



September 30, 2015

Town of Marana  
11555 West Civic Center Drive  
Marana, Arizona 85653

Attn: Mr. Morris Reyna

Phone: 520-382-2600

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E-mail: [mreyna@maranaaz.gov](mailto:mreyna@maranaaz.gov)

Re: **Scope of Work and Cost Proposal**  
**North Mountain Stone Pine Road: N Douglas Fir Dr to W Scotch Pine Ln**  
**Town of Marana**  
**Pima County, Arizona**  
**Terracon Project No. P63150295**

At your request, Terracon Consultants, Inc. is submitting this proposal for providing geotechnical exploration and forensic engineering services for the subject project. This proposal includes an outline of the project information provided to us, the proposed scope of services, our estimated fees, and the proposed schedule.

#### PROJECT INFORMATION

We met Mr. Morris Reyna, Town of Marana at the site on September 29, 2015. The locations of the borings were laid out on site at that time.

We understand this project is to better define the extents of existing fill in an area along North Mountain Stone Pine Road east of North Douglas Fir Drive. Terracon provided a Geotechnical Engineering Report No. 63045225, dated December 8, 2004 for the residential area with fill up to depths of 27 feet was located on the site. We understand that Pattison Evanoff Engineering LLC has developed a separate report with three (3) borings to help define the extent of the in which we assume we will be provided to us for the development of the forensic report.

The objectives of the geotechnical and pavement engineering services for this project will be to:

- Characterize the subsurface soil conditions at the project site;
- Develop a new site plan with a updated view of the extent of fill.

#### PROPOSED SCOPE OF SERVICES

We have been requested to submit a proposal for three (3) borings to depths of 35 feet along the North Mountain Stone Pine Road. Based on the requested services and our understanding of the



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Geotechnical



Environmental



Construction Materials



Facilities

project, Terracon is proposing to complete geotechnical engineering services with the following work tasks:

**Task 1:** We will coordinate with the Town of Marana the locations of the borings. We will coordinate traffic control with a subcontractor and will provide a traffic control plan to Town of Marana for the field exploration of the project.

**Task 2:** This task will include the geotechnical field exploration of the project. During the drilling operations, a field engineer or geologist will log the borings, record the results of penetration tests performed every 5 feet in the top 15 feet and 2.5 feet after to determine the extent of existing fill. All drilling and sampling will be conducted in general accordance with applicable ASTM/AASHTO/ADOT or local standards.

**Task 3:** At the completion of drilling operations, all samples obtained from the field exploration will be taken to our laboratory where they will be examined by the project geotechnical engineer. At that time, the field descriptions will be confirmed or modified, and an applicable laboratory testing program will be formulated.

Selected representative disturbed soil samples from the test borings will be tested for moisture-density relationship. Relatively undisturbed samples will be tested for moisture content and dry density. All laboratory testing will be conducted in accordance with applicable ASTM/AASHTO/ADOT or other locally recognized standards.

**Task 4:** Based upon our analyses, a forensic engineering report will be prepared. The following information will be provided in the report:

- A review of our field and laboratory procedures, and the results of all testing conducted;
- Site plan depicting the extent of the fill and projected fill within the area; and
- A letter report summarizing findings and further recommendations, if any.

If additional testing or engineering is required, Terracon will send a supplemental proposal stating the modified work scope as well as its impact on our fee.

## **SCHEDULE**

It is anticipated that the work for this project will commence October 5, 2015 provided the necessary permits are cleared through the Town of Marana. The initial tasks, including project review, field observations and field exploration activities (Tasks 1 and 2) will take approximately one day to complete. An additional three (3) days would be required for the completion of laboratory testing (Task 3). We also anticipate the letter report will be provided by October 9, 2015 (Tasks 4).

### COST OF SERVICES

Our fee on the project will be \$4,091 as shown in the following table based upon approved Town of Marana rates.

Classification	Rate	Units	Total
Senior Principal	\$150	1	\$150
Senior Project Manager	\$110	3	\$330
Field Engineer/Staff Engineer	\$90	12	\$1,080
Draftsperson	\$70	1	\$70
Clerical	\$45	1	\$45
Vehicle Mileage	\$0.65	40	\$26
Moisture-Density Relationship	\$150	1	\$150
Dry Density	\$15	20	\$300
Moisture Content	\$10	20	\$200
Traffic Control	\$300	1	\$300
Contract Drilling	\$180	8	\$1,440
<b>Total</b>			<b>\$4,091</b>

### AUTHORIZATION

We understand, if awarded, Town of Marana will be provide Terracon a Task Order to authorize the scope of services.

We appreciate the opportunity to provide this proposal and look forward to the opportunity of working with you.

Sincerely,  




Louis D. Braun, E.I.T.  
Geotechnical Field Engineer



Brent M. Borchers, P.E.  
Senior Associate

Copies to:      Addressee (1 via email)