To:	Nora Gamino (City of Bishop) and Deston Dishion (City of Bishop)
From:	Eric Toschi P.E. (Wood Rodgers, Inc.)
CC:	
Date:	September 5, 2025
Project Name:	City of Bishop – Chamber of Commerce Building Structural Condition Assessment **FINAL**
Subject:	Chamber of Commerce Building Structural Observations and Recommendations

1.1 EXECUTIVE SUMMARY

The City of Bishop (City) engaged Wood Rodgers, Inc. (Wood Rodgers) to conduct a structural condition assessment of the Chamber of Commerce Building (Building) located at 690 North Main Street in Bishop, California. This assessment was prompted by a life-safety report from Willdan Engineering, which recommended further structural evaluation due to concerns about the building's integrity.

Wood Rodgers performed both qualitative and quantitative evaluations of the approximately 55-year-old structure, which comprises of three distinct sections. The assessment concluded that the overall condition of the building is **POOR** and may be nearing the end of its service life. Numerous structural deficiencies were identified, warranting further investigation, retrofitting, or potential replacement.

Key findings include:

- **Potentially overstressed structural components**, particularly in the second-floor framing of the A-frame section, where joists may exceed allowable load limits under both dead and live loads.
- **Unclear structural connections** between second-floor joists and supporting elements, raising additional safety concerns.
- **Southern addition framing** relies on foundation posts located near the creek's edge, some of which have been undermined by creek activity, compromising structural stability.

Due to these concerns, Wood Rodgers recommends that the second floor of the A-frame not be occupied or used for storage. The findings also support Willdan Engineering's concerns regarding the safety of the southern addition.

The report concludes that further evaluation, retrofitting, or potential replacement of the building is necessary to address the identified safety risks. The recommended path forward depends on the City's long-term goals—whether to preserve the entire building, retain select portions, or pursue full demolition and replacement. Each option will require careful consideration of environmental, structural, and financial factors.

1.2 INTRODUCTION

The City of Bishop (City) maintains the Chamber of Commerce Building (Building) located at 690 North Main Street, Bishop, California. The Building was originally built sometime in the 1970's based on documentation from the City. A description of the Building is found in **Section 2** of this Memo. The assessment was initiated after the City received a life-safety report by Willdan Engineering, located in **Appendix D**, recommending a structural evaluation of the Building. In response, the City engaged Wood Rodgers, Inc. (Wood Rodgers) to perform a structural condition assessment of the Building.

OBJECTIVE

The objective of this technical memorandum is to:

1. Document field observations identified structural deficiencies, and structural members of concern for the existing Building, as observed by Wood Rodgers.
2. Review the structural drawings and calculations of the original A-Frame Building. Original building drawings for the South or East Additions were not available for our review
2. Determine the Building dead, live, and snow design loads based on the current California Building Code (CBC) and compare it to original A-Frame loading in the original calculations. Perform a quantitative analysis using the current California Building Code (CBC) design loads and the original design loads of some of the structural framing and connections identified as concerns during the site observation. Wind and seismic loads were not determined after determining existing member capacities may be limited based on dead, live and snow.
3. Determine if the area "Red Tagged" may be occupied or should remain unoccupied.
4. Provide an opinion if the area "Red Tagged" could be retrofitted to become occupied again.
5. Asses the condition of the original A-frame and small east Addition portion of the Building.

Wood Rodgers has performed the above tasks as a basis for providing an evaluation of the subject Building. We strive to perform our professional services in accordance with generally accepted engineering principles and practices. Our site scope was limited to visual observation of the Building. The findings summarized in this technical memorandum are based upon visual observation of the Building and did not involve a comprehensive engineering survey, as we did not remove finishes, gypsum board or plywood materials, nor did we operate any testing equipment. The condition assessment and recommendations represent our professional opinion.

2 CHAMBER OF COMMERCE BULDING

Wood Rodgers' visual survey included the Building located as noted in the introduction. Refer to **Appendix A - Observation Photos** (attached) for the extents of Wood Rodgers' visual observation.

Field Observations Time & Date: 12:30 p.m. to 4:30 p.m., Tuesday, August 19, 2025
Engineer: Eric Toschi, P.E. (Wood Rodgers)
City Representative: Nora Gamino (City of Bishop) and Deston Dishion (City of Bishop)

A Wood Rodgers' engineer conducted a visual observation of the Building at the location described in the **Introduction**. The purpose of this assessment is to evaluate the structural condition of the building, identify any structural members exhibiting signs of distress, review visible structural connections, examine foundation bearing conditions adjacent to the Creek, and document any grading issues of concern. The observation also included a general evaluation of the overall condition of the building.

A City Representative provided Wood Rodgers access to the Building and was present at the beginning and end of the visual survey of the Building. Photos were taken as part of the Building observations. Elements of the Building were rated from GOOD to POOR as defined below in **Table 1 - Condition Rating Criteria.**

Table 1 - Condition Rating Criteria

Condition Rating Criteria	
Rating	Rating Description
GOOD	No major deficiencies: numerous minor deficiencies associated with cosmetic distress; age of construction is showing in cosmetic distress; periodic observation recommended,
FAIR	Few major deficiencies; numerous minor deficiencies; age of construction is showing in cosmetic distress; periodic observation and potential repair could extend service life.
POOR	Major deficiencies may lead to or cause deterioration of the Building such that loss of stability of structure could occur; retrofit repair, replacement, or removal recommended.

2.1 GENERAL STRUCTURAL SYSTEM OF BUILDING

The Building consists of three sections, the original A-frame, a small addition built to the A-Frame to the East, and a larger addition built to the South. For the remainder of the report the original building portion will be referred to as the "A-Frame", the East addition will be called "small addition", and the larger southern addition will be called "addition". The following is a description of the structural framing system for each section:

A-Frame

For this portion of the building, we have access to partial structural drawings and calculations, included in **Appendix C**. The rough plan dimensions of the A-frame structure measure approximately twenty-eight feet in width (North-South direction) and thirty-two feet in length (East-West direction). However, the current configuration of the A-frame does not match the original building plans. This discrepancy will be addressed further in **Section 4 – Conclusion**.

The A-frame is constructed with wood framing and sits on a continuous concrete stem wall foundation around its perimeter. According to the original plans, the perimeter was initially supported by isolated footings beneath posts. At some point after the original construction, continuous footings appear to have been added, although there is no documentation available to confirm when this modification occurred or how the existing rafter-floor system is connected to these footings.

The roof is built using pairs of 2x10 rafters spanning in the North-South direction, spaced four feet on center. These rafters extend from the foundation up to the ridge, forming a steep pitch that creates a sixty-degree angle at the first-floor level. The roof structure also serves as a sloping exterior wall on the North side and partially on the South side.

The second floor is located approximately eight feet six inches above the finished elevation of the first floor. It is framed with 2x12 floor joists that are lapped and connected to each side of the roof rafters, forming collar ties. This floor spans the full interior length of the building, with a staircase positioned on the East side of the A-frame. Per the original drawings, the first floor is framed with pairs of 2x10 joists bolted to each set of roof rafters. The roof rafters, second floor, and first floor are all bolted together at their lap joints, forming the characteristic A-frame structure.

Originally, the frames were tied to isolated perimeter footings, but it remains unclear whether they are currently tied to the concrete stem wall. The underfloor area of the first floor was not accessible during the observation, so additional modifications to the floor framing may exist but could not be verified.

The West wall of the A-frame consists primarily of glass and a single door, framed with vertical and horizontal wood members including king studs and headers between the openings. While this may have been part of the original design, the existing drawings do not provide sufficient clarity to confirm this. The East wall is a wood stud-framed wall, likely constructed with 2x studs spaced sixteen inches on center. It includes a small window above the second floor and a door providing access to the East.

The South side of the A-frame roof was modified during the construction of the South Addition. These modifications will be discussed in detail in **Section 2.2**, Field Observations.

Addition

The Addition is a section of the Building, that was constructed at an unknown time, extending southward from the original A-frame structure. Its approximate plan dimensions are twenty-eight feet by forty-eight feet. The first floor is framed with 6x10 girders running in the North-South direction, spaced three feet on center. These girders are supported by a masonry stem wall along the West and East edges of the Addition. On the South side, the foundation consists of a combination of CMU stem wall — located approximately six feet north of the South wall—and isolated post supports situated about two feet north of the same wall. This portion of the floor projects beyond the perimeter CMU stem wall and is exposed to the exterior.

The southern foundation elements are positioned near the flow line of the South Fork Biship Creek (Creek) that runs East-West, which will be discussed in greater detail in **Section 2.3**. Within the crawl space formed by the perimeter CMU stem walls, the floor joists are supported by isolated post foundations. The exterior walls appear to be conventionally framed with wood studs spaced sixteen inches on-center.

The roof framing consists of 6x12 purlins spanning in the same direction as the first-floor floor joists. These purlins are aligned with the existing A-frame roof rafters, approximately four feet on-center. At the South end, the purlins bear on the exterior wall, which is supported by the cantilevered first-floor framing. At the North end, the purlins connect to the A-frame structure, a detail that will also be addressed in **Section 2.3**. The roof has a relatively flat slope, and the direction of drainage remains unclear.

Small Addition

The Small Addition was added to the East of the A-frame at an unknown time. The rough plan dimensions of this portion of the building are nine feet by four feet. During the observation this portion of the building was not accessible, and a majority of the framing was not observed. Based on the small visible portion of this section of the Building, it is most likely wood framed stud walls, and a simple wood framed roof with a minimal slope. The first floor is wood framed with joists at sixteen inches on center, supported by wood beam girders on isolated posts. The isolated posts do not appear to have a foundation, and this is noted in **Section 2.4.**

2.2 FIELD OBSERVATIONS OF A-FRAME

The observed components of the A-Frame section of the Building ranged in condition from FAIR to POOR. Observed A-Frame deficiencies are as follows:

- At some locations of the roof, the framing was in contact with earth (refer to **Photo 1**). The roof rafter shows signs of dry rot. It also appears the bolted connection to the floor joist has been modified or was not built per the original drawings. This framing condition is considered POOR.

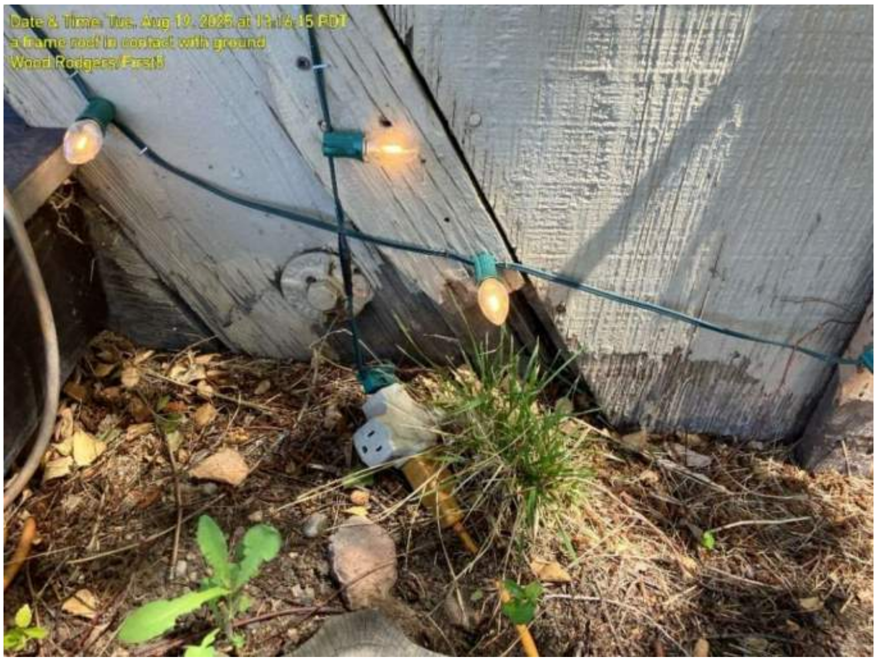

Photo 1 – Southeast corner of roof in contact with earth

- Of the roof rafters visible, there are seven locations where the existing 2-2x10 roof rafters have been spliced and would not be considered 2-2x10 continuous members. The original structural drawings did not allow splices of the roof rafters within three to four feet of the second-floor height. For examples of the different splice conditions refer to **Phots 2 thru 4**. In **Appendix B**, there is a quantitative study of the load carrying capacity of the existing roof rafters where the rafter splice may be within three feet of second floor. The results of this quantitative study will be addressed in the **Section 4 – Conclusion**.

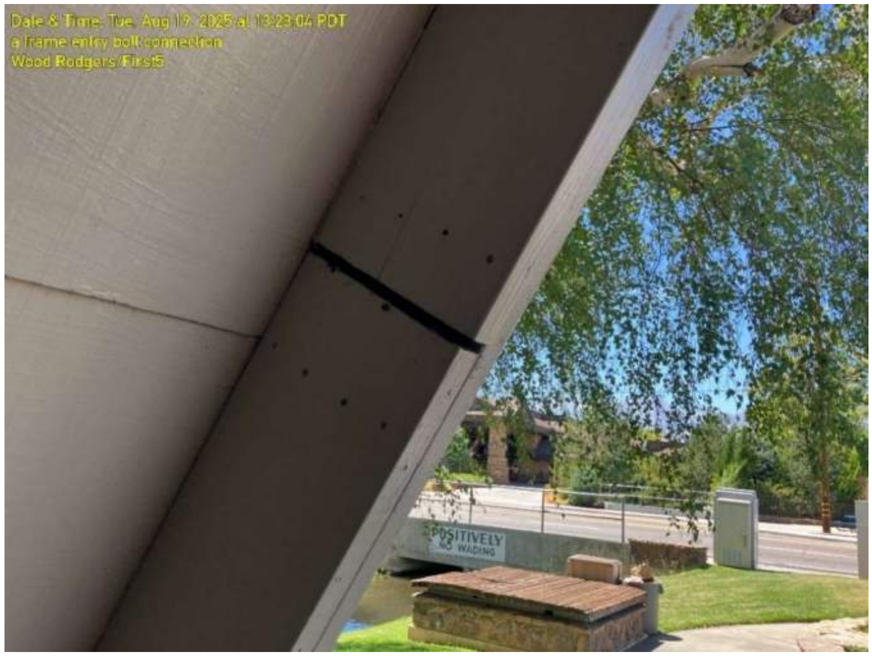

Photo 2 – At West side roof gable, roof rafter splice with larger separation.

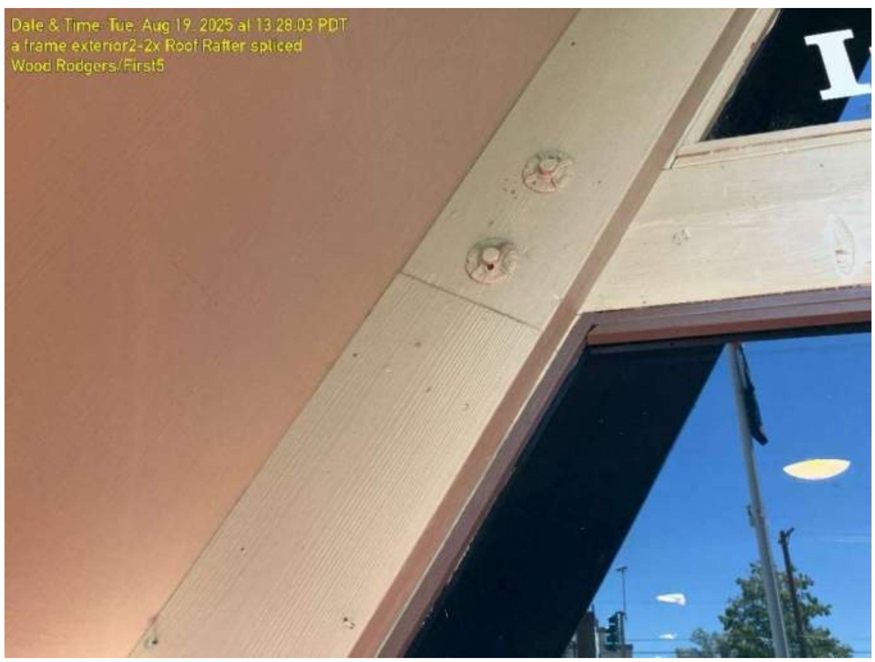

Photo 3 – At West side roof gable, roof rafter splice just below collar tie connection.

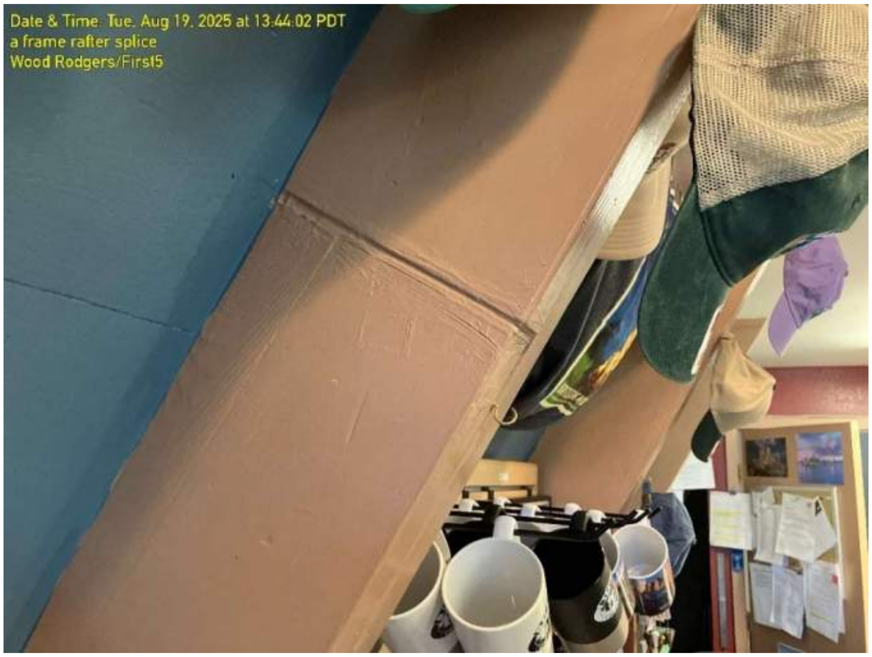

Photo 4 – North side roof at interior rafter splice below collar tie connection.

- At the West end gable roof, the roof rafter collar tie member, at the approximate height of the second-floor level, has been removed on the first two roof rafters (refer to **Photos 5 and 6**). In addition, both of these roof rafters contain splices similar to the description of the bullet point above. In **Appendix B**, there is a quantitative study of the load carrying capacity of the existing roof rafters due to the modification of the collar tie and the splice. The results of this quantitative study will be addressed in **Section 4 – Conclusion**.

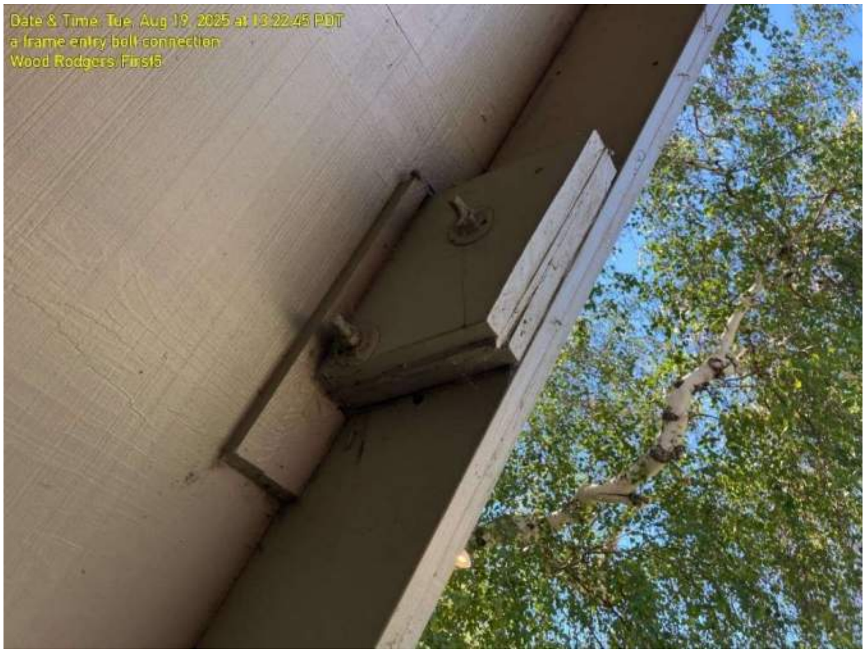

Photo 5 – Collar tie cut off at gable end roof rafter.

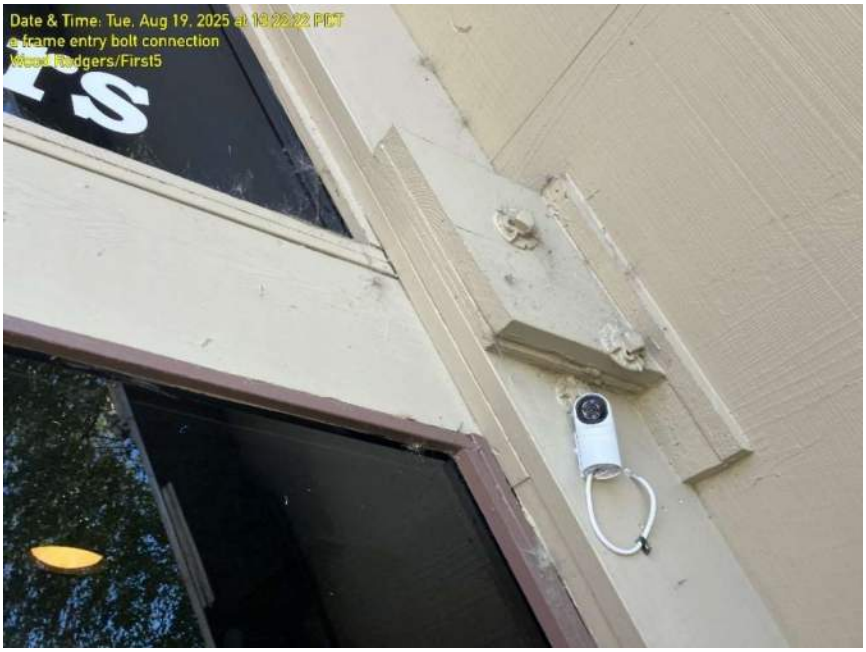

Photo 6 – Collar tie cut off at roof rafter adjacent to the storefront glass.

- At the first-floor connection between the roof rafter and the first-floor joist, either the connection has been modified, or the structure was not built to the original drawings. At some locations, the floor joist has been cut at the added wood deck, eliminating the original roof rafter to first-floor tie that forms the A-frame (refer to **Photo 7**). In addition, according to the original drawings, the bolted connection between the rafter and floor was to have a minimum of three (3) bolts. Based on the visible connections, it appears there is only (1) one (refer to **Photo 7 and 8**). This framing condition is considered POOR.

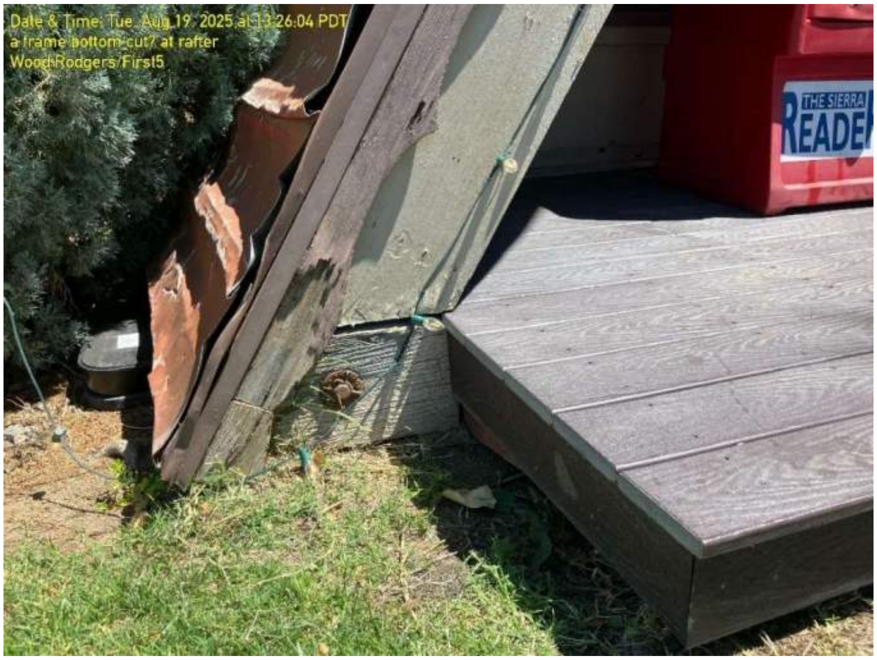

Photo 7 – Northwest corner of first floor to rafter connection, one (1) bolt and floor joist cut.

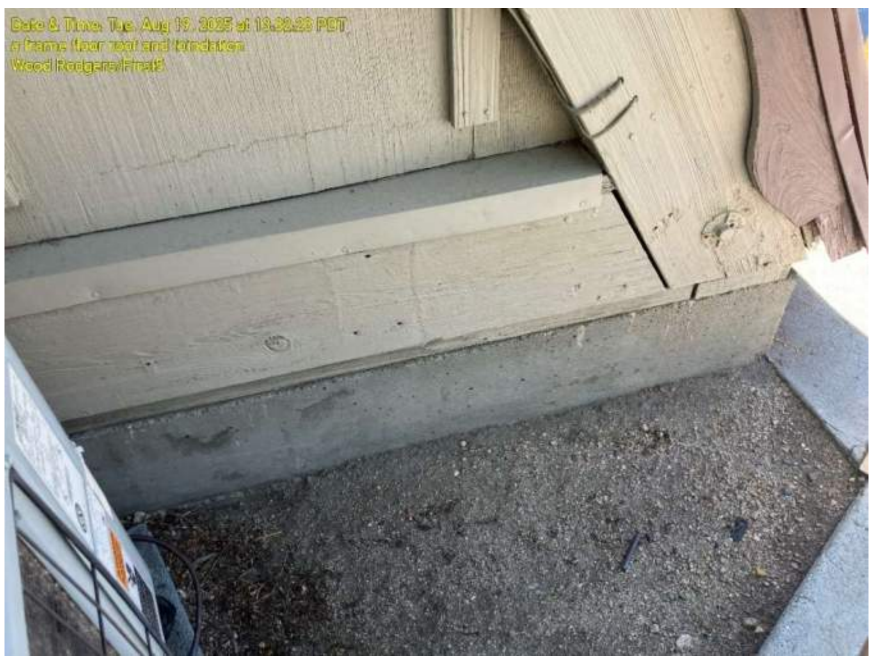

Photo 8 – Northeast corner of first floor to rafter connection, one (1) bolt.

- Around the perimeter of the A-frame building, no visible under-floor venting occurred at the first-floor level (refer to **Photos 9 to 11**). This condition is considered POOR.

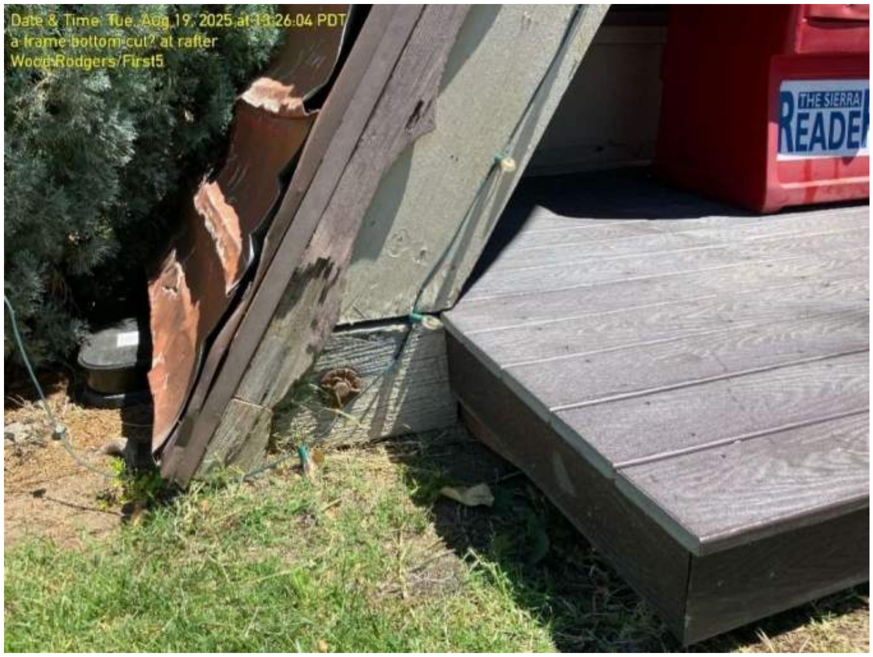

Photo 9 – Northwest corner of first floor foundation. No ventilation.

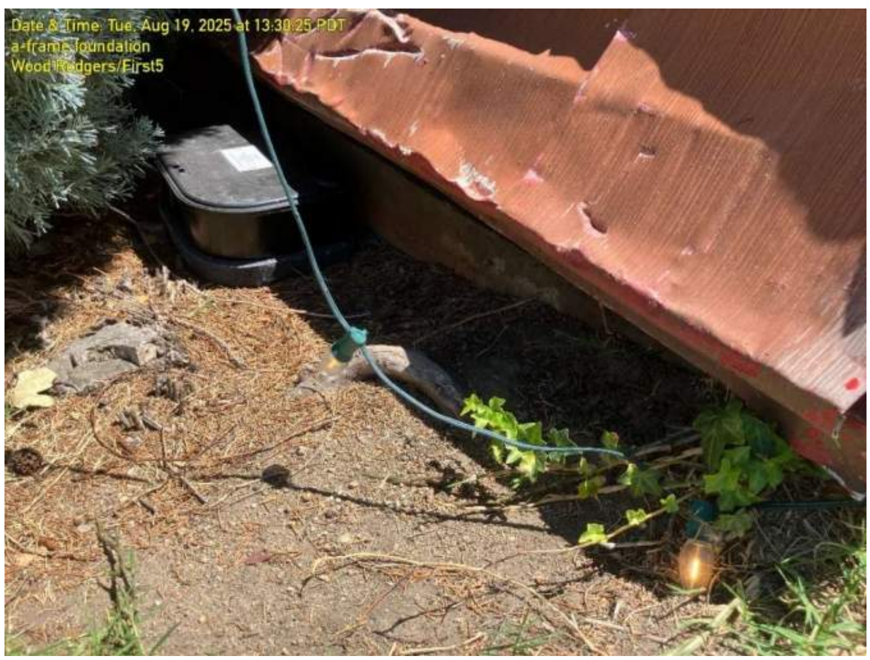

Photo 10 – North Foundation stem wall of first floor foundation. No ventilation.

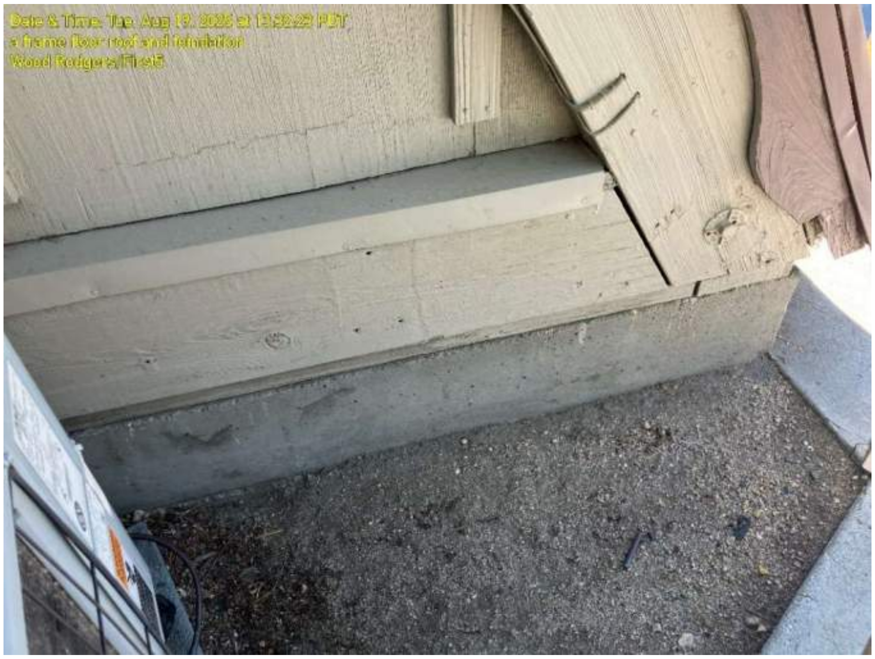

Photo 11 – Northeast corner of first floor foundation. No ventilation.

- The existing 2-2x12 floor joists and their connection to the 2-2x10 roof rafters are not currently visible, making it not possible to verify the integrity of the original framing system during the observation. Based on the observed connection between the 6x12 roof joist of the Addition and the existing 2-2x10 A-frame roof rafter (see Photos 20 and 21), there is concern that modifications may have been made to the original floor joist connections. At this time, the load paths in this area — particularly how roof and floor loads are transferred to supporting members — cannot be clearly determined. This specific connection and its structural implications will be addressed in **Section 4 – Conclusion.**

2.3 FIELD OBSERVATIONS OF ADDITION

The observed components of the southern Addition section of the Building ranged in condition from FAIR to POOR. Observed A-Frame deficiencies are as follows:

At the southwestern section of the Addition, Creek erosion has undermined the soil beneath the post foundations supporting the floor girder and joists in three distinct locations. As a result, the existing footings no longer provide effective support for the posts (refer to **Photos 12 to 14**). This loss of bearing capacity poses a significant structural concern and is discussed in **Section 4 – Conclusions**.

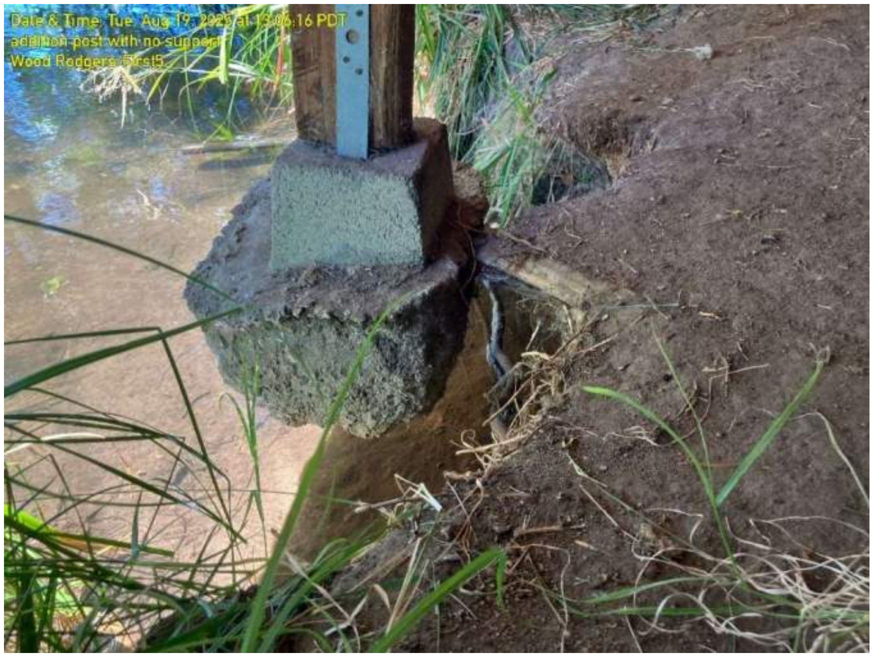

Photo 12 – Concrete footing undermined by Creek.

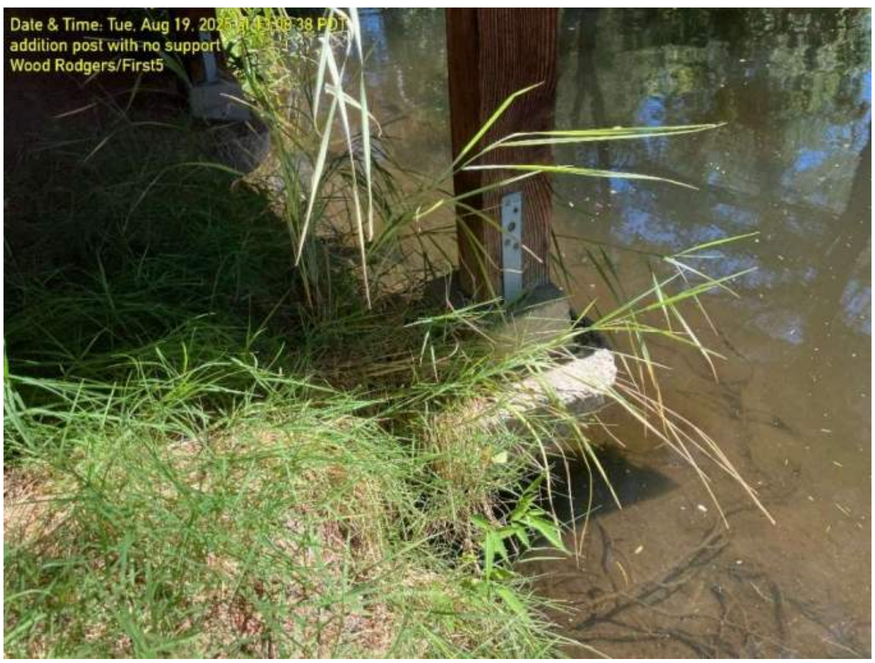

Photo 13 – Soil erosion by Creek under concrete footing

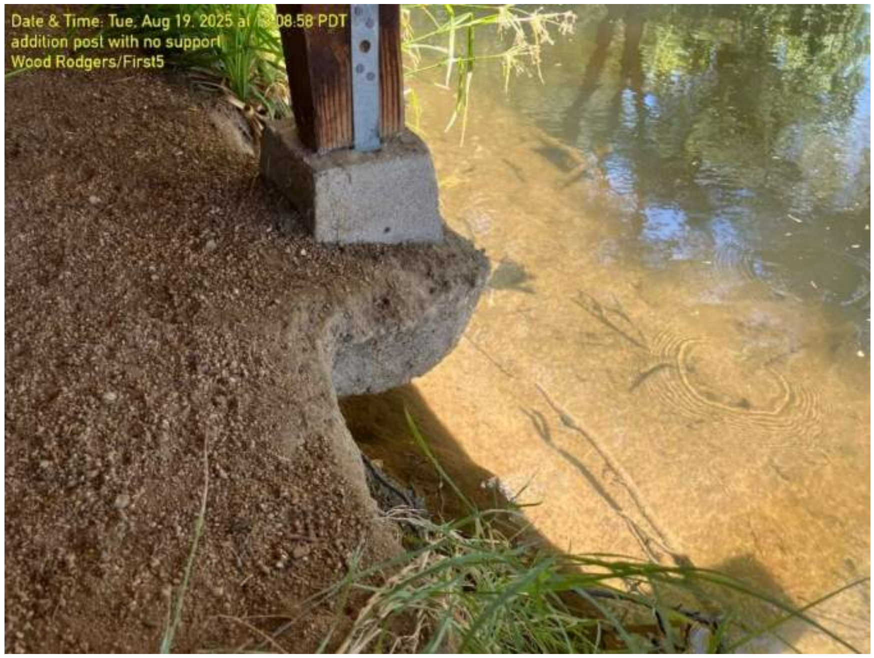

Photo 14 – Soil erosion by Creek under concrete footing

- At the southeastern edge of the Addition, the adjacent Creek flows are eroding the soil, and the embankment is encroaching toward the post foundations. Without mitigation, continued erosion from the Creek will likely compromise the soil supporting these posts, potentially leading to loss of structural support—similar to the condition previously described (see **Photos 15 and 16**). If erosion persists, there is a risk that the Creek flows may eventually undermine the footing beneath the CMU stem wall (refer to **Photo 16**), which could result in significant structural instability. This condition is considered FAIR to POOR

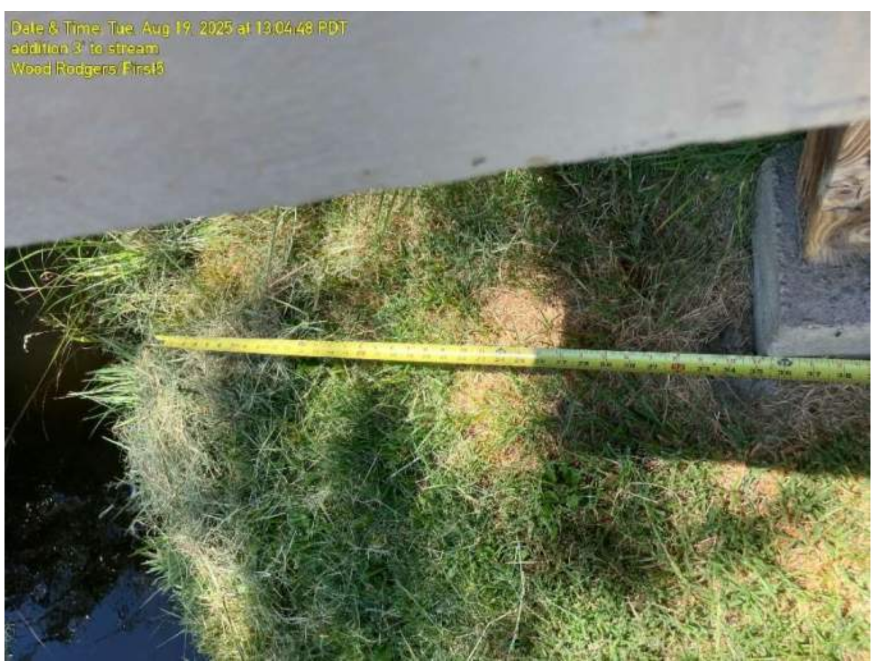

Photo 15 – Creek within three feet of the post foundation.

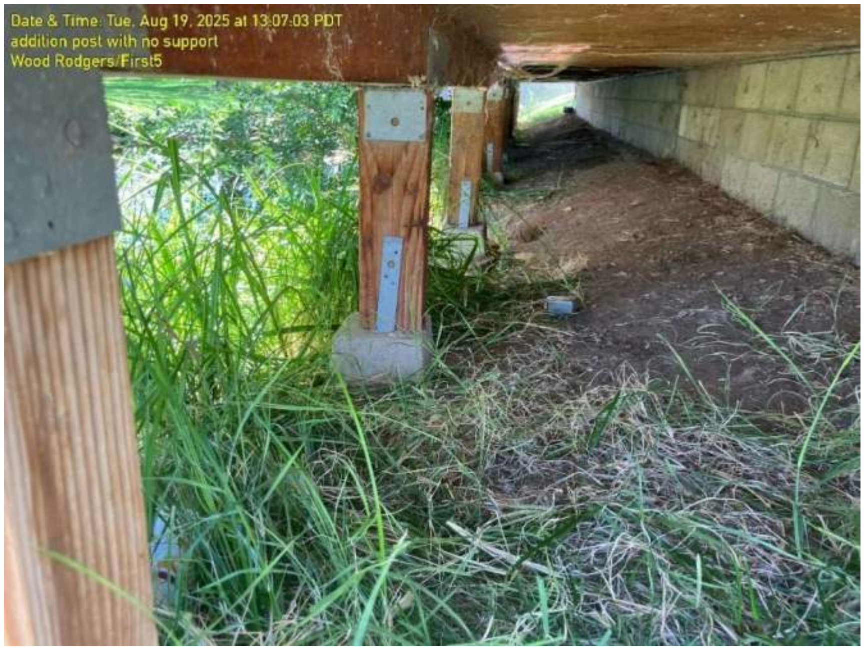

Photo 16 – Creek encroaching on post foundations.

- The existing 6x12 roof joists were only observed at their end connection to the A-frame structure; the remainder of the joists are concealed and not accessible for observation. Notably, staining is visible on the interior sheetrock ceiling, which appears to be the result of past or ongoing roof leaks (see **Photos 17 and 18**). From the rooftop, the slope direction and drainage configuration are unclear (refer to **Photos 19 and 20**), which may be contributing to the potential for water intrusion. Given the suspected leaks and lack of apparent drainage, there is concern that the roof joists may be affected by dry rot or other moisture-related damage. Further evaluation of this condition will be provided in **Section 4 – Conclusion**.

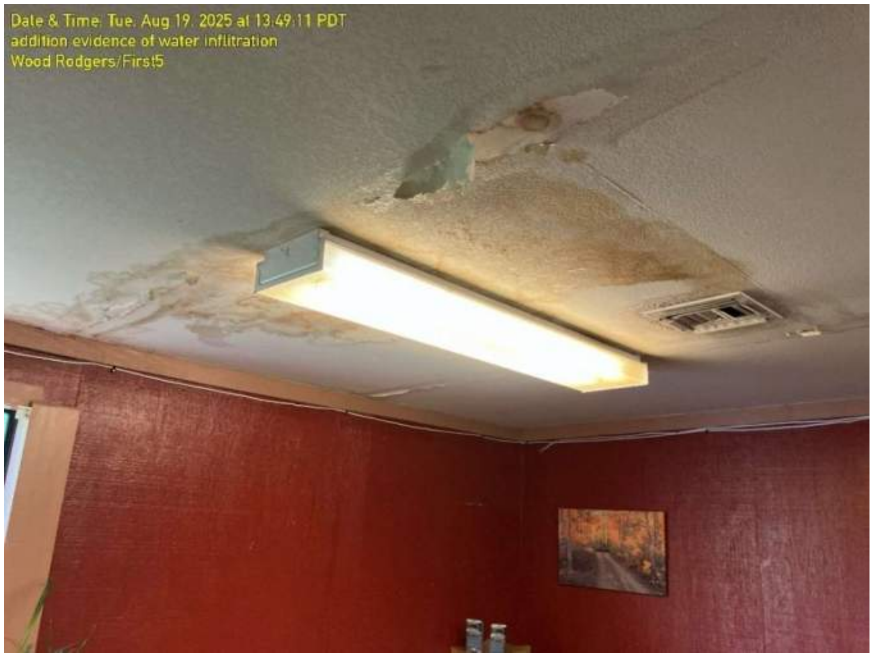

Photo 17 – Visible signs of possible roof leak.

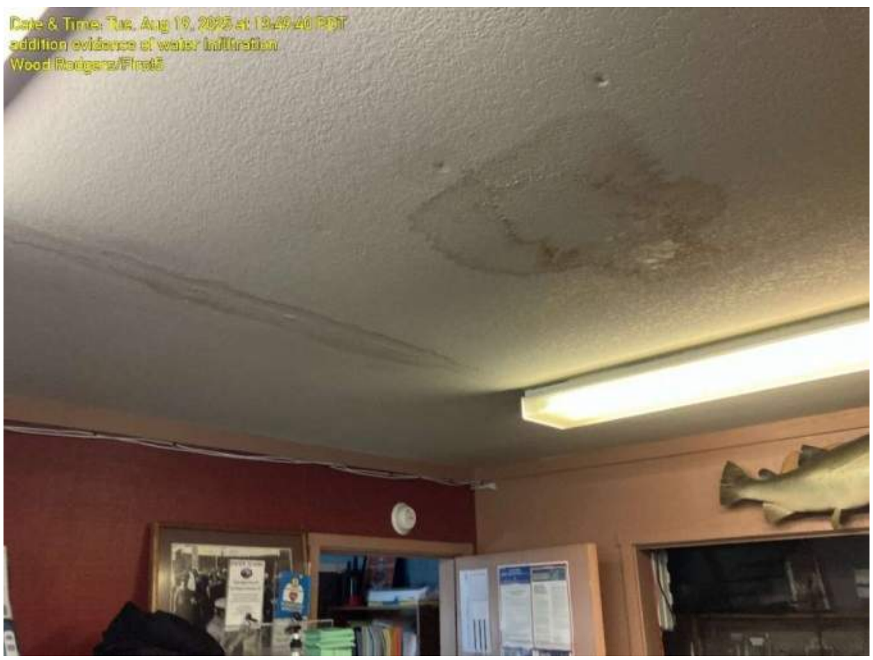

Photo 18 – Visible signs of possible roof leak.

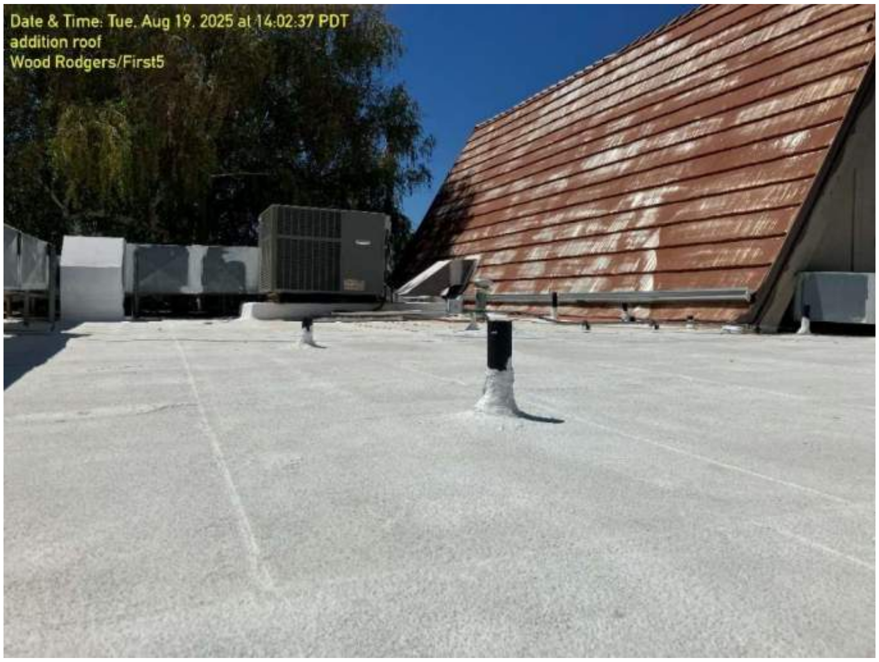

Photo 19 – No apparent roof slope or drainage.

- The existing 6x12 roof joists connect to the existing A-Frame roof joists & floor joists via a bearing seat and bolts (refer to **Photos 20**). The connection of the 6x12 roof joist to the A-Frame is not evident other than the steel bearing seat. There may be additional connectors that are not visible. The original floor joist of the A-Frame would not have extended horizontally past the end of the A-Frame roof rafters. In addition, on one side of the 6x12 roof joists, the existing floor joists would not lap directly to the 6x roof joist due to the difference in widths of the 6x roof joists (5") and double 2x roof rafter (3") [Refer to **Photo 21**].There may be additional connectors and members that are not visible, but a load path to support members cannot be discerned at this time. This particular connection and support will be addressed in more detail in **Section 4 – Conclusion**.

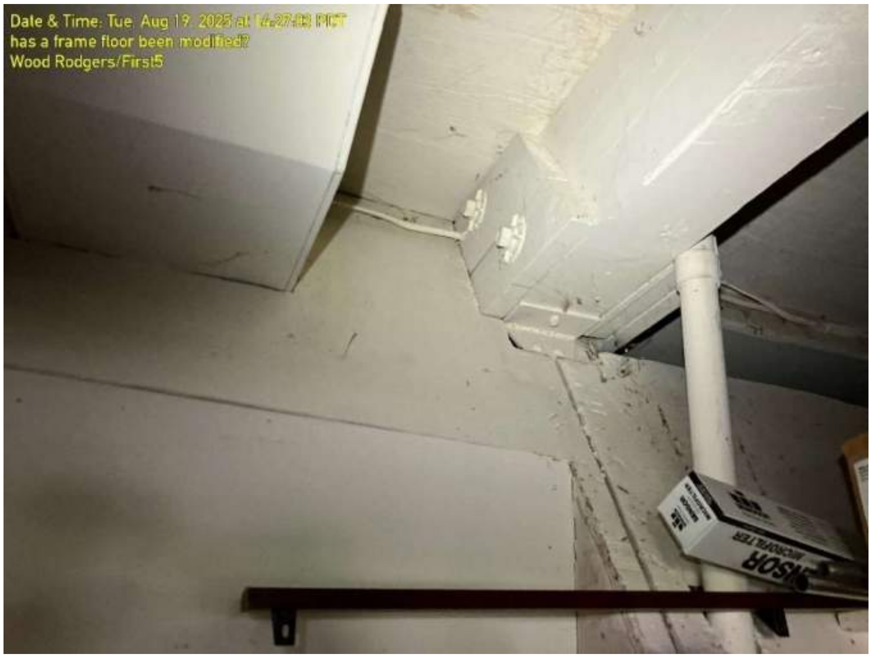

Photo 20 – 6x12 Roof Joist connection at A-Frame Floor.

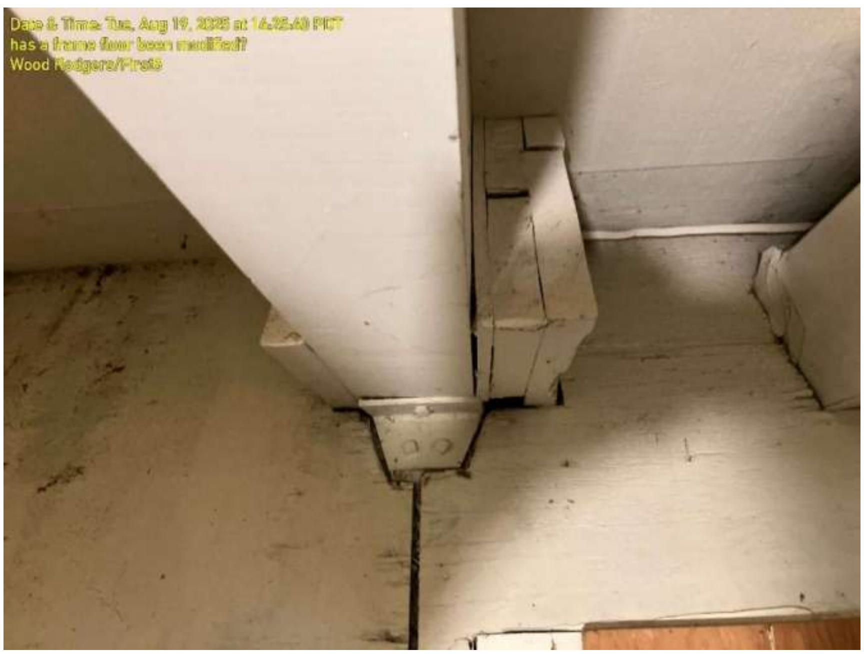

Photo 21 – 6x12 Roof Joist connection at A-Frame Floor showing additional members

- Around the perimeter of the Addition portion of the Building, no visible under-floor venting occurred at the first-floor level (refer to **Photos 22 to 23**). This condition is considered POOR

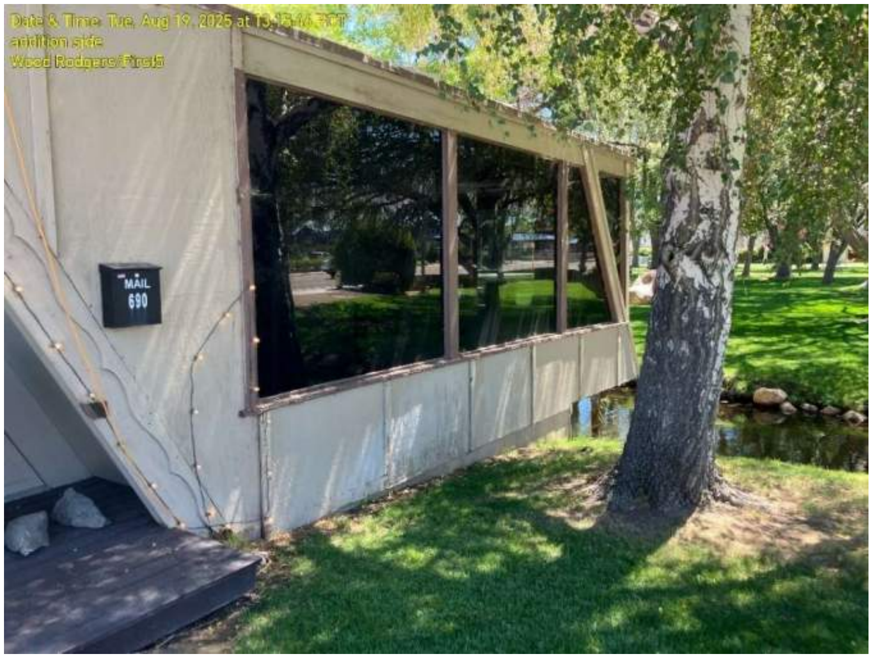

Photo 22 – No visible venting of First floor level on West side of Addition

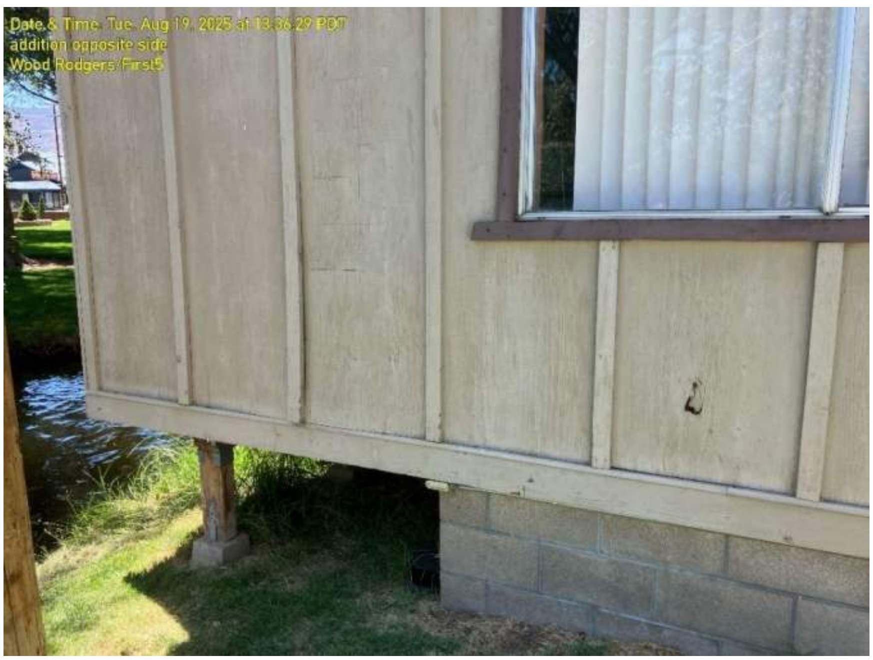

Photo 23 – No visible venting of First floor level on West side of Addition

2.4 FIELD OBSERVATIONS OF SMALL ADDITION

The Small Addition portion that was observed was in FAIR condition. However, there is no apparent concrete foundation supporting the floor girder posts. The posts seem to be either embedded into the soil for support, or the finished soil elevation has been raised resulting in burying the top of the foundation below the current grade. This creates a POOR condition with the posts in contact with soil (Refer to **Photo 24**).

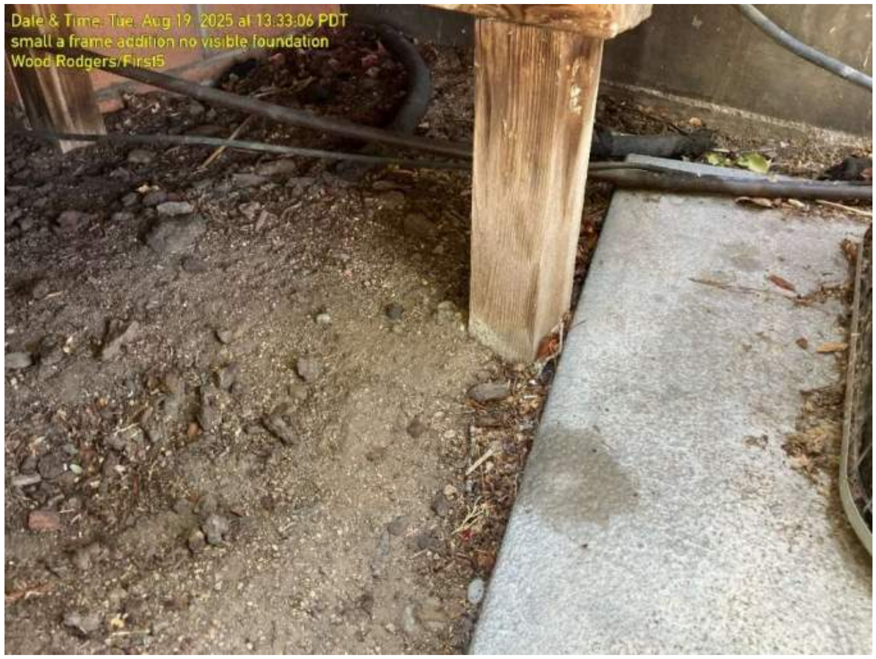

Photo 24 – Showing post in contact with earth and no apparent foundation

3 DESIGN LOADS

As part of this technical memorandum, Wood Rodgers conducted a study to compare the original design dead loads of the A-Frame structure—based on the original structural calculations—with the current in-situ dead loads, which reflect the existing finishes. Refer to **Appendix C** for the original A-Frame documents provided by the City and **Appendix B**, pages B-2 and B-3 for Wood Rodgers Dead Load take-offs.

Since the original design, additional gypsum board finishes have been installed on the roof rafters and floor joists of the A-Frame structure. These additions have increased the dead load beyond the values accounted for in the original design.

Table 2 – Design Load Summary presents a comparison between the original and current dead loads. The implications of the increased dead load are discussed further in **Section 4 – Conclusion**.

Table 2 - Design Load Summary of A-Frame

Allowable Stress Design (ASD) Loads			
Level	Original 1970 (Appendix C)	Current In-situ	Percent Increase
Roof Dead Load in pounds per square foot (**psf**)	8.6 psf	12.5 psf	45%
Floor Dead Load in pounds per square foot (**psf**)	7.0 psf	13.0 psf	85%

4 CONCLUSION

4.1 CONCLUSIONS – A-FRAME MEMBER AND CONNECTION QUANTITAIVE ANALYSIS

As shown in **Table 2** above, there has been an increase in dead load design weight from the original A-Frame structural design. In addition to the increase in dead load design weight, during our site observation splices of the double 2x10 roof rafters were noted outside of the allowed splice zone in the original calculations. There were also collar tie members forming the original “A-frame” that were removed after completed construction.

In order to evaluate the effects of the increase dead load and the modifications to the structure a quantitative analysis was performed on the roof framing members, floor framing members, and the connections between the floor joists and roof joists. The calculations in **Appendix B** use current 2022 California Building Code load cases and show the following:

- Page B-6 of the calculations analyzes a single 2x10 roof rafter spanning fourteen feet with in-situ dead loads and current City snow loads. This analysis was performed to evaluate the effects of the removed collar ties, the splices in the 2x10, and the increase in dead load.
- Page B-6 of the calculations also analyzes the original A-Frame design with bending in a single 2x10 roof rafter. This analysis was performed to evaluate the effects the splices in the 2x10 roof rafter and the increase in dead load.
- Page B-7 of the calculations analyzes the existing double floor joists with the increase in dead load.
- Page B-8 of the calculations analyzes the existing bolted connection between the existing floor joist and roof rafters with the increase dead load of only the A-Frame. It also analyzes the existing bolted connection between the existing floor joist and roof rafters with the increased load from the southern Addition 6x12 roof joist.

The structural analysis presented on pages B-6 to B-8 highlights several concerns regarding the roof and floor framing system. The location of splices in the roof rafters and the absence of collar ties are critical to the structural integrity. When a splice occurs in the double 2x10 rafters without a collar tie, the bending capacity of the rafter may be exceeded, potentially exceeding the limit states defined by the California Building Code (CBC). Similarly, the existing double 2x12 floor joists may be overstressed when subjected to full dead and live loads along their entire span, suggesting that their bending capacity could be exceeded under design loading. Additionally, the bolted connection between the roof rafter and the floor joist appears to be approaching or exceeding its allowable load capacity. This issue becomes even more pronounced when the load from the 6x12 roof joists of the southern Addition is transferred onto the existing roof rafter.

The following are additional considerations when evaluating the Condition of the A-frame:

- There are conditions where the existing roof framing is in contact with soil. The grading around the building needs to be modified so there is a minimum of eight inches of clearance between the roof and finished grade.

- The existing bolted connection at the first-floor joist to the roof rafter appears to be a single bolt. The original structural drawings call for a three bolted connection. The single bolt connection could exceed its load carrying capacity.
- The first floor does not appear to have any underfloor crawl space ventilation. This potentially has caused or will cause dry rot or other moisture-related damage to the first-floor structural framing.
- The structural building plans provided by the City do not match the existing configuration. In particular, the second-floor dimensions. There are no permits or other documentation for a second-floor expansion.
- Where the existing A-frame second floor joists meet the A-Frame roof rafters and the Addition 6x12 roof joist, there is not clear load path between these members and a support member. Potentially this could be relying on a single 2x10 A-frame roof rafter to support the loads from the A-frame and Addition.

For more information, refer to **FINAL CONCLUSIONS AND RECOMMENDATIONS – Section 5.**

4.2 CONCLUSIONS – ADDITION MEMBER AND CONNECTION QUANTITAIVE ANALYSIS

There were no original structural calculations or drawings for the southern Addition. In order to understand the carrying capacity of the existing members Wood Rodgers performed structural calculations for select members. These calculations are in **Appendix B**, using current 2022 California Building Code load cases, and show the following:

The following are additional considerations when evaluating the Condition of the Addition:

- Page B-9 of the calculations analyzes the existing 6x12 roof joist with the calculated dead load and the City uniform snow load. The existing lumber grade of the 6x12 member is unknown, so several common grades have been assumed for bending strength and shear strength.
- Page B-9 of the calculations analyzes the existing 6x10 floor joist with the calculated dead load, floor live load and the City specified uniform snow load. The existing lumber grade of the 6x10 member is unknown, so several common grades have been assumed for bending strength and shear strength. This calculation assumes the existing posts have full bearing foundations, have not been undermined by the Creek, and the joists cantilever (extend past support) maximum two feet six inches.
- Page B-10 of the calculations analyzes the existing 6x10 floor joist with the calculated dead load, floor live load and the City specified uniform snow load. The existing lumber grade of the 6x10 member is unknown, so several common grades have been assumed for bending strength and shear strength. This calculation assumes the existing posts do not provide any support, the joists bear on the masonry stem wall for support, and the joists cantilever (extend past masonry stem support) maximum six feet.
- Page B-10 also analyzes the bearing load to the stem wall footing if the posts supporting the floor joists near the Creek were removed and did not provide support.
- Page B-11 details a possible load path for the 6x12 roof joist to the A-Frame members. The loading to the load path shows the lack

The results presented on pages B-9 to B-11 indicate that the existing roof joists and floor joists may be approaching or exceeding the limit states defined by the CBC. The post foundations, which were originally intended to support the floor joists, have been undermined by Creek erosion. With these supports compromised or removed, the bending capacity of the 6x10 floor joists may be exceeded when subjected to full dead and live floor loads across their entire span. Additionally, where the 6x12 roof joist connects to the existing A-frame structure, the imposed loading is substantial. The unknown nature of this connection raises concerns about its adequacy and structural reliability.

The following are additional considerations when evaluating the Condition of the Addition:

- The first floor does not appear to have any underfloor crawl space ventilation. This potentially has caused or will cause dry rot or other moisture-related damage to the first-floor structural framing.
- There is evidence of the roof leaking or past leaks. This potentially has caused or will cause dry rot or other moisture-related damage to the roof structural framing. If this damage occurs in the 6x12 roof joists, the potentially reduced carrying capacity of the possible over-stressed members is greater.
- Where the existing A-frame second floor joists meet the A-Frame roof rafters and the Addition 6x12 roof joist, there is not clear load path between these members and a support member. Potentially this could be relying on a single 2x10 A-frame roof rafter to support the loads from the A-frame and Addition.

For more information, refer to **FINAL CONCLUSIONS AND RECOMMENDATIONS – Section 5.**

5 FINAL CONCLUSION AND RECOMMENDATIONS

Based on the qualitative and quantitative assessment, the overall condition of the Building is rated as **POOR** and nearing the end of its service life. All three sections of the structure exhibit numerous deficiencies that warrant further evaluation, retrofitting, and/or replacement. Several roof and floor framing members are either approaching or already exceeding their load-carrying capacities as defined by the California Building Code.

A particular concern is the load-carrying capacity and structural support of the second-floor framing in the A-frame. The bending strength of the second-floor joists is exceeded when subjected to the full extent of both dead and live loads along their entire span. This overstress was identified in the original structural calculations.

With the addition of in-situ finishes, the dead load increases, further exacerbating the overstress condition. These calculations, along with the increased stress levels, are documented on page B-6 of **Appendix B**. Additionally, the connection between the second-floor joists and the supporting structure is unclear and raises further structural concerns.

Based on this information, Wood Rodgers recommends that the second floor of the A-frame not be occupied or used for any form of storage.

Upon reviewing the southern addition, it is evident that the existing first-floor framing relies on the foundation posts for structural support. As such, Wood Rodgers concurs with the findings presented in the Willdan Engineering life-safety report, particularly regarding the occupancy-related concerns associated with this portion of the structure.

The path forward hinges on the City's objectives—whether to preserve the entire building, retain select portions, or pursue complete demolition and replacement. Each carries unique challenges and financial implications that should be thoroughly evaluated during the planning and decision-making process.

The following offer possible solutions separated into a few scenarios:

Scenario 1 – Complete Removal of the Southern and Small Eastern Additions, Retaining the A-Frame

- **Environmental and Permitting Considerations**
  Removing the southern Addition may satisfy the regulatory Authorities overseeing the Creek, allowing it to return to a more natural path. This approach could facilitate a more expedited permitting process.
- **Structural Retrofitting of the A-Frame**
  Retrofitting the A-frame is a complex undertaking with many unknowns. To assess the structural integrity, all interior finishes must be removed to expose the roof, second floor, and wall framing. Underfloor access hatches will be required to inspect the first-floor framing, and exterior potholes will be necessary to determine the existing footing configuration. As-built structural plans must be developed before any analysis can begin. The scope of structural review is extensive, as outlined in our report.
- **Code Compliance Upgrades**
  During retrofitting, additional structural elements will need to be upgraded to meet current seismic and wind lateral bracing codes.
- **Additional Professional Services Required**
  Non-structural issues will require input from other consultants, including Architects, Mechanical and Plumbing Engineers, and Civil Engineers. These professionals will address concerns such as underfloor ventilation, exterior grading, ADA-compliant accessibility, and other site-specific requirements

SCENARIO 2 – **Partial Removal of the Southern Addition and Retention of the A-Frame**

- **Environmental and Permitting Considerations**
  Partial removal of the southern Addition may create a suitable setback from the Creek. However, this could lead to complex negotiations with the Authorities. A clear understanding of jurisdictional boundaries from the Creek's edge is essential. If the setback is sufficient, the project may fall solely under City jurisdiction, simplifying the permitting process.
- **Structural Assessment and Retrofitting**
  Similar to **Scenario 1**, interior finishes of the retained Addition must be removed to expose structural elements. Underfloor access and potholes will be required to evaluate the existing post footings and continuous footings. The A-frame will also undergo the same structural review and retrofitting as described in **Scenario 1**.
- **Code Compliance Upgrades**
  Both the A-frame and retained Addition will require upgrades to meet current seismic and wind lateral bracing standards
- **Additional Professional Services Required**
  As with **Scenario 1**, a multidisciplinary team will be needed to address non-structural concerns such as ventilation, grading, ADA compliance, and potential environmental issues.

SCENARIO 3 – Full Demolition and Replacement of the Building at Present Site or New Site

- **Design and Construction Advantages**
  Constructing a new building offers significant advantages over retrofitting an existing structure. Without the constraints imposed by pre-existing conditions, design professionals have greater flexibility to implement optimal solutions. These benefits are further enhanced if the project is located on a new site with favorable environmental factors and standard permitting processes.
- **Demolition Requirements**
  Full demolition of the current structure is required before new construction at the present site can begin.
- **Environment and Permitting Considerations**
  Removing the existing building—particularly the portions impacting the creek—may allow the creek to return to a more natural course and possibly help satisfy regulatory authorities. However, the footprint of any replacement structure would need to be significantly smaller than the current building. To meet oversight requirements related to the creek, the new building's footprint may be limited to an area only slightly larger than the existing A-Frame structure.

  Even if this approach aligns with regulatory expectations, determining an acceptable footprint size could still be a lengthy and cost-prohibitive process. Ultimately, the most efficient and cost-effective solution may be to relocate the new building to a site with fewer environmental constraints and a more favorable permitting landscape.

From a cost perspective, **Scenario 3** may be the most cost-effective option. It presents the fewest challenges related to unknown conditions, design complexities, construction logistics and environmental concerns when considering a different site for a new building. In contrast, **Scenarios 1 and 2** could result in significantly higher initial costs due to selective predesign demolition, extensive site observations, engineering fees, and numerous uncertainties – all before completing final retrofit design documents. Retrofitting an existing building, especially one that is over fifty years old, is inherently difficult and often unpredictable.

If **Scenario 1 or 2** is chosen, 85% of the structure may need to be removed to provide a stable structure that complies with current building codes. It is possible that it is determined that a retrofit solution is not feasible and the structures need to be completely replaced after exposing and reviewing the existing framing and connections not observed in this condition assessment.

This Technical Memorandum presents our findings and recommendations regarding the observed condition of the Chamber of Commerce Building. We remain available to provide further details or support as needed. Please feel free to contact our office with any questions.

Regards,

____
Eric Toschi, PE
Senior Engineer – Structures

____
Anthony Johnson, PE, SE
Principal Structural Engineer