

**STATEMENT OF WORK FOR GEOTECHNICAL STUDIES, CMR ADDITIONS, WELLINGTON****1. GENERAL**

- (a) **Work Required:** The work required consists of furnishing all professional services, labor, materials, apparatus, supplies, transportation, equipment, required insurance, permits, and any other items, accessories, and subcontractor services necessary to complete the investigations and recommendations specified herein. All work shall be in accordance with this statement of work, applicable drawings, the local regulations and Building Codes.
- (b) **Project Description:** The U.S. Government is in the process of evaluating the existing ambassador's residence compound in Wellington for an addition and other upgrades. The extent of the actual upgrades is unknown at this time. The investigations shall be performed in such a manner as to obtain the necessary information, and evaluate their suitability for the proposed development. The geotechnical studies and reports shall include necessary evaluations and recommendations to develop detailed requirements for foundations, excavations, ground improvement, site earthwork activities, etc. for the project.
- (c) **Site Specific Information:** The site is the existing CMR compound. OBO is not aware of existing geotechnical information on the site. Existing structures and underground utilities are present on the site. The proposed investigations shall be performed in such a manner as to investigate all site-specific issues which may arise during the investigation, or issues known locally.
- (d) **Proposal Submission:** The Contractor shall provide qualifications and costs associated with each category of requested services. In addition, the proposal shall include a schedule presenting the time required to perform the above services.

**2. Applicable Drawings and Specifications**

A suggested subsurface investigation program is included. Modifications to the suggested program should be submitted by the Contractor based on the available data and local knowledge. ASTM or other local equivalent standards should be used.

**3. Definitions**

- (a) Whenever the term "Owner" is used herein, it shall refer to Overseas Buildings Operations (OBO), U.S. Department of State, Washington, D.C. 20520.
- (b) Whenever the term "Contractor" is used herein, it shall refer to Tonkin & Taylor LTD, and their subcontractors submitting a proposal for the work specified.

**4. Examination of Site**

The Contractor should examine the site and review available information, and inform himself as to the location and nature of the work, the type of equipment and facilities

needed, and all matters, which may in any way affect the work under this contract. Failure to take this precaution will not relieve the Contractor from furnishing all material and labor necessary to complete the contract without additional compensation.

#### 5. Protection of Property

The Contractor shall investigate and verify the location of existing underground utility lines before proceeding with the field work, and shall protect such lines and adjacent properties during the course of work. At the completion of the work, the Contractor shall restore the site to a similar condition existing before his entry, including patching of pavements, and the backfilling of the borings, unless otherwise directed.

#### 6. Borings, Sampling and Penetration Tests

- (a) We suggest a total of four (4) test borings to evaluate subsurface conditions at the site. Actual boring locations and depth will be determined by the contractor at a later date, once the extent of the work is established. At this time we suggest that all borings go at least 9m deep, or up to 3m into rock. Offsets due to natural obstructions or utility lines will be permitted. Boring locations and elevations based on established features and benchmarks shall be provided by the contractor.
- (b) In addition, a couple shallow test pits may be excavated to better evaluate near surface soils and determine existing foundation conditions.
- (c) The Owner reserves the right to change the location of borings or increase or decrease the depths, as he finds advisable by the nature of the soil encountered.
- (d) Representative Split-Barrel Samples and Standard Penetration Tests shall be taken at every change in soil stratification and at not more than one and half meter (5') intervals of depth in accordance with ASTM Designation D-1586.
- (e) Representative undisturbed samples shall be taken of all weak, compressible, and potentially expansive soil layers in accordance with ASTM Designation D-1587.
- (f) Ground water elevations shall be measured in all borings when first encountered, upon boring completion, and after 24 hours. In addition, caved depth shall be measured upon boring completion, and after 24 hours.

#### 7. Report of Field Work

- (a) Immediately upon completion of any fieldwork (borings, etc.) the Contractor shall submit field logs (in English) by fax to the US Embassy.

#### 8. Geotechnical Engineering Testing Program

##### (a) **Geotechnical Engineering Testing of Soils:**

The Contractor shall complete a program of geotechnical laboratory tests and analyses, to measure and appraise the engineering properties of the soil and/or rock encountered. The testing program shall be directed specifically toward the

geotechnical engineering evaluations required to develop recommendations for the future structures and grading at the site. The laboratory testing program shall include all necessary tests approved/agreed (in the proposal) between OBO and the Contractor. Depending on the material encountered during the field investigation, minimum laboratory testing shall include the following tests: moisture content, grain size analysis, Atterberg limits and soil classification. Concrete corrosivity testing is also requested.

The Contractor shall include in the proposal the type and number of tests required to develop the foundation and engineering requirements for the project.

(b) **Engineering Soil Testing Procedures:**

ASTM testing procedures shall be used. If other alternative procedures are proposed, approved, and used, they shall be fully reported.

9. **Geotechnical Engineering Report**

- (a) On the basis of the field and laboratory investigation, the Contractor shall prepare a detailed geotechnical report. These shall include, but not be limited to, the following as appropriate:
- (1) A general description of the site including a site plan showing the principal topographic features, rock outcrops, existing and adjacent structures, and the location of all new and previous borings and field tests performed.
  - (2) Narrative and graphical description of the subsurface conditions encountered at the site, identifying the regional and local geologic formations and features, site seismic and geologic hazards, and groundwater levels. The logs of soil borings and penetration tests shall be shown graphically with the elevation of samples indicated, and pertinent laboratory classification test data included.
  - (3) Presentation of the groundwater elevations, as encountered during the field exploration. In addition, estimates of the seasonal groundwater table fluctuation at the site.
  - (4) A presentation of all laboratory test data in appropriate graphical or tabular form, including descriptions of the equipment and procedures used.
  - (5) A description of the analyses and correlations used in evaluating the test data to arrive at engineering appraisals and design recommendations.
  - (6) Recommended foundation requirements for structure support based on the results of the field and laboratory tests. Recommendations shall include allowable bearing pressures and required depths of shallow foundations, estimated settlements, lateral resistance, and lateral load and over-turning

capacities. This shall include seismic, wind, and liquefaction considerations.

- (7) Additional geotechnical recommendations as needed including; site preparation and earthwork criteria, rock excavation, temporary and permanent slopes, corrosion potential, lateral earth pressure, pavement and slab-on grade support, etc.

#### 10. Suggested Modification

Any suggestions for modification of the soil investigation and testing program, such as relocation or addition/deletion of borings, increased depths, substitution or supplementation of field investigative procedures and testing items, or other changes believed to be appropriate for better understanding of the geotechnical site conditions are welcome and will be reviewed for acceptance.

#### 11. Deliverables

Three (3) copies of a Draft Report including all relevant field test results shall be submitted for OBO review. After review comments are addressed three (3) bound and two CD copies of the Final Reports shall be delivered to OBO. Final reports are requested to be received within 10 days after review comments are provided.

#### 12. Time Schedule

The proposal submitted by the potential Contractor shall list in days the time required after the notice to proceed for:

- (a) Commencement of the field work,
- (b) Completion of the field work and laboratory tests, and
- (c) Completion of the Draft Preliminary Geotechnical report

#### 13. Selection Criteria

The proposal shall include any local sub-consultants to be used and their fee schedule. The technical proposal and quotation should be submitted within two weeks of receipt of this SOW. Negotiations/discussions will commence after review of your cost proposal.

#### 14. Points of Contact

1) U.S. Embassy Wellington, Management Office

2) U.S. Department of State, Washington, DC

Overseas Buildings Operations (OBO/PDCS/PDC & DE)

Contacts: George Yi (703-875-7396), Skep Nordmark (703-875-5279)

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