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16 January 2024

ACE House Leveling & Repair
8675 Broussard Rd.
Beaumont, TX 77713

REFERENCE: FOUNDATION REPAIR INSPECTION

**SITE: 1428 Avenue F
Nederland, Texas**

Dear Sir or Madam:

Proceeding upon your request, I made a visual inspection of the repair site. Following in this report are my findings, discussion, conclusions, recommendations, and maintenance considerations where applicable.

SCOPE OF INSPECTION

Perform a visual inspection of the foundation repairs at the site. ACE House Leveling & Repair installed fifteen (15) - drilled shafts along the left side front, front, right, and right rear portions of the residence.

SITE DESCRIPTION

The residence is of frame construction and has an ordinary slab.

DISCUSSION

During a year, seasonal changes occur. Southeast Texas is home to a particular type of soil that is greatly affected by moisture content. This soil's volume shrinks during dry conditions and swells during wet conditions. This soil's volume change generates pressures that will move the foundation with it. The exposure of the foundation, location of trees and their type, and other unseen variables will greatly contribute to the rate that the soil dries and changes in volume. These differences in shrinking and swelling around the foundation create differential movement that will flex the foundation, sometimes to the point of failure.

By controlling the moisture content of the soil of the foundation, it is possible to limit the degree of differential change and therefor limiting the flexure. How many times the foundation can flex is dependent on its strength, construction quality and other unknown variables. Foundations of considerable age have more opportunities for these changes and therefor a higher probability for foundation problems or failures. A well-maintained foundation can withstand all of these problems and provide long use.

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CONCLUSIONS

Based upon the visual inspection and indicators listed above, I have come to the following conclusions. The foundation piers were installed properly at the designated locations. The repair system furnished by ACE House Leveling & Repair meets the specifications necessary for the repairs.

RECOMMENDATIONS

Maintenance of a foundation is a sensible method of minimizing foundation movement due to shrinking and swelling soils. According to the best information available, these maintenance considerations will aid in controlling the soils moisture content and minimizing differential movement. However, these suggestions do not guarantee or provide a warranty against future foundation related problems. It is my opinion that drilled shafts or bell footings could be required in the future for the remainder of the foundation, but not at the time of this report.

MAINTENANCE CONSIDERATIONS

By following these suggestions as well as using good sense it is possible to maintain a foundation for extended use.

- ◆ Good and uniform drainage around the foundation should be supplied. This will aid in controlling the rate the soil dries. However, do not let the soil completely dry out. The soil should remain moist just below the surface. Uniform drying limits differential movement therefor limiting foundation flexure. Protect against standing water at any location around the foundation.
- ◆ Do not plant trees too close to the perimeter of the foundation, especially ones that will grow large. Oak trees especially should not be planted close to foundations. Generally, the roots will extend out as far as the limbs. If trees are too close to the foundation, their roots will grow under and sometimes through the foundation. The roots will pull moisture from beneath the foundation, changing the soils volume and creating differential movement. Trees have been known to completely destroy foundations. Root barriers are available to aid in protecting the foundation. If an existing tree is already too close, its removal would greatly increase the chances against future foundation related problems.

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- ◆ Exposure also plays a role in foundation related problems. There are many variables that can contribute to non-uniform drying and ultimately differential movement. A few variables that one can be aware of are shading from trees, direct sunlight, patio paving, driveways, landscaping, and downspouts.

LIMITATIONS

This report and opinions made, cover existing conditions as observed during a site visit. No responsibility is taken for unseen defects. This report is not a guarantee or warranty of the foundation, its design, or soil conditions. No person outside this office had any influence on opinions made during this report and our maximum liability is limited to the fee paid. Contact our office if these limitations are not acceptable.

I appreciate the opportunity to be of service to you. If any questions arise, please do not hesitate to contact me.

Sincerely,

Ted B. Harp Jr., P.E., RPLS

