



INTELLIGENT  
DESIGN  
ENGINEERING

1945 J N Pease Place #204  
Charlotte, NC 28262  
704-335-7200  
www.IDEcharlotte.com

*Via Email:*

August 29, 2016

At your request a visit was made to the referenced address on August 23, 2016 to inspect some crawlspace repairs as well as recent cracks in the brick veneer at the front of the house.

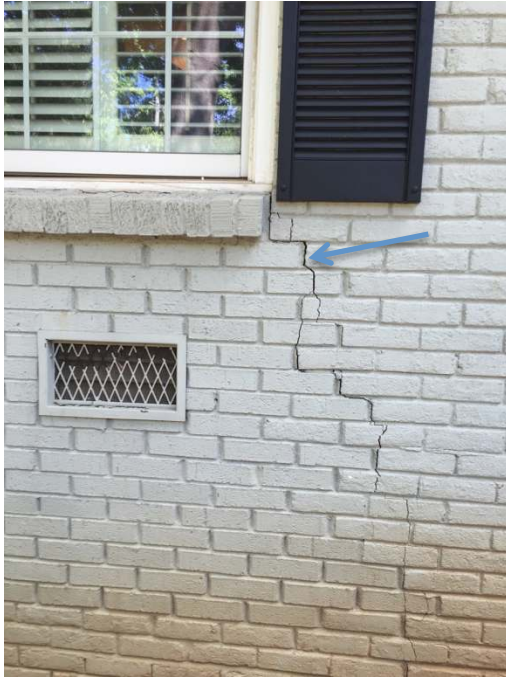
*All directions are in reference to a person facing the front of the house from the street.*

It is my understanding that you purchased the house about a year ago. At the time of purchase, a home inspector had noted several items in the crawlspace in need of repair that a contractor had subsequently repaired. I reviewed those items and found that all of them were corrected as noted with the exception of a few piers that still needed it to be shimmed in my opinion (see photo below for an examples). Two piers are located at the rear wall near the left side and one is located at the front left corner.



The crack in the brick veneer at the front left of the house under the window is slightly more concerning and structurally significant (see the photos below of the referenced crack). This crack was noted by the home inspector as being an eighth of an inch wide and it was structurally insignificant in his opinion but since you had lived there it has worsened. Using a laser level, I measured the foundation which slopes towards the left rear corner approximately  $\frac{3}{4}$ " and towards the left front corner approximately  $1\frac{1}{2}$ ". Differential settlement can be

expected on homes but normally anything over about a 1/2" is concerning. There is evidence that these cracks had developed prior to you moving in and had been patched, which indicates that this has been an on-going problem. The photos below are of the crack at the front left bedroom window where the more significant settlement is present and actively moving.



The photo below shows the window at the left rear bedroom at the rear wall where patched mortar was observed.



Given the history of movement, the amount of movement and the fact that movement is still active, further actions are needed. The left side of the house is settling which may require deep foundation solutions such as helical piers or grouted micropiles installed to stabilize the foundation. However, given the extent of the movement I would recommend that a soils engineer evaluate the soils characteristics prior to performing any repairs. Have the soils engineer check the soil stiffness and plasticity at all four corners of the house and towards the middle of the rear and front wall for a total of six locations. An evaluation of the soils plasticity will help determine if the soil is expansive in nature and the movements may be due to fluctuations in moisture content of the soil. Knowing this will help determine the most appropriate repair considerations. Please have the soils engineer forward us a copy of the report in order to determine whether or not a repair is warranted and what the repair should consist of.

The inspection covers only those systems and components expressly and specifically identified in this report. Any area of view concealed or inaccessible is excluded from this inspection. The inspection does not include any destructive testing or dismantling. It is agreed that the Inspection Report does not constitute a warranty of adequacy, performance or condition of any structure, item or system. The inspection and the Inspection Report are prepared for the sole, confidential and exclusive use of the Client. Should you have any questions regarding this report, please feel free to call.

Sincerely,

Michael P. Gervais, P.E.  
NC License # 27399  
Corporate License # C-3118



August 29, 2016