



August 9, 2013

DELIVER VIA EMAIL

Centex Homes
12301-A Riata Trace Parkway, Building 2
Austin, Texas 78727
Attn: Spencer McGhie

RE: Level B Investigation
102 Mesa Drive
Austin, Texas
Job No.: 1314006000.0100
Firm No.: 002685

Dear Mr. McGhie:

Scope:

On August 6, 2013 we conducted a structural evaluation of the above referenced address. We visually observed the interior and exterior finish materials around the property. A slab elevation survey was performed using a Pro-Level Manometer and surface contours were developed based on that survey. We used the contours and our observations to evaluate the performance of the foundation. We consider this evaluation a Level B investigation, as defined by ASCE Texas Section's "*Guidelines for the Evaluation and Repair of Residential Foundations*", the publication can be ordered through the publication section of the Texas Section's website, www.texasasce.org.

Sources of Information and Data:

The following sources of information were used as a basis for this report:

- Review, visual observation and pictorial baseline taken of the interior and exterior of the house.
- Conducted a finish slab elevation survey with a Pro-Level Manometer and developed slab surface contours, August 6, 2013
- ASCE-TX Section Doc. No. 4.6.5.2.2, "*Guidelines for the Evaluation and Repair of Residential Foundations*"

Conclusions:

Conclusions Foundation Performance

Based on ASCE criteria, the foundation has not failed, nor is there a defect. This foundation does not violate the maximum guidelines established by ASCE for foundation performance. See below:

- MAXIMUM value for global TILT A-A = 4.44 Inches



GEOTECHNICAL / GEOSTRUCTURAL / STRUCTURAL
PAVEMENTS / FORENSIC

CONSULTANTS & ENGINEERS

Thank you for the opportunity to be of service, please call if you need further information.

Sincerely,



Consultants & Engineers

Michael R Lynch P.E.
Attachments

✓ 6/12/13





LIMITATIONS OF REPORT

- These observations do not intend to provide an exhaustive analysis of the structural or foundation conditions and does not intend to convey the impression that detailed measurements, or examinations of the superstructure or the hidden elements of the structure were performed. Hidden elements would include framing or floors covered by sheetrock, brick veneer, carpeting or tile, etc.
- Unless otherwise indicated, this report was prepared expressly for the client involved and expressly for the purposes indicated by the client. Permission for use by any other persons for any purpose, or by the client for a different purpose is denied unless otherwise stated in writing by MLAW.
- The observations, discussions, and conclusions in this report are based solely on the Field Observations contained in the report. The observed conditions are subject to change with the passage of time. The Field Observations and this report are not to be construed in any way as a guarantee or warranty as to the future life, performance, and need of repair or suitability of purpose of the subject property.
- Detailed structural calculations were not performed and a report that the structure is in good condition does not imply that it meets all Building Code provisions.
- Soil borings and materials testing are not included in this investigation, unless specifically reported.
- These observations do not include an examination or opinion regarding electrical, mechanical, plumbing systems or appliances, or roof or wall waterproof condition.
- Water damage or rotted wood will be noted if obvious, but the limited scope of the examination precludes observations of all structural members, and hidden defects may be present. Surface drainage may be noted in general as being adequate or inadequate to prevent casual water from entering the structure or ponding adjacent to foundation, but no evaluation of regional or lot drainage was done to ensure that floodwaters do not rise above the levels of the foundation and enter the building.

Termite damage was specifically not examined for and is not a part of this scope of work.

- ACTUAL value for global TILT A-A = 1.60 inches
- MAXIMUM value for global DEFLECTION A-A = 1.23 inches
- ACTUAL value for global DEFLECTION A-A = 0.45 inches

Sheetrock Cracking, Sticking Doors

Concrete foundations are designed with consideration of how much the supporting sub-soil will expand and contract and how much the foundation will move. Foundations are more tolerant of this movement than sheetrock or caulk which is the reason cracking can appear in these materials with no damage to the foundation. In addition, doors can stick as a result of minor movement in the framing system. This movement and the resulting distress can be attributed to the natural properties of wood as discussed below:

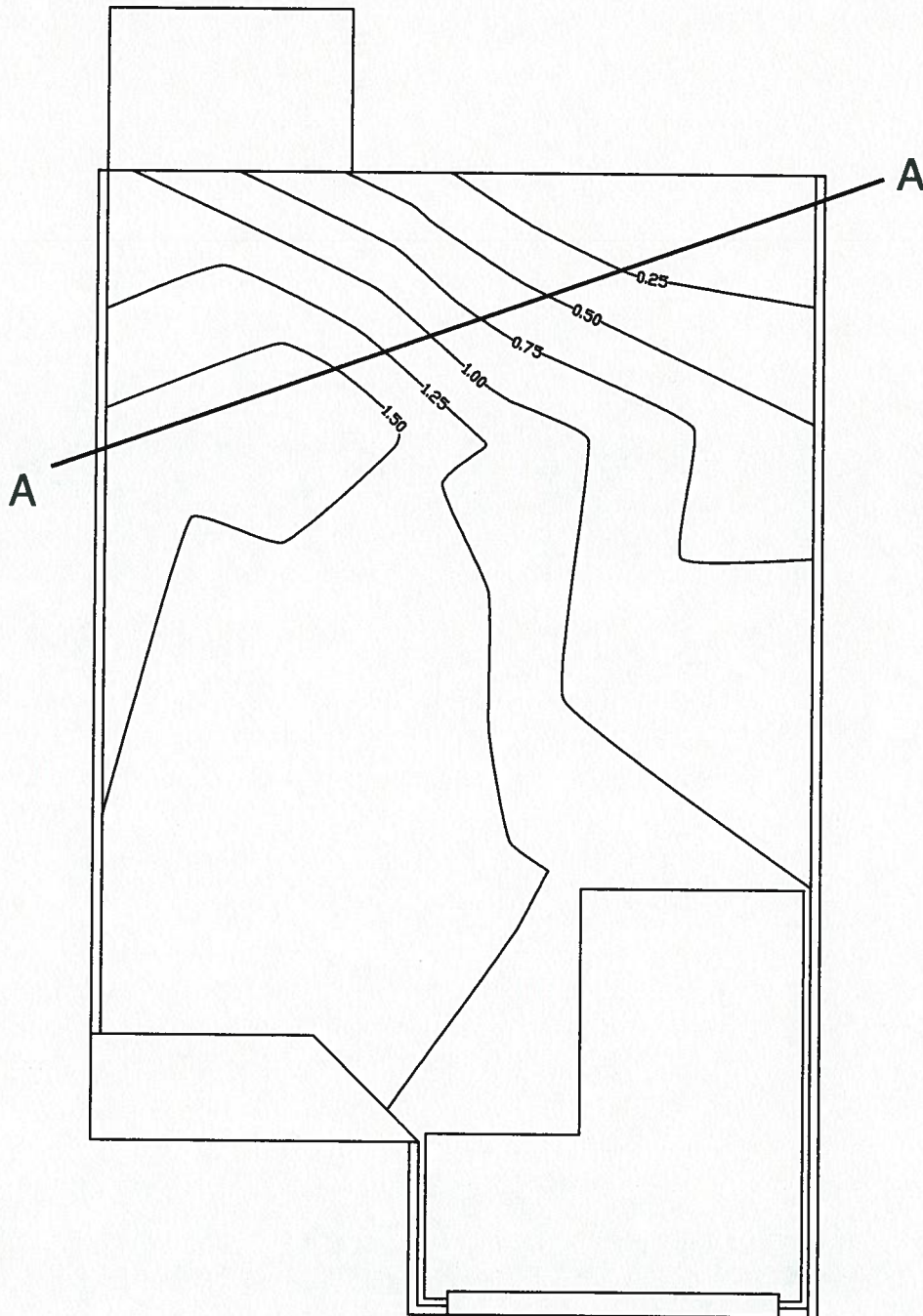
- **Thermal Movement** - expansion and contraction of building materials at different rates due to thermal fluctuations during seasonal temperature changes.
- **Shrinkage** - moisture induced expansion or contraction of the framing system and trim due to the seasonal changes in relative humidity.
- **Creep** - elastic deformations that occur under a variety of stress ranges over a period of years.

This cracking is not a structural issue and should be considered cosmetic in nature. Minor foundation movement has intensified the drywall cracks within the home.

Recommendations:

Based on the age of the home, we do not believe and further significant movement of the foundation will occur. The foundation is performing well within the tolerances and we have no recommendations at this time. This has occurred due to the recent drought conditions in Texas. Edge rise or drop in a foundation is the result of a moisture imbalance in the soil. Too little moisture will cause the soil to contract too much moisture will cause the soil to expand.

We recommend that careful attention be paid to properly watering the yard around the home. The grass around the home should remain green but at no time should the ground become so wet that it is damp to the touch for an extended period of time. Drip irrigation hoses should be used in maintaining moisture around the home anytime the soil begins to pull away from the perimeter of the slab. We suggest the drip hoses be placed on an inexpensive timer and set to water the rear, left rear, and right rear sides of the home for 2 hours once a week for 3 – 4 months (see detail). The rest of the foundation perimeter should be watered once every two weeks, only during drought conditions with a drip hose. Following this watering schedule, the entire perimeter of home should be watered every two weeks if drought conditions persist. Winter watering schedules should be limited to once or twice a month depending on rainfall amounts.



SLAB SURFACE CONTOURS

READINGS IN .25 INCH INCREMENTS

ADDRESS: 102 MESA DRIVE

JOB No: 1314006000.0100

FIRM No: 002685

CLIENT: CENTEX HOMES

DATE: 8-9-13

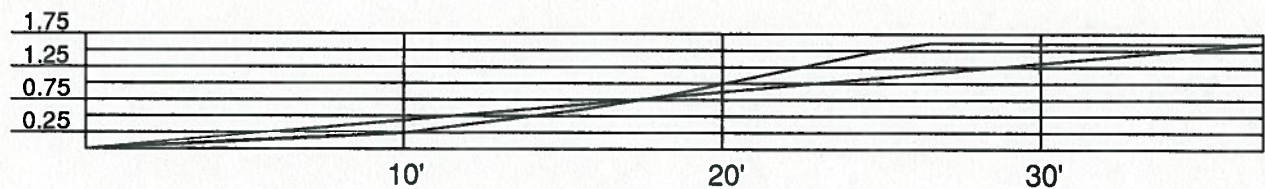
SHEET: 1 OF 2

GEOSTRUCTURAL/STRUCTURAL
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FORENSIC

MLAW
CONSULTANTS AND ENGINEERS

2804 LONGHORN BLVD.
AUSTIN, TEXAS 78758
(512) 835-7000

SECTION A-A



TILT = 1.60" IN 37' (1% = 4.44")
DEFLECTION = 0.45" IN 37' (L/987)

SLAB SURFACE SECTION

READINGS IN .25 INCH INCREMENTS

ADDRESS: 102 MESA DRIVE
JOB No: 1314006000.0100

FIRM No: 002685

CLIENT: CENTEX HOMES
DATE: 8-9-13
SHEET: 2 OF 2

GEOSTRUCTURAL/STRUCTURAL
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