

Greg A. Brooks, P.E.
2003 Mossy Cup
Lake Jackson, TX 77566

August 30, 2022
979-229-0068

PRELIMINARY FOUNDATION INSPECTION REPORT: JOB NO. 22-Galv235

LOCATION: 5816 Maco
Galveston, TX

DATE OF INSPECTION: August 25, 2022

OBSERVATIONS:

The structure consists of a single-story single-family house with an enclosed attic resting on a pier and beam foundation. Multiple additions have been added onto the structure since the original build. According to records provided by the homeowner, the original structure was built in 1846. It is not possible to bring this structure into compliance with current International Residential Code recommendations. Therefore, the purpose of this report is to propose modifications to repair existing damages and improve areas with gross deficiencies. Any windstorm uplift design work is beyond the scope of this report as the structure does not currently contain any uplift protection. Refer to this write up and the attached drawing for a list of notable deficiencies and a recommended repair plan. Repair recommendations are based on what can be determined from an interior walk through and a perimeter viewing from visible areas. Additional discovery work may be found once access under the structure is gained due to the limited viewing along the front and left perimeter. If additional repairs are identified, these should be addressed through a change order process. The repair plan is based on evaluating the joists and beam load against recommendations from the American Wood Council and Wood Manufacturers. Pier load recommendations are based on physical observation and weight transfer recommendations for clay-based soils prevalent in the Texas Gulf Coast area.

CONCLUSIONS:

The structure has adequate clearance for access and ventilation. Air flow between piers should be free flowing and blocked by lattice work to allow adequate ventilation. Air circulation is necessary to prevent premature wood rot. Existing floor joists in the original structure are true dimension 2"x8" construction. Most appear to be in acceptable shape. However, multiple floor joist issues need to be addressed in areas that are post original construction.

1. The floor joists on the front deck next to the front perimeter beam have been toenailed to the nailed end beam. Connect the 2"x6" end beam to the 6"x6" perimeter beam using a 5/8" galvanized bolt on 3' centers with a minimum of 3 bolts per 2"x6". Install a joist bracket to connect each floor joist to the 2"x6" bolted to the perimeter beam.
2. The floor joists supporting the front entry area have excessive rot. Furthermore, they are not supported by a beam as they have been toenailed into an existing beam at the same elevation. The damaged joists should be sistered with a new joist and the end of each joist should be supported by a beam beneath the joists.
3. The joists supporting the back bathroom/kitchen addition have been excessively notched and are splitting. Sister the split joists and install a 4"x6" beam under each joist without notching.

4. Evaluate porch joist and replace any that are rotten. The joists were Wet and discolored black at the time of inspection.
5. The 8'x8' laundry/kitchen area contains no beams and the joists have been toenailed to other joists. Replace with joist of a minimum 2"x6" construction supported with a beam on each end of joists. Replace random wooden post with cinder block piers resting on a concrete pier pads

All joists should be pressure treated wood of a minimum of 2"x6" construction. All sistered joists will have to be 2"x8" construction. Sixteen ft of 6"x6" beam will have to be replaced. Approximately 130' of new 4"x6" beam will have to be installed. See the attached drawing detailing the locations and reason for install. Any beam replaced should be pressure treated 4"x6" or 6"x6" construction. Existing original piers may be reused. However, the elevation of the piers make them unusable for most of the new beam installation because it placed the beam too high to support the joist. All random placed wooden posts not anchored in the ground should be replaced with cinderblock piers resting on concrete pier pads. All interior beams should be supported by 8"x8"x16" cinder block piers resting on a 16"x16"x4" concrete pad. Piers should be placed on a maximum of 8' centers and should support each beam joint. Termite shields should be placed at each pier location. Replace rotten decking and joists below front entry. Decking is soft from top and black on bottom. Level as needed to adjust door frames and reduce floor slope while minimizing excessive damage to the structure.

RECOMMENDATIONS:

Pier and Beam repair recommendations are detailed on the attached drawings. Once level, the new piers should be shimmed with treated or rot resistant support shims to hold the structure at the proper elevation. All work should be in accordance with the details and specifications shown on the attached drawing. These repairs should restore the floor joists to their intended location. As is customary with pier and beam foundations, this exercise may have to be repeated during the life of the structure. The engineer will not assume any liability for any cracks created during leveling or for any new cracks or damage to flooring or roofing which may appear during the leveling procedure. Please note that I shall not control or have charge of, and shall not be responsible for, construction means, methods, techniques, sequences, procedure of repair, health or safety programs or precautions contained with the work and shall not manage, supervise, control, or oversee construction. Further, I shall not be responsible for the acts or omissions of the contractor or other parties on the project. I have provided the service in a professional manner that meets generally accepted practices in residential construction. My entire warranty and liability will be limited to the payment received for my work performed.

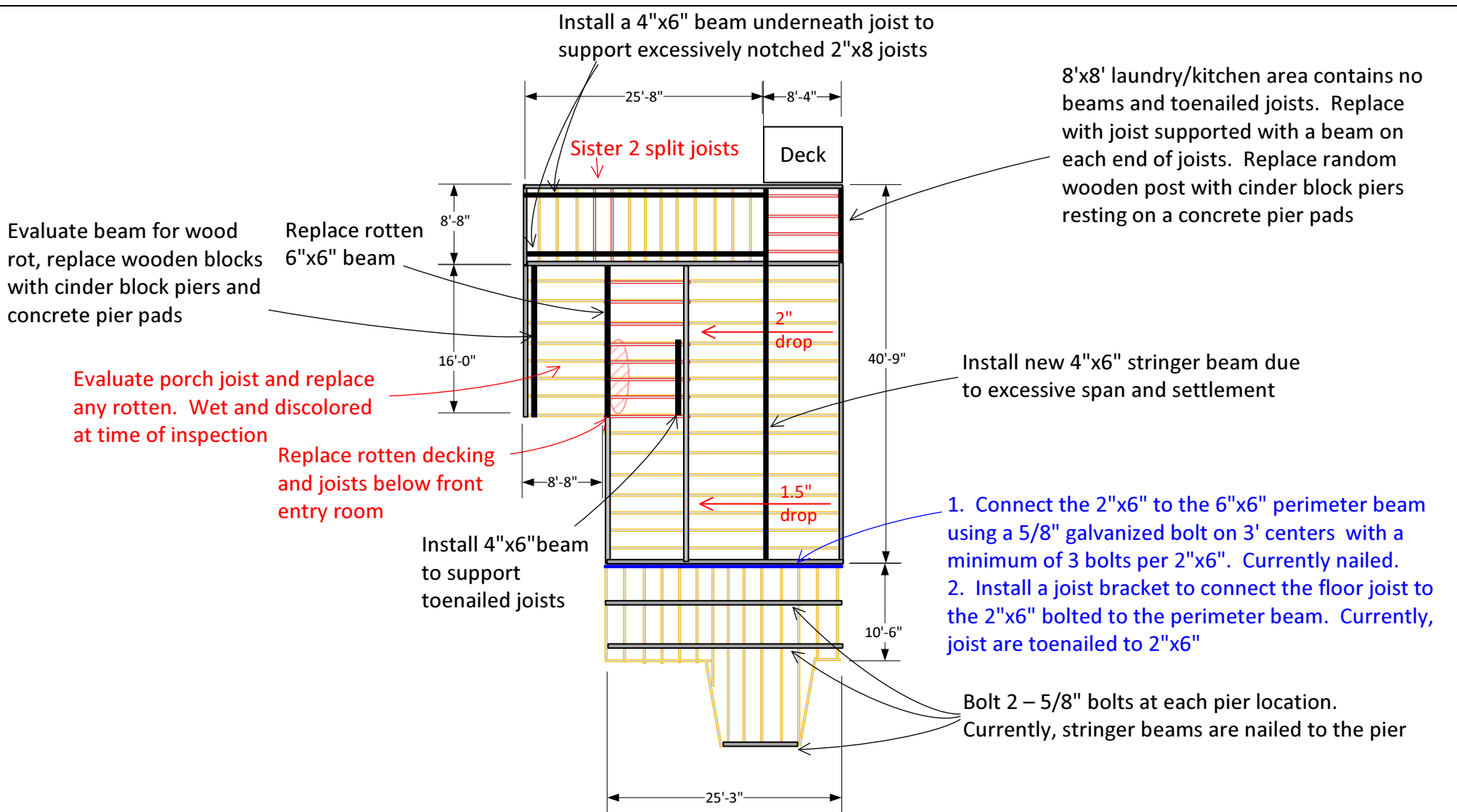
Respectfully submitted,



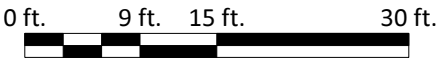
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F-15269

8-30-2022





- Existing 2"x6" floor joist on 24" centers
- Existing 4"x6" support beams
- New 4"x6" beam to be installed
- Concrete perimeter beam



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Proposed Repair Plan 5816 Maco St. Galveston, TX				
PO Box 2373 Freeport, TX 77542	SIZE L	JOB NO 22-Galv235	DWG NO 22-Galv235-01	REV 0
gregbrookspe@yahoo.com (979)341-9181	SCALE 1in = 15ft. 0in.	SHEET	1 OF 10	

Repair Notes

Foundation Clearance - The structure has adequate clearance for access and ventilation. Air flow between piers should be free flowing and blocked by lattice work to allow adequate ventilation. Air circulation is necessary to prevent premature wood rot.

Floor Joists & Beams - Existing floor joists in the original structure are true dimension 2"x8" construction. Most appear to be in acceptable shape. However, multiple floor joist issues need to be addressed in areas that are post original construction.

1. The floor joists on the front deck next to the front perimeter beam have been toenailed to the nailed end beam. Connect the 2"x6" end beam to the 6"x6" perimeter beam using a 5/8" galvanized bolt on 3' centers with a minimum of 3 bolts per 2"x6". Install a joist bracket to connect each floor joist to the 2"x6" bolted to the perimeter beam.
2. The floor joists supporting the front entry area have excessive rot. Furthermore, they are not supported by a beam as they have been toenailed into an existing beam at the same elevation. The damaged joists should be sistered with a new joist and the end of each joist should be supported by a beam beneath the joists.
3. The joists supporting the back bathroom/kitchen addition have been excessively notched and are splitting. Sister the split joists and install a 4"x6" beam under each joists without notching.
4. Evaluate porch joist and replace any that are rotten. The joists were Wet and discolored black at the time of inspection.
5. The 8'x8' laundry/kitchen area contains no beams and the joists have been toenailed to other joists. Replace with joist of a minimum 2"x6" construction supported with a beam on each end of joists. Replace random wooden post with cinder block piers resting on a concrete pier pads. All joists should be pressure treated wood of a minimum of 2"x6" construction. All sistered joists will have to be 2"x8" construction.

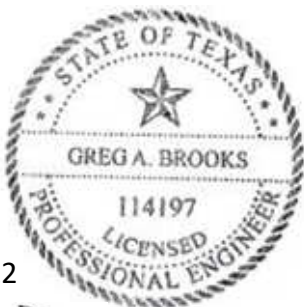
Perimeter & Interior Beams – 16' of 6"x6" beam will have to be replaced. Approximately 130' of new 4"x6" beam will have to be installed. See the attached drawing detailing the locations and reason for install. Any beam replaced should be pressure treated 4"x6" or 6"x6" construction.

Pier Footings & Spacing – Existing original piers may be reused. However, the elevation of the piers make them unusable for most of the new beam installation because it placed the beam too high to support the joist. All random placed wooden posts not anchored in the ground should be replaced with cinderblock piers resting on concrete pier pads. All interior beams should be supported by 8"x8"x16" cinder block piers resting on a 16"x16"x4" concrete pad. Piers should be placed on a maximum of 8' centers and should support each beam joint.

Termite Shields - Termite shields should be placed at each pier location

Decking - Replace rotten decking and joists below front entry. Decking is soft from top and black on bottom.

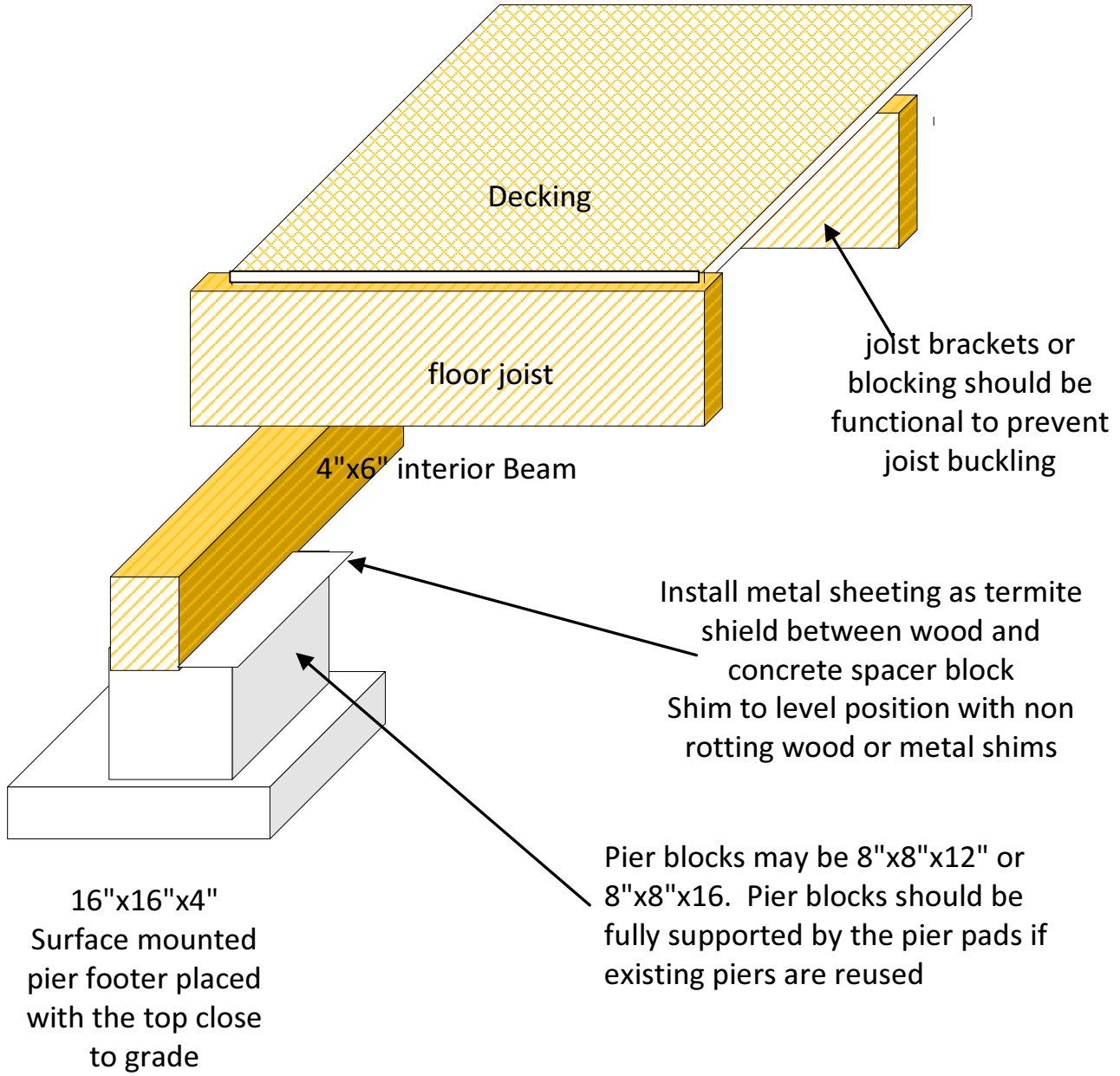
Leveling - Level as needed to adjust door frames and reduce floor slope while minimizing excessive damage to the structure.



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Pier Detail



16"x16"x4"
Surface mounted
pier footer placed
with the top close
to grade

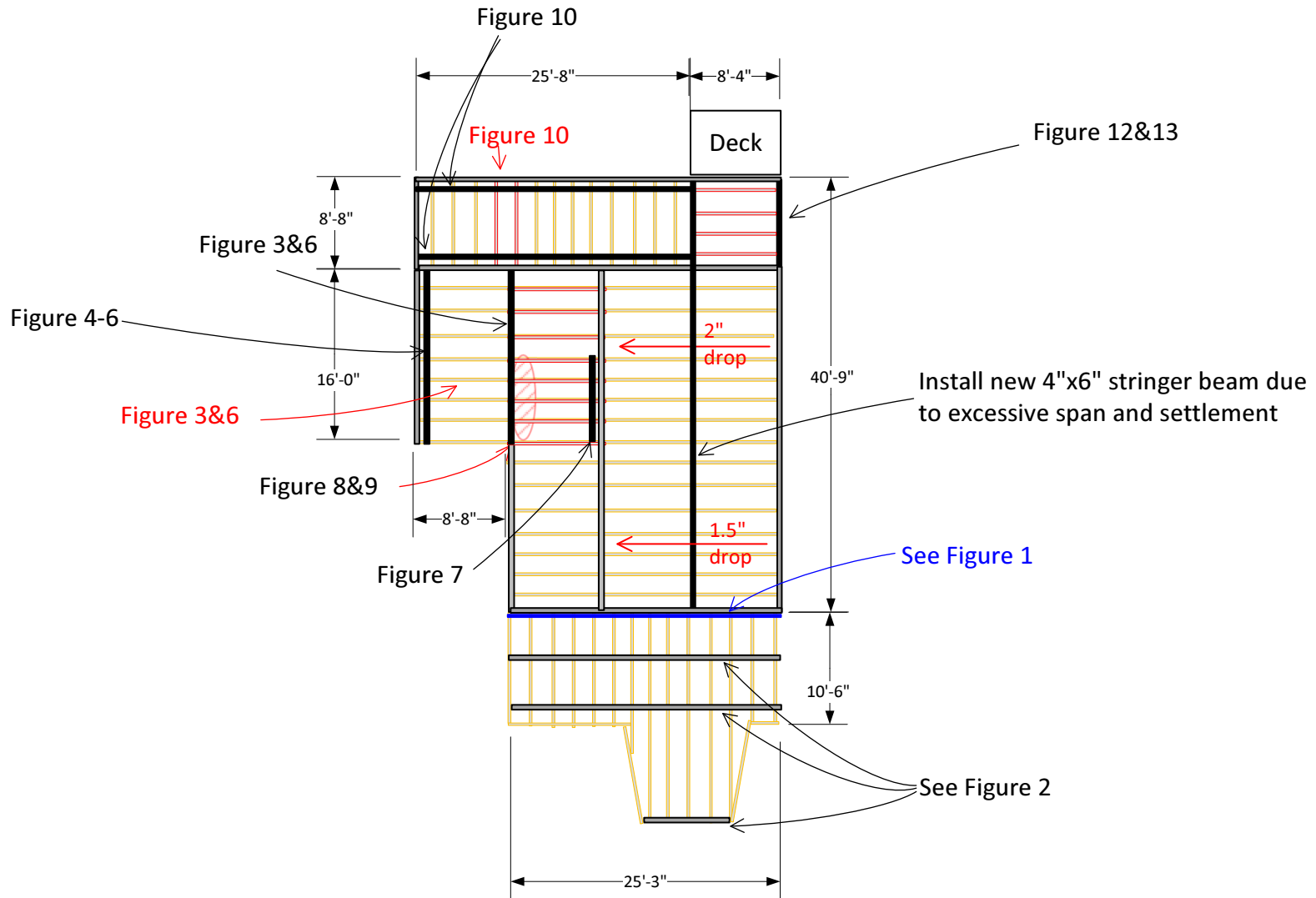
Install metal sheeting as termite
shield between wood and
concrete spacer block
Shim to level position with non
rotting wood or metal shims

Pier blocks may be 8"x8"x12" or
8"x8"x16. Pier blocks should be
fully supported by the pier pads if
existing piers are reused



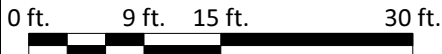
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L	22-Galv235	22-Galv235-03		0
SCALE	1in = 15ft. 0in.	SHEET	3 OF 10	



- Existing 2"x6" floor joist on 24" centers
- Existing 4"x6" support beams
- New 4"x6" beam to be installed
- Concrete perimeter beam

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Front Porch



Figure 1:

1. Connect the 2"x6" to the 6"x6" perimeter beam using a 5/8" galvanized bolt on 3' centers with a minimum of 3 bolts per 2"x6". Currently nailed.
2. Install a joist bracket to connect the floor joist to the 2"x6" bolted to the perimeter beam. Currently, joist are toenailed to 2"x6"



Figure 2:

Bolt 2 – 5/8" bolts at each pier location.
Currently, stringer beams are nailed to the pier



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Figure 3:

- Replace rotten 6"x6" interior beam.
- Evaluate porch joist and replace any rotten. Joists were Wet and discolored at time of inspection



Figure 4&5:

- Evaluate beam for wood rot, replace wooden blocks with cinder block piers and concrete pier pads

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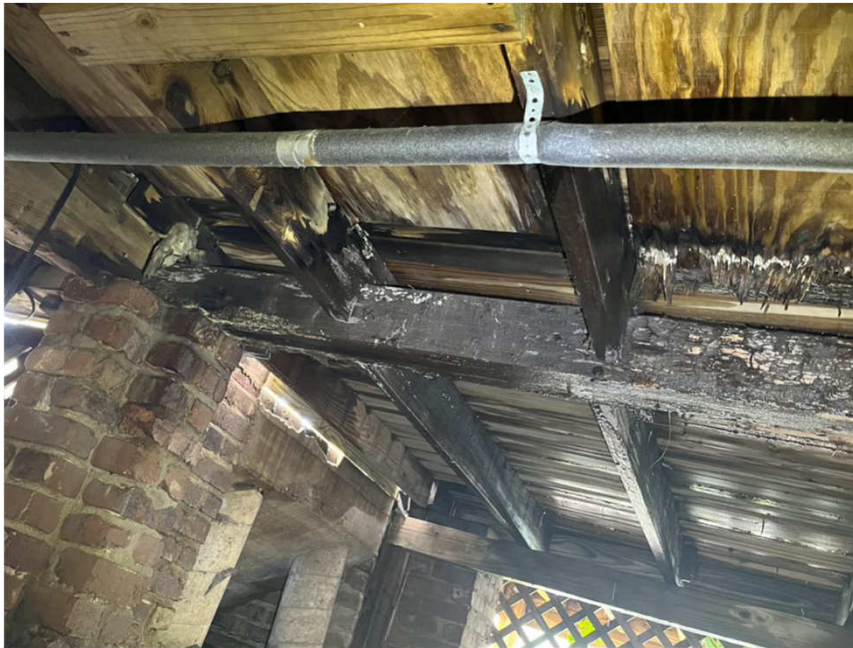


Figure 6:

- Replace rotten 6"x6" interior beam.
- Evaluate porch joist and replace any rotten. Joists were Wet and discolored at time of inspection



Figure 7:

- Install 4"x6" beam to support toenailed joists

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Decking Under Entrance



Figure 8&9:
Replace rotten decking and joists below front entry room



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Figure 10:
Install a 4"x6" beam underneath joist to support excessively notched 2"x8 joists. Sister notched joists that have split as shown in Figure 10.

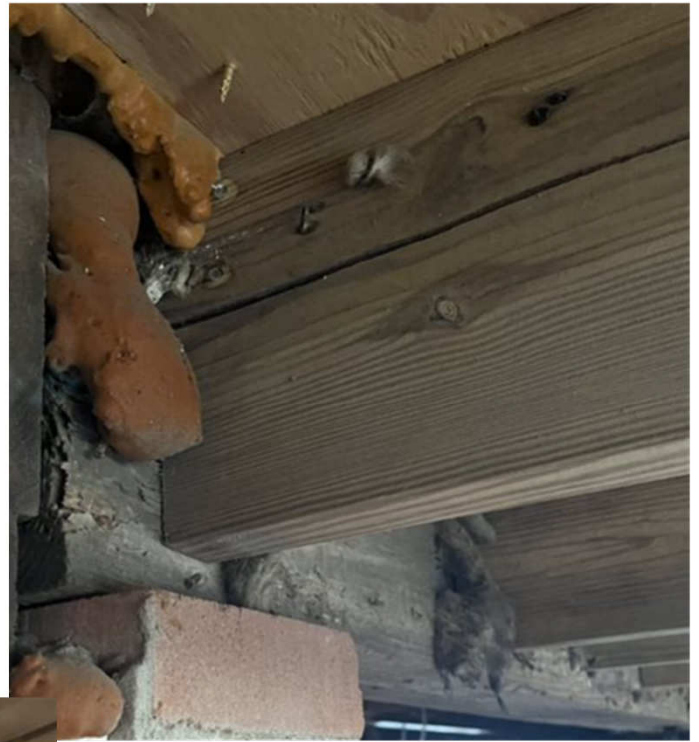


Figure 11:
The original joists re notched, however since the joists are true 2"x8" construction, they appear to hold up to the stress without splitting.

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SCALE	1in = 15ft. 0in.	SHEET	9 OF 10



Figure 12&13:
 8'x8' laundry/kitchen area contains no beams and toenailed joists. Replace with joist supported with a beam on each end of joists. Replace random wooden post with cinder block piers resting on a concrete pier pads

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