right	-983	789	386		8	191	34	0.2	1.12	1.92	2.75	1364	0.72	4.62	3	247	# 3	18	149	3.65	2.19	22	0.44	OK.	0.59	OK.	
		MEZ	S12-B	Left	-69	70	35		8	54	78	1.4	1.12	1.35	2.75	268	0.26	1.47	3	68	# 3	18	43	5	3	22	0.12	OK.	0.14	OK.	
		MEZ	S12-B	Right	-119	98	56		8	54	78	1.4	1.12	1.35	2.75	268	0.44	2.35	3	68	# 3	18	43	5	3	22	0.20	OK.	0.23	OK.	
2.6	2.0	MEZ	S4-C	Left	-705	641	230		8	51	70	1.4	1.12	1.33	2.75	246	2.87	10.37	3	63	# 3	18	40	2.5	1.5	22	2.55	N.G.	2.00	N.G.	
2.9	2.5	MEZ	S4-C	Right	-726	813	285		8	51	70	1.4	1.12	1.33	2.75	246	3.31	12.84	3	63	# 3	18	40	2.5	1.5	22	2.94	N.G.	2.48	N.G.	
		MEZ	S4-D	Left	-239	247	132		8	51	120	2.4	1.12	1.33	2.75	246	1.00	5.95	2	42	# 3	18	40	2.54	1.53	21	0.53	OK.	0.85	OK.	
	1.3	MEZ	S4-D	Right	-241	261	193		8	51	120	2.4	1.12	1.33	2.75	246	1.06	8.70	2	42	# 3	18	40	2.5	1.5	21	0.57	OK.	1.27	N.G.	
4.0	4.5	MEZ	S4-H	Left	-803	1110	518		8	51	60	1.2	1.12	1.33	2.75	246	4.52	23.34	3	63	# 3	18	40	2.5	1.5	22	4.02	N.G.	4.51	N.G.	
4.1	3.4	MEZ	S4-H	Right	-1139	806	387		8	51	60	1.2	1.12	1.33	2.75	246	4.64	17.44	3	63	# 3	18	40	2.5	1.5	22	4.12	N.G.	3.37	N.G.	
	1.5	MEZ	S6-C8	Left	-1367	1172	670		8	187	54	0.3	1.12	1.91	2.75	1325	1.03	8.19	3	242	# 3	18	146	2.5	1.5	22	0.92	OK.	1.54	N.G.	
	1.5	MEZ	S6-C8	Right	-871	1178	641		8	187	54	0.3	1.12	1.91	2.75	1325	0.89	7.83	3	242	# 3	18	146	2.5	1.5	22	0.79	OK.	1.47	N.G.	
		MEZ	S6-N8	Left	-1474	1344	228		8	187	36	0.2	1.12	1.91	2.75	1325	1.11	2.79	3	242	# 3	18	146	5	3	22	0.49	OK.	0.26	OK.	
		MEZ	S6-N8	Right	-1383	1123	234		8	187	36	0.2	1.12	1.91	2.75	1325	1.04	2.86	3	242	# 3	18	146	5	3	22	0.46	OK.	0.27	OK.	
		MEZ	S6-T8	Left	-202	1650	448		8	187	60	0.3	1.12	1.91	2.75	1325	1.25	5.48	3	242	# 3	18	146	2.94	1.76	22	0.94	OK.	0.88	OK.	
		MEZ	S6-T8	Right	-949	240	458		8	187	60	0.3	1.12	1.91	2.75	1325	0.72	5.60	3	242	# 3	18	146	2.84	1.7	22	0.56	OK.	0.93	OK.	
	1.4	MEZ	S8-C8	Left	-1232	1093	623		8	187	54	0.3	1.12	1.91	2.75	1325	0.93	7.61	3	242	# 3	18	146	2.5	1.5	22	0.83	OK.	1.43	N.G.	
	1.4	MEZ	S8-C8	Right	-884	1116	589		8	187	54	0.3	1.12	1.91	2.75	1325	0.84	7.20	3	242	# 3	18	146	2.5	1.5	22	0.75	OK.	1.35	N.G.	
		MEZ	S8-N8	Left	-1412	1370	187		8	187	36	0.2	1.12	1.91	2.75	1325	1.07	2.29	3	242	# 3	18	146	5	3	22	0.47	OK.	0.21	OK.	
		MEZ	S8-N8	Right	-988	987	180		8	187	36	0.2	1.12	1.91	2.75	1325	0.75	2.20	3	242	# 3	18	146	5	3	22	0.33	OK.	0.21	OK.	
		MEZ	S8-T8	Left	-242	1310	369		8	187	60	0.3	1.12	1.91	2.75	1325	0.99	4.51	3	242	# 3	18	146	3.74	2.24	22	0.59	OK.	0.57	OK.	
		MEZ	S8-T8	Right	-777	240	380		8	187	60	0.3	1.12	1.91	2.75	1325	0.59	4.64	3	242	# 3	18	146	3.63	2.18	22	0.36	OK.	0.60	OK.	
	1.3	MEZ	S10-C8	Left	-993	890	557		8	187	54	0.3	1.12	1.91	2.75	1325	0.75	6.81	3	242	# 3	18	146	2.5	1.5	22	0.67	OK.	1.28	N.G.	
	1.2	MEZ	S10-C8	Right	-678	887	526		8	187	54	0.3	1.12	1.91	2.75	1325	0.67	6.43	3	242	# 3	18	146	2.5	1.5	22	0.59	OK.	1.21	N.G.	
		MEZ	S10-N8	Left	-1185	1191	282		8	187	36	0.2	1.12	1.91	2.75	1325	0.90	3.45	3	242	# 3	18	146	4.63	2.78	22	0.43	OK.	0.35	OK.	
		MEZ	S10-N8	Right	-458	471	275		8	187	36	0.2	1.12	1.91	2.75	1325	0.36	3.36	3	242	# 3	18	146	4.7	2.82	22	0.17	OK.	0.34	OK.	
		MEZ	S10-T8	Left	-25	986	283		8	187	60	0.3	1.12	1.91	2.75	1325	0.74	3.46	3	242	# 3	18	146	4.62	2.77	22	0.36	OK.	0.35	OK.	
		MEZ	S10-T8	Right	-694	178	294		8	187	60	0.3	1.12	1.91	2.75	1325	0.52	3.59	3	242	# 3	18	146	4.51	2.7	22	0.26	OK.	0.37	OK.	
		MEZ	SU-4.2	Left	-780	609	223		8	191	35	0.2	1.12	1.92	2.75	1364	0.57	2.67	3	247	# 3	18	149	5	3	22	0.25	OK.	0.25	OK.	
		MEZ	SU-4.2	Right	-1180	1118	218		8	191	35	0.2	1.12	1.92	2.75	1364	0.86	2.61	3	247	# 3	18	149	5	3	22	0.38	OK.	0.25	OK.	
		MEZ	SU-9	Left	-626	796	299		8	191	60	0.3	1.12	1.92	2.75	1364	0.58	3.58	3	247	# 3	18	149	4.52	2.71	22	0.29	OK.	0.37	OK.	
		MEZ	SU-9	Right	-206	121	194		8	191	60	0.3	1.12	1.92	2.75	1364	0.15	2.32	3	247	# 3	18	149	5	3	22	0.07	OK.	0.22	OK.	

Eartquake Level hazard, BSE-2E

Spandrel Reinf. Check/ DCR (Evaluation):

Shear Wall Spandrel Summary - ACI 318-14

Shear 1912 1949 (trim + web bars) d=0.9 Lw

f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2

f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2

DCR/mk = [V/(Vc+Vs)] / mk

1949: Deformed bar

1912: Square bar

k = 0.75 for 1912 ~ A15Gr33

k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
					kip-ft	kip-ft	kip	Alteration	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
		MEZ	SU-9.6	Left	-526	450	275		8	191	54	0.3	1.12	1.92	2.75	1364	0.39	3.29	3	247	# 3	18	149	4.76	2.85	22	0.18	OK.	0.32	OK.	
		MEZ	SU-9.6	Right	-439	304	284		8	191	54	0.3	1.12	1.92	2.75	1364	0.32	3.40	3	247	# 3	18	149	4.67	2.8	22	0.15	OK.	0.34	OK.	
		MEZ	SU-9.9	Left	-432	580	103		8	191	42	0.2	1.12	1.92	2.75	1364	0.43	1.23	3	247	# 3	18	149	5	3	22	0.19	OK.	0.12	OK.	
		MEZ	SU-9.9	Right	-153	277	109		8	191	42	0.2	1.12	1.92	2.75	1364	0.20	1.31	3	247	# 3	18	149	5	3	22	0.09	OK.	0.12	OK.	
1.5		MEZ	SU-10.5	Left	-4493	5257	612		8	274	300	1.1	1.12	2.28	2.75	2323	2.26	5.10	3	356	# 3	18	214	3.25	1.95	22	1.55	N.G.	0.74	OK.	
		MEZ	SU-10.5	Right	-1670	1373	671		8	274	300	1.1	1.12	2.28	2.75	2323	0.72	5.59	3	356	# 3	18	214	2.84	1.7	22	0.56	OK.	0.92	OK.	
		MEZ	SU-8.3	Left	-1005	1005	379		8	274	165	0.6	1.12	2.28	2.75	2323	0.43	3.16	3	356	# 3	18	214	4.87	2.92	22	0.20	OK.	0.30	OK.	
		MEZ	SU-8.3	Right	-732	1000	371		8	274	165	0.6	1.12	2.28	2.75	2323	0.43	3.09	3	356	# 3	18	214	4.92	2.95	22	0.19	OK.	0.29	OK.	
		MEZ	SU-7.5	Left	-607	995	238		8	274	330	1.2	1.12	2.28	2.75	2323	0.43	1.98	3	356	# 3	18	214	5	3	22	0.19	OK.	0.19	OK.	
		MEZ	SU-7.5	Right	-932	418	319		8	274	330	1.2	1.12	2.28	2.75	2323	0.40	2.66	3	356	# 3	18	214	5	3	22	0.18	OK.	0.25	OK.	
		MEZ	SU-6.5	Left	-942	588	291		8	274	330	1.2	1.12	2.28	2.75	2323	0.41	2.43	3	356	# 3	18	214	5	3	22	0.18	OK.	0.23	OK.	
		MEZ	SU-6.5	Right	-469	780	262		8	274	330	1.2	1.12	2.28	2.75	2323	0.34	2.18	3	356	# 3	18	214	5	3	22	0.15	OK.	0.20	OK.	
		MEZ	SU-5.5	Left	-1287	1900	597		8	274	330	1.2	1.12	2.28	2.75	2323	0.82	4.98	3	356	# 3	18	214	3.35	2.01	22	0.54	OK.	0.69	OK.	
1.7	1.1	MEZ	SU-5.5	Right	-4359	3232	717		8	274	330	1.2	1.12	2.28	2.75	2323	1.88	5.98	3	356	# 3	18	214	2.52	1.51	22	1.66	N.G.	1.11	N.G.	
		MEZ	SU-8.7	Left	-734	395	138		8	274	144	0.5	1.12	2.28	2.75	2323	0.32	1.15	3	356	# 3	18	214	5	3	22	0.14	OK.	0.11	OK.	
		MEZ	SU-8.7	Right	-636	574	361		8	274	144	0.5	1.12	2.28	2.75	2323	0.27	3.01	3	356	# 3	18	214	4.99	3	22	0.12	OK.	0.28	OK.	
		MEZ	SU-9.3	Left	-775	1003	437		8	274	141	0.5	1.12	2.28	2.75	2323	0.43	3.64	3	356	# 3	18	214	4.46	2.68	22	0.21	OK.	0.38	OK.	
		MEZ	SU-9.3	Right	-734	514	211		8	274	141	0.5	1.12	2.28	2.75	2323	0.32	1.76	3	356	# 3	18	214	5	3	22	0.14	OK.	0.16	OK.	
		MEZ	S2.-1	Left	-203	167	61	1949	8	54	42	0.8	1.2	2.11	2.35	420	0.48	2.29	3	76	# 4	18	59	5	3	22	0.18	OK.	0.17	OK.	
		MEZ	S2.-1	Right	-165	207	63	1949	8	54	42	0.8	1.2	2.11	2.35	420	0.49	2.36	3	76	# 4	18	59	5	3	22	0.18	OK.	0.17	OK.	
		MEZ	S2.-2	Left	-261	262	59	1949	8	54	42	0.8	1.2	2.11	2.35	420	0.62	2.21	3	76	# 4	18	59	5	3	22	0.23	OK.	0.16	OK.	
		MEZ	S2.-2	Right	-206	213	58	1949	8	54	42	0.8	1.2	2.11	2.35	420	0.51	2.17	3	76	# 4	18	59	5	3	22	0.19	OK.	0.16	OK.	
4.4	4.2	1ST	SA-1	Left	0	1147	470		10	30	96	3.2	1.12	1.28	2.20	138	8.29	28.60	2	30	# 3	14	30	2.5	1.5	21	4.42	N.G.	4.20	N.G.	
3.9	3.5	1ST	SA-1	Right	-1020	991	394		10	30	96	3.2	1.12	1.28	2.20	138	7.37	23.98	2	30	# 3	14	30	2.5	1.5	21	3.93	N.G.	3.52	N.G.	
4.4	4.1	1ST	SA-3	Left	0	1146	457		10	30	96	3.2	1.12	1.28	2.20	138	8.28	27.81	2	30	# 3	14	30	2.5	1.5	21	4.41	N.G.	4.08	N.G.	
4.4	4.1	1ST	SA-3	Right	-1152	0	461		10	30	96	3.2	1.12	1.28	2.20	138	8.32	28.06	2	30	# 3	14	30	2.5	1.5	21	4.44	N.G.	4.12	N.G.	
1.2	1.1	1ST	S1-A	Left	-283	304	121		10	30	96	3.2	1.12	1.28	2.20	138	2.20	7.36	2	30	# 3	14	30	2.5	1.5	21	1.17	N.G.	1.08	N.G.	
1.5	1.5	1ST	S1-A	Right	-318	390	164		10	30	96	3.2	1.12	1.28	2.20	138	2.82	9.98	2	30	# 3	14	30	2.5	1.5	21	1.50	N.G.	1.46	N.G.	
1.2	1.1	1ST	S1-B	Left	-292	308	125		10	30	96	3.2	1.12	1.28	2.20	138	2.23	7.61	2	30	# 3	14	30	2.5	1.5	21	1.19	N.G.	1.12	N.G.	
1.5	1.5	1ST	S1-B	Right	-314	398	166		10	30	96	3.2	1.12	1.28	2.20	138	2.87	10.10	2	30	# 3	14	30	2.5	1.5	21	1.53	N.G.	1.48	N.G.	
1.1	1.0	1ST	S1-C	Left	-296	284	116		10	30	96	3.2	1.12	1.28	2.20	138	2.14	7.06	2	30	# 3	14	30	2.5	1.5	21	1.14	N.G.	1.04	N.G.	
1.6	1.5	1ST	S1-C	Right	-294	409	168		10	30	96	3.2	1.12	1.28	2.20	138	2.95	10.22	2	30	# 3	14	30	2.5	1.5	21	1.57	N.G.	1.50	N.G.	
		1ST	S1-D	Left	-145	152	41		6	30	132	4.4	1.12	1.28	3.66	134	1.14	4.18	2	18	# 3	20	21	4.01	2.41	21	0.38	OK.	0.35	OK.	
		1ST	S1-D	Right	-131	134	53		6	30	132	4.4	1.12	1.28	3.66	134	1.00	5.41	2	18	# 3	20	21	2.99	1.8	21	0.45	OK.	0.61	OK.	
		1ST	S1-E	Left	-54	66	66		6	30	132	4.4	1.12	1.28	3.66	134	0.50	6.73	2	18	# 3	20	21	2.5	1.5	21	0.26	OK.	0.91	OK.	
		1ST	S1-E	Right	-71	125	68		6	30	132	4.4	1.12	1.28	3.66	134	0.93	6.94	2	18	# 3	20	21	2.5	1.5	21	0.50	OK.	0.94	OK.	
	1.6	1ST	S1-F	Left	-84	101	118		6	30	132	4.4	1.12	1.28	3.66	134	0.76	12.04	2	18	# 3	20	21	2.5	1.5	21	0.40	OK.	1.63	N.G.	
		1ST	S1-F	Right	-185	237	23		6	30	132	4.4	1.12	1.28	3.66	134	1.78	2.35	2	18	# 3	20	21	5	3	21	0.47	OK.	0.16	OK.	
		1ST	S1-G	Left	-393	370	119		12	41	150	3.6	1.12	1.38	1.83	209	1.88	4.37	2	50	# 3	12	49	3.86	2.31	21	0.65	OK.	0.42	OK.	
		1ST	S1-G	Right	-242	217	172		12	41	150	3.6	1.12	1.38	1.83	209	1.16	6.32	2	50	# 3	12	49	2.5	1.5	21	0.62	OK.	0.93	OK.	

Eartquake Level hazard, BSE-2E

Spandrel Reinf. Check/ DCR (Evaluation):

Shear Wall Spandrel Summary - ACI 318-14

Shear 1912 1949 (trim + web bars) d=0.9 Lw

f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2

f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2

DCR/mk = [V/(Vc+Vs)] / mk

1949: Deformed bar

1912: Square bar

k = 0.75 for 1912 ~ A15Gr33

k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949 Alteration	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
					kip-ft	kip-ft	kip		in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
		1ST	S1-H	Left	-127	143	67		6	30	132	4.4	1.12	1.28	3.66	134	1.07	6.84	2	18	# 3	20	21	2.5	1.5	21	0.57	OK.	0.93	OK.	
	1.0	1ST	S1-H	Right	-47	74	75		6	30	132	4.4	1.12	1.28	3.66	134	0.55	7.65	2	18	# 3	20	21	2.5	1.5	21	0.30	OK.	1.04	N.G.	
3.1	1.4	1ST	S1-J	Left	-2006	2054	433		10.1	96	132	1.4	1.12	1.64	2.17	583	3.52	8.12	3	155	# 3	12	113	2.5	1.5	22	3.13	N.G.	1.44	N.G.	
3.0	1.5	1ST	S1-J	Right	-1936	1875	446		10.1	96	132	1.4	1.12	1.64	2.17	583	3.32	8.37	3	155	# 3	12	113	2.5	1.5	22	2.95	N.G.	1.48	N.G.	
2.3	1.1	1ST	S1-K	Left	-1445	1500	329		10.1	96	132	1.4	1.12	1.64	2.17	583	2.57	6.17	3	155	# 3	12	113	2.5	1.5	22	2.28	N.G.	1.09	N.G.	
2.4	1.1	1ST	S1-K	Right	-1577	1497	344		10.1	96	132	1.4	1.12	1.64	2.17	583	2.70	6.45	3	155	# 3	12	113	2.5	1.5	22	2.40	N.G.	1.14	N.G.	
2.2	1.1	1ST	S1-L	Left	-1357	1419	322		10.1	96	132	1.4	1.12	1.64	2.17	583	2.43	6.04	3	155	# 3	12	113	2.5	1.5	22	2.16	N.G.	1.07	N.G.	
2.3	1.1	1ST	S1-L	Right	-1491	1393	336		10.1	96	132	1.4	1.12	1.64	2.17	583	2.55	6.30	3	155	# 3	12	113	2.5	1.5	22	2.27	N.G.	1.12	N.G.	
1.2		1ST	S1-M	Left	-1093	1154	253		10.1	96	132	1.4	1.12	1.64	2.17	583	1.98	4.75	3	155	# 3	12	113	3.54	2.13	22	1.24	N.G.	0.59	OK.	
1.3		1ST	S1-M	Right	-1123	1033	267		10.1	96	132	1.4	1.12	1.64	2.17	583	1.92	5.01	3	155	# 3	12	113	3.33	2	22	1.29	N.G.	0.67	OK.	
1.8	1.7	1ST	S1-N	Left	-1127	1200	519		10.1	96	77	0.8	1.12	1.64	2.17	583	2.06	9.74	3	155	# 3	12	113	2.5	1.5	22	1.83	N.G.	1.73	N.G.	
2.0	1.8	1ST	S1-N	Right	-1331	1237	527		10.1	96	77	0.8	1.12	1.64	2.17	583	2.28	9.89	3	155	# 3	12	113	2.5	1.5	22	2.03	N.G.	1.75	N.G.	
1.5	1.5	1ST	S1-Q4	Left	-480	447	175		8	38	72	1.9	1.12	1.28	2.75	175	2.74	10.51	2.204	34	# 3	18	30	2.5	1.5	21	1.46	N.G.	1.47	N.G.	
	1.2	1ST	S1-Q4	Right	-164	189	145		8	38	72	1.9	1.12	1.28	2.75	175	1.08	8.71	2.204	34	# 3	18	30	2.5	1.5	21	0.57	OK.	1.22	N.G.	
1.8	1.8	1ST	S1-Q7	Left	-554	577	212		8	38	72	1.9	1.12	1.28	2.75	175	3.29	12.73	2.21	34	# 3	18	30	2.5	1.5	21	1.76	N.G.	1.78	N.G.	
2.2	1.7	1ST	S1-Q7	Right	-731	704	205		8	38	72	1.9	1.12	1.28	2.75	175	4.17	12.31	2.21	34	# 3	18	30	2.5	1.5	21	2.23	N.G.	1.72	N.G.	
1.9	1.4	1ST	S1-R2	Left	-618	563	169		8	38	72	1.9	1.12	1.28	2.75	175	3.53	10.15	2.21	34	# 3	18	30	2.5	1.5	21	1.88	N.G.	1.42	N.G.	
1.4	1.5	1ST	S1-R2	Right	-418	461	184		8	38	72	1.9	1.12	1.28	2.75	175	2.63	11.05	2.21	34	# 3	18	30	2.5	1.5	21	1.40	N.G.	1.54	N.G.	
		1ST	S1-R5	Left	-148	147	97		8	38	72	1.9	1.12	1.28	2.75	175	0.84	5.83	2.204	34	# 3	18	30	2.65	1.59	21	0.43	OK.	0.77	OK.	
		1ST	S1-R5	Right	-144	143	99		8	38	72	1.9	1.12	1.28	2.75	175	0.82	5.95	2.204	34	# 3	18	30	2.55	1.53	21	0.43	OK.	0.82	OK.	
1.4	1.5	1ST	S1-R8	Left	-400	447	177		8	38	72	1.9	1.12	1.28	2.75	175	2.55	10.63	2.21	34	# 3	18	30	2.5	1.5	21	1.36	N.G.	1.48	N.G.	
1.8	1.4	1ST	S1-R8	Right	-607	544	161		8	38	72	1.9	1.12	1.28	2.75	175	3.46	9.67	2.21	34	# 3	18	30	2.5	1.5	21	1.85	N.G.	1.35	N.G.	
1.5		1ST	S1-S2	Left	-800	678	165		8	71	72	1.0	1.12	1.42	2.75	372	2.15	5.28	3	90	# 3	18	56	3.1	1.86	22	1.54	N.G.	0.81	OK.	
		1ST	S1-S2	Right	-128	182	159		8	71	72	1.0	1.12	1.42	2.75	372	0.49	5.09	3	90	# 3	18	56	3.26	1.96	22	0.33	OK.	0.74	OK.	
		1ST	S1-S5	Left	-176	202	81		8	71	72	1.0	1.12	1.42	2.75	372	0.54	2.59	3	90	# 3	18	56	5	3	22	0.24	OK.	0.25	OK.	
		1ST	S1-S5	Right	-234	289	78		8	71	72	1.0	1.12	1.42	2.75	372	0.78	2.49	3	90	# 3	18	56	5	3	22	0.34	OK.	0.24	OK.	
		1ST	S1-S8	Left	-38	81	104		8	71	72	1.0	1.12	1.42	2.75	372	0.22	3.33	3	90	# 3	18	56	4.73	2.84	22	0.10	OK.	0.34	OK.	
		1ST	S1-S8	Right	-575	533	111		8	71	72	1.0	1.12	1.42	2.75	372	1.54	3.55	3	90	# 3	18	56	4.54	2.73	22	0.76	OK.	0.37	OK.	
1.2	2.2	1ST	SU-3.2	Left	-271	357	272		8	54	55	1.0	1.12	1.35	2.75	267	1.34	11.43	3	67	# 3	18	42	2.5	1.5	22	1.19	N.G.	2.20	N.G.	
1.6	2.2	1ST	SU-3.2	Right	-469	388	272		8	54	55	1.0	1.12	1.35	2.75	267	1.75	11.43	3	67	# 3	18	42	2.5	1.5	22	1.56	N.G.	2.20	N.G.	
		1ST	SU-3.4	Left	-736	804	102		12	106	145	1.4	1.12	1.79	1.83	709	1.13	1.46	3	204	# 3	12	125	5	3	22	0.50	OK.	0.14	OK.	
1.6	1.2	1ST	SU-3.4	Right	-1286	918	440		12	106	145	1.4	1.12	1.79	1.83	709	1.81	6.29	3	204	# 3	12	125	2.5	1.5	22	1.61	N.G.	1.19	N.G.	
1.7		1ST	S1-T2	Left	-843	845	171		8	71	72	1.0	1.12	1.42	2.75	372	2.27	5.47	3	90	# 3	18	56	2.94	1.77	22	1.71	N.G.	0.89	OK.	
		1ST	S1-T2	Right	-136	169	165		8	71	72	1.0	1.12	1.42	2.75	372	0.45	5.28	3	90	# 3	18	56	3.1	1.86	22	0.32	OK.	0.81	OK.	
	2.0	1ST	S1-T5	Left	-271	307	324		8	71	96	1.3	1.12	1.42	2.75	372	0.83	10.36	3	90	# 3	18	56	2.5	1.5	22	0.73	OK.	1.98	N.G.	
1.1	1.4	1ST	S1-T5	Right	-477	455	224		8	71	96	1.3	1.12	1.42	2.75	372	1.28	7.16	3	90	# 3	18	56	2.5	1.5	22	1.14	N.G.	1.37	N.G.	
		1ST	SS-1.8	Left	-223	145	129		8	132	36	0.3	1.12	1.68	2.75	824	0.27	2.22	3	170	# 3	18	103	5	3	22	0.12	OK.	0.21	OK.	
		1ST	SS-1.8	Right	-96	183	122		8	132	36	0.3	1.12	1.68	2.75	824	0.22	2.10	3	170	# 3	18	103	5	3	22	0.10	OK.	0.20	OK.	
		1ST	SS-2.6	Left	-353	349	174		8	132	54	0.4	1.12	1.68	2.75	824	0.43	3.00	3	170	# 3	18	103	5	3	22	0.19	OK.	0.28	OK.	
		1ST	SS-2.6	Right	-508	348	180		8	132	54	0.4	1.12	1.68	2.75	824	0.62	3.10	3	170	# 3	18	103	4.91	2.95	22	0.28	OK.	0.30	OK.	

Eartquake Level hazard, BSE-2E

Spandrel Reinf. Check/ DCR (Evaluation):

Shear Wall Spandrel Summary - ACI 318-14

Shear 1912 1949 (trim + web bars) d=0.9 Lw

f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2

f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2

DCR/mk = [V/(Vc+Vs)] / mk

1949: Deformed bar

1912: Square bar

k = 0.75 for 1912 ~ A15Gr33

k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	$DCR_{(max T/B)}$	$V/(tw\ lw\ (fc')^{1/2})$	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
					kip-ft	kip-ft	kip	Alteration	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
		1ST	SS-3.8	Left	-587	397	221		8	132	36	0.3	1.12	1.68	2.75	824	0.71	3.81	3	170	# 3	18	103	4.32	2.59	22	0.37	OK.	0.42	OK.	
		1ST	SS-3.8	Right	-355	306	217		8	132	36	0.3	1.12	1.68	2.75	824	0.43	3.74	3	170	# 3	18	103	4.38	2.63	22	0.22	OK.	0.40	OK.	
1.2	1.5	1ST	SS-4.8	Left	-813	1094	476		8	132	59	0.4	1.12	1.68	2.75	824	1.33	8.21	3	170	# 3	18	103	2.5	1.5	22	1.18	N.G.	1.55	N.G.	
1.0	1.7	1ST	SS-4.8	Right	-970	586	530		8	132	59	0.4	1.12	1.68	2.75	824	1.18	9.14	3	170	# 3	18	103	2.5	1.5	22	1.05	N.G.	1.72	N.G.	
		1ST	SS-8.8	Left	-538	655	222		8	132	54	0.4	1.12	1.68	2.75	824	0.80	3.83	3	170	# 3	18	103	4.31	2.59	22	0.41	OK.	0.42	OK.	
		1ST	SS-8.8	Right	-357	182	226		8	132	54	0.4	1.12	1.68	2.75	824	0.43	3.90	3	170	# 3	18	103	4.25	2.55	22	0.23	OK.	0.43	OK.	
1.5	2.2	1ST	SU-4.4	Left	-416	558	464		12	61	54	0.9	1.12	1.51	1.83	342	1.63	11.49	3	115	# 3	12	72	2.5	1.5	22	1.45	N.G.	2.20	N.G.	
2.0	2.4	1ST	SU-4.4	Right	-783	569	498		12	61	54	0.9	1.12	1.51	1.83	342	2.29	12.33	3	115	# 3	12	72	2.5	1.5	22	2.04	N.G.	2.36	N.G.	
	1.0	1ST	SU-4.8	Left	-427	490	473		9.75	148	45	0.3	1.12	1.92	2.25	1054	0.46	6.00	3	232	# 3	12	173	2.5	1.5	22	0.41	OK.	1.04	N.G.	
1.3	1.1	1ST	SU-4.8	Right	-1508	1385	478		9.75	148	45	0.3	1.12	1.92	2.25	1054	1.43	6.07	3	232	# 3	12	173	2.5	1.5	22	1.27	N.G.	1.05	N.G.	
3.7	2.4	1ST	SU-9.6	Left	-1237	1501	531		12	64	72	1.1	1.12	1.53	1.83	363	4.13	12.54	3	121	# 3	12	76	2.5	1.5	22	3.67	N.G.	2.40	N.G.	
	1.3	1ST	SU-9.6	Right	-353	378	297		12	64	72	1.1	1.12	1.53	1.83	363	1.04	7.01	3	121	# 3	12	76	2.5	1.5	22	0.92	OK.	1.34	N.G.	
1.8	1.4	1ST	SU-9.9	Left	-1360	1690	563		12	118	42	0.4	1.12	1.87	1.83	818	2.07	7.27	3	227	# 3	12	138	2.5	1.5	22	1.84	N.G.	1.37	N.G.	
	1.4	1ST	SU-9.9	Right	-304	283	568		12	118	42	0.4	1.12	1.87	1.83	818	0.37	7.33	3	227	# 3	12	138	2.5	1.5	22	0.33	OK.	1.38	N.G.	
		1ST	SU-10.5	Left	-351	380	128		12	40	300	7.4	1.12	1.38	1.83	203	1.87	4.82	2	49	# 3	12	47	3.49	2.09	21	0.71	OK.	0.51	OK.	
1.0		1ST	SU-10.5	Right	-463	254	145		12	40	300	7.4	1.12	1.38	1.83	203	2.28	5.46	2	49	# 3	12	47	2.95	1.77	21	1.03	N.G.	0.68	OK.	
		1ST	SU-8.3	Left	-456	420	141		12	64	165	2.6	1.12	1.53	1.83	363	1.26	3.33	2	81	# 3	12	76	4.73	2.84	21	0.35	OK.	0.25	OK.	
		1ST	SU-8.3	Right	-572	350	154		12	64	165	2.6	1.12	1.53	1.83	363	1.57	3.64	2	81	# 3	12	76	4.47	2.68	21	0.47	OK.	0.29	OK.	
		1ST	SU-7.5	Left	-406	387	107		12	64	330	5.1	1.12	1.53	1.83	363	1.12	2.53	2	81	# 3	12	76	5	3	21	0.30	OK.	0.18	OK.	
		1ST	SU-7.5	Right	-561	254	148		12	64	330	5.1	1.12	1.53	1.83	363	1.54	3.49	2	81	# 3	12	76	4.59	2.75	21	0.45	OK.	0.28	OK.	
		1ST	SU-6.5	Left	-484	362	129		12	64	330	5.1	1.12	1.53	1.83	363	1.33	3.05	2	81	# 3	12	76	4.96	2.98	21	0.36	OK.	0.22	OK.	
		1ST	SU-6.5	Right	-516	265	132		12	64	330	5.1	1.12	1.53	1.83	363	1.42	3.12	2	81	# 3	12	76	4.9	2.94	21	0.39	OK.	0.23	OK.	
		1ST	SU-5.5	Left	-527	482	145		12	64	330	5.1	1.12	1.53	1.83	363	1.45	3.42	2	81	# 3	12	76	4.65	2.79	21	0.42	OK.	0.27	OK.	
		1ST	SU-5.5	Right	-504	222	143		12	64	330	5.1	1.12	1.53	1.83	363	1.39	3.38	2	81	# 3	12	76	4.69	2.81	21	0.39	OK.	0.26	OK.	
1.8		1ST	SU-8.7	Left	-1084	1201	258		12	64	144	2.2	1.12	1.53	1.83	363	3.30	6.09	2	81	# 3	12	76	2.5	1.5	21	1.76	N.G.	0.88	OK.	
		1ST	SU-8.7	Right	-547	304	182		12	64	144	2.2	1.12	1.53	1.83	363	1.50	4.30	2	81	# 3	12	76	3.92	2.35	21	0.51	OK.	0.40	OK.	
		1ST	SU-9.3	Left	-315	412	56		12	64	141	2.2	1.12	1.53	1.83	363	1.13	1.32	2	81	# 3	12	76	5	3	21	0.30	OK.	0.10	OK.	
1.6		1ST	SU-9.3	Right	-1094	729	284		12	64	141	2.2	1.12	1.53	1.83	363	3.01	6.71	2	81	# 3	12	76	2.5	1.5	21	1.60	N.G.	0.97	OK.	
1.0		1ST	S2.-1	Left	-642	710	208	1949	8	62	42	0.7	1.2	2.24	2.35	513	1.38	6.80	3	87	# 4	18	68	2.5	1.5	22	1.03	N.G.	0.99	OK.	
	1.0	1ST	S2.-1	Right	-654	577	215	1949	8	62	42	0.7	1.2	2.24	2.35	513	1.27	7.03	3	87	# 4	18	68	2.5	1.5	22	0.94	OK.	1.03	N.G.	
	1.1	1ST	S2.-2	Left	-591	589	223	1949	8	62	42	0.7	1.2	2.24	2.35	513	1.15	7.29	3	87	# 4	18	68	2.5	1.5	22	0.85	OK.	1.06	N.G.	
1.1	1.0	1ST	S2.-2	Right	-736	768	220	1949	8	62	42	0.7	1.2	2.24	2.35	513	1.50	7.20	3	87	# 4	18	68	2.5	1.5	22	1.11	N.G.	1.05	N.G.	
2.3	1.7	BASE	S1-D	Left	-2775	2157	830		12	142	96	0.7	1.12	2.02	1.83	1067	2.60	8.90	3	274	# 3	12	166	2.5	1.5	22	2.31	N.G.	1.68	N.G.	
2.0	1.7	BASE	S1-D	Right	-2069	2442	857		12	142	96	0.7	1.12	2.02	1.83	1067	2.29	9.18	3	274	# 3	12	166	2.5	1.5	22	2.03	N.G.	1.73	N.G.	
2.4	1.8	BASE	S1-E	Left	-2184	2229	723		12	118	96	0.8	1.12	1.87	1.83	819	2.72	9.33	3	227	# 3	12	138	2.5	1.5	22	2.42	N.G.	1.76	N.G.	
2.5	1.7	BASE	S1-E	Right	-2241	2287	718		12	118	96	0.8	1.12	1.87	1.83	819	2.79	9.26	3	227	# 3	12	138	2.5	1.5	22	2.48	N.G.	1.75	N.G.	
2.8	2.0	BASE	S1-F	Left	-1781	1852	658		12	94	96	1.0	1.12	1.72	1.83	598	3.10	10.65	3	179	# 3	12	110	2.5	1.5	22	2.75	N.G.	2.02	N.G.	
3.0	2.0	BASE	S1-F	Right	-2029	2027	638		12	94	96	1.0	1.12	1.72	1.83	598	3.39	10.33	3	179	# 3	12	110	2.5	1.5	22	3.02	N.G.	1.96	N.G.	
2.1		BASE	S1-J	Left	-2447	2595	420		12	123	132	1.1	1.12	1.90	1.83	870	2.98	5.19	3	237	# 3	12	144	3.18	1.91	22	2.08	N.G.	0.77	OK.	
1.8		BASE	S1-J	Right	-2128	2019	438		12	123	132	1.1	1.12	1.90	1.83	870	2.44	5.41	3	237	# 3	12	144	2.99	1.8	22	1.82	N.G.	0.85	OK.	

Eartquake Level hazard, BSE-2E Shear 1912 1949 (trim + web bars) d=0.9 Lw DCR/mk = [V/(Vc+Vs)] / mk

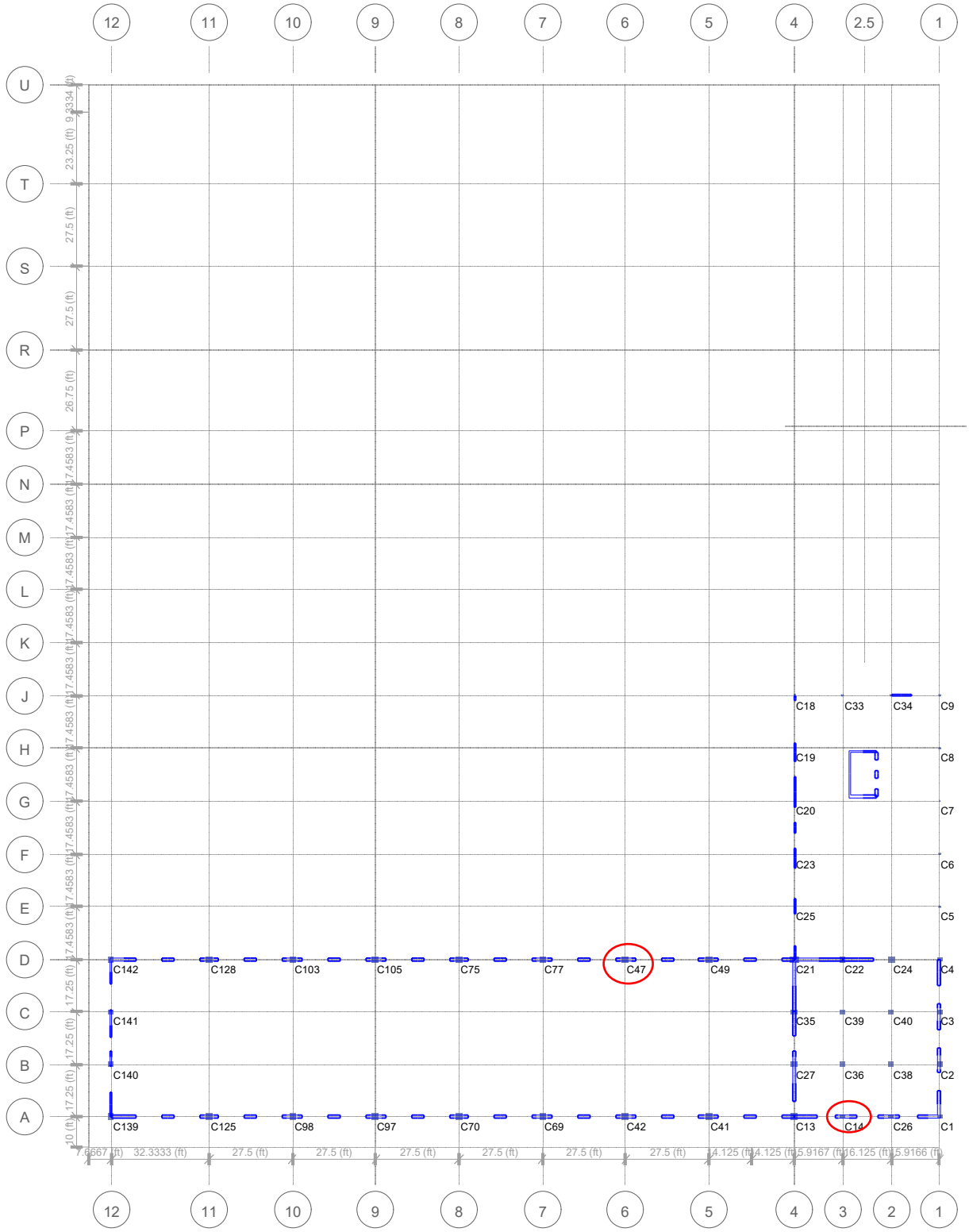
Spandrel Reinf. Check/ DCR (Evaluation): f_y = 50 50 ksi As prov'd = 2-3/4# + (H) Bar Lw/2 1949: Deformed bar k = 0.75 for 1912 ~ A15Gr33

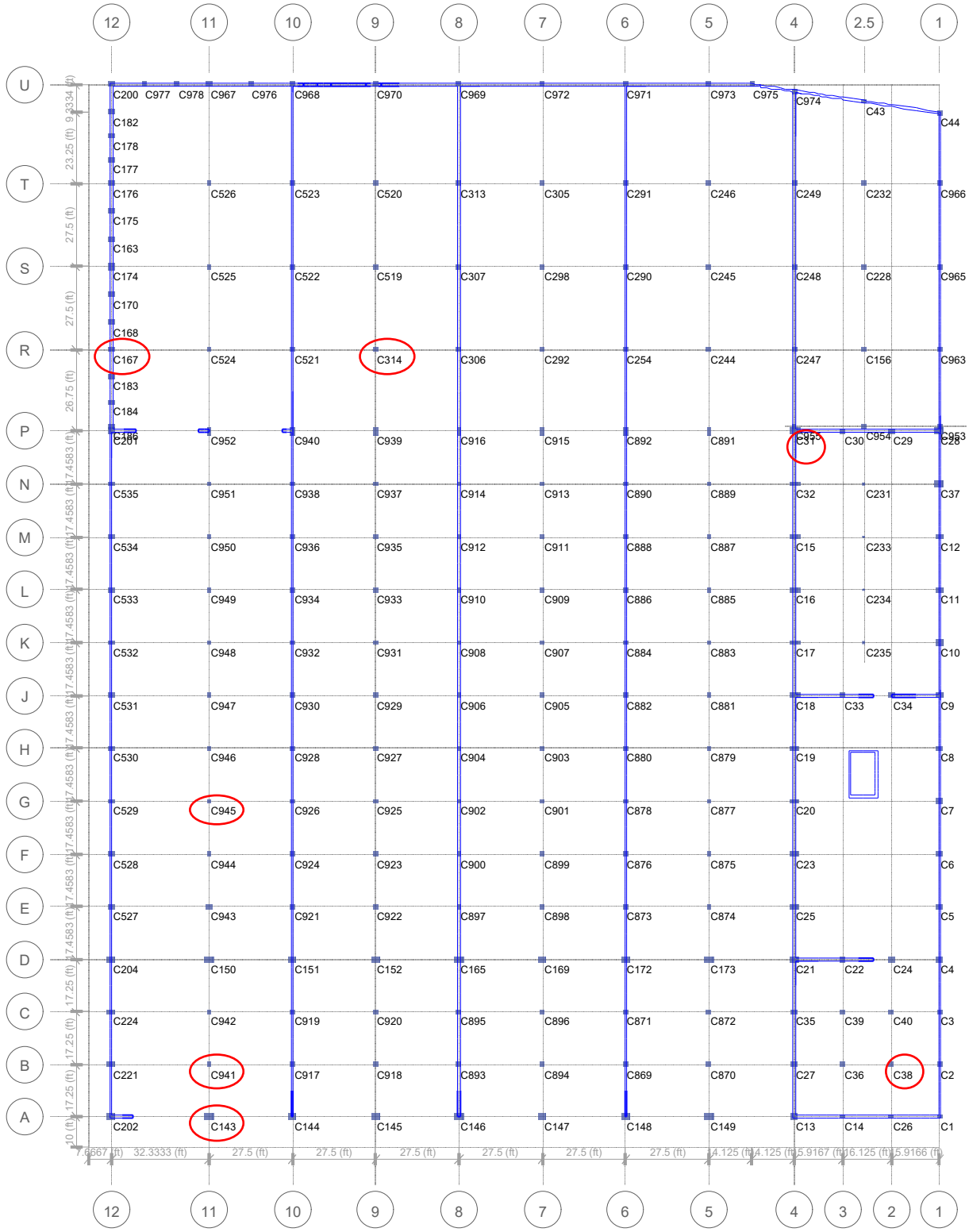
Shear Wall Spandrel Summary - ACI 318-14 f_c' = 3 3.75 ksi (1949) = 2(1)-#7 + (H) Bar Lw/2 1912: Square bar k = 0.90 for 1949 A15Gr40

Failure M	Failure V	Story	Spandrel Label	Station	Top Design Moment	Bottom Design Moment	Design Shear, V	1949 Alteration	tw	Lw (depth)	hw (length)	hw/Lw	Trim bars Per detail	As provd (T or B)	$a_{(max)}$	$M_{n(max)}$	DCR $_{(max\ T/B)}$	V /(tw lw $(f_c')^{1/2}$)	α_c	Vc	V rebar	Rebar Spc.	Vs	m_{cp} (Table 10-21)	m_{cp} (Table 10-22)	Table used	DCR/mk	Status	DCR/mk	Status	SPANDREL
M	V				kip-ft	kip-ft	kip	1949	in	in	in	<>1.5		in^2	in	kip-ft				kip	#3=3/8#		kip			10-	FLEXURE		SHEAR		
1.3		BASE	S1-K	Left	-1823	1915	350		12	123	132	1.1	1.12	1.90	1.83	870	2.20	4.32	3	237	# 3	12	144	3.9	2.34	22	1.25	N.G.	0.52	OK.	
1.4		BASE	S1-K	Right	-2025	1939	367		12	123	132	1.1	1.12	1.90	1.83	870	2.33	4.53	3	237	# 3	12	144	3.72	2.23	22	1.39	N.G.	0.57	OK.	
1.3		BASE	S1-L	Left	-1865	1961	343		12	123	132	1.1	1.12	1.90	1.83	870	2.25	4.24	3	237	# 3	12	144	3.97	2.38	22	1.26	N.G.	0.50	OK.	
1.3		BASE	S1-L	Right	-1910	1823	361		12	123	132	1.1	1.12	1.90	1.83	870	2.19	4.46	3	237	# 3	12	144	3.78	2.27	22	1.29	N.G.	0.56	OK.	
1.7		BASE	S1-M	Left	-1948	2062	433		12	123	132	1.1	1.12	1.90	1.83	870	2.37	5.35	3	237	# 3	12	144	3.04	1.83	22	1.73	N.G.	0.83	OK.	
2.5		BASE	S1-M	Right	-2801	2633	451		12	123	132	1.1	1.12	1.90	1.83	870	3.22	5.57	3	237	# 3	12	144	2.86	1.71	22	2.50	N.G.	0.92	OK.	
2.6	1.4	BASE	S1-N	Left	-807	844	263		12	54	77	1.4	1.12	1.46	1.83	290	2.91	7.41	3	101	# 3	12	63	2.5	1.5	22	2.58	N.G.	1.43	N.G.	
2.6	1.4	BASE	S1-N	Right	-846	818	267		12	54	77	1.4	1.12	1.46	1.83	290	2.91	7.52	3	101	# 3	12	63	2.5	1.5	22	2.59	N.G.	1.45	N.G.	
1.7	2.2	BASE	S1-Q4	Left	-823	900	548		12	54	321	5.9	1.12	1.46	1.83	290	3.10	15.44	2	67	# 3	12	63	2.5	1.5	21	1.65	N.G.	2.24	N.G.	
		BASE	S1-Q4	Right	-474	410	47		12	54	321	5.9	1.12	1.46	1.83	290	1.63	1.32	2	67	# 3	12	63	5	3	21	0.44	OK.	0.10	OK.	
		BASE	S1-R5	Left	-403	348	34		12	54	330	6.1	1.12	1.46	1.83	290	1.39	0.96	2	67	# 3	12	63	5	3	21	0.37	OK.	0.07	OK.	
		BASE	S1-R5	Right	-390	279	36		12	54	330	6.1	1.12	1.46	1.83	290	1.34	1.01	2	67	# 3	12	63	5	3	21	0.36	OK.	0.07	OK.	
		BASE	S1-S5	Left	-2401	2243	167		9.68	128	330	2.6	1.12	1.82	2.27	866	2.77	2.45	2	133	# 3	12	150	5	3	21	0.74	OK.	0.16	OK.	
		BASE	S1-S5	Right	-1736	1669	163		9.68	128	330	2.6	1.12	1.82	2.27	866	2.00	2.39	2	133	# 3	12	150	5	3	21	0.53	OK.	0.15	OK.	
		BASE	S1-T2	Left	-667	638	119		12	54	147	2.7	1.12	1.46	1.83	290	2.30	3.35	2	67	# 3	12	63	4.71	2.82	21	0.65	OK.	0.26	OK.	
		BASE	S1-T2	Right	-740	742	116		12	54	147	2.7	1.12	1.46	1.83	290	2.56	3.27	2	67	# 3	12	63	4.78	2.87	21	0.71	OK.	0.25	OK.	
	1.2	BASE	S1-T5	Left	-335	352	471		9.68	128	78	0.6	1.12	1.82	2.27	866	0.41	6.92	3	200	# 3	12	150	2.5	1.5	22	0.36	OK.	1.20	N.G.	
3.5	1.2	BASE	S1-T5	Right	-3420	3273	479		9.68	128	78	0.6	1.12	1.82	2.27	866	3.95	7.03	3	200	# 3	12	150	2.5	1.5	22	3.51	N.G.	1.22	N.G.	
		BASE	SU-9.9	Left	-239	837	312		12	93	42	0.5	1.12	1.71	1.83	587	1.43	5.12	3	177	# 3	12	109	3.23	1.94	22	0.98	OK.	0.75	OK.	
		BASE	SU-9.9	Right	-263	92	316		12	93	42	0.5	1.12	1.71	1.83	587	0.45	5.18	3	177	# 3	12	109	3.18	1.91	22	0.31	OK.	0.77	OK.	
	1.2	BASE	S2.-1	Left	-596	568	290	1949	8	74	42	0.6	1.2	2.43	2.35	661	0.90	8.02	3	104	# 4	18	80	2.5	1.5	22	0.67	OK.	1.16	N.G.	
1.1		BASE	S2.-1	Right	-967	605	236	1949	8	74	42	0.6	1.2	2.43	2.35	661	1.46	6.53	3	104	# 4	18	80	2.5	1.5	22	1.08	N.G.	0.95	OK.	
1.0		BASE	S2.-2	Left	-926	578	240	1949	8	74	42	0.6	1.2	2.43	2.35	661	1.40	6.64	3	104	# 4	18	80	2.5	1.5	22	1.04	N.G.	0.96	OK.	
	1.2	BASE	S2.-2	Right	-621	568	306	1949	8	74	42	0.6	1.2	2.43	2.35	661	0.94	8.46	3	104	# 4	18	80	2.5	1.5	22	0.70	OK.	1.23	N.G.	

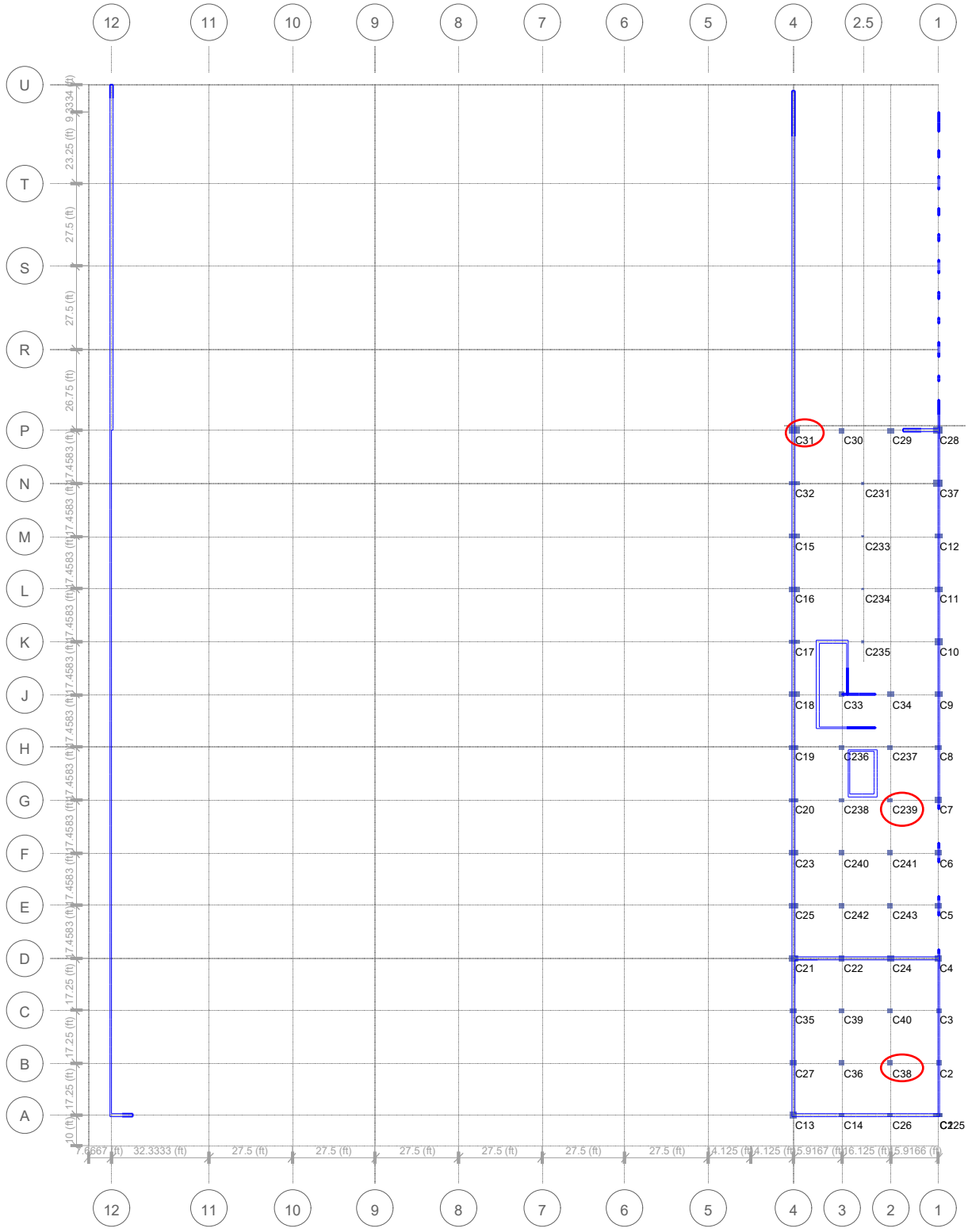
Max= 7.00 Max= 4.79

Selected Similar Columns to be check for m-factor:

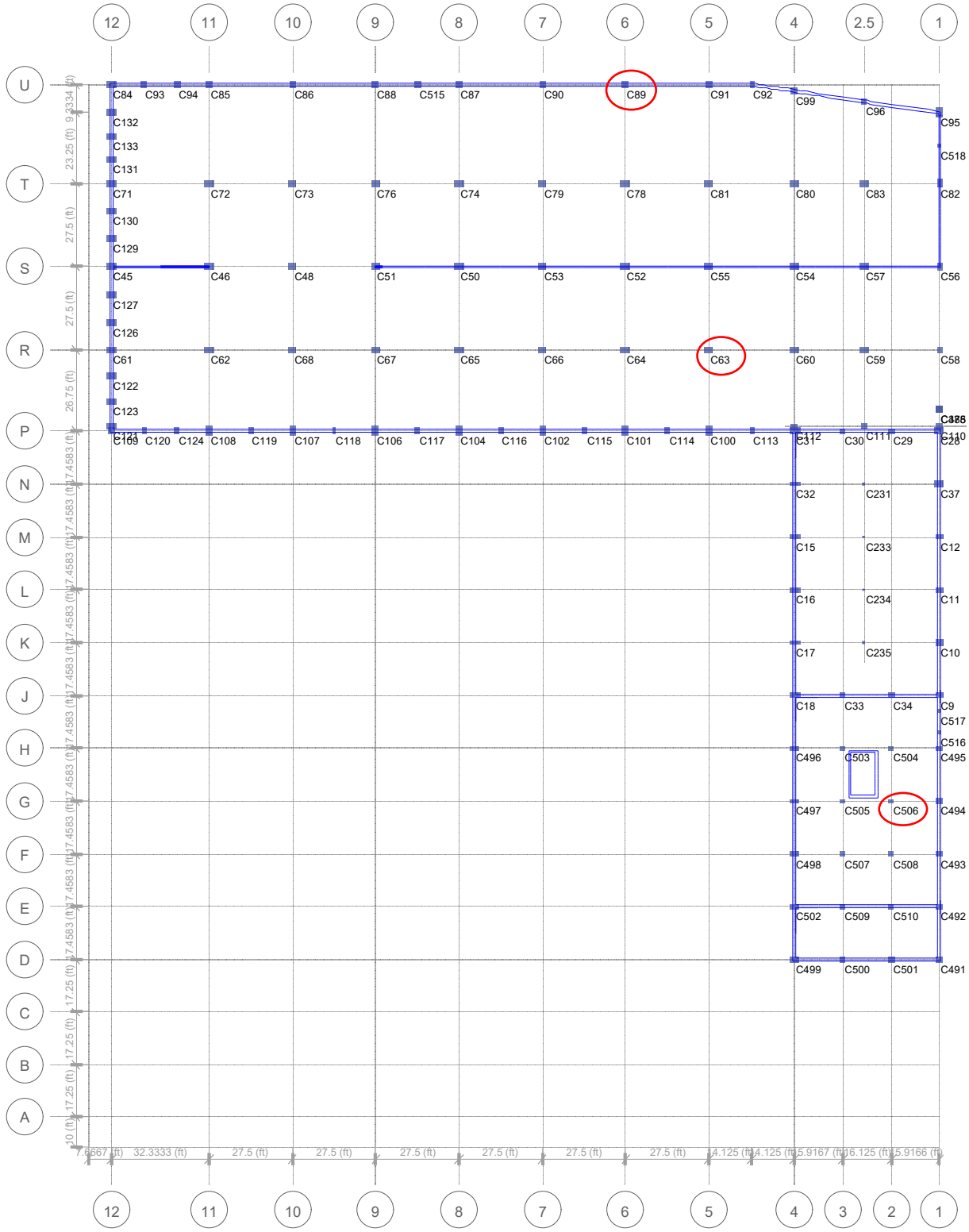




1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - 2ND - Z = 285.34 (ft) Groups



1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - MEZ - Z = 274 (ft) Groups



1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - 1ST - Z = 262.53 (ft) Groups

Output of Etabs Column Design of selected Columns

TABLE: Concrete Column PMM Envelope										
Label	Story	Section	Location	P	M Major	M Minor	PMM Comb	PMM Ratio	V Major	V Minor
				kip	kip-ft	kip-ft			kip	kip
C314	2ND	18x18C-7/8	Top	42	-144	12	UDCon5	1.6	18	12
C314	2ND	18x18C-7/8	Bottom	48	205	-19	UDCon5	2.36	18	12
C143	2ND	24x32C	Top	72	-1931	-126	UDCon5	8.57	100	13
C143	2ND	24x32C	Bottom	-81	0	9	UDCon6	0.48	100	15
C941	2ND	18x18C-7/8	Top	41	-321	-48	UDCon5	3.97	16	11
C941	2ND	18x18C-7/8	Bottom	86	8	0	UDCon4	0.11	16	12
C945	2ND	16x16C-7/8	Top	28	-179	-30	UDCon5	2.58	10	10
C945	2ND	16x16C-7/8	Bottom	57	5	0	UDCon3	0.09	10	10
C31	MEZ	43x20C	Top	-450	2507	-9	UDCon5	8.1	536	5
C31	MEZ	43x20C	Bottom	-411	-3504	23	UDCon5	10.45	531	10
C239	MEZ	16x16C-7/8	Top	-10	-51	-10	UDCon5	0.88	24	24
C239	MEZ	16x16C-7/8	Bottom	-8	135	26	UDCon5	2.17	24	24
C38	MEZ	18x18C-1	Top	31	-648	-150	UDCon5	4.56	70	39
C38	MEZ	18x18C-1	Bottom	181	17	0	UDCon4	0.21	70	39
C506	1ST	16x16C-7/8	Top	3	-150	-39	UDCon5	2.32	12	12
C506	1ST	16x16C-7/8	Bottom	119	11	0	UDCon3	0.19	12	12
C63	1ST	24x30C-10	Top	69	-160	473	UDCon6	1.66	52	41
C63	1ST	24x30C-10	Bottom	242	30	0	UDCon4	0.14	50	40
C89	1ST	27x24C	Top	179	-834	-98	UDCon3	2.36	124	13
C89	1ST	27x24C	Bottom	188	916	-43	UDCon3	2.56	124	33
C14	ROOF	18x18C-7/8	Top	-162	-36	-15	UDCon5	1.73	0.4	10
C14	ROOF	18x18C-7/8	Bottom	-31	19	-44	UDCon6	0.83	1	7
C47	ROOF	24x24C	Top	115	-37	398	UDCon4	1.96	33	64
C47	ROOF	24x24C	Bottom	-265	649	-216	UDCon5	5.49	174	64
C167	2ND	18x27C1	Top	-19	-90	4	UDCon3	0.39	22	22
C167	2ND	18x27C1	Bottom	-24	384	-6	UDCon5	1.46	37	22

Column Line A/11 (C143) - Shear DCR

f'c =	concrete strength =		3000	psi
fy =	Rebar strength =	wire	41250	psi
bw =	Width of Column =		24	in
h =	Depth of Column =		32	in
d' =	distanace to center of first longit bar =		5	in
Ag =	bw h =		768.0	in2

Shear DCR

		Etabs	ACI 318		
Pu max =		81	-81	K	(tension)
Pu min =		-115	115	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		250	K-ft	
H =			22.81	ft	
Ve @ yielding =	Mn/H = Vp =		11	K	
Vu max @ end =	Vp =	100	100	K	V major
Mu max =		-1931	250	K-ft	=Mn, if Ve < Vu
	M/Vd = 0.9 < 4 and > 2		2.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}0.8\,Ag\right]$$

@ P max =	101	k	ASCE 41-13, 10-3
@ P min =	122	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	19	k		
Vs @ mid =	Av fy (h-d') =	19	k		
k =	Based on Max. value of DCR	1			ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	120	k		
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	120	k		
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.09			
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.09			
Vp/Vo =		0.09	< 0.6		Table 10-11
P/(Ag fc') =		0.05	< 0.1		
ρ @ end =	Av / bw s =	0.0007	< 0.002		
ρ @ mid =	Av / bw s =	0.0007	< 0.002		
V/($fc'^{1/2}$ Acv) =		0.31	< 3		
m-factor @ end =	(by interpolation)	2.60		CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)	2.60			
DCR/mk @ end =	(k=0.75)	0.05			
DCR/mk @ mid =	(k=0.75)	0.05			

mK (DCR limit) for Other Column along GL A/5-12 and D / 5-12 = 1.95 CP

For Flexural, see Etabs Column PMM DCR, if DCR < mK ....OK

Column Line B/11 (C941) - Shear DCR

f'c =	concrete strength =		3000	psi
fy =	Rebar strength =	wire	41250	psi
bw =	Width of Column =		18	in
h =	Depth of Column =		18	in
d' =	distanace to center of first longit bar =		3	in
Ag =	bw h =		324.0	in2

Shear DCR

		Etabs	ACI 318		
Pu max =		-41	41	K	(compression)
Pu min =		-86	86	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		120	K-ft	
H =			22.81	ft	
Ve @ yielding =	Mn/H = Vp =		5	K	
Vu max @ end =	Vp =	16	16	K	V major
Mu max =		-321	120	K-ft	=Mn, if Ve < Vu
	M/Vd = 5.0 < 4 and > 2		4.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right] 0.8\,Ag$$

@ P max =	25	k	ASCE 41-13, 10-3
@ P min =	29	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	11	k	
Vs @ mid =	Av fy (h-d') =	11	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	36	k	
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	36	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.15		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.15		

Vp/Vo =		0.15	< 0.6	Table 10-11
P/(Ag fc') =		0.09	< 0.1	
ρ @ end =	Av / bw s =	0.0010	< 0.002	
ρ @ mid =	Av / bw s =	0.0010	< 0.002	
$V/(fc'^{1/2}\,Acv)$ =		0.36	< 3	
m-factor @ end =	(by interpolation)	2.60	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)	2.60		
DCR/mk @ end =	(k=0.75)	0.08		
DCR/mk @ mid =	(k=0.75)	0.08		

mK (DCR limit) for Other Column Btwn GL B-C / 5-12 =	1.95	CP

Column Line G/11 (C945) - Shear DCR

f'c =	concrete strength =		3000	psi
fy =	Rebar strength =	wire	41250	psi
bw =	Width of Column =		16	in
h =	Depth of Column =		16	in
d' =	distanace to center of first longit bar =		3	in
Ag =	bw h =		256.0	in2

Shear DCR

		Etabs	ACI 318		
Pu max =		-28	28	K	(compression)
Pu min =		-50	50	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		90	K-ft	
H =			22.81	ft	
Ve @ yielding =	Mn/H = Vp =		4	K	
Vu max @ end =	Vp =	10	10	K	V major
Mu max =		-179	90	K-ft	=Mn, if Ve < Vu
	M/Vd = 6.8 < 4 and > 2		4.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}0.8\right]Ag$$

@ P max =	19	k	ASCE 41-13, 10-3
@ P min =	21	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	9	k	
Vs @ mid =	Av fy (h-d') =	9	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	29	k	
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	29	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.14		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.14		

Vp/Vo =		0.14	< 0.6		Table 10-11
P/(Ag fc') =		0.07	< 0.1		
ρ @ end =	Av / bw s =	0.0011	< 0.002		
ρ @ mid =	Av / bw s =	0.0011	< 0.002		
$V/(fc'^{1/2}\,Acv)$ =		0.35	< 3		
m-factor @ end =	(by interpolation)	2.60		CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)	2.60			
DCR/mk @ end =	(k=0.75)	0.07			
DCR/mk @ mid =	(k=0.75)	0.07			

mK (DCR limit) for Other Column Btwn GL E-N / 5-11 =	1.95	CP

Column Line R/12 - 2nd Floor (C167) - Shear DCR

f'c =	concrete strength =		3000	psi	
fy =	Rebar strength =	wire	41250	psi	
bw =	Width of Column =		18	in	
h =	Depth of Column =		21	in	
d' =	distanace to center of first longit bar =		3	in	
Ag =	bw h =		378.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		-19	19	K	(compression)
Pu min =		-24	24	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		300	K-ft	
H =			22.81	ft	
Ve @ yielding =	2*Mn/H = Vp =		26	K	
Vu max @ end =	Vp =	37	37	K	V major
Mu max =		384	384	K-ft	=Mn, if Ve < Vu
	M/Vd = 5.9 < 4 and > 2		4.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right] 0.8\,Ag$$

@ P max =	27	k	ASCE 41-13, 10-3
@ P min =	27	k	Pu=0 @ tension

Av prov'd @ end =	3/8# ties @8" O.C. =	0.587	in2/ft	4 legs
Av prov'd @ mid =	3/8# ties @12" O.C. =	0.440	in2/ft	4 legs

Vs @ end =	Av fy (h-d') =	36	k	
Vs @ mid =	Av fy (h-d') =	27	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	63	k	
Vn @ mid =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	54	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.42		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.49		

Vp/Vo =			0.49	< 0.6	Table 10-11
P/(Ag fc') =			0.02	< 0.1	
ρ @ end =	Av / bw s =	0.002 <	0.0027	< 0.006	
ρ @ mid =	Av / bw s =	0.002 <	0.0020	< 0.006	
V/(fc'$^{1/2}$ Acv) =			1.48	< 3	
m-factor @ end =	(by interpolation)		2.93	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)		3.00		
DCR/mk @ end =	(k=0.75)		0.19		
DCR/mk @ mid =	(k=0.75)		0.22		

mK (DCR limit) for Other Column Along GL 12 / E-U = 2.20 CP

Column Line R/9 - 2nd Floor (C314) - Shear DCR

f'c =	concrete strength =	3000	psi	
fy =	Rebar strength = wire	41250	psi	
bw =	Width of Column =	18	in	
h =	Depth of Column =	18	in	
d' =	distanace to center of first longit bar =	3	in	
Ag =	bw h =	324.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		-52	52	K	(compression)
Pu min =		-48	48	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		105	K-ft	
H =			22.81	ft	
Ve @ yielding =	2*Mn/H = Vp =		9	K	
Vu max @ end =	Vp =	18	18	K	
Mu max =		205	105	K-ft	=Mn, if Ve < Vu
	M/Vd = 3.9 < 4 and > 2		3.9		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}0.8\right]Ag$$

@ P max =	27	k	ASCE 41-13, 10-3
@ P min =	26	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	11	k	
Vs @ mid =	Av fy (h-d') =	11	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	37	k	
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	37	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.25		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.25		

Vp/Vo =		0.25	< 0.6	Table 10-11
P/(Ag fc') =		0.05	< 0.1	
ρ @ end =	Av / bw s =	0.0010	< 0.002	
ρ @ mid =	Av / bw s =	0.0010	< 0.002	
V/($fc'^{1/2}$ Acv) =		0.62	< 3	
m-factor @ end =	(by interpolation)	2.60	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)	2.60		
DCR/mk @ end =	(k=0.75)	0.13		
DCR/mk @ mid =	(k=0.75)	0.13		

mK (DCR limit) for Other Column Btwn GL R-U / 1-11 =	1.95	CP	
(sim. For col. At GL P / 5-11)			

Column Line U/6 - 1st Floor (C89) - Shear DCR

f'c =	concrete strength =		3000	psi
fy =	Rebar strength =	wire	41250	psi
bw =	Width of Column =		27	in
h =	Depth of Column =		24	in
d' =	distanace to center of first longit bar =		3	in
Ag =	bw h =		648.0	in2

Shear DCR

		Etabs	ACI 318		
Pu max =		-179	179	K	(compression)
Pu min =		-188	188	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		400	K-ft	
H =			18.28	ft	
Ve @ yielding =	Mn/H = Vp =		22	K	
Vu max @ end =	Vp =	124	124	K	
Mu max =		916	400	K-ft	=Mn, if Ve < Vu
	M/Vd = 1.6 < 4 and > 2		2.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right] 0.8\,Ag$$

@ P max =	116	k	ASCE 41-13, 10-3
@ P min =	117	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	15	k	
Vs @ mid =	Av fy (h-d') =	15	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	130	k	
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	130	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.17		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.17		

Vp/Vo =		0.17	< 0.6	Table 10-11
P/(Ag fc') =		0.10	< 0.1	
ρ @ end =	Av / bw s =	0.0006	< 0.002	
ρ @ mid =	Av / bw s =	0.0006	< 0.002	
$V/(fc'^{1/2}\,Acv)$ =		0.70	< 3	
m-factor @ end =	(by interpolation)	2.60	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)	2.60		
DCR/mk @ end =	(k=0.75)	0.09		
DCR/mk @ mid =	(k=0.75)	0.09		

mK (DCR limit) for Other Column Along GL U / 2.5-11 = 1.95 CP

Column Line R/5 - 1st Floor (C63) - Shear DCR

f'c =	concrete strength =		3000	psi	
fy =	Rebar strength =	wire	41250	psi	
bw =	Width of Column =		24	in	
h =	Depth of Column =		30	in	
d' =	distanace to center of first longit bar =		3	in	
Ag =	bw h =		720.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		-69	69	K	(compression)
Pu min =		-242	242	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		310	K-ft	
H =			18.28	ft	
Ve @ yielding =	Mn/H = Vp =		17	K	
Vu max @ end =	Vp =	52	52	K	
Mu max =		473	310	K-ft	=Mn, if Ve < Vu
	M/Vd = 2.4 < 4 and > 2		2.4		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}0.8\right]Ag$$

@ P max =	90	k	ASCE 41-13, 10-3
@ P min =	113	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	19	k	
Vs @ mid =	Av fy (h-d') =	19	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	109	k	
Vn @ mid =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	109	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.16		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.16		

Vp/Vo =			0.16	< 0.6	Table 10-11
P/(Ag fc') =		0.1 <	0.11	< 0.6	
ρ @ end =	Av / bw s =		0.0007	< 0.002	
ρ @ mid =	Av / bw s =		0.0007	< 0.002	
V/(fc'$^{1/2}$ Acv) =			0.48	< 3	
m-factor @ end =	(by interpolation)		2.57	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)		2.57		
DCR/mk @ end =	(k=0.75)		0.08		
DCR/mk @ mid =	(k=0.75)		0.08		

mK (DCR limit) for Other Column Btwn GL R-T / 1-11 =	1.92	CP

Column Line P/4 - Mez Floor (C31) - Shear DCR

f'c =	concrete strength =		3000	psi
fy =	Rebar strength =	wire	41250	psi
bw =	Width of Column =		20	in
h =	Depth of Column =		43	in
d' =	distanace to center of first longit bar =		3	in
Ag =	bw h =		860.0	in2

Shear DCR

		Etabs	ACI 318		
Pu max =		411	-411	K	(tension)
Pu min =		-450	450	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		650	K-ft	
H =			11.47	ft	
Ve @ yielding =	Mn/H = Vp =		57	K	
Vu max @ end =	Vp =	536	536	K	
Mu max =		-3504	650	K-ft	=Mn, if Ve < Vu
	M/Vd = 0.3 < 4 and > 2		2.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right] 0.8\,Ag$$

@ P max =	113	k	ASCE 41-13, 10-3
@ P min =	182	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	28	k		
Vs @ mid =	Av fy (h-d') =	28	k		
k =	Based on Max. value of DCR	1			ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	141	k		
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	141	k		
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.40			
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.40			

Vp/Vo =			0.40	< 0.6	Table 10-11
P/(Ag fc') =		0.1 <	0.17	< 0.6	
ρ @ end =	Av / bw s =		0.0009	< 0.002	
ρ @ mid =	Av / bw s =		0.0009	< 0.002	
V/($fc'^{1/2}$ Acv) =			1.29	< 3	
m-factor @ end =	(by interpolation)		2.39	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)		2.39		
DCR/mk @ end =	(k=0.75)		0.22		
DCR/mk @ mid =	(k=0.75)		0.22		

mK (DCR limit) for Other Column Along GL 4 / D-N & GL P & Q= 1.79 CP

Column Line G/2 - Mez Floor (C239) - Shear DCR

f'c =	concrete strength =	3000	psi	
fy =	Rebar strength = wire	41250	psi	
bw =	Width of Column =	16	in	
h =	Depth of Column =	16	in	
d' =	distanace to center of first longit bar =	3	in	
Ag =	bw h =	256.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		8	-8	K	(tension)
Pu min =		-10	10	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		60	K-ft	
H =			11.47	ft	
Ve @ yielding =	2Mn/H = Vp =		10	K	
Vu max @ end =	Vp =	24	24	K	
Mu max =		135	60	K-ft	=Mn, if Ve < Vu
	M/Vd = 1.9 < 4 and > 2		2.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right] 0.8\,Ag$$

@ P max =	34	k	ASCE 41-13, 10-3
@ P min =	36	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	9	k	
Vs @ mid =	Av fy (h-d') =	9	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	43	k	
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	43	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.24		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.24		

Vp/Vo =		0.24	< 0.6	Table 10-11
P/(Ag fc') =		0.01	< 0.1	
ρ @ end =	Av / bw s =	0.0011	< 0.002	
ρ @ mid =	Av / bw s =	0.0011	< 0.002	
$V/(fc'^{1/2}\,Acv)$ =		0.92	< 3	
m-factor @ end =	(by interpolation)	2.60	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)	2.60		
DCR/mk @ end =	(k=0.75)	0.13		
DCR/mk @ mid =	(k=0.75)	0.13		

mK (DCR limit) for Other Column Between GL 1-3 / E-J = 1.95 CP

Column Line G/2 - 1st Floor (C506) Shear DCR

f'c =	concrete strength =		3000	psi	
fy =	Rebar strength =	wire	41250	psi	
bw =	Width of Column =		16	in	
h =	Depth of Column =		16	in	
d' =	distanace to center of first longit bar =		3	in	
Ag =	bw h =		256.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		-3	3	K	(compression)
Pu min =		-119	119	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		60	K-ft	
H =			18.28	ft	
Ve @ yielding =	Mn/H = Vp =		3	K	
Vu max @ end =	Vp =	12	46	K	
Mu max =		150	60	K-ft	=Mn, if Ve < Vu
	M/Vd = 1.0 < 4 and > 2		2.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right] 0.8\,Ag$$

@ P max =	34	k	ASCE 41-13, 10-3
@ P min =	52	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	9	k	
Vs @ mid =	Av fy (h-d') =	9	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	43	k	
Vn @ mid =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	43	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.08		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.08		

Vp/Vo =			0.08	< 0.6	Table 10-11
P/(Ag fc') =		0.1 <	0.15	< 0.6	
ρ @ end =	Av / bw s =		0.0011	< 0.002	
ρ @ mid =	Av / bw s =		0.0011	< 0.002	
V/(fc'$^{1/2}$ Acv) =			0.29	< 3	
m-factor @ end =	(by interpolation)		2.45	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)		2.45		
DCR/mk @ end =	(k=0.75)		0.04		
DCR/mk @ mid =	(k=0.75)		0.04		

mK (DCR limit) for Other Column Between GL 1-3 / E-J = 1.83 CP

Column Line B/2 - Mez Floor (C38) Shear DCR

f'c =	concrete strength =	3000	psi	
fy =	Rebar strength = wire	41250	psi	
bw =	Width of Column =	18	in	
h =	Depth of Column =	18	in	
d' =	distanace to center of first longit bar =	3	in	
Ag =	bw h =	324.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		-31	31	K	(compression)
Pu min =		-181	181	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		170	K-ft	
H =			11.47	ft	
Ve @ yielding =	Mn/H = Vp =		15	K	
Vu max @ end =	Vp =	70	70	K	
Mu max =		-648	170	K-ft	=Mn, if Ve < Vu
	M/Vd = 1.6 < 4 and > 2		2.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right] 0.8\,Ag$$

@ P max =	48	k	ASCE 41-13, 10-3
@ P min =	70	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	11	k	
Vs @ mid =	Av fy (h-d') =	11	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	59	k	
Vn @ mid =	k [Min(Vc $^{@Pmax}$, Vc $^{@Pmin}$)+Vs] =	59	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.25		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.25		

Vp/Vo =			0.25	< 0.6	Table 10-11
P/(Ag fc') =		0.1 <	0.19	< 0.6	
ρ @ end =	Av / bw s =		0.0010	< 0.002	
ρ @ mid =	Av / bw s =		0.0010	< 0.002	
V/(fc'$^{1/2}$ Acv) =			1.00	< 3	
m-factor @ end =	(by interpolation)		2.36	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)		2.36		
DCR/mk @ end =	(k=0.75)		0.14		
DCR/mk @ mid =	(k=0.75)		0.14		

mK (DCR limit) for Other Column Between GL 2-3 / B-C =	1.77	CP	

Column Line A/3 - Roof (C14) Shear DCR

f'c =	concrete strength =		3000	psi	
fy =	Rebar strength =	wire	41250	psi	
bw =	Width of Column =		18	in	
h =	Depth of Column =		18	in	
d' =	distanace to center of first longit bar =		3	in	
Ag =	bw h =		324.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		-31	31	K	(compression)
Pu min =		-162	162	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		95	K-ft	
H =			13.92	ft	
Ve @ yielding =	2*Mn/H = Vp =		14	K	
Vu max @ end =	Vp =	10	10	K	
Mu max =		-44	44	K-ft	=Mn, if Ve < Vu
	M/Vd = 2.9 < 4 and > 2		2.9		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right]0.8\,Ag$$

@ P max = 33 k ASCE 41-13, 10-3

@ P min = 46 k Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

Vs @ end =	Av fy (h-d') =	11	k	
Vs @ mid =	Av fy (h-d') =	11	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	44	k	
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	44	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.23		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.23		

Vp/Vo =			0.23	< 0.6	Table 10-11
P/(Ag fc') =		0.1 <	0.17	< 0.6	
ρ @ end =	Av / bw s =		0.0010	< 0.002	
ρ @ mid =	Av / bw s =		0.0010	< 0.002	
V/($fc'^{1/2}$ Acv) =			0.68	< 3	
m-factor @ end =	(by interpolation)		2.41	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)		2.41		
DCR/mk @ end =	(k=0.75)		0.13		
DCR/mk @ mid =	(k=0.75)		0.13		

mK (DCR limit) for Other Column at; GL 1,4, 12/A-D, A&D/2-3 = 1.81 CP

Column Line D/6 - Roof (C47) Shear DCR

f'c =	concrete strength =		3000	psi	
fy =	Rebar strength =	wire	41250	psi	
bw =	Width of Column =		24	in	
h =	Depth of Column =		24	in	
d' =	distanace to center of first longit bar =		3	in	
Ag =	bw h =		576.0	in2	

Shear DCR

		Etabs	ACI 318		
Pu max =		115	-115	K	(tension)
Pu min =		-265	265	K	(compression)
Mn =	at Pu max, etabs interaction curve capacity graph) =		260	K-ft	
H =			13.92	ft	
Ve @ yielding =	2*Mn/H = Vp =		37	K	
Vu max @ end =	Vp =	174	174	K	
Mu max =		649	260	K-ft	=Mn, if Ve < Vu
	M/Vd = 0.7 < 4 and > 2		2.0		

$$Vc = \frac{6\,fc'^{1/2}}{M/Vd}\left[\left(1+\frac{Pu}{6\,fc'^{1/2}\,Ag}\right)^{1/2}\right]0.8\,Ag$$

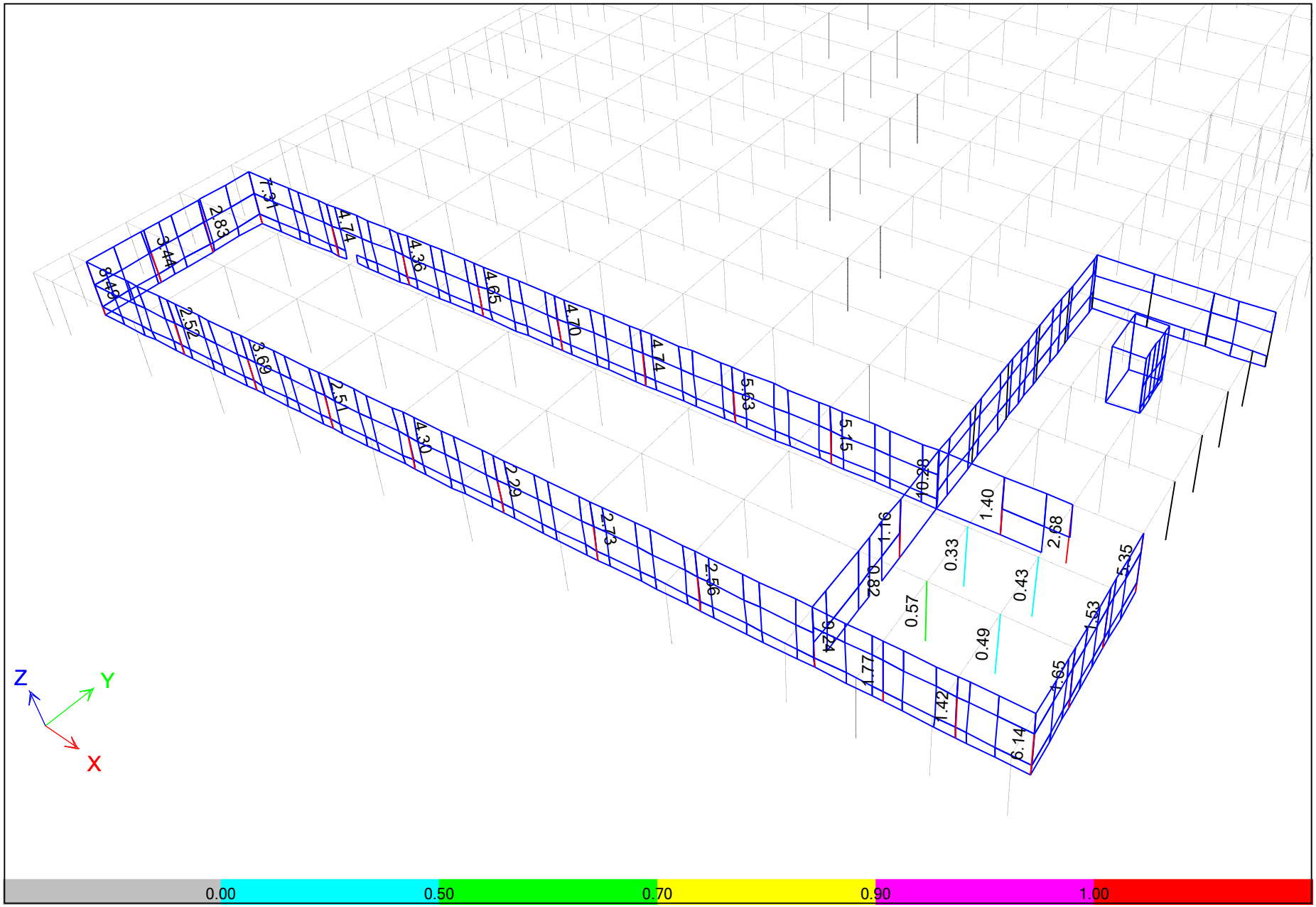
@ P max =	76	k	ASCE 41-13, 10-3
@ P min =	117	k	Pu=0 @ tension

Av prov'd @ end =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs
Av prov'd @ mid =	5/16# ties @9" O.C. =	0.205	in2/ft	2 legs

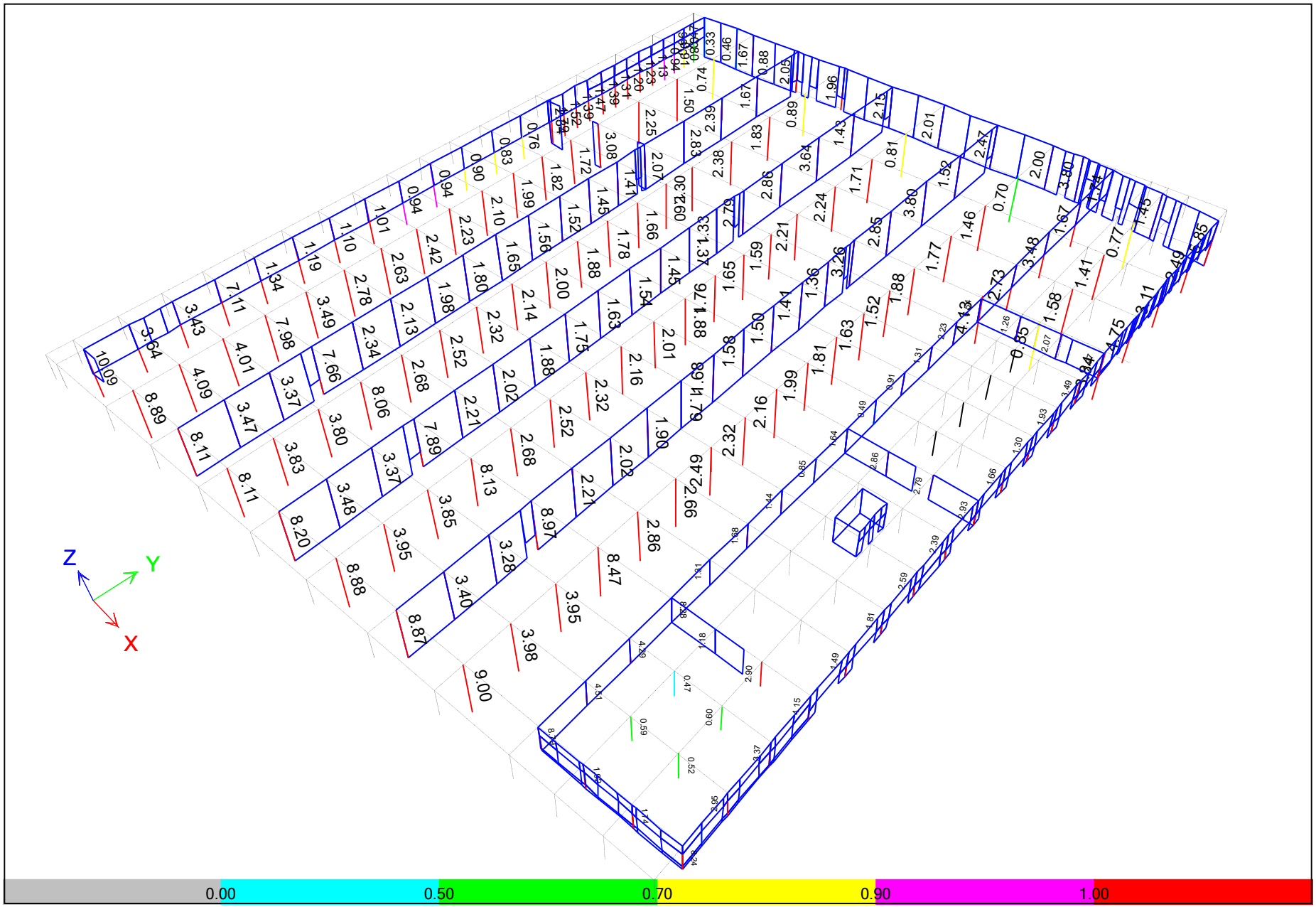
Vs @ end =	Av fy (h-d') =	15	k	
Vs @ mid =	Av fy (h-d') =	15	k	
k =	Based on Max. value of DCR	1		ASCE 41-13 10.4.2.3
Vn @ end = k Vo =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	91	k	
Vn @ mid =	k [Min($Vc^{@Pmax}$, $Vc^{@Pmin}$)+Vs] =	91	k	
DCR @ end =	[Min(Ve, Vu)] / Vn @ end=	0.41		
DCR @ mid =	[Min(Ve, Vu)] / Vn @ mid=	0.41		

Vp/Vo =			0.41	< 0.6	Table 10-11
P/(Ag fc') =		0.1 <	0.15	< 0.6	
ρ @ end =	Av / bw s =		0.0007	< 0.002	
ρ @ mid =	Av / bw s =		0.0007	< 0.002	
V/($fc'^{1/2}$ Acv) =			1.35	< 3	
m-factor @ end =	(by interpolation)		2.45	CP	Table 10-9 cond. i
m-factor @ mid =	(by interpolation)		2.45		
DCR/mk @ end =	(k=0.75)		0.22		
DCR/mk @ mid =	(k=0.75)		0.22		

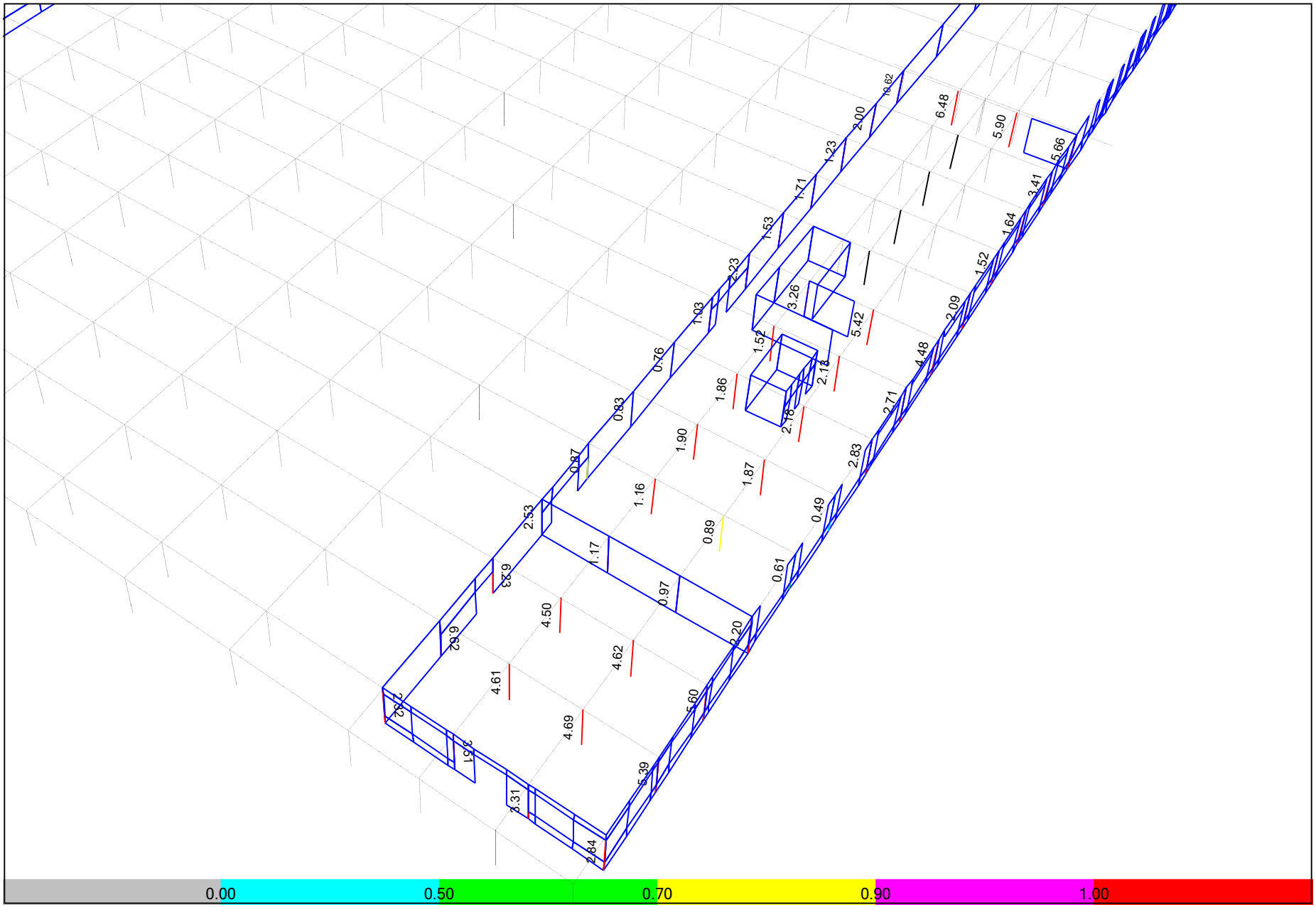
mK (DCR limit) for Other Column Along GL A&D / 5-11 = 1.84 CP



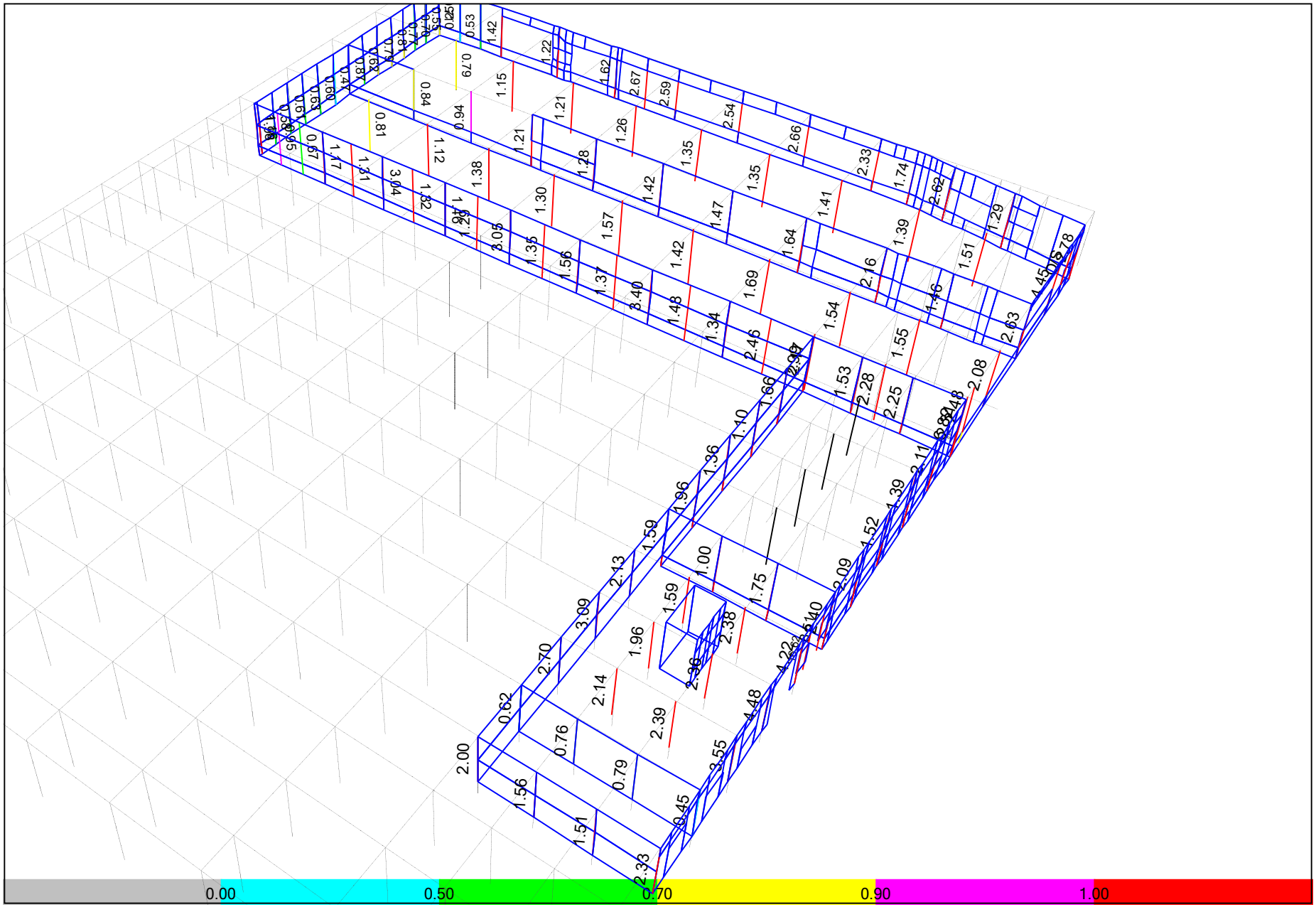
1532-7 Presidio Bus Yard-LBS-3.EDB 3-D View of ROOF Column P-M-M Interaction Ratios (ACI 318-08)



1532-7 Presidio Bus Yard-LBS-3.EDB 3-D View of 2ND Column P-M-M Interaction Ratios (ACI 318-08)



1532-7 Presidio Bus Yard-LBS-3.EDB 3-D View of MEZ Column P-M-M Interaction Ratios (ACI 318-08)



1532-7 Presidio Bus Yard-LBS-3.EDB 3-D View of 1ST Column P-M-M Interaction Ratios (ACI 318-08)

Collector Line P+Q /4-5 - 2nd Floor DCR

				Slab	C 24/ S-5 & RB 24		2-beams as collector			
fc' =	3	ksi		T&B	2-3/4#		2.25-2.25 (Yield) =		0	in2
fy =	41.25	ksi		3/8# @12		8 ft	Slab bar =		1.12	in2
				50% eff.						
bw =	18	in	(2 beams)							
h =	24	in			2-3/4#		2.25 (=2*2*0.56) =		2.25	in2
								As =	3.37	in2
Q_E =	-1015	k	(=520+495 k axial tension)		Tension capacity		Q_{CL} =	As fy =	139.0	k

Force Controlled Action for LSP:

$Q_{UF} = Q_G + Q_E / (C_1 C_2 J)$ Where; $C_1 C_2$ = 1.1 Q_G = 4 k (1+3k) tension

= 465 k J = 2

DCR = $Q_{UF} / (Q_{CL} K)$ = 465 / (139 * 1) = 3.35 > 1.0 ...NG

Collector Line J/4-5 - 2nd Floor DCR

				Slab	B 26/ S-5		1-beam as collector			
fc' =	3	ksi		T&B	2-3/4#		1.12-1.12 (Yield) =		0	in2
fy =	41.25	ksi		3/8# @12		8 ft	Slab bar =		1.12	in2
				50% eff.						
bw =	9	in	(1 beam)							
h =	24	in			2-3/4#		1.12 (=2*0.56) =		1.12	in2
								As =	2.24	in2
Q_E =	-269	k			Tension capacity		Q_{CL} =	As fy =	92.4	k

Force Controlled Action for LDP:

$Q_{UF} = Q_G + Q_E X / (C_1 C_2 J)$ Where; $C_1 C_2$ = 1.1 Q_G = 25 k

= 184 k J = 2 X = 1.3 For LS

DCR = $Q_{UF} / (Q_{CL} K)$ = 184 / (92 * 1) = 1.99 > 1.0 ...NG

Collector Line D/4-5 - 2nd Floor DCR

				Slab	B 27/ S-5		1-beam as collector			
fc' =	3	ksi		T&B	2-1"#		2-2 (Yield) =		0	in2
fy =	41.25	ksi		3/8# @12		8 ft	Slab bar =		1.12	in2
				50% eff.						
bw =	12	in	(1 beam)							
h =	36	in			2-1"#		2 (=2*1) =		2	in2
								As =	3.12	in2
Q_E =	-2005	k			Tension capacity		Q_{CL} =	As fy =	128.7	k

Force Controlled Action for LSP:

$Q_{UF} = Q_G + Q_E / (C_1 C_2 J)$ Where; $C_1 C_2$ = 1.1 Q_G = 10 k

= 921 k J = 2

DCR = $Q_{UF} / (Q_{CL} K)$ = 921 / (129 * 1) = 7.16 > 1.0 ...NG

Collector Line A/4-5 - 2nd Floor DCR

				Slab	B 30 +SB 23/ S-5		2-beams as collector			
fc' =	3	ksi		T&B	2-1"#		2-2 (Yield) =		0	in2
fy =	41.25	ksi		3/8# @12		8 ft		Slab bar =	1.12	in2
				50% eff.						
bw =	12	in	(1 beam)			6-3/4#			3.36	in2
h =	36	in			2-1"#		2 (=2*1) =		2	in2
								As =	6.48	in2
Q_E =	-2348	k			Tension capacity		Q_{CL} =	As fy =	267.3	k

Force Controlled Action for LSP:

$Q_{UF} = Q_G + Q_E / (C_1 C_2 J)$ Where; $C_1 C_2$ = 1.1 Q_G = -136 k (compr.)

= 931 k J = 2

DCR = $Q_{UF} / (Q_{CL} K)$ = 931 / (267 * 1) = 3.48 > 1.0 ...NG

Collector Line 4/P-R 1ST Floor DCR

				Slab	FB 5a/ S-11		1-beam as collector			
fc' =	3	ksi		T&B	3-1"#		3-3 (Yield) =		0	in2
fy =	41.25	ksi		3/8# @12		8 ft		Slab bar =	1.12	in2
				50% eff.						
bw =	9	in	(1 beam)							
h =	24	in			2-1"#		2 (=2*1) =		2	in2
								As =	3.12	in2
Q_E =	1080	k			Tension capacity		Q_{CL} =	As fy =	128.7	k

Force Controlled Action for LSP:

$Q_{UF} = Q_G + Q_E / (C_1 C_2 J)$ Where; $C_1 C_2$ = 1.1 Q_G = -108 k

= 383 k J = 2

DCR = $Q_{UF} / (Q_{CL} K)$ = 383 / (129 * 1) = 2.98 > 1.0 ...NG

Collector Line 6/P-R - 1ST Floor DCR

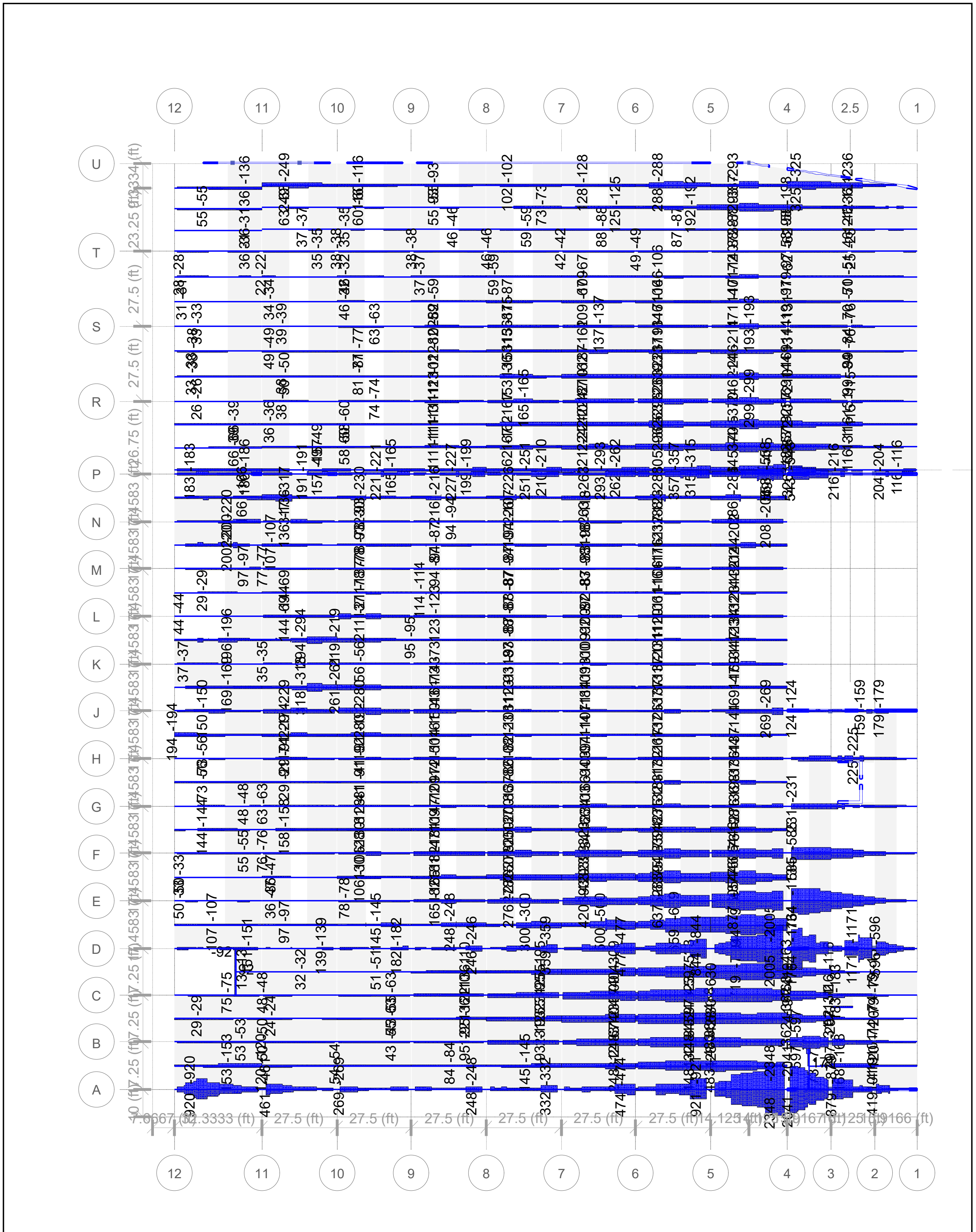
				Slab	FB 4/ S-11		1-beam as collector			
fc' =	3	ksi		T&B	2-3/4#		1.12-1.12 (Yield) =		0	in2
fy =	41.25	ksi		3/8# @12		8 ft		Slab bar =	1.12	in2
				50% eff.						
bw =	9	in	(1 beam)							
h =	24	in			2-3/4#		1.12 (=2*0.56) =		1.12	in2
								As =	2.24	in2
Pu =	-555	k			Tension capacity		Q_{CL} =	As fy =	92.4	k

Force Controlled Action for LSP:

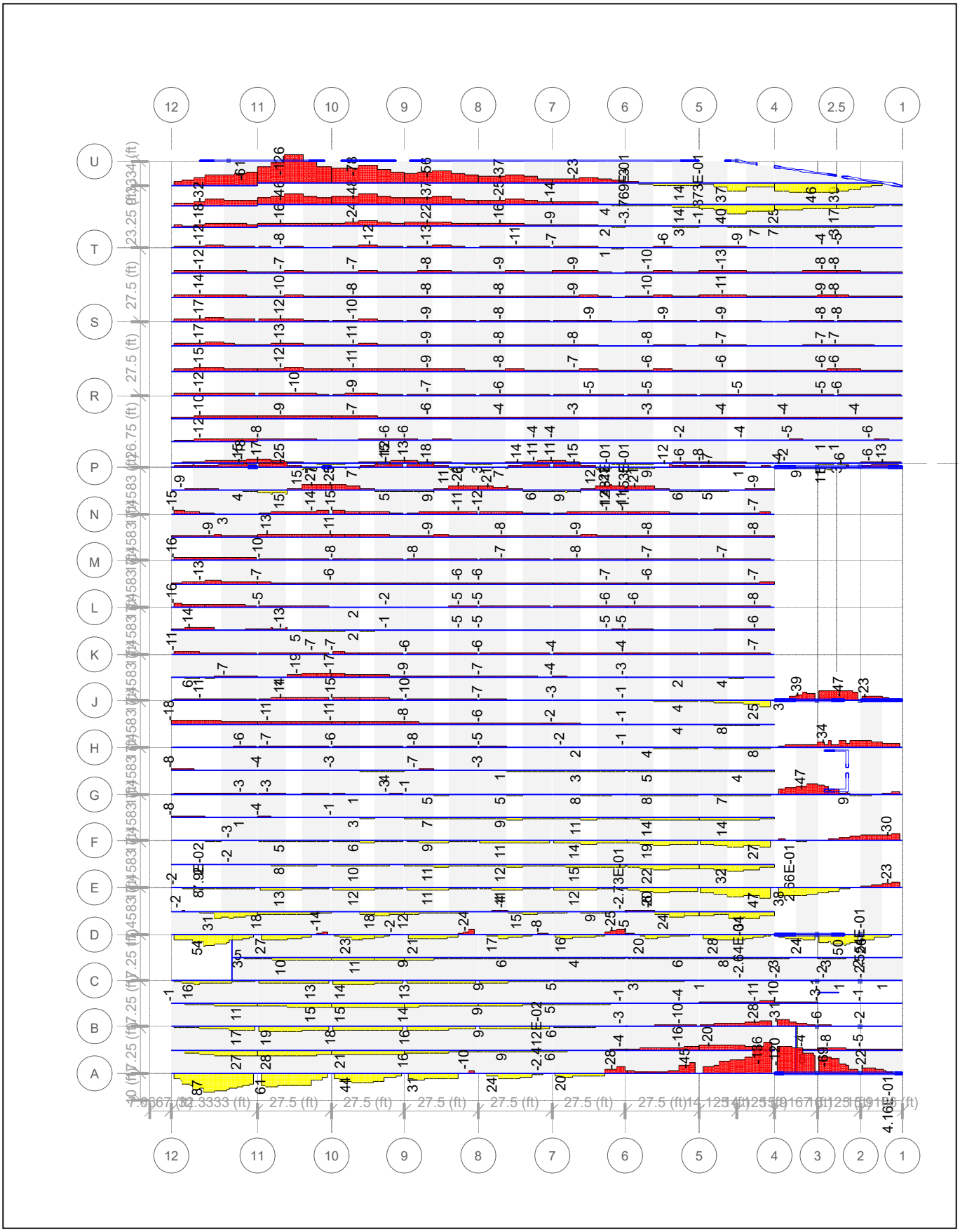
$Q_{UF} = Q_G + Q_E / (C_1 C_2 J)$ Where; $C_1 C_2$ = 1.1 Q_G = -107 k

= 145 k J = 2

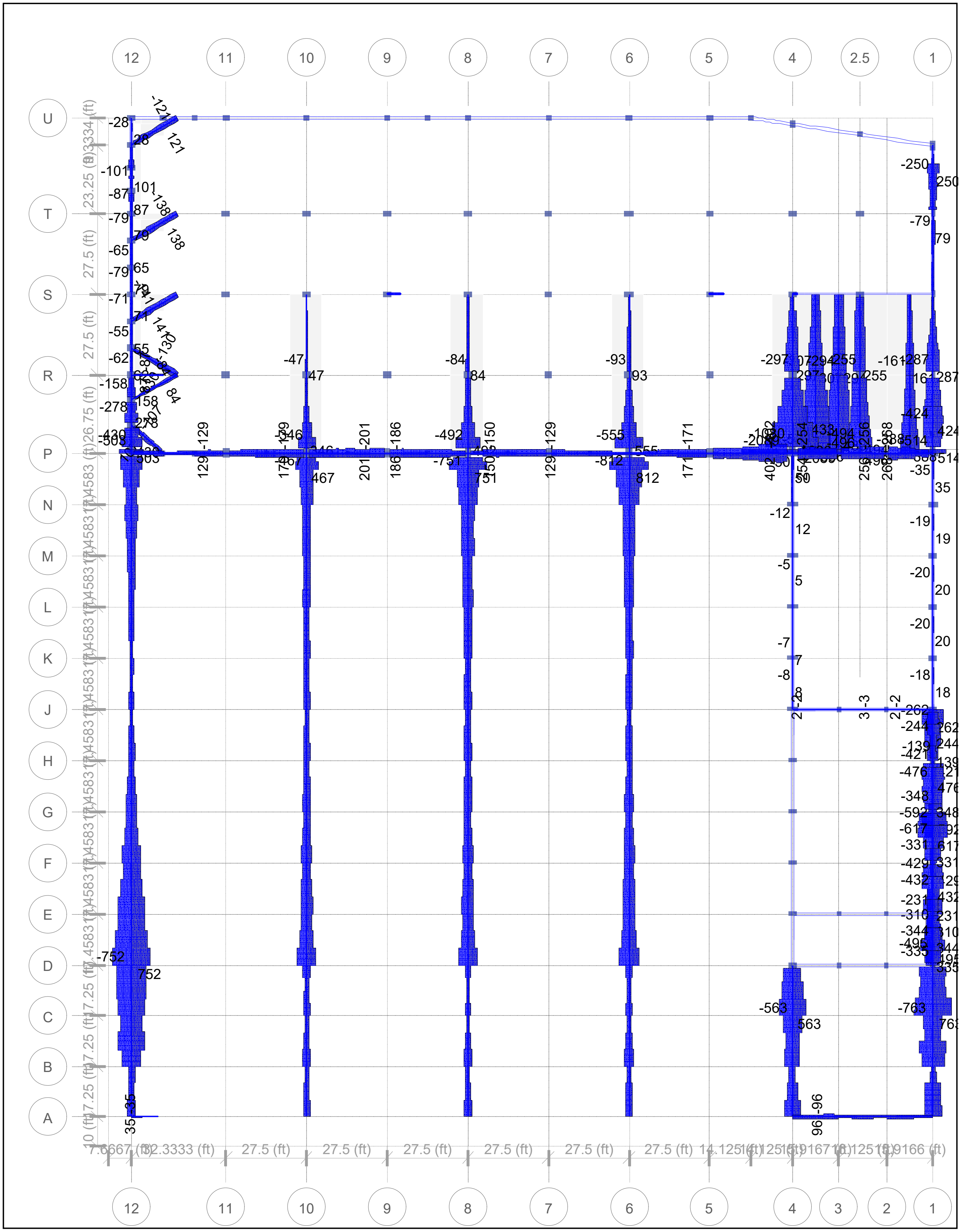
DCR = $Q_{UF} / (Q_{CL} K)$ = 145 / (92 * 1) = 1.57 > 1.0 ...NG



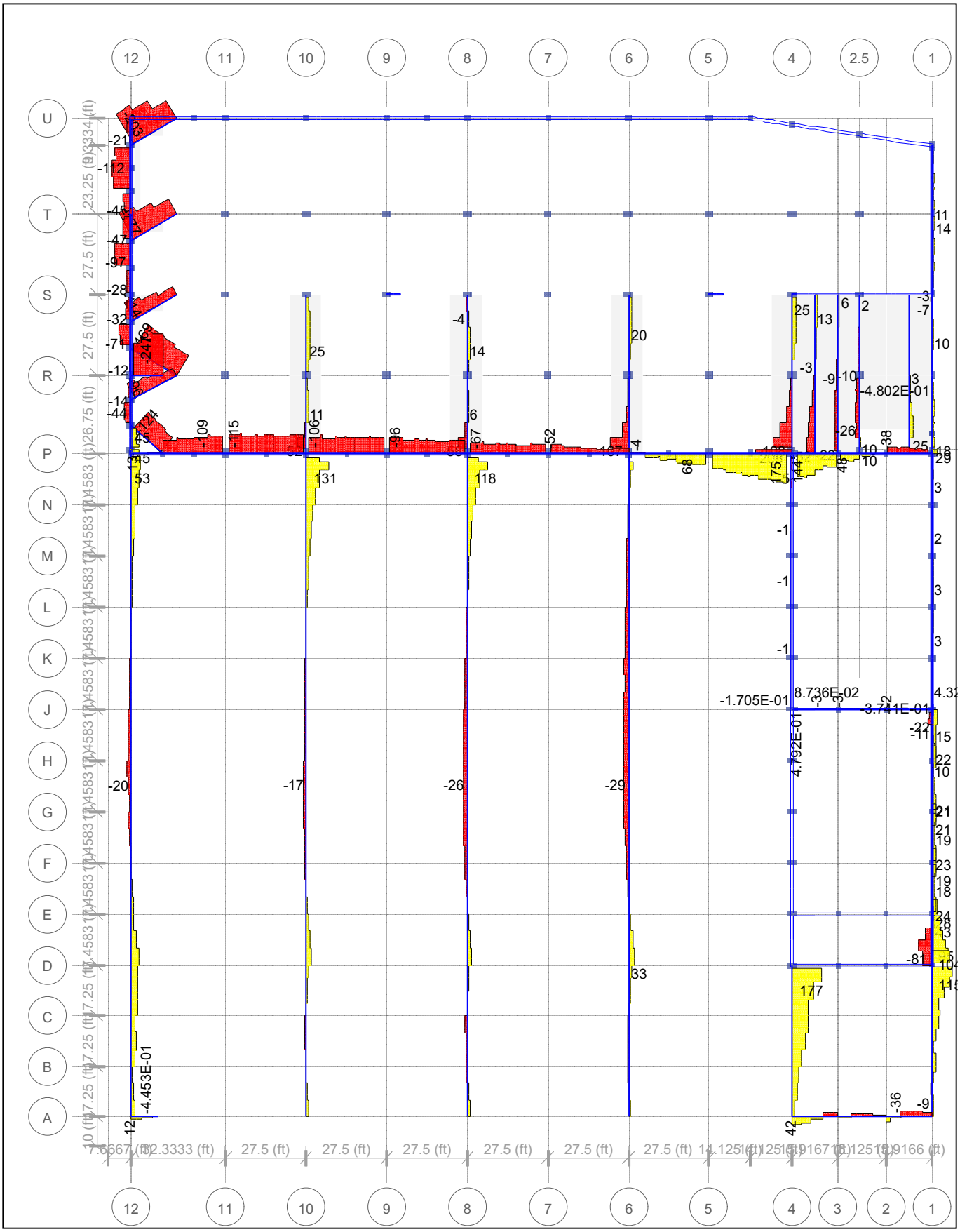
1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - 2ND - Z = 285.34 (ft) Axial Force Diagram (Esx) [kip]



1532-7 Presidio Bus Plan View - ROOF - Z = 285.34 (ft) Axial Force Diagram (UDCon2) [kip]



1532-7 Presidio Bus Yard.EDB Plan View - 1BT - Z = 262.53 (ft) Axial Force Diagram (Esy) [kip]



1532-7 Presidio Bus Plan View - ESDB - Z = 262.53 (ft) Axial Force Diagram (UDCon2) [kip]

2nd Floor Beam Line C/-4-5

f'c =	concrete strength =	3000	psi
fy =	Rebar strength =	41250	psi
bw =	width of beam =	10	in
H =	full depth of beam =	30	in
d =	effective (reinforced) depth of beam =	21	in

Shear DCR Check at non-ductile beam

As =	2-1"# + 2-1/2#	(B-29)	2.5	in2	
a =	As fy/(0.85 fc' bw)		4.04	in	
Mn =	As fy (d-a/2)		163	K-ft	
Vug =			14.3	k	
Vu max @ end =			29	K	
Vu max @ mid =			21	K	
Vc @ end =			0	k	ACI 318 21.6.5.2.
Vc @ mid =	$2(fc')^{1/2}$ bw d		23	k	ACI 318 Ch. 11
Av prov'd @ end =	3/8# @9" O.C. =		0.373333	in2/ft	2 legs
Av prov'd @ mid =	3/8# @18" O.C. =		0.186667	in2/ft	2 legs
Vs @ end =	Av fy d =		27	k	
Vs @ mid =	Av fy d =		13	k	
Vn @ end =	Vc+Vs =		27	k	
Vn @ mid =	Vc+Vs =		36	k	
DCR @ end =	Vu @ end / Vn @ end=		1.08		
DCR @ mid =	Vu @ mid / Vn @ mid=		0.58		
mk =			1.75		Table 10-1
DCR/mk @ end =			0.61	< 1.0	...OK
DCR/mk @ mid =			0.33	< 1.0	...OK

Flexural DCR Check

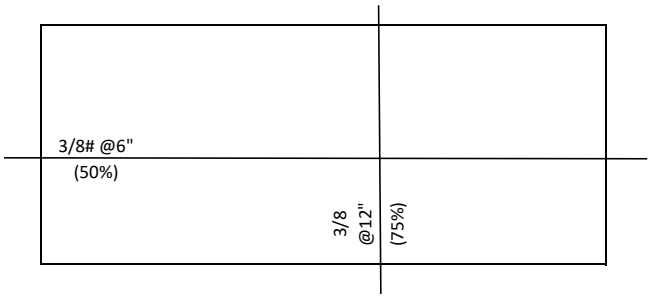
$V/(fc'^{1/2}$ bw d) =		2.52	< 3	
$\rho - \rho' / \rho_{bal} < 0$ Transverse reinf : NC				
m-factor =		4		Table 10-1 CP
k =		1		
Mu max @ end =	near GL C	135	K-ft	
DCR/mk @ end =	Mn / (Mu mk)	0.21	< 1.0	...OK

Beam - non ductile

ROOF SLAB REINFORCEMENT X-Dirn

fc' =	3	ksi
fy =	41.25	ksi
t =	5	in
d =	12	in

Seismic direction: N-S
Av = 0.22 in2/'
Available reinf = 50%



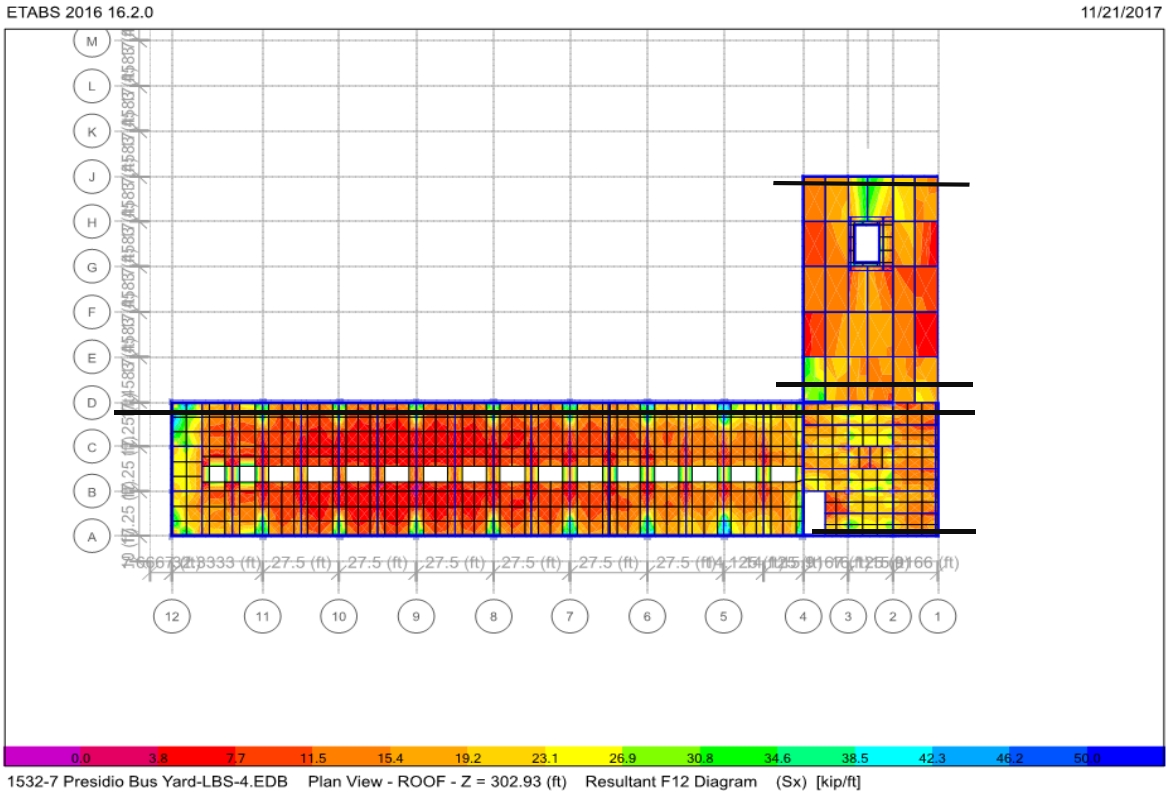
Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

Direction: E-W		Per ft		Cut section, L1 =	40.5	ft	L2 =	273	ft, d = L
Vc = 2 $(fc')^{1/2}$ t d	=	6.57	k	=	266	k	=	1794	k
Vs = Av fy d * 50%	=	4.54	k	=	184	k	=	1239	k
Vn = Vc+Vs	=	11.11	k	=	450	k	=	3033	k

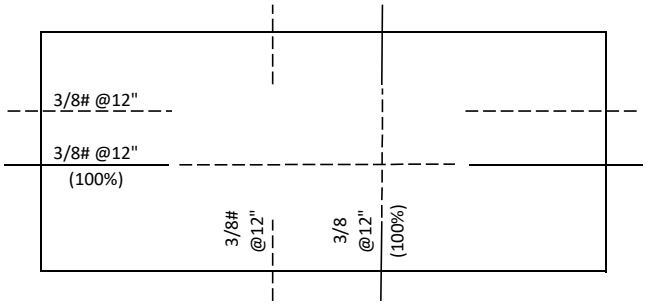
Shear Demand (locally), Vu =	50	k/ft	DCR = Vu / (mk Vn) =	2.00	> 1.0	...NG
Shear Cut Section, Vu1 =	440	k (A.1)	DCR = Vu / (mk Vn) =	0.43	< 1.0	...OK
Shear Cut Section, Vu2 =	1463	k (C.9)	DCR = Vu / (mk Vn) =	0.21	< 1.0	...OK



2ND FL SLAB REINFORCEMENT X-Dirn

fc' =	3	ksi
fy =	41.25	ksi
t =	3.5	in
d =	12	in

Seismic direction: N-S 1-way Slab
Av = 0.22 in2/' Major
Available reinf = 50%



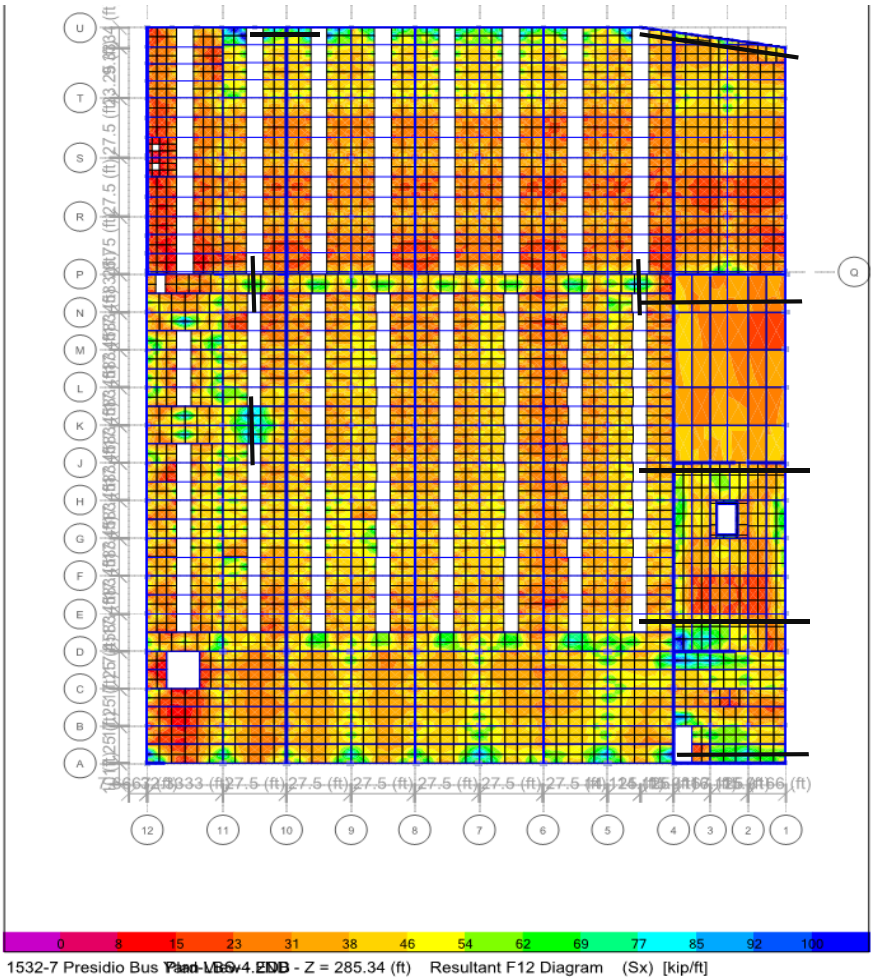
Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

Direction: E-W		Per ft		Cut section, L1 =	60.5	ft	L2 =	40.5	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	4.60	k	=	278	k	=	186	k
Vs = Av fy d * 50%	=	4.54	k	=	275	k	=	184	k
Vn = Vc+Vs	=	9.14	k	=	553	k	=	370	k

Shear Demand (locally), Vu =	100	k/ft	DCR = Vu / (mk Vn) =	4.86	> 1.0	...NG
Shear Cut Section, Vu1 =	1540	k (D.5 /3)	DCR = Vu / (mk Vn) =	1.24	> 1.0	...NG
Shear Cut Section, Vu2 =	1320	k (A.1 /2)	DCR = Vu / (mk Vn) =	1.59	> 1.0	...NG



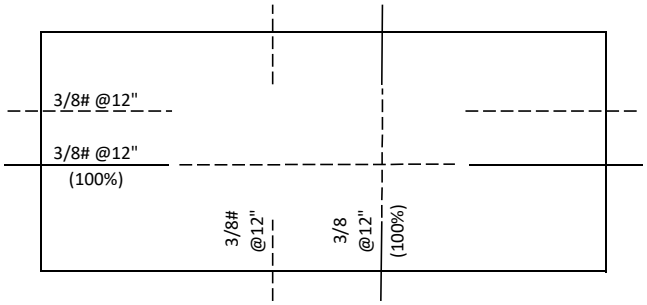
1532-7 Presidio Bus Plan-Lbsv4.ETB - Z = 285.34 (ft) Resultant F12 Diagram (Sx) [kip/ft]

2ND FL SLAB REINFORCEMENT X-Dirn

fc' = 3 ksi
fy = 41.25 ksi

t = 3.5 in
d = 12 in

Seismic direction: N-S 1-way Slab
Av = 0.22 in2/' Major
Available reinf = 50%



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

Direction: E-W		Per ft		Cut section, L1 =	60.5	ft	L2 =	60.5	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	4.60	k	=	278	k	=	278	k
Vs = Av fy d * 50%	=	4.54	k	=	275	k	=	275	k
Vn = Vc+Vs	=	9.14	k	=	553	k	=	553	k

Shear Demand (locally), Vu =	100	k/ft	DCR = Vu / (mk Vn) =	4.86	> 1.0 ...NG
Shear Cut Section, Vu1 =	2167	k (H.9 /3)	DCR = Vu / (mk Vn) =	1.74	> 1.0 ...NG
Shear Cut Section, Vu2 =	1606	k (J.1 /3)	DCR = Vu / (mk Vn) =	1.29	> 1.0 ...NG

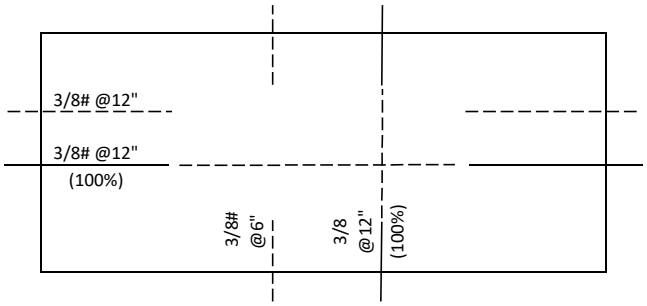
(Sim. For Q.1 /3, N.4/ 3)

2ND FL SLAB REINFORCEMENT X-Dirn

fc' = 3 ksi
fy = 41.25 ksi

t = 3.5 in
d = 12 in

Seismic direction: N-S 1-way Slab
Av = 0.22 in2/' Major
Available reinf = 50%



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

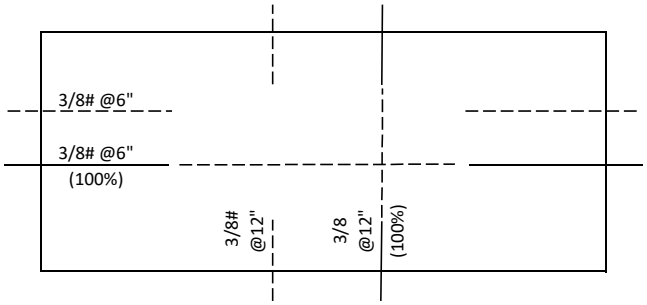
Direction: E-W		Per ft		Cut section, L1 =	59	ft	L2 =	20	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	4.60	k	=	271	k	=	92	k
Vs = Av fy d * 50%	=	4.54	k	=	268	k	=	91	k
Vn = Vc+Vs	=	9.14	k	=	539	k	=	183	k

Shear Demand (locally), Vu =	100	k/ft	DCR = Vu / (mk Vn) =	4.86	> 1.0 ...NG
Shear Cut Section, Vu1 =	1089	k (T.8 /3)	DCR = Vu / (mk Vn) =	0.90	< 1.0 ...OK
Shear Cut Section, Vu2 =	407	k (T.9/10)	DCR = Vu / (mk Vn) =	0.99	< 1.0 ...OK

MEZ FL SLAB REINFORCEMENT X-Dirn

fc' =	3	ksi
fy =	41.25	ksi
t =	4.5	in
d =	12	in

Seismic direction: N-S
Av = 0.11 in2/' 1-way Slab
Available reinf = 100% Minor



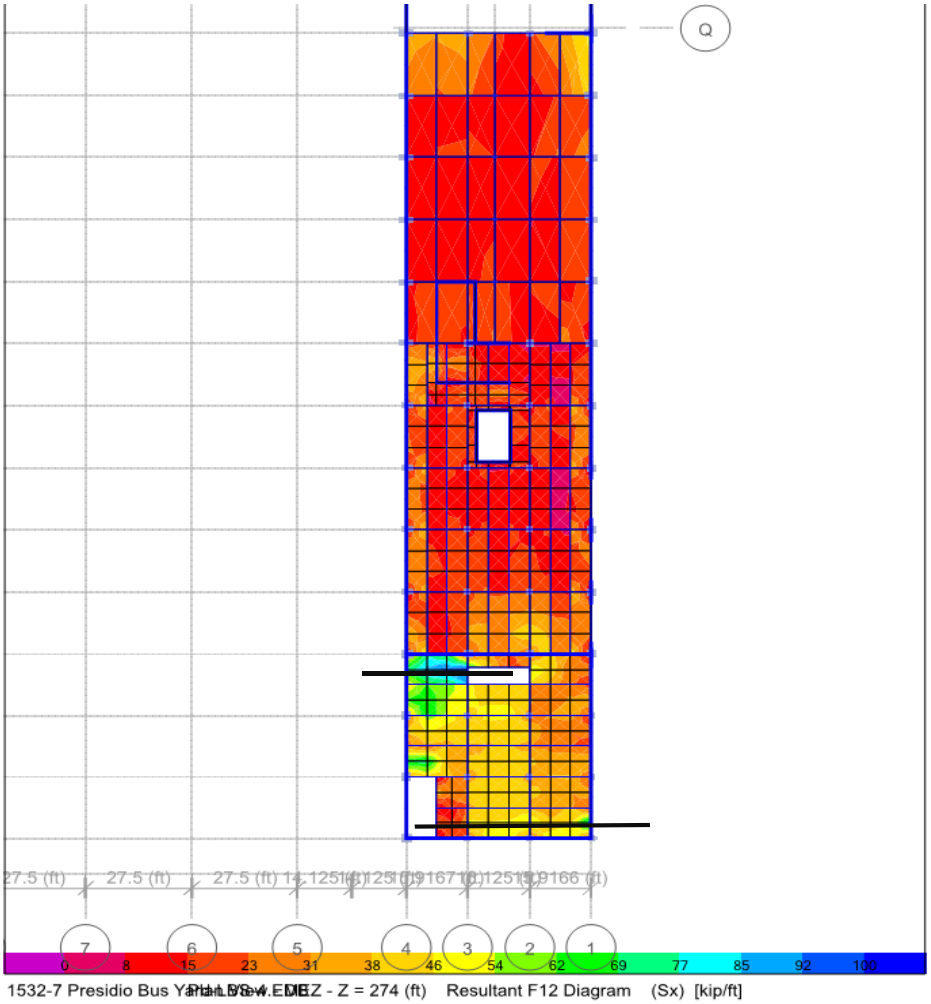
Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

Direction: E-W		Per ft		Cut section, L1 =	15.5	ft	L2 =	39.5	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	5.92	k	=	92	k	=	234	k
Vs = Av fy d * 100%	=	4.54	k	=	70	k	=	179	k
Vn = Vc+Vs	=	10.45	k	=	162	k	=	413	k

Shear Demand (locally), Vu =	20	k/ft	DCR = Vu / (mk Vn) =	0.85	< 1.0 ...OK
Shear Cut Section, Vu1 =	1353	k (C.7)	DCR = Vu / (mk Vn) =	3.71	> 1.0 ...NG
Shear Cut Section, Vu2 =	1056	k (A.1)	DCR = Vu / (mk Vn) =	1.14	> 1.0 ...NG



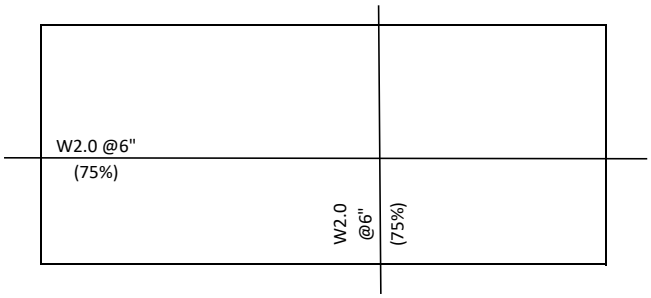
1532-7 Presidio Bus Yard.bdb: MEZ - Z = 274 (ft) Resultant F12 Diagram (Sx) [kip/ft]

MEZ FL SLAB REINFORCEMENT X-Dirn

fc' = 3.75 ksi (LWT)
fy = 41.25 ksi

t = 2.5 in (avg)
d = 12 in

Seismic direction: N-S
Av = 0.04 in2/' (6x6 W2.0 x W2.0)
Available reinf = 75%
Assumed Robertson 3-18 deck



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

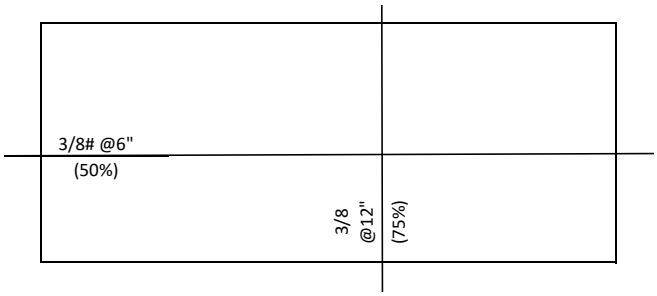
Direction: E-W		Per ft		Cut section, L1 =			L2 =		
Vc = 1.5 $(fc')^{1/2}$ t d	=	2.76	k	=	132	k	=	132	k
Vs = Av fy d * 75%	=	1.24	k	=	59	k	=	59	k
Vdeck = 2 V allow *75%	=	2.76	k	=	132	k	=	132	k
Vn = Vc+Vs+Vdeck	=	6.75	k	=	324	k	=	324	k

Shear Demand (locally), Vu =	50	k/ft	DCR = Vu / (mk Vn) =	3.29	> 1.0	...NG
Shear Cut Section, Vu1 =	682	k (H.9)	DCR = Vu / (mk Vn) =	0.94	< 1.0	...OK
Shear Cut Section, Vu2 =	649	k (J.1)	DCR = Vu / (mk Vn) =	0.89	< 1.0	...OK

ROOF SLAB REINFORCEMENT Y-Dirn.

fc' =	3	ksi
fy =	41.25	ksi
t =	5	in
d =	12	in

Seismic direction: E-W
Av = 0.11 in2/'
Available reinf = 75%



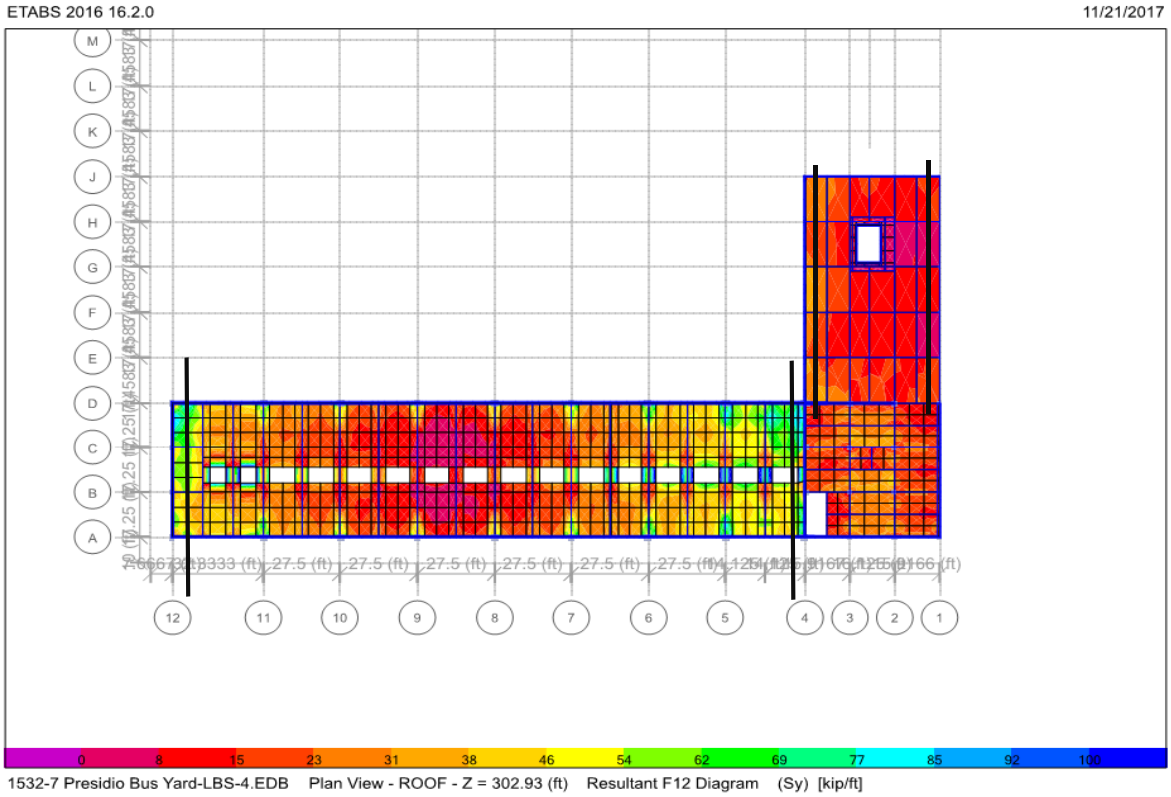
Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or < 0.05 m = 3 CP k = 0.75

Direction: N-S		Per ft		Cut section, L1 =		L2 =		d = L
Vc = 2 (fc')$^{1/2}$ t d	=	6.57	k	= 342	k	= 342	k	
Vs = Av fy d * 75%	=	3.40	k	= 177	k	= 177	k	
Vn = Vc+Vs	=	9.98	k	= 519	k	= 519	k	

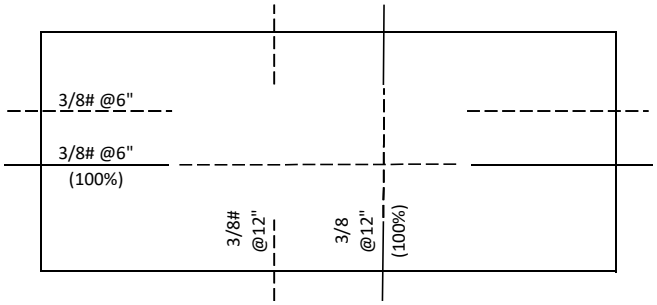
Shear Demand (locally), Vu =	100	k/ft	DCR = Vu / (mk Vn) =	4.46	> 1.0 ...NG
Shear Cut Section, Vu1 =	2104.3	k (11.9)	DCR = Vu / (mk Vn) =	1.80	> 1.0 ...NG
Shear Cut Section, Vu2 =	2842.4	k (4.1)	DCR = Vu / (mk Vn) =	2.44	> 1.0 ...NG



2ND FL SLAB REINFORCEMENT Y-Dirn.

fc' =	3	ksi
fy =	41.25	ksi
t =	3.5	in
d =	12	in

Seismic direction: E-W 1-way Slab
Av = 0.22 in2/' Major
Available reinf = 100%



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or < 0.05 m = 3 CP k = 0.75

Direction: N-S		Per ft		Cut section, L1 =	26.5	ft	L2 =	18.5	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	4.60	k	=	122	k	=	85	k
Vs = Av fy d * 50%	=	4.54	k	=	120	k	=	84	k
Vn = Vc+Vs	=	9.14	k	=	242	k	=	169	k

Shear Demand (locally), Vu =	50	k/ft	DCR = Vu / (mk Vn) =	2.43	> 1.0	...NG
Shear Cut Section, Vu1 =	660	k (11.5/N)	DCR = Vu / (mk Vn) =	1.21	> 1.0	...NG
Shear Cut Section, Vu2 =	583	k (11.5/K)	DCR = Vu / (mk Vn) =	1.53	> 1.0	...NG

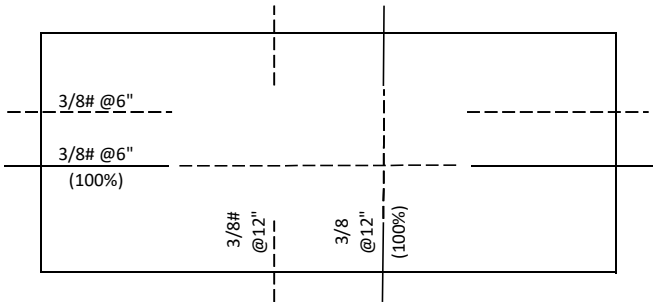
1532-7 Presidio Bus Y and-LB5v4.ESB - Z = 285.34 (ft) Resultant F12 Diagram (Sy) [kip/ft]

2ND FL SLAB REINFORCEMENT Y-Dirn.

fc' = 3 ksi
fy = 41.25 ksi

t = 3.5 in
d = 12 in

Seismic direction: E-W 1-way Slab
Av = 0.22 in2/' Major
Available reinf = 100%



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or < 0.05 m = 3 CP k = 0.75

Direction: N-S		Per ft		Cut section, L1 =	8.5	ft	L2 =	122	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	4.60	k	=	39	k	=	561	k
Vs = Av fy d * 50%	=	4.54	k	=	39	k	=	554	k
Vn = Vc+Vs	=	9.14	k	=	78	k	=	1115	k

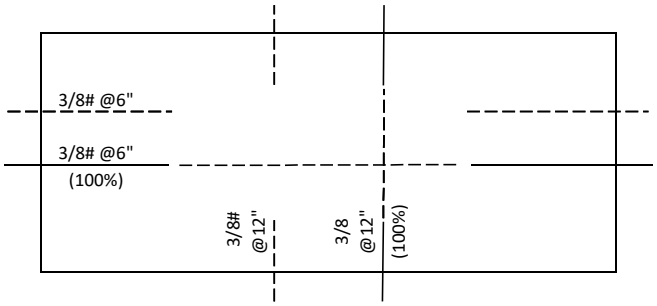
Shear Demand (locally), Vu =	50	k/ft	DCR = Vu / (mk Vn) =	2.43	> 1.0 ...NG
Sx (governed), Shear Cut Section, Vu1 =	748	k (4.5 /P)	DCR = Vu / (mk Vn) =	4.28	> 1.0 ...NG
Shear Cut Section, Vu2 =	2068	k (3.9 /E)	DCR = Vu / (mk Vn) =	0.82	< 1.0 ...OK

2ND FL SLAB REINFORCEMENT Y-Dirn.

fc' = 3 ksi
fy = 41.25 ksi

t = 3.5 in
d = 12 in

Seismic direction: E-W 1-way Slab
Av = 0.22 in2/' Major
Available reinf = 100%



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or < 0.05 m = 3 CP k = 0.75

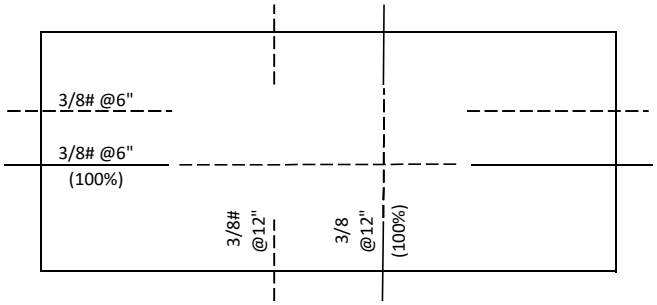
Direction: N-S		Per ft		Cut section, L1 =	52	ft	L2 =	52	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	4.60	k	=	239	k	=	239	k
Vs = Av fy d * 50%	=	4.54	k	=	236	k	=	236	k
Vn = Vc+Vs	=	9.14	k	=	475	k	=	475	k

Shear Demand (locally), Vu =	50	k/ft	DCR = Vu / (mk Vn) =	2.43	> 1.0 ...NG
Shear Cut Section, Vu1 =	946	k (4.5 /C)	DCR = Vu / (mk Vn) =	0.88	< 1.0 ...OK
Shear Cut Section, Vu2 =	1540	k (5.5 /C)	DCR = Vu / (mk Vn) =	1.44	> 1.0 ...NG

1ST FL SLAB REINFORCEMENT Y-Dirn.

fc' =	3	ksi
fy =	41.25	ksi
t =	4	in
d =	12	in

Seismic direction: E-W 1-way Slab
Av = 0.11 in2/' Minor
Available reinf = 100%



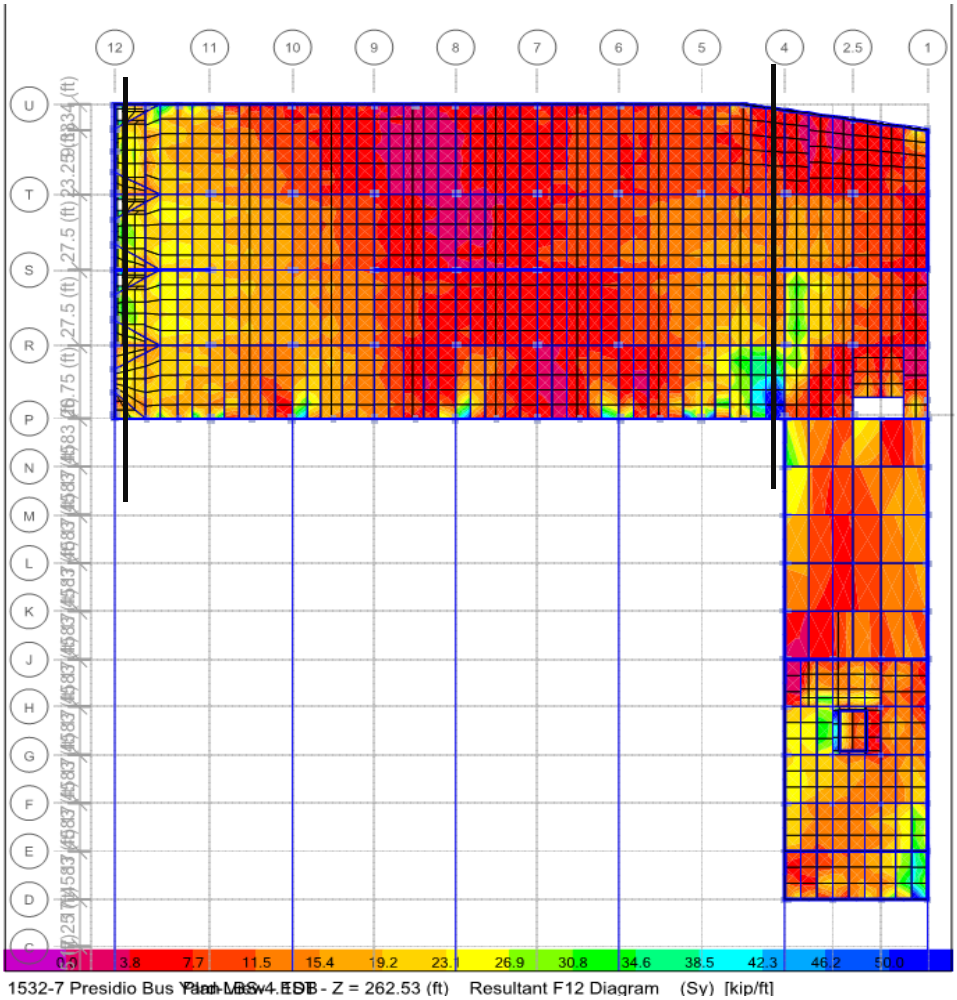
Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or < 0.05 m = 3 CP k = 0.75

Direction: N-S		Per ft		Cut section, L1 =	113.5	ft	L2 =	110.5	ft, d = L
Vc = 2 (fc')$^{1/2}$ t d	=	5.26	k	=	597	k	=	581	k
Vs = Av fy d * 100%	=	4.54	k	=	515	k	=	501	k
Vn = Vc+Vs	=	9.80	k	=	1112	k	=	1082	k

Shear Demand (locally), Vu =	50	k/ft	DCR = Vu / (mk Vn) =	2.27	> 1.0	...NG
Shear Cut Section, Vu1 =	3157	k (15.9)	DCR = Vu / (mk Vn) =	1.26	> 1.0	...NG
Shear Cut Section, Vu2 =	2541	k (4.1)	DCR = Vu / (mk Vn) =	1.04	> 1.0	...NG



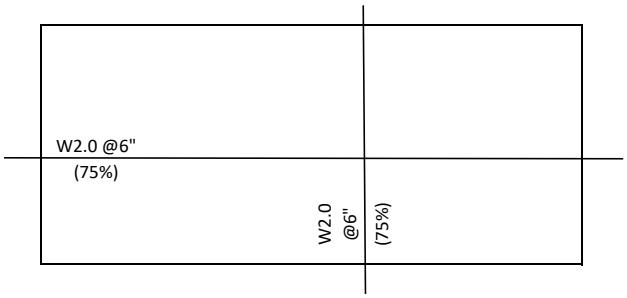
1532-7 Presidio Bus Plan LBSv4.EDB - Z = 262.53 (ft) Resultant F12 Diagram (Sy) [kip/ft]

ROOF DECK REINFORCEMENT X-Dirn

fc' = 3.75 ksi (LWT)
fy = 41.25 ksi

t = 2.5 in
d = 12 in

Seismic direction: N-S
Av = 0.04 in2/' (6x6 W2.0 x W2.0)
Available reinf = 75%



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

Direction: E-W		Per ft		Cut section, L1 =	48	ft	L2 =	48	ft, d = L
Vc = 1.5 $(fc')^{1/2}$ t d	=	2.76	k	=	132	k	=	132	k
Vs = Av fy d * 75%	=	1.24	k	=	59	k	=	59	k
V deck = 2 Allow Robertson Roofs	=	3.6	k	=	173	k	=	173	k
Vn = Vc+Vs+Vdeck	=	7.59	k	=	364	k	=	364	k

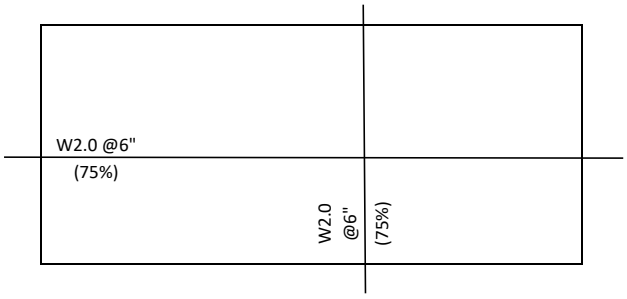
Shear Demand (locally), Vu =	35	k/ft	DCR = Vu / (mk Vn) =	2.05	> 1.0 ...NG
Shear Cut Section, Vu1 =	693	k (H.9)	DCR = Vu / (mk Vn) =	0.85	< 1.0 ...OK
Shear Cut Section, Vu2 =	594	k (D.1)	DCR = Vu / (mk Vn) =	0.72	< 1.0 ...OK

ROOF DECK REINFORCEMENT Y-Dirn

fc' = 3.75 ksi (LWT)
fy = 41.25 ksi

t = 2.5 in
d = 12 in

Seismic direction: E-W
Av = 0.04 in2/' (6x6 W2.0 x W2.0)
Available reinf = 75%



Available slab bar area for diap. shear

DIAPHRAGM DCR

Per Table 10-22, ASCE 41-13 for { (As-As') fy + P}/ (tw Lw fc') > or< 0.05 m = 3 CP k = 0.75

Direction: N-S		Per ft		Cut section, L1 =	87	ft	L2 =	48	ft, d = L
Vc = 1.5 $(fc')^{1/2}$ t d	=	2.76	k	=	240	k	=	132	k
Vs = Av fy d * 75%	=	1.24	k	=	108	k	=	59	k
V deck = 2 Allow Robertson Roofs	=	3.6	k	=	313	k	=	173	k
Vn = Vc+Vs+Vdeck	=	7.59	k	=	661	k	=	364	k

Shear Demand (locally), Vu =	35	k/ft	DCR = Vu / (mk Vn) =	2.05	> 1.0 ...NG
Shear Cut Section, Vu1 =	693	k (H.9)	DCR = Vu / (mk Vn) =	0.47	< 1.0 ...OK
Shear Cut Section, Vu2 =	594	k (D.1)	DCR = Vu / (mk Vn) =	0.72	< 1.0 ...OK

Foundation

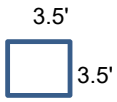
m-factor for Fixed base Foundation

Per 8.4.2.3.2.1 ASCE 41-13 CP, m = 3.00

Bearing Capacity for model with Flexible Foundation

Load Combination	q allow (Ksf)	qc = 3 q allow (Ksf)	k = 0.75 m	mk qc (Ksf)
D+L	4	12		
D+L+Ex	5.3	16.0	3.00	36.0
D+L+Ey	5.3	16.0	3.00	36.0

Reactions at Basement (1914 Bldg 2)



GL 1/Q.2 UDCon3, FZ = 169 k (Location of max displacement, see countour)
UDCon4, FZ = 84.9 k Joint label = 1132
Ftg size = 3'-6" SQ

Pressure = 169/(3.5^2) = 13.8 Ksf < mk qc Ok.

Reactions at 1st FL (1912 Bldg 1)

GL H/16 UDCon3, FZ = 266.9 k (Location of max displacement, see countour)
UDCon4, FZ = 443.2 k Joint label = 149
Ftg size = 6'-0" SQ

Pressure = 443.2/(6^2) = 12.3 Ksf < mk qc Ok.

TABLE: Joint Assignments - Springs				
Story	Label	nique Nam	Spring	Afooting (ft2)
1ST	1	4557	5.75	33.0625
1ST	2	4558	6.25	39.0625
1ST	3	4559	6.25	39.0625
1ST	38	4584	7	49
1ST	39	4585	6	36
1ST	40	4586	6	36
1ST	13	4587	6.25	39.0625
1ST	14	4588	6.25	39.0625
1ST	26	4593	5.75	33.0625
1ST	27	4594	5.75	33.0625
1ST	35	4595	5.75	33.0625
1ST	36	4596	5.75	33.0625
1ST	102	4597	7.5	56.25
1ST	103	4598	7.5	56.25
1ST	104	4599	4.5	20.25
1ST	105	4600	4.5	20.25
1ST	108	4601	4.5	20.25
1ST	109	4602	4.5	20.25
1ST	112	4603	7.75	60.0625
1ST	113	4604	3.5	12.25
1ST	114	4605	8	64
1ST	115	4606	4.5	20.25
1ST	121	4607	5	25
1ST	122	4608	3.5	12.25
1ST	123	4609	5.5	30.25
1ST	124	4610	3.5	12.25
1ST	151	4611	5	25
1ST	153	4612	3.5	12.25
1ST	190	4613	4.5	20.25
1ST	191	4614	3.5	12.25
1ST	209	4615	4.5	20.25
1ST	210	4616	3.5	12.25
1ST	228	4617	4.5	20.25
1ST	229	4618	3.5	12.25
1ST	247	4619	4.5	20.25
1ST	248	4620	3.5	12.25
1ST	266	4621	4.5	20.25
1ST	267	4622	3.5	12.25
1ST	304	4625	7	49
1ST	305	4626	7.5	56.25
1ST	306	4627	4.5	20.25
1ST	307	4628	5.5	30.25
1ST	310	4629	4.5	20.25
1ST	311	4630	5.5	30.25
1ST	314	4631	7.75	60.0625
1ST	315	4632	3.5	12.25
1ST	316	4633	7.75	60.0625
1ST	317	4634	3.5	12.25
1ST	342	4635	4	16
1ST	343	4636	3.5	12.25
1ST	344	4637	4.75	22.5625

1ST	345	4638	3.5	12.25
1ST	370	4639	4	16
1ST	371	4640	3.5	12.25
1ST	388	4641	3.5	12.25
1ST	389	4642	3.5	12.25
1ST	406	4643	3.5	12.25
1ST	407	4644	3.5	12.25
1ST	424	4645	3.5	12.25
1ST	425	4646	3.5	12.25
1ST	442	4647	3.5	12.25
1ST	443	4648	3.5	12.25
1ST	460	4649	3.5	12.25
1ST	461	4650	3.5	12.25
1ST	523	4653	7.5	56.25
1ST	524	4654	7.5	56.25
1ST	525	4655	4.5	20.25
1ST	526	4656	4.5	20.25
1ST	529	4657	4.5	20.25
1ST	530	4658	4.5	20.25
1ST	533	4659	7.75	60.0625
1ST	534	4660	3.5	12.25
1ST	535	4661	7.75	60.0625
1ST	536	4662	3.5	12.25
1ST	561	4663	4	16
1ST	562	4664	3.5	12.25
1ST	563	4665	4.75	22.5625
1ST	564	4666	3.5	12.25
1ST	589	4667	4	16
1ST	590	4668	3.5	12.25
1ST	607	4669	3.5	12.25
1ST	608	4670	3.5	12.25
1ST	625	4671	3.5	12.25
1ST	626	4672	3.5	12.25
1ST	643	4673	3.5	12.25
1ST	644	4674	3.5	12.25
1ST	661	4675	3.5	12.25
1ST	662	4676	3.5	12.25
1ST	679	4677	3.5	12.25
1ST	680	4678	3.5	12.25
1ST	742	4681	8	64
1ST	743	4682	4.5	20.25
1ST	745	4683	4.5	20.25
1ST	747	4684	8.25	68.0625
1ST	748	4685	3.5	12.25
1ST	761	4686	3.5	12.25
1ST	762	4687	3.5	12.25
1ST	775	4688	3.5	12.25
1ST	784	4689	3.5	12.25
1ST	793	4690	3.5	12.25
1ST	802	4691	3.5	12.25
1ST	811	4692	3.5	12.25
1ST	820	4693	3.5	12.25
1ST	149	4695	6	36
1ST	150	4696	6	36

1ST	329	4697	6	36
1ST	335	4698	6	36
1ST	337	4699	4.5	20.25
1ST	846	4700	4.5	20.25
1ST	847	4701	4.5	20.25
1ST	860	4702	4.5	20.25
1ST	869	4703	4.5	20.25
1ST	878	4704	4.5	20.25
1ST	887	4705	4.5	20.25
1ST	896	4706	4.5	20.25
1ST	905	4707	4.5	20.25
1ST	2921	2392	7	49
1ST	2922	2393	6	36
1ST	2923	2394	6	36
1ST	2924	2403	6	36
1ST	2925	2404	6	36
1ST	2926	2407	7.5	56.25
1ST	2927	2408	7.5	56.25
1ST	2928	2409	7.5	56.25
1ST	2929	2410	8.25	68.0625
1ST	2930	2411	8.25	68.0625
1ST	2931	2412	7.5	56.25
1ST	2932	2413	7.5	56.25
1ST	2933	2776	4	16
1ST	2934	2777	4	16
1ST	2935	2778	4	16
1ST	2936	2779	4	16
1ST	2937	2780	4	16
1ST	2938	2781	4	16
1ST	2939	2782	4	16
1ST	2940	2783	4	16
1ST	2950	1133	7	49
BASE	9	2807	6	36
BASE	10	908	7	49
BASE	11	909	7	49
BASE	12	917	7	49
BASE	28	5023	5.75	33.0625
BASE	29	5024	4.5	20.25
BASE	30	5025	4.5	20.25
BASE	33	2805	5	25
BASE	34	2806	5	25
BASE	37	918	7	49
BASE	220	5035	4.5	20.25
BASE	238	5036	4.5	20.25
BASE	471	5047	6.25	39.0625
BASE	571	5048	7	49
BASE	572	5049	7.75	60.0625
BASE	614	5053	7.5	56.25
BASE	467	5055	7	49
BASE	667	5056	7.75	60.0625
BASE	719	5057	7.75	60.0625
BASE	721	5058	7	49
BASE	839	5059	7	49
BASE	840	5060	7.75	60.0625

BASE	883	5064	7.5		56.25
BASE	884	5065	7.75		60.0625
BASE	898	5066	7.75		60.0625
BASE	900	5067	7		49
BASE	924	5068	7.75		60.0625
BASE	925	5069	7		49
BASE	926	5070	7.75		60.0625
BASE	927	5071	7		49
BASE	1016	5072	6.25		39.0625
BASE	1017	5073	7		49
BASE	949	5077	7.5		56.25
BASE	950	5078	8		64
BASE	1032	5079	8		64
BASE	1033	5080	7.5		56.25
BASE	1042	5081	8		64
BASE	1043	5082	7.5		56.25
BASE	1053	5083	8		64
BASE	1054	5084	7.5		56.25
BASE	1064	5085	6		36
BASE	1065	5086	7		49
BASE	1070	5098	5.75		33.0625
BASE	1126	5100	8.25		68.0625
BASE	1127	5099	8.25		68.0625
BASE	1132	5110	3.5		12.25
BASE	1853	901	4.5		20.25
BASE	1878	902	4.5		20.25
BASE	1879	903	4.5		20.25
BASE	1888	904	4.5		20.25

TABLE: Frame Assignments - Springs

Story	Label	nique Nam	Design Type	Spring		Afooting (ft2)
1ST	B63	152	Beam	LSpr1-8	1.667	226.33
1ST	B64	171	Beam	LSpr1-8	1.667	226.33
1ST	B65	294	Beam	LSpr1-8	1.667	226.33
1ST	B839	300	Beam	LSpr1-8	1.667	0
1ST	B840	301	Beam	LSpr2-6	2.5	51.75
1ST	B859	293	Beam	LSpr2-6	2.5	47.96
1ST	B865	308	Beam	LSpr2-6	2.5	51.75
1ST	B913	298	Beam	LSpr2-6	2.5	87.29
1ST	B823	370	Beam	LSpr1-8	1.667	226.33
BASE	B194	443	Beam	LSpr10	10	28.25
BASE	B837	151	Beam	LSpr1-8	1.667	273.54
BASE	B838	388	Beam	LSpr5-6	5.5	114.33
BASE	B918	416	Beam	LSpr4	4	211.46
BASE	B919	423	Beam	LSpr1-8	1.667	62.78
BASE	B921	438	Beam	LSpr4-6	4.5	197.33
BASE	B923	495	Beam	LSpr11-3	11.25	94.74

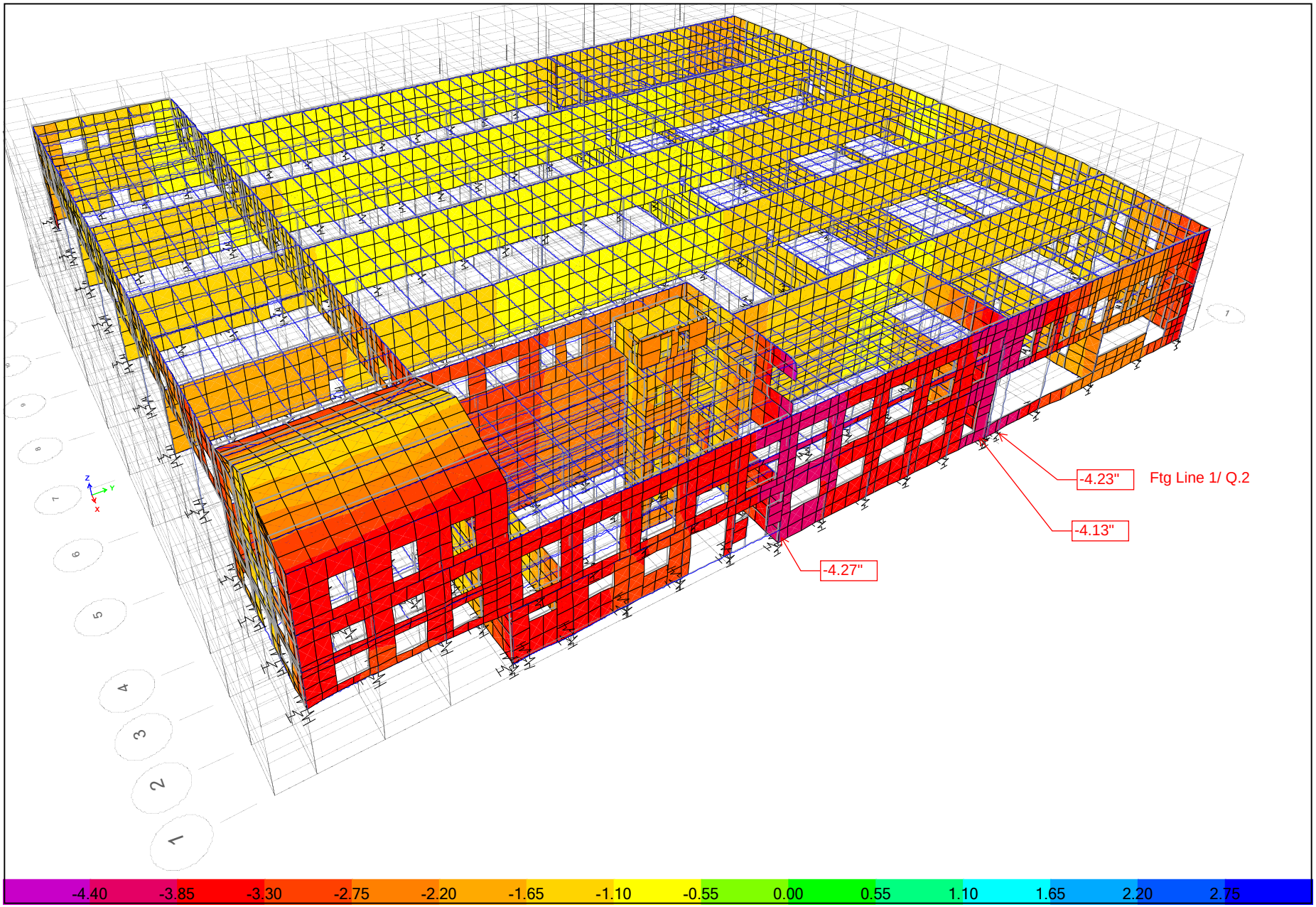
TABLE: Shell Assignments - Springs

Story	Label	nique Nam	Spring		Afooting (ft2)
1ST	F1332	2762	22.5PCI		129.06

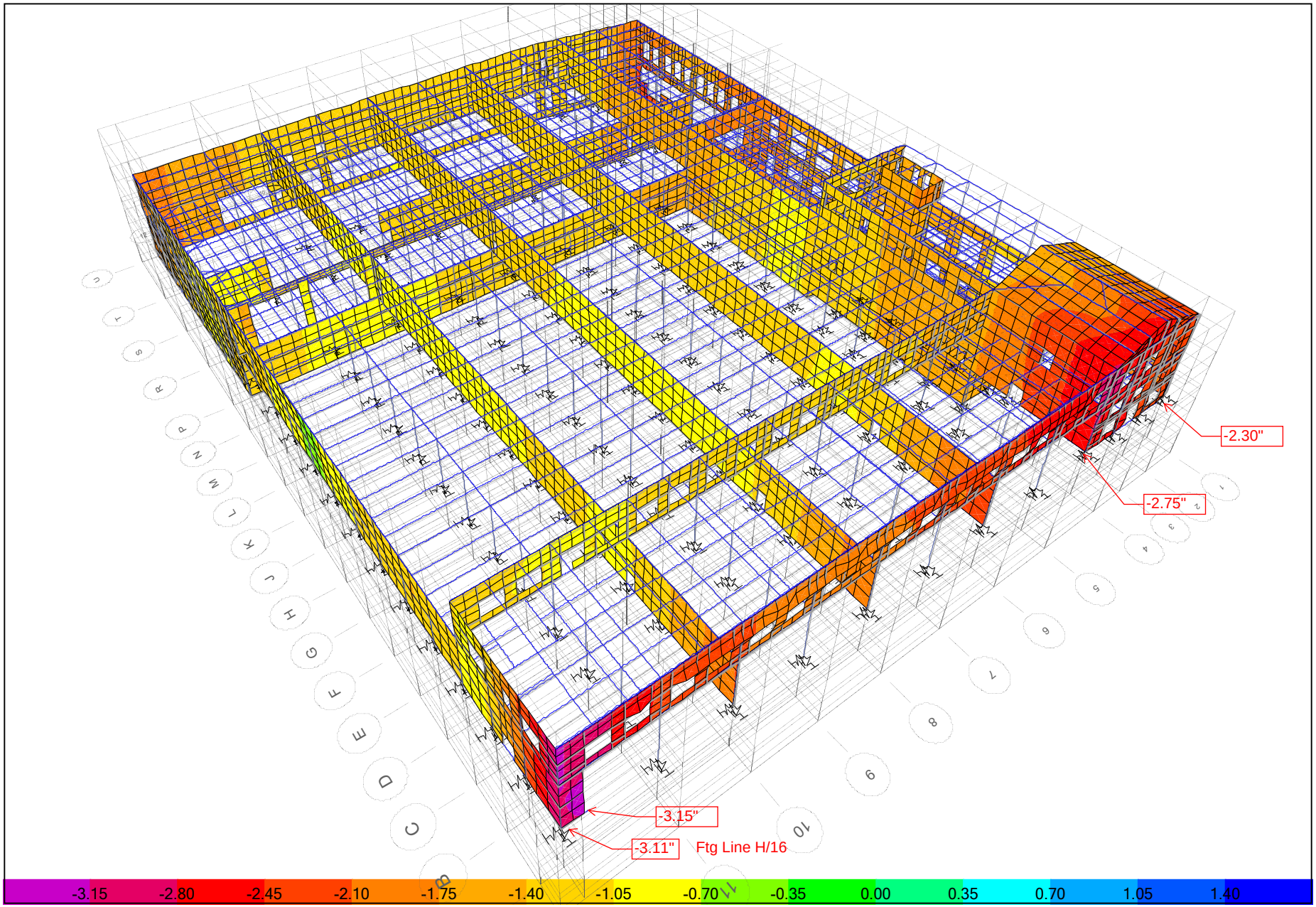
Total area of ftg area+lines+joints= 8128.373 ft2

TABLE: Joint Reactions

Story	Joint Label	Unique Name	Load Case/Combo	FX	FY	FZ	MX	MY	MZ
				kip	kip	kip	kip-ft	kip-ft	kip-ft
1ST	149	4695	DEAD	0.4	-3.7	110.1	0	0	0
1ST	149	4695	L	-1.7	-2.5	6.5	0	0	0
1ST	149	4695	SDL	-0.1	-0.2	5.7	0	0	0
1ST	149	4695	Lr	0.2	-0.0372	4.1	0	0	0
1ST	149	4695	Ap	-12.4	-18	-10.9	0	0	0
1ST	149	4695	Spx	-15.2	-5.9	-7.3	0	0	0
1ST	149	4695	Spy	0.7	-16.5	-5.7	0	0	0
1ST	149	4695	Ex	-602.6	85.9	-156.7	0	0	0
1ST	149	4695	Ey	20.4	-293.4	-382.5	0	0	0
1ST	149	4695	Sx Max	381.4	156.6	131.4	0	0	0
1ST	149	4695	Sy Max	49.4	255.4	291.7	0	0	0
1ST	149	4695	UDCon1	-13.3	-24.1	115.4	0	0	0
1ST	149	4695	UDCon2	-13.7	-24.8	118.3	0	0	0
1ST	149	4695	UDCon3 Max	410.5	154.2	266.9	0	0	0
1ST	149	4695	UDCon3 Min	-428.7	-190.4	-22.2	0	0	0
1ST	149	4695	UDCon4 Max	45.3	262.8	443.2	0	0	0
1ST	149	4695	UDCon4 Min	-63.4	-299.1	-198.5	0	0	0
1ST	149	4695	UDCon5 Max	410.8	155.6	240.8	0	0	0
1ST	149	4695	UDCon5 Min	-428.3	-189	-48.3	0	0	0
1ST	149	4695	UDCon6 Max	45.6	264.3	417.2	0	0	0
1ST	149	4695	UDCon6 Min	-63.1	-297.6	-224.6	0	0	0
1ST	149	4695	Esx Max	419.6	172.3	144.5	0	0	0
1ST	149	4695	Esx Min	-419.6	-172.3	-144.5	0	0	0
1ST	149	4695	Esy Max	54.4	281	320.9	0	0	0
1ST	149	4695	Esy Min	-54.4	-281	-320.9	0	0	0
1ST	149	4695	Qx Max	410.6	159.2	136.6	0	0	0
1ST	149	4695	Qx Min	-428.6	-185.4	-152.5	0	0	0
1ST	149	4695	Qy Max	45.3	267.8	312.9	0	0	0
1ST	149	4695	Qy Min	-63.4	-294.1	-328.8	0	0	0
BASE	1132	5110	DEAD	0.8	0.04316	34.4	0	0	0
BASE	1132	5110	L	-0.4	-0.4	7.4	0	0	0
BASE	1132	5110	SDL	0.00431	-0.04714	2.8	0	0	0
BASE	1132	5110	Lr	-0.002334	0.0122	1.2	0	0	0
BASE	1132	5110	Ap	-8.5	-1.9	4.8	0	0	0
BASE	1132	5110	Spx	-9.3	1.3	6.6	0	0	0
BASE	1132	5110	Spy	0.1	-3.4	1.4	0	0	0
BASE	1132	5110	Ex	-46.4	-23.7	206.4	0	0	0
BASE	1132	5110	Ey	1	-86.4	48.1	0	0	0
BASE	1132	5110	Sx Max	27.3	39	111.1	0	0	0
BASE	1132	5110	Sy Max	7.9	83.5	34.6	0	0	0
BASE	1132	5110	UDCon1	-8.4	-2.1	46.2	0	0	0
BASE	1132	5110	UDCon2	-8.5	-2.2	48.6	0	0	0
BASE	1132	5110	UDCon3 Max	24.7	41.4	169	0	0	0
BASE	1132	5110	UDCon3 Min	-35.4	-44.5	-75.4	0	0	0
BASE	1132	5110	UDCon4 Max	3.3	90.3	84.9	0	0	0
BASE	1132	5110	UDCon4 Min	-14.1	-93.4	8.7	0	0	0
BASE	1132	5110	UDCon5 Max	24.6	41.5	159.2	0	0	0
BASE	1132	5110	UDCon5 Min	-35.5	-44.4	-85.2	0	0	0
BASE	1132	5110	UDCon6 Max	3.3	90.5	75.1	0	0	0
BASE	1132	5110	UDCon6 Min	-14.2	-93.3	-1.1	0	0	0
BASE	1132	5110	Esx Max	30	42.9	122.2	0	0	0
BASE	1132	5110	Esx Min	-30	-42.9	-122.2	0	0	0
BASE	1132	5110	Esy Max	8.7	91.9	38.1	0	0	0
BASE	1132	5110	Esy Min	-8.7	-91.9	-38.1	0	0	0
BASE	1132	5110	Qx Max	23.8	41.5	125.8	0	0	0
BASE	1132	5110	Qx Min	-36.2	-44.4	-118.7	0	0	0
BASE	1132	5110	Qy Max	2.5	90.5	41.6	0	0	0
BASE	1132	5110	Qy Min	-14.9	-93.3	-34.5	0	0	0



1532-7 Presidio Bus Yard-LBS-4.EDB 3-D View - Displacements (UDCon3) [in]



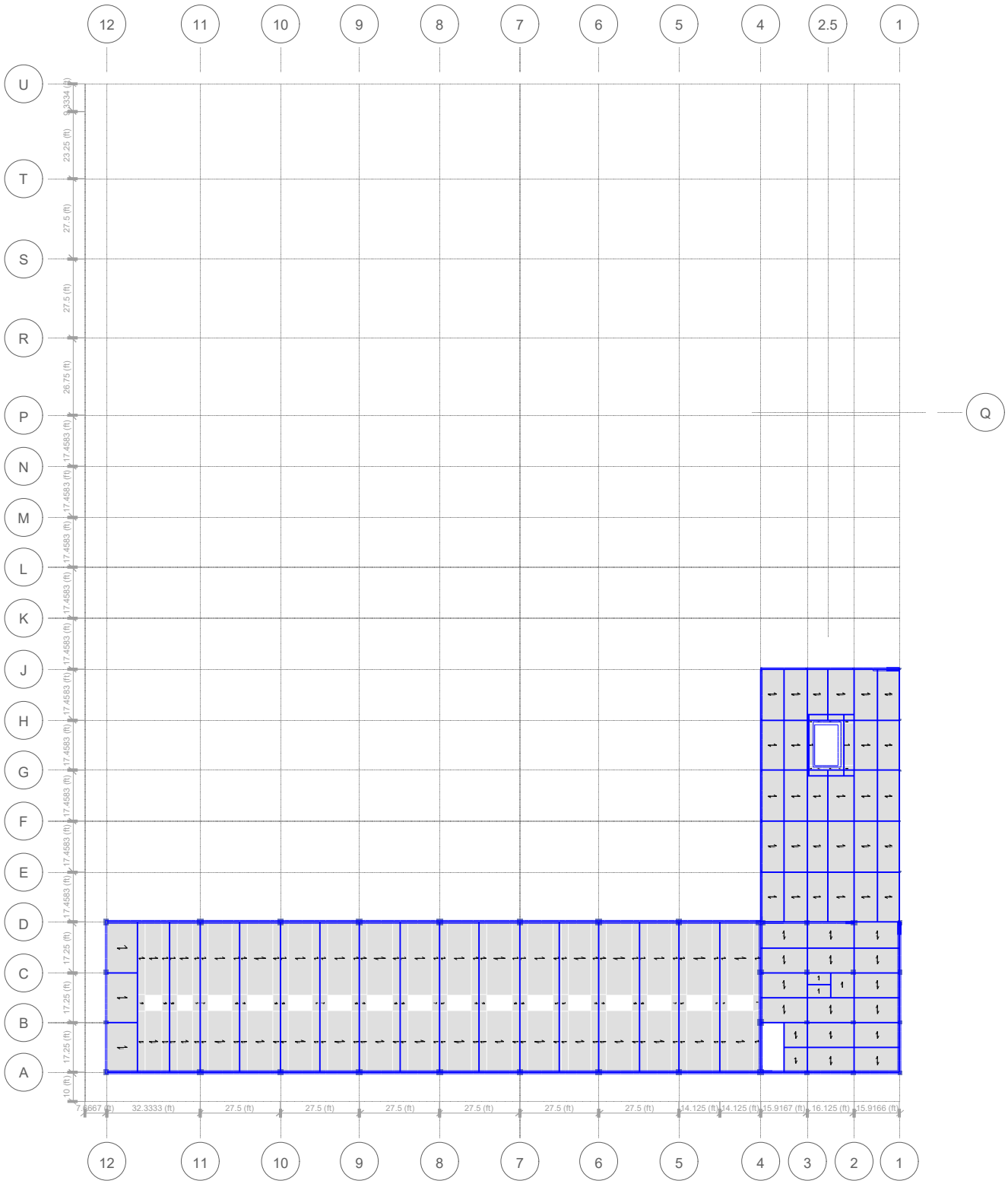
1532-7 Presidio Bus Yard-LBS-4.EDB 3-D View - Displacements (UDCon4) [in]

STRUCTUS

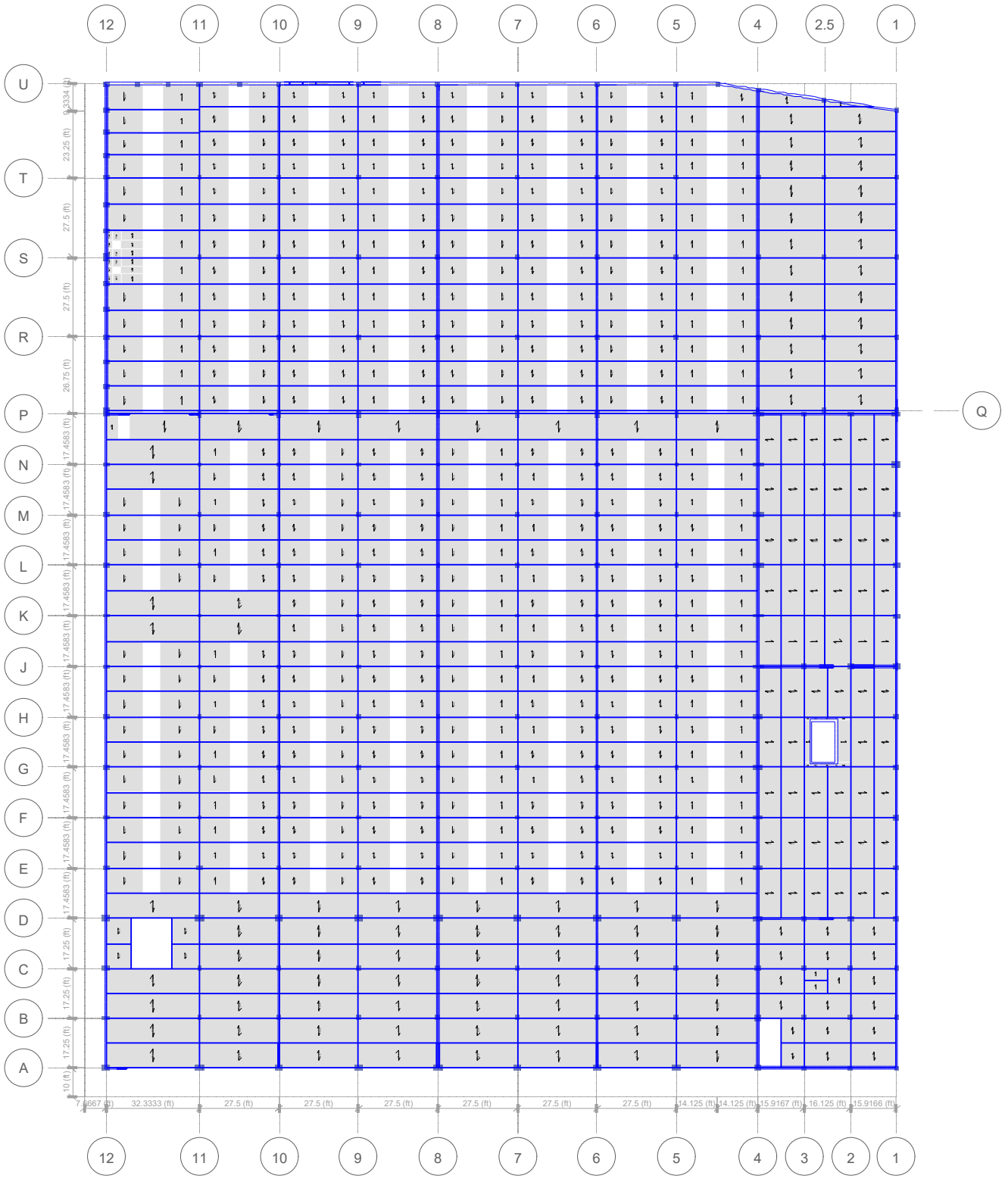
Appendix D

Computer Modeling and Analysis Documentation

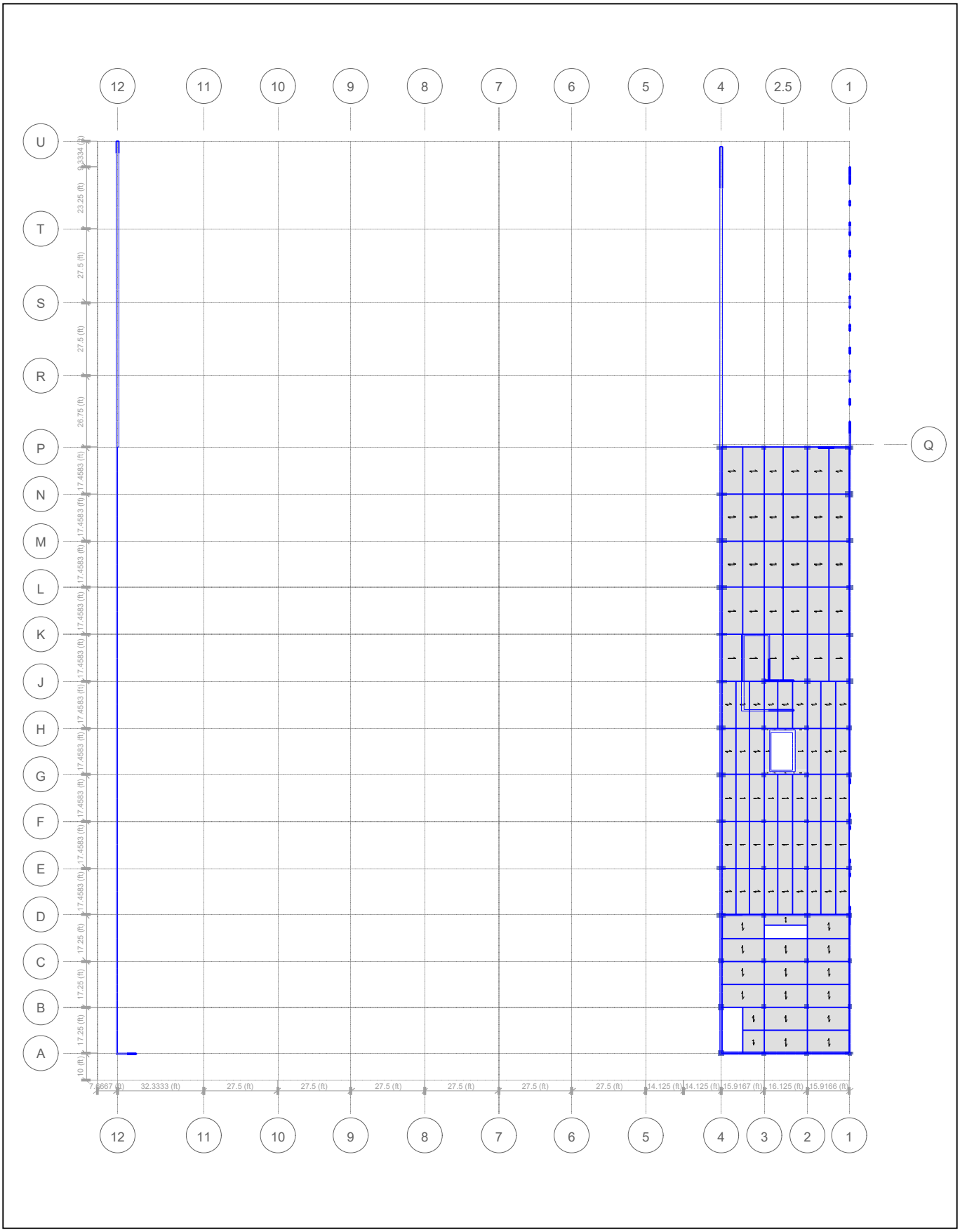
Floor Plans:



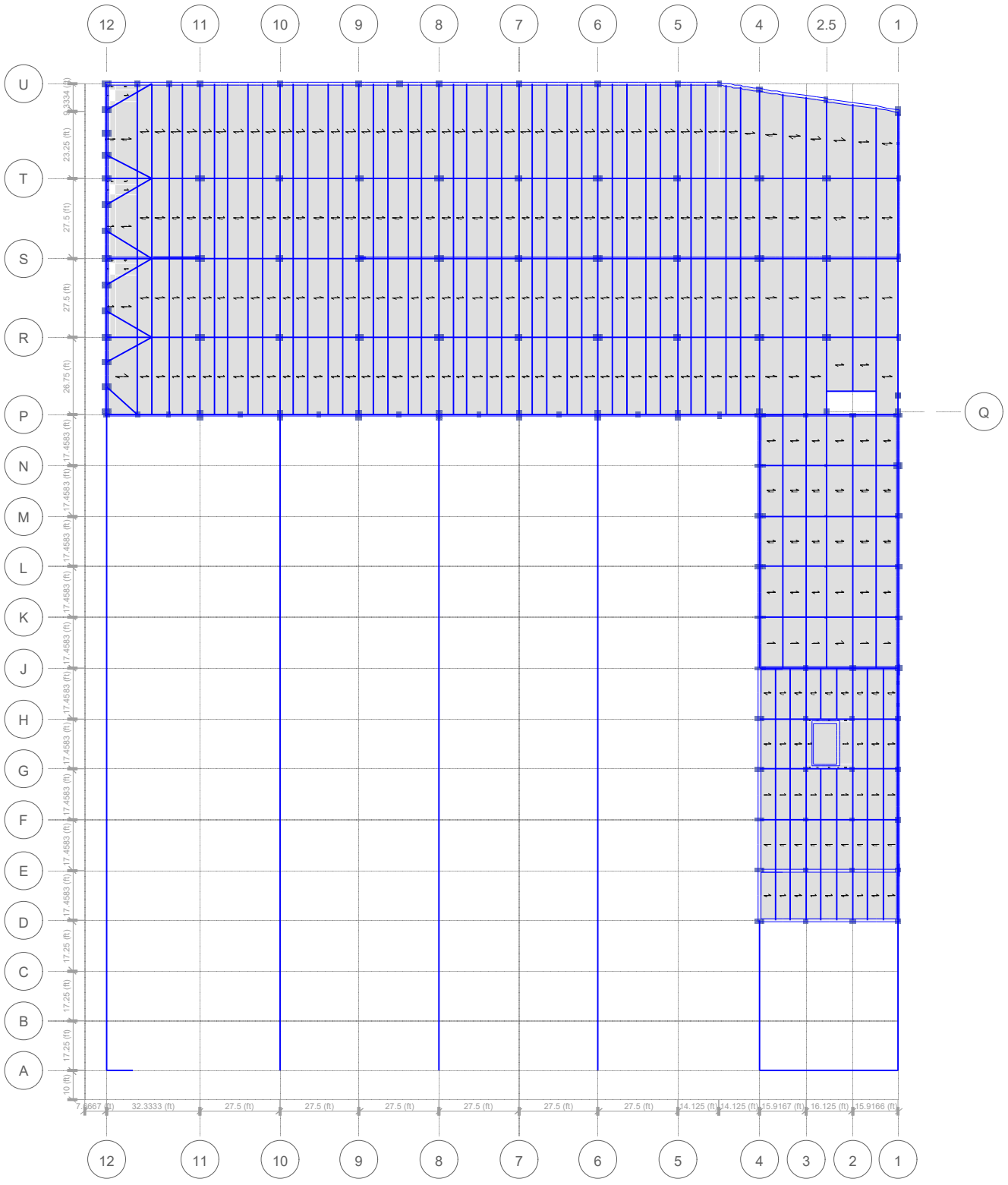
1532-7 Presidio Bus Yard-LBS-4.EDB Plan View - ROOF - Z = 302.93 (ft)



1532-7 Presidio Bus Yard-LBS-4.EDB Plan View - 2ND - Z = 285.34 (ft)

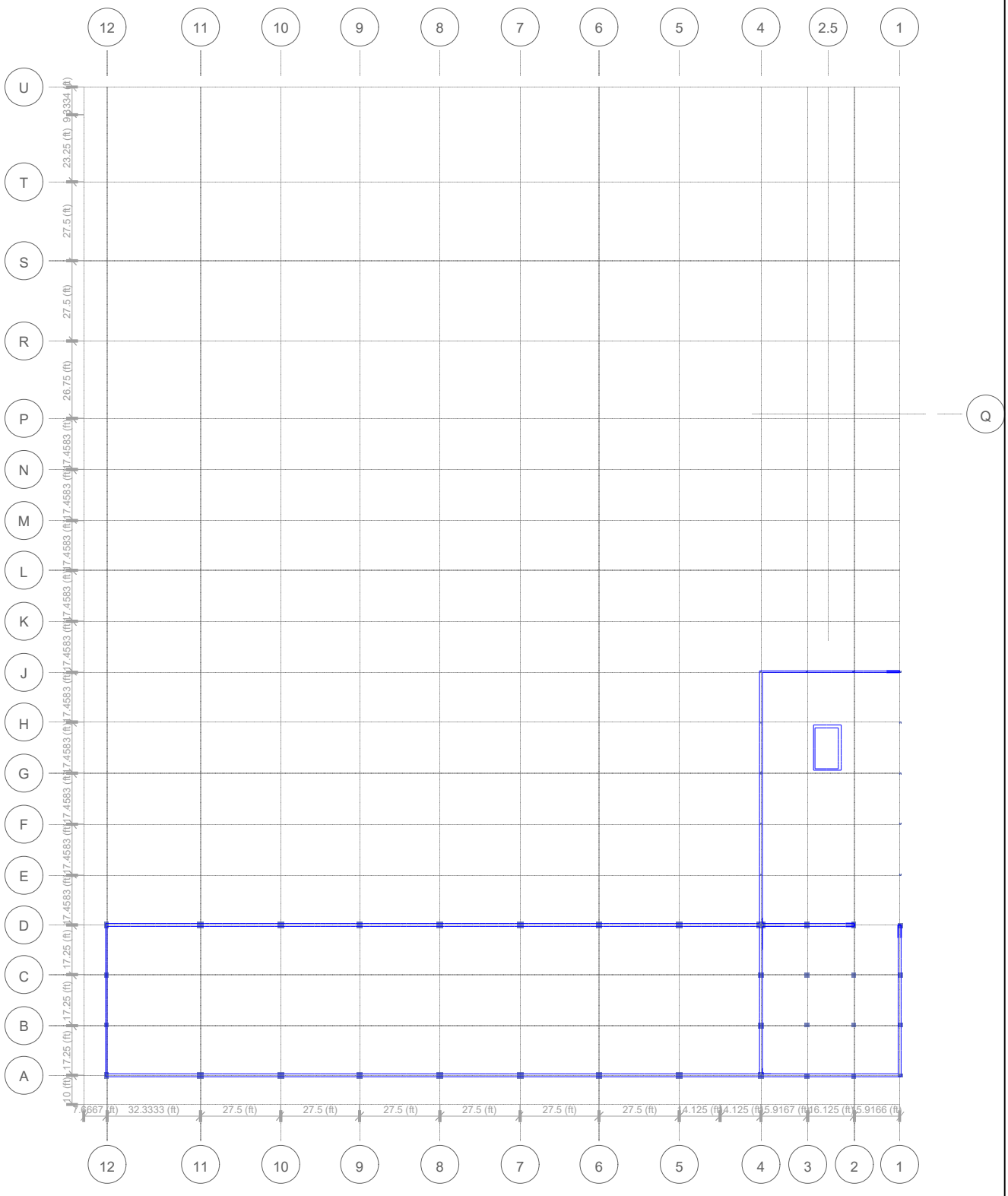


1532-7 Presidio Bus Yard-LBS-4.EDB Plan View - MEZ - Z = 274 (ft)

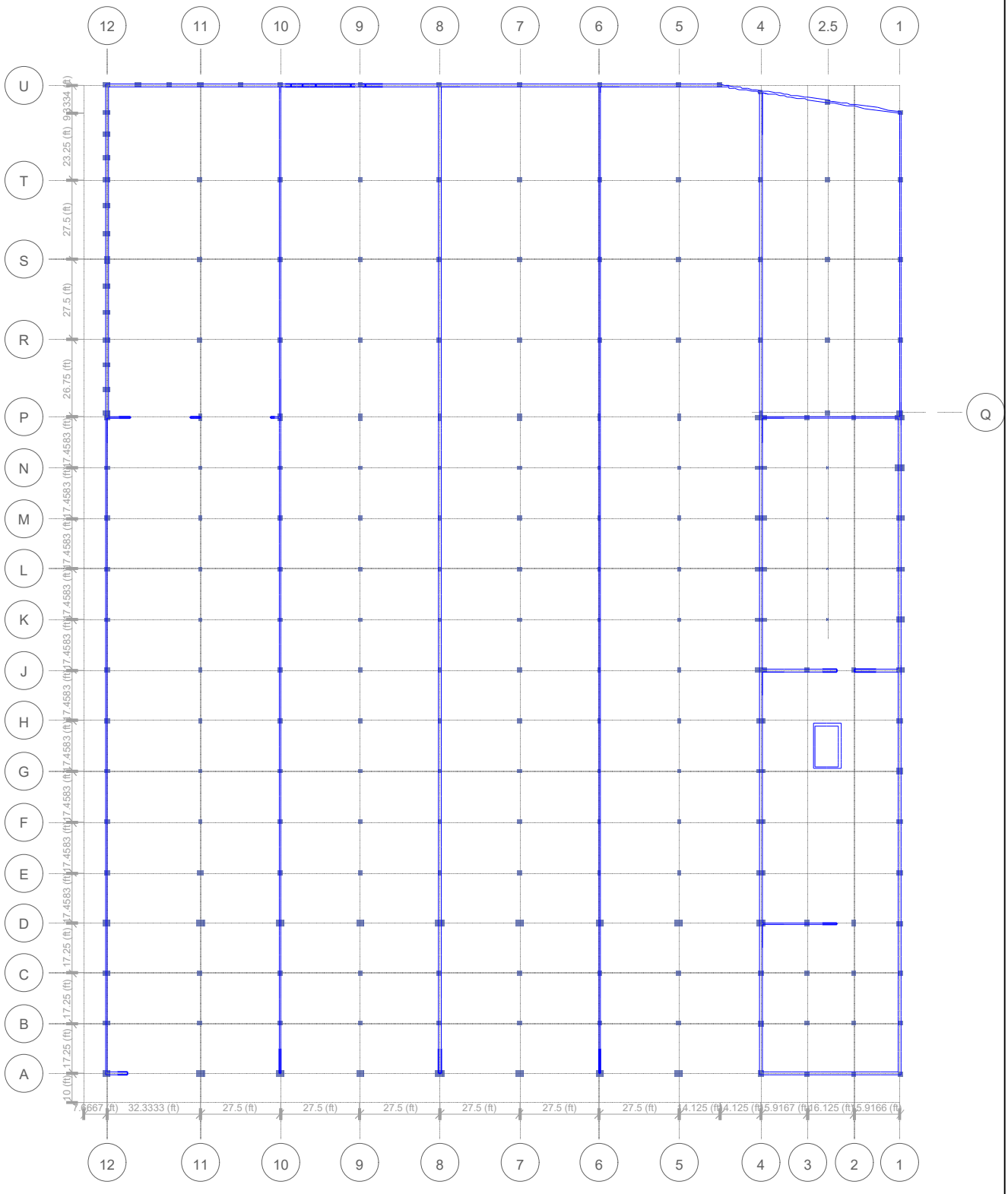


1532-7 Presidio Bus Yard-LBS-4.EDB Plan View - 1ST - Z = 262.53 (ft)

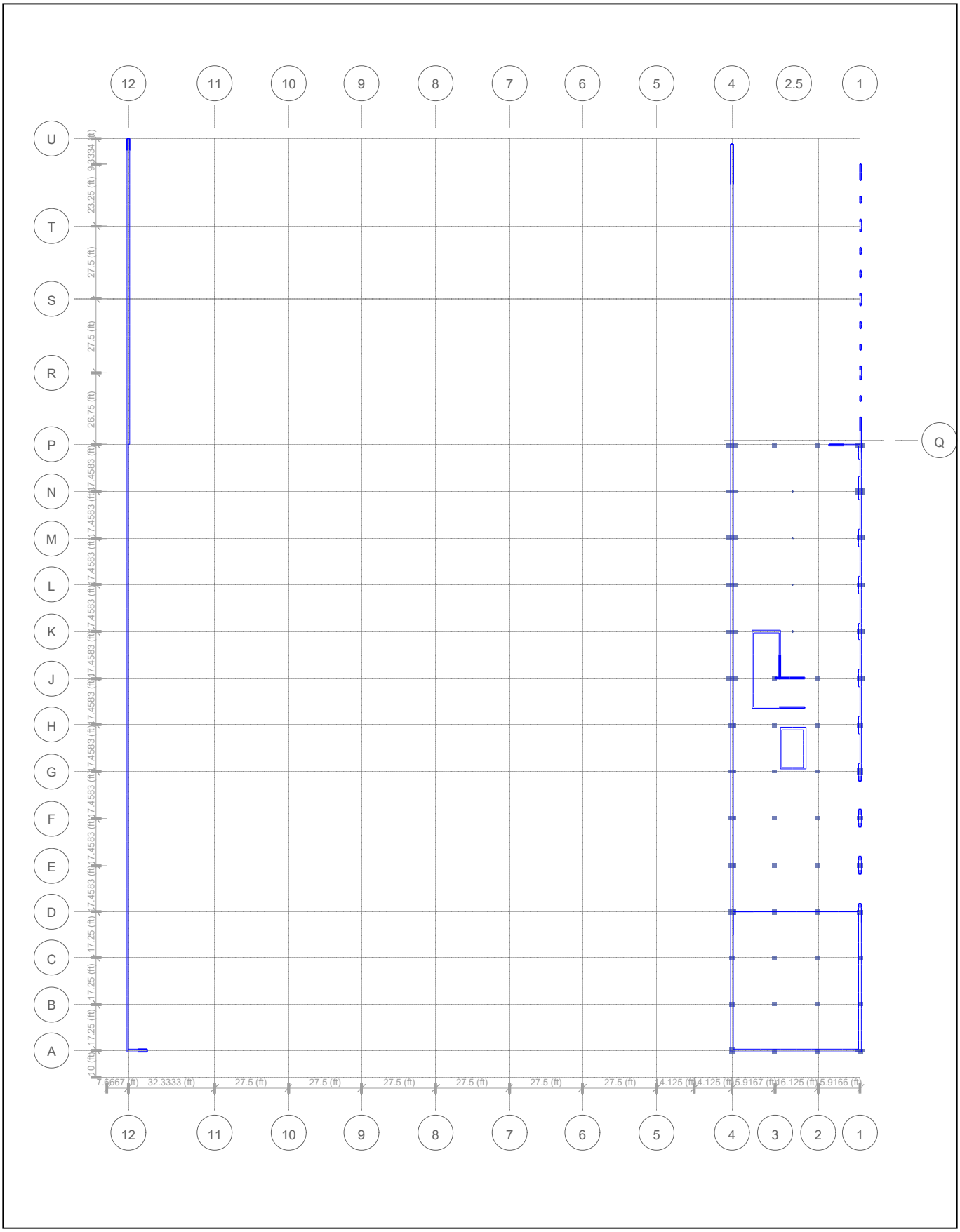
Wall / Column Plans:



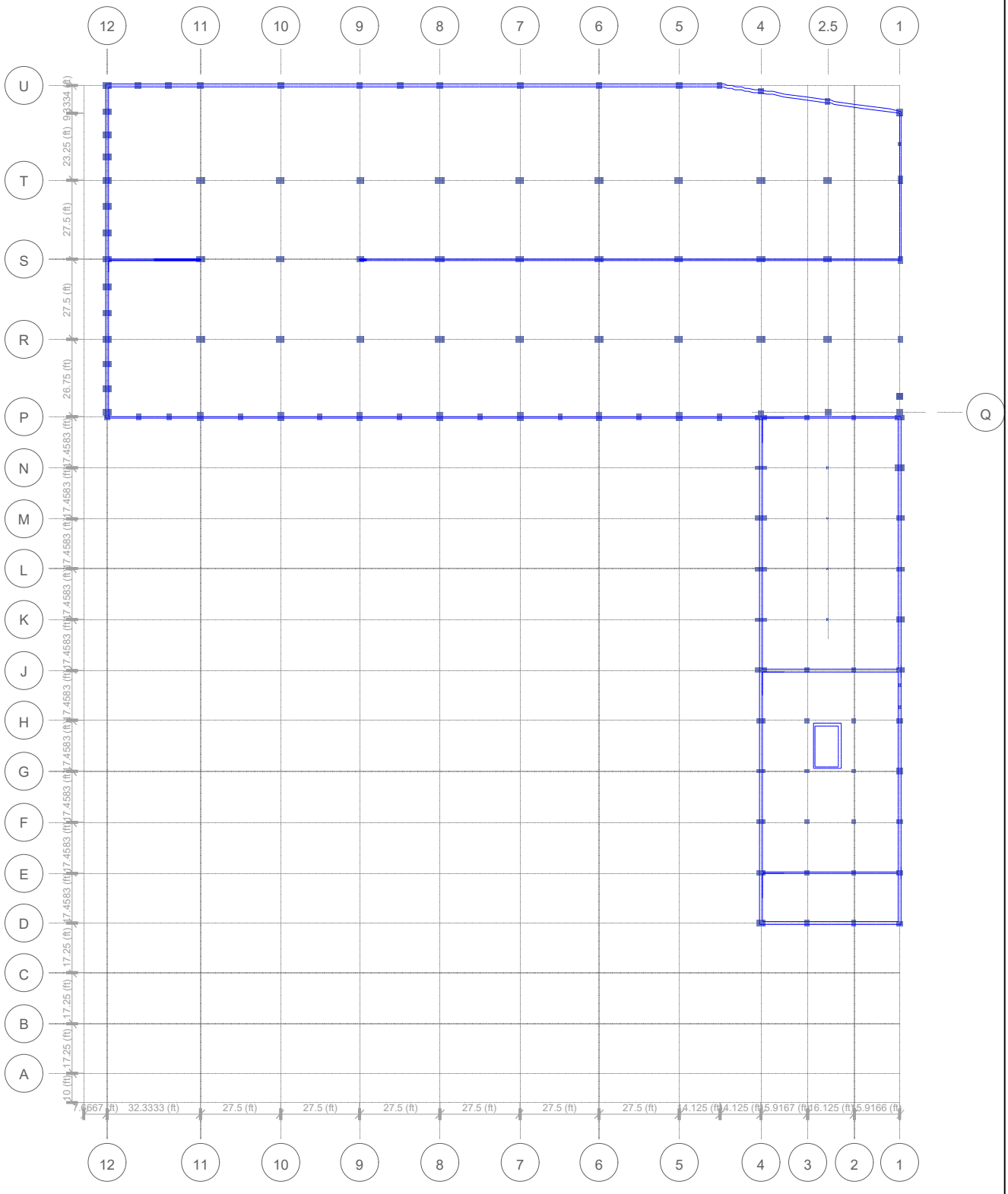
1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - ROOF - Z = 302.93 (ft)



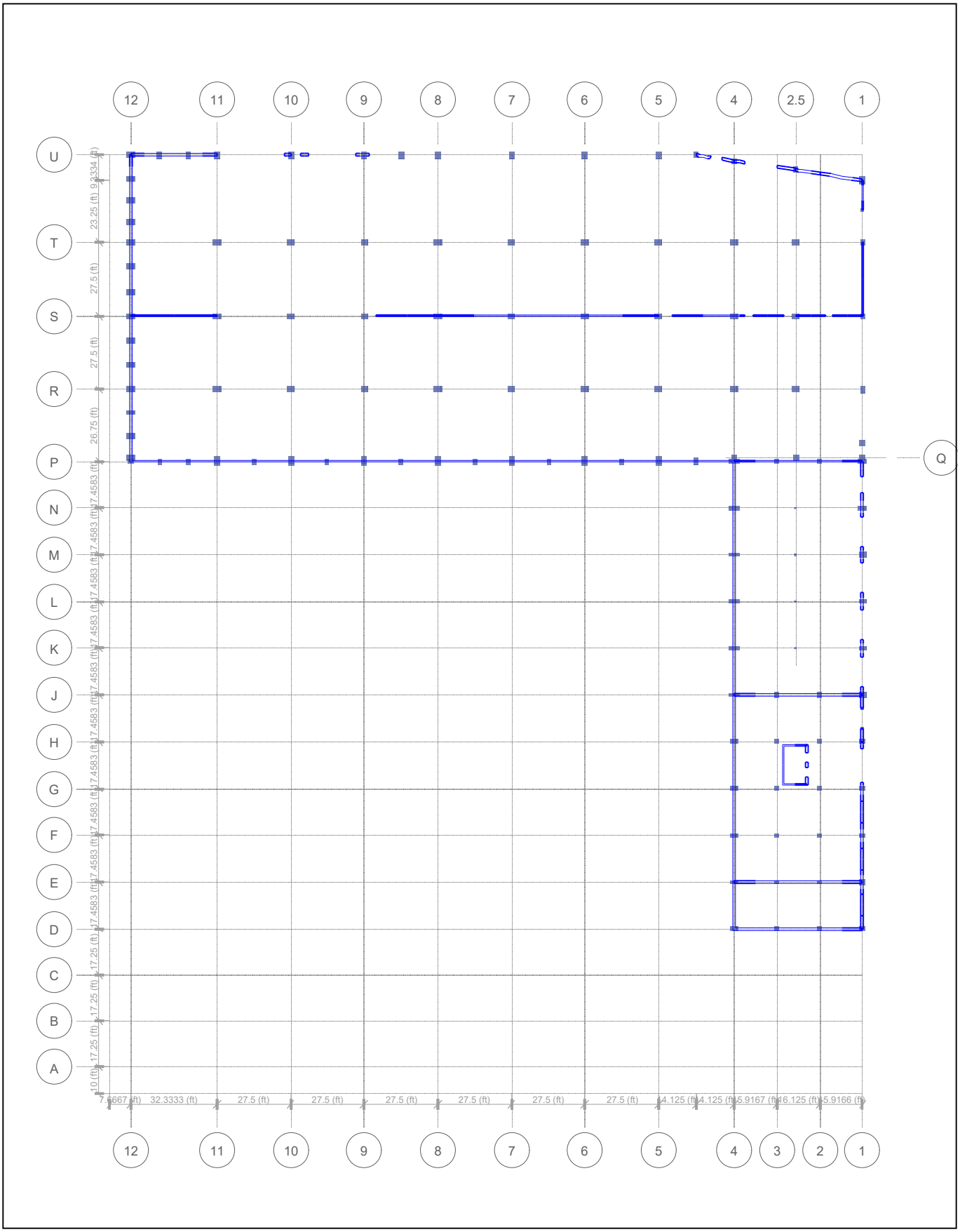
1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - 2ND - Z = 285.34 (ft)



1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - MEZ - Z = 274 (ft)



1532-7 Presidio Bus Yard-LBS-3.EDB Plan View - 1ST - Z = 262.53 (ft)



1532-7 Presidio Bus Yard-LBS-3.EDBPlan View - RefPl GR2 - Z = 250.45 (ft)

Structus Inc.

Project:	Presidio Bus Yard - SF	Job No.	1532-7	Sheet:	
Subject:	Existing Building Evaluation	Designer:		Date:	8/14/2017
		Checker:		Date:	

ASCE 41-13, 7.4 Seismic Base Shear (LSP):

Seismic Design Data	BSE-2E (Site Class-C)		(4.1.2 of ASCE 41-13)
SX_S =	1.518	g	(Sec 2.4 of ASCE 41-13)
SX_1 =	1.019	g	
Structure Height	63.08	ft	(Sec 7.1.4.2 of ASCE 41-13)
C_t =	0.02		
$T_a = C_t h_n^{0.75}$ =	0.448	sec	
$T_o = 0.2SX_1/SX_S$ =	0.134	sec	(Sec 2.4.1.7 of ASCE 41-13)
$T_s = SX_1/SX_S$ =	0.671	sec	
T_L =	8.000	sec	
B_1 =	1.002		
S_a =	1.514	g	
C_m =	1		Table 7-4 @ 2 Story Conc. Shear Wall & MF
C_1C_2=	1.1		Table 7-3 @ 0.3< T < 1.0 s and 2< m <6
Base Shear, $V = C_1C_2C_mS_aW$ =	1.666	W	(7.4.1.3 of ASCE 41-13)

ASCE 41-13, 7.4 Seismic Base Shear (LSP):

Seismic Design Data	BSE-1E (Site Class-C)		(4.1.2 of ASCE 41-13)
SX_S =	1.006	g	(Sec 2.4 of ASCE 41-13)
SX_1 =	0.580	g	
Structure Height	63.08	ft	(Sec 7.1.4.2 of ASCE 41-13)
C_t =	0.02		
$T_a = C_t h_n^{0.75}$ =	0.448	sec	
$T_o = 0.2SX_1/SX_S$ =	0.115	sec	(Sec 2.4.1.7 of ASCE 41-13)
$T_s = SX_1/SX_S$ =	0.577	sec	
T_L =	8.000	sec	
B_1 =	1.002		
S_a =	1.004	g	
C_m =	1		Table 7-4 @ 2 Story Conc. Shear Wall & MF
C_1C_2=	1		Table 7-3 @ 0.3< T < 1.0 s and m < 2
Base Shear, $V = C_1C_2C_mS_aW$ =	1.004	W	(7.4.1.3 of ASCE 41-13)

Vertical Distribution for LSP

k =	1		(Sec 7.4.1.3.2 of ASCE 41-13)
	T<0.5 dec.		

Structus Inc.

Project:	Potrero Bus Yard - SF	Job No.	1532-7	Sheet:	
Subject:	Existing Building Evaluation	Designer:	BS	Date:	8/14/2017
		Checker:		Date:	

ASCE 41-13, 7.4 Seismic Base Shear (LSP):

Seismic Design Data	BSE-2N (Site Class-C)		(4.1.2 of ASCE 41-13)	
SX_S =	1.518	g	(Sec 2.4 of ASCE 41-13)	
SX_1 =	1.019	g		
Structure Height	63.08	ft	(Sec 7.1.4.2 of ASCE 41-13)	
C_t =	0.02			
$T_a = C_t h_n^{0.75}$ =	0.448	sec		
$T_o = 0.2SX_1/SX_S$ =	0.134	sec	(Sec 2.4.1.7 of ASCE 41-13)	
$T_s = SX_1/SX_S$ =	0.671	sec		
T_L =	8.000	sec		
B_1 =	1.002			
S_a =	1.514	g		
C_m =	1		Table 7-4 @ 2 Story Conc. Shear Wall & MF	
C_1C_2=	1.1		Table 7-3 @ 0.3< T < 1m = 2.5 (max.)	
Base Shear, $V = C_1C_2C_mS_aW$ =	1.666	W	(7.4.1.3 of ASCE 41-13)	(USED)

ASCE 41-13, 7.4 Seismic Base Shear (LSP): 1

Seismic Design Data	BSE-1N (Site Class-C)		(4.1.2 of ASCE 41-13)	
SX_S =	1.006	g	(Sec 2.4 of ASCE 41-13)	(2/3 BSE-2N)
SX_1 =	0.580	g		
Structure Height	63.08	ft	(Sec 7.1.4.2 of ASCE 41-13)	
C_t =	0.02			
$T_a = C_t h_n^{0.75}$ =	0.448	sec		
$T_o = 0.2SX_1/SX_S$ =	0.115	sec	(Sec 2.4.1.7 of ASCE 41-13)	
$T_s = SX_1/SX_S$ =	0.577	sec		
T_L =	8.000	sec		
B_1 =	1.002			
S_a =	1.004	g		
C_m =	1		Table 7-4 @ 2 Story Conc. Shear Wall & MF	
C_1C_2=	1		Table 7-3 @ 0.3< T < 1m = 2.0 (max.)	
Base Shear, $V = C_1C_2C_mS_aW$ =	1.004	W	(7.4.1.3 of ASCE 41-13)	

DCR @ BSE-2E = Q_{UD} / [mk Q_{CE}]

COMPARE DCR @ BSE-1E VS DCR @ BSE-2E

Since (1) Q_{UD} due to EQ BSE-1E = 2/3 Q_{UD} due to EQ BSE-2E, (2) C_1C_2 @ BSE-1E = 1.0 and C_1C_2 @ BSE-2E = 1.1 (based on higher m-factor per (3) below)

(3) m-factor at Live Safety (LS) over m-factor at Collapse Prevention (CP) comparison for shear walls without Confined Boundary & shear wall coupling beams (spandrels with non-conforming transverse reinforcement) values are between; 2.5/4, 2/3,.. & 1.8/2.5, 1.2/1.5 (control by flexure, shear) per ASCE 41-13 Table 10-21 and Table 10-22 respectively.

(4) assuming that QUD due to gravity is not dominant, and m-factor value govern. Therefore, Max. of;

DCR @ BSE-1E = [2/3 * 1.0/1.1 Q_{UD}] / [2.5/4 * 1.0 Q_{CE}] = $\pm$ 0.97 DCR @ BSE-2E for walls controlled by flexure.

DCR @ BSE-1E = [2/3 * 1.0/1.1 Q_{UD}] / [1.8/2.5 * 1.0 Q_{CE}] = $\pm$ 0.84 DCR @ BSE-2E for spandrels controlled by flexure.

In conclusion, DCRs @ BSE-1E does not govern on the above, and it is not checked in this evaluation.

7.4.1.3.2 Vertical Distribution of Seismic Forces for LSP The vertical distribution of the pseudo lateral force shall be as specified in this section for all buildings except unreinforced masonry buildings with flexible diaphragms and seismically isolated structures, for which the pseudo lateral force shall be permitted to be distributed in accordance with Section 7.4.1.3.5 and Section 14.2.4.4.4, respectively. The seismic force F_x applied at any floor level x shall be determined in accordance with Eqs. 7-24 and 7-25:

$$F_x = C_{vx} V \tag{7-24}$$

$$C_{vx} = \frac{w_x h_x^k}{\sum_{i=1}^{n} w_i h_i^k} \tag{7-25}$$

where C_{vx} = Vertical distribution factor;
k = 2.0 for $T \geq 2.5$ s;
= 1.0 for $T \leq 0.5$ s (linear interpolation shall be used to calculate values of k for intermediate values of T);
V = Pseudo lateral force from Eq. (7-21);
w_i = Portion of the effective seismic weight W located on or assigned to level i;
w_x = Portion of the effective seismic weight W located on or assigned to level x;
h_i = Height from the base to level i; and
h_x = height from the base to level x.

2.4.1.4 BSE-1E Spectral Response Acceleration Parameters The design short-period spectral response acceleration parameter, S_{XS}, and the design spectral response acceleration parameter at a 1-s period, S_{X1}, for the BSE-1E Seismic Hazard Level shall be taken as values from approved 20%/50-year maximum direction spectral response acceleration contour maps (denoted S_S and S_1 in this standard), and modified for site class in accordance with Section 2.4.1.6. Values between contour lines shall be interpolated in accordance with the procedure in Section 2.4.1. Values for BSE-1E need not be greater than those for BSE-1N.

Table C2-1. Probability of Exceedance and Mean Return Period

Probability of Exceedance	Mean Return Period (years)
50%/30 years	43
50%/50 years	72
20%/50 years	225
10%/50 years	475
5%/50 years	975
2%/50 years	2,475

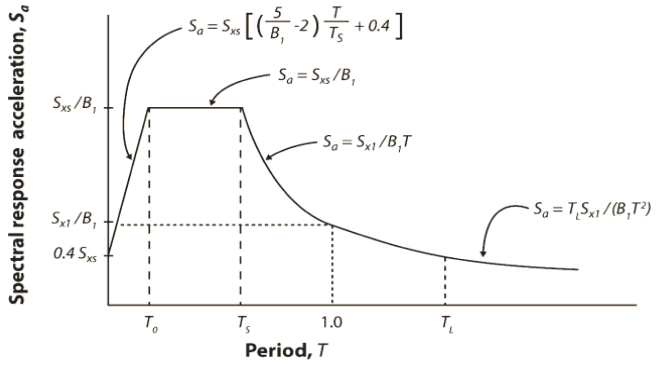


Table 7-3. Alternate Values for Modification Factors C_1C_2

Fundamental Period	$m_{max} < 2$	$2 \leq m_{max} < 6$	$m_{max} \geq 6$
$T \leq 0.3$	1.1	1.4	1.8
$0.3 < T \leq 1.0$	1.0	1.1	1.2
$T > 1.0$	1.0	1.0	1.1

Table C2-2. Performance Objectives

	Target Building Performance Levels			
Seismic Hazard Level	Operational Performance Level (1-A)	Immediate Occupancy Performance Level (1-B)	Life Safety Performance Level (3-C)	Collapse Prevention Performance Level (5-D)
50%/50 years	a	b	c	d
BSE-1E (20%/50 years)	e	f	g	h
BSE-2E (5%/50 years)	i	j	k	l
BSE-2N (ASCE 7 MCE_R)	m	n	o	p

NOTES: Each cell in the above matrix represents a discrete Performance Objective.
The Performance Objectives in the matrix above can be used to represent the three specific Performance Objectives for a standard building that would be considered Risk Category I & II defined in Sections 2.2.1, 2.2.2, and 2.2.3, as follows:

Basic Performance Objective for Existing Buildings (BPOE)	g and l
Enhanced Objectives	g and i, j, m, n, o, or p l and e or f g and l and a, or b k, m, n, or o alone
Limited Objectives	g alone l alone c, d, e, or f

Table 7-4. Values for Effective Mass Factor C_m

No. of Stories	Concrete Moment Frame	Concrete Shear Wall	Concrete Pier-Spandrel	Steel Moment Frame	Steel Concentrically Braced Frame	Steel Eccentrically Braced Frame	Other
1–2	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3 or more	0.9	0.8	0.8	0.9	0.9	0.9	1.0

NOTE: C_m shall be taken as 1.0 if the fundamental period, T, in the direction of response under consideration is greater than 1.0 s.

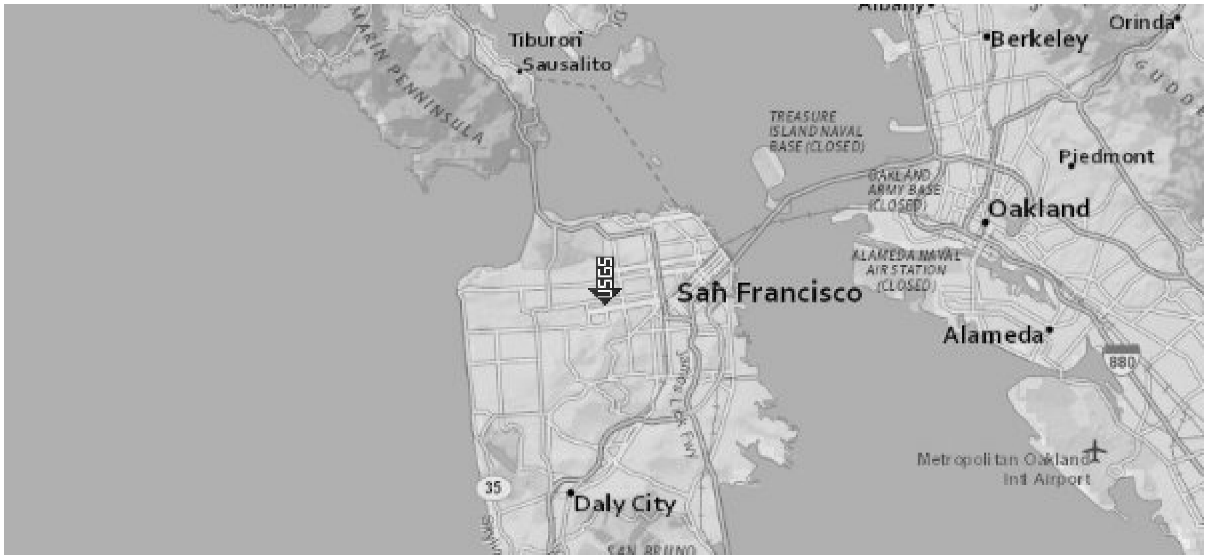
For Linear Dynamic Procedure (LDP)

Sx = Sy =	C_1C_2 E response spectrum		(Sec 7.4.2.3 of ASCE 41-13)
	1.1 E	at BSE-2E	(USED)
	1 E	at BSE-1E	

USGS Design Maps Summary Report

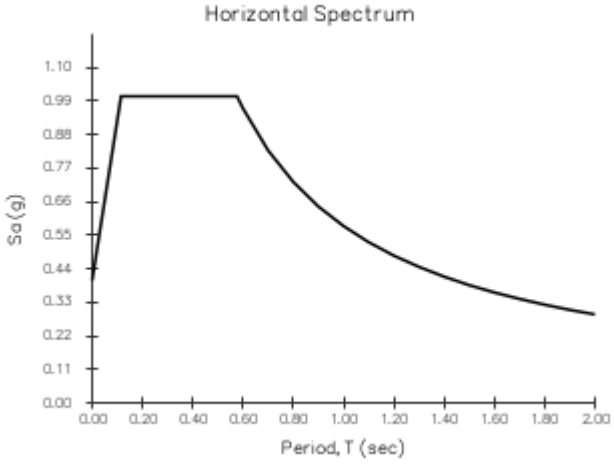
User–Specified Input

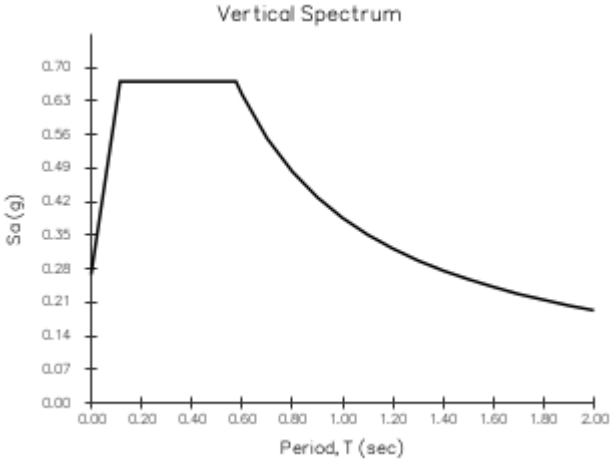
Report Title	Presidio Bus Yard Mon December 11, 2017 19:34:07 UTC
Building Code Reference Document	ASCE 41-13 Retrofit Standard, BSE-1E (which utilizes USGS hazard data available in 2008)
Site Coordinates	37.7833°N, 122.4466°W
Site Soil Classification	Site Class D – "Stiff Soil"



USGS–Provided Output

$S_{S,20/50}$	0.875 g	$S_{XS,BSE\text{-}1E}$	1.006 g
$S_{1,20/50}$	0.335 g	$S_{X1,BSE\text{-}1E}$	0.580 g

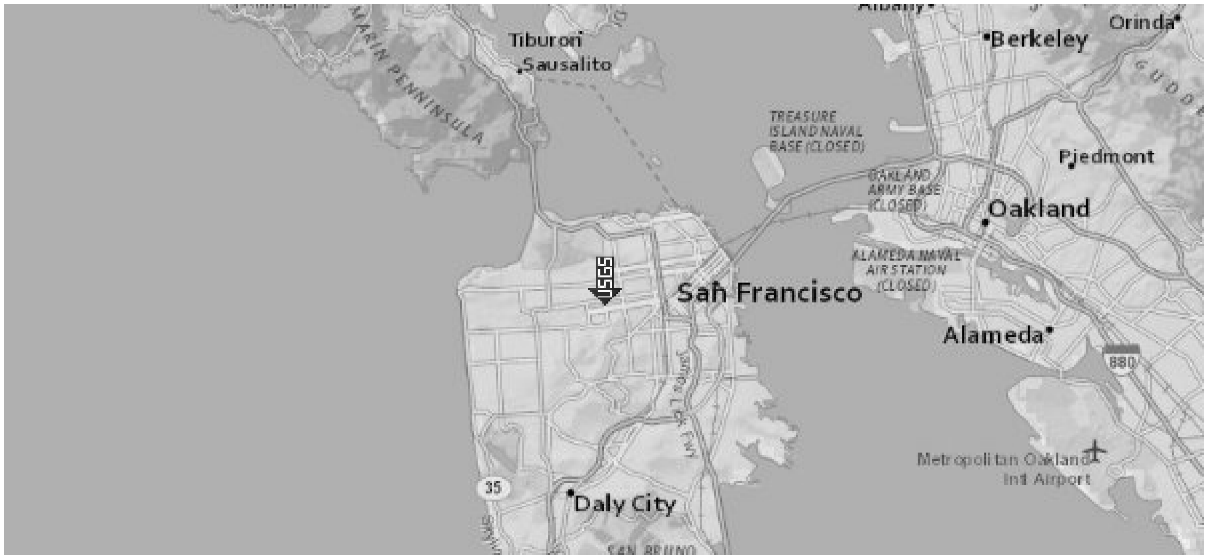




USGS Design Maps Summary Report

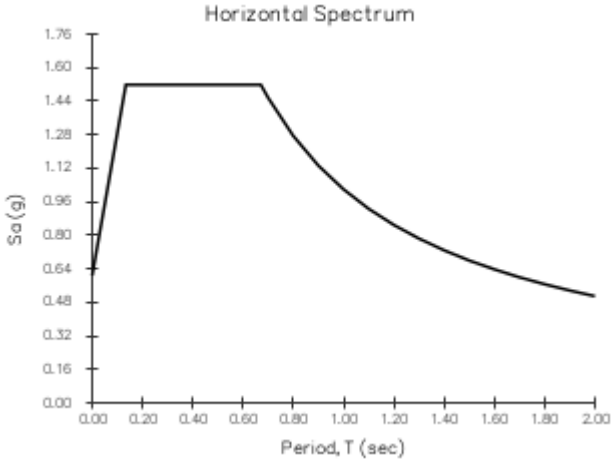
User–Specified Input

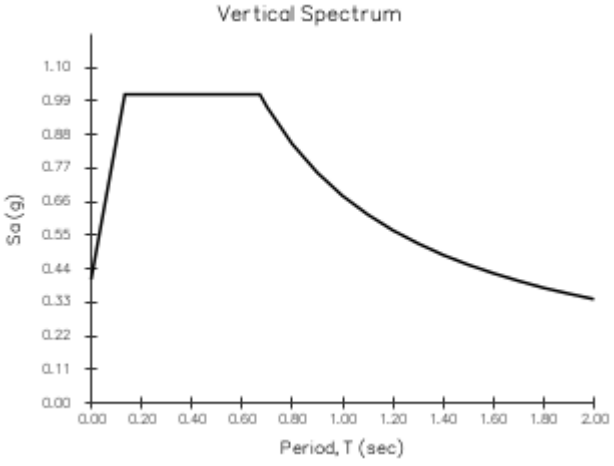
Report Title	Presidio Bus Yard Mon December 11, 2017 19:32:47 UTC
Building Code Reference Document	ASCE 41-13 Retrofit Standard, BSE-2E (which utilizes USGS hazard data available in 2008)
Site Coordinates	37.7833°N, 122.4466°W
Site Soil Classification	Site Class D – "Stiff Soil"



USGS–Provided Output

$S_{S,5/50}$	1.621 g	$S_{XS,BSE-2E}$	1.518 g
$S_{1,5/50}$	0.679 g	$S_{X1,BSE-2E}$	1.019 g





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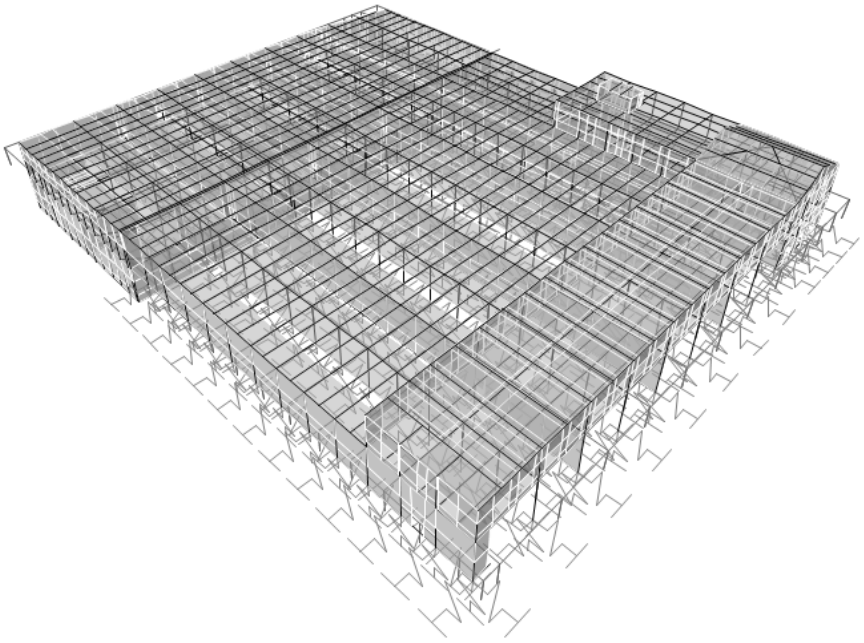


Summary Report

Model File: 1532-7 Potrero Bus Yard-v1, Revision 0
12/11/2017

1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Data

Name	Height in	Elevation in	Master Story	Similar To	Splice Story
PH	103.92	3739.08	No	None	No
ROOF	211.08	3635.16	No	None	No
2ND	136.08	3424.08	No	None	No
MEZ	137.64	3288	No	None	No
1ST	273.36	3150.36	No	None	No
BASE	0	2877	No	None	No

2 Loads

This chapter provides loading information as applied to the model.

2.1 Load Patterns

Table 2.1 - Load Patterns

Name	Type	Self Weight Multiplier	Auto Load
DEAD	Dead	1	
L	Live	0	
SDL	Superimposed Dead	0	
Lr	Live	0	
Ap	Other	0	
Spx	Seismic	0	None
Spy	Seismic	0	None
Ex	Seismic	0	User Coefficient
Ey	Seismic	0	User Coefficient

2.2 Functions

2.2.1 Response Spectrum Functions

Table 2.2 - Response Spectrum Function - NEHRP 97

Name	Period sec	Acceleration	Damping	SDS	SD1
BSE-2E	0	0.6072	5	1.518	1.019
BSE-2E	0.134	1.518			
BSE-2E	0.671	1.518			
BSE-2E	0.8	1.27375			
BSE-2E	1	1.019			
BSE-2E	1.2	0.849167			
BSE-2E	1.4	0.727857			
BSE-2E	1.6	0.636875			
BSE-2E	1.8	0.566111			
BSE-2E	2	0.5095			
BSE-2E	2.5	0.4076			
BSE-2E	3	0.339667			
BSE-2E	3.5	0.291143			
BSE-2E	4	0.25475			
BSE-2E	4.5	0.226444			
BSE-2E	5	0.2038			
BSE-2E	5.5	0.185273			
BSE-2E	6	0.169833			
BSE-2E	6.5	0.156769			
BSE-2E	7	0.145571			
BSE-2E	7.5	0.135867			
BSE-2E	8	0.127375			
BSE-2E	8.5	0.119882			
BSE-2E	9	0.113222			

Table 2.2 - Response Spectrum Function - NEHRP 97 (continued)

Name	Period sec	Acceleration	Damping	SDS	SD1
BSE-2E	9.5	0.107263			
BSE-2E	10	0.1019			

2.3 Load Cases

Table 2.3 - Load Cases - Summary

Name	Type
DEAD	Linear Static
L	Linear Static
SDL	Linear Static
Lr	Linear Static
Ap	Linear Static
Spx	Linear Static
Spy	Linear Static
Ex	Linear Static
Ey	Linear Static
Sx	Response Spectrum
Sy	Response Spectrum
~TorsionSx	Linear Static
~TorsionSy	Linear Static

3 Analysis Results

This chapter provides analysis results.

3.1 Structure Results

Table 3.1 - Base Reactions at Lower Bound Stiffness

Load Case/Combo	FX kip	FY kip	FZ kip	MX kip-ft	MY kip-ft	MZ kip-ft	X ft	Y ft	Z ft
DEAD	0	0	30169	5114026	-9692471	3.984E-05	0	0	239.75
L	-430	-206	6350	1378258	-2043610	22958	0	0	239.75
SDL	0	0	2635	440937	-886852	4.258E-06	0	0	239.75
Lr	0	0	1486	256164	-453484	1.657E-06	0	0	239.75
Ap	-7528	-3993	0	33951	-97364	621354	0	0	239.75
Spx	-7635	0	0	-7.303E-05	-136424	1835877	0	0	239.75
Spy	0	-3990	0	46529	-1.037E-05	-1184796	0	0	239.75
Ex	-54916	0	-6.221E-06	-0.001899	-2292080	8058768	0	0	239.75
Ey	0	-54916	0	2292080	0.001064	-17694286	0	0	239.75
Sx Max	28052	5065	0	191277	1148504	5759185	0	0	239.75
Sy Max	5065	48438	0	1817239	152825	16584919	0	0	239.75
UDCon1	-8281	-4393	36084	6147807	-11744355	683489	0	0	239.75
UDCon2	-8400	-4449	38239	6597273	-12431056	689803	0	0	239.75
UDCon3 Max	25243	2599	38239	6795115	-11131678	6795005	0	0	239.75
UDCon3 Min	-36471	-8543	38239	6374306	-13658386	-5875201	0	0	239.75
UDCon4 Max	-43	50310	38239	8583673	-12226924	18703312	0	0	239.75
UDCon4 Min	-11185	-56253	38239	4585748	-12563139	-17783509	0	0	239.75
UDCon5 Max	25361	2656	29524	5234656	-8329112	6788691	0	0	239.75
UDCon5 Min	-36353	-8486	29524	4813847	-10855820	-5881515	0	0	239.75
UDCon6 Max	75	50366	29524	7023215	-9424359	18696999	0	0	239.75
UDCon6 Min	-11067	-56197	29524	3025289	-9760574	-17789822	0	0	239.75
Esx Max	30857	5571	0	210405	1263354	6335103	0	0	239.75
Esx Min	-30857	-5571	0	-210405	-1263354	-6335103	0	0	239.75
Esy Max	5571	53282	0	1998963	168108	18243410	0	0	239.75
Esy Min	-5571	-53282	0	-1998963	-168108	-18243410	0	0	239.75
Qx Max	25361	2656	0	235189	1192278	6788691	0	0	239.75
Qx Min	-36353	-8486	0	-185620	-1334430	-5881515	0	0	239.75
Qy Max	75	50366	0	2023747	97032	18696999	0	0	239.75
Qy Min	-11067	-56197	0	-1974178	-239184	-17789822	0	0	239.75

Seismic in Y-dirn. governed at Lower Bound Stiff. of spring

Table 3.2 - Centers of Mass and Rigidity

Story	Diaphragm	Mass X lb-s²/ft	Mass Y lb-s²/ft	XCM ft	YCM ft	Cumulative X lb-s²/ft	Cumulative Y lb-s²/ft	XCCM ft	YCCM ft	XCR ft	YCR ft
ROOF	D1	0	0	321.964	38.9446	0	0	0	0		
2ND	D1	0	0	312.1106	161.9416	0	0	0	0		
MEZ	D1	0	0	417.1135	122.5057	0	0	0	0		

Table 3.3 - Diaphragm Center of Mass Displacements

Story	Diaphragm	Load Case/Combo	UX in	UY in	RZ rad	Point	X ft	Y ft	Z ft
ROOF	D1	DEAD	0.056922	-0.016152	-4.5E-05	84	321.964	38.9446	302.93
ROOF	D1	L	0.082365	0.038763	-1.4E-05	84	321.964	38.9446	302.93
ROOF	D1	SDL	0.015618	0.005495	-6E-06	84	321.964	38.9446	302.93
ROOF	D1	Lr	-0.004586	0.003127	-2.715E-07	84	321.964	38.9446	302.93
ROOF	D1	Ap	0.487716	0.242033	-7.9E-05	84	321.964	38.9446	302.93
ROOF	D1	Spx	0.59435	0.035355	-9.6E-05	84	321.964	38.9446	302.93
ROOF	D1	Spy	-0.020181	0.253526	-7E-06	84	321.964	38.9446	302.93
ROOF	D1	Ex	20.753287	0.192406	0.000686	84	321.964	38.9446	302.93
ROOF	D1	Ey	0.203315	8.644737	0.001052	84	321.964	38.9446	302.93
ROOF	D1	Sx Max	12.514055	0.868096	0.00169	84	321.964	38.9446	302.93
ROOF	D1	Sy Max	0.933674	7.103069	0.001445	84	321.964	38.9446	302.93
ROOF	D1	UDCon1	0.616281	0.254513	-0.000144	84	321.964	38.9446	302.93
ROOF	D1	UDCon2	0.63767	0.266033	-0.000148	84	321.964	38.9446	302.93
ROOF	D1	UDCon3 Max	14.222676	1.131387	0.001741	84	321.964	38.9446	302.93
ROOF	D1	UDCon3 Min	-13.308245	-0.778426	-0.001978	84	321.964	38.9446	302.93
ROOF	D1	UDCon4 Max	1.484257	7.989857	0.001471	84	321.964	38.9446	302.93
ROOF	D1	UDCon4 Min	-0.569825	-7.636895	-0.001708	84	321.964	38.9446	302.93
ROOF	D1	UDCon5 Max	14.186779	1.121998	0.001755	84	321.964	38.9446	302.93
ROOF	D1	UDCon5 Min	-13.344142	-0.787814	-0.001963	84	321.964	38.9446	302.93
ROOF	D1	UDCon6 Max	1.44836	7.980468	0.001486	84	321.964	38.9446	302.93
ROOF	D1	UDCon6 Min	-0.605722	-7.646284	-0.001694	84	321.964	38.9446	302.93
ROOF	D1	Esx Max	13.765461	0.954906	0.001859	84	321.964	38.9446	302.93
ROOF	D1	Esx Min	-13.765461	-0.954906	-0.001859	84	321.964	38.9446	302.93
ROOF	D1	Esy Max	1.027041	7.813376	0.00159	84	321.964	38.9446	302.93
ROOF	D1	Esy Min	-1.027041	-7.813376	-0.00159	84	321.964	38.9446	302.93
ROOF	D1	Qx Max	14.121493	1.13159	0.001801	84	321.964	38.9446	302.93
ROOF	D1	Qx Min	-13.409428	-0.778222	-0.001917	84	321.964	38.9446	302.93
ROOF	D1	Qy Max	1.383073	7.99006	0.001532	84	321.964	38.9446	302.93
ROOF	D1	Qy Min	-0.671009	-7.636692	-0.001648	84	321.964	38.9446	302.93
2ND	D1	DEAD	0.095068	-0.009799	-1.7E-05	611	312.1106	161.9416	285.34
2ND	D1	L	0.089251	0.047835	-3E-06	611	312.1106	161.9416	285.34
2ND	D1	SDL	0.014015	0.000734	-3.467E-07	611	312.1106	161.9416	285.34
2ND	D1	Lr	0.00169	-1.2E-05	-1E-06	611	312.1106	161.9416	285.34
2ND	D1	Ap	0.707326	0.231026	-8.2E-05	611	312.1106	161.9416	285.34
2ND	D1	Spx	0.859453	-0.003922	-9.1E-05	611	312.1106	161.9416	285.34
2ND	D1	Spy	-0.003635	0.28793	-2E-05	611	312.1106	161.9416	285.34
2ND	D1	Ex	15.397495	-0.114076	0.001604	611	312.1106	161.9416	285.34
2ND	D1	Ey	0.299883	6.015013	0.00032	611	312.1106	161.9416	285.34
2ND	D1	Sx Max	8.470111	0.678495	0.006792	611	312.1106	161.9416	285.34
2ND	D1	Sy Max	1.054323	5.392383	0.004474	611	312.1106	161.9416	285.34
2ND	D1	UDCon1	0.89805	0.244157	-0.000109	611	312.1106	161.9416	285.34
2ND	D1	UDCon2	0.923059	0.257309	-0.00011	611	312.1106	161.9416	285.34
2ND	D1	UDCon3 Max	9.97847	0.918174	0.007392	611	312.1106	161.9416	285.34
2ND	D1	UDCon3 Min	-8.655774	-0.574515	-0.007551	611	312.1106	161.9416	285.34
2ND	D1	UDCon4 Max	1.821103	6.10345	0.004842	611	312.1106	161.9416	285.34

Table 3.3 - Diaphragm Center of Mass Displacements (continued)

Story	Diaphragm	Load Case/Combo	UX in	UY in	RZ rad	Point	X ft	Y ft	Z ft
2ND	D1	UDCon4 Min	-0.498407	-5.759792	-0.005001	611	312.1106	161.9416	285.34
2ND	D1	UDCon5 Max	9.931645	0.906835	0.007397	611	312.1106	161.9416	285.34
2ND	D1	UDCon5 Min	-8.7026	-0.585854	-0.007547	611	312.1106	161.9416	285.34
2ND	D1	UDCon6 Max	1.774278	6.092112	0.004847	611	312.1106	161.9416	285.34
2ND	D1	UDCon6 Min	-0.545233	-5.77113	-0.004997	611	312.1106	161.9416	285.34
2ND	D1	Esx Max	9.317122	0.746345	0.007472	611	312.1106	161.9416	285.34
2ND	D1	Esx Min	-9.317122	-0.746345	-0.007472	611	312.1106	161.9416	285.34
2ND	D1	Esy Max	1.159755	5.931621	0.004922	611	312.1106	161.9416	285.34
2ND	D1	Esy Min	-1.159755	-5.931621	-0.004922	611	312.1106	161.9416	285.34
2ND	D1	Qx Max	9.83347	0.914993	0.007412	611	312.1106	161.9416	285.34
2ND	D1	Qx Min	-8.800774	-0.577696	-0.007532	611	312.1106	161.9416	285.34
2ND	D1	Qy Max	1.676103	6.10027	0.004862	611	312.1106	161.9416	285.34
2ND	D1	Qy Min	-0.643407	-5.762972	-0.004982	611	312.1106	161.9416	285.34
MEZ	D1	DEAD	0.054301	-0.044712	-7E-06	613	417.1135	122.5057	274
MEZ	D1	L	0.074917	0.017412	-3E-06	613	417.1135	122.5057	274
MEZ	D1	SDL	0.008844	-0.00429	-3.105E-07	613	417.1135	122.5057	274
MEZ	D1	Lr	0.00113	0.000354	-3.028E-07	613	417.1135	122.5057	274
MEZ	D1	Ap	0.63464	0.147248	-0.000189	613	417.1135	122.5057	274
MEZ	D1	Spx	0.758366	-0.063869	-0.000233	613	417.1135	122.5057	274
MEZ	D1	Spy	-0.011654	0.230591	2E-06	613	417.1135	122.5057	274
MEZ	D1	Ex	14.625856	1.145341	0.003179	613	417.1135	122.5057	274
MEZ	D1	Ey	0.372558	5.856387	6.9E-05	613	417.1135	122.5057	274
MEZ	D1	Sx Max	8.225305	1.987363	0.003406	613	417.1135	122.5057	274
MEZ	D1	Sy Max	0.554608	5.426934	0.000829	613	417.1135	122.5057	274
MEZ	D1	UDCon1	0.767564	0.108071	-0.000216	613	417.1135	122.5057	274
MEZ	D1	UDCon2	0.788477	0.112957	-0.000217	613	417.1135	122.5057	274
MEZ	D1	UDCon3 Max	9.601496	2.244574	0.0036	613	417.1135	122.5057	274
MEZ	D1	UDCon3 Min	-8.494175	-2.127624	-0.003893	613	417.1135	122.5057	274
MEZ	D1	UDCon4 Max	1.163729	6.028102	0.000765	613	417.1135	122.5057	274
MEZ	D1	UDCon4 Min	-0.056408	-5.911153	-0.001059	613	417.1135	122.5057	274
MEZ	D1	UDCon5 Max	9.567954	2.249488	0.003602	613	417.1135	122.5057	274
MEZ	D1	UDCon5 Min	-8.527717	-2.12271	-0.003891	613	417.1135	122.5057	274
MEZ	D1	UDCon6 Max	1.130187	6.033017	0.000768	613	417.1135	122.5057	274
MEZ	D1	UDCon6 Min	-0.089951	-5.906238	-0.001056	613	417.1135	122.5057	274
MEZ	D1	Esx Max	9.047836	2.186099	0.003747	613	417.1135	122.5057	274
MEZ	D1	Esx Min	-9.047836	-2.186099	-0.003747	613	417.1135	122.5057	274
MEZ	D1	Esy Max	0.610069	5.969628	0.000912	613	417.1135	122.5057	274
MEZ	D1	Esy Min	-0.610069	-5.969628	-0.000912	613	417.1135	122.5057	274
MEZ	D1	Qx Max	9.511123	2.29359	0.003608	613	417.1135	122.5057	274
MEZ	D1	Qx Min	-8.584548	-2.078608	-0.003885	613	417.1135	122.5057	274
MEZ	D1	Qy Max	1.073356	6.077118	0.000774	613	417.1135	122.5057	274
MEZ	D1	Qy Min	-0.146781	-5.862137	-0.00105	613	417.1135	122.5057	274

Table 3.4 - Diaphragm Accelerations

Story	Diaphragm	Load Case/Combo	UX in/sec²	UY in/sec²	UZ in/sec²	RX rad/sec²	RY rad/sec²	RZ rad/sec²
ROOF	D1	Sx Max	644.791	354.083	193.026	0.993	1.268	0.411
ROOF	D1	Sy Max	119.769	836.589	256.233	1.692	0.564	0.3
2ND	D1	Sx Max	611.369	288.081	284.868	3.642	4.084	5.714
2ND	D1	Sy Max	199.627	638.733	252.407	10.275	0.642	1.956
MEZ	D1	Sx Max	509.251	240.956	224.69	0.454	2.133	0.451
MEZ	D1	Sy Max	132.283	586.194	182.8	1.854	0.411	0.385

Table 3.5 - Response Spectrum Modal Information

Response Spectrum Case	Modal case	Mode	Period sec	Damping Ratio	U1 Acceleration in/sec²	U2 Acceleration in/sec²	U3 Acceleration in/sec²	U1 Amplitude in	U2 Amplitude in	U3 Amplitude in
Sx	Modal	1	0.921	0.05	432.11	0	0	70.25763	0	0
Sx	Modal	2	0.601	0.05	586.082	0	0	-8.650526	0	0
Sx	Modal	3	0.572	0.05	586.082	0	0	-20.496812	0	0
Sx	Modal	4	0.416	0.05	586.082	0	0	3.79915	0	0
Sx	Modal	5	0.412	0.05	586.082	0	0	-1.502026	0	0
Sx	Modal	6	0.326	0.05	586.082	0	0	-0.776509	0	0
Sx	Modal	7	0.319	0.05	586.082	0	0	1.646756	0	0
Sx	Modal	8	0.294	0.05	586.082	0	0	1.540168	0	0
Sx	Modal	9	0.271	0.05	586.082	0	0	0.116305	0	0
Sx	Modal	10	0.223	0.05	586.082	0	0	-1.113565	0	0
Sx	Modal	11	0.208	0.05	586.082	0	0	0.072385	0	0
Sx	Modal	12	0.166	0.05	586.082	0	0	0.415787	0	0
Sx	Modal	13	0.138	0.05	586.082	0	0	-0.02346	0	0
Sx	Modal	14	0.098	0.05	491.016	0	0	-0.157896	0	0
Sx	Modal	15	0.094	0.05	481.816	0	0	-0.034603	0	0
Sy	Modal	1	0.921	0.05	0	432.11	0	0	2.815018	0
Sy	Modal	2	0.601	0.05	0	586.082	0	0	46.796197	0
Sy	Modal	3	0.572	0.05	0	586.082	0	0	-13.793154	0
Sy	Modal	4	0.416	0.05	0	586.082	0	0	-0.619648	0
Sy	Modal	5	0.412	0.05	0	586.082	0	0	0.291064	0
Sy	Modal	6	0.326	0.05	0	586.082	0	0	-0.197557	0
Sy	Modal	7	0.319	0.05	0	586.082	0	0	1.024549	0
Sy	Modal	8	0.294	0.05	0	586.082	0	0	-0.712576	0
Sy	Modal	9	0.271	0.05	0	586.082	0	0	-0.575592	0
Sy	Modal	10	0.223	0.05	0	586.082	0	0	-0.040277	0
Sy	Modal	11	0.208	0.05	0	586.082	0	0	0.383404	0
Sy	Modal	12	0.166	0.05	0	586.082	0	0	-0.031142	0
Sy	Modal	13	0.138	0.05	0	586.082	0	0	-0.319139	0
Sy	Modal	14	0.098	0.05	0	491.016	0	0	0.035805	0
Sy	Modal	15	0.094	0.05	0	481.816	0	0	-0.118128	0

3.2 Story Results

Table 3.6 - Story Max/Avg Displacements

Story	Load Case/Combo	Direction	Maximum in	Average in	Ratio
ROOF	DEAD	X	0.115763	0.071892	1.61
ROOF	DEAD	Y	0.071053	0.043639	1.63
2ND	DEAD	X	0.115023	0.064285	1.79
2ND	DEAD	Y	0.068918	0.008836	7.8
MEZ	DEAD	X	0.066178	0.055658	1.19
MEZ	DEAD	Y	0.053461	0.042082	1.27
ROOF	L	X	0.105711	0.090683	1.17
ROOF	L	Y	0.038944	0.028914	1.35
2ND	L	X	0.09451	0.049525	1.91
2ND	L	Y	0.071166	0.03057	2.33
MEZ	L	X	0.07589	0.068273	1.11
MEZ	L	Y	0.025499	0.018212	1.4
ROOF	SDL	X	0.019462	0.016164	1.2
2ND	SDL	X	0.015405	0.008343	1.85
2ND	SDL	Y	0.009909	0.002354	4.21
MEZ	SDL	X	0.011451	0.009442	1.21
MEZ	SDL	Y	0.006805	0.005112	1.33
ROOF	Lr	X	0.006403	0.003584	1.79
ROOF	Lr	Y	0.003501	0.002264	1.55
2ND	Lr	X	0.005861	0.000407	14.4
2ND	Lr	Y	0.002159	6.8E-05	31.83
MEZ	Lr	X	0.002657	0.001706	1.56
MEZ	Lr	Y	0.001009	0.000454	2.22
ROOF	Ap	X	0.679097	0.559272	1.21
ROOF	Ap	Y	0.313903	0.204279	1.54
2ND	Ap	X	0.986568	0.699264	1.41
2ND	Ap	Y	0.353485	0.2247	1.57
MEZ	Ap	X	0.765344	0.568379	1.35
MEZ	Ap	Y	0.187088	0.13837	1.35
ROOF	Spx	X	0.840148	0.690372	1.22
2ND	Spx	X	1.16521	0.834191	1.4
MEZ	Spx	X	0.914396	0.682671	1.34
MEZ	Spx	Y	0.125483	0.071178	1.76
ROOF	Spy	Y	0.269041	0.248907	1.08
2ND	Spy	Y	0.36159	0.293323	1.23
MEZ	Spy	Y	0.250015	0.234286	1.07
ROOF	Ex	X	21.667113	20.758137	1.04
2ND	Ex	X	20.774855	12.592273	1.65
MEZ	Ex	X	16.742369	13.35067	1.25
ROOF	Ey	Y	9.091712	7.77361	1.17
2ND	Ey	Y	6.361937	5.521105	1.15
MEZ	Ey	Y	5.952402	5.818445	1.02
ROOF	Sx Max	X	13.444812	12.157719	1.11
ROOF	Sx Max	Y	3.071837	1.960121	1.57

Table 3.6 - Story Max/Avg Displacements (continued)

Story	Load Case/Combo	Direction	Maximum in	Average in	Ratio
2ND	Sx Max	X	12.86468	8.095024	1.59
2ND	Sx Max	Y	3.044631	1.795776	1.7
MEZ	Sx Max	X	10.542582	7.888425	1.34
MEZ	Sx Max	Y	2.93587	2.092891	1.4
ROOF	Sy Max	X	1.179823	0.894883	1.32
ROOF	Sy Max	Y	7.439862	6.60562	1.13
2ND	Sy Max	X	1.912479	1.230546	1.55
2ND	Sy Max	Y	5.79535	4.936322	1.17
MEZ	Sy Max	X	1.184578	0.845498	1.4
MEZ	Sy Max	Y	5.565273	5.414722	1.03
ROOF	UDCon1	X	0.894487	0.712255	1.26
ROOF	UDCon1	Y	0.298612	0.162343	1.84
2ND	UDCon1	X	1.124564	0.821352	1.37
2ND	UDCon1	Y	0.411278	0.228495	1.8
MEZ	UDCon1	X	0.915764	0.700306	1.31
MEZ	UDCon1	Y	0.157851	0.096893	1.63
ROOF	UDCon2	X	0.923072	0.736189	1.25
ROOF	UDCon2	Y	0.307765	0.169707	1.81
2ND	UDCon2	X	1.150427	0.84352	1.36
2ND	UDCon2	Y	0.42299	0.236736	1.79
MEZ	UDCon2	X	0.934406	0.71817	1.3
MEZ	UDCon2	Y	0.163439	0.101215	1.61
ROOF	UDCon3 Max	X	15.17631	13.902903	1.09
ROOF	UDCon3 Max	Y	3.429604	2.265215	1.51
2ND	UDCon3 Max	X	14.55484	9.440541	1.54
2ND	UDCon3 Max	Y	3.375683	2.047245	1.65
MEZ	UDCon3 Max	X	11.961231	9.186508	1.3
MEZ	UDCon3 Max	Y	3.266279	2.363672	1.38
ROOF	UDCon3 Min	X	14.402277	12.84408	1.12
ROOF	UDCon3 Min	Y	3.381791	2.073728	1.63
2ND	UDCon3 Min	X	13.748766	8.366281	1.64
2ND	UDCon3 Min	Y	3.322504	1.879973	1.77
MEZ	UDCon3 Min	X	11.233135	8.168369	1.38
MEZ	UDCon3 Min	Y	3.192636	2.240688	1.42
ROOF	UDCon4 Max	X	1.750668	1.494983	1.17
ROOF	UDCon4 Max	Y	8.369217	7.397476	1.13
2ND	UDCon4 Max	X	2.887572	2.011174	1.44
2ND	UDCon4 Max	Y	6.471472	5.605042	1.15
MEZ	UDCon4 Max	X	1.949256	1.505026	1.3
MEZ	UDCon4 Max	Y	6.141748	6.010086	1.02
ROOF	UDCon4 Min	Y	7.99947	7.096048	1.13
2ND	UDCon4 Min	X	1.31988	0.679841	1.94
2ND	UDCon4 Min	Y	6.327484	5.275043	1.2
MEZ	UDCon4 Min	Y	6.104277	5.903516	1.03
ROOF	UDCon5 Max	X	15.148403	13.861249	1.09

Table 3.6 - Story Max/Avg Displacements (continued)

Story	Load Case/Combo	Direction	Maximum in	Average in	Ratio
ROOF	UDCon5 Max	Y	3.428736	2.260367	1.52
2ND	UDCon5 Max	X	14.525862	9.415859	1.54
2ND	UDCon5 Max	Y	3.379854	2.049724	1.65
MEZ	UDCon5 Max	X	11.93032	9.154241	1.3
MEZ	UDCon5 Max	Y	3.26989	2.367692	1.38
ROOF	UDCon5 Min	X	14.430184	12.885733	1.12
ROOF	UDCon5 Min	Y	3.373327	2.073909	1.63
2ND	UDCon5 Min	X	13.777462	8.393707	1.64
2ND	UDCon5 Min	Y	3.318333	1.886186	1.76
MEZ	UDCon5 Min	X	11.263656	8.200441	1.37
MEZ	UDCon5 Min	Y	3.189025	2.236667	1.43
ROOF	UDCon6 Max	X	1.708253	1.450933	1.18
ROOF	UDCon6 Max	Y	8.361496	7.395925	1.13
2ND	UDCon6 Max	X	2.854736	1.975352	1.45
2ND	UDCon6 Max	Y	6.472095	5.597843	1.16
MEZ	UDCon6 Max	X	1.917246	1.47262	1.3
MEZ	UDCon6 Max	Y	6.145823	6.014017	1.02
ROOF	UDCon6 Min	Y	8.006843	7.09972	1.13
2ND	UDCon6 Min	X	1.352717	0.716959	1.89
2ND	UDCon6 Min	Y	6.322401	5.28116	1.2
MEZ	UDCon6 Min	Y	6.097776	5.898372	1.03
ROOF	Esx Max	X	14.789294	13.373491	1.11
ROOF	Esx Max	Y	3.379021	2.156133	1.57
2ND	Esx Max	X	14.151148	8.904526	1.59
2ND	Esx Max	Y	3.349094	1.975354	1.7
MEZ	Esx Max	X	11.59684	8.677267	1.34
MEZ	Esx Max	Y	3.229457	2.30218	1.4
ROOF	Esx Min	X	14.789294	13.373491	1.11
ROOF	Esx Min	Y	3.379021	2.156133	1.57
2ND	Esx Min	X	14.151148	8.904526	1.59
2ND	Esx Min	Y	3.349094	1.975354	1.7
MEZ	Esx Min	X	11.59684	8.677267	1.34
MEZ	Esx Min	Y	3.229457	2.30218	1.4
ROOF	Esy Max	X	1.297805	0.984372	1.32
ROOF	Esy Max	Y	8.183848	7.266182	1.13
2ND	Esy Max	X	2.103726	1.353601	1.55
2ND	Esy Max	Y	6.374885	5.429954	1.17
MEZ	Esy Max	X	1.303035	0.930048	1.4
MEZ	Esy Max	Y	6.1218	5.956195	1.03
ROOF	Esy Min	X	1.297805	0.984372	1.32
ROOF	Esy Min	Y	8.183848	7.266182	1.13
2ND	Esy Min	X	2.103726	1.353601	1.55
2ND	Esy Min	Y	6.374885	5.429954	1.17
MEZ	Esy Min	X	1.303035	0.930048	1.4
MEZ	Esy Min	Y	6.1218	5.956195	1.03

Table 3.6 - Story Max/Avg Displacements (continued)

Story	Load Case/Combo	Direction	Maximum in	Average in	Ratio
ROOF	Qx Max	X	15.110089	13.78176	1.1
ROOF	Qx Max	Y	3.466016	2.284495	1.52
2ND	Qx Max	X	14.483997	9.37777	1.54
2ND	Qx Max	Y	3.428711	2.09477	1.64
MEZ	Qx Max	X	11.869561	9.090155	1.31
MEZ	Qx Max	Y	3.311206	2.409218	1.37
ROOF	Qx Min	X	14.468498	12.965223	1.12
ROOF	Qx Min	Y	3.309923	2.036719	1.63
2ND	Qx Min	X	13.818299	8.431282	1.64
2ND	Qx Min	Y	3.269477	1.855938	1.76
MEZ	Qx Min	X	11.32412	8.26438	1.37
MEZ	Qx Min	Y	3.147709	2.195142	1.43
ROOF	Qy Max	X	1.623444	1.361558	1.19
ROOF	Qy Max	Y	8.378822	7.432636	1.13
2ND	Qy Max	X	2.822186	1.922593	1.47
2ND	Qy Max	Y	6.509035	5.605739	1.16
MEZ	Qy Max	X	1.861559	1.416929	1.31
MEZ	Qy Max	Y	6.194834	6.057997	1.02
ROOF	Qy Min	Y	7.988874	7.0707	1.13
2ND	Qy Min	X	1.385267	0.773548	1.79
2ND	Qy Min	Y	6.275583	5.271594	1.19
MEZ	Qy Min	Y	6.048766	5.854392	1.03

Table 3.7 - Story Drifts

Story	Load Case/Combo	Direction	Drift	Label	X ft	Y ft	Z ft
PH	DEAD	X	0.000369	2048	410.0417	123.4583	311.59
PH	DEAD	Y	0.000201	2030	420.4167	102.4583	311.59
PH	L	X	9.4E-05	2047	410.0417	102.4583	311.59
PH	L	Y	2.2E-05	2048	410.0417	123.4583	311.59
PH	SDL	X	6.6E-05	2048	410.0417	123.4583	311.59
PH	Lr	X	3.9E-05	2048	410.0417	123.4583	311.59
PH	Lr	Y	2.3E-05	2030	420.4167	102.4583	311.59
PH	Ap	X	7.7E-05	2030	420.4167	102.4583	311.59
PH	Spx	X	0.000151	2030	420.4167	102.4583	311.59
PH	Spx	Y	3.1E-05	2026	422.0417	111.8333	311.59
PH	Spy	X	2.4E-05	2048	410.0417	123.4583	311.59
PH	Spy	Y	7E-06	2051	417.9167	102.4583	311.59
PH	Ex	X	0.013536	2048	410.0417	123.4583	311.59
PH	Ey	X	0.000962	2047	410.0417	102.4583	311.59
PH	Ey	Y	0.003682	2028	422.0417	117.5833	311.59
PH	Sx Max	X	0.007395	2048	410.0417	123.4583	311.59
PH	Sx Max	Y	0.001173	2025	422.0417	108.3333	311.59
PH	Sy Max	X	0.000577	2047	410.0417	102.4583	311.59
PH	Sy Max	Y	0.002413	2027	422.0417	114.0833	311.59

Table 3.7 - Story Drifts (continued)

Story	Load Case/Combo	Direction	Drift	Label	X ft	Y ft	Z ft
PH	UDCon1	X	0.000548	2047	410.0417	102.4583	311.59
PH	UDCon1	Y	0.000244	2045	422.0417	102.4583	311.59
PH	UDCon2	X	0.000582	2047	410.0417	102.4583	311.59
PH	UDCon2	Y	0.000247	2045	422.0417	102.4583	311.59
PH	UDCon3 Max	X	0.008691	2048	410.0417	123.4583	311.59
PH	UDCon3 Max	Y	0.00106	2026	422.0417	111.8333	311.59
PH	UDCon3 Min	X	0.007589	2046	422.0417	123.4583	311.59
PH	UDCon3 Min	Y	0.001528	2045	422.0417	102.4583	311.59
PH	UDCon4 Max	X	0.001189	2047	410.0417	102.4583	311.59
PH	UDCon4 Max	Y	0.002486	2050	417.9167	123.4583	311.59
PH	UDCon4 Min	Y	0.002867	2026	422.0417	111.8333	311.59
PH	UDCon5 Max	X	0.008569	2048	410.0417	123.4583	311.59
PH	UDCon5 Max	Y	0.0011	2026	422.0417	111.8333	311.59
PH	UDCon5 Min	X	0.007706	2046	422.0417	123.4583	311.59
PH	UDCon5 Min	Y	0.001483	2045	422.0417	102.4583	311.59
PH	UDCon6 Max	X	0.001071	2047	410.0417	102.4583	311.59
PH	UDCon6 Max	Y	0.002504	2050	417.9167	123.4583	311.59
PH	UDCon6 Min	Y	0.002828	2026	422.0417	111.8333	311.59
PH	Esx Max	X	0.008135	2048	410.0417	123.4583	311.59
PH	Esx Max	Y	0.00129	2025	422.0417	108.3333	311.59
PH	Esx Min	X	0.008135	2048	410.0417	123.4583	311.59
PH	Esx Min	Y	0.00129	2025	422.0417	108.3333	311.59
PH	Esy Max	X	0.000635	2047	410.0417	102.4583	311.59
PH	Esy Max	Y	0.002654	2027	422.0417	114.0833	311.59
PH	Esy Min	X	0.000635	2047	410.0417	102.4583	311.59
PH	Esy Min	Y	0.002654	2027	422.0417	114.0833	311.59
PH	Qx Max	X	0.008178	2048	410.0417	123.4583	311.59
PH	Qx Max	Y	0.001281	2025	422.0417	108.3333	311.59
PH	Qx Min	X	0.008092	2048	410.0417	123.4583	311.59
PH	Qx Min	Y	0.001298	2025	422.0417	108.3333	311.59
PH	Qy Max	X	0.000691	2047	410.0417	102.4583	311.59
PH	Qy Max	Y	0.002646	2027	422.0417	114.0833	311.59
PH	Qy Min	X	0.000579	2047	410.0417	102.4583	311.59
PH	Qy Min	Y	0.002663	2027	422.0417	114.0833	311.59
ROOF	DEAD	X	0.000301	149	167.6667	0	302.93
ROOF	DEAD	Y	0.000212	335	167.6667	51.75	302.93
ROOF	L	X	8.3E-05	9	441.2083	139.0417	302.93
ROOF	L	Y	5.2E-05	112	337.5	51.75	302.93
ROOF	SDL	X	3.8E-05	149	167.6667	0	302.93
ROOF	SDL	Y	3.9E-05	112	337.5	51.75	302.93
ROOF	Lr	X	2.7E-05	2537	389.25	0	302.93
ROOF	Lr	Y	1.7E-05	103	337.5	0	302.93
ROOF	Ap	X	0.00013	1	441.2083	0	302.93
ROOF	Ap	Y	0.000159	524	227.5	0	302.93
ROOF	Spx	X	0.000177	1	441.2083	0	302.93

Table 3.7 - Story Drifts (continued)

Story	Load Case/Combo	Direction	Drift	Label	X ft	Y ft	Z ft
ROOF	Spx	Y	0.000194	2343	251.75	51.75	302.93
ROOF	Spy	Y	6.3E-05	1678	167.6667	8	302.93
ROOF	Ex	X	0.018206	18	393.25	139.0417	302.93
ROOF	Ex	Y	0.003674	9	441.2083	139.0417	302.93
ROOF	Ey	Y	0.01621	2356	270.75	51.75	302.93
ROOF	Sx Max	X	0.010209	18	393.25	139.0417	302.93
ROOF	Sx Max	Y	0.003861	2518	258.25	0	302.93
ROOF	Sy Max	X	0.002146	149	167.6667	0	302.93
ROOF	Sy Max	Y	0.012107	2355	266.75	51.75	302.93
ROOF	UDCon1	X	0.000486	149	167.6667	0	302.93
ROOF	UDCon1	Y	0.000307	2529	334.25	0	302.93
ROOF	UDCon2	X	0.000508	149	167.6667	0	302.93
ROOF	UDCon2	Y	0.000322	2529	334.25	0	302.93
ROOF	UDCon3 Max	X	0.011367	18	393.25	139.0417	302.93
ROOF	UDCon3 Max	Y	0.004429	2518	258.25	0	302.93
ROOF	UDCon3 Min	X	0.011093	18	393.25	139.0417	302.93
ROOF	UDCon3 Min	Y	0.004124	2340	230.75	51.75	302.93
ROOF	UDCon4 Max	X	0.00283	149	167.6667	0	302.93
ROOF	UDCon4 Max	Y	0.013453	2518	258.25	0	302.93
ROOF	UDCon4 Min	X	0.00189	149	167.6667	0	302.93
ROOF	UDCon4 Min	Y	0.013189	2355	266.75	51.75	302.93
ROOF	UDCon5 Max	X	0.011336	18	393.25	139.0417	302.93
ROOF	UDCon5 Max	Y	0.004409	2518	258.25	0	302.93
ROOF	UDCon5 Min	X	0.011124	18	393.25	139.0417	302.93
ROOF	UDCon5 Min	Y	0.004116	2340	230.75	51.75	302.93
ROOF	UDCon6 Max	X	0.00274	149	167.6667	0	302.93
ROOF	UDCon6 Max	Y	0.013436	2355	266.75	51.75	302.93
ROOF	UDCon6 Min	X	0.00198	149	167.6667	0	302.93
ROOF	UDCon6 Min	Y	0.0132	2355	266.75	51.75	302.93
ROOF	Esx Max	X	0.01123	18	393.25	139.0417	302.93
ROOF	Esx Max	Y	0.004248	2518	258.25	0	302.93
ROOF	Esx Min	X	0.01123	18	393.25	139.0417	302.93
ROOF	Esx Min	Y	0.004248	2518	258.25	0	302.93
ROOF	Esy Max	X	0.00236	149	167.6667	0	302.93
ROOF	Esy Max	Y	0.013318	2355	266.75	51.75	302.93
ROOF	Esy Min	X	0.00236	149	167.6667	0	302.93
ROOF	Esy Min	Y	0.013318	2355	266.75	51.75	302.93
ROOF	Qx Max	X	0.01126	18	393.25	139.0417	302.93
ROOF	Qx Max	Y	0.004362	2518	258.25	0	302.93
ROOF	Qx Min	X	0.0112	18	393.25	139.0417	302.93
ROOF	Qx Min	Y	0.004133	2518	258.25	0	302.93
ROOF	Qy Max	X	0.002435	149	167.6667	0	302.93
ROOF	Qy Max	Y	0.013423	2355	266.75	51.75	302.93
ROOF	Qy Min	X	0.002285	149	167.6667	0	302.93
ROOF	Qy Min	Y	0.013212	2355	266.75	51.75	302.93

Table 3.7 - Story Drifts (continued)

Story	Load Case/Combo	Direction	Drift	Label	X ft	Y ft	Z ft
2ND	DEAD	X	0.001776	878	167.6667	156.5	285.34
2ND	DEAD	Y	0.000602	115	365	69.2083	285.34
2ND	L	X	0.001455	896	167.6667	191.4167	285.34
2ND	L	Y	0.000506	1071	379.125	340.6667	285.34
2ND	SDL	X	0.000295	2194	167.6667	22.625	285.34
2ND	SDL	Y	0.000174	745	200	34.5	285.34
2ND	Lr	X	0.000449	878	167.6667	156.5	285.34
2ND	Lr	Y	0.000209	820	200	208.875	285.34
2ND	Ap	X	0.003448	896	167.6667	191.4167	285.34
2ND	Ap	Y	0.001565	478	310	226.3333	285.34
2ND	Spx	X	0.003798	945	167.6667	289.75	285.34
2ND	Spx	Y	0.000343	1071	379.125	340.6667	285.34
2ND	Spy	X	0.00023	914	167.6667	226.3333	285.34
2ND	Spy	Y	0.001311	478	310	226.3333	285.34
2ND	Ex	X	0.072096	525	227.5	17.25	285.34
2ND	Ey	Y	0.021584	114	365	51.75	285.34
2ND	Sx Max	X	0.044698	525	227.5	17.25	285.34
2ND	Sx Max	Y	0.008094	1791	175	0	285.34
2ND	Sy Max	X	0.004697	914	167.6667	226.3333	285.34
2ND	Sy Max	Y	0.019433	114	365	51.75	285.34
2ND	UDCon1	X	0.003486	662	227.5	191.4167	285.34
2ND	UDCon1	Y	0.001866	478	310	226.3333	285.34
2ND	UDCon2	X	0.003576	662	227.5	191.4167	285.34
2ND	UDCon2	Y	0.001886	478	310	226.3333	285.34
2ND	UDCon3 Max	X	0.050624	525	227.5	17.25	285.34
2ND	UDCon3 Max	Y	0.008762	1791	175	0	285.34
2ND	UDCon3 Min	X	0.047712	525	227.5	17.25	285.34
2ND	UDCon3 Min	Y	0.009045	1791	175	0	285.34
2ND	UDCon4 Max	X	0.006809	680	227.5	208.875	285.34
2ND	UDCon4 Max	Y	0.021792	114	365	51.75	285.34
2ND	UDCon4 Min	X	0.004789	914	167.6667	226.3333	285.34
2ND	UDCon4 Min	Y	0.020962	114	365	51.75	285.34
2ND	UDCon5 Max	X	0.050521	525	227.5	17.25	285.34
2ND	UDCon5 Max	Y	0.008814	1791	175	0	285.34
2ND	UDCon5 Min	X	0.047815	525	227.5	17.25	285.34
2ND	UDCon5 Min	Y	0.008994	1791	175	0	285.34
2ND	UDCon6 Max	X	0.006638	680	227.5	208.875	285.34
2ND	UDCon6 Max	Y	0.021788	114	365	51.75	285.34
2ND	UDCon6 Min	X	0.004928	914	167.6667	226.3333	285.34
2ND	UDCon6 Min	Y	0.020966	114	365	51.75	285.34
2ND	Esx Max	X	0.049168	525	227.5	17.25	285.34
2ND	Esx Max	Y	0.008904	1791	175	0	285.34
2ND	Esx Min	X	0.049168	525	227.5	17.25	285.34
2ND	Esx Min	Y	0.008904	1791	175	0	285.34
2ND	Esy Max	X	0.005167	914	167.6667	226.3333	285.34

Table 3.7 - Story Drifts (continued)

Story	Load Case/Combo	Direction	Drift	Label	X ft	Y ft	Z ft
2ND	Esy Max	Y	0.021377	114	365	51.75	285.34
2ND	Esy Min	X	0.005167	914	167.6667	226.3333	285.34
2ND	Esy Min	Y	0.021377	114	365	51.75	285.34
2ND	Qx Max	X	0.050371	525	227.5	17.25	285.34
2ND	Qx Max	Y	0.009017	1791	175	0	285.34
2ND	Qx Min	X	0.047965	525	227.5	17.25	285.34
2ND	Qx Min	Y	0.008791	1791	175	0	285.34
2ND	Qy Max	X	0.006251	680	227.5	208.875	285.34
2ND	Qy Max	Y	0.021886	114	365	51.75	285.34
2ND	Qy Min	X	0.005785	905	167.6667	208.875	285.34
2ND	Qy Min	Y	0.020867	114	365	51.75	285.34
MEZ	DEAD	X	0.000905	2569	441.2083	272.255	274
MEZ	DEAD	Y	0.00031	1863	413.7292	0	274
MEZ	L	X	0.000823	896	167.6667	191.4167	274
MEZ	L	Y	0.000208	1791	175	0	274
MEZ	SDL	X	0.000147	2194	167.6667	22.625	274
MEZ	Lr	X	0.000331	878	167.6667	156.5	274
MEZ	Ap	X	0.004597	896	167.6667	191.4167	274
MEZ	Ap	Y	0.001618	1791	175	0	274
MEZ	Spx	X	0.005266	896	167.6667	191.4167	274
MEZ	Spy	Y	0.001552	1863	413.7292	0	274
MEZ	Ex	X	0.115	2395	441.2083	21.875	274
MEZ	Ey	Y	0.040083	1863	413.7292	0	274
MEZ	Sx Max	X	0.07149	2395	441.2083	21.875	274
MEZ	Sx Max	Y	0.014388	2375	426.7291	0	274
MEZ	Sy Max	X	0.006136	2652	441.2083	15.375	274
MEZ	Sy Max	Y	0.037112	1863	413.7292	0	274
MEZ	UDCon1	X	0.004287	896	167.6667	191.4167	274
MEZ	UDCon1	Y	0.001877	1791	175	0	274
MEZ	UDCon2	X	0.004434	896	167.6667	191.4167	274
MEZ	UDCon2	Y	0.001935	1791	175	0	274
MEZ	UDCon3 Max	X	0.081294	2395	441.2083	21.875	274
MEZ	UDCon3 Max	Y	0.016103	2375	426.7291	0	274
MEZ	UDCon3 Min	X	0.075985	2395	441.2083	21.875	274
MEZ	UDCon3 Min	Y	0.015549	2375	426.7291	0	274
MEZ	UDCon4 Max	X	0.009339	2652	441.2083	15.375	274
MEZ	UDCon4 Max	Y	0.041219	1863	413.7292	0	274
MEZ	UDCon4 Min	X	0.004565	2794	441.2083	291.3283	274
MEZ	UDCon4 Min	Y	0.040427	1863	413.7292	0	274
MEZ	UDCon5 Max	X	0.081099	2395	441.2083	21.875	274
MEZ	UDCon5 Max	Y	0.016129	2375	426.7291	0	274
MEZ	UDCon5 Min	X	0.07618	2395	441.2083	21.875	274
MEZ	UDCon5 Min	Y	0.015523	2375	426.7291	0	274
MEZ	UDCon6 Max	X	0.009144	2652	441.2083	15.375	274
MEZ	UDCon6 Max	Y	0.041248	1863	413.7292	0	274

Table 3.7 - Story Drifts (continued)

Story	Load Case/Combo	Direction	Drift	Label	X ft	Y ft	Z ft
MEZ	UDCon6 Min	X	0.004813	2794	441.2083	291.3283	274
MEZ	UDCon6 Min	Y	0.040398	1863	413.7292	0	274
MEZ	Esx Max	X	0.078639	2395	441.2083	21.875	274
MEZ	Esx Max	Y	0.015826	2375	426.7291	0	274
MEZ	Esx Min	X	0.078639	2395	441.2083	21.875	274
MEZ	Esx Min	Y	0.015826	2375	426.7291	0	274
MEZ	Esy Max	X	0.006749	2652	441.2083	15.375	274
MEZ	Esy Max	Y	0.040823	1863	413.7292	0	274
MEZ	Esy Min	X	0.006749	2652	441.2083	15.375	274
MEZ	Esy Min	Y	0.040823	1863	413.7292	0	274
MEZ	Qx Max	X	0.080742	2395	441.2083	21.875	274
MEZ	Qx Max	Y	0.016405	2375	426.7291	0	274
MEZ	Qx Min	X	0.076536	2395	441.2083	21.875	274
MEZ	Qx Min	Y	0.015247	2375	426.7291	0	274
MEZ	Qy Max	X	0.008783	2652	441.2083	15.375	274
MEZ	Qy Max	Y	0.041549	1863	413.7292	0	274
MEZ	Qy Min	X	0.005673	2794	441.2083	291.3283	274
MEZ	Qy Min	Y	0.040097	1863	413.7292	0	274
1ST	DEAD	X	0.000426	18	393.25	139.0417	262.53
1ST	DEAD	Y	0.000317	1071	379.125	340.6667	262.53
1ST	L	X	0.000339	947	167.6667	298.9167	262.53
1ST	L	Y	0.000195	1033	255	308.0833	262.53
1ST	SDL	X	5.6E-05	882	167.6667	280.5833	262.53
1ST	SDL	Y	3.4E-05	2089	441.2083	188.1872	262.53
1ST	Lr	X	1.9E-05	453	189.2222	226.3333	262.53
1ST	Lr	Y	1.2E-05	1071	379.125	340.6667	262.53
1ST	Ap	X	0.003077	949	200	308.0833	262.53
1ST	Ap	Y	0.003338	478	310	226.3333	262.53
1ST	Spx	X	0.003305	950	227.5	308.0833	262.53
1ST	Spy	X	0.000308	653	167.6667	244.5	262.53
1ST	Spy	Y	0.001965	377	213.75	226.3333	262.53
1ST	Ex	X	0.037918	1888	416.2083	156.5	262.53
1ST	Ey	Y	0.021355	1103	337.5	340.6667	262.53
1ST	Sx Max	X	0.020679	1888	416.2083	156.5	262.53
1ST	Sx Max	Y	0.006861	2201	427.2083	280.5833	262.53
1ST	Sy Max	X	0.004144	950	227.5	308.0833	262.53
1ST	Sy Max	Y	0.019698	1103	337.5	340.6667	262.53
1ST	UDCon1	X	0.003388	949	200	308.0833	262.53
1ST	UDCon1	Y	0.00372	273	324.125	226.3333	262.53
1ST	UDCon2	X	0.003425	949	200	308.0833	262.53
1ST	UDCon2	Y	0.003693	273	324.125	226.3333	262.53
1ST	UDCon3 Max	X	0.024729	1888	416.2083	156.5	262.53
1ST	UDCon3 Max	Y	0.008111	883	200	280.5833	262.53
1ST	UDCon3 Min	X	0.020765	1888	416.2083	156.5	262.53
1ST	UDCon3 Min	Y	0.008311	377	213.75	226.3333	262.53

Table 3.7 - Story Drifts (continued)

Story	Load Case/Combo	Direction	Drift	Label	X ft	Y ft	Z ft
1ST	UDCon4 Max	X	0.006873	950	227.5	308.0833	262.53
1ST	UDCon4 Max	Y	0.022175	1103	337.5	340.6667	262.53
1ST	UDCon4 Min	X	0.004185	1170	167.6667	315.9167	262.53
1ST	UDCon4 Min	Y	0.022898	273	324.125	226.3333	262.53
1ST	UDCon5 Max	X	0.024653	1888	416.2083	156.5	262.53
1ST	UDCon5 Max	Y	0.008085	883	200	280.5833	262.53
1ST	UDCon5 Min	X	0.02084	1888	416.2083	156.5	262.53
1ST	UDCon5 Min	Y	0.008357	377	213.75	226.3333	262.53
1ST	UDCon6 Max	X	0.006808	950	227.5	308.0833	262.53
1ST	UDCon6 Max	Y	0.022181	1103	337.5	340.6667	262.53
1ST	UDCon6 Min	X	0.004294	1170	167.6667	315.9167	262.53
1ST	UDCon6 Min	Y	0.022914	273	324.125	226.3333	262.53
1ST	Esx Max	X	0.022747	1888	416.2083	156.5	262.53
1ST	Esx Max	Y	0.007547	2201	427.2083	280.5833	262.53
1ST	Esx Min	X	0.022747	1888	416.2083	156.5	262.53
1ST	Esx Min	Y	0.007547	2201	427.2083	280.5833	262.53
1ST	Esy Max	X	0.004558	950	227.5	308.0833	262.53
1ST	Esy Max	Y	0.021668	1103	337.5	340.6667	262.53
1ST	Esy Min	X	0.004558	950	227.5	308.0833	262.53
1ST	Esy Min	Y	0.021668	1103	337.5	340.6667	262.53
1ST	Qx Max	X	0.024587	1888	416.2083	156.5	262.53
1ST	Qx Max	Y	0.008089	883	200	280.5833	262.53
1ST	Qx Min	X	0.020907	1888	416.2083	156.5	262.53
1ST	Qx Min	Y	0.008407	377	213.75	226.3333	262.53
1ST	Qy Max	X	0.006743	950	227.5	308.0833	262.53
1ST	Qy Max	Y	0.02235	1135	409.1667	336.1503	262.53
1ST	Qy Min	X	0.004404	948	167.6667	308.0833	262.53
1ST	Qy Min	Y	0.022866	273	324.125	226.3333	262.53

Table 3.8 - Story Forces

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
PH	DEAD	Top	17	0	0	0	1893	-6972
PH	DEAD	Bottom	415	0	0	0	15922	-172742
PH	L	Top	4	0	0	0	474	-1747
PH	L	Bottom	54	0	0	0	1759	-22457
PH	SDL	Top	3	0	0	0	285	-1048
PH	SDL	Bottom	3	0	0	0	285	-1048
PH	Lr	Top	5	0	0	0	569	-2097
PH	Lr	Bottom	5	0	0	0	569	-2097
PH	Ap	Top	0	0	0	8.31E-07	0	0
PH	Ap	Bottom	0	0	0	7.878E-07	0	0
PH	Spx	Top	0	0	0	1.135E-06	0	0
PH	Spx	Bottom	0	0	0	9.508E-07	0	0
PH	Spy	Top	0	0	0	0	0	0

Table 3.8 - Story Forces (continued)

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
PH	Spy	Bottom	0	0	0	0	0	0
PH	Ex	Top	0	-96	0	10877	0	0
PH	Ex	Bottom	0	-1092	0	42447	0	-6025
PH	Ey	Top	0	0	-96	-40040	0	0
PH	Ey	Bottom	0	0	-1092	-455146	6025	-5.449E-07
PH	Sx Max	Top	0	48	18	8719	0	0
PH	Sx Max	Bottom	0	562	194	78245	1075	3102
PH	Sy Max	Top	0	6	54	22606	0	0
PH	Sy Max	Bottom	0	52	602	251508	3333	274
PH	UDCon1	Top	21	0	0	1.209E-06	2395	-8822
PH	UDCon1	Bottom	459	0	0	1.113E-06	17827	-191170
PH	UDCon2	Top	24	0	0	1.248E-06	2682	-9879
PH	UDCon2	Bottom	475	0	0	1.152E-06	18467	-197922
PH	UDCon3 Max	Top	24	52	19	9591	2682	-9879
PH	UDCon3 Max	Bottom	475	618	213	86070	19650	-194510
PH	UDCon3 Min	Top	24	-52	-19	-9591	2682	-9879
PH	UDCon3 Min	Bottom	475	-618	-213	-86070	17285	-201334
PH	UDCon4 Max	Top	24	7	59	24867	2682	-9879
PH	UDCon4 Max	Bottom	475	58	662	276659	22133	-197621
PH	UDCon4 Min	Top	24	-7	-59	-24867	2682	-9879
PH	UDCon4 Min	Bottom	475	-58	-662	-276659	14801	-198224
PH	UDCon5 Max	Top	17	52	19	9591	1960	-7218
PH	UDCon5 Max	Bottom	375	618	213	86070	15768	-153000
PH	UDCon5 Min	Top	17	-52	-19	-9591	1960	-7218
PH	UDCon5 Min	Bottom	375	-618	-213	-86070	13403	-159823
PH	UDCon6 Max	Top	17	7	59	24867	1960	-7218
PH	UDCon6 Max	Bottom	375	58	662	276659	18252	-156110
PH	UDCon6 Min	Top	17	-7	-59	-24867	1960	-7218
PH	UDCon6 Min	Bottom	375	-58	-662	-276659	10919	-156713
PH	Esx Max	Top	0	52	19	9591	0	0
PH	Esx Max	Bottom	0	618	213	86070	1183	3412
PH	Esx Min	Top	0	-52	-19	-9591	0	0
PH	Esx Min	Bottom	0	-618	-213	-86070	-1183	-3412
PH	Esy Max	Top	0	7	59	24867	0	0
PH	Esy Max	Bottom	0	58	662	276659	3666	301
PH	Esy Min	Top	0	-7	-59	-24867	0	0
PH	Esy Min	Bottom	0	-58	-662	-276659	-3666	-301
PH	Qx Max	Top	0	52	19	9591	0	0
PH	Qx Max	Bottom	0	618	213	86070	1183	3412
PH	Qx Min	Top	0	-52	-19	-9591	0	0
PH	Qx Min	Bottom	0	-618	-213	-86070	-1183	-3412
PH	Qy Max	Top	0	7	59	24867	0	0
PH	Qy Max	Bottom	0	58	662	276659	3666	301
PH	Qy Min	Top	0	-7	-59	-24867	0	0
PH	Qy Min	Bottom	0	-58	-662	-276659	-3666	-301

Table 3.8 - Story Forces (continued)

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
ROOF	DEAD	Top	2807	0	0	7.175E-06	101595	-918860
ROOF	DEAD	Bottom	4636	0	0	9.975E-06	171296	-1517278
ROOF	L	Top	54	0	0	-1.182E-05	1759	-22457
ROOF	L	Bottom	54	0	0	-1.368E-05	1759	-22457
ROOF	SDL	Top	175	0	0	-1.454E-06	7589	-58202
ROOF	SDL	Bottom	175	0		-1.46E-06	7589	-58202
ROOF	Lr	Top	303	0	0	-1.125E-06	13918	-96785
ROOF	Lr	Bottom	303	0	0	-1.27E-06	13918	-96785
ROOF	Ap	Top	0	0	0	-7.616E-05	-2.538E-06	1.755E-06
ROOF	Ap	Bottom	0	0	0	-8.905E-05	2.377E-06	-2.891E-06
ROOF	Spx	Top	0	0	0	-3.463E-06	-3.958E-06	1.336E-06
ROOF	Spx	Bottom	0	0	0	-8.089E-07	-3.26E-06	-4.349E-06
ROOF	Spy	Top	0	0	0	-8.767E-05	9.233E-07	-3.77E-06
ROOF	Spy	Bottom	0	0	0	-0.0001052	6.098E-06	-3.595E-06
ROOF	Ex	Top	0	-9396	0	346223	-0.0002067	-6025
ROOF	Ex	Bottom	0	-12405	0	457532	-0.0002028	-198902
ROOF	Ey	Top	0	0	-9396	-3100926	6025	0.0002212
ROOF	Ey	Bottom	0	0	-12405	-4070639	198902	0.0002137
ROOF	Sx Max	Top	0	5188	1066	379364	1075	3102
ROOF	Sx Max	Bottom	0	6829	1317	466954	21642	109503
ROOF	Sy Max	Top	0	522	6281	2098714	3333	274
ROOF	Sy Max	Bottom	0	690	8143	2700674	131409	10996
ROOF	UDCon1	Top	3281	0	0	-7.748E-05	120103	-1074768
ROOF	UDCon1	Bottom	5292	0	0	-8.859E-05	196774	-1733028
ROOF	UDCon2	Top	3379	0	0	-8.104E-05	124414	-1107560
ROOF	UDCon2	Bottom	5391	0	0	-9.27E-05	201085	-1765820
ROOF	UDCon3 Max	Top	3379	5707	1172	417300	125596	-1104148
ROOF	UDCon3 Max	Bottom	5391	7512	1449	513649	224892	-1645367
ROOF	UDCon3 Min	Top	3379	-5707	-1172	-417300	123231	-1110972
ROOF	UDCon3 Min	Bottom	5391	-7512	-1449	-513649	177279	-1886273
ROOF	UDCon4 Max	Top	3379	574	6909	2308586	128080	-1107258
ROOF	UDCon4 Max	Bottom	5391	759	8958	2970741	345635	-1753725
ROOF	UDCon4 Min	Top	3379	-574	-6909	-2308586	120748	-1107861
ROOF	UDCon4 Min	Bottom	5391	-759	-8958	-2970741	56535	-1777916
ROOF	UDCon5 Max	Top	2684	5707	1172	417300	99449	-875944
ROOF	UDCon5 Max	Bottom	4330	7512	1449	513649	184803	-1297480
ROOF	UDCon5 Min	Top	2684	-5707	-1172	-417300	97083	-882768
ROOF	UDCon5 Min	Bottom	4330	-7512	-1449	-513649	137191	-1538385
ROOF	UDCon6 Max	Top	2684	574	6909	2308586	101932	-879054
ROOF	UDCon6 Max	Bottom	4330	759	8958	2970741	305547	-1405837
ROOF	UDCon6 Min	Top	2684	-574	-6909	-2308586	94600	-879657
ROOF	UDCon6 Min	Bottom	4330	-759	-8958	-2970741	16447	-1430028
ROOF	Esx Max	Top	0	5707	1172	417300	1183	3412
ROOF	Esx Max	Bottom	0	7512	1449	513649	23806	120453
ROOF	Esx Min	Top	0	-5707	-1172	-417300	-1183	-3412

Table 3.8 - Story Forces (continued)

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
ROOF	Esx Min	Bottom	0	-7512	-1449	-513649	-23806	-120453
ROOF	Esy Max	Top	0	574	6909	2308586	3666	301
ROOF	Esy Max	Bottom	0	759	8958	2970741	144550	12096
ROOF	Esy Min	Top	0	-574	-6909	-2308586	-3666	-301
ROOF	Esy Min	Bottom	0	-759	-8958	-2970741	-144550	-12096
ROOF	Qx Max	Top	0	5707	1172	417300	1183	3412
ROOF	Qx Max	Bottom	0	7512	1449	513649	23806	120453
ROOF	Qx Min	Top	0	-5707	-1172	-417300	-1183	-3412
ROOF	Qx Min	Bottom	0	-7512	-1449	-513649	-23806	-120453
ROOF	Qy Max	Top	0	574	6909	2308586	3666	301
ROOF	Qy Max	Bottom	0	759	8958	2970741	144550	12096
ROOF	Qy Min	Top	0	-574	-6909	-2308586	-3666	-301
ROOF	Qy Min	Bottom	0	-759	-8958	-2970741	-144550	-12096
2ND	DEAD	Top	11917	48	4	-15511	1374505	-3769648
2ND	DEAD	Bottom	5503	95	4	-31438	598153	-2055291
2ND	L	Top	1043	65	-1	-22224	43257	-345232
2ND	L	Bottom	456	-27	-68	-14606	27726	-177088
2ND	SDL	Top	1394	12	0.1045	-3984	163179	-457358
2ND	SDL	Bottom	553	4	-6	-3601	55717	-217469
2ND	Lr	Top	1484	3	0.3778	-990	255464	-452998
2ND	Lr	Bottom	354	-8	-1	1261	54602	-129608
2ND	Ap	Top	30	97	5	-31562	10150	-7388
2ND	Ap	Bottom	-49	-42	14	35284	-3020	9556
2ND	Spx	Top	49	206	11	-67435	16396	-11982
2ND	Spx	Bottom	29	-379	77	149728	11609	-2527
2ND	Spy	Top	-6	-55	1	18969	-2126	1461
2ND	Spy	Bottom	-56	-4	-133	-37095	-8665	7257
2ND	Ex	Top	214	-32744	149	3550348	70629	-252938
2ND	Ex	Bottom	1792	-25511	-0.1037	1726274	4842	-1350695
2ND	Ey	Top	-91	-619	-33357	-10369793	167043	21928
2ND	Ey	Bottom	900	-227	-21257	-7181543	402342	-298443
2ND	Sx Max	Top	153	17280	2589	2208553	58338	135463
2ND	Sx Max	Bottom	1076	13770	1875	1547051	73752	798606
2ND	Sy Max	Top	137	1617	23421	7575283	111241	37087
2ND	Sy Max	Bottom	511	1113	15092	5335517	257302	181532
2ND	UDCon1	Top	14675	172	10	-56162	1702617	-4657834
2ND	UDCon1	Bottom	6608	63	13	270	715935	-2489525
2ND	UDCon2	Top	15370	191	10	-62546	1784765	-4877347
2ND	UDCon2	Bottom	6831	54	-6	-3400	738575	-2573866
2ND	UDCon3 Max	Top	15527	19163	2856	2378540	1845181	-4725604
2ND	UDCon3 Max	Bottom	8033	15216	2050	1685300	820820	-1698935
2ND	UDCon3 Min	Top	15190	-18853	-2840	-2480276	1716838	-5023623
2ND	UDCon3 Min	Bottom	5665	-15078	-2074	-1718211	658565	-3455869
2ND	UDCon4 Max	Top	15510	1934	25771	8281943	1903375	-4833817
2ND	UDCon4 Max	Bottom	7410	1294	16589	5852613	1022724	-2377716

Table 3.8 - Story Forces (continued)

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
2ND	UDCon4 Min	Top	15207	-1624	-25755	-8383679	1658644	-4915410
2ND	UDCon4 Min	Bottom	6287	-1156	-16612	-5885524	456661	-2777088
2ND	UDCon5 Max	Top	12170	19132	2855	2388822	1455496	-3660690
2ND	UDCon5 Max	Bottom	6599	15206	2070	1695978	667406	-1160042
2ND	UDCon5 Min	Top	11833	-18883	-2841	-2469993	1327153	-3958708
2ND	UDCon5 Min	Bottom	4231	-15088	-2054	-1707533	505151	-2916975
2ND	UDCon6 Max	Top	12152	1903	25771	8292226	1513690	-3768903
2ND	UDCon6 Max	Bottom	5977	1284	16609	5863291	869310	-1838823
2ND	UDCon6 Min	Top	11850	-1654	-25756	-8373397	1268959	-3850495
2ND	UDCon6 Min	Bottom	4853	-1166	-16593	-5874847	303247	-2238194
2ND	Esx Max	Top	168	19008	2848	2429408	64172	149009
2ND	Esx Max	Bottom	1184	15147	2062	1701756	81127	878467
2ND	Esx Min	Top	-168	-19008	-2848	-2429408	-64172	-149009
2ND	Esx Min	Bottom	-1184	-15147	-2062	-1701756	-81127	-878467
2ND	Esy Max	Top	151	1779	25763	8332811	122365	40796
2ND	Esy Max	Bottom	562	1225	16601	5869069	283032	199686
2ND	Esy Min	Top	-151	-1779	-25763	-8332811	-122365	-40796
2ND	Esy Min	Bottom	-562	-1225	-16601	-5869069	-283032	-199686
2ND	Qx Max	Top	190	19078	2852	2406368	71581	143616
2ND	Qx Max	Bottom	1148	15117	2072	1727513	78923	885443
2ND	Qx Min	Top	-146	-18937	-2844	-2452448	-56762	-154402
2ND	Qx Min	Bottom	-1220	-15177	-2052	-1675998	-83332	-871491
2ND	Qy Max	Top	173	1849	25767	8309771	129775	35403
2ND	Qy Max	Bottom	526	1194	16611	5894826	280827	206662
2ND	Qy Min	Top	-129	-1708	-25759	-8355851	-114956	-46189
2ND	Qy Min	Bottom	-597	-1255	-16590	-5843312	-285236	-192710
MEZ	DEAD	Top	6442	101	5	-33546	671342	-2456490
MEZ	DEAD	Bottom	7825	93	4	-31005	864839	-2932625
MEZ	L	Top	1222	48	-66	-33697	128967	-496309
MEZ	L	Bottom	1208	-133	-68	3513	124663	-490128
MEZ	SDL	Top	808	7	-6	-4386	83293	-323702
MEZ	SDL	Bottom	798	4	-6	-3335	80490	-319336
MEZ	Lr	Top	345	-7	-1	945	52022	-126200
MEZ	Lr	Bottom	337	-8	-1	1281	50020	-123192
MEZ	Ap	Top	-6	186	11	-26031	5176	-3188
MEZ	Ap	Bottom	76	-671	12	187984	23577	-39781
MEZ	Spx	Top	53	183	70	-10962	13725	-9747
MEZ	Spx	Bottom	68	-1201	81	356851	14233	-30513
MEZ	Spy	Top	-39	-14	-130	-32491	-3850	1114
MEZ	Spy	Bottom	8	-3	-138	-39343	8982	-15353
MEZ	Ex	Top	1978	-28160	151	2018281	-119880	-1346862
MEZ	Ex	Bottom	1467	-29860	18	2350266	-377581	-1391598
MEZ	Ey	Top	849	-345	-24641	-8461995	411129	-312407
MEZ	Ey	Bottom	976	-204	-25881	-8943313	733511	-414793
MEZ	Sx Max	Top	1266	15618	2470	1956352	95440	814640

Table 3.8 - Story Forces (continued)

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
MEZ	Sx Max	Bottom	1184	16300	2650	2195776	223133	856172
MEZ	Sy Max	Top	522	1221	18425	6629425	288846	221938
MEZ	Sy Max	Bottom	815	1432	19558	7111524	577284	352234
MEZ	UDCon1	Top	7968	323	10	-70360	835792	-3061718
MEZ	UDCon1	Bottom	9569	-631	11	169007	1065796	-3620917
MEZ	UDCon2	Top	8399	334	-8	-79367	885564	-3232908
MEZ	UDCon2	Bottom	9994	-670	-8	170326	1113834	-3789580
MEZ	UDCon3 Max	Top	9794	17445	2705	2082252	988633	-2335625
MEZ	UDCon3 Max	Bottom	11267	17508	2903	2516125	1350556	-2833072
MEZ	UDCon3 Min	Top	7009	-16915	-2729	-2221722	778665	-4127832
MEZ	UDCon3 Min	Bottom	8663	-18351	-2928	-2314582	859665	-4716650
MEZ	UDCon4 Max	Top	8976	1608	20256	7222633	1201380	-2987596
MEZ	UDCon4 Max	Bottom	10861	1153	21501	7923449	1740123	-3387404
MEZ	UDCon4 Min	Top	7827	-1077	-20280	-7362103	565918	-3475860
MEZ	UDCon4 Min	Bottom	9069	-1997	-21526	-7721905	470098	-4162319
MEZ	UDCon5 Max	Top	7913	17413	2723	2098845	787934	-1608397
MEZ	UDCon5 Max	Bottom	9118	17527	2922	2521675	1113453	-2014017
MEZ	UDCon5 Min	Top	5128	-16947	-2710	-2205129	577966	-3400604
MEZ	UDCon5 Min	Bottom	6514	-18332	-2908	-2309032	622561	-3897595
MEZ	UDCon6 Max	Top	7095	1575	20274	7239226	1000681	-2260368
MEZ	UDCon6 Max	Bottom	8712	1172	21521	7928998	1503020	-2568348
MEZ	UDCon6 Min	Top	5946	-1110	-20261	-7345510	365219	-2748632
MEZ	UDCon6 Min	Bottom	6920	-1977	-21507	-7716355	232994	-3343263
MEZ	Esx Max	Top	1392	17180	2717	2151987	104984	896103
MEZ	Esx Max	Bottom	1302	17930	2915	2415354	245446	941789
MEZ	Esx Min	Top	-1392	-17180	-2717	-2151987	-104984	-896103
MEZ	Esx Min	Bottom	-1302	-17930	-2915	-2415354	-245446	-941789
MEZ	Esy Max	Top	574	1343	20268	7292368	317731	244132
MEZ	Esy Max	Bottom	896	1575	21514	7822677	635013	387457
MEZ	Esy Min	Top	-574	-1343	-20268	-7292368	-317731	-244132
MEZ	Esy Min	Bottom	-896	-1575	-21514	-7822677	-635013	-387457
MEZ	Qx Max	Top	1388	17316	2724	2132984	108762	893776
MEZ	Qx Max	Bottom	1358	17440	2924	2552582	262657	912749
MEZ	Qx Min	Top	-1397	-17044	-2709	-2170989	-101206	-898431
MEZ	Qx Min	Bottom	-1246	-18419	-2906	-2278125	-228234	-970829
MEZ	Qy Max	Top	570	1478	20276	7273365	321509	241804
MEZ	Qy Max	Bottom	952	1085	21523	7959905	652224	358417
MEZ	Qy Min	Top	-579	-1207	-20260	-7311371	-313953	-246459
MEZ	Qy Min	Bottom	-841	-2064	-21505	-7685449	-617801	-416498
1ST	DEAD	Top	13619	21	58	7099	3127356	-4624936
1ST	DEAD	Bottom	15561	77	17	-14052	4036109	-4972158
1ST	L	Top	5229	-122	153	81538	1304721	-1684746
1ST	L	Bottom	4698	-229	-46	44817	1257573	-1466131
1ST	SDL	Top	1758	3	1	-840	383605	-619148
1ST	SDL	Bottom	1384	7	-7	-4496	350342	-461288

Table 3.8 - Story Forces (continued)

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
1ST	Lr	Top	761	-5	-1	454	182198	-253996
1ST	Lr	Bottom	683	1	-4	-999	175108	-221419
1ST	Ap	Top	3	-591	1180	554861	-13140	1422
1ST	Ap	Bottom	9	-6204	-2507	929376	-6454	-70722
1ST	Spx	Top	70	-1753	111	605428	12042	-22640
1ST	Spx	Bottom	31	-6223	8	1666978	6818	-100813
1ST	Spy	Top	-21	-15	1337	367510	-22726	2917
1ST	Spy	Bottom	10	-26	-2261	-651158	-5923	-10111
1ST	Ex	Top	3529	-37088	-1160	6858958	253838	-1875848
1ST	Ex	Bottom	-363	-30302	461	7474840	-80422	-882536
1ST	Ey	Top	5651	49	-24852	-9002756	1017978	-1948908
1ST	Ey	Bottom	6019	18	-21116	-7196931	1602233	-2083555
1ST	Sx Max	Top	2144	19425	3688	5011242	163365	1091313
1ST	Sx Max	Bottom	541	16997	2083	4920953	132596	504542
1ST	Sy Max	Top	4141	4650	21395	8565220	687559	1417178
1ST	Sy Max	Bottom	4663	5101	18509	7147522	1219042	1578861
1ST	UDCon1	Top	16919	-623	1363	617233	3847603	-5766928
1ST	UDCon1	Bottom	18649	-6732	-2747	1001911	4817996	-6054584
1ST	UDCon2	Top	18567	-658	1405	639780	4256506	-6300082
1ST	UDCon2	Bottom	20129	-6795	-2761	1013961	5211983	-6518661
1ST	UDCon3 Max	Top	20923	20928	5025	5946847	4441068	-5100164
1ST	UDCon3 Max	Bottom	20720	14198	459	6083140	5360226	-5937497
1ST	UDCon3 Min	Top	16207	-21807	-3088	-5077884	4081666	-7501052
1ST	UDCon3 Min	Bottom	19531	-23196	-4125	-4742956	5068516	-7047490
1ST	UDCon4 Max	Top	23121	4676	24502	9856223	5017682	-4741712
1ST	UDCon4 Max	Bottom	25255	1112	18527	8532366	6555317	-4755746
1ST	UDCon4 Min	Top	14010	-5555	-22566	-8987260	3505052	-7859504
1ST	UDCon4 Min	Bottom	14996	-10111	-22193	-7192182	3873425	-8229241
1ST	UDCon5 Max	Top	16200	20958	4972	5923048	3329974	-3518193
1ST	UDCon5 Max	Bottom	15851	14244	471	6074800	4088949	-4386732
1ST	UDCon5 Min	Top	11484	-21777	-3142	-5101684	2970571	-5919082
1ST	UDCon5 Min	Bottom	14662	-23151	-4113	-4751297	3797239	-5496725
1ST	UDCon6 Max	Top	18398	4706	24449	9832424	3906587	-3159741
1ST	UDCon6 Max	Bottom	20386	1158	18539	8524025	5284040	-3204981
1ST	UDCon6 Min	Top	9287	-5525	-22619	-9011060	2393957	-6277533
1ST	UDCon6 Min	Bottom	10127	-10065	-22181	-7200522	2602147	-6678476
1ST	Esx Max	Top	2358	21368	4057	5512366	179701	1200444
1ST	Esx Max	Bottom	595	18697	2292	5413048	145855	554996
1ST	Esx Min	Top	-2358	-21368	-4057	-5512366	-179701	-1200444
1ST	Esx Min	Bottom	-595	-18697	-2292	-5413048	-145855	-554996
1ST	Esy Max	Top	4556	5116	23534	9421742	756315	1558896
1ST	Esy Max	Bottom	5130	5611	20360	7862274	1340946	1736747
1ST	Esy Min	Top	-4556	-5116	-23534	-9421742	-756315	-1558896
1ST	Esy Min	Bottom	-5130	-5611	-20360	-7862274	-1340946	-1736747
1ST	Qx Max	Top	2360	20936	4918	5917414	170109	1201482

Table 3.8 - Story Forces (continued)

Story	Load Case/Combo	Location	P kip	VX kip	VY kip	T kip-ft	MX kip-ft	MY kip-ft
1ST	Qx Max	Bottom	601	14168	461	6091492	141144	503369
1ST	Qx Min	Top	-2356	-21799	-3195	-5107317	-189293	-1199406
1ST	Qx Min	Bottom	-588	-23226	-4122	-4734604	-150567	-606623
1ST	Qy Max	Top	4558	4684	24395	9826791	746723	1559934
1ST	Qy Max	Bottom	5136	1082	18530	8540718	1336235	1685121
1ST	Qy Min	Top	-4553	-5547	-22672	-9016693	-765907	-1557858
1ST	Qy Min	Bottom	-5123	-10140	-22191	-7183829	-1345658	-1788374

Table 3.9 - Story Stiffness

Story	Load Case	Shear X kip	Drift X in	Stiffness X kip/in	Shear Y kip	Drift Y in	Stiffness Y kip/in
PH	Spx	0	0.014129	0	0	0.001665	0
ROOF	Spx	0	0.01873	1.712E-05	0	0.020499	1.766E-06
2ND	Spx	379	0.264034	1434.1976	77	0.017101	4486.2568
MEZ	Spx	1201	0.362497	3312.9659	81	0.043546	0
1ST	Spx	6223	0.452392	13756.3247	8	0.052329	0
PH	Spy	0	0.002395	0	0	0.000567	0
ROOF	Spy	0	0.001768	0	0	0.006662	4.843E-05
2ND	Spy	4	0.015629	0	133	0.019991	6654.9274
MEZ	Spy	3	0.011019	0	138	0.106833	1289.2671
1ST	Spy	26	0.042412	0	2261	0.271338	8334.0318
PH	Ex	1092	1.348298	809.5502	0	0.027078	0
ROOF	Ex	12405	2.069799	5993.3744	0	0.38777	0
2ND	Ex	25511	3.846373	6632.4552	0.1037	0.547107	0
MEZ	Ex	29860	8.205846	3638.8227	18	0.720412	0
1ST	Ex	30302	5.189803	5838.7692	461	0.664568	0
PH	Ey	0	0.065899	0	1092	0.36162	3018.4022
ROOF	Ey	0	0.320347	0	12405	1.949412	6363.4999
2ND	Ey	227	0.169899	0	21257	0.622764	34133.4058
MEZ	Ey	204	0.179012	0	25881	2.761495	9372.023
1ST	Ey	18	0.288455	0	21116	3.102893	6805.2624
PH	Sx	562	0.732882	766.1817	194	0.099791	1943.7002
ROOF	Sx	6829	1.158783	5893.0195	1317	0.468521	2811.2881
2ND	Sx	13770	2.543956	5412.867	1875	0.559132	3352.7666
MEZ	Sx	16300	5.090978	3201.6655	2650	0.999319	2652.1677
1ST	Sx	16997	2.851759	5960.3317	2083	0.97689	2132.7741
PH	Sy	52	0.048588	0	602	0.238828	2519.4449
ROOF	Sy	690	0.233744	0	8143	1.439246	5658.1082
2ND	Sy	1113	0.351064	0	15092	0.700451	21545.5594
MEZ	Sy	1432	0.456237	0	19558	2.561342	7635.7847
1ST	Sy	5101	0.590194	8643.1055	18509	2.859627	6472.6242

3.3 Modal Results

Table 3.10 - Modal Periods and Frequencies

Case	Mode	Period sec	Frequency cyc/sec	Circular Frequency rad/sec	Eigenvalue rad²/sec²
Modal	1	0.921	1.085	6.8196	46.5076
Modal	2	0.601	1.663	10.449	109.1812
Modal	3	0.572	1.749	10.9863	120.6981
Modal	4	0.416	2.404	15.1049	228.1569
Modal	5	0.412	2.427	15.249	232.5306
Modal	6	0.326	3.064	19.2539	370.7131
Modal	7	0.319	3.139	19.724	389.0369
Modal	8	0.294	3.406	21.4	457.9609
Modal	9	0.271	3.688	23.1703	536.8608
Modal	10	0.223	4.477	28.1272	791.1399
Modal	11	0.208	4.819	30.2756	916.6131
Modal	12	0.166	6.022	37.8383	1431.7394
Modal	13	0.138	7.268	45.664	2085.2025
Modal	14	0.098	10.208	64.1402	4113.9641
Modal	15	0.094	10.588	66.5255	4425.6458

Table 3.11 - Modal Participating Mass Ratios (Part 1 of 2)

Case	Mode	Period sec	UX	UY	UZ	Sum UX	Sum UY	Sum UZ
Modal	1	0.921	0.6479	0.001	0	0.6479	0.001	0
Modal	2	0.601	0.0294	0.8611	0	0.6773	0.8621	0
Modal	3	0.572	0.2019	0.0914	0	0.8792	0.9535	0
Modal	4	0.416	0.0248	0.0007	0	0.904	0.9542	0
Modal	5	0.412	0.004	0.0002	0	0.908	0.9543	0
Modal	6	0.326	0.0027	0.0002	0	0.9108	0.9545	0
Modal	7	0.319	0.0135	0.0052	0	0.9243	0.9598	0
Modal	8	0.294	0.0164	0.0035	0	0.9407	0.9633	0
Modal	9	0.271	0.0001	0.0031	0	0.9408	0.9664	0
Modal	10	0.223	0.0256	3.349E-05	0	0.9664	0.9665	0
Modal	11	0.208	0.0001	0.0041	0	0.9666	0.9705	0
Modal	12	0.166	0.0117	0.0001	0	0.9783	0.9706	0
Modal	13	0.138	0.0001	0.0146	0	0.9784	0.9852	0
Modal	14	0.098	0.0198	0.001	0	0.9982	0.9862	0
Modal	15	0.094	0.0011	0.0133	0	0.9993	0.9996	0

Table 3.11 - Modal Participating Mass Ratios (Part 2 of 2)

Case	Mode	RX	RY	RZ	Sum RX	Sum RY	Sum RZ
Modal	1	1.563E-05	0.1926	0.221	1.563E-05	0.1926	0.221
Modal	2	0.0157	0.0034	0.0655	0.0157	0.196	0.2865
Modal	3	0.0042	0.0587	0.6196	0.0199	0.2547	0.9061
Modal	4	0.0012	0.0512	0.0342	0.0211	0.3059	0.9403
Modal	5	0.0001	0.0035	0.0079	0.0213	0.3095	0.9482

Table 3.11 - Modal Participating Mass Ratios (Part 2 of 2, continued)

Case	Mode	RX	RY	RZ	Sum RX	Sum RY	Sum RZ
Modal	6	0.002	0.0074	0.0018	0.0233	0.3169	0.95
Modal	7	0.1122	0.0162	0.0122	0.1354	0.3331	0.9622
Modal	8	0.1237	0.0478	0.0038	0.2592	0.3809	0.966
Modal	9	0.0127	0.0002	0.0001	0.2718	0.3811	0.9662
Modal	10	0.0031	0.3143	0.0002	0.2749	0.6954	0.9663
Modal	11	0.0483	0.0038	4.582E-05	0.3232	0.6992	0.9664
Modal	12	0.0016	0.0362	0.0032	0.3248	0.7354	0.9696
Modal	13	0.1146	3.89E-05	0.0004	0.4394	0.7354	0.97
Modal	14	0.0029	0.0529	0.0005	0.4424	0.7884	0.9704
Modal	15	0.042	0.0039	3.938E-06	0.4844	0.7923	0.9704

Table 3.12 - Modal Load Participation Ratios

Case	Item Type	Item	Static %	Dynamic %
Modal	Acceleration	UX	100	99.93
Modal	Acceleration	UY	100	99.96
Modal	Acceleration	UZ	0	0

Table 3.13 - Modal Direction Factors

Case	Mode	Period sec	UX	UY	UZ	RZ
Modal	1	0.921	0.849	0.001	0	0.15
Modal	2	0.601	0.04	0.906	0	0.053
Modal	3	0.572	0.4	0.123	0	0.477
Modal	4	0.416	0.364	0.061	0	0.575
Modal	5	0.412	0.366	0.063	0	0.571
Modal	6	0.326	0.58	0.181	0	0.239
Modal	7	0.319	0.228	0.668	0	0.104
Modal	8	0.294	0.249	0.447	0	0.304
Modal	9	0.271	0.031	0.65	0	0.32
Modal	10	0.223	0.475	0.011	0	0.514
Modal	11	0.208	0.009	0.11	0	0.881
Modal	12	0.166	0.462	0.014	0	0.524
Modal	13	0.138	0.004	0.815	0	0.181
Modal	14	0.098	0.394	0.052	0	0.554
Modal	15	0.094	0.032	0.802	0	0.167

3 Analysis Results

This chapter provides analysis results.

3.1 Structure Results

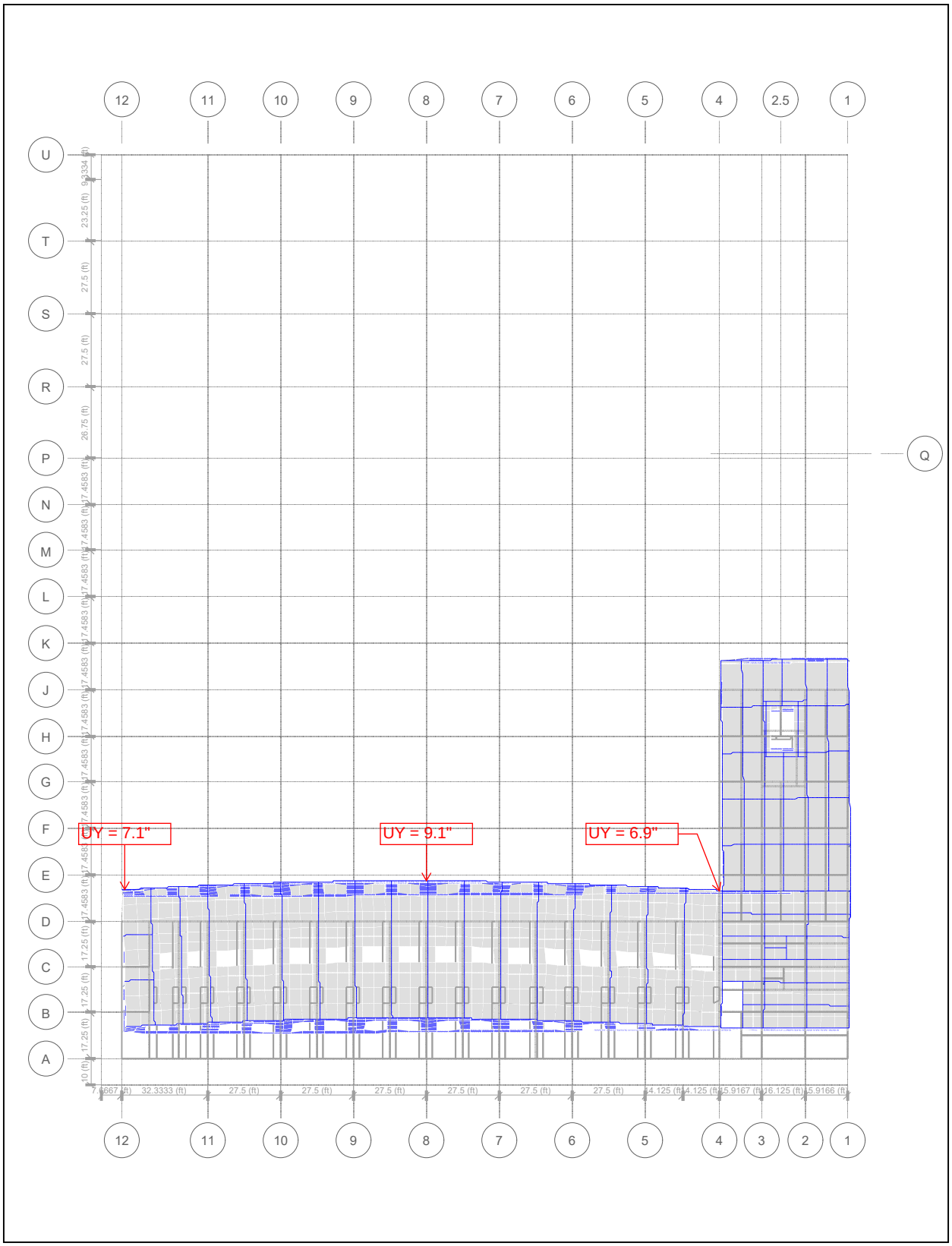
Table 3.1 - Base Reactions at Upper Bound Stiffness

Load Case/Combo	FX kip	FY kip	FZ kip	MX kip-ft	MY kip-ft	MZ kip-ft	X ft	Y ft	Z ft
DEAD	0	0	30169	5114026.2549	-9692471	1.297E-05	0	0	239.75
L	-430	-206	6350	1378257.7241	-2043610	22957.7216	0	0	239.75
SDL	0	0	2635	440937.4094	-886851.5602	0	0	0	239.75
Lr	0	0	1486	256163.8427	-453484.0319	1.581E-06	0	0	239.75
Ap	-7528	-3993	0	33951.4291	-97364.1103	621353.9677	0	0	239.75
Spx	-7635	0	0	-4.94E-05	-136424.2434	1835877.1792	0	0	239.75
Spy	0	-3990	0	46529.4609	-1.844E-06	-1184796	0	0	239.75
Ex	-54916	0	0	-0.0009	-2292080	8058767.6082	0	0	239.75
Ey	0	-54916	0	2292079.6076	0.0006	-17694286	0	0	239.75
Sx Max	33355	3017	0	91607.921	1455132.4087	5309474.4635	0	0	239.75
Sy Max	3005	41527	0	1643774.6564	101156.0265	13671492	0	0	239.75
UDCon1	-8281	-4393	36084	6147806.6027	-11744356	683489.3645	0	0	239.75
UDCon2	-8400	-4449	38239	6597272.5336	-12431056	689802.7379	0	0	239.75
UDCon3 Max	31076	347	38239	6685479.2179	-10794386	6300323.6797	0	0	239.75
UDCon3 Min	-42304	-6290	38239	6483941.7917	-13995677	-5380520	0	0	239.75
UDCon4 Max	-2309	42708	38239	8392862.6269	-12283760	15498543	0	0	239.75
UDCon4 Min	-8919	-48652	38239	4776558.3828	-12506303	-14578740	0	0	239.75
UDCon5 Max	31194	403	29524	5125020.5542	-7991821	6294010.3063	0	0	239.75
UDCon5 Min	-42186	-6234	29524	4923483.128	-11193112	-5386834	0	0	239.75
UDCon6 Max	-2191	42765	29524	6832403.9631	-9481195	15492230	0	0	239.75
UDCon6 Min	-8801	-48595	29524	3216099.719	-9703738	-14585053	0	0	239.75
Esx Max	36690	3318	0	100768.7131	1600645.6495	5840421.9098	0	0	239.75
Esx Min	-36690	-3318	0	-100768.7131	-1600646	-5840422	0	0	239.75
Esy Max	3305	45680	0	1808152.122	111271.6291	15038642	0	0	239.75
Esy Min	-3305	-45680	0	-1808152	-111271.6291	-15038642	0	0	239.75
Qx Max	31194	403	0	125553.2563	1529569.849	6294010.3063	0	0	239.75
Qx Min	-42186	-6234	0	-75984.1699	-1671721	-5386834	0	0	239.75
Qy Max	-2191	42765	0	1832936.6653	40195.8287	15492230	0	0	239.75
Qy Min	-8801	-48595	0	-1783368	-182347.4296	-14585053	0	0	239.75

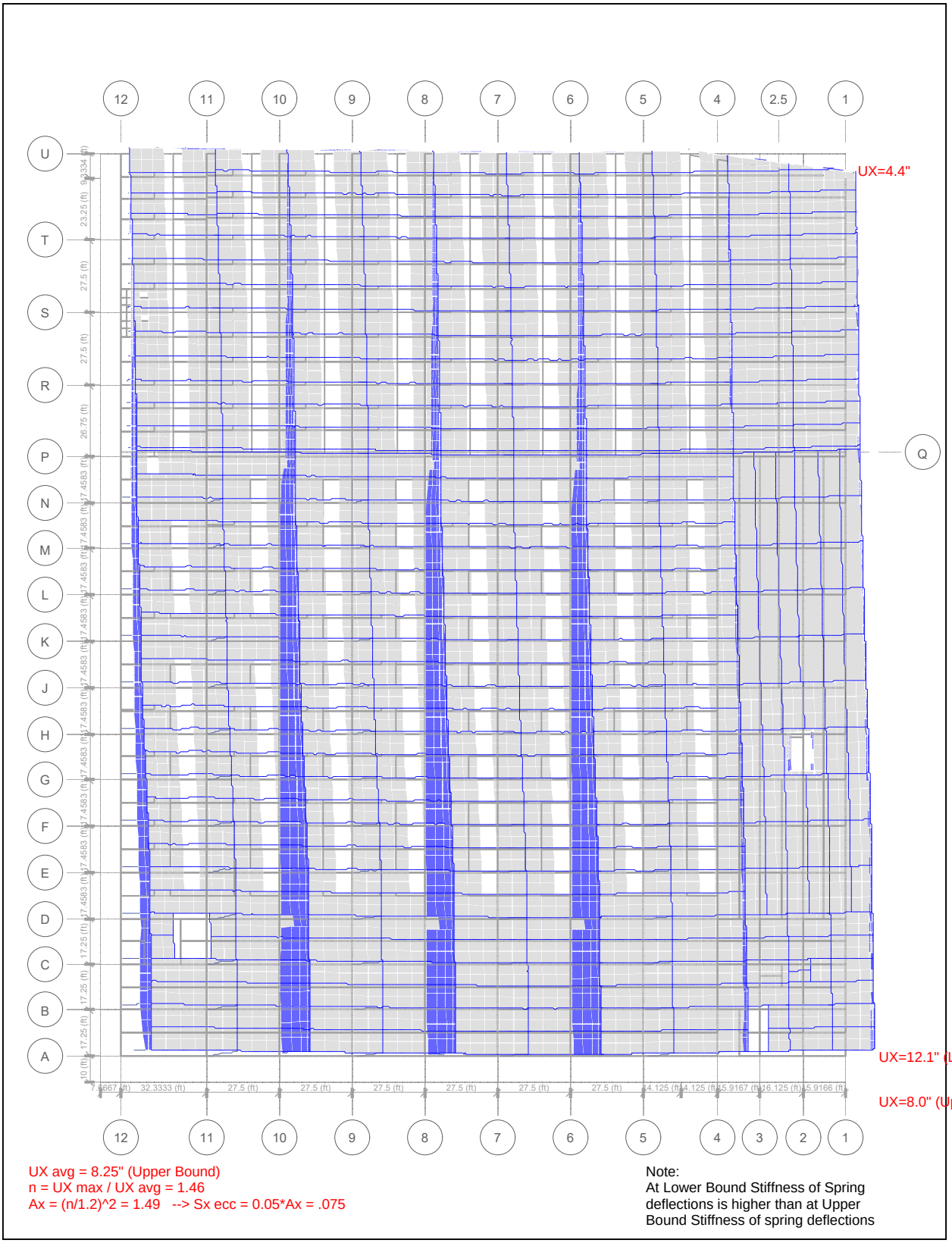
Seismic in X-dirn. governed at Upper Bound Stiff. of spring

Table 3.2 - Centers of Mass and Rigidity

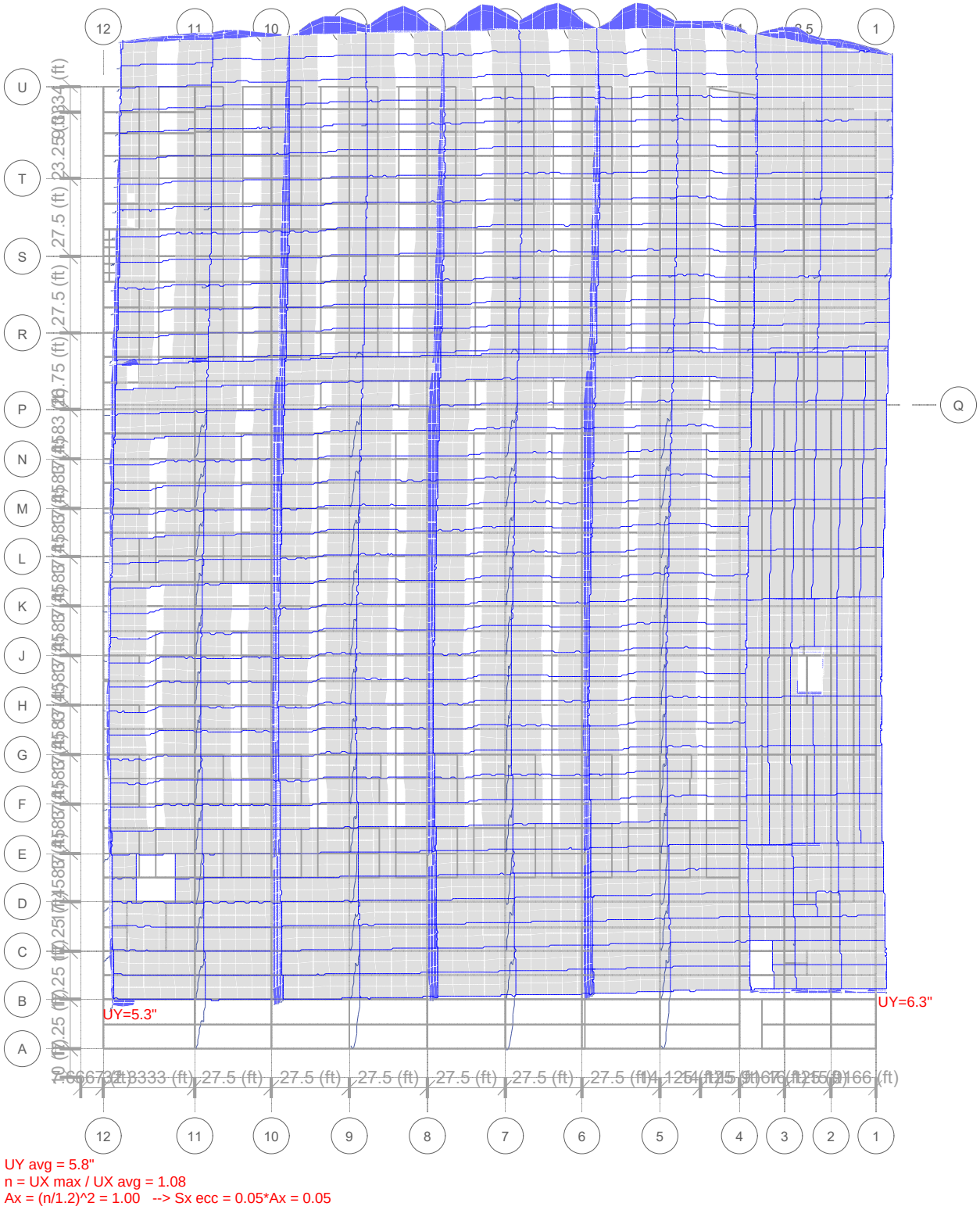
Story	Diaphragm	Mass X lb-s²/ft	Mass Y lb-s²/ft	XCM ft	YCM ft	Cumulative X lb-s²/ft	Cumulative Y lb-s²/ft	XCCM ft	YCCM ft	XCR ft	YCR ft
ROOF	D1	0	0	321.964	38.9446	0	0	0	0		
2ND	D1	0	0	312.1106	161.9416	0	0	0	0		
MEZ	D1	0	0	417.1135	122.5057	0	0	0	0		



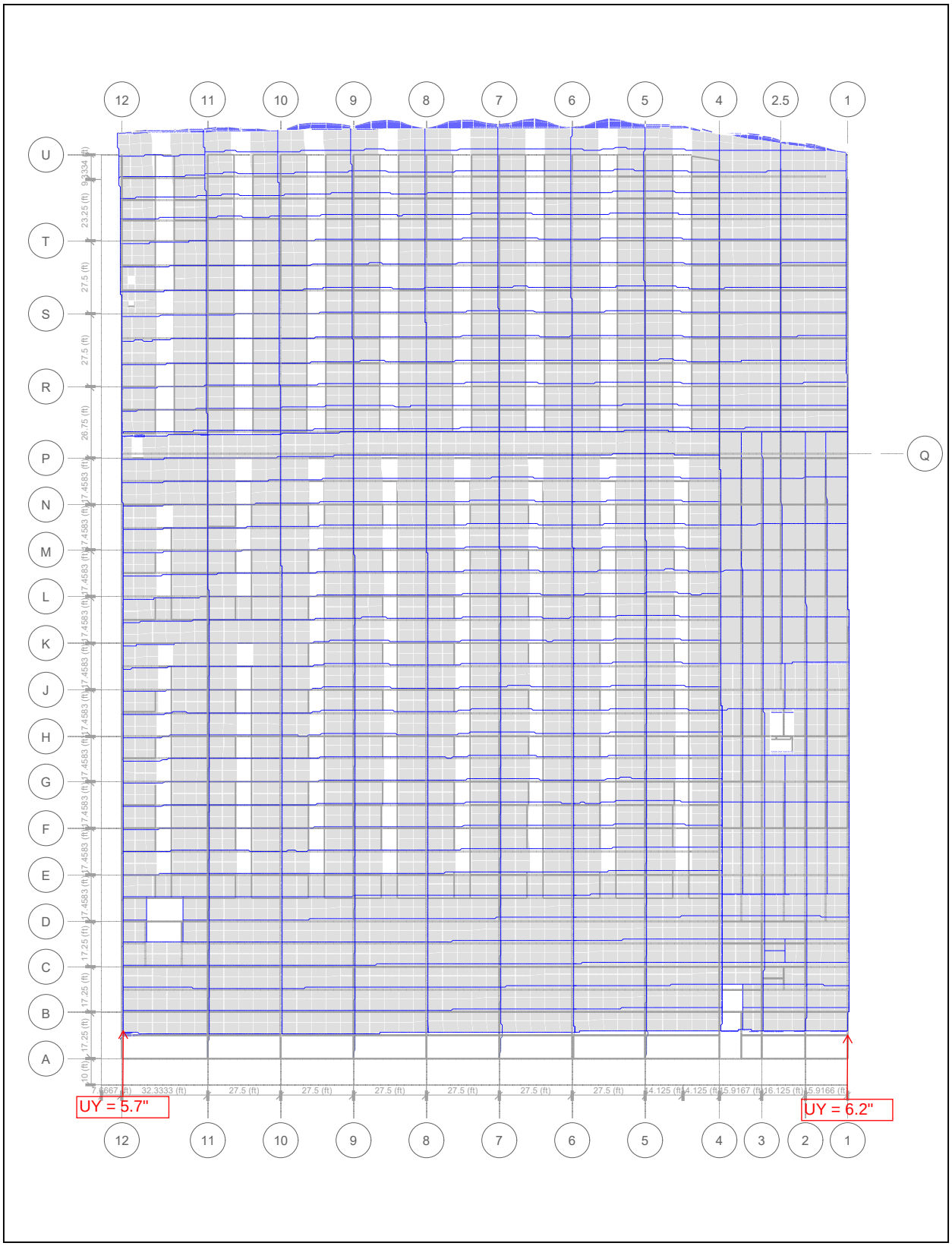
1532-7 Presidio Bus Yard LBSv3.ETB Plan View - ROOF - Z = 302.93 (ft) - Displacements (Ey) [in]



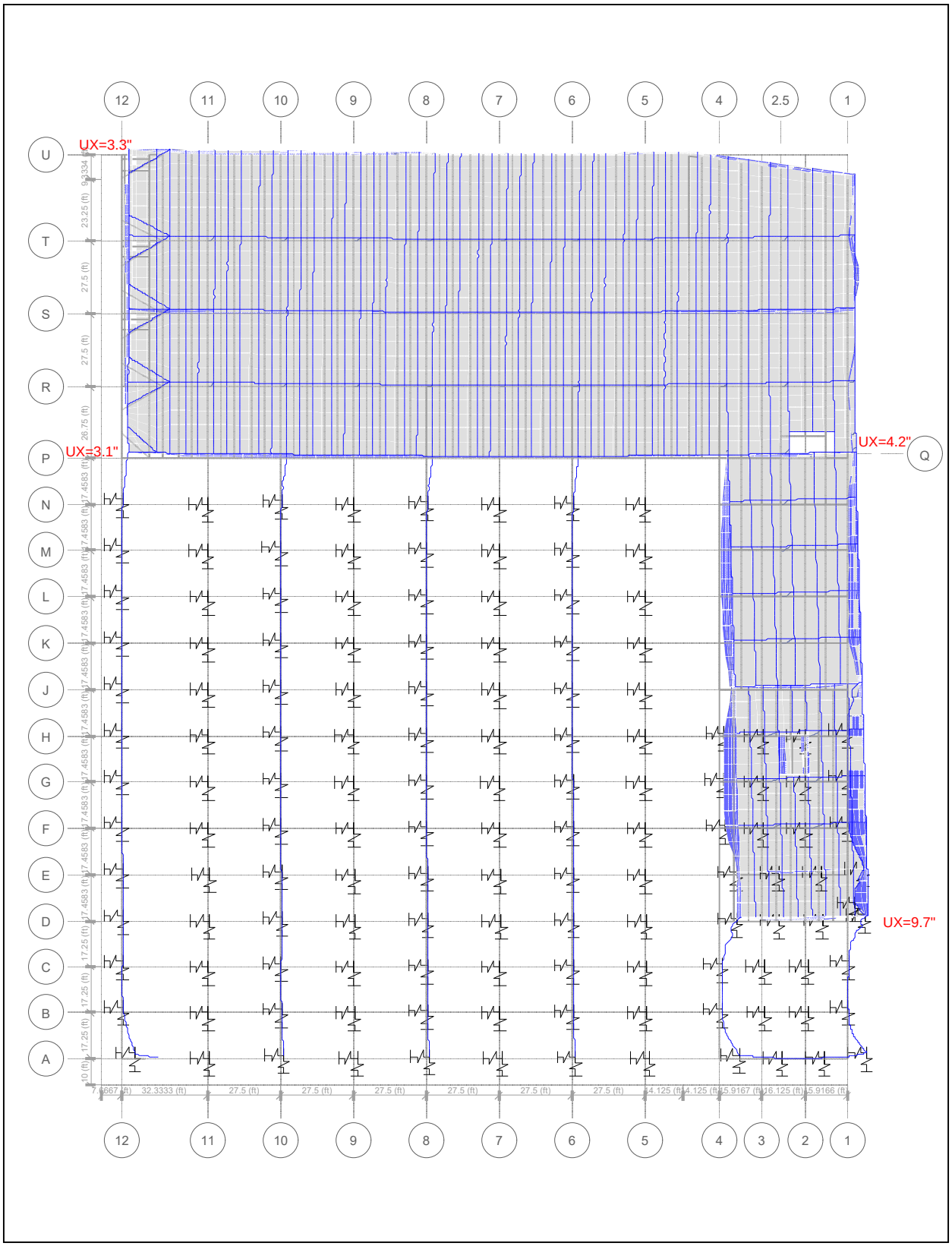
1532-7 Presidio Bus Yard Level 3 - EQX - Z = 285.34 (ft) - Displacements (Esx) [in]



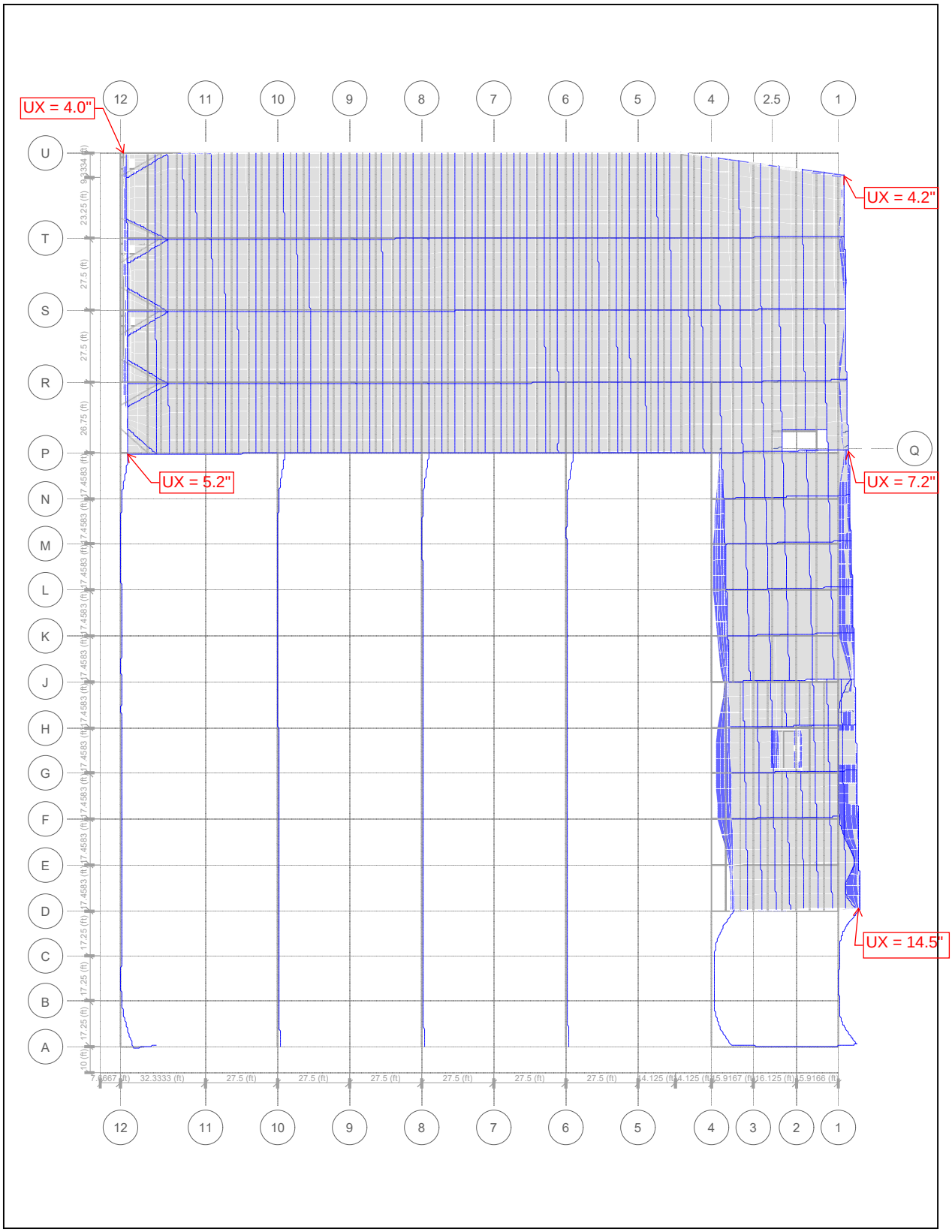
1532-7 Presidio Bus Yard-LBS-3.EDB - 2ND - Z = 285.34 (ft) - Displacements (Esy) [in]



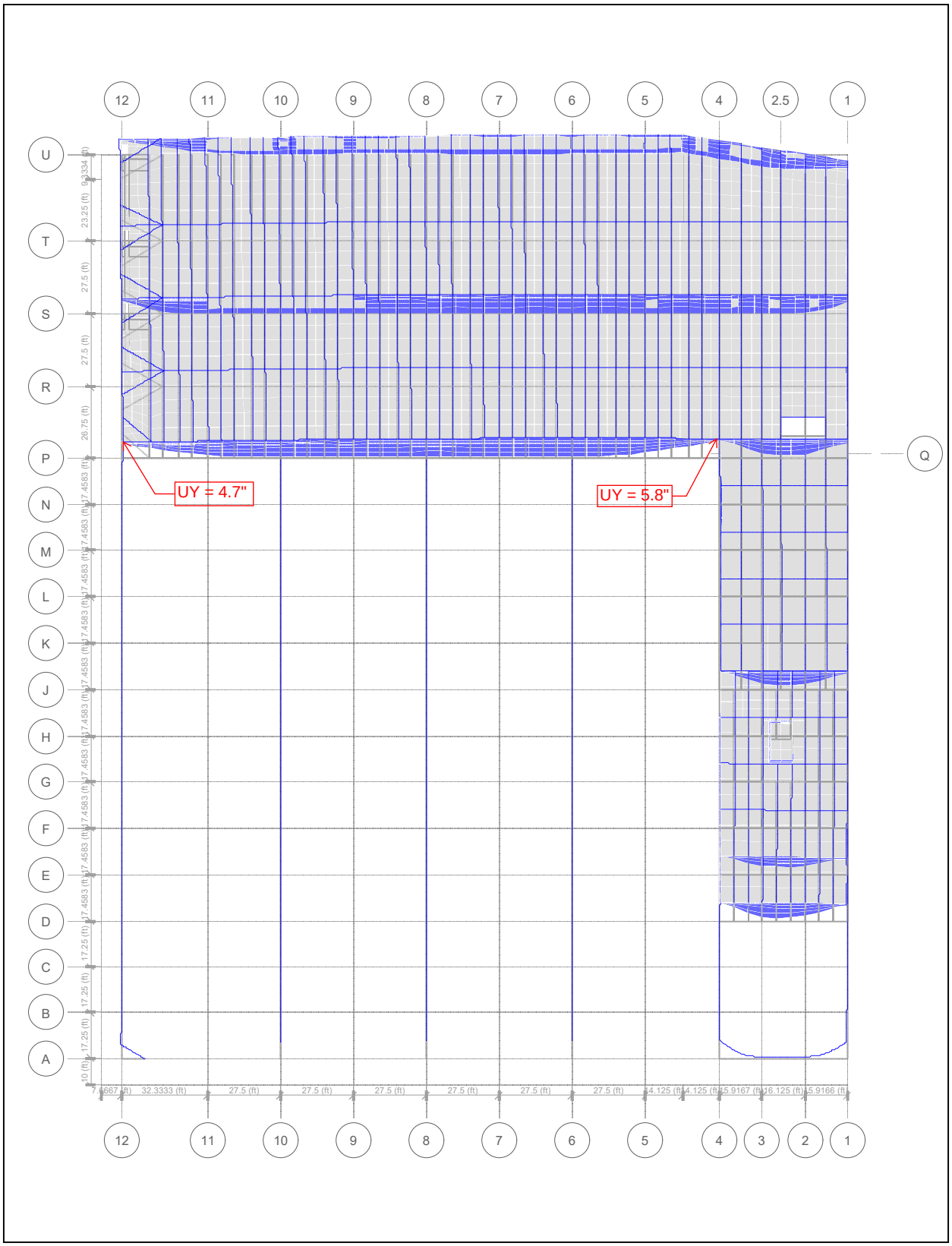
1532-7 Presidio Bus Yard LBS-8.EDB - Z = 285.34 (ft) - Displacements (Ey) [in]



1532-7 Presidio Bus Yard LLC.EDB - Z = 262.53 (ft) - Displacements (Esx) [in]



1532-7 Presidio Bus Yard.EDB - Z = 262.53 (ft) - Displacements (Ex) [in]



1532-7 Presidio Bus Yard LBS-3.EDB Plan View - Z = 262.53 (ft) - Displacements (Ey) [in]

1 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

1.1 Materials

Table 1.1 - Material Properties - Summary

Name	Type	E lb/in²	v	Unit Weight lb/ft³	Design Strengths
2000PSI	Concrete	3122000	0.2	145	Fc=3000 lb/in²
A15Gr33	Rebar	29000000	0.3	490	Fy=41250 lb/in², Fu=70000 lb/in²
A15Gr40	Rebar	29000000	0.3	490	Fy=50000 lb/in², Fu=70000 lb/in²
A36	Steel	29000000	0.3	489.02	Fy=36000 lb/in², Fu=58000 lb/in²
A416Gr270	Tendon	28500000	0	490	Fy=245100 lb/in², Fu=270000 lb/in²
CONC	Concrete	3600000	0.2	149.99	Fc=4000 lb/in²
Conc0	Concrete	3122000	0.2	0	Fc=3000 lb/in²
LW2.5KSI	Concrete	3149000	0.2	150	Fc=3750 lb/in²
M1500Psi	Masonry	1350000	0.2	135	
STEEL	Steel	29000000	0.3	489.02	Fy=50000 lb/in², Fu=65000 lb/in²

1.2 Frame Sections

Table 1.2 - Frame Sections - Summary

Name	Material	Shape
10WF21	A36	Steel I/Wide Flange
10WF25	A36	Steel I/Wide Flange
10WF49	A36	Steel I/Wide Flange
10x24B	2000PSI	Concrete Rectangular
10x27B	2000PSI	Concrete Rectangular
10x30B	2000PSI	Concrete Rectangular
10x36B	2000PSI	Concrete Rectangular
10X42B	2000PSI	Concrete Rectangular
12WF27	A36	Steel I/Wide Flange
12X12C	2000PSI	Concrete Rectangular
12x16B	2000PSI	Concrete Rectangular
12x30B	2000PSI	Concrete Rectangular
12x36B	2000PSI	Concrete Rectangular
13x36B	2000PSI	Concrete Rectangular
13x42B	2000PSI	Concrete Rectangular
14WF38	A36	Steel I/Wide Flange
15x15C	2000PSI	Concrete Rectangular
16WF36	STEEL	Steel I/Wide Flange
16x16C-3/4	2000PSI	Concrete Rectangular
16x16C-7/8	2000PSI	Concrete Rectangular
16x22C	2000PSI	Concrete Rectangular
16x24C	2000PSI	Concrete Rectangular
16x27C	2000PSI	Concrete Rectangular
16x28C	2000PSI	Concrete Rectangular
16x32C	2000PSI	Concrete Rectangular

Table 1.2 - Frame Sections - Summary (continued)

Name	Material	Shape
16X42B	2000PSI	Concrete Rectangular
18x18C-1	2000PSI	Concrete Rectangular
18X18C-3/4	2000PSI	Concrete Rectangular
18x18C-7/8	2000PSI	Concrete Rectangular
18x20C	2000PSI	Concrete Rectangular
18x22C	2000PSI	Concrete Rectangular
18x24C	2000PSI	Concrete Rectangular
18x27C1	2000PSI	Concrete Rectangular
18x30B	2000PSI	Concrete Rectangular
18x42B	2000PSI	Concrete Rectangular
18x48B	2000PSI	Concrete Rectangular
18x51B	2000PSI	Concrete Rectangular
18x55B	2000PSI	Concrete Rectangular
20x24-C2	2000PSI	Concrete Rectangular
20x24C	2000PSI	Concrete Rectangular
20x24C-1	2000PSI	Concrete Rectangular
20x33C	2000PSI	Concrete Rectangular
20x37C	2000PSI	Concrete Rectangular
21x19C	2000PSI	Concrete Rectangular
21x21C	2000PSI	Concrete Rectangular
24x16C	2000PSI	Concrete Rectangular
24x24C	2000PSI	Concrete Rectangular
24x30B	2000PSI	Concrete Rectangular
24x30C-10	2000PSI	Concrete Rectangular
24x32C	2000PSI	Concrete Rectangular
24x34C-12	2000PSI	Concrete Rectangular
24X34C-8	2000PSI	Concrete Rectangular
24x36C	2000PSI	Concrete Rectangular
24x36C2	2000PSI	Concrete Rectangular
24x38C	2000PSI	Concrete Rectangular
27x24C	2000PSI	Concrete Rectangular
28x18C	2000PSI	Concrete Rectangular
28x24C	2000PSI	Concrete Rectangular
34x16C	2000PSI	Concrete Rectangular
34x22C	2000PSI	Concrete Rectangular
43x16C	2000PSI	Concrete Rectangular
43x20C	2000PSI	Concrete Rectangular
7x16B	2000PSI	Concrete Rectangular
8WF17	STEEL	Steel I/Wide Flange
8WF31	A36	Steel I/Wide Flange
8x18B	2000PSI	Concrete Rectangular
8x21B	2000PSI	Concrete Rectangular
8x24B	2000PSI	Concrete Rectangular
9x22B	2000PSI	Concrete Rectangular
9x24B	2000PSI	Concrete Rectangular
9x27B	2000PSI	Concrete Rectangular

Table 1.2 - Frame Sections - Summary (continued)

Name	Material	Shape
F120x22	Conc0	Concrete Rectangular
F135x22	Conc0	Concrete Rectangular
F20X12	Conc0	Concrete Rectangular
F48x24	Conc0	Concrete Rectangular
F54x30	Conc0	Concrete Rectangular
F66x48	Conc0	Concrete Rectangular
L4X3X5/16	A36	Steel Angle

1.3 Shell Sections

Table 1.3 - Shell Sections - Summary

Name	Design Type	Element Type	Material	Total Thickness in	Deck Material	Deck Depth in
10W	Wall	Shell-Thin	2000PSI	10		
12W	Wall	Shell-Thin	2000PSI	12		
6W	Wall	Shell-Thin	2000PSI	6		
7LW	Wall	Shell-Thin	LW2.5KSI	7		
8CMU	Wall	Shell-Thin	M1500Psi	7.625		
8LW	Wall	Shell-Thin	LW2.5KSI	8		
8W	Wall	Shell-Thin	2000PSI	8		
DECK1	Deck	Membrane	CONC	6.5	STEEL	3
F12	Slab	Shell-Thin	CONC	12		
S3.5	Slab	Shell-Thin	2000PSI	3.5		
S4	Slab	Shell-Thin	2000PSI	4		
S4.5	Slab	Shell-Thin	2000PSI	4.5		
S5	Slab	Shell-Thin	2000PSI	5		

1.4 Reinforcement Sizes

Table 1.4 - Reinforcing Bar Sizes

Name	Diameter in	Area in²
#3	0.375	0.11
#9	1.128	1
3/4#	0.75	0.56
7/8#	0.875	0.76
1#	1	1

1.5 Spring Properties

Table 1.5 - Spring Properties - Point

Name	UX kip/in	UY kip/in	UZ kip/in	RX kip-in/rad	RY kip-in/rad	RZ kip-in/rad
3.5	20	20	40	0	0	0
4	26	26	52	0	0	0
4.5	33	33	66	0	0	0
4.75	37	37	73	0	0	0

Table 1.5 - Spring Properties - Point (continued)

Name	UX kip/in	UY kip/in	UZ kip/in	RX kip-in/rad	RY kip-in/rad	RZ kip-in/rad
5	41	41	81	0	0	0
5.5	49	49	98	0	0	0
5.75	54	54	107	0	0	0
6	58	58	117	0	0	0
6.25	63	63	127	0	0	0
7	79	79	159	0	0	0
7.5	51	51	182	0	0	0
7.75	97	97	195	0	0	0
8	104	104	207	0	0	0
8.25	110	110	221	0	0	0

Table 1.6 - Spring Properties - Line

Name	U1 kip/in/in	U2 kip/in/in	U3 kip/in/in	R1 kip/rad	Nonlinear 2 Option	Nonlinear 3 Option
LSpr1-8	0.23	0.45	0.23	0	None	None
LSpr10	1.35	2.7	1.35	0	None	None
LSpr11-3	1.52	3.04	1.52	0	None	None
LSpr2-6	0.34	0.68	0.34	0	None	None
LSpr4	0.54	1.08	0.54	0	None	None
LSpr4-6	0.61	1.22	0.61	0	None	None
LSpr5-6	0.74	1.49	0.74	0	None	None

Table 1.7 - Spring Properties - Area

Name	U1 kip/in/in²	U2 kip/in/in²	U3 kip/in/in²	Nonlinear 3 Option
22.5PCI	0.0113	0.0113	0.0225	Compression Only

2 Loads

This chapter provides loading information as applied to the model.

2.1 Load Patterns

Table 2.1 - Load Patterns

Name	Type	Self Weight Multiplier	Auto Load
DEAD	Dead	1	
L	Live	0	
SDL	Superimposed Dead	0	
Lr	Live	0	
Ap	Other	0	
Spx	Seismic	0	None
Spy	Seismic	0	None
Ex	Seismic	0	User Coefficient
Ey	Seismic	0	User Coefficient

2.2 Auto Seismic Loading

Table 2.2 - Auto Seismic - User Coefficients

Load Pattern	Type	Direction	Top Story	Bottom Story	C	K
Ex	Seismic	X	PH	BASE	1.666	1
Ey	Seismic	Y	PH	BASE	1.666	1

User Coefficient Auto Seismic Load Calculation

This calculation presents the automatically generated lateral seismic loads for load pattern Ex using the user input coefficients, as calculated by ETABS.

Direction and Eccentricity

Direction = X

Factors and Coefficients

User Coefficient Auto Seismic Load Calculation

This calculation presents the automatically generated lateral seismic loads for load pattern Ey using the user input coefficients, as calculated by ETABS.

Direction and Eccentricity

Direction = Y

Factors and Coefficients

2.3 Applied Loads

2.3.1 Line Loads

Table 2.3 - Frame Loads - Distributed

Story	Label	Unique Name	Design Type	Load Pattern	LoadType	Direction	Relative Distance Start	Relative Distance End	Absolute Distance Start in	Absolute Distance End in	Force at Start kip/ft	Force at End kip/ft
ROOF	C5	312	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C6	316	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C7	334	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C8	335	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C9	317	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C18	320	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C19	321	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C20	322	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C23	323	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C33	319	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C34	318	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2
ROOF	C25	324	Column	DEAD	Force	Gravity	0	1	0	211.08	0.2	0.2

2.3.2 Area Loads

Table 2.4 - Shell Loads - Uniform

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
PH	W366	1187	L	Gravity Proj	20
PH	W367	1188	L	Gravity Proj	20
PH	W368	1189	L	Gravity Proj	20
PH	W369	1190	L	Gravity Proj	20
PH	W370	1191	L	Gravity Proj	20
PH	W371	1192	L	Gravity Proj	20
PH	W372	1175	L	Gravity Proj	20
PH	W373	1176	L	Gravity Proj	20
PH	W374	1177	L	Gravity Proj	20
PH	W375	1178	L	Gravity Proj	20
PH	W376	1183	L	Gravity Proj	20
PH	W377	1185	L	Gravity Proj	20
PH	W362	1179	L	Gravity Proj	20
PH	W363	1182	L	Gravity Proj	20
PH	W364	1184	L	Gravity Proj	20
PH	W365	1186	L	Gravity Proj	20
PH	W393	1193	L	Gravity Proj	20
PH	W399	1495	L	Gravity Proj	20
2ND	W44	1367	L	Global-X	100
2ND	W166	1369	L	Global-X	100
2ND	W170	1441	L	Global-X	100
2ND	W178	1446	L	Global-X	100
2ND	W201	2034	L	Global-X	100
2ND	W223	2298	L	Global-X	100

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	W227	2300	L	Global-X	100
2ND	W440	2936	L	Global-X	100
2ND	W442	2938	L	Global-X	100
2ND	W626	2940	L	Global-X	100
MEZ	W36	2049	L	Global-X	100
MEZ	W37	2050	L	Global-X	100
MEZ	W38	2051	L	Global-X	100
MEZ	W39	2052	L	Global-X	100
MEZ	W55	2053	L	Global-X	100
MEZ	W56	2054	L	Global-X	100
MEZ	W58	2055	L	Global-X	100
MEZ	W59	2056	L	Global-X	100
MEZ	W260	2905	L	Global-X	100
MEZ	W272	2907	L	Global-X	100
MEZ	W302	2915	L	Global-X	100
MEZ	W308	2917	L	Global-X	100
MEZ	W310	2919	L	Global-X	100
MEZ	W344	2921	L	Global-X	100
MEZ	W437	2923	L	Global-X	100
MEZ	W1212	2924	L	Global-X	100
MEZ	W1214	2926	L	Global-X	100
MEZ	W1219	2928	L	Global-X	100
MEZ	W1233	2930	L	Global-X	100
MEZ	W1235	2932	L	Global-X	100
MEZ	W1243	2934	L	Global-X	100
MEZ	W1267	2943	L	Global-X	100
MEZ	W1315	2945	L	Global-X	100
MEZ	W1347	2947	L	Global-X	100
1ST	W445	2786	L	Global-X	100
1ST	W449	2788	L	Global-X	100
1ST	W451	2790	L	Global-X	100
1ST	W456	2846	L	Global-X	100
1ST	W458	2848	L	Global-X	100
1ST	W474	2850	L	Global-X	100
1ST	W531	2852	L	Global-X	100
1ST	W539	2854	L	Global-X	100
1ST	W544	2856	L	Global-X	100
1ST	W565	2858	L	Global-X	100
1ST	W1176	2888	L	Global-Y	100
1ST	W1191	2890	L	Global-Y	100
1ST	W1197	2892	L	Global-Y	100
1ST	W1218	2894	L	Global-Y	100
1ST	W1256	2896	L	Global-Y	100
1ST	W1258	2898	L	Global-Y	100
1ST	W1260	2900	L	Global-Y	100

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	W1262	2902	L	Global-Y	100
2ND	W44	1367	Ap	Global-X	170
2ND	W166	1369	Ap	Global-X	170
2ND	W170	1441	Ap	Global-X	170
2ND	W178	1446	Ap	Global-X	170
2ND	W201	2034	Ap	Global-X	170
2ND	W223	2298	Ap	Global-X	170
2ND	W227	2300	Ap	Global-X	170
2ND	W440	2936	Ap	Global-X	170
2ND	W442	2938	Ap	Global-X	170
2ND	W626	2940	Ap	Global-X	170
MEZ	W36	2049	Ap	Global-X	344
MEZ	W37	2050	Ap	Global-X	344
MEZ	W38	2051	Ap	Global-X	344
MEZ	W39	2052	Ap	Global-X	344
MEZ	W55	2053	Ap	Global-X	344
MEZ	W56	2054	Ap	Global-X	344
MEZ	W58	2055	Ap	Global-X	344
MEZ	W59	2056	Ap	Global-X	344
MEZ	W234	2904	Ap	Global-X	684
MEZ	W260	2905	Ap	Global-X	684
MEZ	W263	2906	Ap	Global-X	684
MEZ	W272	2907	Ap	Global-X	684
MEZ	W301	2908	Ap	Global-X	684
MEZ	W302	2915	Ap	Global-X	684
MEZ	W307	2916	Ap	Global-X	684
MEZ	W308	2917	Ap	Global-X	684
MEZ	W309	2918	Ap	Global-X	684
MEZ	W310	2919	Ap	Global-X	684
MEZ	W323	2920	Ap	Global-X	684
MEZ	W344	2921	Ap	Global-X	684
MEZ	W426	2922	Ap	Global-X	684
MEZ	W437	2923	Ap	Global-X	684
MEZ	W1212	2924	Ap	Global-X	172
MEZ	W1214	2926	Ap	Global-X	172
MEZ	W1219	2928	Ap	Global-X	172
MEZ	W1233	2930	Ap	Global-X	172
MEZ	W1235	2932	Ap	Global-X	172
MEZ	W1243	2934	Ap	Global-X	172
MEZ	W1251	2942	Ap	Global-X	684
MEZ	W1267	2943	Ap	Global-X	684
MEZ	W1268	2944	Ap	Global-X	684
MEZ	W1315	2945	Ap	Global-X	684
MEZ	W1346	2946	Ap	Global-X	684
MEZ	W1347	2947	Ap	Global-X	684

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	W354	1224	Ap	Global-X	2260
1ST	W355	1225	Ap	Global-X	2260
1ST	W356	1226	Ap	Global-X	2260
1ST	W357	1227	Ap	Global-X	2260
1ST	W358	1228	Ap	Global-X	2260
1ST	W359	1229	Ap	Global-X	2260
1ST	W360	1230	Ap	Global-X	2260
1ST	W361	1231	Ap	Global-X	1920
1ST	W400	1232	Ap	Global-X	1920
1ST	W401	1233	Ap	Global-X	1920
1ST	W402	1234	Ap	Global-X	1920
1ST	W403	1235	Ap	Global-X	1920
1ST	W404	1236	Ap	Global-X	1920
1ST	W405	1237	Ap	Global-X	1920
1ST	W793	1383	Ap	Global-X	1232
1ST	W794	1384	Ap	Global-X	1232
1ST	W853	1385	Ap	Global-X	1232
1ST	W960	1386	Ap	Global-X	1232
1ST	W1127	1391	Ap	Global-X	1232
1ST	W1225	331	Ap	Global-Y	1232
1ST	W1226	367	Ap	Global-Y	1232
1ST	W1227	388	Ap	Global-Y	1232
1ST	W1228	1238	Ap	Global-Y	1232
1ST	W1229	1239	Ap	Global-Y	1232
1ST	W1230	1244	Ap	Global-Y	1232
1ST	W1231	1245	Ap	Global-Y	1232
1ST	W1277	1655	Ap	Global-Y	1232
1ST	W435	2785	Ap	Global-X	823
1ST	W445	2786	Ap	Global-X	274
1ST	W447	2787	Ap	Global-X	823
1ST	W449	2788	Ap	Global-X	274
1ST	W450	2789	Ap	Global-X	823
1ST	W451	2790	Ap	Global-X	274
1ST	W454	2845	Ap	Global-X	823
1ST	W456	2846	Ap	Global-X	274
1ST	W457	2847	Ap	Global-X	823
1ST	W458	2848	Ap	Global-X	274
1ST	W468	2849	Ap	Global-X	823
1ST	W474	2850	Ap	Global-X	274
1ST	W520	2851	Ap	Global-X	823
1ST	W531	2852	Ap	Global-X	274
1ST	W533	2853	Ap	Global-X	823
1ST	W539	2854	Ap	Global-X	274
1ST	W542	2855	Ap	Global-X	823
1ST	W544	2856	Ap	Global-X	274

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	W560	2857	Ap	Global-X	823
1ST	W565	2858	Ap	Global-X	274
1ST	W568	2859	Ap	Global-X	1851
1ST	W574	2860	Ap	Global-X	1303
1ST	W578	2861	Ap	Global-X	1851
1ST	W579	2862	Ap	Global-X	1303
1ST	W581	2863	Ap	Global-X	1851
1ST	W583	2864	Ap	Global-X	1303
1ST	W584	2865	Ap	Global-X	1851
1ST	W586	2866	Ap	Global-X	1303
1ST	W587	2867	Ap	Global-X	1851
1ST	W607	2868	Ap	Global-X	1303
1ST	W612	2869	Ap	Global-X	1851
1ST	W615	2870	Ap	Global-X	1303
1ST	W783	2871	Ap	Global-X	1851
1ST	W784	2872	Ap	Global-X	1303
1ST	W785	2873	Ap	Global-X	1511
1ST	W1124	2874	Ap	Global-X	962
1ST	W1129	2875	Ap	Global-X	1511
1ST	W1137	2876	Ap	Global-X	962
1ST	W1164	2877	Ap	Global-X	1511
1ST	W1165	2878	Ap	Global-X	962
1ST	W1166	2879	Ap	Global-X	1511
1ST	W1167	2880	Ap	Global-X	962
1ST	W1168	2881	Ap	Global-X	1511
1ST	W1169	2882	Ap	Global-X	962
1ST	W1170	2883	Ap	Global-X	1511
1ST	W1171	2884	Ap	Global-X	962
1ST	W1173	2885	Ap	Global-X	1511
1ST	W1174	2886	Ap	Global-X	962
1ST	W1175	2887	Ap	Global-Y	823
1ST	W1176	2888	Ap	Global-Y	274
1ST	W1179	2889	Ap	Global-Y	823
1ST	W1191	2890	Ap	Global-Y	274
1ST	W1193	2891	Ap	Global-Y	823
1ST	W1197	2892	Ap	Global-Y	274
1ST	W1204	2893	Ap	Global-Y	823
1ST	W1218	2894	Ap	Global-Y	274
1ST	W1221	2895	Ap	Global-Y	823
1ST	W1256	2896	Ap	Global-Y	274
1ST	W1257	2897	Ap	Global-Y	823
1ST	W1258	2898	Ap	Global-Y	274
1ST	W1259	2899	Ap	Global-Y	823
1ST	W1260	2900	Ap	Global-Y	274
1ST	W1261	2901	Ap	Global-Y	823

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	W1262	2902	Ap	Global-Y	274
1ST	W1263	2909	Ap	Global-Y	823
1ST	W1264	2910	Ap	Global-Y	274
1ST	W1265	2911	Ap	Global-Y	823
1ST	W1266	2912	Ap	Global-Y	274
1ST	W1278	2913	Ap	Global-Y	823
1ST	W1342	2914	Ap	Global-Y	274
2ND	W44	1367	Spx	Global-X	1198
2ND	W166	1369	Spx	Global-X	1198
2ND	W170	1441	Spx	Global-X	1198
2ND	W178	1446	Spx	Global-X	1198
2ND	W201	2034	Spx	Global-X	1198
2ND	W223	2298	Spx	Global-X	1198
2ND	W227	2300	Spx	Global-X	1198
2ND	W440	2936	Spx	Global-X	1198
2ND	W442	2938	Spx	Global-X	1198
2ND	W626	2940	Spx	Global-X	1198
MEZ	W36	2049	Spx	Global-X	1028
MEZ	W37	2050	Spx	Global-X	1028
MEZ	W38	2051	Spx	Global-X	1028
MEZ	W39	2052	Spx	Global-X	1028
MEZ	W55	2053	Spx	Global-X	344
MEZ	W56	2054	Spx	Global-X	344
MEZ	W58	2055	Spx	Global-X	344
MEZ	W59	2056	Spx	Global-X	344
MEZ	W234	2904	Spx	Global-X	1198
MEZ	W260	2905	Spx	Global-X	1198
MEZ	W263	2906	Spx	Global-X	1198
MEZ	W272	2907	Spx	Global-X	1198
MEZ	W301	2908	Spx	Global-X	1198
MEZ	W302	2915	Spx	Global-X	1198
MEZ	W307	2916	Spx	Global-X	1198
MEZ	W308	2917	Spx	Global-X	1198
MEZ	W309	2918	Spx	Global-X	1198
MEZ	W310	2919	Spx	Global-X	1198
MEZ	W323	2920	Spx	Global-X	1198
MEZ	W344	2921	Spx	Global-X	1198
MEZ	W426	2922	Spx	Global-X	1198
MEZ	W437	2923	Spx	Global-X	1198
MEZ	W1212	2924	Spx	Global-X	172
MEZ	W1214	2926	Spx	Global-X	172
MEZ	W1219	2928	Spx	Global-X	172
MEZ	W1233	2930	Spx	Global-X	172
MEZ	W1235	2932	Spx	Global-X	172
MEZ	W1243	2934	Spx	Global-X	172

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
MEZ	W1251	2942	Spx	Global-X	1198
MEZ	W1267	2943	Spx	Global-X	1198
MEZ	W1268	2944	Spx	Global-X	1198
MEZ	W1315	2945	Spx	Global-X	1198
MEZ	W1346	2946	Spx	Global-X	1198
MEZ	W1347	2947	Spx	Global-X	1198
1ST	W354	1224	Spx	Global-X	1198
1ST	W355	1225	Spx	Global-X	1198
1ST	W356	1226	Spx	Global-X	1198
1ST	W357	1227	Spx	Global-X	1198
1ST	W358	1228	Spx	Global-X	1198
1ST	W359	1229	Spx	Global-X	1198
1ST	W360	1230	Spx	Global-X	1198
1ST	W361	1231	Spx	Global-X	1028
1ST	W400	1232	Spx	Global-X	1028
1ST	W401	1233	Spx	Global-X	1028
1ST	W402	1234	Spx	Global-X	1028
1ST	W403	1235	Spx	Global-X	1028
1ST	W404	1236	Spx	Global-X	1028
1ST	W405	1237	Spx	Global-X	1028
1ST	W793	1383	Spx	Global-X	683
1ST	W794	1384	Spx	Global-X	683
1ST	W853	1385	Spx	Global-X	683
1ST	W960	1386	Spx	Global-X	683
1ST	W1127	1391	Spx	Global-X	683
1ST	W435	2785	Spx	Global-X	548
1ST	W445	2786	Spx	Global-X	548
1ST	W447	2787	Spx	Global-X	548
1ST	W449	2788	Spx	Global-X	548
1ST	W450	2789	Spx	Global-X	548
1ST	W451	2790	Spx	Global-X	548
1ST	W454	2845	Spx	Global-X	548
1ST	W456	2846	Spx	Global-X	548
1ST	W457	2847	Spx	Global-X	548
1ST	W458	2848	Spx	Global-X	548
1ST	W468	2849	Spx	Global-X	683
1ST	W474	2850	Spx	Global-X	683
1ST	W520	2851	Spx	Global-X	683
1ST	W531	2852	Spx	Global-X	683
1ST	W533	2853	Spx	Global-X	683
1ST	W539	2854	Spx	Global-X	683
1ST	W542	2855	Spx	Global-X	683
1ST	W544	2856	Spx	Global-X	683
1ST	W560	2857	Spx	Global-X	683
1ST	W565	2858	Spx	Global-X	683

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	W568	2859	Spx	Global-X	1198
1ST	W574	2860	Spx	Global-X	1198
1ST	W578	2861	Spx	Global-X	1198
1ST	W579	2862	Spx	Global-X	1198
1ST	W581	2863	Spx	Global-X	1198
1ST	W583	2864	Spx	Global-X	1198
1ST	W584	2865	Spx	Global-X	1198
1ST	W586	2866	Spx	Global-X	1198
1ST	W587	2867	Spx	Global-X	1198
1ST	W607	2868	Spx	Global-X	1198
1ST	W612	2869	Spx	Global-X	1198
1ST	W615	2870	Spx	Global-X	1198
1ST	W783	2871	Spx	Global-X	1198
1ST	W784	2872	Spx	Global-X	1198
1ST	W785	2873	Spx	Global-X	1028
1ST	W1124	2874	Spx	Global-X	1028
1ST	W1129	2875	Spx	Global-X	1028
1ST	W1137	2876	Spx	Global-X	1028
1ST	W1164	2877	Spx	Global-X	1028
1ST	W1165	2878	Spx	Global-X	1028
1ST	W1166	2879	Spx	Global-X	1028
1ST	W1167	2880	Spx	Global-X	1028
1ST	W1168	2881	Spx	Global-X	1028
1ST	W1169	2882	Spx	Global-X	1028
1ST	W1170	2883	Spx	Global-X	1028
1ST	W1171	2884	Spx	Global-X	1028
1ST	W1173	2885	Spx	Global-X	1028
1ST	W1174	2886	Spx	Global-X	1028
1ST	W1225	331	Spy	Global-Y	683
1ST	W1226	367	Spy	Global-Y	683
1ST	W1227	388	Spy	Global-Y	683
1ST	W1228	1238	Spy	Global-Y	683
1ST	W1229	1239	Spy	Global-Y	683
1ST	W1230	1244	Spy	Global-Y	683
1ST	W1231	1245	Spy	Global-Y	683
1ST	W1277	1655	Spy	Global-Y	683
1ST	W1175	2887	Spy	Global-Y	683
1ST	W1176	2888	Spy	Global-Y	683
1ST	W1179	2889	Spy	Global-Y	683
1ST	W1191	2890	Spy	Global-Y	683
1ST	W1193	2891	Spy	Global-Y	683
1ST	W1197	2892	Spy	Global-Y	683
1ST	W1204	2893	Spy	Global-Y	683
1ST	W1218	2894	Spy	Global-Y	683
1ST	W1221	2895	Spy	Global-Y	683

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	W1256	2896	Spy	Global-Y	683
1ST	W1257	2897	Spy	Global-Y	683
1ST	W1258	2898	Spy	Global-Y	683
1ST	W1259	2899	Spy	Global-Y	683
1ST	W1260	2900	Spy	Global-Y	683
1ST	W1261	2901	Spy	Global-Y	683
1ST	W1262	2902	Spy	Global-Y	683
1ST	W1263	2909	Spy	Global-Y	548
1ST	W1264	2910	Spy	Global-Y	548
1ST	W1265	2911	Spy	Global-Y	548
1ST	W1266	2912	Spy	Global-Y	548
1ST	W1278	2913	Spy	Global-Y	548
1ST	W1342	2914	Spy	Global-Y	548
PH	F890	1423	L	Gravity	50
2ND	F3	674	L	Gravity	50
2ND	F4	675	L	Gravity	50
2ND	F5	676	L	Gravity	50
2ND	F6	677	L	Gravity	50
2ND	F7	678	L	Gravity	50
2ND	F8	679	L	Gravity	50
2ND	F9	680	L	Gravity	50
2ND	F10	681	L	Gravity	50
2ND	F11	682	L	Gravity	50
2ND	F12	683	L	Gravity	50
2ND	F13	684	L	Gravity	50
2ND	F14	685	L	Gravity	50
2ND	F15	686	L	Gravity	50
2ND	F16	687	L	Gravity	50
2ND	F41	712	L	Gravity	50
2ND	F42	713	L	Gravity	50
2ND	F49	720	L	Gravity	50
2ND	F50	721	L	Gravity	50
2ND	F51	722	L	Gravity	50
2ND	F52	723	L	Gravity	50
2ND	F53	724	L	Gravity	50
2ND	F54	725	L	Gravity	50
2ND	F55	726	L	Gravity	50
2ND	F56	727	L	Gravity	50
2ND	F57	728	L	Gravity	50
2ND	F58	729	L	Gravity	50
2ND	F59	730	L	Gravity	50
2ND	F60	731	L	Gravity	50
2ND	F61	732	L	Gravity	50
2ND	F62	733	L	Gravity	50
2ND	F63	734	L	Gravity	50

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F64	735	L	Gravity	50
2ND	F65	736	L	Gravity	50
2ND	F67	738	L	Gravity	50
2ND	F69	740	L	Gravity	50
2ND	F70	741	L	Gravity	50
2ND	F71	742	L	Gravity	50
2ND	F72	743	L	Gravity	50
2ND	F76	745	L	Gravity	50
2ND	F85	749	L	Gravity	50
2ND	F151	820	L	Gravity	50
2ND	F152	821	L	Gravity	50
2ND	F153	822	L	Gravity	50
2ND	F154	823	L	Gravity	50
2ND	F161	824	L	Gravity	50
2ND	F162	825	L	Gravity	50
2ND	F163	826	L	Gravity	50
2ND	F164	827	L	Gravity	50
2ND	F168	829	L	Gravity	50
2ND	F177	833	L	Gravity	50
2ND	F249	904	L	Gravity	50
2ND	F251	906	L	Gravity	50
2ND	F253	908	L	Gravity	50
2ND	F255	910	L	Gravity	50
2ND	F260	913	L	Gravity	50
2ND	F341	988	L	Gravity	50
2ND	F342	989	L	Gravity	50
2ND	F343	990	L	Gravity	50
2ND	F344	991	L	Gravity	50
2ND	F348	993	L	Gravity	50
2ND	F74	1028	L	Gravity	50
2ND	F75	1029	L	Gravity	50
2ND	F82	1032	L	Gravity	50
2ND	F86	1035	L	Gravity	50
2ND	F173	1039	L	Gravity	50
2ND	F175	1041	L	Gravity	50
2ND	F176	1042	L	Gravity	50
2ND	F178	1043	L	Gravity	50
2ND	F258	1044	L	Gravity	50
2ND	F259	1045	L	Gravity	50
2ND	F397	1030	L	Gravity	50
2ND	F398	1031	L	Gravity	50
2ND	F399	1033	L	Gravity	50
2ND	F400	1034	L	Gravity	50
2ND	F401	1037	L	Gravity	50
2ND	F403	1040	L	Gravity	50

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F404	1076	L	Gravity	50
2ND	F405	905	L	Gravity	50
2ND	F406	907	L	Gravity	50
2ND	F407	909	L	Gravity	50
2ND	F408	911	L	Gravity	50
2ND	F410	917	L	Gravity	50
2ND	F441	1036	L	Gravity	50
2ND	F445	1038	L	Gravity	50
2ND	F113	1081	L	Gravity	50
2ND	F229	1082	L	Gravity	50
2ND	F306	1083	L	Gravity	50
2ND	F307	1084	L	Gravity	50
2ND	F1064	618	L	Gravity	50
2ND	F1065	619	L	Gravity	50
2ND	F1066	620	L	Gravity	50
2ND	F1067	621	L	Gravity	50
2ND	F1070	1180	L	Gravity	50
2ND	F1071	1181	L	Gravity	50
2ND	F1072	644	L	Gravity	50
2ND	F1073	641	L	Gravity	50
2ND	F1074	642	L	Gravity	50
2ND	F1075	643	L	Gravity	50
2ND	F1091	1347	L	Gravity	50
2ND	F1092	1348	L	Gravity	50
2ND	F1093	1349	L	Gravity	50
2ND	F1094	1350	L	Gravity	50
2ND	F1096	1351	L	Gravity	50
2ND	F1097	1352	L	Gravity	50
2ND	F1099	1353	L	Gravity	50
2ND	F1100	1354	L	Gravity	50
2ND	F1102	1355	L	Gravity	50
2ND	F1103	1356	L	Gravity	50
2ND	F1104	1357	L	Gravity	50
2ND	F1105	1358	L	Gravity	50
2ND	F1294	716	L	Gravity	50
2ND	F1295	717	L	Gravity	50
2ND	F47	714	L	Gravity	50
2ND	F48	715	L	Gravity	50
2ND	F66	718	L	Gravity	50
2ND	F68	719	L	Gravity	50
2ND	F1296	737	L	Gravity	50
2ND	F1297	739	L	Gravity	50
MEZ	F3	637	L	Gravity	50
MEZ	F4	639	L	Gravity	50
MEZ	F5	638	L	Gravity	50

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
MEZ	F6	640	L	Gravity	50
MEZ	F7	636	L	Gravity	50
MEZ	F8	631	L	Gravity	50
MEZ	F9	628	L	Gravity	50
MEZ	F10	625	L	Gravity	50
MEZ	F12	627	L	Gravity	50
MEZ	F13	623	L	Gravity	50
MEZ	F14	626	L	Gravity	50
MEZ	F15	629	L	Gravity	50
MEZ	F16	632	L	Gravity	50
MEZ	F21	506	L	Gravity	125
MEZ	F22	507	L	Gravity	125
MEZ	F23	509	L	Gravity	125
MEZ	F24	510	L	Gravity	125
MEZ	F25	508	L	Gravity	125
MEZ	F26	513	L	Gravity	125
MEZ	F27	514	L	Gravity	50
MEZ	F28	515	L	Gravity	50
MEZ	F29	518	L	Gravity	125
MEZ	F30	519	L	Gravity	125
MEZ	F31	520	L	Gravity	50
MEZ	F32	521	L	Gravity	50
MEZ	F33	524	L	Gravity	125
MEZ	F34	525	L	Gravity	125
MEZ	F35	527	L	Gravity	125
MEZ	F36	528	L	Gravity	125
MEZ	F39	531	L	Gravity	125
MEZ	F40	532	L	Gravity	125
MEZ	F869	495	L	Gravity	125
MEZ	F870	503	L	Gravity	125
MEZ	F871	511	L	Gravity	125
MEZ	F872	512	L	Gravity	125
MEZ	F873	516	L	Gravity	50
MEZ	F874	517	L	Gravity	125
MEZ	F875	522	L	Gravity	50
MEZ	F876	523	L	Gravity	125
MEZ	F877	529	L	Gravity	125
MEZ	F878	530	L	Gravity	125
MEZ	F17	693	L	Gravity	50
MEZ	F18	694	L	Gravity	50
MEZ	F19	695	L	Gravity	50
MEZ	F20	696	L	Gravity	50
MEZ	F37	697	L	Gravity	50
MEZ	F38	698	L	Gravity	50
MEZ	F879	699	L	Gravity	50

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
MEZ	F880	700	L	Gravity	50
MEZ	F881	701	L	Gravity	50
MEZ	F882	702	L	Gravity	50
MEZ	F883	703	L	Gravity	50
MEZ	F884	704	L	Gravity	50
MEZ	F893	708	L	Gravity	50
MEZ	F896	709	L	Gravity	50
MEZ	F899	710	L	Gravity	50
MEZ	F902	711	L	Gravity	50
MEZ	F905	1085	L	Gravity	50
MEZ	F908	1086	L	Gravity	50
MEZ	F911	1087	L	Gravity	50
MEZ	F913	1088	L	Gravity	50
MEZ	F914	1089	L	Gravity	50
MEZ	F915	1090	L	Gravity	50
MEZ	F916	1091	L	Gravity	50
MEZ	F917	1092	L	Gravity	50
MEZ	F918	1093	L	Gravity	50
MEZ	F919	1094	L	Gravity	50
MEZ	F920	1095	L	Gravity	50
MEZ	F921	1096	L	Gravity	50
MEZ	F922	1097	L	Gravity	50
MEZ	F923	1098	L	Gravity	50
MEZ	F924	1099	L	Gravity	50
MEZ	F925	1100	L	Gravity	50
MEZ	F926	1101	L	Gravity	50
MEZ	F927	1102	L	Gravity	50
MEZ	F928	1103	L	Gravity	50
MEZ	F929	1104	L	Gravity	50
MEZ	F930	1105	L	Gravity	50
MEZ	F931	1106	L	Gravity	50
MEZ	F932	1107	L	Gravity	50
MEZ	F933	1108	L	Gravity	50
MEZ	F934	1109	L	Gravity	50
MEZ	F939	1110	L	Gravity	50
MEZ	F1070	633	L	Gravity	50
MEZ	F1071	634	L	Gravity	50
MEZ	F1072	635	L	Gravity	50
MEZ	F1091	1400	L	Gravity	50
MEZ	F1092	1401	L	Gravity	50
MEZ	F1093	1402	L	Gravity	50
MEZ	F1094	1403	L	Gravity	50
MEZ	F1096	1404	L	Gravity	50
MEZ	F1097	1405	L	Gravity	50
MEZ	F1099	1406	L	Gravity	50

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
MEZ	F1100	1407	L	Gravity	50
MEZ	F1102	1408	L	Gravity	50
MEZ	F1103	1409	L	Gravity	50
MEZ	F1104	1410	L	Gravity	50
MEZ	F1105	1411	L	Gravity	50
MEZ	F984	624	L	Gravity	50
MEZ	F1055	630	L	Gravity	50
MEZ	F1082	472	L	Gravity	125
MEZ	F1083	490	L	Gravity	125
1ST	F21	537	L	Gravity	50
1ST	F22	538	L	Gravity	50
1ST	F23	539	L	Gravity	50
1ST	F24	540	L	Gravity	50
1ST	F25	543	L	Gravity	50
1ST	F26	544	L	Gravity	50
1ST	F27	545	L	Gravity	50
1ST	F28	546	L	Gravity	50
1ST	F29	549	L	Gravity	50
1ST	F30	550	L	Gravity	50
1ST	F31	551	L	Gravity	50
1ST	F32	552	L	Gravity	50
1ST	F33	555	L	Gravity	50
1ST	F34	556	L	Gravity	50
1ST	F35	557	L	Gravity	50
1ST	F36	558	L	Gravity	50
1ST	F39	561	L	Gravity	50
1ST	F40	562	L	Gravity	50
1ST	F83	2066	L	Gravity	150
1ST	F237	2067	L	Gravity	150
1ST	F264	2068	L	Gravity	150
1ST	F311	2069	L	Gravity	150
1ST	F313	2070	L	Gravity	150
1ST	F314	2071	L	Gravity	50
1ST	F315	2072	L	Gravity	50
1ST	F319	2073	L	Gravity	50
1ST	F322	2074	L	Gravity	50
1ST	F323	2075	L	Gravity	50
1ST	F321	2077	L	Gravity	150
1ST	F329	2078	L	Gravity	150
1ST	F331	2079	L	Gravity	150
1ST	F335	2080	L	Gravity	150
1ST	F340	2081	L	Gravity	150
1ST	F360	2082	L	Gravity	150
1ST	F364	2083	L	Gravity	150
1ST	F372	2085	L	Gravity	150

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F376	2086	L	Gravity	150
1ST	F330	2087	L	Gravity	150
1ST	F389	2088	L	Gravity	150
1ST	F391	2089	L	Gravity	150
1ST	F392	2090	L	Gravity	150
1ST	F393	2091	L	Gravity	150
1ST	F395	2092	L	Gravity	150
1ST	F396	2093	L	Gravity	150
1ST	F438	2095	L	Gravity	150
1ST	F440	2096	L	Gravity	150
1ST	F442	2097	L	Gravity	150
1ST	F444	2098	L	Gravity	150
1ST	F446	2099	L	Gravity	150
1ST	F448	2100	L	Gravity	150
1ST	F449	2101	L	Gravity	150
1ST	F450	2102	L	Gravity	150
1ST	F451	2103	L	Gravity	150
1ST	F452	2104	L	Gravity	150
1ST	F453	2105	L	Gravity	150
1ST	F454	2106	L	Gravity	150
1ST	F455	2107	L	Gravity	150
1ST	F456	2108	L	Gravity	150
1ST	F458	2110	L	Gravity	150
1ST	F459	2111	L	Gravity	150
1ST	F461	2112	L	Gravity	150
1ST	F462	2113	L	Gravity	150
1ST	F463	2114	L	Gravity	150
1ST	F464	2115	L	Gravity	150
1ST	F465	2116	L	Gravity	150
1ST	F466	2117	L	Gravity	150
1ST	F467	2118	L	Gravity	150
1ST	F468	2119	L	Gravity	150
1ST	F469	2120	L	Gravity	150
1ST	F472	2123	L	Gravity	150
1ST	F474	2124	L	Gravity	150
1ST	F475	2125	L	Gravity	150
1ST	F477	2127	L	Gravity	150
1ST	F478	2128	L	Gravity	150
1ST	F460	2129	L	Gravity	150
1ST	F473	2130	L	Gravity	150
1ST	F479	2131	L	Gravity	150
1ST	F480	2132	L	Gravity	150
1ST	F481	2133	L	Gravity	150
1ST	F482	2134	L	Gravity	150
1ST	F483	2135	L	Gravity	150

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F484	2136	L	Gravity	150
1ST	F485	2137	L	Gravity	150
1ST	F486	2138	L	Gravity	150
1ST	F497	2139	L	Gravity	150
1ST	F498	2140	L	Gravity	150
1ST	F499	2141	L	Gravity	150
1ST	F500	2142	L	Gravity	150
1ST	F501	2143	L	Gravity	150
1ST	F502	2144	L	Gravity	150
1ST	F503	2145	L	Gravity	150
1ST	F505	2147	L	Gravity	150
1ST	F506	2148	L	Gravity	150
1ST	F507	2149	L	Gravity	150
1ST	F508	2150	L	Gravity	150
1ST	F509	2151	L	Gravity	150
1ST	F510	2152	L	Gravity	150
1ST	F511	2153	L	Gravity	150
1ST	F512	2154	L	Gravity	150
1ST	F513	2155	L	Gravity	150
1ST	F515	2157	L	Gravity	150
1ST	F516	2158	L	Gravity	150
1ST	F523	2159	L	Gravity	50
1ST	F524	2160	L	Gravity	50
1ST	F525	2161	L	Gravity	50
1ST	F526	2164	L	Gravity	50
1ST	F527	2162	L	Gravity	50
1ST	F528	2163	L	Gravity	50
1ST	F487	2165	L	Gravity	150
1ST	F488	2166	L	Gravity	150
1ST	F489	2167	L	Gravity	150
1ST	F490	2168	L	Gravity	150
1ST	F491	2169	L	Gravity	150
1ST	F492	2170	L	Gravity	150
1ST	F493	2171	L	Gravity	150
1ST	F494	2172	L	Gravity	150
1ST	F495	2173	L	Gravity	150
1ST	F496	2174	L	Gravity	150
1ST	F517	2175	L	Gravity	150
1ST	F518	2176	L	Gravity	150
1ST	F519	2177	L	Gravity	150
1ST	F520	2178	L	Gravity	150
1ST	F521	2179	L	Gravity	150
1ST	F522	2180	L	Gravity	150
1ST	F529	2181	L	Gravity	150
1ST	F530	2182	L	Gravity	150

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F531	2183	L	Gravity	150
1ST	F532	2184	L	Gravity	150
1ST	F533	2185	L	Gravity	150
1ST	F534	2186	L	Gravity	150
1ST	F535	2187	L	Gravity	150
1ST	F536	2188	L	Gravity	150
1ST	F537	2189	L	Gravity	150
1ST	F538	2190	L	Gravity	150
1ST	F539	2191	L	Gravity	150
1ST	F540	2192	L	Gravity	150
1ST	F541	2193	L	Gravity	150
1ST	F542	2194	L	Gravity	150
1ST	F543	2195	L	Gravity	150
1ST	F544	2196	L	Gravity	150
1ST	F545	2197	L	Gravity	150
1ST	F546	2198	L	Gravity	150
1ST	F548	2200	L	Gravity	150
1ST	F549	2201	L	Gravity	150
1ST	F550	2202	L	Gravity	150
1ST	F551	2203	L	Gravity	150
1ST	F552	2204	L	Gravity	150
1ST	F553	2205	L	Gravity	150
1ST	F554	2206	L	Gravity	150
1ST	F555	2207	L	Gravity	150
1ST	F556	2208	L	Gravity	150
1ST	F558	2210	L	Gravity	150
1ST	F559	2211	L	Gravity	150
1ST	F560	2212	L	Gravity	50
1ST	F561	2213	L	Gravity	50
1ST	F562	2214	L	Gravity	50
1ST	F563	2215	L	Gravity	50
1ST	F564	2216	L	Gravity	50
1ST	F565	2217	L	Gravity	50
1ST	F575	2227	L	Gravity	150
1ST	F576	2228	L	Gravity	150
1ST	F577	2229	L	Gravity	150
1ST	F578	2230	L	Gravity	150
1ST	F579	2231	L	Gravity	150
1ST	F613	2218	L	Gravity	150
1ST	F614	2219	L	Gravity	150
1ST	F615	2220	L	Gravity	150
1ST	F616	2221	L	Gravity	150
1ST	F617	2222	L	Gravity	150
1ST	F618	2223	L	Gravity	150
1ST	F619	2224	L	Gravity	150

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F620	2225	L	Gravity	150
1ST	F621	2226	L	Gravity	150
1ST	F622	2232	L	Gravity	150
1ST	F623	2233	L	Gravity	150
1ST	F624	2234	L	Gravity	150
1ST	F625	2235	L	Gravity	150
1ST	F626	2236	L	Gravity	150
1ST	F627	2237	L	Gravity	150
1ST	F628	2238	L	Gravity	150
1ST	F629	2239	L	Gravity	150
1ST	F630	2240	L	Gravity	150
1ST	F631	2241	L	Gravity	150
1ST	F632	2242	L	Gravity	150
1ST	F633	2243	L	Gravity	150
1ST	F634	2244	L	Gravity	150
1ST	F635	2245	L	Gravity	150
1ST	F636	2246	L	Gravity	150
1ST	F637	2247	L	Gravity	150
1ST	F638	2248	L	Gravity	150
1ST	F639	2249	L	Gravity	150
1ST	F640	2250	L	Gravity	150
1ST	F641	2251	L	Gravity	150
1ST	F643	2253	L	Gravity	150
1ST	F644	2254	L	Gravity	150
1ST	F645	2255	L	Gravity	150
1ST	F646	2256	L	Gravity	150
1ST	F647	2257	L	Gravity	150
1ST	F648	2258	L	Gravity	150
1ST	F649	2259	L	Gravity	150
1ST	F650	2260	L	Gravity	150
1ST	F651	2261	L	Gravity	150
1ST	F566	2264	L	Gravity	150
1ST	F574	2262	L	Gravity	150
1ST	F580	2263	L	Gravity	150
1ST	F582	2275	L	Gravity	50
1ST	F583	2276	L	Gravity	50
1ST	F584	2277	L	Gravity	50
1ST	F585	2278	L	Gravity	50
1ST	F586	2279	L	Gravity	50
1ST	F587	2280	L	Gravity	50
1ST	F869	535	L	Gravity	50
1ST	F870	536	L	Gravity	50
1ST	F871	541	L	Gravity	50
1ST	F872	542	L	Gravity	50
1ST	F873	547	L	Gravity	50

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F874	548	L	Gravity	50
1ST	F875	553	L	Gravity	50
1ST	F876	554	L	Gravity	50
1ST	F877	559	L	Gravity	50
1ST	F878	560	L	Gravity	50
1ST	F17	573	L	Gravity	50
1ST	F18	574	L	Gravity	50
1ST	F19	575	L	Gravity	50
1ST	F20	576	L	Gravity	50
1ST	F37	577	L	Gravity	50
1ST	F38	578	L	Gravity	50
1ST	F879	579	L	Gravity	50
1ST	F880	580	L	Gravity	50
1ST	F881	581	L	Gravity	50
1ST	F882	582	L	Gravity	50
1ST	F883	583	L	Gravity	50
1ST	F884	584	L	Gravity	50
1ST	F893	647	L	Gravity	50
1ST	F896	648	L	Gravity	50
1ST	F899	649	L	Gravity	50
1ST	F902	650	L	Gravity	50
1ST	F905	651	L	Gravity	50
1ST	F908	652	L	Gravity	50
1ST	F911	653	L	Gravity	50
1ST	F913	654	L	Gravity	50
1ST	F914	655	L	Gravity	50
1ST	F915	656	L	Gravity	50
1ST	F916	657	L	Gravity	50
1ST	F917	658	L	Gravity	50
1ST	F918	659	L	Gravity	50
1ST	F919	660	L	Gravity	50
1ST	F920	661	L	Gravity	50
1ST	F921	662	L	Gravity	50
1ST	F922	663	L	Gravity	50
1ST	F923	664	L	Gravity	50
1ST	F924	665	L	Gravity	50
1ST	F925	666	L	Gravity	50
1ST	F926	667	L	Gravity	50
1ST	F927	668	L	Gravity	50
1ST	F928	669	L	Gravity	50
1ST	F929	670	L	Gravity	50
1ST	F930	671	L	Gravity	50
1ST	F931	688	L	Gravity	50
1ST	F932	689	L	Gravity	50
1ST	F933	690	L	Gravity	50

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F934	691	L	Gravity	50
1ST	F939	692	L	Gravity	50
1ST	F1091	1202	L	Gravity	50
1ST	F1092	1203	L	Gravity	50
1ST	F1093	1204	L	Gravity	50
1ST	F1094	1205	L	Gravity	50
1ST	F1096	1207	L	Gravity	50
1ST	F1097	1208	L	Gravity	50
1ST	F1099	1210	L	Gravity	50
1ST	F1100	1215	L	Gravity	50
1ST	F1102	1217	L	Gravity	50
1ST	F1103	1218	L	Gravity	50
1ST	F1104	1219	L	Gravity	50
1ST	F1105	1220	L	Gravity	50
1ST	F1	2094	L	Gravity	150
1ST	F2	2109	L	Gravity	150
1ST	F43	2146	L	Gravity	150
1ST	F44	2199	L	Gravity	150
1ST	F46	2252	L	Gravity	150
1ST	F1056	2084	L	Gravity	150
1ST	F1059	2156	L	Gravity	150
1ST	F1063	2209	L	Gravity	150
1ST	F1068	2265	L	Gravity	150
1ST	F1082	533	L	Gravity	50
1ST	F1083	534	L	Gravity	50
1ST	F327	2076	L	Gravity	50
PH	F887	1422	SDL	Gravity	10
PH	F890	1423	SDL	Gravity	10
PH	F892	1424	SDL	Gravity	10
ROOF	F3	622	SDL	Gravity	10
ROOF	F4	645	SDL	Gravity	10
ROOF	F5	672	SDL	Gravity	10
ROOF	F6	673	SDL	Gravity	10
ROOF	F7	1119	SDL	Gravity	10
ROOF	F8	1120	SDL	Gravity	10
ROOF	F9	1121	SDL	Gravity	10
ROOF	F10	1162	SDL	Gravity	10
ROOF	F11	1163	SDL	Gravity	10
ROOF	F12	1164	SDL	Gravity	10
ROOF	F13	1165	SDL	Gravity	10
ROOF	F14	1166	SDL	Gravity	10
ROOF	F15	1167	SDL	Gravity	10
ROOF	F16	1168	SDL	Gravity	10
ROOF	F41	1132	SDL	Gravity	10
ROOF	F42	1133	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F49	1160	SDL	Gravity	10
ROOF	F50	1161	SDL	Gravity	10
ROOF	F51	1156	SDL	Gravity	10
ROOF	F52	1157	SDL	Gravity	10
ROOF	F53	1138	SDL	Gravity	10
ROOF	F54	1139	SDL	Gravity	10
ROOF	F55	1142	SDL	Gravity	10
ROOF	F56	1143	SDL	Gravity	10
ROOF	F57	1148	SDL	Gravity	10
ROOF	F58	1149	SDL	Gravity	10
ROOF	F59	1154	SDL	Gravity	10
ROOF	F60	1155	SDL	Gravity	10
ROOF	F61	1144	SDL	Gravity	10
ROOF	F62	1145	SDL	Gravity	10
ROOF	F63	1150	SDL	Gravity	10
ROOF	F64	1151	SDL	Gravity	10
ROOF	F831	221	SDL	Gravity	10
ROOF	F846	224	SDL	Gravity	10
ROOF	F848	225	SDL	Gravity	10
ROOF	F853	232	SDL	Gravity	10
ROOF	F854	235	SDL	Gravity	10
ROOF	F856	238	SDL	Gravity	10
ROOF	F857	241	SDL	Gravity	10
ROOF	F858	244	SDL	Gravity	10
ROOF	F859	247	SDL	Gravity	10
ROOF	F860	250	SDL	Gravity	10
ROOF	F861	253	SDL	Gravity	10
ROOF	F862	256	SDL	Gravity	10
ROOF	F863	258	SDL	Gravity	10
ROOF	F865	260	SDL	Gravity	10
ROOF	F866	261	SDL	Gravity	10
ROOF	F867	262	SDL	Gravity	10
ROOF	F868	263	SDL	Gravity	10
ROOF	F935	264	SDL	Gravity	10
ROOF	F936	265	SDL	Gravity	10
ROOF	F937	266	SDL	Gravity	10
ROOF	F938	267	SDL	Gravity	10
ROOF	F940	314	SDL	Gravity	10
ROOF	F941	315	SDL	Gravity	10
ROOF	F942	316	SDL	Gravity	10
ROOF	F943	317	SDL	Gravity	10
ROOF	F944	318	SDL	Gravity	10
ROOF	F945	319	SDL	Gravity	10
ROOF	F946	320	SDL	Gravity	10
ROOF	F947	321	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F949	323	SDL	Gravity	10
ROOF	F950	324	SDL	Gravity	10
ROOF	F951	325	SDL	Gravity	10
ROOF	F952	326	SDL	Gravity	10
ROOF	F953	327	SDL	Gravity	10
ROOF	F954	328	SDL	Gravity	10
ROOF	F955	329	SDL	Gravity	10
ROOF	F956	330	SDL	Gravity	10
ROOF	F958	332	SDL	Gravity	10
ROOF	F959	333	SDL	Gravity	10
ROOF	F960	334	SDL	Gravity	10
ROOF	F961	335	SDL	Gravity	10
ROOF	F962	336	SDL	Gravity	10
ROOF	F963	337	SDL	Gravity	10
ROOF	F964	338	SDL	Gravity	10
ROOF	F965	339	SDL	Gravity	10
ROOF	F967	341	SDL	Gravity	10
ROOF	F968	342	SDL	Gravity	10
ROOF	F969	343	SDL	Gravity	10
ROOF	F970	344	SDL	Gravity	10
ROOF	F971	345	SDL	Gravity	10
ROOF	F972	346	SDL	Gravity	10
ROOF	F973	347	SDL	Gravity	10
ROOF	F974	348	SDL	Gravity	10
ROOF	F976	350	SDL	Gravity	10
ROOF	F977	351	SDL	Gravity	10
ROOF	F978	352	SDL	Gravity	10
ROOF	F979	353	SDL	Gravity	10
ROOF	F980	354	SDL	Gravity	10
ROOF	F981	355	SDL	Gravity	10
ROOF	F982	356	SDL	Gravity	10
ROOF	F983	357	SDL	Gravity	10
ROOF	F985	359	SDL	Gravity	10
ROOF	F986	360	SDL	Gravity	10
ROOF	F987	361	SDL	Gravity	10
ROOF	F988	362	SDL	Gravity	10
ROOF	F989	363	SDL	Gravity	10
ROOF	F990	364	SDL	Gravity	10
ROOF	F991	365	SDL	Gravity	10
ROOF	F992	366	SDL	Gravity	10
ROOF	F994	368	SDL	Gravity	10
ROOF	F995	369	SDL	Gravity	10
ROOF	F996	370	SDL	Gravity	10
ROOF	F997	371	SDL	Gravity	10
ROOF	F998	372	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F999	373	SDL	Gravity	10
ROOF	F1000	374	SDL	Gravity	10
ROOF	F1001	375	SDL	Gravity	10
ROOF	F1003	377	SDL	Gravity	10
ROOF	F1004	381	SDL	Gravity	10
ROOF	F1005	382	SDL	Gravity	10
ROOF	F1006	383	SDL	Gravity	10
ROOF	F1007	384	SDL	Gravity	10
ROOF	F1008	385	SDL	Gravity	10
ROOF	F1009	386	SDL	Gravity	10
ROOF	F1010	387	SDL	Gravity	10
ROOF	F1012	389	SDL	Gravity	10
ROOF	F1013	390	SDL	Gravity	10
ROOF	F1014	391	SDL	Gravity	10
ROOF	F1015	392	SDL	Gravity	10
ROOF	F1016	393	SDL	Gravity	10
ROOF	F1017	394	SDL	Gravity	10
ROOF	F1018	395	SDL	Gravity	10
ROOF	F1019	396	SDL	Gravity	10
ROOF	F1021	398	SDL	Gravity	10
ROOF	F1022	399	SDL	Gravity	10
ROOF	F1023	400	SDL	Gravity	10
ROOF	F1024	401	SDL	Gravity	10
ROOF	F1025	402	SDL	Gravity	10
ROOF	F1026	403	SDL	Gravity	10
ROOF	F1027	404	SDL	Gravity	10
ROOF	F1028	405	SDL	Gravity	10
ROOF	F1030	407	SDL	Gravity	10
ROOF	F1031	408	SDL	Gravity	10
ROOF	F1032	409	SDL	Gravity	10
ROOF	F1033	410	SDL	Gravity	10
ROOF	F1034	411	SDL	Gravity	10
ROOF	F1035	412	SDL	Gravity	10
ROOF	F1036	413	SDL	Gravity	10
ROOF	F1037	414	SDL	Gravity	10
ROOF	F1039	416	SDL	Gravity	10
ROOF	F1040	417	SDL	Gravity	10
ROOF	F1041	418	SDL	Gravity	10
ROOF	F1042	419	SDL	Gravity	10
ROOF	F1043	420	SDL	Gravity	10
ROOF	F1044	421	SDL	Gravity	10
ROOF	F1045	422	SDL	Gravity	10
ROOF	F1046	423	SDL	Gravity	10
ROOF	F1048	425	SDL	Gravity	10
ROOF	F1049	426	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F1050	427	SDL	Gravity	10
ROOF	F1051	428	SDL	Gravity	10
ROOF	F1052	429	SDL	Gravity	10
ROOF	F1053	430	SDL	Gravity	10
ROOF	F1054	431	SDL	Gravity	10
ROOF	F1057	434	SDL	Gravity	10
ROOF	F1058	435	SDL	Gravity	10
ROOF	F1060	437	SDL	Gravity	10
ROOF	F1061	438	SDL	Gravity	10
ROOF	F1062	439	SDL	Gravity	10
ROOF	F1070	1173	SDL	Gravity	10
ROOF	F1071	1174	SDL	Gravity	10
ROOF	F1072	1172	SDL	Gravity	10
ROOF	F1073	1169	SDL	Gravity	10
ROOF	F1074	1170	SDL	Gravity	10
ROOF	F1075	1171	SDL	Gravity	10
ROOF	F1091	1279	SDL	Gravity	10
ROOF	F1092	1280	SDL	Gravity	10
ROOF	F1093	1281	SDL	Gravity	10
ROOF	F1094	1282	SDL	Gravity	10
ROOF	F1096	1283	SDL	Gravity	10
ROOF	F1097	1284	SDL	Gravity	10
ROOF	F1099	1292	SDL	Gravity	10
ROOF	F1100	1294	SDL	Gravity	10
ROOF	F1102	1295	SDL	Gravity	10
ROOF	F1103	1296	SDL	Gravity	10
ROOF	F1104	1297	SDL	Gravity	10
ROOF	F1105	1298	SDL	Gravity	10
ROOF	F966	1134	SDL	Gravity	10
ROOF	F975	1135	SDL	Gravity	10
ROOF	F1002	1146	SDL	Gravity	10
ROOF	F1011	1147	SDL	Gravity	10
ROOF	F1020	1152	SDL	Gravity	10
ROOF	F1029	1153	SDL	Gravity	10
ROOF	F1038	1158	SDL	Gravity	10
ROOF	F1047	1159	SDL	Gravity	10
ROOF	F1292	433	SDL	Gravity	10
ROOF	F1293	436	SDL	Gravity	10
ROOF	F1294	1136	SDL	Gravity	10
ROOF	F1295	1137	SDL	Gravity	10
2ND	F3	674	SDL	Gravity	25
2ND	F4	675	SDL	Gravity	25
2ND	F5	676	SDL	Gravity	25
2ND	F6	677	SDL	Gravity	25
2ND	F7	678	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F8	679	SDL	Gravity	25
2ND	F9	680	SDL	Gravity	25
2ND	F10	681	SDL	Gravity	25
2ND	F11	682	SDL	Gravity	25
2ND	F12	683	SDL	Gravity	25
2ND	F13	684	SDL	Gravity	25
2ND	F14	685	SDL	Gravity	25
2ND	F15	686	SDL	Gravity	25
2ND	F16	687	SDL	Gravity	25
2ND	F21	590	SDL	Gravity	10
2ND	F22	591	SDL	Gravity	10
2ND	F23	592	SDL	Gravity	10
2ND	F24	593	SDL	Gravity	10
2ND	F25	596	SDL	Gravity	10
2ND	F26	597	SDL	Gravity	10
2ND	F27	598	SDL	Gravity	10
2ND	F28	599	SDL	Gravity	10
2ND	F29	602	SDL	Gravity	10
2ND	F30	603	SDL	Gravity	10
2ND	F31	604	SDL	Gravity	10
2ND	F32	605	SDL	Gravity	10
2ND	F33	608	SDL	Gravity	10
2ND	F34	609	SDL	Gravity	10
2ND	F35	610	SDL	Gravity	10
2ND	F36	611	SDL	Gravity	10
2ND	F39	614	SDL	Gravity	10
2ND	F40	615	SDL	Gravity	10
2ND	F41	712	SDL	Gravity	25
2ND	F41	712	SDL	Gravity	40
2ND	F42	713	SDL	Gravity	25
2ND	F42	713	SDL	Gravity	40
2ND	F49	720	SDL	Gravity	25
2ND	F49	720	SDL	Gravity	40
2ND	F50	721	SDL	Gravity	25
2ND	F50	721	SDL	Gravity	40
2ND	F51	722	SDL	Gravity	25
2ND	F51	722	SDL	Gravity	40
2ND	F52	723	SDL	Gravity	25
2ND	F52	723	SDL	Gravity	40
2ND	F53	724	SDL	Gravity	25
2ND	F53	724	SDL	Gravity	40
2ND	F54	725	SDL	Gravity	25
2ND	F54	725	SDL	Gravity	40
2ND	F55	726	SDL	Gravity	25
2ND	F55	726	SDL	Gravity	40

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F56	727	SDL	Gravity	25
2ND	F56	727	SDL	Gravity	40
2ND	F57	728	SDL	Gravity	25
2ND	F57	728	SDL	Gravity	40
2ND	F58	729	SDL	Gravity	25
2ND	F58	729	SDL	Gravity	40
2ND	F59	730	SDL	Gravity	25
2ND	F59	730	SDL	Gravity	40
2ND	F60	731	SDL	Gravity	25
2ND	F60	731	SDL	Gravity	40
2ND	F61	732	SDL	Gravity	25
2ND	F61	732	SDL	Gravity	40
2ND	F62	733	SDL	Gravity	25
2ND	F62	733	SDL	Gravity	40
2ND	F63	734	SDL	Gravity	25
2ND	F63	734	SDL	Gravity	40
2ND	F64	735	SDL	Gravity	25
2ND	F64	735	SDL	Gravity	40
2ND	F65	736	SDL	Gravity	25
2ND	F67	738	SDL	Gravity	25
2ND	F69	740	SDL	Gravity	25
2ND	F70	741	SDL	Gravity	25
2ND	F71	742	SDL	Gravity	25
2ND	F72	743	SDL	Gravity	25
2ND	F73	744	SDL	Gravity	10
2ND	F76	745	SDL	Gravity	25
2ND	F77	746	SDL	Gravity	10
2ND	F78	747	SDL	Gravity	10
2ND	F79	748	SDL	Gravity	10
2ND	F85	749	SDL	Gravity	25
2ND	F88	751	SDL	Gravity	10
2ND	F90	753	SDL	Gravity	10
2ND	F91	754	SDL	Gravity	10
2ND	F92	755	SDL	Gravity	10
2ND	F93	756	SDL	Gravity	10
2ND	F94	757	SDL	Gravity	10
2ND	F95	758	SDL	Gravity	10
2ND	F96	759	SDL	Gravity	10
2ND	F97	760	SDL	Gravity	10
2ND	F98	761	SDL	Gravity	10
2ND	F99	762	SDL	Gravity	10
2ND	F100	763	SDL	Gravity	10
2ND	F101	764	SDL	Gravity	10
2ND	F102	765	SDL	Gravity	10
2ND	F104	767	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F106	769	SDL	Gravity	10
2ND	F107	770	SDL	Gravity	10
2ND	F108	771	SDL	Gravity	10
2ND	F109	772	SDL	Gravity	10
2ND	F110	773	SDL	Gravity	10
2ND	F112	775	SDL	Gravity	10
2ND	F114	777	SDL	Gravity	10
2ND	F115	778	SDL	Gravity	10
2ND	F116	779	SDL	Gravity	10
2ND	F117	780	SDL	Gravity	10
2ND	F118	781	SDL	Gravity	10
2ND	F120	783	SDL	Gravity	10
2ND	F122	785	SDL	Gravity	10
2ND	F123	786	SDL	Gravity	10
2ND	F124	787	SDL	Gravity	10
2ND	F125	788	SDL	Gravity	10
2ND	F126	789	SDL	Gravity	10
2ND	F128	791	SDL	Gravity	10
2ND	F130	793	SDL	Gravity	10
2ND	F131	794	SDL	Gravity	10
2ND	F132	795	SDL	Gravity	10
2ND	F133	796	SDL	Gravity	10
2ND	F134	797	SDL	Gravity	10
2ND	F136	799	SDL	Gravity	10
2ND	F138	801	SDL	Gravity	10
2ND	F139	802	SDL	Gravity	10
2ND	F140	803	SDL	Gravity	10
2ND	F141	804	SDL	Gravity	10
2ND	F142	805	SDL	Gravity	10
2ND	F144	807	SDL	Gravity	10
2ND	F146	809	SDL	Gravity	10
2ND	F147	810	SDL	Gravity	10
2ND	F148	811	SDL	Gravity	10
2ND	F149	812	SDL	Gravity	10
2ND	F150	813	SDL	Gravity	10
2ND	F155	814	SDL	Gravity	10
2ND	F156	815	SDL	Gravity	10
2ND	F157	816	SDL	Gravity	10
2ND	F158	817	SDL	Gravity	10
2ND	F159	818	SDL	Gravity	10
2ND	F160	819	SDL	Gravity	10
2ND	F151	820	SDL	Gravity	25
2ND	F152	821	SDL	Gravity	25
2ND	F153	822	SDL	Gravity	25
2ND	F154	823	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F161	824	SDL	Gravity	25
2ND	F162	825	SDL	Gravity	25
2ND	F163	826	SDL	Gravity	25
2ND	F164	827	SDL	Gravity	25
2ND	F165	828	SDL	Gravity	10
2ND	F168	829	SDL	Gravity	25
2ND	F169	830	SDL	Gravity	10
2ND	F170	831	SDL	Gravity	10
2ND	F171	832	SDL	Gravity	10
2ND	F177	833	SDL	Gravity	25
2ND	F180	835	SDL	Gravity	10
2ND	F182	837	SDL	Gravity	10
2ND	F183	838	SDL	Gravity	10
2ND	F184	839	SDL	Gravity	10
2ND	F185	840	SDL	Gravity	10
2ND	F186	841	SDL	Gravity	10
2ND	F187	842	SDL	Gravity	10
2ND	F188	843	SDL	Gravity	10
2ND	F189	844	SDL	Gravity	10
2ND	F190	845	SDL	Gravity	10
2ND	F191	846	SDL	Gravity	10
2ND	F192	847	SDL	Gravity	10
2ND	F193	848	SDL	Gravity	10
2ND	F194	849	SDL	Gravity	10
2ND	F196	851	SDL	Gravity	10
2ND	F198	853	SDL	Gravity	10
2ND	F199	854	SDL	Gravity	10
2ND	F200	855	SDL	Gravity	10
2ND	F201	856	SDL	Gravity	10
2ND	F202	857	SDL	Gravity	10
2ND	F204	859	SDL	Gravity	10
2ND	F206	861	SDL	Gravity	10
2ND	F207	862	SDL	Gravity	10
2ND	F208	863	SDL	Gravity	10
2ND	F209	864	SDL	Gravity	10
2ND	F210	865	SDL	Gravity	10
2ND	F212	867	SDL	Gravity	10
2ND	F214	869	SDL	Gravity	10
2ND	F215	870	SDL	Gravity	10
2ND	F216	871	SDL	Gravity	10
2ND	F217	872	SDL	Gravity	10
2ND	F218	873	SDL	Gravity	10
2ND	F220	875	SDL	Gravity	10
2ND	F222	877	SDL	Gravity	10
2ND	F223	878	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F224	879	SDL	Gravity	10
2ND	F225	880	SDL	Gravity	10
2ND	F226	881	SDL	Gravity	10
2ND	F228	883	SDL	Gravity	10
2ND	F230	885	SDL	Gravity	10
2ND	F231	886	SDL	Gravity	10
2ND	F232	887	SDL	Gravity	10
2ND	F233	888	SDL	Gravity	10
2ND	F234	889	SDL	Gravity	10
2ND	F236	891	SDL	Gravity	10
2ND	F238	893	SDL	Gravity	10
2ND	F239	894	SDL	Gravity	10
2ND	F240	895	SDL	Gravity	10
2ND	F241	896	SDL	Gravity	10
2ND	F242	897	SDL	Gravity	10
2ND	F243	898	SDL	Gravity	10
2ND	F244	899	SDL	Gravity	10
2ND	F245	900	SDL	Gravity	10
2ND	F246	901	SDL	Gravity	10
2ND	F247	902	SDL	Gravity	10
2ND	F248	903	SDL	Gravity	10
2ND	F249	904	SDL	Gravity	25
2ND	F251	906	SDL	Gravity	25
2ND	F253	908	SDL	Gravity	25
2ND	F255	910	SDL	Gravity	25
2ND	F257	912	SDL	Gravity	10
2ND	F260	913	SDL	Gravity	25
2ND	F261	914	SDL	Gravity	10
2ND	F262	915	SDL	Gravity	10
2ND	F272	919	SDL	Gravity	10
2ND	F278	925	SDL	Gravity	10
2ND	F279	926	SDL	Gravity	10
2ND	F280	927	SDL	Gravity	10
2ND	F281	928	SDL	Gravity	10
2ND	F282	929	SDL	Gravity	10
2ND	F283	930	SDL	Gravity	10
2ND	F284	931	SDL	Gravity	10
2ND	F285	932	SDL	Gravity	10
2ND	F286	933	SDL	Gravity	10
2ND	F288	935	SDL	Gravity	10
2ND	F289	936	SDL	Gravity	10
2ND	F292	939	SDL	Gravity	10
2ND	F293	940	SDL	Gravity	10
2ND	F294	941	SDL	Gravity	10
2ND	F296	943	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F300	947	SDL	Gravity	10
2ND	F301	948	SDL	Gravity	10
2ND	F302	949	SDL	Gravity	10
2ND	F304	951	SDL	Gravity	10
2ND	F308	955	SDL	Gravity	10
2ND	F309	956	SDL	Gravity	10
2ND	F310	957	SDL	Gravity	10
2ND	F312	959	SDL	Gravity	10
2ND	F316	963	SDL	Gravity	10
2ND	F317	964	SDL	Gravity	10
2ND	F318	965	SDL	Gravity	10
2ND	F320	967	SDL	Gravity	10
2ND	F324	971	SDL	Gravity	10
2ND	F325	972	SDL	Gravity	10
2ND	F326	973	SDL	Gravity	10
2ND	F328	975	SDL	Gravity	10
2ND	F332	979	SDL	Gravity	10
2ND	F333	980	SDL	Gravity	10
2ND	F334	981	SDL	Gravity	10
2ND	F336	983	SDL	Gravity	10
2ND	F337	984	SDL	Gravity	10
2ND	F338	985	SDL	Gravity	10
2ND	F339	986	SDL	Gravity	10
2ND	F341	988	SDL	Gravity	25
2ND	F342	989	SDL	Gravity	25
2ND	F343	990	SDL	Gravity	25
2ND	F344	991	SDL	Gravity	25
2ND	F345	992	SDL	Gravity	10
2ND	F348	993	SDL	Gravity	25
2ND	F349	994	SDL	Gravity	10
2ND	F352	995	SDL	Gravity	10
2ND	F353	996	SDL	Gravity	10
2ND	F354	997	SDL	Gravity	10
2ND	F355	998	SDL	Gravity	10
2ND	F356	999	SDL	Gravity	10
2ND	F357	1000	SDL	Gravity	10
2ND	F358	1001	SDL	Gravity	10
2ND	F359	1002	SDL	Gravity	10
2ND	F361	1004	SDL	Gravity	10
2ND	F362	1005	SDL	Gravity	10
2ND	F363	1006	SDL	Gravity	10
2ND	F365	1008	SDL	Gravity	10
2ND	F366	1009	SDL	Gravity	10
2ND	F367	1010	SDL	Gravity	10
2ND	F370	1011	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F371	1012	SDL	Gravity	10
2ND	F373	1014	SDL	Gravity	10
2ND	F377	1016	SDL	Gravity	10
2ND	F378	1017	SDL	Gravity	10
2ND	F379	1018	SDL	Gravity	10
2ND	F380	1019	SDL	Gravity	10
2ND	F381	1020	SDL	Gravity	10
2ND	F382	1021	SDL	Gravity	10
2ND	F383	1022	SDL	Gravity	10
2ND	F384	1023	SDL	Gravity	10
2ND	F385	1024	SDL	Gravity	10
2ND	F386	1025	SDL	Gravity	10
2ND	F387	1026	SDL	Gravity	10
2ND	F388	1027	SDL	Gravity	10
2ND	F74	1028	SDL	Gravity	25
2ND	F75	1029	SDL	Gravity	25
2ND	F82	1032	SDL	Gravity	25
2ND	F86	1035	SDL	Gravity	25
2ND	F173	1039	SDL	Gravity	25
2ND	F175	1041	SDL	Gravity	25
2ND	F417	1046	SDL	Gravity	10
2ND	F420	1048	SDL	Gravity	10
2ND	F425	1053	SDL	Gravity	10
2ND	F426	1054	SDL	Gravity	10
2ND	F427	1055	SDL	Gravity	10
2ND	F428	1056	SDL	Gravity	10
2ND	F431	1059	SDL	Gravity	10
2ND	F432	1060	SDL	Gravity	10
2ND	F435	1063	SDL	Gravity	10
2ND	F437	1065	SDL	Gravity	10
2ND	F443	1071	SDL	Gravity	10
2ND	F447	1073	SDL	Gravity	10
2ND	F176	1042	SDL	Gravity	25
2ND	F178	1043	SDL	Gravity	25
2ND	F258	1044	SDL	Gravity	25
2ND	F259	1045	SDL	Gravity	25
2ND	F265	1047	SDL	Gravity	10
2ND	F266	1049	SDL	Gravity	10
2ND	F267	1050	SDL	Gravity	10
2ND	F268	1051	SDL	Gravity	10
2ND	F270	1052	SDL	Gravity	10
2ND	F346	1057	SDL	Gravity	10
2ND	F347	1058	SDL	Gravity	10
2ND	F350	1061	SDL	Gravity	10
2ND	F351	1062	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F368	1064	SDL	Gravity	10
2ND	F374	1069	SDL	Gravity	10
2ND	F375	1070	SDL	Gravity	10
2ND	F390	1072	SDL	Gravity	10
2ND	F394	1075	SDL	Gravity	10
2ND	F397	1030	SDL	Gravity	10
2ND	F398	1031	SDL	Gravity	10
2ND	F399	1033	SDL	Gravity	10
2ND	F400	1034	SDL	Gravity	10
2ND	F401	1037	SDL	Gravity	10
2ND	F403	1040	SDL	Gravity	10
2ND	F404	1076	SDL	Gravity	10
2ND	F405	905	SDL	Gravity	25
2ND	F406	907	SDL	Gravity	25
2ND	F407	909	SDL	Gravity	25
2ND	F408	911	SDL	Gravity	25
2ND	F409	916	SDL	Gravity	10
2ND	F410	917	SDL	Gravity	25
2ND	F411	921	SDL	Gravity	10
2ND	F412	922	SDL	Gravity	10
2ND	F413	923	SDL	Gravity	10
2ND	F414	924	SDL	Gravity	10
2ND	F415	937	SDL	Gravity	10
2ND	F416	938	SDL	Gravity	10
2ND	F418	945	SDL	Gravity	10
2ND	F419	946	SDL	Gravity	10
2ND	F421	953	SDL	Gravity	10
2ND	F422	954	SDL	Gravity	10
2ND	F423	961	SDL	Gravity	10
2ND	F424	962	SDL	Gravity	10
2ND	F429	969	SDL	Gravity	10
2ND	F430	970	SDL	Gravity	10
2ND	F433	977	SDL	Gravity	10
2ND	F434	978	SDL	Gravity	10
2ND	F436	982	SDL	Gravity	10
2ND	F439	987	SDL	Gravity	10
2ND	F441	1036	SDL	Gravity	25
2ND	F445	1038	SDL	Gravity	10
2ND	F80	966	SDL	Gravity	10
2ND	F81	974	SDL	Gravity	10
2ND	F84	1066	SDL	Gravity	10
2ND	F166	1068	SDL	Gravity	10
2ND	F167	1067	SDL	Gravity	10
2ND	F172	1074	SDL	Gravity	10
2ND	F174	1013	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F250	1015	SDL	Gravity	10
2ND	F252	968	SDL	Gravity	10
2ND	F254	976	SDL	Gravity	10
2ND	F256	950	SDL	Gravity	10
2ND	F263	958	SDL	Gravity	10
2ND	F269	952	SDL	Gravity	10
2ND	F274	1003	SDL	Gravity	10
2ND	F275	1007	SDL	Gravity	10
2ND	F276	960	SDL	Gravity	10
2ND	F277	944	SDL	Gravity	10
2ND	F290	858	SDL	Gravity	10
2ND	F203	866	SDL	Gravity	10
2ND	F211	874	SDL	Gravity	10
2ND	F291	882	SDL	Gravity	10
2ND	F297	890	SDL	Gravity	10
2ND	F219	918	SDL	Gravity	10
2ND	F227	920	SDL	Gravity	10
2ND	F235	942	SDL	Gravity	10
2ND	F271	934	SDL	Gravity	10
2ND	F273	834	SDL	Gravity	10
2ND	F179	836	SDL	Gravity	10
2ND	F287	852	SDL	Gravity	10
2ND	F181	860	SDL	Gravity	10
2ND	F197	868	SDL	Gravity	10
2ND	F205	876	SDL	Gravity	10
2ND	F213	884	SDL	Gravity	10
2ND	F221	892	SDL	Gravity	10
2ND	F295	806	SDL	Gravity	10
2ND	F298	798	SDL	Gravity	10
2ND	F299	850	SDL	Gravity	10
2ND	F303	790	SDL	Gravity	10
2ND	F305	808	SDL	Gravity	10
2ND	F127	800	SDL	Gravity	10
2ND	F135	792	SDL	Gravity	10
2ND	F143	782	SDL	Gravity	10
2ND	F145	774	SDL	Gravity	10
2ND	F195	766	SDL	Gravity	10
2ND	F103	750	SDL	Gravity	10
2ND	F111	752	SDL	Gravity	10
2ND	F119	768	SDL	Gravity	10
2ND	F129	776	SDL	Gravity	10
2ND	F137	784	SDL	Gravity	10
2ND	F87	1077	SDL	Gravity	10
2ND	F89	1078	SDL	Gravity	10
2ND	F105	1079	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F121	1080	SDL	Gravity	10
2ND	F113	1081	SDL	Gravity	25
2ND	F229	1082	SDL	Gravity	25
2ND	F306	1083	SDL	Gravity	25
2ND	F307	1084	SDL	Gravity	25
2ND	F567	2312	SDL	Gravity	10
2ND	F568	2313	SDL	Gravity	10
2ND	F569	2314	SDL	Gravity	10
2ND	F570	2315	SDL	Gravity	10
2ND	F571	2316	SDL	Gravity	10
2ND	F572	2317	SDL	Gravity	10
2ND	F573	1	SDL	Gravity	10
2ND	F588	2	SDL	Gravity	10
2ND	F597	3	SDL	Gravity	10
2ND	F598	4	SDL	Gravity	10
2ND	F599	5	SDL	Gravity	10
2ND	F600	6	SDL	Gravity	10
2ND	F601	7	SDL	Gravity	10
2ND	F602	8	SDL	Gravity	10
2ND	F603	9	SDL	Gravity	10
2ND	F604	10	SDL	Gravity	10
2ND	F605	11	SDL	Gravity	10
2ND	F606	12	SDL	Gravity	10
2ND	F607	13	SDL	Gravity	10
2ND	F608	14	SDL	Gravity	10
2ND	F609	15	SDL	Gravity	10
2ND	F610	16	SDL	Gravity	10
2ND	F611	17	SDL	Gravity	10
2ND	F612	18	SDL	Gravity	10
2ND	F652	19	SDL	Gravity	10
2ND	F654	20	SDL	Gravity	10
2ND	F591	21	SDL	Gravity	10
2ND	F592	22	SDL	Gravity	10
2ND	F589	24	SDL	Gravity	10
2ND	F590	25	SDL	Gravity	10
2ND	F593	26	SDL	Gravity	10
2ND	F594	27	SDL	Gravity	10
2ND	F595	28	SDL	Gravity	10
2ND	F596	29	SDL	Gravity	10
2ND	F653	30	SDL	Gravity	10
2ND	F656	32	SDL	Gravity	10
2ND	F657	33	SDL	Gravity	10
2ND	F658	34	SDL	Gravity	10
2ND	F659	35	SDL	Gravity	10
2ND	F660	36	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F655	23	SDL	Gravity	10
2ND	F661	31	SDL	Gravity	10
2ND	F662	37	SDL	Gravity	10
2ND	F663	38	SDL	Gravity	10
2ND	F664	39	SDL	Gravity	10
2ND	F665	40	SDL	Gravity	10
2ND	F666	41	SDL	Gravity	10
2ND	F667	42	SDL	Gravity	10
2ND	F668	43	SDL	Gravity	10
2ND	F669	44	SDL	Gravity	10
2ND	F670	45	SDL	Gravity	10
2ND	F671	46	SDL	Gravity	10
2ND	F711	47	SDL	Gravity	10
2ND	F713	49	SDL	Gravity	10
2ND	F714	50	SDL	Gravity	10
2ND	F715	51	SDL	Gravity	10
2ND	F716	52	SDL	Gravity	10
2ND	F717	53	SDL	Gravity	10
2ND	F718	54	SDL	Gravity	10
2ND	F719	55	SDL	Gravity	10
2ND	F720	56	SDL	Gravity	10
2ND	F721	57	SDL	Gravity	10
2ND	F722	58	SDL	Gravity	10
2ND	F723	59	SDL	Gravity	10
2ND	F724	60	SDL	Gravity	10
2ND	F725	61	SDL	Gravity	10
2ND	F726	62	SDL	Gravity	10
2ND	F727	63	SDL	Gravity	10
2ND	F728	64	SDL	Gravity	10
2ND	F729	65	SDL	Gravity	10
2ND	F730	66	SDL	Gravity	10
2ND	F731	67	SDL	Gravity	10
2ND	F732	68	SDL	Gravity	10
2ND	F733	69	SDL	Gravity	10
2ND	F734	70	SDL	Gravity	10
2ND	F735	71	SDL	Gravity	10
2ND	F736	72	SDL	Gravity	10
2ND	F672	48	SDL	Gravity	10
2ND	F673	73	SDL	Gravity	10
2ND	F674	74	SDL	Gravity	10
2ND	F675	75	SDL	Gravity	10
2ND	F676	76	SDL	Gravity	10
2ND	F677	77	SDL	Gravity	10
2ND	F678	78	SDL	Gravity	10
2ND	F679	79	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F680	80	SDL	Gravity	10
2ND	F681	81	SDL	Gravity	10
2ND	F682	82	SDL	Gravity	10
2ND	F683	83	SDL	Gravity	10
2ND	F684	84	SDL	Gravity	10
2ND	F685	85	SDL	Gravity	10
2ND	F686	86	SDL	Gravity	10
2ND	F687	87	SDL	Gravity	10
2ND	F688	88	SDL	Gravity	10
2ND	F689	89	SDL	Gravity	10
2ND	F690	90	SDL	Gravity	10
2ND	F691	91	SDL	Gravity	10
2ND	F692	92	SDL	Gravity	10
2ND	F693	93	SDL	Gravity	10
2ND	F694	94	SDL	Gravity	10
2ND	F695	95	SDL	Gravity	10
2ND	F696	96	SDL	Gravity	10
2ND	F697	97	SDL	Gravity	10
2ND	F698	98	SDL	Gravity	10
2ND	F699	99	SDL	Gravity	10
2ND	F700	100	SDL	Gravity	10
2ND	F701	101	SDL	Gravity	10
2ND	F702	102	SDL	Gravity	10
2ND	F703	103	SDL	Gravity	10
2ND	F704	104	SDL	Gravity	10
2ND	F705	105	SDL	Gravity	10
2ND	F706	106	SDL	Gravity	10
2ND	F707	107	SDL	Gravity	10
2ND	F708	108	SDL	Gravity	10
2ND	F709	109	SDL	Gravity	10
2ND	F710	110	SDL	Gravity	10
2ND	F712	111	SDL	Gravity	10
2ND	F737	112	SDL	Gravity	10
2ND	F738	113	SDL	Gravity	10
2ND	F739	114	SDL	Gravity	10
2ND	F740	115	SDL	Gravity	10
2ND	F741	116	SDL	Gravity	10
2ND	F742	117	SDL	Gravity	10
2ND	F743	118	SDL	Gravity	10
2ND	F744	119	SDL	Gravity	10
2ND	F745	120	SDL	Gravity	10
2ND	F746	121	SDL	Gravity	10
2ND	F747	122	SDL	Gravity	10
2ND	F748	123	SDL	Gravity	10
2ND	F749	124	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F750	125	SDL	Gravity	10
2ND	F751	126	SDL	Gravity	10
2ND	F752	127	SDL	Gravity	10
2ND	F753	128	SDL	Gravity	10
2ND	F754	129	SDL	Gravity	10
2ND	F755	130	SDL	Gravity	10
2ND	F756	131	SDL	Gravity	10
2ND	F757	132	SDL	Gravity	10
2ND	F758	133	SDL	Gravity	10
2ND	F759	134	SDL	Gravity	10
2ND	F760	135	SDL	Gravity	10
2ND	F761	136	SDL	Gravity	10
2ND	F762	137	SDL	Gravity	10
2ND	F763	138	SDL	Gravity	10
2ND	F764	139	SDL	Gravity	10
2ND	F765	140	SDL	Gravity	10
2ND	F766	141	SDL	Gravity	10
2ND	F767	142	SDL	Gravity	10
2ND	F768	143	SDL	Gravity	10
2ND	F769	144	SDL	Gravity	10
2ND	F770	145	SDL	Gravity	10
2ND	F771	146	SDL	Gravity	10
2ND	F772	147	SDL	Gravity	10
2ND	F773	148	SDL	Gravity	10
2ND	F774	149	SDL	Gravity	10
2ND	F775	150	SDL	Gravity	10
2ND	F776	151	SDL	Gravity	10
2ND	F777	152	SDL	Gravity	10
2ND	F778	153	SDL	Gravity	10
2ND	F779	154	SDL	Gravity	10
2ND	F780	155	SDL	Gravity	10
2ND	F781	156	SDL	Gravity	10
2ND	F782	157	SDL	Gravity	10
2ND	F783	158	SDL	Gravity	10
2ND	F784	159	SDL	Gravity	10
2ND	F785	160	SDL	Gravity	10
2ND	F786	161	SDL	Gravity	10
2ND	F787	162	SDL	Gravity	10
2ND	F788	163	SDL	Gravity	10
2ND	F789	164	SDL	Gravity	10
2ND	F790	165	SDL	Gravity	10
2ND	F791	166	SDL	Gravity	10
2ND	F792	167	SDL	Gravity	10
2ND	F793	168	SDL	Gravity	10
2ND	F794	169	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F795	170	SDL	Gravity	10
2ND	F796	171	SDL	Gravity	10
2ND	F797	172	SDL	Gravity	10
2ND	F798	173	SDL	Gravity	10
2ND	F799	174	SDL	Gravity	10
2ND	F800	175	SDL	Gravity	10
2ND	F801	176	SDL	Gravity	10
2ND	F802	177	SDL	Gravity	10
2ND	F803	178	SDL	Gravity	10
2ND	F804	179	SDL	Gravity	10
2ND	F805	180	SDL	Gravity	10
2ND	F806	181	SDL	Gravity	10
2ND	F807	182	SDL	Gravity	10
2ND	F808	183	SDL	Gravity	10
2ND	F809	184	SDL	Gravity	10
2ND	F810	185	SDL	Gravity	10
2ND	F811	186	SDL	Gravity	10
2ND	F812	187	SDL	Gravity	10
2ND	F813	188	SDL	Gravity	10
2ND	F814	189	SDL	Gravity	10
2ND	F815	190	SDL	Gravity	10
2ND	F816	191	SDL	Gravity	10
2ND	F817	192	SDL	Gravity	10
2ND	F818	193	SDL	Gravity	10
2ND	F819	194	SDL	Gravity	10
2ND	F820	195	SDL	Gravity	10
2ND	F821	196	SDL	Gravity	10
2ND	F822	197	SDL	Gravity	10
2ND	F823	198	SDL	Gravity	10
2ND	F824	199	SDL	Gravity	10
2ND	F825	200	SDL	Gravity	10
2ND	F826	201	SDL	Gravity	10
2ND	F827	202	SDL	Gravity	10
2ND	F885	230	SDL	Gravity	10
2ND	F886	231	SDL	Gravity	10
2ND	F888	233	SDL	Gravity	10
2ND	F889	234	SDL	Gravity	10
2ND	F891	236	SDL	Gravity	10
2ND	F894	239	SDL	Gravity	10
2ND	F895	240	SDL	Gravity	10
2ND	F897	242	SDL	Gravity	10
2ND	F898	243	SDL	Gravity	10
2ND	F900	245	SDL	Gravity	10
2ND	F901	246	SDL	Gravity	10
2ND	F903	248	SDL	Gravity	10

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F904	249	SDL	Gravity	10
2ND	F906	251	SDL	Gravity	10
2ND	F907	252	SDL	Gravity	10
2ND	F909	254	SDL	Gravity	10
2ND	F910	255	SDL	Gravity	10
2ND	F912	257	SDL	Gravity	10
2ND	F828	203	SDL	Gravity	10
2ND	F829	204	SDL	Gravity	10
2ND	F830	205	SDL	Gravity	10
2ND	F832	207	SDL	Gravity	10
2ND	F833	208	SDL	Gravity	10
2ND	F834	209	SDL	Gravity	10
2ND	F835	210	SDL	Gravity	10
2ND	F836	211	SDL	Gravity	10
2ND	F837	212	SDL	Gravity	10
2ND	F838	213	SDL	Gravity	10
2ND	F839	214	SDL	Gravity	10
2ND	F841	216	SDL	Gravity	10
2ND	F842	217	SDL	Gravity	10
2ND	F843	218	SDL	Gravity	10
2ND	F844	219	SDL	Gravity	10
2ND	F845	220	SDL	Gravity	10
2ND	F840	223	SDL	Gravity	10
2ND	F847	222	SDL	Gravity	10
2ND	F849	226	SDL	Gravity	10
2ND	F850	227	SDL	Gravity	10
2ND	F851	228	SDL	Gravity	10
2ND	F852	229	SDL	Gravity	10
2ND	F869	588	SDL	Gravity	10
2ND	F870	589	SDL	Gravity	10
2ND	F871	594	SDL	Gravity	10
2ND	F872	595	SDL	Gravity	10
2ND	F873	600	SDL	Gravity	10
2ND	F874	601	SDL	Gravity	10
2ND	F875	606	SDL	Gravity	10
2ND	F876	607	SDL	Gravity	10
2ND	F877	612	SDL	Gravity	10
2ND	F878	613	SDL	Gravity	10
2ND	F1064	618	SDL	Gravity	25
2ND	F1064	618	SDL	Gravity	40
2ND	F1065	619	SDL	Gravity	25
2ND	F1065	619	SDL	Gravity	40
2ND	F1066	620	SDL	Gravity	25
2ND	F1066	620	SDL	Gravity	40
2ND	F1067	621	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F1067	621	SDL	Gravity	40
2ND	F1070	1180	SDL	Gravity	25
2ND	F1071	1181	SDL	Gravity	25
2ND	F1072	644	SDL	Gravity	25
2ND	F1073	641	SDL	Gravity	25
2ND	F1074	642	SDL	Gravity	25
2ND	F1075	643	SDL	Gravity	25
2ND	F1091	1347	SDL	Gravity	25
2ND	F1091	1347	SDL	Gravity	40
2ND	F1092	1348	SDL	Gravity	25
2ND	F1092	1348	SDL	Gravity	40
2ND	F1093	1349	SDL	Gravity	25
2ND	F1093	1349	SDL	Gravity	40
2ND	F1094	1350	SDL	Gravity	25
2ND	F1094	1350	SDL	Gravity	40
2ND	F1096	1351	SDL	Gravity	25
2ND	F1096	1351	SDL	Gravity	40
2ND	F1097	1352	SDL	Gravity	25
2ND	F1097	1352	SDL	Gravity	40
2ND	F1099	1353	SDL	Gravity	25
2ND	F1099	1353	SDL	Gravity	40
2ND	F1100	1354	SDL	Gravity	25
2ND	F1100	1354	SDL	Gravity	40
2ND	F1102	1355	SDL	Gravity	25
2ND	F1102	1355	SDL	Gravity	40
2ND	F1103	1356	SDL	Gravity	25
2ND	F1103	1356	SDL	Gravity	40
2ND	F1104	1357	SDL	Gravity	25
2ND	F1104	1357	SDL	Gravity	40
2ND	F1105	1358	SDL	Gravity	25
2ND	F1105	1358	SDL	Gravity	40
2ND	F1294	716	SDL	Gravity	25
2ND	F1294	716	SDL	Gravity	40
2ND	F1295	717	SDL	Gravity	25
2ND	F1295	717	SDL	Gravity	40
2ND	F47	714	SDL	Gravity	25
2ND	F47	714	SDL	Gravity	40
2ND	F48	715	SDL	Gravity	25
2ND	F48	715	SDL	Gravity	40
2ND	F66	718	SDL	Gravity	25
2ND	F66	718	SDL	Gravity	40
2ND	F68	719	SDL	Gravity	25
2ND	F68	719	SDL	Gravity	40
2ND	F1296	737	SDL	Gravity	25
2ND	F1297	739	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F1082	526	SDL	Gravity	10
2ND	F1083	587	SDL	Gravity	10
MEZ	F3	637	SDL	Gravity	25
MEZ	F4	639	SDL	Gravity	25
MEZ	F5	638	SDL	Gravity	25
MEZ	F6	640	SDL	Gravity	25
MEZ	F7	636	SDL	Gravity	25
MEZ	F8	631	SDL	Gravity	25
MEZ	F9	628	SDL	Gravity	25
MEZ	F10	625	SDL	Gravity	25
MEZ	F12	627	SDL	Gravity	25
MEZ	F13	623	SDL	Gravity	25
MEZ	F14	626	SDL	Gravity	25
MEZ	F15	629	SDL	Gravity	25
MEZ	F16	632	SDL	Gravity	25
MEZ	F21	506	SDL	Gravity	25
MEZ	F22	507	SDL	Gravity	25
MEZ	F23	509	SDL	Gravity	25
MEZ	F24	510	SDL	Gravity	25
MEZ	F25	508	SDL	Gravity	25
MEZ	F26	513	SDL	Gravity	25
MEZ	F27	514	SDL	Gravity	25
MEZ	F28	515	SDL	Gravity	25
MEZ	F29	518	SDL	Gravity	25
MEZ	F30	519	SDL	Gravity	25
MEZ	F31	520	SDL	Gravity	25
MEZ	F32	521	SDL	Gravity	25
MEZ	F33	524	SDL	Gravity	25
MEZ	F34	525	SDL	Gravity	25
MEZ	F35	527	SDL	Gravity	25
MEZ	F36	528	SDL	Gravity	25
MEZ	F39	531	SDL	Gravity	25
MEZ	F40	532	SDL	Gravity	25
MEZ	F869	495	SDL	Gravity	25
MEZ	F870	503	SDL	Gravity	25
MEZ	F871	511	SDL	Gravity	25
MEZ	F872	512	SDL	Gravity	25
MEZ	F873	516	SDL	Gravity	25
MEZ	F874	517	SDL	Gravity	25
MEZ	F875	522	SDL	Gravity	25
MEZ	F876	523	SDL	Gravity	25
MEZ	F877	529	SDL	Gravity	25
MEZ	F878	530	SDL	Gravity	25
MEZ	F17	693	SDL	Gravity	25
MEZ	F18	694	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
MEZ	F19	695	SDL	Gravity	25
MEZ	F20	696	SDL	Gravity	25
MEZ	F37	697	SDL	Gravity	25
MEZ	F38	698	SDL	Gravity	25
MEZ	F879	699	SDL	Gravity	25
MEZ	F880	700	SDL	Gravity	25
MEZ	F881	701	SDL	Gravity	25
MEZ	F882	702	SDL	Gravity	25
MEZ	F883	703	SDL	Gravity	25
MEZ	F884	704	SDL	Gravity	25
MEZ	F893	708	SDL	Gravity	25
MEZ	F896	709	SDL	Gravity	25
MEZ	F899	710	SDL	Gravity	25
MEZ	F902	711	SDL	Gravity	25
MEZ	F905	1085	SDL	Gravity	25
MEZ	F908	1086	SDL	Gravity	25
MEZ	F911	1087	SDL	Gravity	25
MEZ	F913	1088	SDL	Gravity	25
MEZ	F914	1089	SDL	Gravity	25
MEZ	F915	1090	SDL	Gravity	25
MEZ	F916	1091	SDL	Gravity	25
MEZ	F917	1092	SDL	Gravity	25
MEZ	F918	1093	SDL	Gravity	25
MEZ	F919	1094	SDL	Gravity	25
MEZ	F920	1095	SDL	Gravity	25
MEZ	F921	1096	SDL	Gravity	25
MEZ	F922	1097	SDL	Gravity	25
MEZ	F923	1098	SDL	Gravity	25
MEZ	F924	1099	SDL	Gravity	25
MEZ	F925	1100	SDL	Gravity	25
MEZ	F926	1101	SDL	Gravity	25
MEZ	F927	1102	SDL	Gravity	25
MEZ	F928	1103	SDL	Gravity	25
MEZ	F929	1104	SDL	Gravity	25
MEZ	F930	1105	SDL	Gravity	25
MEZ	F931	1106	SDL	Gravity	25
MEZ	F932	1107	SDL	Gravity	25
MEZ	F933	1108	SDL	Gravity	25
MEZ	F934	1109	SDL	Gravity	25
MEZ	F939	1110	SDL	Gravity	25
MEZ	F1070	633	SDL	Gravity	25
MEZ	F1071	634	SDL	Gravity	25
MEZ	F1072	635	SDL	Gravity	25
MEZ	F1091	1400	SDL	Gravity	25
MEZ	F1092	1401	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
MEZ	F1093	1402	SDL	Gravity	25
MEZ	F1094	1403	SDL	Gravity	25
MEZ	F1096	1404	SDL	Gravity	25
MEZ	F1097	1405	SDL	Gravity	25
MEZ	F1099	1406	SDL	Gravity	25
MEZ	F1100	1407	SDL	Gravity	25
MEZ	F1102	1408	SDL	Gravity	25
MEZ	F1103	1409	SDL	Gravity	25
MEZ	F1104	1410	SDL	Gravity	25
MEZ	F1105	1411	SDL	Gravity	25
MEZ	F984	624	SDL	Gravity	25
MEZ	F1055	630	SDL	Gravity	25
MEZ	F1082	472	SDL	Gravity	25
MEZ	F1083	490	SDL	Gravity	25
1ST	F21	537	SDL	Gravity	25
1ST	F22	538	SDL	Gravity	25
1ST	F23	539	SDL	Gravity	25
1ST	F24	540	SDL	Gravity	25
1ST	F25	543	SDL	Gravity	25
1ST	F26	544	SDL	Gravity	25
1ST	F27	545	SDL	Gravity	25
1ST	F28	546	SDL	Gravity	25
1ST	F29	549	SDL	Gravity	25
1ST	F30	550	SDL	Gravity	25
1ST	F31	551	SDL	Gravity	25
1ST	F32	552	SDL	Gravity	25
1ST	F33	555	SDL	Gravity	25
1ST	F34	556	SDL	Gravity	25
1ST	F35	557	SDL	Gravity	25
1ST	F36	558	SDL	Gravity	25
1ST	F39	561	SDL	Gravity	25
1ST	F40	562	SDL	Gravity	25
1ST	F83	2066	SDL	Gravity	25
1ST	F237	2067	SDL	Gravity	25
1ST	F264	2068	SDL	Gravity	25
1ST	F311	2069	SDL	Gravity	25
1ST	F313	2070	SDL	Gravity	25
1ST	F314	2071	SDL	Gravity	25
1ST	F315	2072	SDL	Gravity	25
1ST	F319	2073	SDL	Gravity	25
1ST	F322	2074	SDL	Gravity	25
1ST	F323	2075	SDL	Gravity	25
1ST	F321	2077	SDL	Gravity	25
1ST	F329	2078	SDL	Gravity	25
1ST	F331	2079	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F335	2080	SDL	Gravity	25
1ST	F340	2081	SDL	Gravity	25
1ST	F360	2082	SDL	Gravity	25
1ST	F364	2083	SDL	Gravity	25
1ST	F372	2085	SDL	Gravity	25
1ST	F376	2086	SDL	Gravity	25
1ST	F330	2087	SDL	Gravity	25
1ST	F389	2088	SDL	Gravity	25
1ST	F391	2089	SDL	Gravity	25
1ST	F392	2090	SDL	Gravity	25
1ST	F393	2091	SDL	Gravity	25
1ST	F395	2092	SDL	Gravity	25
1ST	F396	2093	SDL	Gravity	25
1ST	F438	2095	SDL	Gravity	25
1ST	F440	2096	SDL	Gravity	25
1ST	F442	2097	SDL	Gravity	25
1ST	F444	2098	SDL	Gravity	25
1ST	F446	2099	SDL	Gravity	25
1ST	F448	2100	SDL	Gravity	25
1ST	F449	2101	SDL	Gravity	25
1ST	F450	2102	SDL	Gravity	25
1ST	F451	2103	SDL	Gravity	25
1ST	F452	2104	SDL	Gravity	25
1ST	F453	2105	SDL	Gravity	25
1ST	F454	2106	SDL	Gravity	25
1ST	F455	2107	SDL	Gravity	25
1ST	F456	2108	SDL	Gravity	25
1ST	F458	2110	SDL	Gravity	25
1ST	F459	2111	SDL	Gravity	25
1ST	F461	2112	SDL	Gravity	25
1ST	F462	2113	SDL	Gravity	25
1ST	F463	2114	SDL	Gravity	25
1ST	F464	2115	SDL	Gravity	25
1ST	F465	2116	SDL	Gravity	25
1ST	F466	2117	SDL	Gravity	25
1ST	F467	2118	SDL	Gravity	25
1ST	F468	2119	SDL	Gravity	25
1ST	F469	2120	SDL	Gravity	25
1ST	F470	2121	SDL	Gravity	25
1ST	F471	2122	SDL	Gravity	25
1ST	F472	2123	SDL	Gravity	25
1ST	F474	2124	SDL	Gravity	25
1ST	F475	2125	SDL	Gravity	25
1ST	F476	2126	SDL	Gravity	25
1ST	F477	2127	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F478	2128	SDL	Gravity	25
1ST	F460	2129	SDL	Gravity	25
1ST	F473	2130	SDL	Gravity	25
1ST	F479	2131	SDL	Gravity	25
1ST	F480	2132	SDL	Gravity	25
1ST	F481	2133	SDL	Gravity	25
1ST	F482	2134	SDL	Gravity	25
1ST	F483	2135	SDL	Gravity	25
1ST	F484	2136	SDL	Gravity	25
1ST	F485	2137	SDL	Gravity	25
1ST	F486	2138	SDL	Gravity	25
1ST	F497	2139	SDL	Gravity	25
1ST	F498	2140	SDL	Gravity	25
1ST	F499	2141	SDL	Gravity	25
1ST	F500	2142	SDL	Gravity	25
1ST	F501	2143	SDL	Gravity	25
1ST	F502	2144	SDL	Gravity	25
1ST	F503	2145	SDL	Gravity	25
1ST	F505	2147	SDL	Gravity	25
1ST	F506	2148	SDL	Gravity	25
1ST	F507	2149	SDL	Gravity	25
1ST	F508	2150	SDL	Gravity	25
1ST	F509	2151	SDL	Gravity	25
1ST	F510	2152	SDL	Gravity	25
1ST	F511	2153	SDL	Gravity	25
1ST	F512	2154	SDL	Gravity	25
1ST	F513	2155	SDL	Gravity	25
1ST	F515	2157	SDL	Gravity	25
1ST	F516	2158	SDL	Gravity	25
1ST	F523	2159	SDL	Gravity	25
1ST	F524	2160	SDL	Gravity	25
1ST	F525	2161	SDL	Gravity	25
1ST	F526	2164	SDL	Gravity	25
1ST	F527	2162	SDL	Gravity	25
1ST	F528	2163	SDL	Gravity	25
1ST	F487	2165	SDL	Gravity	25
1ST	F488	2166	SDL	Gravity	25
1ST	F489	2167	SDL	Gravity	25
1ST	F490	2168	SDL	Gravity	25
1ST	F491	2169	SDL	Gravity	25
1ST	F492	2170	SDL	Gravity	25
1ST	F493	2171	SDL	Gravity	25
1ST	F494	2172	SDL	Gravity	25
1ST	F495	2173	SDL	Gravity	25
1ST	F496	2174	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F517	2175	SDL	Gravity	25
1ST	F518	2176	SDL	Gravity	25
1ST	F519	2177	SDL	Gravity	25
1ST	F520	2178	SDL	Gravity	25
1ST	F521	2179	SDL	Gravity	25
1ST	F522	2180	SDL	Gravity	25
1ST	F529	2181	SDL	Gravity	25
1ST	F530	2182	SDL	Gravity	25
1ST	F531	2183	SDL	Gravity	25
1ST	F532	2184	SDL	Gravity	25
1ST	F533	2185	SDL	Gravity	25
1ST	F534	2186	SDL	Gravity	25
1ST	F535	2187	SDL	Gravity	25
1ST	F536	2188	SDL	Gravity	25
1ST	F537	2189	SDL	Gravity	25
1ST	F538	2190	SDL	Gravity	25
1ST	F539	2191	SDL	Gravity	25
1ST	F540	2192	SDL	Gravity	25
1ST	F541	2193	SDL	Gravity	25
1ST	F542	2194	SDL	Gravity	25
1ST	F543	2195	SDL	Gravity	25
1ST	F544	2196	SDL	Gravity	25
1ST	F545	2197	SDL	Gravity	25
1ST	F546	2198	SDL	Gravity	25
1ST	F548	2200	SDL	Gravity	25
1ST	F549	2201	SDL	Gravity	25
1ST	F550	2202	SDL	Gravity	25
1ST	F551	2203	SDL	Gravity	25
1ST	F552	2204	SDL	Gravity	25
1ST	F553	2205	SDL	Gravity	25
1ST	F554	2206	SDL	Gravity	25
1ST	F555	2207	SDL	Gravity	25
1ST	F556	2208	SDL	Gravity	25
1ST	F558	2210	SDL	Gravity	25
1ST	F559	2211	SDL	Gravity	25
1ST	F560	2212	SDL	Gravity	25
1ST	F561	2213	SDL	Gravity	25
1ST	F562	2214	SDL	Gravity	25
1ST	F563	2215	SDL	Gravity	25
1ST	F564	2216	SDL	Gravity	25
1ST	F565	2217	SDL	Gravity	25
1ST	F575	2227	SDL	Gravity	25
1ST	F576	2228	SDL	Gravity	25
1ST	F577	2229	SDL	Gravity	25
1ST	F578	2230	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F579	2231	SDL	Gravity	25
1ST	F613	2218	SDL	Gravity	25
1ST	F614	2219	SDL	Gravity	25
1ST	F615	2220	SDL	Gravity	25
1ST	F616	2221	SDL	Gravity	25
1ST	F617	2222	SDL	Gravity	25
1ST	F618	2223	SDL	Gravity	25
1ST	F619	2224	SDL	Gravity	25
1ST	F620	2225	SDL	Gravity	25
1ST	F621	2226	SDL	Gravity	25
1ST	F622	2232	SDL	Gravity	25
1ST	F623	2233	SDL	Gravity	25
1ST	F624	2234	SDL	Gravity	25
1ST	F625	2235	SDL	Gravity	25
1ST	F626	2236	SDL	Gravity	25
1ST	F627	2237	SDL	Gravity	25
1ST	F628	2238	SDL	Gravity	25
1ST	F629	2239	SDL	Gravity	25
1ST	F630	2240	SDL	Gravity	25
1ST	F631	2241	SDL	Gravity	25
1ST	F632	2242	SDL	Gravity	25
1ST	F633	2243	SDL	Gravity	25
1ST	F634	2244	SDL	Gravity	25
1ST	F635	2245	SDL	Gravity	25
1ST	F636	2246	SDL	Gravity	25
1ST	F637	2247	SDL	Gravity	25
1ST	F638	2248	SDL	Gravity	25
1ST	F639	2249	SDL	Gravity	25
1ST	F640	2250	SDL	Gravity	25
1ST	F641	2251	SDL	Gravity	25
1ST	F643	2253	SDL	Gravity	25
1ST	F644	2254	SDL	Gravity	25
1ST	F645	2255	SDL	Gravity	25
1ST	F646	2256	SDL	Gravity	25
1ST	F647	2257	SDL	Gravity	25
1ST	F648	2258	SDL	Gravity	25
1ST	F649	2259	SDL	Gravity	25
1ST	F650	2260	SDL	Gravity	25
1ST	F651	2261	SDL	Gravity	25
1ST	F566	2264	SDL	Gravity	25
1ST	F574	2262	SDL	Gravity	25
1ST	F580	2263	SDL	Gravity	25
1ST	F582	2275	SDL	Gravity	25
1ST	F583	2276	SDL	Gravity	25
1ST	F584	2277	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F585	2278	SDL	Gravity	25
1ST	F586	2279	SDL	Gravity	25
1ST	F587	2280	SDL	Gravity	25
1ST	F869	535	SDL	Gravity	25
1ST	F870	536	SDL	Gravity	25
1ST	F871	541	SDL	Gravity	25
1ST	F872	542	SDL	Gravity	25
1ST	F873	547	SDL	Gravity	25
1ST	F874	548	SDL	Gravity	25
1ST	F875	553	SDL	Gravity	25
1ST	F876	554	SDL	Gravity	25
1ST	F877	559	SDL	Gravity	25
1ST	F878	560	SDL	Gravity	25
1ST	F17	573	SDL	Gravity	25
1ST	F18	574	SDL	Gravity	25
1ST	F19	575	SDL	Gravity	25
1ST	F20	576	SDL	Gravity	25
1ST	F37	577	SDL	Gravity	25
1ST	F38	578	SDL	Gravity	25
1ST	F879	579	SDL	Gravity	25
1ST	F880	580	SDL	Gravity	25
1ST	F881	581	SDL	Gravity	25
1ST	F882	582	SDL	Gravity	25
1ST	F883	583	SDL	Gravity	25
1ST	F884	584	SDL	Gravity	25
1ST	F893	647	SDL	Gravity	25
1ST	F896	648	SDL	Gravity	25
1ST	F899	649	SDL	Gravity	25
1ST	F902	650	SDL	Gravity	25
1ST	F905	651	SDL	Gravity	25
1ST	F908	652	SDL	Gravity	25
1ST	F911	653	SDL	Gravity	25
1ST	F913	654	SDL	Gravity	25
1ST	F914	655	SDL	Gravity	25
1ST	F915	656	SDL	Gravity	25
1ST	F916	657	SDL	Gravity	25
1ST	F917	658	SDL	Gravity	25
1ST	F918	659	SDL	Gravity	25
1ST	F919	660	SDL	Gravity	25
1ST	F920	661	SDL	Gravity	25
1ST	F921	662	SDL	Gravity	25
1ST	F922	663	SDL	Gravity	25
1ST	F923	664	SDL	Gravity	25
1ST	F924	665	SDL	Gravity	25
1ST	F925	666	SDL	Gravity	25

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
1ST	F926	667	SDL	Gravity	25
1ST	F927	668	SDL	Gravity	25
1ST	F928	669	SDL	Gravity	25
1ST	F929	670	SDL	Gravity	25
1ST	F930	671	SDL	Gravity	25
1ST	F931	688	SDL	Gravity	25
1ST	F932	689	SDL	Gravity	25
1ST	F933	690	SDL	Gravity	25
1ST	F934	691	SDL	Gravity	25
1ST	F939	692	SDL	Gravity	25
1ST	F1091	1202	SDL	Gravity	25
1ST	F1092	1203	SDL	Gravity	25
1ST	F1093	1204	SDL	Gravity	25
1ST	F1094	1205	SDL	Gravity	25
1ST	F1096	1207	SDL	Gravity	25
1ST	F1097	1208	SDL	Gravity	25
1ST	F1099	1210	SDL	Gravity	25
1ST	F1100	1215	SDL	Gravity	25
1ST	F1102	1217	SDL	Gravity	25
1ST	F1103	1218	SDL	Gravity	25
1ST	F1104	1219	SDL	Gravity	25
1ST	F1105	1220	SDL	Gravity	25
1ST	F1	2094	SDL	Gravity	25
1ST	F2	2109	SDL	Gravity	25
1ST	F43	2146	SDL	Gravity	25
1ST	F44	2199	SDL	Gravity	25
1ST	F46	2252	SDL	Gravity	25
1ST	F1056	2084	SDL	Gravity	25
1ST	F1059	2156	SDL	Gravity	25
1ST	F1063	2209	SDL	Gravity	25
1ST	F1068	2265	SDL	Gravity	25
1ST	F1082	533	SDL	Gravity	25
1ST	F1083	534	SDL	Gravity	25
1ST	F327	2076	SDL	Gravity	25
PH	F887	1422	Lr	Gravity	20
PH	F890	1423	Lr	Gravity	20
PH	F892	1424	Lr	Gravity	20
ROOF	F41	1132	Lr	Gravity	20
ROOF	F42	1133	Lr	Gravity	20
ROOF	F49	1160	Lr	Gravity	20
ROOF	F50	1161	Lr	Gravity	20
ROOF	F51	1156	Lr	Gravity	20
ROOF	F52	1157	Lr	Gravity	20
ROOF	F53	1138	Lr	Gravity	20
ROOF	F54	1139	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F55	1142	Lr	Gravity	20
ROOF	F56	1143	Lr	Gravity	20
ROOF	F57	1148	Lr	Gravity	20
ROOF	F58	1149	Lr	Gravity	20
ROOF	F59	1154	Lr	Gravity	20
ROOF	F60	1155	Lr	Gravity	20
ROOF	F61	1144	Lr	Gravity	20
ROOF	F62	1145	Lr	Gravity	20
ROOF	F63	1150	Lr	Gravity	20
ROOF	F64	1151	Lr	Gravity	20
ROOF	F831	221	Lr	Gravity	20
ROOF	F846	224	Lr	Gravity	20
ROOF	F848	225	Lr	Gravity	20
ROOF	F853	232	Lr	Gravity	20
ROOF	F854	235	Lr	Gravity	20
ROOF	F856	238	Lr	Gravity	20
ROOF	F857	241	Lr	Gravity	20
ROOF	F858	244	Lr	Gravity	20
ROOF	F859	247	Lr	Gravity	20
ROOF	F860	250	Lr	Gravity	20
ROOF	F861	253	Lr	Gravity	20
ROOF	F862	256	Lr	Gravity	20
ROOF	F863	258	Lr	Gravity	20
ROOF	F865	260	Lr	Gravity	20
ROOF	F866	261	Lr	Gravity	20
ROOF	F867	262	Lr	Gravity	20
ROOF	F868	263	Lr	Gravity	20
ROOF	F935	264	Lr	Gravity	20
ROOF	F936	265	Lr	Gravity	20
ROOF	F937	266	Lr	Gravity	20
ROOF	F938	267	Lr	Gravity	20
ROOF	F940	314	Lr	Gravity	20
ROOF	F941	315	Lr	Gravity	20
ROOF	F942	316	Lr	Gravity	20
ROOF	F943	317	Lr	Gravity	20
ROOF	F944	318	Lr	Gravity	20
ROOF	F945	319	Lr	Gravity	20
ROOF	F946	320	Lr	Gravity	20
ROOF	F947	321	Lr	Gravity	20
ROOF	F949	323	Lr	Gravity	20
ROOF	F950	324	Lr	Gravity	20
ROOF	F951	325	Lr	Gravity	20
ROOF	F952	326	Lr	Gravity	20
ROOF	F953	327	Lr	Gravity	20
ROOF	F954	328	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F955	329	Lr	Gravity	20
ROOF	F956	330	Lr	Gravity	20
ROOF	F958	332	Lr	Gravity	20
ROOF	F959	333	Lr	Gravity	20
ROOF	F960	334	Lr	Gravity	20
ROOF	F961	335	Lr	Gravity	20
ROOF	F962	336	Lr	Gravity	20
ROOF	F963	337	Lr	Gravity	20
ROOF	F964	338	Lr	Gravity	20
ROOF	F965	339	Lr	Gravity	20
ROOF	F967	341	Lr	Gravity	20
ROOF	F968	342	Lr	Gravity	20
ROOF	F969	343	Lr	Gravity	20
ROOF	F970	344	Lr	Gravity	20
ROOF	F971	345	Lr	Gravity	20
ROOF	F972	346	Lr	Gravity	20
ROOF	F973	347	Lr	Gravity	20
ROOF	F974	348	Lr	Gravity	20
ROOF	F976	350	Lr	Gravity	20
ROOF	F977	351	Lr	Gravity	20
ROOF	F978	352	Lr	Gravity	20
ROOF	F979	353	Lr	Gravity	20
ROOF	F980	354	Lr	Gravity	20
ROOF	F981	355	Lr	Gravity	20
ROOF	F982	356	Lr	Gravity	20
ROOF	F983	357	Lr	Gravity	20
ROOF	F985	359	Lr	Gravity	20
ROOF	F986	360	Lr	Gravity	20
ROOF	F987	361	Lr	Gravity	20
ROOF	F988	362	Lr	Gravity	20
ROOF	F989	363	Lr	Gravity	20
ROOF	F990	364	Lr	Gravity	20
ROOF	F991	365	Lr	Gravity	20
ROOF	F992	366	Lr	Gravity	20
ROOF	F994	368	Lr	Gravity	20
ROOF	F995	369	Lr	Gravity	20
ROOF	F996	370	Lr	Gravity	20
ROOF	F997	371	Lr	Gravity	20
ROOF	F998	372	Lr	Gravity	20
ROOF	F999	373	Lr	Gravity	20
ROOF	F1000	374	Lr	Gravity	20
ROOF	F1001	375	Lr	Gravity	20
ROOF	F1003	377	Lr	Gravity	20
ROOF	F1004	381	Lr	Gravity	20
ROOF	F1005	382	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F1006	383	Lr	Gravity	20
ROOF	F1007	384	Lr	Gravity	20
ROOF	F1008	385	Lr	Gravity	20
ROOF	F1009	386	Lr	Gravity	20
ROOF	F1010	387	Lr	Gravity	20
ROOF	F1012	389	Lr	Gravity	20
ROOF	F1013	390	Lr	Gravity	20
ROOF	F1014	391	Lr	Gravity	20
ROOF	F1015	392	Lr	Gravity	20
ROOF	F1016	393	Lr	Gravity	20
ROOF	F1017	394	Lr	Gravity	20
ROOF	F1018	395	Lr	Gravity	20
ROOF	F1019	396	Lr	Gravity	20
ROOF	F1021	398	Lr	Gravity	20
ROOF	F1022	399	Lr	Gravity	20
ROOF	F1023	400	Lr	Gravity	20
ROOF	F1024	401	Lr	Gravity	20
ROOF	F1025	402	Lr	Gravity	20
ROOF	F1026	403	Lr	Gravity	20
ROOF	F1027	404	Lr	Gravity	20
ROOF	F1028	405	Lr	Gravity	20
ROOF	F1030	407	Lr	Gravity	20
ROOF	F1031	408	Lr	Gravity	20
ROOF	F1032	409	Lr	Gravity	20
ROOF	F1033	410	Lr	Gravity	20
ROOF	F1034	411	Lr	Gravity	20
ROOF	F1035	412	Lr	Gravity	20
ROOF	F1036	413	Lr	Gravity	20
ROOF	F1037	414	Lr	Gravity	20
ROOF	F1039	416	Lr	Gravity	20
ROOF	F1040	417	Lr	Gravity	20
ROOF	F1041	418	Lr	Gravity	20
ROOF	F1042	419	Lr	Gravity	20
ROOF	F1043	420	Lr	Gravity	20
ROOF	F1044	421	Lr	Gravity	20
ROOF	F1045	422	Lr	Gravity	20
ROOF	F1046	423	Lr	Gravity	20
ROOF	F1048	425	Lr	Gravity	20
ROOF	F1049	426	Lr	Gravity	20
ROOF	F1050	427	Lr	Gravity	20
ROOF	F1051	428	Lr	Gravity	20
ROOF	F1052	429	Lr	Gravity	20
ROOF	F1053	430	Lr	Gravity	20
ROOF	F1054	431	Lr	Gravity	20
ROOF	F1057	434	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
ROOF	F1058	435	Lr	Gravity	20
ROOF	F1060	437	Lr	Gravity	20
ROOF	F1061	438	Lr	Gravity	20
ROOF	F1062	439	Lr	Gravity	20
ROOF	F1091	1279	Lr	Gravity	20
ROOF	F1092	1280	Lr	Gravity	20
ROOF	F1093	1281	Lr	Gravity	20
ROOF	F1094	1282	Lr	Gravity	20
ROOF	F1096	1283	Lr	Gravity	20
ROOF	F1097	1284	Lr	Gravity	20
ROOF	F1099	1292	Lr	Gravity	20
ROOF	F1100	1294	Lr	Gravity	20
ROOF	F1102	1295	Lr	Gravity	20
ROOF	F1103	1296	Lr	Gravity	20
ROOF	F1104	1297	Lr	Gravity	20
ROOF	F1105	1298	Lr	Gravity	20
ROOF	F966	1134	Lr	Gravity	20
ROOF	F975	1135	Lr	Gravity	20
ROOF	F1002	1146	Lr	Gravity	20
ROOF	F1011	1147	Lr	Gravity	20
ROOF	F1020	1152	Lr	Gravity	20
ROOF	F1029	1153	Lr	Gravity	20
ROOF	F1038	1158	Lr	Gravity	20
ROOF	F1047	1159	Lr	Gravity	20
ROOF	F1292	433	Lr	Gravity	20
ROOF	F1293	436	Lr	Gravity	20
ROOF	F1294	1136	Lr	Gravity	20
ROOF	F1295	1137	Lr	Gravity	20
2ND	F21	590	Lr	Gravity	20
2ND	F22	591	Lr	Gravity	20
2ND	F23	592	Lr	Gravity	20
2ND	F24	593	Lr	Gravity	20
2ND	F25	596	Lr	Gravity	20
2ND	F26	597	Lr	Gravity	20
2ND	F27	598	Lr	Gravity	20
2ND	F28	599	Lr	Gravity	20
2ND	F29	602	Lr	Gravity	20
2ND	F30	603	Lr	Gravity	20
2ND	F31	604	Lr	Gravity	20
2ND	F32	605	Lr	Gravity	20
2ND	F33	608	Lr	Gravity	20
2ND	F34	609	Lr	Gravity	20
2ND	F35	610	Lr	Gravity	20
2ND	F36	611	Lr	Gravity	20
2ND	F39	614	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F40	615	Lr	Gravity	20
2ND	F73	744	Lr	Gravity	20
2ND	F77	746	Lr	Gravity	20
2ND	F78	747	Lr	Gravity	20
2ND	F79	748	Lr	Gravity	20
2ND	F88	751	Lr	Gravity	20
2ND	F90	753	Lr	Gravity	20
2ND	F91	754	Lr	Gravity	20
2ND	F92	755	Lr	Gravity	20
2ND	F93	756	Lr	Gravity	20
2ND	F94	757	Lr	Gravity	20
2ND	F95	758	Lr	Gravity	20
2ND	F96	759	Lr	Gravity	20
2ND	F97	760	Lr	Gravity	20
2ND	F98	761	Lr	Gravity	20
2ND	F99	762	Lr	Gravity	20
2ND	F100	763	Lr	Gravity	20
2ND	F101	764	Lr	Gravity	20
2ND	F102	765	Lr	Gravity	20
2ND	F104	767	Lr	Gravity	20
2ND	F106	769	Lr	Gravity	20
2ND	F107	770	Lr	Gravity	20
2ND	F108	771	Lr	Gravity	20
2ND	F109	772	Lr	Gravity	20
2ND	F110	773	Lr	Gravity	20
2ND	F112	775	Lr	Gravity	20
2ND	F114	777	Lr	Gravity	20
2ND	F115	778	Lr	Gravity	20
2ND	F116	779	Lr	Gravity	20
2ND	F117	780	Lr	Gravity	20
2ND	F118	781	Lr	Gravity	20
2ND	F120	783	Lr	Gravity	20
2ND	F122	785	Lr	Gravity	20
2ND	F123	786	Lr	Gravity	20
2ND	F124	787	Lr	Gravity	20
2ND	F125	788	Lr	Gravity	20
2ND	F126	789	Lr	Gravity	20
2ND	F128	791	Lr	Gravity	20
2ND	F130	793	Lr	Gravity	20
2ND	F131	794	Lr	Gravity	20
2ND	F132	795	Lr	Gravity	20
2ND	F133	796	Lr	Gravity	20
2ND	F134	797	Lr	Gravity	20
2ND	F136	799	Lr	Gravity	20
2ND	F138	801	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F139	802	Lr	Gravity	20
2ND	F140	803	Lr	Gravity	20
2ND	F141	804	Lr	Gravity	20
2ND	F142	805	Lr	Gravity	20
2ND	F144	807	Lr	Gravity	20
2ND	F146	809	Lr	Gravity	20
2ND	F147	810	Lr	Gravity	20
2ND	F148	811	Lr	Gravity	20
2ND	F149	812	Lr	Gravity	20
2ND	F150	813	Lr	Gravity	20
2ND	F155	814	Lr	Gravity	20
2ND	F156	815	Lr	Gravity	20
2ND	F157	816	Lr	Gravity	20
2ND	F158	817	Lr	Gravity	20
2ND	F159	818	Lr	Gravity	20
2ND	F160	819	Lr	Gravity	20
2ND	F165	828	Lr	Gravity	20
2ND	F169	830	Lr	Gravity	20
2ND	F170	831	Lr	Gravity	20
2ND	F171	832	Lr	Gravity	20
2ND	F180	835	Lr	Gravity	20
2ND	F182	837	Lr	Gravity	20
2ND	F183	838	Lr	Gravity	20
2ND	F184	839	Lr	Gravity	20
2ND	F185	840	Lr	Gravity	20
2ND	F186	841	Lr	Gravity	20
2ND	F187	842	Lr	Gravity	20
2ND	F188	843	Lr	Gravity	20
2ND	F189	844	Lr	Gravity	20
2ND	F190	845	Lr	Gravity	20
2ND	F191	846	Lr	Gravity	20
2ND	F192	847	Lr	Gravity	20
2ND	F193	848	Lr	Gravity	20
2ND	F194	849	Lr	Gravity	20
2ND	F196	851	Lr	Gravity	20
2ND	F198	853	Lr	Gravity	20
2ND	F199	854	Lr	Gravity	20
2ND	F200	855	Lr	Gravity	20
2ND	F201	856	Lr	Gravity	20
2ND	F202	857	Lr	Gravity	20
2ND	F204	859	Lr	Gravity	20
2ND	F206	861	Lr	Gravity	20
2ND	F207	862	Lr	Gravity	20
2ND	F208	863	Lr	Gravity	20
2ND	F209	864	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F210	865	Lr	Gravity	20
2ND	F212	867	Lr	Gravity	20
2ND	F214	869	Lr	Gravity	20
2ND	F215	870	Lr	Gravity	20
2ND	F216	871	Lr	Gravity	20
2ND	F217	872	Lr	Gravity	20
2ND	F218	873	Lr	Gravity	20
2ND	F220	875	Lr	Gravity	20
2ND	F222	877	Lr	Gravity	20
2ND	F223	878	Lr	Gravity	20
2ND	F224	879	Lr	Gravity	20
2ND	F225	880	Lr	Gravity	20
2ND	F226	881	Lr	Gravity	20
2ND	F228	883	Lr	Gravity	20
2ND	F230	885	Lr	Gravity	20
2ND	F231	886	Lr	Gravity	20
2ND	F232	887	Lr	Gravity	20
2ND	F233	888	Lr	Gravity	20
2ND	F234	889	Lr	Gravity	20
2ND	F236	891	Lr	Gravity	20
2ND	F238	893	Lr	Gravity	20
2ND	F239	894	Lr	Gravity	20
2ND	F240	895	Lr	Gravity	20
2ND	F241	896	Lr	Gravity	20
2ND	F242	897	Lr	Gravity	20
2ND	F243	898	Lr	Gravity	20
2ND	F244	899	Lr	Gravity	20
2ND	F245	900	Lr	Gravity	20
2ND	F246	901	Lr	Gravity	20
2ND	F247	902	Lr	Gravity	20
2ND	F248	903	Lr	Gravity	20
2ND	F257	912	Lr	Gravity	20
2ND	F261	914	Lr	Gravity	20
2ND	F262	915	Lr	Gravity	20
2ND	F272	919	Lr	Gravity	20
2ND	F278	925	Lr	Gravity	20
2ND	F279	926	Lr	Gravity	20
2ND	F280	927	Lr	Gravity	20
2ND	F281	928	Lr	Gravity	20
2ND	F282	929	Lr	Gravity	20
2ND	F283	930	Lr	Gravity	20
2ND	F284	931	Lr	Gravity	20
2ND	F285	932	Lr	Gravity	20
2ND	F286	933	Lr	Gravity	20
2ND	F288	935	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F289	936	Lr	Gravity	20
2ND	F292	939	Lr	Gravity	20
2ND	F293	940	Lr	Gravity	20
2ND	F294	941	Lr	Gravity	20
2ND	F296	943	Lr	Gravity	20
2ND	F300	947	Lr	Gravity	20
2ND	F301	948	Lr	Gravity	20
2ND	F302	949	Lr	Gravity	20
2ND	F304	951	Lr	Gravity	20
2ND	F308	955	Lr	Gravity	20
2ND	F309	956	Lr	Gravity	20
2ND	F310	957	Lr	Gravity	20
2ND	F312	959	Lr	Gravity	20
2ND	F316	963	Lr	Gravity	20
2ND	F317	964	Lr	Gravity	20
2ND	F318	965	Lr	Gravity	20
2ND	F320	967	Lr	Gravity	20
2ND	F324	971	Lr	Gravity	20
2ND	F325	972	Lr	Gravity	20
2ND	F326	973	Lr	Gravity	20
2ND	F328	975	Lr	Gravity	20
2ND	F332	979	Lr	Gravity	20
2ND	F333	980	Lr	Gravity	20
2ND	F334	981	Lr	Gravity	20
2ND	F336	983	Lr	Gravity	20
2ND	F337	984	Lr	Gravity	20
2ND	F338	985	Lr	Gravity	20
2ND	F339	986	Lr	Gravity	20
2ND	F345	992	Lr	Gravity	20
2ND	F349	994	Lr	Gravity	20
2ND	F352	995	Lr	Gravity	20
2ND	F353	996	Lr	Gravity	20
2ND	F354	997	Lr	Gravity	20
2ND	F355	998	Lr	Gravity	20
2ND	F356	999	Lr	Gravity	20
2ND	F357	1000	Lr	Gravity	20
2ND	F358	1001	Lr	Gravity	20
2ND	F359	1002	Lr	Gravity	20
2ND	F361	1004	Lr	Gravity	20
2ND	F362	1005	Lr	Gravity	20
2ND	F363	1006	Lr	Gravity	20
2ND	F365	1008	Lr	Gravity	20
2ND	F366	1009	Lr	Gravity	20
2ND	F367	1010	Lr	Gravity	20
2ND	F370	1011	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F371	1012	Lr	Gravity	20
2ND	F373	1014	Lr	Gravity	20
2ND	F377	1016	Lr	Gravity	20
2ND	F378	1017	Lr	Gravity	20
2ND	F379	1018	Lr	Gravity	20
2ND	F380	1019	Lr	Gravity	20
2ND	F381	1020	Lr	Gravity	20
2ND	F382	1021	Lr	Gravity	20
2ND	F383	1022	Lr	Gravity	20
2ND	F384	1023	Lr	Gravity	20
2ND	F385	1024	Lr	Gravity	20
2ND	F386	1025	Lr	Gravity	20
2ND	F387	1026	Lr	Gravity	20
2ND	F388	1027	Lr	Gravity	20
2ND	F417	1046	Lr	Gravity	20
2ND	F420	1048	Lr	Gravity	20
2ND	F425	1053	Lr	Gravity	20
2ND	F426	1054	Lr	Gravity	20
2ND	F427	1055	Lr	Gravity	20
2ND	F428	1056	Lr	Gravity	20
2ND	F431	1059	Lr	Gravity	20
2ND	F432	1060	Lr	Gravity	20
2ND	F435	1063	Lr	Gravity	20
2ND	F437	1065	Lr	Gravity	20
2ND	F443	1071	Lr	Gravity	20
2ND	F447	1073	Lr	Gravity	20
2ND	F265	1047	Lr	Gravity	20
2ND	F266	1049	Lr	Gravity	20
2ND	F267	1050	Lr	Gravity	20
2ND	F268	1051	Lr	Gravity	20
2ND	F270	1052	Lr	Gravity	20
2ND	F346	1057	Lr	Gravity	20
2ND	F347	1058	Lr	Gravity	20
2ND	F350	1061	Lr	Gravity	20
2ND	F351	1062	Lr	Gravity	20
2ND	F368	1064	Lr	Gravity	20
2ND	F374	1069	Lr	Gravity	20
2ND	F375	1070	Lr	Gravity	20
2ND	F390	1072	Lr	Gravity	20
2ND	F394	1075	Lr	Gravity	20
2ND	F409	916	Lr	Gravity	20
2ND	F411	921	Lr	Gravity	20
2ND	F412	922	Lr	Gravity	20
2ND	F413	923	Lr	Gravity	20
2ND	F414	924	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F415	937	Lr	Gravity	20
2ND	F416	938	Lr	Gravity	20
2ND	F418	945	Lr	Gravity	20
2ND	F419	946	Lr	Gravity	20
2ND	F421	953	Lr	Gravity	20
2ND	F422	954	Lr	Gravity	20
2ND	F423	961	Lr	Gravity	20
2ND	F424	962	Lr	Gravity	20
2ND	F429	969	Lr	Gravity	20
2ND	F430	970	Lr	Gravity	20
2ND	F433	977	Lr	Gravity	20
2ND	F434	978	Lr	Gravity	20
2ND	F436	982	Lr	Gravity	20
2ND	F439	987	Lr	Gravity	20
2ND	F80	966	Lr	Gravity	20
2ND	F81	974	Lr	Gravity	20
2ND	F84	1066	Lr	Gravity	20
2ND	F166	1068	Lr	Gravity	20
2ND	F167	1067	Lr	Gravity	20
2ND	F172	1074	Lr	Gravity	20
2ND	F174	1013	Lr	Gravity	20
2ND	F250	1015	Lr	Gravity	20
2ND	F252	968	Lr	Gravity	20
2ND	F254	976	Lr	Gravity	20
2ND	F256	950	Lr	Gravity	20
2ND	F263	958	Lr	Gravity	20
2ND	F269	952	Lr	Gravity	20
2ND	F274	1003	Lr	Gravity	20
2ND	F275	1007	Lr	Gravity	20
2ND	F276	960	Lr	Gravity	20
2ND	F277	944	Lr	Gravity	20
2ND	F290	858	Lr	Gravity	20
2ND	F203	866	Lr	Gravity	20
2ND	F211	874	Lr	Gravity	20
2ND	F291	882	Lr	Gravity	20
2ND	F297	890	Lr	Gravity	20
2ND	F219	918	Lr	Gravity	20
2ND	F227	920	Lr	Gravity	20
2ND	F235	942	Lr	Gravity	20
2ND	F271	934	Lr	Gravity	20
2ND	F273	834	Lr	Gravity	20
2ND	F179	836	Lr	Gravity	20
2ND	F287	852	Lr	Gravity	20
2ND	F181	860	Lr	Gravity	20
2ND	F197	868	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F205	876	Lr	Gravity	20
2ND	F213	884	Lr	Gravity	20
2ND	F221	892	Lr	Gravity	20
2ND	F295	806	Lr	Gravity	20
2ND	F298	798	Lr	Gravity	20
2ND	F299	850	Lr	Gravity	20
2ND	F303	790	Lr	Gravity	20
2ND	F305	808	Lr	Gravity	20
2ND	F127	800	Lr	Gravity	20
2ND	F135	792	Lr	Gravity	20
2ND	F143	782	Lr	Gravity	20
2ND	F145	774	Lr	Gravity	20
2ND	F195	766	Lr	Gravity	20
2ND	F103	750	Lr	Gravity	20
2ND	F111	752	Lr	Gravity	20
2ND	F119	768	Lr	Gravity	20
2ND	F129	776	Lr	Gravity	20
2ND	F137	784	Lr	Gravity	20
2ND	F87	1077	Lr	Gravity	20
2ND	F89	1078	Lr	Gravity	20
2ND	F105	1079	Lr	Gravity	20
2ND	F121	1080	Lr	Gravity	20
2ND	F567	2312	Lr	Gravity	20
2ND	F568	2313	Lr	Gravity	20
2ND	F569	2314	Lr	Gravity	20
2ND	F570	2315	Lr	Gravity	20
2ND	F571	2316	Lr	Gravity	20
2ND	F572	2317	Lr	Gravity	20
2ND	F573	1	Lr	Gravity	20
2ND	F588	2	Lr	Gravity	20
2ND	F597	3	Lr	Gravity	20
2ND	F598	4	Lr	Gravity	20
2ND	F599	5	Lr	Gravity	20
2ND	F600	6	Lr	Gravity	20
2ND	F601	7	Lr	Gravity	20
2ND	F602	8	Lr	Gravity	20
2ND	F603	9	Lr	Gravity	20
2ND	F604	10	Lr	Gravity	20
2ND	F605	11	Lr	Gravity	20
2ND	F606	12	Lr	Gravity	20
2ND	F607	13	Lr	Gravity	20
2ND	F608	14	Lr	Gravity	20
2ND	F609	15	Lr	Gravity	20
2ND	F610	16	Lr	Gravity	20
2ND	F611	17	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F612	18	Lr	Gravity	20
2ND	F652	19	Lr	Gravity	20
2ND	F654	20	Lr	Gravity	20
2ND	F591	21	Lr	Gravity	20
2ND	F592	22	Lr	Gravity	20
2ND	F589	24	Lr	Gravity	20
2ND	F590	25	Lr	Gravity	20
2ND	F593	26	Lr	Gravity	20
2ND	F594	27	Lr	Gravity	20
2ND	F595	28	Lr	Gravity	20
2ND	F596	29	Lr	Gravity	20
2ND	F653	30	Lr	Gravity	20
2ND	F656	32	Lr	Gravity	20
2ND	F657	33	Lr	Gravity	20
2ND	F658	34	Lr	Gravity	20
2ND	F659	35	Lr	Gravity	20
2ND	F660	36	Lr	Gravity	20
2ND	F655	23	Lr	Gravity	20
2ND	F661	31	Lr	Gravity	20
2ND	F662	37	Lr	Gravity	20
2ND	F663	38	Lr	Gravity	20
2ND	F664	39	Lr	Gravity	20
2ND	F665	40	Lr	Gravity	20
2ND	F666	41	Lr	Gravity	20
2ND	F667	42	Lr	Gravity	20
2ND	F668	43	Lr	Gravity	20
2ND	F669	44	Lr	Gravity	20
2ND	F670	45	Lr	Gravity	20
2ND	F671	46	Lr	Gravity	20
2ND	F711	47	Lr	Gravity	20
2ND	F713	49	Lr	Gravity	20
2ND	F714	50	Lr	Gravity	20
2ND	F715	51	Lr	Gravity	20
2ND	F716	52	Lr	Gravity	20
2ND	F717	53	Lr	Gravity	20
2ND	F718	54	Lr	Gravity	20
2ND	F719	55	Lr	Gravity	20
2ND	F720	56	Lr	Gravity	20
2ND	F721	57	Lr	Gravity	20
2ND	F722	58	Lr	Gravity	20
2ND	F723	59	Lr	Gravity	20
2ND	F724	60	Lr	Gravity	20
2ND	F725	61	Lr	Gravity	20
2ND	F726	62	Lr	Gravity	20
2ND	F727	63	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F728	64	Lr	Gravity	20
2ND	F729	65	Lr	Gravity	20
2ND	F730	66	Lr	Gravity	20
2ND	F731	67	Lr	Gravity	20
2ND	F732	68	Lr	Gravity	20
2ND	F733	69	Lr	Gravity	20
2ND	F734	70	Lr	Gravity	20
2ND	F735	71	Lr	Gravity	20
2ND	F736	72	Lr	Gravity	20
2ND	F672	48	Lr	Gravity	20
2ND	F673	73	Lr	Gravity	20
2ND	F674	74	Lr	Gravity	20
2ND	F675	75	Lr	Gravity	20
2ND	F676	76	Lr	Gravity	20
2ND	F677	77	Lr	Gravity	20
2ND	F678	78	Lr	Gravity	20
2ND	F679	79	Lr	Gravity	20
2ND	F680	80	Lr	Gravity	20
2ND	F681	81	Lr	Gravity	20
2ND	F682	82	Lr	Gravity	20
2ND	F683	83	Lr	Gravity	20
2ND	F684	84	Lr	Gravity	20
2ND	F685	85	Lr	Gravity	20
2ND	F686	86	Lr	Gravity	20
2ND	F687	87	Lr	Gravity	20
2ND	F688	88	Lr	Gravity	20
2ND	F689	89	Lr	Gravity	20
2ND	F690	90	Lr	Gravity	20
2ND	F691	91	Lr	Gravity	20
2ND	F692	92	Lr	Gravity	20
2ND	F693	93	Lr	Gravity	20
2ND	F694	94	Lr	Gravity	20
2ND	F695	95	Lr	Gravity	20
2ND	F696	96	Lr	Gravity	20
2ND	F697	97	Lr	Gravity	20
2ND	F698	98	Lr	Gravity	20
2ND	F699	99	Lr	Gravity	20
2ND	F700	100	Lr	Gravity	20
2ND	F701	101	Lr	Gravity	20
2ND	F702	102	Lr	Gravity	20
2ND	F703	103	Lr	Gravity	20
2ND	F704	104	Lr	Gravity	20
2ND	F705	105	Lr	Gravity	20
2ND	F706	106	Lr	Gravity	20
2ND	F707	107	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F708	108	Lr	Gravity	20
2ND	F709	109	Lr	Gravity	20
2ND	F710	110	Lr	Gravity	20
2ND	F712	111	Lr	Gravity	20
2ND	F737	112	Lr	Gravity	20
2ND	F738	113	Lr	Gravity	20
2ND	F739	114	Lr	Gravity	20
2ND	F740	115	Lr	Gravity	20
2ND	F741	116	Lr	Gravity	20
2ND	F742	117	Lr	Gravity	20
2ND	F743	118	Lr	Gravity	20
2ND	F744	119	Lr	Gravity	20
2ND	F745	120	Lr	Gravity	20
2ND	F746	121	Lr	Gravity	20
2ND	F747	122	Lr	Gravity	20
2ND	F748	123	Lr	Gravity	20
2ND	F749	124	Lr	Gravity	20
2ND	F750	125	Lr	Gravity	20
2ND	F751	126	Lr	Gravity	20
2ND	F752	127	Lr	Gravity	20
2ND	F753	128	Lr	Gravity	20
2ND	F754	129	Lr	Gravity	20
2ND	F755	130	Lr	Gravity	20
2ND	F756	131	Lr	Gravity	20
2ND	F757	132	Lr	Gravity	20
2ND	F758	133	Lr	Gravity	20
2ND	F759	134	Lr	Gravity	20
2ND	F760	135	Lr	Gravity	20
2ND	F761	136	Lr	Gravity	20
2ND	F762	137	Lr	Gravity	20
2ND	F763	138	Lr	Gravity	20
2ND	F764	139	Lr	Gravity	20
2ND	F765	140	Lr	Gravity	20
2ND	F766	141	Lr	Gravity	20
2ND	F767	142	Lr	Gravity	20
2ND	F768	143	Lr	Gravity	20
2ND	F769	144	Lr	Gravity	20
2ND	F770	145	Lr	Gravity	20
2ND	F771	146	Lr	Gravity	20
2ND	F772	147	Lr	Gravity	20
2ND	F773	148	Lr	Gravity	20
2ND	F774	149	Lr	Gravity	20
2ND	F775	150	Lr	Gravity	20
2ND	F776	151	Lr	Gravity	20
2ND	F777	152	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F778	153	Lr	Gravity	20
2ND	F779	154	Lr	Gravity	20
2ND	F780	155	Lr	Gravity	20
2ND	F781	156	Lr	Gravity	20
2ND	F782	157	Lr	Gravity	20
2ND	F783	158	Lr	Gravity	20
2ND	F784	159	Lr	Gravity	20
2ND	F785	160	Lr	Gravity	20
2ND	F786	161	Lr	Gravity	20
2ND	F787	162	Lr	Gravity	20
2ND	F788	163	Lr	Gravity	20
2ND	F789	164	Lr	Gravity	20
2ND	F790	165	Lr	Gravity	20
2ND	F791	166	Lr	Gravity	20
2ND	F792	167	Lr	Gravity	20
2ND	F793	168	Lr	Gravity	20
2ND	F794	169	Lr	Gravity	20
2ND	F795	170	Lr	Gravity	20
2ND	F796	171	Lr	Gravity	20
2ND	F797	172	Lr	Gravity	20
2ND	F798	173	Lr	Gravity	20
2ND	F799	174	Lr	Gravity	20
2ND	F800	175	Lr	Gravity	20
2ND	F801	176	Lr	Gravity	20
2ND	F802	177	Lr	Gravity	20
2ND	F803	178	Lr	Gravity	20
2ND	F804	179	Lr	Gravity	20
2ND	F805	180	Lr	Gravity	20
2ND	F806	181	Lr	Gravity	20
2ND	F807	182	Lr	Gravity	20
2ND	F808	183	Lr	Gravity	20
2ND	F809	184	Lr	Gravity	20
2ND	F810	185	Lr	Gravity	20
2ND	F811	186	Lr	Gravity	20
2ND	F812	187	Lr	Gravity	20
2ND	F813	188	Lr	Gravity	20
2ND	F814	189	Lr	Gravity	20
2ND	F815	190	Lr	Gravity	20
2ND	F816	191	Lr	Gravity	20
2ND	F817	192	Lr	Gravity	20
2ND	F818	193	Lr	Gravity	20
2ND	F819	194	Lr	Gravity	20
2ND	F820	195	Lr	Gravity	20
2ND	F821	196	Lr	Gravity	20
2ND	F822	197	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F823	198	Lr	Gravity	20
2ND	F824	199	Lr	Gravity	20
2ND	F825	200	Lr	Gravity	20
2ND	F826	201	Lr	Gravity	20
2ND	F827	202	Lr	Gravity	20
2ND	F885	230	Lr	Gravity	20
2ND	F886	231	Lr	Gravity	20
2ND	F888	233	Lr	Gravity	20
2ND	F889	234	Lr	Gravity	20
2ND	F891	236	Lr	Gravity	20
2ND	F894	239	Lr	Gravity	20
2ND	F895	240	Lr	Gravity	20
2ND	F897	242	Lr	Gravity	20
2ND	F898	243	Lr	Gravity	20
2ND	F900	245	Lr	Gravity	20
2ND	F901	246	Lr	Gravity	20
2ND	F903	248	Lr	Gravity	20
2ND	F904	249	Lr	Gravity	20
2ND	F906	251	Lr	Gravity	20
2ND	F907	252	Lr	Gravity	20
2ND	F909	254	Lr	Gravity	20
2ND	F910	255	Lr	Gravity	20
2ND	F912	257	Lr	Gravity	20
2ND	F828	203	Lr	Gravity	20
2ND	F829	204	Lr	Gravity	20
2ND	F830	205	Lr	Gravity	20
2ND	F832	207	Lr	Gravity	20
2ND	F833	208	Lr	Gravity	20
2ND	F834	209	Lr	Gravity	20
2ND	F835	210	Lr	Gravity	20
2ND	F836	211	Lr	Gravity	20
2ND	F837	212	Lr	Gravity	20
2ND	F838	213	Lr	Gravity	20
2ND	F839	214	Lr	Gravity	20
2ND	F841	216	Lr	Gravity	20
2ND	F842	217	Lr	Gravity	20
2ND	F843	218	Lr	Gravity	20
2ND	F844	219	Lr	Gravity	20
2ND	F845	220	Lr	Gravity	20
2ND	F840	223	Lr	Gravity	20
2ND	F847	222	Lr	Gravity	20
2ND	F849	226	Lr	Gravity	20
2ND	F850	227	Lr	Gravity	20
2ND	F851	228	Lr	Gravity	20
2ND	F852	229	Lr	Gravity	20

Table 2.4 - Shell Loads - Uniform (continued)

Story	Label	Unique Name	Load Pattern	Direction	Load lb/ft²
2ND	F869	588	Lr	Gravity	20
2ND	F870	589	Lr	Gravity	20
2ND	F871	594	Lr	Gravity	20
2ND	F872	595	Lr	Gravity	20
2ND	F873	600	Lr	Gravity	20
2ND	F874	601	Lr	Gravity	20
2ND	F875	606	Lr	Gravity	20
2ND	F876	607	Lr	Gravity	20
2ND	F877	612	Lr	Gravity	20
2ND	F878	613	Lr	Gravity	20
2ND	F1082	526	Lr	Gravity	20
2ND	F1083	587	Lr	Gravity	20

2.4 Functions

2.4.1 Response Spectrum Functions

Table 2.5 - Response Spectrum Function - NEHRP 97

Name	Period sec	Acceleration	Damping	SDS	SD1
BSE-2E	0	0.6072	5	1.518	1.019
BSE-2E	0.134	1.518			
BSE-2E	0.671	1.518			
BSE-2E	0.8	1.27375			
BSE-2E	1	1.019			
BSE-2E	1.2	0.849167			
BSE-2E	1.4	0.727857			
BSE-2E	1.6	0.636875			
BSE-2E	1.8	0.566111			
BSE-2E	2	0.5095			
BSE-2E	2.5	0.4076			
BSE-2E	3	0.339667			
BSE-2E	3.5	0.291143			
BSE-2E	4	0.25475			
BSE-2E	4.5	0.226444			
BSE-2E	5	0.2038			
BSE-2E	5.5	0.185273			
BSE-2E	6	0.169833			
BSE-2E	6.5	0.156769			
BSE-2E	7	0.145571			
BSE-2E	7.5	0.135867			
BSE-2E	8	0.127375			
BSE-2E	8.5	0.119882			
BSE-2E	9	0.113222			
BSE-2E	9.5	0.107263			
BSE-2E	10	0.1019			

2.5 Load Cases

Table 2.6 - Load Cases - Summary

Name	Type
DEAD	Linear Static
L	Linear Static
SDL	Linear Static
Lr	Linear Static
Ap	Linear Static
Spx	Linear Static
Spy	Linear Static
Ex	Linear Static
Ey	Linear Static
Sx	Response Spectrum
Sy	Response Spectrum

Table 2.7 - Load Cases - Static - Linear

Name	Stiffness From	Mass Source	Load Type	Load Name	Scale Factor	Design Load Type
DEAD	Preset P-delta	MsSrc1	Load Pattern	DEAD	1	Program Determined
L	Preset P-delta	MsSrc1	Load Pattern	L	1	Program Determined
SDL	Preset P-delta	MsSrc1	Load Pattern	SDL	1	Program Determined
Lr	Preset P-delta	MsSrc1	Load Pattern	Lr	1	Program Determined
Ap	Preset P-delta	MsSrc1	Load Pattern	Ap	1	Program Determined
Spx	Preset P-delta	MsSrc1	Load Pattern	Spx	1	Program Determined
Spy	Preset P-delta	MsSrc1	Load Pattern	Spy	1	Program Determined
Ex	Preset P-delta	MsSrc1	Load Pattern	Ex	1	Program Determined
Ey	Preset P-delta	MsSrc1	Load Pattern	Ey	1	Program Determined

Table 2.8 - Load Cases - Modal - Ritz

Name	Stiffness From	Mass Source	Load Type	Load Name	Max Cycles	Target Participation %	Max Number Modes	Min Number Modes	Design Load Type
Modal	Preset P-delta	MsSrc1	Acceleration	UX	0	99	15	12	Program Determined
Modal			Acceleration	UY	0	99			
Modal			Acceleration	UZ	0	99			

Table 2.9 - Load Cases - Response Spectrum (Part 1 of 2)

Name	Mass Source	Load Type	Load Name	Function	Scale Factor	Coordinate System	Angle deg	Modal Case	Modal Combination Method
Sx	Previous (MsSrc1)	Acceleration	U1	BSE-2E	386.089	Global	0	Modal	CQC
Sy	Previous (MsSrc1)	Acceleration	U2	BSE-2E	386.089	Global	0	Modal	CQC

Table 2.9 - Load Cases - Response Spectrum (Part 2 of 2)

Name	Include Rigid Response	Directional Combination Method	Design Load Type	Eccentricity Ratio	Eccentricity Overrides	Constant Damping
Sx	No	SRSS	Program Determined	0.075	No	0.05
Sy	No	SRSS	Program Determined	0.05	No	0.05

Table 2.10 - P-delta Options

Automation Method
None

2.6 Load Combinations

Table 2.11 - Load Combinations

Name	Load Case/Combo	Scale Factor	Type	Auto	
UDCon1	DEAD	1.1	Linear Add	No	
UDCon1	SDL	1.1		No	
UDCon1	Ap	1.1		No	
UDCon2	DEAD	1.1	Linear Add	No	
UDCon2	L	0.275		No	
UDCon2	SDL	1.1		No	
UDCon2	Lr	0.275		No	
UDCon2	Ap	1.1		No	
UDCon3	DEAD	1.1	Linear Add	No	
UDCon3	L	0.275		No	
UDCon3	SDL	1.1		No	
UDCon3	Lr	0.275		No	
UDCon3	Qx	1		No	
UDCon4	DEAD	1.1	Linear Add	No	
UDCon4	L	0.275		No	
UDCon4	SDL	1.1		No	
UDCon4	Lr	0.275		No	
UDCon4	Qy	1		No	
UDCon5	DEAD	0.9	Linear Add	No	
UDCon5	SDL	0.9		No	
UDCon5	Qx	1		No	
UDCon6	DEAD	0.9	Linear Add	No	
UDCon6	SDL	0.9		No	
UDCon6	Qy	1		No	
Esx	Sx	1.1	Linear Add	No	
Esy	Sy	1.1	Linear Add	No	
Qx	Esx	1	Linear Add	No	
Qx	Ap	0.73		No	=1.1*2/3 Ap (COMB. W/ SEIS.)
Qy	Esy	1	Linear Add	No	
Qy	Ap	0.73		No	

SHR Definitions - **Appendix E**

SHR	Description
1	**Minor damage** (good performance). Some structural or nonstructural damage and/or falling hazards may occur, but these would pose minimal life hazards to occupants. The damage can be repaired while the building is occupied and with minimum disruptions to functions.
2	**Moderate damage** (fair performance). Structural and nonstructural damage and/or falling hazards are anticipated which would pose low life hazards to occupants. The damage can be repaired while the building is occupied.
3	**Major damage** (poor performance). Structural and nonstructural damage are anticipated which would pose appreciable life hazards to occupants. The building has to be vacated during repairs, or possibly cannot be repaired due to the extent and/or economic considerations.
4	**Partial/total collapse** (very poor performance). Extensive structural and nonstructural damage, potential structural collapse and/or falling hazards are anticipated which would pose high life hazards to occupants. There is a good likelihood that damage repairs would not be feasible.