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**INSPECTION PROPERTY ADDRESS:** 16314 Concord Falls  
Sugar Land, Texas

**INSPECTION PERFORMED FOR:** Willard Franklin

**INSPECTION DATE:** 06/27/22

**INSPECTIONS ORDERED:**

[] Foundation Only

### **LIMITATIONS AND DISCLAIMERS**

This Inspection Report reflects only the items listed and only the condition of those items at the time and date of inspection. This Report reflects only if the items inspected are observed to be "functional" or "nonfunctional" at the time of the inspection, that is, whether such items at this time are observed to serve the purpose for which they are ordinarily intended. THIS REPORT REFLECTS ONLY THOSE ITEMS THAT ARE REASONABLY OBSERVABLE AT THE TIME OF THE INSPECTION. NO REPRESENTATION IS MADE CONCERNING ANY LATENT DEFECTS OR DEFECTS NOT REASONABLY OBSERVABLE AT THE TIME OF THE INSPECTION OR OF ITEMS WHICH REQUIRE THE REMOVAL OF FURNITURE OR COVERINGS. For example, but without limitation, recent repairs, painting or coverings may conceal prior or present damage which is not reasonably observable by the inspector, and no representation or comment can be made. NO REPRESENTATION IS MADE CONCERNING ANY OTHER CONDITION OR THE FUTURE PERFORMANCE OF ANY ITEM. NO REPRESENTATION IS MADE AS TO ITEMS NOT SPECIFICALLY COMMENTED UPON. ALL WARRANTIES, EXPRESSED OR IMPLIED, ARE EXCLUDED AND DISCLAIMED. This report is provided for the use of our client only, based on their specific needs. No representation is made to the use of this report by any other party. Opinions related to the compliance with specifications, legal and current code requirements, or restrictions of any kind are specifically excluded as being covered by this inspection. Repair costs vary from one contractor to the next. You should contact several qualified contractors to obtain firm quotes and defined scope of work on each repair item.

On June 27, 2022, Harris Engineering Real Estate Inspections, Inc. performed a limited foundation inspection on the house at 16314 Concord Falls, Sugar Land, Texas. Since only the foundation and signs of foundation distress were inspected, we make no representation to any other portion of the property. The inspection was performed exclusively for Willard Franklin. We make no representation to the use of this report by any other party. The purpose of this report is to discuss the condition of the foundation at the time of the inspection.



The limited foundation inspection consisted of interior and exterior visual observations as well as floor levelness measurements with a ZIPLEVEL. See drawing D-1. Since no formal engineering analysis or testing was performed, the conclusions of this report are based solely on this engineer's visual impressions as to the performance on this date. Should you desire engineering evaluations such as geotechnical analysis, concrete testing, concrete moisture testing, plumbing testing, or post tension testing (if applicable), please contact this office. No geotechnical study has been made to determine the soil characteristics of this property. However, much of the greater Houston area is known to have an active type soil that can adversely affect the performance of the foundation. No representation is made to the location of any geological faults. For the purpose of this report, the terms front, rear, right, and left are used when viewing the house from the front. No representation is made to any previous or future flooding.

This is a two story residential structure with a post-tension cable reinforced concrete foundation. Exterior siding is brick veneer and hardboard material.

Observations revealed signs of moderate foundation movement. There were a few brick veneer cracks. There were minor separations at brick expansion joints. The brick lines were relatively straight, as visually observed from the exterior. There was separation of approximately  $\frac{3}{4}$ " at a left rear brick/window detail. Some cracks were observed at the perimeter of the foundation and at the exposed part of the concrete foundation at the garage. No floor coverings were removed to determined locations of all cracks in the concrete foundation. Cracks do not necessarily indicate a need for foundation repair. Interior observations revealed a few drywall cracks. There were several signs of drywall crack patches. There were a few signs of misaligned doors. Foundation levelness measurements showed some unlevelness. See drawing D-1. There was an overall foundation unlevelness that was measured at 2.2" from the high point to the low point. Original construction elevations were not available. Therefore, it was not possible to determine exactly how much of the unlevelness was a result of original construction and how much was a result of foundation movement.







Based on the limited visual observations and foundation levelness measurements, it appears that this foundation has experienced a moderate amount of movement. Although there are signs of movement, it is our opinion that the deflection and tilt of this foundation are within generally acceptable engineering limits. See attached deflection calculation. Although there are some signs of foundation movement, it is our opinion that foundation repair underpinning is not necessary at this time. **No representation is made to future performance.**

Although future performance is not predicted, a soil moisture maintenance program is recommended. The soil was dry and had pulled away from the perimeter of the foundation. Signs of distress should be monitored to determine if the maintenance program will be effective. The soil should be kept at a constant moisture content to avoid any inherent shrink/swell characteristics of the soil which can cause differential movement and damage to foundations. This can be achieved by diligent lawn watering and by using a soaker hose around the entire perimeter of the house during dry seasons. Automatic soil moisture maintenance systems are available. Without specific soil characteristics of this property, the moisture maintenance program will be somewhat by trial and error. Any signs of foundation distress should be closely monitored as inadequate or excessive soil moisture can cause problems under certain conditions. Trees and large shrubs can remove a large amount of soil moisture which can adversely affect the foundation. Trees at the left adjacent property appeared to be adversely affecting the performance of this foundation. Root pruning and a root barrier could be performed at this property as a maintenance procedure. Areas of large vegetation should be given sufficient water so that they do not deplete the moisture content of the soil. Top soil should be at least four inches below the brick or siding and sloped away from the structure for drainage.



Some of the post-tension cable ends were exposed. These are in need of being grouted as a maintenance procedure in order to avoid further rusting.



There were typical "wedge cracks" at the corners of the foundation. The wedge crack at the front left corner was relatively large. It is recommended that the front left corner of the concrete foundation be repaired by applying a bonding agent and grout.



This report contains the opinions of Harris Engineering Real Estate Inspections, Inc. It is possible that differing conclusions could be obtained from other companies. It is a pleasure to have been of service. Please call should you have any questions or need future inspections.

Harris Engineering  
Real Estate Inspections, Inc.  
F-7281

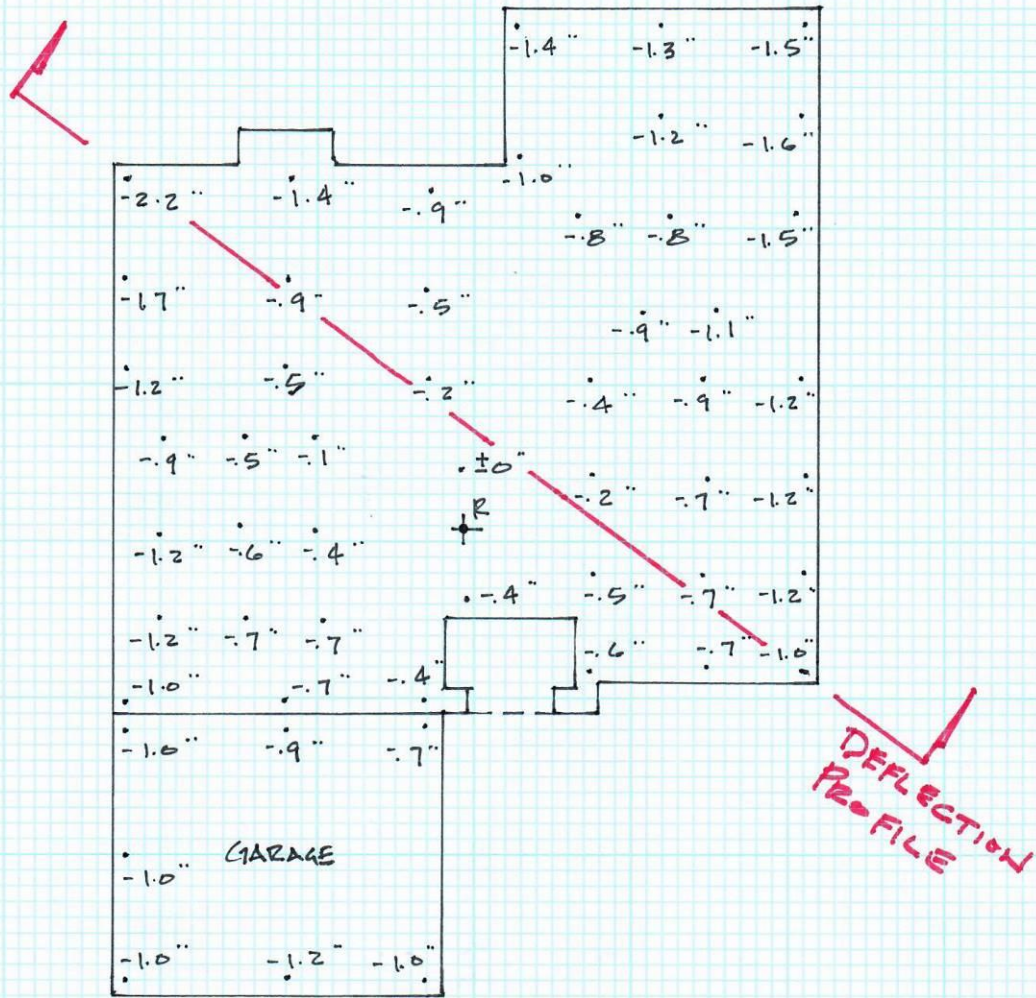


David Harris, P.E.





16314 CONCORD FALLS



(FRONT)

\* ADJUSTMENTS HAVE BEEN MADE FOR FLOOR COVERINGS

FOUNDATION LEVEL SURVEY

6-27-2022

(D-1)

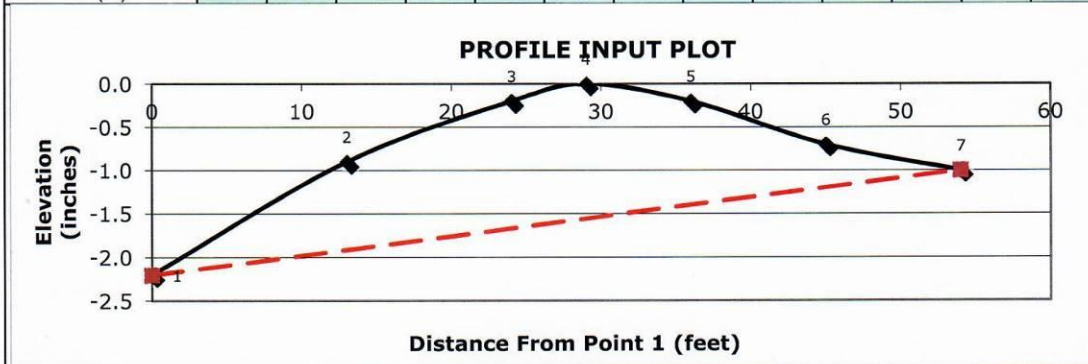
**Proprietary Calculation Spreadsheet for Document # FPA-SC-13-1  
Guidelines for the Evaluation of Foundation Movement for  
Residential And Other Low-Rise Buildings**

16314 Concord Falls Ln	27-Jun-22	

**Instructions to Compute Deflection and Tilt**

- a) Input distances along profile into blue "L" cells from one edge of slab to the other.  
(Spacing may be unequal, first L must be zero, each successive L greater than the previous)
- b) Input elevations measured at each "L" into blue "Y" cells  
(Start with Point 1; For less than 13 data sets, extra L and Y cells **must** be "empty", not zero)

PROFILE INPUT											EFFECTIVE LENGTH (FT) =		20
POINT	1	2	3	4	5	6	7	8	9	10	11	12	13
L (ft)	0	13	24	29	36	45	54						
Y (in)	-2.2	-0.9	-0.2	0.0	-0.2	-0.7	-1.0						



PERFORMANCE OUTPUT RESULTS					
	ACTUAL	RESULT	PT. 1	PT. 2	PT. 3
Deflection 1 =	L / 417	86% OF L/360 LIMIT	1	4	7
Deflection 2 =	L / 438	82% OF L/360 LIMIT	1	4	6
Deflection 3 =	L / 442	81% OF L/360 LIMIT	1	3	7
Tilt =	0.19 %	19% OF 1% LIMIT			

"Deflection 1" is the maximum deflection computed in this profile.

User input is in the blue cells only and echoed in the Profile Input Plot. Output is in the yellow cells.

Deflection between points 1 and 3:  $Deflection = Y_2 - [Y_1 + (L_{12}/L)(Y_3 - Y_1)]$   
 Points 1 & 3 are end points of any intermediate span chosen by spreadsheet;  
 Point 2 is any point chosen by spreadsheet that falls in between 1 & 3,

Per FPA-SC-13-1, Deflection is calculated when the distance between Points 1 and 3 (effective length) is  $\geq$  to 20 feet. If this spreadsheet is used to check Deflection (i.e. curvature) per PTI-DC10.8-18, increase effective length to 25 feet.

*This spreadsheet is provided to FPA members as a courtesy, with no guarantee of its accuracy. This spreadsheet has not been subjected to peer review and may be revised by the FPA-SC without notice from time to time by changing the revision date. Section 6 of FPA-SC-13-1 provides definitions and further information on the calculations performed. FPA-SC-13-1 takes precedence over this spreadsheet in case of a conflict.*