

02/21/2013



D/DRC Case

601-603 Saluda Avenue

Wales Garden Architectural Conservation District

TMS: 11308-11-13



DESIGN/DEVELOPMENT REVIEW COMMISSION
DESIGN REVIEW DISTRICT
HISTORIC AGENDA
EVALUATION SHEET
Case # 1

ADDRESS: 601-603 Saluda Avenue

APPLICANT: Jimmy Chao, agent
City of Columbia, owner

TAX MAP REFERENCE: TMS# 11308-11-13

USE OF PROPERTY: Residential

REVIEW DISTRICT: Wales Garden Architectural Conservation District

NATURE OF REQUEST: Request Certificate of Design Approval for demolition

FINDINGS/COMMENTS:

This is a rather unique situation which has resulted in a request from the City of Columbia for the demolition of a duplex building, based upon its structural condition combined with its impact on the accessibility needed for a storm water project. The City very recently purchased this parcel on Saluda Avenue, which contains three duplexes. These duplexes were built around 1935 and reflect a trend of accommodation for multi-family housing along this stretch of road. The block from Saluda Avenue up to Wheat Street contains almost without exception either duplexes or apartment buildings which were likely built to house University students and faculty.

The building in question is to the far right of the parcel and is a painted brick two-story building with a side gabled roof, windows (not original) which wrap the corners, and a single covered porch which spans both entries and is supported with wrought iron columns.. Three other duplexes immediately adjacent share very similar design styles, footprint, and materials with this one. All were built around the same period. While individually very simple, together they form a visually cohesive narrative of the original development of this street in the neighborhood.

Directly behind these duplexes, the topography drops sharply off into a pond where several pipes converge to handle drainage for the area. Given the amount of water which flows through here, the City needs to do a great deal of work to repair pipes and deal with the extensive erosion which has eaten away enough earth that the drop has crept up to be fairly close behind the duplexes. The duplex at 601-603 Saluda Avenue shows significant structural issues both inside and out, and this has led the City to request the demolition of the building and using the property as access and staging area for the considerable amount of work which needs to be done. The structural issues are summarized in the attached report by Chao and Associates.

The other two duplexes on this parcel are also owned by the City. These both have tenants and while the City is retaining these as rental units, they are consulting with the neighborhood to determine long-term use and ownership of the properties.

PERTINENT SECTIONS FROM GUIDELINES

Sec. 17-674. - Review process.

(e) *Criteria for review of requests for demolition permits.* The following criteria shall be used as a guideline by the DDRC or its staff for review of all requests for demolition permits. The commission may require the applicant to provide certain information dealing with the criteria. The type of information which may be required is detailed in the commission's rules and regulations; however, only that information which is reasonably available to owners may be required.

- (1) The historic or architectural significance of a building, structure or object;

This duplex building is one of four along this street, all built roughly around the same time, sharing a similar size footprint, and similar designs. While simple, it is largely architecturally intact and is a contributing building on the street.

- (2) A determination of whether the subject property is capable of earning a reasonable economic return on its value without the demolition, with consideration being given to economic impact to the property owner of the subject property;

The building is currently in use and has tenants in both sides of the building. While the building certainly has structural issues, at this time these are not severe enough to prohibit its use; therefore it is currently capable of earning a reasonable return. However, eventually the building will require structural repairs in order for it to be both safe and habitable (see #6 below). The engineering report has recommendations for repairs which equal to about \$70,000 with about \$50,000 directly related to stabilizing the structure. The value of the three buildings on the parcel is \$224,700 according to Richland County tax records or about \$75,000 each (the design and appearance of the interiors are very similar, as well as the sizes of the buildings).

- (3) The importance of the building, structure or object to the ambience of a district;

The building helps to tell the story of this part of the neighborhood and its development and use, although it is fairly closely duplicated by the adjacent structures.

- (4) Whether the building, structure or object is one of the last remaining examples of its kind in the neighborhood, the city or the region;

This is not the last of its kind in the immediate neighborhood, nor in the City;

- (5) Whether there are definite plans for reuse of the property if the proposed demolition is carried out, and what the effect of those plans on the character of the surrounding area would be;

There are not definite plans as yet for the reuse of the property. Discussions for use of this part of the parcel are ongoing with the neighborhood and have ranged from building a new structure (which would go through design review) to establishing a small park here. However, repairing the pipes and managing the erosion is a pressing issue and an ongoing one--City Engineering staff are recommending a 20' easement to allow access for future maintenance and repair.

- (6) The existing structural condition, history of maintenance and use of the property, whether it endangers public safety, and whether the city is requiring its demolition.

Although there is no history of maintenance, the condition of the building speaks for itself. While the inside of this duplex is cosmetically not too bad, the exterior of the building has not been maintained and the resulting serious structural issues had not been addressed prior to the City taking ownership. Since their acquisition earlier this year, the City has taken care of some of the more urgent cosmetic issues and cleaned up around all the buildings.

The conditions are summarized in the attached report but condense down to a) the building has settled; and b) there are issues either with the original construction or added pressure or overloading from the settling. The right rear of the building has severe settlement, bowing out about 2", and the engineering report recommends a new structural system, new masonry pier, and new brick veneer here. A series of helical piers are recommended to support all corners of the building, among other recommendations. Other stepping-stone cracks are visible on every elevation of the building. The interior of the building has been pretty well maintained, but the structural issues are becoming more evident inside. While some of these can be dismissed as minor, others are indications of the larger problems in the building.

While not requiring it, the City is requesting the demolition in part to handle the repair work behind the property, which needs to be done to manage the heavy volume of water coming into the area. Repairing the pipes and addressing the major erosion issues immediately behind this property should help to keep the erosion from advancing further toward the remaining duplexes which have lost several feet of backyard over time. City Engineering staff have indicated that at least a 20' easement here would be helpful in providing access for future maintenance and repairs.

- (7) Whether the building or structure is able to be relocated, and whether a site for relocation is available; and

Staff is not aware of a site nearby for relocation or the advisability of moving the building.

- (8) Whether the building or structure is under orders from the city to be demolished due to severe structural deficiencies, and this criterion shall have added significance in comparison to the criteria mentioned in subsections (1) through (7) of this subsection.

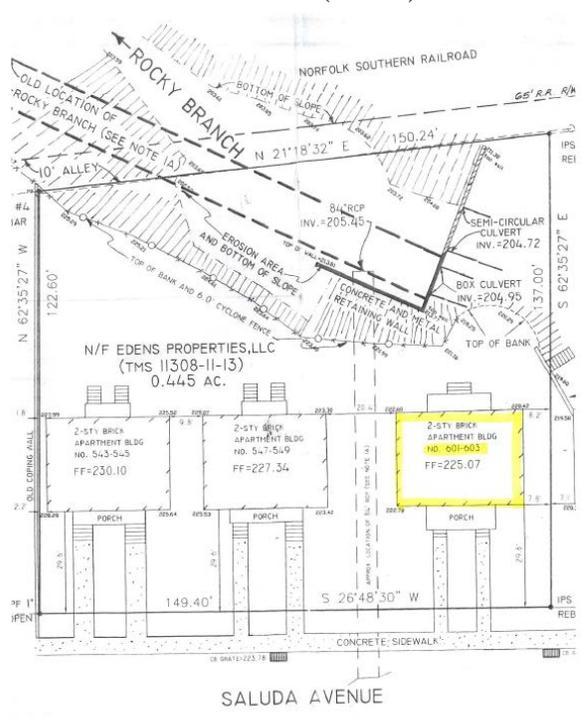
The building is not currently under orders from the city to be demolished.

STAFF RECOMMENDATIONS:

Staff finds that that the structural issues for this building are significant, as evidenced by the structural report and recommendations, that the building is not one of the last of its kind on the block, area, or City, that while the building itself is not presently presenting a severe life/safety hazard, the conditions behind the duplexes could indeed affect public safety if not addressed, and recommends for demolition according to Section 17-674 of the City of Columbia Ordinance.



601-603 Saluda Avenue (center)



Location of duplex relative to drainage/repair area



Erosion at the rear of the properties



Right rear of building (other issues addressed in attached report)

Site issues behind duplex:



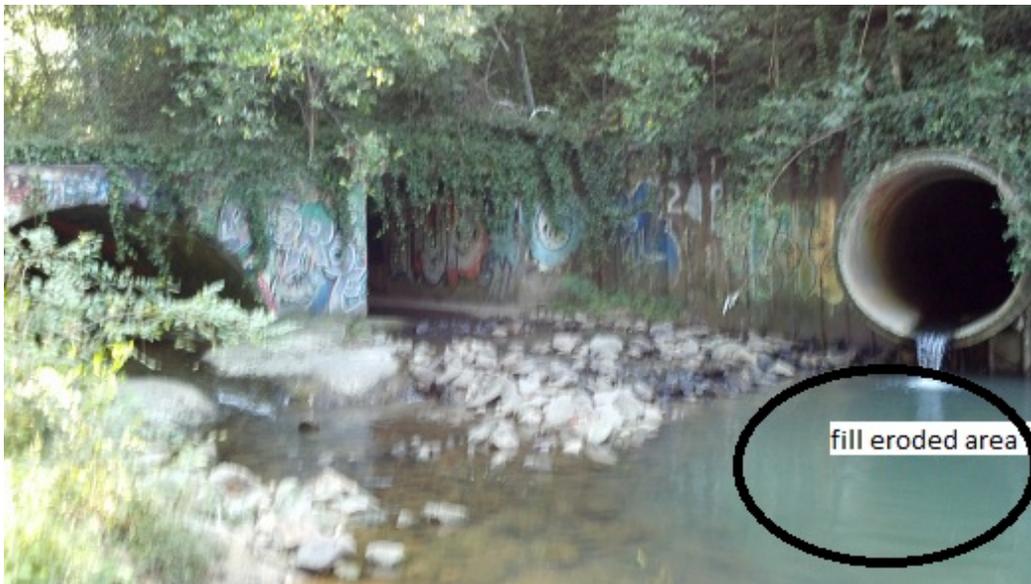
1. The area south of the outfall pipe will need to be backfilled to provide stability.



2. Sheet piling should continue from current location after backfilling.



3. Gabion Baskets should be installed to help with erosion of the opposite bank.



4. The area at the outfall of the pipe should be filled and armored.

Summary
Structural Evaluation
of
601-603 Saluda Ave
Columbia, SC



Prepared by

Chao and Associates, Inc.

June 2016





June 20, 2016

Ms. Dana Higgins, PE
City Engineer
City of Columbia
1136 Washington St
Columbia, SC 29201

RE: Structural Evaluation at 601-603 Saluda Ave, Columbia, SC.
C&A Project No. 593724-16

Dear Ms. Higgins:

As requested, Chao & Associates, Inc. (Chao) performed an initial visual observation of the above referenced site on June 17, 2016. Ms. Amy Moore was present to provide access and background information.

For description purposes, the directions used in this report are based on the view of a person standing on Saluda Ave facing the building.

GENERAL INFORMATION

The house, reportedly built circa 1930's, is a 2-story duplex wood framed building with brick veneer. Unit 601 is located at the left side of the building and 603 is located at the right side. The structure consists of a sloped gable roof, attic, and a crawlspace. You reported that the property, which is owned by City of Columbia, has reportedly sustained various structural deficiencies throughout the interior and exterior of the house. These reported deficiencies have raised a concern for the structural integrity of the house. City of Columbia is interested in the structural condition of the house.

SCOPE OF SERVICE

Chao was engaged to conduct a cursory, field evaluation to determine the structural condition of the house, cause of the reported deficiencies as well as provide repair recommendations.

This report is based on visual observations and information that was provided or was made available during the visual field evaluation. It represents the professional opinion and judgment of a Licensed Professional Engineer. No material testing was performed and is beyond the scope of service. If further information is provided or becomes available, the initial findings will be reviewed which may result in the need to modify the opinion rendered initially.

This report is solely for the benefit of the client to whom it is addressed. Any reuse of this report without the expressed written consent of Chao & Associates Inc. is strictly prohibited.



FIELD OBSERVATIONS

During the visual field evaluation of 603 Saluda Ave, the following items were noted:

1. Upon arrival at the property, it was noted that the house is part of a series of three homes with similar construction/ architectural appearance (see photo 1).
2. Multiple stair-step cracks were noted at approximately the front right corner of the house (see photos 2): stair-steps crack under each corner window on the right front side and a stair-step crack under the corner window of the front right window. Multiple stair-step cracks were noted at approximately the rear right corner of the house (see photos 3): stair-step cracks under each corner window on the right rear side as well as stair-step cracks under the corner window of the rear right window. The rear right corner of the house was noted to be leaning out significantly (about 2"). Stair-step cracks were noted at the rear left corner of the house under each of the corner windows (see photos 4). The crack openings at the right rear corner ranged from approximately 1" max gap to hairline in width. The crack openings at the remaining corners previously mentioned, ranged from approximately 1/2" max gap to hairline in width. None of these window openings appear to have a lintel to support the opening.
3. The brick masonry pier located within the crawlspace on the right rear side appeared to be leaning outwards (see photo 5).
4. From observation within the house, the front right corner of the house on the first and second-story, appeared to be dropped/sagging downwards (see photo 6 and 7).
5. The floors at the kitchen and dining room were noted to be sloping significantly downward towards the back of the house. The sloping was measured to be approximately 3/4" to 1" over 4' level respectively (see photos 8-13). From observation within the crawlspace, it was noted that the first-story framing at the rear of the house spanned left to right (see photos 14 and 15). It was also noted that no visible sign of moisture was present within the crawlspace at the time of observation (see photo 16).
6. Cracks were noted generally throughout the house located on the walls and ceilings (see photos 17-20). These cracks measured approximately hairline in width. The cracks on the ceilings are mostly from left to right.
7. The jamb of the entry door to the front bedroom located on the second-story was noted to have settled with wall cracks located just on top of the door opening (see photos 21 and 22). The floor at this area was noted to be sloped towards the opening. The cracks noted above the doorway were noted to be approximately hairline in width. This is a common occurrence on all the door openings and window openings.
8. The floor of the second-story bathroom, located at approximately the rear end of the house, was noted to be sloped towards the rear of the house (see photo 23). The slope was measured to be approximately 5/8" over a 4' level (see photo 24). The floor of the bathroom was also noted to have a hump with a crack in the tile floor covering located at approximately the humped area (see photo 23). The floor was further noted to have dipped downwards at the front and also at the rear of the humped area (see photo 25). The dip measured approximately 3/16".

9. The tub surround located above the second-story bathroom tub was noted to have a diagonal crack (see photo 26).

Similar conditions were noted at 601 Saluda Ave, as were noted with 603 Saluda Ave, with the addition of several items. The following additional items were noted:

1. The kitchen floor located in the rear middle portion of the house was noted to be slopped towards what appears to be the common wall shared by the two apartments, and a load bearing wall (see photo 27 and 28). The slope of the floor was measured to be approximately 5/8" over 4' level.
2. The floor of the rear second-story bedroom was noted to be sloped toward the front common wall located between the two second-story bedrooms (see photos 29 and 30). The sloping was noted to be approximately 1" over a 4' level. The floor of the front second-story bedroom was noted to be sloped toward the common wall located between the two second-story bedrooms (see photo 31). The sloping was noted to be approximately 1" over a 4' level. The floor of this bedroom was also noted to have a hump approximately 4' in front of the common wall of the bedrooms, which spanned across the room traveling left and right. From observation within the attic, it was noted that the second-story ceiling framing was bearing directly onto this common wall (see photo 32). Kickers supporting the roof load were also noted to be bearing onto this common wall.
3. A separation was noted at the interface between the ceiling and the right wall of the second-story rear bedroom (see photo 33). This separation was noted to be approximately hairline to 1/16" in width. A separation was noted at the interface between the ceiling and the right wall of the staircase (see photo 34). This separation was noted to be approximately hairline to 1/16" in width. A separation was noted at the interface of the overhead walls of the staircase at the front left corner of the staircase (see photo 35). This separation was noted to be approximately hairline to 1/16" in width.

CONCLUSIONS/RECOMMENDATIONS

Considering the stair-step cracks noted at the front right, rear left, and rear right corners of the house, the noted sagging of the interior corners at the front right, rear left, and rear right corners of the house, the noted general sloping of the rear floors towards the rear of the house, and the orientation of the floor framing at the rear of the house, it is our opinion that the house has sustained severe localized settlement at the front right and rear corners of the house, as well as severe global settlement at the rear portion of the house. It is recommended to support the corners of the house as well as the rear portion of the house with either push-piles or helical piers as required. The quantity and spacing of the piers shall be determined by a licensed professional engineer or a competent foundation specialist. The steel lintels are recommended to be placed at all the corner widow openings along with placing a structural column at the corner of window to support the end of the lintels. In regards to the right rear corner of the house, due to the severity of the settlement/ leaning out of the veneer, and the apparent settlement/ leaning of the masonry pier at this location, it is recommended to remove the brick veneer and masonry pier, and provide new structural system as required (install new footing, pier, and brick veneer wall) at this location.

In regards to the general ceiling and wall cracks located throughout the house, it is our opinion that these cracks are likely caused by either settlement, deflection of structural members, or a combination of both. Due to the age of the house, these cracks throughout the house are likely not a structural concern at the present. It is recommended to properly repair the cracks with flexible tape, mud, and paint to match the existing colors as well as monitoring the condition for further reference.

The noted door jamb settlement in the second-story bedroom of Unit 601 and 603 are most likely caused by inadequate structural support members beneath. The door jambs have concentrated load due to door opening and it often were placed between floor joists which were only supported by the floor sheathing. It is recommended to remove the first-story ceiling beneath this area and provide additional supporting framing members for the door jamb area or install a blocking in-between the floor joists to support the jamb. It is also recommended to properly repair the cracks with flexible tape, mud, and paint to match the existing colors as well as monitoring the condition for further reference.

In regards to the tile cracks in the bathroom floors, based on the general sloping of the floors towards the rear of the house and the tub surround crack in Unit 603, it is most like due to settlement at the rear of the house. Providing additional helical piers at the rear of the house, as mentioned previously, will most likely adequately support the framing at this area. It is recommended to repaint/replace the tile flooring at these locations after the installation of the helical piers, and to monitor the condition for future reference.

As for the sloping of the bedroom floors as well as the humps in the second-story bedrooms located in Unit 601, considering that the roof and ceiling framing is supported by the common wall between the bedrooms, most likely the sloping of the floor and humps in the floor are due to severe deflection of the supporting member for the load bearing common wall. This supporting framing member is most likely not adequately sized and/or damaged to carry the imposed roof/ceiling load. It is recommended to open the ceiling of the first-story approximately beneath this area to verify the orientation of the joist surrounding this wall supporting beam. After verification of the orientation of the joist at this location, one of the two following repair recommendation can be used: If the floor joists are spanning parallel to the wall supporting beam, the repair option would be to provide an additional beam scabbed directly to the side of the existing beam. If the ceiling joists are spanning perpendicular to the wall supporting beam, the repair option would be to place an additional beam under the existing beam (spanning the full span of the room) supported with a column on each side. A pier in the crawl space is required to support the column.

In regards to the sloping of the floor in the kitchen of Unit 601 towards the apparent common/load bearing wall, the causation is likely the same as with the common/load bearing wall between the two bedrooms on the second-story mentioned previously (the supporting framing members beneath this wall have experienced severe deflection as well). Considering that the floor joists at this location span perpendicular to this wall's supporting beam, it is recommended to provide additional piers beneath this wall's supporting beam for added support. In regards to the separations noted at the ceiling to wall interfaces, please see repair recommendations mentioned previously for general cracks after the foundation repair is completed.

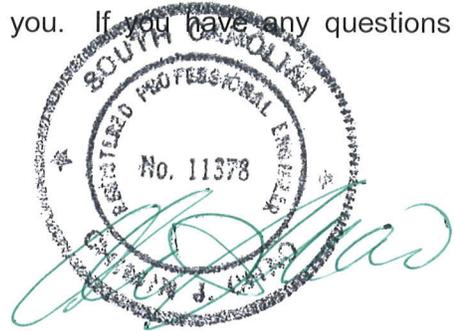
The total budgetary repair cost estimate for the aforementioned structural deficiencies are \$70,000.

It is a pleasure to provide our engineering service to you. If you have any questions or additional concerns, please do not hesitate to call.

Sincerely,
Chao and Associates, Inc.



Daniel Dodson, EIT
Structural Designer



C. Jimmy Chao, P.E.
Chief Engineer/ President



1



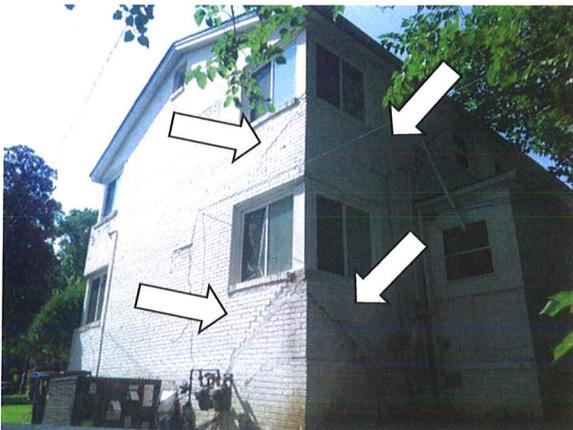
4



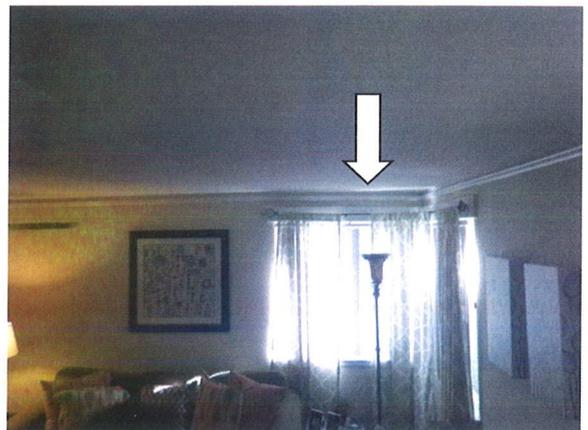
2



5



3



6



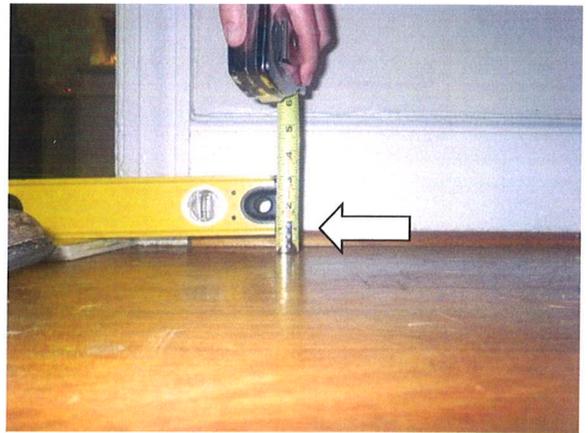
7



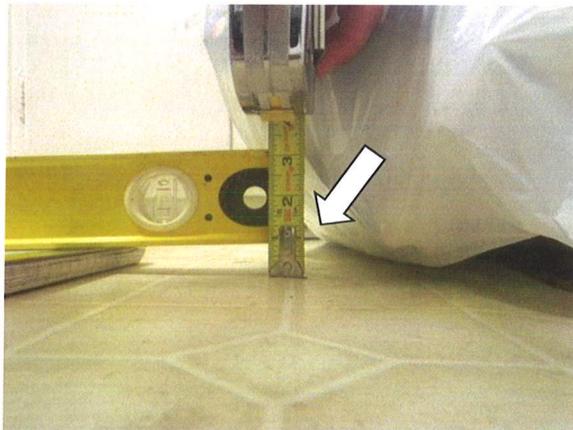
10



8



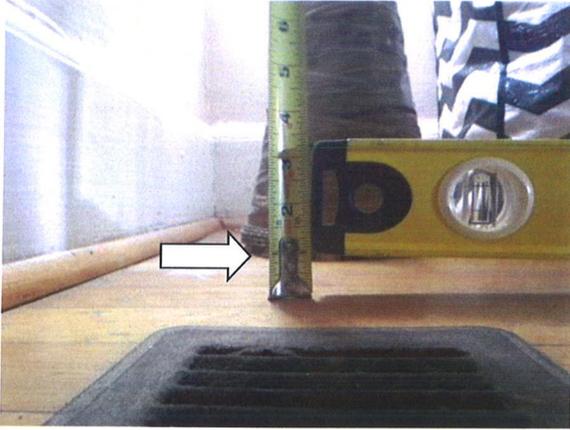
11



9



12



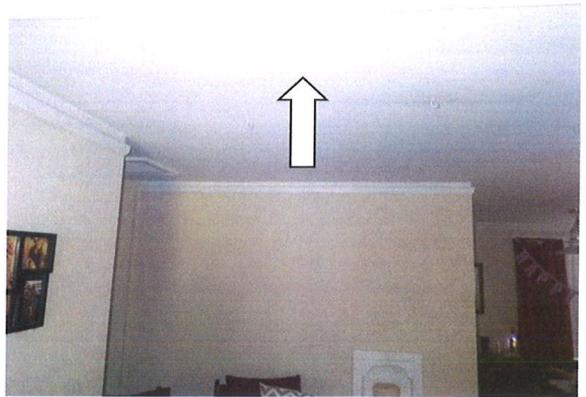
13



16



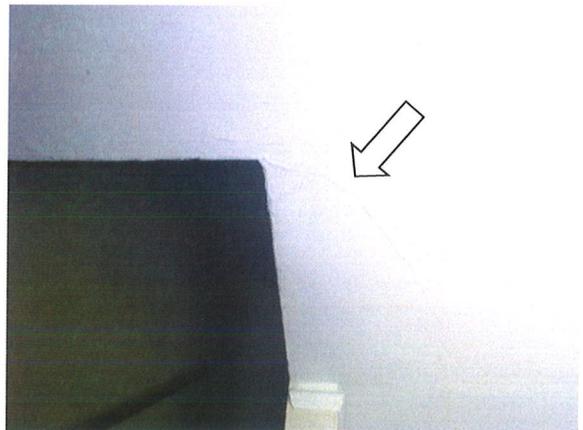
14



17



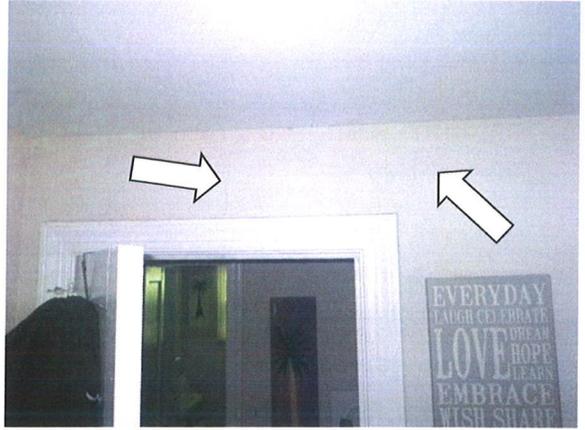
15



18



19



22



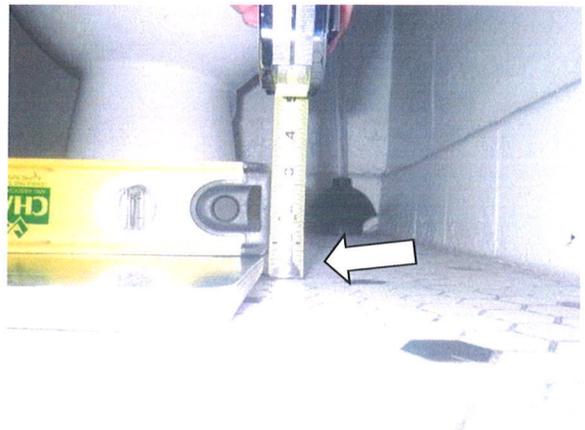
20



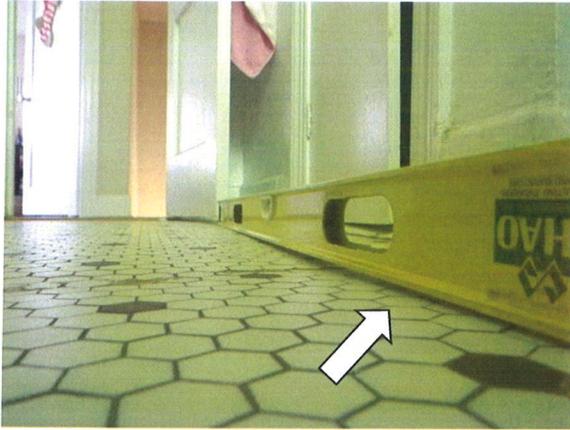
23



21



24



25



28



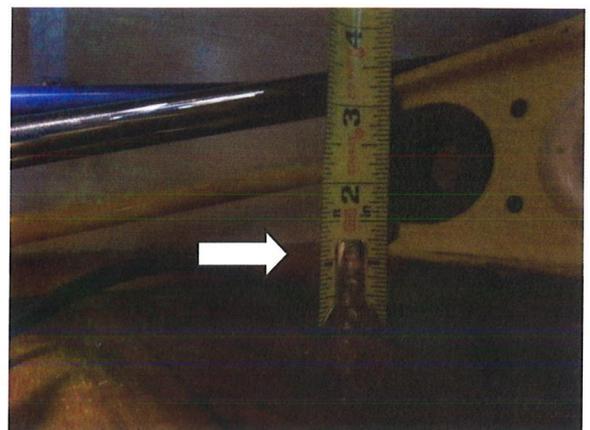
26



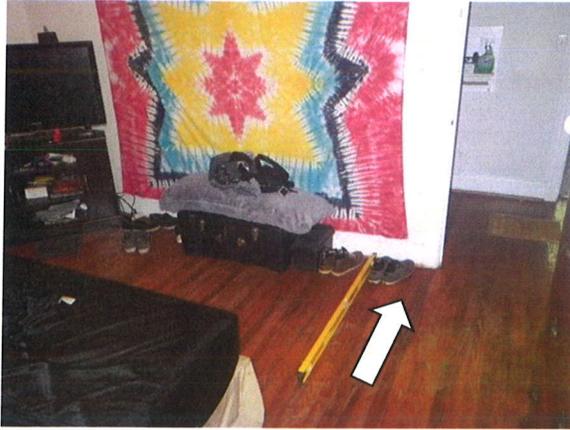
29



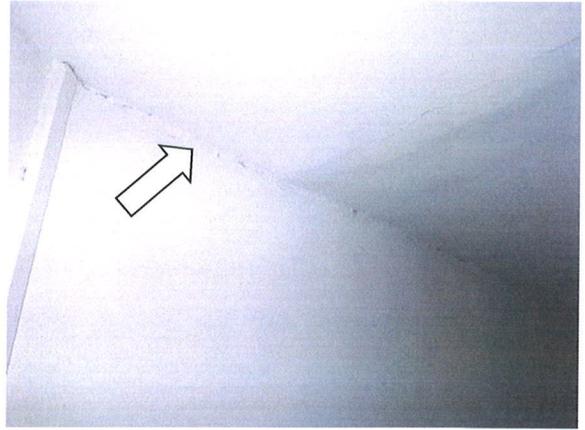
27



30



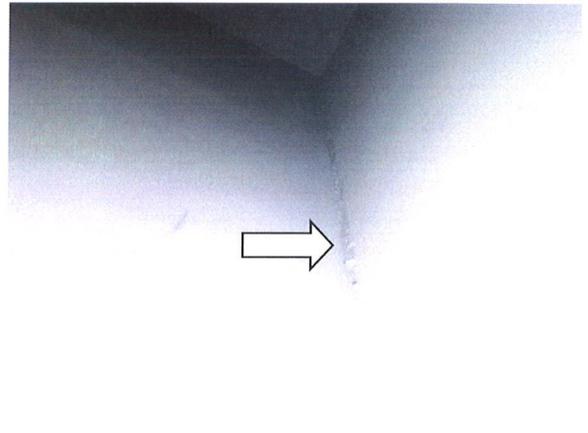
31



34



32



35



33

Coliseum Wall Penetration

Chao and Associates, Inc.
6/24/2016

Description	Unit	Quantity	Unit Cost	Total
Disposal	LS	1	\$2,000.00	\$2,000.00
corner helical piers	ea	6.00	\$900.00	\$5,400.00
rear wall helical piers	ea	8.00	\$900.00	\$7,200.00
rear right corner rebrick	ea	1.00	\$5,000.00	\$5,000.00
601 second floor beam	ea	1.00	\$3,000.00	\$3,000.00
common wall piers	ea	6.00	\$500.00	\$3,000.00
corner window lintels	ea	3.00	\$4,000.00	\$12,000.00
door jambs	ea	6.00	\$1,000.00	\$6,000.00
paintings	LS	1.00	\$6,000.00	\$6,000.00
yard work	LS	1.00	\$3,000.00	\$3,000.00
			subtotal	<u>\$52,600.00</u>
Bond, Insurance, General Condition				\$5,260.00
Profit				\$5,786.00
Contingency 10%				\$6,364.60
			Grand Total =	\$70,010.60