

**City of Sutter Creek  
Design Review Application**

**For Commercial Projects  
Within the Historic District**

Please complete the “Existing & Proposed” Columns. Please submit your plans in print ready.pdf to be printed as 11 x 17. Please show: elevations, site plan, spot grades, and include elevations at the corners of buildings and also include any existing historic features.

**DATE:** July 28, 2025

**TO: DESIGN REVIEW COMMITTEE**

**FROM:** JWCS Design

**REVIEWED and SUBMITTED BY:** Tom Obayashi, R.A. and Dave Meza, P.E.

**Project Address:** 40 Gold Dust Trail, Sutter Creek, CA,

#	Design Standard Reference	Description	Design Criteria Requirements:	Existing:	Proposed:	Has design criteria been met? (Y/N)?	Recommendations to meet Design Criteria:
1.		<b>Zoning</b>		R-E	R-E (Existing, No Change)		
2.		<b>District:</b>	Historic	Historic	Historic		
3.		<b>Lot Size:</b>	N/A	0.72 Acres (31,267 S.F.)	Existing, No Change		
4.		<b>Set Back Requirements:</b>					
5.		<b>Front</b>	25'	40'-0"	Existing, No Change		
6.		<b>Side</b>	5'	11'-0"	Existing, No Change		
7.		<b>Rear</b>	10'	13'-0"	Existing, No Change		
8.		<b>Siting:</b>		<p>Historic Structure – Orientated facing street.</p> <p>Previous Addition – Sits behind historic structure and a portion faces the street.</p> <p>Concrete Vault – a portion faces the street.</p>	No change to building orientation and footprint.		
9.		<b>Lot Coverage:</b>		10.12%	10.12%		

**City of Sutter Creek  
Design Review Application**

**For Commercial Projects  
Within the Historic District**

<b>10.</b>		<b>Are there existing historic features?</b>		<p>Historic Structure – Yes. It consists of 3 wye brick exterior walls with a stacked stone foundation, metal shutters, and a metal roof.</p> <p>Previous Addition – No.</p> <p>Concrete Vault – Yes. Interior Metal Door</p>	<p>Historic Structure – Incorporating gold rush architecture with brick cladding and stacked stone cladding. Reusing metal shutters and reusing the front metal entry door. Incorporating the metal canopy and metal roofing.</p> <p>Concrete Vault – Preserving concrete vault and its metal door.</p>		
<b>11.</b>		<b>Structure Type</b>		<p>Historic Structure – Masonry Exterior Walls</p> <p>Previous Addition - Wood Framed</p> <p>Concrete Vault – Reinforced Concrete</p>	<p>Historic Structure – Wood Framed</p> <p>Previous Addition – No Change</p> <p>Concrete Vault – No Change</p>		
<b>12.</b>		<b>Max Building Height</b>	35'	25'-0"	Existing, No Change		
<b>13.</b>		<b>Roof Pitch</b>	In new construction, reflect historic style	<p>Historic Structure 7:12 Roof Pitch</p> <p>Previous Addition 7:12 Roof Pitch</p> <p>Concrete Vault – Flat but with a built up wood frame roof (7:12 pitch)</p>	Maintain same roof pitch		
<b>14.</b>		<b>Style</b>	National, Shotgun, Victorian, or Craftsman	<p>Historic Structure – National Style.</p> <p>Previous Addition – National Style.</p> <p>Concrete Vault – National Style</p>	<p>Historic Structure – Maintain same architectural style and reuse historic features.</p> <p>Previous Addition – No Change.</p> <p>Concrete Vault – No Change.</p>		

**City of Sutter Creek  
Design Review Application**

**For Commercial Projects  
Within the Historic District**

15.	3.4.2	<b>Exterior Finish &amp; Color Scheme</b>		<p>Historic Structure – Brick</p> <p>Previous Addition – Stucco with beige color</p> <p>Concrete Vault – Stucco with beige color</p>	<p>Historic Structure – Maintain same brick exterior look and stacked stone foundation look</p> <p>Previous Addition – Stucco with similar new paint</p> <p>Concrete Vault – Stucco with similar new paint</p>		
16.	3.4.3	<b>Doors</b>	Consistent in shape and scale with building's style	<p>Historic Structure – Main entry metal door with metal strap.</p> <p>Previous Addition – Exterior Metal doors</p> <p>Concrete Vault – Interior vault door</p>	<p>Historic Structure – reuse metal entry metal door.</p> <p>Previous Addition - Existing, No Change.</p> <p>Concrete Vault – preserve vault door.</p>		
17.	3.4.4	<b>Windows</b>	Match historic style with panes and trim	<p>Historic Structure – None. Windows previously in-filled with masonry and/or metal shutters</p> <p>Previous Addition – None</p> <p>Concrete Vault - None</p>	<p>Historic Structure – No windows, but reuse metal shutters.</p> <p>Previous Addition – No Change</p> <p>Concrete Vault – No Change</p>		
18.	3.4.5	<b>Lighting</b>	Match architecturally	<p>Two existing parking lot light poles.</p> <p>Several existing building mounted lights.</p>	<p>Two parking lot lights, but with minor location adjustment.</p> <p>New wall mounted lights on building.</p>		
19.	3.4.6	<b>Fences</b>	Wood picket, masonry, simple iron, wire, or dry stacked stone	<p>Wood and chain link fencing</p>	<p>Existing, No Change</p>		
20.	3.4.7	<b>Mechanical Equipment</b>		<p>3 existing ground units on NE side of building – not visible from street</p>	<p>Proposed 2 new ground units on NE side of building – not visible from street</p>		

**City of Sutter Creek  
Design Review Application**

**For Commercial Projects  
Within the Historic District**

<b>21.</b>		<b>Siding</b>	Match historic style	Historic Structure – brick and stone Concrete Vault – Stucco Previous Addition – Stucco	Historic Structure – brick cladding and stone cladding selected to be consistent with the existing brick and stone. Previous Addition – No Change Concrete Vault – No Change		
<b>22.</b>		<b>Roofing Material</b>	Match historic style	Metal panel roof	Historic Structure - New or Reused panel metal roof to match existing roofing Previous Addition – No Change Concrete Vault – No Change		
<b>23.</b>		<b>Porches</b>	Match the building in historic character	Existing metal canopy	New metal canopy to match existing canopy.		
<b>24.</b>		<b>Does the structure blend as proposed?</b>			No, the structure will not blend with the neighborhood. However, given the building's historical significance, maintaining the existing architecture is proposed.		

Other Comments: Please see the following attachments.

1. July 28, 2025 Building Historical and Structural Assessment Report
2. Proposed Floor Plan
3. Proposed Building Elevations
4. Proposed Renderings
5. Proposed Site Plan



July 28, 2025 (Revised August 4, 2025)

City of Sutter Creek  
Design Review Committee  
C/O Erin Ventura, Contract Planner  
18 Main Street, Sutter Creek, CA 95685

Project: Sutter Creek Kingdom Hall Major Renovation  
Address: 40 Gold Dust Trail, Sutter Creek, CA 95685  
Subject: Response to Design Review Committee Questions

---

During the April 14, 2025 Design Review Committee meeting, several inquiries were made concerning the historical significance of the 1870 brick building located at 40 Gold Dust Trail, Sutter Creek. In response, JWCS undertook efforts to thoroughly assess the historical value of the site and its surrounding area. JWCS also considered various expert opinions regarding the building's structural condition and developed a proposed approach aimed at preserving the building's historical character.

### **What is the historical significance to the project's building?**

---

Sutter Creek occupies a central position in California's mining heritage. Situated within the historically significant Jackson-Plymouth Mining District—an area distinguished by its prominent gold mining activities during the California Gold Rush era. The following section presents a historical overview of the property located at 40 Gold Dust Trail.

Prior to 1979, Gold Dust Trail was called the road to the Old Eureka Mine and Eureka Trail, reflecting its link to the Old Eureka Mine. 40 Gold Dust Trail is situated north of the Old Eureka Mine. Figure 1 is an excerpt from the 1941 USGS. From the 1941 USGS Map, a dirt road connects Old Eureka Mine and 40 Gold Dust Trail.

Figure 1 – 1941 USGS, Excerpt



Property records link the brick structure to the Old Eureka Mine. Figure 2 displays its location per the legal description, while Figures 2, 3, and 4 show the mine office.

Figure 2 – Property Description Refer to the Central Eureka Mining Company

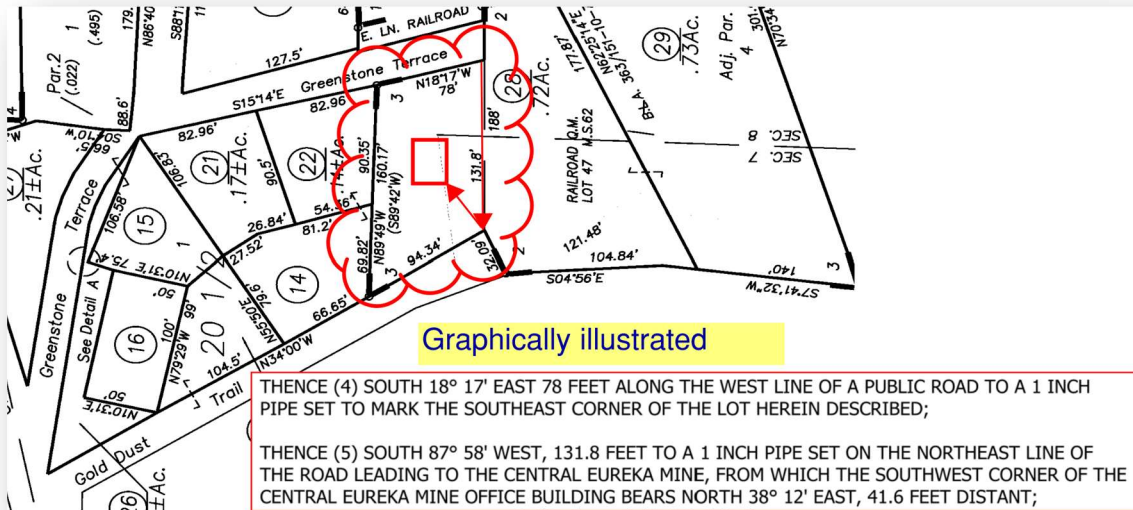


Figure 3 – Aerial View (Source: Amador County Archives)



Figure 4 – The Central Eureka Mine Office (Source: Amador County Archives)



The building was constructed in 1870 and served as a mine office for the Amador Mining Company (see attached Logan's Alley by Larry Cenotto's No. 405 article). The building included a door and windows with metal shutters. The raised foundation consists of stacked stone, while the walls are made of three wythes of brick. The ceiling features a wood frame with dirt insulation. The roof covering may have originally been wood shake.

Possible Building Uses from 1870 to the mid-1950s: The brick building was initially used as a mine office and may have later served as an Assayer's office. Existing records do not confirm whether the building was used as an Assayer's office or as a residence.

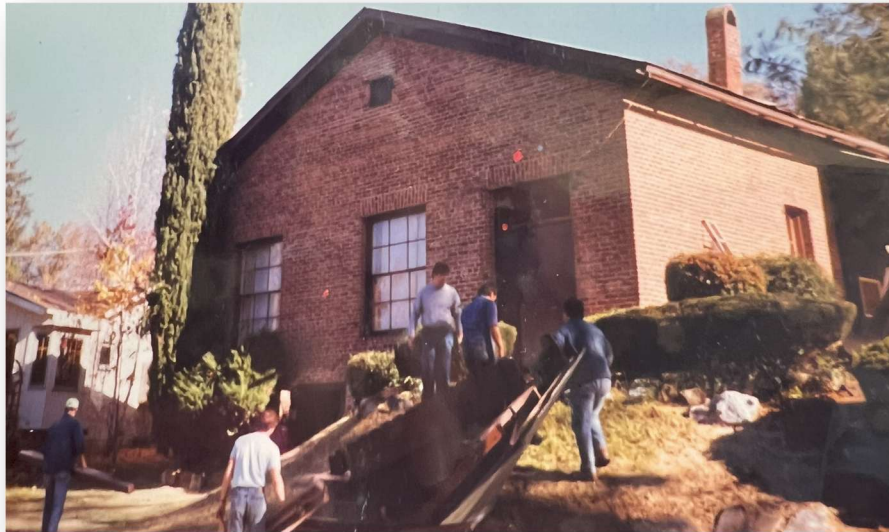
In the mid-1950s, the Central Eureka Mining Company liquidated its assets, including this property. In 1956, a parcel containing the brick structure was acquired by Jehovah's Witnesses, who have since utilized the building as a place of worship.

In 1991, renovation of the 1870 building was carried out with considerable attention to incorporating architectural elements to better reflect the mining era. Part of the renovation included the addition of a larger auditorium. The 1870 portion was used for the lobby and restrooms.



In 1991, the existing openings were closed and replaced with metal shutters (See Figure 5).

Figure 5 – Existing Windows (Source: JWCS Archive Photos)



In 1991, photos indicate one opening was filled-in sometime before 1991. During the 1991 renovation, the opening was restored and became the main entry door, see Figure 6.

Figure 6 – 1991 Photo of South Wall (Source: JWCS Archive Photos)



Shutters and Metal Front Door. In 1991, the front entry door and the metal shutters were installed to replicate those found on other properties within the County. The manufacturing process was undertaken by volunteers. Figure 7 and Figure 8 illustrates the effort to preserve architectural elements consistent with the Gold Rush era.

Figure 7 – Shutter Doors Added to Preserve History



40 Gold Dust Trail



Plymouth Trading Post

Figure 8 – Front Entry Doors



#### 1998 Repair Work.

- Main Entry Canopy. The main entry canopy was added in 1998 to prevent water from entering the front door area.

Concrete Vault. The concrete vault was likely constructed during the 1930s (See Figure 3). It was likely constructed in the 1930s because of the automobiles in Figure 3. The two automobiles noted in the photo may have been the 1926 Buick Master Six and the 1936 Ford Model 68, 3 window coupe. The concrete vault consists of a concrete slab on grade, concrete walls and flat concrete roof. The concrete exterior walls are covered with stucco.

About the significance of the concrete vault, documents could not be found to determine the use of the vault. However, it was likely used to store precious metals, money, and/or important documents.

Figure 8 is a photo of the vault door. Originally, there were two sets of doors as noted by the metal frames. Today, one set of doors remain. A metal frame is used to support the metal doors.

Figure 8 – Vault Doors



**Building Use Summary.** The 1870 structure (1,090 sf) functioned as both a mining office and potentially an assay office and/or a residence. This brick building played a significant role in supporting operations at one of the most successful mines of the California Gold Rush era. The concrete vault (206 sf), constructed some 60 years after the original 1870 building, was integral to mining activities between the 1930s and 1940s. In 1991, local volunteers enhanced the building's look by constructing metal shutters and a new front entry metal door, along with a metal canopy added in 1998. These improvements are consistent with the historical characteristics representative of the mining period.

### **What efforts were taken to preserve the 1870 building?**

---

Based on the records on hand, the following is a summary of the repair work needed to preserve the building.

#### **1991 Renovation.**

- The ceiling dirt insulation was removed. Volunteers used garden tools to carefully remove soil from the ceiling. The soil was used for both insulation and fire protection.
- The 1870 portion of the building suffers from powder post beetle and termite infestations. The 1870 building construction allows water through the foundation and walls. The moist environment results in a pest issue resulting in wood member replacement.

#### **1999 Repair Work.**

- Main Entry Canopy. The main entry canopy was installed in 1999 to mitigate water intrusion at the front entrance. The scope of repair included restoration of the foundation and flooring in the entry area. This section experienced significant dry rot and pest infestations, which were addressed as part of the repair work.

#### **2001 Repair Work.**

- Foundation girders were replaced due to dry rot and pest infestations.

#### **2009 Finish Project.**

- Floor tile was replaced since the foundation has been settling. Repair was needed to the interior plaster that was flaking. All of the issues are due to moisture, dry rot, and pest infestations.

#### **2019 Asbestos, Lead, Mold (ALM), and Pest Reports.**

- The ALM reports require asbestos, lead and mold abatement.
- The pest reports highlight affected roof and foundation structural members.



## 2023 Structural Assessments

- Structural engineers have identified critical deficiencies according to the ASCE 41-17 evaluation for the Life-Safety Performance (S-3) objective. The assessment determined that the building does not satisfy the minimum required standards.
- Roof framing: Dry rot has been observed where the framing connects to the walls.
- Unreinforced Masonry (URM) Walls: Approximately 25% of the mortar on the south, west, and north walls is chalky and can be easily removed.
- The interior surfaces of the brick walls are plastered, with notable areas of scaling resulting from moisture migration.
- In certain wall sections below the floor framing, the mortar has deteriorated to the extent that individual bricks can be shifted or removed by hand.
- Mortar quality and workmanship are inconsistent. Variations in lime content have resulted in some mortar being soft to the touch. Additionally, mortar application is uneven, with some bricks exhibiting poor coverage (Figures 9-12).

Figure 9 – Moisture affecting plaster and mortar





Figure 10 -Dry rot at embedded beams



Figure 11 – Mortar and Brick Review – Interior Brick Condition



Figure 12 – Foundation Stacked Stone - Moisture affected mortar strength



**Structural Condition Summary.** While much effort was made to preserve the building over the years, moisture and pests have ended the useful life of the 1870 portion of the structure. In addition, the building does not meet the ASCE 41-17 Life-Safety requirements.

#### **Could the Building be Repaired?**

---

This 1870 structure contains several structural wood members that are deteriorated and require removal and replacement. As a result, only the shell would be preserved. The walls need to be secured to new structural supports. Due to varying mortar and brick strength, this process may affect an undetermined portion of the brick wall. Additionally, it is necessary to reinforce the existing unreinforced foundation while constructing a new foundation adjacent to the old one. This work may impact sections of the unreinforced stacked stone.

Consequently, some sections of the wall and foundation may need to be replaced, which could lead to variations in the exterior appearance. At the time of this report, estimators are determining the cost to repair the building. However, assigning a cost to a product that may not meet desired standards presents challenges.



**If the building is demolished, can something be saved? The appearance should be consistent with the gold rush community.**

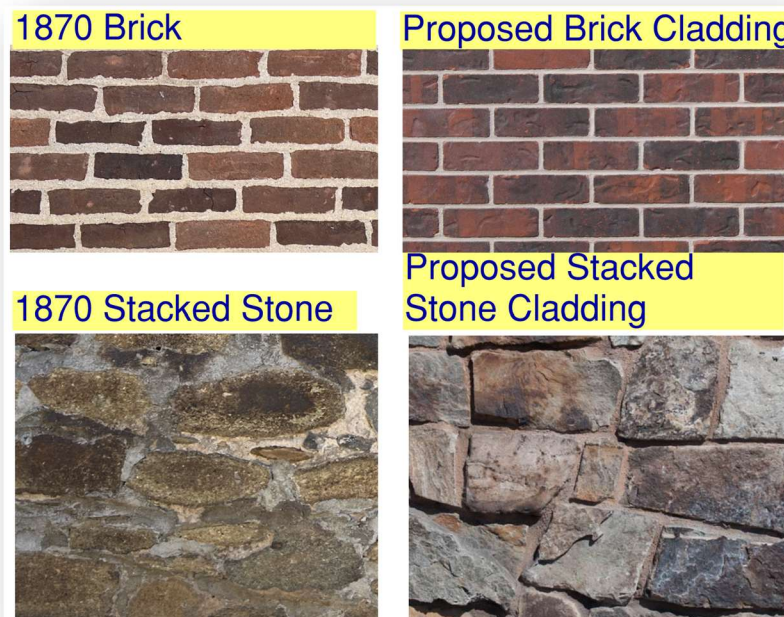
---

JWCS is committed to preserving the historic appearance consistent with the Gold Rush era. While the brick building has deteriorated, the concrete vault has not. To that end, here is a proposal to maintain the gold rush era architectural style.

**1870 Building**

- **Roof Structure.** The existing roof structure is proposed to be replaced with an engineered truss system. The roof pitch will match the auditorium roof pitch (which is about 7:12).
- **Roof Covering.** The roof covering will consist of a metal roof. The metal roof is proposed to be either reused or removed and replaced with a metal roof that is consistent with the adjoining structure.
- **Exterior Wall.** The existing brick wall is proposed to be removed and replaced with wood framed construction. The wall covering is proposed to consist of brick cladding and stacked stone cladding which is similar to the existing exterior look.

Figure 13 – Exterior Wall Finish



- **Exterior Wall Features.** The metal shutters and the front entry metal door will be removed and reused.
- **Front Entry Canopy.** The front entry canopy may be removed, if needed. If so, the front canopy is proposed to be restructured to mirror the existing canopy.

#### Concrete Vault

- Structure. The concrete structure will be preserved.
- Architectural Feature. The existing vault metal door and frame will be preserved.

This is a rendering of the rebuilt 1870 structure, which closely resembles the original.

Figure 14 – Rendering



Figure 15 – Photo



## **Summary**

The 1870 brick building was initially by the Central Eureka Mining Company as a mine office. It may have later also served as an Assayer's office. As such, the 1870 brick building has potentially significant historic value.

Over the years, much effort was taken to preserve the former mine office. Sadly, moisture and its related pests have compromised the building's structural integrity. Nonetheless, we feel the proposal to maintain the historical nature of the building is important and proposed.

We look forward to your review and the DRC's comments. If this application is deemed complete, we hope the application could be added to the August 11, 2025 Design Review Committee meeting agenda.

Sincerely,

**Dave Meza**

Digitally signed by Dave Meza  
DN: C=US, E=pgcoastline@gmail.com,  
CN=Dave Meza  
Date: 2025.08.03 22:14:30-07'00'

David B. Meza, P.E.  
Design Coordinator  
JWCS Design/Construction

## **Attachments**

Logan's Alley by Larry Cenotto's No. 405  
Structural Engineer 1 Report  
Structural Engineer 2 Report  
Proposed Demolition Plan  
Proposed Floor Plan  
Proposed Elevation View  
Proposed Site Plan  
Proposed Renderings





# Logan's Alley

By Larry Cenotto

## The Kingdom Hall No. 405

In 1978, Reader, Logan first researched that old brick church in Sutter Creek's Skunk Hollow. You know, the one behind the Allen mansion.

It's the Kingdom Hall of the Sutter Creek Jehovah's Witnesses, which the congregation purchased from Frances and Nick Eliskovich in 1956.

About then Logan had first ventured into the hollow with the malodorous name. His antiquarian curiosity or itch made him wonder when that old church was built, and by whom. Its taller than wide, rectangular casements suggested the 1860s. The deed conveying the property to the church showed that it had been Central Eureka mine property in the 1950s, and before that, fractions of the Railroad Quartz Mine.

The last mine, parenthetically, derived its name from a railway from the Old Eureka, Hayward or Amador Mine to the Eureka Mill, along the south bank of Sutter Creek.

Therefore, one had only to research other deeds relating to those mines to find mention, description or identification of the building and its date of construction. But those leads "pinched out," and the mystery remained.

**THEN CAME** 1980, and Logan and "DBVWC" spent days in San Francisco, previously mentioned here, in general research of Sutter Creek and its mines. In the State historical society's library they found a lode of papers

about the Amador Mining Company, that San Francisco-based corporation which owned the Amador from 1867 to 1873.

It was the world's richest mine then, purchased from perhaps the state's first gold billionaire, Alvinza Hayward. With grit, luck, expertise and a friend's eleventh-hour grubstake, Hayward had created the mine from pioneer claims called Badger, Eureka, Wolverine and Hayden.

After miners exposed its golden chimney or chute, Hayward bought Bernard Rebeil's "stone store house" for his mining office in '59. Was that today's Kingdom Hall? No. That first office was where the Sutter Creek Pharmacy is now. And it is probably the same building.

Hayward extracted a veritable bonanza from his mine before selling it, assets and office, to the Amador Mining Company for about \$1.5 million. The corporation hardly bought a pig in a poke, as mining engineers estimated there was over a \$1 million in gold in sight!

The mine remained rich and stockholders reaped enviable dividends until April, 1870, when fire destroyed the north shaft and damaged other shafts. At least 150 feet of the shafts filled with water, shutting down the mine.

**WHEN THE** annals if not history of the Central Eureka Mine are written, important sources will be those annual reports and internal communications now among the John A. Steinberger papers in the San Francisco hill-top library.

After the fire, Logan concludes

the corporation may have decided that an office downtown, especially during an emergency, was an operational handicap. The telephone was still eight years away, and Logan doubts there was a telegraph wire to the mine from downtown.

Whatever the reason, the corporation by June must have built a new office adjacent to the mine, because it was willing to sell the old office to former mine superintendent John A. Faulk and William T. Wildman.

Even though corporation directors, for reasons not clear, cancelled that sale later, a new office had already been built. The proof?

Within the corporation's 1871 annual report (for the year 1870) Logan noted that the assets had been increased \$1.985 because of a new brick office!

That new office, much nearer the mine, was headquarters when the miners struck in 1871 and the brief "Amador War" ensued.

And most likely it remained a mine office for the Amador, the Consolidated Amador, and eventually the Central Eureka, too. Further research would tell us.

**THAT OFFICE** today, Reader, where decisions made in San Francisco, New York and London board rooms, were executed as millions in gold "skipped to sunlight," is Kingdom Hall in Skunk Hollow, built in 1870, and 110 years old this year.

With that mystery solved, what do you make of that delightful name, Skunk Hollow? Why, when, and by whom, Reader?

July 27, 2023

# Structural Engineer Report No 1

Derek Nunez, Design Contact, Zone 10

Mira Loma Assembly Hall,

Mira Loma, California

RE: Structural Assessment of Unreinforced Masonry Portion of Sutter Creek Kingdom Hall  
40 Gold Dust Trail  
Sutter Creek, CA 95685

Dear Brother Nunez,

At your request, this report is prepared to provide a professional Structural Engineering opinion of the Unreinforced Masonry ("URM") portion of the Sutter Creek Kingdom Hall with a 'Historic' structure designation.

## **SUMMARY**

The URM building portion exhibits significant deterioration and stability deficiencies that present a life-safety hazard. Over 25% of the foundation and walls are reported to exhibit deterioration of the mortar binding the rock and brick. Over 60% of the wood framed roof framing members are reported to be decayed due to insect infestation. The structure lacks adequate connections at the roof, ceiling, and floor framing levels.

It is recommended that the building occupancy be restricted to stabilization and repair or strengthening activities only.

## **DESCRIPTION**

Remodel plans from the 1990's indicate the building consists of a single story, 30 ft wide by 34 foot long, URM structure, abutting a 2190 square foot addition, rectangular, wood framed, single story, structure. Reportedly, the wood framed building is separated from the URM with a 1-inch gap.

The exterior walls are 13-inch-thick multi-wythe brick and mortar walls, and the end walls extend up to form the gables. The brick wall bears on a stacked and mortared stone stem wall of varying height to follow the slope of surrounding grade. The interior face of brick from the floor to ceiling is plastered.

The URM building consists of wood framed roof rafters with cross ties forming a gable roof, bearing on full height, unreinforced brick masonry walls. A wood framed ceiling with plywood was added in the 1990's renovation project with wall tie anchors specified at 4-foot on center. A raised wood framed floor joist crawl space varies in height from several feet at the west wall to approximately 6 inches under floor joists.



## **FINDINGS**

### **1. CONDITIONS OF MATERIALS**

The following were reported by Gary Robinson who has a long history with the original construction and ongoing maintenance of the facility:

- a. Roof Framing- approximately 60% of the roof framing is reportedly affected by infected by insects and decay. Framing into the walls has dry rot.
- b. Ceiling Framing- ceiling framing is concealed by plywood and gypboard.
- c. Floor framing- framing member ends are notched into the brick wall and approximately 50% show signs of dry rot at the ends. The soil level rises to nearly 6-inches of the bottom of the joists which is not code compliant.
- d. URM Walls-approximately 25% of the mortar on the south, west and north walls is chalky, and easily scraped out. The interior face of the brick walls is plastered and has scaled off due to moisture migration from within the masonry wall. Sections of wall below the floor framing have mortar that has disintegrated such that individual bricks can be shifted and removed by hand.
- e. Foundation- the foundation consists of mortar stacked rock to the floor joist level. The mortar within approximately a foot within the floor level from the surrounding grade level is in poor condition, and in some areas completely eroded.
- f. There appears to be a lack of sufficient ventilation openings in the crawl space.
- g. Reportedly, water accumulates in the crawl space without a means of discharge.

### **2. CODE/STANDARD EVALUATION**

The following items are key deficiencies based on ASCE 41-17 evaluation for a Life-Safety Performance Level (S-3) objective. The Level of Seismicity is "HIGH" based on an  $S_{X5}=0.365$  and  $S_{X1}=0.283$  [Table 2-4 of ASCE 41-17].

- a. Wall Height-to-thickness ratio. Since the wall is neither braced at the floor level nor ceiling level, the overall wall height from the foundation is 16.33 ft, resulting in a  $h/t=15.1$  which exceeds the maximum allowable  $h/t=13$ . This is non-compliant and presents a significant stability deficiency. [ASCE 41-17 5.5.3.1.2]
- b. Wall Anchorage- There is a lack of adequate anchorage at 4-foot on center at the floor and roof levels. The specified anchorage at the ceiling level at the interior is concealed and could not be confirmed; however, the exterior anchors exceed the minimum spacing requirement. Therefore, it is concluded that the lack of sufficient wall anchorage poses a significant stability deficiency. [ASCE 41-17 5.7.1]
- c. Shear Transfer of Diaphragm to Shearwalls- the top bricks of the gable endwalls are loose which does not transfer forces into the wall. This is non-compliant. [ASCE 41-17 5.7.2]
- d. Wood Diaphragm-The existing diaphragm is spaced straight sheathing exceeds a length-to-width ratio of 1:1. This is a deficiency. [ASCE 41-17 5.6.2]



### **CONCLUSION AND RECOMMENDATIONS**

Based on the poor and deteriorated conditions of major structural building elements (foundation, walls, floor, and roof framing), the URM portion of the building poses significant deficiencies and non-compliance, which poses a life-safety hazard.

It is recommended that the building occupancy be limited to safe construction activities until these deficiencies can be repaired, upgraded, strengthened or replaced before resuming public occupancy.

### **LIMITATIONS**

This report was prepared to perform an independent, second opinion, and is based on information and documents collected by others, including pictures and videos, termite inspection report, and original plans of a remodel constructed circa 1991; it is not based on site visits to observe existing conditions, selective demolition to observe concealed conditions, or testing of mortar or brick materials. Therefore, a change in the condition of materials, selective demolition to expose actual conditions, or testing of materials, may result in a changing the findings, conclusions and recommendations.

Sincerely, Your Brother,

Byron L. Dietrich, Structural Engineer



Cc: Andrew Quinones, Design Lead

# Structural Engineer Report No 2

English Sutter Creek Congregation of Jehovah's Witnesses  
40 Gold Dust Trail  
Sutter Creek, CA 95685

RE: Seismic Evaluation of Sutter Creek Kingdom Hall  
40 Gold Dust Trail  
Sutter Creek, CA 95685

Dear Brothers,

The Sutter Creek Kingdom Hall (Figure 1) is composed of a circa 1860 single-story unreinforced masonry (URM) building with a wood framed main auditorium added in the 1990's. The URM portion of the Kingdom Hall has a wood floor with significant crawl space below (See Pic 1 and Figure 1). The URM wall height along Gridlines 1 and 2 is approximately 13'-0" above finished floor. The URM wall height at the gable end walls at Gridlines A and B vary from approximately 13'-0" to 21'-9" above finished floor.

An on-site investigation and condition assessment was made on January 21, 2023. The purpose of the site visit was to determine if the URM portion of this Kingdom Hall would meet the Life Safety Structural Performance Level (S-3) of ASCE 41-17, *Seismic Evaluation and Retrofit of Existing Buildings*.

Structural Performance Level S-3 is defined "as the post-earthquake damage state in which a structure has damaged components but retains a margin of safety against the onset of partial or total collapse.

Based upon its design short-period spectral response acceleration parameter  $S_{DS} = 0.48$  and a design spectral response acceleration parameter at 1-sec period  $S_{D1} = 0.33$ , the Level of Seismicity at this location is High based upon Table 2-4 of ASCE 41-17.

## 1.0 Collapse Prevention Acceptance Criteria

ASCE 41-17 Table 17-36 *Collapse Prevention Structural Checklist for Building Types URM and URMa* lists many items that would need to be addressed for collapse prevention. Included on this list are wall anchorage and wall height to thickness (h/t) ratios for out-of-plane actions.

## 2.0 Wall Height-to-Thickness (h/t) Ratio for Collapse Prevention

ASCE 41-17 Section 11.3.3.3 and Table 11-5 contain the *Collapse Prevention Acceptance Criteria for URM Walls Subject to Out-of-Plane Actions*. With an  $S_{X1} = 0.592$  the maximum h/t ratio for the walls is 13. As the existing 13" wide walls are 3-wythe thick, the allowable maximum height would be 14'-0".

ASCE 41-17 Section 16.2.2.1.1 *Headers in Multi-wythe Solid Brick* reads:

“The facing and backing wythes of multi-wythe walls shall be bonded so that not less than 10% of the exposed face area is composed of solid headers extending not less than 4 in. into the backing. The clear distance between adjacent full-length headers shall not exceed 24 inches vertically or horizontally. Where backing consists of two or more wythes, the headers shall extend not less than 4 inches into the most distant wythe, or the backing wythes shall be bonded together with separate headers for which the area and spacing conform to the foregoing. Wythes of walls not meeting these requirements shall be considered veneer and shall not be included in the effective thickness used in calculations of the height-to-thickness ratio and shear strength of the wall.”

The exterior URM walls at Sutter Creek Kingdom Hall do not meet these requirements; hence, based on Sections 16.2, *Special Procedure for Unreinforced Masonry* and 16.2.2.1.1, the maximum height for collapse prevention would be:

$$13'' \times 2/3 \times 13 = 112.7'' \text{ or } 9.38'$$

It should be noted that Section 16.2.2.1.3 allows for other wall lay-up patterns “if their performance can be justified.” This cannot be done for this building.

Conclusion: Wall Height-to Thickness (h/t) Ratio for Collapse Prevention = Noncompliant

### 3.0 Wall Anchorage for Collapse Prevention (1991 Structural Plans – Attached)

Sheet S2 of the plan set dated 3-10-91 (wood framed slab-on-grade addition) called for the addition of wall anchors at 4'cc at approximately 8'-8" above finished floor on three sides of the building. (Plate washer (see Pic 1) were observed on the exterior of the building at this elevation at spacings up to 8'-0".)

The Ceiling Framing Plan on Sheet S2 (See Figure 2) called for new 2x6 ceiling joists with ½" plywood installed on the top of a new hard lid ceiling over the rooms adjacent to Gridlines 1, 2, and A.

Detail 4/S2 called for the installation of 3x6 DF joists with Simpson LTT20 light tension ties with ½" diameter epoxied rods at 4'-0" cc along gridlines 1, 2, and A. Sheet S2 did not provide continuous ties, struts, or chords for the “Ceiling Framing Plan” diaphragm to resist the wall anchorage forces at the Simpson LTT20 locations. No structural sub-diaphragms or cross ties were detailed. No edge nailing was required at 3x6 tie locations.

For seismic loads in the north-south direction no detailing at re-entrant diaphragm corners was provided. Shear transfer detailing to the wall as Gridline B is absent.

Sheet 1 called for the installation of a new ½" plywood overlayment at ground level diaphragm, but no wall anchors were detailed.

Wall anchors with plate washers were installed each side of the existing wall openings along Gridline B. From the interior side of the walls the brick and mortar at these locations was often in bad conditions (See Pic 2)

No intermediate height wall anchors were provided for the gable end wall at Gridline B.

**Conclusion:** Wall Anchorage for Collapse Prevention = Noncompliant

### 3.1 Wall Anchorage for Collapse Prevention (Top of wall connection at Gridlines 1 and 2)

The existing roof framing system is composed of 2"x5" rafters @24"cc with collar ties at varying elevations. (See Pics 3 and 4). Representative top of wall conditions at Gridline 2 are shown in Pics 5, 6, and 7. Very minimal connection to the top of wall sill plates was present. No anchor bolts were observed between the top of wall sill plates and the URM walls below. The bearing ends of the rafters are unblocked so shear transfer from the spaced sheathing roof diaphragm is questionable.

**Conclusion:** Wall Anchorage for Collapse Prevention: Noncompliant

### 3.3 Wall Anchorage for Collapse Prevention (Attic Level)

An attic floor composed of 2"x11.25" floor joists @ 24"cc is located above the hard-lid ceiling detailed on Sheet S2 of the 1991 Structural Plans. The attic floor at one point was sheathed entirely with 1x floor planks and supported a one foot thick layer of dirt that was used for insulation, which has since been removed and replaced with rolled insulation. The hard-lid ceiling can be seen in Pics 8 and 9. The bottom of the 2"x11.25" attic floor joists occur approximately 3'-6" above the hard-lid plywood installed per the 1991 Structural Plans.

The attic floor joists (See Pic 10) are built into the URM masonry walls with no positive anchorage or moisture protection. Many of the joist ends have dry-rot (Pics 11, 12, 13). Very weak mortar and bricks were observed at various attic floor joists (Pics 13, 14, 15, 16). The mortar was weak or loose. The bricks would crumble from probing by a screwdriver. Mortared brick could be loosened and removed by hand without mechanical assistance. More than a few attic joist ends were repaired with plywood scabs (Pic 13, 14, 15).

At gable end walls at Lines A and B no wall anchorage was observed at the attic level (See Pics 1, 17).

**Conclusion:** Wall Anchorage for Collapse Prevention: Noncompliant

### 3.4 Wall Anchorage for Collapse Prevention (Top of gable end walls at Gridlines A and B)

Wood ledgers with malleable iron washer are installed each side of the tops of the gable end walls at Gridlines A and B to “trap” the tops from falling over via cross-grain tension. No details were provided for anchoring these walls into the straight sheathing for the sloped roof.

The masonry at the top of gable end walls is loose at various locations (See Pics 17, 18, 19)

Conclusion: Wall Anchorage for Collapse Prevention: Noncompliant

#### 4.0 Other findings

The URM building has very poor attic ventilation.

The original wood lath and plaster ceiling at the underneath side of the attic floor joists had been removed and many locations adjacent to the exterior walls were missing the original 1x boards that supported the dirt insulation that had been on the top side of these joists. The removal of the plaster ceiling and 1x sheathing weakened and destroyed the lateral stiffness parallel to the exterior walls.

The crawl space below the URM building has poor ventilation with no foundation vents observed except for the louvers in the crawl space access door (See Pic 1). There needs to be cross ventilation. The soil was very muddy in many locations. The crawl space gets run-off water seepage from the hill on the east side of the Kingdom Hall. A trench sloping from the east to the west side for the Kingdom Hall toward the crawl space access door was observed (See Pic 20). An electric fan (Pic 20) was observed, but without adequate cross ventilation there is no means for the moisture to escape. See Pic. 21 showing moisture rising on concrete pier block and shale foundation wall.

The foundation walls supporting the URM walls are composed of stacked pieces of mortared shale (See Pics 21, 22, 23, 24). The mortar was weak under probing with a screwdriver in some locations.

Stacked shale was used to support floor girders in many locations (See Pics 25, 26)

#### **Summary**

Based upon my on-site investigation and conditions assessment of the unreinforced masonry (URM) portion of the Sutter Creek Kingdom Hall, along with the conclusions noted above, this building has significant deficiencies, and the health and safety of its occupants is at risk. This building does not meet the Life Safety Structural Performance Level of ASCE 41-17, which specifies the nationally applicable provisions for the seismic evaluation and retrofit of buildings. Until the deficiencies noted within this report are corrected and abated, I recommend that the Sutter Creek Kingdom Hall not be used as a place of worship.

Sincerely, Your Brother,

**Kurt  
Katsumata**  
Digitally signed by Kurt  
Katsumata  
DN: cn=Kurt Katsumata,  
c=US, ou=Structural  
Engineer  
Date: 2023.03.30 14:57:22  
-07'00'

Kurt Katsumata, Structural Engineer

Attachments: Figure 1- 1991 Floor Plan showing URM building  
Figure 2- 1991 Ceiling Framing Plan with ½" plywood and Simpson LTT tension ties  
Pic Attachment: Pics 1-27  
1991 Architectural and Structural Plan Set

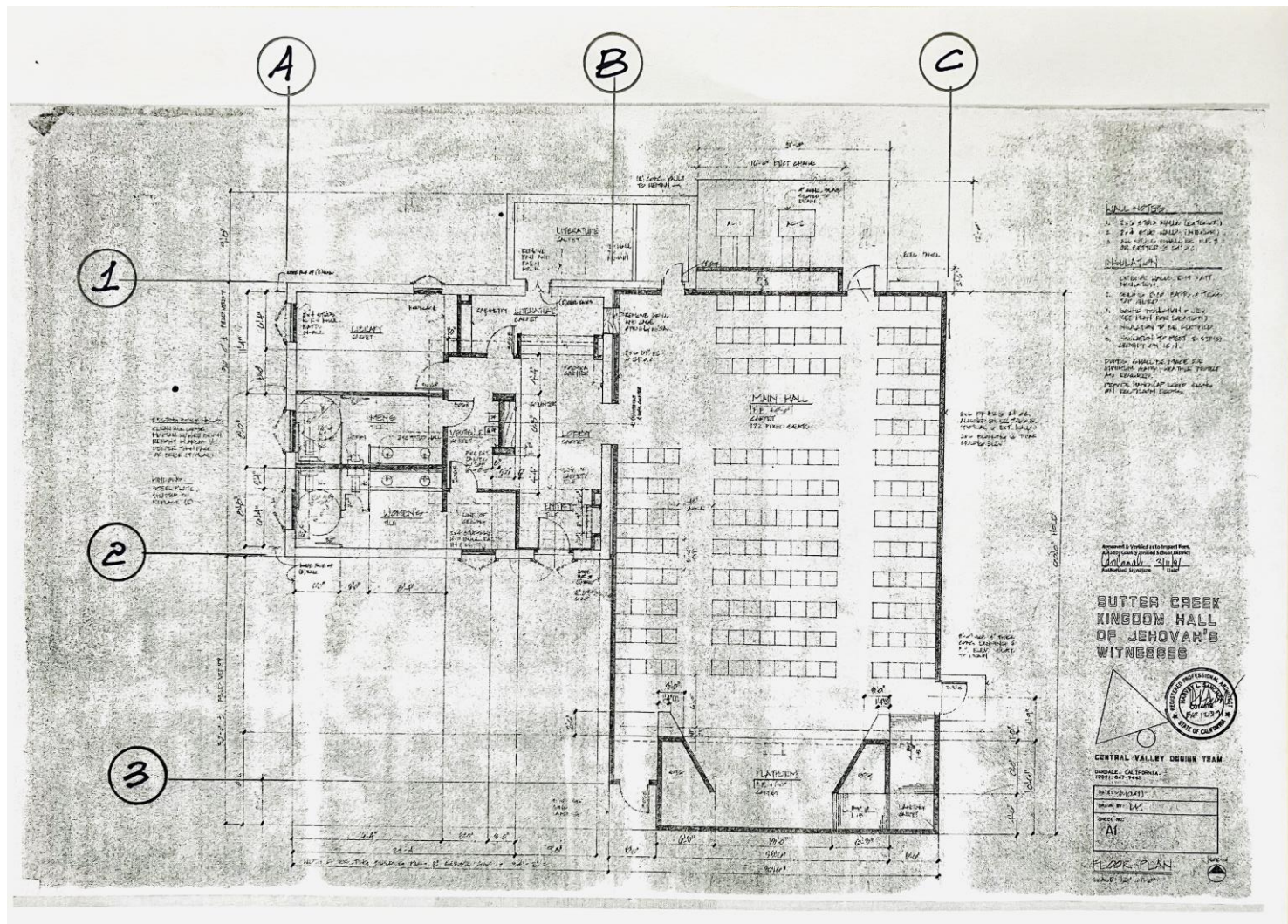


Figure 1 - 1991 Floor Plan: URM Building between Gridlines "A" and "B"



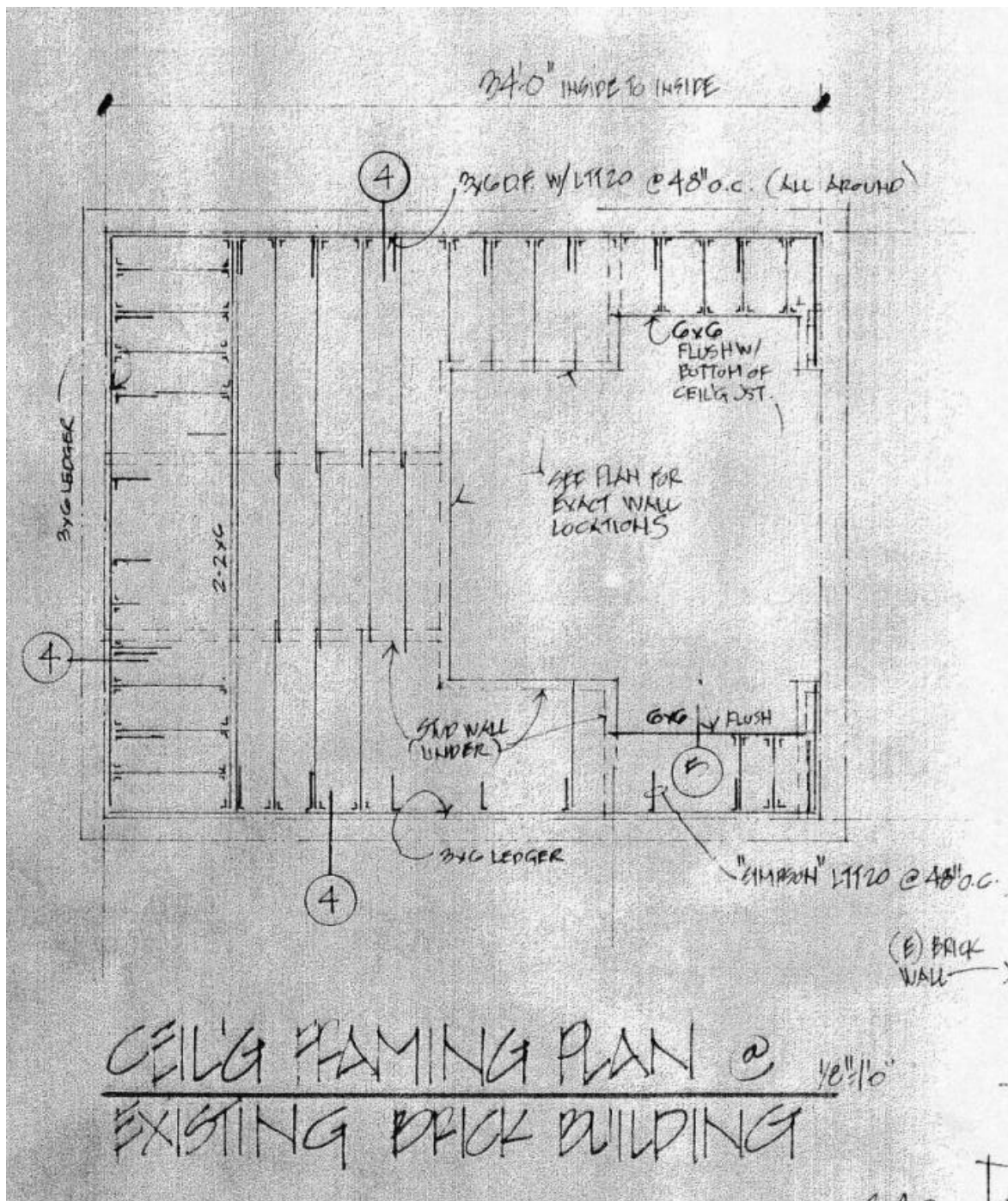


Figure 2 - 1991 Ceiling framing plan with 1/2" plywood and Simpson LTT20 tension ties @ 4'-0" cc at URM walls





Pic 1- West wall of URM building with access door to crawl space and added anchors each side of existing wall openings.



Pic 2- Brick and mortar at wall openings at West Wall at 1991 Hard Lid Ceiling with plywood diaphragm+





Pic 3 – Sagging collar tie at roof rafters. King Post added at mid-span



Pic 4 – Collar ties are varying elevations at roof rafters





Pic 5 – Roof rafters at top of wall at Gridline 2.



Pic 6 – Roof rafter with low collar tie and Simpson A35 to sill plate at top of wall





Pic 7 – Roof rafter connection to top of wall at Gridline 2 with spaced sheathing on top



Pic 8- Hard lid ceiling with ½" plywood at west wall added per 1991 structural plans w/ attic floor joists above.



Pic 9 – Added hard lid ceiling below attic ceiling joists at northwest corner of URM building.



Pic 10 – Attic floor joists built into masonry wall with 1x floor boards removed. Roof rafters on top of wall





Pic 11 – Dry rot at embedded 2"x11.25" attic floor joists



Pic 12 – Dry rot at embedded attic floor joist





Pic 13 – Dry rot at embedded attic floor joist



Pic 14 – Weak mortar and loose bricks at attic ceiling joist repair locations.





Pic 15 – Loose bricks and weak mortar at attic floor joist repair location



Pic 16 - Loose and missing bricks. Exposed brick head for interior two wythes of wall.





Pic 17 - No wall anchorage at Line B (East Wall) at attic floor level. Attic floor boards removed.



Pic 18 – Loose and missing bricks at west wall gable





Pic 19 – Loose bricks at top of wall support on north end of west wall



Pic 20 – Drainage trench sloping from east to west toward crawl space access door.





Pic 21 – Moisture at pier block and stacked shale foundation wall at Gridline 2.



Pic 22 – Stacked shale foundation wall at floor girder at Gridline A





Pic 23 – Stacked shale foundation wall at Gridline A.



Pic 24 – Stacked shale foundation wall at southwest corner of crawl space.





Pic 25 - Floor beam supported on stacked shale pier



Pic 26 - Beam splice over shim at built-up shale pier





Pic 27 – Beam splice and dry rot repair over pier block (teter-totter method)