

# Section 2. Terms of Reference

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**Government of the People's Republic of Bangladesh**  
**Local Government Engineering Department**  
**The Construction of Important Bridges on Rural Roads (Phase-II) project**  
**Terms of Reference (ToR)**  
**for**  
**AutoCAD Expert**

**Package No: CIB2-S-52**

## 1. Background of the Assignment

The Construction of Important Bridges on Rural Roads (Phase-II) project has been prepared to improve the rural transport and trading networks in line with the strategy improvement of rural connectivity as well as socio-economic conditions of the rural people. Due to construction of the small and medium bridges in rural roads, subsequently uninterrupted accessibility demand has increased to construct the large bridges in the existing gap in comparatively in large rivers. In the last couple of years, the honorable local representatives have demanded to construct significant number of bridges. As a result, after completion of feasibility study of bridges over the third and fourth category of river included in this project. These bridges will be ensured the marketing facility of agricultural and industrial products reduce marketing cost, time and established sustainable development. The project has directly reduced the rural poverty and indirectly improve health facility specially reduced the mother/child mortality rate, increase the enrolment of children in the school and women empowerment. For this reason, the project has been prepared would establish safe communication Assessment (EIA), Hydro-Morphology Study, and Economic Feasibility Study (EFS) to address the risks of disasters related consequences as well as vulnerability of climate change.

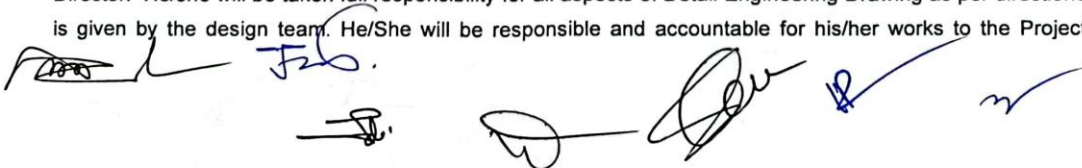
This is GoB funded project and a portion of the project fund will be utilized to employ Individual Consultant (AutoCAD Expert) for Detail Engineering Drawings of PSC or RCC girder bridges of bridges in different districts of different Upazila's under CIBRR-2 Project.

## 2. Objective of Consultancy Services

The objective of the consultancy services under the Terms of Reference (ToR) is to prepare Detail Engineering Drawings of important bridges on rural roads at different location of our country with specified technical standards, quality and time-frame and assist the team of consultants and the Local Government Engineering Department (LGED).

## 3. Scope of Work of AutoCAD Expert

The AutoCAD Expert will work under the guidance and direction of the Design Unit, LGED; Team Leader Cum Senior Bridge Engineer, Design Engineer, Foundation Cum Geotechnical Engineer and the Project Director. He/she will be taken full responsibility for all aspects of Detail Engineering Drawing as per directions is given by the design team. He/She will be responsible and accountable for his/her works to the Project



Director and the Superintending Engineer (Bridge Design), LGED. The responsibilities of the "AutoCAD Expert" would be, but not limited to, the following: -

1. Perform and prepare Architectural and Detail Structural Drawing of bridges assigned by the Design Unit, Project Director, Team Leader Cum Senior Bridge Engineer and Design Engineer/Foundation cum Geotechnical Engineer;
2. Review of all available drawing if any;
3. Follow the instruction of Team Leader Cum Senior Bridge Engineer, Design Engineer, Foundation cum Geotechnical Engineer, Electrical Engineer;
4. Perform any other works assigned by the Design Unit (Bridge Design) and project Director of the Project.

### 3.1 Architectural and Detail Structural Drawing

The design shall yield a comprehensive set of detailed drawings suitable for tendering and actual execution of the project. The drawings shall be conveniently sized for construction site and shall be drawn to suitable scales to provide clarity of comprehension. During the Preparation of Final Engineering Drawing, the aesthetic view of the bridge as well as the landscape of approach road must be considered and the Final Drawing of the bridge would be prepared on the basis of architectural point of view. Following detail structural design shall be submitted.

- Site Plan including proposed best suitable Bridge approaches with ancillary works.
- Bridge layout plan with benchmark references, boring and test pit location (Mention Global GPS Coordinate, RTK).
- General view (Plan and Elevation) with necessary RLs and dimensions.
- Detail foundation and structural drawing of various parts of the bridge in accordance with hydro-morphological study report and Sub-soil Investigation report using suitable software.
- Detail Reinforcement drawings.
- Bar bending schedule.
- Details of all necessary bearings and Joints, protection work and river training work (if required)
- Utilities and any other features, which may be, deem necessary by the designer.
- Detail Electrical drawing of bridge.
- Detail slope protection work.
- Road and Bridge Junction details with safety measures.
- Diversion road (if necessary).

### 3.2 Review of all available drawing

Review of all available drawings and suggest Design Engineer if any modification required.

### 3.3 Follow the instruction

- a. Prepare detail structural drawing of the selected bridges particularly PSC girder bridges using

- standard software based on preliminary drawings upon acceptance of the Design Unit.
- b. Follow the instruction of the design team in carrying out the Detail Engineering Drawing;
  - c. Assist the Project Director in review the Structural drawing of bridges, prepare modification drawing of bridges and or any of their components (if needed) based on the actual site condition and problems encouraged during construction.
  - d. Discuss with related consultant teams, Design Unit and concerned Project Director for finalization of the preliminary drawing of selected bridges including the bridge alignment, length, geometry, hydraulic parameter, foundation type, protective works, approach road etc.
  - e. AutoCAD Expert to prepare working drawings; ensure preparing all details of critical sections at appropriate scale; print the drawings in A-3 sheets; verify drawings with the structural design; correct dimensions; reinforcement position etc. as necessary and submit it to the Project Director/Design Unit for approval.

#### 4. Consultant's reporting obligations and deliverable submission

**Output:** a) Architectural and Structural Drawing of bridge, river training work (if required) and approach road, protection work (if necessary) b) Electrical drawing, safety drawing etc.) c) Setting layout plan of Bridge and river training work with RTK GPS coordinate.

#### 5. Duration of the Assignment

Duration of the assignment will be 60 (sixty) months. It is expected to commencement date of consultancy services from February 2023.

#### 6. Required Qualification and Experience

##### Educational Qualification

- Minimum B. Sc. in Civil Engineering/ Diploma in Civil Engineering/ Diploma in Architecture/ equivalent from any Government accredited University/Institute

##### Experience & adequacy for the assignment

- For B Sc. Engineer 5 (five) years of overall experiences, out of which 3 (three) years relevant experience in performing all type of drawings of bridge through AutoCAD
- For Diploma Engineer 8 (eight) years of overall experiences, out of which 5 (five) years relevant experience in performing all type of drawings of bridge through AutoCAD

##### Other Competency

- Drawing expert in more than 100m bridges over river will be more preferable.
- Computer skill (MS word, Excel, Power point, AutoCAD etc),
- Training in relevant areas etc.
- Extra ordinary practical experienced candidate will be given more preference.

## 7. Institutional arrangements

The individual Consultant will work directly with the Project Director, Superintendent Engineer (Bridge Design), Design Unit and support the Consultant team and staff of LGED District and Upazila in the project area, and at PMU LGED Headquarters, in order to achieve the objectives of the project.


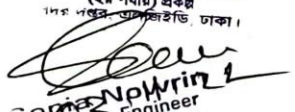
## 8. Related available information, Logistics and Facilities provided by Client

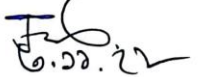

LGED/Project Director office will provide office accommodation for the consultant. LGED may also provide Computer/Laptop, Printer and necessary consumables. Client will also provide following study report, traffic and technical data which are as follows:

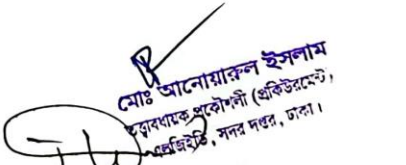
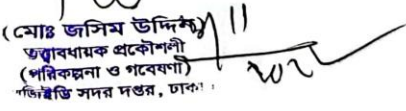
- All relevant studies so far done related to the project;
- Design manuals, standard designs of structures & other infrastructures;
- Topographical survey map. (Hard copy and soft copy);
- GIS map, Upazila Map, record on rivers (if available), Road data base, Manuals, guideline, Norms, standard etc.;
- Maps of the country and location of the structures;

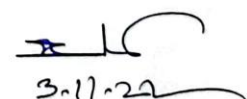
## 9. Working station

The Consultant will be based at LGED H/Q. If the consultant wants to change the service for another project of LGED, he/she have to take prior approval from the PD during submission of RFA for another Project in LGED. Otherwise, 2(two) months remuneration and reimbursable amount will be forfeited.

  
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শেখ মোঃ আবু জাকির সেকান্দার  
প্রকল্প পরিচালক  
১৯৯ সড়কে গুরুত্বপূর্ণ সেতু নির্মাণ  
(২য় পর্যায়) প্রকল্প  
এলজিইডি, সদর দপ্তর, ঢাকা।  
  
Sophia Noorin  
Executive Engineer  
Measurement Unit  
LGED, HQ. Dhaka

  
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মোঃ আব্দুল সাব্বার  
নির্বাহী প্রকৌশলী  
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৩/১১/২২  
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মোঃ আনোয়ারুল ইসলাম  
অধ্যক্ষ প্রকৌশলী (প্রকিউরমেন্ট)  
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## 8. Related available Information, Logistics and Facilities provided by Client


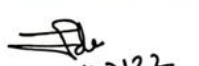
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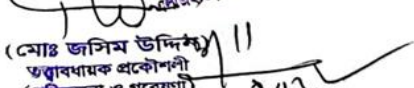
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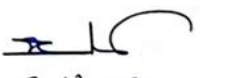
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সদর দপ্তর, এলাজিইডি, ঢাকা।  
  
Soha Noprin  
Executive Engineer  
Procurement Unit  
LGED, HQ. Dhaka

  
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মোঃ আব্দুল সাত্তার  
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মোঃ জসিম উদ্দিন  
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মোঃ আব্দুল মালেক সরকার  
অতিরিক্ত প্রধান প্রকৌশলী  
(পত্র অবকাঠামো উন্নয়ন ও যাবস্থাপনা)  
এলাজিইডি, সদর দপ্তর, ঢাকা।



**Government of the People's Republic of Bangladesh**  
**Local Government Engineering Department**  
**The Construction of Important Bridges on Rural Roads (Phase-II) project**  
**Terms of Reference (ToR)**  
**for**  
**Estimator**

**Package No: CIB2-S-55**

**1. Background of the assignment**

The Construction of Important Bridges on Rural Roads (Phase-II) project has been prepared to improve the rural transport and trading networks in line with the strategy improvement of rural connectivity as well as socio-economic conditions of the rural people. Due to construction of the small and medium bridges in rural roads, subsequently uninterrupted accessibility demand has increased to construct the large bridges in the existing gap in comparatively in large rivers. In the last couple of years, the honorable local representatives have demanded to construct significant number of bridges. As a result, after completion of feasibility study of bridges over the third and fourth category of river included in this project. These bridges will be ensured the marketing facility of agricultural and industrial products reduce marketing cost, time and established sustainable development. The project has directly reduced the rural poverty and indirectly improve health facility specially reduced the mother/child mortality rate, increase the enrolment of children in the school and women empowerment. For this reason, the project has been prepared would establish safe communication network by construct The climate resilience infrastructure after completion of the Environmental Impact Assessment (EIA), Hydro-Morphology Study, and Economic Feasibility Study (EFS) to address the risks of disasters related consequences as well as vulnerability of climate change.

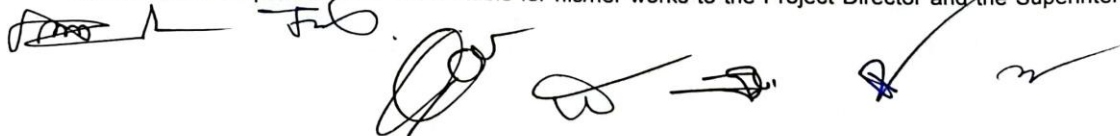
This is GoB funded project and a portion of the project fund will be utilized to employ Individual Consultant (Estimator) for detail engineering Estimate of PSC or RCC girder bridges in different districts of different Upazila under CIBRR-2 Project.

**2. Objective of Consultancy Services**

The objective of the consultancy services under the Terms of reference (ToR) is to Prepare Detail Engineering Estimates with BoQ of important bridges on rural roads at different location of our country with specified technical standards, quality and time-frame and assist the team of consultants and the Local Government Engineering Department (LGED).

**3. Scope of Work of Estimator**

The Estimator will work under the guidance and direction of the Design Unit, LGED, Team Leader Cum Senior Bridge Engineer, Design Engineer, Foundation Cum Geotechnical Engineer and the Project Director. He/she will be responsible and accountable for his/her works to the Project Director and the Superintending



Engineer (Bridge Design), LGED. The responsibilities of the "Estimator" would be, but not limited to, the following:

- a) Preparation of Detail cost estimate of bridge as per approved final drawing of bridge by using RSEPS/EVCS software.
- b) Preparation of Bar bending schedule from structural Engineering drawings.
- c) Carryout other assignments as provided by the Design Unit and the Project Director.

### **3.1 Preparation of Detailed Cost Estimate of Bridge**

- a. Should have a clear understanding on computer aided drawings and design.
- b. Prepare detail cost estimate of the selected bridges using RSEPS/EVCS software based on Design provided by Design Unit and design consultant team.
- c. Preparation of bar bending schedule to calculate reinforcement.
- d. Review and check the modified design and re-estimate the followings design.
- e. Check the variation estimate if any.

### **4. Consultant's reporting obligations and deliverable submission**

**Output:** a) Detail estimate of Bridge, approach road, protection work and river training work etc.

### **5. Duration of the Assignment**

Duration of the assignment will be 60 (sixty) months. It is expected to commencement date of consultancy services from February 2023.

### **6. Required Qualification and Experience**

#### **Educational Qualification**

- Minimum Diploma in Civil Engineering from any reputed institution.

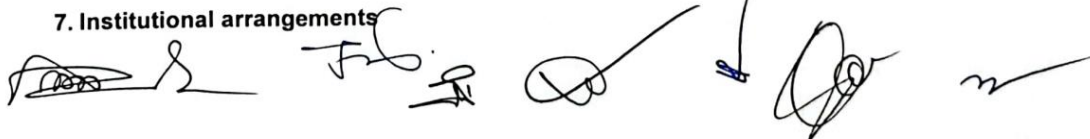
#### **Experience & adequacy for the assignment**

- At least 10 (Ten) years of overall experiences, out of which 5 (Five) years relevant experience in performing all type of details estimate of bridge project by using RSEPS and EVCS software.

#### **Other Competency**

- Estimate expert in more than 100m bridges over river will be more preferable.
- Computer skill (MS word, Excel, Power point etc.),
- Training in relevant areas etc.

### **7. Institutional arrangements**

A series of handwritten signatures and initials in black ink, arranged horizontally. From left to right, there are approximately six distinct marks, including full names and initials.

The individual Consultant will work directly with the Project Director, Superintendent Engineer (Bridge Design), Design Unit and support the consultant team and staff of LGED at LGED district and Upazila in the project area, and at PMU LGED Headquarters, in order to achieve the objectives of the project.


## 8. Related available Information, Logistics and Facilities provided by Client

LGED/Project Director office will provide office accommodation for the consultant. LGED may also provide Computer/Laptop, Printer and necessary consumables. Client will also provide following study report, traffic and technical data which are as follows:

- Design manuals, standard designs of structures & other infrastructures, PPR-2008, LGED's Unit Rate Analysis and Unit Rates etc.
- Contract documents including design, drawing, price BOQ, technical specification etc.
- Cost data on recent construction projects; and any other report as available in LGED.


## 9. Working station


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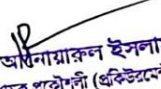
  
শেখ মোঃ আব্দুল আজিজ সেকান্দার  
বকর পরিচালক  
পদ্মা নড়কে তলত্বপূর্ণ সেতু নির্মাণ  
(২য় পর্যায়) প্রকল্প  
সদর দপ্তর, এলজিইডি ঢাকা।

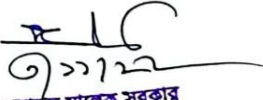
  
03.11.22  
Sonia Nowrin  
Executive Engineer  
Measurement Unit  
Dhaka

  
6.12.22  
মোঃ আব্দুস সাত্তার  
নির্বাহী প্রকৌশলী  
প্রকিউরমেন্ট ইউনিট  
এলজিইডি, সদর দপ্তর, ঢাকা।

  
(মোঃ জশিম উদ্দিন)  
তত্ত্বাবধায়ক প্রকৌশলী  
(পরিষ্করণ ও গবেষণা)  
এলজিইডি সদর দপ্তর, ঢাকা।

  
6.12.22  
মোঃ গৌশাম ইয়াজদানী  
নির্বাহী প্রকৌশলী  
প্রকিউরমেন্ট ইউনিট  
এলজিইডি, সদর দপ্তর, ঢাকা।

  
মোঃ আনোয়ারুল ইসলাম  
তত্ত্বাবধায়ক প্রকৌশলী (প্রকিউরমেন্ট)  
এলজিইডি, সদর দপ্তর, ঢাকা।

  
9.12.22  
মোঃ আব্দুল মালেক সরকার  
অতিরিক্ত প্রধান প্রকৌশলী  
(পতি অধিকারসম্পন্ন উন্নয়ন ও ব্যবস্থাপনা)  
এলজিইডি, সদর দপ্তর, ঢাকা।

Government of the People's Republic of Bangladesh  
Local Government Engineering Department  
**The Construction of Important Bridges on Rural Roads (Phase-II) project**  
**Terms of Reference (ToR)**  
**for**  
**Estimator**

**Package No: CIB2-S-56**

**1. Background of the assignment**

The Construction of Important Bridges on Rural Roads (Phase-II) project has been prepared to improve the rural transport and trading networks in line with the strategy improvement of rural connectivity as well as socio-economic conditions of the rural people. Due to construction of the small and medium bridges in rural roads, subsequently uninterrupted accessibility demand has increased to construct the large bridges in the existing gap in comparatively in large rivers. In the last couple of years, the honorable local representatives have demanded to construct significant number of bridges. As a result, after completion of feasibility study of bridges over the third and fourth category of river included in this project. These bridges will be ensured the marketing facility of agricultural and industrial products reduce marketing cost, time and established sustainable development. The project has directly reduced the rural poverty and indirectly improve health facility specially reduced the mother/child mortality rate, increase the enrolment of children in the school and women empowerment. For this reason, the project has been prepared would establish safe communication network by construct the climate resilience infrastructure after completion of the Environmental Impact Assessment (EIA), Hydro-Morphology Study, and Economic Feasibility Study (EFS) to address the risks of disasters related consequences as well as vulnerability of climate change.

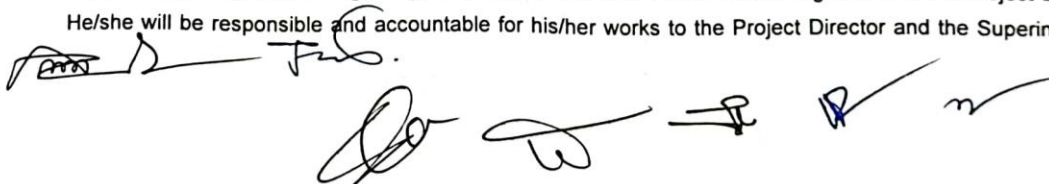
This is GoB funded project and a portion of the project fund will be utilized to employ Individual Consultant (Estimator) for detail engineering Estimate of PSC or RCC girder bridges in different districts of different Upazila under CIBRR-2 Project.

**2. Objective of Consultancy Services**

The objective of the consultancy services under the Terms of reference (ToR) is to Prepare Detail Engineering Estimates with BoQ of important bridges on rural roads at different location of our country with specified technical standards, quality and time-frame and assist the team of consultants and the Local Government Engineering Department (LGED).

**3. Scope of Work of Estimator**

The Estimator will work under the guidance and direction of the Design Unit, LGED, Team Leader Cum Senior Bridge Engineer, Design Engineer, Foundation Cum Geotechnical Engineer and the Project Director. He/she will be responsible and accountable for his/her works to the Project Director and the Superintending

A series of handwritten signatures in blue ink, arranged horizontally. The signatures vary in style, with some being more stylized and others more legible. They appear to be official signatures of project stakeholders.

Engineer (Bridge Design), LGED. The responsibilities of the "Estimator" would be, but not limited to, the following:

- a) Preparation of Detail cost estimate of bridge as per approved final drawing of bridge by using RSEPS/EVCS software.
- b) Preparation of Bar bending schedule from structural Engineering drawings.
- c) Carryout other assignments as provided by the Design Unit and the Project Director.

### 3.1 Preparation of Detailed Cost Estimate of Bridge

- a. Should have a clear understanding on computer aided drawings and design.
- b. Prepare detail cost estimate of the selected bridges using RSEPS/EVCS software based on Design provided by Design Unit and design consultant team.
- c. Preparation of bar bending schedule to calculate reinforcement.
- d. Review and check the modified design and re-estimate the followings design.
- e. Check the variation estimate if any.

### 4. Consultant's reporting obligations and deliverable submission

**Output:** a) Detail estimate of Bridge, approach road, protection work and river training work etc.

### 5. Duration of the Assignment

Duration of the assignment will be 60 (sixty) months. It is expected to commencement date of consultancy services from February 2023.

### 6. Required Qualification and Experience

#### Educational Qualification

- Minimum Diploma in Civil Engineering from any reputed institution.

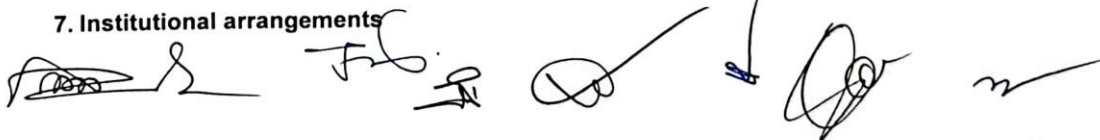
#### Experience & adequacy for the assignment

- At least 10 (Ten) years of overall experiences, out of which 5 (Five) years relevant experience in performing all type of details estimate of bridge project by using RSEPS and EVCS software.

#### Other Competency

- Estimate expert in more than 100m bridges over river will be more preferable.
- Computer skill (MS word, Excel, Power point etc.),
- Training in relevant areas etc.

### 7. Institutional arrangements

A series of handwritten signatures and initials in blue ink, including a large signature on the left, several smaller initials, and a signature on the right.

The individual Consultant will work directly with the Project Director, Superintendent Engineer (Bridge Design), Design Unit and support the consultant team and staff of LGED at LGED district and Upazila in the project area, and at PMU LGED Headquarters, in order to achieve the objectives of the project.


## 8. Related available Information, Logistics and Facilities provided by Client

LGED/Project Director office will provide office accommodation for the consultant. LGED may also provide Computer/Laptop, Printer and necessary consumables. Client will also provide following study report, traffic and technical data which are as follows:

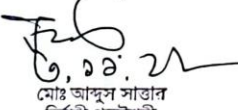
- Design manuals, standard designs of structures & other infrastructures, PPR-2008, LGED's Unit Rate Analysis and Unit Rates etc.
- Contract documents including design, drawing, price BOQ, technical specification etc.
- Cost data on recent construction projects; and any other report as available in LGED.

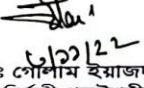
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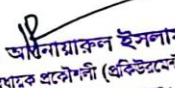
  
শেখ মোঃ আনু হাকের সেকাদার  
এক্সিকিউটিভ  
১৯৯৬ থেকে শুরুতে সেতু নির্মাণ  
(২য় পর্যায়) এক্স  
সদর দপ্তর, এলজিইডি ঢাকা।


  
03.11.22  
Sonia Nowrin  
Executive Engineer  
Design Unit  
Dhaka

  
৬, ১১. ২২  
মোঃ আব্দুস সাত্তার  
নির্বাহী প্রকৌশলী  
প্রকিউরমেন্ট ইউনিট  
এলজিইডি, সদর দপ্তর, ঢাকা।

  
৬/১১/২২  
মোঃ গোলাম হোসাইন  
নির্বাহী প্রকৌশলী  
প্রকিউরমেন্ট ইউনিট  
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৭/১১/২২  
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