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01.07.13

Mr. Gary Devries
BRW Architects
3535 Travis Street, Suite 250
Dallas, Texas 75204

Re: Texas Horse Park
JQ Project No.: 3123500

Dear Gary:

We recommend that a qualified geotechnical engineer be employed by the owner to perform a geotechnical investigation of the soil and/or rock under the proposed structure, provide a written report of the investigation's findings, and review the completed contract documents for compliance with the recommendations contained within the written report.

Building Description

The project is anticipated to be the development of land north of Loop 12 and east of Interstate 45, near the Trinity River for a new horse park. The development will primarily consist of 1-story structures, barns, covered arenas and open-air arenas as shown on the attached site plan. These buildings could possibly consist of conventional residential framing, conventional steel framing, load-bearing CMU and long-span pre-engineered metal buildings.

Site Investigation and Report

The geotechnical properties under the proposed structure shall be investigated and the information obtained shall be summarized in a written report, including recommendations for the following:

- I. Slabs-on-grade
 - A. Soil preparation for slab-on-grade construction at existing ground level or above, required to limit heave or settlement to 3/4 inches.
 - B. Design parameters according to the Post-Tensioning Institute for design of post-tensioned slabs-on-grade. This will primarily be for small, stand-alone structures where deep foundations are not appropriate.

II. Foundations

- A. Foundation support for concentrated column loads of 10 kips to 150 kips.
- B. Foundation support for bearing wall loads of 0.50 kips per foot to 2.0 kips per foot.
- C. Anticipated magnitude of total foundation settlement and differential settlement between adjacent foundation elements.
- D. Minimum penetrations of foundations into bearing stratum and/or minimum penetration to diameter ratios required to achieve the allowable capacities of the bearing stratum.
- E. Capacity reduction for foundations of close proximity.
- F. Pull-out resistance of the bearing stratum for tension foundations.
- G. Magnitude of uplift skin friction pressures on the foundations due to expansive clay.
- H. Recommendations regarding the design of foundations subject to bending and lateral loads.
- I. Recommendations on the construction of foundations including the need for casing, time limitations on placement of concrete, and any special preparation of the excavation surface to achieve the allowable capacities.
- J. Soil characteristics and design criteria for input into LPILE design program.

III. Miscellaneous

- A. Special details of construction required to remove ground water or surface water, including need for and location of drains around perimeter of building and/or under the building.
- B. Special details of construction required by the existence of expansive clay.
- C. Maximum safe slope for sides of excavation left unprotected.
- D. Special construction details or materials required for protection in corrosive soil conditions.
- E. Seismic site class of soils as defined in sections 1613.5.2 and 1613.5.5 of the 2006 International Building Code. For site class F provide a site-specific geotechnical investigation and dynamic site response analyses as prescribed by tables 1613.5.3(1) and 1613.5.3(2) of the 2006 IBC.

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IV. Site work

- A. Pavement design recommendations; including thicknesses, reinforcement, and compressive strength(s) for Portland Cement Concrete Pavements as well as thicknesses for Asphaltic Concrete Pavement subject to (1) passenger vehicular traffic, (2) fire trucks, and (3) garbage trucks. Provide subgrade preparation recommendations for pavements.
- B. Design pressures, backfill, and drainage requirements for retaining walls founded 8 feet below grade.

We suggest that a minimum of 25 borings be made at the locations indicated on the enclosed site plan and that these borings be into the primary bearing stratum at least 10 feet below the bottom of the deepest anticipated foundation. The geotechnical engineer should estimate the depth of the foundations, based on the loads listed above and his knowledge of site conditions, and determine the required depths of borings before proceeding.

However, the final total quantity, depth and exact location of the borings shall be determined by the geotechnical engineer based on his experience in the area and geological findings at the site. If, in the opinion of the geotechnical engineer, additional borings or tests are required to properly evaluate and analyze the subsurface conditions, the geotechnical engineer shall propose that such additional borings and/or testing be provided.

It is requested that actual boring locations be staked after drilling so that they may be later surveyed for their exact location.

Professional Liability Insurance

The geotechnical engineer should maintain an errors and omissions insurance policy, with an aggregate limit of at least \$1,000,000 per year and should submit a certificate of insurance for your file before commencing with the work.

If you have any questions, please contact me.

Sincerely yours,

JASTER-QUINTANILLA DALLAS, LLP



Thomas L. Scott, PE
Principal

Enclosure

