Job No. 190756

August 5, 2022

Tralon Homes, LLC
212 N. Wahsatch Ave.
Suite 201
Colorado Springs, CO 80903

Attn: Mike Cox

Re: Structural Observation
[redacted]
El Paso County, Colorado

Dear Mike,

As requested, personnel of RMG - Rocky Mountain Group have visually observed the structure at the above referenced address. The purpose of our visit was to assess the condition of the structure with regards to the foundation system, soil conditions and drainage conditions. This letter represents the documentation of our site observations, provides an analysis of the present condition of the structure, and lists, if necessary, conceptual recommendations for the repair of past damage or to reduce the probability of future damage. It should be noted the documentation of items such as drywall cracks does not automatically imply structural damage has occurred. It is important the reader reviews our analysis before drawing conclusions regarding the present structural condition.

Based on our observations of the structure and its age it is our opinion that the foundation is adequately supporting the structure. Additional comments will be contained in the body of this report.

The site visit was performed on July 28, 2022. The house was observed to be a two-story structure with a finished basement. The house was reportedly built in 2021. For the purpose of this report the front of the house will be considered west.

OBSERVATIONS:

Basement:

At the rec room and the southeast bedroom, the drywall at the east walls of the rooms had been removed at the time of our visit. The tops of the studs at the wall framing at both of these rooms was shifted in approximately 3/8" relative to the top plates of the walls. The studs at these walls were found to be relatively plumb. Reportedly, a crack developed at the drywall along the upper portion of both these walls. The drywall was removed to expose the wall framing. Reportedly,

the upper portion of the studs was found to be in contact with the east foundation wall. The east foundation wall is out of plumb roughly 1/4" in 48" with the upper portion of the wall leaning inward. A hairline vertical crack was observed at the north end of the east foundation wall.

At the mechanical room, the door into the room rubs on the frame at the latch side. A sump pit is located in the southwest corner of the mechanical room. A pump and discharge pipes are located within the pit. The pit was dry at the time of our site visit. Voided wall framing was observed at the perimeter of the mechanical room. The drywall was observed to be cut back at the void. The door jambs at the door opening into the room extend down to the slab. The base trim at the exterior of the room was observed to be nailed above and below the void space

The floors throughout the basement were found to be generally level.

Main Level:

The floors throughout the main level were found to be generally level. No significant drywall cracks or structural distress was readily apparent. The doors at the laundry room, the entry to the master bedroom, and the entry to the master bathroom rub on their door frames.

Upper Level:

Not observed.

Garage:

Not observed.

Exterior:

At the south of the one car garage door opening the jamb was buckled outwards at the lower portion of the door. The jamb appeared to be in contact with the garage slab.

A concrete patio extends along the rear of the home. A roughly 1/4" gap was evident between the patio and the east foundation wall. One small section of the upper portion of the east foundation wall appeared to have fractured and popped off the foundation. This fracture appears to coincide with the location of an anchor bolt. A roughly 1/8 " wide vertical crack was evident at the north end of the east foundation wall.

In general the grades appear to slope adequately away from the home. A drainage swale extends along the north of the home. There appears to be a low area in the swale to the northwest of the home.

CONCLUSIONS:

Based on our observations of the structure and its age it is our opinion that the foundation is adequately supporting the structure. This appears to be evidenced by the general levelness of the main level floors which are supported by foundation components. However, it appears that the east foundation wall has experienced lateral rotation. The lateral rotation appears to be evidenced by the inward leaning of the top of the east foundation wall, the fractured section noted at the exterior of the east foundation wall, and the cracks observed at the north end of the east foundation wall. The lateral rotation of the east foundation wall may be the result of a consolidation of the backfill soils adjacent to the foundation wall. If the backfill soils are not compacted properly they can consolidate and settle, increasing the lateral pressure on the foundation wall. This increased pressure can easily exceed the structural capacity of the wall if not designed for this condition. The inward rotation of the east foundation wall appears to have pushed in on the interior wall framing at the east of the rec room and east of the southeast bedroom, resulting in the drywall cracks that were reported to have been present along the upper portion of these walls. It appears that these walls may have originally been framed out of plumb with the upper part of the wall leaning outward and in contact with the east foundation wall. The inward leaning of the east foundation wall does not appear to represent a structural concern at this time.

In addition, it appears that the basement slab has experienced vertical displacement. If water ponds adjacent to the foundation, moisture can seep down through the subsurface soil causing the soils to swell and heave or consolidate and settle. This can result in interior slab movement. Typically, slab movement is a cosmetic issue and not a structural one. However, if the interior non-bearing walls are not properly isolated from slab movement or if the movement is significant, the slab can push up on the walls, door jambs, and structural elements above potentially resulting in structural distress.

RECOMMENDATIONS:

The following is a list of recommendations that should be performed in order to enhance the performance of the structure in the future:

1. It is our recommendation that the backfill zone around the entire structure be regraded where necessary to a minimum positive slope of 10% (2% for paved areas) for the first ten feet from the foundation walls. This slope should be maintained for the life of the structure. The soil placed adjacent to the foundation walls should consist of topsoil type material and under no circumstances should a clean gravel or rock be utilized to obtain the minimum slope. Decorative rock adjacent to the foundation walls should be placed over a landscape fabric. Plastic membrane should not be installed adjacent to the foundation walls. Local building code requirements require a minimum distance of six inches between the siding components and any soil. Therefore where necessary drainage swales may be required in order to properly slope the grade in the backfill zone and collect it and discharge it away from the foundation walls.

2. Monitor the structure in the future. If drywall cracking initiates and/or if interior doors start binding the construction at the bottom of the walls in the basement could be modified

to re-establish the void space. This could be expected to include removing the base trim and cutting the drywall back. It could also include cutting door jambs and trim back from the slab.

3. The crack at the north end of the exterior face of the east foundation wall could be pressure injected with epoxy. This can fill the gap and inhibit moisture migration through the wall.

LIMITATIONS:

This report does not express nor does it imply any warranty of the future performance of the structure or drainage condition. The opinions and recommendations presented in this report are based solely on conditions available for viewing at the time of the site visit, information provided by the client to RMG, the pertinent experience with similar conditions of personnel performing the observations and accepted local engineering practice. No additional subsurface testing, material testing, calculations, nor monitoring over time of the conditions presented in the report were performed by RMG unless noted. These additional investigations can be performed upon request for an additional charge, which may or may not provide information to better address the observed structural or drainage conditions that presently exist. It is the responsibility of the client to provide adequate access to any areas not physically accessible, whether or not RMG is aware of the existence of such areas. Not included is a review of architectural, mechanical, electrical, plumbing, mold or cosmetic conditions, nor a comprehensive review of compliance with applicable building codes. **Also, excluded from the scope of this report are evaluations of geologic, natural and environmental hazards such as landslides, unstable slopes, seismicity, underground mines, avalanches, flooding, corrosive soils, erosion, radon, wild fire dangers and hazardous waste.**

I hope this provides the information you requested. Should you have any questions, please do not hesitate to call.

Cordially,

RMG – Rocky Mountain Group

David Schmidt, P.E.
Sr. Structural Project Manager