



**Government of the People's Republic of Bangladesh
Ministry of Communication
Roads Division
Roads & Highways Department**

CONTRACT FOR CONSULTANCY SERVICES

For

Design and Construction-Supervision of Paira Bridge (Lebukhali Bridge) over the river Paira on Barisal-Patuakhali road, Bangladesh

(KUWAIT FUND LOAN NO. 841)

Between

Roads and Highways Department

And

ICT-Kunhwa-NARCO-EPC JV

Intercontinental Consultants and Technocrats Pvt. Ltd

Kunhwa Engineering & Consulting Co. Ltd

Dr. Nabeel Abdul-Raheem Consultants

Engineering and Planning Consultants Ltd

December 2013

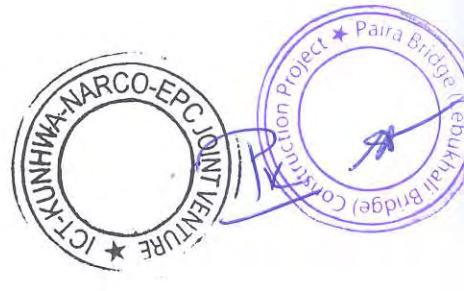


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CONTRACT AGREEMENT



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Contract Agreement

This CONTRACT (hereinafter called the "Contract") is made the 08th day of the month of December, 2013, between, on the one hand, *The Chief Engineer, Roads & Highways Department* (hereinafter called the "Client") and, on the other hand, a joint venture consisting of the following entities, each of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *Intercontinental Consultants and Technocrats Pvt. Ltd* and *Kunhwa Engineering & Consulting Co. Ltd*, Dr. Nabeel Abdul-Raheem Consultants, *Engineering and Planning Consultants Ltd* (hereinafter called the "Consultant").

WHEREAS

- the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");
- the Consultant, having represented to the Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract; and
- the Client has received a credit/ loan/ grant from *Kuwait Fund for Arab Economic Development* towards the cost of the services under this Contract, it being understood (i) that payments by the Development Partner will be made only at the request of the Client and upon approval by the Development Partner, (ii) that such payments will be subject, in all respects, to the terms and conditions of the agreement between the development partner and the Client.

NOW THEREFORE the parties hereto hereby agree as follows:

- The following documents forming the integral part of this Contract shall be interpreted in the order of priority shown:
 - The Form of Contract;
 - The Particular Conditions of Contract (PCC);
 - The General Conditions of Contract (GCC),
 - The Appendices (1 to 6).

Appendix 1: Description of the Services
Appendix 2: Reporting Requirements

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

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Appendix 3: Key Personnel and Sub Consultants and Hours of Work for Key Personnel

Appendix 4: Cost Estimates

Appendix 5: Duties of the Client- Services, Facilities and Property to be provided by the Client

Appendix 6: Form of Bank Guarantee for Advance Payment

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
- the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
 - the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS We, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of each of the Members of
the Consultant

Intercontinental Consultants and Technocrats
Pvt. Ltd

For and on behalf of Roads & Highways
Department

Md. Aminur Rahman Lasker
Chief Engineer
Roads and Highways Department

P.Kapila
Prashant Kapila
Chief Operating Officer (COO)
Intercontinental Consultants and Technocrats
Pvt. Ltd



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Kunhwa Engineering & Consulting Co. Ltd

P.Kapile

Mr. Choi, Gang II

Mr. Choi, Gang Il
Chief Officer for Int. Business / Vice President, kuhnwa

Dr. Nabeel Abdul-Raheem Consultants

[Handwritten signature]

*Dr. Nabeel Abdul Raheem
Chairman and Managing Director, NARCO*

Engineering and Planning Consultants Ltd

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Gazi A. Rahmani,
Associate Director, EPC

In presence of:

1. ~~✓~~ ✓

2. Reutahij
M. Mustafizur Rahman
Office Manager
Engineering & Planning Consultants Ltd

3. Md. Imdad Hussain
Project No. 1

Project Director
Paira bridge (Lebukhali bridge) construction Project - Patuakhali

4. ~~1/83~~
Name of Sheriff ~~Singh~~
PM(E.E), RHD
Parva Bridge (Lebukkali Bridge)
construction Project.

THE PARTICULAR CONDITIONS OF CONTRACT (PCC)



Particular Conditions of Contract

GCC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	RFP IDENTIFICATION NO:PD/Paira/01 date 31.12.2012
1.1 (c)	<p>Name of the Client : Chief Engineer Roads & Highways Department Sarak Bhaban, Ramna, Dhaka-1000, Bangladesh</p> <p>Authorised Representative: Project Director Paira Bridge (Lebukhali Bridge) Construction Project</p>
1.1 (f)	<p>The Consultant is: ICT-KUNHWA-NARCO-EPC Joint Venture</p> <p>[<i>authorized representatives</i>] Mr. Prashant Kapila Chief Operating Officer (COO) Intercontinental Consultants and Technocrats Pvt. Ltd A-8, Green Park New Delhi-110 016 India</p>
1.1 (o)	<p>The Intended Completion Date is April 2018</p>
GCC 2.1	<p>The assignment is to be completed in the following phases:</p> <p>06 months for design phase 33 months for construction-supervision phase</p>
GCC 3.1	<p>The addresses for Communications and Notices are:</p> <p>Client : Chief Engineer Roads & Highways Department Sarak Bhaban, Tejgaon, Dhaka-1208, Bangladesh</p> <p>Attention : Project Director Paira Bridge (Lebukhali Bridge) Construction Project Patuakhali, Bangladesh</p> <p>Facsimile : +88 0441-65108</p> <p>E-mail : pd.paira@gmail.com</p>



	<p>Consultant : ICT-KUNHWA-NARCO-EPC Joint Venture</p> <p>Attention : Mr. Prashant Kapila Chief Operating Officer (COO) Intercontinental Consultants and Technocrats Pvt. Ltd A-8, Green Park New Delhi-110 016 India</p> <p>Facsimile : 0091-11-26855252</p> <p>E-mail : pkapila@ictonline.com</p>
GCC 6.1(e)	The following additional documents shall form the part of the Contract: None
GCC 8.1	Non eligible countries are: Israel
GCC 11.1	The Member in Charge is: Mr. Prashant Kapila Chief Operating Officer (COO) Intercontinental Consultants and Technocrats Pvt. Ltd
GCC 12.1	<p>The Authorized Representatives are:</p> <p>For the Client : Project Director Paira Bridge (Lebukhali Bridge) Construction Project</p> <p>For the Consultant: Mr. Prashant Kapila Chief Operating Officer (COO) Intercontinental Consultants and Technocrats Pvt. Ltd A-8, Green Park New Delhi-110 016 India</p>



GCC 15.1	<p>The Client warrants that the Client shall pay on behalf of the Consultant, the Sub-Consultants and the Personnel any indirect taxes, duties, fees, levies and other impositions imposed, under the Applicable Law, on the Consultant, the Sub-Consultants and the Personnel in respect of:</p> <ul style="list-style-type: none"> (a) any payments whatsoever made to the Consultant, Sub-Consultants and the Personnel (other than nationals or permanent residents of the Government's country), in connection with the carrying out of the Services; (b) any equipment, materials and supplies brought into the Government's country by the Consultant or Sub-Consultants for the purpose of carrying out the Services and which, after having been brought into such territories, will be subsequently withdrawn there from by them; (c) any equipment imported for the purpose of carrying out the Services and paid for out of funds provided by the Client and which is treated as property of the Client; (d) any property brought into the Government's country by the Consultant, any Sub-Consultants or the Personnel (other than nationals or permanent residents of the Government's country), or the eligible dependents of such Personnel for their personal use and which will subsequently be withdrawn there from by them upon their respective departure from the Government's country, provided that: <ul style="list-style-type: none"> (1) the Consultant, Sub-Consultants and Personnel, and their eligible dependents, shall follow the usual customs procedures of the Government's country in importing property into the Government's country; and (2) if the Consultant, Sub-Consultants or Personnel, or their eligible dependents, do not withdraw but dispose of any property in the Government's country upon which customs duties and taxes have been exempted, the Consultant, Sub-Consultants or Personnel, as the case may be, (i) shall bear such customs duties and taxes in conformity with the regulations of the Government's country, or (ii) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Government's country.
GCC 17.1	The conditions for effectiveness of the Contract are the following: none
GCC 18.1	The contract shall come into effect on the date the Client issues notice to the Consultant to commence carrying out the services.
GCC 20.1	The time for commencement of the Services shall be 14 (fourteen) days after the Effective Date of the Contract.
GCC 21.1	The Contract shall expire 54 months after the effective date unless terminated earlier pursuant to GCC clauses 63 to 66.
GCC 34.4(a)	The Consultant is notified of such actions, claims, losses or damages not later than 6 months after conclusion of the Services.
GCC 34.4(b)	The ceiling on Consultant's liability shall be limited to Contract amount .



GCC 35.1(a)	<p>The risks and the coverage shall be as follows:</p> <ul style="list-style-type: none"> (a) Third Party motor vehicle liability insurance in respect of motor vehicles operated in Bangladesh by the Consultant or its Personnel or any Sub-Consultants or their Personnel, with a minimum coverage of Tk 10,000 (Taka ten thousand only) (b) Third Party liability insurance, with a minimum coverage of Tk 500,000 (Taka five hundred thousand only) (c) Professional Liability insurance, with a minimum coverage of <i>an amount equal to the total remuneration of the consultancy contract.</i> (d) Employer's Liability and Workers' Compensation insurance in respect of the Personnel of the Consultant and of any Sub-Consultant, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel, or other insurance as may be appropriate; and (e) Insurance against loss of or damage to (i) equipment and materials purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.
GCC 37.1(c)	<p>The other actions that shall require Client's approval are:</p> <p>Taking any action under a civil works contract designating the Consultant as "Engineer", for which action, pursuant to such civil works contract, the written approval of the Client as "Employer" is required.</p>
GCC 39.3	<p>The other restrictions about future use of documents and software are;</p> <p>The Consultant shall not use these documents and software for purposes unrelated to this Contract without the prior written approval of the Client.</p>
GCC 41.1(g)	<p>Assistance for carrying out the Services to be provided by the Client are;</p> <p>None</p>
GCC 47.2	The Contract ceiling amount is: [insert amount]
GCC 48.1	The Bank Account is: [insert account with details] To be informed
GCC 49.1	Payments for remuneration shall remain fixed for the duration of contract.
GCC 50.1	The Contract Price is: US\$ 1,590,400.00 and TK. 133,292,950
GCC 52.1	Advance Payment: 10 percent of the fees for the design phase shall be paid within 30 days after the Effective Date against the submission of a Bank Guarantee in prescribed format for the same



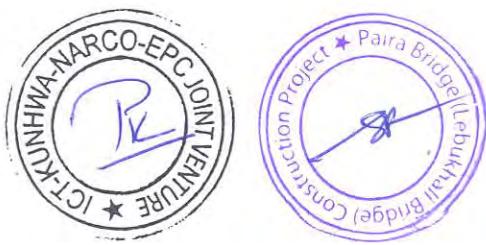
	Bank Guarantee shall remain effective until advance payment is fully adjusted.
GCC 52.2	<p>Advance Payment will be adjusted by the Client in the following manner:</p> <p>Advance payment will be adjusted through percentage deductions from the invoices. Deductions shall commence in the next invoice following that in which the total of invoices has reached ten percent (10%) of the fees for the design phase less provisional sums, and shall be made at the rate of twenty five percent (25%) or higher of the amount of all invoices in the types and proportionate amounts of currencies of the advance payment until such time as the advance payment has been repaid; always provided that the advance payment shall be completely repaid by the end of the design phase.</p>
GCC 53.1	The Consultant shall submit to the Client itemized statements at time intervals of one month .
GCC 53.3	The Consultant shall be entitled to receive financing charges for delayed payment during the period of delay at the following rate; 0.00%
GCC 74.2	<p>Disputes shall be settled by arbitration in accordance with the following provisions:</p> <ol style="list-style-type: none"> 1. Selection of Arbitrators. Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three arbitrators, in accordance with the following provisions: <ol style="list-style-type: none"> (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the Federation Internationale des Ingenieurs-Conseil (FIDIC) of Lausanne, Switzerland for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the Federation Internationale des Ingenieurs-Conseil (FIDIC) of Lausanne, Switzerland shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by the Secretary General of the Permanent Court of Arbitration, The Hague.



	<p>(c) If, in a dispute subject to Clause SC 74.2 , one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to <i>the Secretary General of the Permanent Court of Arbitration, The Hague</i> to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute..</p>
	<p>2. Rules of Procedure. Except as stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract for foreign consultants and the Arbitration Act (Act no 1 of 2001) in force in Bangladesh for local consultants.</p>
	<p>3. Substitute Arbitrators. If for any reason an arbitrator is unable to perform his function, a substitute shall be appointed in the same manner as the original arbitrator.</p>
	<p>4. Nationality and Qualifications of Arbitrators. The sole arbitrator or the third arbitrator appointed pursuant to paragraphs (a) through (c) of Clause PCC 74.2.1 hereof shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Consultant's home country or of the home country of any of their Members or Parties or of the Government's country. For the purposes of this Clause, "home country" means any of:</p> <ul style="list-style-type: none"> (a) the country of incorporation of the Consultant or of any of their Members or Parties]; or (b) the country in which the Consultant's [or any of their Members' or Parties'] principal place of business is located; or (c) the country of nationality of a majority of the Consultant's [or of any Members' or Parties'] shareholders; or (d) the country of nationality of the Sub-Consultants concerned, where the dispute involves a subcontract.
	<p>5. Miscellaneous. In any arbitration proceeding hereunder:</p> <ul style="list-style-type: none"> (a) proceedings shall, unless otherwise agreed by the Parties, be held in The Hague. (b) the English language shall be the official language for all purposes; and (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.



THE GENERAL CONDITIONS OF CONTRACT (GCC)



Section 3. General Conditions of Contract

A. General Provisions

1. Definitions

- 1.1 In the Conditions of Contract, which include Particular Conditions and these General Conditions; the following words and expressions shall have the meanings hereby assigned to them. Boldface type is used to identify the defined terms:
- (a) **Approving Authority** means the authority which, in accordance with the Delegation of Financial Powers, approves the award of Contract for the Procurement of Goods, Works and Services.
 - (b) **Competent Authority** means the authority that gives decision on specific issues as per delegation of administrative and/or financial powers.
 - (c) **Client** is the party named in the PCC who engages the Consultant to perform the Services.
 - (d) **Completion** means the fulfilment of the Services by the Consultant in accordance with the terms and conditions set forth in the Contract.
 - (e) **Completion Date** is the date of actual completion of the fulfilment of the Services certified by the Client, in accordance with GCC Clause 57.1.
 - (f) **Consultant** is a person who has been shortlisted to submit a Proposal for providing intellectual and professional services duly accepted by the Client; named as such in the PCC and the Contract Agreement.
 - (g) **Contract Agreement** means the Agreement entered into between the Client and the Consultant together with the Contract Documents.
 - (h) **Contract Documents** means the documents listed in the Agreement, including any Addendum thereto, that is these General Conditions of Contract (GCC), the Particular Conditions of Contract (PCC), and the Appendices.
 - (i) **Contract Price** means the price to be paid for the performance of the Services, in accordance with GCC Clause 50.1.
 - (j) **Day** means calendar day unless otherwise specified as working days..
 - (k) **Effective Date** means the date on which this Contract comes into force pursuant to GCC Clause 18.1.
 - (l) **Foreign Currency** means any currency other than the currency of the Client's country.
 - (m) **GCC** mean the General Conditions of Contract.
 - (n) **Government** means the Government of the People's



Republic of Bangladesh.

- (o) **Intended Completion Date** is the date on which it is intended that the Consultant shall complete the Services as specified in the PCC.
- (p) **Local Currency** means the currency of the Client's country.
- (q) **Member** means in case where the Consultant consists of a joint venture, consortium or association any of the entities that make up the joint venture; and "**Members**" means all these entities.
- (r) **Month** means calendar month
- (s) **Party** means the Client or the Consultant, as the case may be, and "**Parties**" means both of them. Third party means any party other than Client and Consultant.
- (t) **Personnel** means professionals and support staff provided by the Consultant or by any Sub-Consultant and assigned to perform the Services or any part thereof; and "**Key Staff/Personnel**" means the Personnel referred to in GCC Sub Clause 24.1.
- (u) "**Public funds**" means any funds allocated to the Client under Government budget, or loan, grants and credits placed at the disposal of the Client through the Government by the **Development Partners or foreign states or organizations**.
- (v) **Reimbursable expenses** mean all assignment-related costs other than Consultant's remuneration.
- (w) **Remuneration** means all costs related to payments of fees to the Consultant for the time spent by the professional and other staff on assignment related activities.
- (x) **PCC** means the Particular Conditions of Contract by which the GCC may be amended or supplemented.
- (y) **Services** means the work to be performed by the Consultant pursuant to this Contract, as described in **Appendices 1 to 7** of the Contract Agreement.
- (z) **Sub-Consultant** means any person or entity to whom/which part of the Services is sub-consulted.
- (aa) **Third Party** means any person or entity other than the Government, the Client, the Consultant or a Sub-Consultant.
- (bb) **In Writing** means communicated in written form with proof of receipt.

2. **Phased Completion** 2.1 If phased completion is specified in the PCC, references in the GCC to the Services, the Completion Date, and the Intended Completion Date apply to any Phase of the Services (other than references to the Completion Date and Intended Completion Date for the whole of the Services).



- 3. Communications and Notices**
- 3.1 Communications between Parties (notice, request or consent required or permitted to be given or made by one party to the other) pursuant to the Contract shall be in writing to the address as specified in the PCC.
 - 3.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.
 - 3.3 A Party may change its address for notice hereunder by giving the other Party notice of such change to the address.
- 4. Governing Law**
- 4.1 The Contract shall be governed by and interpreted in accordance with the laws of the People's Republic of Bangladesh.
- 5. Governing Language**
- 5.1 The Contract shall be written in **English**. All correspondences and documents relating to the Contract shall be written in English. Supporting documents and printed literature that are part of the Contract may be in another language, provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, such translation shall govern.
 - 5.2 The Consultant shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.
- 6. Documents Forming the Contract in Order of Precedence**
- 6.1 The following documents forming the Contract shall be interpreted in the following order of priority:
 - (a) the Contract Agreement;
 - (b) the Particular Conditions of Contract (PCC);
 - (c) the General Conditions of Contract (GCC);
 - (d) the Appendix (1 to 6); and
 - (e) any other document as specified in the PCC forming part of the Contract.
- 7. Assignment**
- 7.1 Neither the Client nor the Consultant shall assign, in whole or in part, their obligations under this Contract; except with prior written approval of the Client.
- 8. Eligible Services**
- 8.1 All materials, equipment, plant, and supplies used by the Consultant and services supplied under the Contract shall have their origin in the countries, except those as specified in the PCC.
- 9. Commissions and Fees**
- 9.1 The Client will require the successful Consultants to disclose any commissions or fees that may have been paid or are to be paid to agents, representatives, or commission agents with respect to the selection process or execution of the contract. The information disclosed must include at least the name and address of the agent, representative, or commission agent, the amount and currency, and the purpose of the commission or fee.



- 10. Joint Venture, Consortium or Association (JVCA)**
- 10.1 If the consultant is a Joint Venture all of the parties shall sign the Contract Agreement.
 - 10.2 Each partner of the Joint Venture (this does not include sub consultancy) shall be jointly and severally liable for the execution of the Contract, all liabilities and ethical and legal obligations in accordance with the terms of the Contract.
 - 10.3 The composition or the constitution of the Joint Venture shall not be altered without the prior approval of the Client.
- 11. Authority of Member in Charge**
- 11.1 In case the Consultant is a Joint Venture consisting of more than one entity, the partners shall designate one party to act as Representative, as specified in the PCC, with authority to conduct all business for and on behalf of all partners of the Joint Venture, including without limitation the receiving of instructions and payments from the Client.
- 12. Authorized Representatives**
- 12.1 Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials as specified in the PCC.
- 13. Relation between the Parties**
- 13.1 Nothing contained herein shall be construed as establishing a relation of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of Personnel and Sub-Consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.
- 14. Location**
- 14.1 The Services shall be performed at such locations as are specified in **Appendix 1**, to the Contract and, where the location of a particular task is not so specified, at such locations as the Client may approve.
- 15. Taxes & Duties**
- 15.1 The Consultant, Sub-Consultant and Personnel shall pay such indirect taxes, duties, fees and other impositions levied under the Applicable Law as specified in the PCC, the amount of which is deemed to have been included in the Contract Price.
- 16. Corrupt, Fraudulent, Collusive or Coercive Practices**
- 16.1 The Government requires that Client, as well as Consultants shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of the Contract under public funds.
 - 16.2 For the purposes of this Sub-Clause, the terms set-forth below are defined as follows:



- (i) "corrupt practice"¹ is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) "fraudulent practice"² is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) "collusive practice"³ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) "coercive practice"⁴ is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

"obstructive practice" is

- (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
- (bb) acts intended to materially impede the exercise of the Client's inspection and audit rights provided for under Clause 36.1

¹ "Another party" refers to a public official acting in relation to the selection process or contract execution. In this context, "public official" includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

² A "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.

³ "Parties" refers to participants in the selection process (including public officials) attempting to establish bid prices at artificial, non competitive levels.

⁴ A "party" refers to a participant in the selection process or contract execution.



- 16.3 Should any corrupt or fraudulent practice of any kind come to the knowledge of the Client, it shall, in the first place, allow the Consultant to provide an explanation and shall take actions only when a satisfactory explanation is not received. Such decision and the reasons therefore, shall be recorded in the procurement proceedings and promptly communicated to the Consultant concerned. Any communications between the Consultant and the Client related to matters of alleged fraud or corruption shall be in writing.
- 16.4 If corrupt, fraudulent, collusive or coercive practices of any kind determined by the Client against the Consultant alleged to have carried out such practices, the Client will :
- (a) exclude the Consultant from further participation in the particular Procurement proceeding; or
 - (b) declare, at its discretion, the Consultant to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time.
- 16.5 The Government requires that Client, as well as Consultants shall, during the Procurement proceedings and the execution of Contracts under public funds, ensure-
- (a) strict compliance with the provisions of Section 64 of the Public Procurement Act, 2006;
 - (b) abiding by the code of ethics as mentioned in the Rule127 of the Public Procurement Rules, 2008;
 - (c) that neither it, nor any other member of its staff, or any other agents or intermediaries working on its behalf engages in any such practice as detailed in GCC Sub Clause 16.2(b).
- 16.6 The Government requires that the Client's personnel have an equal obligation not to solicit, ask for and/or use coercive methods to obtain personal benefits in connection with the said proceedings.

B. Commencement, Completion and Modification

- | | |
|--|--|
| 17. Effectiveness of Contract | 17.1 The Contract shall come into force and effect on the date, called the "Effective Date", of the Client's notice to the Consultant instructing the Consultant to commence carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, as specified in the PCC have been met. |
| 18. Effective Date | 18.1 The date the Contract comes into effect shall be as specified in the PCC. |
| 19. Termination of Contract for Failure to Become Effective | 19.1 If the Contract has not become effective within such time period after the date of the Contract signed by the Parties as specified in the GCC Clause 18.1, either Party may, by not less than twenty-one (21) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party |



with respect hereto.

- 20. Commencement of Services** 20.1 The Consultant shall commence carrying out the Services not later than the number of days after the Effective Date as specified in the PCC
- 21. Expiration of Contract** 21.1 Unless terminated earlier pursuant to GCC Clauses 63 to 66, this Contract shall expire at the end of such period after the Effective Date as specified in the PCC or any extension of time approved by the Client
- 22. Modifications or Variations** 22.1 The Client may notify the Consultant to alter, amend, omit, add to, or otherwise vary the services, provided that the changes in the Services involved are necessary for the satisfactory completion of the assignment.
- 22.2 Any modification or variation of the terms and conditions of the Contract, including any modification or variation of the Scope of the Services, may only be made by written agreement between the Parties. Each Party shall give due consideration to any proposals for modification or variation made by the other Party.
- 22.3 In cases of substantial modifications or variations, the prior written consent of the Donor Agency/ Development Partner, would be required.
- 22.4 The Consultant shall submit to the Client an estimate for the proposed change in the Services within fifteen (**15**) days of receipt of such Variation Order(s) as stated under GCC Sub Clause 22.2. The estimate shall comprise the following:
- a. an estimate of the impacts, if any , of the Variation Orders on the staffing Schedule;
 - b. a detailed schedule for execution of the Variation Orders showing the resources to be employed and significant outputs;
 - c. a detail costing covering the total amount of the Variation Orders; and
 - d. a proposed revision of the schedule of payments as approved, if required.
- 22.5 Variation Orders, as stated under GCC Sub Clause 22.2, costing within fifteen (**15**) percent of the original Contract Price shall be approved by the **Approving Authority** and for cost beyond fifteen (**15**) percent by the authority higher than the **Approving Authority**.
- 22.6 For the purpose of determining the remuneration due for services or any other reimbursable expenses under Variation Orders as may be agreed under GCC Sub Clause 22, the breakdown of the unit price provided in Forms 5B3 and 5B4 shall be the basis.

C. Consultant's Personnel and Sub-Consultants

- 23. General** 23.1 The Consultant shall employ and provide such qualified and experienced Personnel and Sub-Consultants as are required to



- carry out the Services under the Contract.
- 24. Description of Personnel**
- 24.1 The title, agreed job description, minimum qualification and period of engagement in carrying out of the Services of each of the Consultant's Key Personnel has already been approved by the Client as are described in **Appendix 3**, to the Contract.
- 24.2 The periods of engagement of Key Personnel set forth in **Appendix 3** may be increased by agreement in writing between the Client and the Consultant, if additional work is required beyond the Scope of the Services specified in **Appendix 1** to the Contract. In case that will cause payments under the Contract to exceed the ceiling set forth in GCC Sub Clause 47.2 of this Contract, this will follow procedures as stated under GCC Clause 22, including prior review where necessary.
- 25. Approval of Personnel**
- 25.1 The Client approves the Key Personnel and Sub Consultants listed by title as well as by name in **Appendix 3** to the Contract. In respect of other Personnel that the Consultant proposes to use in carrying out of the Services, the Consultant shall submit to the Client for review and approval a copy of their Curricula Vitae (CVs). If the Client does not object in writing (stating the reasons for objection) within twenty one (21) days from the date of receipt of such CVs, such Personnel shall be deemed to have been approved by the client.
- 26. Working Hours, Overtime, Leave etc.**
- 26.1 Working hours and holidays for Key Personnel are set forth in **Appendix 4** to the contract. To account for travel time, Foreign Personnel carrying out Services inside the Client's country shall be deemed to have commenced, or finished work in respect of the Services such number of days before their arrival in, or after their departure from the Client's country as is specified in Appendix C hereto.
- 26.2 The Key Personnel shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave, except as specified in **Appendix 4** to the contract and except as specified in such **Appendix**, the Consultant's remuneration shall be deemed to cover these items. All leave to be allowed to the Personnel is included in the staff-months of service set forth in **Appendix 3** to the contract. Any taking of leave by Personnel shall be subject to the prior approval by the Consultant who shall ensure that absence for leave purposes will not delay the progress and adequate supervision of the Services.
- 27. Removal and/or Replacement of Personnel**
- 27.1 Except as the Client may otherwise agree, no changes shall be made in the Personnel. If, for any reason beyond the reasonable control of the Consultant, it becomes necessary to replace any of the Personnel, the Consultant shall forthwith provide as a replacement a person of equivalent or higher qualifications acceptable to the Client.
- 27.2 If the Client
- (a) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a



- criminal action; or
- (b) has reasonable cause to be dissatisfied with the performance of any of the Personnel;

then the Consultant shall, at the Client's written request specifying the grounds therefore, forthwith provide as a replacement, a person with qualifications and experience, as stated under GCC Sub Clause 27.1, acceptable to the Client.

- 27.3 Any of the Personnel provided as a replacement under GCC Sub Clauses 27.1 and 27.2, the rate of remuneration applicable to such person as well as any reimbursable expenses (including expenditures due to number of eligible dependents) the Consultant may wish to claim as a result of such replacement, shall be subject to the prior written approval by the Client.

Except as the Client may otherwise agree;

- a. the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and
- b. the remuneration to be paid for any of the Personnel provided as a replacement shall not exceed the remuneration which would have been payable to the Personnel replaced.

- 27.4 In the event that any Sub-Consultant is found by the Client to be incompetent or incapable of discharging the allocated duties, the Client may request and the Consultant shall provide a replacement, with qualifications and experience acceptable to the Client, or to resume the performance of the Services by itself.

- 27.5 If required by the PCC, the Consultant shall ensure that at all times during the Consultant's performance of the Services in the Government's country a resident **project manager**, acceptable to the Client, shall take charge of the performance of such Services.

D. Obligations of the Consultant

28. Standard of Performance

- 28.1 The Consultant shall perform the Services and carry out its obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with Sub Consultants or Third Parties.

29. Conflict of Interests

- 29.1 The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests

30. Consultant Not to Benefit from Commissions

- 30.1 The remuneration of the Consultant as stated under GCC Clauses 44, 46 and 48 shall constitute the Consultant's sole remuneration in connection with this Contract and, subject to GCC Sub Clause



Discounts etc.	31.1 hereof, the Consultant shall not accept for their own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of their obligations hereunder, and the Consultant shall use their best efforts to ensure that any Sub-Consultants, as well as the Personnel and agents of either of them, similarly shall not receive any such additional remuneration.
	30.2 Furthermore, if the Consultant, as part of the Services, have the responsibility of advising the Client on the procurement of Goods, Works or Services, the Consultant shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.
31. Consultant and Affiliates not to Engage in Certain Activities	31.1 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-Consultant and any entity affiliated with such Sub-Consultant, shall be disqualified from providing goods, works or services (other than consulting services) for any project resulting from or closely related to this consulting services.
32. Prohibition of Conflicting Activities	32.1 The Consultant shall not engage, and shall cause their Personnel as well as their Sub-Consultants and their Personnel not to engage, either directly or indirectly, in any business or professional activities in Bangladesh that would conflict with the activities assigned to them under this Contract.
33. Confidentiality	33.1 Except with the prior written consent of the Client, the Consultant and the Personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Personnel make public the recommendations formulated in the course of, or as a result of, the Services. <i>[For the purposes of this Clause "confidential information" means any information or knowledge acquired by the Consultant and/or their Personnel arising out of, or in connection with, the performance of the Services under this Contract that is not otherwise available to the public]</i>
34. Liability of the Consultant	34.1 Pursuant to Rule 125 (4) of the Public Procurement Rules, 2008, the Consultant, in lieu of furnishing any Performance Security, shall be, liable to and required to indemnify, the Client as stated under GCC Sub Clause 34.2 thru 34.6 inclusive for due performance of the Contract. 34.2 The Consultant shall indemnify the Client from and against any and all claims, liabilities, obligations, losses, damages, penalties, actions, judgment, suits, proceedings, demands, costs, expenses and disbursements of whatsoever nature that may be imposed on, incurred by or asserted against the Client during or in connection with the Services by reason of: (a) infringement or alleged infringement by the Consultant of any patent or other protected right; or



- (b) plagiarism or alleged plagiarism by the Consultant.
- 34.3 The Consultant shall ensure that all goods and services (including without limitation all computer hardware, software and systems) procured by the Consultant out of funds provided or reimbursed by the Client or used by the Consultant in the carrying out of the Services do not violate or infringe any industrial property or intellectual property right or claim of any third party.
- 34.4 The Consultant shall indemnify, protect and defend at their own expense the Client, and its agents and employees from and against any and all actions, claims, losses or damages arising out of Consultant's failure to exercise the skill and care required under GCC Clause 26 provided:
- (a) that the Consultant is notified of such actions, claims, losses or damages not later than the number of months after conclusion of the Services as specified in the PCC;
 - (b) that the ceiling on the Consultant's liability under GCC Clause 28 shall be limited to the amount as specified in the PCC, except that such ceiling shall not apply to actions, claims, losses or damages caused by Consultant's gross negligence or reckless conduct; and
 - (c) that the Consultant's liability under GCC Clause 28 shall be limited to actions, claims, losses or damages directly caused by such failure to exercise the said skill and care, and shall not include liability for any actions, claims, losses or damages arising out of occurrences incidental or indirectly consequential to such failure.
- 34.5 In addition to any liability the Consultant may have under GCC Clause 28, the Consultant shall, pursuant to Rule 125 (5) of the Public Procurement Rules, 2008, at their own cost and expense, upon request of Client; re-perform the Services in the event of Consultant's failure to exercise the skill and care required under GCC Clause 28.
- 34.6 Notwithstanding the provisions of GCC Sub Clause 32.4(a), the Consultant shall have no liability whatsoever for actions, claims, losses or damages occasioned by:
- (d) Client's overriding a decision or recommendation of the Consultant or requiring the Consultant to implement a decision or recommendation with which Consultant do not agree; or
 - (e) the improper execution of the Consultant's instructions by agents, employees or independent contractors of the Client.



- 35. Insurance to be taken out by the Consultant**
- 35.1 The Consultant
- (a) shall take out and maintain, and shall cause any Sub-Consultants to take out and maintain, at their (or the Sub-Consultants', as the case may be) own cost, but on terms and conditions approved by the Client, insurance against the risks, and for the coverage as specified in the PCC; and
 - (b) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.
- 36. Accounting, Inspection and Auditing**
- 36.1 The Consultant shall
- (a) keep accurate and systematic accounts and records in respect of the Services hereunder, in accordance with nationally/internationally accepted accounting principles and in such form and detail as will clearly identify all relevant changes in time and costs, and the bases thereof;
 - and
 - (b) periodically permit the Client or its designated representative or the Development Partner's representative, when applicable, and up to five (5) years from the expiration or termination of this Contract, to inspect the same and make copies as well as to have them audited by auditors appointed by the Client, if so required by the Client as the case may be.
- 36.2 The Consultant shall furnish the Client such information relating to the Services as the Client may from time to time reasonably request.
- 37. Consultant's Actions Requiring Client's Prior Approval**
- 37.1 The Consultant shall obtain the Client's prior approval in writing before taking any of the following actions:
- (a) any change or addition to the Personnel listed in **Appendix 3** to the Contract;
 - (b) any subcontract relating to the Services to an extent and with such specialists and entities as may be approved; and
 - (c) any other action that may be specified in the PCC.
- 37.2 Notwithstanding any approval under GCC Sub Clause 37.1(b), the Consultant shall remain fully liable for the performance of Services by the Sub-Consultant and its Personnel and retain full responsibility for the Services.
- 38. Reporting Obligations**
- 38.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix 2** to the Contract hereto, in the form, in the numbers and within the time periods set forth in the **Appendix 2**. Final Reports shall be delivered in CD ROM in addition to the hard copies specified in the said **Appendix**.



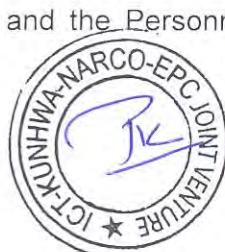
- 39. Proprietary Rights on Documents Prepared by the Consultant**
- 39.1 All plans, maps, diagrams, drawings, specifications, designs, statistics, reports, other documents, data and software compiled or prepared by the Consultant for the Client under this Contract shall become and remain the absolute property of the Client, and the Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents (both hard copy and softcopy in CD) to the Client, together with a detailed inventory.
- 39.2 The Consultant may retain a copy of such documents and software, and use such software for their own use with the prior written approval of the Client.
- 39.3 Other restrictions, if any, about the future use of these documents and software, if any, shall be as specified in the PCC.
- 40. Proprietary Rights on Equipment and Materials Furnished by the Client.**
- 40.1 Equipment, vehicles, tools and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly.

Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment and materials and shall dispose of such equipment and materials in accordance with the Client's instructions.

- 40.2 During the possession of such equipment and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

E. Obligations of the Client

- 41. Assistance and Exemptions**
- 41.1 The Client shall use its best efforts to ensure that the Government shall:
- (a) provide the Consultant, Sub-Consultants and Personnel with work permits and such other documents as shall be necessary to enable the Consultant, Sub-Consultants or Personnel to perform the Services;
 - (b) Arrange for the Personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Government's country.
 - (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Personnel and their eligible dependents.
 - (d) issue to officials, agents and representatives of the Government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services;
 - (e) Exempt the Consultant and the Personnel and any Sub-



Consultants employed by the Consultant for the Services from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity according to the Applicable Law.

- (f) Grant to the Consultant, any Sub-Consultants and the Personnel of either of them the privilege, pursuant to the Applicable Law, of bringing into the Government's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Personnel and their dependents and of withdrawing any such amounts as may be earned therein by the Personnel in the execution of the Services
- (g) Provide to the Consultant, Sub-Consultants and Personnel any such other assistance as may be specified in the PCC.

42. Access to Land

- 42.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to all land in respect of which access is required for the performance of the Services. The Consultant shall, however, be responsible for any damage to such land or any property thereon resulting from such access, and will indemnify the Consultant and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultant or any Sub-Consultant or the Personnel of either of them.

43. Change in the Applicable Law Related to Taxes

- 43.1 If, after the date of signing of the Contract, and during the performance of the Contract, there is any change in the Applicable Law with respect to taxes which increases or decreases the cost incurred by the Consultant in performing the Services, then the amounts otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amount specified in GCC Sub Clause 47.2.

44. Services, Facilities and Property

- 44.1 The Client shall make available to the Consultant and the Personnel, for the purposes of the Services and free of any charge, the services facilities and properties described in **Appendix 5** to the Contract at the times and in the manner specified.



	44.2	In case that such services, facilities and property shall not be made available to the Consultant as specified in Appendix 5 , the Parties shall agree on:
	i.	any time extension that may be appropriate to grant to the Consultant for the performance of the Services;
	ii.	the manner in which the Consultant shall procure any such services and facilities from other sources, and
	iii.	the additional payments, if any, to be made to the Consultant as a result thereof pursuant to GCC Sub Clause 47.3 hereinafter.
45. Payment✓	45.1	In consideration of the Services performed by the Consultant under this Contract, the Client shall make to the Consultant such payments and in such manner as stated under GCC Clauses 47 to 56.
46. Counterpart Personnel✓	46.1	The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in Appendix 5B to the contract.
	46.2	If counterpart personnel are not provided by the Client to the Consultant as and when specified in Appendix 5B , the Client and the Consultant shall agree on;
	(a)	how the affected part of the Services shall be carried out, and
	(b)	the additional payments, if any, to be made by the Client to the Consultant as a result thereof pursuant to GCC Sub Clause 47.3.
	46.3	Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.
		F. Payments to the Consultants
47 Cost Estimate of Services: Ceiling Amount✓	47.1	An estimate of the cost of the Services is set forth in Appendix 6 to the contract.
	47.2	Except as may be otherwise agreed under GCC Clause 22 and subject to GCC Sub Clause 47.3, payments under this Contract shall not exceed the ceilings in foreign currency and local currency as specified in the PCC.



- 47.3 Notwithstanding GCC Sub Clause 47.2, if pursuant to any of the GCC Clauses 44, 46 or 48, the Parties shall agree that additional payments in local and/or foreign currency as the case may be, shall be made to the Consultant in order to cover any necessary additional expenditures not envisaged in the cost estimate referred to in GCC Sub Clause 47.1 above, the ceiling set forth in GCC Sub Clause 47.2 above shall be increased by the amount of any such additional payments.
- 48 Payments: General**
- 48.1 All payments under this Contract shall be made to the account of the Consultant as specified in the PCC. Foreign currency payments shall be made in the currency or currencies specified in the SC, and local currency payments shall be made in the currency of the Client's country.
- 48.2 Payments in respect of remuneration or reimbursable expenses, which exceed the cost estimates for these items as set forth in **Appendix6** to the contract, may be charged to the physical contingency provided for only if the Client approved such expenditures prior to being incurred.
- 48.3 With the exception of the final payment as stated under GCC Clause 53, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations.
- 49 Remuneration and Reimbursable Expenses**
- 49.1 Subject to the ceiling specified in GCC Sub Clause 47.2, the Client shall pay to the Consultant
- (a) Remuneration as set forth in GCC Sub Clause 49.2; and
 - (b) Reimbursable Expenses as set forth in GCC Sub Clause 49.3.
- Unless otherwise specified in the PCC, the said remuneration shall be fixed for the duration of the Contract.
- 49.2 Remuneration for the Personnel shall be determined on the basis of time actually spent by such Personnel in the performance of the Services after the date determined (or such other date as the Parties shall agree in writing) in accordance with GCC Clause 21, at the rates referred to in the PCC.
- 49.3 Reimbursable expenses actually and reasonably incurred by the Consultant in the performance of the Services, as specified in the PCC.
- 49.4 The remuneration rates referred to under Clause 49.1(a) above shall cover:
- a. such salaries and allowances as the Consultant shall have agreed to pay to the Personnel; as well as
 - b. factors for social charges and overhead (bonuses or other means of profit-sharing shall not be allowed as an element of overhead), and
 - c. the cost of backstopping by home office staff not included in the Personnel listed in Appendix 3.



- d. the Consultant's fee.
- 49.5 Payments for periods of less than one month shall be calculated on an hourly basis for actual time spent in the Consultant's home office and directly attributable to the Services (one hour being equivalent to 1/176th of a month) and on a calendar-day basis for time spent away from home office (one day being equivalent to 1/30th of a month).
- 49.6 Any rates specified for Personnel not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Client, once the applicable salaries and allowances are known.
- 50 Contract Price**
- 50.1 The Contract Price is set forth in the PCC.
- 51 Modes of Billing and Payment**
- 51.1 Payments in respect of the Services shall be made in line with outputs according to the payment schedule as specified in GCC Clauses 52, 53 and 55.
- 52 Advance Payment**
- 52.1 If so specified in the PCC, an Advance Payment shall be made to the Consultant, of the amount and within the number of days after the Effective Date as specified in the PCC. The Advance Payment shall be made against the provision of a Bank Guarantee by the Consultant which shall:
- (a) Remain effective until sixty percent (60%) Advanced Payment has been adjusted as specified in the PCC; and
 - (b) be in the format as shown in **Appendix 6**
- 52.2 Advance Payments will be adjusted by the Client in equal instalments as specified in the PCC until fully offset.
- 53 Interim Payments**
- 53.1 Subject to the provision of Advance Payment stated in GCC Clause 52, as soon as practicable and not later than fifteen (15) days after the end of each calendar month during the period of the Services, or after the end of each time intervals otherwise indicated in the PCC, the Consultant shall submit to the Client, in duplicate, an itemized statement, accompanied by copies of invoices, vouchers and other appropriate supporting materials, of the amounts payable pursuant to GCC Clauses 49 to 55 for such month, or any other period indicated in the PCC. Each statement shall distinguish that portion of the total eligible costs which pertains to remuneration from that portion which pertains to reimbursable expenses.
- 53.2 The Client shall pay the Consultant within thirty (30) days after the receipt by the Client of the invoices with supporting documents. Only such portion of a statement that is not satisfactorily supported may be withheld from payment.
- 53.3 If the Client has delayed payment beyond thirty (30) days after the due date, interest at the annual rate as specified in the PCC shall become payable as from the above due date on any amount due by, but not paid on, such due date.



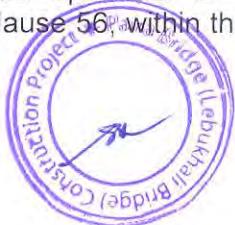
	53.4	Should any discrepancy be found to exist between actual payment and costs authorized to be incurred by the Consultant, the Client may add or subtract the difference from any subsequent payments.
54 Amendment to Contract	54.1	The amendment to Contract shall generally include extension of time to the Intended Completion Date, increase or decrease in original Contract price and any other changes duly approved under the Conditions of the Contract.
	54.2	The Client contracting, shall amend the Contract incorporating the required approved changes subsequently introduced to the original Terms and Conditions of the Contract in line with the Rules, including prior review where necessary.
55 Final Payment	55.1	The final payment under this Clause shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall be deemed completed and finally accepted by the Client and the final report and final statement shall be deemed approved by the Client as satisfactory sixty (60) days after receipt of the final report and final statement by the Client unless the Client, within such sixty (60) day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final statement. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated until such time as the final report and the final statement have been approved by the Client.
56 Suspension of Payments	56.1	The Client may, by written notice of suspension to the Consultant, suspend all or part of the payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension:
	(a)	shall specify the nature of the failure, and
	(b)	shall request the Consultant to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultant of such notice of suspension.

G. Time Control

	57.1	The Consultant shall carry out the Services in accordance with the Programme submitted by the Consultant, as updated with the approval of the Client and complete them by the Intended Completion Date as stated under GCC Clause 21.1.
58 Early Warning	58.1	If at any time during performance of the Contract, the Consultant or its Sub-Consultants should encounter events, circumstances conditions that may adversely affect the quality of the work, increase the cost of Services or delay the execution of the Services, the Consultant shall promptly notify the Client in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Consultant's notice, the Client



- shall evaluate the situation, and the Consultant shall cooperate with the Client in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced.
- | | |
|---|---|
| 59 Extension of the Intended Completion Date | 59.1 In the event the Consultant is unable to complete the assignment by the Intended Completion Date it may request the Client to extend the Intended Completion Date giving reasons. The Client shall extend the Intended Completion Date if the reasons given by the Consultant, including prior review where necessary, are found acceptable. The Client shall, however, decide by how much to extend the Intended Completion Date. |
| 60 Progress Meetings | <p>60.1 The Client and the Consultant shall arrange progress meetings at regular intervals to review the progress of works. The meeting may review the plans for dealing with matters raised in accordance with the early warning procedure.</p> <p>60.2 The Client shall record the business of progress meetings and provide copies of the record to those attending the meeting and to the Consultant for action.</p> |
| H. Good Faith | |
| 61 Good Faith | 61.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract. |
| 62 Fairness in Operation | 62.1 The Parties recognize that it is impractical in the Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with GCC Clause 74. |
| I. Termination and Settlement of Disputes | |
| 63 Termination for Default | <p>63.1 The Client or the Consultant, without prejudice to any other remedy for breach of Contract, by notice of default sent to the other party, may terminate the Contract in whole or in part if the other party causes a fundamental breach of contract. In such an occurrence one party shall give not less than thirty (30) days' written notice of termination to the other party.</p> <p>63.2 Fundamental breaches of the Contract shall include but shall not be limited to, the following:</p> <ul style="list-style-type: none"> (a) If the Consultant fails to remedy a failure in the performance of their obligations hereunder, as specified in a notice of suspension pursuant to GCC Clause 56, within thirty (30) days |



		<p>of receipt of such notice of suspension or within such further period as the Client may have subsequently approved in writing;</p> <ul style="list-style-type: none"> (b) If the Consultant submits to the Client a statement which has a material effect on the rights, obligations or interests of the Client and which the Consultant knows to be false; (c) If the Consultant, in the judgment of the Client, has engaged in corrupt, fraudulent, collusive and coercive practices in competing for or in executing this Contract; (d) If the Consultant or the Client fails to comply with any final decision reached as a result of arbitration proceedings pursuant to GCC Sub Clause 74.2; (e) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to GCC Sub Clause 74.2 within forty-five (45) days after receiving written notice from the Consultant that such payment is overdue; or (f) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.
64 Termination for Insolvency	64.1	<p>The Client and the Consultant may at any time terminate the Contract by giving notice to the other party if:</p> <ul style="list-style-type: none"> (a) the Client becomes bankrupt or otherwise insolvent; (b) the Consultant becomes (or, if the Consultant consist of more than one entity, if any of its Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; or (c) in such event, termination will be without compensation to any party, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the other party.
65 Termination for Convenience	65.1	<p>The Client, by notice sent to the Consultant, may in its sole discretion and for any reason whatsoever, terminates the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Client's convenience, the extent to which performance of the Consultant under the Contract is terminated, and the date upon which such termination becomes effective.</p>



- 66 Termination because of Force Majeure**
- 66.1 The Client and the Consultant may at any time terminate the Contract by giving notice to the other party if, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
- 67 Force Majeure**
- 67.1 For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of a Party, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood, epidemics, or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by Government agencies.
- 67.2 Force Majeure shall not include any:
- (a) event which is caused by the negligence or intentional action of a Party or such Party's Sub-Consultants or agents or employees, or
 - (b) event which a diligent Party could reasonably have been expected both to take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.
- 67.3 Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.
- 68 No Breach of Contract**
- 68.1 The failure of a Party to fulfil any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.
- 69 Measures to be Taken on Force Majeure**
- 69.1 A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.
- 69.2 A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.



	69.3	Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.
	66.4	During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:
	(a)	demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or
	(b)	continue with the Services to the extent possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.
70 Cessation of Rights and Obligations	70.1	Upon termination of the Contract pursuant to GCC Clauses 63 to 66, or upon expiration of this Contract pursuant to GCC Clause 21, all rights and obligations of the Parties hereunder shall cease, except
	(a)	such rights and obligations as may have accrued on the date of termination or expiration;
	(b)	the obligation of confidentiality set forth in GCC Clause 33;
	(c)	the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in GCC Clause 36; and
	(d)	any right which a Party may have under the Applicable Law.
71 Cessation of Services	71.1	Upon termination of the Contract by notice of either Party to the other pursuant to GCC Clauses 63 to 66, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by GCC Clauses 39 and or 40.
72 Payment upon Termination	72.1	Upon termination of this Contract pursuant to GCC Clauses to 63 to 66, the Client shall make the following payments to the Consultant:
	(a)	payment pursuant to GCC Clause 47 to 55 for Services satisfactorily performed prior to the effective date of termination;
	(b)	except in the case of termination pursuant to GCC Sub Clause 63.2 (a), (b), & (c) and GCC Sub Clause 64.1 (b), reimbursement of any reasonable cost incidental to the prompt and orderly termination of the Contract, including the cost of the return travel of the Personnel and their



eligible dependents.

- 73 Disputes about Events of Termination**
- 73.1 If either Party disputes whether an event specified in GCC Clause 63, 64 or 65 has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to arbitration pursuant to GCC Clause 74.2, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.
- 73.2 In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to GCC Clause 74.

74 Settlement of Disputes

74.1 Amicable Settlement

If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within 14 days after receipt. If that Party fails to respond within 14 days, or the dispute cannot be amicably settled within 14 days following the response of that Party; Clause GC 74.2

shall apply.

74.2 Arbitration

- (a) Any dispute between the Parties as to matters arising pursuant to this Contract that cannot be settled amicably according to Clause GC 74.1 may be submitted by either Party for settlement in accordance with the provisions specified in the PCC.
- (b) Notwithstanding any reference to arbitration herein
 - (i) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree ; and
 - (ii) the Client shall pay the Consultant any monies due the Consultant



APPENDIX-3:

Key Personnel and Sub Consultants - Hours of Works for Key Personnel



KEY PERSONNEL (As per Negotiation)

1. Professional Staff for Design phase

Sl. No.	Name	Position	Minimum Qualification		Man- months
			Academic	Experience (years)	
INTERNATIOINAL STAFF					
1	Jurgen H.H Dorbecker	Team Leader / Sr. Bridge Engineer	B.Sc Engg (Civil)	25	8.00
2	Suresh Nagesh	Sr. Contract Specialist	B.Sc Engg (Civil)	20	3.50
3	Taranisien Naik	Sr. Bridge Design Specialist	B.Sc Engg (Civil)	20	5.00
4	Maral Bedian Papazian	Sr. Foundation / Geotechnical Engineer	B.Sc Engg (Civil)	15	3.00
5	Kim, Jong Gab	Sr. Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	2.00
Sub Total					21.50
LOCAL STAFF					
6	Md. Zohrul Islam	Deputy Team Leader	B.Sc Engg (Civil)	25	8.00
7	Md.Nurul Islam	Contract Engineer	B.Sc Engg (Civil)	20	7.00
8	M A Momin Khondaker	Environmental Engineer	B.Sc Engg (Civil)	15	4.00
9	Mustafa Kamal	Electrical Engineer	B.Sc Engg (Civil)	10	1.00
10	Humayun Kabir	Social Impact Specialist	Masters degree	20	4.00
11	Md. Iqbal Hossain	Quantity Surveyor	B.Sc Engg (Civil)	10	6.00
12	S.M. Azizul Hoque	Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	4.00
13	Mohammad Shahjahan	Highway Design Engineer	B.Sc Engg (Civil)	15	2.00
14	Prodip Kumar Saha	Structural Design Engineer	B.Sc Engg (Civil)	15	6.00
15	Md. Tajuddin	Foundation / Geotechnical Engineer	B.Sc Engg (Civil)	15	5.00
Sub Total					47.00
TOTAL					68.50



2. Professional Staff for Construction-Supervision phase

Sl. No.	Name	Position	Minimum Qualification		Man- months
			Academic	Experience (years)	
INTERNATIONAL STAFF					
1	Jurgen H.H Dorbecker	Team Leader / Sr. Bridge Engineer	B.Sc Engg (Civil)	25	34.00
2	Suresh Nagesh	Sr. Contract Specialist	B.Sc Engg (Civil)	20	14.00
3	Swapan Kumar Bagui	Sr. Foundation / Geotechnical Engineer	B.Sc Engg (Civil)	15	6.00
4	Kim, Jong Gab	Sr. Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	2.00
5	kim, Hyun Kon	Sr. Bridge Engineer	B.Sc Engg (Civil)	20	18.00
6	Shaik Asif Ahmed	Sr. Material and Quality Control Engineer	B.Sc Engg (Civil)	20	15.00
7	Gautam Chattopadhyay	O & M Specialist	B.Sc Engg (Civil)	20	2.00
	Sub Total				91.00
LOCAL STAFF					
8	Md. Zohrul Islam	Deputy Team Leader	B.Sc Engg (Civil)	25	33.00
9	Md. Nurul Islam	Contract Engineer	B.Sc Engg (Civil)	20	28.00
10	M A Momin Khondaker	Environmental Engineer	B.Sc Engg (Civil)	15	4.00
11	Mustafa Kamal	Electrical Engineer	B.Sc Engg (Civil)	10	2.00
12	Humayun Kabir	Social Impact Specialist	Masters degree	20	4.00
13	Md. Iqbal Hossain	Quantity Surveyor	B.Sc Engg (Civil)	10	32.00
14	Mohammad Fazlur Rahman	Resident Engineer	B.Sc Engg (Civil)	20	32.00
15	Shahidur Rahman Joarder	Material and Quality Control Engineer	B.Sc Engg (Civil)	20	26.00
16	AZM Nuran Nabi Khan	Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	6.00
17	Md. Masudur Rahman	Bridge Engineer - 1	B.Sc Engg (Civil)	15	32.00
18	Md. Ataur Rahman	Bridge Engineer - 2	B.Sc Engg (Civil)	15	32.00
19	S.M. Masoodur Rahman	Foundation Engineer	B.Sc Engg (Civil)	15	9.00
20	Kamal Hossain	Junior Engineer - 1	B.Sc Engg (Civil)	8	32.00
17	Md. Shamsul Haque	Junior Engineer - 2	B.Sc Engg (Civil)	8	32.00
	Sub Total				304.00
	Total				395.00



APPENDIX-4:
COST ESTIMATES



FORM 5B2 : SUMMARY OF COSTS

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal - Patuakhali Road,
Bangladesh

Item	Costs		
	US Dollar	BDT	Equivalent BDT
TOTAL costs (excluding VAT & IT)	1,590,400	81,347,000	207,783,800
Local Taxes			
VAT @15%		31,167,570	
IT @10%		20,778,380	
Total for VAT & IT		51,945,950	
Total Negotiated Amount (including VAT & IT)	1,590,400	133,292,950	259,729,750

Conversion Rate: 01 US\$=BDT 79.50 (As per currency exchange rate published by Bangladesh Bank as on 17 January, 2013)



FORM 5B3 : BREAKDOWN OF COSTS BY ACTIVITY

Design and Construction Supervision for Paita Bridge (Lebukhali Bridge) over the River Paita
on Barisal - Patuakhali Road, Bangladesh

Group of Activities : Design Phase		Description :	
Sl. No.	Cost Component	Costs	
		US\$	BDT
1	Remuneration	253,500	6,515,000
2	Reimbursable Expenses	61,600	8,163,500
	Subtotals	315,100	14,678,500

US\$: United States Dollar

BDT: Bangladesh Taka



FORM 5B4: BREAKDOWN OF REMUNERATION

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal - Patuakhali Road,
Bangladesh

Design Phase

Sl. No.	Name	Position	Staff-Month Rate		Input (Staff- months)	Total Amount				
				US\$		US\$	BDT			
INTERNATIONAL STAFF										
Key Professionals										
1	Jurgen H.H Dorbecker	Team Leader / Sr. Bridge Engineer	Home	13,000	-	-	-			
			Field	13,000	-	8.00	104,000			
2	Suresh Nagesh	Sr. Contract Specialist	Home	10,000	-	-	-			
			Field	10,000	-	3.50	35,000			
3	Taranisien Naik	Sr. Bridge Design Specialist	Home	10,500	-	-	-			
			Field	10,500	-	5.00	52,500			
4	Maral Bedian Papazian	Sr. Foundation / Geotechnical Engineer	Home	10,000	-	-	-			
			Field	10,000	-	3.00	30,000			
5	Kim, Jong Gab	Sr. Hydraulic / R T Engineer	Home	16,000	-	-	-			
			Field	16,000	-	2.00	32,000			
Sub Total					21.50	253,500	-			
LOCAL STAFF										
Key Professionals										
6	Md. Zohrul Islam	Deputy Team Leader	Home	-	200,000	-	-			
			Field	-	200,000	8.00	-			
7	Md.Nurul Islam	Contract Engineer	Home	-	140,000	-	-			
			Field	-	140,000	7.00	-			
8	M A Momin Khondaker	Environmental Engineer	Home	-	100,000	-	-			
			Field	-	100,000	4.00	-			
9	Mustafa Kamal	Electrical Engineer	Home	-	130,000	-	-			
			Field	-	130,000	1.00	-			
10	Humayun Kabir	Social Impact Specialist	Home	-	130,000	-	-			
			Field	-	130,000	4.00	-			
11	Md. Iqbal Hossain	Quantity Surveyor	Home	-	80,000	-	-			
			Field	-	80,000	6.00	-			
12	S.M. Azizul Hoque	Hydraulic / R T Engineer	Home	-	140,000	-	-			
			Field	-	140,000	4.00	-			
13	Mohammad Shahjahan	Highway Design Engineer	Home	-	140,000	-	-			
			Field	-	140,000	2.00	-			
14	Prodip Kumar Saha	Structural Design Engineer	Home	-	140,000	-	-			
			Field	-	140,000	6.00	-			
15	Md. Tajuddin	Foundation / Geotechnical Engineer	Home	-	145,000	-	-			
			Field	-	145,000	5.00	-			
Sub Total					47.00	-	6,515,000			
TOTAL CARRIED TO SUMMARY					68.50	253,500	6,515,000			

US\$: United States Dollar
BDT: Bangladesh Taka

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FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal - Patuakhali Road, Bangladesh

a. Reimbursable Expenses in Design Phase (International)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Residential accommodation for long term expatriate personnel	Month	1,250	-	8	10,000	-
2	Setting of Team Leader's house	LS	2,500	-	1	2,500.00	-
3	Per Diem for short-term expatriate personnel	Day	100	-	420	42,000	-
4	International Travel Cost						
	Delhi - Dhaka - Delhi	RT	500	-	5	2,500	-
	Korea - Dhaka - Korea	RT	1,600	-	2	3,200	-
5	Miscellaneous Expenses for Travel (visa, local transport, insurance, etc)	RT	200	-	7	1,400	-
TOTAL COSTS						61,600	-

US\$: United States Dollar
BDT: Bangladesh Taka

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FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Design and Construction Supervision for Paita Bridge (Lebukhali Bridge) over the River Paita on Barisal - Patuakhali Road, Bangladesh

b. Reimbursable Expenses in Design Phase (National)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Out of pocket expenses for National staff and the Team Leader	Day	-	2,000	95	-	190,000
2	Communication Cost, telecommunication cost including cellular phone, e-mail, fax, postage, courier etc	Month	-	15,000	9	-	135,000
3	Drafting, Reproduction of Reports						
	i) Inception Report	Copy	-	2,000	10	-	20,000
	ii) Progress Report (Monthly)	Copy	-	300	45	-	13,500
	iii) Hydrology and Morphology Study Report	Copy	-	2,000	7	-	14,000
	iv) Design Report and Drawings	Set	-	20,000	9	-	180,000
	v) Draft Tender Documents	Set	-	5,000	5	-	25,000
	vi) Final Tender Documents	Set	-	5,000	30	-	150,000
	vii) Land acquisition plan	Set	-	7,000	10	-	70,000
	viii) Environmental Management Plan	Set	-	5,000	7	-	35,000
	ix) Social Action Plan	Set	-	5,000	7	-	35,000
	x) Quarterly Report	Set	-	2,500	18	-	45,000
	xi) Project Completion Report	Set	-	10,000	10	-	100,000
4	Rental office accommodation including all furniture, equipment software, consumables, utility charges, security, etc	Month	-	200,000	6	-	1,200,000
5	Other transportation						
	Vehicles on rental basis including operation and maintenance	Veh.Month	-	80,000	36	-	2,880,000
6	Survey / study / investigation						
	i) Topographic survey	LS	-	120,000	1	-	120,000
	ii) Geotechnical investigation	LS	-	950,000	1	-	950,000
	iii) Hydrological study / survey	LS	-	150,000	1	-	150,000
	iv) Morphological study / survey	LS	-	200,000	1	-	200,000
	v) Environmental study / survey	LS	-	100,000	1	-	100,000
	vii) Resettlement / social survey	LS	-	150,000	1	-	150,000
7	Support Staff						
	ii) Office Manager / Secretary	Month	-	30,000	9	-	270,000
	ii) Accountant	Month	-	30,000	6	-	180,000
	iii) Computer Operator	Month	-	25,000	9	-	225,000
	iv) CAD Operator	Month	-	35,000	12	-	420,000
	v) Photocopy Machine Operator	Month	-	12,000	6	-	72,000
	vi) Office Assistant, Messenger, etc (2 nos)	Month	-	12,000	12	-	144,000
	vii) Laboratory Technician	Month	-	30,000	3	-	90,000
	TOTAL COSTS						8,163,500

US\$ United States Dollar
BDT Bangladesh Taka



B, Green
Park
New Delhi

FORM 5B3 : BREAKDOWN OF COSTS BY ACTIVITY

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira
on Barisal - Patuakhali Road, Bangladesh

Group of Activities : Construction Supervision Phase		Description :	
Sl. No.	Cost Component	Costs	
		US\$	BDT
1	Remuneration	1,130,000	31,700,000
2	Reimbursable Expenses	145,300	34,968,500
	Subtotals	1,275,300	66,668,500

US\$: United States Dollar
BDT: Bangladesh Taka



FORM 5B4: BREAKDOWN OF REMUNERATION

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal - Patuakhali Road,
Bangladesh

Construction Supervision Phase

Sl. No.	Name	Position	Staff-Month Rate			Input (Staff- months)	Total Amount				
			Per	US\$	BDT		US\$	BDT			
INTERNATIONAL STAFF											
Key Professionals											
1	Jurgen H.H Dorbecker	Team Leader / Sr. Bridge Engineer	Home	13,000	-	-	-	-			
			Field	13,000	-	34.00	442,000	-			
2	Suresh Nagesh	Sr. Contract Specialist	Home	11,000	-	-	-	-			
			Field	11,000	-	14.00	154,000	-			
3	Swapan Kumar Bagui	Sr. Foundation / Geotechnical Engineer	Home	10,000	-	-	-	-			
			Field	10,000	-	6.00	60,000	-			
4	Kim, Jong Gab	Sr. Hydraulic / R.T Engineer	Home	16,000	-	-	-	-			
			Field	16,000	-	2.00	32,000	-			
5	Kim, Hyun Kon	Sr. Bridge Engineer	Home	17,000	-	-	-	-			
			Field	17,000	-	18.00	306,000	-			
6	Shaik Asif Ahmed	Sr. Material and Quality Control Engineer	Home	8,000	-	-	-	-			
			Field	8,000	-	15.00	120,000	-			
7	Gautam Chaltopadhyay	O & M Specialist	Home	8,000	-	-	-	-			
			Field	8,000	-	2.00	16,000	-			
Sub Total						91.00	1,130,000	-			
LOCAL STAFF											
Key Professionals											
8	Md. Zohrul Islam	Deputy Team Leader	Home	-	210,000	-	-	-			
			Field	-	210,000	33.00	-	6,930,000			
9	Md. Nurul Islam	Contract Engineer	Home	-	150,000	-	-	-			
			Field	-	150,000	28.00	-	4,200,000			
10	M A Momin Khondaker	Environmental Engineer	Home	-	100,000	-	-	-			
			Field	-	100,000	4.00	-	400,000			
11	Mustafa Kamal	Electrical Engineer	Home	-	150,000	-	-	-			
			Field	-	150,000	2.00	-	300,000			
12	Humayun Kabir	Social Impact Specialist	Home	-	150,000	-	-	-			
			Field	-	150,000	4.00	-	600,000			
13	Md. Iqbal Hossain	Quantity Surveyor	Home	-	90,000	-	-	-			
			Field	-	90,000	32.00	-	2,880,000			
14	Mohammad Fazlur Rahman	Resident Engineer	Home	-	100,000	-	-	-			
			Field	-	100,000	32.00	-	3,200,000			
15	Shahidur Rahman Joarder	Material and Quality Control Engineer	Home	-	85,000	-	-	-			
			Field	-	85,000	26.00	-	2,210,000			
16	AZM Nuran Nabi Khan	Hydraulic / R.T Engineer	Home	-	150,000	-	-	-			
			Field	-	150,000	6.00	-	900,000			
17	Md. Masudur Rahman	Bridge Engineer - 1	Home	-	75,000	-	-	-			
			Field	-	75,000	32.00	-	2,400,000			
18	Md. Ataur Rahman	Bridge Engineer - 2	Home	-	75,000	-	-	-			
			Field	-	75,000	32.00	-	2,400,000			
19	S.M. Masoodur Rahman	Foundation Engineer	Home	-	160,000	-	-	-			
			Field	-	160,000	9.00	-	1,440,000			
20	Kamal Hossain	Junior Engineer - 1	Home	-	60,000	-	-	-			
			Field	-	60,000	32.00	-	1,920,000			
17	Md. Shamsul Haque	Junior Engineer - 2	Home	-	60,000	-	-	-			
			Field	-	60,000	32.00	-	1,920,000			
Sub Total						304.00	-	31,700,000			
TOTAL CARRIED TO SUMMARY						395.00	1,130,000	31,700,000			

US\$: United States Dollar
BDT: Bangladesh Taka

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FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal - Patuakhali Road, Bangladesh

a. Reimbursable Expenses in Construction Supervision Phase (International)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Residential accommodation for long term expatriate personnel	Month	1,250	-	82	102,500	-
2	Per Diem for short-term expatriate personnel	Day	100	-	300	30,000	-
3	International Travel Cost						
	Delhi - Dhaka - Delhi	RT	500	-	8	4,000	-
	Korea - Dhaka - Korea	RT	1,600	-	4	6,400	-
4	Miscellaneous Expenses for Travel (visa, local transport, insurance, etc)	RT	200	-	12	2,400	-
TOTAL COSTS						145,300	-

US\$: United States Dollar
BDT: Bangladesh Taka






FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Design and Construction Supervision for Paita Bridge (Lebukhali Bridge) over the River Paita on Barisal - Patuakhali Road,
Bangladesh

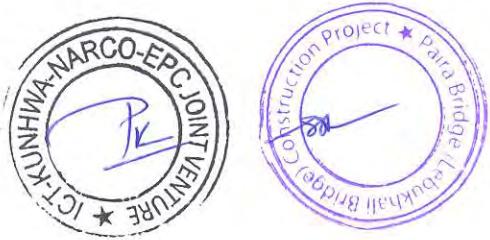
b. Reimbursable Expenses in Construction Supervision Phase (National)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Per Diem for National Staff and Long Term expatriate staff	Day	-	2,000	224	-	448,000
2	Communication Cost, telecommunication cost including cellular phone, e-mail, fax, postage, courier etc	Month	-	21,000	33	-	693,000
3	Drafting, Reproduction of Reports						
	i) Progress Report (Monthly)	Copy	-	400	165	-	66,000
	ii) Progress Report (Quarterly)	Copy	-	2,500	66	-	165,000
	iii) Resettlement Completion Report	Copy	-	5,000	10	-	50,000
	iv) Project Completion Report	Copy	-	15,000	10	-	150,000
4	Dhaka Liasion Office	Month	-	35,000	33	-	1,155,000
5	Support Staff						
	Team Leader's Dhaka Office (Liaison office) max 150 sqm area						
	i) Office Manager / Secretary	Month	-	32,000	36	-	1,152,000
	for Field Office						
	i) Office Manager / Secretary	Month	-	30,000	33	-	990,000
	ii) Computer Operator	Month	-	30,000	33	-	990,000
	iii) CAD Operator	Month	-	38,000	18	-	684,000
	iv) Photocopy Machine Operator	Month	-	12,500	33	-	412,500
	v) Office Boy, Messenger, etc (2 nos)	Month	-	12,500	66	-	825,000
	vi) SAE / Site Supervisors (4 nos)	Month	-	40,000	132	-	5,280,000
	vii) Surveyor	Month	-	36,000	20	-	720,000
	viii) Laboratory Technician	Month	-	36,000	33	-	1,188,000
6	Provisional Sum						
	Arrangement of training / study tour	Month	-	20,000,000	-	-	20,000,000
	TOTAL COSTS					-	34,968,500

US\$: United States Dollar
BDT: Bangladesh Taka



APPENDIX-6:
Form of Bank Guarantee for Advance Payment



Bank Guarantee for Advance Payment

[this is the format for the Advance Payment Security to be issued by a scheduled bank of Bangladesh in accordance with GCC Clause 52.1]

Contract No:

Date:

To:

[Name and address of Client]

ADVANCE PAYMENT GUARANTEE No:

We have been informed that [name of Consultant] (hereinafter called "the Consultant") has undertaken, pursuant to Contract No [reference number of Contract] dated [date of Contract] (hereinafter called "the Contract") for the delivery of [description of consulting services] under the Contract.

Furthermore, we understand that, according to the conditions of Contract an Advance Payment(s) in the sum of ----- [amount in figures] (-----) [amount in words] is to be made against an advance payment guarantee

At the request of the Consultant, we [name of bank] hereby irrevocably undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk [insert amount in figures and in words] upon receipt by us of your first written demand accompanied by a written statement stating that the Consultant is in breach of their obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

We further agree that no change, addition or other modification of the terms of the Contract to be performed, or of any of the Contract documents which may be made between the Client and the Consultant, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee is valid until [date of validity of guarantee], consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature

Signature



APPENDIX-1:

DESCRIPTION OF THE SERVICES



DESCRIPTION OF THE SERVICES OF THE CONSULTANTS

The description of the services is narrated in the Terms of Reference (ToR) of the consultants and in Annexed herewith.



Terms of Reference

for

**Design and Construction-Supervision of the Paire Bridge (Lebukhali Bridge) over the river
Paire on Barisal-Patuakhali Road, Bangladesh.**

1. PROJECT BACKGROUND

The Barisal-Patuakhali link is part of one of the most important national highways of Bangladesh ie. Dhaka-Mawa-Bhanga-Barisal-Patuakhali-Kuakata Road (N8). It extends up to Kuakata about 287km from Dhaka which is an attractive tourist center where massive development work is taking place. On its 189th km there is a river crossing where road communication is currently maintained by ferry service on the river Paire at Lebukhali. With the completion of construction of the proposed bridge over the river Paire the entire transportation link from Dhaka to Kuakata will provide a robust road transport which will aid and promote the developments at Kuakata and to the entire southern region of Bangladesh. A feasibility study was carried out on May 2012. To implement the project the Government of Bangladesh (GoB) has signed a loan agreement with Kuwait Fund for Arab Economic Development (KFAED). In this project KFAED will provide 82% of construction cost, 100% of consultancy services cost and also for contingencies. The remaining cost will be funded by GoB.

The Project has the following civil works:

- Construction of the main bridge with a length of about 1470m including viaduct of 840m and an overall width of about 19.76m, comprising 2X7.30m double carriage way, 1.10m wide footpaths on both sides and central reserve. The navigational openings not less than 76.2m wide and 18.30m high above high standard water level. Span length should be at least 200m in the main river channel.
- River training and protective work - about 700m.
- Construction of approach road - about 890m.
- Construction of Toll plaza, installation of Weigh Bridge, installation of solar panel for lighting, decoration of superstructure etc.

The physical work of the project is expected to start in the beginning of December 2013 and is expected to be completed by September 2016.

2. OBJECTIVES:

2.1 General Objectives:

- a) To connect Patuakhali/Kuakata Parjatan Area with capital Dhaka.
- b) To reduce the travel time.



- c) To reduce transportation cost and travel time of the raw materials and finished goods of different mills and industries of that vicinity.
- d) To reduce poverty and uplift socio-economic condition of that locality.

3. SCOPE OF CONSULTING SERVICES

The required consultancy services are divided into two distinctive Phases:

3.1 DESIGN PHASE:

3.1.1 Surveys Investigations and Studies

a) Reconnaissance survey

Site reconnaissance and general condition for the project Influence area including

- Land use survey
- Traffic characteristic
- Condition of existing surface drainage

b) Topographic Survey

- Topographic survey for the whole Project influence area, including preparation of plans and drawing on a scale of less than 1:1000, for the general Project area and 1:500 for the main and secondary bridges and major intersections areas.

The survey should include, but is not limited to the following:

- Plans of the Project area showing existing roads, intersection, structures, rivers and ferry crossing and land-use.
- Ground elevation and elevations of existing road and structures.
- Details of public services and utilities, etc.

c) Traffic Observation

- Volume, type and direction of road and river traffic flow, traffic lanes, signalization, obstruction and accidents.

d) Geophysical and Soil Investigations.

- Any investigation and laboratory tests that may be necessary for the foundation and structural design of the entire Project components, including preparation of geophysical report and detailed maps.

e) Hydrological and Morphological Investigation

- Hydrological and Morphological studies including the data collection, investigation and analysis of the river system, historical flow and flood characteristics.
- A derail report on this item.

f) Data Collection

- Data related regulations, laws, by-laws and codes of practice in force in the People's Republic of Bangladesh.



- Data related to roads, buildings, utilities or other ongoing or planned projects in the project influence area.
- Data related to availability and cost of construction materials in the Project area.

3.1.2 Review of Feasibility Study and Preliminary Engineering Design

The Consultant may require to review the feasibility study and Preliminary Engineering Design of the Project to establish its viability to optimally realize the Project objectives. The review should include all investigations, surveys and studies related to the preparation to the preliminary design and should take into account any comments thereon by the Employer or by KFAED.

The review should include but will not be limited to the following:

- Selection of the Alignment/Right of way.
- Soundness of the engineering solution.
- Environmental Impact of the proposed design.
- Land Acquisition requirements and re-location of residents.
- Construction methods.

Based on the above review, the Consultant is required to present his findings and recommendations including proposal for alternatives for consideration, discussion and approval by the Employer and by KFAED.

3.1.3 Final Engineering Design

Based on the above review and approval of proposal by the Employer and the Fund, the Consultant is required to prepare the Final Engineering Design of the project including all relevant written and graphical information such as surveys, investigations, data, plans, profiles, sections, construction plan, profiles, decorative works on superstructure as foreseen during feasibility stage etc. as well as structural design calculations. The Final Design Report shall also include cost estimates for all the Project Components.

3.1.4 Detail Engineering Design and Tender Documents

Based on the Final Design approved by the Employer the Consultant is required to complete the Detail Engineering Design for all the Project Components and prepare the necessary Tender Documents for the Project as outlined in the following:

In principle, the Detailed Design and Tender Document shall be prepared in a manner and to such details that ensure the pricing and subsequent construction by pre-qualified Contractors, without any ambiguity or misinterpretation and without the need for further design services.

The tender documents shall include but will not limited to:

- Full set of drawings including all graphic and written details describing each component of the work in sufficient detail and to the necessary scale that will allow the contractor/s to define without ambiguity the nature, specification and quantity of the required works or supplies both for pricing and execution purposes.



- General and Particular specification.
- Bills of Quantities detailing all the Component of the works and all items of supplies and installation
- General Conditions of Contract, Particular Conditions of Contract , Form of Contract and form of Tender

The Contractual terms and conditions included in the above documents shall be prepared in consultation with the Employer in advance before the preparation of the documents including any Provisional Sums that may be included in the document.

The Consultant shall provide the Employer with a confidentially the estimate of the bridge.

3.1.5 Land Acquisition and Resettlement

- Carry out land use survey to determine land ownership, land use and tenancy around the project affected area, to identify area to be acquired permanently, that may be required for temporary diversion, areas suitable for use by contractors as working areas.
- Preparation of Land acquisition Plan for permanent works and the temporary diversion.
- Carryout socio- economic survey to assess the impact of the bridge, preparation of Social Action Plan to address the adverse impact on the project affected parsons

3.1.6 Environmental Management Plan

Carry out environmental survey, prepare environmental management plan and taking approval from the Department of Environment.

3.1.7 Assistance in Tendering Procedures

The Consultant shall assist Project Director in all stages of tendering, the various components of the project until the successful award of contract/s and the issue of notification of award to the contractor/s. The Consultant's scope of services shall include but not be limited to the following:

- a) Drafting the necessary forms of advertisements and announcements.
- b) Assist the Project Director in ensuring that the tender documents include complete information and instructions to tenders.
- c) Prepare replies/queries to the tender documents and advising the Project Director on issuing circulars and other information to renders.
- d) Attend and prepare minutes of tender opening session, assist in tender evaluation and issue a Tender Evaluation Report with recommendation to the project Director for the award of contract/s.
- e) Evaluate any alterative design, construction method or system that may be proposed by the successful tender, and make the relevant recommendation to Project Director regarding their implementation.
- f) Assist in negotiations with successful tender and in the preparation and completion of the contract documents and notifications.



3.1.8 Providing soft copies

The Consultant will provide Client with the following softcopies:

- a) Final design of the bridge
- b) Drawings
- c) Resettlement Action Plan
- d) Environmental Management Plan
- e) Hydrology and Morphology Study Report
- f) Collected all data and relevant documents

3.1.9 Training

The consultant shall arrange in-country and overseas training program for the Engineers of RHD and related officials of the Ministry of Communication, Planning Commission/ERD/IMED. The training is envisaged to be conducted in RHD Training Centre or at any conveniently agreed venues and for overseas training countries agreed with the employer. The Consultant is free to sub-contract the training program to a professional training firm, if needed.

3.2 CONSTRUCTION-SUPERVISION PHASE:

3.2.1 Supervision of Construction

- a) Supervision of all works carried out on the project site at all times in a manner that ensures the attainment of the requirement of the design, specifications, budget and time schedule.
- b) Establish a preventive supervision method that ensures the compliance by the contractors with design requirements during the execution of the work.
- c) Perform any design changes, which may be necessary to adopt the particular site conditions encountered during the construction stage. After recommendation by the consultant all design changes and modification or variation orders shall be approved by the Client in accordance with terms and condition to be established in the Consultancy Agreement.
- d) During execution of the project any changes or modifications of any Design or drawing to be needed shall be the responsibility of the consultants.
- e) Conduct or cause to be conducted all topographical geo-technical, material or other surveys and any other field or laboratory investigations or tests that will be required for the proper execution and functioning of the Project.
- f) Establish and apply a quality control and quality assurance system for all materials, supplies and works carried out on the Project.
- g) Establish a Project time schedule for each of the Project components based on the general Project Program agreed with the Client and produce a cash flow program based on the Project time schedule and construction contractor/s. Revise and update time and cash flow programs on a monthly basis and discuss with the Client all action necessary to adhere to such programs.



- g) Inspect and approve all samples of materials in consultation with the Client.
- h) Review and approve working and shop drawing and methodology submitted by the contractor and verify all measurements during and after the completion of the work.
- i) Arrange for provision of specialist staff and when appropriate to ensure the smooth progress of works without interruption.
- j) Advise the Project Director on Coordination with the relevant authorities for all matters related to the smooth operation of the Project in conjunction with Planning, land acquisition, traffic flow during and after completion of the Project, services, utilities, safety and noise control in the Project area.
- k) Arrange and administer site meeting as may be necessary for the proper execution of the works with a minimum of one formal site meeting per month to be attended by the Project Director and the Contractor/s in addition to representatives of other person or authorities involved in the Project.
- l) Maintain all necessary records, books, diaries and other site and Project records including all correspondence and accounts.
- m) Prepare Progress reports, as set out in this ToR, in a format acceptable to the client.
- n) Verify and recommend Contractor/s application for payments and prepare interim and other measurement and valuation certificate of works completed as stipulated in the construction contract/s.
- o) Advise the Project Director on the interpretation of the contract Documents including claims by contractor/s , time extensions, extra payments and the contractor/s compliance with these documents, and assist in the analysis and negotiation of contractor/s claims and requests for time extension.
- p) Verify and approve contractor's As –Built drawings and operation and maintenance manuals, which should be available prior to preliminary hand – over of the Project.
- q) Arrange preliminary hand – over procedures and the preparation of final certificates in accordance with the terms and condition of contract between the Client and the contractor/s.
- r) Shall assist Project Director to communicate with the donor agency.

3.2.2 Management and Supervision of Maintenance Works

- a) Attend and Supervise any repair or maintenance work carried out on site by the contractor during the defect liability period (maintenance period) .
- b) Arrange final hand-over procedure and preparation of completion certificate in accordance with the terms and condition of the contract between the Client and the contractor/s.



DESCRIPTION OF APPROACH AND METHODOLOGY FOR PERFORMING THE ASSIGNMENT

3.1 Introduction

The Barisal-Patuakhali link is part of one of the most important national highways of Bangladesh i.e. Dhaka-Mawa-Bhanga-Barisal-Patuakhali-Kuakata Road (N8). Kuakata is about 287km from Dhaka, which is an attractive tourist center where massive development work is taking place. On its 189th km there is river Paira, where road communication is currently maintained by a ferry service and is a bottle neck. The Construction of a bridge over the river Paira will ensure smooth transportation link from Dhaka to Kuakata and will aid and promote the developments at Kuakata and to the entire southern region of Bangladesh. Government of Bangladesh has proposed construction of an all weather bridge over river Paira.

To implement the project, the Government of Bangladesh (GoB) has signed a loan agreement with Kuwait Fund for Arab Economic Development (KFAED).

GoB through its Roads and Highways Department (RHD), wishes to engage a Consultant for Detailed Design, Preparation of Bidding Documents, Assistance in Tender Procedure and Construction Supervision of Paira bridge and has shortlisted M/s Intercontinental Consultants and Technocrats Pvt. Ltd. (ICT), India in Joint Venture with M/s Kunhwa Consulting & Engineering Co., Ltd., Korea, M/s Dr. Nabeel Abdul-Raheem Consultants, Kuwait and M/s Engineering and Planning Consultants Ltd. Bangladesh, hereinafter referred to as "the Consultants" for submission of their proposal for the required services. This chapter represents a description of our Technical Approach and Methodology for performing the services described in the Terms of Reference (ToR).

In formulating the approach and methodology, the Consultants have given detailed consideration to the objectives of the Project, the requirement of assignment as per ToR, being for Detailed Design, Preparation of Bidding Documents, Assistance in Tender Procedure and Construction Supervision. In giving final shape to methodology, the Consultants have also drawn on the extensive international experience they have gained from similar number of projects undertaken during the recent years, particularly for Detailed Design, Preparation of Tender Documents and Construction Supervision in African and Asian Countries funded by various financial institutions including KFAED.

3.2 Understanding of Terms of Reference

3.2.1 Location and Project Description

Dhaka to Kuakata road is about 287km long. On its 189th km there is a river crossing where road communication is currently maintained by ferry service on the river Paira at Lebukhali, which is a bottle neck. The Construction of a bridge over the river Paira will prove smooth transportation link from Dhaka to Kuakata. The bridge is estimated to be 1470 m long including 840 m viaduct and will have an overall width of 19.76m. A Key Plan showing the bridge site is at **Fig 3.1**.

3.2.2 Project Components

The main components of the project are:

- Construction of Main Bridge over river Paira;
- Construction of Approach Roads;
- Construction of River Training and Protection Works;
- Construction of Toll plaza, instillation of weigh Bridge and Solar panel; and
- Lighting and Decoration of Superstructure etc.

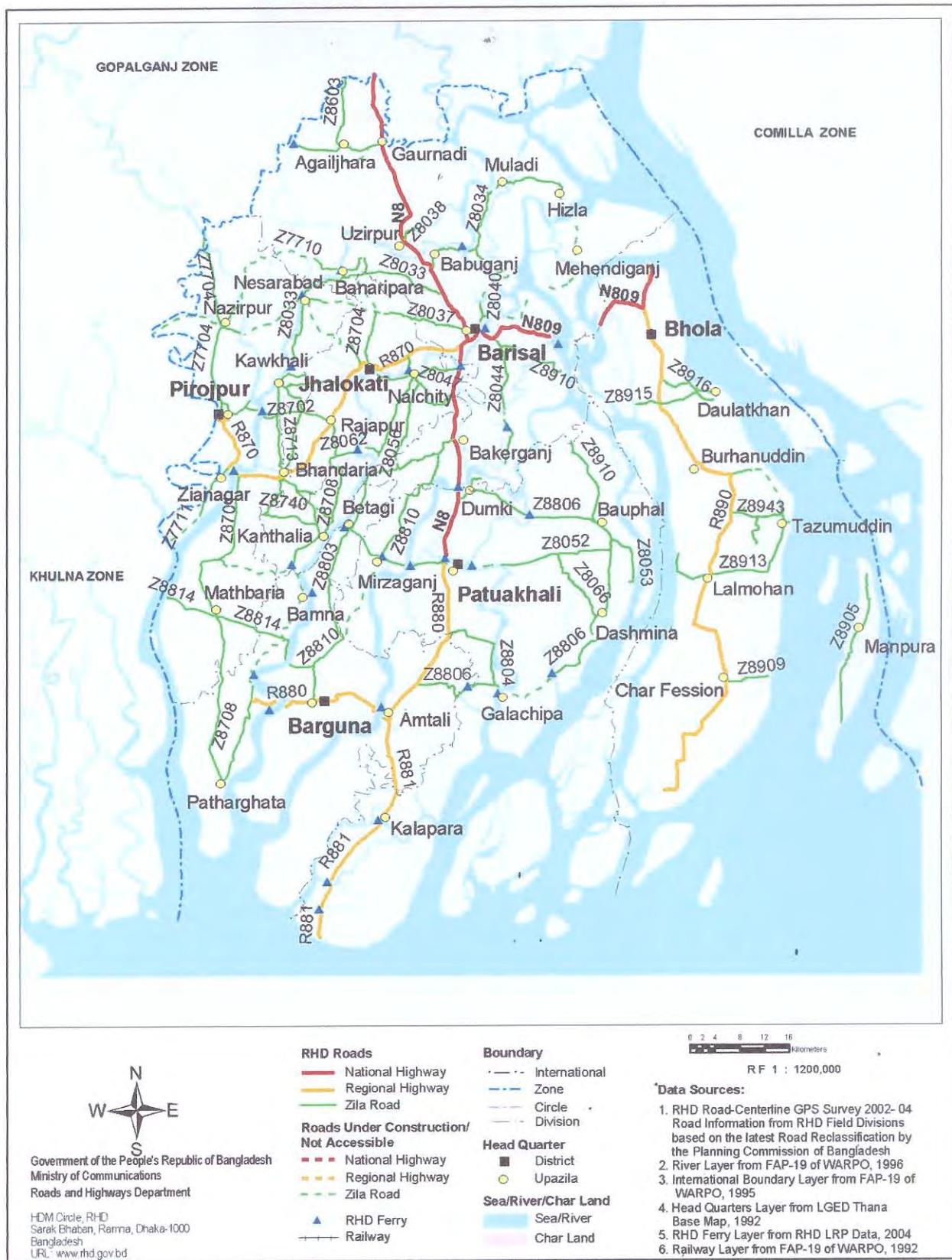
3.2.3 Project Objectives

The objectives of the Project briefly are:

- a) To connect Patuakhali/Kuakata Parjatan Area with capital Dhaka by a road and replace an existing ferry over river Paira by a bridge;



Fig. 3.1: RHD Road Network, Barisal Circle



Printed and Published by HDM Circle, RHD in Cooperation with CIDC3 Project, May 2005

- To reduce the travel time;
- To reduce transportation cost and Travel time of the raw materials and finished goods of different mills and industries of that vicinity; and
- To reduce poverty and uplift socio-economic condition of that locality.



3.2.4 Scope of the Assignment

The Consultants shall conscientiously and to the highest professional standards perform and provide services to the Roads and Highways Department of GoB for the following main components of the services:

- a) To conduct all necessary studies and Investigation to prepare detailed design of the bridges and other elements of the project;
- b) To conduct an environmental impact assessment and socio-economic study and prepare Environmental Management Plan and Re-settlement Plan and obtain approval;
- c) To prepare all documents necessary to conduct bidding for the planned works using standards procurement documents of GoB;
- d) To assist the Client during bidding and bid evaluation;
- e) To prepare for implementation of supervision activities and put in place a comprehensive, documented quality assurance framework;
- f) To participate in the supervision of the Project work contracts in the role of the "Engineer" as described in the Conditions of Contract for the works contract;
- g) To provide and/or facilitate as necessary the assessment, monitoring and management of environmental and social impacts and compliance with the applicable laws and regulations in respect of environment and social impacts;
- h) To monitor and report on all aspects of the Project works contract, the supervision contract and related aspects;
- i) The measurement, validation, verification and certification of payments under he Project works contract;
- j) To advise, assist and support the Project Director in contract monitoring, reporting and financial management and all other aspects relating to proper management of the contract;
- k) To provide Training and support to the nominated RHD officers in order to develop their technical, and contract management capability; and
- l) All other objectives reasonably relating to successful execution of the design and construction supervision.

3.2.5 Scope of Services

The services are to be conducted in two phases and are to cover the following over a time period as indicated:

Design Phase

- a) Detailed Design and Preparation of Bidding Documents (6 months)
- b) Assistance during Bidding of Works (3 months)

Construction Supervision Phase

Construction Supervision (45 months), the period includes Defect Liability Period of 12 months.

3.3 Project Site Appreciation

3.3.1 Site Visit

A site visit to the proposed bridge location over river Paira was carried out by Senior Engineers of the Consultants from 26th January 2013 to 30th January, 2013 to have a feel of the ground conditions on either bank of the river and also the existing ferry Ghat. Our engineers had discussion with the Executive Engineer at Patukhali and some important local residents to obtain first hand useful information and familiarize with prevailing socio-technical complexities.

3.3.2 Location of the Proposed Bridge Site

The proposed Lebukhali Bridge is situated in the South-Central Region (SCR, WARPO August 2000) on N8 highway lying between Barisal and Patuakhali districts (**Fig. 3.1**). Exact location of Lebukhali Bridge is at the cross point of 22° 28'. 89.11" N Latitude and 90° 19.49.34" E Longitude. The proposed site location is shown in **Fig. 3.2**. The N8 highway goes in north-south direction to Kuakata beach site over the Low Ganges River estuarine tidal floodplains. The landscape is level with low gradient towards south that is at places intersected by tidal rivers and channels. Temporary / Semi permanent houses over low man-made platforms in clusters are prevalent over the entire area.



Fig. 3.2: Proposed Location of Paire Bridge



3.3.3 Ferry Site

Two ferries operate to transport vehicles and personnel across the river. It is gathered that 60-80 trips are made by the ferries every day and each trip carries 15 to 20 vehicles, motorcycles and persons. On either side of the approach to the ferry Ghat a number of temporary shops have been constructed and do brisk business, **Photos 1 & 2** show these conditions. The bank on the both side of Ghat at Lebukhali and that on the north end is at Dodalmou (**Photos 3 & 4**). The existing river width at the ferry location is over five hundred meters (**Photo 5**).



Photo 1: Dudalmou Ferry Ghat,
Paire River

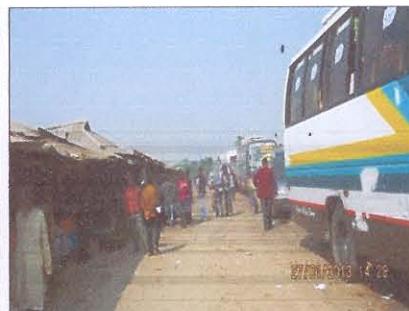


Photo 2: Lebukhali Ferry Ghat,
Paire River Approach Road



Photo 3: Dudalmou Ferry Ghat,
Paire River



Photo 4: Dudalmou Ferry Ghat,
Paire River



Photo 5: Paire River - From north
Side To South Side Ferry Ghat



3.3.4 Conditions of Banks

RHD has constructed facilities for docking of the ferries on either bank (**Photo 6 & 7**). The banks near the ferry have suffered damage, despite the fact that some protection work by using concrete blocks had been carried out. It indicates that protection of banks even after the bridge has been constructed would be required and need be planned and designed (**Photos 8 & 9**).



Photo 6: Paire River Lebu Khali Ferry Ghat West Site to East Side eroded



Photo 7: Lebukhali Ferry Ghat, Paire River



Photo 8: Lebukhali Ferry Ghat, Eroded Paire River



Photo 9: Ferry Ghat: river protection required

3.3.5 Approach Road

The existing approach roads on both the banks have many houses, shops and on either side. To get adequate ROW for the project, acquisition of land and re-settlement of the displaced persons will be required. An interaction with some of the locals showed that if the bridge work is taken up, they shall be willing to give up their land when acquired and there may not be any serious resistance to land acquisition (**Photos 10 & 11**).



Photo 10: Habitation along the proposed Bridge Alignment South Side of Paire River: Land acquisition & resettlement required



Photo 11: From Ferry to Lebu Khali Ferry Ghat South Side of Paire River: Relocation required

The approach road on the North end (Dodal Mou) passes through a number of weekly Haat / Bazars, specially at Boalia, Bakergonj, Dadurhat and Lakhipasa. This approach may also require two bridges of 30 - 35 meter spans at Boalia and Bakergonj, where baily bridges presently exist. Similarly the approach road on the south end also passes through Bazars at Pagla, Karon, Badarpur, Gabua & Talikhali. Since the approach roads may require high embankment as it nears the bridge, some of these market places will have to be shifted and rehabilitated.



3.4 Consultants' Obligation

The Consultants have fully understood the requirements of assignment. The Consultants shall act as faithful advisors and support / safeguard legitimate interests of Employer. The Consultants hereby assure to carry out the consultancy works in accordance with GoB and KFAED guidelines and requirements and to the entire satisfaction of Employer as under:

- Highly competent professional staff for the implementation of the assignment will be provided;
- Supervision will be carried out with due diligence and efficiency and in accordance with sound technical, administrative, financial and economic practices;
- Best construction practices shall be followed so that the end product is in all respects equal to, or better than that specified at the most economic costs and is carried out in full compliance with the governing specifications; and
- A quality assurance plan will be established for the implementation of the services and will be submitted to Employer for approval.

3.5 Technical Approach

3.5.1 Integration of Project Team Personnel

As the proposed project requires the inputs of qualified engineers and specialists of various engineering, social and environmental fields for all the project components, the Consultants have realized that this demands a well-coordinated and inter-disciplinary approach including regular and close interface and coordination with all the stakeholders of the projects i.e. the Consultants, the Client and the Contractor. Therefore, the Consultants' general approach will be one of integration whereby all the key personnel are aware of their own and other's responsibilities and authority, the overall objectives of the services, and the benchmarked levels of quality in the provision of the services. To achieve this, the Consultants will organize a workshop at the commencement of the service with the participation of all concerned. A computer based Project Management Tool, which drives, monitors, reports on and manages the Projects, will also be developed for the construction supervision. Computer software programs will be used for scheduling, resource and cost management, reporting, and for the data exchange requirements of the Project.

3.5.2 Technically Sound and Economical Design

There are technological developments taking place in the world, at a rapid pace and it is essential that all technocrats keep abreast with the state-of-the art technology. The Consultants have acquired sophisticated latest software tools for analysis, evaluation and economical design solutions of road/bridge projects. The Consultants will make use of the following computer design tools to optimize results which are technically sound and economically acceptable.

Based on the scope of works given in the ToR, it is considered that the following softwares can be gainfully used for this project.

- Softwel
- AutoCAD
- MX Road
- AutoCAD Civil 3D
- Slope-W-2004
- HEC-RAS
- Culvert Master
- ADAPT
- STAAD PRO
- GT STIDL
- HDM-4
- DIPS
- C-Tunnel
- GE05
- FPAVE (IRC)
- DARWin-ME
- CIRCLY

3.5.3 Consideration for Timely Completion of the Project

The Consultants will ensure that project activities are completed in time as per the work plan through constant monitoring during all stages. The Consultants, based on the experience obtained in several projects of similar nature performed in Asian and African Countries, have identified the following factors which cause delays in the implementation of the project after award of Civil Work Contracts:



- Handing over of a clear site;
- Cutting of trees and shifting of utilities;
- Land acquisition and resettlements;
- Delays in payment;
- Lack of adequate resources and their timely deployment by contractors;
- Delays in decisions on contractual matters; and
- Environmental clearances.

The Consultants will take following measures to avoid above delays:

- Review of mobilization plans and early commencement of the works;
- Regular holding project review meetings in consultation with Project Director of RHD;
- Ensure systematic procedure for sampling, testing and approval of materials;
- Prompt preparation and submission / approval of documents and drawings;
- Ensure timely action for handing over of encumbrance free work site;
- To initiate process for obtaining clearances for Hot Mix Plant, Concrete Batching Plan and Casting yard etc.;
- Regular monitoring of time/work schedule;
- Efficient Procedure for payment certification of the contractors;
- Identification, reporting and treatment of unexpected conditions;
- Timely preparation of Alternatives and variation Orders;
- Prompt treatment of claims and resolution of disputes; and
- Ensure advance procurement of important materials.

The strategy of the Consultants would be to establish suitable measures and develop an interactive framework between Employer / Employer's Representative, Engineer / Engineer's Representative, and Contractors to make possible the timely completion of the Project.

3.5.4 Quality Assurance in Accordance with ISO 9001:2008

ICT is an ISO 9001:2008 certified firm and as effective quality management on the project is required that will be achieved by the application of relevant procedures that include definition of responsibilities and duties, implementation of project planning and review, appropriate verification of inputs and project work, quality auditing and, where necessary, corrective action etc. These procedures will generate quality records which are ensured by establishment and execution of activities and tasks related to QA and QC, based on concepts of ISO 9001:2008.

3.5.5 Environmental and Social Impacts of the Project

The Consultants fully understand their responsibilities towards environmental protection along the project stretch as well as the much wider impact on ecology and poverty reduction within the project area. The Consultants' approach will be to ensure that the project is implemented in such a way that it blends harmoniously with the physical, biological, socio-economic and cultural environment of the project area. Environmental and Social issues as stipulated in the TOR will be fully considered during detailed engineering design including preparation of tender documents and during construction phase. The mitigation measures to guard against the adverse effects shall be closely monitored.

3.5.6 Support from Head Office

Taking into account the scope of the project, the time and work schedules for implementation and aimed on the main objectives of the Quality Assurance System, the Consultants will make pertinent arrangements for providing a continuous technical, administrative and management support from their Head Office at New Delhi, India.

3.7 Management Approach

The emphasis of the Consultants will be to ensure a proper management of all the issues related to contracts including the necessary assessment for a proper understanding of contractual aspects and conditions, timely compliance of the contractual requirements, adherence to contract specifications, etc. Therefore, the Consultants' approach to proactive management of services will be based on the following actions:

- Close co-ordination among the key stakeholders of the project (GoB, RHD, KFAED, Consultants and the Contractor);
- Systematic and effective working relation within the Consultant's associates;
- Sufficient flexibility to respond to desired changes and directions;
- Systematic procedures for quality control;
- Systematic monitoring of both processes and performance.



- Fully empowered Team Leader to act for all administrative and financial decision;
- Strict adherence to the work schedule;
- Facilitative in dispute management;
- Safety Management at all times;
- Clearly defined roles and responsibilities for each member of the proposed Team with power delegated by the Team Leader;
- Well equipped field office setup and followed by Home office support;
- Computerized communications in the project;
- Adherence to the contract conditions and technical specifications for the project;
- Develop anti-claim mentality; and
- In-depth knowledge of physical and financial and management information systems at all times.

3.8 General Approach

The Consultants would embark upon the works with the following general approaches:

- Selection / mobilization of project personnel;
- Selection of tested and proven methods and technologies to be optimum;
- Application of an optimal combination of the methods, tools / technologies based on practicality and usefulness;
- Full use of the national and international technical standards, guidelines procedures, methodologies including those formulated by the RHD;
- Close contact and effective co-ordination with the Client and concerned authorities;
- Regular briefing to the Client and concerned authorities on the progress / problems;
- Full use of available and applicable reports, standards, data, maps / drawings, specifications, other information for execution and completion of the services in accordance with accepted professional standards and sound engineering and economic practices
- Completion of the proposed services within the stipulated time and budget.

Based on our understanding of the objectives and the detailed TOR for the services, an appropriate methodology has been developed by the Consultants. Since the scope of services covers some independent and interdependent activities, it is proposed to follow a Task Approach to carry out the entire work comprehensively and accurately to the complete satisfaction of the Client. The whole foreseen scope of work has thus been organized into different Task Groups, which will allow better monitoring, compliance and QA/QC during the entire duration of Consultancy services in both phases.

3.9 Innovativeness

The Consultants intend to apply the latest and innovative approaches that have been proven and have produced positive impacts towards smooth complementation of similar projects. Some of the innovative approaches to be applied for this project would be:

- Carry out all field surveys and investigations with quality, use of latest technology as per schedule and data analysis
- Cost effectiveness / appropriateness in design while ensuring least cost in maintenance
- Sustainable and Systematic Monitoring of Quantities
- Minimizing environmental and social hazards taking into social & environmental dimensions of influence areas of the project
- Ensuring Value Engineering Practices for optimal value for money invested during preliminary and detailed design and construction
- Effective implementation of Quality Control Program with review of quality assurance plan submitted by contractors
- Computerized monitoring of major construction materials inventory for procurement schedule of contractor, stock balance vis-a-vis the requirement for planned works for two months in advance and take remedial measures to eliminate delays
- Computer application in survey & road / structure designs and protection works for optimization of works/output
- Sustainable and Systematic Monitoring of Work Program and appraise contractor their drawbacks and remedial actions to ensure progress as per schedule
- Systematic Supervision of Construction and contract Administration
- Preparation and Handling of Digital Database for information storing
- Sustainable Revision and Optimization of the Design for Economical and Timely Project Completion
- Transfer of technology to staff of client and to contractors through workshops, formal training and on the job execution as appropriate
- Introduce Bonus clause for early completion of works by contractors
- Earned Value Analysis during construction monitoring the physical and financial progress
- Application of multi-criteria decision tools for ranking of design options



3.10 Technology Transfer and Training

The Consultants have always, as a matter of policy, considered transfer of technology and training of domestic counterparts to be a very important and integral part of overseas consulting services. The Consultants understand that training should achieve both institutional and individual objectives. The institutional objectives would ensure that the staffs associated with the project from the client, local consultant, NGO, and contractors improve their capability to perform effectively and to continue to develop the Client's in-house training capabilities. The individual training objectives would also be oriented towards strengthening the capabilities of RHD staff in design, supervision of road projects, and maintenance.

The transfer of technology will require a rapid assessment of the existing level of knowledge, available resources, and constraints within the Ministry of Communication/RHD and its professional, analysis and identification of gaps, preparation of discussion materials and organization of lectures and on the job training. The Consultants will emphasize on:

- On-the-job training;
- Collaboration together at field and at office sharing experience together;
- Conducting classes on Contract Management, Quality Control, Environmental Monitoring and Finance; and
- Regular discussions on various aspects of the project design and supervision.
- Organise overseas training.

Since Training firms a major component of the services, the Consultants have explained their training method and approach in a separate **Chapter 7**.

3.11 Methodology Framework

Based on our technical, management, participatory, general, innovativeness and technology transfer approaches to be adopted, the entire work to be carried out has been grouped into various task groups as under:

DESIGN PHASE

- Task Group I : Mobilization and Work Initiation
Task Group II : Survey and Investigation
Task Group III : Final Design
Task Group IV : Preparation of Land Acquisition and Re-settlement Plan
Task Group V : Preparation of Tender Documents and Estimates
Task Group VI : Preparation of Environment Management Plan
Task Group VII : Assistance to Client during Procurement of Works
Task Group VIII : Preparation and Submission of Reports

CONSTRUCTION SUPERVISION PHASE

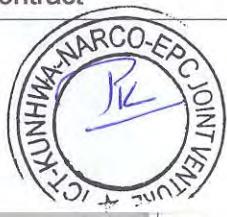
- Task Group I : Mobilization and Preparatory Activities
Task Group II : Supervision of Construction Works and Quality Control
Task Group III : Contract Management and Cost Control
Task Group IV : Monitoring
Task Group V : Documentation
Task Group VI : Services During Defect Liability Period
Task Group VII : Reporting and Submission of Reports

Table 3.1: Task List

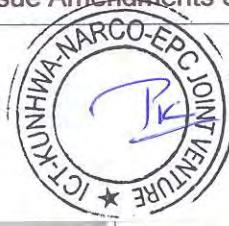
Task No.	Description of Task	ToR Reference
DESIGN PHASE		
TASK GROUP I – MOBILIZATION AND WORK INITIATION		
101	Mobilization of Project Team and Start up Meeting	Normal Task
102	Reconnaissance Survey	3.1.1 (a)



Task No.	Description of Task	ToR Reference
103	Review of Feasibility Study	3.1.2
104	Review of Preliminary Engineering Design	3.1.2
105	Review of Existing Regulation & Codes in force in Bangladesh	3.1.1 (f)
TASK GROUP II – SURVEY AND INVESTIGATIONS		
201	Topographical Survey	3.1.1 (b)
202	Traffic Survey	3.1.1 (c)
203	Geophysical Investigation	3.1.1 (d)
204	Soil and Material Investigations	3.1.1(d)
205	Hydrological Investigation	3.1.1 (e)
TASK GROUP III – FINAL DESGIN		
301	Finalize Design Concept of Bridge	3.1.3
302	Detailed Engineering Design of Bridge	3.1.4
303	Design of Approach Road	3.1.4
304	Design of Toll Plaza, Weigh Bridge and other facilities	3.1.4
305	Finalisation of Specifications	Additional Task
TASK GROUP IV – PREPARATION OF LAND ACQUISITION AND RE-SETTLEMENT PLAN		
401	Preparation of Land Use and Ownership Plans	3.1.5
402	Preparation of Land Acquisition Plan	3.1.5
403	Conduct Socio-Economic Survey and Prepare Resettlement Plan	3.1.5
TASK GROUP V – PREPARATION OF TENDER DOCUMENTS AND ESTIMATES		
501	Preparation of Bidding and Contract Documents	3.1.4
502	Finalize General and Particular Conditions of the Contracts	3.1.4
503	Finalize and prepare BOQ	3.1.4
504	Finalize Full Set of Drawings	3.1.4
505	Preparation of General and Particular Specification	3.1.4
506	Preparation of Engineer's Estimates	3.1.4
TASK GROUP VI – PREPARATION OF ENVIRONMENT MANAGEMENT PLAN		
601	Conduct Environmental Surveys and Analyse Impact	3.1.6
602	Impact Identification and their Mitigation	3.1.6
603	Prepare Environmental Management Plan (EMP)	3.1.6
604	Obtain Approval of EMP	3.1.6
TASK GROUP VII – ASSISTANCE TO CLIENT DURING PROCUREMENT OF WORKS		
701	Prepare Tender Notices and Assist in their Publication	3.1.7 (a) (b)
702	Assist in Pre-bid Meeting and Site Visit	3.1.7 (c)
703	Assist in Tender Evaluation	3.1.7 (d)
704	Evaluate Alternatives Proposed by Bidders and Advise	3.1.7 (e)
705	Assist in Negotiation & Award of Contract	3.1.7 (f)



Task No.	Description of Task	ToR Reference
TASK GROUP VIII – PREPARATION AND SUBMISSION OF REPORTS		
801	Submission of Inception Report	4.1 (i)
802	Monthly Progress Reports	4.1 (ii)
803	Design Report and Drawings	4.1 (iii) (iv) (vii) to (ix)
804	Submission of Tender Documents	4.1 (v), (vi)
CONSTRUCTION SUPERVISION PHASE		
TASK GROUP I – MOBILIZATION AND PREPARATORY ACTIVITIES		
101	Mobilization and Preparatory Activities	Normal Task
102	Study and Review Contract Documents and Other Relevant Reports	Normal Task
103	Review and Familiarization with Project Environmental Management Plan (EMP)	3.2.1 (a), (k)
104	Review the Resettlement Action Plan (RAP) and its Implementation Status	3.2.1 (a), (k)
105	Review Shifting of Existing Utility Services Status	3.2.1 (k)
106	Identify and Verify Accuracy of Survey Control Station	3.2.1 (e)
107	Prepare Standard Formats for Progress Reports, Payment Certificates etc.	Normal Task
TASK GROUP II – SUPERVISION OF CONSTRUCTION WORKS AND QUALITY CONTROL		
201	Assist in Issue of Order to Commence Works and Handing over of Work Site to the Contractor	Normal Task
202	Establish Quality Assurance and Preventive Supervision System	3.2.1 (b) (f)
203	Review and Monitor Contractor's Mobilization Plan and Ensure Implementation	3.2.1 (a)
204	Installation of Computer Aided Project Management System and Management Information System	Additional Task
205	Check and Approve Contractor's Setting out of Works	Normal Task
206	Inspect and Approve Materials Proposed by Contractor for Incorporation in Works	3.2.1 (e)
207	Review and Approve Contractor's Construction Methodology	3.2.1 (i)
208	Supervision Construction Works and Stage Approval	3.2.1 (a)
209	Supervision Quality Control Measures	3.2.1 (f)
210	Carry out Tests on Soils, Material, Mixes for Compliances with Specifications and their Approval	3.2.1 (f)
211	Order Renewal / Rectification of Sub-standard Works and Unsatisfactory Materials	3.2.1(a)
212	Check and Approve Traffic and Safety Arrangements During Construction	3.2.1 (k)
TASK GROUP III – CONTRACT MANAGEMENT AND COST CONTROL		
301	Make Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval	3.2.1 (d) (c)



Task No.	Description of Task	ToR Reference
302	When Required Carry out Design; Prepare Drawings and Technical Specifications as Supplementary Information	3.2.1 (d) (c)
303	Review and Approve Contractor's Work Program	3.2.1 (a)
304	Review and Approval of Working Drawings	3.2.1 (i)
305	Inspect Contractor's Plants, Machinery and Laboratory Equipments	Routine Task
306	Inspect Contractor's Housing and Facilities	Routine Task
307	Review / Approve Contractor's Key Personnel	Normal Task
308	Check and Verify Validity of Contractor's all Insurances and Guarantees	Routine Task
309	Check and Verify Measurements of Works	3.2.1 (o)
310	Regular Review of Bill of Quantities and Advise Employer on Estimated Total Cost	3.2.1 (a)
311	Scrutinize and certify Interim and Final Payments	3.2.1 (n)
312	Review and Analyse Contractor's Claims including Extension of Time and Advise Project Director	3.2.1 (p)
313	Prepare Engineer's Instruction and Variation Orders	3.2.1 (c), (a)
314	Advise / Assist in Disputes / DRE / Arbitration	3.2.1 (p)
315	Advise / Assist the Project Director in Communication with Donor Agency	3.2.1 (s)
316	Advise Project Director for Coordination with other Related Local Authorities	3.2.1 (k)
317	Prepare and Assist Issue of Substantial Completion and Final Taking Over Certificate	3.2.1 (r)
318	Arrange Provision of Special Staff if so Required for Smooth Progress	3.2.1 (j)

TASK GROUP IV – MONITORING

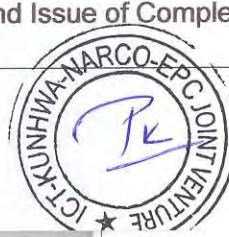
401	Evolve Progress Monitoring System	3.2.1 (a)
402	Monitor Progress and Contractor's Work Plan	3.2.1 (a)
403	Organise Monthly Progress Review Meetings	3.2.1 (l)
404	Monitor Implementation of Environmental Mitigation Plan	3.2.1 (k)
405	Issue Notices for Slow Progress and other Issues	3.2.1 (a)

TASK GROUP V – DOCUMENTATION

501	Maintain Accurate Records of all Measurements and Bills	3.2.1 (o)
502	Maintain Accurate Records of all Quality Control Tests including Rejected Works	3.2.1 (m)
503	Maintain Detailed Records of Contractor's Plants / Equipments	Normal Task
504	Review, Approve and Submit "As-Built-Drawings"	3.2.1 (q)
505	Maintain Project Daily Site Diary	3.2.1 (m)

TASK GROUP VI – SERVICES DURING DEFECT LIABILITY PERIOD

601	Inspect Completed Works and Supervise Maintenance Works during Defect Liability Period	3.2.2 (a)
602	Assist in Final Taking Over of Works and Issue of Completion Certificate	3.2.2 (b)



Task No.	Description of Task	ToR Reference
603	Issue Final Payment Certificate	Normal Task
TASK GROUP VII – REPORTING AND SUBMISSION OF DOCUMENTS		
701	Preparation and Submission of Mobilization and Inception Plan	4.2
702	Preparation and Submission of Progress Report	4.2
703	Preparation and Submission of Quarterly Report	4.2
704	Preparation and Submission of Project Completion Report	Addl. Task

3.12 Methodology

A detailed methodology for each task has been prepared and proposed herein, to ensure comprehensive coverage of the ToR requirements and its linkage to it. *The text in italics e.g. 3.7.2 (v) denotes the corresponding activities as referred in the ToR.* Depending upon the nature of the tasks and their relationships as well as the project completion time including intermediate targets, a suitable Work Plan that illustrates all the detailed of the Task as discussed here, has also been prepared to ensure satisfactory completion of the services.

DESIGN PHASE

TASK GROUP I: MOBILIZATION AND WORK INITIATION

Task 101:	Mobilization of Project Team and Start up Meeting	Normal Task
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Immediately upon receipt of the notice to proceed from the client, the Consultants will mobilize their team within the specified time frame. A kick off meeting will be held with the Project Director, Paira Bridge Construction Project to obtain relevant information about the project including all past studies conducted and also to have preliminary discussion on the proposed work plan of the Consultants for undertaking the assignment. Further, the procedure proposed to be followed by the Client for administration of the contract as well as any modifications required in the scope of work will be discussed with them. The Team Leader will hold an orientation session with the team members to clarify the project objectives and responsibilities of each team member. All logistical matters will be resolved during initial stages of mobilization and a project office established at Dhaka.

Task 102:	Reconnaissance Survey	3.1.1 (a)
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An initial field visit by a multi-disciplinary team will be undertaken, preferably along with the concerned functionaries of RHD, as early as possible. Our team would mainly consist of:

- Team Leader and Deputy Team Leader;
- Senior Foundation / Geotechnical Engineer;
- Environment Engineer;
- Senior Bridge Design Engineer;
- Senior Hydraulic / RT Engineer;
- Highway Design Engineer

The Team will travel on the existing road from Barisal to Paira river and use the Ferry to cross over onto the other bank. The team will familiarize with the proposed bridge site, condition of approaches, the settlements along the existing road for about two kilometer on either side of river, presence of utilities, the type and volume of traffic presently using the Ferry to Cross over, the Land use and drainage conditions. The aim of the reconnaissance survey will be to get a feel of the project area and prevalent conditions. This will help plan other detailed survey.

Task 103:	Review of Feasibility Study	3.1.2
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It is noted that a Feasibility Study had been conducted by GoB for the proposed bridge in May 2012. The Consultants will review the Feasibility Report for following information and data:

- Topographical Map of the Project;
- Climate Data;
- Traffic data and future projections;



- Condition Survey of Existing road;
- Hydrological Studies;
- Results of Geo-Technical Investigations;
- Soil and Materials Investigation;
- Alternative proposals for the bridge and GAD of the selected option as well as proposed protection works; and
- Environment and Resettlement Issues etc.

The comments of RHD and KFAED on the Feasibility report will also be studied. As a result of the review, should the consultants find a need for certain changes that may enhance the soundness of design or result in economy, the same will be discussed with the Project Director, RHD and incorporated in the detailed design if accepted.

Task 104: Review of Preliminary Engineering Design

3.1.2

The preliminary design shall be broadly gone through to see if the design conforms to provisions of AASHTO LRFD Design Specification 2010. Also that the methodology adopted by the Feasibility Consultant in the design matches with the type of superstructure, arrangement of bearings, type of substructure and foundations proposed and sequence of construction for the same. The following will be reviewed in particular

Review of Alternative Options and Preliminary GAD Prepared by Feasibility Consultant:

The alternative options, General Arrangement Drawing and preliminary design proposed in Feasibility study for the bridge shall be reviewed to see if the dimensions adopted for various components are broadly in line with the type of structure, methodology of construction and construction sequence, height of substructure, likely loads thereon and type of soil met with at site. Protection measures suggested for foundations and substructure in navigational spans against collision of drifting vessels or collision force considered in design shall be studied and reviewed for adequacy.

Check Navigational Requirement for Horizontal and Vertical Clearance:

Width of channel to be used by navigating vessels, classification of channel from navigational requirements, if any, horizontal and vertical clearances above HFL/HTL specified for the channel shall be ascertained. GAD shall be examined if one or more spans as required by the client meet out the navigational requirements set out by the concerned authority. Further, the vertical profile in adjacent spans should follow the gradient as permissible in the code on geometric design issued by Bangladesh.

Review Seismic Analysis of Bridge Design:

A study shall be made of the seismic map of the country to ascertain the seismic zone in which the bridge lies. Thereafter, the calculations made by the Feasibility Consultant for working out seismic coefficient shall be reviewed to see if the same are in conformity with the relevant seismic code of practice specified by the client.

Review Preliminary Design of Foundations and substructure:

The preliminary design of foundations in viaduct spans, river spans and navigational spans will be reviewed to see if all the relevant design forces have been duly considered.

Review Preliminary Design of Substructure:

Design of substructure for each pier and abutment shall be reviewed considering the dead loads, live loads and forces transmitted to the piers/abutments during construction as well as in service condition. Modifications if any, required shall be conveyed to the client and incorporated in the drawings.

Review Preliminary Design of Superstructure:

Design of superstructure depends upon its length, type, materials of construction and concrete grades, support system, construction methodology etc. The preliminary design of superstructure in various spans would therefore be reviewed in the light of analysis made in the Feasibility Consultant for the proposed spans, their construction methodology, construction loads as well as live loads and forces during service condition.

Review of Provision of Ancillary Items:

The type of bearings, expansion joints, approach slabs, drainage spouts, seismic restrainers and other ancillary items proposed in Feasibility Report shall be reviewed from the consideration of loads, forces, rotation and translation as applicable.



Based on the review of Feasibility Study and Preliminary Engineering design, the Consultants shall organize and make a presentation of their findings to the client including proposed changes for their consideration by the Client and decision before proceeding with the detailed design.

Task 105: Review of Existing Regulations & Codes in force in Bangladesh

3.1.1 (f)

The Consultants shall collect and study RHD standards for National Highways and Bridges recommended for adoption in Bangladesh in particular RHD's approved Geometric Design Standard Manual (Revised), 2005 and RHD's Bridge Design Standard of 2004. Similarly the Laws and Regulations related with Environment Protection, Social Management, HIV / AIDS aspects, Land Acquisition, Utilities Services etc. will be studied to incorporate them in the design process. The Consultants will also ascertain development plans of the project area and project influence area, which could have direct or indirect impact on the project. Planned investment by the Government or even Private Parties which may influence generation of traffic or even migration of workers to or from the area will be made a note of and taken into account for future projections.

The Consultants will also collect prevalent rate of local materials and stone aggregate if imported from Pakur in India. The Consultants will also collect data pertaining to contracted work items of road and bridges in progress or completed in the recent past for guidance while carrying out cost analysis of the civil works.

TASK GROUP II: SURVEY AND INVESTIGATIONS

Task 201: Topographical Survey

3.1.1 (b)

Topographical Survey is one of the Key input in the designing of the bridge, approaches and other facilities. The Consultants shall locate the Survey Control points established during the Feasibility Study and Check their correctness and make use of these or if need be establish new survey control points. The Consultants will establish the primary network of permanent control points in the project influence area near the existing road. The Primary control points will be established in each location within a range of 200-300 meter interval and intervisible. Primary Control points on either side of river bank will also be established and x,y,z coordinates fixed, with high precision differential GPS technique. These will and to be maintained throughout the project period.

Detailed topographical survey will be carried out by following standards as specified. Based on the X, Y and Z coordinates of primary and secondary control points, detailed topographical survey will be carried out with the help of Total Station / GPS / Auto Level as applicable covering all natural and manmade topographical features as under:

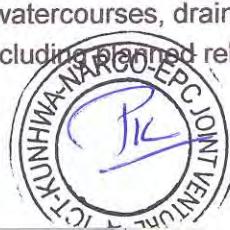
- Verification and reinstatement of control points established during the Feasibility Study as well as establishment of additional control points as necessary.
- Stake out centre line of approach roads and bridge location based on data of Feasibility Study,
- Survey of the existing roads, junctions, kerbs, drains, culverts, road furniture, utilities, buildings etc. within the project influence area for preparation of map to a scale of 1:1000 and carrying out the detailed engineering design as necessary,
- Detailed surveys at the proposed location of the main bridge and secondary bridges including enough length downstream and upstream of the structures, ferry crossing and land use to a scale of 1:500
- Levelling along centerline of road at 50m intervals for the longitudinal profile, and
- Cross-section leveling at 20m intervals and at any local irregularity. Cross sections are to cover the ROW. Since embankment of approaches to the bridge will be high, enough land width will be covered during survey.

It will be ensured that the engineering team continues to work with the resettlement specialists to ensure continued efforts to minimize the number of cases of resettlement, where technically and economically feasible.

All detailed topographical survey data in the form of x, y and z coordinates will be exported to highway design software for definition of the geometric characteristics of the centerline of the bridge and approach roads and preparation of the setting out data. This data will be used to generate Digital Terrain Model of the strip with contours at 0.5m interval for the purpose of developing strip plans and profiles, and work out the cost estimates

The topographic data will be developed and presented on maps with a scale of 1:1000 and 1:500 as specified for the following:

- Existing road, other roads, footpaths, rivers creeks, watercourses, drains etc.
- Buildings:-houses of bricks, mud, public buildings; including planned relocation



- Land use; sports fields, cemeteries, cultivation, forests, etc.;
- Trees with diameter exceeding 0.5m and height exceeding 1.50m.
- Main fences/bench marks and grid lines;
- Existing national trigonometric points, and national bench marks, Consultant's primary and secondary trigonometric points and benchmarks with co-ordinates and elevations.

In addition, electronic copies of the topographical data saved in MS Excel and topographic drawing in DXF or DWG format will be submitted in CD ROMs for future reference and action if any.

Task 202: Traffic Survey

3.1.1 (c)

The Consultants will determine the type and volume of existing traffic for road by analysing all existing statistical data available with RHD and Bangladesh Inland Water Transport Authority (BIWTA) and by conducting and analysing such traffic counts and origin-destination studies as required to determine the nature of the traffic and the present volume of freight and passenger movement on the road. Since Traffic Communication across river Paira is through a ferry, traffic count at the Ferry will be organised and past data collected from BIWTA will be co-related to determine the seasonal variations.

In view of the requirements of ToR, the following traffic surveys will be carried out, besides the collection of secondary data relating to the project traffic.

- Classified Traffic Volume Counts
- Origin-Destination and Commodity Movement Survey
- Axle Load Survey
- Speed and Delay Survey
- Ferry/IWT Passenger Survey

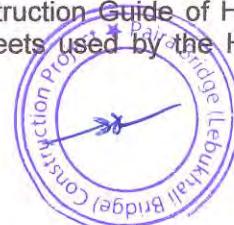
The tentative locations of traffic surveys are tabulated in **Table 3.1**. These locations have been decided tentatively based on map study and after reviewing of feasibility report, which will be finalized in consultation with the client before commencement of surveys.

Table 3.1: Details of Tentative Locations of Traffic Surveys

S. No.	Location Code	Locations	Project Road
Classified Traffic Volume Counts			
1	MCC 1	Between Lebukhali ferry ghat and Barisal.	N-8
2	MCC 2	Between Lebukhali ferry ghat and Patuakhali.	N-8
3	MCC 3	Between Bakerganj and Barisal.	N-8
4	MCC 4	On Bakerganj-Barguna Road	-
Origin-Destination and Commodity Movement Survey			
5	OD 1	Between Lebukhali ferry ghat and Patuakhali	N-8
6	OD 2	Between Bakerganj and Barisal.	N-8
Axle Load Survey			
7	AL 1	Between Lebukhali ferry ghat and Patuakhali	N-8
8	AL 2	Between Bakerganj and Barisal.	N-8
Speed & Delay Survey			
9	Along the Project Corridor(Including ferry transport)		N-8
Ferry/IWT Passenger Survey			
10	At Lebukhali Ferry, Along Dhaka-Patuakhali and Dhaka-Barguna Route		-

Classified Traffic Volume Counts

The Manual Classified Counts (MCC) will be carried out for 7 days/3 days (24hrs- direction wise) at the selected survey stations. Survey duration will be finalized in discussion with the Client. The vehicle classification system will be followed as per Manual Traffic Count Instruction Guide of HDM Circle, RHD. Survey would be carried out using the standard traffic count tally sheets used by the HDM Circle. The



survey would consist of counting of each category of vehicle in both directions for successive 15 minutes periods. Counts and recording of data (by manual tally-marking) would be done by trained enumerators in two shifts of 12 hours each per day under the presence of supervisors.

Analysis of traffic survey data would give the following traffic information on project road.

- Average Daily Traffic (ADT)
- Traffic composition
- Annual Average Daily Traffic (AADT)
- Daily variation of traffic volume during the survey period
- Hourly variation of traffic within a day
- Peak hour periods and peak pour flows
- Directional distribution of ADT

The AADT shall be worked out by applying seasonal factors to the ADT. The seasonal factor shall be obtained from past traffic data as mentioned above, if available or from other secondary data like, fuel sales in the project influence area.

Origin – Destination and Commodity Movement Surveys

The origin-destination survey is carried out with the primary objective of studying the travel pattern of goods and passenger traffic around the project location. The O-D surveys will be carried out for one day, 24 hours, in weekday along with the classified traffic volume counts at same locations. Survey duration will be finalized in discussion with the Client. Roadside interview method will be adopted for the survey in which the vehicles will be stopped on random sample basis with the help of police, and trained enumerators will interview the drivers/passenger to obtain the required data (origin, destination, trip length, trip purpose, commodity type, frequency, fare, distance travelled, time required for travel, waiting time etc. as applicable for different vehicle types).

The results of this survey will be useful for identifying the influence area of the project location, as well as in estimating the growth of traffic operating between different O-D pairs. The survey data will be fed to the computer and analysed. Separate O-D matrices for each mode will be generated for the observed sample and then will be expended for the total population of traffic observed. These matrices will be developed for each survey locations and then will be combined for total traffic analysis of the influence area. Analysis of O-D data would give the following traffic information on project road

- Major trip generating zones within the project influence area and its share in total trips
- Lead and load pattern of the vehicular movement on the project
- Type of commodities moving on the project influence area
- Frequency and purpose of travel

Axle Load Survey

Axle Load Survey would be carried out at locations around the project bridge site at identified locations. The main purpose for carrying out the survey is to assess the overloading pattern on the corridor and to estimate Axle Load Spectrum as well as Vehicle Damage Factor based on the commercial (Heavy) vehicle volume which is using the road. During the survey, axle loads of commercial vehicles, i.e. LGVs, 2-Axle, 3-Axle, 4-6 axles, Multi Axle Trucks and a few Buses would be weighed on random sampling basis. The vehicles will be stopped with the help of police and the drivers will be directed to stop their vehicles in such a way that wheel of each axle can be weighed using portable Axle Load Weighing Pad. The readings would be recorded by trained enumerators for each axle separately and the surveys will be carried out for duration of 24 Hours.

Speed and Delay Survey

To quantify the problems of congestion and the causes for delay, speed and delay studies will be conducted on the 50-100 km stretch around the project bridge location. For this purpose, the identified stretch would be divided into road and ferry sections. In study of ferry section, waiting time, journey time and loading/unloading time would be considered. This survey will help in assessing the total journey time on the project influence area road network (without and with construction of bridge), benefits occurring to the user with the provision of the proposed facility and benefits likely to be occurring to the potential users willing to shift from the other roads/modes.

Ferry/IWT Passenger Survey

Passenger at the Lebukhali ferry shall be interviewed to obtain he information on origin, destination, mode used to reach the ferry, purpose, waiting time, travel time, travel cost, willingness to shift to motorised mode, if using NMT to reach the ferry etc.



Apart from interview at Lebukhali ferry, passenger along the Dhaka-Patuakhali and Dhaka –Barguna IWT routes shall be interviewed to obtain information on origin, destination, purpose, travel time, travel cost and their willingness to shift from IWT mode to road transport after completion of Paira Bridge.

Assessment of IWT network

Inland Water Transport (IWT) plays a very significant role in the transportation system of Bangladesh. Its low expenses and high accessibility, as compared with other alternatives, amplifies a great demand for carrying goods and passengers within the country. Although water transportation sector in Bangladesh possess geographical advantage but there are deficiencies in the safety and accessibility aspects.

Bangladesh has about 24,000 km. of rivers, streams and canals that together cover about 7% of the country's surface. Most part of the country is linked by a complex network of waterways which reaches its extensive size in the monsoon period. Out of 24,000 km. of rivers, streams and canals only about 5,968 km is navigable by mechanized vessels during monsoon period which shrinks to about 3,865km during dry period. The IWT sector carries over 50% of all arterial freight traffic and one quarter of all passenger traffic.

Assessment of IWT network is required to compute the potential traffic onto proposed bridge through diversion to road mode.

The collected data will be analysed and a forecast of the traffic made through following stages:

Computation of Times Series / Growth Factors

Analysis of traffic volume count data and origin-destination survey analysis will help in estimating the normal traffic on the proposed bridge.

Existing traffic volume count data at the selected locations, data received from past census and ferry data will be processed to estimate the traffic growth rates. . Apart from estimating the growth of traffic based on the past trend, econometric method will also be used to estimate growth of traffic on the project road/bridge. Traffic Projection Methodology adopted in earlier studies will also be reviewed while projecting the traffic for the proposed bridge.

Elasticity of Transport Demand

The method of long-term traffic forecasting incorporates analyses of some of the key socio-economic characteristics in the influence area of the project and their anticipated rates of change during the study period upto horizon year. These characteristics are being taken as indicators for the future growth of traffic. The Consultants will use elasticity approach for determining the growth rates of future traffic. This will involve establishing a quantitative relationship between traffic growth as the dependent variable and growth of various socio-economic indicators as the independent variable. The methodology will involve fitting of a log-log regression equations to the time series data.

The growth rates for normal traffic obtained from this approach will take some account of the following factors, which affect future traffic levels:

- The prospective growth in the economy
- The prospective demographic growth
- The estimated elasticity of demand for transport, and
- Change in the structure of the vehicle fleet, for example vehicle productivity and changes in the inter-modal share of passenger and freight demand.

Computation of Growth Factors

A detailed level analysis of statistical data, consist of socio-economic data, future infrastructure development plans, policy on industrial/tourism development within project influence area would be carried out to understand the trends of growth, variations in transport demand with socioeconomic backgrounds and traffic characteristics on the project road for long term forecasting of traffic . Also the surrounding area would be studied to demarcate the project influence area and identify the competing roads and modes to the project section.

From the study of OD data, the zones in the project influence area, which contribute to the total traffic on the project location, will be found. Based on the detailed review and analysis of the socio-economic parameters for these zones in the project influence area, a set of traffic zone-wise economic indices shall be generated. Based on the trend of the economic growth for each traffic zone, these indicators will be used for estimating the transport demand elasticities, which in turn shall be used to estimate the rates of growth proposed to be used. The sets of growth rates estimated for each of these zones in the project influence area will be applied to the proportion of traffic coming from the respective zone. The future traffic estimates for the project road shall be based on these growth rates.



Based on the methods presented above, traffic growth factors for all categories of vehicles will be evaluated for 5 – year intervals over the design life period of the project.

The traffic demand estimates will be completed for three possible scenarios:

- Optimistic Traffic Growth Rates
- Pessimistic Traffic Growth Rates
- Most Likely Traffic Growth Rates

To summarise, the expected traffic on the proposed bridge will be evaluated on the basis of the following technique:

- Compute growth factors obtained from regular past counts
- Compute socio-economic growth factors and indicators and apply elasticity to compute growth rates for individual classes of vehicle
- Choose appropriate growth factors on the basis of the two activities above and estimate the traffic on the proposed bridge, by each mode

After study of the traffic flows determined by the methods described above, most likely estimates for the design year will be chosen. The traffic projections will also take into account the various other components of the traffic like, induced diverted and generated traffic.

Estimation of Generated, Diverted and Induced Traffic

In addition to this normal traffic growth, various other components of traffic will also be added which may arise due to construction of proposed bridge and hence better accessibility of the surrounding area. These components are generated / development traffic, diverted traffic and induced traffic.

Generation of traffic

Better road connectivity, reduction in operating cost and reduction in travel time cost will generate traffic in the project area. Generated traffic shall be estimated based on Consultants earlier experience of similar projects in the similar situation and similar studies in the region including feasibility study of the proposed bridge.

Diverted traffic

At a new facility like the bridge, it will be estimated from the possible points of diversion such as neighbouring alternative roads, waterways and railways as well as diversion from possible modes of traffic such as pedestrian to vehicular traffic, NMT to MT and so on. The Barisal- Patuakhali section of N-8 is a straight and unique alignment and has no alternative routes in between network of rivers. Therefore the traffic as present time will ply direct from Barisal to Patuakhali and beyond. Possible diversion of traffic will take place is from long distance IWT traffic at Dhaka and Narayanganj. The existing IWT service from Barisal-Barguna will continue to carry traffic due to convenience of east-west travel to and from riverine centers. There is possibility of diversion from long IWT route traffic like Dhaka-Patuakhali and Dhaka-Barguna route.

Induced Traffic

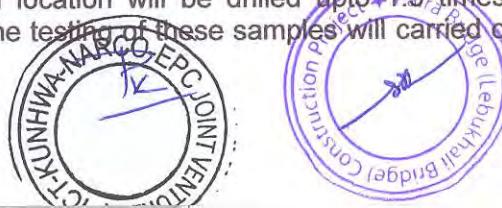
Induced traffic is the traffic which is presently suppressed due to non-availability of bridge at the proposed location. Based on the experience of the Consultants for similar projects, induced traffic will be considered based on the potential for existing land uses to release extra demand which might have been suppressed due to non-availability of bridge at Paira river. Also, new developments may be induced by the construction of the bridge along this corridor, which will cause additional traffic.

Thus the total traffic flow will be estimated on the proposed bridge for various horizon years up to period of 25-30 years taking into account the normal growth of traffic on the bridge and also including the combined effect of induced, generated and diverted traffic on the project road.

Task 203: Geophysical Investigation

3.1.1 (d)

Based on the sites of structure decided during the preliminary design and finally approved by the Client, the Consultants will plan and carry out further investigations. Sub-surface condition for bridge sites and other structures will be ascertained by testing of samples taken by hand auguring, and/or drilling as required including undisturbed samples. The aim of the tests is to determine allowable bearing pressure of sub-surface strata at the proposed founding levels. Testing will be carried out for all the piers and abutment locations and one bore hole for each foundation location will be drilled upto 1.5 times of the width of foundation below the anticipated founding level. The testing of these samples will be carried out in accordance



with Road and Highway Department's Bridge Design Standards. The data/results of the test will be used in design of foundations and presented in the form of charts, maps and reports.

Task 204: Soil and Material Investigations

3.1.1 (d)

Investigations for sources of construction materials for embankment, pavement and structures will be carried out. These can be further grouped under locally available natural materials like soil, aggregates etc. and those manufactured like, cement, steel, bitumen, pre-stressing tandoms, bearings, expansion joints, plastesizer, etc. This will involve study of the already known / used borrow areas and quarries, discussions with knowledgeable local engineers regarding potential sources and appraisal of geology. Samples from the promising sources will be evaluated for properties through laboratory tests. The tests for soils will be for grain size distribution and plasticity characteristics, maximum dry density and optimum moisture content, etc. Coarse aggregates will be tested for aggregate impact, Los Angeles Abrasion (LAA), grading, flakiness index, absorption, soundness, susceptibility to stripping and soundness. Based on the results of the materials investigations, the Consultants shall prepare material sources map and charts with indicative properties and quantities. Material utilization diagrams will be prepared to optimize the haulage of pavement materials. Most of the manufactured materials, except cement, bitumen and steel may require importing from other countries.

Nature of soil along the accepted approach road alignments will be tested by taking samples at 500 m and wherever nature of soil changes by excavating holes upto 1.5 m depth. The materials from the site will be tested for (i) grading (ii) attarberg limits (iii) proctor test (iv) CBR at 100 % MDD after 4 day soaking. The results from the nature of soil and its properties will be used in pavement / embankment design and shall be presented in tables and also shown on L-section drawings.

Task 205: Hydrological Investigation

3.1.1 (e)

The Consultants shall collect toposheets, highest flood level and other related data for Paira river area from Bangladesh Water Development Board, who maintain water level and discharge records of all rivers in Bangladesh and Bangladesh Inland Water Transport Authority. Assistance of the Project Director will be requested to interact with BWDB & BIWTA. Bathymetric Survey will be carried out along the proposed approved bridge alignment to clearly determine the river bed profile. A LIDAR survey possibly would have been a better alternative to have an accurate aerial digital map of the area and also the river bed profile but it is a costly survey and facilities might not be available in Bangladesh, besides, it is not in the scope of ToR. Paira is a coastal river and frequently affected by tidal variations in river water level. These variations may vary from 2 to 3 meters. The Consultants will collect information from available sources and take it into account during the design process.

Hydrological and Morphological studies include collection of historical stream inflow data, cross sectional data of upstream and downstream location of proposed bridge location, deck level of existing bridge in U/S or D/S of proposed location, rainfall data prevailing in the area from the rain-gauge stations, highest flood level data at locations, meandering pattern of river near the proposed bridge location, geological characteristics in the bed and banks of the river, stability of the channel, pattern of bank line shifting of river, minimum clearance and minimum water depth required for the safe movement of river navigation modes i.e. inland water traffic and water level rise / back water flow due to cyclonic effect in the coastal areas.

Based on the above collected data, the hydrological analysis shall be performed by delineation of catchment area and working out the flood discharge at various flood frequencies using international codes of practice and local codal provisions. These flood discharge shall be co-related with the stream flow data collected from the governmental records.

The hydraulic analysis shall be performed for fixation of waterway required at different flood frequencies and optimum waterway shall be finalized, corresponding HFL in the river shall be analysed keeping in view of minimum disturbance of inhabited areas. These HFL data shall be co-related with collected data from the government agencies. The free board for the bridge shall be considered based on the HFL of the river and minimum vertical and horizontal clearance for navigation of inland water traffic. The location of the bridge is near bend of river, in that case the river training works including bank revetment shall be taken in certain length based on the topography of that area and taking into account of inhabitant areas.

Based on the channel characteristics of the river bed material, scour depth shall be determined for foundation treatment and designing the foundation of bridge.

Morphological survey will be carried out using satellite imaginaries of the project area for at least 20 years to study the changes taking place in the river course and banks to determine sites which have been by and large stable and not affected by floods and erosion. This will also be taken into consideration for deciding the stretch of bank protection works and type of revetment of banks.



Based on the above studies and requirement of safe passage of inland water traffic, the Consultants shall finalize hydrological and hydraulic parameters for the proposed bridge, feasible option of site selection of structure, configuration and detailed design of the bridge.

The Consultants will also study past history regarding change of river / stream course, erosion of banks and flooding of adjoining areas to assess and evaluate need for river training and other protection works.

TASK GROUP III: FINAL DESGIN

Task 301: Finalize Design Concept of Bridge

3.1.3

Before taking up engineering design, design standards and design criteria will be clearly identified and enumerated for evolving a comprehensive design philosophy, which covers all aspects of design for various components of the bridge viz. superstructure, substructure, foundations in viaduct, river and navigational channel including protection works for the bridge and its approaches. The design philosophy will be primarily based on relevant AASHTO LRFD Design Specification 2010 (prescribed for design, execution, maintenance and safety during construction and service), and latest guidelines and circulars of Bangladesh. For aspects not covered by these Codes and other International Standards like BS-5400, EURO Code, IRC Code of Practice, relevant recommendations of the other International Standards, sound engineering practices will be followed. The design philosophy shall include but will not be limited to the following:

- Materials for construction - concrete, steel etc.
- Live loads
- Width of carriageway and number of lanes
- Design speed
- Requirement of footpaths
- Temperature gradient and climatic data
- Wind effect
- Seismic effect
- Safe bearing capacity and soil parameters
- Navigational requirement
- Differential settlement
- Methodology for analysis and design
- Bearings, expansion joints and wearing coat
- Construction techniques
- Protection works
- Barge impact

Design Loads

The design loads for the bridge shall generally be as per the provision of AASHTO LRFD 2010 Design Specifications.

Dead Loads

The unit weight of materials considered for the design shall be as per codal provisions.

Super Imposed Dead Loads

Wearing Coat

Type of wearing coat viz. concrete or asphaltic shall be decided in consultation with client.

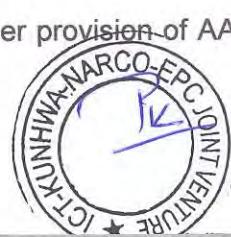
Crash Barrier

New Jersey type crash barrier shall be proposed.

Footpaths

Whether raised footpaths or level footpaths are to be provided shall be decided in consultation with client.

Live load on bridge shall be considered as per provision of AASHTO Specifications LRFD 2010. Live load combination for design will be as below.



- (i) Both carriageways fully loaded
- (ii) One carriageway fully loaded and other unloaded

The above loads will be increased by appropriate impact factors. Live load on footpaths shall also be considered.

Wind loads

Wind load on structure shall be duly considered in design.

Water current forces

Water current forces shall be considered as below.

- Water current pressure acting at right angle to structure.
- Water current pressure acting at an angle of (+/-) 20° to structure.

Severe of the above two conditions will be adopted for the design.

Longitudinal forces

Longitudinal forces arising from braking effect and frictional resistance of bearing shall be considered as below.

- Braking force as per live load over the bridge.
- Frictional resistance offered to the movement of bearings due to change in temperature or any other cause.

Earth pressure

Components of bridge required to retain the earth will be designed for earth pressure. Abutments and return walls will be designed for live load surcharge.

In general, soil used for back filling behind abutment and return wall will have the following properties:-

$$\begin{aligned}\phi &\geq 30^\circ \\ \delta &= 20^\circ \\ r_d &= 18 \text{ kN/m}^3 \\ r_{\text{sub}} &= 10 \text{ kN/m}^3\end{aligned}$$

Temperature effects

Temperature effects will be considered as per climatic data and provision of AASHTO.

Seismic Forces

Seismic forces shall be considered as per provision of AASHTO Design Specifications.

Seismic coefficient shall be worked out considering various factors viz. zone factor, importance factor, response reduction factor etc. and seismic force worked out on each component and live load and considered in the design of foundations, substructure and bearings.

Construction stage loadings

Effect of likely moving or stationary loads as per construction methodology in each stage shall be considered.

Buoyancy

100% buoyancy shall be considered while checking stability of foundations resting on soil. However, the maximum base pressures shall also be checked without buoyancy effects. Pore pressure uplift limited to 15% shall be considered while checking stresses of the substructure elements.

Load Combinations

Basic loads considered in the design are as follows:

- Dead load (G)
- Live load (Q) + Vehicle impact Qim + Braking (Fb)
- Vehicle Collision load (Vc)
- Centrifugal force (Fcf)
- Water current (Fwc) + Buoyancy (Gb)



- Earth pressure (F_{ep})
- Temperature effect (F_{te})
- Wind load (W)
- Seismic Force (F_{eq})
- Grade effect (G_e)
- Barge impact

Combination of these loads and factors of safety in each combination shall be as per Bangladesh Codes.

Condition of Exposure

Since the National Highway is near to sea coast, the structure shall be designed for severe condition of exposure. Accordingly, cover to the reinforcement, minimum grade of concrete, minimum cement content and water cement ratio will be as per provisions for severe condition of exposure. Further suitable protective coating to exposed concrete surfaces shall be suggested.

Material Specifications

Concrete

The concretes will conform to the requirements stipulated in relevant code of the country. Minimum grades of concrete proposed for each component are listed below:

• PSC post tensioned Box / I girders	= M45 / M50 / M60
• RCC Main & cross girders and deck slab	= M35
• Pier cap, Pier and Abutment	= M35
• Pedestals on Pier	= M45
• Pile cap and Pile	= M35
• Kerb, Bed block and dirt wall	= M35
• Crash barrier over deck	= M40
• Crash barrier-cum-Friction slab in approach	= M40
• PCC filling in the footpath	= M15
• PCC Levelling course below foundations and approach slabs	= M15

Expansion Joints

Strip seal type joints shall be provided.

Bearings

POT/PTFE bearings/special type bearings as suitable for the proposed span lengths shall be proposed. The design of bearings shall be as per provisions of AASHTO.

Untensioned Reinforcement

TMT deformed bars of Grade Designation Fe-460 conforming to AASHTO Design Specifications will be proposed.

Prestressing Steel

High Tensile Steel Strands: Uncoated, stress relieved, low relaxation strands, conforming to applicable codes of practice will be proposed for prestressing cables. It will avoid grouping of cables and also reduce the number of cables.

Drainage Spouts

Drainage spouts shall be provided considering rainfall intensity.

River Training and Protective Works

River training and protective works are required for ensuring the safety of the bridge and its approaches on either side. The selection of the type of river training or protective work will depend upon terrain,



overall behaviour of the river, location of the bridge vis-à-vis the areas of attack of the river, span arrangement, type of foundation, nearness of the approaches from the influence zone of the river etc. The following types of river training works and protection are generally required depending upon the hydraulic consideration and site requirement.

(i) River Bank Protection

For protection of river banks against the erosive attack of the river, the pitched slope may normally vary from $1\frac{1}{2}$ H: 1 V, to 2H: 1 V. Generally maximum depth of anticipated scour is assumed as 1.5 dsm. The thickness of the pitching and the details of the apron are worked out as for the guide bund.

(ii) Approach Road Protection

The approaches to high bridges located in the flood zones of rivers are susceptible to river attack, making it necessary to protect them for their safety. The design of the protective works depends upon the location of the approaches, their distance from the river, depth of flow, velocity of attack etc. These can be slope pitching and/or suitably designed guide bunds.

Design of bank protection or guide bunds shall be carried out as per codal provisions and design discharge and maximum scour depth to be considered at various locations.

Vertical and Lateral Clearance

Minimum vertical and lateral clearances for design of bridge shall be as follows:

- Vertical clearance above finished road level of : 5.5m lower road for viaduct spans
- Lateral clearance in Navigational spans : 78m (between piers)
- Vertical clearance in Navigational spans : 18.3m above High Standard Water Level

Standards and Code of Practices

Standards and codes of practice to be followed shall be specified in consultation with the clients. Design of all components of structures will be carried out in accordance with the provisions of the Bangladesh Standards / codes of Practices and guidelines. Where these are silent International Codes such as AASHTO and BS shall be followed.

Task 302: Detailed Engineering Design of Bridge

3.1.4

The detailed design of the various components of the bridge viz. superstructure, substructure, foundation, bearings and other miscellaneous items as per finalized General Arrangement Drawing of the bridge shall be carried out based on hydrological and geotechnical investigation reports available or carried out at site and in accordance with design criteria got approved from client. Analysis for the same shall be carried out based on the various computer programmes evolved in-house and also by using internationally renowned softwares like STAADPRO, GT STRUDL and ADAPT. Design of various components shall be carried out in accordance with the latest provisions of International Codes such as AASHTO and BS codes of practice and guidelines issued by Bangladesh Govt. from time to time.

Task 303: Design of Approach Road

3.1.4

The geometrical design of approach roads will be prepared using computer software MX Road by adopting ground data collected during topographical survey and final bridge alignment and its deck design level.

Typical cross-sections shall be designed following RHD norms for National Highways. The pavement will be designed for the projected traffic, Axle loads and type of subgrade material available in the region. The pavement composition will be decided based on available materials and use of burnt bricks for the sub-base.

Task 304: Design of Toll Plaza, Weigh Bridge and other facilities

3.1.4

The Toll plaza will be preferably located near the northern end of the proposed bridge and its exact location will be finalized in consultation with the Client. The aim is to suitably position the Toll plaza for ease of construction and operation without causing major Land acquisition and re-settlement problem. Number of Toll gates will be decided based on the peak hour traffic. A detailed layout plan will be prepared for the Toll plaza area showing location and number of gates for either side traffic, office and rest rooms for the agency operating the plaza, weigh bridge and other facilities. It will also be examined whether concrete or flexible



pavement will be more advantageous in the Toll plaza approaches. The plan will be finalized in Consultation with the Project Director. Location of Solar panels either on sloping roofs or as a separate park will also be decided to provide captive electric supply to the bridge and the plaza.

Task 305:	Finalisation of Specifications	Additional Task
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The Consultants will prepare Draft Technical Specification by adopting the standard Technical Specification for road and bridge works, however these will be re-structured for the design standards finalized and adopted for this project. It will be ensured that specification for all the materials, work methodology, type of equipments and plants allowed, safety measures, environmental aspects, method of measurements and payment for all elements of the project components are fully covered. Certain details not covered by the General Specification will be included in the special specifications forming part of the contract documents. In the instant case, certain aspects like piling for foundation, construction of superstructure, bearings, expansion joints, lighting of bridge, solar panels, Toll equipments etc. shall be given utmost attention to ensure that all details are covered and project progresses unhindered. Draft Technical Specification will be finalized after getting comments of the client and their incorporation.

TASK GROUP IV: PREPARATION OF LAND ACQUISITION AND RE-SETTLEMENT PLAN

Task 401:	Preparation of Land Use and Ownership Plans	3.1.5
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The Consultants will collect Land Mauza Maps of the proposed project corridor from the Department of Land Records of Ministry of Land. These maps show each plot of land, their registration number and ownership and size of plot. The project construction zone which may be required for the approach roads, bridge, diversion road etc. will be superimposed on the Mauza map. The Consultants will verify the Land in the project construction corridor that may have to be acquired and record their existing land use i.e. agricultural, commercial, residential etc.

Task 402:	Preparation of Land Acquisition Plan	3.1.5
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The map prepared as explained in Task 401, showing limits of the work site will determine the Right of Way (RoW) required at different sections of the project. The land beyond the existing RoW of the RHD will have to be acquired. The land to be acquired with existing assets could be agricultural, residential, commercial, educational, recreational, etc. The Consultants will show the existing land use for the land required to be acquired. All the plots of land to be acquired, their Mauza numbers and ownership, present land use with existing assets shall be listed in a tabulated form. Total area of all such plots required to be acquired added up will indicate the total land required. The cost evaluation, based on prevent land rates, compensation for existing assets and social cost will also be assessed by the Consultants and covered in the report.

Task 403:	Conduct Socio-Economic Survey and Prepare Resettlement Plan	3.1.5
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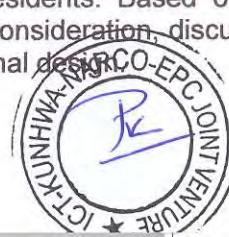
A comprehensive Resettlement Action Plan (RAP) will be prepared after minimizing adverse social impact by considering multiple options and finalizing the project road design, consisting of socio-economic baseline survey, avoidance / reduction of resettlement, identification of PAPs and affected vulnerable groups etc. The Consultant will prepare a time bound RAP, based on the results of census of the affected households and supported by representative size of sample socio-economic survey, inventory of losses, replacement cost surveys, video filming of the affected properties, public consultation and focus group discussions (FGDs) with the affected population, to ensure the compliance of Government of Bangladesh (GoB) and Kuwait Fund for Arab Economic Development (KFAED) guidelines and other relevant national laws on involuntary resettlement.

The survey will identify the PAPs, households, commercial and business enterprises, landowners, tenants (both residential and commercial) and community properties falling on the proposed RoW. The socio-economic survey will collect a wide range of data on demography, age & sex distribution, education, occupation, income & employment, poverty data, type of businesses, types and ownership status of affected structures and other assets.

The RAP preparation of the project road will involve the following:

Review of Feasibility Study and Preliminary Engineering Design Project Report

The consultant will review the feasibility study and preliminary engineering design report which already has been prepared to optimally realize the project objectives. The review of the project report will include RoW, land acquisition requirements and relocation of residents. Based on the review and observations, the consultant will recommend proposal for alternative consideration, discussions and approval by the KFAED / GoB, if required and accordingly incorporate in the final design.



Reconnaissance Survey

In order to get a feel of the project area and to adopt an appropriate approach a reconnaissance survey will be conducted to identify socio-economic issues which are sensitive for the project. The survey will help in identifying the requirement of land acquisition, resettlement and major population groups that may be affected beneficially & otherwise by the proposed project.

Public Consultation

Extensive public consultations will be carried out at various locations along the project road involving a wide range of establishments, PAPs, households, commercial and business enterprises, landowners, tenants, community leaders, women traders, poor and vulnerable population including NGOs.

These consultations will help to achieve the following specific objectives:

- (i) Awareness amongst stakeholders;
- (ii) Improvement in project design thus minimizing conflicts and delays in implementation;
- (iii) Facilitate development of appropriate and acceptable entitlement options;
- (iv) Increase project sustainability and reduce problems of institutional co-ordination;
- (v) Make the R&R process transparent and people friendly;
- (vi) Increase re-settler commitment to and effectiveness of sustainability of livelihood restoration strategies; and
- (vii) Assistance in enhancing involvement of people in decision making process with conceptual clarity, altitudinal pre-dispositions to avoid the hardship of the resettlement and adverse impact, particularly on vulnerable population including women headed households (WHHs).

Census Survey of the Project Affected Persons (PAPs)

The Consultants will conduct a detailed impact measurement of 100% affected households. This survey will focus on the components like number of PAPs, area and dimensions of the affected properties, level and severity of the impact on people and properties and its replacement value which will be done by using appropriate survey instruments. This task will: (i) identify groups that are particularly vulnerable to impacts during construction with a view to providing a description of who they are, where they live and what makes them vulnerable; (ii) identify construction and operational effects that could contribute to social conflict and animosity; (iii) identify poverty reduction and livelihood restoration activities that will be negatively affected during road construction; (iv) describe potential impact of the temporary access roads; (v) carry out a detailed gender assessment of the project to identify gender based constraints and opportunities related to the development and implementation of the project. This task will help in minimizing resettlement and rehabilitation.

Baseline Socio-Economic Survey

A baseline socio-economic survey will be conducted on 25% of the project affected households for developing mitigating measures and to create a database and develop indicators for the monitoring and evaluation of the RAP implementation. The socioeconomic survey will cover (i) household members, family type, social composition and male/female employment; (ii) information on full resource base of the affected population, intra-household and gender distribution of resources including income and employment of women and economic activities; (iii) demographic composition, spatial distribution and population characteristics such as, sex ratio, growth rates, occupations, migration, literacy and poverty index and gender; (iv) agricultural production and cultivation of different crops, yields of major crops, livestock, dairy, fisheries and forestry products, industrial production by types of industry etc. (v) patterns of socio-economic development of various social classes particularly women and poor; (vi) identification of socio-economically deprived communities, classes and groups, specially the poverty stricken population and women status along the zone of influence; (vii) formal and informal associations, study of attitudes & fears associated with negative impacts of the project and involuntary resettlement; (viii) Economic and non-economic activities carried out by women and the poor; (ix) educational level, gender dimensions, and social capital; (x) access to basic services such as, education, health care, drinking water, institutional network, local market, roads, etc. (xi) access to transport facility for women and vulnerable groups; (xii) household expenditure patterns and income levels, particularly of poor and vulnerable groups; (xiii) health status of women and poor and their migration pattern; (xiv) assessment of various kinds of losses likely to be experienced by the households, (xv) valuation of lost assets and livelihood and their compensation; and (xvi) rehabilitation strategies and assessment of alternative sites for relocation.

For conducting field surveys, appropriate formats and checklists will be developed on the basis of spot



assessment of field conditions and consultation with likely affected households, which will be pretested, fine-tuned and redesigned, if necessary. The data collected as part of sample socio-economic survey will be analyzed to assess the impact of the loss of various kinds of properties, assets and resources on various categories of households, irrespective of their formal legal rights under existing rules and regulations.

Mitigation Measures

The Consultants will formulate cost effective mitigating measures in the RAP report prepared for monitoring and implementation of the procedures for the limitation of the negative social impacts of road construction activities both on contract staff as well as PAPs communities impacted by the project road construction. This will include compensation, R&R assistance, training, time frame for implementation and reporting requirements as specified in the ToR.

TASK GROUP V: PREPARATION OF TENDER DOCUMENTS AND ESTIMATES

Task 501: Preparation of Bidding and Contract Documents

3.1.4

There are three major components of the project works i.e. the Bridge, approach roads and the protection works. Client may decide to either have only one contract or may like to divide it into two or three components. The tender documents will then be prepared accordingly.

The Tender Documents shall be prepared in accordance with the latest version of the WB / ADB Standard Bidding Documents for the Procurement of Works as agreed by the Client. The Tender Documents shall be designed into following volumes:

a) VOLUME I

- Notice of Invitation to Bid;
- Instructions to Bidders and Bidding Data;
- Forms of Bid and Qualification Information;
- Form of Agreement and Appendices;
- Form of Performance Guarantee;
- Tender Surety;
- General Conditions of Contract;
- Special Conditions of Contract; and
- Bill of Quantities.

N.B: This document shall be clearly marked on the cover as "TENDER DOCUMENT"

b) VOLUME II -Technical Specifications (Standard and Special)

c) VOLUME III -Drawings (photo-reduced to "A3" size)

d) VOLUME IV (A) - Materials Report

e) VOLUME IV (B) - Hydrological/Hydraulic Report

The volumes IV (A) & IV (B) will be factual reports and clearly marked on the cover " FOR INFORMATION ONLY AND NOT PART OF TENDER DOCUMENTS" with preamble in the text stating that these reports are only representing the investigations and findings (without analysis or interpretation of results/findings) of the Consultants and that it shall be the Tenderer's responsibility for any source and quality of materials, etc. without binding the Employer.

Task 502: Finalize General and Particular Conditions of the Contracts

3.1.4

It is expected that the General Conditions of the Contract will be based on the FIDIC. In consultation with the Client the consultants will finalize the contract data with specific information related with:

- Name of the Employer;
- Engineer's name;
- Contract Period and phases of completion and DLP;
- Date of Commencements;
- Advance Payments;
- Method of Payments;
- Bonus / Liquidated damages;
- Escalation in price clause;



- Provisional sum; and
- Insurances, etc.

The Consultants will also frame particular conditions of the contract for the contract specific. This may deal with Environmental Issues, Labor Laws, Currency Exchange Rate, Taxes Payable, Powers of Engineers, Resolution of Disputes etc.

Task 503: Finalize and prepare BOQ

3.1.4

The Consultants will prepare the final required BOQ keeping in view the quantity of various items of construction, calculated and finalized based on the final approved design drawings. The earthwork quantities will be derived from calculations based on average cross-section area method along the road centerline or any other methods of measurement acceptable to the Client. A detailed bill of quantities will be prepared in a format approved by the Client under the following heads:

- Preliminary and general;
- Clearing and earthworks;
- Drainage;
- Culvert and protection works;
- Pavement structures, sub-grade, sub-base; base course and surfacing;
- Bridges including major structures;
- Road furniture;
- Ancillary work; and
- Schedule of day works, etc.

Task 504: Finalize Full Set of Drawings

3.1.4

The Consultants will prepare contract drawings for the road and Bridge works and all ancillaries works to be executed under the contract. Full set of drawings including all graphic and written description for each component of works in sufficient detail and comprehensive for execution of works without any ambiguity shall be prepared on a standard accepted format and scale and form part of the Contract / Bidding documents. All drawings will be bound in a separate volume with a list of drawings, their numbers and subject.

Task 505: Preparation of General and Particular Specification

3.1.4

Technical specifications for each item of work as recommended under feasibility report will be finalized in consultation and agreement with RHD. For most of the items, the Standard Specification for Roads and Bridge Works, published by the Ministry of Works and Standard details and Road Signs will be used. International codes or sound engineering practices will be followed, whenever considered necessary. Special specification and additional standard details, where required, will be prepared for various elements of the permanent and temporary works to complement the above standards to form the basis for tendering and construction. It will be ensured that all works, materials, method of construction and equipments are covered by the specifications. This task has also been described in Task 305.

Task 506: Preparation of Engineer's Estimates

3.1.4

Individual unit rates for items of BoQ will be prepared as realistically as possible, taking into account the expected cost of materials, equipments, labour and overheads expenditure of the contractor and certain percentage of profit. Rates of similar works in progress or executed recently in other parts of Bangladesh will be used to compare the rates derived for the project. Cost of manufactured items like bearings, expansion joints, sign boards, toll collection equipments, weigh bridge, etc. will be estimated based on market enquiries or similar works carried out under other projects. The BoQ and rates of items will enable the Consultants arrive at a cost estimate for the works. The Project Cost will also include cost of land acquisition, environmental management cost, shifting of utility services, cost of supervision consultants and project staff of RHD. The cost estimate will be kept confidential and will be submitted to the Client as such.

TASK GROUP VI: PREPARATION OF ENVIRONMENT MANAGEMENT PLAN

Task 601: Conduct Environmental Surveys and Analyse Impact

3.1.6

Under this task, the Consultants will identify the project corridor of impact and will prepare an inventory of the primary and secondary baseline environmental characteristics encompassing physical, biological and socio-cultural features within the corridor of impact as mentioned below but not limited to the same:

Physical Environmental component

- Meteorology
- Topography, Geomorphology and Drainage



- Soil and Geology
- Land Use/ Land Cover
- Surface and ground water hydrology: quantity, quality monitoring
- Ambient air quality and noise level: base line monitoring

Biological components

- Biodiversity: flora, fauna and their habitat
- Ecologically sensitive area: Notified protected area or undeclared sensitive area

Socio-Economic components

- Infrastructure including water, sewer, electricity, telephone etc.
- Settlement patterns including any unplanned/involuntary
- Community structure
- Demography of project area
- Significant sites (historic and cultural of national, regional and local merit)
- Archaeological sites, artifacts, scenic places
- Ethnic or tribal customs, traditions and values
- Stakeholders opinion through consultation

Task 602: Impact Identification and their Mitigation

3.1.6

Analysis of impact shall be done to measure the degree of impact of the project on the valued components of ecosystem mentioned above and evaluate their strengths, weaknesses, opportunities and threats. This will be based on the baseline primary data collected, satellite imageries, geotechnical survey and use of GIS and Remote sensing soft wares etc. Environmental analysis will include the following:

- Topographic and land use analysis
- Pollution status and predicted levels
- Ecological issues/ hot spots
- Extent of quantitative impact on water resources
- Socio-economic issues

Subsequently, based on the analysis, cost effective mitigation measures will be devised and recommended for adoption, in order to firstly, avoid, secondly minimize and thirdly compensate for adverse impacts, if any. It will include detailed positive and negative environmental impacts and appropriate and specific mitigation measures for the same and also suggestions for incorporation in the engineering design.

Task 603: Prepare Environmental Management Plan (EMP)

3.1.6

This task will include preparation of EMP. The EMP would focus on three generic areas i.e. implementation of environmental mitigation measures, institutional strengthening and environmental monitoring. It would be based on technical report of the project, maps, consultation with stakeholders, analyzed and predicted values, Environmental and Social legislations, international agreement /treaty of the Government of Bangladesh.

The EMP will include:

- A summary of all positive and negative environmental impacts and the appropriate mitigation measures along with suggestions for incorporation of these measures in the engineering design scheme. This will also indicate the persons / agencies responsible for implementation;
- Environmental enhancement, preservation and management: Appropriate landscaping scheme, slope protection and soil erosion prevention measures, protection of ecologically sensitive areas, conservation and enhancement of water bodies and other environmental features.
- The monitoring and management plan shall include the activities to be undertaken at various stages of pre-construction, construction and post construction period.
- Proposed work programme, budget estimates, schedules, staffing and training requirements and other necessary support services to implement the mitigation measures. Institutional arrangements required for implementing this management plan will be provided in the report. The cost of



implementing the monitoring and evaluation including staffing, training and institutional arrangements will also be specified where monitoring and evaluation requires inter-agency collaboration / association.

Task 604: Obtain Approval of EMP**3.1.6**

The Consultant will assist the Client in Obtaining Environmental Clearance from Cometent authority, forest clearance from the concerned forest department and other necessary environmental permissions from the concerned departments/agencies.

TASK GROUP VII: ASSISTANCE TO CLIENT DURING PROCUREMENT OF WORKS**Task 701: Prepare Tender Notices and Assist in their Publication****3.1.7 (a) (b)**

The Consultants will draft a notice of the Tender for publication in the News Papers, display on notice boards and placing on Bank and RHD websites. The notice will includes information regarding.

- Name and Scope of Work;
- Client and Funding Agency;
- Eligibility of Bidders;
- Latest date, place and time for submitting bids;
- Cost and sale of Tender Documents; and
- Amount of Bid Security.

The draft notice will be submitted for consideration of the Client and approval for its publication. Before sale of the Bid documents, the Consultants will thoroughly check them to ensure that they are complete and are signed.

Task 702: Assist in Pre-bid Meeting and Site Visit**3.1.7 (c)**

Based on comments of the KFAED and other stakeholders, the bidding documents will be updated in consultation with the client before these are sold to the bidders. The bidders generally seek clarifications on issues not clear to them and even make suggestions for making certain changes in Technical Specifications etc. The Consultants will go through these carefully and formulate answers to all the questions. Before the pre-bid meeting, the bidders are generally asked to visit the work site on a given date, to familiarize with the conditions. During this visit the Consultants shall work as a guide and assist the client. On the date of pre-bid meeting, the Team Leader and the Procurement Specialist shall be present and help reply to various queries of the bidders that they may raise, other than those submitted in writing. The Consultants will prepare minutes of the pre-bid meeting bringing out the questions and replies and any Addendum that may become necessary due to certain changes agreed by the Client.

Task 703: Assist in Tender Evaluation**3.1.7 (d)**

The Team Leader and Contract Specialist of the consultant will be present during opening of the bids. They will assist the Project Director to inspect the sealed bids, correctness of bid security and its validity, the bid amount and see that these are signed by the members of the opening committee. The Consultants will prepare minutes of the bid opening in standard format for submission to KFAED and the Employer.

The Consultants will officially accept one copy of the bids for scrutiny of the tender bids and their financial evaluation adopting KFAED guidelines. The evaluation will be carried out in steps. First completeness of the bids will be examined before taking up detailed scrutiny of the Bid Security, JV agreement, present capacity and capability of the bidders, their experience, etc. Arithmetical checks and correctness of the financial bid will be evaluated to determine the final bid amount. The Aim of the Evaluation being to determine financially lowest valid bid. The Consultants will make detailed report of the Tender Evaluation process and their final recommendations for consideration of the Client, who may seek clearance from KFAED before taking a decision.

Task 704: Evaluate Alternatives Proposed by Bidders and Advise**3.1.7 (e)**

The successful bidder may have come up with alternative technical proposal, method of construction or use of certain materials. The Consultants will examine these from technical, financial and environmental consideration and make recommendations accordingly. It will be ensured that should the alternatives be accepted, these will not amount to altering the parameters of the contracts and changes are for the improvement and financially acceptable without giving an undue advantage to the tenderer.



Task 705: Assist in Negotiation & Award of Contract

3.1.7 (f)

The Consultants will assist in contract negotiations with the lowest valid bidders to iron out all the differences before notification of the award is made. The performance security of the bidder will be checked and its authenticity ascertained. The Consultants will scrutinize the contract documents to ensure that these are complete and correct before signing by either party.

TASK GROUP VIII: PREPARATION AND SUBMISSION OF REPORTS**Task 801: Submission of Inception Report**

4.1 (i)

Within 2-3 weeks from the commencement of the services, the Consultants will prepare and submit an Inception Report. This report will briefly describe the mobilization and establishment status of the Consultants. The Consultants will review their work plan, staffing schedule and methodology after taking a detailed stock of site and works involved. The report will outline the Consultants' initial findings and confirm the methodology and detailed / updated work plan and specific staffing plan proposed for executing the work in the light of initial findings, while also identifying constraints and proposed solutions, together with any action required by RHD to facilitate smooth implementation of the study. The Consultants will also highlight the works done so far along with the proposals of changes identified till the submission of the reports. The proposed alignments of bridge or approach roads as agreed with RHD will also be included alongwith the desin standards. Ten copies of the report will be submitted.

Task 802: Monthly Progress Reports

4.1 (ii)

Progress Reports will be submitted at monthly intervals from the date of the contract until completion using mutually agreed standard report format to provide details of progress against program in respect of all project elements. The report will detail separately the progress of work during the reporting period and also summarize the overall progress in respect of main tasks of the TOR, and also give a schedule for the next month. It will also contain comments on the targets and achievements and proposed change in work plan, if any. Bottlenecks, if any, will also be highlighted therein. The report will be submitted within two days of the report period ending, and will be numbered serially. Six hard copies and one soft copy of the MPR will be submitted.

Task 803: Design Report and Drawings4.1 (iii) (iv)
(vii) to (ix)

The Consultants will prepare and submit Draft Final Design Report within 5 months of commencement of services summarize the findings, analysis, results and recommendations of the detailed engineering design, and shall consist of Bridge layout plan, design and drawings, road plans and profile drawings, typical cross-sections drawings, drainage plans, design of drainage and other structures, traffic data, topographic data, setting out data. The draft final design report will comprise all the assumptions and criteria used in the analysis and design of the work together with all details and standards used. All design calculations for pavements and structures shall be enclosed in form of annexes. If require a presentation of the report will be made. Based on comments / observations of the Client the report will be finalized and final design report shall be submitted together with the following reports as specified in the ToR:

- i. Hydrological Morphology Report (7 copies);
- ii. Engineering Drawings (9 copies);
- iii. Land Acquisition Plan (10 set);
- iv. Environmental and Social Management Reports (7 copies).

Soft copies of the above documents will also be made available to the Client.

Task 804: Submission of Tender Documents

4.1 (v), (vi)

The details of the tender documents have been discussed under Task Group V. Five copies of the draft tender documents for the contract will be submitted to the Project Director for their comments. Based on the comments of the Client and KFAED, the documents will be finalized and 30 sets of the tender documents will be submitted along with the cost estimates prepared by the Consultants.

CONSTRUCTION SUPERVISION PHASE**TASK GROUP I – MOBILIZATION AND PREPARATORY ACTIVITIES****Task 101: Mobilization of the Project Team**

Normal Task

The Consultants will mobilize the supervision team on receipt of orders from the client and start the initial work for commencement of services. The Team Leader responsible to supervise the contract will mobilize



the skeletal staff as agreed with RHD to commence the services. The Team Leader will hold start up meetings with the Project Director (PD), introduce key members of the supervision team and also have discussions on the proposed work program of the Consultants for undertaking the assignment for construction supervision. The plan for induction of other staff during the contractor's mobilization period will be discussed with the Project Director and their deployment carried out accordingly. Further, the procedure proposed to be followed by the Client for administration of the contracts as well as any modification required in the scope of work will be discussed and finalized.

Task 102: Study and Review Contract Documents and Other Relevant Reports

Normal Task

Before commencement of works and during the Contractor's mobilization, the Consultants will proceed with checking the sufficiency of the engineering drawings, plans, technical specifications, design calculations, pertinent reports prepared at design stage in particular the material report and sources of materials identified so that after reviewing the documents, any amendments deemed necessary can be proposed to the Client. After the approval of the amendments by the Client, the Consultants will verify the soundness and sufficiency of the updated details and contract documents, as well as the accuracy of the Bill of Quantities finalized after incorporating the approved amendments.

The following aspects will be specially accorded importance:

(i) *Review of Material Reports and Sources of Materials*

To assess/identify the type of sub grade soils underlying the road, embankment and potential sources of construction materials available in the area, etc., the Consultants will further review the findings of investigations carried out during the Design. While these tasks focus primarily on the geotechnical/material characteristic assessments for the road itself, the location of potential sources of construction materials for the bridge will also be simultaneously confirmed. Prospective sources of materials for embankments and sub-grade, crushed rock, gravel, sand, etc. as identified in detailed engineering design will be assessed in terms of quantity, quality and accessibility by study of the results of the assessment and testing of the sources of borrow and quarry materials. Some laboratory tests may be conducted to confirm the results given in the design report.

The sources of materials required for the bridge i.e. quality stone aggregates, cement, steel, pre-stressing cables, bearings, expansion joints, etc. will also be ascertained.

Water at major sources will be checked for its suitability for construction and bore wells may need to be developed early by the contractor to provide water for the personnel and construction works along the road. Chemical tests on river water will need to be carried out to determine the chemical composition to check that water does not contain chemicals capable of causing damage to concrete or steel.

Particular emphasis will be put to Mass haul diagram to thoroughly check earth works and each work items hauling distance. This exercise will also be needed to assess the consistency with rates and the specifications.

(ii) *Review of Plans, Specifications and Contract Documents*

After the field checks are complete and surveys and investigation data has been authenticated, the Consultants will carefully review and analyze the plans, technical specifications, special contract requirements and all other relevant contract documents. The Special Conditions of Contract and in particular the Contract Data and Appendix to bid will be examined carefully to ensure that there are no unworkable clauses or clauses which may be open to interpretation from which claims may arise. The technical specifications will be reviewed to identify and correct ambiguities, discrepancies, and / or contradictions within the provisions of technical specifications and also with other parts of the contract documents including drawings and bill of quantities. While reviewing the specifications, special attention will be given for the provisions for bridge foundations, quality of concrete, bearings, expansion joints, toll equipments, etc.

The Consultants will review the technical specification that each work items envisaged is properly addressed in the specification and that method of measurement and payment are clearly described. The Consultants will ensure that the technical specifications is in harmony with other contract documents such as drawings, condition of contracts and bills of quantity, the design and all provisions in regard to traffic management and operation, safety measures, environmental impact assessment and that mitigation measures are incorporated in the specifications.



The conditions of contracts will be reviewed to identify inconsistencies in the contract document if any and also become familiar with them in order to identify the duties and responsibility of each party in the contract agreement.

The Consultants will also examine the entire area of the proposed construction works and compare existing field conditions with those shown on the plans. Any significant differences needing reconciliation will be reported with suggestions to Employer. Further, the Consultants will study in detail the other aspects like General and Special Conditions of the Contract, various Schedules and work program, etc. Special attention will be given to issues concerning work program, cash flow, resource scheduling, time frame, price escalation, measurement and payment.

(iii) **Review of Bill of Quantities (BOQ)**

It is a common feature for road and bridge projects that the site conditions may change in the intervening period between the detailed engineering design and commencement of construction. The bill of quantities will be reviewed critically based on the final design. During review of the BOQ, the Consultants will update the road condition survey and detail of the water way, assess the type of sub-surface strata which are likely to be encountered during construction, study the contract drawings, and examine the description and specification of the works as itemized in BOQ. The Consultants will submit details of variation on itemized items of BOQ including reasons thereof, and the list of items of works in BOQ for which the quantities are likely to exceed or get reduced.

This review of the Consultants will make sure that all aspects of the works have been captured; the bill items provided are consistent with the specifications, units, method of measurement and that all items are clearly referenced to the Specification and method of measurement.

The changes in site conditions if any which may come to light afterwards during the consultancy period necessary modifications in the design will be reported to the Employer.

Task 103:	Review and Familiarization with Project Environmental Management Plan (EMP)	3.2.1 (a), (k)
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The Consultants will review and get familiarized with Environmental Management Plan (EMP) with a time frame for actions to be taken keeping in view the requirements identified in the EIA and in the Environmental Mitigation Plan as well as any additional mitigative measures. This plan will be submitted to the Employer prior to the Commencement of the construction works and regularly updated, as required, during the construction period. The potential adverse impacts to be minimized during construction will include but not limited to:

- Avoiding water and soil pollution due to discharge from the workshops and accidental spillage;
- Alleviate noise vibration and suppressing dust , dust pollution by regular wetting of surface of detours and road under construction;
- Ensure safety during construction by installing the appropriate signs and signals at and around construction sites and wearing of safety boots, hats, glasses and ear protectors;
- All borrow pit areas and quarry sites to be rehabilitated as much as possible to their original state;
- Minimize the risk of soil erosion by biological and physical erosion control measures such as grassing the embankments, stabilize with gabions or stone pitching at bridges and cross drainage structures on sandy soils;
- Avoid long traffic diversion roads to minimize the effect of dust on the surrounding Environment;
- Avoid spillage of oil, fuel and lubricants, if spilt, carry out disposal in such a way as not to adversely affect the natural environment;
- Campsites will be located in an area so as to minimize disruption to local population, fauna and watercourses; adequate drainage facilities and treatment of sewerage and waste disposals will be provided. Camp area will be dismantled and rehabilitated once construction is completed; and
- Follow up of the tree planting.

The above measures will be regularly monitored to ensure compliance during implementation.

The contractors will also be asked to provide action plans on HIV/AIDS Prevention and Control at the project camp sites and communities along the road corridor.

Finally, the Consultants as an outcome of the review will ensure that all environmental impact mitigation measures and action plans on HIV/AIDS included in the various reports or identified by the review have been adequately addressed and financed in the contract documents.



Task 104: Review the Resettlement Action Plan (RAP) and its Implementation Status

3.2.1 (j)

The Consultants will review and familiarize themselves with RHD's Resettlement Framework paper and the Resettlement Action Plan (RAP) of the project, as well as the GoB's policies, regulations, and laws of resettlement and ensure their proper implementation. The Consultants will properly verify the original plans in line with the final alignment set out and as needed, further identify Project Affected Persons and Properties and categorize impacts in terms of the types of land, persons and activities along with differentiating between effects being temporary or permanent to ensure that all affected persons and properties have been covered. This will ensure that there is no hold up in the project implementation. Land Acquisition Plan clearly showing the location of the effected properties will be reviewed. The Land Acquisition in Bangladesh is a lengthy process and goes through 6-7 stages. The Consultants will keep a close watch so that acquisition of land and payment of compensation proceeds smoothly.

Task 105: Review Shifting of Existing Utility Services Status

3.2.1 (j)

The Consultants will check the contract documents and detailed design report regarding the information about the location of existing utility services such as water pipes, sewerages, electric poles, telephone lines / poles, gas pipe lines, optical fibre cables, etc.

The Consultants will thereafter make confirmatory survey of existing utility services and facilities in order to identify the requirement of relocation of services, falling within the Right of Way and affected by the proposed work after studying the plans, site visit and with the help of competent concerned authorities. The detailed plans and proposals for the relocation of services affected by the proposed work will be submitted to the Project Director for approaching the concerned service agencies for timely action for their shifting / relocation to avoid any hold up in the works as per the work program. All official dealing with the service agencies will be done through the Project Director.

Task 106: Identify and Verify Accuracy of Survey Control Station

3.2.1 (e)

The Consultants will first identify the availability of all beacons and benchmarks and verify their accuracy using precision survey instruments. The Consultants will instruct and coordinate with contractors to re-establish (as per provision of the standard specification of the works bidding documents) any damaged, altered or missing survey stations to enable the contractor to set out and construct the works. Works of survey during mobilization includes checking of the original survey information and validity of the Original ground data; re-establishing control points and establishing new control points as many as required for the works; carrying out identification of any obstruction within the right of way; and taking new survey data for any modification work, if required.

The survey verification will be carried out jointly with the contractor's surveyor. To this end, the Topographical Surveyor of the Consultants will at the start of survey ensure proper calibration of the survey instruments. This verification will include:

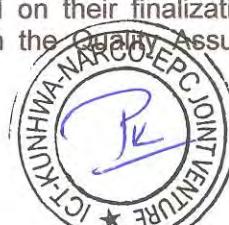
- Accuracy of survey control points;
- Locations of permanent and temporary Bench Mark Pillars;
- Reference pillars for Bridge Centre line and other structures.

The verification will be generally carried out by visual inspection. However, the measurements with the Tape, Level and Total Stations may be carried out where considered necessary. Local resurvey will be carried out and control stations will be re-established with the assistance of adjoining control stations / or other control stations in the vicinity where the control stations are found to have been disturbed or damaged. In accordance with the relevant provisions of the contract, the contractor will be instructed to re-establish, protect and maintain all control points. The Control Stations where established will be rechecked by closing traverse. The coordinates of the control stations may also be checked using GPS, where necessary.

Task 107: Prepare Standard Formats for Progress Reports, Payment Certificates etc.

Normal Task

The Consultants will evolve and prepare formats and outline of contents for Monthly Progress Reports, Measurements of Completed Works, Interim Payment Applications of Contractors, Variation Orders and Engineer's Instructions, Request for Inspection by the Contractor, Stage approval of works, Daily Work Daily, Accident Reports, etc. and issue to all concerned on their finalization after discussion with the Project Directors. These formats shall also be included in the Quality Assurance and Construction Supervision Manuals.



TASK GROUP II – SUPERVISION OF CONSTRUCTION WORKS AND QUALITY CONTROL

Task 201:	Assist in Issue of Order to Commence Works and Handing over of Work Site to the Contractor	Normal Task
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The Consultants will issue the order to the contractor to commence the works after obtaining the specific approval of the Employer. As per the FIDIC (revised version) conditions, except otherwise specified in the particular conditions, the commencement date will be the date at which the under mentioned precedent conditions for it have been fulfilled and the Engineer's instructions recording the agreement of both the parties on it and order to commence the work is received by the contractor.

- Signing of the contract agreement for the work;
- Handing over of the site;
- Receipt of the advance payment; and
- Reasonable evidence of the Employer's financial arrangements.

However, the Consultants will check the conditions included in the Works Contract for implementation and take appropriate actions accordingly.

The Consultants will assist the Employer in handing over the site as per contractor's work program and in terms of Contract provisions and finally issue a letter to the contractors recording the dates on which site handing over was completed to establish that site handed over as per the work schedule of the contractor.

Task 202:	Establish Quality Assurance and Preventive Supervision System	3.2.1 (b) (f)
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The Consultants will prepare and establish Quality Assurance System (QAS) for the Contract to be instituted by the contractor to ensure the desired quality standards at all stages of the service and ensure its compliance with the requirements of the contract. The QAS will cover following essential elements:

- Materials;
- Calibration of mixing plants of stabilized material, concrete etc. and lab testing equipment;
- Work methodology and stage approval of completed works;
- Work force including the person responsible;
- Control of data and documentation;
- Safety and environment control.

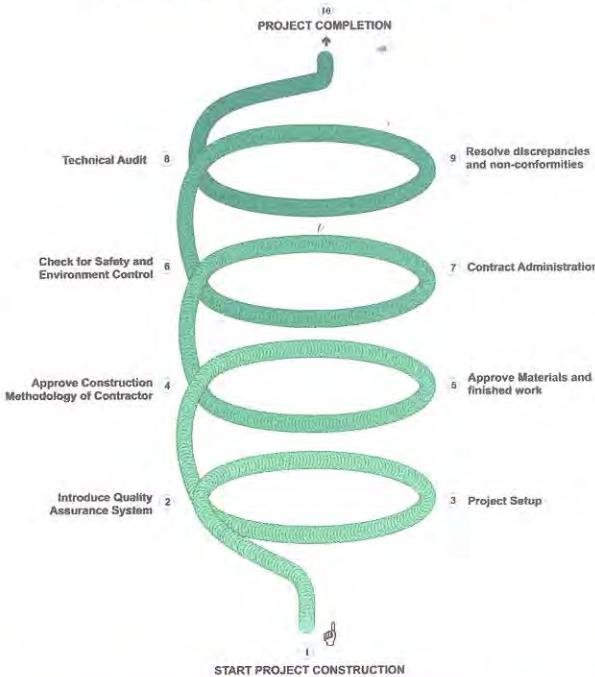
The system will, inter alia, include:

- General quality control procedures;
- Procedure of sampling, testing and approval of materials including calibration of testing apparatus;
- Type, procedure and frequency of tests on various materials;
- Procedure of tests/checks, and approval of various kinds of equipment and temporary works;
- Criteria for the engagement of various types of work force such as Supervisory Staff and skilled, semi-skilled and ordinary labour;
- Procedure for assurance of methodology, workmanship and quality, degree of supervision, number and types of supervision staff;
- Procedure for the approval of Contractors submission such as method statements, shop drawings, etc.;
- Acceptance criteria for materials and various items of work;
- Standard forms for approval of borrow materials, manufactured material, bought out materials and items of completed work;
- Control of execution related documents and quality related records;
- Procedure of monitoring contractor's adherence to the Contracts provisions regarding safety and environmental control;
- Procedures for dealing with substandard works, and their rejection, rectification, etc.;
- Procedures for dealing with non-compliance and for updating quality control system; and
- Responsibilities of various team's personnel with regard to quality assurance.
- Contract's administration
- Work measurement and payment
- Reporting

The Quality Assurance System will be finalized by the Team Leader in consultation with the other experts. In general, a two-tier approach will be suggested and followed. Any activity carried out by the support staff will be test checked by the experts as part of the QAS. The Employer / Project Director will be continuously apprised about the results of these checks. In nutshell, the Consultants will stand fully committed to the highest performance standards, fully meeting the Employer's requirements and expectations and continuously striving to improve the effectiveness of the Quality Management System (QMS). The Quality Assurance Loop as given at **Fig. 3.3** explains the various steps involved in achieving and ensuring quality.



Fig. 3.3: Quality Assurance Loop



Task 203: Review and Monitor Contractor's Mobilization Plan and Ensure Implementation

3.2.1 (a)

The contractor's plans for mobilization and establishment of construction operations will be reviewed and monitored by the Consultants, in consultation with Project Director, to ascertain any changes / additions considered necessary, keeping in view the contract and the site requirements.

During the Contractors' mobilization period, the Consultants effort will be directed mainly towards the following work items:

- Discuss the site camp location to minimize disruption to local population, fauna and water courses;
- Finalize the location and layout of the site laboratory and the provision of laboratory equipment, batching plant, fabrication and casting yards;
- Check and discuss the facilities provision under the works contract for the Engineer and the Client's counterparts (accommodation, office, communication and transport);
- Discuss the Design review initial findings;
- Discuss arrangements for traffic diversions during the works;
- Schedule for handing over site as per the contractors work schedule;
- Review/discuss with RHD and Contractor's representative regarding:
 - Contractor's resource based detailed work schedule and CPM along with Gantt charts;
 - Master list of equipment and materials to be inducted;
 - Master list of personnel to be inducted; and
 - Contractor's insurance policy.

The progress will be regularly reviewed during the mobilization period and a report will be given on completion of mobilization by the contractor which will cover but not limited to the following:

- Details of Contractor's mobilization;
- Organisation and correspondence;
- Establishment of lines of communication between RHD, Consultants and the Contractor;
- Contractor's detailed work program;
- Progress and proposed resources schedules;
- Proposed cash flow;
- Plant and equipment schedules;
- Format of forms and their use and presentation;
- Schedule of site meetings;
- Contractor's obligations;
- Any other submitted contractual documentation; and
- Consultants' mobilization.

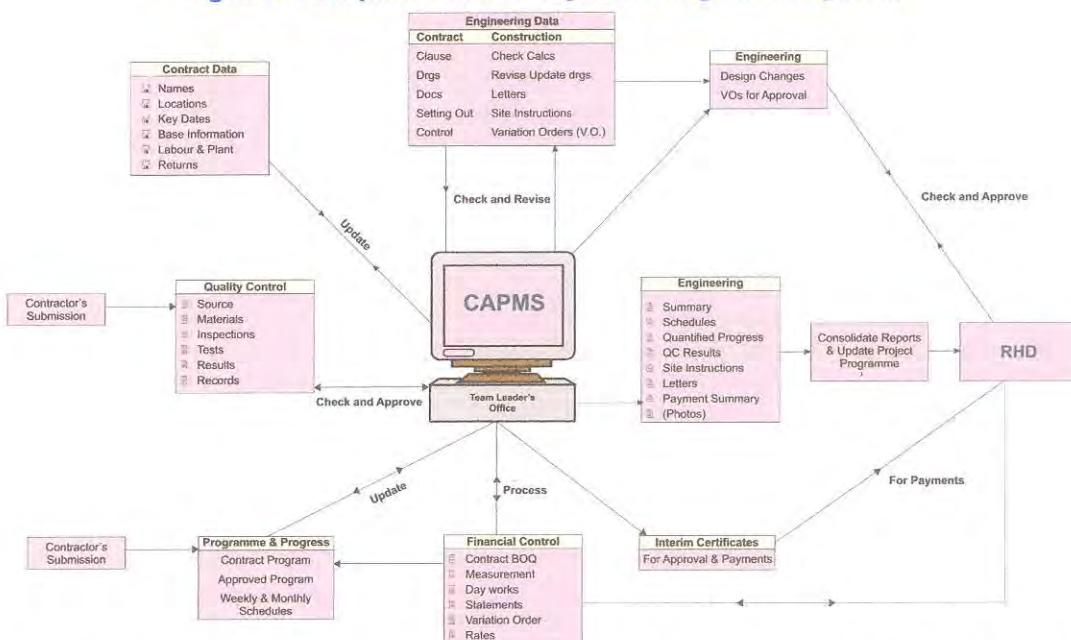


The Consultants will check and establish that the contractor mobilises and induces all plant, equipment and machinery that have been committed in the tender / contract or required for the completion of the works and ensure that all such items of plant / equipment remain on site until authorised for release.

Task 204: Installation of Computer Aided Project Management System and Addl. Task Management Information System

Project Master Schedules (PMS) which encompass the requirements for the technical, financial monitoring and evaluation of the progress of the works is a very useful tool for project management. During the early stages of the Project, the Team Leader, will develop and introduce a Computer Aided Project Management System (CAPMS) and Management Information System (MIS). The Consultants have developed CAPMS and MIS for a number of Highway Projects in India and abroad to monitor the contract status. The emphasis will be to monitor the key areas of construction schedules, cost and monthly progress. Correspondence, contract drawings, working drawings, site instructions, payments and variation orders will also be included. An outline of CAPMS is given in Fig. 3.4.

Fig. 3.4: Computer Aided Project Management System



The system developed will be logically divided into a data entry system and a reporting system. The data entry system will allow access to the contract information contained in the system's database. This will be used to review information on the contract and edit or update such information. The reporting system will produce reports representing the status of works and other reports required to verify the contractor's staffing requirements, interim payments, price fluctuation, etc.

The following base information on the contract will be entered into the system initially and updated as the work progresses:

- **Contract Data:** This will include general data such as names, locations, dates, advance payments, base fluctuation indices and the constants used in the equations for each fluctuation group in the case of contract price fluctuation;
- **Contractor's Schedule:** This will consist of the cumulative percentage of work completed every month for each group represented in the bill of quantities. This information will be used to measure progress;
- **Line Items:** This data from the contractor's tender will include contract quantities and prices. The contractor's progress and payments will be calculated using these rates;
- **Monthly Progress:** This will consist of the monthly-certified quantity for each line item. All progress and interim payments and fluctuation calculations will be based on these quantities;
- **Fluctuation Indices:** These will be the indices for the interim payments / monthly invoices. They will be used for the fluctuation calculations;
- **Invoice Adjustments:** These will be the adjustments applied to the interim payments, on account, including any retention sums or amounts, which might be payable but not included in the bill of quantities. Adjustments could be for day work, materials on site or other billable, deductible or escalation items; and
- **Monitoring of Progress:** The contractor's work schedule will be monitored with the help of the system. A suitable network will be drawn, critical activities identified and progress of works reviewed from time to time. In case any delay is observed on the activities on the critical path, the same will be brought to the



- notice of the contractor and Employer, and suitable measures recommended for ensuring timely and quality execution of the work.
- Control Charts:** The Consultants propose to utilise the CAPMS to prepare the control charts. The control charts as developed will facilitate management, monitoring and administration in respect of each of the main activities (mile stones) of the project. These will be active tools for proper project management, alert the staff to forthcoming deadlines, provide details of status of the project, invoices, cash flow forecast, submission of drawings and reports for approval, disbursements etc. besides reflecting the delays and the effect of the delays on other project component. The control charts will play a major role in the monitoring of the construction management of the project and serve as a part of reliable Management Information System (MIS).

Task 205:	Check and Approve Contractor's Setting out of Works	Normal Task
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All previously established survey ground control stations will be identified, verified and if necessary re-established as already highlighted under Task 106. Prior to commencement of construction operations, the beacons established will be handed to the contractor on site. The Consultants will provide the contractor with all necessary data and references for setting out of the works. In accordance with the obligations of the contractor set out in the contract documents, he will verify the accuracy of the survey stations, the reference points and bench marks and re-establish any damaged or missing stations. This setting out will be physically checked in the field by the Consultants' surveyors, for its correctness prior to issuing approval to construct the works.

The Consultants will check and approve the entire alignment layout of the bridge and approach roads under the contract. The various activities in this respect, therefore will include verification for compliance with line, level and layout of the works in accordance with the contract drawings and within the tolerance required by the specification, approval of the contractors setting out of the works, and daily monitoring and inspection of work under construction to verify compliance with the requirements of the specifications in regard to dimensions and position. Setting out of the bridge, other structures and road will be checked before start of the works and as it proceeds. Special care will be taken to fix the pier location in the water stream and founding levels.

The setting out will be accurately referenced in a satisfactory manner and a schedule of reference dimensions will be prepared and supplied by the contractor to the Consultants. The contractor will in connection with the staking out of the centreline, survey the terrain along the road and will submit to the Consultants a profile along the centreline and cross-sections at intervals as required by the Consultants for their approval. Until the centreline has been referenced, no reference peg or marker will be moved or withdrawn without the approval of the Consultants and no earthwork or structural work will be commenced. The contractor will be the sole responsible party for safeguarding of all survey monuments, benchmarks and beacons, etc. till the works reach finished formation level and are accepted by the Consultants. All markers as established will be maintained by the contractor.

The centreline will again be checked by the Consultants on construction reaching the formation level stage.

Task 206:	Inspect and Approve Materials Proposed by Contractor for Incorporation in Works	3.2.1 (e)
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Prior to approval of the materials sources (borrow areas, quarries and water sources, etc.) as identified during the project preparation along the route for embankment, pavement, bridges, drainage and other structures, necessary inspection and testing will be carried out by the Consultants to ensure their compliance with technical specification requirements and adequacy in respect of their quality and quantity respectively.

The following non exhaustive lists of laboratory tests will be carried out on a regular basis:

- CBR Tests;
- Grain size analysis;
- Atterberg limits and linear shrinkage;
- Soundness Test (sodium or magnesium Sulphate soundness);
- Aggregate crushing values (ACV),
- Durability (Los Angeles Abrasion);
- Flakiness Index;
- Ten Percent Fines Value (both dry and wet) of coarse aggregates;
- Concrete mix design & all quality tests of each ingredient;
- Specific Gravity and Water Absorption of aggregates;
- Organic impurity and etc.;
- Water Quality tests;
- Strength tests on Reinforcing bars etc.;

The Consultant's proposed staff is very experienced in the running of testing facilities and will ensure that all tests are conducted as per applicable design standards.

In addition, the sources of manufactured materials such as cement, lime, bitumen, steel, bearings, expansion joints, etc. as proposed by the contractor will be examined for availability, reliability, quality on the basis of manufacturer's test certificate and past performance in similar projects before approval. Contractor



will start processing of procuring these materials only after obtaining source approval. Consignment of materials received at site will be inspected and sampled (for routine testing in site laboratory) jointly with the contractor. However, in special cases, the Consultants will have tests carried out in independent / manufacturer's laboratory or otherwise within the provisions of the Contract and in consultation with the Client. The test results of all manufactured materials will be properly recorded and compiled in prescribed format and submitted for necessary approval. Based on the satisfactory test results of samples, a particular lot / consignment will be approved for incorporation into works. The approval of materials will be accorded in consultation with the Project Director.

Thus, the activities carried out by the Consultants will include the monitoring and inspection of tests carried out by the contractor, the assessment of these tests and, where considered appropriate, the issuing of instructions to the contractor to execute specific supplementary test of materials and workmanship and to monitor such supplementary tests.

The Consultants approval on Material Borrow Pits will be subjected to:

- Confirming that the Contractor has established a right of access to the sites and a right of excavation;
- Inspecting the Contractor's proposed equipment and proposed route of access to the project sites to ensure that the Contractor has sufficient equipment to supply the necessary materials in the sufficient quantity not to delay production;
- Ensuring that the Contractor has appropriate plans drawn to re-grade the borrow pits after completion of their use;
- Testing to be made to establish its suitability;
- The Contractor will be required to produce plans for the reinstatement of the borrow areas after use.

Construction Material Storage

Inspection of storage places for the following important construction materials will be given due attention:

- **Reinforcement**

Steel is very susceptible to rust and mechanical damage. Hence the Consultants will instruct the Contractor to store it in a safe, moist and air free areas, normally above the ground in a roofed shelter.

- **Cement**

Cement will be stored in weather proof buildings provided with raised floors to protect it from dampness. The Consultants will control the date of entry of each shipment and storage of cement longer than three months will not be allowed. The consumption will be on the basis of first in first out.

- **Bitumen**

All storage and handling of bitumen and bitumen emulsion procured for bituminous works involved in binder course and wearing course will be done in accordance with the relevant codal provisions

- **Aggregates / Sand**

There will be stored near the batching plants but will be protected against possible mixing of different sizes.

Task 207: | Review and Approve Contractor's Construction Methodology

3.2.1 (i)

The Consultants as part of work program will obtain the construction methodology for all items of work from the contractor supported with schedules of materials procurement, equipment mobilization and labour and stage wise implementation procedure. The Consultants will ensure proper interpretation of specifications and its relationship with the construction method. The contractor will also be advised to include his method of working in respect of each and all maintenance / care of works activities, with details of the manpower allocation, the techniques of maintenance, and the machineries & equipment he is adopting for execution of the works. In particular, the contractor will be required to indicate the resources necessary to undertake all of his planned operations and the sum of all resources needed to maintain the planned rates of progress will be checked against those resources actually provided. The adequacy of construction methodology will be scrutinized taking into account the sequential operation of various activities, deployment of resources with regard to both labour and equipment, compatibility with work program, environmental appropriateness, safety of workers, personnel and public protection of works and compliance of related provisions of Contract including technical specifications. The Consultants findings would be discussed with Project Director and the contractor will be notified within 21 days and as per revised FIDIC condition clause 8.3 (or as given in the conditions of the Works contract) the extent to which the methodology does not comply with the contract and asked to submit revised methodology conforming to contract provisions. Special attention will be paid to methodology for setting out survey for locating piers in the river stream, cofferdam, decision of founding level, drilling of piles, construction of superstructure span and safety precaution against tidal effect.

Task 208: | Supervision Construction Works and Stage Approval

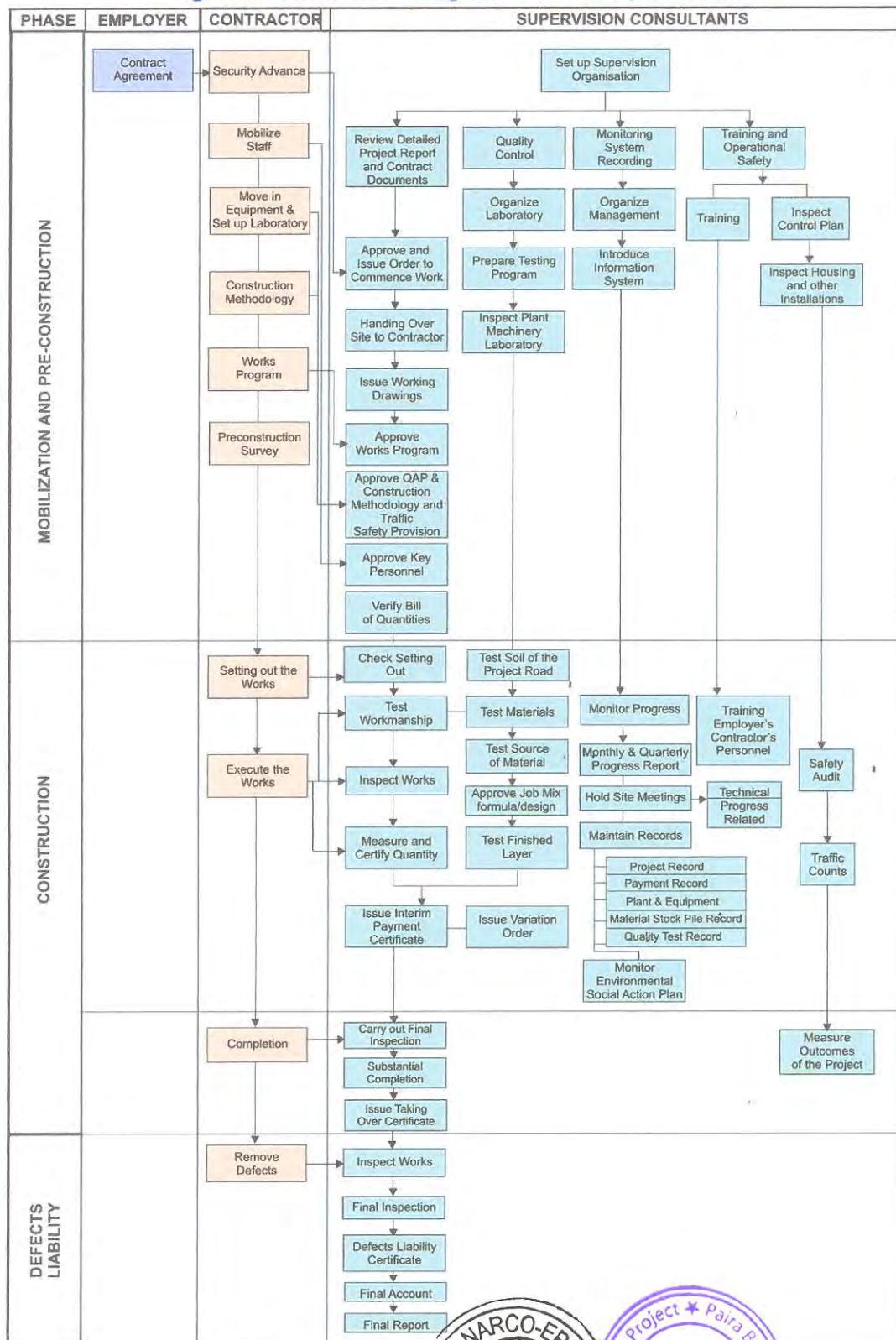
3.2.1 (a)

The Team Leader will plan comprehensive construction supervision of bridge works in progress including pavement, drainage, other structures and other miscellaneous works. The roles and responsibilities of the parties to the contact during the construction and post construction period have been reflected in **Fig. 3.5.**



The Team Leader along with his team will ensure that the works under the contract are carried out by the contractor in accordance with established standards, criteria, technical specifications, procedures, approved design and drawings, Environmental Protection Plan as well as the construction schedule. They will organise the supervision of works contract with proper allocation of responsibilities to individual members of the supervision team and supervise their work to ensure effective quality execution. It will also be checked and ensured that all necessary steps are taken, including those mentioned in the contract to protect the environment on and off the site, which arise due to construction operations. Further, the implementation of the Quality Assurance System given under Task 202 will be ensured. Every work operation will be inspected and approved by means of formal request from the contractor (RFI Request for Inspection, RFA- Request for Approval)

Fig. 3.5: Flow Chart- Obligations and Responsibilities



Routinely and as requested by the contractor, the Consultants will inspect the Works both underway and completed for compliance with specifications and for the agreed method of working, as a basis for payment. The main aspect of Control and Verification of quality will follow the stipulations of the Quality Management Plan by adopting a control system. The contractor is expected to produce his proposed working drawing/plans, the associated calculations and method statements in sufficient time ahead of commencement of all activities. Examining the submissions, the Consultants will approve or reject the proposals, identifying any changes required. The Consultants will inspect and check contractor's setting out of the works and submittals prior to issuance of approval or rejection otherwise. To this end, the Consultants will verify all preparatory works and check list before granting a go-ahead to proceed with the next activity.

All work activities undertaken by the contractor will be closely supervised with due diligence and efficiency to carry out the works in accordance with sound technical administration, financial and economic practices, and the concerned staff will be present during all major construction activities. It will be ensured that the contractor employs only competent skilled personnel on the works. The staged approved work will become the basis of payment.

The Consultants will instruct the Contractor to post information and warning signs and notices along the works for the safety and protection of the general public and workforce engaged in the construction of the works. The Consultants will approve the location, numbers and type of signs and notices to be erected.

The Consultants will monitor the construction of new bridges and culverts, etc., and will ensure that all materials for use in the structural works comply with the specifications and that the methods of construction comply with the contract requirements. Particular attention will be paid to the concrete works by ensuring following checks/measures:

- Check and approve if the materials being used i.e. aggregates, sand, cement, steel etc. comply with the standards and specifications and relevant test certificates are available;
- Checking quality of water for use in concrete;
- Checking water cement ratio;
- Proper quality and type of shuttering/scaffolding materials;
- Adequacy of curing materials/arrangements;
- Check the line and level of all structures to ensure that they are set out in accordance with the drawings;
- Design mixes for the concrete works will be regularly verified and approved by the Consultants to ensure there is no deviation from the approved mix design;
- Inspect all foundations before concreting in order to insure their suitability for supportive purpose and record the depths of excavation for measurement;
- Review and verify all re-enforcing steel works for correct size, spacing and lapping as per drawings;
- Check all concrete materials for quality and quantity and all formwork for correct dimensioning, stability, etc. prior to concreting;
- Monitor and ensure that the samples of concrete and related materials are tested according to the quality control procedures and standards;
- Periodic spot sampling of concrete will be carried out to ensure consistency and quality with slumps tests and concrete cube crushing tests;
- Details of completed structural works be recorded to verify the Contractor's payment requisitions;
- Maintain up-to-date records of structural works;

The Contractor will be informed in writing about rejection of any defective work so that rectification action is carried out promptly.

Task 209: Supervision Quality Control Measures

3.2.1 (f)

The Consultants will supervise all day-to-day quality control tests carried out by the contractor in the field / laboratory in accordance with their quality assurance plan and Contract specifications during supervision of all works. The Consultants will also develop a mechanism in consultation with the Employer for them to carry out adequate number of independent tests other than the regular testing done by laboratory personnel to ascertain the reliability / acceptability of the materials and completed works. The Team Leader, will, in particular guide and check the construction methodologies and quality control tests, specifications, etc. to ensure construction of a high quality.

The Senior Materials and Quality Control Engineer, assisted by the support staff will have overall responsibility for proper implementation of established quality control system and procedures and



maintaining all quality related records and reporting in respect of materials and finished work. The revised edition FIDIC conditions requires the contractor to forward to the Engineer duly certified reports of the tests and that when the specified tests have been passed, the Engineer will endorse the contractor's certificate or issue a certificate to him. Accordingly for this, the Senior Materials and Quality Control Engineer along with his staff will regularly carry out the following:

- Inspect sources of materials, stock piles of aggregate and materials of borrow areas placed at site and then conduct tests on samples to ensure their conformity with specifications;
- Conduct field density test on each layer of embankment, sub-grade, sub-base and base course as laid and evaluate the results for acceptance, instruct the contractor for scarification and re-compaction, if the work fails with respect to target density, on rectification give permission to proceed for subsequent layer;
- Inspect manufactured materials (cement, admixture, bitumen, emulsion, steel bars, expansion joints, bearings etc.) delivered at site / manufacturer's workshop to ensure compliance with the specifications;
- Ensure contractor's staff, responsible for the field and laboratory tests are adequately experienced and properly trained and that they carryout tests in accordance with the specified procedures;
- Ensure that the contractor carries out adequate number of tests as specified in each case and supplies two copies of the results of each test on approved printed forms;
- Conduct independent tests on selected materials for verification of test results of manufacturer's test certificate. Such verification tests may also be carried out for the properties tested in the field laboratory.
- Ensure that the laboratory equipment is properly maintained and regularly calibrated;
- Ensure that the test records are properly and orderly maintained;
- Ensure that proper statistical analysis is carried out for the group of tests and the results are as per acceptable standards;
- Check regularly the calibration, accuracy and operation of the batching and mixing equipment and of the testing equipment;
- Check all design mixes and approve them;
- Order special tests of materials and / or completed works, as required; and
- Compile database of various test results for monitoring pavement performance and performance of other structures.

The Consultants will also issue order for special tests not provided for in the Contract but required, after getting specific approval of the Employer along with the financial implications of such tests.

Task 210:	Carry out Tests on Soils, Material, Mixes for Compliances with Specifications and their Approval	3.2.1 (f)
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Approval of materials proposed to be used in work by the contractor has been described under Task 206. However, during the execution of works, samples of the materials / mixes will also be taken and tested in accordance with the quality parameters of the specification to ensure that only the approved quality materials / mixes are incorporated in the works. The samples for testing will be taken from the stock yard, work site / work in progress and batching plants. These samples will be tested in the laboratory in presence of contractor's quality control staff. If the test results do not conform to the specifications, the same will be rejected, and stretch of road or structural element where such material has been already used will also stand rejected. The system will form part of overall quality assurance plan.

Task 211:	Order Renewal / Rectification of Sub-standard Works and Unsatisfactory Materials	3.2.1 (a)
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The items of completed works and unsatisfactory materials which fail to comply with the acceptability standards specified including workmanship, will be got dismantled and removed or rectified as required.

Task 212:	Check and Approve Traffic and Safety Arrangements During Construction	3.2.1 (k)
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As part of proposed work methodology the contractor is required to and will be instructed to submit his plan to ensure that existing traffic moves smoothly. It will be ensured that the minimum impediment is caused to the flow of traffic and safe acceptable detours are provided and maintained at all times by installing proper signs, wheel guards, facing, barrier, lighting, watchman and traffic regulators.



TASK GROUP III – CONTRACT MANAGEMENT AND COST CONTROL

Task 301:	Make Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval	3.2.1 (d) (c)
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In case the Consultants consider it necessary to make some major changes in the design / drawings of bridge to suit field conditions as well as improvement of alignment during construction or which could also have effect on costs, the same will be discussed with the Employer and necessary approval obtained before formally releasing the changes to the contractor.

The Consultants will also issue new / supplementary drawings, which are not included in the contract, whenever necessary and give timely necessary instructions for their implementation.

In addition, as the works proceed, the Consultants will continuously monitor both the nature and the scope of design proposals for the next section of the works to ensure that the design proposals remain the most cost-effective option within the available budget. Any changes envisaged as a result of this monitoring process will be discussed with the Employer, and where agreed to be necessary the design drawings and/or specifications will be amended and re-issued.

However such changes will not increase the contract time nor will increase the contract sum resulting from such changes not exceeding a percentage agreed. However, if the cost exceeds the limit, a Variation Order will be issued with the approval of the Employer.

Task 302:	When Required Carry out Design; Prepare Drawings and Technical Specifications as Supplementary Information	3.2.1 (d) (c)
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It is the Consultants responsibility as the Engineer, and that of Engineer's Representatives to ensure that the contractor is in possession of the complete contract document, including all applicable drawings, at the start of the contract period. The Engineer will ensure that the Employer has issued all such documents and in turn, will formally issue these to the contractor. Should it be found that certain additional details are needed or certain modifications have to be carried out, the Consultants will carry out the amendments, the relevant changes in drawings, technical specifications and contract documents for issue with the approval of the Client.

The Consultants will also provide timely any supplementary information requested by the contractor to carry out works without interruptions and assist the contractors in the interpretation of various clauses of the contract and technical specifications. Any discrepancies found in the data / drawings / designs supplied to the contractor will also be clarified by the Consultants.

Task 303:	Review and Approve Contractor's Work Program	3.2.1 (g)
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The Contractors are required to submit a detailed location wise work program to the Engineer within 28 days after receiving the notice for the commencement of the works for carrying out each physical work actively along with requirement of all resources (manpower, equipment and material) along with corresponding work method statement.

The important matters of the work program are: (i) activity schedule to define all the works; (ii) the Critical Path on the program; (iii) materials approval schedule; (iv) equipment and manpower requirement for each activity; (v) method statement with all the output and working duration as already given in Task 207; (vi) method statement for materials exploration; (vii) traffic diversion scheme; (viii) safety planning; (ix) environmental protection measures to be implemented at the time of construction. The contractor will also be required to submit the corresponding cash flow chart for the duration of the whole contract period. The same will be scrutinized and a monthly requirement of funds will be prepared for planning and provision by the client. This will be further reviewed every month and discussed with the P.D. This project has two major components i.e. the bridge and approach roads. The contractor will be asked to submit an overall work plan for these two distinctive major components for ease of monitoring.

A detailed evaluation of the program will be undertaken as to whether it will allow the contractor to finalize the works during the given time of completion with the resources indicated in his planning taking into account the project constraints.

The Consultants will review the contractor's work program with respect to availability of equipment at site or proposed to be inducted during the Contract period, personnel, staging material, working hours, procurement of construction materials, etc. A schedule of payments, based on the quantum of work the contractor would reasonably be able to carry out during each month, will also be worked out for budgetary as well as project monitoring purposes.



As an efficient way of monitoring the progress is to identify, the critical items, which could affect the progress of works, and closely monitor throughout the Contract period with evaluation of changes required for the positive advance of the progress. Based on this monitoring, instructions for adjustments to manpower and equipment requirements or extra efforts for speedier procurement, as may become necessary, will be advised to the contractor notifying the extent to which the program failed to comply with the Contract or is inconsistent with actual progress and the contractor's stated intention.

If during the progress of the work, the quantity of the work (work progress) performed per month falls below that shown in the program, or if the sequence of the operations is altered, or if the program is deviated in any other way, the Consultants will require the Contractor to revise his work program to show the modifications to the original program necessary to ensure completion of the works within the contract completion time.

Task 304: Review and Approval of Working Drawings

3.2.1 (i)

As per the procedures to be agreed with the contractor before the commencement of the construction supervision works, the contractor will be required to submit working drawings/plans, shop drawings, drawings for temporary works, and / or drawings prepared to overcome unforeseen obstacles that he may encounter to the Consultants for review and approval.

The contractor's proposed drawings / plans and associated calculations will be thoroughly reviewed and approved or rejected and changes required will be identified and intimated to the contractor for timely action. The working drawings will be prepared from the contract documents by the contractor based on the contract drawings but for the ground conditions now recorded based on updated topographic survey of project site, variation in ground and hydraulic condition, etc. The contractor will also provide and deliver the results of the survey work in a computerized format including a digital ground model acceptable to the Consultants and in a format which can be used directly as input data for the Consultants highway design program installed at site.

The Consultants will provide all necessary guidance/ assistance as required. However, preparation of the working drawings is the responsibility of the contractor. The drawings calculations as prepared by the contractor will be reviewed. The Consultants will approve or reject the drawings after due scrutiny for their compliance with the contract drawings, specifications, acceptable design and method of works including safety.

Task 305: Inspect Contractor's Plants, Machinery and Laboratory Equipments

Routine Task

The Consultants will regularly inspect the contractor's plant and machinery to ensure that they are as per specifications, have adequate capacity and are capable of producing quality items of work at the specified rate to ensure timely completion as per the agreed program.' The contractor's installations like concrete batching plant, crusher, pile boring equipments, asphalt mix plant, workshops, etc. as per the contract document for attending to maintenance and breakdown conforming to safety and pollution hazard control requirements, will be regularly checked and suggestions given for the required improvement measures, if any, to be undertaken by the contractor.

The Consultants will verify the list of contractor's equipment and plant as given in the contract document and approved work plan and according to the output envisaged for the adequacy of the assignment. Condition, capacity, and type of equipment will be evaluated before mobilization of the equipment. The quality of the equipment for conformity with the specified requirements upon mobilization to site will also be checked and updated frequently. The Consultants will assess the equipment mobilized to site with a view to ascertain that they are sufficient for the project works and are in compliance with the requirements set in the contract. The works inspector on regular basis will record the equipment fleet. The record will comprise of: equipment type; model and year of manufacturing; previous hours worked and condition; capacity; and date of arrival on site, its availability and utilization, etc.

The Consultants will also inspect all laboratory equipment to ensure that (a) the laboratory equipment of specified type and requisite number are available and installed (b) they are properly calibrated and give correct results. Equipment calibration status showing calibration history of the equipment will be displayed in a chart in the laboratory.

Task 306: Inspect Contractor's Housing and Facilities

Routine Task

As per the works contracts, the contractor shall at all times take all reasonable measures and precautions to maintain health and safety of the contractors personnel and make suitable arrangements for all necessary welfare and hygiene requirements and for the prevention of epidemics.



The Consultants will regularly inspect the housing and medical facilities for the workers for their adequacy and improvement measures suggested as required. It will be ensured that provisions made in the contract are fully complied with to ensure health and safety for contractors staff and labourers which should also include adequate drainage facilities and treatment of sewage and waste disposal.

Task 307: Review / Approve Contractor's Key Personnel

Normal Task

The Consultants will review the key personnel of the contractor for their capability to perform the contract works based on their qualifications and experience and will approve them or may suggest replacement of any of them. Their performance will also be regularly reviewed during the implementation of the civil works contract and should deficiencies be found, replacement will be requested. The review will be aimed at assessment of their capability to handle projects of this magnitude; capacity to motivate labour; quality consciousness; adherence to time schedule and cost; safety awareness; and capability to handle work during emergencies.

Task 308: Check and Verify Validity of Contractor's all Insurances and Guarantees

Routine Task

The Team Leader and the Contract Specialist will regularly check and verify the validity of all insurance/guarantees and proof of payment of premium, which the contractor is required to maintain as per the contract. The Consultants will establish a system to ensure that these obligations are regularly checked upon and are fulfilled. If any insurance/guarantee bond fails to comply with the intended validity period and the amount as required, the contractor will be immediately notified for appropriate action within the prescribed time and Project Director advised accordingly.

Task 309: Check and Verify Measurements of Works

3.2.1 (o)

The Consultants will establish agreed methods of measurements and certification in consultation with RHD and the contractor. The accuracy of measurements and costing calculations required for payment purposes will be regularly verified by the Consultants at the frequencies specified in the contract documents. All measurement records will be kept as per the directions of the Employer / Project Director. When a particular work is completed, after its quality is tested and accepted, it will be jointly measured by the contractor and the Consultants for payment purposes in accordance with the method of measurement and payment in the specifications.

All measurements will be made of works before they are being covered up and no measurements will be made for any unaccepted works. These measurements will form the basis for preparation of interim payment certificates. The Consultants will develop a "Measurement Format" in line with other similar completed projects in consultation with RHD.

The Consultants will provide all the necessary documents and information to enable the Site Counterpart Engineer review the measurement of works and computation of quantities and check the contractor's interim payment certificates for conformity with the contract and actual works executed on the site.

Task 310: Regular Review of Bill of Quantities and Advise Employer on Estimated Total Cost

3.2.1 (a)

The Consultants will regularly review and update the bill of quantities of the works executed and compare with BOQ for variation in execution of balance works. The Team Leader will, at no more than quarterly interval review the costs based on the variation allowed and work out the projected cost and budget position at regular intervals and advise the Employer of the estimated total cost in different currencies for completion of the works.

To this end, the works attended and quantities of work done will be verified. The monitoring of project cost activities will include re-measurements, periodic updates of quantities, checking and certifying of interim payment certificates, preparation of periodic financial reports, accounting of material delivered to site, checking of amount remaining for outstanding works, communicating with Employer on issues related to variations and identification of actions which may result in savings without undermining quality of the works. On completion of the contract, the Consultants will prepare and submit the final cost of executed works.

Task 311: Scrutinize and certify Interim and Final Payments

3.2.1 (n)

As per the works contract, it is the contractor's responsibility to submit a statement at the end of each month, in a form approved by the Engineer, showing in detail, the amounts to which the contractor considers himself to be entitled, together with the supporting documents.



The Consultants will review and check the contractor's Payment Applications and after verifying the accuracy of the measurements and costing calculations and the sufficiency of the supporting documentation, prepare and issue the interim / monthly payments or final payment certificates for processing by the Employer within period specified in the contract.

The interim payment certificate will be made to contain the value work done up to date of payment application, the value of materials on site intended to form part of the permanent work and are delivered reasonably, not too early, and stored properly and/or without any damage. In addition, it will be made to incorporate deduction of retention money and advance repayments as per the contract. Adjustment to the price will also be made appropriately according to the contract. Monthly certificate for payments will include the total cost of works executed in foreign and local currency (net of taxes & duties)

The Contract provides specific periods within which payment of successive certificates must be paid. Certain provisions of the Contract stipulate remedies for late payment, including the payment of interest and, in the extreme event, termination by the contractor of the Contract. The Consultants would monitor the payment process and alert the Employer when the delay in payment accrues to a point when: (i) financing charges will become due; and (ii) the Employer will be in default for late payment. The Consultants will also advise the Employer if any liquidated damages are due from the contractor.

The contractor is required to submit the Final Statement on completion of the work. The Consultants would discuss with the contractor and Project Director any unresolved claims / accounts of the Interim Bills and evolve a format to prepare the Final Certificate. The final statement will include details of all payments, retentions, liquidated damages and contractual claims that may be due. The Consultants will scrutinize and certify all bills and will help Employer in the settlement of bills, accounts and claims, if any, on satisfactory completion of the project.

Task 312:	Review and Analyse Contractor's Claims including Extension of Time and Advise Project Director	3.2.1 (p)
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During the tenancy of contract, some issues may crop up for which the contractor may put up claims for additional payment. Such claims normally can be due to late handing over of site resulting in idling charges of equipment and manpower, late decision in conveying the approval of working drawings and new drawings to be furnished to the contractor; delay in approval of stage work in progress; escalation of costs due to new legislative changes made by the Government; and works not envisaged under the scope of contract and improper or inadequate performance of contractual obligations by a party.

If the contractor considers himself to be entitled to any extension of time for completion and / or any extension of time, the contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable and not later than 28 days of the contractor became aware or should have become aware of the event or circumstances.

The Consultants site supervision staff in general and the Team Leader and Contract Specialist in particular will be thoroughly familiar with the contract provisions, rights of parties, and the concept of contract operations.

In all cases, the Consultants will examine details of the circumstances and the contractor's records, and either reject or recommend appropriate payment for claims after modification as required under terms of contract. The Engineer's detailed analysis of such claims and recommended rulings will be submitted timely to the Employer for approval, where necessary and advise the contractor appropriately.

The contractor is generally eligible for extension of time for completion of works if: (i) the delay occurring is due to causes beyond his control; (ii) additional works or alteration of works involving any delay; and; (iii) Employer's desire to change the sequence of works in the approved work program involving delay.

In all such cases, the contractor has to notify the Employer his intention to claim within the time period specified in the contract. After studying the case, the Consultants will examine the extension of time requested by the contractor and recommend appropriately to the Employer for approval, as justified. Wherever necessary, the cost involved in such extension will also be worked out and highlighted. The Consultants position in dealing with claims is to act as an impartial assessor, to advise fairly and promptly on the validity and value of claims submitted. If however, the Consultants do not agree with the contractor's request, the reasons thereof will be explained to the Employer in writing, with recommendations for either reduced extension of time as appropriate or rejection. In this regard, the provisions for the procedure and time limits for dealing with claims will be adhered to by the Consultants.

All communication concerning claims will be in writing and Consultants will maintain details in a separate file. All claim settlements will be fully documented in the appropriate format. Proper, detailed documentation of claims will normally include, but not be limited to, the following details:



- Notification of intent to claim;
- Preliminary report on Contractor's intent to claim;
- Formal claim from Contractor in writing which includes full supporting particulars of the claim and of the extension of time and/or additional payment claimed;
- Details of claims review by Engineer and decision on acceptance/rejection;
- Contract change notice if accepted and approved by Employer;
- Fair cost estimate of claim;
- Minutes of any negotiation 'meetings, including the resources and rationale for compromise settlements;
- Photographic records where applicable;

Written approval of the claims settlement will follow procedures as required by the contract provisions and established delegation of authority.

In the event of disagreement between the contractor and the Employer, the Consultants will assist with negotiation to enable reaching an amicable settlement agreement between the two parties. If however the negotiation fails, either of the two parties will declare a dispute, and the contractual procedures for reference to the Dispute Board in accordance with the relevant clause of the contract. Under such circumstances, the Consultants will provide all the necessary personnel expertise to advise and assist the Employer to prepare any further analysis of contractor's claims submitted.

Task 313: Prepare Engineer's Instruction and Variation Orders

3.2.1 (c), (a)

In the course of execution of the works, the Consultants may require to instruct the contractor to execute the works properly following the design drawings, technical specifications and other provisions of the contract. Such instructions will be prepared and issued by the Project Director / Engineer regularly as and when required.

In addition, Variation Orders (VO) may also be required to carry out additional works in the contact as per the request of the Employer, Consultants, and the contractor. The request for Employer's approval of a variation order will give details of the proposed variation, including details such as but not limited to: detailed description of the change (s), contractual implications in terms of extension of time of the change (s) given the contract provisions, financial implications of the change (s) using unit rates of the contract or those fixed on the basis of the contract rates or market rates as the case may be, draft variation order to be issued to the contractor in accordance with the conditions of the contract. Upon doing so, the Consultants will verify and examine carefully all the underlying circumstances to assure that such variations are absolutely necessary. The Consultants, after discussion with the contractor and after obtaining prior approval of the Employer as per provisions of the Contract conditions, will prepare and issue Engineer's Instructions (EIs) and Variation Orders (VO) complete with the associated measurement and payment instructions to the contractor in writing; increased / reduced quantities beyond the percentage specified in the contract; new works not envisaged at the time of project preparation; change in design / drawings of any of the components of work as necessary or advisable to suit field conditions during construction or change could result in reduction of construction costs without sacrificing strength and quality of works; and fixing rates for non-priced works. Variation orders will only be applicable should there be a substantial change in the scope of works or as detailed in the contract. Incidental increase / decrease in quantities will be dealt with relevant conditions of the contract.

The contractor is required to provide along with their claim analysis of proposed rates for new item. The rates provided in the Variation Orders will first be derived from BOQ provided the varied work is of similar character and executed under similar conditions to the work priced in the BOQ. If the rates in the BOQ are not applicable or are rendered to be inappropriate due to the nature or amount of work of the varied work then the BOQ rates will be used as a basis of valuation so far as may be reasonable, which otherwise will be failing when analyzed as per the market rates. The time and cost implications of the Variation Orders will also be highlighted by the Consultants to the Employer to enable reasoned decision in this regard.

In case of an emergency, as judged by the Consultants, when a proposed variation will prevent or appreciably reduce additional costs, damage to adjacent facilities, delays in construction progress, hazardous condition and/or other effects adverse to the best interest of the project or the Employer, the Consultants will issue appropriate variation orders and instructions to the contractor, without relieving the contractor of any of his duties and responsibilities under the contract, for the execution of the work. Such variation orders and instructions may be issued without prior written approval of the Employer. However, oral approval will be sought from the Employer.



Task 314: Advise / Assist in Disputes / DRE / Arbitration

3.2.1 (p)

In case of any dispute arising between the Employer and the Contractors in connection with, or arising out of the contract or the execution of works or after their completion including any disagreement by either party in respect of any action, inaction, opinion, instruction, determination, certificate or valuation of the Engineer, the matter in dispute shall, in the first place, be referred to Dispute Review Expert (DRE) / Dispute Review Board (DRB), as applicable.

In the event of disputes being referred to the DRE / DRB, the Consultants will provide necessary advice and assistance in providing necessary information and documents required in the course of the process including comments on claim of the Contractors. As the recommendation of the DRE / DRB are binding on both the parties if intention to seek arbitration is not notified within specified period, the Consultants will work closely with the Client and advice, on the merits of the DRE / DRB's findings and recommendations for taking timely action in the matter.

Any dispute between the contractor and the Employer arising out of or in connection with the contract not settled amicably in accordance with relevant clauses of contract and respect of which DB's decision (if any) has not become final and binding shall be finally settled by arbitration.

The Consultants, in the event of adjudication or arbitration, will provide the necessary personnel and expertise to advise and assist the Employer in any such process and prepare any further analysis of the contractor's claims submissions as may be necessary to assist the Employer in the presentation of his case in dispute of any kind whatsoever arising between the Employer and the contractor in respect of which: (i) decision of the 'Engineer' or DB's has not become final and binding; (ii) amicable settlement has not been reached within the period, if any, as stated in the contract.

Task 315: Advise / Assist the Project Director in Communication with Donor Agency

3.2.1 (s)

The Team Leader and Contract Specialist will render advise and assistance to Project Director or the Project Implementation Unit of RHD to correspond will KFAED. This could be for submission of payment invoices, disbursement of loan, periodical report to be submitted to the donor or any clarification sought by them.

Task 316: Advise Project Director for Coordination with other Related Local Authorities

3.2.1 (k)

The Consultants will assist the Employer in providing necessary coordination with different agencies and in holding coordination meetings for proper and timely implementation of the project, resolution of problems and implementation of various environmental mitigation measures for land acquisition, shifting of utilities, regulation of traffic etc.

Task 317: Prepare and Assist Issue of Substantial Completion and Final Taking Over Certificate

3.2.1 (r)

When the whole of the works have been substantially completed and have satisfactorily passed the tests on completion prescribed by the contract, the contractor may give notice to the Engineer for a Taking Over Certificate, with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding works during the defects liability period. Such notice and undertaking will be deemed to be a request by the contractor for the Engineer to issue a Taking Over Certificate in respect of the works.

As per the provisions of FIDIC conditions of contract, the Consultants are required within the period of time specified in the contract, (usually 28 days,) either to issue to the contractor, with a copy to the Employer, a Taking Over Certificate stating the date on which, in his opinion, the works were substantially completed in accordance with the contract, or give instructions in writing to the contractor specifying all the works which, in the Consultant's opinion, is required to be done by the contractor before the issue of such certificate.

On receipt of notice from the contractor that the works have been substantially completed, the Consultants will inspect, verify and make independent measurements and calculations required for measurement purposes. The Consultants will then formally arrange joint inspections with the contractor in the presence of Employer. The Consultants will prepare defects list and draft the Taking Over Certificate (for obtaining specific approval of the Employer if such is set out as a requirement,) provided that it is found during the final joint inspection that the extent of any outstanding work of defects is of minor character and the works are capable of being used for the purposes for which these were intended and if the contractor has given a written undertaking to finish with due expedition any such outstanding works during the defects liability period



The Consultants will verify and ensure that the contractor has fully complied with Environmental and Social safeguards before issue of Taking Over Certificate.

Where there are major deficiencies which need to be corrected, the Consultants will reject the application for completion certificate specifying the work required to be done by the contractor. The Consultants will specify, instruct and supervise any remedial work to be carried out. The Consultants will also notify the contractor of any defects in the works affecting substantial completion that may appear after such instructions and before completion of the remedial works specified therein. When the Consultants are satisfied with the remedial works carried out by the contractor, the Consultants will issue certificate after successful joint final inspection of the works by the Employer, the Consultants and the contractor. In this project the Bridge, Approach road, Toll collection equipments / gates, weighing station must be completed, become functional and safe for playing of traffic.

The issue of the certificate will certify that the works have been satisfactorily completed and accepted and set the date of commencement for the 12 months of the defects liability period of the project.

Task 318: Arrange Provision of Special Staff if so Required for Smooth Progress

3.2.1 (j)

The Consultant's team for supervision work of the bridge, approach roads and other facilities integral to the project have been adequately staffed and covers technical, contractual and other specialist required for such projects and should generally suffice for successful completion of the works. However, due to unforeseen reasons should certain technical problem crop up, which require some other specialist staff to find and recommend solutions, the Consultant are obliged to arrange and mobilize such specialist after due consultation with the Client, so that the project works progress smoothly.

TASK GROUP IV – MONITORING

Task 401: Evolve Progress Monitoring System

3.2.1 (a)

The Consultants will evolve a suitable progress monitoring system with the help of the Project Management System and MIS implemented under Task 204.

Project monitoring will be carried out through the CAPMS which offers the following facilities:

- Scheduling;
- S-Curves;
- Tracking of finance;
- Document Tracking;
- Cost Control;
- Invoice Tracking; and
- Task Management and Control.

S-curves provide a good analytical view of the overall physical and financial progress of the project. In addition, the CAPMS is capable of providing early warnings as to how any delay in one activity will affect the others and the whole project, so that corrective and preventive actions can be taken in time to achieve the overall time and financial targets, in the project implementation.

Task 402: Monitor Progress and Contractor's Work Plan

3.2.1 (a)

With proper allocation of responsibilities to the individual members of the supervision team, the Consultants will organize the monitoring of contractor's method of work against the approved program and method statement with respect to each construction activity and also supervise their work in order to ensure that it is effectively executed. The Consultants will organize formal meetings to review the progress of work and identify and resolve problems/hold ups at the earliest. These meetings will be in addition to site progress meetings under Task 403, and discuss activities planned for the ensuing week as well as methods of working.

The Consultants will also thoroughly follow the contractor's program to ensure schedules of materials' and shop drawings submission are in compliance to the work program and are submitted in a reasonable time not to affect the progress and cause delay to the works. In addition, to guarantee satisfactory performance by the contractor, and check and monitor the productivity of labour and resources to make sure that adequate resources are available to complete the works according to schedule, the Consultants will monitor the contractor's performance. Moreover, the Consultants will check and monitor materials delivered to site, and advise the contractor when additional resources or revised methods of working or reprogramming of the works are deemed to be required.



In case the progress is falling behind the approved program the Consultants will advise the contractors to induct additional resources or revised methods of working or revised program of works which will indicate how the progress will be accelerated to complete the works as per the contract completion date.

The Consultants will also record and issue formal minutes of such meetings. Monthly progress reports will also be prepared with detailed quality control test statement for submission to the Employer and other reports regarding construction progress and status of Works Contract.

Task 403: Organise Monthly Progress Review Meetings

3.2.1 (l)

The Consultants will hold periodical site meetings and joint site inspections with the contractor and the Project Director to sort out various site problems encountered during the period. The Consultants will hold formal joint meeting at least once a month to facilitate monitoring of the services and brief the Employer about the progress of works, slippage occurred and remedial measures undertaken to accelerate the work. The Consultants will also discuss the progress of work and the steps to be undertaken to accelerate them to achieve various milestones as per schedule.

A formal agenda for each meeting will be issued by the Consultants with input from the contractor and RHD, and will cover the following:

- Schedule-progress vs actual planned with reasons for shortfall;
- Recommended action plan to correct significant shortfalls in the plan;
- Review of planned activities for the upcoming month;
- Problem areas - identification of items, seriously affecting the work or potential problem areas to be avoided;
- Safety-review of any incident which might have occurred during the previous period and measures to avoid reoccurring and identification of likely for potential hazardous areas;
- Relevant environmental and social factors relevant to the project;
- Any other pertinent business.

Accurate and detailed minutes covering all items of discussion will be prepared by the Consultants and issued to all concerned parties. All minutes of meeting will be filed and recorded on the register and will be kept accessible to the Client's officials at all times for consultation.

Minutes of monthly meeting will be also part of the Monthly/quarterly/ report.

Task 404: Monitor Implementation of Environmental Mitigation Plan

3.2.1 (k)

The contractor will be required to comply in every respect with the Environmental Mitigation Plan prepared by the Contracting Authority for the project road.

The Consultants will monitor the recommendations / issues, mentioned under Task 103 for necessary environmental protection in consultation with Environmental Specialist of RHD. The Consultants will also have full consultation with the Local Authorities during the implementation of the necessary mitigation measures for the environmental protection and ensure the minimization of the negative impact of the project to the society of project influence area. The scale and extent of impacts caused by the project implementation will be monitored alongwith assessment whether mitigation measures have been properly and timely implemented and are working as expected.

The Consultants will also monitor and ensure that work camps, temporary works, and life styles of construction workers do not negatively affect adjacent communities and the impact of construction activities on buildings and land adjacent to right of way is minimized and adjacent owners and occupiers are given advance warning of such activities.

Task 405: Issue Notices for Slow Progress and Other Issues

3.2.1 (a)

Rate of Progress: The progress of work will be regularly monitored / evaluated under Task 402 and the contractor's performance would be judged by the Consultants. If, at any time actual progress is too slow to complete the work within the scheduled timeframe, and/or progress has fallen behind the current program, the Consultants will notify so to the contractor to revise the work program and take such steps as are necessary to expedite progress so as to comply with the Time of Completion. This action will be taken as per General Conditions of Contract (GCC).

Suspension of Work: In case the contractor is found to ignore provisions of contract related to safety, environment protection, emergency works, etc., the Consultants may also advise the Employer to approve



suspension of work. The Consultants, after taking prior approval of the Employer, may issue instruction to the contractor, to suspend the progress of work and to protect, store and secure the works against loss / damage.

Termination of work: The FIDIC revised edition condition 15.2 entitles the Employer for termination the contract for defaults / reasons mentioned therein. If the contractor fails to carry out any obligation under the contract and the Consultants certify as such to the Employer, with a copy to the contractor, the Employer may upon giving notice to the contractor terminate the work as per GCC in the event that all other channels are exhausted and contractor fails to make any efforts to improve the situation. Similarly if the analysis/ evaluation reveals serious shortfall in progress due to failures on the part of the contractor and he appears to be incapable of completing the work as per schedule, the Consultants may suggest to RHD to invoke the provisions of contract to terminate/ rescind the work.

TASK GROUP V – DOCUMENTATION

Task 501: Maintain Accurate Records of all Measurements and Bills

3.2.1 (o)

The Consultants will systematically maintain accurate records of measurements of completed items of work taken every month and a record of the interim bills paid to the contractor. This may be required for purpose of accounting and in preparation of contractor's final bill as well as to settle any disputes arising at a later date.

Task 502 : Maintain Accurate Records of all Quality Control Tests including Rejected Works

3.2.1 (m)

The Consultants, with the help of CAPMS, will maintain records of laboratory and field tests, details of works rejected and those works, which are rectified and covered by payments.

Task 503: Maintain Detailed Records of Contractor's Plants / Equipments

Normal Task

The Consultants will keep and maintain detailed records (and make available for inspection) of the contractor's equipment on site and its precise date of arrival or removal from site, its date of manufacture, previous hours worked and condition, the date commissioned to commence work, its availability, and utilization. The contractor will submit the resources of equipment required for carrying out road work and construction of bridge, etc. depending upon the output of the equipment and duration of the task. The Consultants will examine and approve the same and regularly establish equipment availability figures for each category of equipment.

Task 504: Review, Approve and Submit "As-Built-Drawings"

3.2.1 (q)

Preparation of 'As-built-drawings' will be carried out continuously by the contractor during the progress of the work and these will show various additions / variations to working drawings, actual foundation levels, etc. The 'As-Built Drawings' are required to be submitted by the contractor detailing all alignment and level information, position and sizes of structures, services information and structural drawings (including type and positions of reinforcement) along with request for the taking over certificate for the completed road sections. The Consultants will review, approve and submit two full sets of as-built drawings prepared by the contractor and certifying its correctness within two months of completion of the Works.

Task 505: Maintain Project Daily Site Diary

3.2.1 (m)

It is a general requirement for the Consultants to keep a written diary recording daily events of the project construction works as per the contents and format finalized in consultation with RHD. A detailed and up-to-date "Daily Site Diary" will be maintained, recording the progress of the works, daily events pertaining to administration of the contract and any other information that may subsequently assist in resolving queries and disputes that may arise concerning the execution of works. The diary will have a detailed coverage of the contractor's operations and activities including comments regarding specific problems, equipment, materials and work schedules, etc. which may have affected the progress and cost of works, and could result into possible claims by the contractor.

Detailed records in the formats approved / specified by the Employer will also be maintained for all contractual correspondence and data, details of variations, all work stoppages or delays, accidents on site, official visitors to site, weather conditions and their effect on work, all activities in progress at any time on site showing the start and end time, and full details of the resources employed for each activity. These will be made available to the Employer or his representative when required to do so.



Daily diary will also include accidents on site; official visitors to site; weather records; and all activities in progress at site showing the start and end time and full details of the resources employed per activity.

TASK GROUP VI – SERVICES DURING DEFECT LIABILITY PERIOD

Task 601 :	Inspect Completed Works and Supervise Maintenance Works during Defect Liability Period	3.2.2 (a)
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The Consultants will inspect the Works at regular intervals or as decided with RHD during the Defects Liability Period, more specifically during and after heavy rains, for damages or failures. Joint inspection will be carried out with the Contractor and the representative nominated by the Employer. The Consultants will nominate a key personnel to carry out inspection of the Works during this period to check progress on completion of any remedial works intimated during taking over and during subsequent inspections and also note any new defects which have taken place. A detailed report after each visit will be made to the Employer. The Contractor will be notified about the latent defects accordingly for appropriate measures. In addition to site inspection and notification of latent defects, the rectification works will be monitored in line with the Technical Specifications and Conditions of the Contract. The Contractor will be asked to issue a Schedule how they will attend the remedial works. Depending on the nature of deficiency, the repair work will be carried out under the supervision of the Consultants' nominated staff.

With a view to have final acceptance of the Works before expiration of the Defects Liability Period, thorough final inspection of the road will be carried out under the supervision of the Team Leader and the Resident Engineer to make a report for the status of the Works. Any defects noticed which have not been rectified and are attributed to faulty workmanship or material will be recorded and the Contractor will be notified to make good the defects.

The Consultants will also ensure that the contractor has carried out restoration and rehabilitation of camp areas, borrow pits, quarry areas, etc. so as to preserve the project area from environmental hazard. After Employer's acceptance, the Defects Liability Certificate will be issued by the Engineer.

Task 602:	Assist in Final Taking Over of Works and Issue of Completion Certificate	3.2.2 (b)
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A joint inspection of the completed works will be conducted by the Project Director, Team Leader and the Project Manager of the contractor towards the end of the Defect Liability Period as described in Task 601. If all the works are found to be satisfactorily completed and all the identified defects have been rectified, the Employer is obliged to issue a final certificate in accordance with the contract conditions, which could be a Defect Liability Certificate or Performance Certificate or Final Taking Over Certificate. Contractually, once the works have been found substantially completed, these are deemed to have been taken over by the Client and services operated thereafter. At the end of satisfactory DLP, the contractor become free from any liability for maintenance / rectification. The Consultants will prepare the Final Certificate to be either issued by the Employer or the Engineer as specified in the Contract Conditions.

Task 603:	Issue Final Payment Certificate	Normal Task
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Soon after the final inspection of completed works and issue of Defects Liability Certificate (Performance Certificate / Final Taking Over Certificate) or as specified in the contract, the contractor will submit, a draft statement with supporting documents in detail including the final measurement of the works, in form approved by the Engineer to include the value of work done in accordance with the contract and any further sums which contractor considers to be due to him under the Contract or otherwise. Based on the verification by the Engineer and changes if any in the draft as agreed by both, the contractor will submit to the Engineer the "Final Statement". While submitting the Final Statement, the contractor will submit a Discharge which confirms that the total of the Final Payment represents full and final settlement of all moneys due to the contractor under the contract. After receiving the Final Statement and Discharge in accordance with conditions of contract the Consultants will prepare and submit the Final Payment Certificate to the Employer.

The Consultants will also advise the Employer to release the Performance Security as per the Contract Conditions.

TASK GROUP VII – REPORTING AND SUBMISSION OF DOCUMENTS

Task 701:	Preparation and Submission of Mobilization and Inception Plan	4.2
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Within 1 month after the date of effectiveness of consultancy services, the Consultants will present seven copies of a draft inception report to the Client. The report will outline the Consultants' initial findings and confirm the methodology and detailed work programme proposed for adoption in the light of the initial findings,



while also identifying constraints and proposed solutions, together with any action required by RHD to facilitate the successful implementation of the services, scope of works, material / resource plan.

The Consultants will also firm up their deployment plan and time schedule for mobilization of supervision staff and include in the Inception report. The Quality Control and Supervision Manual as described under task 202 will also be finalized and submitted. The Supervision Manual will also include the safety aspects during execution of works. The measures needed for ensuring safety while working in mid stream of a major river will be adequately covered and emphasised for compliance by all the agencies specially the contractor. The Inception Report and Manuals will be finalised on receipt of comments / Suggestion / Observation and final report submitted to the Project Director.

Task 702: Preparation and Submission of Progress Report

4.2

The Consultants will prepare a progress reports every month for the duration of the contract using mutually agreed standard report format which will also include the format for reporting the implementation of Environmental and Social Impact mitigation measures, safety issues and detailed progress against work progress in respect of all project elements and cover all activities performed during the reporting period. The report will contain separate sections for physical progress / technical aspects and financial progress including Cash Flow Plan. The report will include digital colour photographs to illustrate progress and to serve records of contemporary events / important stages. All important monthly project correspondence and minutes of the meetings will be included. Six copies of report will be submitted to the Project Director.

Task 703: Preparation and Submission of Quarterly Report

4.2

These will be similar to the monthly reports but will be more detailed and will include an overview of the progress within the project, physical and financial progress and its projections.

A suitable number of colour photographs with date imprinted will be included which will illustrate progress and any difficulties encountered on the Site. These will allow a permanent record of progress. This report will also include an update of project cost estimate, keeping in view of variations, price escalations and contractor's claim entitlement for additional money. The report will also include details of environmental, social and safety issues.

Task 704: Preparation and Submission of Project Completion Report

4.2

The Draft Contract Completion Report will be prepared and submitted to RHD and within one month of the completion of construction and will include but not be limited to:

- Executive summary;
- Mobilization/ Demobilization details;
- Description of Project;
- Project implementation;
- Financial cost details together with a breakdown of the same, detailing and assessing extra expenditures and cost increases inclusive of the justification for such increases;
- Details of the work executed and of the techniques employed and type, quality, quantities and sources of materials used in the pavement;
- Contract changes and variations;
- Contractor's performance;
- Assessment of any complaints and/or claims by the contractor and disputes by the contractor;
- A critical study of important technical problems which may have arisen during the construction;
- Comments on Technical Specifications and Conditions of Contract;
- Construction Records;
- As-built drawings (A1 size reproducible);
- Assessment of counterpart training;
- Conclusions; and
- Details of Final Account, where possible.
- Operation and Maintenance manual of the Contractor after scrutinizing & finalization.

The report will also include detailed report on environmental, social and safety issues.

After incorporating the comments from Client, the Consultants will submit seven copies of the Contract Completion Report to the Client within two weeks of receipt of Client's comments.



WORK PLAN

1 General

This chapter contains a Work Plan for providing consultancy services for the assignment, based on the requirements given the Terms of Reference (ToR) and Technical Approach and Methodology.

2 Work Plan (Work Schedule)

2.1 The Work Plan is consistent with the Work Schedule and Planning for Deliverables of Form 5A5 given in the ToR and provides details of main activities for execution of services, delivery of reports and benchmarks separately for each phase in a bar chart in **Fig. 4.1 & 4.2** for Design Study and Construction Supervision Phases respectively. As explained in the 'Technical Approach and Methodology', the total services to be provided have been divided into different Tasks as listed in **Tables 3.1** of that Chapter. All Activities corresponding to the Tasks will be carried out to complete these services. A list of Activities along with the 'Activity Nos.' and duration in the form of a bar chart is presented in **Fig. 4.1 & 4.2** 'Work Plan'. It may be mentioned that activities listed therein are identical to the tasks although their numbers are different. The number of any particular activity is obtained by suffixing a zero to the corresponding task number, e.g. for Task No. 103, the corresponding Activity No. is 1030. This method of numbering has been adopted to accommodate sub-activities such as (1030, 1032 etc. up to 1039), which might be identified, when the works begin. The activities are broadly placed under the following task groups:

DESIGN PHASE

- Task Group I : Mobilization and Work Initiation
- Task Group II : Survey and Investigations
- Task Group III : Final Design
- Task Group IV : Preparation of Land Acquisition and Re-settlement Plan
- Task Group V : Preparation of Tender Documents and Estimates
- Task Group VI : Preparation of Environment Management Plan
- Task Group VII : Assistance to Client during Procurement of Works
- Task Group VIII : Preparation and Submission of Reports

CONSTRUCTION SUPERVISION PHASE

- Task Group I : Mobilization and Preparatory Activities
- Task Group II : Supervision of Construction Works and Quality Control
- Task Group III : Contract Management and Cost Control
- Task Group IV : Monitoring
- Task Group V : Documentation
- Task Group VI : Services During Defect Liability Period
- Task Group VII : Reporting and Submission of Reports

2.2 In accordance with the TOR, the Consultancy Services are to be completed in 2 phases with duration as follows:

Design Phase is expected to take 9 months to complete, which includes bidding and award of contract.

Construction Supervision Phase and Defects Liability Period is expected to be completed in 45 months.

The Consultants will commence the services within 15 days of the effective date of the contract and will submit the Reports as per the time schedule given in the ToR. The Work Plan for completing the services within this time period is given in a bar- chart format in **Fig. 4.1 & 4.2**. These charts indicate the estimated period for execution of each task and experts responsible for the same. **Milestones for completion and submission of draft and final reports are also given therein.** The Work Plan will be discussed in detail with the Client on award of the work and any adjustments required due to site considerations will be incorporated and presented in the Inception Report. Suitable explanatory notes have been given to help in reading the charts.



APPENDIX-2:
REPORTING REQUIREMENTS



1.0 REPORTING

The Consultant shall submit the following reports to RHD

1.1 Reporting During Design Phase.

i) Inception Report	10 Copies
ii) Progress Report (Monthly)	6 Copies
iii) Hydrology and Morphology study report	7 Copies
iv) Design report and drawings	9 Sets
v) Draft Tender document	5 Sets
vi) Final Tender document	30 Sets
vii) Land acquisition plan	10 Sets
viii) Environmental Management Plan	7 Sets
ix) Social Action Plan	7 Sets
x) Quarterly Report	6 Copies
xi) Project Completion Report	10 Copies

1.2 Reporting During Construction and Maintenance Stage

-Mobilization and Inception Plan

- Supervision Methodology
- Proposed Staffing
- Quality Control Procedure Manual
- Safety Procedure Manual
- Sample output for monthly and quarterly reports

-Monthly Progress Reports

- Project Summary Section
- Technical Section
- Financial Section and Cash Flow Plan
- Progress Photographs
- Copies of Minutes of Meetings During Month
- Recommendations for Remedial Actions if Applicable

-Quarterly Report

- Global Project Status
- Major Changes
- Main Events
- Consolidated Time Schedule
- Consolidated Project Accounts

-Project Completion Report

- Final Report
- Final Accounts
- As Built Drawings
- Operation and Maintenance Manual



1.3 Time Schedule for submission of Report

sl no	Item	Time schedule for submission
1	2	3
i)	Inception Report	Within 15-20 days after the date of commencement.
ii)	Progress Report (Monthly)	By the 2nd day of the following month.
iii)	Quarterly Report	At the first week of the following quarter.



APPENDIX-3:

Key Personnel and Sub Consultants - Hours of Works for Key Personnel



KEY PERSONNEL (As per Negotiation)

1. Professional Staff for Design phase

Sl. No.	Name	Position	Minimum Qualification		Man- months
			Academic	Experience (years)	
INTERNATIONAL STAFF					
1	Jurgen H.H Dorbecker	Team Leader / Sr. Bridge Engineer	B.Sc Engg (Civil)	25	8.00
2	Suresh Nagesh	Sr. Contract Specialist	B.Sc Engg (Civil)	20	3.50
3	Taranisien Naik	Sr. Bridge Design Specialist	B.Sc Engg (Civil)	20	5.00
4	Maral Bedian Papazian	Sr. Foundation / Geotechnical Engineer	B.Sc Engg (Civil)	15	3.00
5	Kim, Jong Gab	Sr. Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	2.00
Sub Total					21.50
LOCAL STAFF					
6	Md. Zohrul Islam	Deputy Team Leader	B.Sc Engg (Civil)	25	8.00
7	Md. Nurul Islam	Contract Engineer	B.Sc Engg (Civil)	20	7.00
8	M A Momin Khondaker	Environmental Engineer	B.Sc Engg (Civil)	15	4.00
9	Mustafa Kamal	Electrical Engineer	B.Sc Engg (Civil)	10	1.00
10	Humayun Kabir	Social Impact Specialist	Masters degree	20	4.00
11	Md. Iqbal Hossain	Quantity Surveyor	B.Sc Engg (Civil)	10	6.00
12	S.M. Azizul Hoque	Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	4.00
13	Mohammad Shahjahan	Highway Design Engineer	B.Sc Engg (Civil)	15	2.00
14	Prodip Kumar Saha	Structural Design Engineer	B.Sc Engg (Civil)	15	6.00
15	Md. Tajuddin	Foundation / Geotechnical Engineer	B.Sc Engg (Civil)	15	5.00
Sub Total					47.00
TOTAL					68.50



2. Professional Staff for Construction-Supervision phase

Sl. No.	Name	Position	Minimum Qualification		Man- months
			Academic	Experience (years)	
INTERNATIONAL STAFF					
1	Jurgen H.H Dorbecker	Team Leader / Sr. Bridge Engineer	B.Sc Engg (Civil)	25	34.00
2	Suresh Nagesh	Sr. Contract Specialist	B.Sc Engg (Civil)	20	14.00
3	Swapan Kumar Bagui	Sr. Foundation / Geotechnical Engineer	B.Sc Engg (Civil)	15	6.00
4	Kim, Jong Gab	Sr. Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	2.00
5	kim, Hyun Kon	Sr. Bridge Engineer	B.Sc Engg (Civil)	20	18.00
6	Shaik Asif Ahmed	Sr. Material and Quality Control Engineer	B.Sc Engg (Civil)	20	15.00
7	Gautam Chattopadhyay	O & M Specialist	B.Sc Engg (Civil)	20	2.00
Sub Total					91.00
LOCAL STAFF					
8	Md. Zohrul Islam	Deputy Team Leader	B.Sc Engg (Civil)	25	33.00
9	Md. Nurul Islam	Contract Engineer	B.Sc Engg (Civil)	20	28.00
10	M A Momin Khondaker	Environmental Engineer	B.Sc Engg (Civil)	15	4.00
11	Mustafa Kamal	Electrical Engineer	B.Sc Engg (Civil)	10	2.00
12	Humayun Kabir	Social Impact Specialist	Masters degree	20	4.00
13	Md. Iqbal Hossain	Quantity Surveyor	B.Sc Engg (Civil)	10	32.00
14	Mohammad Fazlur Rahman	Resident Engineer	B.Sc Engg (Civil)	20	32.00
15	Shahidur Rahman Joarder	Material and Quality Control Engineer	B.Sc Engg (Civil)	20	26.00
16	AZM Nuran Nabi Khan	Hydraulic / R T Engineer	B.Sc Engg (Civil)	20	6.00
17	Md. Masudur Rahman	Bridge Engineer - 1	B.Sc Engg (Civil)	15	32.00
18	Md. Ataur Rahman	Bridge Engineer - 2	B.Sc Engg (Civil)	15	32.00
19	S.M. Masoodur Rahman	Foundation Engineer	B.Sc Engg (Civil)	15	9.00
20	Kamal Hossain	Junior Engineer - 1	B.Sc Engg (Civil)	8	32.00
17	Md. Shamsul Haque	Junior Engineer - 2	B.Sc Engg (Civil)	8	32.00
Sub Total					304.00
Total					395.00



HOURS OF WORKS FOR KEY PERSONNEL

Working hours and holidays for the Key personnel are as per prevailing laws of Bangladesh Government.



Responsibility of the Professional Staffs

The principal Tasks assigned to each of the **Professional Staff** are given in **following tables**

**Table: Team Composition and Tasks Assignments
of Professional Staff (Design Phase)**

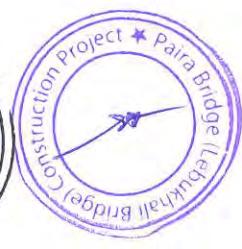
Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
International				
Jurgen H. H. Dorbecker	ICT	Civil Engineering bridges / structures	Team Leader / Sr. Bridge Engineer	<ul style="list-style-type: none"> • Mobilization of Team; • Direct, guide and coordinate the work of Key and Technical Support personnel; • Interaction with Roads and Highways Department (RHD), and other concerned agencies for arranging secondary data, development plan, project clearances etc.; • Review of all available data, reports and documents about the project and the project influence area; • Carrying out reconnaissance survey; • Coordinate and oversee the project Design works of various key personnel; • Finalization of strip plan, utility relocation plan and land acquisition plans; • Organise and Conduct Geotech, Hydrological, Morphological and other Investigation; • Preparation and finalization of Quality Assurance Plan in consultation with RHD; • Finalization of design standards, and technical specifications and detailed designs; • Finalization of Bridge Design over Paita, approach bridges / structures and drainage etc.; • Finalization of proposals for junction improvements and interchanges and identification of locations for project facilities in consultation with RHD; • Guide preparation of Land Acquisition and Resettlement Plan; • Finalization of cost estimates and Bill of Quantities and Bidding documents; • Guide preparation of Environment Management Plan; • Preparation and submission of Bid document; • Assist in Evaluation of tender bids; • Suggest methods of procurement, bid evaluation, contract packaging and; • Preparation, finalization and submission of



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
Suresh Nagesh	ICT	Finalizing cost estimates and tender documents, prequalification of contractors and award of works, claims management, dispute resolution etc	Sr. Contract Specialist	<p>reports;</p> <ul style="list-style-type: none"> • Advise Team Leader and Preparation of Bidding and Contract Documents; • Preparation of BOQ and Cost Estimates; • Assist Team Leader in Carrying out Pre-bid Meeting and Site Visit and; • Providing assistance during the procurement of works and carry out tender evaluation.
Taranisen Naik	ICT	Structural engineering, design of bridges / structures	Sr. Bridge Design Specialist	<ul style="list-style-type: none"> • Review of secondary data and documents; • Carry out reconnaissance and field investigations; • Prepare draft design standards and methodology and finalize design standards for bridges and structures; • Study and review of various Survey and Investigation data for proposed structures; • Carryout inventory and condition survey of existing structures including bridges, culverts, etc.; • Assist Team Leader in preparation of Preliminary Engineering Design; • Preparation of Estimates for bridges and structures; • Assist Team Leader and Finalization of Detailed Engineering Design of Bridge and the Specifications; • Prepare Quality Assurance Plan (QAP) for all field, design and investigation activities regarding bridge and structures; • Prepare final design and drawings of structures and; • Assist Team Leader in preparation of Reports related with structures for submission to RHD.
Maral Bedian Papazian	NARCO	Geotechnical Engineering – Geotechnical and Sub soil Investigations and Testing	Sr. Foundation / Geotechnical Engineer	<ul style="list-style-type: none"> • Liaison with the RHD, collection of data, Documents and their review; • Carry out Reconnaissance Survey; • Plan, organize and conduct detailed Geophysical Investigation; • Assist in preparation of Quality Assurance Plan; • Carry out foundation design of bridge; • Assist in Finalization of Specifications; • Finalize foundation and other related drawings; • Assist in preparation of Reports.
Kim, Jong Gab	Kunwah	Hydrology / hydraulic	Sr. Hydraulic / R T	<ul style="list-style-type: none"> • Carry out reconnaissance surveys;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
		Engineering	Engineer,	<ul style="list-style-type: none"> • Collect reports of previous studies, finalize data formats and requirements for field studies for Cross Drainage (CD) structures; • Carry out hydrological studies using stereoscopic aerial photography, topographical maps, survey data and field investigations; • Study the catchment areas, rainfall, run off duration, intensity relationship, characteristics and channel slope / discharge characteristics of each catchment area; • Evaluate waterway requirements using appropriate return flood periods and corresponding water levels; • Study slopes and discharge in the side drains and design of side drains and finalize drainage plan of the road; • Plan and design river protection works; and • Assist Team Leader in preparation of relevant reports.
Local				
Md. Zohurul Islam	ICT	Civil Engineering	Deputy Team Leader	<ul style="list-style-type: none"> • Carry out administrative duties in the project office; • Assist Team Leader in all his duties; • Coordinate works of local staff and; • Works as Team Leader in absence of the Team Leader.
Md.Nurul Islam	EPC	Contract	Contract Engineer	<ul style="list-style-type: none"> • Assist Senior Contract Engineer in the Preparation of Bidding and Contract Documents; • Assistance in the Preparation of BOQ and Cost Estimates; • Assist in finalization of Condition of Contract.
M A Momin Khondaker	EPC	Environmental Management	Environmental Engineer	<ul style="list-style-type: none"> • Carryout review of Environmental Management Plan; • Review of Environmental Study of the Feasibility Report; • Review of Existing Regulations and Codes in force in Bangladesh; • Conduct Environmental Survey and analyze import of the Project; • Finalization of Detailed Mitigation Measures / Plans and; • Prepare Monthly Progress Reports.
Mustafa Kamal	EPC	Electrical Engineering	Electrical Engineer	<ul style="list-style-type: none"> • To design lighting plan of the bridge and roads; • To finalize specifications of the electrical item; • To decide location of solar panels/ park;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
				<ul style="list-style-type: none"> To finalize electrical layout plan for bridge, road, toll plaza etc.; Decide Location of Transformer / substation if any; Assist in getting connected drawings prepared;
Md. Humayan Kabir	EPC	Sociology	Social Impact Specialist	<ul style="list-style-type: none"> Review of Feasibility Report Review of Detailed Resettlement Action Plan; Study related laws, codes etc. of Bangladesh; Carry out reconnaissance of the project site; Conduct socio economic surveys and; Finalization of Land Acquisition and Resettlement plan.
Md. Iqbal Hossain	EPC	Quantity Surveying Expert	Quantity Surveyor	<ul style="list-style-type: none"> Preparation of Bidding and Contract Documents Assist in Finalization and preparation of BOQ Assist in preparation of Engineer's Estimates
S.M. Azizul Hoque	EPC	Hydrology / hydraulic Engineering	Hydraulic / RT Engineer	<ul style="list-style-type: none"> Assisting Senior Hydraulic / RT Engineer and carry out duties as assigned and in his absence; Assist in Carrying out hydrological studies using stereoscopic aerial photography, topographical maps, survey data and field investigations; Assist in study of catchment areas, rainfall, run off duration, intensity relationship, characteristics and channel slope / discharge characteristics of each catchment area; Assist in Evaluation of waterway requirements using appropriate return flood periods and corresponding water levels; Assist and study slopes and discharge in the side drains and design of side drains and finalize drainage plan of the road; and Assist Senior Hydraulic Engineer in preparation of relevant reports.
Mohammad Shahjahan	EPC	Highway Engineering	Highway Design Engineer	<ul style="list-style-type: none"> Coordinate with the Team Leader, RHD and other agencies to collect past studies, reports and data; Study of available reports, data and relevant manuals of RHD; Carrying out reconnaissance survey & field surveys; Preparing Design standards, technical specifications; Carry out condition survey of road, pavement and culverts; Finalization of alignment of approach roads; Finalization of detailed design and engineering drawings of the roads;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
				<ul style="list-style-type: none"> • Compute earth work quantities for road work; • Carry out road safety audit and Assist in finalization of location for toll plaza etc. and; • Assist the Team Leader / Deputy Team Leader in preparation of detailed project reports, strip plan and finalization of project design documents.
Prodip Kumar Saha	EPC	Structural engineering, design of bridges / structures	Structural Design Engineer	<ul style="list-style-type: none"> • Assist Senior Bridge Design Engineer and carry out duties as assigned and in his absence; • Review of Feasibility Study Report and secondary documents; • Carry out reconnaissance and field surveys; • Assist to prepare Quality Assurance Plan (QAP) for activities regarding bridge and structural engineering; • Preparation of data formats and requirements for field studies for bridges and other structures; • Inventory and condition surveys of bridges if any; • Assist in Hydrological Investigation etc. and data analysis; • Assist Senior Bridge Design Engineer in Finalization of Detailed Engineering Design of Bridge and the Specifications; • Assist Senior Bridge Design Engineer in preparation of Cost Estimates for bridges and structures; and • Assist Team Leader / Deputy Team Leader in preparation of various reports.
Md. Tajuddin	EPC	Geotechnical Engineering – Geotechnical and Sub soil Investigations and Testing	Foundation / Geotechnical Engineer	<ul style="list-style-type: none"> • Assist Senior Foundation / Geotechnical Engineer in his work and carry out works as assigned and in his absence; • Review of data and documents; • Carry out reconnaissance survey; • Assist in carrying out geo-technical investigations for road, bridges / other structures and high embankment; • Assist in Analysis of data for establishing parameters for designing, high embankments, foundations for bridges and other structures; • Assisting in Slope stability analysis and Design of high embankments; • Assisting in Preparation of reports, documents and drawings for material & geo-technical engineering related aspects; and • Assist the Senior Foundation/ Geotechnical Engineer in preparation of various reports.

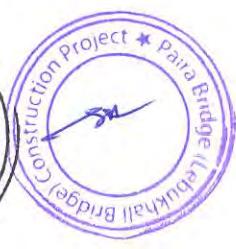


**Table: Team Composition and Tasks Assignments
for Professional Staff (Construction Supervision Phase)**

Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
International				
Jurgen H. H. Dorbecker	ICT	Civil Engineering Structural Engineering	Team Leader / Sr. Bridge Engineer	<ul style="list-style-type: none"> • Mobilization of Team; • Carry out reconnaissance and field surveys; • Establish Quality Assurance and Preventive Supervision System • Review and Monitor Contractor's Mobilization Plan and Ensure Implementation; • Carry out scrutiny and approval of the final setting out of Paita Bridge by the contractor; • Establishing procedures for supervision of bridge and other major structural works and carryout periodical monitoring of such works; • Carry out quality control of works, verification of lines and levels, inspection of works; • Review and modify as necessary the design and drawings, specifications of bridges; • Review and Approve Contractor's Work Program and Working Drawings; • Supervising and Monitoring work of the Team; • Assist in issue of letter of commence and handing over of work site to contractor; • Certify, payments; • Prepare and submit MPRs; • Organize and conduct monthly review meetings; • Coordinate work of environment and social specialist and implementation of plan; • Coordinate shifting of utilities and acquisition of land; • Coordination with PIU and other agencies; • Prepare Variation Orders and instruction to the contractor; • Approval of materials; • Inspect contractor's Plant / Equipments and housing; • Ensure implementation of the project in accordance with the contract, specifications, time and budget; • Periodical inspection during Defects Liability Period; • Undertake verification of the Contractor's statements at completion relating to bridges and other structures; • Carry out compilation and verification of "as-built drawings", of structures and;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
Suresh Nagesh	ICT	Finalizing cost estimates and tender documents, prequalification of contractors and award of works, claims management, dispute resolution etc	Sr. Contract Specialist	<ul style="list-style-type: none"> Preparation & submission of all reports. Review of contract documents of the contract; Prepare standard format for IPCs; Assist in issue of commencement of work letter; Assist in analysis of contractor's work plan; Assist in inspection of contractors Housing / Camp; Verify contractor's insurances, BGs and IPCs; Analyze claims and assist in dispute resolution; Assist in preparation of Variation Orders; Assist in preparation of reports; Assist in issue of completion reports and DLP and; Maintain accurate record of IPCs & measurements.
Swapan Kumar Bagui	ICT	Geotechnical Engineering – Geotechnical and Sub soil Investigations and Testing	Sr. Foundation / Geotechnical Engineer	<ul style="list-style-type: none"> Study and Review Contract Drawing and Other Relevant Reports; Assist in establishing Quality Assurance and Preventive Supervision System; Review and Monitor Contractor's Mobilization Plan and Ensure Implementation; Check and Approve Contractor's Setting out of Works for foundation; Supervision Construction Works and Stage Approval; Supervision Quality Control Measures; Assist for Order Renewal / Rectification of Sub-standard Works and Unsatisfactory Materials; Review Contractor's Work Program and Working Drawings and assist in their approval; Making Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval; Carry out Design, Prepare Drawings and Technical Specifications as Supplementary Information; Monitor Progress and Contractor's Work Plan; Maintain Accurate Records of all Quality Control Tests including Rejected Works; Review and recommend "As-Built-Drawings" for approval and; Assist in preparation of Monthly Progress Reports.
Kim, Jong Gab	Kunwah	Hydrology / hydraulic Engineering	Sr. Hydraulic / R	<ul style="list-style-type: none"> Study and Review Contract Drawings and Other Relevant Reports; Assist Quality Assurance and Preventive



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
			T Engineer	<p>Supervision System;</p> <ul style="list-style-type: none"> • Review and Recommend Contractor's Construction Methodology for approval; • Supervision of Construction Works and Stage Approval; • Making Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval; • Carry out Design; Prepare Drawings and Technical Specifications as Supplementary Information; • Review Contractor's Working Drawings and make recommendation for approval; • Assist TL in preparation of MPR and other reports;
Kim, Hyun Kon	Kunwah	Structural Engineer	Sr. Bridge Engineer	<ul style="list-style-type: none"> • Study and Review Contract Documents and Other Relevant Reports; • Coordinate Shifting of Existing Utility Services Status for bridge work; • Assist to prepare Standard Formats for Progress Reports; • Assist to establish Quality Assurance and Preventive Supervision System; • Review and Monitor Contractor's Mobilization Plan and monitor Implementation; • Check and Approve Contractor's Setting out of Works for bridges; • Make Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval; • Assist in Carrying out Design; Prepare Drawings and Technical Specifications as Supplementary Information; • Assist to Inspect and Approve Materials Proposed by Contractor for Incorporation in Works; • Review and Approve Contractor's Construction Methodology and recommend for approval; • Supervision Construction Works and Stage Approval; • Supervision Quality Control Measures; • Carry out Tests on Material, Mixes for Compliances with Specifications and their Approval; • Check and Approve Safety Arrangements During Construction;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
				<ul style="list-style-type: none"> • Review and Recommend Contractor's Work Program and Working Drawings for approval; • Inspect Contractor's Laboratory Equipments; • Maintain Accurate Records of all Quality Control Tests including Rejected Works • Maintain Detailed Records of Contractor's Plants / Equipments; • Review for approval "As-Built-Drawings" and; • Assist in Preparation of Monthly Progress reports.
Shaik Asif Ahmed	ICT	Civil engineering, material investigation, testing	Sr. Material and Quality Control Engineer	<ul style="list-style-type: none"> • Review of data and documents; • Study and Review Contract Documents and Other Relevant Reports; • Assist to Prepare Standard Formats for Laboratory Testings and approvals.; • Establish Quality Assurance and Preventive Supervision System; • Inspect and recommend approval of Materials Proposed by Contractor for Incorporation in Works; • Review and Approve Contractor's Mix design; • Supervision Construction Works and Inspect for Stage Approval; • Supervision Quality Control Measures; • Carry out Tests on Material, Mixes for Compliances with Specifications and their Approval; • Inspect Contractor's Laboratory Equipments; • Maintain Accurate Records of all Quality Control Tests including Rejected Works and; • Assist in preparation of Monthly Progress Reports.
Gautam Chattopadhyay	ICT	Civil Engineering	O & M Specialist	<ul style="list-style-type: none"> • Review Operation and Maintenance Program of the Contractor; • Finalize maintenance manual; • Inspect operation and maintenance being carried out by the Contractor during the Defect Liability Period and; • Get corrective measures implemented if so required for satisfactory operation of the bridge.
Local				
Md. Zohurul Islam	ICT	Civil Engineering	Deputy Team Leader	<ul style="list-style-type: none"> • To assist team leader in all his duties and carryout work as assigned; • Works as Team Leader in absence of the Team Leader; • Mobilization of Local Team;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
				<ul style="list-style-type: none"> • Assist in Liaison with RHD and other local government officer; • Exercise administrative and technical control over local engineers.
Md.Nurul Islam	EPC	Contract	Contract Engineer	<ul style="list-style-type: none"> • Assist Senior Contract Engineer in his work and carry out works as assigned and in his absence; • Review of contract documents and Reports; • Assist in Preparation of standard format for IPCs; • Assist in issue of commencement of work letter; • Assist in analysis of contractor's work plan; • Assist in inspection of contractors Housing / Camp; • Verify contractor's insurances, BGs and IPCs; • Analyze claims and assist in dispute resolution; • Assist in preparation of Variation Orders; • Assist in preparation of reports; • Assist in issue of completion reports and DLP and; • Maintain accurate record of IPCs & measurements.
M A Momin Khondaker	EPC	Environmental Management	Environmental Engineer	<ul style="list-style-type: none"> • Review and Familiarization with Project Environmental Management Plan (EMP); • Review the Resettlement Action Plan (RAP) and its Implementation Status; • Coordinate Shifting of Existing Utility Services Status; • Prepare Standard Formats for Progress Reports; • Check Traffic and Safety Arrangements During Construction; • Advise Project Director for Coordination with other Related Local Authorities when required; • Monitor Implementation of Environmental Mitigation Plan and; • Assist in preparation of Reports.
Mustafa Kamal	EPC	Electrical Engineering	Electrical Engineer	<ul style="list-style-type: none"> • To ensure that Electrical works are carried out in accordance with the plan; • To check quality of electrical item samples and recommend for approval; • To check quality of materials brought for use; • To check electrical works during execution; • To test functioning of the system periodically and on completion;
Md. HumayanKabir	EPC	Sociology	Social Impact	<ul style="list-style-type: none"> • Review the Resettlement Action Plan (RAP)



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
			Specialist	<p>and its Implementation Status;</p> <ul style="list-style-type: none"> • Prepare Standard Formats for Progress Reports, etc.; • Monitor acquisition of land; • Watch payment of compensation to owners; • Monitor resettlement of displaced people and implementation of the plan and; • Advise Project Director for Coordination with other Related Local Authorities when required.
Md. Iqbal Hossain	EPC	Quantity Surveying Expert	Quantity Surveyor	<ul style="list-style-type: none"> • Prepare Standard Formats for Progress Reports; • Check and Verify Measurements of Works; • Regular Review of Bill of Quantities and Advise Team Leader on Estimated Cost of works; • Scrutinize Interim and Final Payments; • Maintain Accurate Records of all Measurements and Bills; • Assist in Issue of Final Payment Certificate and; • Carry out any other duty assigned by the T.L.
Mohammad Fazlur Rahman	EPC	Civil Engineering	Resident Engineer	<ul style="list-style-type: none"> • Assist in handing over site to the contractor; • Review the design and drawings prepared by the contractor and recommend / modification, if any to Team Leader; • Issue of all detailed working drawings to the contractor; • Supervision, scrutiny, and approval of the final setting out by the contractor; • Assist in updating drawings, setting up of quantity and quality control procedures and review of contractor's method of construction; • Directly responsible for the construction supervision of Project works as per stipulated specifications, standards, contract, etc.; • Keep proper records of the contractor's activities and progress by maintaining of Project Diary; • Assisting the Team Leader in reviewing contractor's work program and performance of contractor's plant, equipment and machinery; • Coordinate with the concerned authorities for shifting of various utilities, if any; • Strictly monitor the progress of work for timely completion of the project; • Direct the contractor to carry out all such work or to do all such things as may be necessary to avoid or reduce the risk in case of any emergency affecting the safety of life and / or



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
				<ul style="list-style-type: none"> • works / adjoining property; • Issue site instructions; • Assist in the preparation of variation orders and evaluation of contractors claims; • Maintain a record set of working drawings; • Maintain construction records; • Quality control of works: verification of lines and levels, inspection of works, acceptance and rejection of the completed works; • Assist in conduct and preparation of minutes of the site meetings; • Compilation and verification of "As-Built Drawings", and assist in preparation of Contract Completion Reports; • Verify and submit the as-built drawings supplied by the contractor for approval of Team Leader; • Monitor the implementation of environmental management plan; • Maintain records, working drawings, as-built drawings, test data, details of variations, correspondence and daily site diary in the approved / specified formats and; • Assist in preparation and submission all reports.
Md. Shahidur Rahman Joarder	EPC	Civil engineering, material investigation, testing	Material and Quality Control Engineer	<ul style="list-style-type: none"> • Study and Review Contract Documents and Other Relevant Reports; • Assist to Prepare Standard Formats for Progress Reports, Lab Testings etc.; • Assist in Establishing Quality Assurance and Preventive Supervision System; • Assist in Inspection and Approval Materials Proposed by Contractor for Incorporation in Works; • Assist in Review and Approval Contractor's Construction Methodology; • Supervision Construction Works and Stage Approval; • Supervision of Quality Control Measures; • Carry out Tests on Soils, Material, Mixes for Compliances with Specifications and their Approval; • Identify Renewal / Rectification of Sub-standard Works and Unsatisfactory Materials and make proposal; • Inspect Contractor's Laboratory Equipments; • Maintain Accurate Records of all Quality Control Tests including Rejected Works and;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
AZM Nuran Nabi Khan	EPC	Hydrology / hydraulic Engineering	Hydraulic / RT Engineer	<ul style="list-style-type: none"> • Assist in Preparation of Monthly Progress Reports. • Assisting Senior Hydraulic / RT Engineer and carry out duties as assigned and in his absence; • Study and Review Contract Drawings and Other Relevant Reports; • Assist to Establish Quality Assurance and Preventive Supervision System; • Assist to Review and Recommend Contractor's Construction Methodology; • Supervision of Construction Works and Stage Approval; • Supervision Quality Control Measures; • Recommend Renewal / Rectification of Sub-standard Works and Unsatisfactory Materials; • Make Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval; • Carry out Design; Prepare Drawings and Technical Specifications as Supplementary Information; • Review Working Drawings and make recommendations; • Inspect Contractor's Plants and Machinery; • Monitor Progress and Contractor's Work Plan; • Maintain Accurate Records of all Quality Control Tests including Rejected Works; • Review & process "As-Built-Drawings" for approval and; • Assist in Preparation of Monthly Progress Reports.
Md. Masudur Rahman Md. Ataur Rahman	EPC	Structural engineering,	Bridge Engineer - 1 Bridge Engineer - 2	<ul style="list-style-type: none"> • Assist Senior Bridge Engineer in his work and carry out works as assigned and in his absence; • Study and Review Contract Documents and Other Relevant Reports; • Assist to Coordinate Shifting of Existing Utility Services Status; • Assist to Prepare Standard Formats for Progress Reports, etc.; • Assist to Establish Quality Assurance and Preventive Supervision System; • Assist to Review and Monitor Contractor's Mobilization Plan and monitor Implementation; • Check and recommend Contractor's Setting out of Works for bridges;



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
				<ul style="list-style-type: none"> • Make Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval; • Assist in Carrying out Design; Prepare Drawings and Technical Specifications as Supplementary Information; • Inspect and process approval of Materials Proposed by Contractor for Incorporation in Works; • Review and recommend Contractor's Construction Methodology; • Supervision of Construction Works and Stage Approval; • Supervision of Quality Control Measures; • Carry out Tests on Material and Mixes for Compliances with Specifications and their Approval; • Check Traffic and Safety Arrangements During Construction; • Review Contractor's Work Program and Working Drawings for approval; • Inspect Contractor's Plants, Machinery and Laboratory Equipments; • Assist in Preparation of Monthly Progress Reports; • Maintain Accurate Records of all Quality Control Tests including Rejected Works; • Review and process to submit "As-Built-Drawings".
S.M. Masoodur Rahman	EPC	Geotechnical Engineering – Geotechnical and Sub soil Investigations and Testing	Foundation Engineer	<ul style="list-style-type: none"> • Assisting Senior Foundation Engineer and carry out duties as assigned and in his absence; • Study and Review Contract Drawings and Other Relevant Reports; • Assist in Establishing Quality Assurance and Preventive Supervision System; • Assist for Review and Monitor Contractor's Mobilization Plan and Ensure Implementation; • Check Contractor's Setting out of Works; • Assist for Review and Approve Contractor's Construction Methodology; • Assist Senior Foundation Engineer in Supervision Construction Works and Stage Approval; • Assist for Supervision of Quality Control Measures; • Recommend Renewal / Rectification of Sub-



Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
				<ul style="list-style-type: none"> standard Works and Unsatisfactory Materials; • Review Contractor's Work Program and Working Drawings; • Inspect Contractor's Plants and Machinery; • Assist in Making Proposals for required Modifications in Design and Construction Details to Suit Field Conditions and Issue Amendments on Approval; • Carry out Design; Prepare Drawings and Technical Specifications as Supplementary Information; • Monitor Progress vis-a-vis and Contractor's Work Plan; • Maintain Accurate Records of all Quality Control Tests including Rejected Works; • Review and recommend "As-Built-Drawings" and; • Assist in Preparation of Monthly Progress Reports.
Md.Kamal Hossain Md. Shamsul Haque	EPC	Civil Engineering	Junior Engineer-1 Junior Engineer-2	<ul style="list-style-type: none"> • Assist the Resident Engineers in:- • Supervision and monitoring of road and bridge works and check the quality of works and execution as per the specifications of contract; • Measurement of all road and bridge works; • Checking of 'as built drawings'; • Checking the entire alignment layout of the works, verify all the survey points, topography, check points of intersection for horizontal control and all benchmarks for grade control, etc.; • Assist in supervision and monitoring of road and bridge works and check the quality of works and execution as per the specifications of contract and carry out measurement of works;



APPENDIX-5:
DUTIES OF THE CLIENT



DUTIES OF THE CLIENT

- 5-1 The Client will provide the following vehicles for site supervision through Civil Work Contracts during construction-supervision phase:

<u>Vehicle type</u>	<u>nos</u>
Car	02
Jeep	03
Pick-up	02
Microbus	01
Motorcycle	02
Speed Boat	02

Note: The Consultants will have to rent the vehicles during design phase.

Limited site residential accommodation for the local personnel, furnished site office facilities, office equipment, furniture, communications, equipment related to surveys and laboratory testing, skilled and unskilled labour will be provided through the civil works contract during construction phase. During design phase, the consultant will have to rent office accommodation, hire office equipment, furniture, software, supplies or other facilities required to carry out the work.

The Client will help to provide the following inputs:

- i) Work permits and such other documents as shall be necessary to be enable Consultants, sub-consultants or personnel to perform the services;
- ii) Arrange for the personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in Bangladesh as per prevailing rules and procedures;
- iii) Facilities for prompt clearance through customs of any property required for the services and the personal effects of the personnel and their eligible dependents;
- iv) Issue to officials, agents and representative of the Government all such instructions as may be necessary of appropriate for the prompt and effective implementation of the Services.



APPENDIX-6:
Form of Bank Guarantee for Advance Payment



Bank Guarantee for Advance Payment

[this is the format for the Advance Payment Security to be issued by a scheduled bank of Bangladesh in accordance with GCC Clause 52.1]

Contract No:

Date:

To:

[Name and address of Client]

ADVANCE PAYMENT GUARANTEE No:

We have been informed that [name of Consultant] (hereinafter called "the Consultant") has undertaken, pursuant to Contract No [reference number of Contract] dated [date of Contract] (hereinafter called "the Contract") for the delivery of [description of consulting services] under the Contract.

Furthermore, we understand that, according to the conditions of Contract an Advance Payment(s) in the sum of ----- [amount in figures] (----- ----) [amount in words] is to be made against an advance payment guarantee. At the request of the Consultant, we [name of bank] hereby irrevocably undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk [insert amount in figures and in words] upon receipt by us of your first written demand accompanied by a written statement stating that the Consultant is in breach of their obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

We further agree that no change, addition or other modification of the terms of the Contract to be performed, or of any of the Contract documents which may be made between the Client and the Consultant, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee is valid until [date of validity of guarantee], consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature

Signature



ANNEXURE-A:
MINUTES OF MEETING FOR CONTRACT NEGOTIATION



Government of the People's Republic of Bangladesh
Office of the Additional Chief Engineer
Bridge Management Wing
Sarak Bhaban, Ramna, Dhaka
Phone: 02 9562 003
email: acebmw@rhd.gov.bd

Memo No. Q-228/229-23

Date: 29.5.13

To

ICT-Kunhwa-NARCO-EPC Joint Venture

(Intercontinental Consultants and Technocrats Pvt. Ltd, India in joint venture with Kunhwa Consulting & Engineering Co. Ltd, Korea, Dr. Nabeel Abdul-Raheem Consultants, Kuwait and Engineering and Planning Consultants Ltd., Bangladesh)

A-8, Green Park, New Delhi 110016, India

(Attention: Mr. Saurabh Khanna, President)

Sub: Selection of Consulting Firm for design and construction-supervision of Paira Bridge (Lebukhali Bridge) over the river Paira on Barisal-Patuakhali Road, Bangladesh

Negotiation Meeting

Dear Sir,

The undersigned has the pleasure to inform you that your Firm (**ICT-Kunhwa-NARCO-EPC Joint Venture**) has become the 1st Ranked in the combined Technical and Financial Evaluation of the Proposals.

The Negotiation Meeting on Technical and Financial Proposals shall commence on **20 June 2013 at 03.00 pm** at the Chief Engineer's Conference Room, 1st Floor, Block-A, Sarak Bhaban, Ramna, Dhaka.

You are, therefore, requested to send your authorized representatives along with the letter of authorisation to attend the Negotiation Meeting on time.

Thanking you.


(Md. Saidul Hoque)
Additional Chief Engineer (ce)
Bridge Management Wing
Sarak Bhaban, Ramna, Dhaka
&

Chairperson, Proposal Evaluation Committee



**Minutes of the Negotiations Meeting held on 20th June 2013 on Technical and Financial
Proposal of Consultancy Services for Design and Construction Supervision of the Paira
Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh**

The Proposal Evaluation Committee (PEC), for Consultancy Services of Design and Construction Supervision of Paira Bridge (Lebukhali Bridge) over the river Paira conducted the contract negotiations with the consulting firm, **ICT-Kunhwa-NARCO-EPC Joint Venture** on 20-06-2013 at 10:30 a.m. in the Conference Room of Chief Engineer, RHD under the Chair of Mr. Md. Saidul Hoque, Additional Chief Engineer, Bridge management Wing of RHD and Chairman of the Evaluation Committee. The attendance of the PEC members and authorized representatives of the consultant and related correspondences are shown in **Annexure-A**.

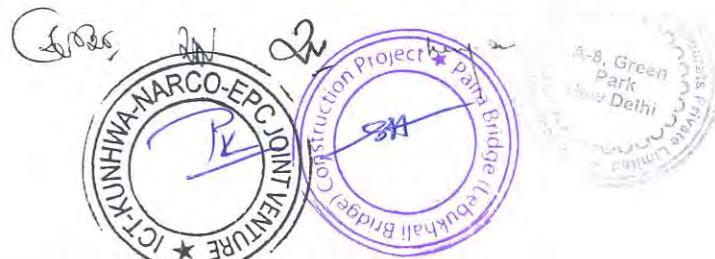
At the outset, the Chairperson welcomed the participants and introduced the members of the PEC and the representative of the consultants. Then the consultant had submitted the letter of authorization for Mr. K. K. Kapila, CMD, ICT Pvt. Ltd., India as authorized representative for **ICT-Kunhwa-NARCO-EPC JV** to conduct the negotiations for the proposal. Copies enclosed as **Annexure-B**.

1.0 Technical Negotiation

- 1.1 The chairman opened the discussions explaining the background of evaluation and informed that the consultants **ICT-Kunhwa-NARCO-EPC JV** ranked first after evaluation of all proposals following QCBS selection process in accordance with the Request for Proposal (RFP) for the project. The meeting was further informed that the technical evaluation has now been concurred by KFAED and approved by the Chief Engineer, RHD.
- 1.2 Regarding training, it was agreed by Both PEC and the consultants that around eight (08) RHD engineers from Bridge Design unit would be trained for around 03 (three) weeks and the specific topic for this training will be the design of extradosed bridges. Regarding training of others officials, suitable module of the training programme will be worked out soon. It was also decided that the detail of training programme will be finalized during the project period in due consultation with RHD and the consultants.
- 1.3 Regarding replacement of certain CVs which were found technically non-acceptable during technical evaluation process in accordance with Clause 47.2 of ITC the consultants agreed to provide alternate CVs at the earliest.

2.0 Financial Negotiation

- 2.1 The PEC informed the consultants that the cost of Survey Engineer would be met from the proposed provision for the Topographic Survey and this suggestion was agreed by the consultants. No extra cost for Survey Engineer shall be provided.
- 2.2 During negotiation it was decided that two (2) items under 'Reimbursable Expenses in Design Phase (International)' and 'Reimbursable Expenses in Construction-supervision (International)' viz. '**Per diem for short-term expatriate personnel**' and '**Miscellaneous expenses for travel (visa, local transport, insurance etc)**' would be paid in US\$ and no receipt/voucher would be required for that.
- 2.3 About '**International Travel Cost**' under both 'Reimbursable Expenses in Design Phase (International)' and 'Reimbursable Expenses in Construction-supervision (International)', it was decided that this cost would be paid in US\$ as per actual cost of tickets up to the ceiling of agreed rate.



2.4 About 'Residential accommodation for long term expatriate personnel' under both 'Reimbursable Expenses in Design Phase (International)' and 'Reimbursable Expenses in Construction-supervision (International)', and 'Setting of Team Leader's house' under 'Reimbursable Expenses in Design Phase (International)', it was decided that payment would be made in equivalent local currency i.e. BDT, against invoice but not exceeding the rate.

2.5 The PEC and consultants agreed that the Taxes and VAT as applicable under the contract shall be billed by the Consultants and shall be deducted from consultant's invoice and paid by the client to the concerned tax authorities and the copies of the payment will be furnished to the consultants.

2.6 In case the Consultant loose the Case under Writ Petition No. 741 of 2009, as per final verdict of the Competent Court, the penalized amount vide letter, Memo No. Road – 207/02-642 (4) CE dated 11/12/08 of CE, RHD would be adjusted from this project.

Since there were no other agenda, the meeting ended with a vote of thanks by the Chair.

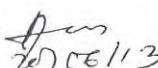
The above minutes of the meeting have been signed by the PEC members and the consultants to confirm their agreement on various issues discussed and agreed during the negotiation.



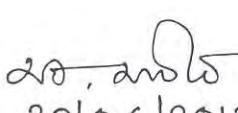
(Md. Saidul Hoque)
Additional Chief Engineer
(c.c.), RHD
Bridge Management Wing
Sarak Bhaban, Ramna,
Dhaka
&
Chairperson, PEC



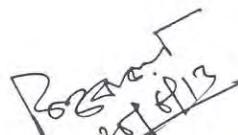
(K K Kapila)
Chairman and Managing Director
Intercontinental Consultants and
Technocrats Pvt. Ltd
A-8, Green Park, New Delhi -110016,
India
&
Authorized signatory of the
ICT-Kunhwa-NARCO-EPC JV



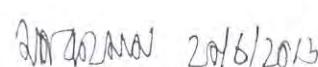
20/06/13
(A. S. M. Elias Shah)
Executive Engineer, RHD
Planning and Design
Division, Dhaka zone
&
Member-Secretary, PEC



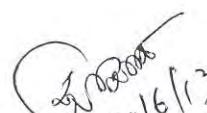
20/06/2013
(Md. Ahsan Habib)
Executive Engineer, RHD
Contract Evaluation Division
Sarak Bhaban, Ramna, Dhaka
&
Member, PEC



20/06/13
(Hayat Md. Feroze)
Executive Engineer, PWD
Project Division-5,
Purta Bhaban, Segunbagicha, Dhaka
&
Member, PEC



20/06/2013
(Md. Shafiqur Rahman)
Executive Engineer, LGED,
IRIDP
LGED Headquarters, Dhaka
&
Member, PEC



20/06/13
(Md. Ashraful Alam)
Superintending Engineer, RHD
Bridge Design Circle, Sarak
Bhaban, Ramna, Dhaka
&
Member, PEC



20/06/13
(Md. Afil Uddin)
Superintending Engineer, RHD
HDM Circle, Sarak Bhaban, Ramna,
Dhaka
&
Member, PEC





Intercontinental Consultants and Technocrats Pvt. Ltd.

EXTRACT FROM THE MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF INTERCONTINENTAL CONSULTANTS AND TECHNOCRATS PRIVATE LIMITED HELD ON 18th JUNE 2013 AT THE CONFERENCE HALL, A-8, GREEN PARK, NEW DELHI.

"RESOLVED that Mr. Kiran Kumar Kapila, Chairman and Managing Director is fully authorized to negotiate / sign / execute Contracts / Agreements, etc. on behalf of the Company both in India and abroad. He is also authorized to carry out such other administrative activities like entering into Joint Venture Agreements, etc. and signing various tenders / proposals being submitted by the Company to various Department and Authorities from time to time".

Further resolved that Mr. K.K. Kapila, Chairman and Managing Director is hereby authorized to deal with letters, including bills / invoices, and receipts for receiving payments on behalf of the Company.

Date: 18th June, 2013

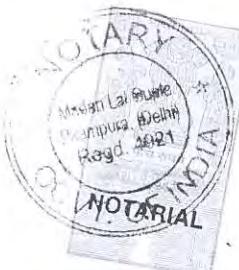
Sonu
keyee
(A. D. Narain)
Director



Specimen signature of Mr. K. K. Kapila

Attested

Sonu
(A. D. Narain)
Director



ATTESTED

NOTARY PUBLIC (DELHI)

VALID OUTSIDE INDIA

18 JUN 2013

*My Commission Expires
on - 21/1/2017*



Innovative, Creative & Technologically Sustainable Infrastructure Solutions

Head Office
A-8, Green Park,
New Delhi-110016, INDIA

Telephone
91-11-40863000

Fax No.
91-11-26565252

E-mail:
contracts@ctonline.com
Internet:
<http://www.ctonline.com>





مكتب
الدكتور نبيل جعفر عبد الرحيم
لإستشارات الهندسية

Letter of Authorization

The undersigned, **Dr. Nabeel Abdul-Raheem**, Chairman and Managing Director of Dr. Nabeel Abdul-Raheem Consultants (hereinafter referred to as "NARCO") with main office at:

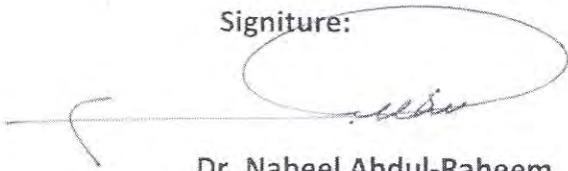
Al Safwa Building
12th Floor
Mubarak Al Kabeer Street
Murgab, Kuwait
(P.O. Box: 38955, Daha Abdulla Al-Salem. Kuwait 72254)
Tel: (965) 97878008

Declares that for the Project:

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over River Paira on Barisal Patuakhali Road, Bangladesh

NARCO authorize the Chairman and Managing Director of ICT, Mr. K.K.Kapila, to attend the negotiation meeting on the 20th of June in Dhaka.

Signature:



Dr. Nabeel Abdul-Raheem

Chairman and Managing Director

NARCO
Dr. Nabeel Abdul-Raheem Consultants
مكتب
الدكتور نبيل جعفر عبد الرحيم
لإستشارات الهندسية

P.O.Box 38351 Daha Abdulla Al-Salem, State of Kuwait 72254

Tel: (+965) 22470852 - Fax: (+965) 22470853 E-mail: business@narco-kw.com



EPC

ENGINEERING & PLANNING CONSULTANTS LTD.

7/4, BLOCK-A, LALMATIA, G.P.O. BOX NO.-3815, DHAKA-1207, BANGLADESH

PHONE : 8110221, 9113772

9129904, 9114631

FAX : 880-2-8114154

E-mail : epc@epc-bd.com

admin@epc-bd.com

www.epc-consultants.org

18 June 2013

To
Mr. Md. Saidul Hoque
Additional Chief Engineer (cc)
Bridge Management Wing
Sarak Bhaban, Ramna, Dhaka
&
Chairperson, Proposal Evaluation Committee.

Sub: "Contract Negotiation" in connection with Selection of Consulting Firm for design and construction-supervision of Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal-Patuakhali Road, Bangladesh

- Authorization

Dear Sir,

We, Engineering & Planning Consultants Ltd. (EPC), do hereby authorize Mr. K. K. Kapila, Chairman and Managing Director of Intercontinental Consultants and Technocrats Pvt. Ltd. (ICT), India as the 'Authorized Representative' of the ICT-Kunhwa-NARCO-EPC Joint Venture to attend the negotiation meeting on Technical and Financial Proposals which shall commence on 20 June 2013 at 10.30 AM (earlier 3.00PM) at the Chief Engineer's Conference Room, 1st Floor, Sarak Bhaban, Ramna, Dhaka. The letter of authorization has been sent in compliance to your letter, memo no. 5-154/157- Bridge dated June 17, 2013.

Sincerely yours,



Md. Abdul Wadud Bhuiyan
Director





세화공증인합동사무소

[41호 서식]

Registered NO. 2013 - 31085

NOTARIAL CERTIFICATE

SEHWA JOINT NOTARY'S OFFICE

6-3,1-Ga Namsan-Dong ,Chung-ku,Seoul, Korea

23230-05311 일
90.11.26 승인

210mm×297mm 인쇄용지(특급) 70g/m²

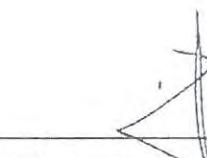


[18th June, 2013]

Letter of Authorization

KNOW ALL MEN BY THESE PRESENTS: That we, Kunhwa Engineering & Consulting Co., Ltd. (hereinafter referred to as "Kunhwa"), a duly organized and existing under the laws of Republic of Korea, having its principal office at Heungan-daero 427 beon-gil, Dongan-gu, Anyang City, Gyeonggi-do, Korea, do hereby appoint Mr. K. K. Kapila, Chairman and Managing Director of Intercontinental Consultants and Technocrats Pvt., Ltd., as our Authorized Representative of the Joint Venture to enter into contract negotiation for Consultancy Service for "**Design and Construction-Supervision of the Paira Bridge (Lebukhali Bridge) over the river Paira on Barisal-Patuakhali Road, Bangladesh**"

IN WITNESS WHEREOF, the undersigned has executed this Letter of Authorization on 18th June 2013.


Choi, Jin Sang
President
Kunhwa Engineering & Consulting Co., Ltd.




서울특별시 중구 남산동1가
6-3 창영빌딩 201호

세화공증인합동사무소

(전화) 02-3481-4451
(팩스) 02-3481-4453

[43호 서식]

등부 2013년 제 31085 호

Registered No. 2013 - 31085

인 증

NOTARIAL CERTIFICATE

위
예 기재된
(주)건화
대표이사 최진상

Kim, Eun Hee
attorney-in-fact of
Kunhwa Engineering & Consulting CO.,Ltd
President / Choi Jin-Sang

의 대리인 김은희 은

appeared before me and admitted
said principal's subscription to
the attached

본 공증인의 면전에서 위 본인이
서명날인한 것임을 확인하였다.

Letter of Authorization

2013년 6월 19일
이 사무소에서 위 인증한다.

This is hereby attested on this
19th day of Jun-2013 at this office.

세화공증인합동사무소
소속 서울중앙지방검찰청
주소: 서울특별시 중구 남산동1가 6-3

SEHWA JOINT NOTARY'S OFFICE
Seoul District Prosecutor's Office
6-3,1-Ga Namsan-Dong ,Chung-ku,Seoul, Korea

공증담당변호사
이원섭

본 사무소는 법률 제 2011-129호에 의거하여
2012년 9월5일 법무부 장관으로부터
공증인 업무를 행할 것을 인가 받았다.

Signature of the Notary Public
LEE WON SUB

This office has been authorized by
the Minister of Justice, the Republic of
Korea, to act as Notary Public Since
5th. Sep. 2012 Under Law No.2011-129



Government of the People's Republic of Bangladesh
Office of the Additional Chief Engineer
Bridge Management Wing
Tejgaon, Dhaka
Phone: 02 8879329
email: acebmw@rhd.gov.bd

Memo No. 204-Bridge

Date: 05 September, 2013

To

ICT-Kunhwa-NARCO-EPC Joint Venture

(Intercontinental Consultants and Technocrats Pvt. Ltd, India in joint venture with Kunhwa Consulting & Engineering Co. Ltd, Korea, Dr. Nabeel Abdul-Raheem Consultants, Kuwait and Engineering and Planning Consultants Ltd., Bangladesh)

A-8, Green Park, New Delhi 110016, India

(Attention: Mr. Saurabh Khanna, President)

Sub: Selection of Consulting Firm for design and construction-supervision of Paira Bridge (Lebukhali Bridge) over the river Paira on Barisal-Patuakhali Road, Bangladesh

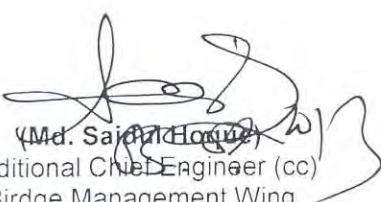
Negotiation Meeting

Dear Sir,

The Negotiation Meeting on Technical and Financial Proposals shall resume on **08 September 2013 at 03.00 pm** at the office of the Additional Chief Engineer, Bridge Management Wing, 1st Floor, Tejgaon, Dhaka.

You are, therefore, requested to send your authorized representative to attend the Negotiation Meeting on time.

Thanking you.


(Md. Saiful Haque)
Additional Chief Engineer (cc)
Bridge Management Wing
Tejgaon, Dhaka
&

Chairperson, Proposal Evaluation Committee



Memo No. 204-Bridge/01(01)

Date: 05 September, 2013

Copy for favour of kind information to:

1. The Chief Engineer, Roads and Highways Department, Tejgaon, Dhaka.


(Md. Saidul Hoque)
Additional Chief Engineer (cc)
Bridge Management Wing
Tejgaon, Dhaka
&
Chairperson, Proposal Evaluation Committee.

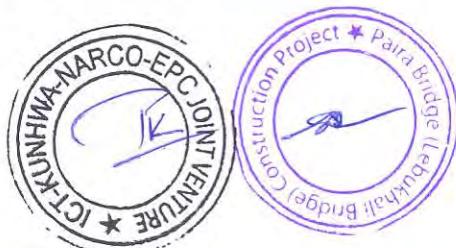
Memo No. 204/Bridge/02(07)

Date: 05 September, 2013

Copy with request to attend the Negotiation Meeting on time:

1. Project Director Paira Bridge (Lebukhali Bridge) Construction Project, Patuakhali, Dhaka.
2. Md. Afil Uddin, Superintending Engineer, RHD, HDM Circle, Tejgaon, Dhaka & Member, PEC
3. Md. Ashraful Alam, Superintending Engineer, RHD, Bridge Design Circle, Tejgaon, Dhaka & Member, PEC
4. Md. Shafiqur Rahman, Executive Engineer, LGED, LGED Headquarters, Dhaka, & Member, PEC
5. Hayat Md. Feroze, Executive Engineer, PWD, Project Division-5, Purta Bhaban, Segunbagicha, Dhaka, & Member, PEC
6. Md. Ahsan Habib, Executive Engineer, RHD, Contract Evaluation Division, Tejgaon, Dhaka, & Member, PEC
7. A. S. M. Elias Shah, Executive Engineer, RHD, Planning and Design Division, Dhaka zone, & Member-Secretary, PEC


(Md. Saidul Hoque)
Additional Chief Engineer (cc)
Bridge Management Wing
Tejgaon, Dhaka
&
Chairperson, Proposal Evaluation Committee



Minutes of the Negotiations Meetings held on 8th & 9th September 2013 on Technical and Financial Proposal of Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

The 2nd negotiation meeting on Technical and Financial Proposal in connection with the selection of Consulting Firm for Design and Construction Supervision of Paira Bridge (Lebukhali Bridge) over the river Paira was held on 8th September 2013 at 15:30 hrs. and on 9th September 2013 at 9:30 hrs in the office of Mr. Md. Saidul Hoque, Additional Chief Engineer, Bridge Management Wing of RHD and Chairman of the Evaluation Committee under his chair. The list of Participants attended the meeting is enclosed as Annexure-A

1.0 Complaint

At the outset, the Chairperson welcomed the participants and gave a brief account about the developments in the intervening period. He informed that the delayed holding of this meeting is due to a complaint lodged by BCL-TAEP-KEI-STUP JV against particular documents submitted by ICT-Kunhwa-NARCO-EPC JV related to design experience of extradosed bridges of ICT. The complaint was verified and scrutinized with the client NHAI (National Highways Authority of India) through High Commission of Bangladesh in New Delhi and was found incorrect.

2.0 Technical Negotiation

2.1 Regarding replacement of CVs which could not secure qualifying marks during technical evaluation process, the consultants had proposed replacement of CVs which were evaluated and found acceptable. The following positions were replaced:

Table 01: Replaced Professionals

Sl No	Positions	Professionals with Original Proposal	Replaced Professionals after negotiation
Local Staff For Both Phases (Design and Supervision)			
2(c)	Environmental Engineer	Rita Sutradhar	M A Momin Khondakar
2(f)	Quantity Surveyor	Md. Ashfaqul Jalil	Md. Iqbal Hossain
Local Staff For Design Phase			
4(b)	Highway Design Engineer	Md. Mahboob Hussain	Mohammed Shahjahan
4(c)	Structural Design Engineer	Dabir Uddin	Prodip Kumar Saha
4(d)	Foundation / Geotechnical Engineer	Md. Jahedul Islam	Md. Tajuddin
International Staff For Construction Supervision Phase			
5(e)	O & M Specialist	Sukanta Chattopadhyay	Gautam Chattopadhyay
Local Staff For Construction Supervision Phase			
6(a)	Resident Engineer	Md. Abdul Muttalib	Mohammad Fazlur Rahman
6(c)	Hydraulic/RT Engineer	S.M. Azizul Hoque	A.Z.M. Nuran Nabi Khan
6(d)	Bridge Engineer – 01	Md. Akhtar Hossain	Md. Masudur Rahman
6(d)	Bridge Engineer – 02	Md. Azim Hossain	Md. Ataur Rahman
6(e)	Foundation Engineer	Md. Jahedul Islam	S.M. Masoodur Rahman

2.2 During evaluation it came to the notice of the PEC that Mr. Baldev Raj Suri, proposed by ICT-Kunhwa-NARCO-EPC Joint Venture as Senior Contract Specialist, was debarred to work in any RHD project for 5 years since 11 December 2008. ICT-Kunhwa-NARCO-EPC Joint Venture was requested vide PEC Chairperson's memo no 88-BMW dated 04 April 2013 to clarify whether Mr Suri was still in debarment or not. ICT-Kunhwa-NARCO-EPC Joint Venture vide their memo no ICT:341:ADN:4777 dated 05 April 2013 responded with supporting documents that the debarment order of the Chief Engineer, Roads and Highways Department was stayed by the High Court of Bangladesh initially for 3 months on 03 February 2009 and on 11 October 2010 the stay order was extended till disposal of the rule. All these correspondences are appended to Annexure-B. Since



the matter is still subjudice, the consultant and the PEC mutually agreed to replace Mr. Baldev Raj Suri to avoid any future complicity. During the negotiation meeting, the consultant had proposed a replacement for this position which was evaluated and found acceptable by PEC. The details are as follows:

Table 02: Replacement of Sr. Contract Specialist

Sl. No	Positions	Professionals with Original Proposal		Replaced Professionals after negotiation	
		Name	Score	Name	Score
International Staff For Both Phases (Design and Supervision)					
1(b)	Sr. Contract Specialist	Baldev Raj Suri	4.20	Suresh Nagesh	4.52

2.3 The chairman then requested the Consultants to confirm availability of their Key Personals in the proposal especially those who's CVs were evaluated in the Technical Evaluation of their proposal. The Consultants confirmed the availability of all their Key Personnel named in the proposal except for Mr. Md. Matiur Rahman, Contract Engineer. During negotiation the consultants proposed the name of Mr. Md. Nurul Islam as a replacement. The CV of the proposed replacement was reviewed by the PEC and was found acceptable. The scoring of the both original and replacement professionals are as follows:

Table 03: Replacement of Contract Engineer

Sl. No	Positions	Professionals with Original Proposal		Replaced Professionals after negotiation	
		Name	Score	Name	Score
Local Staff For Both Phases (Design and Supervision)					
1	Contract Engineer	Md. Matiur Rahman	1.67	Md. Nurul Islam	1.82

3.0 Financial Negotiation

3.1 The Chairperson of the PEC informed the members and the consultants that according to the government desire all PDs' office will be located at the project site. This point was discussed at the meeting by all the attendees and consent was given on that issue. Accordingly, the Team Leader of the project eventually will have to work at the project site office. But a liaison office at Dhaka will be maintained to facilitate PD/Team Leader work with RHD and the Ministry. Further it was agreed to reduce certain expenses during design phases. So the financial proposal was amended in light of this. Following are the list of reimbursable expenses which have been revised as an outcome of the negotiation.

Table 04: Reimbursement expenses of Revised Items

			Original Proposal			Negotiated proposal		
Reimbursable Expenses in Design Phase (National)								
Sl. No.	Description	Unit	Unit Cost	Quantity	Total Amount	Unit Cost	Quantity	Total Amount
			BDT		BDT	BDT		BDT
4	Rental office accommodation including all furniture, equipment software, consumables,	Month	200,000	9	1,800,000	200,000	6	1,200,000



	utility charges, security, etc							
6c	Support Staff							
	ii) Accountant	Month	30,000	9	270,000	30,000	6	180,000
	v) Photocopy Machine Operator	Month	12,000	9	108,000	12,000	6	72,000
	vi) Office Assistant, Messenger, etc (2 nos)	Month	12,000	18	216,000	12,000	12	144,000

Reimbursable Expenses in Construction Supervision Phase (National)

4	Rental office accommodation including all furniture, equipment software, consumables, utility charges, security, etc (Dhaka Liaison Office)	Month	170,000 (For TL's Dhaka Office)	33	5,610,000	35,000	33	1,155,000
5	Support Staff (Dhaka Liaison Office)							
	ii) Accountant	Man-Month	32,000	36	1,152,000	32,000	0	0
	iii) Computer Operator	Man-Month	30,000	36	1,080,000	30,000	0	0
	iv) CAD Operator	Man-Month	35,000	12	420,000	35,000	0	0
	v) Photocopy Machine Operator	Man-Month	12,500	36	450,000	12,500	0	0
	vi) Office Assistant, Messenger, etc (2 nos)	Man-Month	12,500	72	900,000	12,500	0	0
	for Field Office							
	iii) CAD Operator	Man-Month	38,000	12	456,000	38,000	18	684000

3.2 The inputs of Sr. Contract Specialist and Contract Engineer have been rationalized. After discussion with the consultants the man-month inputs were revised as follows:

Table 05: Revised man-month input

Sl. No	Position	Staff months	
		Original Proposal	Negotiated Proposal
International Staff (Design Phase)			
1	Sr. Contract Specialist	4.00	3.50



International Staff (Construction Supervision Phase)			
2	Sr. Contract Specialist	15.00	14.00
Local Staff (Construction Supervision Phase)			
3	Contract Engineer	32.00	28.00

3.3 The Consultants revised the Financial Proposal and Technical proposal taking into account the decisions made in the negotiation meetings. The detail of the negotiated cost is attached as Annexure C. The Summary of Consultancy Costs showing the Original Costs as well as Negotiated Costs is presented below.

Table 06: Summary of costs

Sl. No.	Cost Component	Costs					
		Original Amount			Negotiated Amount		
Group of Activities : Design Phase							
		US\$	BDT	Equivalent BDT	US\$	BDT	Equivalent BDT
A	Remuneration	258,500	6,515,000		253,500	6,515,000	
B	Reimbursable Expenses	61,600	8,961,500		61,600	8,163,500	
	Subtotals (A+B)	320,100	15,476,500		315,100	14,678,500	
Group of Activities : Construction Supervision Phase							
C	Remuneration	1,141,000	32,300,000		1,130,000	31,700,000	
D	Reimbursable Expenses	145,300	43,197,500		145,300	34,968,500	
	Subtotals (C+D)	1,286,300	75,497,500		1,275,300	66,668,500	
E	Totals (A+B+C+D) (excluding VAT & IT)	1,606,400	90,974,000	218,682,800	1,590,400	81,347,000	207,783,800
F	VAT @15%		32,802,420			31,167,570	
G	Income Tax @10%		21,868,280			20,778,380	
	Total Amount (including VAT & IT)	1,606,400	145,644,700	273,353,500	1,590,400	133,292,950	259,729,750

US\$ = United States Dollar, BDT = Bangladesh Taka

1 US\$ = 79.5 BDT (Exchange rate as per Bangladesh Bank on 17 January, 2013)

Finally the negotiated amount excluding VAT & Income Tax is US\$ 1,590,400.00 and BDT 81,347,000.00 (equivalent to total BDT 207,783,800) instead of quoted amount (excluding VAT & Income Tax) US\$ 1,606,400.00 and BDT 90,974,000.00 (equivalent to BDT 218,682,800) has been recommended by the PEC.



Eventually the final negotiated amount for the above consultancy services stands to US\$ 1,590,400.00 and BDT 133,292,950.00 equivalent to total BDT 259,729,750 Including VAT & Income Tax of BDT 51,945,950.00

Since there was no more agenda the meeting ended with vote of thanks by the Chair.

(Md. Saidul Hoque)

Additional Chief Engineer
(c.c), RHD
Bridge Management Wing
Sarak Bhaban, Tejgaon,
Dhaka
&
Chairperson, PEC

Kapila
(K K Kapila)

Chairman and Managing Director
Intercontinental Consultants and
Technocrats Pvt. Ltd
A-8, Green Park, New Delhi -110016,
India

&
Authorized signatory of the
ICT-Kunhwa-NARCO-EPC JV

(A. S. M. Elias Shah)

Executive Engineer, RHD
Planning and Design Division,
Dhaka zone
&
Member-Secretary, PEC

09/09/2013
(Md. Ahsan Habib)

Executive Engineer, RHD
Contract Evaluation Division
Sarak Bhaban, Tejgaon, Dhaka
&
Member, PEC

(Hayat Md. Feroze)

Executive Engineer, PWD
Project Division-5,
Putra Bhaban, Segunbagicha, Dhaka
&
Member, PEC

(Md. Shafiqur Rahman)

Executive Engineer, LGED,
IRIDP
LGED Headquarters, Dhaka
&
Member, PEC

09/09/2013
(Md. Ashraful Alam)

Superintending Engineer, RHD
Bridge Design Circle, Sarak
Bhaban, Tejgaon, Dhaka
&
Member, PEC

(Md. Afif Uddin)

Superintending Engineer, RHD
HDM Circle, Sarak Bhaban, Tejgaon,
Dhaka
&
Member, PEC



আপীল

রীট পিটিশন নং-৭৪১/২০০৯

নং

২০০

সুত্র : রঞ্জ

রিভিশন

District-Dhaka. Engineering and Planning Consultants Ltd

-VS-

Govt. of Bangladesh and others.

৫। যে তারিখের মধ্যে তথ্য প্রস্তুত থাকিতে হইবে :

উপরোক্ত রীট পিটিশন নং ৭৪১/০৯ মোকদ্দমায় মহামান্য হাইকোর্টে মামলার শুনানী না হওয়া পর্যন্ত স্থগিতাদেশ

বহাল আছে।

৬। তথ্য :

সরবরাহের তারিখঃ
২৮/৮/২০১০

তথ্য সরবরাহকারী অফিসারের স্বাক্ষর

স্ট্রাইলিংটেকনিকেট

লাইসারণ ও সংস্থাপন শাখা

ঝাঙ্গাদেশ মুগ্রীম কেট

পাইকাট পাইকাট, চাঁপা।

২৮/৮/১০

টীকা ৪— যে সকল মামলা বা আপীল সম্পর্কে তথ্য চাওয়া হইতেছে তাহা যদি মোহাফেজখানায় জমা প্রদান করা হইলে অনুসন্ধান ফি লাগিবে।

টীকা ৫— আপীল অথবা কার্যবিবরণীয় রেকর্ডের প্রয়োজনীয় তথ্য প্রাপ্তির জন্য মোহাফেজখানায় অনুসন্ধান আবশ্যিক হইলে সকল আবেদনের উপর অনুসন্ধান ফি দাবী করা হইবে।

[সম/বাবাকো/ভেটিং/ফ-৬১৩৯ তারিখ ১৩-৬-৯৩]

গড়নমেন্ট প্রিন্টিং প্রেস—কম্পিউটার শাখা-৯৫০/২০০৭-২০০৮/(ল)—০৯-০৮-২০০৮-২৫,০০০।





Intercontinental Consultants and Technocrats Pvt. Ltd.

ICT:341:ADN:৪৭৭

April 06, 2013

Md. Saidul Hoque,
Additional Chief Engineer (C.C), RHD,
Bridge Management Wing
&
Chairperson
Proposal Evaluation Committee,
Block – A, Room#310,
Sarak Bhaban, Ramna,
Dhaka – 1000, Bangladesh

Sub: Paira Bridge (Lebukhali Bridge) over the river Paira on Barisal – Patuakhali Road, Bangladesh – reg. Clarification on Proposal for Consultancy Services

Dear Sir,

This has reference to your letter No.88-BMW dated 04th April 2013 wherein you had requested us to clarify on the debarment of Mr. Baldev Raj Suri as Senior Contract Specialist.

In this regard, we would like to bring to your kind notice that a Petition is filed in the Supreme Court of Bangladesh, High Court Division (Special Original Jurisdiction) (Copy attached for ready reference) against which a stay order have issued by the Supreme Court of Bangladesh, High Court Division (Special Original Jurisdiction). A copy of the same is attached for your kind reference.

Since the case is pending before the Supreme Court of Bangladesh, High Court Division (Special Original Jurisdiction) and is still subjudice, we humbly request that the debarment of Mr. Baldev Raj Suri as Senior Contract Specialist need not be insisted upon. In view of the above, we request you to accept our proposal of Mr. 'Baldev Raj Suri as Senior Contract Specialist for the subject project.

Thanking you and assuring you of our highest consideration.

For Intercontinental Consultants
and Technocrats Pvt. Ltd.

(A.D.Narain)
President

Encl.: As above



Innovative, Creative & Technologically Sustainable Infrastructure Solutions

Head Office Telephone
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New Delhi-110016, INDIA

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contracts@ictonline.com Internet:
<http://www.ictonline.com>





16-02-09, 16-02-09, 16-02-09, 16-02-09, 16-02-09

IN THE SUPREME COURT OF BANGLADESH

HIGH COURT DIVISION

(SPECIAL ORIGINAL JURISDICTION)

WRIT PETITION NO. 741 OF 2009.

In the matter of

An application under Article 102 (2) (ii) of the Constitution of the Peoples' Republic of Bangladesh.

-And-

In the matter of

Engineering and Planning Consultants Limited (EPC) 74, Lalmatia, Block-A Dhaka-1297 Represented by its Managing Director Mr. Zeaul Huq Son of late A.M. Fazlul Wahab.

.....Petitioner.

-Versus-

1. Government of the People's Republic of Bangladesh, represented by the Secretary, Ministry of Communication Sachibaloy Bhavon, Ramna, Dhaka.

2. Chief Engineer Roads and High Ways Department (RHD) Ministry of Communication Sarak Bhaban, Ramna, Dhaka.

3. Project Director, RHD RS RP ADB Projects Sarak Bhaban, Ramna, Dhaka.

.....Respondents.

-And-

In the matter of:

Letter dated 11.12.2008 bearing Memo no. Road -207/02-642(4)CE issued by respondent no.2, the chief Engineer RHD Ministry of Communication debarring consulting personnel's of Intercontinental Consultants and Technocrats Pvt. Ltd. the Principal Consultant from working in any ongoing or future RHD Projects for a period of next 5 years and imposing fine of Tk. 50 Lacs against Consulting firms (1)





- 2 -

Intercontinental Consultants and Technocrats Pvt. Ltd (2) Engineering and Planning
Consultants Ltd (EPC) (3) Engineering Science Ltd. (ESL) and (4) Prokalpa
Upodesha Ltd. (PUL), herein after called Annexure-D.

Present:

Mr. Justice Syed Mahmud Hossam

-And-

Mr. Justice Quamrul Islam Siddiqui

The 2nd day of February, 2009.

Mr. Abdul Malek with

Mr. S. M. Shahjahan, for the petitioner.

Mr. Razik Al Johil, DAG for the respondents.

Let a Rule Nisi issue calling upon the respondents to show cause as to why the impugned letter contained in memo No. Road-207/02-642(4)CE dated 11.12.2008 (Annexure-D) issued under the signature of Respondent No. 2 should not be declared to have been made without lawful authority and is of no legal effect and/or such other or further order or orders passed as to this Court may seem fit and proper.

Pending hearing of the Rule, let the operation of the impugned memo dated 11.12.2008 (Annexure-D) be stayed for a period of 3(three) months from date.

The Rule is made returnable within 4(four) weeks from date

The petitioner is directed to put in requisites for service of notices upon the respondents in usual course and through registered post.

S. M. Hossain

Quamrul Islam Siddiqui

১৬/২
B.Banu 16.02.09

Read by _____
Exam by _____
Date 16/2/09

প্রত্যাখ্যান অধিকাল পত্রসমিতি

(Signature)

16.2.09



IN THE SUPREME COURT OF BANGLADESH
HIGH COURT DIVISION
(SPECIAL ORIGINAL JURISDICTION)

WRIT PETITION NO. 74/ OF 2009

IN THE MATTER OF:

An application under Article
102 (2)(ii) of the Constitution of the
Peoples Republic of Bangladesh.

A N D

IN THE MATTER OF:

Engineering and Planning
Consultants Limited (EPC)
7/4 Lalmatia, Block-A

Dhaka-1207

Represented by



Managing Director

Mr. Zeaul Huq

Son of Late A.M. Fazlul Wahab

.....Petitioner

- Versus -

1. Government of the People's
Republic of Bangladesh.
represented by the Secretary
Ministry of Communication
Sachibaloy Bhavon, Ramna,
Dhaka.

2. Chief Engineer
Roads and High Ways
Department (RHD)
Ministry of Communication
Sarak Bhabon,
Ramna, Dhaka.



RS RP/ADB Projects

Sarak Bhabon, Ramna,

Dhaka.

.....Respondents

A N D

IN THE MATTER OF:-

Letter dated 11.12.2008 bearing Memo no

Road- 207/02-642(4) CE issued by

respondent no. 2, the chief Engineer RHD

Ministry of Communication debarring

consulting personnels of Intercontinental

Consultants and Technocrats Pvt. Ltd., the

Principal Consultant, from working in any

ongoing or future RHD Projects for a

period of next 5 years and imposing fine of

Tk. 50 Lacs on the consulting firms (1)



and

Technocrats Pvt. Ltd. (2) Engineering and
 Planning Consultants Ltd. (EPC) (3)
 Engineering Science Ltd. (ESL) and (4)
 Prokalpa Upodestha Ltd. (PUL), herein
 after called Annexure-D.

To,

Mr. Justice M.M. Ruhul Amin, the Hon'ble Chief Justice of the Supreme Court of Bangladesh and other Companion Justices of the said Hon'ble Court.

The humble petition on behalf of the Petitioner above named most respectfully.

S H E W E T H

1. That the petitioner is a Limited company incorporated under the Companies Act 1994, an associate firm of foreign company namely Intercontinental Consultants and Technocrats Pvt. Ltd. A-8, Green Park, New Delhi-110016, India. The main objects was petitioners company and their principal are to provide consultancy services for Bangladesh Post Flood Recovery Assistance Program



(BPFRAP) for Primary Road Network, Roads and High Ways Department (Western Part).

2. That the addresses of the petitioner and of the Respondents as given in the cause title of the petition are their correct addresses and all notices in connection with this writ petition may be issued and served respectively on them in their said addresses.
3. That the petitioner is the Managing Director of his firm Engineering and Planning Consultants Ltd. (EPC) which is an associate of Principal Consultants namely (1) Intercontinental Consultants and Technocrats Pvt. Ltd. (ICT).
4. That a contract for consultancy services was executed between Roads and high Ways department, Ministry of Communication, Government of the Peoples republic of Bangladesh showing themselves as client and Intercontinental Consultants and Technocrats Pvt. Ltd. (ICT), India, in association with Engineering and Planning Consultants Ltd. (EPC), Engineering Science Ltd. (ESL), Prokalpa Upodestha Ltd. (PUL) as in joint venture for the



purpose of rendering consultancy services namely Bangladesh Post Flood Recovery Assistance Program (BPFRAP) (Western Part).

Copy of the Contract is annexed hereto and marked as **Annexure-A**.

5. That the said contract was executed and signed on 13th August 2005 by and between the above named parties.
6. That the Intercontinental Consultants and technocrats Pvt Ltd. India in association with Engineering and Planning Consultants Ltd., Engineering Science Ltd., Prokalpa Upodestha Ltd., started performing consultancy works as provided in the contract. Thereafter all on a sudden without any notice as required under clause 2.9.1 (f) of the contract (notice not less than 60 days) the respondent no. 2 terminated the contract by their letter dated 03.05.2006 by memo no. Road-207/02-262-CE.

Copy of the said letter dated 03.05.2006 is annexed hereto and marked as **Annexure-B**.



7. That after termination of the said contract the petitioner and his principal Intercontinental Consultants and Technocrats Pvt. Ltd. by letter dated 18.11.2008 submitted claims /bills / invoice amounting to US\$ 1,03,000.82 (US Dollar one lac three thousand and cent eighty two) only and the petitioner as the associate of the principle also in the said invoice /letter claimed their money payable to them for the works already done amounting to Taka 35,32,681.26 (Thirty five lac thirty two thousand six hundred eighty one and paisa twenty six) only. But on repeated reminders did not pay at all any amount.

Copy of the bill is annexed hereto and marked as Annexure-C.

8. That the client respondent no. 2 duly received the bill as mentioned above but without any response to the claim of the petitioner nor they raised any question of the petitioner's or his principals right to entitlement until as date as on 11.12.2008.

9. That thereafter as an afterthought and to defeat the lawful claim of the petitioner and his principal with malafide intention the



respondent no. 2 instead of paying the bill sent a letter dated 11.12.2008 to the principal and other associates including the petitioner stating that two personnel namely (1) L.K. Sharma (2) Baldev Raj Suri the team leader and senior contract document specialist respectively of Intercontinental Consultants and Technocrats and Pvt. Ltd. to be debarred for five years to work in any ongoing or future project of RHD and impose nominal fine of Tk. 50,00,000.00 (fifty lac) with direction to deposit the same in Bangladesh through treasury challan within 50 days as per clause 3.4 of Special Condition of the contract. The petitioner received the said letter which runs as follows:

Government of the People's Republic of Bangladesh
 Office of the Chief Engineer
 Roads and Highways Department (RHD)
 Sarak Bhaban, Ramna, Dhaka
 Ph. 9562829

Memo no: Road-207/02-642(4)-CE

Date: 11/12/08

To,

1. Intercontinental Consultants and Technocrats Pvt. Ltd
A-8, Green Park, New Delhi-110016, INDIA.
2. Engineering & Planning Consultant Ltd. (EPC)
7/4, Lalmatia, Block-A, Dhaka-1207
3. Engineering Science Limited (ESL)
31/05, Babar Road, Block-B, Mohammadpur, Dhaka
4. Prokalpa Upodestha Limited (PUL)
3/6, Block-B, Lalmatia, Dhaka.

Sub: Action against the consulting firms for not working properly for Bangladesh Post Flood Recovery Assistance Program under RRMP-III.

This is to inform you that for failure to advise your client RHD properly, the following Consultants/ Consulting firms are considered responsible as per contract clause 3.4 of Special Condition of Contract for



Consultancy Services. For this reason the following Consultant personnel will not be allowed to work in any ongoing RHD projects and also in future RHD projects for a period of next 05 (five) years.

Sl no.	Name	Position in the project/contract	Consulting Firm
1.	L.K. Sharma	Team Leader	Intercontinental Consultants & Technocrats Pvt. Ltd.
2.	Baldev Raj Suri	Senior Contract Document Specialist	Intercontinental Consultants & Technocrats Pvt. Ltd.

2) It is further to inform that the penal action of nominal fine amounting to Tk. 50,00,000/- (Taka fifty lac) is imposed on the consulting firms ICTL-EPC-ESL-PUL engaged in design and supervision of Post Flood Recovery Assistance Program, 2004 under RRMP-III as an exemplary evidence. They are directed to deposit the said amount in code 1-5041-0001-1901-Fines & penalty to Bangladesh Bank through treasury chalan within 15 (fifteen) days, a copy of which should be submitted to this office.

The consulting firms should be very much careful while selecting their personnel for deployment in the projects of similar nature.

(Md. Nihar Miah)
Chief Engineer (C.C), RHD
Sarak Bhaban, Ramna, Dhaka

Memo No.

Date:

Copy to:

1. The secretary, Roads & Railways Division, Ministry of Communications, Bangladesh Secretariat, Dhaka for favour of kind information with reference to MOC's memo no. Dev-2/Misc-2/05(part-1)-562 dt. 28.10.08
2. The Project Director, RHD, RSRP/ADB Projects/JBARP/3-Bridge Projects/RNIMP-1 II/EDDRP-2007/4- Laning of Dhaka Chittagong Highways Project
3. The Project Coordinator, CPLI, Sarak Bhaban, Ramna, Dhaka
4. The Add. Chief Engineer, RHD, Planning & Maintenance / Technical Services/ Bridge Management Wing/ Mechanical /Dhaka / Comilla/ Chittagong/ Sylhet/ Rangpur/ Rajshahi/ Khulna/ Barisal Zone
5. The Project Director, RHD, Dapdapia/ 3rd Karnafuly Bridge Project.
6. Mr. Mohi Uz Zaman Quazi, Sr. Transport Engineer, World Bank Office, Dhaka.

(Md. Nihar Miah)
Chief Engineer (C.C), RHD
Sarak Bhaban, Ramna, Dhaka

Copy of the above mentioned letter is also

annexed hereto and marked as Annexure-D.

10. That it is stated that the principal, Intercontinental Consultants and Technocrats Pvt. Ltd. as they are a foreign company and in the mean time the contract has been terminated so they wond up their



activities so they gave a power of attorney to the petitioner Engineering and Planning Consultants Ltd. (EPC) on 22.12.2008 and the petitioner being empowered by Power of Attorney executed by their principal again submitted a reminder on 25.01.2009 for payment of US\$ for their principal and Tk. payable to the petitioner payable to them by their client for the consultancy service rendered by them. But the respondent no. 2 did not show any response to the letter.

Copy of the letter dated 25.01.2009 along with the letter of authority dated 22.12.2008 are annexed hereto and marked as Annexure-E & E(1).

11. That it is stated that the penalty of Tk. 50 Lacs and debarring to persons of Intercontinental Consultants and Technocrats Pvt. Ltd. are vague and not provided either by the general or special or additional conditions of the contract. It is further stated that no reason has been assigned for debarring the said two persons. The statement of debarring the above mentioned personnels and of



imposing fine of Tk. 50 Lac without assigning any reason are malafide and not covered by any condition of the contract and hence it is illegal.

12. That it is further stated that the client or other respondents at the time of termination of the contract or at any other time never pointed out any fault of the said personnels or of any fault of the petitioner and his principal and of any other associates regarding the consultancy works done by them.
13. That it is stated that the bills / invoices submitted by the petitioners and of his principal for the work done by them is due under the contract which the respondents are obliged to pay but they having not paid the same or having given any reason for not paying the bills, the, their action in their impugned letter debarring the two persons and imposing fine is absolutely illegal, dishonest and malafide.
14. That the petitioner issued demand of Justice notice on the respondent on 24.12.2008 through Mr. Abdul Malek the learned



senior Advocate to which they sent a reply to the learned Advocate which are absolutely irrelevant and beside the Point and have no merit whatsoever.

Copy of the demand of Justice Notice is annexed hereto and marked as Annexure-“F”.

15. That the Petitioner has no other effective, speedy and alternative remedy except writ petition for redress of their grievances amongst others on the following

GROUND S

- I. For that instead of paying the bill of the petitioner the respondent no 2 after an inordinate delay sent the Impugned letter on 11.12.2008 (Annexure-D) as an after thought and to frustrate the lawful claim of the petitioner debarred the 2 personnel of Intercontinental Consultants and Technocrats Pvt. Ltd. and imposed fine of Tk. 50 Lacs which is absolutely illegal and malafide.



[Handwritten signature]

- II. For that Respondent no. 2 the client above named wrongly quoted the provision of the contract 3.4 and issued the impugned letter (Annexure-D) though they remained silent about any claim at the time of termination of the Contracts.
- III. For that in the impugned letter (Annexure D) the respondent no. 2 quoting clause 3.4 of Special condition of the contract debarred the said two personnels of Intercontinental Consultants and Technocrats Pvt. Ltd. and imposed a fine of Taka 50 Lacs but in the said clause there is no such provisions either of debarring any personnel or imposing fine and thus the respondent no. 2 with a view to defeating and diverting the bonafide claim for payment of US\$ 1,03,000.82 (US Dollar one lac three thousand and cent eighty two) only payable to the principal i.e. Intercontinental Consultants and Technocrats Pvt. Ltd. and of BDT Tk. 35,32,681.26 (Bangladeshi taka thirty five lac thirty two thousand six hundred eighty one and paisa twenty six) only to the petitioner issued the said letter which is a clear and malafide act of respondent no. 2.



Therefore it is humbly prayed that your lordships would be pleased to issue:-

- a) Rule NISI upon the respondent to show cause as to why the impugned letter (Annexure-D) should not be declared to have been made without lawful authority and is of no legal effect
- b) that upon hearing the parties and causes if any shown make the Rule absolute.
- c) pending hearing of the Rule stay the operation of the impugned letter (Annexure-D) both in respect of debarring the two personnel namely (1) L.K. Sharma, Team Leader and (2)

Boldev Raj Suri, Senior Contract



Specialist

of

Intercontinental Consultants and Technocrats Pvt. Ltd. and imposing nominal fine of taka 50 Lacs and directing to deposit the said amount in Bangladesh Bank through Treasury Challan.

- d) to award the cost and incidental to this petition against the respondent and in favour of the petitioner

And for this Act of your lordships kindness your petitioner shall ever pray.

A F F I D A V I T

I, Zeaul Huq son of Late A.M. Fazlul Wahab, Managing Director, Engineering and Planning Consultants Ltd. (EPC) of 7/4 Lalmatia, Block-A Dhaka-1207, Dhaka, Bangladesh, aged about 69 years, by faith Muslim, by profession business, Nationality Bangladeshi, do hereby solemnly affirm and declare as follows:



1. That I am the Petitioner of the case and well conversant with the facts and circumstances of the case and as such I am competent to swear this affidavit.

2. That the statements made above are true to my knowledge and belief.

Prepared in my office:

SD/-
DEPONENT

SD/-
Advocate

The deponent is known to me and identified by me.

Solemnly affirmed before me on
this the 1st day of February
2009 at

SD/-
Advocate

COMMISSIONER OF AFFIDAVITS
SUPREME COURT OF BANGLADESH
HIGH COURT JUDICIARY, DHAKA



DUL MALEK

OR ADVOCATE
GLADESH SUPREME COURT

- 106 -

Annexure F

DENCE - CHAMBER
- SUITE # 7 2ND FLOOR
SE # 23, ROAD # 4
MONDI R.A, DHAKA-1205
IE - 8614380, 8628585

COURT CHAMBER
ROOM # 106
SUPREME COURT
BAR ASSOCIATION BUILDING
DHAKA, MOBILE : 011-809460

DATE 24-12-2008

DEMAND OF JUSTICE NOTICE
Registered with A/D

From:
Abdul Malek
Sr. Advocate
Room No. 106,
Supreme Court Bar Association Building, Ramna, Dhaka.

On behalf of
Mr. Zeaul Huq
Managing Director
PC Engineering and Planning Consultants Ltd.
14, Block -A, Lalmatia
Dhaka-1207, Bangladesh
or his firm and being empowered by a Power of Attorney
or Inter Continental Consultants and Technocrats Pvt. Ltd.
-8, Green Park,
New Delhi, India

To:
Chief Engineer (CC)
Roads and High Ways
Government of the People's Republic of Bangladesh
Rak Bhaban, Ramna, Dhaka.

Sir Sir,

I have been instructed by my above named client Mr. Zeaul Huq, Managing Director, EPC Engineering and Planning Consultants Ltd. For his firm and being empowered by a Power of Attorney for Inter Continental Consultants and Technocrats Pvt. Ltd. for his own firm I on behalf of the firm mentioned above to give you this notice demanding justice in the following manners.



Contd.. P/2

ABDUL MALEK

SENIOR ADVOCATE
BANGLADESH SUPREME COURT

-107-

RESIDENCE - CHAMBER
ASRA - SUITE # 7 2ND FLOOR
HOUSE # 23, ROAD # 4
DHANMONDI R.A, DHAKA-1205
PHONE 8614380, 8628585

COURT CHAMBER
ROOM # 106
SUPREME COURT
BAR ASSOCIATION BUILDING
DHAKA, MOBILE - 011-809460

DATE 24-12-2008

-2-

1. That a contract was signed between yourself and my clients as consulting firms for Consultancy services for recovery of post Flood Assistance Program (BPFRAP) for primary Road Network. After execution of the contract my clients above named carried on the work entrusted to them ^{from} July 03, 2006 on which date the contract ended.
2. That on November 18, 2008 our clients Inter Continental Consultant submitted a letter claiming their dues including compensation under the contract and requested to you to pay the same and to settle the matter within 30 days from that date.
3. That you received the above mentioned letter of claim in time without controverting the claim of my client on any ground whatsoever. But long thereafter on 11.12.2008 by a letter issued by you suddenly informed my clients saying that a Penal action of nominal fine of Tk. 50,00,000/- (fifty lac) was imposed on them and you asked them to deposit the said sum of money through Bank as fine and Penalty within 15 days with a copy to be submitted to your office. It was further stated that my clients the consulting firms should be careful while selecting their Personnel for deployment of the Project of similar nature. It was also stated in the said letter that



Contd.. P/3

ABDUL MALEK

SENIOR ADVOCATE
BANGLADESH SUPREME COURT

106
RESIDENCE - CHAMBER
ASRA - SUITE # 7 2ND FLOOR
HOUSE # 23, ROAD # 4
DHANMONDI R.A, DHAKA-1205
PHONE 8614380, 8628585

COURT CHAMBER
ROOM # 106
SUPREME COURT
BAR ASSOCIATION BUILDING
DHAKA, MOBILE : 011-809460

DATE *24-12-2008*

-3-

two personnels namely L.K. Sharma, Team Leader and Baldev Raj Suri of Senior Contract Document Specialist of Intercontinental Consultants & Technocrats Pvt. Ltd. will not be allowed to work in any on going RHD Projects and in future RHD Projects for a period of next 5 (five) years without pointing out any fault committed by them.

4. That my clients believe that the belated letter issued by you on 11.12.2008 is an afterthought, illegal and malafide and it was obviously intended to avoid payment of the claim made by my clients on you by their letter dated 18.11.2008.
5. That in the facts I have been instructed by my above named clients to give you this demand of Justice notice to withdraw, cancel and or to rescind your said letter dated 11.12.2008 by 1st of January 2009 failing which it will be deemed that you have refused to do justice to them and in that event my clients will have no option but to file a writ petition before the Hon'ble High Court Division of the Supreme Court of Bangladesh as they have no other alternative speedy and equally effective remedy.

N.B.: Copy of this notice will be preserved in my office for future reference.



(Abdul Malek)
Senior Advocate

ANNEXURE-B:
Consultants JV Agreement, Power of Attorneys and
Authorization letters submitted at the time of proposal



JOINT VENTURE AGREEMENT

THIS JOINT VENTURE AGREEMENT is made effective from the 5th day of February, 2013

BETWEEN

**M/S INTERCONTINENTAL CONSULTANTS
AND TECHNOCRATS PVT. LTD.**

A-8, Green Park,
New Delhi – 110 016, India.
(hereinafter referred to as “ICT”)

OF THE FIRST PART,

M/S KUNHWA ENGINEERING & CONSULTING CO., LTD.

38, Heungan-daero 427beon-gil, Dong-an-gu,
Anyang-si, Gyeonggi-do, Korea.
(hereinafter referred to as “KUNHWA”)

OF THE SECOND PART.

M/S DR. NABEEL ABDUL-RAHEEM CONSULTANTS

P.O. Box 38955, Daha Abdulla Al-Salem,
State of Kuwait 72254.
(hereinafter referred to as “NARCO”)

OF THE THIRD PART.

AND

M/S ENGINEERING & PLANNING CONSULTANTS LTD.

7/4 Block A, Lalmatia, Dhaka 1207,
Bangladesh.
(hereinafter referred to as “EPC”)

OF THE FOURTH PART.

WITNESSES THAT:

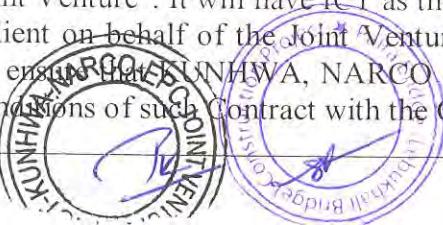
WHEREAS, ICT, KUNHWA, NARCO and EPC as Joint Venturers (collectively referred to as the “Joint Venture” or singly as a “Joint Venturer”) intend to provide services for the Project “Design and Construction-Supervision of the Paire Bridge (Lebukhali Bridge) over the river Paire on Barisal-Patuakhali Road, Bangladesh” (hereinafter referred to as the “Project”) to Roads and Highways Department, Bangladesh (hereinafter referred to as “the Client”).

AND WHEREAS, the Joint Venturers desire to enter into this agreement (hereinafter referred to as “the Agreement”) and to form an unincorporated Joint Venture for the purpose of securing, carrying out and performing the services to be set forth in the Contract with the Client (hereinafter referred to as “the Contract”), any amendments or supplements thereto and any other assignments accepted by the parties hereto which involve work connected with the Project.

NOW THEREFORE, in consideration of the mutual promises and agreement herein contained, the parties hereto agree to the following:

Article 1 – Name of the Joint Venture

- 1.1 Name of the Joint Venture comprising ICT, KUNHWA, NARCO and EPC will be “ICT-KUNHWA-NARCO-EPC Joint Venture”. It will have ICT as the lead partner who shall enter into the Contract with the Client on behalf of the Joint Venture. Prior to signing any such Contract, however, ICT shall ensure that KUNHWA, NARCO and EPC accept and agree in writing with the terms and conditions of such Contract with the Client.



Article 2 – Liability of Joint Venture to the Client

- 2.1 The Joint Venturers are jointly and severally liable to the Client to the extent of services provided by each party for performing the services and the obligations of the Joint Venture set forth in the Contract, in accordance with the terms and conditions thereof.

Article 3 – Liability of Joint Venture as between themselves

- 3.1 As between the Joint Venturers, each Joint Venturer is solely liable for, and shall indemnify and hold harmless the other Joint Venturer from any damages, injuries, expenses, costs, claims, proceedings and losses arise as a result of its negligence, willful misconduct or breach of obligations under the Contract.

Article 4 – Delineation of duties / responsibilities and Scope of Work

- 4.1 Each Joint Venturer shall participate in the Joint Venture on the basis of their inputs mentioned in the Technical Proposal. Their share of the Contract amount and liabilities shall be proportionate to their inputs in carrying out their services for the Project.

Article 5 – Duration of the Joint Venture Agreement

- 5.1 This JV shall come into force immediately after it has been signed by the parties. It shall continue to have full force and effect and shall terminate:
- when a new Agreement is signed,
 - if the parties jointly decide not to submit the tender,
 - if the Client cancels the Project.

IN WITNESS WHEREOF, duly authorized representatives of the Joint Venture have executed this Joint Venture Agreement as of the date and year first written above.

FOR AND ON BEHALF OF

**Intercontinental Consultants and
Technocrats Pvt. Ltd. (ICT)**

(Saurabh Khanna)
President

FOR AND ON BEHALF OF

**Dr. Nabeel Abdul-Raheem Consultants
(NARCO)**

(Dr. Nabeel Abdul-Raheem)
Chairman & Managing Director

FOR AND ON BEHALF OF

**Kunhwa Engineering & Consulting Co.,
Ltd. (KUNHWA)**

Noh, Jeong Lae

(Noh, Jeong Lae)
President

FOR AND ON BEHALF OF

**Engineering & Planning Consultants
Ltd. (EPC)**

Abdul Wadud Bhuiyan
Director





Intercontinental Consultants and Technocrats Pvt. Ltd.

**EXTRACT OF THE MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS
OF INTERCONTINENTAL CONSULTANTS AND TECHNOCRATS PRIVATE LIMITED
HELD ON 27TH DECEMBER, 2012 AT THE CONFERENCE HALL, A-8, GREEN PARK,
NEW DELHI – 110 016.**

"RESOLVED THAT Mr. Prashant Kapila, President and Chief Operating Officer, a member of the Board of Directors is hereby authorized to enter into such agreements, sign and submit such requisite documentations for execute existing project or/and new proposed projects."

RESOLVED FURTHER THAT Mr. Prashant Kapila, President and Chief Operating Officer, a member of the Board of Directors is also authorised to delegate all/or such powers as deemed appropriate to any other President/Employee of the Company /any representative of Joint-venture/Associate Partners , to deal all such matter on a project specific basis as needed.

RESOLVED FURTHER THAT any and all actions of the authorised representative in pursuant to Contract and Agreement as defined in the Power of Attorney, or in furtherance of the intent and purposes of the foregoing resolutions, are hereby in all respects adopted, approved, confirmed and ratified as the valid and subsisting acts of this Company."

By Order of the Board

For INTERCONTINENTAL CONSULTANTS AND TECHNOCRATS PRIVATE LIMITED

M. L. Goyal
27-12-2012
Director



ATTESTED

NOTARY PUBLIC (DELHI)

15 FEB 2013



Innovative, Creative & Technologically Sustainable Infrastructure Solutions

Head Office
A-B, Green Park
New Delhi 110016, INDIA

Telephone
+91 11 4030 8000

Fax No
+91 11 2465 5252

E-mail
business@ictonline.com Internet
<http://www.ictonline.com>



[Handwritten Signature]



Intercontinental Consultants and Technocrats Pvt. Ltd.

EXTRACT OF THE MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF
INTERCONTINENTAL CONSULTANTS AND TECHNOCRATS PRIVATE LIMITED HELD ON
4TH SEPTEMBER, 2012 AT THE CONFERENCE HALL, A-8, GREEN PARK, NEW
DELHI – 110 016.

PRESENT:-

1. Mr. K.K. Kapila (Chairman-cum Managing Director)
2. Mrs. Poonam Kapila
3. Mr. N.C. Saxena
4. Mr. A.D. Narain
5. Mr. Prashant Kapila
6. Mr. Saurabh Khanna

Mr. K.K. Kapila, Chairman-cum Managing Director (CMD), briefed the Board that Mr. Prashant Kapila, appointed as Chief Operating Officer since June, 2012 is authorized on behalf of the Board to enter into agreements, sign and submit such requisite documentations for execute existing projects or/and new proposed projects. The Board, having discussed the matter, resolved as under:-

"RESOLVED THAT Mr. Prashant Kapila, President and Chief Operating Officer, a member of the Board of Directors is hereby authorized to enter into such agreements, sign and submit such ^{existing} ~~existing~~ project or/and new proposed projects."

"RESOLVED FURTHER THAT Mr. Prashant Kapila, President and Chief Operating Officer, a member of the Board of Directors is also authorized to delegate all/or such powers as deemed appropriate to any other President/Employee of the Company, to deal all such matter on a project specific basis as needed."

"RESOLVED FURTHER THAT any and all actions of the authorized representative in pursuant to Contract and Agreement as defined in the Power of Attorney, or in furtherance of the intent and purposes of the foregoing resolutions, are hereby in all respects adopted, approved, confirmed and ratified as the valid and subsisting acts of this Company."

True Copy

Signed on behalf of the Intercontinental Consultants and Technocrats Pvt. Ltd

- 1 K.K. Kapila (Chairman-cum Managing Director)
- 2 Poonam Kapila
- 3 N.C. Saxena
- 5 A.D. Narain
- 4 Prashant Kapila
- 6 Saurabh Khanna

K.K. Kapila

Poonam Kapila

N.C. Saxena

A.D. Narain

P.K. Kapila

Saurabh Khanna



Innovative, Creative & Technological Solutions Sustainable Infrastructure Solutions

Head Office
A-8, Green Park,
New Delhi-110016, INDIA

Telephone
91-11-40863000

Fax No.
91-11-40630212

E-mail
business@ictonline.com

Internet
<http://www.ictonline.com>



ANNEXURE-C:
Consultants Authorization letter for Contract signing





सत्यमेव जयते

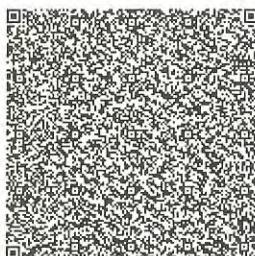
INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

Certificate No.
Certificate Issued Date
Account Reference
Unique Doc. Reference
Purchased by
Description of Document
Property Description
Consideration Price (Rs.)

: IN-DL91866216458963L
: 27-Nov-2013 10:44 AM
: IMPACC (IV)/ dl723903/ DELHI/ DL-DLH
: SUBIN-DLDL72390381698159891654L
: ICT PVT LTD
: Article Others
: NA
: 0
 (Zero)
: ICT PVT LTD
: NA
: ICT PVT LTD
: 100
 (One Hundred only)



Please write or type below this line.....

SPECIFIC POWER OF ATTORNEY

Know all men by these presents, we Intercontinental Consultants and Technocrats Pvt. Ltd., A-8, Green Park, New Delhi-110016, do hereby authorize Mr. Prashant Kapila S/o Mr. K. K. Kapila, R/o A-11, Green Park, New Delhi-110016, who is presently employed



Statutory Alert:

- The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
- The onus of checking the legitimacy is on the users of the certificate.
- In case of any discrepancy please inform the Competent Authority.

with us and holding the position of "Chief Operating Officer and President" as our attorney to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our proposal for "**Consulting Services for Design and Construction Supervision of Paire Bridge (Lebukhali Bridge) over the River Paire on Barisal – Patuakhli Road, Bangladesh**", for signing the Contract agreement with Ministry of Communication Roads Division, Roads and Highways Department, Dhaka, Bangladesh, representing us in all matters before the Client in connection with our proposal for the said project.

We, hereby, agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall always be deemed to have been done by us.

It was further stated that Mr. K. K. Kapila, Chairman and Managing Director be authorized to attest the specimen signature of Mr. Prashant Kapila, Chief Operating Officer and President for the purpose of this authorization.

Date: 05th December, 2013

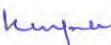

(K. K. Kapila)
Chairman and Managing Director
Intercontinental Consultants and
Technocrats Pvt. Ltd.
A-8, Green Park, New Delhi-110016

I Accept



Specimen Signature of Mr. Prashant Kapila

Attested


(K. K. Kapila)
Chairman and Managing Director

~~ATTESTED~~

05 DEC 2013

My Commission Expire
on 2 HI-2017
VALID OUTSIDE INDIA





مركز الديوان للترجمة والطباعة والتصوير

Al-Diwan Translation Center

E-mail: diwan_translation@hotmail.com

مترجمون ملحوظون ومعتمدون من قبل جميع الوزارات والسفارات في

SWORN TRANSLATORS SPECIALIZED IN ALL APPROVED LANGUAGES AUTHORIZED BY ALL EMBASSIES & MINISTRIES

Engineering Firm License

Upon the item H of the paragraph no. 7 of the article no. 27 of the law no. 5/2005 concerning the municipality of Kuwait according to the municipal decision no. (2007/15/459/4), dated 25//06/2007; and

Upon the municipality's general manager's administrative decision no. (223/2010), dated 21/06/2010,

It is licensed to Engineer/ Dr. Nabeel Jafar AbdulRaheem to renew engineering firm under the name of Firm of Dr. Nabeel Jafar AbdulRaheem (NARCO) for engineering consultation in order to conduct the profession of engineering (Design and Supervision), the major: Civil, for four years from 21/06/2010 until 20/06/2014.

Register no. 293 / م ٢٠٠٧/٧/ ع

Date of Issue: 29/06/2010

Firm address: Governorate: AlAsema, City: Kuwait, Building (2-1 A), Design no. (21103/م), Floor: 12, Office (12)

Chief of the panel for conducting profession for engineering firms

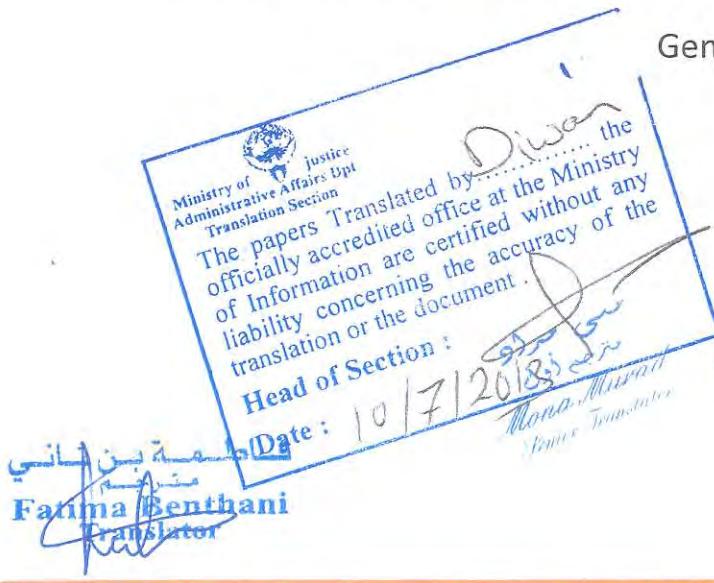
Signed

Eng. Talal Melta3 AlKahtani

General Manager of Kuwait Municipality

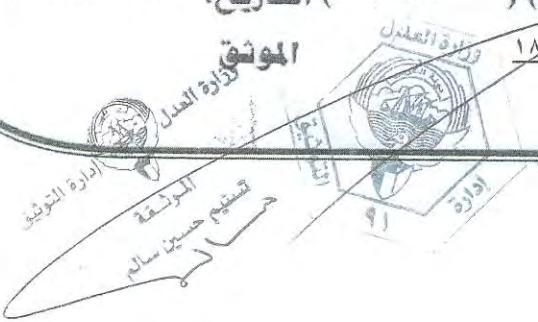
Signed – Sealed

Ahmad Al-Sabeeh

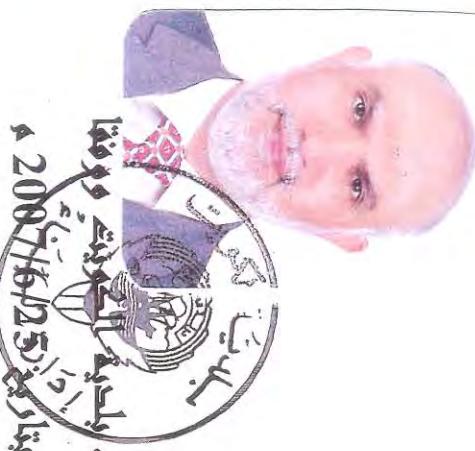
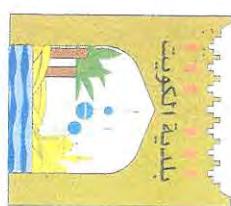




وزارة العدل / إدارة التوثيق
أصادق أنا المؤتّق أدناه على صحة التوقيع على خاتم ترجمة
وزارة العدل دون أن تتحمل الإدارة مسؤولية محتواه.
سجل برقم (٢٢٧٠٢) (الإدارة) (التاريخ:
٢٠١٣/٧/١٠) رقم الآي ١٨٧٩٠٨٣



الإمارة متحدة هـ دلسي



ونها لما جاء بالبند هـ من المقدمة 7 من المادة 27 من القانون رقم 2005/5 في شأن مجلس البلديات ورفقا
لقرار المجلس البلدي رقم (هـ بـ جـ هـ) ٢٠٠٧/١٥/٩٥٤/٤٩
 بتاريخ ٢٠٠٧/٦/٢٥
ووفقاً للقرار الإداري لمدير عام البلدية رقم (2010/223)
يسعى للمهندس / نبيل جعفر جاسم محمد الربيه

تخيير مكتبه بمدحبي قدمت اسمه مكتبه / نبيل جعفر محمد الربيه لاستشاراته الهندسية .

لوزارة المهندسة (تصنيفه وإشرافه) تخصص / مدني .

وذلك لمدة أربع سنوات اعتباراً من : 2010/6/21

متى: 2014/6/20 تاريخ الإصدار : 2010/6/29 رقم القيد : ٢٠٠٧/٧/٩ - ٢٩٣

لبيان المكتبه : محافظة العاصمة - مدينة الكويت - قبعة(2 - ١) مدد ره (12) الدور (12) متنبه (12).

رئيس لجنة مرأة المهنـة للمـهـنـاتـ الـهـنـدـسـيـةـ

مدير عام بلدية الكويت



محل الـمـتـابـعـ الـقـصـاصـ

رئـسـ بـنـظـرـ الـلـادـلـيـ

Al-Dawaniya General Translation Section

Native Aff.

Translators



KUNHWA ENGINEERING & CONSULTING CO., LTD.

SEOUL Office | 702-22 Teheran Rd., Gangnam-gu, Seoul, KOREA

| 38-25, Samsung2-dong, Gangnam-gu, Seoul, KOREA

ANYANG Office | 38, Heungan-daero 427 beon-gil, Dong-an-gu, Anyang-si, Gyeonggi-do, KOREA

Email : overseas@kunhwaeng.co.kr | Tel : +82-2-6938-7509 | Fax : +82-2-541-3295

[5th December, 2013]

Md. Saidul Hoque
Additional Chief Engineer
Bridge Management Wing
Roads and Highways Department
Sarak Bhaban, Tejgaon, Dhaka-1208, Bangladesh

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That we, Kunhwa Engineering & Consulting Co., Ltd. (hereinafter referred to as "Kunhwa"), a duly organized and existing under the laws of Republic of Korea, having its principal office at 702-22 Teheran Rd., Gangnam-gu, Seoul, Korea, do hereby appoint **Mr. Choi, Gang Il (Passport Number: MP0359521)**, **Senior Executive Vice President of Kunhwa**, as our true and lawful representative to do in our name on our behalf, all such acts, deeds required, and sign the Contract for the Consulting Services for Design and Construction Supervision of Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal-Patuakhli Road, Bangladesh.

IN WITNESS WHEREOF, the undersigned has executed this Power of Attorney on 5th December 2013.

Choi, Jin Sang
President
Kunhwa Engineering & Consulting Co., Ltd.





ENGINEERING & PLANNING CONSULTANTS LTD.

7/4, BLOCK-A, LALMATIA, G.P.O. BOX NO.-3815, DHAKA-1207, BANGLADESH

PHONE : 8110221, 9113772
9129904, 9114631
FAX : 880-2-8114154
E-mail : epc@epc-bd.com
admin@epc-bd.com
Website : www.epc-consultants.org

Dated 7th December 2013

Letter of Authorization

DESIGN AND CONSTRUCTION SUPERVISION OF THE PAIRA BRIDGE (LEBUKHALI BRIDGE) OVER THE RIVER PAIRA ON BARISAL-PATUAKHALI ROAD, BANGLADESH, THE PEOPLE'S REPUBLIC OF BANGLADESH.

THAT ENGINEERING AND PLANNING CONSULTANTS LIMITED as a member of Joint Venture with INTERCONTINENTAL CONSULTANTS AND TECHNOCRATS PVT. LTD. INDIA, with KUNHUA CONSULTING AND ENGINEERING COMPANY LTD. KOREA and DR. NABEEL ABDUL-RAHIM CONSULTANTS, KUWAIT, be and it is hereby authorized to sign the Contract document for Design and Construction supervision of the Paira Bridge (Lebukhali Bridge) over the river Paira on Barisal- Patuakhali Road, Bangladesh for ROADS AND HIGHWAYS DEPARTMENT (RHD) under the MINISTRY OF COMMUNICATION, (Government of the People's Republic of Bangladesh),

That Mr. GAZI A. RAHMANI, Associate Director of EPC be and is hereby authorized to initial and sign the said Contract document and any other documents related thereto, for and on behalf of Engineering & Planning Consultants Ltd and as member of the Joint Venture, in order to give effect to this authorization.

Engr/Arch. A.K. Rafique Uddin Ahmed, P.Eng.,
Chairman & Acting Managing Director
Engineering and Planning Consultants Limited.

ANNEXURE-D:
Original Financial Proposal



ORIGINAL



Government of the
People's Republic of Bangladesh
Ministry of Communication
Roads Division
Roads & Highways Department

Consultancy Services for
Design and Construction Supervision
of the Paita Bridge (Lebukhali Bridge) over the
River Paita on Bansat Patuakhali Road, Bangladesh

Financial Proposal

2
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Intercontinental Consultants
and Technocrats Pvt. Ltd.
A-8, Green Park, New Delhi - 110 016, India

A joint venture with

Kunhwa Engineering & Consulting Co., Ltd.
38, Hwang-dong, 7-gil, Dong-an-gu
Anyang-si, Gyeonggi-do, Korea



Dr. Nabeel Ahmad Raheem Consultants
101, Sector 102-A, DLF Phase V, Sector 102
Gurugram, Haryana - 122 002, India



Engineering & Planning Consultants Ltd.
101, Sector 102-A, DLF Phase V, Gurugram - 122 002, India

February, 2013

BANGLADESH





Intercontinental Consultants and Technocrats Pvt. Ltd.

ICT:114:GAR:

New Delhi, 15th February, 2013

Form 5B1: FINANCIAL PROPOSAL SUBMISSION FORM

To

The Project Director,
Paira Bridge (Lebukhali Bridge) Construction Project,
Room no - 422, Block - A, Sarak Bhaban, Ramna,
Dhaka-1000, Bangladesh.
Tel: +88 02 9557498
Fax: +88 02 9557498
E-mail: pd.paira@gmail.com

Subject : Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

Dear Sir,

We, Intercontinental Consultants and Technocrats Pvt. Ltd. (ICT), India in joint venture with M/s Kunhwa Engineering & Consulting Co., Ltd., Korea, M/s Dr. Nabeel Abdul-Raheem Consultants, Kuwait and M/s Engineering & Planning Consultants Ltd., Bangladesh offer to provide the consulting services for "Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh" in accordance with your Request for Proposal dated 31st December 2012 and our Technical Proposal. Our attached Financial Proposal is for the sum of **USD 1,606,400 + BDT 90,974,000 (US Dollar One Million Six Hundred Six Thousand Four Hundred only Plus Bangladeshi Taka Ninety Million Nine Hundred Seventy Four Thousand Only)**. This amount is exclusive of local taxes, which we have estimated at **USD 401,600 + BDT 22,743,500 (US Dollar Four Hundred One Thousand Six Hundred only Plus Bangladeshi Taka Twenty Two Million Seven Hundred Forty Three Thousand Five Hundred Only)** and, which shall be discussed during negotiations and shall be added to the above amount for determining the Contract Price.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before 19th June 2013.

No Commissions or Gratuities have been paid or are to be paid by us to agents relating to this Proposal and Contract execution, if we are awarded the Contract.

In accordance with GCC Sub Clause 36, we acknowledge and accept the Client's right to inspect and audit all records relating to our proposal irrespective of whether we enter into a Contract with the Client as a result of this Proposal.

We also declare that the Government of Bangladesh has not declared us or any Sub-Consultants for any part of the Contract, ineligible on charges of engaging in corrupt, fraudulent, collusive, or coercive practices. We furthermore, pledge not to indulge in such practices in competing for or in executing the Contract, and are aware of the relevant provisions of the Proposal Document as stated under ITC Clause 4.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Duly authorized to sign the application for
and on behalf of ICT, India in Joint Venture with
M/s Kunhwa Engineering & Consulting Co.,
Ltd., Korea, M/s Dr. Nabeel Abdul-Raheem
Consultants, Kuwait and M/s Engineering &
Planning Consultants Ltd., Bangladesh

Authorized Signature (*in full and initials*)
Name and Title of Signatory

GAZI A. RAHMANI

Associate Director

Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207

Name of Firm (Lead Firm)

: Gazi A. Rahmani, Associate Director,
M/s Engineering & Planning Consultants Ltd.

Address

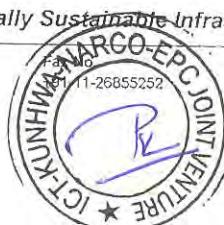
: Intercontinental Consultants and
Technocrats Pvt. Ltd. (ICT)
A-8, Green Park, New Delhi-110 016, India



Innovative, Creative & Technologically Sustainable Infrastructure Solutions

Corporate Office
A-8, Green Park,
New Delhi-110016, INDIA

Telephone
+91-11-40863000



E-mail:
business@ictonline.com

Internet
<http://www.ictonline.com>

FORM 5B2 : SUMMARY OF COSTS

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

Item	Costs	
	US Dollar	Bangladeshi Taka
TOTAL costs of Financial Proposal	1,606,400	90,974,000
Local Taxes		
VAT @ 15%	240,960	13,646,100
Income Tax @ 10%	160,640	9,097,400
Total amount of estimated Local Taxes	401,600	22,743,500

overhead
GAZI A. RAHMANI

Associate Director

Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207



FORM 5B3 : BREAKDOWN OF COSTS BY ACTIVITY

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

Group of Activities : Design Phase		Description :	
Sl. No.	Cost Component	Costs	
		US\$	BDT
1	Remuneration	258,500	6,515,000
2	Reimbursable Expenses	61,600	8,961,500
	Subtotals	320,100	15,476,500



GAZI A. RAHMANI
Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmonirhat, Dhaka-1207



FORM 5B4: BREAKDOWN OF REMUNERATION

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

Design Phase

Sl. No.	Name	Position	Staff-Month Rate			Input (Staff-months)	Total Amount			
				US\$	BDT		US\$	BDT		
	FOREIGN STAFF									
	Key Professionals									
1	Jurgen H.H. Dorbecker	Team Leader / Sr. Bridge Engineer	Home	13,000	-	-	-	-		
			Field	13,000	-	8.00	104,000	-		
2	Baldev Raj Suri	Sr. Contract Specialist	Home	10,000	-	-	-	-		
			Field	10,000	-	4.00	40,000	-		
3	Taranisen Naik	Sr. Bridge Design Specialist	Home	10,500	-	-	-	-		
			Field	10,500	-	5.00	52,500	-		
4	Maral Bedian Papazian	Sr. Foundation / Geotechnical Engineer	Home	10,000	-	-	-	-		
			Field	10,000	-	3.00	30,000	-		
5	Kim, Jong Gab	Sr. Hydraulic / R T Engineer	Home	16,000	-	-	-	-		
			Field	16,000	-	2.00	32,000	-		
Sub Total						22.00	258,500	-		
	LOCAL STAFF									
	Key Professionals									
6	Md. Zohurul Islam	Deputy Team Leader	Home	-	200,000	-	-	-		
			Field	-	200,000	8.00	-	1,600,000		
7	Md. Matiur Rahman	Contract Engineer	Home	-	140,000	-	-	-		
			Field	-	140,000	7.00	-	980,000		
8	Rita Sutradhar	Environmental Engineer	Home	-	100,000	-	-	-		
			Field	-	100,000	4.00	-	400,000		
9	Mustafa Kamal	Electrical Engineer	Home	-	130,000	-	-	-		
			Field	-	130,000	1.00	-	130,000		
10	Md. Humayan Kabir	Social Impact Specialist	Home	-	130,000	-	-	-		
			Field	-	130,000	4.00	-	520,000		
11	Md. Ashfaqul Jalil	Quantity Surveyor	Home	-	80,000	-	-	-		
			Field	-	80,000	6.00	-	480,000		
12	S.M. Azizul Hoque	Hydraulic / R T Engineer	Home	-	140,000	-	-	-		
			Field	-	140,000	4.00	-	560,000		
13	Md. Mahboob Hussain	Highway Design Engineer	Home	-	140,000	-	-	-		
			Field	-	140,000	2.00	-	280,000		
14	Dabir Uddin Ahmed	Structural Design Engineer	Home	-	140,000	-	-	-		
			Field	-	140,000	6.00	-	840,000		
15	Md. Jahedul Islam	Foundation / Geotechnical Engineer	Home	-	145,000	-	-	-		
			Field	-	145,000	5.00	-	725,000		
Sub Total						47.00	-	6,515,000		
TOTAL COSTS						69.00	258,500	6,515,000		

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GAZI A. RAHMANI



FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

a. Reimbursable Expenses in Design Phase (International)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Residential accommodation for long term expatriate personnel*	Month	1,250	-	8	10,000	-
2	Setting of Team Leader's house*	Lump sum	2,500	-	1	2,500	-
3	Per Diem for short-term expatriate personnel*	Day	100	-	420	42,000	-
4	International Travel Cost						
	Delhi - Dhaka - Delhi	Round Trip	500	-	5	2,500	-
	Korea - Dhaka - Korea	Round Trip	1,600	-	2	3,200	-
5	Miscellaneous Expenses for Travel (visa, local transport, insurance, etc.)*	Round Trip	200	-	7	1,400	-
	TOTAL COSTS					61,600	-

* These are fixed costs and no receipt / voucher is required for claiming the payment.

[Signature]

GAZI A. RAHMANI
Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207



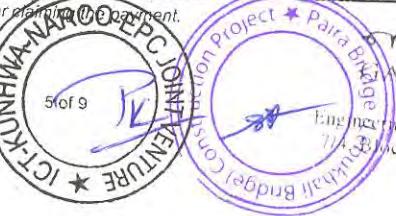
FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

b. Reimbursable Expenses in Design Phase (National)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Out of pocket expenses for National staff and the Team Leader*	Day	-	2,000	95	-	190,000
2	Communication Cost, telecommunication cost including cellular phone, e-mail, fax, postage, courier etc*	Month	-	15,000	9	-	135,000
3	Drafting, Reproduction of Reports*						
	i) Inception Report	Copy	-	2,000	10	-	20,000
	ii) Progress Report (Monthly)	Copy	-	300	45	-	13,500
	iii) Hydrology and Morphology Study Report	Copy	-	2,000	7	-	14,000
	iv) Design Report and Drawings	Set	-	20,000	9	-	180,000
	v) Draft Tender Documents	Set	-	5,000	5	-	25,000
	vi) Final Tender Documents	Set	-	5,000	30	-	150,000
	vii) Land acquisition plan	Set	-	7,000	10	-	70,000
	viii) Environmental Management Plan	Set	-	5,000	7	-	35,000
	ix) Social Action Plan	Set	-	5,000	7	-	35,000
	x) Progress Report (Quarterly)	Set	-	2,500	18	-	45,000
	xi) Project Completion Report	Set	-	10,000	10	-	100,000
4	Rental office accommodation including all furniture, equipment software, consumables, utility charges, security, etc*	Month	-	200,000	9	-	1,800,000
5	Other transportation*						
	Vehicles on rental basis including operation and maintenance	Veh. Month	-	80,000	36	-	2,880,000
6	Survey / study / investigation*						
	i) Topographic survey	Lump sum	-	120,000	1	-	120,000
	ii) Geotechnical investigation	Lump sum	-	950,000	1	-	950,000
	iii) Hydrological study / survey	Lump sum	-	150,000	1	-	150,000
	iv) Morphological Study / Survey	Lump sum	-	200,000	1	-	200,000
	v) Environmental Study / Survey	Lump sum	-	100,000	1	-	100,000
	vi) Resettlement / Social Survey	Lump sum	-	150,000	1	-	150,000
c.	Support Staff in Design Phase						
	i) Office Manager / Secretary	Man-month	-	30,000	9	-	270,000
	ii) Accountant	Man-month	-	30,000	9	-	270,000
	iii) Computer Operator	Man-month	-	25,000	9	-	225,000
	iv) CAD Operator (2 nos)	Man-month	-	35,000	12	-	420,000
	v) Photocopy Machine Operator	Man-month	-	12,000	9	-	108,000
	vi) Office Assistant, Messenger, etc (2 nos)	Man-month	-	12,000	18	-	216,000
	vii) Laboratory Technician	Man-month	-	30,000	3	-	90,000
	TOTAL COSTS						8,961,500

* These are fixed costs and no receipt / voucher is required for payment.



AZI A. RAHMANI
Associate Director

Engineering & Planning Consultants Ltd.
Block-A, Lalmatia, Dhaka-1207

FORM 5B3 : BREAKDOWN OF COSTS BY ACTIVITY

Consultancy Services for Design and Construction Supervision of the Paira Bridge
(Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

Group of Activities : Construction Supervision Phase		Description :	
Sl. No.	Cost Component	Costs	
		US\$	BDT
1	Remuneration	1,141,000	32,300,000
2	Reimbursable Expenses	145,300	43,197,500
	Subtotals	1,286,300	75,497,500

[Signature]
GAZI A. RAHMANI
Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207



FORM 5B4: BREAKDOWN OF REMUNERATION

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

Construction Supervision Phase

Sl. No.	Name	Position	Staff-Month Rate		Input (Staff-months)	Total Amount	
			US\$	BDT		US\$	BDT
	FOREIGN STAFF						
	Key Professionals						
1	Jurgen H.H. Dorbecker	Team Leader / Sr. Bridge Engineer	Home	13,000	-	-	-
			Field	13,000	-	34.00	442,000
2	Baldev Raj Suri	Sr. Contract Specialist	Home	11,000	-	-	-
			Field	11,000	-	15.00	165,000
3	Swapan Kumar Bagui	Sr. Foundation / Geotechnical Engineer	Home	10,000	-	-	-
			Field	10,000	-	6.00	60,000
4	Kim, Jong Gab	Sr. Hydraulic / R T Engineer	Home	16,000	-	-	-
			Field	16,000	-	2.00	32,000
5	Kim, Hyun Kon	Sr. Bridge Engineer	Home	17,000	-	-	-
			Field	17,000	-	18.00	306,000
6	Shaik Asif Ahmed	Sr. Material and Quality Control Engineer	Home	8,000	-	-	-
			Field	8,000	-	15.00	120,000
7	Sukanta Chattopadhyay	O & M Specialist	Home	8,000	-	-	-
			Field	8,000	-	2.00	16,000
Sub Total					92.00	1,141,000	-
	LOCAL STAFF						
	Key Professionals						
8	Md. Zohurul Islam	Deputy Team Leader	Home	-	210,000	-	-
			Field	-	210,000	33.00	- 6,930,000
9	Md. Matiur Rahman	Contract Engineer	Home	-	150,000	-	-
			Field	-	150,000	32.00	- 4,800,000
10	Rita Sutradhar	Environmental Engineer	Home	-	100,000	-	-
			Field	-	100,000	4.00	- 400,000
11	Mustafa Kamal	Electrical Engineer	Home	-	150,000	-	-
			Field	-	150,000	2.00	- 300,000
12	Md. Humayan Kabir	Social Impact Specialist	Home	-	150,000	-	-
			Field	-	150,000	4.00	- 600,000
13	Md. Ashfaqul Jalil	Quantity Surveyor	Home	-	90,000	-	-
			Field	-	90,000	32.00	- 2,880,000
14	Md. Abdul Muttalib	Resident Engineer	Home	-	100,000	-	-
			Field	-	100,000	32.00	- 3,200,000
15	Md. Shahidur Rahman Joarder	Material and Quality Control Engineer	Home	-	85,000	-	-
			Field	-	85,000	26.00	- 2,210,000
16	S.M. Azizul Hoque	Hydraulic / R T Engineer	Home	-	150,000	-	-
			Field	-	150,000	6.00	- 900,000
17	Md. Akhtar Hossain	Bridge Engineer - 1	Home	-	75,000	-	-
			Field	-	75,000	32.00	- 2,400,000
18	Md. Azim Hossain	Bridge Engineer - 2	Home	-	75,000	-	-
			Field	-	75,000	32.00	- 2,400,000
19	Md. Jahedul Islam	Foundation Engineer	Home	-	160,000	-	-
			Field	-	160,000	9.00	- 1,440,000
20	Md. Kamal Hossain	Junior Engineer - 1	Home	-	60,000	-	-
			Field	-	60,000	32.00	- 1,920,000
21	Md. Shamsul Haque	Junior Engineer - 2	Home	-	60,000	-	-
			Field	-	60,000	32.00	- 1,920,000
Sub Total					308.00	-	32,300,000
	TOTAL COSTS				400.00	1,141,000	32,300,000



GAZI A. RAHMANI
Associate Director

Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207

FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Consultancy Services for Design and Construction Supervision of the Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal Patuakhali Road, Bangladesh

a. Reimbursable Expenses in Construction Supervision Phase (International)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Residential accommodation for long term expatriate personnel*	Month	1,250	-	82	102,500	-
2	Per Diem for short-term expatriate personnel*	Day	100	-	300	30,000	-
3	International Travel Cost						
	Delhi - Dhaka - Delhi	Round Trip	500	-	8	4,000	-
	Korea - Dhaka - Korea	Round Trip	1,600	-	4	6,400	-
4	Miscellaneous Expenses for Travel (visa, local transport, insurance, etc.)*	Round Trip	200	-	12	2,400	-
	TOTAL COSTS					145,300	-

* These are fixed costs and no receipt / voucher is required for claiming the payment.

[Signature]
GAZI A. RAHMANI
Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207



FORM 5B5 : BREAKDOWN OF REIMBURSABLE EXPENSES

Consultancy Services for Design and Construction Supervision of the Paita Bridge (Lebukhali Bridge) over the River Paita on Barisal Patuakhali Road, Bangladesh

b. Reimbursable Expenses in Construction Supervision Phase (National)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Per Diem for National Staff and Long Term expatriate staff*	Day	-	2,000	224	-	448,000
2	Communication Cost, telecommunication cost including cellular phone, e-mail, fax, postage, courier etc*	Month	-	21,000	33	-	693,000
3	Drafting, Reproduction of Reports*						
	i) Progress Report (Monthly)	Copy	-	400	165	-	66,000
	ii) Progress Report (Quarterly)	Copy	-	2,500	66	-	165,000
	iii) Resettlement Completion Report	Copy	-	5,000	10	-	50,000
	iv) Project Completion Report	Copy	-	15,000	10	-	150,000
4	Rental office accommodation including all furniture, equipment software, consumables, utility charges, security, etc (Team Leader's Dhaka Office)*	Month	-	170,000	33	-	5,610,000
c.	Support Staff in Construction Supervision Phase						
	Team Leader's Dhaka Office (Liaison office) max 150 sqm area						
	i) Office Manager / Secretary	Man-month	-	32,000	36	-	1,152,000
	ii) Accountant	Man-month	-	32,000	36	-	1,152,000
	iii) Computer Operator	Man-month	-	30,000	36	-	1,080,000
	iv) CAD Operator	Man-month	-	35,000	12	-	420,000
	v) Photocopy Machine Operator	Man-month	-	12,500	36	-	450,000
	vi) Office Assistant, Messenger, etc (2 nos)	Man-month	-	12,500	72	-	900,000
	For Field Office						
	i) Office Manager / Secretary	Man-month	-	30,000	33	-	990,000
	ii) Computer Operator	Man-month	-	30,000	33	-	990,000
	iii) CAD Operator	Man-month	-	38,000	12	-	456,000
	iv) Photocopy Machine Operator	Man-month	-	12,500	33	-	412,500
	v) Office Boy, Messenger, etc (2 nos)	Man-month	-	12,500	66	-	825,000
	vi) SAE / Site Supervisors (4 nos)	Man-month	-	40,000	132	-	5,280,000
	vii) Surveyor	Man-month	-	36,000	20	-	720,000
	viii) Laboratory Technician	Man-month	-	36,000	33	-	1,188,000
d.	Provisional Sum						
	Arrangement of training / study tour	Lump sum	-	20,000,000	-	-	20,000,000
	TOTAL COSTS					-	43,197,500

* These are fixed costs and no receipt / voucher is required for claiming the payment.



ANNEXURE-E:
Approval of Bangladesh Government



গোপনীয়
অতি. জরুরি

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
যোগাযোগ মন্ত্রণালয়
সড়ক বিভাগ
ডিএফডিপি শাখা

নম্বর ৩৫,০০,০০০০,০২৯,০৭,০০৩,১২-৬৬৪

তারিখ : ১৪ অগ্রহায়ণ ১৪২০
২৮ নভেম্বর ২০১৩

বিষয়ঃ বরিশাল-পটুয়াখালী মহাসড়কে পায়রা নদীর উপর পায়রা সেতু (লেবুখালী সেতু) নির্মাণ প্রকল্পের ডিজাইন ও নির্মাণ কাজ তদারকির পরামর্শক নিয়োগের ক্রয় প্রস্তাব অনুমোদন প্রসঙ্গে

সূত্র : প্রধান প্রকৌশলী (সওজ) এর স্মারক নম্বর ৪৩৪-প্র; তারিখ : ০৪.১১.২০১৩

উপর্যুক্ত বিষয় ও সূত্রে প্রক্রিয়া পরিপ্রেক্ষিতে নির্দেশক্রমে জানানো যাচ্ছে যে, বিবেচ্য ক্রয়ে প্রচলিত আইন, বিধি/প্রবিধান ও নির্দেশনা পুরোপুরি অনুসরণ করা হয়েছে মর্মে প্রধান প্রকৌশলী, সওজ অধিদপ্তর প্রত্যয়ন করার বাংলাদেশ সরকার এবং Kuwait Fund for Arab Economic Development (KFAED) এর অর্থায়নে বরিশাল-পটুয়াখালী মহাসড়কে পায়রা নদীর উপর পায়রা সেতু (লেবুখালী সেতু) নির্মাণ প্রকল্পের ডিজাইন ও নির্মাণ কাজ তদারকির পরামর্শক হিসেবে পরামর্শক প্রতিষ্ঠান ICT-Kunhwa-NARCO-EPC Joint Venture (Intercontinental Consultants and Technocrats Pvt. Ltd, India in joint venture with Kunhwa Consulting & Engineering Co. Ltd, Korea, Dr. Nabeel Abdul-Rahem Consultants, Kuwait and Engineering and Planning Consultants Ltd., Bangladeshi) কে ভ্যাট ও আইটি বাবদ ৫,৯,৮৫,৯৫০.০০ (পাঁচ কোটি উনিশ লক্ষ পঁয়তালিশ হাজার নয়শত, পঞ্চাশ) টাকাসহ সর্বমোট ২৫,৯৭,২৯,৭৫০.০০ (পঁচিশ কোটি সাতানববই লক্ষ উনিশ হাজার সাতশত পঞ্চাশ টাকা মাত্র) (মার্কিন ডলার ১,৬১০,৮০০.০০ এবং বাংলাদেশী টাকা ১৩৩,২৯২,৯৫০.০০) টাকার ক্রয় প্রস্তাব সরকার অনুমোদন করেছে।

০২. চুক্তি স্বাক্ষরকালে Consultant Association এর Lead Partner এবং অংশীদারী অন্যান্য পরামর্শক প্রতিষ্ঠানের Authorized Representative এর উপস্থিতি নিশ্চিত করার জন্য অনুরোধ করা হলো।

০৩. উক্ত সরকারি সিদ্ধান্ত অনুসরণে পরবর্তী প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য অনুরোধ করা হলো।

০৪. উক্ত সরকারি সিদ্ধান্ত বাস্তবায়ন কার্য না হওয়া পর্যন্ত বাস্তবায়নের অগ্রগতি প্রতিবেদন প্রতি মাসের শেষ কার্যবিসে একবার এ বিভাগে প্রেরণ করার জন্য অনুরোধ করা হলো।

(মো: মতিউল্লাহ ইসলাম চৌধুরী)
সিনিয়র সহকারী সচিব
ফোন: ৯৫৭৫৫১৪

প্রধান প্রকৌশলী
সড়ক ও জনপথ অধিদপ্তর
সড়ক ভবন, তেজগাঁও, ঢাকা।

অনুলিপি :

০১. প্রকল্প পরিচালক, বরিশাল-পটুয়াখালী মহাসড়কে পায়রা সেতু (লেবুখালী সেতু) নির্মাণ প্রকল্প
সড়ক ভবন, পটুয়াখালী।
০২. সচিব মহোদয়ের একান্ত সচিব, সড়ক বিভাগ, যোগাযোগ মন্ত্রণালয়, ঢাকা।



PROFESSIONAL SERVICES AGREEMENT

This Agreement is signed on the 18th December, 2013 between M/s Intercontinental Consultants & Technocrats Pvt. Ltd. (herein referred to as ICT), A-8, Green Park, New Delhi – 110 016, India and M/s Engineering & Planning Consultants Ltd., 7/4 Block – A, Lalmatia, Dhaka – 1207 (herein referred to as EPC).

Whereas, ICT in joint Venture with M/s Kunhwa Engineering & Consulting Co. Ltd., Korea and M/s Dr. Nabeel Abdul-Raheem Consultants, Kuwait and M/s Engineering & Planning Consultants Ltd., Bangladesh have been awarded a project by Ministry of Communication Roads Division, Roads and Highways Department, Sarak Bhavan, Tejgoan, Dhaka-1208, Bangladesh (hereinafter referred to as Client) for providing “Consulting Services for Design and Construction Supervision of Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal – Patuakhli Road, Bangladesh” (hereinafter referred to as “Project”). Based on mutual understanding, EPC has agreed to provide services of various personnel as per details indicated in the manning schedule.

In view of the above, both parties have agreed broadly on the following terms:

- Duration of Contract** : 54 months (Design Phase-6 months; Tendering Phase-3 months; Construction Supervision 33 months and Defect Liability Period 12 months).
- Remuneration** : ICT agrees to pay EPC, remuneration at a rate, which has been approved as per contract signed on 8th Dec 2013 by all the parties against each position allotted to EPC in Annexure – A. The inputs of their various Professionals shall be as per the Manning Schedule enclosed in the Main Contract.

REIMBURSABLE EXPENSES

- General** : All reimbursable expenses shall be paid by ICT to EPC as per Annex-A.
- Per Diem** : In addition to Consultancy Fee, ICT shall pay to EPC, per diem as mentioned in Annexure- A.
- Communication Cost** : Communication cost shall be paid by ICT to EPC on monthly basis as mentioned in Annexure-A.
- Other transportation** : Suitable transportation facility for official use only to all staff of EPC shall be provided by EPC. ICT shall provide vehicle month rate to EPC as indicated in Annexure- A.
- Payment Terms** : The payment will be made as per the payment schedule enclosed in the main Contract on back to back basis. ICT shall make payment to EPC after receipt of invoice from EPC and within seven (07) days of receipt of payment of the invoices submitted by ICT to the Client.
- Surveys & Investigations :** ICT shall pay to EPC a lump-sum amount towards various Survey as per details indicated in Annexure – A.



Page 1 of 2

[Signature]
GAZI A. RAHMANI
Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207

- Taxes** : All payments to be made to EPC will be subject to Contract negotiation signed on 20th June 2013, Clause 2.5.
- Arbitration** : Any dispute or disagreement arising out of this Agreement shall be mutually settled between the Parties hereto.
- Variation** : Variation, if any, in the input period / duration, will also be governed by the above terms.

Both parties accept the above mutually agreed conditions.

For and on behalf of ICT

(Prashant Kapila)
Chief Operating Officer & President



For and on behalf of EPC

(Gazi A Rahmani) **GAZI A. RAHMANI**
Associate Director Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207

Witness

1.

(R.N. MALIK)
VICE PRESIDENT
M/S ICT LTD. A-8
Green Park, New Delhi-110016

Witness

1.

Md. Mustafizur Rahman
Office Manager
EPC Ltd.

Annexure - A

SUMMARY OF COSTS

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira on Barisal - Patuakhali Road, Bangladesh

Item	Costs	
	US Dollar	BDT
TOTAL COST		68,034,000

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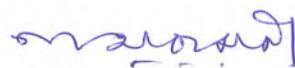


GAZI A. RAHMANI
Associate Director
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7/4, Block-A, Lalmatia, Dhaka-1207

BREAKDOWN OF COSTS BY ACTIVITY

Design and Construction Supervision for Paira Bridge (Lebukhali Bridge) over the River Paira
on Barisal - Patuakhali Road, Bangladesh

Group of Activities : Design Phase		Description :	
Sl. No.	Cost Component	Costs	
		US\$	BDT
1	Remuneration	-	4,915,000
2	Reimbursable Expenses	-	7,072,500
	Subtotals	-	11,987,500



GAZI A. RAHMANI
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7/4, Block-A, Lalmatia, Dhaka-1207



BREAKDOWN OF REMUNERATION

Design and Construction Supervision for Pairs Bridge (Lebukhali Bridge) over the River Pairs on Barisal - Patuakhali Road,
Bangladesh

Design Phase

Sl. No.	Name	Position	Staff-Month Rate			Input (Staff- months)	Total Amount	
				US\$	BDT		US\$	BDT
	LOCAL STAFF							
	Key Professionals							
1	Md. Nurul Islam	Contract Engineer	Home	-	-	-	-	-
			Field	-	140,000	7.00	-	980,000
2	M.A. Momin Khondakar	Environmental Engineer	Home	-	-	-	-	-
			Field	-	100,000	4.00	-	400,000
3	Mustafa Kamal	Electrical Engineer	Home	-	-	-	-	-
			Field	-	130,000	1.00	-	130,000
4	Humayun Kabir	Social Impact Specialist	Home	-	-	-	-	-
			Field	-	130,000	4.00	-	520,000
5	Md. Iqbal Hossain	Quantity Surveyor	Home	-	-	-	-	-
			Field	-	80,000	6.00	-	480,000
6	S.M. Azizul Hoque	Hydraulic / R.T Engineer	Home	-	-	-	-	-
			Field	-	140,000	4.00	-	560,000
7	Mohammed Shahjahan	Highway Design Engineer	Home	-	-	-	-	-
			Field	-	140,000	2.00	-	280,000
8	Prodip Kumar Saha	Structural Design Engineer	Home	-	-	-	-	-
			Field	-	140,000	6.00	-	840,000
9	Md. Tajuddin	Foundation / Geotechnical Engineer	Home	-	-	-	-	-
			Field	-	145,000	5.00	-	725,000
TOTAL CARRIED TO SUMMARY						39.00	-	4,915,000

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GAZI A. RAHMANI
Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207



BREAKDOWN OF REIMBURSABLE EXPENSES

Design and Construction Supervision for Palra Bridge (Lebukhali Bridge) over the River Palra on Barisal - Patuakhali Road, Bangladesh

Reimbursable Expenses in Design Phase (National)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Out of pocket expenses for National staff and the Team Leader	Day	-	2,000	10	For ICT & Other Partner's Staff	
			-	2,000	85	-	170,000
2	Communication Cost, telecommunication cost including cellular phone, e-mail, fax, postage, courier etc	Month	-	9,000	9	For ICT & Other Partner's Staff for Int'l Calls & Local Calls	
			-	6,000	9	-	54,000
3	Drafting, Reproduction of Reports						
	i) Inception Report	Copy	-	2,000	10	-	20,000
	ii) Progress Report (Monthly)	Copy	-	300	45	-	13,500
	iii) Hydrology and Morphology Study Report	Copy	-	2,000	7	-	14,000
	iv) Design Report and Drawings	Set	-	20,000	9	-	180,000
	v) Draft Tender Documents	Set	-	5,000	5	-	25,000
	vi) Final Tender Documents	Set	-	5,000	30	-	150,000
	vii) Land acquisition plan	Set	-	7,000	10	-	70,000
	viii) Environmental Management Plan	Set	-	5,000	7	-	35,000
	ix) Social Action Plan	Set	-	5,000	7	-	35,000
	x) Quarterly Report	Set	-	2,500	18	-	45,000
	xi) Project Completion Report	Set	-	10,000	10	-	100,000
4	Rental office accommodation including all furniture, equipment software, consumables, utility charges, security, etc	Month	-	200,000	6	-	1,200,000
5	Other transportation					-	-
	Vehicles on rental basis including operation and maintenance (1 No.)	Veh.Month	-	80,000	9	To be provided by ICT	
	Vehicles on rental basis including operation and maintenance	Veh.Month	-	80,000	27	-	2,160,000
6	Survey / study / investigation					-	-
	i) Topographic survey	LS	-	120,000	1	-	120,000
	ii) Geotechnical Investigation (including Traffic Survey)	LS	-	950,000	1	-	950,000
	iii) Hydrological study / survey	LS	-	150,000	1	-	150,000
	iv) Morphological study / survey	LS	-	200,000	1	-	200,000
	v) Environmental study / survey	LS	-	100,000	1	-	100,000
	vi) Resettlement / social survey	LS	-	150,000	1	-	150,000
7	Support Staff					-	-
	i) Office Manager / Secretary	Month	-	30,000	9	To be provided by ICT	
	ii) Accountant	Month	-	30,000	6	-	180,000
	iii) Computer Operator	Month	-	25,000	9	-	225,000
	iv) CAD Operator	Month	-	35,000	12	-	420,000
	v) Photocopy Machine Operator	Month	-	12,000	6	-	72,000
	vi) Office Assistant, Messenger, etc (2 nos)	Month	-	12,000	12	-	144,000
	vii) Laboratory Technician	Month	-	30,000	3	-	90,000
	TOTAL COSTS					-	7,072,500

[Signature]
GAZI A. RAHMANI
Associate Director
Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207

1 of 1

[Signature]
P. Karp


BREAKDOWN OF COSTS BY ACTIVITY

Design and Construction Supervision for Pairs Bridge (Lebukhali Bridge) over the River Pairs
on Barisal - Patuakhali Road, Bangladesh

Group of Activities : Construction Supervision Phase		Description :	
Sl. No.	Cost Component	Costs	
		US\$	BDT
1	Remuneration	-	24,770,000
2	Reimbursable Expenses	-	31,276,500
	Subtotals	-	56,046,500

M.A. Rahmani

GAZI A. RAHMANI

Associate Director

Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207

P. Kapoor



BREAKDOWN OF REMUNERATION

Design and Construction Supervision for Pairsa Bridge (Lebukhali Bridge) over the River Pairsa on Barisal - Patuakhali Road, Bangladesh

Construction Supervision Phase

Sl. No.	Name	Position	Staff-Month Rate		Input (Staff-months)	Total Amount	
				US\$		US\$	BDT
	LOCAL STAFF						
	Key Professionals						
1	Md. Nurul Islam	Contract Engineer	Home	-	-	-	-
			Field	-	150,000	28.00	- 4,200,000
2	M.A.Momin Khondakar	Environmental Engineer	Home	-	-	-	-
			Field	-	100,000	4.00	- 400,000
3	Mustafa Kamal	Electrical Engineer	Home	-	-	-	-
			Field	-	150,000	2.00	- 300,000
4	Humayun Kabir	Social Impact Specialist	Home	-	-	-	-
			Field	-	150,000	4.00	- 600,000
5	Md. Iqbal Hossain	Quantity Surveyor	Home	-	-	-	-
			Field	-	90,000	32.00	- 2,880,000
6	Mohammad Faziur Rahman	Resident Engineer	Home	-	-	-	-
			Field	-	100,000	32.00	- 3,200,000
7	Shahidur Rahman Joarder	Material and Quality Control Engineer	Home	-	-	-	-
			Field	-	85,000	26.00	- 2,210,000
8	AZM Nuran Nabi Khan	Hydraulic / R T Engineer	Home	-	-	-	-
			Field	-	150,000	6.00	- 900,000
9	Md. Masudur Rahman	Bridge Engineer - 1	Home	-	-	-	-
			Field	-	75,000	32.00	- 2,400,000
10	Md. Ataur Rahman	Bridge Engineer - 2	Home	-	-	-	-
			Field	-	75,000	32.00	- 2,400,000
11	S.M.Masoodur Rahman	Foundation Engineer	Home	-	-	-	-
			Field	-	160,000	9.00	- 1,440,000
12	Kamal Hossain	Junior Engineer - 1	Home	-	-	-	-
			Field	-	60,000	32.00	- 1,920,000
13	Md. Shamsul Haque	Junior Engineer - 2	Home	-	-	-	-
			Field	-	60,000	32.00	- 1,920,000
	TOTAL CARRIED TO SUMMARY					271.00	- 24,770,000

GAZI A. RAHMANI

Associate Director

Engineering & Planning Consultants Ltd.
7/4, Block-A, Lalmatia, Dhaka-1207

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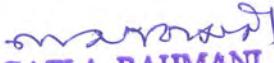


BREAKDOWN OF REIMBURSABLE EXPENSES

Design and Construction Supervision for Paita Bridge (Lebukhali Bridge) over the River Paita on Barisal - Patuakhali Road, Bangladesh

Reimbursable Expenses in Construction Supervision Phase (National)

Sl. No.	Description	Unit	Unit Cost		Quantity	Total Amount	
			US\$	BDT		US\$	BDT
1	Per Diem for National Staff and Long Term expatriate staff	Day	-	2,000	49	For ICT & Other Partner's Staff	
		Day	-	2,000	175	-	350,000
2	Communication Cost, telecommunication cost including cellular phone, e-mail, fax, postage, courier etc	Month	-	9,000	33	For ICT & Other Partner's Staff for Int'l Calls & Local Calls	
		Month	-	12,000	33	-	396,000
3	Drafting, Reproduction of Reports						
	i) Progress Report (Monthly)	Copy	-	400	165	-	66,000
	ii) Progress Report (Quarterly)	Copy	-	2,500	66	-	165,000
	iii) Resettlement Completion Report	Copy	-	5,000	10	-	50,000
	iv) Project Completion Report	Copy	-	15,000	10	-	150,000
4	Dhaka Liasion Office	Month	-	35,000	33	To be provided by ICT	
5	Support Staff						
	Team Leader's Dhaka Office (Liaison office) max 150 sqm area						
	i) Office Manager / Secretary	Month	-	32,000	36	To be provided by ICT	
	for Field Office						
	i) Office Manager / Secretary	Month	-	30,000	33	To be provided by ICT	
	ii) Computer Operator	Month	-	30,000	33	-	990,000
	iii) CAD Operator	Month	-	38,000	18	-	684,000
	iv) Photocopy Machine Operator	Month	-	12,500	33	-	412,500
	v) Office Boy, Messenger, etc (2 nos)	Month	-	12,500	66	-	825,000
	vi) SAE / Site Supervisors (4 nos)	Month	-	40,000	132	-	5,280,000
	vii) Surveyor	Month	-	36,000	20	-	720,000
	viii) Laboratory Technician	Month	-	36,000	33	-	1,188,000
6	-Provisional Sum						
	Arrangement of training / study tour	Month	-	20,000,000	-	-	20,000,000
	TOTAL COSTS					-	31,276,500


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