

August 10, 2011

Sean Coon
Redband Investments II LLC
Hermosa Beach, CA 90254

RE: 3801 East Fifth Street, Long Beach
Structural Assessment
NYA #11231.00

Dear Mr. Coon,

Nabih Youssef & Associates (NYA) has performed a structural assessment of the single-story residence located at 3801 East Fifth Street, in Long Beach, CA. The assessment consisted of a site visit to observe the current condition of the structure and determine the feasibility of restoring the structure to its original appearance.

Building Description

The structure is a Type V (wood framed) single family, single-story residence, with a raised floor, originally constructed in 1920. It is approximately 1500 square feet in area. A separate wood framed garage structure is also part of the site, but is a stand alone structure separate from the main residence. The south side of the structure faces Fifth Street and the west side faces Grand Avenue. The existing building sustained damaged by fire and is currently unsafe and uninhabitable.



Photo 1: Exterior View from the corner of Fifth & Grand

The structural system of this building is typical of the era for residential construction. The gravity system consists of a gable roof system composed of 2x6 rafters spaced at 24" on center and 2x4 ceiling joists spaced at 16" on center. The roof framing spans from east to west and is supported on the exterior wood stud bearing walls. The walls are supported by a stone cripple wall which extends

to the foundation. The foundation system was not visible, but is most likely composed of a continuous shallow spread footing on the perimeter of the building. The southwest corner of the building has a porch. The roof framing over the porch is supported by three stone columns.

The lateral system of the building consists of horizontal 1x wood sheathing, which acts as a structural diaphragm to transfer seismic inertial forces to the lateral force resisting system. The lateral force resisting system consists of shear walls consisting of plaster on wood lath. The walls transfer seismic forces to the cripple walls which in turn transfer the forces down to the foundation system.

Structural Observation and Findings

A site visit was performed by Jacob Rodriguez, S.E., of NYA on July 25th, 2011 to observe the existing condition of the structure. The residence has suffered substantial damage due to a previous fire. Based on the site visit the following deficiencies were noted:

- The structural damage was limited to the south and west sides of the structure. Refer to Diagram 1 and Photos 2 and 3.
- The roof framing suffered most of the damage, including partial collapse over the living room. Refer to Photo 3 and 4.
- The west facing bearing wall studs have lost their essential structural attributes and engineering properties to allow them to be augmented or strengthened. Refer to Photo 3.
- At the porch, the header beam supporting the roof has a reduced cross sectional area and capacity due to extent of the fire damage. The header beam appears to be sagging and may not be able to continue to support the weight of the roof. Refer to Photos 2 and 3.
- There are no shear transfer connectors between the floor and roof framing and the perimeter wall framing.
- There is no positive connection (anchorage) between the stud walls and the stone cripple walls.
- The walls do not contain a means to transfer overturning and shear forces to the foundation. There are no hold-down anchors or straps at any of the visible walls.
- The vertical lateral resisting system on the west side (lath and plaster) has burnt through and no longer provides a means of resisting lateral forces.
- The floor Framing does not appear to have suffered major fire damage and may be able to be kept or strengthened to continue to support the floor loads. Refer to Photo 5.
- The east and north walls did not appear to suffer major damage and may be saved or strengthened to continue to provide a means of gravity and lateral resistance.
- The stone cripple walls do not appear to have been affected by the fire and may be saved to continue to provide a means of gravity and lateral resistance.
- The stone columns at the porch do not appear to have been affected by the fire and may be saved to continue to provide a means of supporting the porch roof framing.
- The structure has suffered "Substantial Structural Damage" as defined by Section 3402 of the 2010 California Building Code (CBC).

Although, the house includes structural elements that were not damaged by the fire and are able to remain, per Section 3405 of the CBC, any structure identified as having sustained "Substantial Structural Damage" should be evaluated by a registered design professional. The evaluation shall

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establish whether the damaged building if repaired to its pre-damage state, would comply with the provisions of the current code for wind and earthquake loads.

A seismic evaluation of the building was performed based on the requirements of Section 3405.2.1 of the CBC. The results of the evaluation indicated that:

- The gypsum plaster on wood lath shear walls is compliant with the evaluation criteria of Section 3405.2.1.
- The horizontal sheathing roof diaphragm is compliant with the evaluation criteria of Section 3405.2.1.

Recommendation

Based on the results of our evaluation and expertise working with Historic Structures, due to the extent of fire damage, partial selective demolition will be required. Diagram 1 indicates the structural elements that will need to be removed and replaced. The intent of this letter is to identify the structural deficiencies. Structural design of the retrofit is not part of this scope.

Our evaluation indicates that the lateral system (roof diaphragm and shear walls) will need to be repaired at a minimum to meet the same level of safety as its pre-existing condition as allowed by Chapter 34 of the California Building Code. We recommend that the roof framing, roof diaphragm, and bearing walls which were damaged by the fire be removed and replaced with materials common to Type 5 residential construction practices of today. Architectural features, such as the stone columns and fireplace, which were not damaged, can remain.

As it currently stands the structure poses a life safety concern since it does not contain a lateral load resisting system, as required to resist wind and earthquake loads. In addition, if the structure continues to be unprotected and exposed to the elements it is possible that the structural members may not be able to support their own weight and is in danger of collapse.

If you have any questions or require further assistance please do not hesitate to contact us.

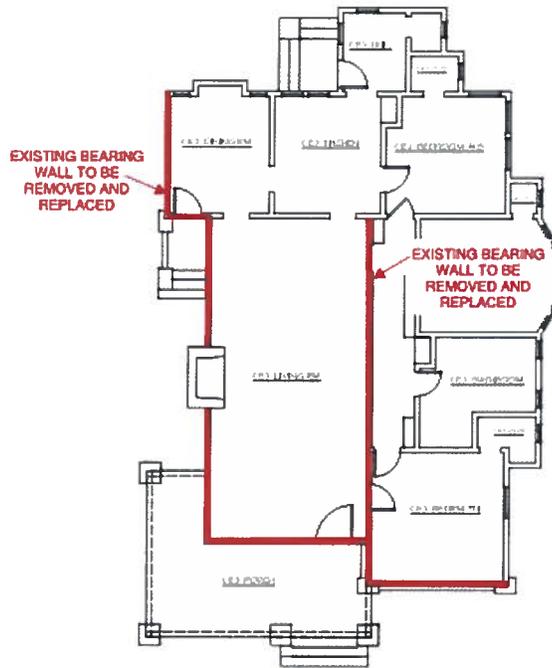
Sincerely,

NABIH YOUSSEF & ASSOCIATES

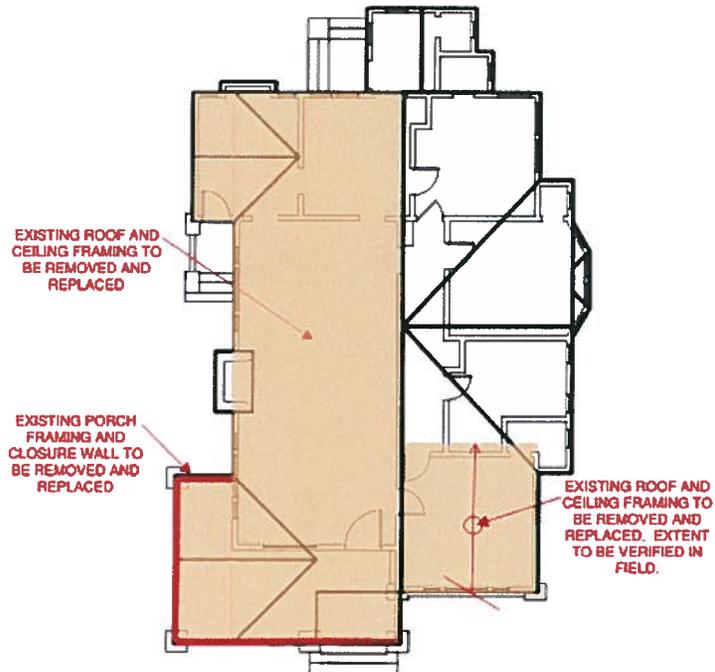


Nabih Youssef, S.E.
President

cc: N. Youssef; J. Rodriguez, File 11231.00



FLOOR PLAN



ROOF PLAN

Diagram 1: Reference Plans



Photo 2: South Elevation – Facing Fifth Street

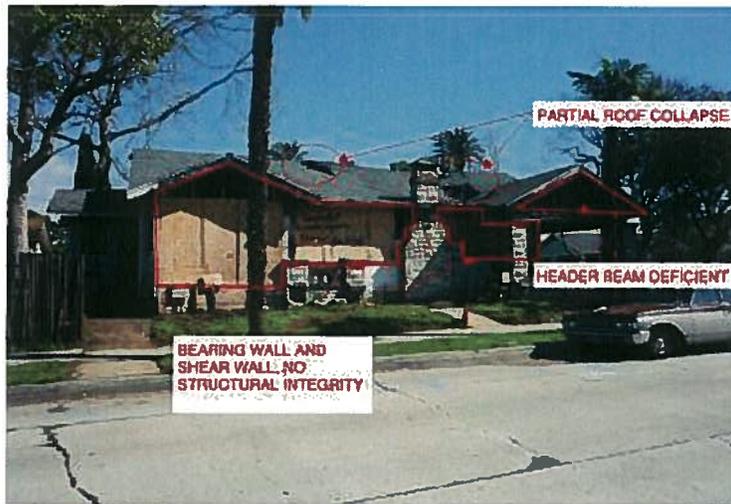


Photo 3: West Elevation – Facing Grand Avenue

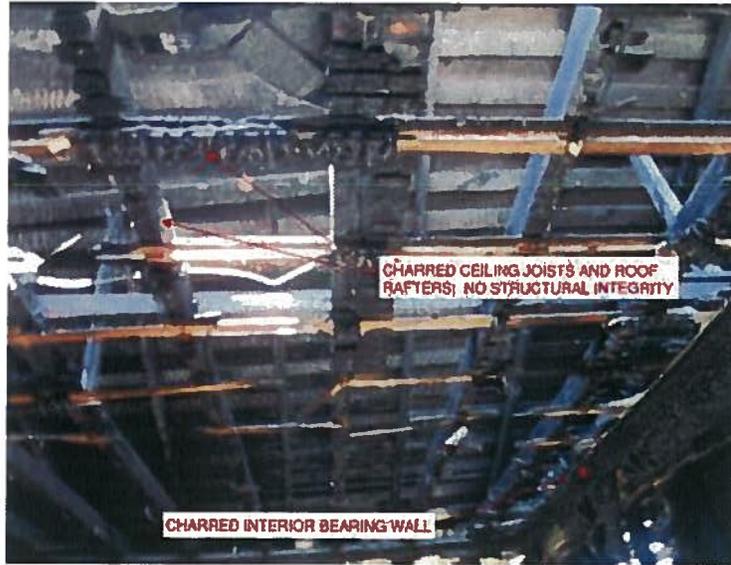


Photo 4: Interior View of Ceiling and Roof Framing

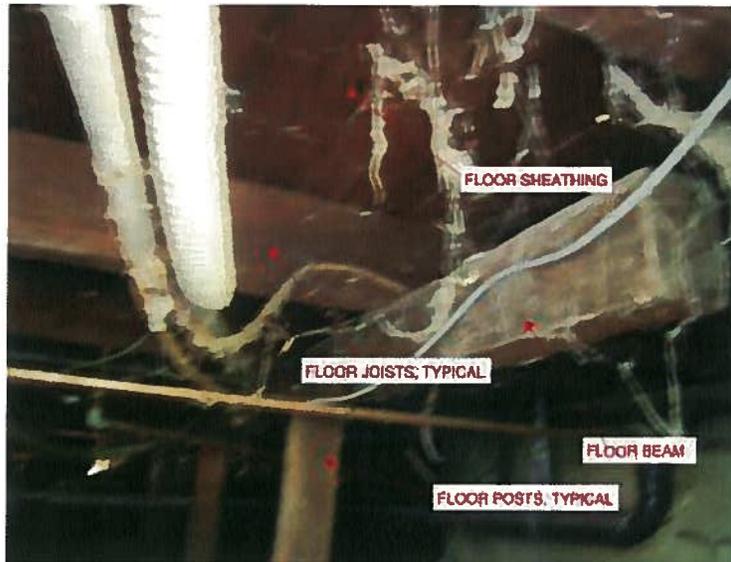


Photo 5: Floor Framing – From Crawl Space