KARL F. DEAN
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

Metropolitan Historic Zoning Commission
Sunnyside in Sevier Park
3000 Granny White Pike
Nashville, Tennessee 37204
Telephone: (615) 862-7970
Fax: (615) 862-7974

STAFF RECOMMENDATION
1112 Forrest Avenue
October 17, 2012

Application: Demolition
District: Lockeland Springs-East End Neighborhood Conservation Zoning Overlay
Council District: 06
Map and Parcel Number: 08309012000
Applicant: Tim Wesley
Project Lead: Robin Zeigler, robin.zeigler@nashville.gov

Description of Project: Application is to demolish a contributing building in the Lockeland Springs-East End Neighborhood Conservation Zoning Overlay. **Recommendation Summary:** Staff recommends approval of demolition based on the economic hardship created with a cost to repair that far outweighs the potential value. Demolition meets section IV.B.2.c. of the *Lockeland Springs-East End Neighborhood Conservation Zoning Overlay: Handbook and Design Guidelines*.	**Attachments** **A:** Structural Report

Vicinity Map:

Aerial Map:

Background: 1112 Forrest Avenue is a one-story Victorian house built c. 1905. The East Nashville National Register Historic District nomination form identifies the house as contributing to the district. The MHZC approved an addition on June 20, 2012.

1112 Forrest Avenue before restoration and preparation for the approved addition began.

Applicable Design Guidelines:

IV. B. Demolition

1. Demolition is not appropriate

a. if a building, or major portion of a building, is of such architectural or historical interest and value that its removal would be detrimental to the public interest; or

b. if a building, or major portion of a building, is of such old or unusual or uncommon design and materials that it could not be reproduced or be reproduced without great difficulty and expense.

2. Demolition is appropriate

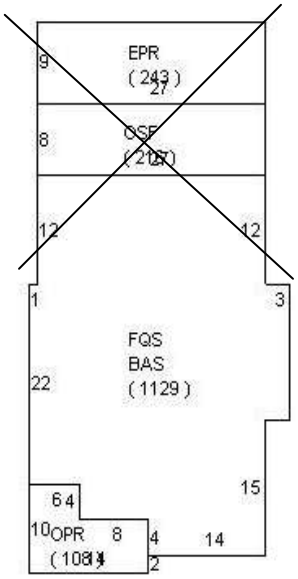
a. if a building, or major portion of a building, has irretrievably lost its architectural and historical integrity and significance and its removal will result in a more historically appropriate visual effect on the district;

b. if a building, or major portion of a building, does not contribute to the historical and architectural character and significance of the district and its removal will result in a more historically appropriate visual effect on the district; or

c. if the denial of the demolition will result in an economic hardship on the applicant as determined by the MHZC in accordance with section 17.40.420 (Historic Zoning Regulations), Metropolitan Comprehensive Zoning Ordinance.

Analysis and Findings:
Since the existing residential building is a contributing building to the National Register of Historic Places district and the Lockeland Springs-East End Neighborhood Conservation Zoning Overlay demolition does not meet the design guidelines for demolition; however, when applying the standards for economic hardship, staff finds the project does meet the guidelines for appropriate demolition.

The existing portion of the house with a previous rear portion already removed and including the stairs, a second level and front porch is 650 square feet.



The applicant purchased the property for $191,700 and estimates that it will take $90,000 to make necessary repairs not evident at the time of purchase and bring the building up to the standards enforced by the Metro's Department of Codes & Building Safety. Staff has reviewed existing conditions three times since the removal of siding and flooring, providing a clear view of the structure, and agrees with the cost estimates for repair and rehabilitation based on an extensive amount of termite and fire damage to critical elements of the structure such as the sill and load bearing interior walls.

Based on recent sales in the Lockeland Springs area, staff finds that small homes are valued at between $150-190 per square foot.

Expenses	
Purchase	161,600
Closing Costs	3,500
Bank Points	1,050
Interest	4,500
Insurance	1,800
Architect	7,500
Engineer	750
Survey	500
Demolition of addition	10,500
Repair	40,000
Rehabilitation	50,000
Interest & Insurance	5,000
TOTAL:	286,700
Value per square foot	**$190 (maximum)**
Cost per square foot	**$441**

The applicant will likely return to the Commission with plans for a new structure but because they have tried to work out various scenarios for saving the building, they have not had time to create new drawings to present at this hearing.

Staff recommends approval of demolition based on the economic hardship created with a cost to repair that far outweighs the potential value. Demolition meets section IV.B.2.c. of the *Lockeland Springs-East End Neighborhood Conservation Zoning Overlay: Handbook and Design Guidelines*.

APPLE JUNCTION DESIGN SERVICES, PLC

3622 Mayflower Place
Nashville, TN 37204
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August 29, 2012

Tim Wesley
1112 Forrest Avenue
Nashville, TN 37206

Re: Review of Structural Integrity of Residence for Remodeling
1112 Forrest Avenue
Nashville, TN 37206
AJDS Project No. 12-0826-000

Dear Tim:

At your request, we visited the above-mentioned residence on Wednesday morning, August 29, 2012. This visit was performed to review the structural integrity of the residence after extreme amounts of termite damage were noted during the initial demolition and to determine the cost feasibility of trying to repair the existing portion of the residence.

Our structural review included no destructive or intrusive procedures and was limited solely to features normally visible to the unaided eye. This is a structural report of a visual review and should not be construed as a comprehensive structural analysis of capacity or performance.

OBSERVATIONS

Apparently termite damage was done to the existing portion of the residence a long time ago. A previous owner apparently did some temporary repairs to address some of the damage, but these were very poor attempts as the termite damage that we noted during our recent visit is extensive.

We understand that plans were to keep the front portion of the residence in an attempt to satisfy the Metro Historic Zoning Commission and remove and replace the rear portion of the residence per the architectural plans.

Unfortunately, once demolition started on the portion of the residence that was originally to remain, the structural condition of this portion of the residence was found to be questionable.

As noted on the attached sketch and in the remainder of this report, we feel that the original front portion of the residence also needs to be demolished and the whole

residence be started from scratch so that a proper foundation and floor system can be placed under the residence for proper structurally stability.

Some of the additional structural issues we found with the remaining portion of the residence are the following:

1. Although not first noted in the architectural drawings, the only section of the residence with brick skirting is at the right front as shown on the attached sketch. The remainder of the skirting for the residence is wood. The support of the residence both interior and at the exterior walls is by wood posts placed in the ground. Both the wood skirting and the wood posts have suffered both termite damage and rot damage so they are in need of replacement. The wood skirting would not be difficult to replace, but it would not be feasible to replace the wood posts as the house would need to be temporarily supported by a house mover and then a new foundation constructed under the residence.
2. Another main issue with the residence is the termite damage to the floor joists and main support beams. The main support beams are almost completely eaten up. Since the interior walls have no bottom wall plate and the studs rest directly on the top of the beams, it is not possible to replace the main beams without also replacing the stud walls. Since the stud walls support the ceiling/floor joists above, these members would also have to be somehow temporarily supported. All of the floor joist also need to be replaced to restore the floor system to its original, non-termite damaged condition. Proper ledgers will also need to be installed at the main beams as the existing ledgers are ¾" thick or less. The ends of the existing floor joists had to be notched more than is allowable to rest on the ledgers as well. Doing all of this work would not be economically feasible.
3. Since there were no bottom wall plates for the stud walls, past termites went up the beams and exterior rim joists into the wall studs above. There are numerous wall studs that will need replacement. In addition, we noted locations where termites even got into the ceiling joists.
4. We noted that no headers were installed above exterior windows or interior and exterior doors. Properly sized headers will need to be installed above all of these.
5. The existing rear double rim joist that supports the rear floor joists has been improperly spliced at a location behind the rear fireplace. It is presently not properly supported and new plies will need to be installed between posts.
6. In the dug-out portion of the crawl space, hollow concrete block retaining walls were constructed to create a partial basement for the water heater and HVAC unit. Since the concrete blocks were not reinforced and core filled, they have suffered damage from the lateral earth pressure on them and many cracks were noted in the retaining walls. The worst of the cracking is at the front retaining wall which receives all of the lateral force from the surcharge that comes from the fireplace just in front of the retaining wall. The retaining walls need to be removed and properly designed retaining walls constructed.
7. Past owners of the residence apparently attempted to use the attic area as living area. The ceiling joists for the attic are only 2x6s spaced at 16-inch centers so they

were not capable of supporting any live load in the attic. Subsequently, all of the ceiling joists have sagged more than code allowable. In order to fix this condition new, properly sized floor joists must be installed and the old ceiling joists removed. Since the roof line cannot be raised because of Metro Historic Zoning Commission guidelines, the attic space is actually unusable anyway with the limited headroom.

8. In addition to having extra live load on the ceiling joists, knee walls were constructed under the rafters that rest on the same ceiling joists which has just added additional load on the ceiling joists which in turn allowed more sag to occur in the ceiling joists.
9. The original roof support for the residence were only 2x4s spaced at 24-inch centers and some of these have even been spliced. These were even minimal when the residence was constructed. Since the original wood shake or metal decking was replaced with OSB board attached to the original spaced out 1x wood strips and then asphalt shingles installed on top of the wood decking, now the rafters are extremely overloaded and additional sagging has occurred in the rafters and the roof system. The only way to fix the roof system would be to tear off the existing roof system including the rafters and then install properly sized roof rafters, ridge beams, valley rafters, and hip rafters. Then new decking and shingles could be installed. Doing all of this work would not be economically feasible.
10. The existing stairs to the second floor do not meet current codes as they are too narrow and the winder tread does not have the proper nosing. The stairs would need to be demoed and replaced.
11. The mortar at the two fireplaces and chimneys all appear to have deteriorated over the lifetime of the residence such that the fireplaces and chimneys are no longer safe to use or even to be left standing.
12. With a residence of this age there is always the issue with lead based paint. Precautions and special care will be required when removing any paint.

COMMENTS

Since the original residence was minimally constructed and/or not constructed properly when it was originally constructed and now it has also suffered significant damage by rot and termites, we see no feasible or economical way to repair the existing residence. The whole residence needs to be brought up to codes with the amount of work that will be required.

Any attempt to try to salvage any portion of the residence would require large expenditures to repair since considerable amounts of temporary supports would be required to keep the residence stable during the repair process.

One should consider the amount of work required to properly repair the residence before coming to the conclusion that it can be salvaged. Some of the following work would be required (keeping in mind that various amounts of temporary supports would be needed that are not listed):

1. The first thing that would be required to be done would be to bring in a house mover to temporarily support the residence while all of the support posts were replaced

with concrete block piers on poured concrete footings. Once temporarily supported (if the structure could withstand this) then the proper foundation could be constructed. This in itself could cost anywhere between $20,000 to $40,000.

2. The existing hollow concrete block retaining wall at the basement/crawl space should also be replaced at the same time with a properly reinforced retaining wall.
3. Once the proper foundation is under the residence then the floor system would need to be worked on. Since the floor joists have already undergone large amounts of termite damage, all of the floor joists should be replaced with new 2x10 floor joists spaced at 16-inch centers.
4. The main beams would also need to be replaced, but this is another issue with there being no existing bottom plate on the walls. The studs rest directly on the top of the main beams. These walls would need to be temporarily supported before the main beams were replaced. Then a minimum of either a double or triple 2x12 beam should be installed with 2x2 ledgers to properly support the floor joists both at the first floor and the second floor.
5. The floor decking for the first floor would need to be removed and replaced in order to install the new floor joists.
6. The first floor walls would need to be repaired as required to replace rotted or termite damaged studs. The new walls should actually have bottom plates under the studs and this could be accomplished while the walls are temporarily supported to install the new main beams.
7. The correct size headers should be installed above all of the windows and doors.
8. Since the second floor is presently only supported by too small of ceiling joists and not true floor joists, all of the second floor joists would need to also be replaced with 2x10s spaced at 16-inch centers. Unfortunately increasing the depth of the floor joists would reduce the ceiling height so the second floor would not be feasibly usable.
9. Proper microlam beams should be installed in the new second floor framing to carry the knee walls that extend up to the rafters.
10. The floor decking for the second floor would need to be removed and replaced in order to install the new floor joists.
11. The ceiling joists should be replaced with at least 2x8s spaced at 16-inch centers above the second floor and also over the front porch.
12. If the existing 2x4 rafters were attempted to be left in place, they would need to be sistered with 2x8 roof rafters and also 2x8 roof rafters installed between the existing rafters. Unfortunately, once again, this increase in depth of rafters limits the ceiling height at the second floor making it unfeasible for use as living space.
13. Since there is no wall sheathing behind the existing wood siding and therefore there is no means of lateral shear resistance in the walls, then the existing wood siding will require removal. When the wood siding is removed, it will not be possible to salvage the siding since it will crack and break during removal. New siding will have to be installed after new sheathing and whole house wrap is placed over the exterior of the residence.
14. The two fireplaces with chimneys should be torn down and replaced because of the deteriorated mortar that is between the bricks

As should be readily be seen by anyone, the work (and cost) required to repair the residence would be more than to completely reconstruct the residence. There is no way to be completely sure of the structural stability of the residence without completely reconstructing the residence either.

Since the cost to repair the residence would cost more than reconstruction, this residence is a good candidate for re-construction.

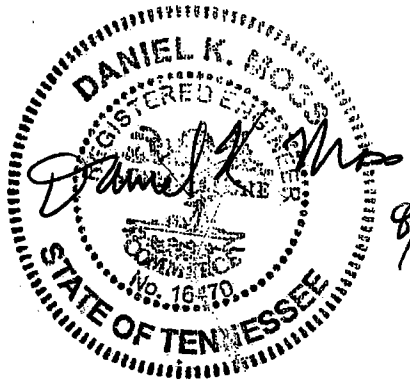
We hope with all of our findings that we have discussed above that the Metro Historic Zoning Commission will agree.

Our comments are based upon our observation of the apparent performance of the items noted and upon the conditions observed at the time of the investigation.

We appreciate this opportunity to be of service to you. If you or the Metro Historic Zoning Commission has any questions, please give us a call.

Sincerely,

Apple Junction Design Services, PLC



8/29/12

Daniel K. Moss, P.E.
Senior Structural Engineer

Attachments: sketch
pictures

APPLE JUNCTION DESIGN SERVICES, PLC

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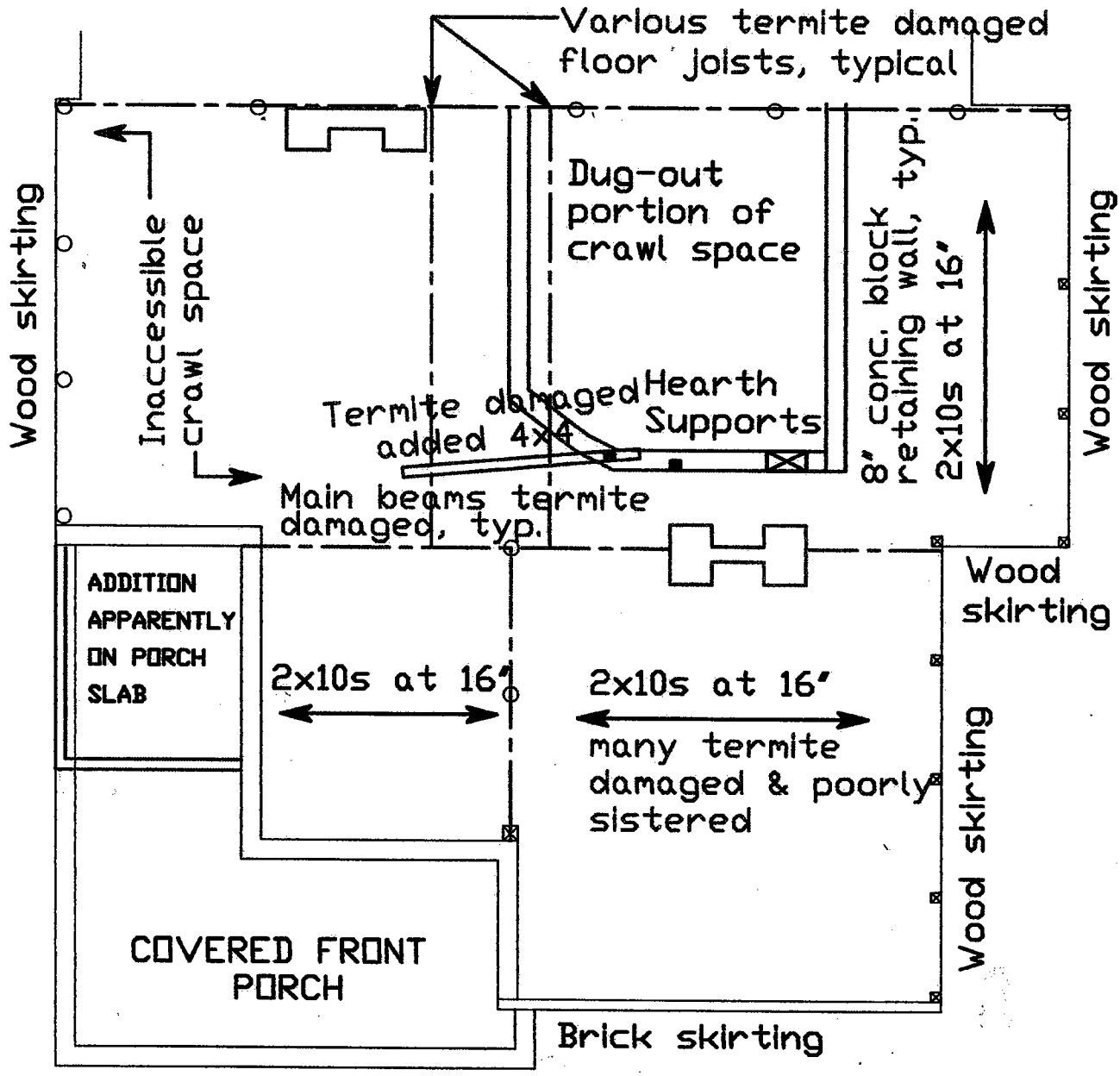
REAR PORTIONS OF RESIDENCE ALREADY REMOVED



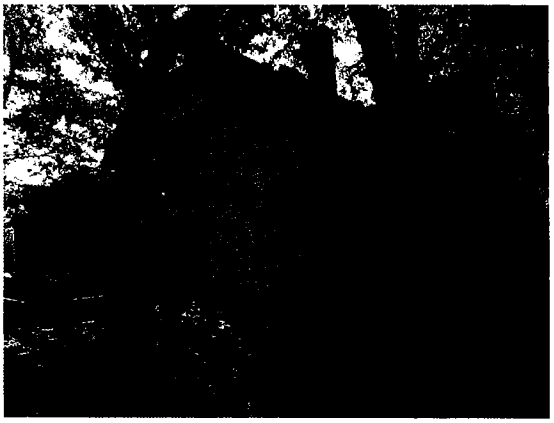
EXISTING PLAN OF RESIDENCE

DANIEL K. MOSS
REGISTERED ENGINEER
AGRICULTURE
No. 16170
STATE OF TENNESSEE

8/29/12

1112 Forrest Avenue
Nashville, TN 37206
August 29, 2012
AJDS Proj 12-0826-002

Front of residence



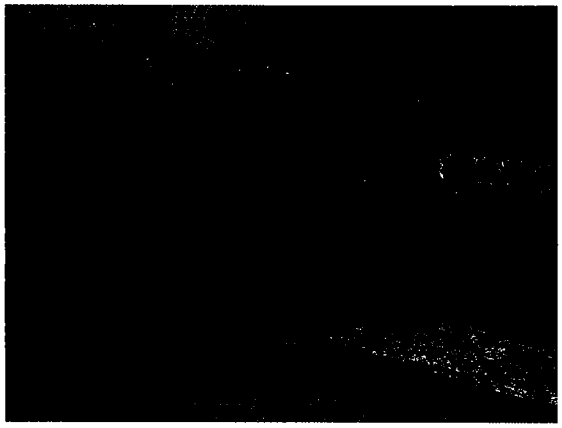
Right side of residence

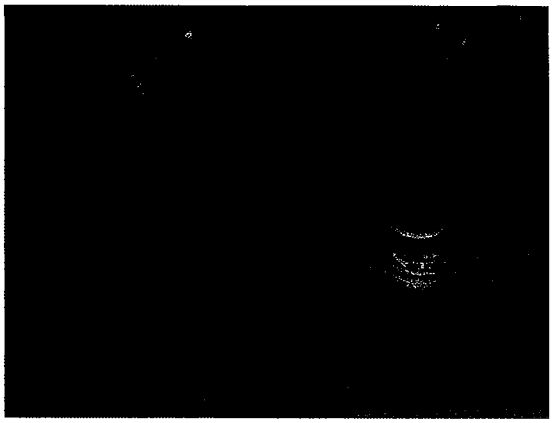
Left side of residence

Rear of residence

Posts at remaining rear near right side

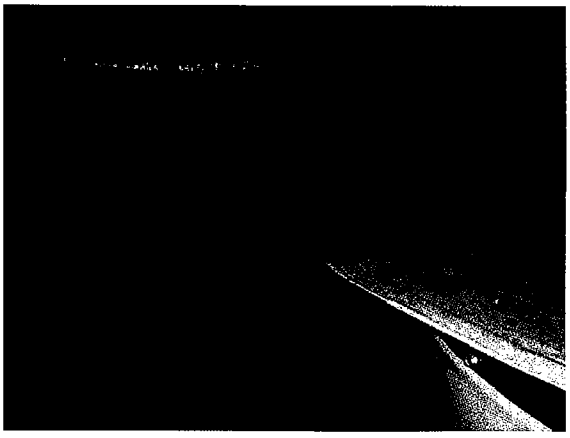
Posts and skirting at right side near rear



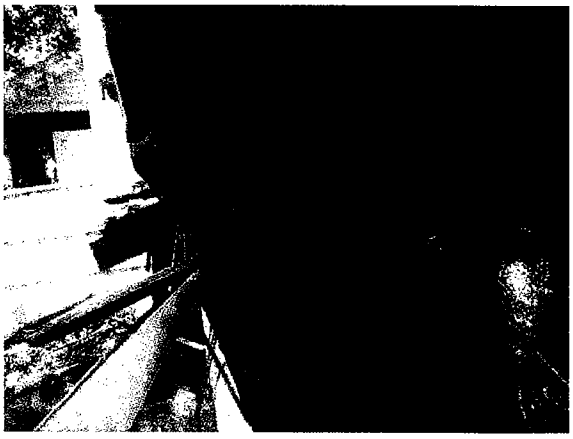


Additional pictures of right side skirting showing skirting rests on bricks

Rear post with blocking on top



Right side hollow concrete block retaining wall

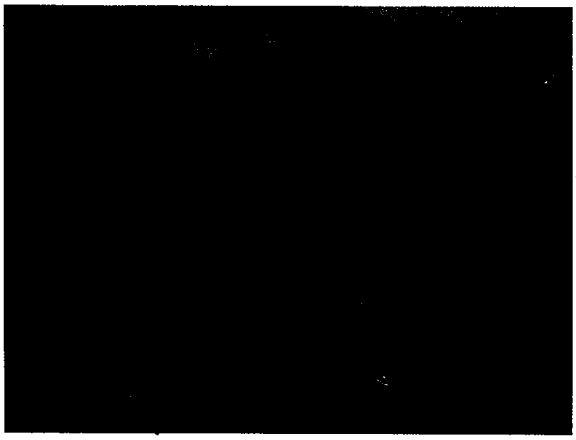


Poor shims at top of another rear wood post

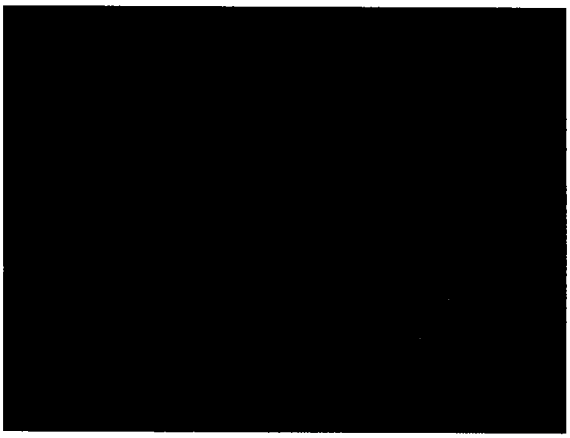
Left side hollow concrete block retaining wall is leaning into dug-out basement

Rear fireplace has been undermined by digging out basement area

Rear band has been spliced at location not over post. Adjacent band has been poorly strengthened.

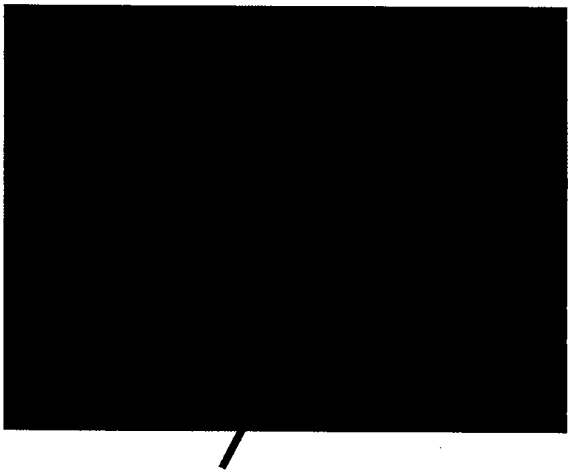


Skirting and posts at right side bump out

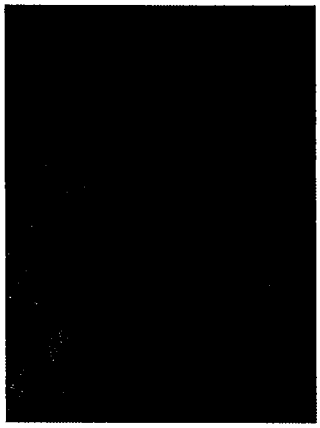


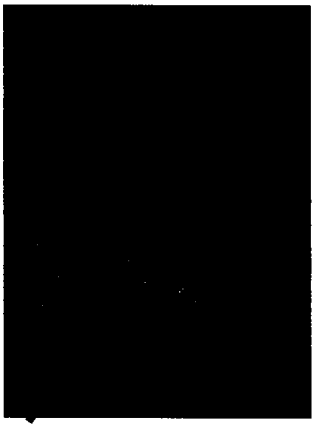
Hearth at interior fireplace has been poorly supported by placing blocks on top of hollow concrete block retaining wall

Hearth at interior fireplace has been poorly supported by wood post placed on top of hollow concrete block retaining wall

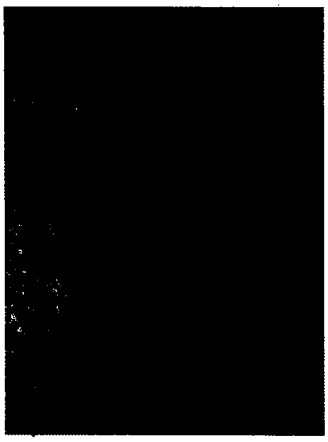


Interior fireplace

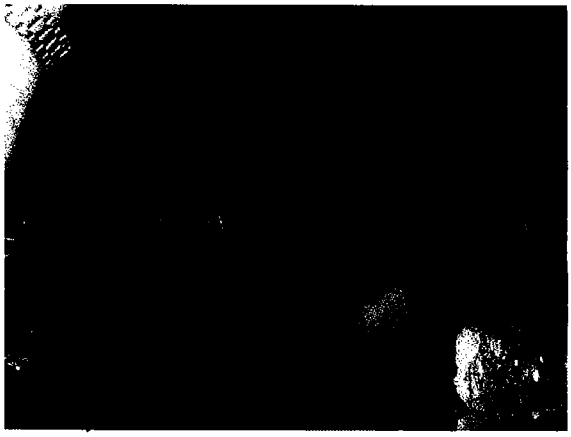




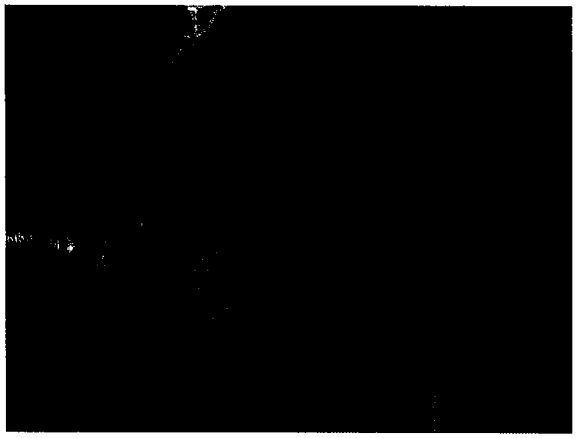
Front portion of hollow concrete block retaining wall has numerous vertical cracks in it.



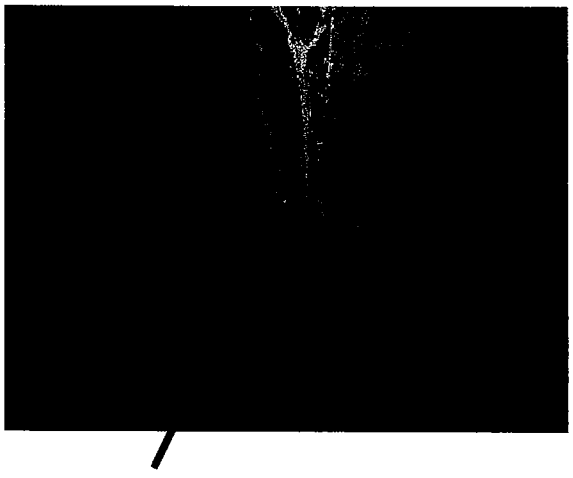
See caption above.



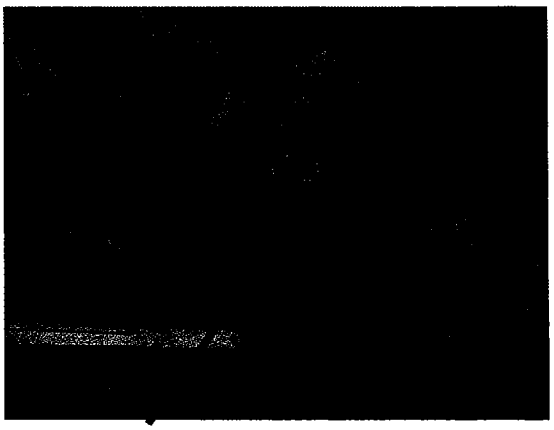
Strut from hollow concrete block retaining wall up to termite damaged 4x4 additional support



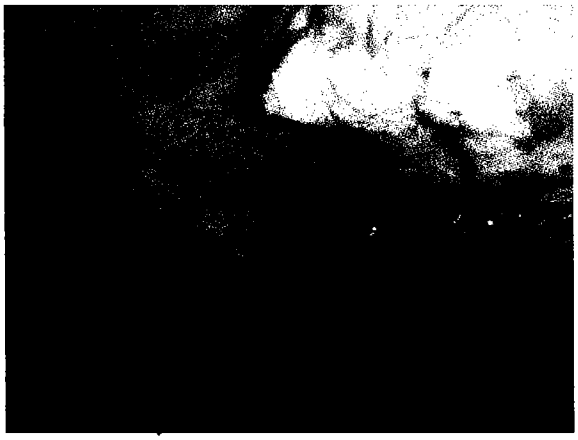
Added 4x4 beam is termite damaged and poorly supported



One of many termite damaged floor joists

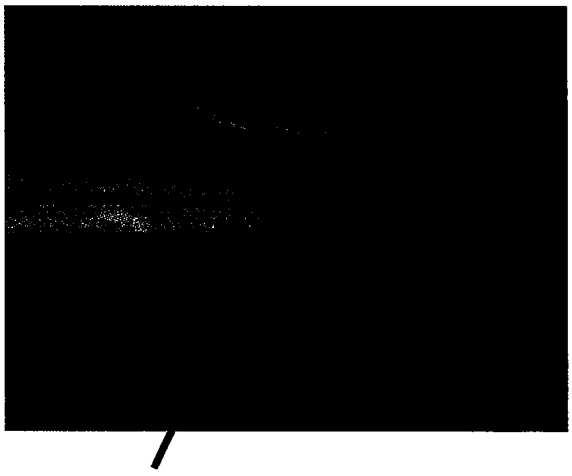


Termite damaged main beam with damage extending into ends of floor joists

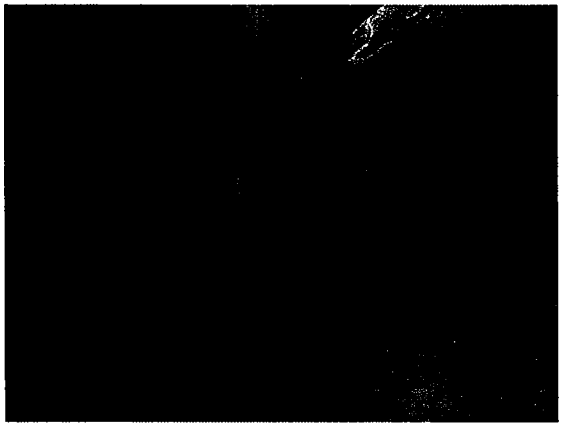


Crack in thin (less than 3/4" thick) ledger that supports floor joists.

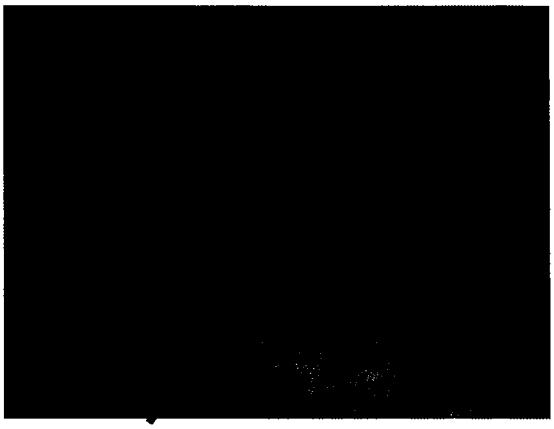
Mortar between bricks at fireplace foundation is in poor condition which will most likely require complete fireplace and chimney to be demoed and replaced



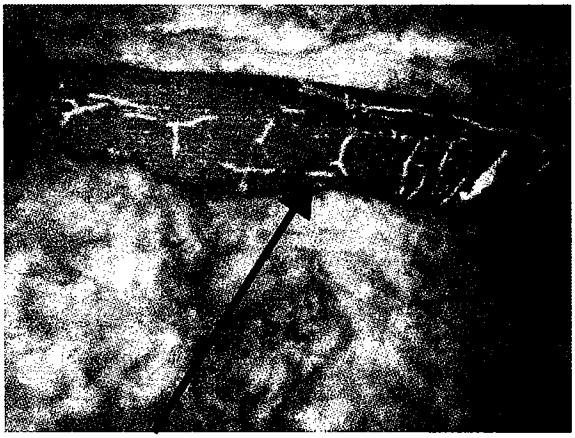
Poor attempts to sister termite damaged floor joists at front section of residence



Concrete block "foundation" for porch

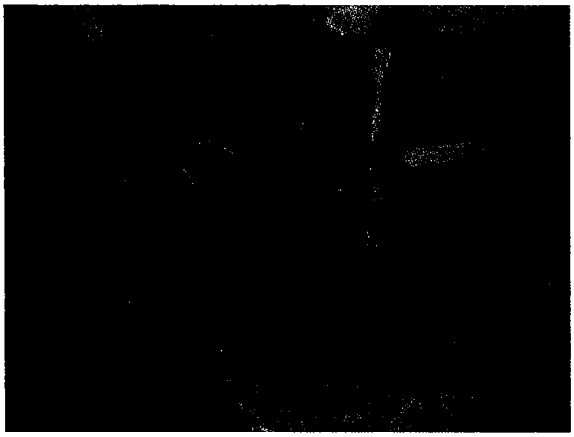


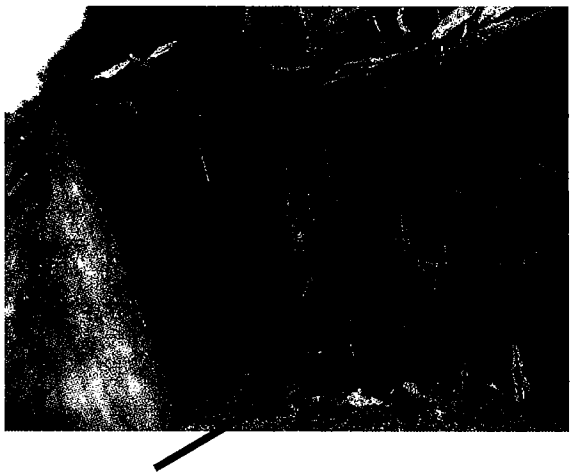
Front brick skirting has some concrete blocks below



Another termite damaged floor joist

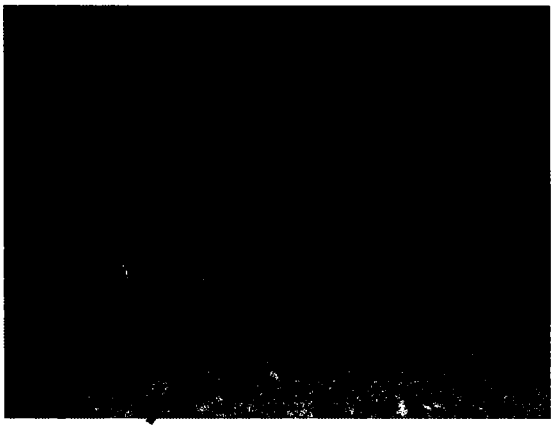
Blocking between first floor joist and rim joist. Rim joist appears to have been damaged and poorly repaired





Skirting and posts at right side near front. Posts, bracing and skirtings appear to have suffered rot and termite damage.

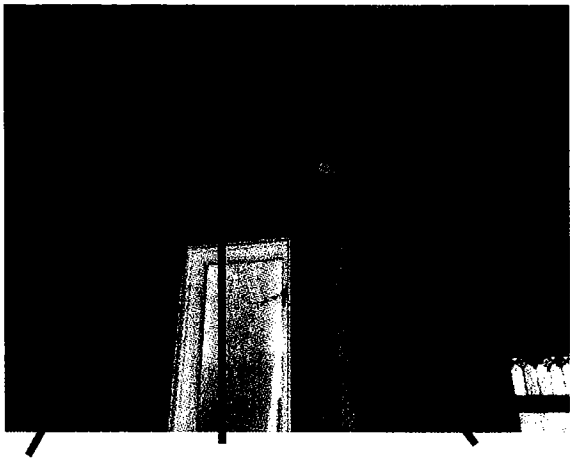
Concrete block "foundation" for porch has missing mortar

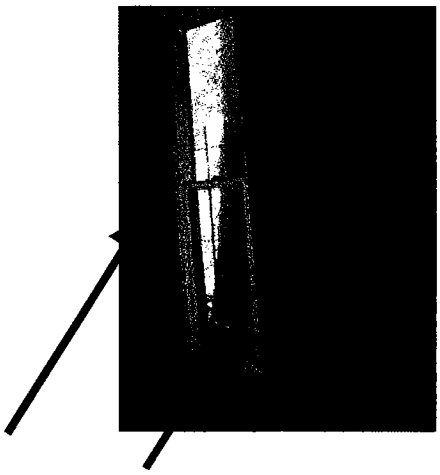


Added double 4x4 post to attempt to strengthen floor system

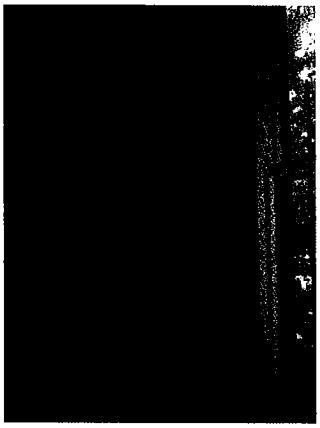
Another wood post under beam that runs from front to rear

None of exterior windows or doors or interior doors have headers above them to support ceiling joists or rafters

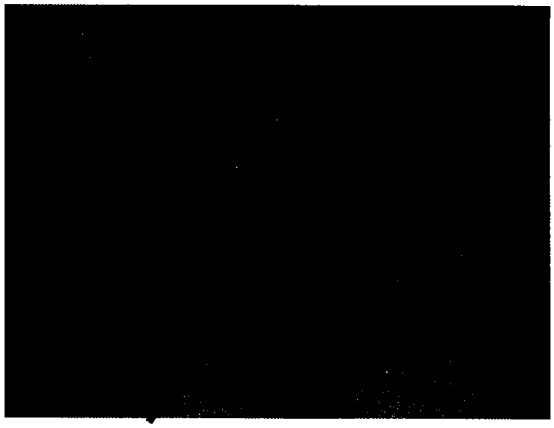




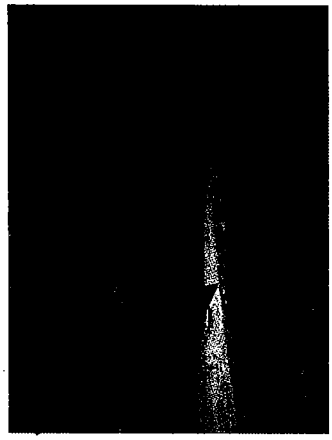
No header above window and studs at each side of window are termite damaged.



Termite damaged right corner

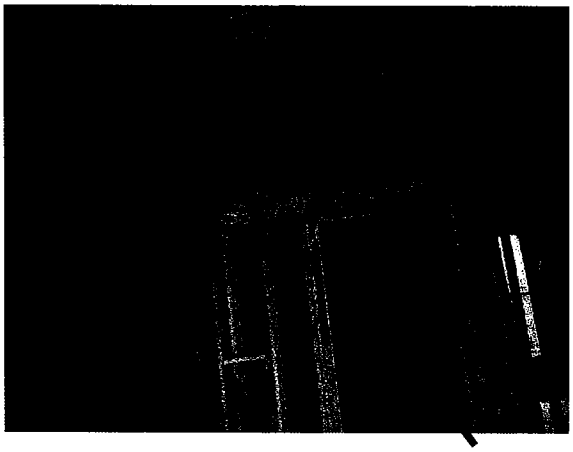


Termite damaged floor joists as viewed from above at right side near front

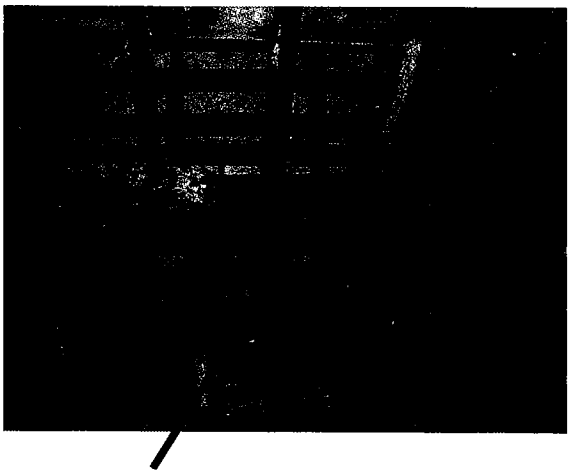


Termite damaged studs at right wall

Termite damaged studs at interior wall near front. See picture below.

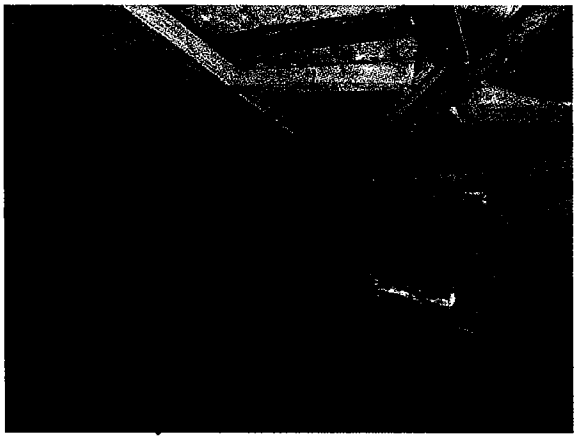


Past changing of framing at interior wall near front



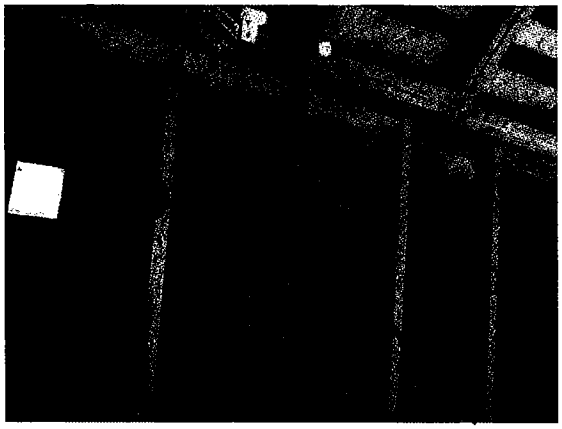
Studs have been removed from this load bearing wall

Original roofing was either wood shakes or tin. With the removal of the original roof and replacement with OSB over the existing slats and rafters and the use of asphalt shingles has added additional load to the minimally sized 2x4 rafters spaced at 24-inch centers

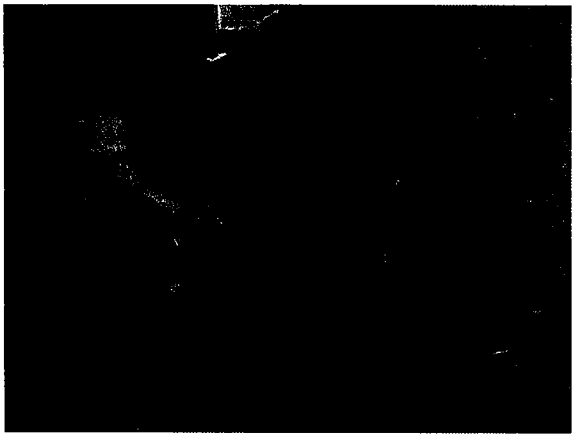


The various knee walls throughout the attic have placed unwanted loads on the ceiling joists, typical.

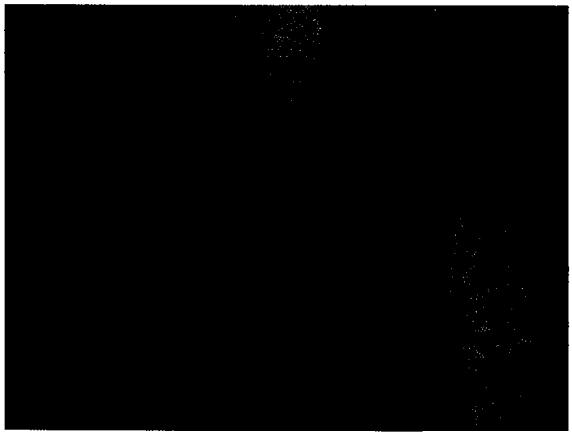
See caption above.



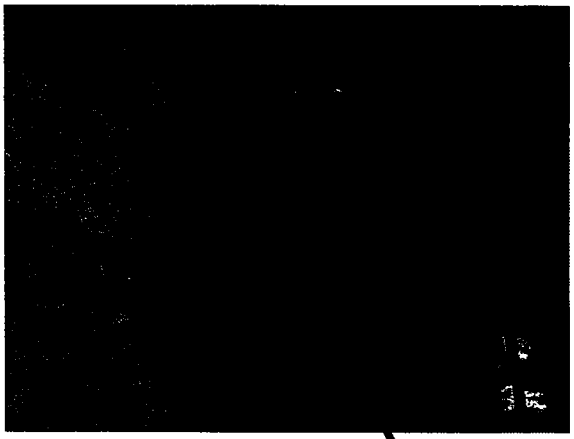
The various knee walls throughout the attic have placed unwanted loads on the ceiling joists, typical.

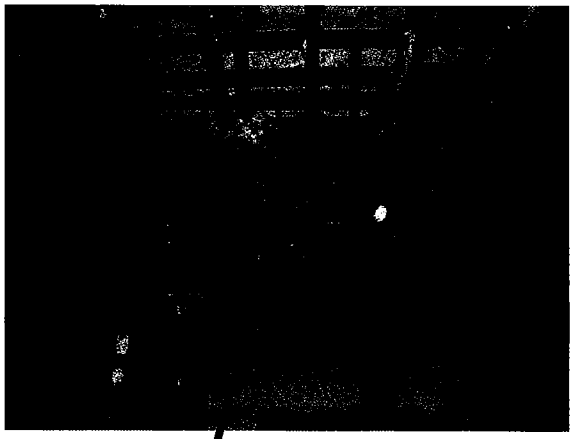


Winder tread at stairs does not meet code and neither does the width of the stairs. The stairs were an add-on as the attic was not meant to be a second floor.

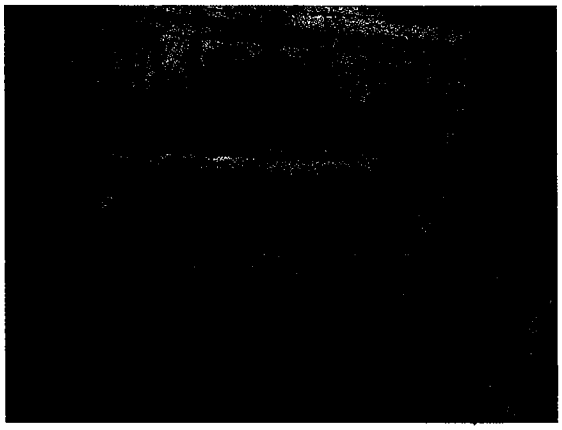


Missing header to support ceiling joists



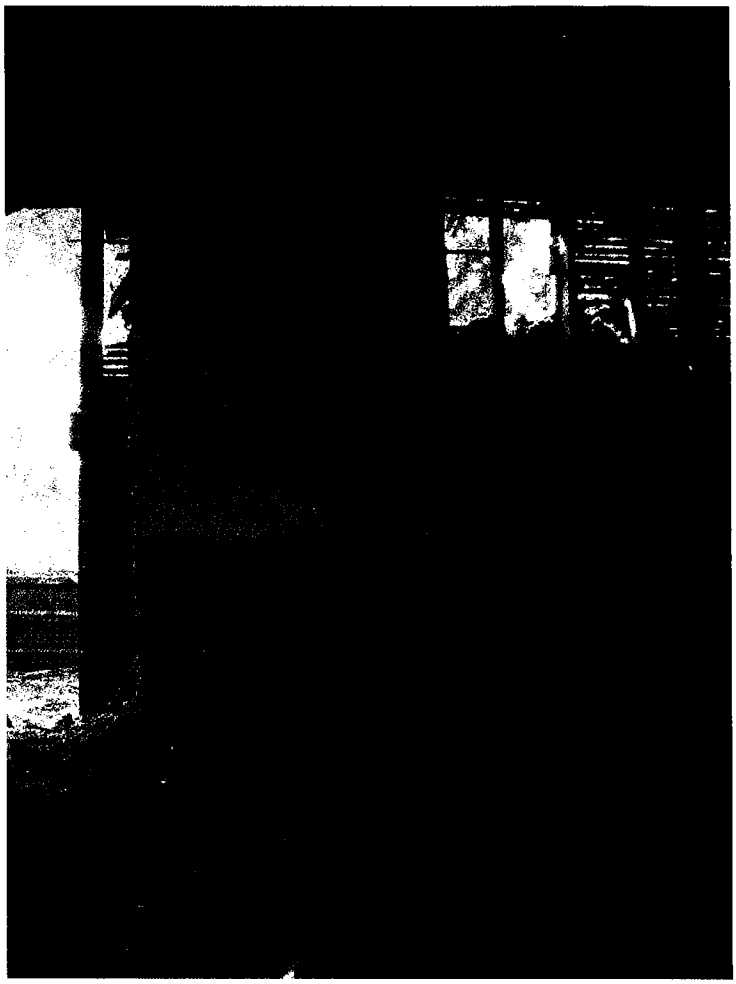


Insufficient header above doors, typical



Apparent termite damage even at ceiling joists.

Large tree is too close to right side of house



Rear fireplace needs significant repairs and would be better to be demoed and rebuilt

GEC
Garman Engineering Company, LLC

August 22, 2012

Hannah Custom Homes
Attn.: Chad Combs
1005 Trails End
Gallatin, TN 37066

Re: Structural Observations of Framing
Residence, 1112 Forrest Ave., Nashville

Dear Mr. Combs:

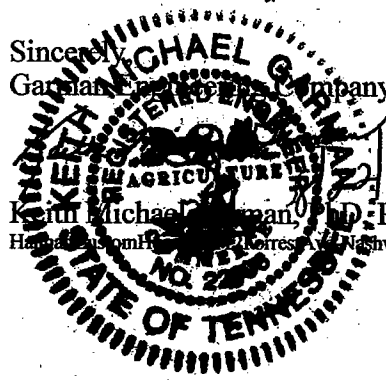
At your request, I met you at the above listed residence on August 21, 2012, to evaluate the framing of the structure. I understand the residence is in a historical area and was in the process of being remodeled. You wanted a structural evaluation to determine the suitability of the residence for a remodel.

The interior wall coverings had been removed and about 50% of the wall studs had structural damage from termite activity. A finger could be pushed through many of the studs. Based on observations of the subfloor framing where visible and of the severe sag of the floor system, about 75% of the floor joists have some type of structural damage from termite activity.

The residence does not have a permanent perimeter foundation. The foundation is post and beam construction with cedar posts, which have sunk and deteriorated at their bases. The residence is not structurally sound and is unsafe. There is no practical method to salvage the structure.

Please contact me if you have questions.

Sincerely,
Garman Engineering Company, LLC



Keith Michael Garman, Ph.D., PE, PG
Hannah Custom Homes-1112 Forrest Ave-Nashville

phone: 615-289-8260 | fax: 615-354-6310 | 1226 Old Charlotte Pike, Pegram, TN 37143 | www.gecnashville.com