EHLEN SPIESS & HAIGHT, INC.
STRUCTURAL ENGINEERS

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January 3, 2020

Mr. Michael Luther, P.E.
Public Works Director
City of Lompoc
100 Civic Center Plaza
Lompoc, CA 93436

Subject: **Structural Condition Assessment**
Fire Station #1
115 South G Street, Lompoc
ESH 19-113

Dear Michael:

In accordance with your request, we have reviewed areas of visible cracking in finishes of the subject building on December 10^{th} and 23rd. This letter is the report of our observations.

Executive Summary

In our opinion, the observed cracks in masonry walls in the fire station and hose tower are due to normal shrinkage cracking during the wall grout curing process and do not indicate structural distress or weakness that will affect the performance of the building. Cracks in the ceiling and wall finishes are likely due to minor settlement of the structure and normal shrinkage of the wood framing and do not indicate structural distress or weakness that will affect the performance of the building. The cracks in the plaster at the front (east side) balcony may have been caused by water infiltration into the wall assembly. These are not imminent safety concerns but further evaluation should be done as described in this report. Moisture intrusion into the building has been reported and we recommend that moisture testing be done.

The conditions described in our seismic evaluation report (June 23, 2014) have not been mitigated. Our current scope of work in this report does not include evaluation of seismic compliance issues.

Scope of Work

Our work included: viewing areas of cracking in the fire station and hose tower, reviewing construction documents of the buildings, and providing our opinion on the structural significance of the current conditions. Structural analysis of the buildings was not done.

Building Description

The facility consists of three generations of buildings. The oldest is the "old jail", believed to have been built sometime between 1920 and 1950. It is a concrete building of 500 sf, located at the northwest corner of the property, and is used for storage.

The next building is the training room, restroom, and equipment bays, built in approximately 1957. It is approximately 2300 sf and has a wood-framed roof, reinforced 8" masonry block walls and concrete footings. The 1990 renovation project work included: indoor remodeling, adding sloped framing above the roof to improve drainage, and adding a roof at the western-most bay, which is connected to the sloping roof of the old jail.

The newest building is the 6500 sf front building, built in 1977. It includes the one-story apparatus bay, hose tower, and two-story offices and living quarters. It is separated from the adjacent building by a 2 inch wide seismic joint. It has a wood-framed roof and second floor, reinforced 8" masonry block, and concrete footings. The roofs are mostly flat, with sloping roofs along the front of the building and at the hose tower.

Condition Survey

The majority of our time was spent reviewing the hose tower and in the newest part of the fire station. A visual survey of the framing was completed by walking through the structures and looking at walls and exposed roof framing.

The east masonry wall of the apparatus bay was constructed without construction joints which would have reduced the amount of wall shrinkage cracking (and exterior plaster cracking) but this is not a construction defect. Cracks in interior finishes do not appear to indicate structural distress and could have been caused by changing moisture conditions in the supporting soils under the building and/or normal drying of the wood framing. Patching of wall finishes is apparent at several interior locations where it was reported to us that leaks have previously occurred.

It was reported that rainwater previously leaked into the kitchen hood, which could be a contributing factor to the kitchen door sticking and cracking of the surrounding drywall.

Water stains were noted on the 2nd floor framing above the Chief's office below the balcony.

The glue-laminated beam bearing connection above the slide appears to have shifted slightly.

Recommendations

The cracks in masonry walls and exterior plaster on masonry walls (Photo 1 and 2) do not need any work.

The cosmetic cracking in the interior ceilings and walls (Photo 3 and 4) can be patched and painted. At the kitchen east side door, we recommend that drywall at the ceiling and above the door should be removed to check for framing damage. Likewise, at the front (east side) balcony we recommend that plaster finishes be removed at the areas of cracking (Photo 5 and 6) and at the bottom side of the balcony framing so that investigation into the structural condition of the framing can be done. These are not imminent safety concerns and the work can be postponed until after the current rainy season ends but should be done before the rainy season begins again in late 2020.

We recognize the difficulty in repairing water leaks at the exterior building envelope, especially where horizontal roof surfaces meet vertical wall surfaces. To be sure that leaks are fixed, we recommend that moisture meter readings be taken of the walls above the main stairwell and at the east side of the steps near the slide.

No action is necessary at the glue-laminated beam end connection.

Conclusions

In our opinion, the observed cracks in masonry walls in the fire station and hose tower are due to normal shrinkage cracking during the wall grout curing process and do not indicate structural distress or weakness that will affect the performance of the building. Cracks in the ceiling and wall finishes are likely due to minor settlement of the structure and/or normal shrinkage of the wood framing and do not indicate structural distress or weakness that will affect the performance of the building. The cracks in the plaster at the front (east side) balcony may have been caused by water infiltration into the wall assembly.

Limitations

Our professional services have been performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable engineers practicing in the structural field in this or similar localities at this time. Please note that a complete structural analysis of the subject structure has not been performed. The conclusions and recommendations contained in this report are based on our engineering judgment and experience. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has been prepared for the City of Lompoc Department of Public Works to be used solely by them in their evaluation of the subject building. The report has not been prepared for use by other parties and may not contain sufficient information for purposes of other parties or other uses.

Thank you for the opportunity to work with you on this project. Please contact us with any questions about this report or if we may be of additional service to you.

Very truly yours,

EHLEN SPIESS & HAIGHT, INC.
a California corporation

By: Jeffrey E. Haight S.E. 4313

REGISTERED PROFESSIONAL ENGINEER
JEFFREY E. HAIGHT
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Exp. 9/30/20
STRUCTURAL
STATE OF CALIFORNIA

JEH/gmg
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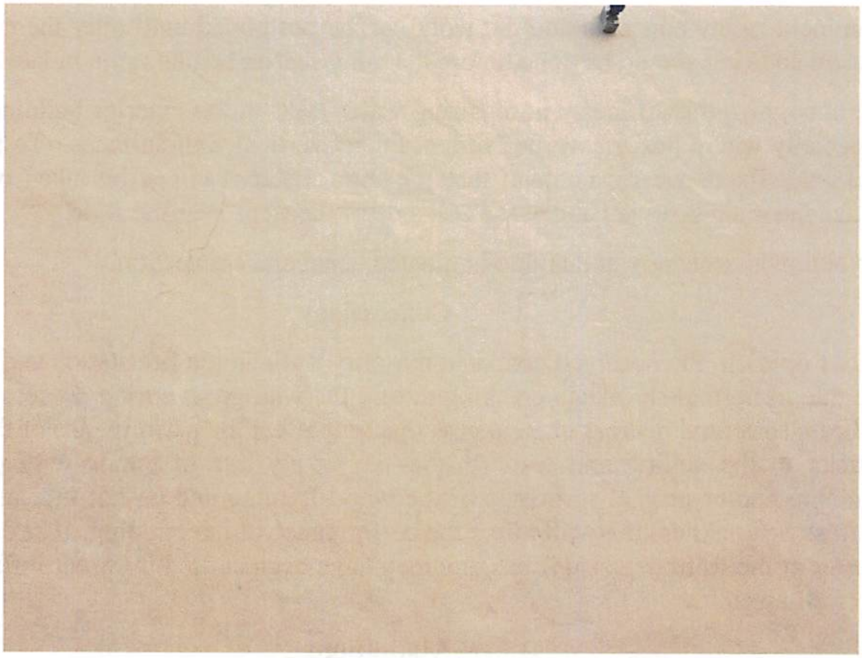

PHOTO #1: SOUTH WALL EXTERIOR

PHOTO #2: SOUTH WALL INTERIOR

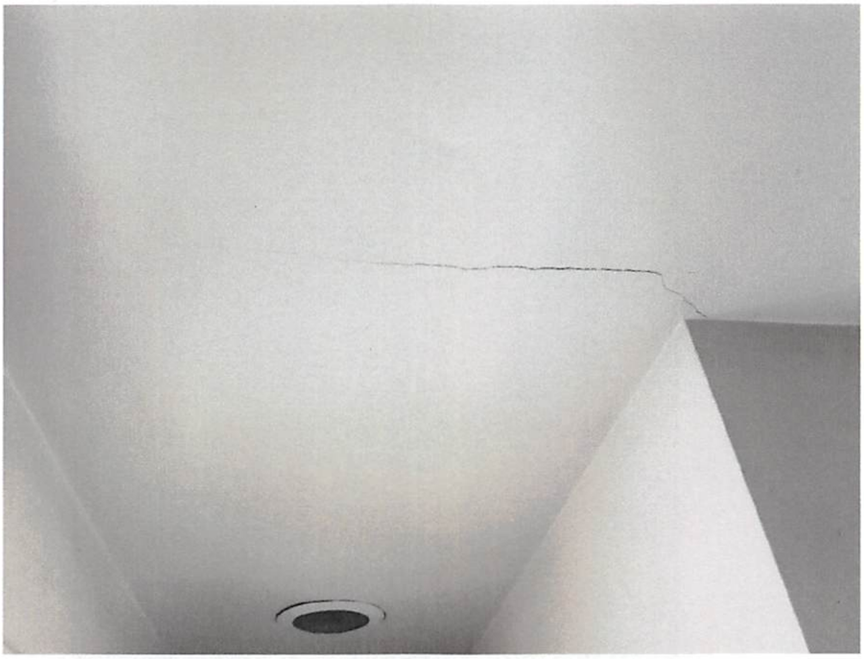

PHOTO #3: CEILING CRACK

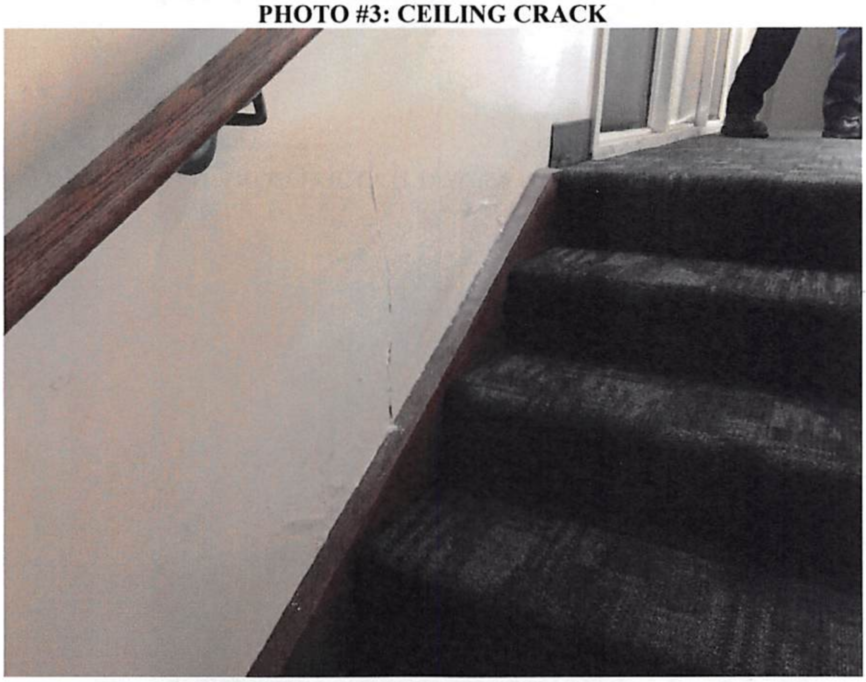

PHOTO #4: WALL CRACK

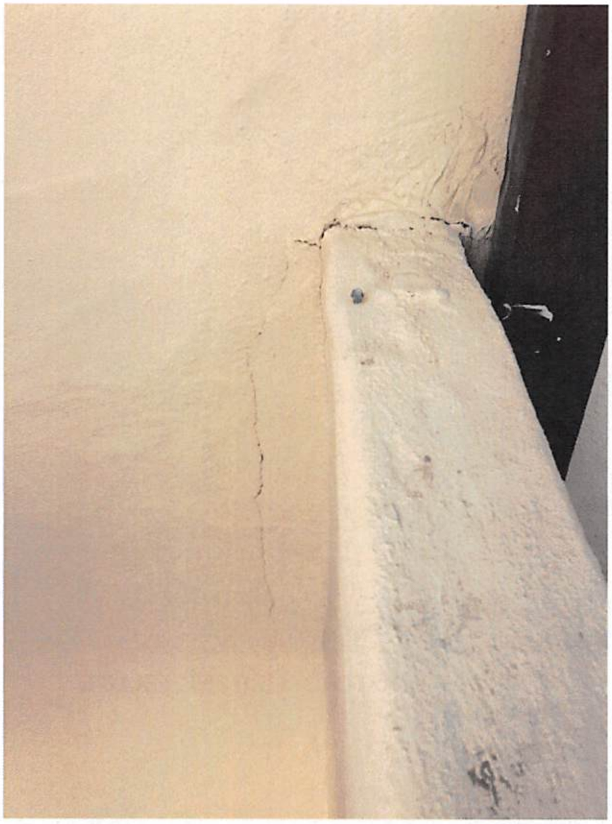

PHOTO #5: WALL AT BALCONY RAIL

PHOTO #6: WALL AT BALCONY

EHLEN SPIESS & HAIGHT, INC.
STRUCTURAL ENGINEERS

SHEET D-1

BY JEH

PROJECT
LOMPOC FIRE STATION #1

JOB NO
19-113

DATE

ROOF JOIST REPAIR

THIS OCCURS @ (2) LOCATIONS IN THE APPARATUS BAY.