

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED

NESPAK HOUSE: 1-C, Block-N, Model Town Extension, Lahore - 54700, Pakistan



Ref: 156-31/024/JuA/01/5643

Date: October 29, 2019

ENGINEERING DESIGN OF INFRASTRUCTURE DEVELOPMENT WORKS OF PHASE XI (RAHBAR), SECTOR IV, DHA LAHORE

Invitation of Bids for Geotechnical Investigations (Field and Laboratory Works)

Dear Sir,

Sealed bid (Technical and Financial in separate sealed envelopes) is invited on behalf of Defense Housing Authority (DHA), Lahore in accordance with the attached BOQ and qualification criteria from drilling firms for carrying out the geotechnical investigations for the subject project.

The companies capable of carrying out subject work are requested to provide their Company's Profile including the following documents along with their sealed bids:

1. PEC Registration Certificate
2. FBR & PRA Registration Certificates
3. List of Similar Projects completed during last three years
4. Financial Capability
5. Equipment Capability
6. Personnel Capability
7. Litigation History
8. HSE Policies

The work comprises; execution of boreholes up to 25 m depth below natural surface level (NSL) in overburden soils by straight rotary / hand auger drilling method, excavation of testpits, performance of SPTs in boreholes, performance of FDT in testpits, collection of disturbed/undisturbed soil samples, collection of water samples (if encountered) and laboratory testing of selected soil /water samples. The field and laboratory work shall have to be completed according to the following time schedule:

Sr No.	Minimum No. of Straight Rotary Drilling Rigs Required	Minimum No. of Hand Auger Sets Required	Total Time for Completion of Field Investigations	Total Time for Completion of Field & Laboratory Investigations
1	02	01	4 Weeks	6 Weeks

Your bid shall be valid for a time period of ninety (90) days after the bid opening. The work shall be executed under the instructions and full-time supervision of NESPAK engineer/geologist and the successful bidder shall mobilize to the site on two day's notice after issuance of Letter of Award/Acceptance.

The coordinates and ground elevations of all the boreholes & testpits by total station shall have to be provided to NESPAK before completion of investigation at site by the Contractor. The approved laboratory, where testing is to be carried out, shall be pursued by the successful bidder for timely completion of the assigned laboratory testing. The successful bidder shall be responsible for providing the field borehole/testpit logs, summary of samples recovered, summary of laboratory test results and detailed laboratory test results to NESPAK, within the contract period. A premium of up to 25 % will be admissible on the official rates of the soil laboratory, selected for testing of samples. This premium

55/MA

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TUV
AUSTRIA

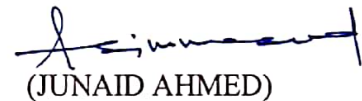
has been allowed as compensation to the Contractor for making advance payment to the laboratory and later following-up for obtaining test results in time. The name of the laboratory should be provided on page 2 of 2 (Annexure-1).

The bidders shall submit a bid security amounting to 5% of bid price at the time of submission of bids in the form of pay order or bank draft in favor of M/s NESPAK.

Your most competitive sealed bids (inclusive of all taxes) in accordance with the BOQs and qualification criteria, should reach the office of the undersigned by 1100 hours on November 18, 2019. Technical bids would be opened on the same day at 1200 hours in the presence of those bidders who wish to be present.

Financial bids would be opened after evaluation of Technical bids, at a time, date and venue announced and communicated to the technically responsive bidders in advance. However the final decision to accept/reject any or all the bids as per PPRA rules solely lies with the undersigned. The entire work shall be carried out in accordance with the requirements of the General Bidding Documents for Geotechnical Investigations available at NESPAK website (www.nespak.com.pk). **Payment of the entire work shall be made directly by the Client i.e. Defense Housing Authority (DHA), Lahore.**

for National Engineering Services Pakistan (Pvt.) Limited



(JUNAID AHMED)

for General Manager
Head, F& P Section (GT & GE Division)

ENGINEERING DESIGN OF INFRASTRUCTURE DEVELOPMENT WORKS OF PHASE-XI (RAHBAR), SECTOR IV, DHA LAHORE

GEOTECHNICAL INVESTIGATIONS
BILL OF QUANTITIES

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
A.	FIELD INVESTIGATIONS				
A1	Mobilization and demobilization of at least two (2) straight rotary / percussion drilling rigs, one (1) set of hand auger / light percussion boring equipment along with allied accessories and appropriate equipment for excavation of testpits at site including access to site/investigation point, setting up and shifting from one investigation point to another. The equipment should be sufficient enough to complete the work within scheduled time.	L.S.	Job		
A2	Execution of: <i>i) Six (6)</i> boreholes up to a maximum depth of 25 m below NSL at six Overhead Water Tank (OHWT) locations, <i>ii) Six (6)</i> boreholes up to a maximum depth of 20 m and <i>Three (3)</i> boreholes up to a maximum depth of 15 m at three locations of Sewage Disposal Stations (SDS), <i>iii) Six (6)</i> boreholes up to a maximum depth of 25 m below NSL at three locations of Nullah / Drain crossings, in overburden soils below NSL by straight rotary drilling method including backfilling of boreholes to their original position using cement:sand:bentonite.	L.M.	465		
A3	Execution of <i>Twelve (12)</i> boreholes up to a maximum depth of 10 m along the proposed alignment of sewer pipe in overburden soils below NSL by hand auger boring method including backfilling of boreholes to their original position using cement:sand:bentonite.	L.M.	120		
A4	Performance of Standard Penetration Tests (SPTs) in boreholes along with collection of SPT samples at 1 m interval in general, or as necessary, including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	555		
A5	Collection of undisturbed soil samples from boreholes through Shelby/Denison/Pitcher samplers, including their waxing, labelling, packing, storage & transportation to an approved testing laboratory.	No.	30		
A6	Excavation of <i>Ten (10)</i> testpits up to a maximum depth of 1.5 m below top of ground at Internal Road Network and <i>Six (6)</i> testpits up to a maximum depth of 1.5 m below top of ground at Approach Road locations, including backfilling of pits to original condition.	L.M.	24		
A7	Performance of field density tests by sand replacement method in testpits generally @ 1 test/pit at selected horizons including determination of insitu bulk & dry density and collection of small disturbed samples in moisture tins, determination of moisture content as well as labelling, storage and transportation of samples to the approved laboratory.	No.	16		
A8	Collection of composite bulk soil samples (minimum 60 kg) from testpits including their labelling, packing, storage & transportation to an approved laboratory.	No.	14		
A9	Collection of composite soil samples (minimum 100 kg) from nearby borrow areas including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	3		
A10	Performance of field permeability tests in boreholes at various depths using constant head or falling head methods for soil column/flush bottom conditions, as appropriate.	No.	6		
A11	Collection of water samples (if encountered) from boreholes including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	4		
	Sub-Total A	Rs.			

Establishment of coordinates and ground elevations of all the boreholes and testpits using Total Station are included in the scope of work. The coordinates should be provided with reference to a permanent local bench mark.

Preferred method of drilling is straight rotary / hand auger boring method. Percussion boring method shall be used in case of gravels/cobbles/boulders.

Field permeability test shall be carried out in boreholes executed by hand auger boring method at specified locations as directed by the Engineer. Cost of boring should be included in rates for permeability test.

All soil / water samples must be labelled, stored and transported as per ASTM requirements. The area ratio and clearance ratio of the thin walled tubes should be in strict compliance with relevant ASTM standard.

**ENGINEERING DESIGN OF INFRASTRUCTURE DEVELOPMENT WORKS OF PHASE-XI
(RAHBAR), SECTOR IV, DHA LAHORE**

**GEOTECHNICAL INVESTIGATIONS
BILL OF QUANTITIES**

Sr. No.	Description	Unit	Qty.	Rate	Amount
B.	LABORATORY TESTING			(Rs.)	(Rs.)
B1	Sieve analysis	No.	90		
B2	Hydrometer analysis	No.	25		
B3	Liquid and plastic limits	No.	30		
B4	Bulk density & dry density	No.	30		
B5	Consolidation with Swell Pressure Measurement	No.	8		
B6	Unconfined compression	No.	20		
B7	Direct Shear	No.	15		
B8	Modified AASHTO Compaction	No.	15		
B9	3-Point Soaked CBR	No.	15		
B10	Sulphate content of soil	No.	5		
B11	Chloride content of soil	No.	5		
B12	Organic matter content of soil	No.	5		
B13	Complete chemical analysis of water samples i/c TDS, Cl, SO4 & pH	No.	4		
Sub- Total B				Rs.	
Total (A+B)=				Rs.	
Say				Rs.	

POST QUALIFICATION OF BIDDING CONTRACTORS FOR GEOTECHNICAL INVESTIGATIONS FOR ENGINEERING DESIGN OF INFRASTRUCTURE DEVELOPMENT WORKS OF PHASE XI (RAHBAR), SECTOR IV, DHA LAHORE

1. Qualification Criteria

Qualification will be based on the criteria given in the following paras regarding the Applicant's experience, personnel and equipment capabilities, financial position and litigation history, as demonstrated by the Applicant's responses in the Forms attached as Annex-A to this Document. The Employer reserves the right to waive minor deviations, if these do not materially affect the capability of an Applicant to perform the contract by the Applicant.

Experience and resources of the Company intended to be employed as sub-contractor shall not be taken into account in determining the Applicant's compliance with the qualifying criteria. However, for joint venture, collective experience, resources and financial soundness of all partners shall be considered.

1.1 General Information

The Applicant shall provide general information of his firm as per the format specified in the Application Form A-1 attached in Annex-A.

1.2 Experience of the Firm

The Applicant shall meet the following minimum criteria:

- 1) Successful experience as contractor in the execution of at least five (5) projects involving bulk of geotechnical investigations within the last three (03) years. This experience should specifically be of geotechnical investigations of similar nature. The Applicant will supply information as per the format specified in the Application Form A-2 attached in Annex-A.

1.3 Personnel Capabilities

The Applicant must have in his employment, suitably qualified and experience personnel to fulfill the positions tabulated below. The Applicant will supply information as per the format specified in the Application Form A-3 attached in Annex-A.

Sr. No.	Position	Qualification*	No.	Minimum Experience (Years)
1	Technical Manager	B.Sc. Civil Engg.	1	3
2	Site Geologist/ Supervisor / Engineer	M. Sc. Geology/ B.Sc. Civil Engg. / B.Sc. Geological Engg.	3	2
3	HSE Supervisor	HSE Certification course	1	1
4	Driller	Literate	3	3

5	Skilled Labor	-	As Required	-
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1.4 Equipment Capabilities

The Applicant should own, or have assured access to the following key items of equipment in full working order, and must demonstrate that, based on known commitments, these will be available for deployment on the proposed works.

Sr. No.	Equipment Type & Characteristics	Minimum Number Required
1	Straight Rotary Drilling rig complete in all respects including drilling rods, bits, mud pumps etc. along with at least one stand-by rig.	2
2	Hand auger boring sets complete in all respects	1
3	Percussion boring set (> 250 mm diameter) complete in all respects including tripod, chiesal/bit etc.	2
4	Casing set having various diameters for all types of boring at least 25 m in length with casing bits.	3
5	Standard penetration test equipment complete in all respects including all rods, split spoon sampler, hammer and containers etc.	3
6	Denison/Pitcher/Shelby samplers and tubes	3 each
7	Hydraulic jacks with all accessories for the extraction of casings	1
8	Electrically operated sounder for groundwater level measurement	1
9	Testpit excavation equipment complete in all respects	As required
10	Field density test apparatus complete in all respect as per ASTM requirements	2
11	Wooden box for the preservation of undisturbed soil samples	As required
12	Transport for mobilization of equipment	As required

The Applicant will supply information as per the format specified in the Application Form A-4 attached in Annex-A.

1.5 Financial Capabilities

The Applicant shall meet the following minimum criteria:

- 1) Annual turnover which is also termed as income from contracting for procurement of geotechnical investigations and is defined as billing for works completed during the last three (3) years of at least Rs. 2 million or the said figure has been achieved in any year during the last three (3) years.

The Applicant shall also provide evidence of financial health such as bank account statements, available line of credits, etc., to show the soundness of the Applicant's financial position for procurement of geotechnical investigations works. The Applicant will provide annual turnover of the geotechnical investigation works carried out by him during the last three years. The Applicant will supply annual turnover information as per the format specified in the Application Form A-5 attached in Annex-A.

1.6 Litigation History

The Applicant should provide accurate information on any litigation or arbitration resulting from Contracts completed or under execution over the last three (03) years. The Applicant will supply information as per the format specified in the Application Form A-6 attached in Annex-A. A consistent/ overwhelming history of award against the Applicant may result in rejection of the application. In case an Applicant claims Nil litigation, he shall submit the same statement on the letter head of his company.

1.7 Application of Health, Safety and Environmental Standards

The Applicant should provide the HSE Policies and supporting documentary evidence for the following:

- i) First Aid Box
- ii) Personnel Protective Equipments (PPEs)
- iii) Standard Operating Procedures (SOPs)
- iv) Health, Safety and Environmental (HSE) Policies
- v) HSE staff

Application Form A-1

Page ___ of ___ Pages

General Information

All individual Applicants applying for qualification are requested to complete the information in this form. Nationality information (if applicable) is also to be provided for foreign owners as required under the PEC Bye-Laws as a Partnership.

1.	Name of Firm	
2.	Head Office Address	
3.	Telephone	Contact Person: Name: Title: Cell No.
4.	Fax	E-mail
5.	Place of Incorporation/Registration Certificates of the firm*	Year of incorporation/registration

*** Registration certificates must include:**

- Valid registration with Pakistan Engineering Council (PEC)
- Valid registration with Federal Board of Revenue (FBR)
- Valid registration with concerned Provincial Revenue Authority (PRA)
- Proof of active taxpayer of FBR & PRA

Experience of the Firm

Name of Applicant: _____

Sr. No.	Name of Project	Value of Geotech Contract* (Pak Rs.)	Contract Duration

**Attach copy of Letter of Awards / Project Completion Certificates for any five (5) latest projects.*

Personnel Capabilities

Name of Applicant: _____

Sr. No.	Name of Person	Qualification	Designation/ Position*	Total Experience

**Attach CVs of the Key Staff Members.*

Equipment Capabilities

Name of Applicant: _____

Sr. No.	Equipment Description	Capacity	Number of Equipment	Working Condition a) Very good b) Good c) Satisfactory	Current Location

Financial Capabilities

Name of Applicant: _____

Year	Annual Turnover (in PKR)
2018 - 2019	
2017 - 2018	
2016 - 2017	

Note: Financial soundness certificate from the bank(s) as specified in section 1.5 must be provided by the Applicant

Litigation History

Name of Applicant: _____

Year	Award for or against Applicant	Name of Client, cause of litigation, and matter in dispute	Disputed amount (current value Pak Rs. or equivalent)

Health, Safety and Environmental (HSE) Policies Personal Protective Equipment (PPE) and Standard Operating Procedures (SOP) of the Contractor

Name of Applicant: _____

The Applicant should provide the following policies/supporting documentary evidence as required in Para 1.7.

A. HSE Policies

Please attach HSE Policies

B. Details of PPE Available with the Contractor

Sr. No.	Type of PPE	Total Number

C. Details of SOPs of the Contractor

Please attach the copies of SOPs