

# NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED

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



Ref: 156-03/02A/luH/01/0912

Date: November 21, 2022

## CONSTRUCTION OF MULTI LEVEL GRADE SEPARATION AT SHAHDARA MORR, LAHORE

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

Dear Sir,

Sealed bids (Technical and Financial in separate sealed envelopes) are invited in accordance with the attached BOQ and qualification criteria from drilling Contractors / companies 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 and the following documents along with their sealed bids:

1. PEC Registration Certificate
2. FBR & Provincial Revenue Authority (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 40 m depth below natural surface level (NSL) by using straight rotary drilling / percussion boring method, excavation of testpits, performance of SPTs in boreholes, performance of field density tests in testpits, collection of disturbed/undisturbed soil samples, collection of water samples and laboratory testing of selected soil/ water samples. The field and laboratory work shall have to be completed according to the following time schedule:

Minimum No. of Straight Rotary Drilling Rigs/ Percussion boring Sets Required	Time for Completion of Field Investigations	Time for Completion Laboratory Testing	Total Time
02	12 Days	12 Days	24 Days

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 engineers/geologists and the successful bidder shall mobilize to the site on two (02) days' notice after issuance of Letter of Award/Acceptance.

The coordinates and ground elevations of all the boreholes and 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.

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The successful bidder shall be responsible for providing the factual geotechnical investigation report (including borehole & testpit logs, summary of field activities, summary of laboratory test results and detailed laboratory test result sheets) to NESPAK, within the contract period. A premium of up to 25 % will be admissible on the official rates of the laboratory, selected for testing of soil / water samples. This premium 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 no. 2 of 2 (Annexure-1).

The bidders shall submit a bid security amounting to Rs.75, 000/- (Rupees seventy five thousand) 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 (complete in all respects and inclusive of all taxes) in accordance with the BOQ and qualification criteria, should reach the office of the undersigned by 1400 hours on or before December 07, 2022. Technical bids would be opened on the same day at 1430 hours after their receipt 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](http://www.nespak.com.pk)). Payment of the entire work shall be made by NESPAK after receipt of its fee from Client.

for National Engineering Services Pakistan (Pvt.) Limited



(IRFAN UL HAQ)

Executive Vice President / Head  
Geotechnical & Geo-Environmental Engineering, Division



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CONSTRUCTION OF MULTI LEVEL GRADE SEPARATION AT SHAHDARA MORR, LAHORE

GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
<b>FIELD INVESTIGATIONS</b>					
A1	Mobilization and demobilization of at least <i>Two (02)</i> straight rotary drilling rigs / percussion boring equipments at site including setting-up & shifting of equipment from one investigation point to another. The equipment should be sufficient to meet the time schedule. Minimum permissible diameter of borehole is 200 mm for percussion method and 100 mm for straight rotary method.	L.S.	Job		
A2	Execution of <i>Five (05)</i> boreholes up to a maximum depth of 40 m in overburden soils below NSL by straight rotary drilling / percussion boring method including backfilling of boreholes to their original position by using cement-sand-bentonite mix.	L.M.	200		
A3	Performance of Standard Penetration Tests (SPTs) in boreholes along with collection of SPT samples at 1 m depth interval in general, or as necessary, including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	185		
A4	Collection of undisturbed soil samples from boreholes through Shelby/Denson/Fitcher samplers, including their waxing, labelling, packing, storage & transportation to an approved testing laboratory.	No.	15		
A5	Excavation of <i>Ten (10)</i> testpits up to a maximum depth of 1.5 m or up-to subgrade, whichever is met earlier, including exposing existing road / pavement layers and backfilling of pits to their original condition.	L.M.	15		
A6	Performance of field density tests (FDTs) by sand replacement method in testpits generally @ 2 - 3 tests/pit at selected horizons in existing pavement layers (i.e. in Water Bound Mecedam/ Aggregate Base Course, Sub-Base and Sub-grade), including determination of in-situ bulk and dry density and collection of small disturbed samples in moisture tins for moisture content determination in laboratory by oven drying method as well as labelling, packing, storage & transportation to an approved testing laboratory.	No.	25		
A7	Collection of composite bulk samples (i.e. from Water Bound Mecedam/ Aggregate Base Course, Sub-Base and Sub-grade) from testpits including their labelling, packing, storage & transportation to an approved laboratory.	No.	15		
A8	Collection of composite bulk soil samples (60 - 100 kg) from nearby Borrow Areas including their labelling, packing, storage & transportation to an approved laboratory.	No.	2		
A9	Collection of water samples (if encountered) from boreholes including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	4		
	<b>Sub-Total A</b>	<b>Rs.</b>			
<p>Establishment of coordinates and ground elevations of all the boreholes &amp; testpits using TOTAL STATION are included in the scope of work. The coordinates should be provided with reference to a permanent local bench mark.</p> <p>All soil / water samples shall be stored and transported as per ASTM standards. The area and clearance ratio of the sampling tubes should be as per ASTM requirements.</p> <p>Contractor will be responsible for arrangement of Personnel Protective Equipments (PPEs) such as safety helmets and jackets for NESPAK site supervisory / visiting staff.</p> <p>Straight rotary drilling method will be used for execution of borehole in sandy / clayey soil. However, percussion method of boring will be required if gravelly strata encountered.</p>					



CONSTRUCTION OF MULTI LEVEL GRADE SEPARATION AT SHAHDARA MORR, LAHORE

GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
<b>B.</b>	<b>LABORATORY TESTING</b>				
B1	Sieve Analysis	No.	40		
B2	Hydrometer Analysis	No.	10		
B3	Liquid & Plastic Limits	No.	20		
B4	Natural Moisture Content & Dry Density	No.	15		
B5	Consolidation with Swell Potential Measurements	No.	3		
B6	Direct Shear	No.	10		
B7	Unconfined Compression	No.	8		
B8	Modified AASHTO Compaction	No.	17		
B9	3-Point Soaked CBR	No.	17		
B10	Sulphate Content of Soil	No.	4		
B11	Chloride Content of Soil	No.	4		
B12	Organic Matter Content of Soil	No.	4		
B13	Complete Chemical Analysis of Water Samples i/c TDS, Cl, SO <sub>4</sub> & pH	No.	4		
	<b>Sub-Total B</b>	<b>Rs.</b>			
<b>Name of Laboratory:</b>					
<b>Total (A+B)=</b>				<b>Rs.</b>	



**QUALIFICATION OF BIDDING CONTRACTORS FOR  
GEOTECHNICAL INVESTIGATIONS FOR THE CONSTRUCTION OF  
MULTI LEVEL GRADE SEPARATION AT SHAHDARA MORR, 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	Minimum No.	Minimum Relevant Experience (Years)
1	Technical Manager	B.Sc. Civil Engg.	1	5
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	2	3
5	Skilled Labor	-	As required	-



#### 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	Percussion boring set ( $\geq 200$ mm diameter) complete in all respects including tripod, chiesal/bit etc.	2
3	Casing set having various diameters for all types of boring at least 40 m in length with casing bits.	2
4	Standard penetration test (SPT) equipment complete in all respects as per ASTM requirements including all rods, split spoon sampler, hammer and containers etc.	2
5	Denison/Pitcher/Shelby samplers and tubes as per ASTM requirements	2 each
6	Hydraulic jacks with all accessories for the extraction of casings	1
7	Electrically operated sounder for groundwater level measurement	1
8	Testpit excavation equipment, complete in all respects	1
9	Field density test apparatus complete in all respect as per ASTM requirements.	1
10	Wooden box for the preservation of undisturbed soil samples	As required
11	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. 5.0 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











**Financial Capabilities***Name of Applicant:* \_\_\_\_\_

Year	Annual Turnover (in PKR)
2020 - 2021	
2019 - 2020	
2018 - 2019	

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





