CROSSTOWN
STRUCTURAL ENGINEERING | HOME & FOUNDATION INSPECTION

Adam A. Green, P.E. (FL & TX), MBA
Tampa: (813) 702 -3398 | Dallas/Ft. Worth (469) 751-7694
www.CrosstownEngineering.com

Date: April 25, 2022

Attention: Arnulfo Perez (via arnulfoperez7@gmail.com)

Subject: Pre-Repair Foundation Repair Evaluation
Block and base Foundation
100 South Cottonbelt Avenue, Wylie, TX

Good Afternoon:

Crosstown Engineering (CE) was retained to inspect the subject foundation and to provide an opinion regarding the performance of the foundation. This report provides our reasonable professional opinion of the condition of the foundation on the date of our inspection and does not take into consideration any changes in the condition of the foundation or soils after that date. The contents of this report supersede any verbal comments made regarding the structure before, during or after the inspection and this report was prepared for exclusive use of the person or persons this report was prepared for and we do not have any obligation or contractual relationship to any other party other than the party this report was prepared for. Observations for compliance with any code or specification other than those explicitly stated are not included.

Scope of Work:

The subject foundation was visually inspected in areas that were accessible at the time of the inspection. The opinions provided within this report are based on the experience and judgment of the inspector and the information provided at the time of the inspection. This report also gives engineering advice with regard to the best and most economical repair method assuming normally expected subsurface conditions and conventional construction methods. It is known to all educated engineers with knowledge of the active soil supporting the structure that a full repair plan would include the underpinning of the entire structure and is not economically feasible due to the cost vs. benefit and the risk of resulting damages.

Scope of Work Limitations:

This report is for informational purposes only and is not intended to provide a detailed inventory of defects or a technical evaluation of the structure, drainage system or the overall property. The inspection excludes plumbing tests or procedures, verification of previous foundation repairs, framed superstructure, detached buildings, privacy or retaining walls, general site drainage away from the structure, material and soil sampling/testing, and verification of concrete reinforcement or knowledge of the location of interior grade beams, boxed structural members not in plain sight or previous repair work.

The client or individual ordering this report agree that Crosstown Engineering is not responsible for knowledge of the subsurface conditions without extensive geotechnical investigation including on-site drilling or testing of samples.

Adam A. Green, P.E. (FL & TX), MBA
Tampa: (813) 702 -3398 | Dallas/Ft. Worth (469) 751-7694
www.CrosstownEngineering.com

The future performance of this foundation cannot be predicted due to variables out of the control of the inspector. Therefore, this report does not predict or warrant the future performance of the subject foundation and the reader is encouraged to read the entire report.

Document Review:

Documents were not provided for review. If existing piers are shown in the limited repair plan, their locations were provided by the client and are approximated. We do not certify their performance or existence. If the reader would like to verify their presence, they must contact the owner or contractor to obtain an engineering certificate for them.

General Observation:

For the purposes of this report directions will be described using the terms left, right, front, and back with the front referring to the side of the structure indicated on the limited repair plan.

The structure is one story tall with a block and base foundation. The primary structural system of the structure is a wood framed system with exterior wood siding and interior drywall with various finishes. The foundation was exposed during our inspection.

Grading, Drainage, Erosion and Vegetation Observations:

The terrain immediately surrounding the structure was visually observed during the inspection. We observed the following:

- The gutter system is inadequate and needs improvement.
- The drainage system is inadequate and needs improvement.
- The terrain is landscaped with grass, several trees, and some shrubbery. Some trees and/or shrubs are close to the foundation.

Visual Observations:

Drywall cracks, window separations, frieze board separations, damaged joist, damaged beam, ponding, and a wet understructure were observed. Based on our observations of the structure, the structure's physical damage and review of the map, we believe the structure has experienced seasonal foundation movement over the life of the structure, resulting in differential movement of the block and base foundation.

Adam A. Green, P.E. (FL & TX), MBA
Tampa: (813) 702 -3398 | Dallas/Ft. Worth (469) 751-7694
www.CrosstownEngineering.com

Foundation Repair Recommendations:

We recommend performing the following in the approximate locations of the structure as indicated on the limited repair plan:

- Obtaining a framing inspection prior to any repairs.
- Installing a full guttering system with downspout extensions.
- Regrading the perimeter of the structure to pitch water away from the foundation.
- Using fans to dry the crawlspace area after the perimeter is regraded.
- Installing 300 LF of beam.
- Adding a single 2x6 to existing 2(2x6) beams to make triple.
- Installing 1,152 LF of joists at 15" spacing so they run on top of beams cohesively from one end to the other.
- Installing 156 LF of rim joist.
- Resetting/re-shimming the entire block and base portion of the foundation with steel to improve leveling.

The purpose of the installation is to provide support and mitigate downward movement in the areas of the installation. Please see the limited repair plan for more information.

Maintenance Opportunities:

We recommend pre-lift and post-lift plumbing tests be performed on the sewer and potable plumbing lines. The results of the tests should be immediately provided to our office.

Maintaining a fully functioning gutter system will minimize ponding, soil loss and erosion, and will help control seasonal movement near the foundation. The gutter system should direct storm-water discharge away from the foundation through downspouts to a well-drained area that is graded away from the foundation. Optimally, we recommend the gutter system discharge via in-ground solid pipe to a low-lying area far away from the foundation.

Vegetation maintenance and a foundation and yard-watering program will also help control seasonal movement. Maintaining consistent moisture levels in supporting soils at all times of the year is necessary. It is important that the soils be stabilized and maintained with grass or ground cover around the perimeter of the structure to prevent erosion and an exposed or improperly embedded foundation. Large to medium-sized trees, and even large or numerous shrubs, growing too close to a foundation can dramatically effect the moisture content of the soils within the zone of influence beneath the structure. Root systems extract large quantities of water from underlying soils and result in large volumetric changes in the soils (shrinkage). As the tree absorbs water from the soil and the soil volume decreases, the foundation will settle in unsupported. If problematic roots are observed, we recommend removal or installation of tree root barriers.

Grading of the soils around the foundation is a critical element to your foundations health. Sloping the soils away from the home and preventing water from ponding near the foundation is needed to prevent soil "heave". If ponding is noticed near the foundation during the rainy season, consult with an engineer or a drainage contractor immediately. Over-saturated soils can cause "heave" or settlement and contribute to foundation movement.

The purpose of the pier installations and block and base work is to support the structure properly and improve elevations in areas of differential settlement. It is understood that structures of this age and type will not be completely level. Any wood shims and inappropriate wood pad/block elements shall be replaced with steel shims and the appropriate concrete pad and blocks. All deteriorated, rotted, cracked or twisted wood beams, joists, subfloor or sill plates shall be removed and replaced. The contractor shall sister beams and joists as appropriate where spans are greater than 7 feet. Additional pads and blocks are recommended for beam spans greater than 7 feet between existing

Adam A. Green, P.E. (FL & TX), MBA
Tampa: (813) 702 -3398 | Dallas/Ft. Worth (469) 751-7694
www.CrosstownEngineering.com

pad/blocks. Although Crosstown was able to visually identify the majority of the wood members, it should be understood that some areas of the crawlspace were difficult to access for a visual inspection and deteriorated wood is not easily identified upon visual observation. As a result, the contractor may identify additional wood members that need replacement. This report identifies the minimum foundation repairs necessary. Please see the repair plan for more information.

Expectations of the Limited Foundation Repairs:

The proposed limited repair plan is intended to provide a reasonable repair to improve the performance of the foundation and is not intended to level the foundation. The contractor shall determine the amount of elevation correction needed based on the reaction of the structure during the lift in order to minimize damages and additional stress.

Because the structure has endured foundation movement and framing distress, residual differential elevation and perceptible floor slope or some leaning door frames/windows, other re-occurring damages, and noticeable issues may remain following the foundation repairs.

The soils beneath and surrounding the structure are known to shrink and swell as the seasonal soil moisture content fluctuates. Moving forward, we anticipate that some cracks in the interior and exterior walls will surface due to seasonal movement within the soils, even after foundation repair. Periodic repair of this type of cracking may be needed.

Adam A. Green, P.E. (FL & TX), MBA
Tampa: (813) 702 -3398 | Dallas/Ft. Worth (469) 751-7694
www.CrosstownEngineering.com

Disclaimer:

The fees collected are for this report and inspection only and do not include additional services. Additional engineering services such as construction compliance inspections or post-repair inspections are available at an additional cost. A request for a construction compliance inspection must be made in a timely manner before commencement of repair work. Otherwise, we accept no responsibility for the proper execution of the repairs. Crosstown Engineering will only perform the post-repair inspection if the proper paperwork is provided at the time of the request. The paperwork should include the type of piling installed, the piling installation depth, the final pressure and the final scope of work. If the scope of work is to be altered by the contractor, we must be notified prior to installation.

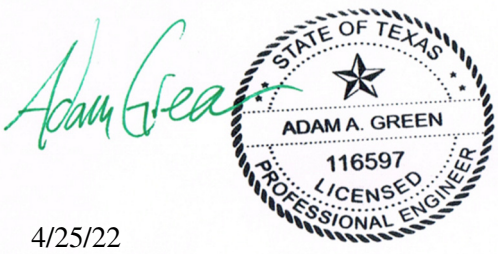
It is known to educated professional engineers that the soils in this area are subject to movement due to expansion, contraction or densification of the soils, etc. This soil movement could possibly cause the foundation to move after the remediation plan has been implemented and may impact the stability of the foundation and cause damage.

We do not warrant the future performance of the subject foundation and the reader is urged to review this entire report. The limit of liability is limited to the fee paid for this opinion. No further agreement shall be made, altered, or varied except by written instrument. Diligent foundation care to maintain consistent soil conditions along the perimeter should reduce further problems after the recommendations within this report have been implemented. However, seasonal moisture variations, water leaks, erosion and other factors may affect the stability of the foundation and put it in danger of further damage.

Neither Crosstown Engineering, its sub-contractors, nor Adam Green, P.E., are responsible for liability to the owner or others for acts or omissions of the contractor to carry out the repairs in accordance with their agreement or for the construction means, methods, techniques, sequences, procedures or the safety precautions incident thereto. The contractor is solely responsible for the warranty of the work performed in accordance with their agreement.

Please see the pier specifications (if provided) and limited repair plan for more information.

Sincerely,



Crosstown Land Development Services
Texas Engineering Firm (F-15944)

Adam Green, P.E., MBA
Professional Engineer (TX #116597) 4/25/22

Adam A. Green, P.E. (FL & TX), MBA
Tampa: (813) 702 -3398 | Dallas/Ft. Worth (469) 751-7694
www.CrosstownEngineering.com

DISCLOSURE & DISCLAIMER

It is known to knowledgeable professional engineers that the soils in this area are subject to movement due to expansion, contraction or densification of the soils etc. This soil movement could possibly cause the foundation to move after the remediation plan within the attached report has been implemented and may impact the stability of the foundation and cause damage.

NO WARRANTY IS EXPRESSED OR IMPLIED BY THIS ENGINEER AS TO THE PERFORMANCE OF THIS FOUNDATION OR THE REPAIRS THERETO. Diligent foundation maintenance to maintain consistent soil conditions along the perimeter should reduce further problems after the recommendations within this report have been implemented. However, seasonal moisture variations, water leaks, erosion and other factors may affect the stability of the foundation and put it in danger of further damage.

REPORT LIMITATIONS

This report is written for informational purposes only and is not intended to be a detailed technical evaluation of the property or an inventory of defects. The opinions expressed in this report are based on a visual evaluation of current conditions observed at the time of the inspection. THERE IS NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THIS ENGINEERING REPORT.

The information in this report supersedes any verbal comments, expressed or implied, made by Crosstown Land Development Services or its principals, agents or employees. The client agrees that neither CLDS nor its employees or owners will be responsible for:

1. Knowledge of the subsurface conditions without extensive geotechnical data obtained from onsite drilling and testing of the recovered samples,
2. Knowledge of cracks, vertical differential displacement of floors without uncovering of the floor by the client; and
3. Any other element such as joists or beams and other structural members that is boxed or otherwise not readily available to CE for viewing, and releases CE from any liability attributable to such knowledge or conditions.

Any prescribed repair or maintenance plan detailed by this report is based on observations of apparent performance of the facility at the time of this structural survey. Compliance with any code or specification other than as expressly noted is specifically excluded.

The provided Floor Map and resulting recommendations are based on conditions as they now exist and DOES NOT IMPLY OR WARRANT THAT OTHER PROBLEMS AND OR AREAS MAY NOT MANIFEST IN THE FUTURE.

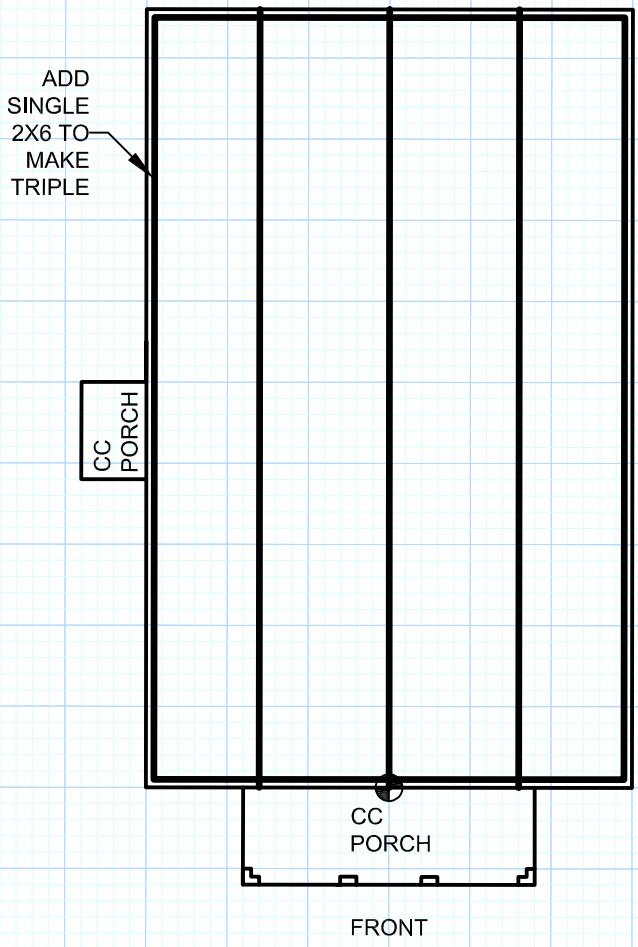
This report was prepared expressly for the client and expressly for the purposes indicated by the client. Permission for use by any other person for any purpose, or by the client for different purpose is denied unless otherwise stated in writing by CE.

CE SHALL HAVE NO LIABILITY FOR ACTS OR OMISSIONS BY THE CONTRACTOR OR HIS SUBCONTRACTORS PERFORMING WORK ON THIS PROJECT, OR THE FAILURE OF THE CONTRACTOR TO PERFORM THE WORK IN ACCORDANCE WITH THE REPAIR PLAN. CE IS NOT RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE OR PROCEDURES OR THE PRECAUTIONS INCIDENTAL THERETO.

CE expressly DISCLAIMS ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE and the client expressly disclaims that it has contracted for or received any warranty of fitness for a particular purpose with respect to this report. THE REPORT UNDER THIS AGREEMENT IS THE OPINION OF CE AND THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS AGREEMENT.

CONSTRUCTION NOTE: IF INTERIOR PILING LOCATIONS ARE SHOWN ON THIS MAP THEY ARE APPROXIMATED AND ARE LOCATED WITHOUT KNOWLEDGE OF THE LOCATIONS OF THE INTERIOR GRADE BEAMS. THE CONTRACTOR SHALL MAKE FIELD JUDGEMENTS BASED OFF OF THEIR GRADE BEAM INVESTIGATIONS AND OBSERVED SLAB QUALITIES TO FIELD LOCATE THE FINAL INTERIOR PIER LOCATIONS. FINAL SCOPE CHANGES SHALL BE APPROVED BY THE ENGINEER OF RECORD.

PLEASE NOTE: IF EXISTING PILINGS ARE SHOWN ON THIS MAP, THEIR LOCATION WAS PROVIDED BY THE CLIENT AND IS APPROXIMATE. CE DOES NOT CERTIFY THEIR PERFORMANCE OR EXISTENCE. IF THE READER WOULD LIKE TO DETERMINE IF THEY ARE ACTUALLY PRESENT, THEY MUST CONTACT THE OWNER OR CONTRACTOR TO OBTAIN AN ENGINEERING CERTIFICATE FOR THEM.



- OBTAIN A FRAMING INSPECTION PRIOR TO ANY REPAIRS.
- INSTALL A FULL GUTTERING SYSTEM WITH DOWNSPOUT EXTENSIONS.
- REGRADE THE PERIMETER OF THE STRUCTURE TO PITCH WATER AWAY FROM THE FOUNDATION.
- USE FANS TO DRY THE CRAWLSPACE AREA AFTER THE PERIMETER IS REGRADED.
- INSTALL 300 LF OF BEAM.
- ADD A SINGLE 2X6 TO EXISTING 2(2X6) BEAMS TO MAKE TRIPLE.
- INSTALL 1,152 LF OF JOISTS AT 15" SPACING SO THEY RUN ON TOP OF BEAMS COHESIVELY FROM ONE END TO THE OTHER.
- INSTALL 156 LF OF RIM JOIST.
- RESET/RE-SHIM THE ENTIRE BLOCK AND BASE PORTION OF THE FOUNDATION WITH STEEL TO IMPROVE LEVELING.

LIMITED REPAIR PLAN *NOT TO SCALE - ALL LOCATIONS APPROXIMATE*

PRE-LIFT ELEVATIONS *BY CE* (_____) *0.0* POST-LIFT ELEVATIONS *BY CE* (_____) **(X.X)**

LEGEND

ELEVATION BASEPOINT	PROPOSED PAD/BLOCK	EXISTING PIER
PROPOSED BEAM	EXISTING PAD/BLOCK	PROPOSED BREAKOUT PIER
EXISTING BEAM	PROPOSED PIER	EXISTING BREAKOUT PIER

4.25.22

STATE OF TEXAS
ADAM A. GREEN
116597
LICENSED
PROFESSIONAL ENGINEER

CROSSTOWN ENGINEERING | FOUNDATION REPAIR

CROSSTOWN ENGINEERING

TBPE FIRM F-15944 - WWW.CROSSTOWNENGINEERING.COM

(469)-751-7694 - DALLAS METROPLEX

100 SOUTH COTTONBELT AVENUE, WYLIE, TX