



**PATTISON  
ENGINEERING, LLC**

Geotechnical Engineering • Construction Inspection • Materials Testing

February 7, 2017

Mountain View Ranch Development Joint Venture LLC  
c/o A.W. Marrs, Inc.  
3573 E. Sunrise Drive, Suite 233  
Tucson, AZ 85718

**ENGINEERING SERVICES**

Mountain View Ranch  
South of Interstate 10 and Highway 83  
Vail, Arizona

Project No. 05-199  
Addendum No. 5

PATTISON EVANOFF ENGINEERING, L.L.C. (NOW PATTISON ENGINEERING, L.L.C.) issued a geotechnical engineering evaluation for this project on July 15, 2005. A site visit was made on February 1, 2017. We are now providing post-tension design parameters that comply with the "Design of Post-Tensioned Slabs-on-Ground, Third Edition". The following parameters may be used for post-tension analyses. Other parameters and geotechnical recommendations shown in our original report remain appropriate.

- ◆ Edge Moisture Variation Distance,  $e_m$ 
  - Center Lift Condition 9.0 feet
  - Edge Lift Condition 5.2 feet
  
- ◆ Differential Soil Movement,  $y_m$ 
  - Center Lift Condition 0.14 inches
  - Edge Lift Condition 0.68 inches

The potential differential movement is a function of the depth and lateral extent of wetting of the supporting soils. It is extremely important, therefore, that precautions be taken in design, construction preparations, and maintenance to *minimize* the potential for moisture increases (from any source) beneath the structures. The above estimates reflect the conditions reasonably expected based on positive drainage and typical local climatic conditions. Significant wetting of the soils below the supporting soil and beyond the above edge moisture distances could result in additional differential vertical movements and superstructure distortions. Care should be taken to prevent moisture from entering the supporting soils. Prolonged seepage, plumbing leaks, or any other event that increases the moisture of the soil could cause adverse movement of the structures.

All prior recommendations and opinions, not specifically superseded in this addendum, remain applicable. We thank you for selecting PATTISON ENGINEERING, L.L.C. for this project. This addendum should be attached to and remain a part of the original report. If you have any questions about this addendum, or require additional consultation, please call us.

Sincerely,

**PATTISON ENGINEERING, L.L.C.**

*Geotechnical, Construction Inspection, and Materials Testing Services*



Francisco J. Jacinto, P.E.  
Managing Principal

Copies: Addressee (1) email