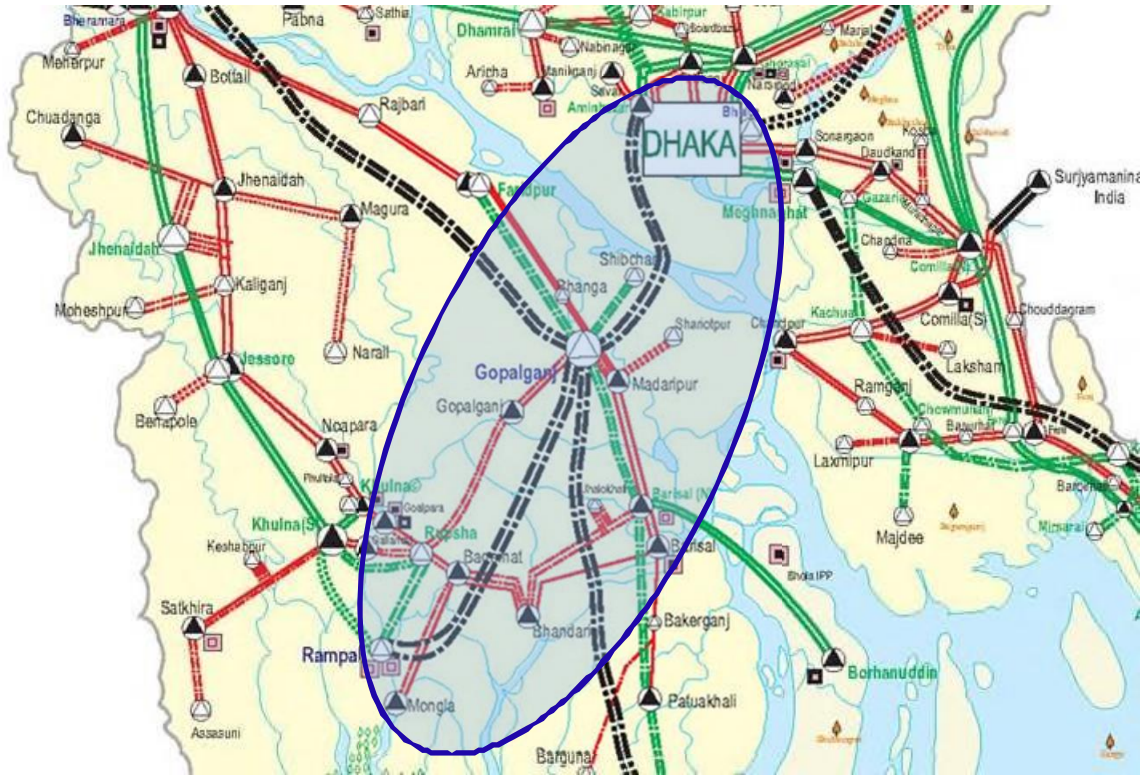

Source: Power Grid Company of Bangladesh Ltd. (PGCB) - QF-SPL-14

Design, Supply, Installation, Testing & Commissioning of the Aminbazar-Gopalganj 400 kV Double Circuit Transmission Line on turnkey basis

Volume 3

Issued on:	**December 18, 2017**
Invitation for Bids No.	**27.21.0000.411.07.209.17.7946, December 18, 2017**
ICB No.	**PGCB/ADB/3522/400kV/TL/AGTL**
Country:	**Bangladesh**

Employer:

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Contents of the Bidding Documents

VOLUME 1

Part 1: Bidding Procedures

Part 2: Requirements

Part 3: Conditions of Contract and Contract Forms

VOLUME 2

VOLUME 3

Table of Contents Page

Schedule A: Introduction and Preamble to the Price and Technical Schedules

1. Scope of Works and General Information

1.1 General

1.1.1. The extent of supply is described in the following clauses and in the respective sections of the specification. All work not expressly called for in the Specification, but necessary for the completion of the work shall be performed and furnished by the Contractor at no additional cost to the Employer.

1.1.2. The contract shall comprise design, manufacturing, testing, supply, insurance, delivery to site of towers, phase conductors, earth wire, OPGW including all associated fittings, complete insulator sets, phase and earth wire tension and non-tension joints and clamps, vibration dampers, spacer dampers, erection, setting to work, testing and the replacement and/or adjustment of defective material and workmanship for the duration of the warranty period detailed in the "Extent of Supply" and the associated Annex1-1.

1.1.3. The contract comprises **design, supply, installation, testing and commissioning of completely new 400 kV double circuit lines Aminbazar-Gopalganj with approx. 73.6 km distance on turnkey basis.**

Generally, the contract comprises design of towers and foundations, etc., as mentioned in the specification.

Design

1.1.4. The contract comprises of the complete design of transmission line.

1.1.5. The Contractor has to design all towers of the line.

1.1.6. Foundation design of all towers shall be done by the Contractor under this Contract. Foundation works for these towers are also included in the scope of this Contract.

Supply, Erection, Testing and Commissioning

The contract comprises supply, installation, testing and commissioning of complete new 400 kV double circuit lines Aminbazar-Gopalganj.

1.2 Extent of Supply

1.2.1. Providing access to affordable and reliable electricity to all citizens is a national goal of the Government of Bangladesh (GoB). In 1996, the GoB split the transmission segment and formed the Power Grid Company of Bangladesh (PGCB). PGCB is fully responsible for all transmission assets.

1.2.2. Bangladesh is facing chronic power shortages that could undermine its economic sustainability. Inadequate, irregular power and poor quality power supply were identified to be the major constraints for sustaining economic growth and development of the country.

1.2.3. PGCB launched a vast program for the improving and strengthening of its transmission system. The objective is expansion and strengthening of the 400 kV transmission systems. The project spreads over Dhaka, Munshiganj, Madaripur, Faridpur and Gopalganj districts.

1.2.4. The aim of the system expansion is to contribute to an efficient power transmission in PGCB's transmission system, to eliminate the operational bottlenecks and to provide an adequate infrastructure for future power sector development.

1.2.5. The GoB received from the Asian Development Bank financial assistance to be used for strengthening the transmission system in the country, especially the 400 kV transmission facilities. ADB will provide a loan, while the remaining costs will be financed from PGCB funds.

1.2.6. Supply, delivery, and construction of transmission line(s) are mentioned in the specification and in **Annex1-1**.

1.2.7. This specification covers the **following scope of works**:

a. Detailed survey including route alignment, profiling, tower spotting, optimization of tower locations, soil resistivity measurement & geotechnical investigation (including special foundation locations, viz. pile/well foundation locations)

b. Check survey shall be conducted to locate tower locations on ground conforming to the approved profile and tower schedule.

The coordinates of all the tower locations shall also be recorded using GPS/DGPS of positional accuracy less than 3m for easy relocating. The position of all tower locations shall be marked in

the final digitized route alignment drawing with relative distances from any permanent bench-mark area.

The Contractor shall also collect required data at each tower location in respect of soil strata, ground water level, history of water table in adjacent areas/surface water, distance from permanent bench mark (these details to be furnished in a tabulated form) and classify the suitable type of foundation at each tower location based on the data collected at each location and de- tailed soil investigations carried out at selected locations etc.

The Bidder/Contractor has to design all 400 kV towers. Preparation of detailed general arrangements, fabrication drawings of all towers is the responsibility of the Bidder/Contractor. This shall be done based on loading criteria given in this specification. The Bidder/Contractor shall calculate all types of loading based on criteria mentioned in this specification. The bidder has to use PLS-Tower software for tower design.

The Bidder/Contractor has to submit the CV of his proposed tower designer for review before starting any design activities during execution stage.

c. Design, fabrication and supply of all types of tower accessories like phase plate, circuit plate (wherever applicable), number plate, danger plate, anti-climbing device, Bird guard, Bird diverter (wherever applicable), ladder (wherever applicable), resting platform (wherever applicable) etc.

d. Design, fabrication and supply of conductors, insulators, earth wire, OPGW, insulator and conductor fittings, earth wire& OPGW accessories,

e. Classification of foundations for different type of towers and casting of foundation (including special foundation locations, viz. pile/well foundation locations) for tower footings;

f. Erection of towers, tower earthing, fixing of insulator strings, stringing of conductors, earth wire, OPGW along with all necessary line accessories,

g. Painting of towers & supply and erection of span markers, obstruction lights (wherever applicable) for aviation requirements (as required)

h. Testing and commissioning of the erected transmission lines and

i. Other items not specifically mentioned in this specification and / or the price schedules but required for the successful commissioning of the transmission line, unless specifically excluded in the Specification.

1.2.8. The various items of work are described very briefly in the relevant price schedules. The various items of the Schedule of Prices shall be read in conjunction with the corresponding sections in the Technical Specifications including amendments and, additions, if any. The Bidder's quoted rates shall be based on the description of activities in the Schedule of Prices as well as other necessary operations required to complete the works detailed in these Technical Specifications.

1.2.9. The **unit rates** quoted shall include minor details which are obviously and fairly intended, and which may not have been included in these documents but are essential for the satisfactory completion of the various works.

1.2.10. The unit rate quoted shall be inclusive of all plant equipment, men, material skilled and unskilled labour etc. essential for satisfactory completion of various works.

1.2.11. All **measurements for payment** shall be in S.I. units, lengths shall be measured in meters corrected to two decimal places. Areas shall be computed in square meters & volume in cubic meters rounded off to two decimals.

1.2.12. The Bidder shall submit his offer taking into consideration that the tower designs / drawings shall be approved by the Employer. Bidder shall quote the unit rates for various items of towers as per units mentioned in appropriate Price Schedule. However, payment of these items identified in the price schedules shall be made as follows:

- Towers /poles:
  - Supply items On supply of respective complete tower/pole
  - Erection items On supply of respective complete tower/pole
- Foundation items: On completion of the respective foundation in all respects

1.2.13. All the **raw materials** such as steel, zinc for galvanising, reinforcement steel, cement, coarse and fine aggregates for tower foundation, coke and salt for tower earthing etc. are included in the Contractor's scope of supply.

1.2.14. Bidders shall also indicate in the offer, the sources from where they propose to procure the fasteners, anti-theft fasteners, step bolts, hangers, D-shackles etc., tower accessories, aviation signal (if required)etc.

1.2.15. The **entire stringing** of conductors and earth wire shall be carried out by tension stringing technique. The Bidder shall indicate in their offer, the sets of tension stringing equipment he is having in his possession and the sets of stringing equipment he would deploy exclusively for each package, which under no circumstance shall be less than the number and capacity requirement indicated in Qualifying Requirements for Bidder.

1.2.16. In hilly terrain and thick forest or area with site constraints, where deployment of tension stringing machine is not possible, manual stringing may be adopted after getting approval of Employer's site Engineer. The Contractor shall deploy appropriate tools/ equipment / machinery to ensure that the stringing operation is carried out without causing damage to conductor / earth wire/OPGW and conductor / earth wire / OPGW is installed at the prescribed sag-tension as per the approved stringing charts.

1.3 Details of Transmission Line Routes and Terrain

1.3.1 The detailed survey shall be carried out using Total stations, DGPS, etc. along the approved route alignment. As an alternative, the Contractor may also use ALTM (Airborne Laser Terrain Modelling) techniques of equal or better accuracy for the detailed survey.

1.3.2 Bidders may, however, visit the line route to acquaint themselves with terrain conditions, approach, / accessibility to the site, salient features of the route and associated details of the proposed transmission lines. Employer may also arrange joint site visit of line route in Bangladesh for all the interested Bidders who intend to participate in the bidding and have purchased the biding documents.

1.4 Location Details and Terminal Points

Please refer to **Annex 1-2** for terminal points.

The Contractor shall have to construct these transmission line(s) completely up to the dead end towers on either end. Stringing shall also be carried out from dead end towers to terminal gantry / towers.

1.5 Estimated and Final Quantities

The quantities set out in the schedules are, unless otherwise defined, estimated quantities of the Works required. They are not to be assumed as the actual and final quantities to be executed by the Contractor in fulfilment of his obligations under the contract.

Final quantities are to be established by the Contractor, and agreed upon by the Employer, immediately after signing of the Contract, after the selection of tower positions has been made on completion of the survey of the transmission line routes.

1.6 Modifications

The transmission line shall be completely in accordance with the Specification and associated design and general arrangement/outline drawings. Any modifications thereto are subject to written confirmation by the Employer/Engineer.

1.7 Terminal Points

The terminal points for the supply and/or installation of the transmission line are defined in **Annex 1-2.**

1.8 Drawings and Documents to Be Submitted With Bid

The following drawings and documents shall be submitted with the bid:

1. Outline drawings of all type of towers with clearance diagrams for 400 kV overland transmission lines; Detailed design calculations showing stress analysis, member and bolt sizes, yield strength of tower materials, foundation reaction etc. These drawings shall be submitted for tender purpose only. All types of tower designs shall be submitted during execution for approval and should any change from these drawings/designs require fulfilling the requirement of tech-

nical specification during execution; such changes shall be made by the Contractor in the contract price.

2. Foundation drawings of all types of towers. The piled system the Bidder intends to use for the foundations along with dimensions of piles, the materials of the shaft and pile cap and the maximum possible length of pile that can be installed with the Bidder's proposed pile system. Further, the Bidders shall give information about the piling method, such as details of casing, methods of soil excavation, type of reinforcement for both pile and pile cap and the facility to transport all equipment.

3. Detailed drawings of all types of insulators and insulator sets including cross section sketch of head portion of all types of disc insulators.

4. Cross-sectional drawings of conductors and detailed drawings of its accessories

5. Cross-sectional drawings of OPGW and detailed drawings of OPGW accessories

6. Test Certificates

6.1 Not used

6.2 OPGW - Type test reports of similar OPGW (type tests shall be as stated in Volume 2, Clause 14.7.2.1 of the bidding documents) from Manufacturer's own laboratory / independent testing laboratory.

6.3 Insulators (insulator units):

Type test certificates issued from independent testing laboratory, which shall include the following tests performed on all the offered types of insulators as per IEC except power arc test, which shall conform to test procedures outlined in Clause 9.6, Volume 2 of 3 of the bidding documents:

- Dry lightning impulse voltage withstand test;
- Wet power frequency voltage withstand test;
- Electro-mechanical failing load test;
- Thermal mechanical performance test;
- Impulse voltage puncture test;
- Power arc test.

The Independent Testing Laboratories shall comply with the following requirements:
1. Valid ISO-IEC/17025 Certificate issued from Accreditation body.
2. Scope of accreditation for the laboratory shall include the required type tests.
3. The Accreditation body shall be one of the Signatories under ILAC, IFA or IEEEC.
4. Provide laboratory address and location details.

7. Technical catalogues, Quality Assurance Certificate BS EN ISO 9001 /ISO 9002 (or equivalent) and quality assurance programme & typical quality plan for the work from the Manufacturers of the following equipment:

- Tower
- Conductor &accessories.
- OPGW and OPGW accessories.
- Insulator and insulator hardware fittings.

1.9 Programme of Work

a. Within 4 (four) weeks of signing of the contract, the Contractor shall submit to the Employer for approval 5 (five) copies of a bar chart detailing the plant manufacture, testing, delivery and erection programme (as appropriate) for the complete contract works.

b. The bar chart (prepared in MSPP) shall indicate the various phases of work for all appropriate items of the contract, from commencement of the contract to its completion, e.g. design, survey, approval of drawings, ordering of materials, manufacture, testing, delivery, erection and commissioning. The bar chart shall, when appropriate, allow the requisite periods of approval by the Employer, and/or any other regulatory body.

c. If at any time during the execution of the contract it is found necessary to modify the approved bar chart, the Contractor shall inform the Employer and submit a modified bar chart for approval. Such approval is not deemed consent to any amendments to the contractual completion date(s).

d. Modifications, which may affect site work and associated local arrangements, must provide a sufficient notice period to allow for any necessary re-arrangements. It should be recognised that where certain power line outages for crossing purposes have been specified, it may not be possible for these to be replanted due to system operational constraints and this should be allowed for in the overall programme.

e. The Employer intends that access will be given to a reasonable number of sites to provide continuity of work. However, the Contractor shall accommodate reasonable delays in access to some individual sites, which may prevent sequential foundation installation and support erection work being carried out. Provided he has overall continuity of work, this shall not affect the Contractor's programme.

Annex 1-1: Scope and Extent of Definite Works

Procurement of Design, Supply, Erection, Testing and Commissioning of 400 kV double circuit Transmission Lines on Turnkey Basis

The following 400 kV Transmission Line will be constructed under the above contract:

1. 400 kV Double Circuit Transmission Line Aminbazar - Gopalganj

400 kV double circuit transmission line from the new 400 kV Aminbazar Substation to new 400 kV Gopalganj Substation.

Total length of the lines is approximately 73.6 km.

It may be mentioned here that the Padma river crossing portion (Anchor tower to Anchor tower) of this line is not included in the scope of this Contract. Padma river crossing portion will be built under separate Contract. The Contractor of this overland portion Contract is required to connect this line with the Anchor towers (land side) of river crossing portion at both ends of the Padma River. By the time of completion of this line, anchor towers of river crossing portion will supposed to be installed by the river crossing Contractor. Anchor towers will be designed for terminal condition as well as anchoring condition.

Jumpering of land portion conductor with river crossing portion conductor is included under the scope of this Contract for both sides.

2. Relocation of Dead Towers of Aminbazar - Meghnaghat 400 kV Line

Existing dead-end tower and last suspension tower of Aminbazar - Meghnaghat line at Aminbazar Substation have to be relocated/replaced and the necessary survey, design, supply, installation of towers and stringing of conductor, earth wire, and OPGW. **Temporary bypass line required for this work will be constructed by PGCB. And after completion of relocation, the bypass line will be dismantle by PGCB. Both construction and dismantle of that bypass line will be under separate local Contract.**

Annex 1-2: Terminal Points

400 kV Double Circuit Transmission Line Aminbazar - Gopalganj

Phase conductors, one shield wire, and one OPGW shall be terminated at the gantry structures of Aminbazar Substation and Gopalganj Substation.

OPGW termination boxes shall be installed at the base of the substations gantry structures.

A jumper off sufficient length shall be provided with the slack span to be terminated at the sub-station entry equipment. **The termination work of the jumper to the substation equipment is not scope of this contract.**

Schedule B: Bid Prices & Schedules

1. General

1. The Price Schedules are divided as follows:

Schedule No. 1:	Plant and Mandatory Spare Parts Supplied from Abroad
Schedule No. 2:	Plant and Mandatory Spare Parts Supplied from within the Employer's Country
Schedule No. 3:	Design Services
Schedule No. 4:	Installation and Other Services
Schedule No. 5:	Grand Summary
Schedule No. 6:	Recommended Spare Parts

2. The Schedules do not generally give a full description of the plant to be supplied and the services to be performed under each item. Bidders shall be deemed to have read the Employer's Requirements and other sections of the Bidding Document and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to cover the full scope as previously mentioned, including overheads and profit.

3. If Bidders are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with ITB 7 prior to submitting their bid.

2. Pricing

4. The units and rates in figures entered into the price schedules should be typewritten or if written by hand, must be in print form. Price schedules not presented accordingly may be considered non responsive. Any alterations necessary due to errors, etc., shall be initialed by the Bidder.

   As specified in the bid data sheet and special conditions of contract, prices shall be fixed and firm for the duration of the contract, or prices shall be subject to adjustment in accordance with the corresponding appendix (price adjustment) to the contract agreement.

5. Bid prices shall be quoted in the manner indicated and in the currencies specified in the Instructions to Bidders in the bidding document.

   For each item, Bidders shall complete each appropriate column in the respective schedules, giving the price breakdown as indicated in the schedules.

   Prices given in the schedules against each item shall be for the scope covered by that item as detailed in Volume II (Employer's Requirements) or elsewhere in the bidding document.

6. Payments will be made to the Contractor in the currency or currencies indicated under each respective item.

7. When requested by the Employer for the purposes of making payments or part payments, valuing variations or evaluating claims, or for such other purposes as the Employer may reasonably require, the Contractor shall provide the Employer with a breakdown of any composite or lump sum items included in the schedules.

3. Schedules of Rates and Prices

Schedule No. 1: Plant and Mandatory Spare Parts Supply from Abroad

Schedule No. 2: Plant and Mandatory Spare Parts Supplied from Within the Employer's Country

Schedule No. 3: Design Services

Schedule No. 4: Installation and Other Services

Schedule No. 5: Grand Summary

Schedule No. 6: Recommended Spare Parts

Please see the separate EXCEL file for the above.

The Bidder shall fill, sign and stamp the attached price schedules and shall attach them to the bid.

(Price schedules are attached at the end of this document.)

Schedule C: Bar Chart Program of Key Activities - Delivery & Completion Time Schedule

The Bidder shall fill, sign and stamp the attached time schedule and shall attach it to the bid.

Time for completion of the whole facilities shall be **720 (seven hundred twenty) days** from the effective date as de- scribed in Section 8 - Special Conditions of Contract, Sub-Clause 8.2.

The Bidder shall provide

- filled general time schedule, provided below and as Appendix 4 to the Section 9: Contract Forms,
- a detailed proposal for mobilization schedule, Section 4: Bidding Forms, item 5.3.and
- a detailed proposal for the construction schedule, Section 4: Bidding Forms, item5.4.

Please find the time schedule attached.

Time Schedule (Show Activity in Bar Chart for 24 months.)

Design, Supply, Installation, Testing & Commissioning of the Aminbazar-Gopalganj 400 kV Double Circuit Transmission Line (Lot-1) on turnkey basis	Duration	Month																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Line Route Survey																															
Geotecnical Investigation																															
Line design																															
Approval of the line design																															
Tower Design																															
Approval of the tower design																															
Civil design																															
Approval of the Civil design																															
Manufacturing of the towers																															
Tower Testing																															
Manufacturing of Conductor. Insulator, earth wire, OPGW & Accessories																															
Testing of Conductor, insulator, earth Wire, OPGW & Accessories																															
Civil works																															
Tower Erection																															
Stringing																															
Testing & Commissioning																															
Work under this contract shall be completed within 30 (thirtymonths) contract effective date																															

Work under this contract shall be completed within 720(seven hundred twenty) days from contract effective date.

Schedule D: Manufacturers, Places of Manufacture and Testing

The following form shall be filled and attached to the bid. Bidders are free to propose more than one Manufacturer for each item.

Manufacturers

Item	Description	Manufacturer	Place of Manufacture	Place of Testing and Inspection	Country of Origin
1.	Tower				
	Nuts, bolts, washers etc.				
2.	Conductor				
3.	Earth wire				
4.	OPGW				
5.	Insulator				
6.	Hardware fittings for ACCC & Insulator				
7.	Hardware fittings for OPGW				

Name of Bidder: _____

Signature of Bidder: _____

Schedule E: Technical Particulars and Guarantees

1. General

The technical data schedules hereafter provide more details on the specific technical criteria and complement the Information given in the bidding document.

They form an essential part of bid submission and will be used in bid evaluation.

They should be fully completed and submitted with the bid.

2. Technical Data Schedules

The technical data schedules hereafter provide more details on the specific technical criteria and complement the Information given in the bidding documents.

They form an essential part of bid submission and will be used in bid evaluation.

They should be fully completed and submitted with the bid.

2.1 Towers

Fill out 1 form for each manufacturer

Parameters	Unit	Tower Type				
		4DL	4D1	4D25	4D45	4DT60
Total height of tower (standard)	(mm)					
Vertical spacing between conductor-earth wire	(mm)					
Horizontal phase separation	(mm)					
Vertical phase separation	(mm)					
Total approx. mass of standard height tower without stub & cleat*	(kg)					
Total approx. mass of E1.5 tower*	(kg)					
Total approx. mass of E3.0 tower*	(kg)					
Total approx. mass of E4.5 tower*	(kg)					
Total approx. mass of E6.0 tower*	(kg)					
Total approx. mass of E9.0 tower*	(kg)					
Total approx. mass of E12.0 tower*	(kg)					
Total approx. mass of E15.0 tower*	(kg)					
Total approx. mass of E20.0 tower*	(kg)					
Total approx. mass of E25.0 tower*	(kg)					
Total approx. mass of E30.0 tower*	(kg)					
Total approx. mass of E40.0 tower*	(kg)					
Total approx. mass of stub & cleat*	(kg)					
Approximate ultimate compression load/leg (highest extension)*	(kN)					
Approximate ultimate uplift load/leg (highest extension)*	(kN)					

* The final figures will be obtained during detailed design of towers and the approval thereof after award of contract, and the towers shall be supplied accordingly within the contract price.

	Mild Steel			High Yield Steel		
	Standard	**Grade**	**Yield Stress**	**Standard**	**Grade**	**Yield Stress**
Steel standard and grades						
Bolt standard and grades						

Name & Signature of
Manufacturer`s Representative:

Stamp of Manufacturer

2.2 Piled Foundation Details

Tower Type Particulars	4DL (Highest extension)	4D1 (Highest extension)	4D25 (Highest extension)	4D45 (Highest extension)	4DT60 (Highest extension)	4DR- Not Required (Highest extension)	4DAX- Not Required
Type of piled foundation							
Number of piles per leg*							
Length of pile* (mm)							
Diameter of pile* (mm)							

* The final figures will be obtained during detailed design of tower foundations and the approval thereof after award of contract, and the foundations shall be supplied accordingly within the contract price.

2.3 Conductor, Earth wire & OPGW

2.3.1 400 kV Line – Overland Portion

Fill out 1 form for each manufacturer

	Phase		Earth wire	
Conductor	**As per Bid requirement**	**As per Bid Proposal**	**As per Bid requirement**	**As per Bid Proposal**
Designation (Code Name)				
Type				
Reference standards				
Aluminium/ Aluminium alloy grade				
Steel grade				
Galvanising Thickness				
Aluminium class (AS wire)				
Aluminium type (AS wire)				
Conductor max. continuous operating temperature (°C)				
Minimum mass of grease (kg/km)				
Creep period of conductor to be considered (years)				
No. and diameter of aluminium wire (No./mm)				
No. and diameter of steel wire (No./mm)				
Overall diameter of conductor (mm)				
Overall sectional area of conductor (mm^2)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm^2)				
Cross Sectional Area of Composite Core (mm^2)				
No. of Composite Core (mm)				
Shape of wires				
Diameter of Composite Core (mm)				
Rated tensile strength of core (kN)				
Current carrying capacity at 180 Deg C (amp)				
Max. allowable emergency operating temp. (Deg C)				
Maximum DC Resistance at 20 Deg C (ohm/km)				

Name & Signature of
Manufacturer`s Representative:

Stamp of Manufacturer

2.3.2 400kV Line - River Crossing Portion-Not Required

	Phase		Earth wire	
Conductor	**As per Bid requirement**	**As per Bid Proposal**	**As per Bid requirement**	**As per Bid Proposal**
Designation (Code Name)				
Type				
Reference standards				
Aluminium/ Aluminium alloy grade				
Steel grade				
Galvanising Thickness				
Aluminium class (AS wire)				
Aluminium type (AS wire)				
Conductor max. continuous operating temperature (°C)				
Minimum mass of grease (kg/km)				
Creep period of conductor to be considered (years)				
No. and diameter of aluminium wire (No./mm)				
No. and diameter of steel wire (No./mm)				
Overall diameter of conductor (mm)				
Overall sectional area of conductor (mm^2)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm^2)				
Cross Sectional Area of Composite Core (mm^2)				
No. of Composite Core (mm)				
Shape of wires				
Diameter of Composite Core (mm)				
Rated tensile strength of core (kN)				
Current carrying capacity at 180 Deg C (amp)				
Max. allowable emergency operating temp. (Deg C)				
Maximum DC Resistance at 20 Deg C (ohm/km)				

2.4 OPGW &Fittings

Fill out 1 form for each manufacturer

Parameter	Unit	Overland Portion		River Crossing Portion-Not required	
		As per Bid requirement	As per Bid Proposal	As per Bid requirement	As per Bid Proposal
OPGW designation & type					
Number of fibres					
Reference standard					
Number and diameter of aluminium strands	mm				
Number and diameter of steel strands	mm				
Corrosion protection of steel strands					
Internal fibre tube diameter	mm				
Overall diameter	mm				
Guaranteed ultimate tensile strength	kN				
Final modulus of elasticity	N/mm²				
Coefficient of linear expansion	1/degree				
DC resistance at 20°C	ohms/m				
Maximum short circuit current capacity	kA² sec				
Assumed temperature rise	°C				
Standard weight	kg/m				
Weight of grease	kg/m				
Standard length on drum*	m				
Weight of complete drum	kg				
Maximum drum length	m				
Installation minimum bending radius	m				
Optical Characteristics:					
Cut-off wave length	nm				
Attenuation at …… Nm	dB/km				
Zero dispersion wave length	nm				
Chromatic dispersion at …… nm	ps/km				
Individual splice loss	dB				
Bit error rate					
OPGW Fittings:					
Guaranteed ultimate tensile strength					
	kN				
• Suspension set • Tension set	kN				

Parameter	Unit	Overland Portion		River Crossing Portion-Not required	
		As per Bid requirement	As per Bid Proposal	As per Bid requirement	As per Bid Proposal
Overall length of set					
• Suspension set	mm				
• Tension set	mm				
Mass of set					
• Suspension set	kg				
• Tension set	kg				
Drawing numbers					
Cross section of OPGW					
Cross section of non-metallic cable					
Joint box					
Fixing clamps					
OPGW suspension set					
OPGW tension set					
OPGW vibration damper					

*Drum length to be finalized after finalization of tower locations as per check survey.

Name & Signature of
Manufacturer`s Representative:

Stamp of Manufacturer

2.5 Insulator Sets &Fittings

2.5.1 400kV Line (Overland Portion)

Fill out 1 form for each manufacturer

Parameter	Unit	As per Bid requirement					As per Bid Proposal				
		Insulator Set Type									
		Suspension	Heavy Suspension	Tension	Low Duty Tension	Jumper Suspension	Suspension	Heavy Suspension	Tension	Low Duty Tension	Jumper Suspension
Insulator unit type no.											
Dielectric material											
Total creepage per unit	mm										
Spacing	mm										
Overall shed diameter	mm										
Puncture voltage	kV										
Electro-mechanical failing load of unit	kN										
Drawing no. of unit											
Type test certificate no.											
Number of units per string	pcs.										
Total creepage of string	mm										
Overall length of set	mm										
Sag adjuster type and step	mm										
Ultimate strength of set	kN										
Mass of set	kg										
Anticipated											
• lightning impulse withstand voltage	kV										
• Power frequency withstand voltage	kV										
• Corona extinction level	kV										

Name & Signature of
Manufacturer`s Representative:

Stamp of Manufacturer

2.5.2 400kV Line (River Crossing Portion)-Not Required

Parameter	Unit	As per Bid requirement		As per Bid Proposal	
		Insulator Set Type			
		Suspension	Tension	Suspension	Tension
Insulator unit type no.					
Dielectric material					
Total creepage per unit	mm				
Spacing	mm				
Overall shed diameter	mm				
Puncture voltage	kV				
Electro-mechanical failing load of unit	kN				
Drawing no. of unit					
Type test certificate no.					
Number of units per string	pcs.				
Total creepage of string	mm				
Overall length of set	mm				
Sag adjuster type and step	mm				
Ultimate strength of set	kN				
Mass of set	kg				
Anticipated					
• lightning impulse withstand voltage	kV				
• Power frequency withstand voltage	kV				
• Corona extinction level	kV				

2.6 Spacers and Spacer Dampers

Fill out 1 form for each manufacturer

Parameter	Unit	As per Bid requirement	As per Bid Proposal	As per Bid requirement	As per Bid Proposal
		Overland		River Crossing-Not required	
Unit weight	kg				
Material	-				
Number of spacer dampers to be used for each phase per span*	pcs.				
Total quantity of spacer dampers for one basic span*	pcs.				

* These quantities shall be based on the design of the proposed spacer dampers. The quantities mentioned above may increase at the contractor's cost, if during design approval such increase is necessary.

Name & Signature of
Manufacturer`s Representative:

Stamp of Manufacturer

2.7 Vibration Dampers

Fill out 1 form for each manufacturer

Parameter	Unit	As per Bid requirement	As per Bid Proposal	As per Bid requirement	As per Bid Proposal
		Overland		River Crossing-Not required	
Unit weight of vibration dampers • for phase conductor • for earth wire • for OPGW	 kg kg kg				
Number of vibration dampers to be used for phase conductor per standard span	pcs.				
Number of vibration dampers to be used for earth wire per standard span	pcs.				
Number of vibration dampers to be used for OPGW per standard span	pcs.				

These quantities shall be based on the design of the proposed vibration dampers. Actual number of vibration damper will be decided according to the Manufacturer's recommendation for each span.

Name & Signature of
Manufacturer`s Representative:

Stamp of Manufacturer

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx] CIP	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad - LAND PART								
1	**Supply of 400 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.**							
1.1	**Tower type "4DL"**							
1.1.1	Tower type 4DL+0m		each	54				
1.1.2	Tower type 4DL+1.5 m		each	18				
1.1.3	Tower type 4DL+3 m		each	45				
1.1.4	Tower type 4DL+4.5 m		each	18				
1.1.5	Tower type 4DL+6 m		each	18				
1.1.6	Tower type 4DL+9 m		each	27				
1.2	**Tower type "4D1"**							
1.2.1	Tower type 4D1+0 m		each	1				
1.2.2	Tower type 4D1+1.5 m		each	1				
1.2.3	Tower type 4D1+3 m		each	1				
1.2.4	Tower type 4D1+4.5 m		each	2				
1.2.5	Tower type 4D1+6 m		each	2				
1.2.6	Tower type 4D1+9 m		each	2				
1.2.7	Tower type 4D1+12 m		each	2				
1.2.8	Tower type 4D1+15 m		each	2				
1.2.9	Tower type 4D1+18 m		each	2				
1.2.10	Tower type 4D1+21 m		each	2				
1.2.11	Tower type 4D1+25 m		each	2				
1.2.12	Tower type 4D1+30 m		each	2				
1.2.13	Tower type 4D1+40 m		each	2				
1.3	**Tower type "4D25"**							
1.3.1	Tower type 4D25+0 m		each	2				
1.3.2	Tower type 4D25+1.5 m		each	1				
1.3.3	Tower type 4D25+3 m		each	2				
1.3.4	Tower type 4D25+4.5 m		each	2				
1.3.5	Tower type 4D25+6 m		each	2				
1.3.6	Tower type 4D25+9 m		each	2				
1.4	**Tower type "4D45"**							
1.4.1	Tower type 4D45+0 m		each	3				
1.4.2	Tower type 4D45+1.5 m		each	2				
1.4.3	Tower type 4D45+3 m		each	1				
1.4.4	Tower type 4D45+4.5 m		each	1				
1.4.5	Tower type 4D45+6 m		each	1				
1.4.6	Tower type 4D45+9 m		each	2				
1.5	**Tower type "4DT60"**							

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx] CIP	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad - LAND PART								
1.5.1	Tower type 4DT60+0 m		each	1				
1.5.2	Tower type 4DT60+1.5 m		each	1				
1.5.3	Tower type 4DT60+3 m		each	1				
1.5.4	Tower type 4DT60+4.5 m		each	1				
1.5.5	Tower type 4DT60+6 m		each	1				
1.5.6	Tower type 4DT60+9 m		each	2				
1.6	**Auxiliary Crossarm for tower**							
1.6.1	Auxiliary crossarm for tower type 4DT60		per set of three	4				
2	**Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints**							
2.1	"ACCC 724/71 DHAKA" (double circuit line, both circuits erected, **four** conductors per phase) [3]		Route km[3]	73.6				
2.2	One optical fibre ground wire, 48 fibres OPGW, mechanically compatible with ACSR Dorking, including joint box		Route km[3]	73.6				
2.3	One earth shield wire ACSR dorking		Route km[3]	73.6				
3	**Insulator strings, with associated suspension and tension clamps for quadruple "ACCC 724/71 DHAKA" Conductor**							
3.1	a) Single suspension V string, having each string 210 kN, total 420kN -disc only		Set	1,080				
	b) Single suspension V string, having each string 210 kN, total 420kN -fittings only		Set	1,080				
3.2	a) Twin Suspension V string, having each string 160 kN, total 640kN-disc only		Set	138				
	b) Twin Suspension V string, having each string 160 kN, total 640kN-fittings only		Set	138				
3.3	a) Double tension string, 2 x 400kN -disc only		Set	348				
	b) Double tension string, 2 x 400kN -fittings only		Set	348				
3.4	a) Single jumper suspension I-string, having each string 1 x 210 kN-disc only		Set	141				
	b) Single jumper suspension I-string, having each string 1 x 210 kN-fittings only		Set	141				
3.5	a) Single tension string, upright low duty 210kN- disc only		Set	12				
	b) Single tension string, upright low duty 210kN- fittings only		Set	12				
3.6	a) Single tension string, inverted low duty 210kN -discs only		Set	12				
	b) Single tension string, inverted low duty 210kN -fittings only		Set	12				
3.7	Counterweights for 210kN suspension insulator sets complete with yoke plate attachment bolts to be used for 4D1 towers:							
(a)	- 40kg set		each	5				
(b)	- 80kg set		each	5				
(c)	- 120kg set		each	3				

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx] CIP	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad - LAND PART								
4	**Earthwire sets, complete with all accessories**							
4.1	Suspension set		set	203				
4.2	Tension set		set	58				
5	**OPGW sets, complete with all accessories, incl. armour rods and earth bounds**							
5.1	Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	203				
5.2	Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	58				
6	**Dampers**							
6.1	Vibration damper for phase conductor		per span	231				
6.2	Spacer damper for phase conductor		per span	231				
6.3	Vibration damper for earthwire		per span	231				
6.4	Vibration damper for OPGW		per span	231				
6.5	Spacer for jumper		nos.	1230				
7	**Aerial Markers**							
7.1	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc.		Per tower	14				
7.2	Bird diverters		pcs.	60				
7.3	Bird guards, one bird guard per each crossarm applied on intermediate towers		pcs.	423				
7.4	Aircraft warning spheres		pcs.	100				
7.5	Painting of 60 meter and over tower in accordance with the requirements of the Technical Specification		per tower	14				
8	**Mandatory Spare Parts and Tools**							
8.1	Tower type 4DL+0m		each	2				
8.2	Tower type 4DL+1.5 m		each	2				
8.3	Tower type 4DL+3 m		each	2				
8.4	Tower type 4DL+4.5 m		each	2				
8.5	Tower type 4DL+6 m		each	2				
8.6	Tower type 4DL+9 m		each	2				
8.7	Tower type 4D1+9m		each	1				
8.8	Tower type 4D25+6m		each	1				
8.9	Tower type 4D25+9m		each	1				
8.10	Tower type 4D45+9m		each	1				
8.11	Tower type 4DT60+9m		each	1				
8.12	Conductor ACCC 724/71 DHAKA type		km	10				
8.13	Optical fibre ground wire, 48 fibres OPGW, mechanically compatible with ACSR Dorking		km	5				
8.14	Shieldwire ACSR dorking		km	5				

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx] CIP	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad - LAND PART								
8.15	a) Single suspension V string, having each string 210 kN, total 420kN -disc only		set	12				
	b) Single suspension V string, having each string 210 kN, total 420kN -fittings only		set	12				
8.16	a) Twin Suspension V string, having each string 160 kN, total 640kN-disc only		set	6				
	b) Twin Suspension V string, having each string 160 kN, total 640kN-fittings only		set	6				
8.17	a) Single jumper suspension I-string, having each string 1 x 210 kN-disc only		set	24				
	b) Single jumper suspension I-string, having each string 1 x 210 kN-fittings only		set	24				
8.18	a) Double tension string, 2 x 400kN -disc only		set	2				
	b) Double tension string, 2 x 400kN -fittings only		set	2				
8.19	Suspension set, suitable for ACSR dorking		set	2				
8.20	Tension set, suitable for ACSR dorking		set	2				
8.21	OPGW 48 fibres suspension set		set	2				
8.22	OPGW 48 fibres tension set		set	2				
8.23	OPGW junction box		set	16				
8.24	Vibration damper for phase conductor Quadruple “ACCC 724/71 DHAKA” Conductor		each	10				
8.25	Vibration damper for earth shield wire ACSR Dorking		each	10				
8.26	Vibration damper for OPGW		each	10				
8.27	Repair sleeve for conductor - Quadruple “ACCC 724/71 DHAKA” Conductor		pcs	10				
8.28	Repair sleeve for earth shieldwire ACSR Dorking		pcs	10				
8.29	Midspan joints for conductor Quadruple “ACCC 724/71 DHAKA” Conductor		pcs	5				
8.30	Midspan joints for earth shieldwire ACSR Dorking		pcs	2				
8.31	Bird diverters		pcs	5				
8.32	Bird guard		pcs	5				
8.33	Aircraft warning markers		pcs	1				
8.34	Terminal ground resistance tester (tools)		pcs	1				
Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary								

Name of Bidder _____

Signature of Bidder _____

1 Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

2 Bidders shall enter a code representing the country of origin of all imported plant and equipment.

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx] CIP	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad - LAND PART								

3 Definition of route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Country of Origin Declaration Form

Item	Description	Code	Country

Design, Supply, Installation, Testing & Commissioning of the Aminbazar-Gopalganj 400 kV Double Circuit Transmission Line on turnkey basis
Transmission Line on turnkey basis

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx] CIP	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1B: Plant and Mandatory Spare Parts Supplied from Abroad -Relocation of Dead-end tower & Suspension Tower at Aminbazar - Maghnaghat 400kV Transmission Line								
1	**Supply of 400 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.**							
1.1	Tower type 4D25+9m		each	1				
1.2	Tower type 4DT60+6 m		each	1				
2	**Insulator strings, with associated suspension and tension clamps for ACSR Egret**							
2.1	a) Double tension string, 2x300 kN-disc only		set	36				
	b) Double tension string, 2x300 kN-fittings only		set	36				
2.2	a) 210kN single jumper suspension set -disc only		set	12				
	b) 210kN single jumper suspension set -fittings only		set	12				
4	**Earthwire sets, complete with all accessories**							
4.1	Tension set		set	4				
5	**OPGW sets, complete with all accessories, incl. armour rods and earth bounds**							
5.1	Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	4				
6	**Dampers**							
6.1	Vibration damper for phase conductor		per span	2				
6.2	Spacer damper		per span	2				
6.3	Vibration damper for earthwire		per span	2				
6.4	Vibration damper for OPGW		per span	2				
6.5	Jumper spacer for ACSR Egret		Nos.	30				
Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary								

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx] CIP	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1B: Plant and Mandatory Spare Parts Supplied from Abroad -Relocation of Dead-end tower & Suspension Tower at Aminbazar - Maghnaghat 400kV Transmission Line								

Name of Bidder

Design, Supply, Installation, Testing & Commissioning of the Aminbazar-Gopalganj 400 kV Double Circuit Transmission Line on turnkey basis
Transmission Line on turnkey basis

Item	Description	Country of origin[2]	Unit	Quantity	Unit Price[1]		Total Price[1]	Sales and Other Taxes
					Local Currency [BDT]	EXW price	Local Currency [BDT] EXW Price	Local Currency
1	2	3	4	5	6	7	8= 5 x 7	9
Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country - LAND PART								
1	**Supply of 400 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.**							
1.1	**Tower type "4DL"**							
1.1.1	Tower type 4DL+0m		each	54				
1.1.2	Tower type 4DL+1.5 m		each	18				
1.1.3	Tower type 4DL+3 m		each	45				
1.1.4	Tower type 4DL+4.5 m		each	18				
1.1.5	Tower type 4DL+6 m		each	18				
1.1.6	Tower type 4DL+9 m		each	27				
1.2	**Tower type "4D1"**							
1.2.1	Tower type 4D1+0 m		each	1				
1.2.2	Tower type 4D1+1.5 m		each	1				
1.2.3	Tower type 4D1+3 m		each	1				
1.2.4	Tower type 4D1+4.5 m		each	2				
1.2.5	Tower type 4D1+6 m		each	2				
1.2.6	Tower type 4D1+9 m		each	2				
1.2.7	Tower type 4D1+12 m		each	2				
1.2.8	Tower type 4D1+15 m		each	2				
1.2.9	Tower type 4D1+18 m		each	2				
1.2.10	Tower type 4D1+21 m		each	2				
1.2.11	Tower type 4D1+25 m		each	2				
1.2.12	Tower type 4D1+30 m		each	2				
1.2.13	Tower type 4D1+40 m		each	2				
1.3	**Tower type "4D25"**							
1.3.1	Tower type 4D25+0 m		each	2				
1.3.2	Tower type 4D25+1.5 m		each	1.35				
1.3.3	Tower type 4D25+3 m		each	1.8				
1.3.4	Tower type 4D25+4.5 m		each	1.8				
1.3.5	Tower type 4D25+6 m		each	1.8				

Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country - LAND PART								
1.3.6	Tower type 4D25+9 m		each	1.8				
1.4	**Tower type "4D45"**							
1.4.1	Tower type 4D45+0 m		each	2.7				
1.4.2	Tower type 4D45+1.5 m		each	2.25				
1.4.3	Tower type 4D45+3 m		each	0.9				
1.4.4	Tower type 4D45+4.5 m		each	0.9				
1.4.5	Tower type 4D45+6 m		each	0.9				
1.4.6	Tower type 4D45+9 m		each	1.8				
1.5	**Tower type "4DT60"**							
1.5.1	Tower type 4DT60+0 m		each	1				
1.5.2	Tower type 4DT60+1.5 m		each	1				
1.5.3	Tower type 4DT60+3 m		each	1				
1.5.4	Tower type 4DT60+4.5 m		each	1				
1.5.5	Tower type 4DT60+6 m		each	1				
1.5.6	Tower type 4DT60+9 m		each	2				
1.6	**Auxiliary Crossarm for tower**							
1.6.1	Auxiliary crossarm for tower type 4DT60		per set of three	4				
2	**Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints**							
2.1	"ACCC 724/71 DHAKA" (double circuit line, both circuits erected, four conductors per phase) [3]		Route km[3]	73.6				
2.2	One optical fibre ground wire, 48 fibres OPGW, mechanically compatible with ACSR Dorking, including joint box		Route km[3]	73.6				
2.3	One earth shield wire ACSR dorking		Route km[3]	73.6				
3	**Insulator strings, with associated suspension and tension clamps for quadruple "ACCC 724/71 DHAKA" Conductor**							
3.1	a) Single suspension V string, having each string 210 kN, total 420kN -disc only		Set	1080				
	b) Single suspension V string, having each string 210 kN, total 420kN -fittings only		Set	1080				
3.2	a) Twin Suspension V string, having each string 160 kN, total 640kN-disc only		Set	138				
	b) Twin Suspension V string, having each string 160 kN, total 640kN-fittings only		Set	138				
3.3	a) Double tension string, 2 x 400kN -disc only		Set	348				
	b) Double tension string, 2 x 400kN -fittings only		Set	348				

Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country - LAND PART								
3.4	a) Single jumper suspension I-string, having each string 1 x 210 kN-disc only		Set	141				
	b) Single jumper suspension I-string, having each string 1 x 210 kN-fittings only		Set	141				
3.5	a) Single tension string, upright low duty 210kN- disc only		Set	12				
	b) Single tension string, upright low duty 210kN- fittings only		Set	12				
3.6	a) Single tension string, inverted low duty 210kN -discs only		Set	12				
	b) Single tension string, inverted low duty 210kN -fittings only		Set	12				
3.7	Counterweights for 210kN suspension insulator sets complete with yoke plate attachment bolts to be used for 4D1 towers:							
(a)	- 40kg set		each	5				
(b)	- 80kg set		each	5				
(c)	- 120kg set		each	3				
4	**Earthwire sets, complete with all accessories**							
4.1	Suspension set		set	203				
4.2	Tension set		set	58				
5	**OPGW sets, complete with all accessories, incl. armour rods and earth bounds**							
5.1	Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	203				
5.2	Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	58				
6	**Dampers**							
6.1	Vibration damper for phase conductor		per span	231				
6.2	Spacer damper for phase conductor		per span	231				
6.3	Vibration damper for earthwire		per span	231				
6.4	Vibration damper for OPGW		per span	231				
6.5	Spacer for jumper		nos.	1230				
7	**Aerial Markers**							
7.1	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc.		Per tower	14				
7.2	Bird diverters		pcs.	60				
7.3	Bird guards, one bird guard per each crossarm applied on intermediate towers		pcs.	423				
7.4	Aircraft warning spheres		pcs.	100				
7.5	Painting of 60 meter and over tower in accordance with the requirements of the Technical Specification		per tower	14				
8	**Mandatory Spare Parts and Tools**							
8.1	Tower type 4DL+0m		each	2				
8.2	Tower type 4DL+1.5 m		each	2				
8.3	Tower type 4DL+3 m		each	2				
8.4	Tower type 4DL+4.5 m		each	2				
8.5	Tower type 4DL+6 m		each	2				
8.6	Tower type 4DL+9 m		each	2				
8.7	Tower type 4D1+9m		each	1				
8.8	Tower type 4D25+6m		each	1				
8.9	Tower type 4D25+9m		each	1				

Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country - LAND PART

8.1	Tower type 4D45+9m		each	1				
8.11	Tower type 4DT60+9m		each	1				
8.12	Conductor ACCC 724/71 DHAKA type		km	10				
8.13	Optical fibre ground wire, 48 fibres OPGW, mechanically compatible with ACSR Dorking		km	5				
8.14	Shieldwire ACSR dorking		km	5				
8.15	a) Single suspension V string, having each string 210 kN, total 420kN -disc only		set	12				
	b) Single suspension V string, having each string 210 kN, total 420kN -fittings only		set	12				
8.16	a) Twin Suspension V string, having each string 160 kN, total 640kN-disc only		set	6				
	b) Twin Suspension V string, having each string 160 kN, total 640kN-fittings only		set	6				
8.17	a) Single jumper suspension I-string, having each string 1 x 210 kN-disc only		set	24				
	b) Single jumper suspension I-string, having each string 1 x 210 kN-fittings only		set	24				
8.18	a) Double tension string, 2 x 400kN -disc only		set	2				
	b) Double tension string, 2 x 400kN -fittings only		set	2				
8.19	Suspension set, suitable for ACSR dorking		set	2				
8.2	Tension set, suitable for ACSR dorking		set	2				
8.21	OPGW 48 fibres suspension set		set	2				
8.22	OPGW 48 fibres tension set		set	2				
8.23	OPGW junction box		set	16				
8.24	Vibration damper for phase conductor Quadruple "ACCC 724/71 DHAKA" Conductor		each	10				
8.25	Vibration damper for earth shield wire ACSR Dorking		each	10				
8.26	Vibration damper for OPGW		each	10				
8.27	Repair sleeve for conductor - Quadruple "ACCC 724/71 DHAKA" Conductor		pcs	10				
8.28	Repair sleeve for earth shieldwire ACSR Dorking		pcs	10				
8.29	Midspan joints for conductor Quadruple "ACCC 724/71 DHAKA" Conductor		pcs	5				
8.3	Midspan joints for earth shieldwire ACSR Dorking		pcs	2				
8.31	Bird diverters		pcs	5				
8.32	Bird guard		pcs	5				
8.33	Aircraft warning markers		pcs	1				
8.34	Terminal ground resistance tester (tools)		pcs	1				
Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary								

Name of Bidder _____

Signature of Bidder _____

1 Specify currencies in accordance with ITB 19.1 of the BDS.

2 Bidders shall enter a code representing the country of origin of all imported plant and equipment.

3 Definition of route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

4. Column 6, EXW Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item or the customs duties and sales and other taxes already paid on previously imported items."

Design, Supply, Installation, Testing & Commissioning of the Aminbazar-Gopalganj 400 kV Double Circuit Transmission Line on turnkey basis

Item	Description	Country of origin	Unit	Quantity	Unit Price[1]		Total Price[1]	Sales and Other Taxes
					Local Currency [BDT]	EXW price	Local Currency [BDT] EXW Price	Local Currency
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 2B: Plant and Mandatory Spare Parts Supplied from Within the Employer's Country -Relocation of Dead-end tower & Suspension Tower at Aminbazar - Maghnaghat 400kV Transmission Line								
1	**Supply of 400 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.**							
1.1	Tower type 4D25+9m		each	1				
1.2	Tower type 4DT60+6 m		each	1				
2	**Insulator strings, with associated suspension and tension clamps for ACSR Egret**							
2.1	a) Double tension string, 2x300 kN-disc only		set	36				
	b) Double tension string, 2x300 kN-fittings only		set	36				
2.2	a) 210kN single jumper suspension set -disc only		set	12				
	b) 210kN single jumper suspension set -fittings only		set	12				
4	**Earthwire sets, complete with all accessories**							
4.1	Tension set		set	4				
5	**OPGW sets, complete with all accessories, incl. armour rods and earth bounds**							
5.1	Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	4				
6	**Dampers**							
6.1	Vibration damper for phase conductor		per span	2				
6.2	Spacer damper		per span	2				
6.3	Vibration damper for earthwire		per span	2				
6.4	Vibration damper for OPGW		per span	2				
6.5	Jumper spacer for ACSR Egret		Nos.	30				
Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary								

Name of Bidder _____

Signature of Bidder _____

1 Specify currencies in accordance with ITB 19.1 of the BDS.

2 Bidders shall enter a code representing the country of origin of all imported plant and equipment.

3. Column 6, EXW Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item or the customs duties and sales and other taxes already paid on previously imported items."

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 3A Design Services - LAND PART							
1	**Line Design**						
1.1	Detailed line design including plan and profiles; conductor, earthwire and OPGW sag tension calculations; tower spotting, establishment of line schedule; Design of insulator strings, OPGW and earthwire attachments	Lump sum	1				
2	**Tower Test**						
2.1	**Tower load test to prove compliance with specification. Payment for successful test only. Tested Tower to be supplied to the Employer's store as per technical specification.**						
2.1.1	Tower type 4DL E9.0	each	1				
2.1.2	Tower type 4D1 E9.0	each	1				
2.1.3	Tower type 4D25 E9.0	each	1				
2.1.4	Tower type 4D45 E9.0	each	1				
2.1.5	Tower type 4DT60 E9.0	each	1				
2.2	**Proto assembly of all type towers with all extensions to prove compliance with specification. Payment for successful test only.**						
(a)	Tower type 4DL	each	1				
(b)	Tower type 4D1	each	1				
(c)	Tower type 4D25	each	1				
(d)	Tower type 4D45	each	1				
(e)	Tower type 4DT60	each	1				
3	**Tower Design and Shop Drawings**						
3.1	**Towers: Design calculations and fabrication drawings including body extensions, hill-side extensions, stubs, and signs as per specifications**						
3.1.1	Tower type "4DL"	Lump sum	1				
3.1.2	Tower type "4D1"	Lump sum	1				
3.1.3	Tower type "4D25"	Lump sum	1				
3.1.4	Tower type "4D45"	Lump sum	1				
3.1.5	Tower type "4DT60"	Lump sum	1				
3.1.6	Special tower	Lump sum	1				
4	**Foundation Design**						
4.1	Foundation design for all soil types including additional soil investigation and additional soil resistivity measurement	Lump sum	1				
Total Columns 7 & 8 to be carried forward to Schedule No. 5 - Grand Summary							
5	Total Tax and VAT deductable at source(TDS & VDS) under the schedule 3A(to be quoted in the currency similar as above)[2]						

Name of Bidder _____

Signature of Bidder _____

1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

2. Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmatic correction by Employer as required.

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 3B Design Services - Relocation of Dead-End Tower & Suspension Tower at Aminbazar - Meghnaghat 400 kV Transmission Line							
1	**Line Design**						
1.1	Detailed line design including plan and profiles; conductor, earthwire and OPGW sag tension calculations; tower spotting, establishment of line schedule; Design of insulator strings, OPGW and earthwire attachments	Lump sum	1				
2	**Foundation Design**						
2.1	Foundation design for all soil types including additional soil investigation and additional soil resistivity measurement	Lump sum	1				
Total Columns 7 & 8 to be carried forward to Schedule No. 5 - Grand Summary							
3	Total Tax and VAT deductable at source(TDS & VDS) under the schedule 3B(to be quoted in the currency similar as above)[2]						

Name of Bidder _____

Signature of Bidder _____

1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

2. Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmatic correction by Employer as required.

Design, Supply, Installation, Testing & Commissioning of the Aminbazar-Gopalganj 400 kV Double Circuit Transmission Line on turnkey basis

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services - LAND PART							
1	**Survey and soil investigation works**						
1.1	**Survey Work**						
1.1.1	Check survey in accordance with the requirements of the technical specification, incl. Full ground survey with change of route, if any, tower plotting and preparation and submission of route maps, profile drawings, SIMM documents, etc.	Km	73.6				
1.2	**Geotechnical Investigations incl. taking samples, logging and lab testing**						
1.2.1	Boreholes for geotechnical investigation, incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification						
(a)	Level 2	borehole	20				
(b)	Level 4	borehole	10				
1.2.2	Soil resistivity tests (one per tower)	unit	232.0				
2	**Foundations for towers including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-Setting, Geotechnical Investigation (Level 2), Shuttering, Leveling, Timbering, supply & Installation of foundation steelwork, Earthing Materials,Backfilling, approved Protective Coating & site clearing etc.**						
2.1.	**Tower type "4DL"**						
2.1.1.	Pile Foundation for Soil Category-2	per tower	30				
2.1.2.	Pile Foundation for Soil Category-3	per tower	42				
2.1.3.	Pile Foundation for Soil Category-4	per tower	59				
2.1.4.	Pile Foundation (1 meter raised chimney) for soil category-2	per tower	3				
2.1.5.	Pile Foundation (2 meter raised chimney) for soil category-2	per tower	3				
2.1.6.	Pile Foundation (1 meter raised chimney) for soil category-3	per tower	8				
2.1.7.	Pile Foundation (2 meter raised chimney) for soil category-3	per tower	8				
2.1.8.	Pile Foundation (1 meter raised chimney) for soil category-4	per tower	9				

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services - LAND PART							
2.1.9.	Pile Foundation (2 meter raised chimney) for soil category-4	per tower	18				
2.2.	**Tower type "4D1"**						
2.2.1	Pile Foundation for Soil Category-2	per tower	3				
2.2.2	Pile Foundation for Soil Category-3	per tower	5				
2.2.3	Pile Foundation for Soil Category-4	per tower	8				
2.2.4	Pile Foundation (1 meter raised chimney) for soil category-2	per tower	1				
2.2.5	Pile Foundation (2 meter raised chimney) for soil category-2	per tower	1				
2.2.6	Pile Foundation (1 meter raised chimney) for soil category-3	per tower	1				
2.2.7	Pile Foundation (2 meter raised chimney) for soil category-3	per tower	1				
2.2.8	Pile Foundation (1 meter raised chimney) for soil category-4	per tower	1				
2.2.9	Pile Foundation (2 meter raised chimney) for soil category-4	per tower	2				
2.3.	**Tower type "4D25"**						
2.3.1	Pile Foundation for Soil Category-2	per tower	1				
2.3.2	Pile Foundation for Soil Category-3	per tower	1				
2.3.3	Pile Foundation for Soil Category-4	per tower	4				
2.3.4	Pile Foundation (1 meter raised chimney) for soil category-2	per tower	0				
2.3.5	Pile Foundation (2 meter raised chimney) for soil category-2	per tower	0				
2.3.6	Pile Foundation (1 meter raised chimney) for soil category-3	per tower	1				
2.3.7	Pile Foundation (2 meter raised chimney) for soil category-3	per tower	1				
2.3.8	Pile Foundation (1 meter raised chimney) for soil category-4	per tower	1				
2.3.9	Pile Foundation (2 meter raised chimney) for soil category-4	per tower	1				
2.4.	**Tower type "4D45"**						
2.4.1	Pile Foundation for Soil Category-2	per tower	1				
2.4.2	Pile Foundation for Soil Category-3	per tower	1				

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services - LAND PART							
2.4.3	Pile Foundation for Soil Category-4	per tower	4				
2.4.4	Pile Foundation (1 meter raised chimney) for soil category-2	per tower	0				
2.4.5	Pile Foundation (2 meter raised chimney) for soil category-2	per tower	0				
2.4.6	Pile Foundation (1 meter raised chimney) for soil category-3	per tower	1				
2.4.7	Pile Foundation (2 meter raised chimney) for soil category-3	per tower	1				
2.4.8	Pile Foundation (1 meter raised chimney) for soil category-4	per tower	1				
2.4.9	Pile Foundation (2 meter raised chimney) for soil category-4	per tower	1				
2.5.	**Tower type "4DT60"**						
2.5.1	Pile Foundation for Soil Category-2	per tower	1				
2.5.2	Pile Foundation for Soil Category-3	per tower	1				
2.5.3	Pile Foundation for Soil Category-4	per tower	1				
2.5.4	Pile Foundation (1 meter raised chimney) for soil category-2	per tower	0				
2.5.5	Pile Foundation (2 meter raised chimney) for soil category-2	per tower	0				
2.5.6	Pile Foundation (1 meter raised chimney) for soil category-3	per tower	1				
2.5.7	Pile Foundation (2 meter raised chimney) for soil category-3	per tower	1				
2.5.8	Pile Foundation (1 meter raised chimney) for soil category-4	per tower	1				
2.5.9	Pile Foundation (2 meter raised chimney) for soil category-4	per tower	1				
3	**Erection of 400kV double circuit towers complete with all stubs, nuts, bolts, locking nuts, washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, ptotective coating, earthing etc.**						
3.1	**Tower type "4DL"**						
3.1.1	Tower type 4DL+0m	each	54				
3.1.2	Tower type 4DL+1.5 m	each	18				
3.1.3	Tower type 4DL+3 m	each	45				
3.1.4	Tower type 4DL+4.5 m	each	18				

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services - LAND PART							
3.1.5	Tower type 4DL+6 m	each	18				
3.1.6	Tower type 4DL+9 m	each	27				
3.2	**Tower type "4D1"**						
3.2.1	Tower type 4D1+0m	each	1				
3.2.2	Tower type 4D1+1.5 m	each	1				
3.2.3	Tower type 4D1+3 m	each	1				
3.2.4	Tower type 4D1+4.5 m	each	2				
3.2.5	Tower type 4D1+6 m	each	2				
3.2.6	Tower type 4D1+9 m	each	2				
3.2.7	Tower type 4D1+12 m	each	2				
3.2.8	Tower type 4D1+15 m	each	2				
3.2.9	Tower type 4D1+18 m	each	2				
3.2.10	Tower type 4D1+21 m	each	2				
3.2.11	Tower type 4D1+25 m	each	2				
3.2.12	Tower type 4D1+30 m	each	2				
3.2.13	Tower type 4D1+40 m	each	2				
3.3	**Tower type "4D25"**						
3.3.1	Tower type 4D25+0m	each	2				
3.3.2	Tower type 4D25+1.5 m	each	1				
3.3.3	Tower type 4D25+3 m	each	2				
3.3.4	Tower type 4D25+4.5 m	each	2				
3.3.5	Tower type 4D25+6 m	each	2				
3.3.6	Tower type 4D25+9 m	each	2				
3.4	**Tower type "4D45"**						

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services - LAND PART							
3.4.1	Tower type 4D45+0m	each	3				
3.4.2	Tower type 4D45+1.5 m	each	2				
3.4.3	Tower type 4D45+3 m	each	1				
3.4.4	Tower type 4D45+4.5 m	each	1				
3.4.5	Tower type 4D45+6 m	each	1				
3.4.6	Tower type 4D45+9 m	each	2				
3.5	**Tower type "4DT60"**						
3.5.1	Tower type 4DT60+0m	each	1				
3.5.2	Tower type 4DT60+1.5 m	each	1				
3.5.3	Tower type 4DT60+3 m	each	1				
3.5.4	Tower type 4DT60+4.5 m	each	1				
3.5.5	Tower type 4DT60+6 m	each	1				
3.5.6	Tower type 4DT60+9 m	each	2				
A4.	**Testing of Foundations**						
4.1	**Supply (incl. Foundation, steel works), install and test foundation for pad & chimney type foundation to prove compliance with Technical specification, payment for successful test only**						
(a)	Uplift test	per test	2				
(b)	Compression test	per test	2				
4.2	**Individual Pile test including supply,install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):**						
(a)	Compression test	per test	6				
(b)	Uplift test	per test	6				
(c)	Pile Integrity test	per test	928				

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services - LAND PART							
5	**Stringing of double circuit line, four conductors per phase, 1 OPGW and 1 conventional earthwire (length approx. Route km)**						
5.1	Conductor "ACCC 724/71 DHAKA" (Double circuit line, both circuits erected, FOUR conductor per phase) including: Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps, Sagging and clipping, Installation of armour rods and Dampers, Pilot strings and jumpers and any other works required as per specification.	route km	73.6				
5.2	One optical fibre ground wire, 48 fibres OPGW, mechanically compatible with ACSR Dorking shield wire, including joint box, including:Tension and semi-tension joints, suspension clamps, armour rods and dampers,Sagging and clipping, Installation of intermediate junction boxes and terminal junction boxes at substation gantries ,Earthing jumpers	route km	73.6				
5.3	One earth shield wire ACSR Dorking type including Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers,Sagging and clipping, Earthing jumpers, warning sphere(**if required**)	route km	73.6				
6	**Documentation**						
6.1	Establishment of as-built drawings, manuals and all requested documents as per specifications	lump sum	1				
7	**Miscellaneous**						
7.1	General and other works and services, not mentioned before	lump sum	1				
7.2	Transport of the material and equipment supplied from Employer's Country	lump sum	1				
7.3	Insurance of material and equipment supplied from Employer's Country during transport	lump sum	1				
7.4	Painting of bottom part of towers in accordance with Section 21	lump sum	1				
7.5	Erection of earthwire connection from terminal tower to substation gantry	per wire	2				
7.6	Erection of OPGW connection from terminal tower to substation Gantry/Mast	per wire	2				

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services - LAND PART							
7.7	Additional counterpoise earthing in accordance with requirement of the Technical specification	per meter	50				
7.8	Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment						
(a)	Additional Excavation	cu.m	500				
(b)	Additional Concrete	cu.m	200				
(c)	Additional Reinforcement	kg	5000				
(d)	Extra for surface resisting cement per cu.m of concrete	cu.m	50				
(e)	Additional Boring (500mm diameter)	rm	200				
(f)	Additional Boring (600mm diameter)	rm	200				
(g)	Additional Boring (750mm diameter)	rm	200				
(h)	Sand Filling	cu.m	300				
7.9	Environmental and Social Services	lump sum	1				
7.10	STI. STD and HIV/AIDS alleviation program[2]	lump sum	1				
7.11	Costs and Expenses related to test witness[3](Provisional Sum)	lump sum	1	0	$231,000.00		$ 231,000.00
Total Columns 7 & 8 to be carried forward to Schedule No. 5 - Grand Summary							
8	Total Tax and VAT deductable at source(TDS & VDS) under the schedule 4A(to be quoted in the currency similar as above)[4]						

Name of Bidder _____

Signature of Bidder _____

1 Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

2 As described in SCC 22.2.7

3 These costs are fixed ceiling and will be included in total price. But the payment shall be at actual upon submission of relevant documents.

4.Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmatic correction by Employer as required.

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4B - Dismantling, Installation & Other Services - Relocation of Dead-end Tower and Suspension Tower of the Aminbazar - Maghnaghat 400 kV Transmission Line							
1	**Survey and soil investigation works**						
1.1	**Survey Work**						
1.1.1	Check survey in accordance with the requirements of the technical specification, incl. Full ground survey with change of route, if any, tower plotting and preparation and submission of route maps, profile drawings, SIMM documents, etc.	km	1				
1.2	**Geotechnical Investigations incl. taking samples, logging and lab testing**						
1.2.1	Boreholes (minimum one per tower), incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification						
(a)	Level 2	borehole	0				
(b)	Level 4	borehole	0				
1.2.2	Soil resistivity tests (one per tower)	unit	2				
2	**Dismantling of existing conductor, earthwire, OPGW , hardware and accessories, dead-end tower and suspension tower**						
2.1	Dismantling of existing Conductor, Earthwire, OPGW , hardware & accessories, Dead-end tower & Suspension Tower **including foundation column and stub leg** at AminBazar Substation of Aminbazar - Maghnaghat 400 kV Transmission Line and handing over of all the dismantled items to clients ware house	Lumpsum	1				
3	**Foundations for towers including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-setting, Geotechnical Investigation (Level 2), Shuttering, Leveling, Timbering, supply & Installation of foundation steelwork, Earthing Materials,Backfilling, approved Protective Coating & site clearing etc**						
3.1.	**Piled foundation**						
3.1.1.	Tower type 4D25+9m	per tower	1				
3.1.2	Tower type 4DT60+6 m	per tower	1				
4	**Testing of Foundations**						
4.1	**Individual Pile test including supply,install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):**						
(a)	Compression test	per test	0				
(b)	Uplift test	per test	0				
(c)	Pile Integrity test	per test	8				

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4B - Dismantling, Installation & Other Services - Relocation of Dead-end Tower and Suspension Tower of the Aminbazar - Maghnaghat 400 kV Transmission Line							
5	**Erection of 400kV double circuit towers complete with all stubs, nuts, bolts, locking nuts, washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, ptotective coating, earthing etc.**						
5.1	**Tower type "4D25"**						
5.1.1	Tower type 4D25+9m	each	1				

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency [BDT]	Foreign Currency [xxx]	Local Currency [BDT]	Foreign Currency [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4B - Dismantling, Installation & Other Services - Relocation of Dead-end Tower and Suspension Tower of the Aminbazar - Maghnaghat 400 kV Transmission Line							
5.2	**Tower type "4DT60"**						
5.2.1	Tower type 4DT60+6 m	each	1				
6	**Stringing of double circuit line, four conductors per phase, 1 OPGW and 1 equivalent earthwire**						
6.1	ACSR Egret (Double circuit line, both circuits erected, FOUR conductor per phase) including: Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps, Sagging and clipping, Installation of armour rods and dampers, Pilot strings and jumpers	route km	1				
6.2	One optical fibre ground wire, 48 fibres OPGW, mechanically compatible with ACSR Dorking shield wire, including joint box Tension and semi-tension joints, suspension clamps, armour rods and dampers, Sagging and clipping. Installation of intermediate junction boxes and terminal junction boxes at substation gantries Earthing jumpers	route km	1				
6.3	One earth shield wire ACSR Dorking type Including Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers, Sagging and clipping, Earthing jumpers, **warning sphere(if required)**	route km	1				
7	**Documentation**						
7.1	Establishment of as-built drawings, manuals and all requested documents as per specifications	lump sum	1				
Total Columns 7 & 8 to be carried forward to Schedule No. 5 - Grand Summary							
8	Total Tax and VAT deductable at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above)[2]						

Name of Bidder _____

Signature of Bidder _____

1 Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

2.Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmatic correction by Employer as required.

Schedule No. 5. Grand Summary

Item	Description	Total Price[1]	
		Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	Plant and Mandatory Spare Parts Supplied from Abroad[2]		
1A	Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad - LAND PART		
1B	Schedule No. 1B: Plant and Mandatory Spare Parts Supplied from Abroad -Relocation of Dead-end tower & Suspension Tower at Aminbazar - Maghnaghat 400kV Transmission Line		
2	Plant and Mandatory Spare Parts Supplied from Within the Employer's Country[2]		
2A	Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country - LAND PART		
2B	Schedule No. 2B: Plant and Mandatory Spare Parts Supplied from Within the Employer's Country -Relocation of Dead-end tower & Suspension Tower at Aminbazar - Maghnaghat 400kV Transmission Line		
3	Design Services		
3A	Schedule No. 3A Design Services - LAND PART		
3B	Schedule No. 3B Design Services - Relocation of Dead-End Tower & Suspension Tower at Aminbazar - Meghnaghat 400 kV Transmission Line		
4	Installation and Other Services		
4A	Schedule No. 4A Installation and Other Services - LAND PART		$ -
4B	Schedule No. 4B - Dismantling, Installation & Other Services - Relocation of Dead-end Tower and Suspension Tower of the Aminbazar - Maghnaghat 400 kV Transmission Line		
Grand Total to be carried forward to Letter of Price Bid			

Name of Bidder _____

Signature of Bidder _____

1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

Design, Supply, Installation, Testing & Commissioning of the Aminbazar-Gopalganj 400 kV Double Circuit Transmission Line on turnkey basis

Schedule No. 6. Recommended Spare Parts

Item	Description	Unit	Quantity	Unit Price[1]		Total Price[1]	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxxxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6

Name of Bidder _____

Signature of Bidder _____

1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.