QUALTIM **Investigative Report**

Summary of Findings of our Site Inspection, Plans and Specifications Review and Design Responsibilities as it Relates to Trusses Supplied by Clearspan Components, Inc.

For the

LaQuinta Inn 957 Cedar Lake Rd, Biloxi, MS

Preliminary Draft Report Issued:
September 2012

Final Report Review: January 28, 2013

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Documents Review, Report Prepared and Report Finalized by:

Kirk Grundahl, P.E., President

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Prepared for Will Simmons, Glover, Young, Walton & Simmons, PLLC

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Introduction:

On July 24, 2012, I was contacted by Mr. Daniel N. Holland, President of Clearspan Components, Inc. (Clearspan) with respect to performing an inspection of the LaQuinta Inn in Biloxi, MS. Clearspan supplied the roof and floor trusses for this project. Based on this discussion and subsequent discussions with Mr. Will Simmons, arrangements were made to inspect the site as follows:

Tuesday, August 7

Meeting Information

Inspection at the site in the AM or PM

Inspection Site: 957 Cedar Lake Road Biloxi, MS 39532

(228) 392-5978

The site inspection took place on the afternoon of August 7th. Will Simmons and I were present. Assistance gaining entry to the rooms was provided by LaQuinta staff, Ms. Carrie Jiminez [per Shawn, but spelling may not be correct.] and Mr. Shawn Goldberg, who were the hotel staff that were present at the time.

Our inspection was a preliminary site inspection given that there would only be the ability to assess the state of the current structural framing performance in an "as-is" state using general overview techniques. In other words, it was not possible to undertake an intrusive inspection that would allow a more detailed assessment and would provide many more facts with respect to causes of the deflection issues present. Our inspection does however allow us to make several fundamental performance observations that are direct pointers to what may have happened, what may be happening and why we believe our opinions are accurate and are made to a reasonable degree of engineering certainty.

Site inspection Observations and Analysis:

Attached, as found in Appendix A and Appendix B are the inspection reports of Mr. Emmett Dammon, P.E., and Mr. Lou Lanza. This background information was the reason for our focus on rooms 220, 203 and 205.

Ms. Carrie Jiminez provided us with access to the rooms to perform our inspections. We first entered room 220 in a follow-up to the report on an inspection performed by Mr. Emmett Dammon, P.E. who stated the following:

> and at that point it looked like the problem was that the Contractor had stacked materials on the floors of the second floor that weighed more than the Trusses could support and spring back to their original position. This is still suspected to be true in some of the rooms, such as rm 220.

Our findings with respect to the laser level measurements taken in this room are as follows:

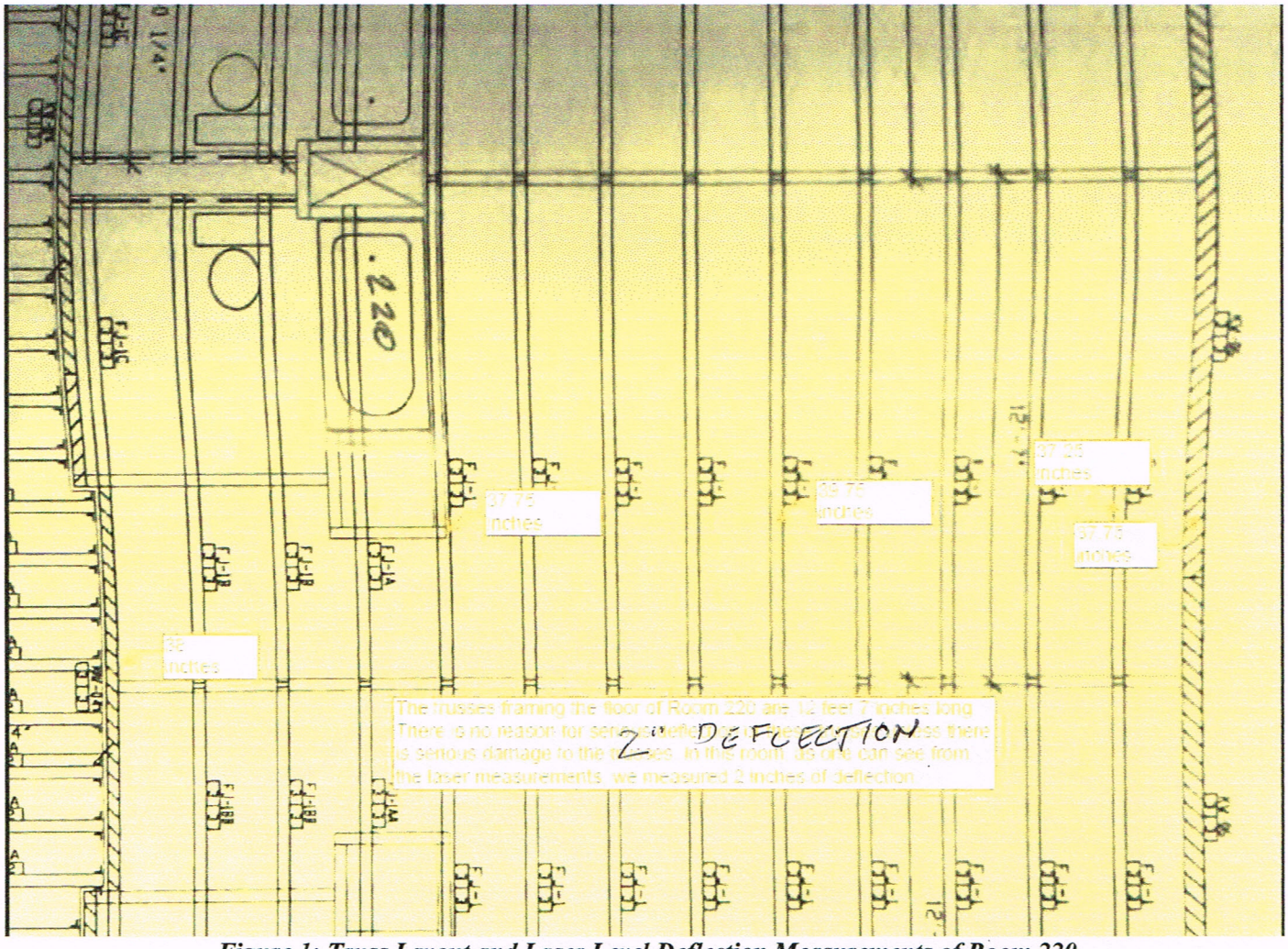

Figure 1: Truss Layout and Laser Level Deflection Measurements of Room 220

Key room 220 observations:

1. As shown and stated above, laser level measurements show a depression in the floor of 2 inches (37.75" - 39.75" equals 2 inches of downward movement).
2. There was not a great deal of gypsum wallboard cracking showing in this room and any repairs that may have been made were not readily apparent.
3. With this kind of floor deflection, one would expect more gypsum wallboard cracking to be present, and if there is no cracking, the question why not needs to be asked and answered.
    a. At the very least, there would have been repairs that would have been made that would have been visible to a discerning eye, given that there was 2 inches of movement.
    b. With no visible repairs seen, this suggests that this deflection had to exist prior to the gypsum wallboard being installed.
4. This then points to the presumption that the trusses were damaged during construction and left in their deformed state while the rest of the framing and finish work was completed.

a. In other words, this deflection was "built in" to the finished room.

5. This is our best assessment based on the laser level measurements above, the span and layout of the trusses and the set of facts we directly observed.
6. Given the deflection present, it is likely that there are one or more broken trusses within the floor system.
7. Given that there is probably a gypcrete topping on this floor, the question we have is; "how much does this mask or emphasize the truss deflection that is actually present?"
8. Only an intrusive inspection would answer these specific questions.

We then walked the hallway down to rooms 203 and 205 and observed the hallway deformation surrounding rooms 202, 203, 204 and 205.

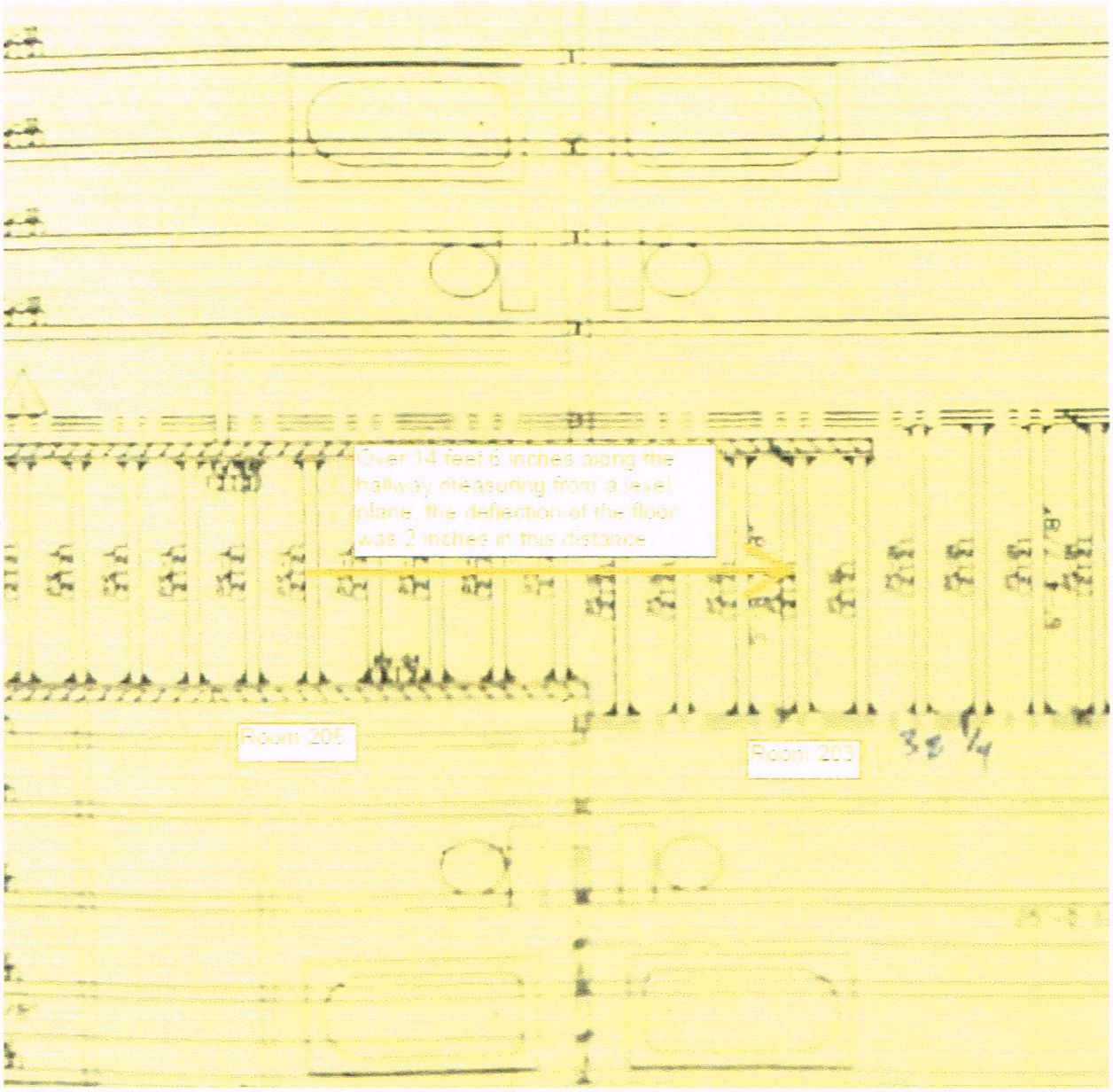

Figure 2: Truss Layout and Laser Level Deflection Measurements in the Hallway near rooms 203, 204, 205 and 206.

Key hallway pictures:

1. There was cracking of the hallway interior gypsum wallboard near rooms 202 and 204. This shows downward movement of the floor causing the wallboard to separate.
2. This movement is likely the floor below deflecting more than floor above, where the floor above is held up more rigidly due to the diaphragm action of the building overall.

Photograph 1: Hallway gypsum wallboard cracking near rooms 203 and 205.

3. Hallway corner near room 203:

Photograph 2: Hallway gypsum wallboard cracking near room 203.

4. Another view of the corner near room 203

Photograph 3: Hallway gypsum wallboard cracking near room 203.

5. Hallway corner near room 204

Photograph 4: Hallway gypsum wallboard cracking near room 204.

Key hallway observations:

1. The ceiling tile was likely installed using a laser level and our inspection noted that the ceiling held a fairly level plane.
2. The floor deformation was 2 inches in 14-½ feet as shown in Figure 2 above.
3. The floor was sloping as defined and the trim board followed the slope of the floor.
    a. Assuming that the hallway trim has not been altered since the hotel was built and the gypsum wallboard has not had open cracking of up to 2 inches, this means that the wallboard and trim were finished in such a way as to follow the floor slope,
    b. This means that floor slope was an existing condition when the interior gypsum wallboard was placed and finished.
    c. The finish trim was also placed to fit the floor deflection.
4. If the trusses were deforming after all the interior gypsum wallboard work and trim was applied, there would be significant cracking that would reflect this very serious deflection condition.
    a. There is no evidence that this is the case other than where the hallway gypcrete cracked and had to be repaired.
        i. The description in the Lou Lanza report was the there was a "speed bump" in the third floor hallway.
    b. This and the cracking that was present are evidence that there is still slow deflection of the floor system, at this location, taking place.

We then entered rooms 2003 and 2005, made observations and took laser level measurements as follows:

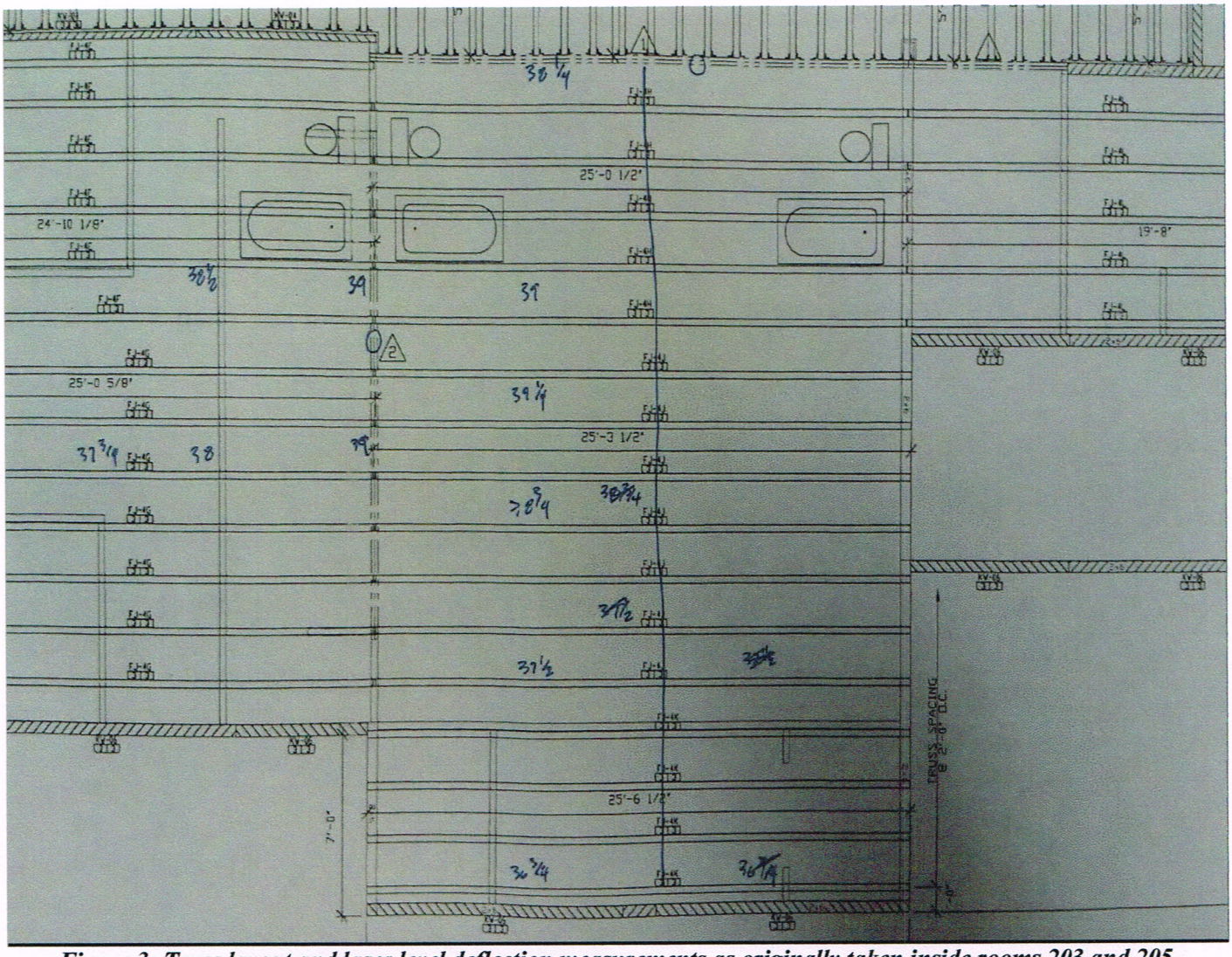

Figure 3: Truss layout and laser level deflection measurements as originally taken inside rooms 203 and 205.

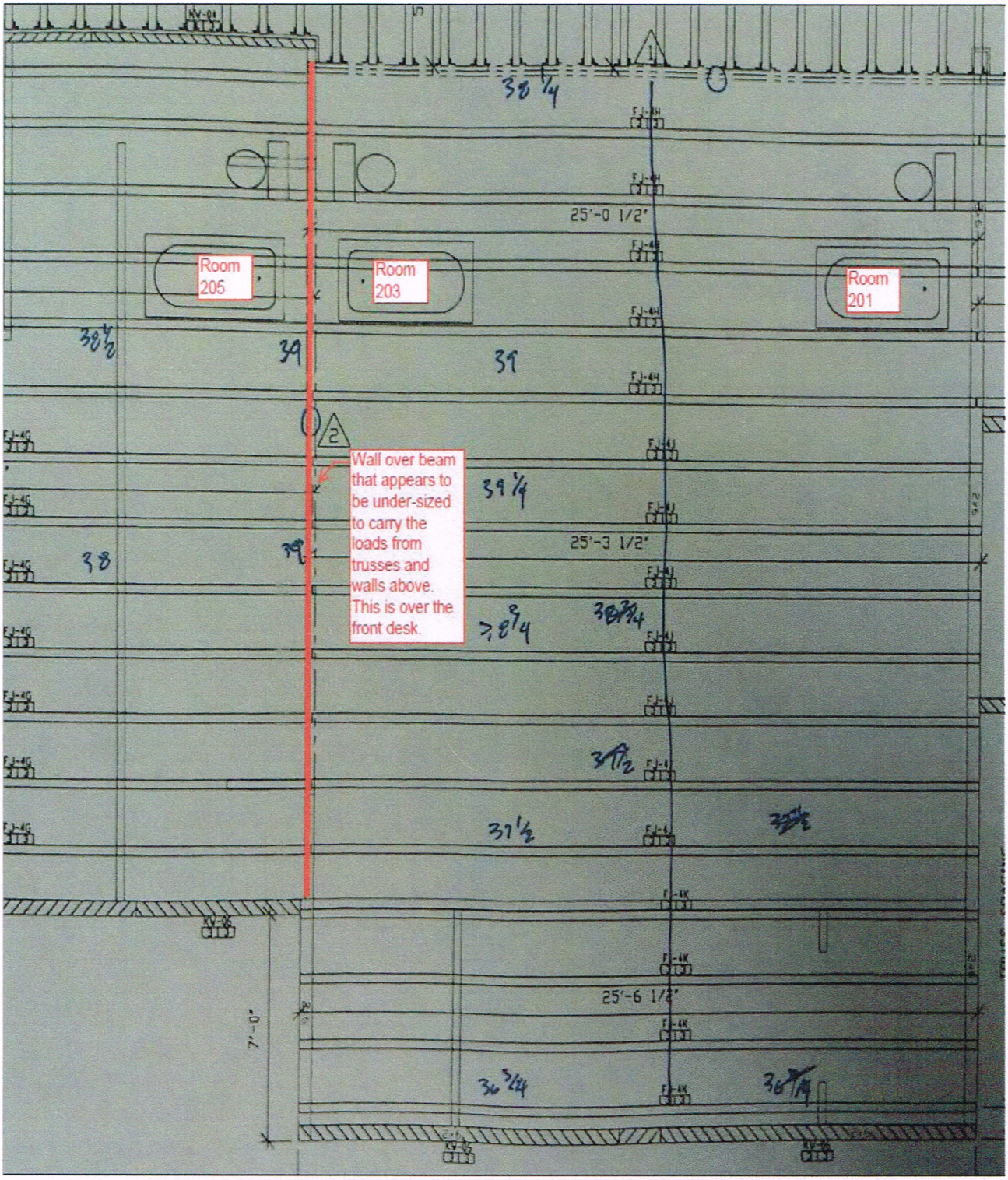

Figure 4: Location of the beam below the wall separating rooms 20 3 and 205.

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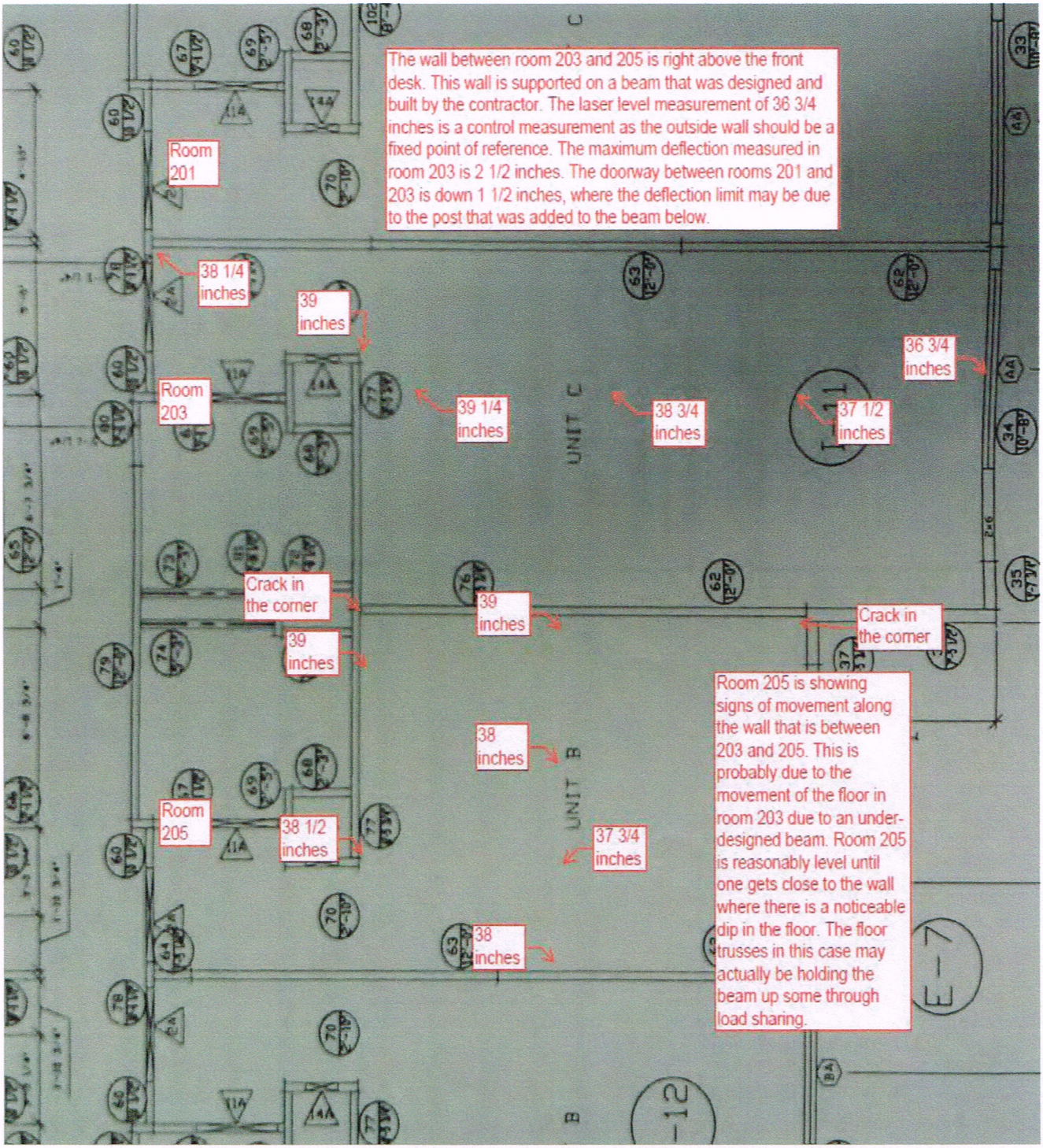


Figure 5: Laser level deflection measurements in rooms 203 and 205.

Key Room 203 and 205 observations:

1. Without performing an intrusive inspection, it is very challenging making a detailed assessment of the performance issues that we are finding, so this analysis is general in nature and by definition.

2. There is a beam under the wall between rooms 203 and 205 and along the hallway from room 203 to the corner of room 201.
    a. This entire area is over the front desk and open atrium area.
    b. It is clear that deflection is taking place throughout the entire floor area from the exterior wall through to the hallway. Therefore, movement has taken place throughout rooms 201, 203, and 205 and conceivably beyond this into rooms 202, 204 and 206.
    c. The entire building may be "settling" around these deforming beams.
        i. As such, the building floor, wall and roof diaphragms are holding the building together as a unit.
        ii. The cracking of the gypsum wallboard and gypcrete floors are indications of the building's adjustments to gravity and the dead load re-adjustment due to the sagging beam.
3. As can easily be seen in figure 5 above the deflection taking place, using the exterior wall as the benchmark, has a downward magnitude of up to 2-½ inches (36.75" - 39.25" downward movement).
    a. This amount of deflection is clearly abnormal.
    b. This suggests that serious structural resistance weakness exists.
4. Again, this is a common theme with respect to the finished construction appearance.
    a. If the trusses were deforming after all the interior gypsum wallboard work and trim were applied, there would be cracking in some manner that would reflect a 2-½ inch movement of the floor.
    b. Our floor measurements show a very serious deflection condition.
    c. There is no evidence that cracking is taking place that reflects this magnitude of movement, other than where the 3rd floor hallway gypcrete cracked and had to be repaired.
    d. Therefore, all indications are that the finished product was built around a majority of this pre-existing deflection.
5. The cracking of the floor and the cracking shown in photographs 1 through 4 above are indications that there is still slow deflection of the floor system, taking place.
6. This needs to be closely monitored, as it is a very serious structural performance condition where the resistance to the applied load is causing the structural members to creep causing cracking. Too much creep can result in a structural failure of some type.

We then reviewed the atrium area, made observations, and took laser level measurements as follows:

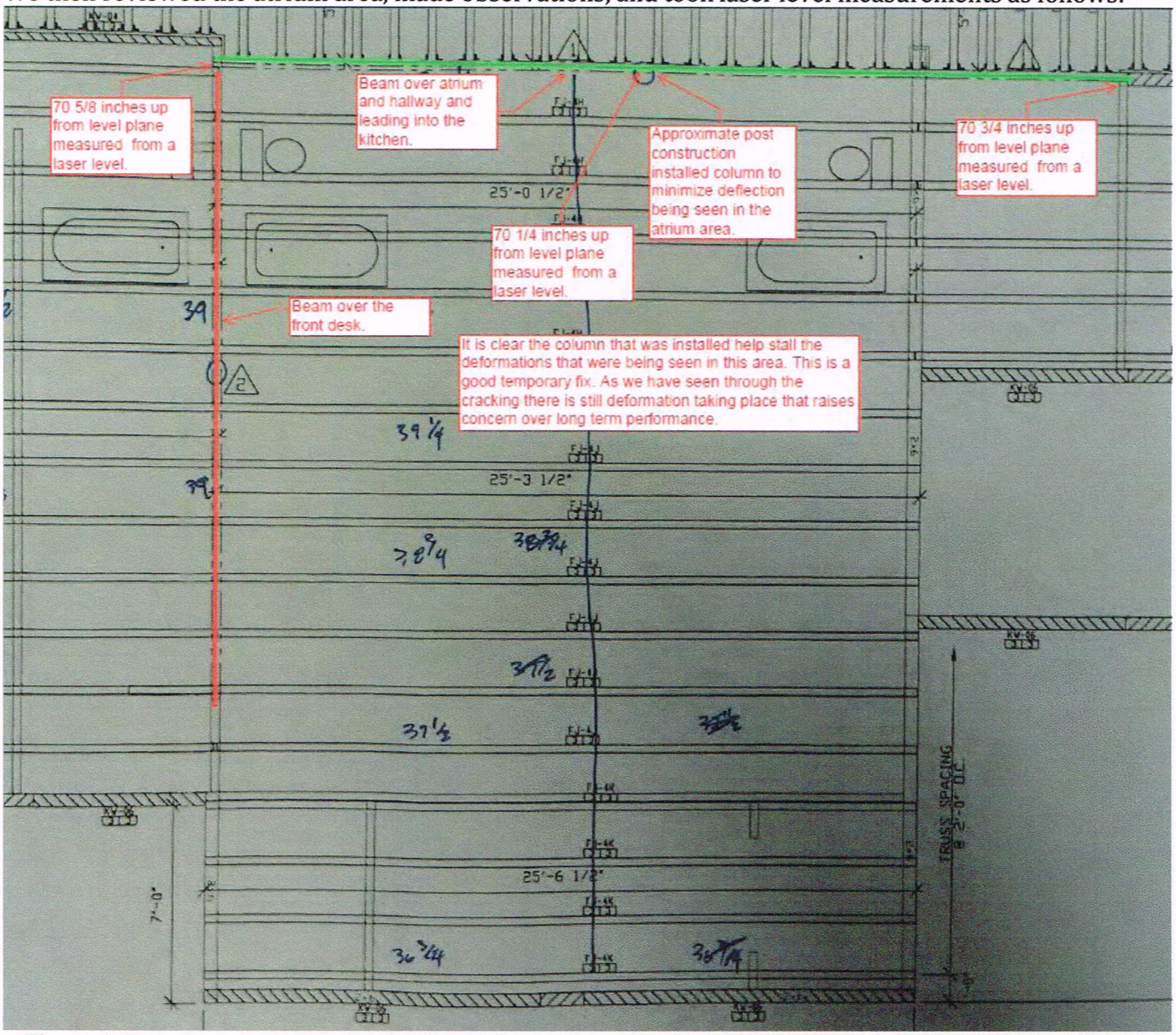
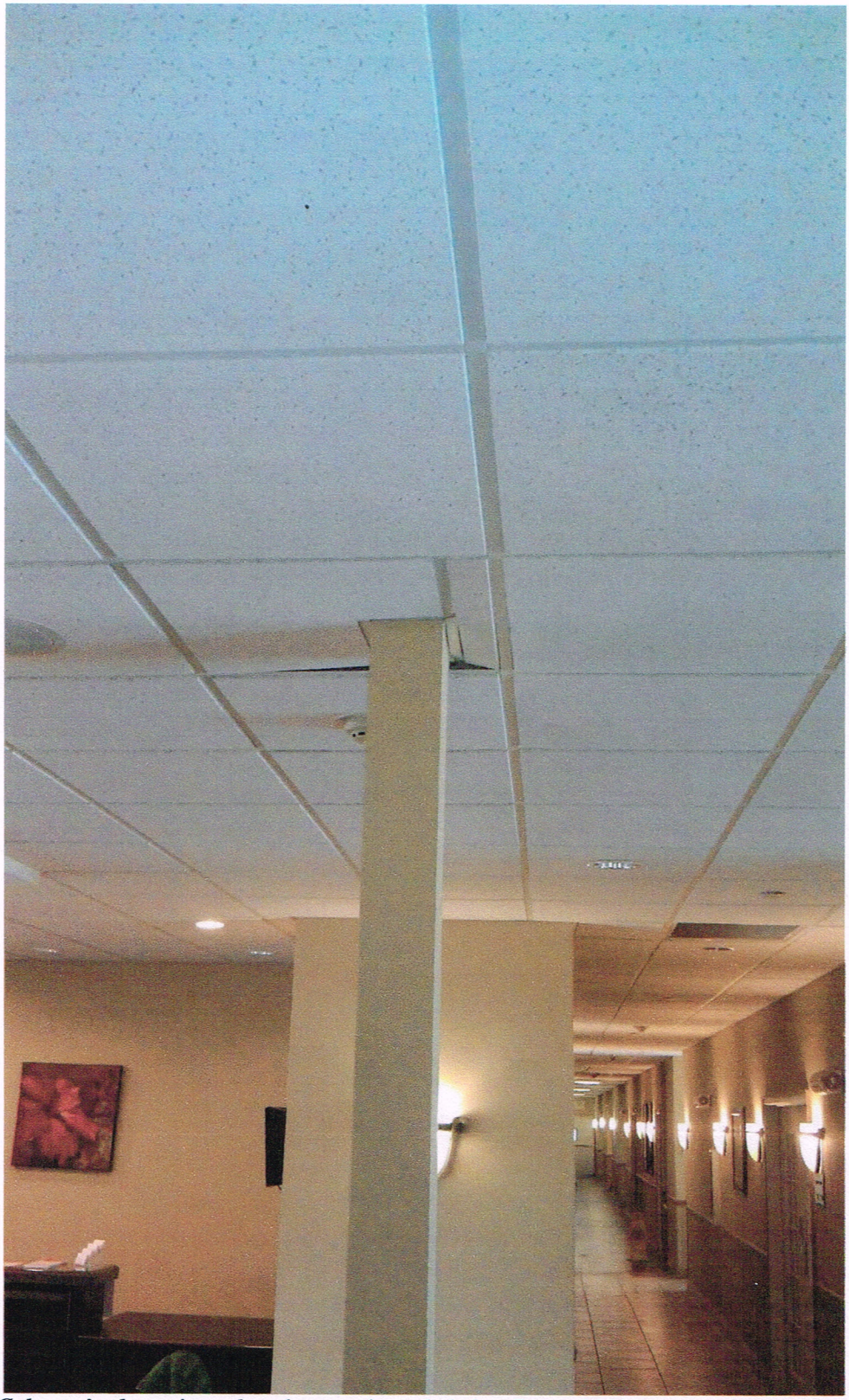


Figure 6: Truss layout and laser level deflection measurement in the atrium area below the hallway and rooms 203, 204, 205 and 206.

Key Atrium Photographs:

1. A photo of the column and the deflection of the ceiling tile around the column suggesting that movement is still taking place post the January 2010 remediation by Mr. Dammon.
2. This observation assumes that the ceiling tile channel attachment to the column is fixed and the rest of the channel is attached to the floor system above.



Photograph 5: Column in the atrium placed approximately below Room 203/ 201 to support the beam that provides support to the floor trusses in the hallway and the walls above it to provide the clear opening in the atrium below. The ceiling tile is reflecting movement of the structural framing surrounding the column.

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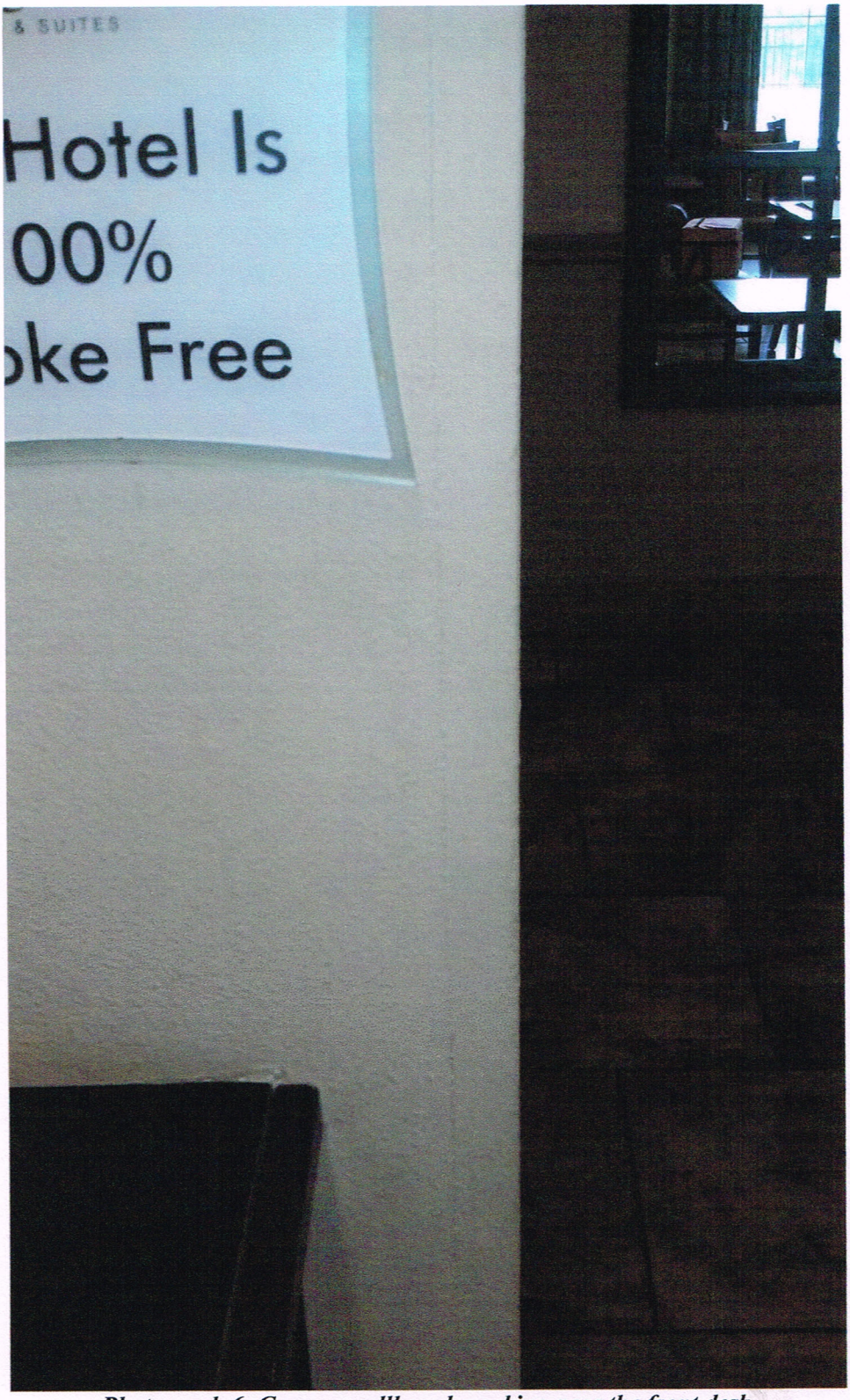
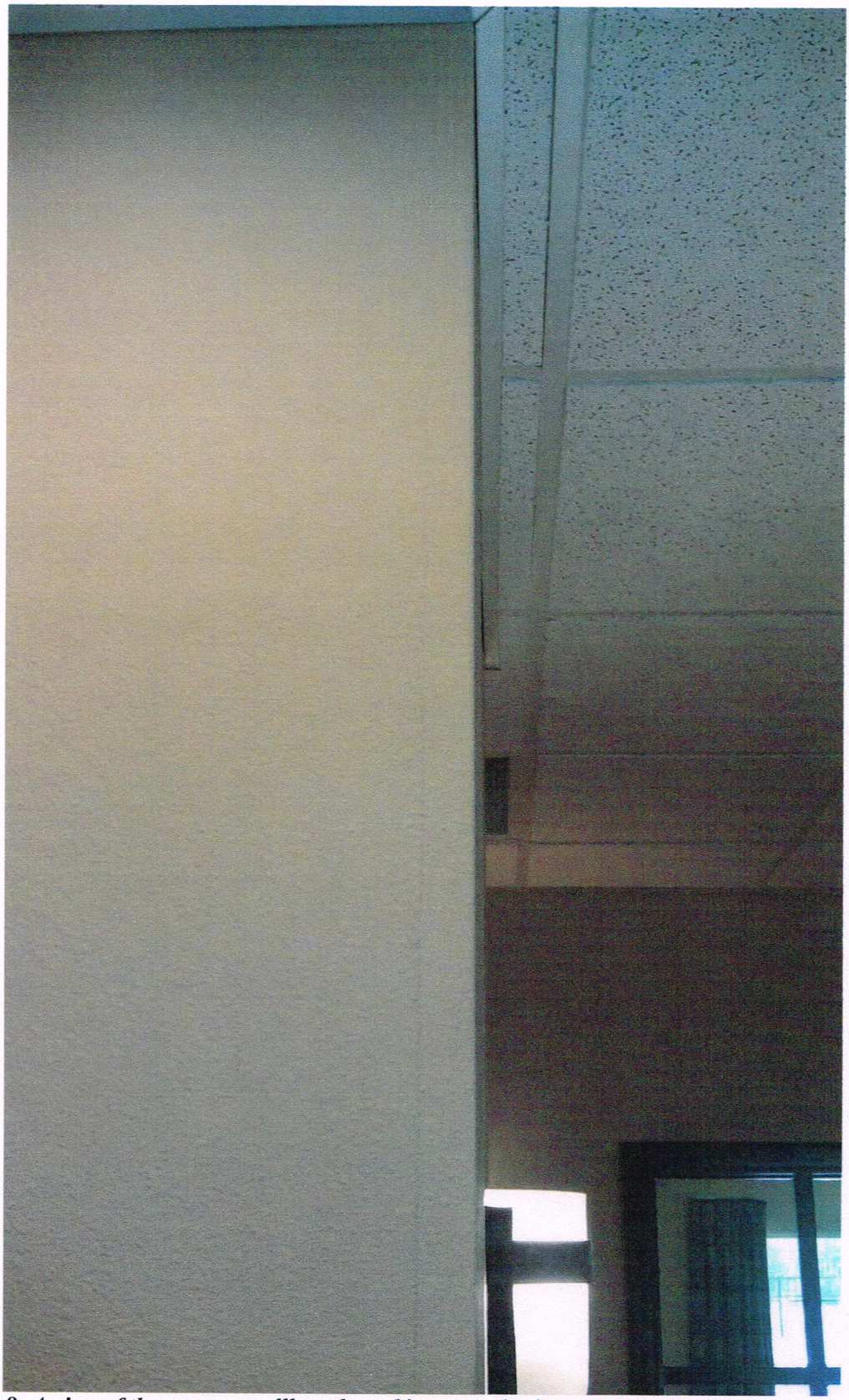
3. Cracking of the wall adjacent to the front desk.



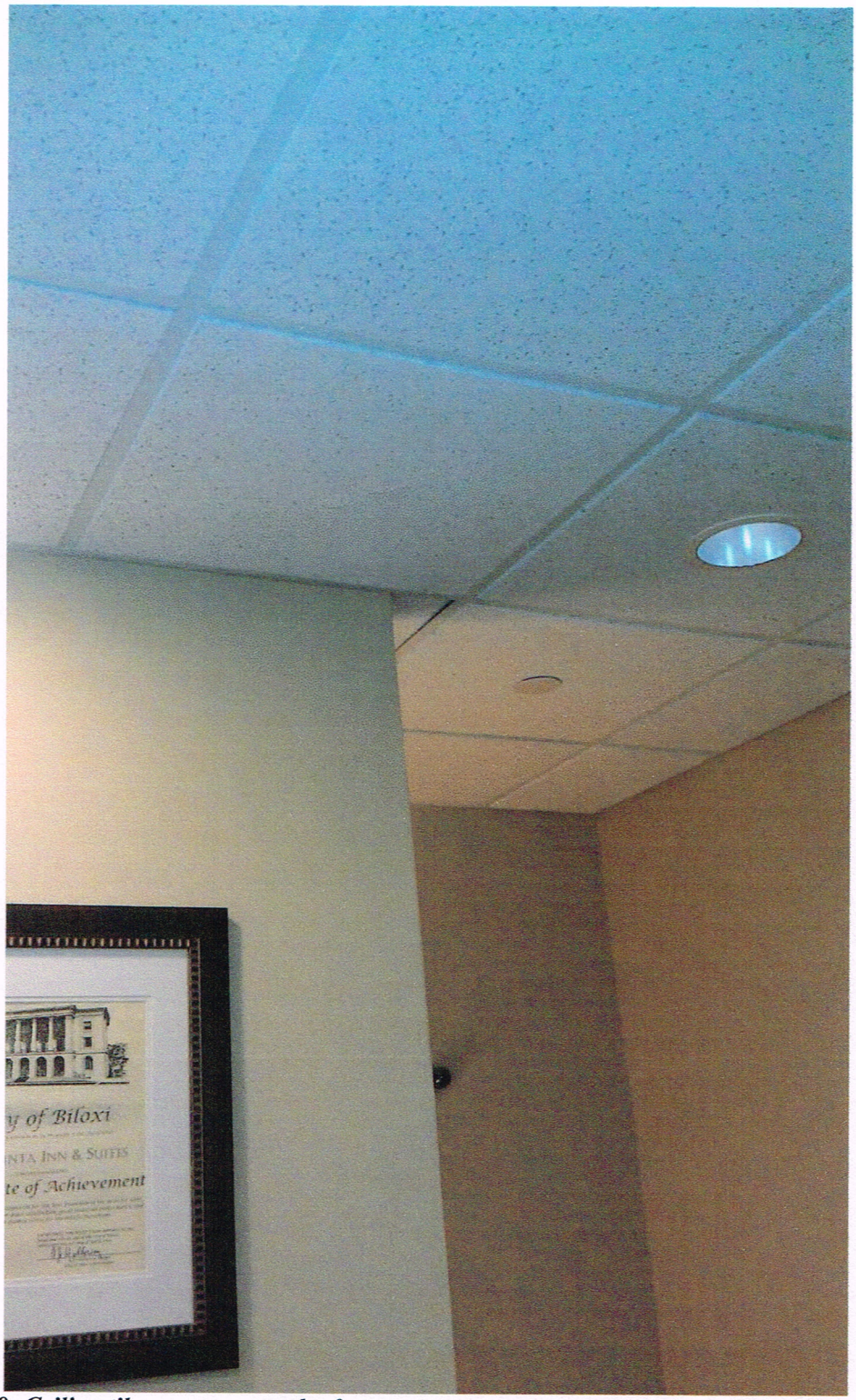
Photograph 6: Gypsum wallboard cracking near the front desk.

Photograph 7: Another view of the gypsum wallboard cracking near the front desk.



Photograph 8: A view of the gypsum wallboard cracking near the front desk and a view toward the ceiling tile.

4. The following photos are of the opposite side of the front desk from the pictures above. This is toward the entryway to the hotel. Notice similar deflection of the ceiling tile relative to a fixed point on the wall.



Photograph 9: Ceiling tile movement at the front entry way corner near the backside of the front desk.