

STRUCTURAL ASSESSMENT



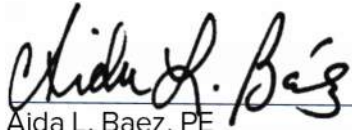
230606-FL

918 Park Avenue

accord
ENGINEERING

SIGNATURES

PREPARED BY



Aida L. Baez, PE

Co-Owner / Senior Structural Engineer

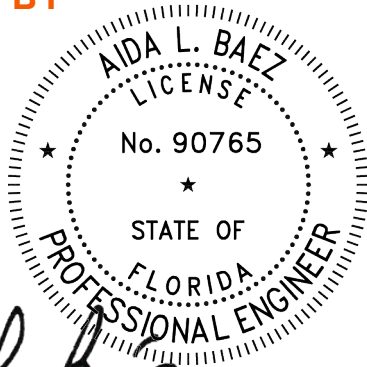
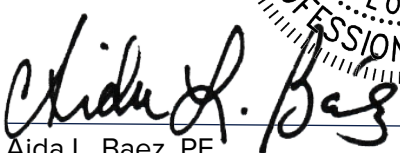
REVIEWED BY



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Aida L. Baez, PE

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Professional Engineer No. 90765

State of Florida

This report was prepared by ACcord Engineering for Kelsey on Park, in accordance with the approved professional services agreement. The material in it reflects ACcord Engineering best judgement in light of the information available to it at the time of preparation

The original of the technology-based document sent herewith has been authenticated and will be retained by ACcord Engineering for a minimum of seven years. Since the file transmitted is now out of ACcord Engineering's control and its integrity can no longer be ensured, no guarantee may be given with regards to any modifications made to this document.

INTRODUCTION

General Description

This structural assessment report is for the building located in the downtown retail district of the Town of Lake Park at 918 Park Avenue, Lake Park, Florida. The original building was constructed in 1925 as a mixed-use commercial building. The 2-story building structure is composed of wood vertical and horizontal framing, with steel interior columns, and concrete slab-on-grade. The foundation was not identified during the field investigation but is presumed to be shallow concrete. The exterior walls are finished with stucco and are sheathed with diagonal or batten boards (see photos 005 and 028), consisting with the framing method preferred before World War II, instead of plywood panel sheathing, which is the recommended method in today's Florida Building Code (FBC), the National Design Specifications (NDS) for wood construction, and the APA – Engineered Wood Association, especially for High Wind Resistance wood construction.

ACcord Engineering was hired by The Kelsey on Park Group to perform a structural assessment of the existing structure. The field evaluation was performed during the afternoon of July 10, 2023, by Aida Baez, PE and Roshaun Wisdom, both from ACCord Engineering. The weather was Fair, with temperature at 95° F.

Purpose and Scope

This report gives overall representative observations and preliminary assessment on the condition of the easily visible areas of the building envelope and structure with details on the types of deteriorations noted, possible causes, the effects of the deterioration, suggested remedies, if applicable, and any noticeable safety concerns.

The observation was limited to the readily accessible and easily visible portions of the building envelope and structural members. The condition assessment is not technically exhaustive and additional field observations, measurements, or testing are likely required to determine the total scope of repairs required, if applicable, and the cost associated with them. As such, this document is not to be used for bidding or execution of repairs and should only serve as a guide in determining the building's structural conditions and assessing the probability for repairs.

General Physical Condition

The exterior of the building needs extensive repairs. For example, delaminated and buckling stucco, shattered windows, inappropriately boarded storefronts with open gaps, leaving the interior of the structure exposed to the elements and susceptible to water intrusion. Also, the exterior door frames display gaps and reveal sealant cohesion failure around the door openings. The exterior stairs and railings are fastened with toe nails which is not allowed in the building code and would need to be analyzed to verify if they're able to sustain the live load requirements for a commercial building, per the FBC minimum requirements.

The interior walls of the building do not have sheathing, leaving the structure susceptible to collapse for lack of lateral resistance, due to the reduction in shear wall capacity. Blocking was not observed preventing continuity at bearing walls, limiting the transfer of lateral loads from the roof and floor diaphragms to the shear walls and down to the foundation. It is critical that these conditions be repaired immediately and without reservations, since the building as it stands may not be able to resist a major hurricane, and do not meet any fire-rating requirements per the FBC and the ASTM E119 or UL 263.

Evident and substantial mold and water damage was noticed in the rear portion of the building, where wood decay is prominent and requires complete replacement.

The bottom of the interior stair is immediately adjacent to the exterior door, and does not provide the necessary landing space as required by the FBC and the American with Disabilities Act (ADA). The stairs are not properly supported and fastened at the top bearing condition to meet the minimum requirements of the FBC. These conditions would require code analysis to determine if redesigning the stairs would be deemed necessary.

The second floor was found to be extremely hot, since it's not properly sheathed nor insulated. Prolonged exposure to such temperatures is not adequate for wood framing since it can cause a permanent loss in strength when cooled and loaded at normal temperatures. A significant amount of the framing seems to be decaying and would require replacement.

The second floor and roof framing display numerous inappropriate and insufficient conditions, causing some to demand temporary shoring, refer to the roof portion of the Observations section below. These framing anomalies warrant immediate repair, since some of the conditions are critically unsafe.

OBSERVATIONS

Exterior Facade

The exterior stucco is delaminating and spalling (see photos 002 and 009), loss of bonding to the structural frame, damage from water penetration, failed lath attachments, or damage to the wood framing from termites or dry rot. Significant exterior finish damage was observed by the entrance of the building, where pieces of stucco were severely damaged and cracked, or completely missing (see photos 005, 006 and 007). A significant indentation on the West side of the building was observed on the wall (see photo 010). This may have been caused by a vehicle crashing into the wall since parking stalls are noted perpendicular to the wall. The stucco finish at this location has been improperly patched and would require repair and further assessment of the existing wall framing.

The storefronts are missing, and their openings are boarded up, but do not provide proper enclosure since there are significant gaps allowing for pest and water intrusion into the interior of the building (see photo 004).

The windows seem to have been installed in recent times, but some are shattered (see photo 011) indicating that they are not impact resistant. Some exterior door frames show a large gap around the opening which allows for pest and water intrusion (see photos 013 and 024).

Interior Structural Framing

From the inside of the building, the exterior walls are noticed to be sheathed with diagonal or batten boards (see photos 005 and 028). Along the East/West direction of the building, the diagonal boards are seemed spaced at $\pm 16"$ OC (see photo 029) and not directly abutting each other as were noted along the North/South direction exterior walls. This framing condition does not provide continuous lateral resistance to the exterior shear walls, making them inadequate to sustain the lateral forces produced by a major hurricane. Figure 1 shows the proper assembly for diagonal lumber shear wall sheathing, to be able to resist in-plane lateral forces.

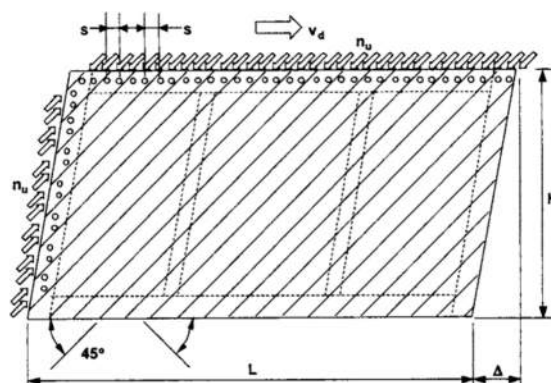


Figure 1 - Diagonal Lumber Shear Wall Sheathing Diagram

The interior bearing/shear wall is not sheathed, the bearing studs are completely exposed (see photo 027). In its current condition, this wall is subjected to combined bending and in-plane structural failure, since it's missing the wall sheathing, which provides lateral resistance and out-of-plane bracing. A continuously anchored bottom sill was not noticed on the interior bearing/shear wall, leaving the structure vulnerable and undermined. Also, it was observed that in some locations the bottom and top plate of the wall had been cut to allow for plumbing. Without proper splicing of the top and bottom plates the shear wall is deemed structurally inadequate.

The front and back interior walls are missing headers above the openings (see photos 025 and 029). This condition renders the wall inadequate for proper door/window framing, gravity support, and for lateral resistance, since there is no transfer of the in-plane forces along the North and South walls.

Significant mold and water damage is present at the rear/South area of the building (see photos 019 and 020). This area of the structure seems to be an addition to the original building. The structural framing elements are substantially rotted and damaged; they are viewed as unsafe and will require complete demolition and replacement.

Partial slab demolition was noted towards the back of the interior space. The partial slab demo seems to be for utility repair reasons. The concrete slab will need to be properly repaired.

The interior stair does not seem to comply with today's FBC and ADA requirements/standards. The stringers top bearing end is be notched more than $\frac{1}{4}$ the depth of the stringer, which is not permitted by the NDS. The wall adjacent to the stair is a bearing wall, supporting the floor joists (see photo 030). It was observed that the wall ends near the top 3rd of the staircase, and two of the floor joists are supported by a 2x8 girder, which is supported on top of the bearing wall by less than 1 inch. This bearing condition of the girder seems insufficient and would require further investigation to validate if it allows for the proper transfer of lateral forces distributed by the floor diaphragm. A small lateral force applied to the building may cause the girder to move and lose its bearing, prompting a collapse of the floor joists. It is imperative that this condition is repaired as soon as possible, since a tropical storm or hurricane can apply enough lateral force to the building that could potentially cause this failure.

The second-floor deck diaphragm was observed to have different types of materials and changes in span direction, without proper fastening to allow for lateral load transfer (see photos 034 and 035). At the back portion of the building the floor was covered with a green rug. The floor deflected a lot as one walked on it, indicating probable water damage due or deficient deck/joist spans. In this area mold was very noticeable on the walls, and bathroom shower.

Near the Northwest corner of the roof framing, a temporary steel-shoring-column has been placed to support a joist bearing line (see photo 031). It is presumed that the joists were bearing over a wall, that since then has been

removed and the top plate of the wall is too shallow to span the unsupported distance. Also, near this area a post installed roof girder has been added and it is improperly supported by a 2x ledge nailed to the face of a timber column (see photo 032). In general, the roof framing does not present a proper load path to transfer the roof diaphragm forces down to the shear walls (see photo 033).

RECOMMENDATIONS

It must be noted that the recommendations that follow are general in nature and are not to be utilized during repairs except as a guide for specification of repair processes and materials. Repair details and material specification shall be done by a licensed Florida professional engineer in accordance with local building codes, the Florida Building Code (FBC), and other professionally accepted standards such as those from the American Wood Council (AWC), the National Design Specification (NDS) for Wood Construction and the American Society of Testing Materials (ASTM) International among others.

The recommendations set forth in the following sections are to be evaluated on a case-by-case basis as further investigation is conducted during the repair process. Some of the recommendations may be deemed unnecessary or other forms of remediation may be required dependent on the findings of during repair.

The following is a list of structural items we recommend be repaired and their urgency level, for the structural integrity of the structure and for human safety.

NO	STRUCTURAL ITEM	REPAIR RECOMMENDATION	URGENCY LEVEL
1	Assess all existing wood vertical and horizontal structural members for lack of strength capacity, decay, or defectiveness (studs, columns, floor and roof joists and girders, headers, etc.)	Remove and replace all structural members compromised	Immediate
2	Missing or compromised framing around openings (doors and windows)	Remove and replace opening wood framing	Immediate
3	Mold and decayed wood member	Remove and replace wood members	Immediate
4	Provide structural sheathing to the North, South, and interior shear walls	Remove all exterior stucco finishes. Remove diagonal (spaced) boards, replace with new sheathing.	Immediate
5	Exterior stairs	Remove, redesign and replace	Immediate
6	Interior stairs	Remove, redesign, reframe support, and replace	Immediate
7	Shattered windows	Remove and replace shattered windows with impact resistant and Miami Dade NOA or Florida Product Approval windows	Immediate
8	Storefronts	Install new impact resistant Miami Dade NOA or Florida Product Approval storefronts	Immediate
9	Repair exterior stucco finish	Remove and replace existing stucco, lath and fasteners	Immediate
10	Waterproofing	Recommend application of elastomeric waterproofing surface coating. This will provide a water-tight seal on the surface, expand and contract with the stucco and concrete surfaces.	Immediate

<p>11 Sealants around fenestrations should be evaluated and if replacement is necessary. Any indication of adhesive failure, cohesive failure, substrate failure, or loss of sealant properties would require replacement of fenestration sealant.</p>	<p>Complete removal of the sealant around door and window openings and a thorough cleaning with a chemical cleaner as approved by the manufacturer of the new sealant would be required. Once the surface has been cleaned of all existing sealant and debris, it is recommended that a structural silicone sealant be applied. The use of a backer rod and bond breaker might be necessary depending on the requirements of the sealant manufacturer.</p> <p>Immediate</p>
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Due to the assessed conditions of the structural elements, the building is deemed unsafe and extensive structural repairs or complete demolition and reconstruction are eminent prior to occupancy. We anticipate the cost for repairs as outlined herein to be cost prohibitive, given the quantity of the repairs and the distressed condition of the existing building. We recommend the client obtains an estimate of the outlined repairs necessary to bring the existing structure up to code and performs a cost analysis comparison for a complete demolition and construction of a new building.

QUALIFICATIONS

Aida Baez, PE is a licensed Professional Engineer in the state of Florida, with more than two decades of structural design experience in multiple regions of the country and worldwide. Her experience includes structural assessment of existing structures and inspections during construction. Assessment of mild-steel reinforced cast-in-place, post-tensioned, and pre-cast concrete for low and high-rise residential buildings, and commercial buildings, including parking garages, has been common throughout her 23-year career span. Conducting structural assessment, documenting existing conditions and implementing construction specifications and repair procedures has been customary throughout her career.

APPENDIX A – FIELD PHOTOGRAPHS

Photo No. 001
Date Taken: 07/10/2023
File Name: 20230710_173023225
Description: Exterior front façade

Comments: Overall front view of building



Photo No. 002
Date Taken: 07/10/2023
File Name: 20230710_173333447
Description: Cracked stucco at top of Northeast corner of building

Comments: Cracked stucco allows for water infiltration, allowing for structural water damage to wood framing members



Photo No. 003
Date Taken: 07/10/2023
File Name: 20230710_173546857
Description: Entrance doorway

Comments: Exposed electrical wires on the exterior of the building should be capped.



Photo No. 004
Date Taken: 07/10/2023
File Name: 20230710_173527910
Description: Boarded storefront openings.

Comments: Boards do not fully enclose the openings allowing for water and pest infiltration into the building.



Photo No. 005
Date Taken: 07/10/2023
File Name: 20230710_173640515
Description: Front entrance vestibule with spalled stucco and exposed framing

Comments: Spalled stucco finish allows for water and pest infiltration into the building.



Photo No. 006
Date Taken: 07/10/2023
File Name: 20230710_173848196
Description: Front entrance vestibule with cracked stucco

Comments: Full horizontal stucco crack may indicate in-plane lateral distress



Photo No. 007
Date Taken: 07/10/2023
File Name: 20230710_173938121
Description: Front entrance vestibule with spalled stucco and exposed framing

Comments: Spalled stucco finish allows for water and pest infiltration into the building.



Photo No. 008
Date Taken: 07/10/2023
File Name: 20230710_173954446
Description: Detached faux column

Comments: Susceptible to falling and injuring a pedestrian.



Photo No. 009
Date Taken: 07/10/2023
File Name: 20230710_174418143
Description: Exterior overall West elevation

Comments: Overall view of West elevation of the building



Photo No. 010
Date Taken: 07/10/2023
File Name: 20230710_174453683
Description: Large indentation on stucco finish

Comments: Presumed vehicle impact. Wall framing needs to be inspected for damage.



Photo No. 011
Date Taken: 07/10/2023
File Name: 20230710_174515638
Description: Broken window on West side of building

Comments: Broken glass window allows for water and pest infiltration into the building



Photo No. 012
Date Taken: 07/10/2023
File Name: 20230710_174714749
Description: Overall West elevation of rear expansion area

Comments:



Photo No. 013
Date Taken: 07/10/2023
File Name: IMG_7937
Description: Broken screen door and exposed door frame at Southwest corner of building

Comments: Dangerous debris needs to be removed



Photo No. 014
Date Taken: 07/10/2023
File Name: 20230710_174904543
Description: Overall South elevation of rear expansion area

Comments:



Photo No. 015
Date Taken: 07/10/2023
File Name: 20230710_174932538
Description: Underside of exterior wood-framed stairs

Comments: Toenailing of threads and stringers is not acceptable per the FBC. Railing does not meet FBC height and spacing requirements

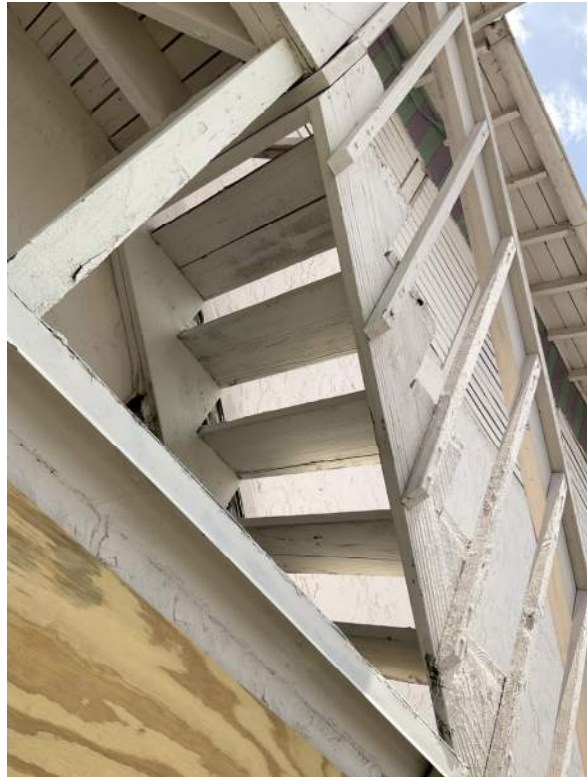


Photo No. 016
Date Taken: 07/10/2023
File Name: 20230710_175010839
Description: Exterior wood-framed stairs

Comments:



Photo No. 017
Date Taken: 07/10/2023
File Name: 20230710_175053193
Description: Overall East elevation of rear expansion area

Comments:



Photo No. 018
Date Taken: 07/10/2023
File Name: 20230710_175225471
Description: Exterior overall East elevation

Comments:



Photo No. 019
Date Taken: 07/10/2023
File Name: 20230710_175620887
Description: Interior of rear expansion framing

Comments: Extensive water damage and mold



Photo No. 020
Date Taken: 07/10/2023
File Name: 20230710_175943565
Description: Interior of rear expansion framing

Comments: Extensive water damage and mold



Photo No. 021
Date Taken: 07/10/2023
File Name: IMG_7961
Description: Interior of rear expansion -
uncapped drain hole and
unfinished floor

Comments: Extensive water damage,
mold, paint delamination
and loose debris



Photo No. 022
Date Taken: 07/10/2023
File Name: 20230710_180136250
Description: Interior of rear expansion –
Opening

Comments: Infill framing and finish
required in existing
opening



Photo No. 023
Date Taken: 07/10/2023
File Name: 20230710_180047399
Description: Interior of rear expansion –
Un-blocked roof framing
over masonry wall

Comments: An unblocked gap allows
for water and pest
infiltration into the building.
There is not lateral load
transfer from the roof
framing onto the wall.



Photo No. 024
Date Taken: 07/10/2023
File Name: 20230710_180212710
Description: Southwest corner of
building – Gapped door
frame, unsheathed walls,
missing door headers,
water damage, debris

Comments:



Photo No. 025
Date Taken: 07/10/2023
File Name: 20230710_180559152
Description: Original building rear wall

Comments: Missing door header,
exposed stucco lath,
spaced diagonal exterior
sheathing, missing interior
wall finish

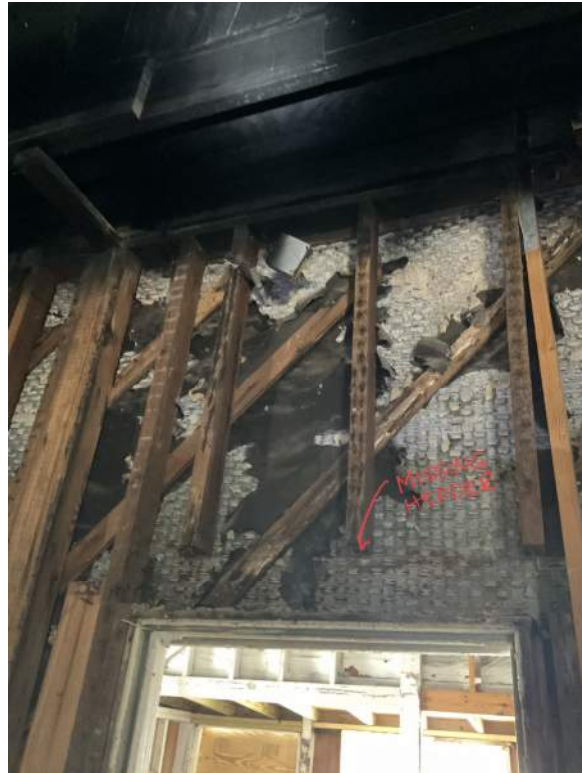


Photo No. 026
Date Taken: 07/10/2023
File Name: IMG_7970
Description: Slab demolition at rear of building

Comments: Exposed utilities should be capped. Sill plate for interior shear wall should not be cut



Photo No. 027
Date Taken: 07/10/2023
File Name: 20230710_180253426
Description: Interior wall framing

Comments: Unsheathed bearing shear wall. Interrupted sill plate, and missing hold-downs.



Photo No. 028
Date Taken: 07/10/2023
File Name: 20230710_180913972
Description: Interior Southeast corner

Comments:



Photo No. 029
Date Taken: 07/10/2023
File Name: IMG_7974
Description: Interior front wall at
Northeast side of building

Comments: Missing sheathing, missing
headers over arched
openings



Photo No. 030
Date Taken: 07/10/2023
File Name: 20230710_181856779
Description: Floor girder by top of stairs

Comments: Bearing of girder is less
than 1 inch.



Photo No. 031
Date Taken: 07/10/2023
File Name: 20230710_183906548
Description: Roof framing temporarily shored

Comments: Near the Northwest corner of the 2nd floor a shallow roof girder is temporarily shored



Photo No. 032
Date Taken: 07/10/2023
File Name: 20230710_182541168
Description: Roof framing girder bearing over nailed stub

Comments: Framing of girder is unconventional and needs to be analyzed. Water stains on roof deck sheathing.



Photo No. 033
Date Taken: 07/10/2023
File Name: 20230710_183444030
Description: Northeast corner of building

Comments: Diagonal board sheathing spaced, exposed stucco lath, unconventional framing at top of wall to be analyzed



Photo No. 034
Date Taken: 07/10/2023
File Name: 20230710_183718585
Description: Window vertical framing at West side of building

Comments: Roof and 2nd floor wall framing bearing over unblocked floor joists



Photo No. 035
Date Taken: 07/10/2023
File Name: 20230710_183145784
Description: Decayed wood framing and discontinuous deck framing
Comments:



Photo No. 036
Date Taken: 07/10/2023
File Name: 20230710_184057412
Description: Interior stair – Bottom door is immediately adjacent to bottom step
Comments:



Photo No. 037
Date Taken: 07/10/2023
File Name: 20230710_183316911
Description: Rear expansion – Mold at shower

Comments:



Photo No. 038
Date Taken: 07/10/2023
File Name: IMG_8018
Description: Rear expansion – Mold at wall top corner

Comments:



Photo No. 039
Date Taken: 07/10/2023
File Name: IMG_8025
Description: Threshold at rear
expansion

Comments:



Additional Photos



Finish separation
PHOTO NO. IMG_7919



Awning framing
PHOTO NO. IMG_7920



Boarded opening
PHOTO NO. IMG_7926



Stucco finish indentation
PHOTO NO. IMG_7931



Unfastened board at wall opening
PHOTO NO. IMG_7946



Stucco repair transition around window
PHOTO NO. 20230710_175305873



Rear expansion floor framing from underside
PHOTO NO. 20230710_175601186



Rear expansion masonry wall
PHOTO NO. 20230710_180038560



Rear expansion masonry wall
PHOTO NO. 20230710_180036624



Broken top of bearing wall, joist not supported
PHOTO NO. 20230710_180056949



Original back wall, water damage, unfastened stucco finished
PHOTO NO. 20230710_180139050



1st floor interior Northwest side wall framing
PHOTO NO. 20230710_180225366



Underside of 2nd floor framing
PHOTO NO. 20230710_180258452



Underside of 2nd floor framing, discontinued top plate
PHOTO NO. 20230710_180448544



Original rear wall framing, exposed stucco lath, unfinished
PHOTO NO. 20230710_180812979



Original rear wall framing, exposed stucco lath, unfinished
PHOTO NO. 20230710_180851909



Spalled stucco finish
PHOTO NO. 20230710_181632154



Missing header over arched openings
PHOTO NO. 20230710_181658453



2nd Floor interior wall framing
PHOTO NO. 20230710_182257563



2nd Floor wall framing
PHOTO NO. 20230710_182322393



Unconventional top of wall framing
PHOTO NO. 20230710_182333863



Unconventional roof framing by the North wall
PHOTO NO. 20230710_182644649



Spliced roof joist framing at bearing ends
PHOTO NO. 20230710_182352450



Unconventional roof framing
PHOTO NO. IMG_7993



Roof framing and water stains at roof deck sheathing
PHOTO NO. IMG_7999



Discontinuous floor deck sheathing
PHOTO NO. IMG_8002



Interior wall framing at 2nd floor
PHOTO NO. IMG_8003



Discontinuous floor deck sheathing
PHOTO NO. IMG_8011