



Conditions Assessment Report

Santa Rosa – 741 4th Street

741 4th St.
Santa Rosa, CA 95404
ZFA Project: 25512.00

September 19, 2025

Prepared For:

Sonoma Clean Power
431 E Street
Santa Rosa, CA 95404

Prepared By:

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INTRODUCTION

A general conditions assessment structural review of a one-story building at 741 4th St. consisting of suites 733, 737, 739, and 741 in Santa Rosa, CA (see Appendix A: Location Map and Site Map) was performed as requested by Sonoma Clean Power as part of potential ownership acquisition due diligence. One site visit was completed on September 02, 2025, to visually review the general condition of the structure; however, no destructive testing or removal of finishes was performed or included in scope. Non-structural elements such as Mechanical, Electrical, Plumbing, Equipment Anchorage or Architectural elements were not included within the scope of this review.

The following documents were provided for review See Appendix B: Plans:

- Original Construction Drawings by Nilliam Adrian SE and Hertzka & Knowles Architects- Dated March 15, 1946
- Structural Rehabilitation Drawings by Donald T Morton Consulting Engineers– Dated July 01, 1981
- Structural Tenant Improvement Drawings for suite 741 by ZFA Structural Engineers– Dated July 22, 2019

The American Society of Civil Engineers (ASCE) 41-17 Standard for Evaluation and Retrofit of Existing Buildings provides a “Tier 1” checklist format which was used as a guide for this assessment which helps to identify points of review and potential deficiencies. This assessment does not constitute a complete seismic evaluation. In a complete seismic evaluation, Tier 1 individual checklists and analysis would be completed for the original structures and any renovations or additions in conjunction with detailed Tier 2 and/or 3 analyses as required.

STRUCTURE OVERVIEW

General Site Description

The building is located on a flat city lot in downtown Santa Rosa. Where the north face of the building is along 4th street and the south face is along 5th street with a parking lot and utilities in the rear of building.

Structural System and Materials Description

General

The building is approximately 17,500sf and consists of multiple spaces divided by non-bearing partition walls. See Appendix B: Original Plans.

The original structure was constructed circa 1946, and structural rehabilitation occurred in 1981. The original structure is one-story wood-framed with original concrete exterior walls and retrofit braces frames, collectors, and wall anchorage. The building is L-shaped in plan view with an open store front along 4th street and non-bearing demising walls in between each unit. There are mezzanines with undocumented framing and wall anchorage. Frames are located along the front of the building and interior.

Since the original and retrofit construction, several code updates have occurred with increases made to seismic requirements. Specifically, concrete shear wall and steel concentric brace frame requirements have significantly increased. It is not likely that the structure meets all current code requirements, and some deficiencies are expected when compared to current code. Historical deficiencies for this type of building include load path for plan irregularities, deflection compatibility, diaphragm to wall shear transfer and wall anchorage, concrete reinforcing, diaphragm stiffness and strength, anchorage to foundations, and bowstring roof trusses connections and bottom chord members.

The building was substantially retrofitted in 1981 to address the local seismic building ordinance then known as Santa Rosa Ordinance 9820. This included adding two chevron type braced frames as described above, collectors, and wall anchorage.

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New or proposed modifications to the main force resisting system (walls/roof framing/etc) will require compliance with current code for each element. Modifications affecting the overall building by more than 10% of total weight will trigger full retrofit to current code.

ASCE41 defines these types of structures as reinforced concrete shear walls (C2a) and steel braced frames (S2a) with flexible diaphragms. The benchmark building codes for these types of structures are Uniform Building Code 1994 and 1997. Both requirements are not met. Therefore, a full seismic evaluation is recommended if desired.

Roof Framing

The roof framing consists of bowstring trusses that are 20 feet on center comprising of built up 4x and 2x members through bolted and 2x12 rafters at 24" on center and 2x10 ceiling framing at 16" on center. One interior bearing line of wide flange columns and W10x21 wide flange steel beams support the trusses. Diagonal sheathing is used for the roof diaphragm.

Walls

The structural walls are cast in place 8-inch concrete walls with #5 @ 18" on center each way. Interior non-bearing partition walls are built up of 2x wood studs. The mezzanines are light 2x wood framing.

Seismic Force-Resisting System

The lateral (seismic and wind) force resisting system is concrete shear walls along the perimeter and two steel brace frames. The seismic retrofit included the installation of steel braces at the open store front and interior; the frame geometry is a "chevron" that has double C8x18.75 brace elements. A new collector line was added in the transverse direction with steel plates and 6x14 aligned beam. Wall anchorage was installed at roof to wall connection of HD2 with two 5/8" diameter bolts and adhesive 5/8" threaded rod.

Ground Floor and Foundations

The ground floor and foundation consist of concrete isolated 48" pad footings with 8-1/2" diameter bars each way at steel H-columns, 12" wide continuous footings, and a 4" thick reinforced concrete slab.

Field Verification and Condition Assessment

Based on the site visit, the building has been constructed generally according to the original and retrofit plans. Several interior tenant improvements including mezzanines have been constructed. Some have drawing sets with permits which were not reviewed in detail as the work appeared to be non-structural. All work has not been verified as permitted. Typically, the structure is in good condition and does not exhibit immediate signs of damage or collapse. Roof framing, while modified in many locations, did not exhibit failures. Concrete walls did not exhibit large cracks. Significant differential settlement was not observed; however, a floor level survey may be useful if is specifically of concern for floor performance. Some conditions do warrant review.

FINDINGS AND RECOMMENDATIONS

The building was constructed under an 80-year-old building code. The retrofit was performed under a 45-year-old code. Both codes are significantly dated and current codes as well as retrofit criteria have evolved significantly since then. It is not expected that the structure would meet current code standards; however, the building is assumed to have been permitted and constructed to meet construction standards and codes at the time. The building and the retrofit were engineered, and the drawings exhibit positive load paths and connections.

The following structural items were observed during the site visit (see Appendix C: Images). Items are listed in order of exterior approximately from the top of structure down to the interior separated by level. Modifications to the structural systems or changes to the structural risk category or occupancy increases would trigger compliance with current code.

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Alternatively, voluntary structural improvements can be implemented to mitigate issues or improve performance. All new construction should meet current code requirements.

741 4th Street:

Findings and Recommendations:

- a. **BUILDING GEOMETRY:** The building was originally designed and assumed constructed as one structure. The tenant demising walls are non-structural. The floor plan includes varied geometry including re-entrant corner horizontal discontinuities. Multiple bearing and shear walls are utilized in the lateral force resisting system. Additionally, the interior frame and collector provide specific strengthening for the building at the re-entrant corner. *See Plan 1 & 3.*

RECOMMENDATION: Additional analysis of the system can be performed to review demand and capacity of the frames and critical concrete shear walls. Two specific items are primary concern:

- a. The retrofit frame added at the front of the building is likely the most critical lateral resisting element with low redundancy (one frame this line) and high demand (supports a significant portion of the building including main egress).
- b. The wall at the West end appears to be shared with the adjacent building. The original drawings indicate post and beam construction at the intersection and illustrate a positive lateral connection to this wall. Review the construction of the existing wall and determine adequacy. Low priority.

The remaining structure additional analysis is lower priority as the retrofit addressed the horizontal discontinuity issue.

- b. **DIAGONALLY SHEATHED DIAPHRAGMS:** The diagonally sheathed diaphragms have spans greater than 40 feet between resisting lines. The diaphragms may be overstressed for seismic loads. *See Plan 2*

RECOMMENDATION: Additional analysis is required to review the demand and capacity of the diaphragms. Generally, this is a low priority deficiency for this type of building.

- c. **MEZZANINES:** Interior mezzanines are not braced independently and have undocumented anchorage into the existing seismic force resisting system. *See image 10.*

RECOMMENDATION: Review mezzanine framing, connections, and lateral force resisting systems in detail. The mezzanines appear to be light wood framed but should be braced to the foundation by shear walls or other methods. Positive connections to all exterior concrete walls are also recommended to be verified. This is a medium priority item.

- d. **SEISMIC GAP:** Seismic gaps to adjacent buildings do not appear to be code compliant. The wall at the West end of the structure appears to be shared with the adjacent structure. Original drawings indicate post and beam construction against this wall. The roof parapet appears to be constructed with and braced to the adjacent building. The structure does have a seismic gap at the East end of the structure. The gap appears to be reasonable size for the height of the structures. *See Images 8 & 9.*

RECOMMENDATION: Review connection details with West building in more detail. Some selective finish removal is likely required. This is a medium priority item.

As a low priority, at East building review drift requirements and pounding implications versus building stiffening requirements. To retrofit this would likely be very impactful and not cost effective.

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- e. WALL ANCHORAGE: Concrete walls, in-plane shear transfer from roof diaphragm to wall, and out of plane anchorage were retrofitted and provide load path. However, these connections do not meet current code requirements, and this is a well-documented potential failure connection. *See Images 2 & 11.*

RECOMMENDATION: Additional analysis and likely wall anchorage strengthening is recommended. Since the original retrofit was performed, this is a medium priority item.

- f. SLENDERNESS OF DIAGONALS: Diagonal elements of brace frames do not meet current slender compression ratios. The bracing members are subject to buckling failures in a seismic event. *See Image 5.*

RECOMMENDATION: Additional analysis and strengthening of the diagonal bracing members is recommended. This is a medium priority item.

- g. NONCOMPACT MEMBERS: Brace elements do not meet moderately ductile requirements. *See Image 5.*

RECOMMENDATION: See above

- h. CHEVRON BRACING: The beams in the chevron braces are not capable of resisting the vertical load from a yielding brace. The chevron brace configuration may induce large vertical loads on roof framing if a brace buckles/fails. *See Image 5.*

RECOMMENDATION: See above. Add center columns at the middle of the brace frames to eliminate significant demand at the roof framing.

- i. ROOF TRUSSES: Bowstring roof trusses have historically exhibited connection failures. *See Image 3 & 4.*

RECOMMENDATION: Initiate and maintain a truss review plan to periodically observe trusses for connection issues. Limit modifications to or additional load being added to the existing roof trusses.

- j. DEMISING WALLS: The demising walls dividing the spaces were discovered to be non-bearing walls. *See Image 12.*

RECOMMENDATION: No additional analysis required.

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CLOSING

The structural review is based on that which was visible and available original structural drawings. No attempt was made to uncover hidden conditions or perform any destructive or non-destructive testing. The items discussed in this report are subject to revision should more information become available. No structural analysis for loads or capacities was performed under the scope of this review.

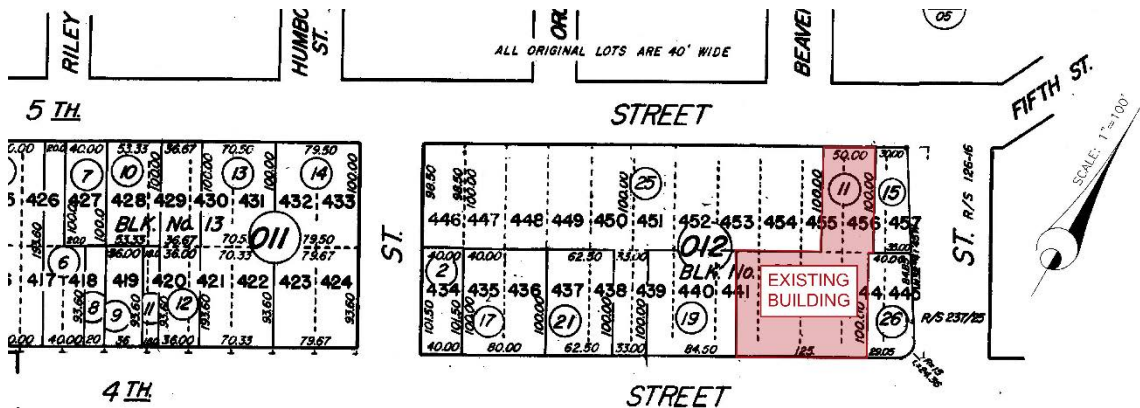
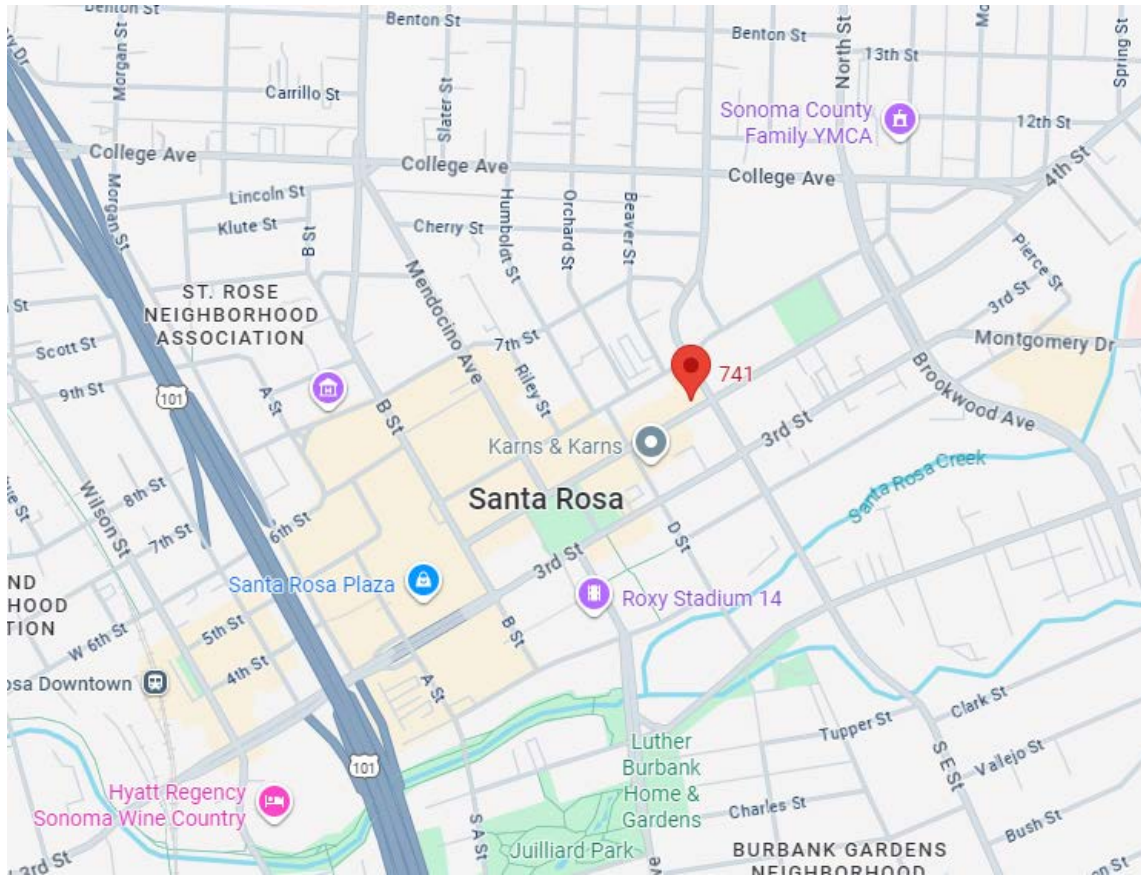
We understand you may have questions regarding this evaluation and are available for comment and explanations. Please call with any questions you may have. Thank you for choosing ZFA Structural Engineers to assist you with this building condition assessment.

Kevin Zucco
Executive Principal
ZFA Structural Engineers

Nathan Hale
Designer
ZFA Structural Engineers

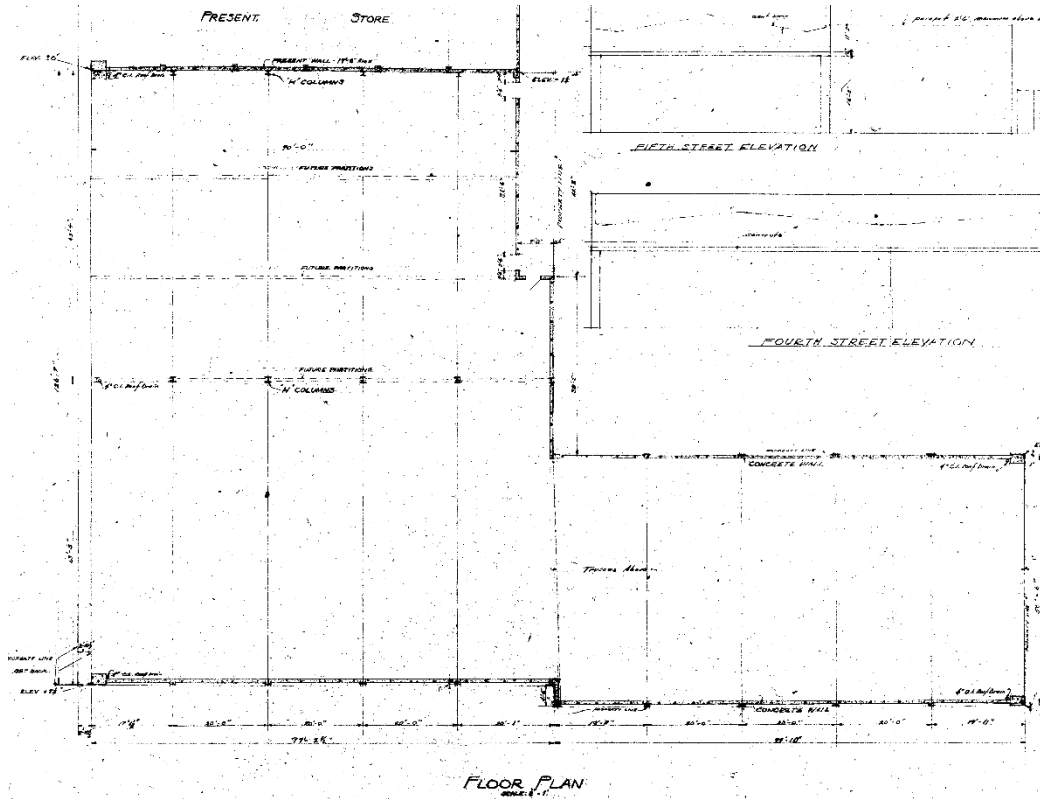
APPENDIX A – LOCATION MAP AND SITE MAP

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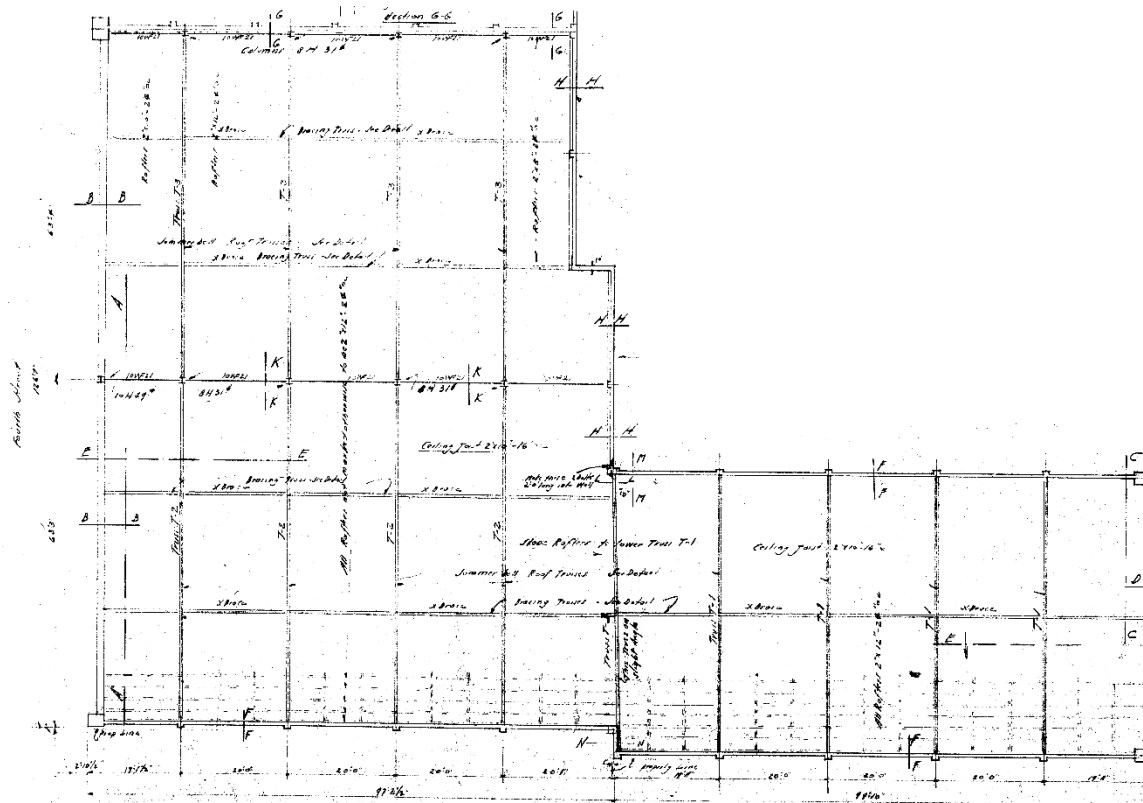


APPENDIX B – Original Drawing Plans

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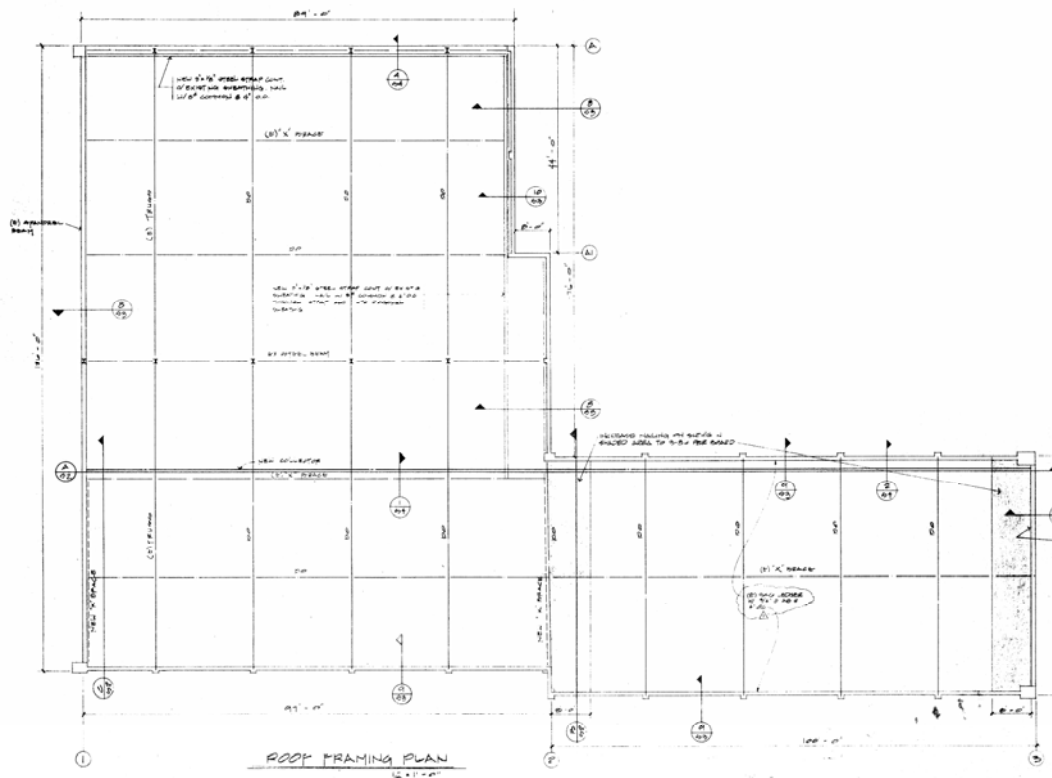


Plan 1: 1946 Original Construction Drawings Foundation Plan



Plan 2: 1946 Original Construction Drawings Roof Framing Plan

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Plan 3: 1981 Retrofit Roof Framing Plan

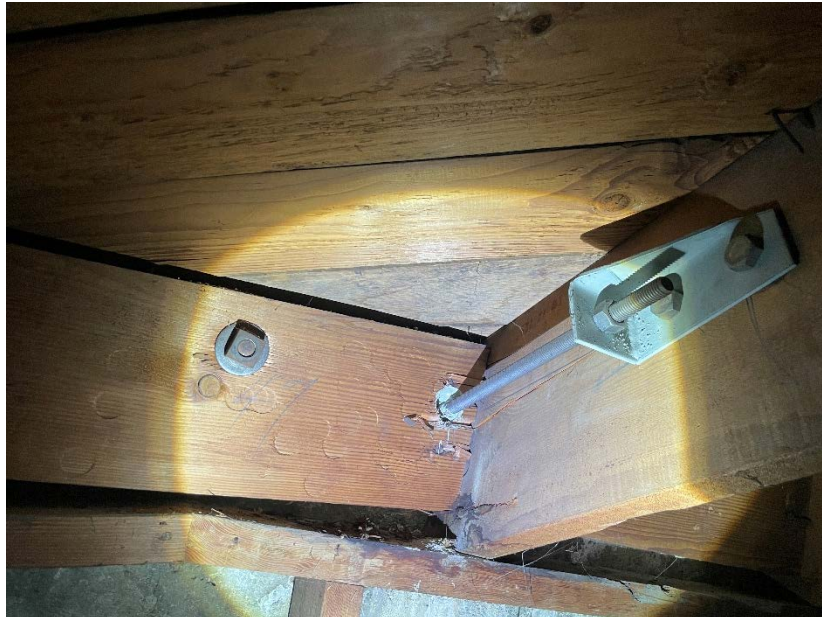
APPENDIX C – Images

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Image 1: Roof Overview



Image 2: Wall Anchorage



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Image 3: Bowstring Roof Trusses

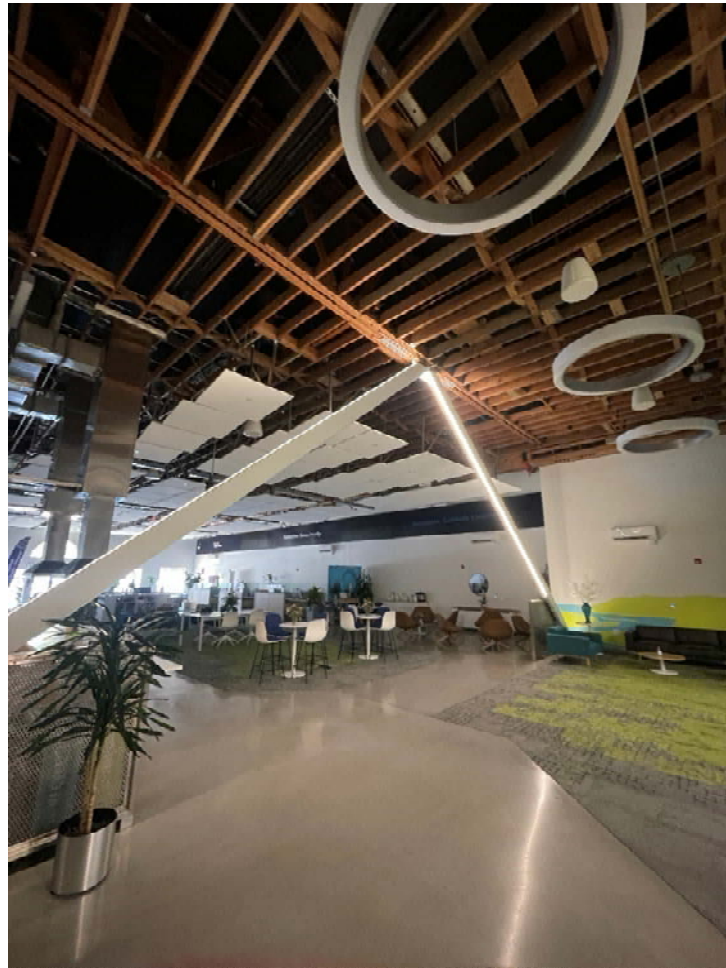


Image 4: Bowstring Roof Trusses



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Image 5: Chevron bracing



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Image 6: North Elevation and Entry Brace Frame



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Image 7: South Elevation

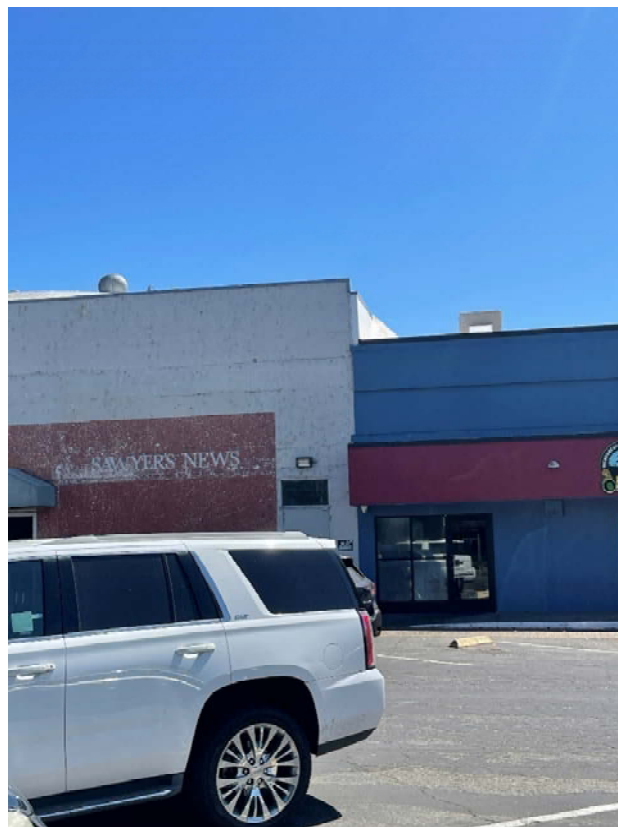


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Image 8: Seismic Gap



Image 9: Shared Wall at Adjacent Building – West Face



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Image 10: Mezzanine



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Image 11: Seismic Retrofit – Wall Anchorage

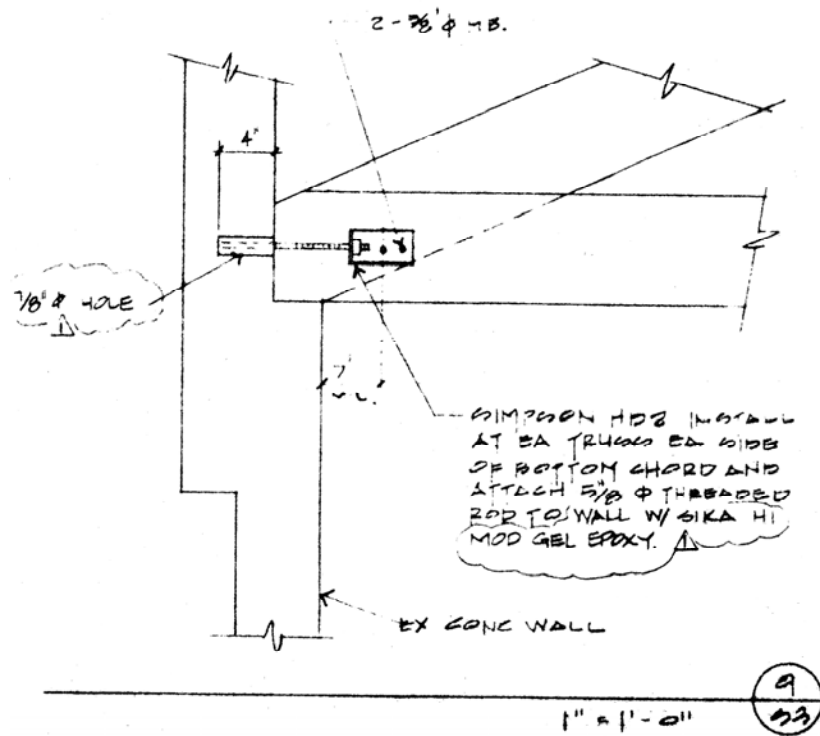


Image 12: Beam and Column line and Demising Non-Bearing Walls Each Side

