ENGINEERED FOUNDATION SOLUTIONS

Gerard J. Duhon, P.E., #59832
Engineered Foundation Solutions, #F-12259
281-788-7393 gerard@texashomeengineer.com

ENGINEERING OPINION

INVESTIGATION OF CONDITIONS
RESIDENCE AT 1039 LAKELAND CIRCLE, ROSHARON, TEXAS, 77583
Date of Inspection: November 30, 2021
Date of Report: December 5, 2021

SUMMARY

The partially constructed building can reasonably be repaired and finished.

BACKGROUND

A request was made for an inspection and report on the deteriorated and deficient conditions at the subject house abandoned during construction. I was assisted by Ramon Lopez. A visual inspection was performed, and relevant conditions documented with photographs, included.

The following information was provided: Don Evans with Outwest Builders, LLC, chaperoned the inspection, and provided items for consideration.

Some of the report is boilerplate, advice and information pre-written due to its common nature and used in this report because of its applicability. Boilerplate and outside references will be italicized in this report.

Convention regarding directions: Front faces the street, left and right are as seen from the street facing the house. Back-right indicates back side, right end. Right-back indicates right side, back end.

INSPECTION AND FINDINGS

Review of the provided plans and the physical layout finds there have been significant changes in the plans. **A floor plan based on the existing conditions and desirable final layout should be created.**

FOUNDATION CONDITION AND LEVELNESS

The foundation is concrete slab-on-ground. The foundation was sensed to be level. A metal detector was used to sense the foundation reinforcement, the results were ambiguous. At a concrete breakout #3 rebar was observed, both directions about 20" spacing, see photo 24. The existing foundation is adequate.

The front and back porch are covered by roofs with no concrete for the porch deck and no foundation support for the covers, see photos 1, 2, and 3. **Concrete decks will have to be installed, doweled into the existing foundation, with 12"x12" grade beams, and 4x6 posts sitting on the deck surface on bases to support the cover.**

The garage floor has a problem. The floor lacks a stem wall and a sloped and depressed floor. This garage floor being at the finished floor level will not allow entry to the garage by a vehicle from ground level. This garage floor being level will not keep water from migrating to the interior. Also, the door area lacks the usual door stop, an indented feature at the bottom of the overhead garage doors which keeps any water shedding from the garage doors from entering the garage interior. See photo 9 for the existing situation at the doors. Water is entering the garage due to these deficiencies, see photos 10 and 11. **The only practical fix for this condition is to have polyurethane foam injected in a line about 4' to the interior of the doors, to raise the floors enough to keep water out of the garage. The front overhead garage door opening should be converted to wall**, it is very close to the front wall and would not respond well to the injection lifting. It is also redundant to the other doors, and would require more driveway for service to this door.

ROOFING, WATER LEAKS, SERVICE LIFE

The roofing is in good condition and a long service life is anticipated.

There is a roof leak above the stairs near the garage which is causing some damages to the interior, see photo 25. **The roof leak and decking damages should be repaired.**

ROOF STRUCTURE, RAFTERS AND DECKING

The roof structure appears to be correct and is performing adequately.

EXTERIOR WALL CLADDING AND EAVES

At the front, the siding is stucco above a horizontal band, below the band are stone blocks that have been adhesively attached, see photo 5. At the back and sides Hardie lap siding is installed.

Some stone blocks are falling off of the wall, see photo 4 and 6. The stones are not mortared nor supported at their base, so each block is dependent on the adhesive attachment. The cladding system involving the stone blocks is improper and cannot

be corrected. The wall underneath the stones is prepared for stucco (see expanded metal lath in photos), and **stucco should be installed instead of the blocks.**

Some of the wood forms to create the foundation have not been removed, see photos 2, 3, 4, 6, and 7. **Remove the foundation forms.**

Eave work is complete and appears to be satisfactory.

The back and sides are clad in lap siding. The siding is blind nailed but not face nailed, see photo 7. The house is in Brazoria County, which carries a windstorm construction requirement. Certainly **the siding will have to be face nailed**, as directed by Hardie installation instructions. This also calls into question whether the roof can be certified for windstorm, and whether the framing can be. **A windstorm engineer will have to be employed to inspect and advise on any changes required to certify the building.** Lack of windstorm certification will affect the ability to insure and thus finance the house.

WINDOWS AND DOORS

The side lites at the kitchen cannot be trimmed properly, see photo 8, and are leaking, see photo 16. **These lites should be filled in to create a wall.**

The remainder of the windows appear to be functioning properly.

ENVIRONMENT, DRAINAGE, TREES, TERMITES

The back yard is ponding, **requiring some fill soil.** Otherwise drainage is adequate. No trees within influence of the foundation. No termite activity or damages. There is **cleanup required at the interior**, see photos 9, 10, 11, 37, and 38.

WALL FRAMING

Some out of plumb doorway studs were observed, see photos 29 and 30. The tall back wall is articulated and will not pass windstorm inspection, see photo 28. The deck overlooking this large room is high in the middle of the edge, see photo 33. At the lower level a double 2x6 header is not sufficient for the loads, and is deflecting the joists above, see photo 27; this should be replaced with a double 2x10. **Make the framing corrections.**

The double tray ceiling furrdowns in the master bedroom are nailed, **they should be screwed at assembly and attachment.**

Certainly some wall reinforcement will be required by the windstorm engineer.

CEILING FRAMING

Some of the ceiling framing is missing hangers, see photos 32 and 34. **Install joist hangers.**

In the garage, a double 2x12 is supporting the ceiling joists, see photo 12. This is an insufficient beam, and is now being supported by a post, see post in foreground of photo 12. This post is in the middle of the vehicular parking space of the garage, so this situation cannot continue. **The double 2x12 and post should be replaced with a 7"x11-1/4" engineered beam spanning from wall to wall.**

MOLD, FLOODING

No evidence of either was observed.

HABITABILITY ISSUES

None were observed.

FLOORING

Two holes in the subflooring were observed, see photo 35 and an uneven joint was observed, see photo 36. **Replace the damaged subflooring and adjust the support for the panels at the uneven joint.**

SMOKE DETECTORS

Wiring not observed. **Install wiring for a code-compliant smoke alarm system.**

ELECTRICAL

There is no electrical service to the house. **Provide electrical service to the house.** The service panels appear to be correct and in repairable condition.

Some of the electrical wiring is not sensible. A 220 outlet at the garage, see photo 13. The layout at the kitchen, see photo 15. A 220 wire too short to be of use, see photo 14.

In general the wiring appears to be correct, but was not traced or inspected for code requirements. **Some corrections to the branch wiring are anticipated.**

PLUMBING

No supply plumbing has been installed.

The drainage plumbing has been repaired and it still has significant problems. The concrete has been broken out at a bathroom, yet the plumbing remains all wrong, see photo 16. The drain pipe to the island is too small for a wet vent, and is sitting within

the slab, see photo 17. A kitchen drain is not within a wall space, see photo 18. The toilet drains are not located correctly, see photo 19. Another drain has no purpose in its present position, see photo 20. A secondary AC drain line is discharging into a wall, see photo 21.

Install supply plumbing. A significant amount of rework of the drainage plumbing will be necessary.

HVAC SYSTEM

An AC outlet is in the wrong location, see photo 22. AC outlets are too close to the returns in most rooms, see photo 23. **Correct the outlet location. Move the outlets to near exterior walls away from the air return path. Have the AC systems (3) checked by an AC technician.**

INSULATION

Insulation has not been installed. The repairs at the interior described above will have to be performed before insulation and sheetrock are installed.

CAVEAT

I will give you the best advice based on my experience, the experiences provided by other professionals and clients, generally accepted information, and scientific principles. I may predict future performance based on generally accepted principles and experience, but factors beyond my control or beyond my ability to observe can affect in unpredictable ways.

This report of observations and opinions was prepared for the exclusive use of the client, and is not intended for any other purpose. Gerard J. Duhon assumes no responsibility whatsoever for the use of this report by any third party. Any third party with an interest in this property should obtain a professional opinion to satisfy their own objectives. This report is based upon information provided at the time of this report. The conditions described are limited to structural and finish issues discovered during a visual, nondestructive survey of the stated scope of the investigation. The investigation is limited to the stated scope, and limited by financial and time constraints.

Attachments:
38 photos on 38 pages


1


2


3


4


5


6


7


8


9

10


11


12
2017
APR
25
8


13


14


15


16


17


18


19


20


21


22


23


24


25


26


27
UP UP


28


29


30


31


32


33


34


35


36


37

38