



Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP)

GEOTECHNICAL INVESTIGATION WORK

(Geotechnical Investigation Services for Land along Lower Topa Murree)

BIDDING DOCUMENTS

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May 2017

FOR INSPECTION PURPOSES ONLY

INVITATION FOR BIDS

INVITATION FOR BIDS

Date: May 19, 2017
Bid Reference No.: GT/17-001

1. The Employer, Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) a company duly incorporated under the provisions of the Company Ordinance, 1984 owned and controlled by the Government of the Punjab, invites sealed bids from eligible firms / companies licensed by the Pakistan Engineering Council in the relevant category (C-6 or above) and having proven track record for conducting Geotechnical Investigations, design and preparation of Geotechnical Investigation reports. The Works “Geotechnical Investigation Services for Land Along Lower Topa Murree” shall be carried out under the full time supervision of ECSP Geotechnical Engineers/Geologists, which will be completed in thirty (30) days.
2. A complete set of Bidding Documents may be purchased by an interested eligible bidder on submission of a written application to the office given below and upon payment of a non-refundable fee of Rupees One Thousand only (Rs. 1,000/-). Bidders may acquire the Bidding Documents from the Office of the Employer, at the address given below during office hours.
3. The Bidders may inspect the documents at ECSP Website.
4. All bids must be accompanied by a Bid Security in the amount of Rs30,000/- (Rupees Thirty Thousand) in form of Bank Draft or Deposit at Call (CDR) issued by a Scheduled Bank in Pakistan in favour of Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Lahore, valid for a period 28 days beyond the Bid Validity date. Bids must be delivered to at the address given below at or before 1100 hours, on 2nd June, 2017. Bids will be opened at 1130 hours on the same day in the presence of bidders’ representatives who choose to attend, at the address given below.

Head (Business & Development)

Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Conference Room
2nd Floor 83 – A, E/1, Main Boulevard Gulberg III, Lahore
Ph: +92 42-35717681-4

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**INSTRUCTIONS
TO BIDDERS
&
BIDDING DATA**

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INSTRUCTIONS TO BIDDERS

A. GENERAL

IB.1 Scope of Bid & Source of Funds

1.1 Scope of Bid

The Employer as defined in the Bidding Data (hereinafter called “the Employer”) wishes to receive Bids for the Works summarized in the Bidding Data (hereinafter referred to as “the Works”).

Bidders must quote for the complete scope of work. Any Bid covering partial scope of work will be rejected as non-responsive.

1.2 Source of Funds

The Employer has arranged funds from its own sources.

IB.2 Eligible Bidders

2.1 Bidding is open to all firms and persons meeting the following requirements:

- a) duly licensed by the Pakistan Engineering Council (PEC) in the appropriate category for value of Works.
- b) duly pre-qualified/enlisted with the Employer.

IB.3 Cost of Bidding

3.1 The bidder shall bear all costs associated with the preparation and submission of its bid and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

B. BIDDING DOCUMENTS

IB.4 Contents of Bidding Documents

4.1 In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addendum issued in accordance with Sub-Clause IB.6.1.

1. Instructions to Bidders & Bidding Data

2. Form of Bid & Schedules to Bid
Schedules to Bid comprise the following:
 - (i) Schedule A: Schedule of Prices
 - (ii) Schedule B: Proposed Programme of Works (Work Schedule)
 - (iii) Schedule C: Method of Performing Works (Method Statement)
3. Conditions of Contract & Contract Data
4. Standard Forms:
Form of Contract Agreement
5. Specifications
6. Drawings, if any

IB.5 Clarification of Bidding Documents

- 5.1 A prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Engineer/Employer at the Employer's/Engineer's address indicated in the Bidding Data.
- 5.2 The Engineer/Employer will respond to any request for clarification which it receives earlier than seven (07) days prior to the deadline for the submission of Bids. Copies of the Engineer/Employer's response will be forwarded to all prospective bidders, at least five (5) days prior to dead line for submission of Bids, who have received the Bidding Documents including a description of the enquiry but without identifying its source.

IB.6 Amendment of Bidding Documents

- 6.1 At any time prior to the deadline for submission of Bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 6.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 6.1 hereof, and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.
- 6.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may at its discretion extend the deadline for submission of Bids.

C. PREPARATION OF BIDS

IB.7 Language of Bid

- 7.1 The bid prepared by the bidder and all correspondence and documents relating to the Bid, exchanged by the bidder and the Employer shall be written in the English language, provided that any printed literature furnished by the bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Bid, the English translation shall govern.

IB.8 Documents Comprising the Bid

- 8.1 The bid prepared by the bidder shall comprise the following components:
- (a) Covering Letter
 - (b) Form of Bid duly filled, signed and sealed, in accordance with Sub-Clause IB.14.3.
 - (c) Schedules (A to C) to Bid duly filled and initialed, in accordance with the instructions contained therein & in accordance with Sub-Clause IB.14.3.
 - (d) Bid Security furnished in accordance with Clause IB.13.
 - (e) Power of Attorney in accordance with Sub-Clause IB.14.5.
 - (f) Documentary evidence in accordance with Clause IB.11
 - (g) Documentary evidence in accordance with Clause IB.12.

IB.9 Sufficiency of Bid

- 9.1 Each bidder shall satisfy himself before Bidding as to the correctness and sufficiency of his Bid and of the rates and prices entered in the Schedule of Prices, which rates and prices shall except in so far as it is otherwise expressly provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper completion of the Works.
- 9.2 The bidder is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the bid and entering into a Contract for execution of the Works.

IB.10 Bid Prices, Currency of Bid and Payment

- 10.1 The bidder shall fill up the Schedule of Prices (Schedule A to Bid) indicating the unit rates and prices of the Works to be performed under the Contract. Prices in the Schedule of Prices shall be entered keeping in view the instructions contained in the Preamble to Schedule of Prices.

- 10.2 Unless otherwise stipulated in the Conditions of Contract, prices quoted by the bidder shall remain fixed during the bidder's performance of the Contract and not subject to variation on any account.
- 10.3 The unit rates and prices in the Schedule of Prices shall be quoted by the bidder in the currency as stipulated in Bidding Data.

IB.11 Documents Establishing Bidder's Eligibility and Qualifications

- 11.1 Pursuant to Clause IB.8, the bidder shall furnish, as part of its bid, documents establishing the bidder's eligibility to bid and its qualifications to perform the Contract if its bid is accepted.
- 11.2 Bidder/Manufacturer must possess and provide evidence of its capability and the experience as stipulated in Bidding Data and the Qualification Criteria stipulated in the Bidding Documents.

IB.12 Documents Establishing Works' Conformity to Bidding Documents

- 12.1 The documentary evidence of the Works' conformity to the Bidding Documents may be in the form of literature, drawings and data and the bidder shall furnish documentation as set out in Bidding Data.
- 12.2 The bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, if any, designated by the Employer in the Technical Provisions are intended to be descriptive only and not restrictive.

IB.13 Bid Security

- 13.1 Each bidder shall furnish, as part of his bid, at the option of the bidder, a Bid Security in the amount stipulated in Bidding Data in Pak. Rupees in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or an insurance company having atleast AA rating from PACRA/JCR in favour of the Employer valid for a period up to twenty eight (28) days beyond the bid validity date.
- 13.2 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 13.3 The bid securities of unsuccessful bidders will be returned upon award of contract to the successful bidder or on the expiry of validity of Bid Security whichever is earlier.
- 13.4 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security, pursuant to Clause IB.21 and signed the Contract Agreement, pursuant to Sub-Clauses IB.20.2 & 20.3.

13.5 The Bid Security may be forfeited:

- (a) if a bidder withdraws his bid during the period of bid validity; or
- (b) if a bidder does not accept the correction of his Bid Price, pursuant to Sub-Clause 16.4 (b) hereof; or
- (c) in the case of a successful bidder, if he fails to:
 - (i) furnish the required Performance Security in accordance with Clause IB.21, or
 - (ii) sign the Contract Agreement, in accordance with Sub-Clauses IB.20.2 & 20.3.

IB.14 Validity of Bids, Format, Signing and Submission of Bid

- 14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the date of bid opening.
- 14.2 All Schedules to Bid are to be properly completed and signed.
- 14.3 No alteration is to be made in the Form of Bid except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the bid may be rejected.
- 14.4 Each bidder shall prepare Original and number of copies specified in the Bidding Data of the documents comprising the bid as described in Clause IB.8 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 14.5 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign (in the case of copies, Photostats are also acceptable). This shall be indicated by submitting a written Power of Attorney authorising the signatory of the bidder to act for and on behalf of the bidder. All pages of the bid shall be initialed and official seal be affixed by the person or persons signing the bid.
- 14.6 The Bid shall be delivered in person or sent by registered mail at the address to Employer as given in Bidding Data.

D. SUBMISSION OF BID

IB.15 Deadline for Submission, Modification & Withdrawal of Bids

- 15.1 Bids must be received by the Employer at the address/provided in Bidding Data not later

than the time and date stipulated therein.

- 15.2 Bids submitted through telegraph, telex, fax or e-mail shall not be considered.
- 15.3 Any bid received by the Employer after the deadline for submission prescribed in Bidding Data will be returned unopened to such bidder.
- 15.4 Any bidder may modify or withdraw his bid after bid submission provided that the modification or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 15.5 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security pursuant to Sub-Clause IB.13.5(a).

E. BID OPENING AND EVALUATION

IB.16 Bid Opening, Clarification and Evaluation

- 16.1 The Employer will open the bids, in the presence of bidders' representatives who choose to attend, at the time, date and location stipulated in the Bidding Data.
- 16.2 The bidder's name, Bid Prices, any discount, the presence or absence of Bid Security, and such other details as the Employer at its discretion may consider appropriate, will be announced by the Employer at the bid opening. The Employer will record the minutes of the bid opening. Representatives of the bidders who choose to attend shall sign the attendance sheet.

Any Bid Price or discount which is not read out and recorded at bid opening will not be taken into account in the evaluation of bid.

- 16.3 To assist in the examination, evaluation and comparison of Bids the Engineer/Employer may, at its discretion, ask the bidder for a clarification of its Bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.
- 16.4 (a) Prior to the detailed evaluation, pursuant to Sub-Clauses IB.16.7 to 16.9, the Engineer/Employer will determine the substantial responsiveness of each bid to the Bidding Documents. For purpose of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations. It will include to determine the requirements listed in Bidding Data.
- (b) Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and total price that is obtained by

multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the words and figures the amount in words shall prevail. If there is a discrepancy between the Total Bid price entered in Form of Bid and the total shown in Schedule of Prices-Summary, the amount stated in the Form of Bid will be corrected by the Employer in accordance with the Corrected Schedule of Prices.

If the bidder does not accept the corrected amount of Bid, his Bid will be rejected and his Bid Security forfeited.

16.5 A Bid determined as substantially non-responsive will be rejected and will not subsequently be made responsive by the bidder by correction of the non-conformity.

16.6 Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation may be waived by Employer, provided such waiver does not prejudice or affect the relative ranking of any other bidders.

16.7 The Engineer/Employer will evaluate and compare only the bids previously determined to be substantially responsive pursuant to Sub-Clauses IB.16.4 to 16.6 as per requirements given hereunder. Bids will be evaluated for complete scope of works. The prices will be compared on the basis of the Evaluated Bid Price pursuant to Sub-Clause 16.8 herein below.

(a) Technical Evaluation

It will be examined in detail whether the Works offered by the bidder complies with the Technical Provisions of the Bidding Documents. For this purpose, the bidder's data submitted with the bid in Schedule B to Bid will be compared with technical features/criteria of the Works detailed in the Technical Provisions. Other technical information submitted with the bid regarding the Scope of Work will also be reviewed.

(b) Commercial Evaluation

It will be examined in detail whether the bids comply with the commercial/contractual conditions of the Bidding Documents. It is expected that no material deviation/stipulation shall be taken by the bidders.

16.8 Evaluated Bid Price

In evaluating the bids, the Engineer/Employer will determine for each bid in addition to the Bid Price, the following factors (adjustments) in the manner and to the extent indicated below to determine the Evaluated Bid Price:

- (i) making any correction for arithmetic errors pursuant to Sub-Clause 16.4 hereof.
- (ii) making an appropriate price adjustment for any other acceptable variation or deviation.

- (iii) making an appropriate price adjustment for Deviations in terms of Payments (if any and acceptable to the Employer).
- (iv) discount, if any, offered by the bidders as also read out and recorded at the time of bid opening.

16.9 Evaluation Methods

Pursuant to Sub-Clause 16.8, Para (ii), and (iii) following evaluation methods for price adjustments will be followed:

- (i) Price Adjustment for Technical Compliance

The cost of making good any deficiency resulting from technical non compliance will be added to the Corrected Total Bid Price for comparison purposes only. The adjustments will be applied taking the highest price quoted by other bidders being evaluated in detail in their original Bids for corresponding item. In case of non availability of price from other bidders, the price will be estimated by the Engineer/Employer.

- (ii) Price Adjustment for Commercial Compliance

The cost of making good any deficiency resulting from any quantifiable variations and deviations from the Bid Schedules and Conditions of Contract, as determined by the Engineer/Employer will be added to the Corrected Total Bid Price for comparison purpose only. Adjustment for commercial compliance will be added to the Corrected Total Bid Prices.

- (iii) Price Adjustment for Deviation in Terms of Payments

Refer to Bidding Data

IB.17 Process to be Confidential

17.1 Subject to Sub-Clause IB.16.3 heretofore, no bidder shall contact Engineer/Employer on any matter relating to its Bid from the time of the Bid opening to the time the bid evaluation result is announced by the Employer. The evaluation result shall be announced at least ten (10) days prior to award of Contract. The announcement to all bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated.

17.2 Any effort by a bidder to influence Engineer/Employer in the Bid evaluation, Bid comparison or Contract Award decisions may result in the rejection of his Bid. Whereas, any bidder feeling aggrieved may lodge a written complaint not later than fifteen (15) days after the announcement of the bid evaluation result, however, mere fact of lodging a complaint shall not warrant suspension of procurement process.

F. AWARD OF CONTRACT

IB.18. Post Qualification

- 18.1 The Employer, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons therefor in writing. They shall form part of the records of that bid evaluation report.

- 18.2 The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the bidders' qualifications submitted under Clause IB.11, as well as such other information required in the Bidding Documents.

IB.19 Award Criteria & Employer's Right

- 19.1 Subject to Sub-Clause IB.19.2, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be qualified to satisfactorily perform the Contract in accordance with the provisions of Clause IB.18.

- 19.2 Notwithstanding Sub-Clause IB.19.1, the Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation to inform the affected bidders of the grounds for the Employer's action except that the grounds for its rejection of all bids shall upon request be communicated, to any bidder who submitted a bid, without justification of the grounds. Notice of the rejection of all the bids shall be given promptly to all the bidders.

IB.20 Notification of Award & Signing of Contract Agreement

- 20.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his bid has been accepted.

- 20.2 Within seven (7) days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send the successful bidder the Form of Contract Agreement provided in the Bidding Documents, incorporating all agreements between the parties.

- 20.3 The formal Agreement between the Employer and the successful bidder shall be executed

within seven (7) days of the receipt of Form of Contract Agreement by the successful bidder from the Employer.

IB.21 Performance Security

21.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Conditions of Contract within a period of fourteen (14) days after the receipt of Letter of Acceptance.

21.2 Failure of the successful bidder to comply with the requirements of Sub-Clauses IB.20.2 & 20.3 or 21.1 or Clause IB.22 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

IB.22 Integrity Pact

The Bidder shall sign and stamp the Form of Integrity Pact provided at Schedule-F to Bid in the Bidding Document for all Federal Government procurement contracts exceeding Rupees ten (10) million. Failure to provide such Integrity Pact shall make the bid non-responsive.

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BIDDING DATA

Instructions to Bidders

Clause Reference

1.1 Name of Employer

Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) a company duly incorporated under the provisions of the Company Ordinance, 1984 owned and controlled by the Government of the Punjab

Brief Description of Works

GEO TECHNICAL INVESTIGATION SERVICES FOR LAND ALONG LOWER TOPA MURREE

- 5.1 (a) Employer's address:
Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Conference Room 2nd
Floor 83 – A, E/1, Main Boulevard Gulberg III, Lahore
Ph: +92 42-35717681-4
- (b) Engineer's address:
Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Conference Room 2nd
Floor 83 – A, E/1, Main Boulevard Gulberg III, Lahore
Ph: +92 42-35717681-4
- 10.3 Bid shall be quoted entirely in Pak. Rupees. The payment shall be made in Pak. Rupees.
- 11.2 The bidder should have the financial, technical and production capability necessary to perform the Contract as follows:

“Geotechnical Investigations and preparation of Geotechnical Investigation reports”
- 12.1 Description of the Works, essential technical and performance characteristics As per Drawings and Schedule of Prices.
- 13.1 **Amount of Bid Security**

Rs 30,000/- (Rupees Thirty Thousand Only)

14.1 Period of Bid Validity

100 days after date of bid opening

14.4 Number of Copies of the Bid to be Submitted

One original plus two (02) copies.

14.6 (a) Employer's Address for the Purpose of Bid Submission

Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Conference Room 2nd Floor
83 – A, E/1, Main Boulevard Gulberg III, Lahore

15.1 Deadline for Submission of Bids

Time: 1100 hours

Date: 02-06-2017

16.1 Venue, Time, and Date of Bid Opening

Venue: Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Conference Room
2nd Floor 83 – A, E/1, Main Boulevard Gulberg III, Lahore

Time: 1130 hours

Date: 02-06-2017

16.4 Responsiveness of Bids

- (i) the Bid is valid till required period,
- (ii) the Bid prices are firm during currency of contract (if it is a fixed price bid)
- (iii) completion period offered is within specified limits,
- (iv) the Bidder is eligible to Bid and possesses the requisite experience, capability and qualification.
- (v) the Bid does not deviate from basic technical requirements and
- (vi) the Bids are generally in order, etc.

16.9 Price Adjustment:

Not Applicable

ATTACHMENT TO TENDERING DATA
Post-Qualification Criteria and Requirements

This Attachment contains all the methods, criteria, and requirements that the Employer shall use to evaluate Tenderers. The information to be provided in relation to each requirement and the definitions of the corresponding terms are included in the respective Forms.

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Post-Qualification Criteria and Requirements

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Partner	One Partner	
1. Eligibility							
1.1	Nationality	Pakistani	Must meet requirement	N/A	N/A	N/A	Forms ELI – 1.1 and 1.2, with attachments Bidder Submission Form
2. Historical Contract Non-Performance							
2.1	History of Non-Performing Contracts	Non-performance of a contract did not occur within the last 3 (three) years prior to the deadline for bi submission based on all information on fully settled disputes or litigation..	Must meet requirement	N/A	N/A	N/A	Form CON-2
2.2	Pending Litigation	All pending litigation shall in total not represent more than 50% (fifty percent) of the Bidder's net worth and shall be treated as resolved against the Bidder.	Must meet requirement	N/A	N/A	N/A	Form CON – 2
3. Financial Situation							
3.1	Financial Performance	Submission of audited balance sheets for the last 3 (three) years to demonstrate: the current soundness of the Bidder's financial position; (as a minimum, the Bidder's net worth calculated as the difference between total assets and total liabilities should be positive)	Must meet requirement Must meet requirement	N/A N/A	N/A N/A	N/A N/A	Form FIN – 3.1 with attachments
3.2	Average Annual Construction Turnover	Minimum average annual construction turnover of Rs 10 (Ten) million, calculated as total certified payments received for contracts in progress or completed, within the last 3 (three) years divided by 3.	Must meet requirement	N/A	N/A	N/A	Form FIN – 3.2

Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Partner	One Partner	
4. Experience							
4.1	General Experience	Experience under construction contracts in the role of contractor, subcontractor, or management contractor for at least the last 5 (five) years prior to the Bid submission deadline, and with activity in at least nine (9) months in each year.	Must meet requirement	N/A	N/A	N/A	Form EXP – 4.1
4.2 (a)	Specific Construction Experience	Participation as contractor, management contractor or subcontractor, in at least 3 (three) contracts within the last 5 (five) years, with a value of each at least Rs 4.0 million, that have been successfully and substantially completed and that are similar to the proposed works. The similarity shall be based on the physical size, complexity, methods/ technology or other characteristics as per Scope of this Contract.	Must meet requirement	N/A	N/A	N/A	Form EXP 4.2(a)

5. Personnel Capabilities

The Applicant must have in his employment, suitably qualified personnel to fulfill the following key management and specialist permanent positions. The Applicant will supply information on a prime and an alternate candidate (if he so wishes) against position (both should meet the specified experience requirements):

Sr. No.	Position	Qualification*	No.	Minimum Experience (Years)	In Similar Works (Years)	As Manager of similar Works (Years)
1	Technical Manager	B.Sc. Civil Engg.	1	10	8	5
2	Site Geologist/ Engineer per drilling rig	M. Sc. Engineering Geology/ B.Sc. Civil Engg.	2	3	2	1
3	Site Supervisor	M. Sc. Geology/ B.Sc. Geological Engg./ B.Sc. Civil Engg.	4	2	1	
4	Driller	Literate	4	3	2	
5	HSE Supervisor	Diploma in Civil Engineering with HSE Certification course	1	1	1	
6	Skilled Labour		As Required			

***Note:** The applicant must provide proof of the above mentioned staff having valid registration with PEC/Professional affiliation, where applicable along with their CVs. Also a documentary proof will be required of permanent working of the staff with the Applicant.

6. Equipment Capabilities

The Applicant should own, or have assured access to (through ownership, purchase agreement or other means, a documentary proof of ownership of the equipment mentioned below shall be provided along with the pre-qualification document), the following key items of equipment (limited to only major 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.

The Applicant may also list alternative equipment, which he would propose for the Work together with an explanation of the alternate proposal. The Applicant should also mention proper location of the equipment/plant at the time of application/inspection.

Sr. No.	Equipment Type & Characteristics	Minimum Number Required
1	Straight Rotary Drilling rigs complete in all respects including rods, bits, mud pumps etc.	4
2	Light percussion boring sets (100 -150 mm diameter) complete in all respects including tripod, chisel/bit etc.	3
3	Percussion boring sets (>150 mm diameter) complete in all respects including tripod, chisel/bit etc.	2
4	Casing sets having various diameters for all types of boring at least 30 m in length with casing bits.	3
5	Hand augers complete in all respects	3
6	Standard penetration test equipment complete in all respects including all rods, split spoon sampler, solid cone attachment, hammer and containers etc.	6
7	Denison/Pitcher/Shelby/Piston samplers	3 each
8	Core barrels (Single Tube (2 nos.), Double Tube (3 nos.) and Triple Tube (1 no,)), coring bits and casing bits.	-
9	Hydraulic jacks with all accessories for the extraction of casings	2
10	Electrically operated sounder for groundwater level measurement	2
12	Field density test apparatus (6 and 12 inches dia. cone) complete in all respect	2 each
13	Wooden boxes for the preservation of Block soil samples	As required
14	Wooden/ steel core boxes for the preservation of Rock Core samples	As required
15	Transport (4 wheel drive) at site along with temporary site office with all accessories.	2

Sr. No.	Equipment Type & Characteristics	Minimum Number Required
16	Applicant should provide details of any additional capability to above if any equipment (CPT, Water pressure test, Survey equipment, Piezometers etc.)	

Note: The Applicant must provide proof on stamp paper in the form of Affidavit for ownership of all the mentioned tools and plants. In addition, the Applicant shall furnish a statement giving present deployment of the equipment, such as a Project location or machine yard.

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

FOR INSPECTION PURPOSES ONLY

FORM OF BID AND SCHEDULES TO BID

FORM OF BID

(LETTER OF OFFER)

Bid Reference No. _____

(Name of Works)

To:

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Bidding Data, Conditions of Contract, Contract Data, Specifications, Drawings, if any, Schedule of Prices and Addenda Nos. _____ for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of and address _____ and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price of Rs _____ (Rupees _____) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules attached hereto form part of this Bid.
3. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of _____ drawn in your favour or made payable to you and valid for a period of twenty eight (28) days beyond the period of validity of Bid.
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the time(s) stated in Contract Data.
5. We agree to abide by this Bid for the period of _____ days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Bid is accepted, to execute the Performance Security referred to in Conditions of Contract for the due performance of the Contract.

8. We understand that you are not bound to accept the lowest or any bid you may receive.

9. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the Works.

Dated this _____ day of _____, 20

Signature _____

in the capacity of _____ duly authorized to sign bid for and on behalf of

(Name of Bidder in Block Capitals)

(Seal)

Address

Witness:

(Signature) _____

Name: _____

Address: _____

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[SCHEDULES TO BID INCLUDE THE FOLLOWING:

- Schedule A to Bid: Schedule of Prices
- Schedule B to Bid: Proposed Programme of Works
- Schedule C to Bid: Method of Performing Works

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SCHEDULE – A TO BID

SCHEDULE OF PRICES

<u>Sr. No.</u>		<u>Page No.</u>
1.	Preamble to Schedule of Prices	26
2.	Schedule of Prices	28
	* (a) Summary of Bid Prices	
	* (b) Detailed Schedule of Prices	

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PREAMBLE TO SCHEDULE OF PRICES

1. General

- 1.1 The Schedule of Prices shall be read in conjunction with the Conditions of Contract, Contract Data together with the Specifications and Drawings, if any.
- 1.2 The Contract shall be for the whole of the Works as described in these Bidding Documents. Bids must be for the complete scope of works.

2. Description

- 2.1 The general directions and descriptions of works and materials are not necessarily repeated nor summarized in the Schedule of Prices. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the Schedule of Prices.

3. Units & Abbreviations

- 3.1 Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply with the Systeme Internationale d' Unites (SI Units).

4. Rates and Prices

- 4.1 Except as otherwise expressly provided under the Conditions of Contract, the rates and amounts entered in the Schedule of Prices shall be the rates at which the Contractor shall be paid and shall be the full inclusive value of the works set forth or implied in the Contract; except for the amounts reimbursable, if any to the Contractor under the Contract.
- 4.2 Unless otherwise stipulated in the Contract Data, the rates and prices entered by the bidder shall not be subject to adjustment during the performance of the Contract.
- 4.3 All duties, taxes and other levies payable by the Contractor shall be included in the rates and prices.
- 4.4 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the Schedule of Prices, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works and no separate payment will be made for those items.

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Any item against which no rate or price is entered by the bidder will not be paid for by the Employer when executed and

SCHEDULE - A TO BID

shall be deemed covered by the rates and prices for other items in the Schedule of Prices.

- 4.5 (a) The bidder shall be deemed to have obtained all information as to and all requirements related thereto which may affect the bid price.
- (b) The Contractor shall be responsible to make complete arrangements for the transportation of the Plant to the Site.
- 4.6 The Contractor shall provide for all parts of the Works to be completed in every respect. Notwithstanding that any details, accessories, etc. required for the complete installation and satisfactory operation of the Works, are not specifically mentioned in the Specifications, such details shall be considered as included in the Contract Price.

5. Bid Prices

5.1 Break-up of Bid Prices

The various elements of Bid Prices shall be quoted as detailed by the Employer in the format of Schedule of Prices.

The bidder shall recognize such elements of the costs which he expects to incur the performance of the Works and shall include all such costs in the rates and amounts entered in the Schedule of Prices.

5.2 Total Bid Price

The total of bid prices in the Schedule of Prices shall be entered in the Summary of Bid Prices.

SCHEDULE OF PRICES – SUMMARY OF BID PRICES

Sr. No.	Description of Services	Amount (Rs.)
A-I	Field Investigations	
A-II	Laboratory Testing	
A-III	Geotechnical Investigations Report	
TOTAL (A-I+A-II+A-III)		
PST @ 16%		
GRAND TOTAL		

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SCHEDULE OF PRICES

A-I: FIELD INVESTIGATIONS

Sr. No.	Description	Unit	Qty.	Rate	Amount
				Rs.	Rs.
A-I.	FIELD INVESTIGATIONS				
A-I (1)	Mobilization and demobilization of at least two (02) straight rotary drilling rigs along with allied accessories at site including setting-up and shifting from one investigation point to another (including making access to the investigation point). The equipment shall be adequate in quantity to meet the time schedule.	L.S.	Job		
A-I (2)	Overburden drilling of Ten (10) boreholes up to maximum depth of 20m by straight rotary method including backfilling of boreholes to their original position using cement-sand-bentonite mix.	L.M.	10		
A-I (3)	Continuous core drilling (NX Size)* of Ten (10) boreholes in bedrock up to a maximum depth of 20m by straight rotary method, using preferably triple tube core barrel including extraction, preservation of core samples in core boxes, waxing, packing, photography of rock cores and transportation of core samples to the laboratory, including backfilling of boreholes to their original position using cement-sand-bentonite mix,	L.M.	100		
A-I (4)	Performance of Standard Penetration Tests (SPTs) in boreholes generally at 1 m depth interval or as necessary in overburden soils along with collection of SPT samples, including their labeling, packing, storage & transportation to an approved testing laboratory.	No.	10		

SCHEDULE - A TO BID

Sr. No.	Description	Unit	Qty.	Rate	Amount
				Rs.	Rs.
A-I.	FIELD INVESTIGATIONS				
A-I (5)	Excavation of five (05) test pits of size (1.5mx1.5m) up to a maximum depth of 2m in overburden soils or up to the bedrock, whichever is met earlier including backfilling of pits to original position.	No.	5		
A-I (6)	Collection of undisturbed block samples (30cm*30cm*30cm) from test pits including their waxing, labelling, packing, storage & transportation to an approved testing laboratory.	No.	5		
A-I (7)	Collection of water samples from borehole (if encountered) including their labeling, packing, storage & transportation to an approved testing laboratory.	No.	3		
	Sub-Total (A-I)				

1. Verticality should be ensured in all the boreholes.
2. Establishment of coordinates and ground elevations of all the boreholes using total station is included in the scope of work. The coordinates should be provided with reference to a permanent bench mark established at site.
3. Preferred method of drilling will be straight rotary method.
4. All the disturbed/undisturbed soil samples shall be stored and transported as per ASTM standards. The area ratio and clearance ratio of the thin walled tube, should be in strict compliance with relevant ASTM standard.

A-II: LABORATORY TESTING

Sr. No.	Description	Unit	Qty.	Rate	Amount
				Rs.	Rs.
A-II.	LABORATORY TESTING				
A-II (1)	Sieve analysis of Overburden Soils	No.	5		
A-II (2)	Hydrometer analysis of Overburden Soils	No.	5		
A-II (3)	Liquid and plastic limits of Overburden Soils	No.	5		
A-II (4)	Direct Shear Test on Overburden Soils	No.	2		
A-II (5)	Bulk and dry density from block samples	No.	3		
A-II (6)	Unconfined Compression (on rock samples)	No.	10		
A-II (7)	Property Index (on rock samples)	No.	10		
A-II (8)	Hoek Shear Box on saw cut samples	No.	3		
A-II (9)	Sulphate content of Overburden Soils	No.	2		
A-II (10)	Chloride content of Overburden Soils	No.	2		
A-II (11)	Organic matter content of Overburden Soils	No.	2		
A-II (12)	Complete chemical analysis of water samples i.e TDS, SO ₄ , CL & pH	No.	3		
Sub-Total (A-II)					

A-III: Geotechnical Investigations Report

Sr. No.	Description	Unit	Qty.	Rate	Amount
				Rs.	Rs.
A-III.	Geotechnical Investigations Report				
A-III (1)	Interpretative Geotechnical Report which consists of design criteria, foundation design parameters, construction recommendations for shallow and deep foundations, design of retaining walls, type of cement to be used etc.	LS	2 copies		
	Sub-Total (A-III)				
	Total (A-I+A-II+A-III)				
	PST @ 16%				
	Grand Total				

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SCHEDULE – B TO BID

PROPOSED PROGRAMME OF WORKS

Bidder shall provide a programme in a bar-chart showing the sequence of work items by which he proposes to complete the Works of the entire Contract. The programme should indicate the sequence of work items and the period of time during which he proposes to complete the Works including the activities like designing, schedule of submittal of drawings, ordering and procurement of materials, manufacturing, delivering, construction of civil works, erection, testing and commissioning of Works to be supplied under the Contract.

FOR INSPECTION PURPOSES ONLY

SCHEDULE – C TO BID

METHOD OF PERFORMING WORKS

The bidder is required to submit a narrative outlining the method of performing the Works. The narrative should indicate in detail and include but not be limited to:

- The sequence and methods in which he proposes to carry out the Works, including the number of shifts per day and hours per shift, he expects to work.
- A list of all major items of constructional and erectional plant, tools and vehicles proposed to be used in delivering/carrying out the Works at Site
- The procedure for installation of equipment and transportation of equipment and materials to the site.
- Organisation chart indicating head office & field office personnel involved in management, supervision and engineering of the Works to be done under the Contract.

FOR INSPECTION PURPOSES ONLY

CONDITIONS OF CONTRACT

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CONDITIONS OF CONTRACT

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CONDITIONS OF CONTRACT

1. GENERAL PROVISIONS

1.1 Definitions

In the Contract as defined below, the words and expressions defined shall have the following meanings assigned to them, except where the context requires otherwise:

The Contract

1.1.1 “Contract” means the Contract Agreement and the other documents listed in the Contract Data.

1.1.2 “Specifications” means the document as listed in the Contract Data, including Employer’s requirements in respect of works to be carried out by the Contractor (if any), and any Variation to such document.

1.1.3 “Drawings” means the Employer’s drawings of the Works as listed in the Contract Data, and any Variation to such drawings.

Persons

1.1.4 “Employer” means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Contractor) any assignee.

1.1.5 “Contractor” means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Employer) any assignee.

1.1.6 “Party” means either the Employer or the Contractor.

Dates, Times and Periods

1.1.7 “Commencement Date” means the date fourteen (14) days after the date the Contract comes into effect or any other date named in the Contract Data.

1.1.8 “Day” means a calendar day

1.1.9 “Time for Completion” means the time for completing the Works as stated in the Contract Data (or as extended under Sub-Clause 7.3), calculated from the Commencement Date.

Money and Payments

1.1.10 “Cost” means all expenditure properly incurred (or to be incurred) by the Contractor, whether on or off the Site, including overheads and similar charges but does not include any allowance for profit.

Other Definitions

- 1.1.11 “Contractor’s Equipment” means all machinery, apparatus and other things required for the execution of the Works but does not include Materials or Plant intended to form part of the Works.
- 1.1.12 “Country” means the Islamic Republic of Pakistan.
- 1.1.13 “Employer’s Risks” means those matters listed in Sub-Clause 6.1.
- 1.1.14 “Force Majeure” means an event or circumstance which makes performance of a Party’s obligations illegal or impracticable and which is beyond that Party’s reasonable control.
- 1.1.15 “Materials” means things of all kinds (other than Plant) to be supplied and incorporated in the Works by the Contractor.
- 1.1.16 “Plant” means the machinery and apparatus intended to form or forming part of the Works.
- 1.1.17 “Site” means the places provided by the Employer where the Works are to be executed, and any other places specified in the Contract as forming part of the Site.
- 1.1.18 “Variation” means a change which is instructed by the Engineer/Employer under Sub-Clause 10.1.
- 1.1.19 “Works” means any or all the works whether Supply, Installation, Construction etc. and design (if any) to be performed by the Contractor including temporary works and any variation thereof.
- 1.1.20 “Engineer” means the person notified by the Employer to act as Engineer for the purpose of the Contract and named as such in Contract Data.

1.2 Interpretation

Words importing persons or parties shall include firms and organisations. Words importing singular or one gender shall include plural or the other gender where the context requires.

1.3 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. If an ambiguity or discrepancy is found in the documents, the priority of the documents shall be in accordance with the order as listed in the Contract Data.

1.4 Law

The law of the Contract is the relevant Law of Islamic Republic of Pakistan.

1.5 **Communications**

All Communications related to the Contract shall be in English language.

1.6 **Statutory Obligations**

The Contractor shall comply with the Laws of Islamic Republic of Pakistan and shall give all notices and pay all fees and other charges in respect of the Works.

2. **THE EMPLOYER**

2.1 **Provision of Site**

The Employer shall provide the Site and right of access thereto at the times stated in the Contract Data.

2.2 **Permits etc.**

The Employer shall, if requested by the Contractor, assist him in applying for permits, licences or approvals which are required for the Works.

2.3 **Engineer's/Employer's Instructions**

The Contractor shall comply with all instructions given by the Employer or the Engineer, if notified by the Employer, in respect of the Works including the suspension of all or part of the Works.

2.4 **Approvals**

No approval or consent or absence of comment by the Engineer/Employer shall affect the Contractor's obligations.

3. **ENGINEER'S/EMPLOYER'S REPRESENTATIVES**

3.1 **Authorised Person**

The Employer shall appoint a duly authorized person to act for him and on his behalf for the purposes of this Contract. Such authorized person shall be duly identified in the Contract Data or otherwise notified in writing to the Contractor as soon as he is so appointed. In either case the Employer shall notify the Contractor, in writing, the precise scope of the authority of such authorized person at the time of his appointment.

3.2 **Engineer's/Employer's Representative**

The name and address of Engineer's/Employer's Representative is given in Contract Data. However the Contractor shall be notified by the Engineer/Employer, the delegated duties and authority before the Commencement of Works.

4. THE CONTRACTOR

4.1 General Obligations

The Contractor shall carry out the Works properly and in accordance with the Contract. The Contractor shall provide all supervision, labour, Materials, Plant and Contractor's Equipment which may be required.

4.2 Contractor's Representative

The Contractor shall appoint a representative at site on full time basis to supervise the execution of work and to receive instructions on behalf of the Contractor but only after obtaining the consent of the Employer for such appointment which consent shall not be unreasonable withheld by the Employer. Such authorized representative may be substituted/replaced by the Contractor at any time during the Contract Period but only after obtaining the consent of the Employer as aforesaid.

4.3 Subcontracting

The Contractor shall not subcontract the whole of the Works. The Contractor shall not subcontract any part of the Works without the consent of the Employer.

4.4 Performance Security

The Contractor shall furnish to the Employer within fourteen (14) days after receipt of Letter of Acceptance a Performance Security at the option of the bidder, in the form of Bank Draft or Bank Guarantee or an insurance company having atleast AA rating from PACRA/JCR for the amount and validity specified in Contract Data.

5. DESIGN BY CONTRACTOR

5.1 Contractor's Design

The Contractor shall carry out design to the extent specified, as referred to in the Contract Data. The Contractor shall promptly submit to the Engineer/Employer all designs prepared by him. Within fourteen (14) days of receipt the Engineer/Employer shall notify any comments or, if the design submitted is not in accordance with the Contract, shall reject it stating the reasons. The Contractor shall not construct any element of the Works designed by him within fourteen (14) days after the design has been submitted to the Engineer/Employer or which has been rejected. Design that has been rejected shall be promptly amended and resubmitted. The Contractor shall resubmit all designs commented on taking these comments into account as necessary.

5.2 Responsibility for Design

The Contractor shall remain responsible for his bided design and the design under this Clause, both of which shall be fit for the intended purposes defined in the Contract and he shall also remain responsible for any infringement of any patent or

copyright in respect of the same. The Engineer/Employer shall be responsible for the Specifications and Drawings.

6. EMPLOYER'S RISKS

6.1 The Employer's Risks

The Employer's Risks are:-

- a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, within the Country;
- b) rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war, within the Country;
- c) riot, commotion or disorder by persons other than the Contractor's personnel and other employees including the personnel and employees of Sub-Contractors, affecting the Site and/or the Works;
- d) ionising radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly, except to the extent to which the Contractor/Sub-Contractors may be responsible for the use of any radio-active material;
- e) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;
- f) use or occupation by the Employer of any part of the Works, except as may be specified in the Contract;
- g) late handing over of sites, anomalies in drawings, late delivery of designs and drawings of any part of the Works by the Employer's personnel or by others for whom the Employer is responsible;
- h) a suspension under Sub-Clause 2.3 unless it is attributable to the Contractor's failure; and
- i) physical obstructions or physical conditions other than climatic conditions, encountered on the Site during the performance of the Works, for which the Contractor immediately notified to the Employer and accepted by the Employer.

7. TIME FOR COMPLETION

7.1 Execution of the Works

The Contractor shall commence the Works on the Commencement Date and shall proceed expeditiously and without delay and shall complete the Works, subject to

Sub-Clause 7.3 below, within the Time for Completion.

7.2 Programme

Within the time stated in the Contract Data, the Contractor shall submit to the Engineer/Employer a programme for the Works in the form stated in the Contract Data.

7.3 Extension of Time

The Contractor shall, within such time as may be reasonable under the circumstances, notify the Employer/Engineer of any event(s) falling within the scope of Sub-Clause 6.1 or 10.3 of these Conditions of Contract and request the Employer/Engineer for a reasonable extension in the time for the completion of Works. Subject to the aforesaid, the Employer/Engineer shall determine such reasonable extension in the time for the completion of Works as may be justified in the light of the details/particulars supplied by the Contractor in connection with the such determination by the Employer/Engineer within such period as may be prescribed by the Employer/Engineer for the same; and

the Employer shall extend the Time for Completion as determined.

7.4 Late Completion

If the Contractor fails to complete the Works within the Time for Completion, the Contractor's only liability to the Employer for such failure shall be to pay the amount stated in the Contract Data for each day for which he fails to complete the Works.

8. TAKING-OVER

8.1 Completion

The Contractor may notify the Engineer/Employer when he considers that the Works are complete.

8.2 Taking-Over Notice

Within fourteen (14) days of the receipt of the said notice of completion from the Contractor the Employer/Engineer shall either takeover the completed Works and issue a Certificate of Completion to that effect or shall notify the Contractor his reasons for not taking-over the Works. While issuing the Certificate of Completion as aforesaid, the Employer/Engineer may identify any outstanding items of work which the Contractor shall undertake during the Maintenance Period.

9. REMEDYING DEFECTS

9.1 Remedying Defects

The Contractor shall for a period stated in the Contract Data from the date of issue

of the Certificate of Completion carry out, at no cost to the Employer, repair and rectification work which is necessitated by the earlier execution of poor quality of work or use of below specifications material in the execution of Works and which is so identified by the Employer/Engineer in writing within the said period. Upon expiry of the said period, and subject to the Contractor's faithfully performing his aforesaid obligations, the Employer/Engineer shall issue a Maintenance Certificate whereupon all obligations of the Contractor under this Contract shall come to an end.

Failure to remedy any such defects or complete outstanding work within a reasonable time shall entitle the Employer to carry out all necessary works at the Contractor's cost. However, the cost of remedying defects not attributable to the Contractor shall be valued as a Variation.

9.2 **Uncovering and Testing**

The Engineer/Employer may give instruction as to the uncovering and/or testing of any work. Unless as a result of an uncovering and/or testing it is established that the Contractor's design, Materials, Plant or workmanship are not in accordance with the Contract, the Contractor shall be paid for such uncovering and/or testing as a Variation in accordance with Sub-Clause 10.2.

10. **VARIATIONS AND CLAIMS**

10.1 **Right to Vary**

The Employer/Engineer may issue Variation Order(s) in writing. Where for any reason it has not been possible for the Employer/Engineer to issue such Variations Order(s), the Contractor may confirm any verbal orders given by the Employer/Engineer in writing and if the same are not refuted/denied by the Employer/Engineer within seven (7) days of the receipt of such confirmation the same shall be deemed to be a Variation Orders for the purposes of this Sub-Clause.

10.2 **Valuation of Variations**

Variations shall be valued as follows:

- a) at a lump sum price agreed between the Parties, or
- b) where appropriate, at rates in the Contract, or
- c) in the absence of appropriate rates, the rates in the Contract shall be used as the basis for valuation, or failing which
- d) at appropriate new rates, as may be agreed or which the Engineer/Employer considers appropriate, or
- e) if the Engineer/Employer so instructs, at day work rates set out in the Contract Data for which the Contractor shall keep records of hours of labour and Contractor's Equipment, and of Materials, used.

10.3 **Early Warning**

The Contractor shall notify the Engineer/Employer in writing as soon as he is aware of any circumstance which may delay or disrupt the Works, or which may give rise to a claim for additional payment.

To the extent of the Contractor's failure to notify, which results to the Engineer/Employer being unable to keep all relevant records or not taking steps to minimise any delay, disruption, or Cost, or the value of any Variation, the Contractor's entitlement to extension of the Time for Completion or additional payment shall be reduced/rejected.

10.4. **Valuation of Claims**

If the Contractor incurs Cost as a result of any of the Employer's Risks, the Contractor shall be entitled to the amount of such Cost. If as a result of any Employer's Risk, it is necessary to change the Works, this shall be dealt with as a Variation subject to Contractor's notification for intention of claim to the Engineer/Employer within fourteen (14) days of the occurrence of cause.

10.5 **Variation and Claim Procedure**

The Contractor shall submit to the Engineer/Employer an itemised make-up of the value of variations and claims within twenty eight (28) days of the instruction or of the event giving rise to the claim. The Engineer/Employer shall check and if possible agree the value. In the absence of agreement, the Employer shall determine the value.

11. **CONTRACT PRICE AND PAYMENT**

11.1 (a) **Terms of Payments**

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Employer and Contractor, or, in the case of the Final Certificate referred to in Sub Clause 60.8, within 60 days after such Final Payment Certificate has been jointly verified by Employer and Contractor; Provided that the Interim Payment shall be caused in 42 days and Final Payment in 60 days in case of foreign funded project. In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor compensation at the 28 days rate of KIBOR+2% per annum in local currency and LIBOR+1% for foreign currency, upon all sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69.

(b) **Valuation of the Works**

The Works shall be valued as provided for in the Contract Data, subject to Clause 10.

11.2 **Monthly Statements**

The Contractor shall be entitled to be paid at monthly intervals:

- a) the value of the Works executed; and
- b) The percentage of the value of Materials and Plant reasonably delivered to the Site, as stated in the Contract Data, subject to any additions or deductions which may be due.

The Contractor shall submit each month to the Engineer/Employer a statement showing the amounts to which he considers himself entitled.

11.3 **Interim Payments**

Within a period not exceeding seven (7) days from the date of submission of a statement for interim payment by the Contractor, the Engineer shall verify the same and within a period not exceeding thirty (30) days from the said date of submission by the Contractor, the Employer shall pay to the Contractor the sum verified by the Engineer less retention money at the rate stated in the Contract Data.

11.4 **Retention**

Retention money shall be paid by the Employer to the Contractor within fourteen (14) days after either the expiry of the period stated in the Contract Data, or the remedying of notified defects, or the completion of outstanding work, all as referred to in Sub-Clause 9.1, which ever is the later.

11.5 **Final Payment**

Within twenty one (21) days from the date of issuance of the Maintenance Certificate the Contractor shall submit a final account to the Engineer to verify and the Engineer shall verify the same within fourteen (14) days from the date of submission and forward the same to the Employer together with any documentation reasonably required to enable the Employer to ascertain the final contract value.

Within sixty (60) days from the date of receipt of the verified final account from the Engineer, the Employer shall pay to the Contractor any amount due to the Contractor. While making such payment the Employer may, for reasons to be given to the Contractor in writing, withhold any part or parts of the verified amount.

11.6 **Currency**

Payment shall be in the currency stated in the Contract Data.

12. DEFAULT

12.1 Default by Contractor

If the Contractor abandons the Works, refuses or fails to comply with a valid instruction of the Engineer/Employer or fails to proceed expeditiously and without delay, or is, despite a written complaint, in breach of the Contract, the Employer may give notice referring to this Sub-Clause and stating the default.

If the Contractor has not taken all practicable steps to remedy the default within fourteen (14) days after receipt of the Employer's notice, the Employer may by a second notice given within a further twenty one (21) days, terminate the Contract. The Contractor shall then demobilise from the Site leaving behind any Contractor's Equipment which the Employer instructs, in the second notice, to be used for the completion of the Works at the risk and cost of the Contractor.

12.2 Default by Employer

If the Employer fails to pay in accordance with the Contract, or is, despite a written complaint, in breach of the Contract, the Contractor may give notice referring to this Sub-Clause and stating the default. If the default is not remedied within fourteen (14) days after the Employer's receipt of this notice, the Contractor may suspend the execution of all or parts of the Works.

If the default is not remedied within twenty eight (28) days after the Employer's receipt of the Contractor's notice, the Contractor may by a second notice given within a further twenty one (21) days, terminate the Contract. The Contractor shall then demobilise from the Site.

12.3 Insolvency

If a Party is declared insolvent under any applicable law, the other Party may by notice terminate the Contract immediately. The Contractor shall then demobilise from the Site leaving behind, in the case of the Contractor's insolvency, any Contractor's Equipment which the Employer instructs in the notice is to be used for the completion of the Works.

12.4 Payment upon Termination

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

- a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) any sums to which the Employer is entitled,
- c) if the Employer has terminated under Sub-Clause 12.1 or 12.3, the Employer shall be entitled to a sum equivalent to twenty percent (20%) of the value of parts of the Works not executed at the date of the termination, and

- d) if the Contractor has terminated under Sub-Clause 12.2 or 12.3, the Contractor shall be entitled to the cost of his demobilisation together with a sum equivalent to ten percent (10%) of the value of parts of the Works not executed at the date of termination.

The net balance due shall be paid or repaid within twenty eight (28) days of the notice of termination.

13. RISKS AND RESPONSIBILITIES

13.1 Contractor's Care of the Works

Subject to Sub-Clause 9.1, the Contractor shall take full responsibility for the care of the Works from the Commencement Date until the date of the Employer's/Engineer's issuance of Certificate of Completion under Sub-Clause 8.2. Responsibility shall then pass to the Employer. If any loss or damage happens to the Works during the above period, the Contractor shall rectify such loss or damage so that the Works conform with the Contract.

Unless the loss or damage happens as a result of any of the Employer's Risks, the Contractor shall indemnify the Employer, or his agents against all claims loss, damage and expense arising out of the Works.

13.2 Force Majeure

If Force Majeure occurs, the Contractor shall notify the Engineer/Employer immediately. If necessary, the Contractor may suspend the execution of the Works and, to the extent agreed with the Employer demobilise the Contractor's Equipment.

If the event continues for a period of eighty four (84) days, either Party may then give notice of termination which shall take effect twenty eight (28) days after the giving of the notice.

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

- a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) the cost of his demobilization, and
- c) less any sums to which the Employer is entitled.

The net balance due shall be paid or repaid within thirty five (35) days of the notice of termination.

14. INSURANCE

14.1 Arrangements

The Contractor shall, prior to commencing the Works, effect insurances of the

types, in the amounts and naming as insured the persons stipulated in the Contract Data except for items (a) to (e) and (i) of the Employer's Risks under Sub-Clause 6.1. The policies shall be issued by insurers and in terms approved by the Employer. The Contractor shall provide the Engineer/Employer with evidence that any required policy is in force and that the premiums have been paid.

14.2 **Default**

If the Contractor fails to effect or keep in force any of the insurances referred to in the previous Sub-Clause, or fails to provide satisfactory evidence, policies or receipts, the Employer may, without prejudice to any other right or remedy, effect insurance for the cover relevant to such as a default and pay the premiums due and recover the same plus a sum in percentage given in Contractor Data from any other amounts due to the Contractor.

15. **RESOLUTION OF DISPUTES**

15.1 **Engineer's Decision**

If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with the Works, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the twenty eight (28) days after the day on which he received such reference, the Engineer shall give notice of his decision to the Employer and the Contractor.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Work with all due diligence, and the Contractor and the Employer shall give effect forthwith to every such decision of the Engineer unless and until the same shall be revised, as hereinafter provided in an arbitral award.

15.2 **Notice of Dissatisfaction**

If a Party is dissatisfied with the decision of the Engineer or if no decision is given within the time set out in Sub-Clause 15.1 hereabove, the Party may give notice of dissatisfaction referring to this Sub-Clause within fourteen (14) days of receipt of the decision or the expiry of the time for the decision. If no notice of dissatisfaction is given within the specified time, the decision shall be final and binding on the Parties. If notice of dissatisfaction is given within the specified time, the decision shall be binding on the Parties who shall give effect to it without delay unless and until the decision of the Engineer is revised by an arbitrator.

15.3 **Arbitration**

A dispute which has been the subject of a notice of dissatisfaction shall be finally settled as per provisions of Arbitration Act 1940 (Act No. X of 1940) and Rules made thereunder and any statutory modifications thereto. Any hearing shall be held at the place specified in the Contract Data and in the language referred to in Sub-Clause 1.5.

16 INTEGRITY PACT

16.1 If the Contractor, or any of his Sub-Contractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Schedule-F to his Bid, then the Employer shall be entitled to:

- (a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Contractor or any of his Sub-Contractors, agents or servants;
- (b) terminate the Contract; and
- (c) recover from the Contractor any loss or damage to the Employer as a result of such termination or of any other corrupt business practices of the Contractor or any of his Sub-Contractors, agents or servants.

On termination of the Contract under Sub-Para (b) of this Sub-Clause, the Contractor shall demobilize from the Site leaving behind Contractor's Equipment which the Employer instructs, in the termination notice, to be used for the completion of the Works at the risk and cost of the Contractor. Payment upon such termination shall be made under Sub-Clause 12.4, in accordance with Sub-Para (c) thereof, after having deducted the amounts due to the Employer under Sub-Para (a) and (c) of this Sub-Clause.

CONTRACT DATA

(Note: Except where otherwise indicated, all Contract Data should be filled in by the Employer prior to issuance of the Bidding Documents.)

Sub-Clauses of Conditions of Contract

1.1.3 Employer's Drawings, if any
(To be listed by the Employer)

1.1.4 **The Employer** means

Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Conference Room 2nd
Floor 83 – A, E/1, Main Boulevard Gulberg III, Lahore
Ph: +92 42-35717681-4

1.1.5 **The Contractor** means

The firm/company having the PEC license of the relevant category (C-6) of above and capable to successful completion of the similar works.

1.1.7 **Commencement Date** means the date of issue of Engineer's Notice to Commence which shall be issued within fourteen (14) days of the signing of the Contract Agreement.

1.1.9 **Time for Completion** thirty (30) days

(The time for completion of the whole of the Works should be assessed by the Employer)

1.1.20 **Engineer**

Engineering Consultancy Services Punjab (Pvt.) Ltd. (ECSP) Conference Room 2nd
Floor 83 – A, E/1, Main Boulevard Gulberg III, Lahore
Ph: +92 42-35717681-4

1.3 **Documents forming the Contract listed in the order of priority:**

- (a) The Contract Agreement
- (b) Letter of Acceptance
- (c) The completed Form of Bid
- (d) Contract Data
- (e) Conditions of Contract
- (f) The completed Schedules to Bid including Schedule of Prices
- (g) Technical Specifications
- (h) Drawings
- (i) Addendum if any

2.1 **Provision of Site:** On the Commencement Date*

3.1 **Authorised person :** _____

3.2 **Name and address of Engineer's/Employer's representative**

4.4 **Performance Security:**

Not Applicable

5.1 **Requirements for Contractor's design (if any):**

Specification Clause No's 3.3 Draft Report and Final Report

7.2 **Programme:**

Time for submission: With Bid Proposal

Form of programme: Bar Chart/CPM/PERT or other

7.4 Amount payable due to failure to complete shall be 0.01% per day up to a maximum of (10%) of sum stated in the Letter of Acceptance

9.1 **Period for remedying defects**

Not Applicable

11.1 (a) **Terms of Payments**

Payment of Contract Price shall be made in the following manners:

- i) Ten percent (10%) of Contract Price shall be paid as advance payment after mobilization and the receipt of acceptable Performance Security and Bank Guarantee for advance payment,
- ii) Forty percent (40%) of Contract Price shall be paid on completion and submission of field work,
- iii) Twenty percent (20%) of Contract Price shall be paid on completion and submission of laboratory tests, and
- iv) Ten percent (10%) of Contract Price shall be paid on submission of draft report.
- v) Twenty percent (20%) of Contract Price upon submission/ approval of final report.

11.2 (b) **Percentage of value of Materials and Plant:**

Not Applicable

11.3 **Percentage of retention:** five (5%)

11.6 **Currency of payment:** Pak. Rupees

15.3 **Arbitration**

Place of Arbitration: ECSP Office Lahore

STANDARD FORMS

FOR INSPECTION PURPOSES ONLY

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the ____ day of _____ 200 ____ between _____(hereinafter called the "Employer") of the one part and _____ (hereinafter called the "Contractor") of the other part.

WHEREAS the Employer is desirous that certain Works, viz _____ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement witnesseth as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents after incorporating addenda, if any except those parts relating to Instructions to Bidders, shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Letter of Acceptance;
 - (b) The completed Form of Bid along with Schedules to Bid;
 - (c) Conditions of Contract & Contract Data;
 - (d) The priced Schedule of Prices;
 - (e) The Specifications; and
 - (f) The Drawings
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects within the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused this Contract Agreement to be executed on the day, month and year first before written in accordance with their respective laws.

Signature of the Contactor

Signature of the Employer

(Seal)

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

(Name, Title and Address)

Witness:

(Name, Title and Address)

FOR INSPECTION PURPOSES ONLY

FORM OF BANK GUARANTEE FOR ADVANCE PAYMENT

Guarantee No. _____

Executed on _____

(Letter by the Guarantor to the Employer)

WHEREAS the _____ (hereinafter called the Employer) has entered into a Contract for _____

_____ (Particulars of Contract), with

_____ (hereinafter called the Contractor).

AND WHEREAS the Employer has agreed to advance to the Contractor, at the Contractor's request, an amount of Rs. _____ Rupees _____) which amount shall be advanced to the Contractor as per provisions of the Contract.

AND WHEREAS the Employer has asked the Contractor to furnish Guarantee to secure the advance payment for the performance of his obligations under the said Contract.

AND WHEREAS _____ (Scheduled Bank) (hereinafter called the Guarantor) at the request of the Contractor and in consideration of the Employer agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

NOW THEREFORE the Guarantor hereby guarantees that the Contractor shall use the advance for the purpose of above mentioned Contract and if he fails, and commits default in fulfillment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to the Employer for payment not exceeding the aforementioned amount.

Notice in writing of any default, of which the Employer shall be the sole and final judge, as aforesaid, on the part of the Contractor, shall be given by the Employer to the Guarantor, and on such first written demand payment shall be made by the Guarantor of all sums then due under this Guarantee without any reference to the Contractor and without any objection.

This Guarantee shall come into force as soon as the advance payment has been credited to the account of the Contractor.

This Guarantee shall expire not later than _____

by which date we must have received any claims by registered letter, telegram, telex or telefax.

It is understood that you will return this Guarantee to us on expiry or after settlement of the total amount to be claimed hereunder.

Witness:

1. _____

Corporate Secretary (Seal)

2. _____

(Name, Title & Address)

Guarantor (Scheduled Bank)

1. Signature _____

2. Name _____

3. Title _____

Corporate Guarantor (Seal)

FOR INSPECTION PURPOSES ONLY

TECHNICAL SPECIFICATIONS

FOR INSPECTION PURPOSES ONLY

TECHNICAL SPECIFICATION

1 GENERAL INFORMATION AND REQUIREMENTS

1.1 General

This technical specification shall apply to the Works “Geotechnical Investigation Services for Land along Lower Topa Murree” in Punjab Province of Pakistan. The specification specifies the scope, extent, types, and method of the Geotechnical Investigations. The Contactor shall carry out the Works in accordance with the specifications provided hereunder and other international standards approved by the Employer.

1.2 Objectives of Geotechnical Investigations

The Geotechnical Investigations mainly include; 1) Overburden and Core drilling, 2) rock core sampling for laboratory testing, 3) laboratory testing, and 4) Comprehensive factual and interpretative report.

The objectives of the Geotechnical Investigations are as below:

- To investigate subsurface geological and geotechnical conditions for a proposed building(s) site along Lower Topa Murree,
- To provide accurate and appropriate geotechnical parameters for design of the proposed construction(s), and

1.3 Scope of the Works

The quantity of the Works is detailed in Schedule of Prices. The Works shall include, but may not be limited to the following items:

- 1) Establishing the detailed working plan including time schedule and provision of equipment,
- 2) Mobilization and site preparation including construction of site access, if necessary,
- 3) Overburden and Core drilling, and subsequent backfilling of these boreholes,
- 4) Performance of Standard Penetration Tests (SPTs),
- 5) Rock core samplings for laboratory tests and their preservation in core boxes,
- 6) Transportation of rock core samples to laboratory in Lahore,
- 7) Excavations of test pits and undisturbed (block) sampling, and subsequent backfilling of test pits,
- 8) Laboratory Testing as per relevant ASTM standards on specified soil and rock core samples from approved laboratories,
- 9) Water sampling and their testing,
- 10) Photographing the boring cores and field works,
- 11) Demobilization and site clearing, and
- 12) Reporting and drawings.

1.4 Location of the Project Site

The project site is located in the southwest direct on downslope of Lower Topa main market adjacent to IMDC (Islamabad Murree Dual Carriageway).

The location map of the project area is given in Appendix 1. The exact locations of the boreholes will be provided to the successful bidder by the Engineer after the Award. The bill of quantity for the Works is shown in Schedule of Prices.

1.5 Work Schedule

The working period for the entire Works is thirty (30) days from the Contract date, as roughly shown below.

1.6 General Requirements

The Contractor shall take great care to avoid any accident at the Site and shall be responsible for any mistake during the Works and accordingly no claims will be entertained by the Employer.

The Contractor shall acquire on his own expense all permits or licenses required for the

Works from appropriate governmental or private agencies. However, the Employer shall facilitate the Contractor to get access to the project site.

The Contractor shall be responsible for any and all damages caused by his employees to the property, facilities, roadways, structures, or persons. All Works shall be carried out with the least possible damage to the Site.

The Contractor shall provide on his own expense traffic safety and management measures as the progress of the site operations requires. Measures shall be taken in accordance with statutory requirements.

The daily reports of core drilling and in-situ tests shall be submitted to the Employer/Engineer. The forms for the daily reports shall be prepared by the Contractor.

2 CORE DRILLING

2.1 General

The Borehole Drilling Investigations involves mainly weathered and fractured rocks with alternate layers of sound rocks (fresh to slightly weathered sandstone), in an open air, on the moderate to steep slopes below IMDC road. Some access to the drilling locations will be required.

2.2 Equipment and Materials for Core Drilling

(1) Equipment

Equipment for the Borehole Drilling Investigations shall satisfy the following requirements and shall be used under the approval of the Engineer. The Engineer will have the right to order replacement of the equipment whenever it is judged inappropriate.

The drilling machine shall have the drilling capacity sufficient to drill the required depths. Diameter of the drill bit shall not be less than 76 mm.

Any other facilities such as ropes, winches, skids and special towing means which may be required for safe access of equipment to drilling locations not directly accessible by normal roads, will be arranged.

All facilities needed to secure continuous and efficient work execution within the time limits specified, such as spare parts and any other equipment, instruments and machinery deemed necessary, will be provided.

(2) Core boxes

Core boxes shall be soundly constructed by the Contractor in timber or other approved material fitted with stout carrying handles, fastenings and hinged lids in general accordance with international standards and shall be to the approval of the Employer. The partitions in the boxes shall be fixed and of such a width to ensure that there is no movement of the core when the lid of the box is closed. The boxes shall be 1.0 m long. All previous labels and markings on the boxes shall be removed.

Cores shall be placed in the box with the shallowest core to the top left hand corner, the top being considered adjacent to the hinged section. The core box shall be labeled on the top, inside the lid and on both ends with the following information: project name, borehole number, box number, top and bottom depth of core in that box. The top and bottom of each core run shall be marked by a wooden block showing the drilled depths. Where the driller detects zones of core loss and rod drops, these shall be marked by labeled wooden blocks.

(3) Personnel

The Contractor shall assign an experienced and competent driller to each drill rig. Mechanics and electricians should preferably be deployed to limit technical breakdowns to a minimum.

2.3 Core Drilling

(1) Drilling location

The exact location of the drilling points will be instructed at site by the Engineer to the Contractor. The Contractor shall measure and record the coordinates of the location of the boreholes.

(2) Core drilling

The drilling shall aim at 100% core recovery in both rock and overburden deposits. Taking of drilling slime shall not be regarded as recovery of core samples. The recovery rate of samples in each ten-meter section of the hole shall not be less than 70 percent without acceptable reason.

The estimated depth of boreholes specified in BOQ is shown from the ground. These depths can be subject to change or modification by the Engineer.

(3) Groundwater observation

Water level in borehole shall be measured and recorded every morning before commencement of the day's drilling work. This measurement shall be continued during the period when the borehole is being drilled.

In case when outstanding loss of drilling water is encountered, its depth shall be recorded accurately and reported to the Engineer as soon as possible.

(4) Core placement and storage

The Contractor shall prepare core boxes for core storage. The recovered core samples shall be placed in order in core boxes, in the same length of grooves of the core box as the length which has been drilled to obtain those core samples. Parts of no core recovery shall be left vacant in the grooves. Marks shall be put regularly to the grooves to indicate depths of sampling. Every core box shall be marked with the borehole number and depth of the section of which the core samples are put in it.

The core box shall be separated with wooden plates into rooms where 1 m long core can be stored. After the core is placed in the box, they shall be color photographed by the Contractor.

Necessary notes such as the core holes No. and core depth shall be clearly marked on each core box.

All cores shall, before the core boxes are stacked, be photographed from the zenith in color so that details marked on the inside of the box are visible. A linear scale and color scale shall be included in the photograph and the final color positives shall be provided showing core in clear focus at a scale of not less than 10% of the actual size of the core. All photographs shall be taken with the cores shaded from direct sunlight and using flash if necessary.

The cores shall be arranged to reveal the most interesting characteristics such as seams, strata and the like. Before photographing, the core shall be washed and they shall be photographed when still damp so as to bring out the nature and characteristics of the rock. All cores shall be unwrapped when photographed.

The core boxes shall be carefully moved to the site store at the end of each day's work and stored safe from interference and protected from rain, sun and frost. Where sections of core are removed for testing a wooden, labeled spacer shall be placed in the core box. The Contractor shall submit 2 sets of digital data and a color photograph to the Employer. Each core photograph cut along the box edge shall be connected to the one for the same hole.

All core boxes shall be stored at the designated place directed by the Employer. The full core boxes shall be stored in a secure weather proof shed. The boxes shall be stacked not more than 10 boxes high or placed on racks in such a way as to permit ready identification and removal of selected boxes.

2.4 Rock Core Sampling and Transportation

(1) Rock core sampling

Where instructed by the Employer (Geologist) samples of the rock core shall be taken for laboratory tests. To prevent drying out of the core the samples shall either be taken the same day that the core is removed from the ground, or the samples shall be given a preliminary protection of two layers of plastic cling film. The sample shall be labeled with the project name, borehole number and top and bottom depth on a label attached to the outside of the sample and repeated on a label inside the sample. The samples shall be stored in core boxes.

(2) Transportation of rock core sampling

The Contractor shall transport all boxes containing rock core to the store at the specified location/ laboratory in Lahore when directed by the Employer's Representative.

2.5 Daily Report

Daily report of drilling shall be prepared every day and be submitted to the Employer by the end of the work. The daily report shall contain the following information:

- 1) Borehole number and date
- 2) Work progress of the day
- 3) Model name of the drilling machine utilized
- 4) Diameter of the drill bit and the casing
- 5) Water table in the borehole
- 6) Depths at which the core barrel was recovered from the borehole
- 7) Core recovery length at each recovering of the core barrel
- 8) Rock condition
- 9) Depth and rate of water loss
- 10) Standard penetration test data
- 11) Name of personnel in charge of the drilling and the tests

The forms for the daily report shall be proposed by the Contractor for the Employer's approval.

3 REPORTING AND DRAWINGS

3.1 Reporting Language

All standard forms, technical data, and reports are to be in English.

3.2 Preliminary Reporting and Recording

Every day the Contractor shall submit one copy of preliminary field records covering all aspects of the previous day's work including the drilling borehole record, preliminary results of in-situ test and daily journals of any other field activity.

3.3 Draft Report and Final Report

The Contractor shall submit a draft final report to the Employer for his comments within the Work Schedule given in the Contract. The report consisting of both the factual and interpretative sections is required and the Contractor's report will compile all technical data/information acquired during the geotechnical investigations comprising the Works. The interpretative section of the Geotechnical Investigations Report will consist of design criteria, foundations design parameters, construction recommendations for shallow and deep foundations, design of retaining walls, types of cement to be used in construction etc. The detailed contents list and format of the reports shall be agreed in advance with the Employer.

The report shall include the following:

- 1) Title page,
- 2) Contents list,
- 3) Document quality control and report issue record, with the date of each revision issue, the name of the report author(s), the report checker(s) and the responsible person who has authorized its release,
- 4) Text describing the Works with a brief factual description of the geotechnical investigations carried out including the number and type of exploratory holes, time of year, weather conditions, field testing etc.,
- 5) An interpretative section with comprehensive description, graphs/charts, design criteria, construction recommendation for shallow and deep foundations, design of retaining walls, type of cement to be used for the project, and other general recommendations,
- 6) Appendix describing the terminology, conventions and symbols used in all logging,
- 7) Appendices describing the in-situ testing equipment, test method and analysis procedures used,
- 8) Summary table of all investigation locations including reference number, ground level and coordinates, investigation type, depth, number of in-situ tests of each type, etc.,
- 9) In-situ testing results,
- 10) Photographs of cores (photocopies of the photographs may be included in the Draft

- report. Photographs are only required in the Final version of the report),
- 11) Borehole location plan and coordinates of boreholes recorded with reference to a permanent benchmark taken from a good quality Total Station,
 - 12) Detailed Borehole and Test Pit Logs, and
 - 13) Laboratory Testing Factual Sheets.

The report shall be A4 format. All bound-in pages shall be A4 or A3 (folded) in size. The drawing format and title block shall conform to the Engineer's requirements. All presented data, tables and figures shall be typed or computer produced. All drawings shall be produced by computer drafting. Hand written results sheets or drawings will not be accepted.

Within two weeks of the Engineer providing his comments on the Draft report, the Contractor shall take into account the Engineer's comments and revise the report accordingly, and submit for approval the Final version of the report. Any further required changes to the Final Report shall be made before the issue of the approved Final Report.

4 PAYMENT AND MEASUREMENTS

4.1 Contract Rates

The Contract Rates shall except in so far as it is otherwise provided be deemed to cover all the Contractor's obligations set forth or implied in the Contract whether or not those obligations have been itemized separately and all matters and things necessary for the proper completion and maintenance of the Works. The cost of any item against which a Contract Rate has not been entered shall be deemed to be covered by other Contract Rates. All quantities in the Bill of Quantities are provisional. No variation of the Contract Rates (including lump sums) will be authorized by reason of the actual quantities of work executed being greater or less than the billed quantities.

The measurement and payment for work or material covered by items in the BOQ are described in the following. Other clauses in the Specifications and Conditions of Contract may refer to the Work or material in question and the Contract Rates shall be deemed to cover the cost of complying with such other clauses as well.

4.2 Items of Bill of Quantities

- (1) Item A-1 (2) & A-1 (3) - Core Drilling (vertical)

1) Measurement

The measured quantity shall consist of the full or part of the depth of acceptable drilling borehole indicated under this item in the BOQ as measured along the line of the borehole. The measured length of drilling shall include the length of any drilled hole which is partially advanced under the instructions of the Employer's Representative.

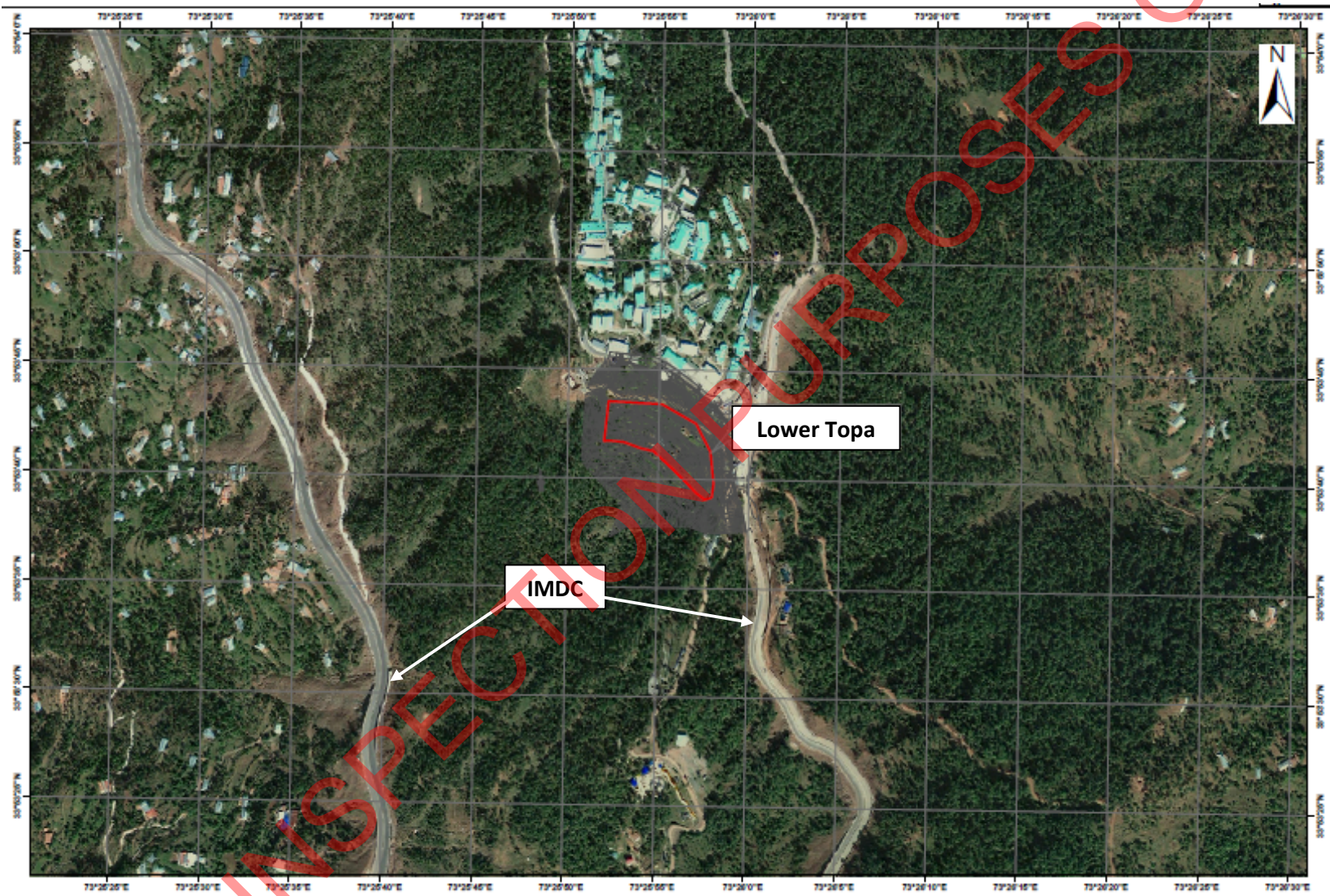
2) Payment

All the necessary operations done to accomplish drilling as specified shall be deemed to be part of this item. The casing of the drilling boreholes, taking and recording of water levels in drill boreholes, backfilling providing core in their boxes, supplying photographs of cores, preparation and supply of daily field record and core boxes, core box storage and all associated costs shall be deemed to be included in the contract rate.

FOR INSPECTION PURPOSES ONLY

APPENDIX-1: DRAWINGS

1. Project Location Map



1. Project Location Map