Bangladesh Telecommunications Company Limited

TENDER DOCUMENT

FOR

“Supply, installation, testing and commissioning of OSP subscriber cable networks of different AGWs installed under RODTS [171 KL] Project at Sher-e-Bangla Nagar, Gulshan, Uttara, Mogbazar, Nilkhet and Ramna Exchange Area”.

Invitation for Tender No:
Issued on:
Re-Tender Package No:

Office of the Director (Procurement)
Sher-e-Bangla Nagar Telephone Exchange Annex Bldg. (2nd Floor), BTCL, Sher-e-Bangla Nagar, Dhaka.
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Section 1. Instructions to Tenderers

A. General

1. Scope of Tender
   1.1 The Procuring Entity, as indicated in the Tender Data Sheet (TDS) issues this Tender Document for the procurement of Works and physical services incidental thereto as specified in the TDS and as detailed in Section 6: Bill of Quantities. The name of the Tender and the number and identification of its constituent lot(s) are stated in the TDS.

   1.2 The successful Tenderer shall be required to execute the Works and physical services as specified in the General Conditions of Contract.

2. Interpretation
   2.1 Throughout this Tender Document:
      (a) the term “in writing” means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail;
      (b) if the context so requires, singular means plural and vice versa;
      (c) “day” means calendar days unless otherwise specified as working days;
      (d) “Person” means and includes an individual, body of individuals, sole proprietorship, partnership, company, association or cooperative society that wishes to participate in Procurement proceedings;
      (e) “Tenderer” means a Person who submits a Tender;
      (f) “Tender Document” means the Document provided by a Procuring Entity to a Tenderer as a basis for preparation of the Tender; and
      (g) “Tender” depending on the context, means a Tender submitted by a Tenderer for execution of Works and physical services to a Procuring Entity in response to an Invitation for Tender.

3. Source of Funds
   3.1 The Procuring Entity has been allocated public funds as indicated in the TDS and intends to apply a portion of the funds to eligible payments under the Contract for which this Tender Document is issued.

   3.2 For the purpose of this provision, “public funds” means any monetary resources appropriated to the Procuring Entity under Government budget, or loan, grants and credits placed at the disposal of the Procuring Entity through the Government by the development partners or foreign states or organisations.

   3.3 Payments by the development partner, if so indicated in the TDS, will be made only at the request of the Government and upon approval by the development partner or foreign state or Organisation in accordance with the applicable Loan / Credit / Grant Agreement, and will be subject in all respects to the terms and conditions of that Agreement.
4. **Corrupt, Fraudulent, Collusive or Coercive Practices**

4.1 The Government requires that the Procuring Entity as well as the Tenderers shall observe the highest standard of ethics during implementation of procurement proceedings and the execution of Contracts under public funds.

4.2 For the purposes of ITT Sub Clause 4.3, the terms set forth below as follows:

(a) “corrupt practice” means offering, giving or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of the Procuring Entity or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by the Procuring Entity in connection with a Procurement proceeding or Contract execution;

(b) “fraudulent practice” means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;

(c) “collusive practice” means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the Procuring Entity, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, non-competitive levels, thereby denying the Procuring Entity the benefits of competitive price arising from genuine and open competition;

(d) “Coercive practice” means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in the Procurement proceeding or the execution of a Contract, and this will include creating obstructions in the normal submission process used for Tenders.

4.3 Should any corrupt, fraudulent, collusive or coercive practice of any kind come to the knowledge of the Procuring Entity, it will, in the first place, allow the Tenderer to provide an explanation and shall, take actions only when a satisfactory explanation is not received. Such exclusion and the reasons thereof, shall be recorded in the record of the procurement proceedings and promptly communicated to the Tenderer concerned. Any communications between the Tenderer and the Procuring Entity related to matters of alleged corrupt, fraudulent, collusive or coercive practices shall be in writing.

4.4 If corrupt, fraudulent, collusive or coercive practices of any kind is determined by the Procuring Entity against any Tenderer or Contractor in competing for, or in executing, a contract under public fund, the Procuring Entity shall:

(a) exclude the concerned Tenderer from further participation in the concerned procurement proceedings;
(b) reject any recommendation for award that had been proposed for that concerned Tenderer; and

c) declare, at its discretion, the concerned Tenderer to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time.

4.5 Tenderers shall be aware of the provisions on corruption, fraudulence, collusion and coercion in Section 64 of the Public Procurement Act, 2006 and Rule 127 of the Public Procurement Rules, 2008 and others as stated in GCC Clause 38.

5. **Eligible Tenderers**

5.1 This Invitation for Tenders is open to all potential Tenderers from all countries, except for any specified in the TDS.

5.2 Tenderers shall have the legal capacity to enter into the Contract under the Applicable law.

5.3 Tenderers shall be enrolled in the relevant professional or trade organisations registered in Bangladesh.

5.4 Tenderers may be a physical or juridical individual or body of individuals, or company, association or any combination of them in the form of a Joint Venture (JV) invited to take part in public procurement or seeking to be so invited or submitting a Tender in response to an Invitation for Tenders.

5.5 Tenderers shall have fulfilled its obligations to pay taxes and social security contributions under the provisions of laws and regulations of the country of its origin.

5.6 Tenderers should not be associated, or have been associated in the past, directly or indirectly, with a consultant or any of its affiliates which have been engaged by the Procuring Entity to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the works to be performed under this Invitation for Tenders.

5.7 Tenderers in its own name or its other names or also in the case of its Persons in different names shall not be under a declaration of ineligibility for corrupt, fraudulent, collusive or coercive practices as stated under ITT Sub Clause 4.4.

5.8 Tenderers are not restrained or barred from participating in Public Procurement on grounds of poor performance in the past under any Contract.

5.9 Tenderers shall not be insolvent, be in receivership, be bankrupt, be in the process of bankruptcy, be not temporarily barred from undertaking business and it shall not be the subject of legal proceedings for any of the foregoing.

5.10 Government-owned enterprise in Bangladesh may also participate in the Tender if it is legally and financially autonomous, it operates under commercial law, and it is not a dependent agency of the Procuring Entity.
5.11 Tenderers shall provide such evidence of their continued eligibility satisfactory to the Procuring Entity, as the Procuring Entity will reasonably request.

5.12 These above requirements for eligibility will extend, as applicable, to each JV partner and Subcontractor proposed by the Tenderers.

5.13 Tenderers shall have the up-to-date valid license(s), issued by the corresponding competent authority, as specified in the TDS.

6. Eligible Materials, Equipment and Associated Services

6.1 All materials, equipment and associated services to be supplied under the Contract are from eligible sources, unless their origin is from a country specified in the TDS.

6.2 For the purposes of this Clause, “origin” means the place where the Materials and Equipments are mined, grown, cultivated, produced or manufactured or processed, or through manufacturing, processing, or assembling, another commercially recognized new product results that differs substantially in its basic characteristics from its components or the place from which the associated services are supplied.

6.3 The origin of materials and equipment and associated services is distinct from the nationality of the Tenderer.

7. Site Visit

7.1 Tenderers are advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at Tenderer’s own expense.

B. Tender Document

8.1 The Sections comprising the Tender Document are listed below, and should be read in conjunction with any Addendum issued under ITT Clause 11.

- Section 1 Instructions to Tenderers (ITT)
- Section 2 Tender Data Sheet (TDS)
- Section 3 General Conditions of Contract (GCC)
- Section 4 Particular Conditions of Contract (PCC)
- Section 5 Tender and Contract Forms
- Section 6 Bill of Quantities (BOQ)
- Section 7 General Specifications
- Section 8 Particular Specifications
- Section 9 Drawings

8.2 The Procuring Entity is not responsible for the completeness of the Tender Document and their addenda, if these were not purchased directly from the Procuring Entity, or through its agent as specified in the TDS.
9. Clarification of Tender Document

8.3 Tenderers are expected to examine all instructions, forms, terms, and specifications in the Tender Document as well as in addendum to Tender, if any.

9.1 A prospective Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity’s address and within time as specified in the TDS.

9.2 The Procuring Entity is not obliged to answer any clarification request received after that date as stated under ITT Sub Clause 9.1.

9.3 The Procuring Entity shall respond in writing within five (5) working days of receipt of any such request for clarification received under ITT Sub Clause 9.1.

9.4 The Procuring Entity shall forward copies of its response to all those who have purchased the Tender Document, including a description of the enquiry but without identifying its source.

9.5 Should the Procuring Entity deem it necessary to revise the Tender Document as a result of a clarification, it will do so following the procedure under ITT Clause 11.

10. Pre-Tender Meeting

10.1 To clarify issues and to answer questions on any matter arising in the Tender Document, the Procuring Entity may, if stated in the TDS, hold a pre-Tender Meeting at the place, date and time as specified in the TDS. All potential Tenderers are encouraged and invited to attend the meeting, if it is held.

10.2 Tenderers are requested to submit any questions in writing so as to reach the Procuring Entity not later than one day prior to the date of the meeting.

10.3 Minutes of the pre-Tender meeting, including the text of the questions raised and the responses given, together with any responses prepared after the meeting, will be transmitted within five (5) working days after holding the meeting to all those who purchased the Tender document and to even those who did not attend the meeting. Any revision to the Tender Document listed in ITT Sub Clause 8.1 that may become necessary as a result of the pre-Tender meeting will be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT Sub Clause 11 and not through the minutes of the pre-Tender meeting.

10.4 Non-attendance at the Pre-Tender meeting will not be a cause for disqualification of a Tenderer.

11. Addendum to Tender Document

11.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity, on its own initiative or in response to an inquiry in writing from a Tenderer, having purchased the Tender Document, or as a result of a pre-Tender meeting may revise the Tender Document by issuing an Addendum.
11.2 The Addendum issued under ITT Sub Clause 11.1 shall become an integral part of the Tender Document and shall have a date and an issue number and must be circulated by fax, mail or e-mail, to Tenderers who have purchased the Tender Documents, within five (5) working days of issuance of such Addendum, to enable Tenderers to take appropriate action.

11.3 The Procuring Entity shall also ensure posting of the relevant addenda with the reference number and date on their websites including notice boards, where the Procuring Entity had originally posted the IFTs.

11.4 To give a prospective Tenderer reasonable time in which to take an addendum into account in preparing its Tender, the Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders, pursuant to ITT Sub Clause 42.2.

11.5 If an addendum is issued when time remaining is less than one-third of the time allowed for the preparation of Tenders, the Procuring Entity at its discretion shall extend the deadline by an appropriate number of days for the submission of Tenders, depending upon the nature of the Procurement requirement and the addendum. In any case, the minimum time for such extension shall not be less than three (3) working days.

C. Qualification Criteria

12. General Criteria

12.1 Tender Tenderers shall possess the necessary professional and technical qualifications and competence, financial resources, equipment and other physical facilities, managerial capability, specific experience, reputation, and the personnel, to perform the contract, which entails setting pass/fail criteria, which if not met by the Tenderers, will result in consideration of its Tender as non-responsive.

12.2 In addition to meeting the eligibility criteria, as stated in ITT Clause 5, Tenderers must satisfy the other criteria stated in ITT Clauses 13 to 18 inclusive.

12.3 To qualify for multiple number of contracts/lots in a package made up of this and other individual contracts/lots for which Tenders are invited in the Invitation for Tenders, the Tenderers shall demonstrate having resources sufficient to meet the aggregate of the qualifying criteria for the individual contracts. The requirement of general experience as stated under ITT Sub Clause 14.1(a) and specific experience, unless otherwise of different nature, as stated under ITT Sub Clause 15.1(b) shall not be separately applicable for each individual lot.

13. Litigation History

13.1 Litigation history shall comply with the requirement as stated under ITT Sub Clause 15.1(c).
14. **Experience Criteria**

14.1 Tenderers shall have the following minimum level of construction experience to qualify for the performance of the Works under the Contract:

(a) a minimum number of years of general experience in the construction of works as Prime Contractor or Subcontractor or Management Contractor as specified in the TDS; and

(b) specific experience as a Prime Contractor or Subcontractor or Management Contractor in construction works of a nature, complexity and methods/construction technology similar to the proposed Works, in at least a number of contract(s) and, each with a minimum value over the period, as specified in the TDS.

15. **Financial Criteria**

15.1 Tenderers shall have the following minimum level of financial capacity to qualify for the performance of the Works under the Contract:

(a) the average annual construction turnover as specified in the TDS during the period specified in the TDS;

(b) availability of minimum liquid assets i.e working capital or credit facilities from any scheduled Bank of Bangladesh, net of other contractual commitments, of the amount as specified in the TDS; and

(c) satisfactory resolution of all claims under litigation cases and shall not have serious negative impact on the financial capacity of the Tenderers. All pending litigation shall be treated as resolved against the Tenderers.

16. **Personnel Capacity**

16.1 Tenderers shall have the following minimum level of personnel capacity to qualify for the performance of the Works under the Contract consisting of a Construction Project Manager, Engineers, and other key staff with qualifications and experience as specified in the TDS.

17. **Equipment Capacity**

17.1 Tenderers shall own suitable equipment and other physical facilities or have proven access through contractual arrangement to hire or lease such equipment or facilities for the desired period, where necessary or have assured access through lease, hire, or other such method, of the essential equipment, in full working order, as specified in the TDS.

18. **Joint Venture (JV)**

18.1 Tenderers may participate in the procurement proceedings forming a Joint Venture (JV) by an agreement, executed case by case on a non-judicial stamp of value as specified in the TDS or alternately with the intent to enter into such an agreement supported by a Letter of Intent along with the proposed agreement duly signed by all legally authorised partners of the intended JV and authenticated by a Notary Public, with the declaration that the partners will execute the JV agreement in the event the Tenderer is successful.
18.2 The figures for each of the partners of a JV shall be added together to determine the Tenderer’s compliance with the minimum qualifying criteria; however, for a JV under ITT Sub Clause 18.1, with number of partners as specified in the TDS to qualify, Leading partner and other partners must meet the criteria as specified in the TDS. Failure to comply with these requirements will result in non-responsiveness of the JV Tender.

18.3 Each partner of the JV shall be jointly and severally liable for the execution of the Contract, all liabilities and ethical and legal obligations in accordance with the Contract terms.

18.4 JV shall nominate the Leading Partner as REPRESENTATIVE being entrusted with the Contract administration and management at Site who shall have the authority to conduct all business for and on behalf of any and all the partners of the JV during the Tendering process and, in the event the JV is awarded the Contract, during contract execution including the receipt of payments for and on behalf of the JV.

19. **Subcontractor(s)**

19.1 Tenderers may intend to subcontract an activity or part of the Works, in which case such elements and the proposed Subcontractor shall be clearly identified.

19.2 The Procuring Entity may require Tenderers to provide more information about their subcontracting arrangements. If any Subcontractor is found ineligible or unsuitable to carry out the subcontracted tasks, the Procuring Entity may request the Tenderers to propose an acceptable substitute.

19.3 A Subcontractor may participate in more than one Tender, but only in that capacity.

19.4 The Procuring Entity may also select in advance Nominated Subcontractor(s) to execute certain specific components of the Works and if so, those will be specified in the TDS.

19.5 The successful Tenderer shall under no circumstances assign the Works or any part of it to a Subcontractor.

**D. Tender Preparation**

20. **Only one Tender**

20.1 Tenderers shall submit only one (1) Tender for each lot, either individually or as a JV. Tenderer who submits or participates in more than one (1) Tender in one (1) lot of a package or in one (1) package with one (1) lot will cause all the Tenders of that particular Tenderer to be rejected.

21. **Cost of Tendering**

21.1 Tenderers shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering process.
22. Issuance and Sale of Tender Document

22.1 The Procuring Entity shall make Tender Documents available immediately to the potential Tenderers, requesting and willing to purchase at the corresponding price by the date the advertisement has been published in the newspaper.

22.2 There shall not be any pre-conditions whatsoever, for sale of Tender Documents and the sale of such Document shall be permitted up to the day prior to the day of deadline for the submission of Tender.

23. Language of Tender

23.1 Tenders shall be written in the English language. Correspondences and documents relating to the Tender may be written in English or Bangla. Supporting documents and printed literature furnished by the Tenderers that are part of the Tender may be in another language, provided they are accompanied by an accurate translation of the relevant passages in the English or Bangla language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

23.2 Tenderers shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

24. Contents of Tender

24.1 The Tender prepared by the Tenderers will comprise the following:

(a) the Tender Submission Letter (Form PW3-1), as stated under ITT Sub Clause 25.1;
(b) the Tenderer Information as stated under ITT Clauses 5, 29 and 32 (Form PW3-2);
(c) the priced BOQ for each lot in accordance with ITT Clauses 25, 27 and 28;
(d) the Tender Security as stated under ITT Clauses 35, 36 and 37;
(e) the alternatives, if permissible, as stated under ITT Clause 26;
(f) the written confirmation authorizing the signatory of the Tender to commit the Tenderer, as stated under ITT Sub Clause 40.3;
(g) the Valid Trade license;
(h) documentary evidence of Tax Identification Number (TIN) and Value Added Tax (VAT) as a proof of taxation obligations as stated under ITT Sub Clause 5.5;
(i) the Technical Proposal describing work plan & method, personnel, equipment and schedules as stated under ITT Clause 31;
(j) documentary evidence as stated under ITT Clause 29 and 32 establishing the Tenderer’s eligibility and the minimum qualifications of the Tenderers required to be met for due performance of the Works and physical services under the Contract;
(k) document establishing legal and financial autonomy and compliance with commercial law, as stated under ITT Sub Clause 5.10 in case of government owned entity; and

(l) any other document as specified in the TDS.

25. Tender Submission Letter and Bill of Quantities

25.1 Tenderers shall submit the Tender Submission Letter (Form PW3-1), which shall be completed without any alterations to its format, filling in all blank spaces with the information requested, failing which the Tender may be rejected as being incomplete.

25.2 Tenderers shall submit the priced BOQ using the form(s) furnished in Section 6: Bill of Quantities.

25.3 If in preparing its Tender, the Tenderer has made errors in the unit rate or the total price, and wishes to correct such errors prior to submission of its Tender, it may do so, but shall ensure that each correction is initialled by the authorised person of the Tenderer.

26. Alternatives

26.1 Unless otherwise specified in the TDS, alternative technical solutions shall not be considered.

26.2 When specified in ITT clause 26.1, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the TDS.

26.3 Only the technical alternatives, if any, of the lowest evaluated Tenderer conforming to the basic technical requirements will be considered by the Procuring Entity.

27. Tender Prices, Discounts and Price Adjustment

27.1 The prices and discounts quoted by the Tenderers in the Tender Submission Letter (Form PW3-1) and in the BOQ shall conform to the requirements specified below.

27.2 Tenderers shall fill in unit rates for all items of the Works both in figures and in words as described in the BOQ.

27.3 The items quantified in the BOQ for which no unit rates have been quoted by the Tenderer will not be paid for, by the Procuring Entity when executed and shall be deemed covered by the amounts of other rates in the BOQ and, it shall not be a reason to change the Tender price.

27.4 The price to be quoted in the Tender Submission Letter, as stated under ITT Sub Clause 25.1, shall be the total price of the Tender, excluding any discounts offered.

27.5 Tenderers shall quote any unconditional discounts and the methodology for application of discount in the Tender Submission Letter as stated under ITT Sub Clause 25.1.
27.6 Tenderers wishing to offer any unconditional discount for the award of more than one lot shall specify the discount applicable to each lot, or alternatively, to any combination of lots within the package in their Tender. Discounts will be submitted as stated under ITT Sub Clause 27.1, provided the Tenders for all lots are submitted and opened together.

27.7 All applicable taxes, custom duties, VAT and other levies payable by the Contractor under the Contract, or for any other causes, as of the date twenty-eight (28) days prior to the deadline for submission of Tenders, shall be included in the unit rates and the total Tender price submitted by the Tenderers.

27.8 Unless otherwise specified in the TDS and provided in the the Contract, the price of a Contract shall be fixed in which case the unit rates may not be modified in response to changes in economic or commercial conditions.

27.9 If so stated under ITT Sub Clause 27.9, Tenders are being invited with a provision for price adjustments. The unit rates quoted by the Tenderers are subject to adjustment during the performance of the Contract in accordance with the provisions of General Condition of Contract (GCC) Clause 69 and, in such case the Procuring Entity shall provide the indexes and weightings or coefficients in Appendix to the Tender (Table 1.1 and Table 1.2) for the price adjustment formulae as specified in the Particular Conditions of Contract (PCC).

28. Tender Currency

Tenderers shall quote all prices in the Tender Submission Letter and in the BOQ in Bangladesh Taka (BDT) currency.

29. Documents Establishing Eligibility of the Tenderer

29.1 Tenderers, if applying as a sole Tenderer, shall submit documentary evidence to establish its eligibility as stated under ITT Clause 5 and, in particular, it shall:

(a) complete the eligibility declarations in the Tender Submission Letter (Form PW3-1);
(b) complete the Tenderer Information (Form PW3-2);
(c) complete Subcontractor Information (Form PW3-4), if it intends to engage any Subcontractor(s).

29.2 Tenderers, if applying as a partner of an existing or intended JV shall submit documentary evidence to establish its eligibility as stated under ITT Clause 5 and, in particular, in addition to as stated under ITT Sub Clause 29.1, it shall:

(a) provide for each JV partner, completed JV Partner Information (Form PW3-3);
(b) provide the JV agreement or Letter of Intent along with the proposed agreement of the intended JV as stated under ITT Sub Clause 18.1
30. Documents Establishing the Eligibility and Conformity of Materials, Equipment and Services

30.1 Tenderers shall submit documentary evidence to establish the origin of all Materials, Equipment and services to be supplied under the Contract as stated under ITT Clause 6.

30.2 To establish the conformity of the Materials, Equipment and services to be supplied under the Contract, the Tenderers shall furnish, as part of its Tender, the documentary evidence (which may be in the form of literature, specifications and brochures, drawings or data) that these conform to the technical specifications and standards specified in Section 7, General Specifications and Section 8, Particular Specifications.

31. Documents Establishing Technical Proposal

31.1 Tenderers shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in TDS, in sufficient detail to demonstrate the adequacy of the Tenderer’s proposal to meet the work requirements and the completion time.

32. Documents Establishing the Tenderer’s Qualification

32.1 Tenderers shall complete and submit the Tenderer Information (Form PW3-2/PW3-3) and shall include documentary evidence, as applicable to satisfy the following:

(a) general experience, of the entity(s) participating in the Tender, in construction works as stated under ITT Sub Clause 14.1(a), substantiated by the year of registration/constitution/licensing in its country of origin;

(b) specific experience, of the entity(s) participating in the Tender, in construction works under public sector of similar nature and size as stated under ITT Sub Clause 14.1(b), substantiated by Completion Certificate (s) issued by the relevant Procuring Entity(s);

(c) average annual construction turnover i.e total certified payments received for contracts in progress or completed under public sector for a period as stated under ITT Sub Clause 15.1(a), substantiated by Statement(s) of Receipts, from any scheduled Bank of Bangladesh, issued not earlier than twenty-eight (28) days prior to the day of the original deadline for submission of Tenders;

(d) adequacy of minimum liquid assets i.e. working capital substantiated by Audit Reports mentioned in (i) below or credit line(s) substantiated by any scheduled Bank of Bangladesh in the format as specified (Form PW3-7), without alteration, issued not earlier than twenty-eight (28) days prior to the day of the original deadline for submission of Tenders for this Contract as stated under ITT Sub Clause 15.1(b);
33. **Validity Period of Tender**

33.1 Tenders shall remain valid for the period as specified in the TDS after the date of Tender submission deadline. A Tender valid for a period shorter than that specified will be considered, non-responsive.

34. **Extension of Tender Validity and Tender Security**

34.1 In exceptional circumstances, prior to the expiration of the Tender Validity period, the Procuring Entity may solicit all the Tenderers’ consent to an extension of the period of validity of their Tenders; provided that those Tenderers have passed the preliminary examination as stated under ITT Sub Clause 51.3.

34.2 The request for extension of Tender Validity period shall state the new date of the validity of the Tender.

34.2 The request and the responses shall be made in writing. Validity of the Tender Security provided under ITT Clause 35 shall also be suitably extended for twenty-eight (28) days beyond the new date for the expiry of the Tender Validity. If a Tenderer does not respond or refuses the request it shall not forfeit its Tender Security, but its Tender shall no longer be considered in the evaluation proceedings. A Tenderer agreeing to the request will not be required or permitted to modify its Tender.

35. **Tender Security**

35.1 Tenderers shall furnish as part of its Tender, in favour of the Procuring Entity or as otherwise directed on account of the Tenderer, a Tender Security in original form (not copy) and in the amount, as specified in the TDS.
35.2 If the Tender is a Joint Venture, the Tenderer shall furnish as part of its Tender, in favour of the Procuring Entity or as otherwise directed on account of the title of the existing or intended JV or any of the partners of that JV or in the names of all future partners as named in the Letter of Intent of the JV, a Tender Security in original form and in the amount as stated under ITT Sub Clause 35.1.

35.3 In case of substitution of the Tender as stated under ITT Clause 46 a new Tender Security shall be required in the substituted Tender.

36. Form of Tender Security

36.1 The Tender Security shall:
(a) at the Tenderer’s option, be either;
   i. in the form of a Bank Draft or Pay Order, or
   ii. in the form of an irrevocable unconditional Bank Guarantee issued by any scheduled Bank of Bangladesh, in the format (Form W3-6), without any alteration, furnished in Section 5: Tender and Contract Forms;
(b) be payable promptly upon written demand by the Procuring Entity in the case of the conditions as stated under ITT Sub Clause 39.1 being invoked; and
(c) remain valid for at least twenty-eight (28) days beyond the expiry date of the Tender Validity in order to make a claim in due course against a Tenderer in the circumstances as stated under ITT Sub Clause 39.1.

37. Authenticity of Tender Security

37.1 The authenticity of the Tender Security submitted by a Tenderer may be examined and verified by the Procuring Entity at its discretion in writing from the Bank issuing the security.

37.2 If a Tender Security is found to be not authentic, the Procuring Entity may proceed to take measures against that Tenderer as stated under ITT Sub Clause 4.4.

37.3 A Tender not accompanied by a valid Tender Security will be considered non-responsive.

38. Return of Tender Security

38.1 No Tender Security shall be returned to the Tenderers before contract signing.

38.2 Unsuccessful Tenderer’s Tender Security will be discharged or returned as soon as possible but within twenty-eight (28) days after the expiry of the Tender Validity period as stated under ITT Sub Clauses 33.1.

38.3 The Tender Security of the successful Tenderer will be discharged upon the Tenderer’s furnishing of the performance security and signing of the Contract Agreement.

39. Forfeiture of Tender Security

39.1 The Tender Security may be forfeited, if a Tenderer:
withdraws its Tender after opening of Tenders but within the validity of the Tender as stated under ITT Clause 33 and 34; or

(b) refuses to accept a Notification of Award as stated under ITT Sub Clause 64.3; or

(c) fails to furnish Performance Security as stated under ITT Sub Clause 65.1 and 65.2; or

(d) refuses to sign the Contract as stated under ITT Sub Clause 70.2 ; or

(e) does not accept the correction of the Tender price following the correction of the arithmetic errors as stated under ITT Clause 55.

40. Format and Signing of Tender

40.1 Tenderers shall prepare one (1) original of the documents comprising the Tender as described in ITT Clause 24 and clearly mark it “ORIGINAL”. In addition, the Tenderers shall prepare the number of copies of the Tender, as specified in the TDS and clearly mark each of them “COPY.” In the event of any discrepancy between the original and the copies, the ORIGINAL shall prevail.

40.2 Alternatives, if permitted as stated under ITT Clause 26, shall be clearly marked “Alternative”.

40.3 The original and each copy of the Tender shall be typed or written in indelible ink and shall be signed by the Person duly authorized to sign on behalf of the Tenderer. This Tender specific authorization shall be attached to the Tender Submission Letter (Form PW3-1). The name and position held by each Person(s) signing the authorization must be typed or printed below the signature. All pages of the original and of each copy of the Tender, except for unamended printed literature, shall be numbered sequentially and signed by the person signing the Tender.

40.4 Any interlineations, erasures, or overwriting will be valid only if they are signed or initialled by the Person(s) signing the Tender.

E. Tender Submission

41. Sealing, Marking and Submission of Tender

41.1 Tenderers shall enclose the original in one (1) envelope and all the copies of the Tender, including the alternatives, if permitted under ITT Clause 26, in another envelope, duly marking the envelopes as “ORIGINAL (O)” “ALTERNATIVE (A)” (if permitted) and “COPY.” These sealed envelopes will then be enclosed and sealed in one (1) single outer envelope.

41.2 The inner and outer envelopes shall:

(a) be addressed to the Procuring Entity at the address as stated under ITT Sub Clause 42.1;

(b) bear the name of the Tender and the Tender Number as stated under ITT Sub Clause 1.1;

(c) bear the name and address of the Tenderer;
(d) bear a statement “DO NOT OPEN BEFORE ---------- ----------” the time and date for Tender opening as stated under ITT Sub Clause 48.1;

(e) bear any additional identification marks as specified in the TDS.

41.3 Tenderers are solely and entirely responsible for pre-disclosure of Tender information if the envelope(s) are not properly sealed and marked.

41.4 Tenders shall be delivered by hand or by mail, including courier services at the address(s) as stated under ITT Sub Clause 42.1.

41.5 The Procuring Entity will, on request, provide the Tenderer with acknowledgement of receipt showing the date and time when it’s Tender was received.

42. Deadline for Submission of Tender

42.1 Tenders shall be delivered to the Procuring Entity at the address specified in the TDS and not later than the date and time specified in the TDS.

42.2 The Procuring Entity may, at its discretion, extend the deadline for submission of Tender as stated under ITT Sub Clause 42.1, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline will thereafter be subject to the new deadline as extended.

42.3 If submission of Tenders is allowed in more than one location, the date and time, for submission of Tenders for both the primary and the secondary place(s), shall be the “same and not different” as specified in the TDS.

42.4 The Procuring Entity shall ensure that the Tenders received at the secondary place(s) are hand-delivered at the primary place as stated under ITT Sub Clause 42.1, within THREE (3) HOURS after the deadline for submission of Tenders at the secondary place(s), in case of MULTIPLE DROPPING as stated under ITT Sub Clause 42.3, as specified in the TDS.

43. Late Tender

43.1 Any Tender received by the Procuring Entity after the deadline for submission of Tenders as stated under ITT Sub Clause 42.1 shall be declared LATE and returned unopened to the Tenderer.

44. Modification, Substitution or Withdrawal of Tender

44.1 Tenderers may modify, substitute or withdraw its Tender after it has been submitted by sending a written notice duly signed by the authorized signatory and properly sealed, and shall include a copy of the authorization; provided that such written notice including the affidavit is received by the Procuring Entity prior to the deadline for submission of Tenders as stated under ITT Clause 42.

45. Tender Modification

45.1 Tenderers shall not be allowed to retrieve its original Tender, but shall be allowed to submit corresponding modification to its original Tender marked as “MODIFICATION (M)”. 
46. Tender Substitution  
46.1 Tenderers shall not be allowed to retrieve its original Tender, but shall be allowed to submit another Tender marked as “SUBSTITUTION (S)”.

47. Tender Withdrawal  
47.1 Tenderers shall be allowed to withdraw its Tender by a Letter of Withdrawal marked as “WITHDRAWAL (W)”.

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F. Tender Opening and Evaluation

48. Tender Opening  
48.1 Tenders shall be opened immediately after the deadline for submission of Tenders at the primary place as specified in the TDS but not later than ONE HOUR after expiry of the submission deadline at the same primary place unless otherwise stated under ITT Sub Clause 48.2.

48.2 If submission of Tenders is allowed in more than one location as stated under ITT Sub Clause 42.3 and 42.4, Tenders shall be opened, immediately after receipt of Tenders from all the secondary place(s), at the primary place at the date and time as stated under ITT Sub Clause 48.1.

48.3 Persons not associated with the Tender may not be allowed to attend the public opening of Tenders.

48.4 Tenderers’ representatives shall be duly authorised by the Tenderer. Tenderers or their authorised representatives will be allowed to attend and witness the opening of Tenders, and will sign a register evidencing their attendance.

48.5 The authenticity of withdrawal or substitution of, or modifications to original Tender, if any made by a Tenderer in specified manner, shall be examined and verified by the Tender Opening Committee (TOC) based on documents submitted as stated under ITT Sub Clause 44.1.

48.6 Ensuring that only the correct (M), (S), (A), (O) envelopes are opened, details of each Tender will be dealt with as follows:
   (a) the Chairperson of the TOC will read aloud each Tender and record in the Tender Opening Sheet (TOS):
      (i) the name and address of the Tenderer;
      (ii) state if it is a withdrawn, modified, substituted or original Tender;
      (iii) the Tender price;
      (iv) any discounts;
      (v) any alternatives;
      (vi) the presence or absence of any requisite Tender Security; and
      (vii) such other details as the Procuring Entity, at its discretion, may consider appropriate
(b) only discounts and alternatives read aloud at the Tender opening will be considered in evaluation.

(c) all pages of the original version of the Tender, except for un-amended printed literature, will be initialled by members of the TOC.

48.7 Upon completion of Tender opening, all members of the TOC and the Tenderers or Tenderer’s duly authorised representatives attending the Tender opening shall sign by name, address, designation, the TOS, copies of which shall be issued to the Head of the Procuring Entity or an officer authorised by him or her and also to the members of the TOC and any authorised Consultants and, to the Tenderers immediately.

48.8 The omission of a Tenderer's signature on the record shall not invalidate the contents and effect of the record under ITT Sub Clause 48.6.

48.9 No Tender will be rejected at the Tender opening stage except the LATE Tenders as stated in the ITT Clause 43.

49. Evaluation of Tenders

49.1 Tenders shall be examined and evaluated only on the basis of the criteria specified in the Tender Document.

49.2 Tender Evaluation Committee (TEC) shall examine, evaluate and compare Tenders that are responsive to the requirements of Tender Documents in order to identify the successful Tenderer.

50. Evaluation Process

50.1 TEC may consider a Tender as responsive in the Evaluation, only if it is submitted in compliance with the mandatory requirements set out in the Tender Document. The evaluation process should begin immediately after Tender opening following four steps:

(a) Preliminary examination
(b) Technical examination and responsiveness
(c) Financial evaluation and price comparison
(d) Post-qualification of the Tender.

51. Preliminary Examination

51.2 TEC shall examine the Tenders to confirm that all documentation as stated under ITT Clause 24 has been provided, to determine the completeness of each document submitted.

51.3 TEC shall confirm that the following documents and information have been provided in the Tender. If any of these documents or information is missing, the Tender shall be considered rejected.

(a) Tender Submission Letter;
(b) Priced Bill of Quantities;
(c) Written confirmation authorizing the signatory of the Tender to commit the Tenderer; and
(d) Valid Tender Security.
52. Technical Responsiveness and Technical Evaluation

52.1 TEC’s determination of a Tender’s responsiveness is to be based on the contents of the Tender itself without recourse to extrinsic evidence.

52.2 A responsive Tender is one that conforms in all respects to the requirements of the Tender Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

(a) affects in any substantial way the scope, quality, or performance of the Works and physical services specified in the Contract; or

(b) limits in any substantial way, or is inconsistent with the Tender Documents, the Procuring Entity’s rights or the Tenderer’s obligations under the Contract; or

(c) if rectified would unfairly affect the competitive position of other Tenderers presenting responsive Tenders.

During the evaluation of Tenders, the following definitions shall apply:

“Deviation” is a departure from the requirements specified in the Tender Document;

“Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Tender Document; and

“Omission” is the failure to submit part or all of the information or documentation required in the Tender Document.

52.3 If a Tender is not responsive to the mandatory requirements set out in the Tender Document, shall not subsequently be made responsive by the Tenderer by correction of the material deviation, reservation, or omission.

52.4 There shall be no requirement as to the minimum number of responsive Tenders.

52.5 There shall be no automatic exclusion of Tenders which are above or below the official estimate.

52.6 TEC shall evaluate the aspects of the Tender submitted as stated under ITT Clauses 29, 30, 31 and 32 and, to confirm that all requirements specified in Section 7: General Specifications and Section 8: Particular Specifications of the Tender Document have been met without any material deviation, reservation or omission.

52.7 Provided that a Tender is responsive, TEC may request that the Tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Tender related to documentation requirements. Such omission shall not be related to any aspect of the rates of the Tender reflected in the Priced BOQ or any mandatory criteria. Failure of the Tenderer to comply with the request may result in the consideration of its Tender as non-responsive.

52.8 TEC may regard a Tender as responsive even if it contains;
minor or insignificant deviations which do not meaningfully alter or depart from the technical specifications, characteristics and commercial terms and, conditions or other mandatory requirements set out in the Tender Document; or

(b) errors or oversights, that if corrected, would not alter the key aspects of the Tender.

53. Clarification on Tender

53.1 TEC may ask Tenderers for clarification of their Tenders, including breakdowns of unit rates, in order to facilitate the examination and evaluation of Tenders. The request for clarification by the TEC and the response from the Tenderer shall be in writing, and Tender clarifications which may lead to a change in the substance of the Tender or in any of the key elements of the Tender as stated under ITT Sub Clause 52.2, will neither be sought nor be permitted.

53.2 Changes in the Tender price shall also not be sought or permitted, except to confirm the correction of arithmetical errors discovered by the TEC in the evaluation of the Tenders, as stated under ITT Sub Clause 55.1.

53.3 Any request for clarifications by the TEC shall not be directed towards making an apparently non-responsive Tender responsive and reciprocally the response from the concerned Tenderer shall not be articulated towards any addition, alteration or modification to its Tender.

53.4 If a Tenderer does not provide clarifications of its Tender by the date and time, its Tender shall not be considered in the evaluation.

54. Restrictions on Disclosure of Information

54.1 Following the opening of Tenders until issuance of Notification of Award no Tenderer shall, unless requested to provide clarification to its Tender or unless necessary for submission of a complaint, communicate with the concerned Procuring Entity.

54.2 Tenderers shall not seek to influence in anyway, the examination and evaluation of the Tenders.

54.3 Any effort by a Tenderer to influence the Procuring Entity in its decision concerning the evaluation of Tenders, Contract awards may result in the non-responsiveness of its Tender as well as further action in accordance with Section 64 (5) of the Public Procurement Act, 2006.

54.4 All clarification requests shall remind Tenderers of the need for confidentiality and that any breach of confidentiality on the part of the Tenderer may result in their tender being non-responsive.

55. Correction of Arithmetical Errors

55.1 Provided that the Tender is responsive, the TEC shall correct arithmetical errors on the following basis:
(a) if there is a discrepancy between the unit price and the line item total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the line item total price shall be corrected, unless in the opinion of the TEC there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted will govern and the unit price will be corrected; and

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

55.2 TEC shall correct the arithmetic errors and shall promptly notify the concerned Tenderer(s). If the Tenderer does not accept the correction of arithmetic errors, its Tender shall be rejected.

56. **Financial Evaluation**

56.1 TEC will evaluate each Tender that has been determined, up to this stage of the evaluation, to be responsive to the requirements set out in the Tender Document.

56.2 To evaluate a Tender, the TEC will consider the following:

(a) the Tender price, excluding Provisional Sums and the provision, if any, for contingencies in the priced BOQ, but including Day work items;

(b) adjustments for correction of arithmetical errors, as stated under ITT Sub Clause 55.1;

(c) adjustments in order to take into consideration the unconditional discounts and methodology for application of the discount offered for being awarded more than one lot, as stated under ITT Sub Clause 27.5 and 27.6, if any.

56.3 Variations, deviations, alternatives and other factors which are in excess of the requirements of the Tender Document or otherwise result in unsolicited benefits for the Procuring Entity will not be taken into account in Tender evaluation.

56.4 The estimated effect of any price adjustment provisions under GCC Clause 71, applied over the period of execution of the Contract, will not be taken into account in Tender evaluation.

56.5 If so indicated in the ITT Sub Clause 1.1 the Procuring Entity may award one or multiple lots to one Tenderer following the methodology specified in ITT Sub Clause 56.6.

56.6 To determine the lowest-evaluated lot or combination of lots, the TEC will take into account:

(a) the lowest-evaluated Tender for each lot;
(b) the resources sufficient to meet the qualifying criteria for the individual lot or aggregate of the qualifying criteria for the multiple lots;

(c) the price reduction on account of discount per lot or combination of lots and the methodology for application of the discount as offered by the Tenderer in its Tender; and

(d) the Contract-award sequence that provides the optimum economic combination on the basis of least overall cost of the total Contract package taking into account any limitations due to constraints in Works or execution capacity determined in accordance with the post-qualification criteria as stated under ITT Clause 59.

56.7 TEC may recommend to increase the amount of the Performance Security above the amounts as stated under ITT Sub Clause 65.1 but not exceeding twenty-five (25) percent of the Contract Price, if in the opinion of TEC, it is found that the Tender is significantly below the updated official estimated cost or unbalanced as a result of front loading.

57. **Price Comparison**

57.1 TEC shall compare all responsive Tenders to determine the lowest-evaluated Tender, as stated under ITT Clause 56.

57.2 In the extremely unlikely event that there is a tie for the lowest evaluated price, the Tenderer with the superior past performance of works with the Procuring Entity shall be selected, whereby factors such as quality of Works executed, complaints history and performance indicators could be taken into consideration.

57.3 In the event that there is a tie for the lowest price and none of the Tenderers has the record of past performance with the Procuring Entity as stated under ITT Sub Clause 57.2, then the Tenderer shall be selected, subject to firm confirmation through the Post-qualification process, after consideration as to whether the Tenderer has demonstrated in its Tender superior past performance with the other Procuring Entities or a more efficient work programme and work methodology.

57.4 The successful Tenderer as stated under ITT Sub Clause 57.1, 57.2 and 57.3 shall not be selected through lottery under any circumstances.

58. **Negotiations**

58.1 No negotiations shall be held during the Tender evaluation or award, with the lowest or any other Tenderer.

58.2 The Procuring Entity through the TEC may, however, negotiate with the lowest evaluated Tenderer with the objective to reduce the Contract Price by reducing the scope of works or a reallocation of risks and responsibilities, only when it is found that the lowest evaluated Tender is significantly higher than the official estimated cost; the reasons for such higher price being duly investigated.
58.3 If the Procuring Entity decides to negotiate for reducing the scope of the requirements under ITT Sub Clause 58.2, it will be required to guarantee that the lowest Tenderer remains the lowest Tenderer even after the scope of work has been revised and shall further be ensured that the objective of the Procurement will not be seriously affected through this reduction.

58.4 In the event that the Procuring Entity decides because of a high Tender price to reduce the scope of the requirements to meet the available budget, the Tenderer is not obliged to accept the award and shall not be penalised in any way for un-accepting the proposed award.

59. Post-qualification

59.1 The determination on Post-qualification shall be based upon an examination of the documentary evidence of the Tenderer’s qualifications submitted by the Tenderer, pursuant to ITT Clause 32, clarifications as stated under ITT Clause 53 and the qualification criteria indicated in ITT Clauses 12 to 17. Factors not included therein shall not be used in the evaluation of the Tenderer’s qualification.

59.2 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in non-responsiveness of the Tenderer’s Tender, in which event the Procuring Entity shall proceed to the next lowest evaluated Tender to make a similar determination of that Tenderer’s capabilities to perform the Contract satisfactorily, if awarded.

59.3 TEC may verify information contained in the Tender by visiting the premises of the Tenderer as a part of the post qualification process, if practical and appropriate.

60. Procuring Entity’s Right to Accept any or to Reject Any or All Tenders

60.1 The Procuring Entity reserves the right to accept any Tender or to reject any or all the Tenders any time prior to contract award and , to annul the Procurement proceedings with prior approval of the Head of the Procuring Entity, any time prior to the deadline for submission of Tenders following specified procedures, without thereby incurring any liability to Tenderers, or any obligations to inform the Tenderers of the grounds for the Procuring Entity’s action.
61. Rejection of All Tenders

61.1 The Procuring Entity may, in the circumstances as stated under ITT Sub Clause 61.2 reject all Tenders following recommendations from the TEC only after the approval of such recommendations by the Head of the Procuring Entity.

61.2 All Tenders can be rejected, if -

(a) the price of the lowest evaluated Tender exceeds the official estimated cost, provided the estimate is realistic, subject to ITT Sub Clause 58.2; or

(b) there is evidence of lack of effective competition; such as non-participation by a number of potential Tenderers; or

(c) the Tenderers are unable to propose completion of the contract within the stipulated time in its Tender, though the stipulated time is reasonable and realistic; or

(d) all Tenders are non-responsive; or

(e) evidence of professional misconduct, affecting seriously the Procurement process, is established pursuant to Rule 127 of the Public Procurement Rules, 2008

61.3 Notwithstanding anything contained in ITT Sub-Clause 61.2 Tenders may not be rejected if the lowest evaluated price is in conformity with the market price.

62. Informing Reasons for Rejection

62.1 Notice of the rejection will be given promptly within seven (7) working days of decision taken by the Procuring Entity to all Tenderers and, the Procuring Entity will, upon receipt of a written request, communicate to any Tenderer the reason(s) for its rejection but is not required to justify those reason(s).

G. Contract Award

63. Award Criteria

63.1 The Procuring Entity shall award the Contract to the Tenderer whose Tender is responsive to all the requirements of the Tender Document and that has been determined to be the lowest evaluated Tender, provided further that the Tenderer is determined to be Post-qualified in accordance with ITT Clousue 59.

63.2 Tenderer will not be required, as a condition for award, to undertake responsibilities not stipulated in the Tender Documents, to change its price, or otherwise to modify its Tender.

64. Notification of Award

64.1 Prior to the expiry of the Tender Validity period and within one (1) week of receipt of the approval of the award by the Approving Authority, the Procuring Entity shall issue the Notification of Award (NOA) to the successful Tenderer.
64.2 The NOA, attaching the contract as per the sample (Form PW3-8) to be signed, shall state:

(a) the acceptance of the Tender by the Procuring Entity;
(b) the price at which the contract is awarded;
(c) the amount of the Performance Security and its format;
(d) the date and time within which the Performance Security shall be furnished; and
(e) the date and time within which the Contract shall be signed.

64.3 The NOA shall be accepted by the successful Tenderer within seven (7) working days from the date of its issuance.

64.4 Until a formal contract is signed, the NOA will constitute a Contract, which shall become binding upon the furnishing of a Performance Security and the signing of the Contract by both parties.

65. Performance Security

65.1 Performance Security shall be provided by the successful Tenderer in BDT currency, of the amount as specified in the TDS.

65.2 The Procuring Entity shall increase the amount of the Performance Security on the recommendation of TEC above the amounts as stated under ITT Sub Clause 56.7.

65.3 The proceeds of the Performance Security shall be payable to the Procuring Entity unconditionally upon first written demand as compensation for Contractor’s failure to complete its obligations under the Contract.

65.4 In the event a Government owned enterprise as stated under ITT Sub Clause 5.10 is the successful Tenderer, Performance Security, as stated under ITT Sub Clause 65.1, shall not be required and, in lieu, there shall be Retention Money as specified in the TDS.

66. Form and Time Limit for Furnishing of Performance Security

66.1 Performance Security, as stated under ITT Clause 65, may be in the form of a Bank Draft, Pay Order or an irrevocable unconditional Bank Guarantee in the format (Form PW3-10), without any alteration, issued by any scheduled Bank of Bangladesh acceptable to the Procuring Entity.

66.2 Within fourteen (14) days from the date of acceptance of the NOA but not later than the date specified therein, the successful Tenderer shall furnish the Performance Security for the due performance of the Contract in the amount as stated under ITT Sub Clauses 65.1 or 65.2.
67. **Validity of Performance Security**

67.1 Performance Security shall be required to be valid until a date twenty-eight (28) days beyond the Intended Completion Date as specified in Tender Document.

68. **Authenticity of Performance Security**

68.1 The Procuring Entity shall verify the authenticity of the Performance Security submitted by the successful Tenderer by sending a written request to the branch of the Bank issuing the Pay Order, Bank Draft or irrevocable unconditional Bank Guarantee in specified format.

69. **Contract Signing**

69.1 At the same time as the Procuring Entity issues the NOA, the Procuring Entity will send the draft Contract Agreement and all documents forming the Contract to the successful Tenderer.

69.2 Within twenty-eight (28) days of the issuance of the NOA, the successful Tenderer and the Procuring Entity shall sign the contract. In the event the successful Tenderer is a JV, all partners of that JV must sign.

69.3 Failure of the successful Tenderer to submit the Performance Security, as stated under ITT Sub Clause 65.1, or to sign the Contract, as stated under ITT Sub Clause 69.2, shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the next lowest evaluated responsive Tenderer, who is determined by the TEC to be qualified to perform the Contract satisfactorily.

70. **Publication of Notification of Award of Contract**

70.1 The NOA for Contract shall be notified by the Procuring Entity to the Central Procurement Technical Unit within seven (7) days of its issuance for publication in their website, and that notice shall be kept posted for not less than a month.

71. **Debriefing of Tenderers**

71.1 Debriefing of Tenderers by the Procuring Entity shall outline the relative status and weakness only of his or her Tender requesting to be informed of the grounds for not accepting the Tender submitted by him or her, without disclosing information about any other Tenderer.

71.2 In the case of debriefing, confidentiality of the evaluation process shall be maintained.

72. **Adjudicator**

72.1 The Procuring Entity proposes the person named in the **TDS** to be appointed as Adjudicator under the Contract, at an hourly fee and for those reimbursable expenses as specified in the **TDS**.

73. **Right to Complain**

73.1 Tenderer has the right to complain in accordance with the Public Procurement Act 2006 and the Public Procurement Rules, 2008.
# Section 2. Tender Data Sheet

Instructions for completing Tender Data Sheet are provided in italics in parenthesis for the relevant ITT clauses

<table>
<thead>
<tr>
<th>ITT Clause</th>
<th>Amendments of, and Supplements to, Clauses in the Instructions to Tenderers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. General</strong></td>
<td></td>
</tr>
</tbody>
</table>
| ITT 1.1 | The Procuring Entity is: Managing Director, Bangladesh Telecommunications Company Limited  
Represented by: Director (Procurement), Sher-e-Bangla Nagar Telephone Exchange Annex. Bldg.  
Sher-e-Bangla Nagar, Dhaka.  
The Name of the Tender is:  
“Supply, installation, testing and commissioning of OSP subscriber cable networks of different AGWs installed under RODTS [171 KL] Project at Sher-e-Bangla Nagar, Gulshan, Uttara, Mogbazar, Nilkhet and Ramna Exchange Area”  
Brief Description of the Works: Trench cutting (open/HDD), HDPE and laying of Copper Cable, construction of Hand-Hole, Cabinet, DP installation/termination etc.  
Tender Ref: as specified in the IFT.  
Lot No(s): 3  
LOT-A : OSP works of SBN Exchange Area as mentioned in Annexure-2  
LOT-C : OSP works of Gulshan Exchange Area as mentioned in Annexure-3  
LOT-E : OSP works of Ramna, Nilkhet, Mogbazar & Uttara Exchange Area as mentioned in Annexure-4 |
| ITT 3.1 | The source of public funds is: **BTCL’s own fund.** |
| ITT 3.3 | The name of the Development Partner is: **None.** |
| ITT 5.1 | Tenderers from the following countries are not eligible: **Israel.** |
| ITT 5.13 | Tenderers shall have the following up to date valid License: Trade License as Contractor. |
| ITT 6.1 | Materials, Equipment and associated services from the following countries are not eligible: **Israel.** |
| **B. Tender Document** | |
| ITT 8.2 | The following are authorised agents of the Procuring Entity for the purpose of issuing the Tender Document: **None.** |
For **clarification of Tender Document purposes** only, the Procuring Entity’s address is:

**Attention:** Director (Procurement)
**Address:** Sher-e-Bangla Nagar Telephone Exchange Annex. Bldg.
Sher-e-Bangla Nagar, Dhaka.
**Telephone:** 02 58150500
**Fax No:** 02 58150511
**e-mail address:** ddiclpct@btcl.net.bd
and contact Procuring Entity within: **One third time remaining for tender submission.**
*(date specified in IFT)*

**ITT 10.1**
Venue, date and time of Pre-tender meeting will be specified in IFT.

## C. Qualification Criteria

| **ITT 14.1(a)** | The minimum number of years of general experience of the Tenderer in construction works as Prime Contractor or Subcontractor or Management Contractor shall be: **05 (five)** years. |
| **ITT 14.1(b)** | The minimum specific experience as a Prime Contractor or Subcontractor or Management Contractor in underground type **Copper Cable/OFClaying/installation and commissioning works under public sector** of at least **01 (one)** contract of similar nature, complexity and methods/construction technology successfully completed within the last **05 (five)** years, with a value of at least Tk. **01 (one) crore for any of the Lots (Lot-A, Lot-C & Lot-E):**

*If any Bidder participates in multiple number of Lots (Lot-A, Lot-C & Lot-E), then to qualify for multiple Lots, the concerned Bidder needs to meet the Clause ITT-12.3.* |
| **ITT 15.1(a)** | The required average annual **construction turnover** shall be greater than Tk. **2 (two) crore for any lot [Lot-A, Lot-C & Lot-E]** over the last **05 (five)** years. This should be substantiated by bank statement of receipt/ Audit report.

*If any Bidder participates in multiple number of Lots (Lot-A, Lot-C & Lot-E), then to qualify for multiple Lots, the concerned Bidder needs to meet the Clause ITT-12.3.* |
| **ITT 15.1(b)** | The minimum amount of liquid assets or working capital or credit facilities of the Tenderer shall be **Tk. 1.0 (one) crore for each lot (Lot-A, Lot-C & Lot-E):**

*If any Bidder participates in multiple number of Lots (Lot-A, Lot-C & Lot-E), then to qualify for multiple Lots, the concerned Bidder needs to meet the Clause ITT-12.3.* |
A Construction Project Manager, Engineer, and other key staff shall have the following qualifications and experience:

<table>
<thead>
<tr>
<th>No</th>
<th>Position</th>
<th>Total Works Experience (years)</th>
<th>In Similar Works Experience (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Project Manager – 1 (one) no</td>
<td>5 (five)</td>
<td>1 (one)</td>
</tr>
<tr>
<td>02</td>
<td>B. Sc in Engg. – 1 (one) no</td>
<td>3 (three)</td>
<td>1 (one)</td>
</tr>
<tr>
<td>03</td>
<td>Diploma Engineer – 3 (three) nos</td>
<td>3 (three)</td>
<td>2 (two)</td>
</tr>
<tr>
<td>04</td>
<td>Cable jointer– 3 (three) nos</td>
<td>2 (two)</td>
<td>2 (two)</td>
</tr>
</tbody>
</table>

The above mentioned Personal Capacity is required for each lot (Lot-A, Lot-C, & Lot-E). If any Bidder participates in multiple number of Lots (Lot-A, Lot-C & Lot-E), then to qualify for multiple Lots, the concerned Bidder needs to meet the Clause ITT-12.3.

Tenderers shall own or have proven access to hire or lease of the major construction equipment, in full working order as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Equipment Type and Characteristics</th>
<th>Minimum Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>HDD machine</td>
<td>02 (Two) nos</td>
</tr>
<tr>
<td>02</td>
<td>Cable Lifter</td>
<td>02 (Two) nos</td>
</tr>
<tr>
<td>03</td>
<td>Powerful Winch Machine</td>
<td>02 (Two) nos</td>
</tr>
<tr>
<td>04</td>
<td>Insulation Tester</td>
<td>04 (Four) nos</td>
</tr>
<tr>
<td>05</td>
<td>Bico-meter</td>
<td>04 (Four) nos</td>
</tr>
</tbody>
</table>

The above mentioned Personal Capacity is required for each lot (Lot-A, Lot-C, & Lot-E). If any Bidder participates in multiple number of Lots (Lot-A, Lot-C & Lot-E), then to qualify for multiple Lots, the concerned Bidder needs to meet the Clause ITT-12.3.

The value of non-judicial stamp for execution of the Joint Venture Agreement shall be Tk. 300 only.

Maximum number of partners in the JV shall be 4 (four)
The minimum qualification requirements of Leading Partner, other Partner(s) and requirements by summation of a JV shall be as follows:

<table>
<thead>
<tr>
<th>TDS Clauses References</th>
<th>Requirements by summation</th>
<th>Requirements for Leading Partner</th>
<th>Requirements for other Partner(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITT-14.1(a)</td>
<td>Summation not applicable</td>
<td>05 (five) years</td>
<td>Same as for Leading Partner</td>
</tr>
<tr>
<td>ITT-14.1(b)</td>
<td>100% (summation of different contracts)</td>
<td>At least one Contract</td>
<td>Minimum requirement not applicable</td>
</tr>
<tr>
<td>ITT-15.1(a)</td>
<td>100%</td>
<td>40%</td>
<td>25%</td>
</tr>
<tr>
<td>ITT-15.1(b)</td>
<td>100%</td>
<td>40%</td>
<td>25%</td>
</tr>
<tr>
<td>ITT-16.1</td>
<td>100%</td>
<td>Minimum requirement not applicable</td>
<td>Minimum requirement not applicable</td>
</tr>
<tr>
<td>ITT-17.1</td>
<td>100%</td>
<td>Minimum requirement not applicable</td>
<td>Minimum requirement not applicable</td>
</tr>
</tbody>
</table>

ITT 19.4 The Nominated Subcontractor(s) named None shall execute the following specific components of the proposed Works: N/A

### D. Tender Preparation

The Tenderer shall submit with its Tender the following additional documents:

1. **Documentary evidence to substantiate the year of registration/constitution/licensing of the Bidder in its country of origin to fulfil the requirements of Clause ITT-14.1(a).**

2. **Experience Certificate(s) to fulfil the requirements of Clause ITT-14.1(b) and ITT-32.1(b).** Such Certificate(s) shall be issued by the relevant public sector authority, and must contain details of the Contracts such as the Project Name, brief description of the work, completion period with date; contact person(s)' Name, Telephone number, Fax number etc.

3. **A list of Manpower including CV (Form PW3-5) of the personnel as specified at Clause ITT-16.1(a).**

4. **Documentary evidence to prove Equipment Capacity as mentioned in Clause ITT-17.1: the Bidder shall submit a separate list of the equipment it owns with the Model nos and Serial nos and another separate list of the equipment it intends to lease or hire with the Model nos and Serial nos along with the relevant lease/hire agreement.**

5. **All other documents mentioned in the tender notice.**

**The bidder has to submit separate bid for each lot.**

#### ITT 26.1

Alternatives will not be permitted.

#### ITT 26.2

Alternative technical solutions for any parts of works will not be permitted.

#### ITT 27.9

The prices quoted by the Tenderers shall be fixed for the duration of the Contract.
### ITT 31.1

The Technical Proposal shall include the following information:

1. **Work Plan**
2. **Statement of Work Method**
3. **Brochure/Catalogue** of the Manufacturer, showing model name, product description, specification, country of origin etc. of HDPE Duct, DWC Duct, GI Pipe, Cable joint, Cabinet, DP etc. to be used in this work. The Bidder must specifically mention which models/product codes of the product it intends to supply in this work and mark/highlight that particular model/product code in the Brochure/Catalogue.

### ITT 32.1(e)

The required information regarding claims under litigation shall be current or during the last 5 (five) years.

### ITT 32.1(i)

The required reports on the financial standing, such as profit and loss statements and audited balance sheet shall be for the past 5 (five) years.

### ITT 33.1

The Tender Validity period shall be 120 days.

### ITT 35.1

The amount of the Tender Security shall be as follows:

1. Taka 4.5 Lac (Four Lac Fifty Thousand) for Lot-A;
2. Taka 4.5 Lac (Four Lac Fifty Thousand) for Lot-C;
3. Taka 5 (Five) Lac for Lot-E.

in favour of:

**Director (Procurement)**
**Sher-e-Bangla Nagar Telephone Exchange Annex. Bldg.**
**BTCL, Sher-e-Bangla Nagar, Dhaka.**

### ITT 40.1

In addition to the original of the Tender, 02 (two) printed hard copies and 1 (one) soft copy (unprotected) shall be submitted. In case of any ambiguity, the hard copy will prevail over the soft copy.

### E. Tender Submission

**ITT 41.2(e)**

The inner and outer envelopes shall bear the following additional identification marks:

*Do not open before the date & time as of the Invitation for Tender or as of subsequent corrigendum (if any).*

**ITT 42.1**

For **Tender submission purposes** only, the Procuring Entity’s address is:

**Attention:** **Director (Procurement)**
**Address:** **Sher-e-Bangla Nagar Telephone Exchange Annex. Bldg.**
**BTCL, Sher-e-Bangla Nagar, Dhaka.**

The deadline for the submission of Tenders is: **As specified in the IFT**
Time & Date: **As specified in the IFT**
For **Tender submission purposes** only, the Procuring Entity’s address is:

**Address (PRIMARY PLACE):**
*Director (Procurement)*  
*BTCL, Sher-e-Bangla Nagar, Dhaka.*

**Address (SECONDARY PLACES):**  
As per IFT or its subsequent corrigendum, if any.

The deadline for the submission of Tender is: **As specified in the IFT**  
Time & Date: **As specified in the IFT**

The deadline for hand-delivering of the Tenders at the **PRIMARY PLACE** is:

Time & Date: **As specified in the IFT**

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**F. Tender Opening and Evaluation**

The Tender opening shall take place at:

**Address:**  
*Director (Procurement)*  
*BTCL, Sher-e-Bangla Nagar, Dhaka.*

Time & Date: **As per IFT or its subsequent corrigendum, if any.**

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**G. Contract Award**

The amount of Performance Security shall be **10 (ten) percent** of the Contract Price.

The Retention Money shall be deducted @ ten (10) percent from the successful Tenderer’s payable invoices during Contract implementation, if awarded the Contract.

The Adjudicator proposed by the Procuring Entity is: **To be proposed later by MD, BTCL**

The hourly fee shall be: **To be proposed later by MD, BTCL**

And the reimbursable expenses shall be limited to: **To be proposed later by MD, BTCL**
Section 3. General Conditions of Contract

A. General

1. Definitions

1.1 In the Conditions of Contract, which include Particular Conditions and these General Conditions, the following words and expressions shall have the meaning hereby assigned to them. Boldface type is used to identify the defined terms:

(a) **Act** means The Public Procurement Act, 2006 (Act 24 of 2006).

(b) **Adjudicator** is the expert appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC Sub Clause 92.2.

(c) **Approving Authority** means the authority which, in accordance with the Delegation of Financial Powers, approves the award of contract.

(d) **Bill of Quantities (BOQ)** means the priced and completed Bill of Quantities forming part of the Contract defined in GCC Clause 59.

(e) **Compensation Events** are those defined in GCC Clause 67.

(f) **Competent Authority** means the authority that gives decision on specific issues as per delegation of administrative and/or financial powers.

(g) **Completion Certificate** means the Certificate issued by the Project Manager as evidence that the Contractor has executed the Works and physical services in all respects as per design, drawing, specifications and Conditions of Contract.

(h) **Completion Date** is the actual date of completion of the Works and physical services certified by the Project Manager, in accordance with GCC Clause 78.

(i) **Contract Agreement** means the Agreement entered into between the Procuring Entity and the Contractor, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein to execute, complete, and maintain the Works.

(j) **Contract Documents** means the documents listed in GCC Clause 6, including any amendments thereto.

(k) **Contractor** means the Person under contract with the Procuring Entity for the execution of Works under the Rules and the Act as stated in the PCC.

(l) **Contract Price** means the price payable to the Contractor as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, for the execution, completion and maintenance of the Works in accordance with the provisions of the Contract.

(m) **Contractor’s Tender** is the completed Tender Document including the priced BOQ and the Schedules submitted by the Contractor to the Procuring Entity.

(n) **Cost** means all expenditures reasonably incurred or to be incurred by the Contractor, whether on or off the Site, including
overhead, taxes, duties, fees and such other similar levies including corresponding incidental charges and premiums for banking and insurances, as applicable.

(o) **Day** means calendar day unless otherwise specified as working days.

(p) **Day works** means work carried out following the instructions of the Procuring Entity or the authorised Project Manager and is paid for on the basis of time spent by the Contractor’s workers and equipment at the rates specified in the Schedules, in addition to payments for associated Materials and Plant.

(q) **Defect** is any part of the Works not completed in accordance with the Contract.

(r) **Defects Correction Certificate** is the certificate issued by the Project Manager upon correction of defects by the Contractor.

(s) **Drawings** include calculations and other information provided in Section 9 or as approved by the Project Manager for the execution and completion of the Contract.

(t) **Equipment** is the Contractor’s apparatus, machinery, vehicles and other things required for the execution and completion of the Works and remedying any defects excluding Temporary Works and the Procuring Entity’s Equipment (if any ), Plant, Materials and any other things to form or forming part of the Permanent Works.

(u) **Force Majeure** means an event or situation beyond the control of the Contractor that is not foreseeable, is unavoidable, and its origins not due to negligence or lack of care on the part of the Contractor; such events may include, but not be limited to, acts of the Government in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes or more as included in GCC Clause 83;

(v) **GCC** means the General Conditions of Contract.

(w) **Government** means the Government of the People’s Republic of Bangladesh.

(x) **Goods** mean the Contractor’s Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.

(y) "**Head of the Procuring Entity**“ means the Secretary of a Ministry or a Division, the Head of a Government Department or Directorate; or the Chief Executive, or as applicable, Divisional Commissioner, Deputy Commissioner, Zilla Judge; or by whatever designation called, of a local Government agency, an autonomous or semi-autonomous body or a corporation, or a corporate body established under the Companies Act;

(z) **Intended Completion Date** is the date calculated from the Commencement Date as specified in the PCC, on which it is intended that the Contractor shall complete the Works and physical services as specified in the Contract and may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

(aa) **Materials** means things of all kinds other than Plant intended to form or forming part of the Permanent Works, including the
supply-only materials, if any, to be supplied by the Contractor under the Contract.

(bb) **Month** means calendar month.

(cc) **Original Contract Price** is the Contract Price stated in the Procuring Entity’s Notification of Award (Form PW3-7) and further clearly determined in the PCC.

(dd) **Permanent works** means the permanent works to be executed by the Contractor under the Contract.

(ee) **PCC** means the Particular Conditions of Contract.

(ff) **Plant** means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Procuring Entity and relating to the construction of the Works and physical services.

(gg) **Procuring Entity** means a Procuring Entity having administrative and financial powers to undertake procurement of Works and physical services using public funds and is as named in the PCC who employs the Contractor to carry out the Works.

(hh) **Project Manager** is the person named in the PCC or any other competent person appointed by the Procuring Entity and notified to the Contractor who is responsible for supervising the execution and completion of the Works and physical services and administering the Contract.

(ii) **Provisional Sums** means amounts of money specified by the Procuring Entity in the BOQ which shall be used, at its discretion for meeting other essential expenditures under the Contract pursuant to GCC Sub Clause 75.

(jj) **Retention Money** means the accumulated retention moneys which the Procuring Entity retains under GCC Clause 70.

(kk) **Schedules** means the document(s) entitled schedules, completed by the Contractor and submitted with the Tender Submission Letter, as included in the Contract. Such document may include the data, lists and schedules of rates and/or prices.

(ll) **Site** means the places where the Permanent Works are to be executed including storage and working areas and to which Plant and Materials are to be delivered, and any other places as may be specified in the PCC as forming part of the Site.

(mm) **Site Investigation Reports** are those that were included in the Tender Document and are factual and interpretative reports about the surface and subsurface conditions at the Site.

(nn) **Specification** means the Specification of the Works included in the Contract and any modifications or additions to the specifications made or approved by the Project Manager in accordance with the Contract.

(oo) **Start Date** is the date defined in the PCC and it is the last date when the Contractor shall commence execution of the Works under the Contract.

(pp) **Subcontractor** means a person or corporate body, who has a contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.
Temporary Works means all temporary works of every kind other than Contractor’s Equipment required on the Site for the execution and completion of the Permanent Works and remedying of any defects.

Variation means any change to the Works directly procured from the original Contractor to cover increases or decreases in quantities, including the introduction of new work items (non-Tendered items) that are either due to change of plans, design or alignment to suit actual field conditions, within the general scope and physical boundaries of the contract.

Works means all works associated with the construction, reconstruction, site preparation, demolition, repair, maintenance or renovation of railways, roads, highways, or a building, an infrastructure or structure or an installation or any construction work relating to excavation, installation of equipment and materials, decoration, as well as physical services ancillary to works as detailed in the PCC, if the value of those services does not exceed that of the Works themselves.

Writing means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail.

2. Interpretation

2.1 In interpreting the GCC, singular also means plural, male also means female or neuter, and the other way around. Headings in the GCC shall not be deemed part thereof or be taken into consideration in the interpretation or construance of the Contract. Words have their normal meaning under the language of the Contract unless specifically defined.

2.2 Entire Agreement

The Contract constitutes the entire agreement between the Procuring Entity and the Contractor and supersedes all communications, negotiations and agreements (whether written or verbal) of parties with respect thereto made prior to the date of Contract Agreement; except those stated under GCC Sub Clause 6.1(j).

2.3 Non waiver

(a) Subject to GCC Sub Clause 2.3(b), no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party’s rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

2.4 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or
unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

2.5 Sectional completion
If sectional completion is specified in the PCC, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Communications & Notices
3.1 Communications between Parties (notice, request or consent required or permitted to be given or made by one party to the other) pursuant to the Contract shall be in writing to the addresses specified in the PCC.

3.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

3.3 A Party may change its address for notice hereunder by giving the other Party notice of such change to the address.

4. Governing Law
4.1 The Contract shall be governed by and interpreted in accordance with the laws of the People’s Republic of Bangladesh.

5. Governing Language
5.1 The Contract shall be written in English. All correspondences and documents relating to the Contract may be written in English or Bangla. Supporting documents and printed literature that are part of the Contract may be in another language, provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, such translation shall govern.

5.2 The Contractor shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Documents Forming the Contract and Priority of Documents
6.1 The following documents forming the Contract shall be interpreted in the following order of priority:
(a) the signed Contract Agreement (Form PW3-9);
(b) the Notification of Award (PW3-8);
(c) the completed Tender and the Appendix to the Tender;
(d) the Particular Conditions of Contract;
(e) the General Conditions of Contract;
(f) the Technical Specifications;
(g) the General Specifications;
(h) the Drawings;
(i) the priced BOQ and the Schedules; and
(j) any other document listed in the PCC forming part of the Contract.

7. Scope of Works
7.1 The Works to be executed, completed and maintained shall be as specified in the BOQ, the General and Particular Specifications and Drawings.
7.2 Unless otherwise stipulated in the Contract, the Works shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for completion of the Works as if such items were expressly mentioned in the Contract.

8. Assignment

8.1 Neither the Contractor nor the Procuring Entity shall assign, in whole or in part, its obligations under the Contract.

9. Eligibility

9.1 The Contractor and its Subcontractor(s) shall have the nationality of a country other than that specified in the PCC.

9.2 All materials, equipment, plant, and supplies used by the Contractor in both permanent and temporary works and services supplied under the Contract shall have their origin in the countries except any specified in the PCC.

10. Gratuities / Agency fees

10.1 No fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the Tender or in the Contract, have been given or received in connection with the procurement process or in the Contract execution.

11. Confidential Details

11.1 The Contractor’s and the Procuring Entity’s personnel shall disclose all such confidential and other information as may be reasonably required in order to verify the Contractor’s compliance with the Contract and allow its proper implementation.

11.2 Each of them shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.

12. Joint Venture (JV)

12.1 If the Contractor is a JV,

(a) each partner of the JV shall be jointly and severally liable for all liabilities and ethical or legal obligations to the Procuring Entity for performance of the Contract;

(b) the JV partners shall nominate the Leading Partner as REPRESENTATIVE being entrusted with the Contract administration and management at Site who shall have the authority to conduct all business including the receipt of payments for and on behalf of all partners of the JV;

(c) If there is a dispute that results in legal action being taken in court then action will be taken against all partners of the JV, if they are available and, if only one partner is available, then that partner alone shall answer on behalf of all partners and, if the complaint lodged is proven, the penalty shall be applicable on that partner alone as whatever penalty all the partners would have received; provided that if the other partners of the JV subsequently become available before the legal action has been completed, the Procuring Entity shall have the right to take action against those other partners of that JV as well.
(d) the composition or constitution and legal status of the JV shall not be altered without the prior approval of the Procuring Entity;

(e) alteration of partners, except the Leading partner, shall only be allowed if any of them is found to be incompetent or has any serious difficulties which may impact the overall implementation of the Works, whereby the incoming partner shall require to possess qualifications higher than that of the outgoing partner;

(f) "if any of the partners of JV has been debarred from participating in any procurement activity due to corrupt, fraudulent, collusive or coercive practices and while in case, the Leading partner is found incompetent or has been debarred due to the same reasons stated herein the Contract shall be terminated pursuant to GCC Sub Clause 87.1(b)."

13. Possession of the Site

13.1 The Procuring Entity shall give possession of the Site or part(s) of the Site, to the Contractor on the date(s) stated in the PCC. If possession of a part of the Site is not given by the date stated in the PCC, the Procuring Entity will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event as stated under GCC Sub Clause 67.1(a).

14. Access to the Site

14.1 The Contractor shall allow the Project Manager and any person authorised by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

15. Procuring Entity's Responsibilities

15.1 The Procuring Entity shall pay the Contractor, in consideration of the satisfactory progress of execution and completion of the Works and physical services, and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract Agreement.

15.2 The Procuring Entity shall make its best effort to guide and assist the Contractor in obtaining, if required, any permit, licence, and approvals from local public authorities for the purpose of execution of the Works and physical services under the Contract.

16. Approval of the Contractor's Temporary Works

16.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, who is to approve them, if they comply with the Specifications and Drawings.

16.2 The Contractor shall be responsible for design of Temporary Works.

16.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

16.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

17. Contractor's Responsibilities

17.1 The Contractor shall execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract Agreement.

18. Taxes and Duties

18.1 The Contractor shall be entirely responsible for all applicable taxes, custom duties, VAT, and other levies imposed or incurred inside and outside Bangladesh.

19.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the PCC, to carry out
19. **Contractor’s Personnel**

   the functions stated in the Schedule or other personnel approved by the Project Manager.

19.2 The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or higher than those of the personnel named in the Schedule.

19.3 If the Project Manager asks the Contractor to remove a particular person who is a member of the Contractor’s staff or work force from the Site, he or she shall state the reasons, and the Contractor shall ensure that the person leaves the Site within three (3) days and has no further connection with the work in the Contract.

20. **Subcontracting**

20.1 Subcontracting the whole of the Works by the Contractor shall not be permissible. The Contractor shall be responsible for the acts or defaults of any Subcontractor, his or her agents or employees, as if they were the acts or defaults of the Contractor.

20.2 The prior consent, in writing, of the Project Manager shall however be obtained for other proposed Subcontractor(s).

20.3 Nominated Subcontractor named in the Contract shall be entitled to execute the specific components of the Works stated in the PCC.

20.4 Subcontractors shall comply with the provisions of GCC Clause 38.

21. **Other Contractors**

21.1 The Contractor shall cooperate and share the Site with other Contractors, public authorities, utilities, the Project Manager and the Procuring Entity between the dates given in the Schedule of other Contractors. The Contractor shall also provide facilities and services for them as described in the Schedule. The Procuring Entity may modify the Schedule of other Contractors, and shall notify the Contractor of any such modification.

22. **Project Manager’s Decisions**

22.1 Except where otherwise specifically stated in the PCC, the Project Manager will decide Contractual matters between the Procuring Entity and the Contractor in its role as representative of the Procuring Entity.

23. **Delegation**

23.1 The Project Manager may delegate any of his duties and responsibilities to his representative except to the Adjudicator, after notifying the Contractor, and may cancel any delegation, without retroactivity, after notifying the Contractor.

23.2 Any communications to the Contractor in accordance with such delegation shall have the same effect as if it was given by the Project Manager.

24. **Instructions**

24.1 The Contractor shall carry out all instructions of the Project Manager that comply with the applicable law.

25. **Queries About the Contract Conditions**

25.1 The Project Manager, on behalf of the Procuring Entity, will clarify queries on the Conditions of Contract.

26. **Safety, Security and Protection of the Environment**

26.1 The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein:
(a) take all reasonable steps to safeguard the health and safety of all workers working on the Site and other persons entitled to be on it, and to keep the Site in an orderly state;

(b) provide and maintain at the Contractor’s own cost all lights, guards, fencing, warning signs and watching for the protection of the Works or for the safety on-site; and

(c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractors methods of operation.

27. Working Hours

27.1 The Contractor shall not perform any work on the Site on the weekly holidays, or during the night or outside the normal working hours, or on any religious or public holiday, without the prior written approval of the Project Manager.

28. Welfare of Labourers

28.1 The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's personnel relating to their employment, health, safety, welfare, immigration and shall allow them all their legal rights.

28.2 The Contractor, in particular, shall provide proper accommodation to his or her labourers and arrange proper water supply, conservancy and sanitation arrangements at the site for all necessary hygienic requirements and for the prevention of epidemics in accordance with relevant regulations, rules and orders of the government.

28.3 The Contractor, further in particular, shall pay reasonable wages to his or her labourers, and pay them in time. In the event of delay in payment the Procuring Entity may effect payments to the labourers and recover the cost from the Contractor.

29. Child Labour

29.1 The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development in compliance with the applicable labor laws and other relevant treaties ratified by the government.

30. Discoveries

30.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Procuring Entity. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

31. Procuring Entity's and Contractor's Risks

31.1 The Procuring Entity carries the risks that the Contract states are Procuring Entity’s risks and the Contractor carries the risks that the Contract states are Contractor’s risks.

32.1 From the Start Date until the Defects Correction Certificate has been issued, the following are Procuring Entity’s risks:
32. Procuring Entity’s Risks

(a) the risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
i. use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
ii. negligence, breach of statutory duty, or interference with any legal right by the Procuring Entity or by any person employed by or Contracted to him except the Contractor.

(b) the risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity’s design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

32.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is Procuring Entity’s risk, except loss or damage due to:

(a) a Defect which existed on the Completion Date;
(b) an event occurring before the Completion Date, which was not itself Procuring Entity’s risk; or
(c) the activities of the Contractor on the Site after the Completion Date.

33. Contractor’s Risks

33.1 From the Start Date until the Defects Correction Certificate has been issued the risks of personal injury, death, and loss of or damage to property including without limitation, the Works, Plant, Materials, and Equipment, which are not Procuring Entity’s risks are Contractor’s risks.

34. Copyright

34.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Procuring Entity by the Contractor herein shall remain vested in the Contractor, or, if they are furnished to the Procuring Entity directly or through the Contractor by any third party, including Suppliers of materials, the copyright in such materials shall remain vested in such third party.

34.2 The Contractor shall not, except for the purposes of performing the obligations under the Contract, without the written permission of the Procuring Entity disclose or make use of any specification, plan, design and drawing, pattern, sample or information furnished by or on behalf of the Procuring Entity.

35. Limitation of Liability

35.1 Except in cases of criminal negligence or wilful misconduct:
(a) the Contractor shall not be liable to the Procuring Entity, whether in Contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the
Contractor to pay liquidated damages to the Procuring Entity; and

(b) the aggregate liability of the Contractor to the Procuring Entity, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective Works, or to any obligation of the Contractor to indemnify the Procuring Entity with respect to patent infringement.

36. Insurance

36.1 The Contractor shall provide, in the joint names of the Procuring Entity and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts specified in the PCC for the following events which are due to the Contractor’s risks:

(a) loss of or damage to the Works, Plant, and Materials;
(b) loss of or damage to Equipment;
(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
(d) personal injury or death.

36.2 The Contractor shall deliver policies and certificates of insurance to the Project Manager, for the Project Manager’s approval, before the Start Date. All such insurances shall provide for compensation to be payable in the types and proportions required to rectify the loss or damage incurred.

36.3 If the Contractor does not provide any of the policies and certificates required, the Procuring Entity may effect the insurance which the Contractor should have provided and recover the premiums the Procuring Entity has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

36.4 Alterations to the terms of insurance shall not be made without the approval of the Project Manager.

36.5 Both parties shall comply with conditions of the insurance policies.

37. Management and Progress Meetings

37.1 Either the Project Manager or the Contractor may require the other to attend a management and progress meeting. The business of such meeting shall be to review the progress and plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

37.2 The Project Manager shall record the business of the meetings and provide copies of the record to those attending the meeting and to the Procuring Entity. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management and progress meeting or after the meeting, and stated in writing to all concerned.
38. **Corrupt, Fraudulent, Collusive or Coercive Practices**

38.1 The Government requires that Procuring Entity, as well as the Contractor shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of the Contract under public fund.

38.2 The Government requires that Procuring Entity, as well as the Contractor shall, during the execution of Contracts under public funds, ensure-

   (a) strict compliance with the provisions of Section 64 of the Public Procurement Act 2006 (Act 24 of 2006);

   (b) abiding by the code of ethics as mentioned in the Rule 127 of the Public Procurement Rules, 2008;

   (c) that neither it nor any other member of its staff or any other agents or intermediaries working on its behalf engages in any practice as detailed in GCC Sub Clause 38.3

38.3 For the purposes of GCC Sub Clause 38.4, the terms set forth below as follows:

   (a) “corrupt practice” means offering, giving or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of a Procuring Entity or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by a Procuring Entity in connection with a Procurement proceeding or Contract execution;

   (b) “fraudulent practice” means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;

   (c) “collusive practice” means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the Procuring Entity, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, non-competitive levels, thereby denying a Procuring Entity the benefits of competitive price arising from genuine and open competition; or

   (d) “coercive practice” means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in the Procurement proceeding or the execution of the Contract, and this will include creating obstructions in the normal submission process used for Tenders.
38.4 Should any corrupt, fraudulent, collusive or coercive practice of any kind come to the knowledge of the Procuring Entity, it will, in the first place, allow the Contractor to provide an explanation and shall, take actions only when a satisfactory explanation is not received. Such exclusion and the reasons thereof, shall be recorded in the record of the procurement proceedings and promptly communicated to the Contractor. Any communications between the Contractor and the Procuring Entity related to matters of alleged corrupt, fraudulent, collusive or coercive practices shall be in writing.

38.5 If corrupt, fraudulent, collusive or coercive practices of any kind determined by the Procuring Entity against the Contractor alleged to have carried out such practices, the Procuring Entity will:
(a) exclude the Contractor from further participation in the particular Procurement proceeding; or
(b) declare, at its discretion, the Contractor to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time.

38.6 The Contractor shall be aware of the provisions on corruption, fraudulence, collusion and coercion in Section 64 of the Public Procurement Act, 2006 and Rule 127 of the Public Procurement Rules, 2008.

B. Time Control

39. Commencement of Works

39.1 Except otherwise specified in the PCC, the Commencement Date shall be the date at which the following precedent conditions have all been fulfilled and the Project Manager’s instruction recording the agreement of both Parties on such fulfilment and instructing to commence the Works is received by the Contractor:
(a) signing of the Contract Agreement by both parties upon approval of the by relevant authorities;
(b) possession of the Site given to the Contractor as required for the commencement of the Works; and
(c) receipt by the Contractor of the Advance Payment under GCC Clause 73 provided that the corresponding Bank Guarantee has been delivered by the Contractor, if any.

39.2 The Contractor shall commence the execution of the Works as soon as is reasonably practicable by the Start Date as specified in the GCC Sub Clause 1.1(oo) after the Commencement Date, and shall then proceed with the Works with due expedition and without delay.

40. Completion of Works

40.1 The Contractor shall carry out the Works in accordance with the Programme of Works submitted by the Contractor and as updated with the approval of the Project Manager as stated under GCC Clause 41 to complete them in all respects by the Intended Completion Date, as specified in the PCC.

41.1 Within the time stated in the PCC, the Contractor shall submit to the Project Manager for approval a Programme of Works showing
41. Programme of Works

the general methods, arrangements, order, and timing for all the activities in the Works. The programme may be in the form of an Implementation Schedule prepared in any software or other form acceptable to the Project Manager.

41.2 The Contractor shall submit to the Project Manager for approval of an updated Programme at intervals no longer than the period stated in the PCC. An update of the Programme shall be a Programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

41.3 If the Contractor does not submit an updated Programme of Works at the intervals as stated under GCC Sub Clause 41.2, the Project Manager may withhold an amount as stated in the PCC from the next payment certificate and continue to withhold this amount until the next due payment after the date on which the overdue Programme of Works has been submitted.

41.4 The Project Manager’s approval of the Programme of Works shall not alter the Contractor’s obligations. The Contractor may revise the Programme and submit it to the Project Manager again at any time for approval. A revised Programme shall show the effect of Variations and Compensation Events.

42. Pro Rata Progress

42.1 The Contractor shall maintain Pro Rata progress of the Works. Progress to be achieved shall be pursuant to GCC Clause 41 and shall be determined in terms of the value of the works done.

43. Early Warning

43.1 If at any time during performance of the Contract, the Contractor or its Subcontractors should encounter events, circumstances, conditions that may adversely affect the quality of the work, increase the original Contract Price or delay the execution of the Works, the Contractor shall promptly notify the Project Manager in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Contractor’s notice, the Project Manager shall evaluate the situation, and the Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced.

43.2 The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the original Contract Price and Completion Date. The Contractor shall provide the estimate and the Project Manager shall further proceed as soon as reasonably possible.

44. Extension of Intended Completion Date

44.1 The Contractor shall be entitled to an extension of the Intended Completion Date, if and to the extent that completion of the Works or any part thereof is or will be delayed by Compensation Events or a Variation or Extra Work Order.

44.2 If the Contractor considers itself to be entitled to an extension of the execution period as stated under GCC Sub Clause 44.1, the Contractor shall give notice, not later than twenty-eight (28) days after the Contractor became aware or should have become aware of the event or circumstance, to the Project Manager.
44.3 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within twenty-one (21) days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the extension of Intended Completion Date.

44.4 The Project Manager may extend the Intended Completion Date by twenty (20) percent of the original Contract time as stated under GCC Sub Clause 44.1, if a Compensation Event occurs or Variation Order or extra work Order issued which does not make it possible to complete the execution of works without incurring additional cost.

44.5 In the case an extension of the Intended Completion Date required under GCC Sub Clause 44.3 is or will be more than twenty (20) percent of the original Contract time, approval of the Head of the Procuring Entity or an officer authorized by him or her for the same shall be required to be obtained.

44.6 Except in case of Force Majeure, as provided under GCC Clause 83, a delay by the Contractor in the execution Works shall render the Contractor liable to the imposition of Liquidated Damages pursuant to GCC Clause 71, unless an extension of the Intended Completion Date is agreed upon, pursuant to GCC Clause 44.3.

45. Delays Caused by Authorities

45.1 If the following conditions apply, namely:
(a) the Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities,
(b) these public authorities delay or disrupt the Contractor’s work, and
(c) the delay or disruption was unforeseeable;
then this delay or disruption will be considered as a cause of delay under GCC Sub Clause 44.1.

45.2 The Project Manager shall notify the Contractor accordingly keeping the Procuring Entity posted.

46. Acceleration

46.1 When the Procuring Entity wants the Contractor to finish the Works before the Intended Completion Date, the Project Manager will obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date will be advanced accordingly and confirmed by both the Procuring Entity and the Contractor.

46.2 If the Procuring Entity accepts the Contractor’s priced proposals for acceleration, they will be incorporated in the Contract Price and treated as a Variation under GCC Clause 61.

47. Delays Ordered by the Project Manager

47.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.
48. Suspension of Work

48.1 The Project Manager may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

49. Consequences of Suspension

49.1 If the Contractor suffers delay and/or incurs Cost from complying with the Project Manager’s instructions under GCC Clause 48 and/or from resuming the work, the Contractor shall give notice to the Project Manager and shall be entitled subject to GCC Clause 91 to:

(a) an extension of time for any such delay, if Completion is or will be delayed and

(b) payment of any such cost, which shall be included in the Contract Price.

49.2 After receiving this notice, the Project Manager shall proceed to agree or determine these matters.

49.3 The Contractor shall not be entitled to any extension of time for, or to any payment of the cost incurred in, making good the consequences of the Contractor’s faulty design, workmanship or materials, or of the Contractor’s failure to protect, store or secure in accordance with GCC Clause 48.

C. Quality Control

50. Execution of Works

50.1 The Contractor shall construct, install and carry out the Works and physical services in accordance with the Specifications and Drawings as scheduled in GCC Clause 6.

51. Examination of Works before covering up

51.1 All works under the Contract shall at all times be open to examination, inspection, measurements, testing and supervision of the Project Manager, and the Contractor shall ensure presence of its representatives at such actions provided proper advance notice is given by the Project Manager.

51.2 No part of the Works shall be covered up or put out of sight without the approval of the Project Manager. The Contractor shall give notice in writing to the Project Manager whenever any such part of the Works is ready for examination and, the Project Manager shall attend to such examination without unreasonable delay.

52. Identifying Defects

52.1 The Project Manager shall check the works executed by the Contractor and notify the Contractor of any Defects found. Such checking shall not relieve the Contractor from his or her obligations. The Project Manager may also instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.

53. Testing

53.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event pursuant to GCC Sub Clause 67.
54. Rejection of Works

54.1 If, as a result of an examination, inspection, measurement or testing, of Works it is found to be defective or otherwise not in accordance with the Contract, the Project Manager may reject the Works by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected Works subsequently complies with the Contract.

55. Remedial Work

55.1 Notwithstanding any test or certification, the Project Manager may instruct the Contractor to:

(a) remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,

(b) remove and re-execute any other work which is not in accordance with the Contract, and

(c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

55.2 The Contractor shall comply with the instruction issued under GCC Sub Clause 55.1 within a reasonable time, which shall be specified in the instruction, or immediately if urgency is specified under GCC Sub Clause 55.1(c).

55.3 If the Contractor fails to comply with the instruction issued under GCC Sub Clause 55.2, the Procuring Entity shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall be liable to pay all such costs arising from this failure.

56. Correction of Defects

56.1 The Project Manager shall give notice to the Contractor, with a copy to the Procuring Entity and others concerned, of any Defects before the end of the Defects Liability Period, which begins at Completion Date, and is defined in the PCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

56.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

57. Uncorrected Defects

57.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected by it, and the Contractor shall remain liable to pay the expenditures incurred on account of correction of such Defect.

D. Cost Control

58. Contract Price

58.1 The Contract Price shall be as specified in the Contract Agreement subject to any additions and adjustments thereto, or deductions therefrom, as may be made pursuant to Contract.
59. Bill of Quantities

59.1 The Bill of Quantities (BOQ) shall contain priced items for the construction, installation, testing, and commissioning work to be done by the Contractor.

59.2 The BOQ is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the BOQ for each item.

59.3 Items of works quantified in the BOQ for which no rates have been quoted shall be deemed covered by the amounts at rates of other items in the Contract and, shall under no circumstances be paid for, by the Procuring Entity.

60. Changes in the Quantities and Unit Rate

60.1 If the final quantity of the work done for any particular item in the BOQ increases by more than twenty-five (25) percent and, such increase in quantity of that particular item alone concurrently causes the original Contract Price to exceed by more than one (1) percent, the Project Manager shall adjust the unit rate of the item to allow for the change.

60.2 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the BOQ.

61. Issue Variation or Extra Work Order

61.1 The Project Manager may issue a Variation Order to the Contractor to cover increase or decrease in quantities, including the introduction of new work items (non-Tendered items) that are either due to change of plans, design or alignment to suit actual field conditions, within the general scope and physical boundaries of the contract.

61.2 The Project Manager may issue an Extra Work Order to cover the introduction of such new works necessary for the completion, improvement or protection of the original works which were not included in the original contract, on the grounds where there are subsurface or latent physical conditions at the site differing materially from those indicated in the contract, or where there are duly unknown physical conditions at the site of an unusual nature differing materially from those usually encountered and generally recognized as inherent in the work or character provided for in the Contract.

61.3 The Project Manager deems it necessary that a Variation or Extra Work Order should be issued, he or she shall prepare the proposed order, the necessary plans, his or her computations as to the quantities of the additional Works involved per item indicating the specific locations where such Works are needed, the date of his or her inspections and investigations thereon, and the log book thereof, and a detailed estimate of the unit cost of such items of work as stated under GCC Clause 62, together with his or her justifications for the need of such Variation or Extra Work Order, and shall submit the same to the Approving Authority.

61.4 The Head of the Procuring Entity may, in exceptions to the GCC Sub Clause 61.3 and subject to the availability of funds, in the event of extreme emergency and when time is of the essence, authorize the immediate start of work under any Variation or Extra Work Order; provided that the cumulative increase in the value of
Works not yet duly approved exceeded ten (10) percent of the adjusted original Contract Price.

61.5 Increase or decrease in the quantities of any item of work included in the BOQ for the reasons other than those stated under GCC Sub Clause 61.1 and 61.2, in particular for field level actual measurements under this contract (admeasurements), not necessarily however, shall constitute a Variation.

61.6 All Variations and Extra work orders under the Contract shall be included in the updated Programme of Works produced by the Contractor.

62. Costing of Variations or Extra Orders

62.1 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) working days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.

62.2 If the item of work in the Variation corresponds to an item of work in the BOQ and if, in the opinion of the Project Manager, the increased quantity and cost of the works of that particular item does not concurrently cause to exceed the limit stated in GCC Sub Clause 60.1, the same unit rate in the BOQ shall be used to calculate the cost of the Variation. If the item of work in the Variation does not correspond to an item in the BOQ, the unit rates for the new items of works shall be determined based on (i) the direct unit costs used in the original Contract for other items (e.g. unit cost of cement, steel bar, labour rate, equipment rental, etc) as indicated in the Contractor’s price breakdown of the cost estimate, if available or (ii) fixed prices acceptable to both, the Procuring Entity and the Contractor, based on market prices. The direct cost of the new work items based on (i) or (ii) stated herein shall then be combined with the mark-up factor (i.e. profit, overhead and VAT) used by the Contractor in its Tender to determine the unit rate of the new items of work.

62.3 If the Contractor’s quotation is found to be unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager’s own forecast of the effects of the Variation on the Contractor’s costs.

62.4 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning under GCC Sub Clause 43.1.

62.5 The time for processing of a Variation and an Extra Work Order from its preparation to approval shall not exceed thirty (30) working days.

63. Cash Flow Forecasts

63.1 When the Programme of Works is updated under GCC Sub Clause 41.2, the Contractor shall provide the Project Manager with an updated cash flow forecast.

64.1 The basis for payment certificates shall be BOQ used to determine the Contract Price.
### 64. Payment Certificates

64.2 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the works executed less the cumulative amount certified previously.

64.3 The Project Manager shall check the Contractor’s monthly statement and certify the amount to be paid to the Contractor.

64.4 The value of work executed shall be determined by the Project Manager.

64.5 The value of work executed may also include the valuation of Variations or Extra Work Orders, Certified Dayworks and Compensation Events.

64.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

### 65. Payments to the Contractor

65.1 Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within twenty-eight (28) days of the date of each certificate after due adjustments for deductions for advance payments, retention and any other additions or deductions which may have become due under the Contract or otherwise, including those under GCC Clause 91.

65.2 Payments for Works under Variation Orders or Extra Work Orders satisfactorily accomplished pursuant to GCC Sub Clause 61 may be made only after approval of the same by the Approving Authority or next higher, as appropriate.

65.3 Payments due to the Contractor in each certificate shall be made into the Bank Account, in any scheduled Bank of Bangladesh, of the legal title of the Contract specified in the PCC, nominated by the Contractor in the currency specified in the Contract.

### 66. Delayed Payment

66.1 If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment at the rate as specified in the PCC. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made.

66.2 If an amount certified is increased in a subsequent certificate as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

### 67. Compensation Events

67.1 The following shall be Compensation Events:

(a) The Procuring Entity does not give access to or possession of the Site or part of the Site by the Site Possession Date stated in the GCC Sub Clause 13.1;

(b) The Procuring Entity modifies the Schedule of other Contractors in a way that affects the works of the Contractor under the Contract;
(c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time;

(d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects;

(e) The Project Manager unreasonably does not approve a subcontract to be let, if applicable;

(f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Notification of Award from the information issued to Tenderers (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site; Other Contractors, public authorities, utilities, or the Procuring Entity do not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor;

(g) The advance payment is delayed;

(h) The effects on the Contractor of any of the Procuring Entity’s Risks;

(i) The Project Manager unreasonably delays issuing a Completion Certificate;

(j) A situation of Force Majeure has occurred, as defined in GCC Clause 83; and

(k) Other Compensation Events described in the Contract or determined by the Project Manager in the PCC shall apply.

67.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended, only on justifiably acceptable grounds duly recorded.

67.3 As soon as the Contractor has provided information demonstrating the effect of each Compensation Event upon the Contractor’s forecast cost, the Project Manager shall assess it, and the Contract Price shall be adjusted accordingly. If the Contractor’s forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager’s own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.

67.4 The Contractor shall not be entitled to compensation to the extent that the Procuring Entity’s interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Project Manager.

68. Adjustments for Changes in Legislation

68.1 Unless otherwise specified in the Contract, if between the date twenty-eight (28) days before the submission of Tenders for the Contract and the date of the last Completion Certificate, any law, regulation, ordinance, order or bylaw having the force of law is
enacted, promulgated, abrogated, or changed in Bangladesh (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Completion Date and/or the Contract Price, then such Completion Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract.

68.2 The Project Manager shall adjust the Contract Price on the basis of the change in the amount of taxes, duties, and other levies payable by the Contractor, provided such changes have not already been accounted for in the price adjustment as defined in GCC Clause 69 and/or reflected in the Contract Price.

69. Price Adjustment

69.1 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the PCC. If so provided, the amounts as certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amount. The formulae indicated below applies:

\[ P = A + B \left( \frac{I_m}{I_o} \right) \]

where:

- \( P \) is the adjustment factor
- \( A \) and \( B \) are Coefficients specified in the PCC, representing the nonadjustable and adjustable portions, respectively, of the Contract; and
- \( I_m \) is the Index during the month the work has been executed and
- \( I_o \) is the Index prevailing twenty-eight (28) days prior to the deadline for submission of Tender.

The Indexes to be used is as published by the Bangladesh Bureau of Statistics (BBS) on a monthly basis. In case not available, then other countries or authorities of the sources mentioned in Appendix to the Tender may be used.

70. Retention Money

70.1 The Procuring Entity may retain from each progressive payment due to the Contractor at the percentage specified in the PCC until completion of the whole of the Works under the Contract.

70.2 On completion of the whole of the Works, the first half of the total amount retained under GCC Sub Clause 70.1 shall be returned to the Contractor and the remaining second half after the Defects Liability Period has passed and the Project Manager has certified in the form of Defects Corrections Certificate.

70.3 On completion of the whole of the Works, the Contractor may substitute an irrevocable unconditional Bank Guarantee from any scheduled Bank of Bangladesh, in the format as specified (Form PW3-12), without any alteration, acceptable to the Procuring Entity for the second half of the retention money as stated under GCC Sub Clause 70.2.

71.1 Except as provided under GCC Sub Clause 83, if the Contractor fails to complete the Works and physical services within the
71. Liquidated Damages

Intended Completion Date or extended Intended Completion Date, the Procuring Entity shall, as Liquidated Damages, deduct from the Contract Price, a sum at the percent-rate per day of delay as specified in the PCC, of the contract value of the uncompleted works or part thereof completed after the Intended Completion Date or extended Intended Completion Date, as applicable. The total amount of Liquidated Damages or Delay Damages shall not exceed the amount specified in the PCC. The Procuring Entity may deduct Liquidated Damages from payments due to the Contractor. Payment of Liquidated damages shall not affect the Contractor’s liabilities.

71.2 If the Intended Completion Date is extended after Liquidated Damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate.

72. Bonus

72.1 The Contractor shall be paid a Bonus calculated at the percent-rate per day if stated in the PCC for each day (less any days for which the Contractor is paid for acceleration) that the completion of the whole of the Works is earlier than the Intended Completion Date. The Project Manager shall require certifying that the Works are complete, although they may not have fallen due to being complete as per approved updated Programme of Works.

73. Advance Payment

73.1 The Procuring Entity shall make advance payment, if so specified in the PCC, to the Contractor in the amounts and by the dates specified in the PCC against an irrevocable unconditional Bank Guarantee issued by any scheduled Bank of Bangladesh in the format as specified (Form PW3-11), without alteration, and acceptable to the Procuring Entity of an amount equal to the advance payment. The Guarantee shall remain effective until the advance payment has been amortized, but the amount of the Guarantee shall be progressively reduced by the amounts amortized by the Contractor. Interest will not be charged on the advance payment.

73.2 The Contractor shall use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used for such specific purposes by supplying copies of invoices or other documents to the Project Manager.

73.3 The advance payment shall be amortized by deducting at proportionate rate from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works as specified in the PCC. No account shall be taken of the advance payment or its amortization in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

73.4 If the amortization of advance payment has not been completed by twenty-eight (28) days prior to the expiry date of the Guarantee stated under GCC Sub Clause 73.1, the Contractor shall correspondingly extend the validity of the Guarantee for a period so long the advance payment is fully amortized. The Bank
74. Performance Security

Guarantee for advance payment shall be released when the same has been fully amortized.

74.1 The Procuring Entity shall notify the Contractor of any claim made against the Bank issuing the Performance Security.

74.2 The Procuring Entity may claim against the security if any of the following events occurs for fourteen (14) days or more.

(a) The Contractor is in breach of the Contract and the Procuring Entity has duly notified him or her; and

(b) The Contractor has not paid an amount due to the Procuring Entity and the Procuring Entity has duly notified him or her.

74.3 In the event as stated under GCC Sub Clause 74.2, the Contractor is liable to pay compensation under the Contract amounting to the full value of the security or more, the Procuring Entity may call the full amount of the security.

74.4 The Performance Security furnished at the time of signing of the Contract Agreement shall be substituted, after the issuance of certificate of Completion of works by the Project Manager, by a new Security covering fifty (50) percent amount of the Performance Security to cover the Defects Liability Period.

74.5 If there is no reason to call the security, the security shall be discharged by the Procuring Entity and returned to the Contractor after the Defects Liability period has passed and the Project Manager has certified in the form of Defects Corrections Certificates and the Procuring Entity shall not make any claim under the security, except for amounts to which the Procuring Entity is entitled under this Contract. In the event this Contract is significantly below the updated official estimated cost or unbalanced as a result of front loading, the Procuring Entity shall call the full amount of the security in the circumstances stated under GCC Sub Clause 74.3.

75. Provisional Sums

75.1 Provisional Sums shall only be used, in whole or in part, in accordance with the Project Manager’s instructions.

75.2 Plants, Materials or Services to be purchased by the Contractor under the provisions of GCC Sub Clause 75.1 from Nominated Subcontractor(s) or for meeting the other expenditures under the Contract, and for which there shall be included in the Contract price, the actual amounts paid or due to be paid by the Contractor, and a sum for profit, overhead and VAT, as applicable, calculated as a percentage of these actual amounts by applying the relevant percentage rate as specified in the PCC.

76. Dayworks

76.1 If applicable, the Dayworks rates in the Contractor’s Tender shall be used for small additional amounts of work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

76.2 All works to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be certified and signed by the Project Manager within seven (7) days of the works being done.
76.3 The Contractor shall be paid for Day-works subject to obtaining signed Day-works forms.

77. Cost of Repairs to Loss or Damages

77.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied by the Contractor at the Contractor’s own cost, if the loss or damage arises from the Contractor’s acts or omissions.

E. Completion of the Contract

78. Completion

78.1 The Contractor shall apply by notice to the Project Manager for issuing a Completion Certificate of the Works, and the Project Manager shall do so upon deciding that the work is completed.

79. Taking Over

79.1 The Procuring Entity shall take over the Site and the Works within seven (7) days of the Project Manager’s issuing a certificate of Completion.

80. Amendment to Contract

80.1 The amendment to Contract shall generally include extension of time to the Intended Completion Date, increase or decrease in original Contract Price and any other changes acceptable under the conditions of the Contract.

80.2 The Procuring Entity shall amend the Contract, incorporating the changes approved, in accordance with the Delegation of Financial Power or Sub-delegation thereof and, introduced to the original terms and conditions of the Contract.

81. Final Account

81.1 The Contractor shall submit with a detailed account of the total amount that the Contractor considers payable under the Contract to the Project Manager before the end of the Defects Liability Period.

81.2 The Project Manager shall certify the Final Payment within fifty six (56) days of receiving the Contractor’s account if the payable amount claimed by the Contractor is correct and the corresponding works are completed.

81.3 If it is not, the Project Manager shall issue within fifty six (56) days a Defects Liability Schedule that states the scope of the corrections or additions that are necessary.

81.4 If the Final Account of Works submitted under GCC Sub Clause 81.1 is unsatisfactory even after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

82. As-built Drawings and Manuals

82.1 If “As Built” Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the PCC.

82.2 If the Contractor does not supply the Drawings and/or Manuals by the dates specified in GCC Sub Clause 82.1, or they do not receive the Project Manager’s approval, the Project Manager shall withhold a nominal amount specified in the PCC from payments due to the Contractor.
83. Force Majeure

83.1 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind stated below:

(a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies;

(b) rebellion, terrorism, sabotage by persons other than the Contractor’s personnel, revolution, insurrection, military or usurped power, or civil war;

(c) riot, commotion, disorder, strike or lockout by persons other than the Contractor’s personnel;

(d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor’s use of such munitions, explosives, radiation or radio-activity; and

(e) natural catastrophes such as fires, floods, epidemics, quarantine restrictions, freight embargoes, cyclone, hurricane, typhoon, tsunami, storm surge, earthquake, hill slides, landslides, and volcanic activities.

83.2 The Head of Procuring Entity decides the existence of a Force Majeure that will be the basis of the issuance of order for suspension of Works as stated under GCC Sub Clause 48.1.

84. Notice of Force Majeure

84.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice, within fourteen (14) days after the party became aware, to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented.

84.2 Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

85. Consequences of Force Majeure

85.1 The Contractor shall not be liable for forfeiture of its security, liquidated damages, or termination for default if and to the extent that it’s delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

85.2 If the Contractor is prevented from performing its substantial obligations under the Contract by Force Majeure of which notice has been given under GCC Sub Clause 84, and suffers delay and/or incurs cost by reason of such Force Majeure, the Contractor shall be entitled subject to GCC Sub Clause 91 to:

(a) an extension of time for any such delay, if completion is or will be delayed, under GCC Clause 44, and

(b) if the event or circumstance is of the kind described subparagraphs (a) to (e) of GCC Sub Clause 83.1 occurs in the country, payment of any such cost, including the costs of rectifying or replacing the Works and physical services damaged or destructed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in GCC Clause 36.
85.3 After receiving notice under GCC Sub Clause 84.1, the Project Manager shall proceed to determine these matters under the provisions of the Contract.

86. Release from Performance 86.1 Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other party of such event or circumstance:

(a) the Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and

(b) the sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under GCC Sub Clause 88.3 if the Contract had been terminated under GCC Sub Clause 87.3.

F. Termination and Settlement of Disputes

87. Termination 87.1 Termination for Default

(a) The Procuring Entity or the Contractor, without prejudice to any other remedy for breach of Contract, by giving twenty-eight (28) days written notice of default to the other party, may terminate the Contract in whole or in part if the other party causes a fundamental breach of Contract. Fundamental breaches of the Contract shall include, but shall not be limited to, the following:

(i) the Contractor stops work for twenty-eight (28) days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Project Manager;

(ii) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within eighty four (84) days;

(iii) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

(iv) the Contractor does not maintain a Security, which is required;

(v) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of Liquidated Damages can be paid, as specified in GCC Sub Clause 71;
(vi) the Contractor has subcontracted the whole of the Works or has assigned the Contract without the required agreement and without the approval of the Project Manager;

(vii) the Contractor, in the judgment of the Procuring Entity has engaged in corrupt or fraudulent practices, as defined in GCC Sub Clause 38, in competing for or in executing the Contract.

(viii) A payment certified by the Project Manager is not paid by the Procuring Entity to the Contractor within eighty-four (84) days of the date of the Project Manager's certificate.

87.2 **Termination for Insolvency**

The Procuring Entity and the Contractor may at any time terminate the Contract by giving twenty-eight (28) days written notice to the other party if either of the party becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to any party, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the other party.

87.3 **Termination for Convenience**

(a) The Procuring Entity, by giving twenty-eight (28) days written notice sent to the Contractor, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Procuring Entity’s convenience, the extent to which performance of the Contractor under the Contract is terminated, and the date upon which such termination becomes effective.

(b) The Procuring Entity shall not terminate the contract under GCC Sub Clause 87.3 (a) in order to execute the Works itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor as stated under GCC Sub Clause 87.1(a).

87.4 In the event the Procuring Entity terminates the Contract in whole or in part, the Procuring Entity shall accept the portion of the Works that are complete and ready for handing over after the Contractor’s receipt of notice of termination of the Contract. For the remaining portion of the Works, the Procuring Entity may elect:

(a) to have any portion completed by the Contractor at the Contract terms and prices; and /or

(b) to cancel the remainder and pay to the Contractor an agreed amount for partially completed Works and for materials and parts previously procured by the Contractor, or

(c) except in the case of termination for convenience as stated under GCC Sub Clause 87.3, engage another
Contractor to complete the Works, and in that case the Contractor shall be liable to the Procuring Entity for any cost that may be incurred in excess of the sum that would have been paid to the Contractor, if the work would have been executed and completed by him or her.

87.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as is reasonably possible.

87.6 The expiration of the Intended Completion Date under GCC Clause 44 and, the initiation of settlement of disputes like amicable or adjudication and arbitration under GCC Clause 92 shall not be deemed a termination of the Contract under GCC Clause 87.

88. Payment upon Termination

88.1 If the Contract is terminated because of a fundamental breach of Contract under GCC Sub Clause 87.1 by the Contractor, the Project Manager shall issue a certificate for the value of the Works done and Plant and Materials ordered less advance payments received up to the date of the issue of the certificate and, further less the amount from percentage to apply to the contract value of the works not completed, as indicated in the PCC. If the total amount due to the Procuring Entity exceeds any payment due to the Contractor, the difference shall be a debt payable to the Procuring Entity.

88.2 If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Project Manager shall issue a payment certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's foreign personnel employed solely on the Works and recruited specifically for the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

88.3 If the Contract is terminated for reasons of Force Majeure, the Project Manager shall determine the value of the work done and issue a Payment Certificate which shall include:

(a) the amounts payable for any work carried out for which unit rates or prices are stated in the Contract;

(b) the cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity's disposal;

(c) other costs or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;

(d) the cost of removal of Temporary Works and Contractor's Equipment from the Site; and
89. Property

89.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Procuring Entity if the Contract is terminated because of the Contractor’s default stated under GCC Sub Clause 87.1.

90. Frustration

90.1 If the Contract is frustrated by the occurrence of a situation of Force Majeure as defined in GCC Sub Clause 83, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and for any work carried out afterwards to which a commitment was made.

G. Claims, Disputes and Arbitration

91. Contractor’s Claims

91.1 If the Contractor considers himself to be entitled to any extension of the Completion Time and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Procuring Entity, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than twenty-eight (28) days after the Contractor became aware, or should have become aware, of the event or circumstance.

91.2 If the Contractor fails to give notice of a claim within such period of twenty-eight (28) days, the Intended Completion Date shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim.

91.3 Within forty two (42) days after the Contractor became aware or should have become aware of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed, for settlement.

92. Settlement of Disputes

92.1 **Amicable settlement**

The procuring Entity and the Contractor shall use their best efforts to settle amicably all possible disputes arising out of or in connection with this Contract or its interpretation.

92.2 **Adjudication**

(a) If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to
the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within fourteen (14) days of notification of the Project Manager’s decision in writing.

(b) The Adjudicator named in the PCC is jointly appointed by the parties. In case of disagreement between the parties, the Appointing Authority designated in the PCC shall appoint the Adjudicator within fourteen (14) days of receipt of a request from either party.

(c) The Adjudicator shall give its decision in writing to both parties within twenty-eight (28) days of a dispute being referred to it.

(d) The Contractor shall make all payments (fees and reimbursable expenses) to the Adjudicator, and the Procuring Entity shall reimburse half of these fees through the regular progress payments.

(e) Should the Adjudicator resign or die, or should the Procuring Entity and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract; a new Adjudicator will be jointly appointed by the Procuring Entity and the Contractor. In case of disagreement between the Procuring Entity and the Contractor the Adjudicator shall be designated by the Appointing Authority within fourteen (14) days of receipt of a request from either party as stated under GCC Sub Clause 92.2 (b).

92.3 Arbitration

(a) If the parties are unable to reach a settlement as per GCC Clauses 92.1 and 92.2 within twenty-eight (28) days of the first written correspondence on the matter of disagreement, then either party may give notice to the other party of its intention to commence arbitration in accordance with GCC Sub Clause 94.3(b).

(b) The arbitration shall be conducted in accordance with the Arbitration Act (Act No 1 of 2001) of Bangladesh as at present in force and in the place shown in the PCC.
Section 4.  Particular Conditions of Contract

Instructions for completing the Particular Conditions of Contract are provided in italics in parenthesis for the relevant GCC Clauses.

<table>
<thead>
<tr>
<th>GCC Clause</th>
<th>Amendments of, and Supplements to, Clauses in the General Conditions of Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC 1.1(k)</td>
<td>The Contractor is [Name, address, and name of authorized representative]</td>
</tr>
<tr>
<td>GCC 1.1(hh)</td>
<td>The Project Manager is: Project Director, Replacement of Old Digital Telephone System of Dhaka City Project: Phase-II, BTCL.</td>
</tr>
<tr>
<td>GCC 1.1 (cc)</td>
<td>The original Contract Price is [Insert the amount in the NOA]</td>
</tr>
<tr>
<td>GCC 1.1(z)</td>
<td>The Intended Completion Date for the whole of the Works shall be 06 (Six) months</td>
</tr>
<tr>
<td>GCC 1.1(oo)</td>
<td>The Start Date shall be: the date of signing the Contract Agreement.</td>
</tr>
<tr>
<td>GCC 1.1(ss)</td>
<td>The Works consist of the items as described in section-6 “Bill of Quantities” of this document.</td>
</tr>
<tr>
<td>GCC 2.5</td>
<td>The Sectional Completion Dates are: The Sectional Completion date will be the date to be mentioned in the PAC.</td>
</tr>
<tr>
<td>GCC 3.1</td>
<td>The Procuring Entity’s address for the purpose of communications under this Contract is: Director (Procurement) Address: Sher-e-Bangla Nagar Telephone Exchange Annex. Bldg. Sher-e-Bangla Nagar, Dhaka. Telephone: 02 58150500 Fax No: 02 58150511 e-mail address: <a href="mailto:ddlclpct@btcl.net.bd">ddlclpct@btcl.net.bd</a> Or, designated later by the Managing Director, BTCL.</td>
</tr>
<tr>
<td>**OSW</td>
<td>AGW of 171 KL Project**</td>
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<tr>
<td><strong>The Contractor’s address for the purpose of communications under this contract is:</strong></td>
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</tr>
<tr>
<td>Contact person:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Tel:</td>
<td></td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
</tr>
<tr>
<td>e-mail address:</td>
<td></td>
</tr>
<tr>
<td><strong>GCC 6.1 (j) Other documents forming part of the Contract are:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Survey Report</td>
<td></td>
</tr>
<tr>
<td>2. Relevant correspondences prior to signing the Contract Agreement.</td>
<td></td>
</tr>
<tr>
<td>3. Finalized BoQ</td>
<td></td>
</tr>
<tr>
<td>4. MOU, if any, signed after signing the Contract Agreement</td>
<td></td>
</tr>
<tr>
<td><strong>GCC 9.1 A Contractor or a Subcontractor that is a national of, or registered in, the following countries are not eligible:</strong></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td></td>
</tr>
<tr>
<td><strong>GCC 9.2 Materials, Equipment, Plants and supplies shall not have their origin in the following countries:</strong></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td></td>
</tr>
<tr>
<td><strong>GCC 13.1 Possession of the Site or part(s) of the Site, to the Contractor shall be given on the following date(s):</strong></td>
<td></td>
</tr>
<tr>
<td>It is assumed that possession of at least 20% of the sites will be handed over within 01 (one) month of signing the Contract Agreement. The remaining sites will be available within 60 (sixty) days from the date of signing the Contract Agreement. However, handing over possession of maximum 20% of the sites may be delayed, which will be handed over at least 3 (three) months before the completion period.</td>
<td></td>
</tr>
<tr>
<td><strong>GCC 19.1 Following Key Personnel to carry out the functions stated in the Schedule shall be employed by the Contractor:</strong></td>
<td></td>
</tr>
<tr>
<td>[insert name(s)]</td>
<td></td>
</tr>
<tr>
<td><strong>GCC 20.3 Nominated Sub-Contractor(s) named below:</strong></td>
<td></td>
</tr>
<tr>
<td><strong><strong>None</strong></strong></td>
<td></td>
</tr>
<tr>
<td>shall be entitled to execute the following specific components of the Works</td>
<td></td>
</tr>
<tr>
<td><strong><strong>None</strong></strong></td>
<td></td>
</tr>
<tr>
<td><strong>GCC 36.1 The insurance cover shall be:</strong></td>
<td></td>
</tr>
<tr>
<td>(a) The minimum cover for the Works and of Plant and Materials is <strong>110%</strong>.</td>
<td></td>
</tr>
<tr>
<td>(b) The maximum deductible for insurance of the Works and of Plant and Materials is <strong>5%</strong>.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>(c)</td>
<td>The minimum cover for loss or damage to Equipment is <strong>110%</strong></td>
</tr>
<tr>
<td>(d)</td>
<td>The maximum deductible for insurance of Equipment is <strong>5%</strong></td>
</tr>
<tr>
<td>(e)</td>
<td>The minimum cover for other property is <strong>10%</strong></td>
</tr>
<tr>
<td>(f)</td>
<td>The maximum deductible for insurance of other property is <strong>5%</strong></td>
</tr>
<tr>
<td>(g)</td>
<td>The minimum cover for personal injury or death:</td>
</tr>
<tr>
<td></td>
<td>(i) for the Contractor’s employees is as per the law and common practice in Bangladesh.</td>
</tr>
<tr>
<td></td>
<td>(ii) and for third parties is as per the law and common practice in Bangladesh.</td>
</tr>
</tbody>
</table>

**GCC 39.1**
Commencement Date of Works shall be as follows-

The date of signing the Contract Agreement

**GCC 40.1**
The Intended Completion Date of the Works shall be **06 (six) months**

**GCC 41.1**
The Contractor shall submit a Programme for the Works within **10 (Ten) days** of signing the Contract.

**GCC 41.2**
The period between Programme updates is: **Monthly**.

**GCC 41.3**
The amount to be withheld for late submission of an updated Programme is **0.01% of the Contract Price per day**.

**GCC 56.1**
The Defects Liability Period is **12 (Twelve) months**.

**GCC 65.3**
The particulars of the Bank Account nominated are as follows:

<table>
<thead>
<tr>
<th>Title of the Account</th>
<th>[insert title to whom the Contract awarded]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Bank</td>
<td>[insert name with code, if any]</td>
</tr>
<tr>
<td>Name of the Branch</td>
<td>[insert branch name with code, if any]</td>
</tr>
<tr>
<td>Account Number</td>
<td>[insert number]</td>
</tr>
<tr>
<td>Address</td>
<td>[insert location with district]</td>
</tr>
<tr>
<td>Tel</td>
<td></td>
</tr>
<tr>
<td>Fax</td>
<td></td>
</tr>
<tr>
<td>e-mail address</td>
<td></td>
</tr>
</tbody>
</table>

[Information furnished by the Contractor shall be substantiated by the concerned Bank and authenticated by the Procuring Entity]

**GCC 66.1**
The rate of interest shall be: **None**

**GCC 67.1(m)**
The following additional events shall also be the Compensation Events:

**None**
| GCC 69.1 | The Contract is not subject to price adjustment. |
| GCC 70.1 | The proportion of payments shall be retained is **10 (ten) percent** |
| GCC 71.1 | The amount of Liquidated Damages or in other words Delay Damages for the uncompleted Works or any part thereof is **0.05 (Zero point Five) percent** of its Contract Price per day of delay. |
| GCC 71.1 | The maximum amount of Liquidated Damages for the uncompleted Works or any part thereof is **10 (ten) percent** of the final Contract Price of the whole of the Works. |
| GCC 72.1 | **Not Applicable** |
| GCC 73.1 | The Advance Payment shall be **Tk zero** and shall be paid to the Contractor not later than: **N/A** |
| GCC 73.4 | Advance Payment shall be amortized at the rate of **N/A** from the progressive payments of invoices. |
| GCC 75.2 | The percentage for adjustment of Provisional Sums is: **None** |
| GCC 82.1 | The date by which “as-built” drawings are required is **01 (one) week before PAT.** The date by which operating and maintenance manuals are required is **01 (one) week before PAT.** |
| GCC 82.2 | The amount to be withheld for failing to produce “as-built” drawings and/or operating and maintenance manuals by the date required is: **02 (Two) percent of the total amount of the Section or Tk. 05 (Five) lac for each Section – whichever is greater.** |
| GCC 88.1 | The percentage to apply to the contract value of the works not completed, representing the Procuring Entity’s additional cost for completing the uncompleted Works, is **20 (Twenty) percent** of the Contract value |
| GCC 92.2 (b) | The Adjudicator jointly appointed by the parties is: **As per clause ITT-72.1** |
| GCC 92.2(b) | In case of disagreement between the parties, the Appointing Authority for the Adjudicator is the President of the Institution of Engineers, Bangladesh (IEB). |
| GCC 92.3 (b) | The arbitration shall be conducted in the place mentioned below: **Telejogajog Bhaban 37/E Eskaton Garden Dhaka, Bangladesh** |
## Section 5. Tender and Contract Forms

<table>
<thead>
<tr>
<th>Form</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW3 – 1</td>
<td>Tender Submission Letter</td>
</tr>
<tr>
<td>PW3 – 2</td>
<td>Tenderer Information</td>
</tr>
<tr>
<td>PW3 – 3</td>
<td>JV Partner Information <em>(if applicable)</em></td>
</tr>
<tr>
<td>PW3 – 4</td>
<td>Subcontractor Information <em>(if applicable)</em></td>
</tr>
<tr>
<td>PW3 – 5</td>
<td>Personnel Information</td>
</tr>
<tr>
<td>PW3 – 6</td>
<td>Bank Guarantee for Tender Security <em>(when this option is chosen)</em></td>
</tr>
<tr>
<td>PW3 - 7</td>
<td>Bank’s Letter of Commitment for Line of Credit <em>(when this option is chosen)</em></td>
</tr>
</tbody>
</table>

### Tender Forms

### Contract Forms

| PW3 – 8 | Notification of Award |
| PW3 – 9 | Contract Agreement |
| PW3 – 10 | Bank Guarantee for Performance Security *(when this option is chosen)* |
| PW3 –11 | Bank Guarantee for Advance Payment *(if applicable)* |
| PW3 –12 | Bank Guarantee for Retention Money Security *(when this option is chosen)* |

Forms **PW3 -1** to **PW3 -7** comprises part of the Tender Format and should be completed as stated in ITT Clauses 24.

Forms **PW3 -8** to **PW3 -12** comprises part of the Contract as stated in GCC Clause 6.
# Tender Submission Letter (Form PW3-1)

[This letter should be completed and signed by the Authorised Signatory on the Letter-Head Pad of the Tenderer]

<table>
<thead>
<tr>
<th>To:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Contact Person]</td>
<td></td>
</tr>
<tr>
<td>[Name of the Procuring Entity]</td>
<td></td>
</tr>
<tr>
<td>[Address of the Procuring Entity]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Invitation for Tender No:</th>
<th>IFT No. __________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender Package No:</td>
<td>Package No. ________________________</td>
</tr>
<tr>
<td>Lot No: (when applicable)</td>
<td>Lot No. __________________________</td>
</tr>
</tbody>
</table>

We, the undersigned, tender to execute in conformity with the Tender Document, the following Works and physical services, viz:

In accordance with ITT Clause 27 and 28, the following price applies to our Tender:

The Tender price is: Tk. __________________________
(ITT Sub Clause 27.4 and 28.1) [in figures]

The advance payment (when applicable) is:
Taka __________________________
[insert the amount based on percentage of the Tender Price] [in words]

[GCC Sub Clause 73.1]
Taka __________________________
[in words]

and we shall accordingly submit an Advance Payment Guarantee in the format shown in Form PW3–10.

In accordance with ITT Clauses 27, the following discounts apply to our Tender:

The unconditional discount for being awarded more than one lot in this package is:
Tk. __________________________
(ITT Sub Clause 27.5 and 28.1) [in figures]

Taka __________________________
[in words]

The methodology for application of the discount is:
[state the methodology].
(ITT Sub Clause 27.6 and 28.1)

Delete BOX, if this Tender is being invited for Single Package or Single Lot
In signing this letter, and in submitting our Tender, we also confirm that:

(a) our Tender shall be valid for the period stated in the Tender Data Sheet (ITT Sub Clause 33.1) and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(b) a Tender Security is attached in the form of a [state Pay Order, Bank Draft, Bank Guarantee] in the amount stated in the Tender Data Sheet (ITT Sub Clause 36.1) and valid for a period of twenty-eight (28) days beyond the Tender Validity date;

(c) if our Tender is accepted, we commit to furnishing a Performance Security within the time stated under ITT Sub Clause 66.2 in the amount stated in the Tender Data Sheet (ITT Sub Clauses 65.1) and in the form specified in the Tender Data Sheet (ITT Sub Clause 66.1) valid for a period of twenty-eight (28) days beyond the date of issue of the Completion Certificate of the Works;

(d) we have examined and have no reservations to the Tender Document, issued by you on [insert date]; including Addendum to Tender Document No(s) [state numbers], issued in accordance with the Instructions to Tenderers (ITT Clause 11). [insert the number and issuing date of each addendum; or delete this sentence if no Addendum has been issued];

(e) we, including as applicable, any JV partner or Subcontractor for any part of the contract resulting from this Tender process, have nationalities from eligible countries, in accordance with ITT Sub Clause 5.1;

(f) we are submitting this Tender as a sole Tenderer in accordance with ITT Sub Clause 40.3 or we are submitting this Tender as the partners of a JV, comprising the following other partners in accordance with ITT Sub Clause 40.3;

<table>
<thead>
<tr>
<th>Name of Partner</th>
<th>Location &amp; District of Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

(g) we are not a Government owned entity as defined in ITT Sub Clause 5.3 or we are a Government owned entity, and we meet the requirements of ITT Sub Clause 5.3;

(h) we, including as applicable any JV partner, declare that we are not associated, nor have been associated in the past, directly or indirectly, with a consultant or any other entity that has prepared the design, specifications and other documents in accordance with ITT Sub Clause 5.5;

(i) we, including as applicable any JV partner or Subcontractor for any part of the contract resulting from this Tender process, have not been declared ineligible by the Government of Bangladesh on charges of engaging in corrupt, fraudulent, collusive or coercive practices in accordance with ITT Sub Clause 5.6;
(j) furthermore, we are aware of ITT Clause 4 concerning such practices and pledge not to indulge in such practices in competing for or in executing the Contract;

(k) we intend to subcontract an activity or part of the Works, in accordance with ITT Sub Clause 19.1, to the following Subcontractor(s);

<table>
<thead>
<tr>
<th>Activity or part of the Works</th>
<th>Name of Subcontractor with Location and District</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(l) we, including as applicable any JV partner, confirm that we do not have a record of poor performance, such as abandoning the works, not properly completing contracts, inordinate delays, or financial failure as stated in ITT Clause 5.7, and that we do not have, or have had, any litigation against us, other than that stated in the Tenderer Information (Form PW3-2);

(m) we are not participating as Tenderer in more than one Tender in this Tendering process. We understand that your written Notification of Award shall constitute the acceptance of our Tender and shall become a binding Contract between us, until a formal Contract is prepared and executed;

(n) we, including as applicable any JV partner, confirm that we do not have a record of insolvency, receivership, bankrupt or being wound up, our business activities were not been suspended, and it was not been the subject of legal proceedings in accordance with ITT Sub Clause 5.8;

(o) we, including as applicable any JV partner, confirm that we have fulfilled our obligations to pay taxes and social security contributions applicable under the relevant national laws and regulations of Bangladesh in accordance with ITT Sub Clause 5.9;

(p) we understand that you reserve the right to reject all the Tenders or annul the Tender proceedings, without incurring any liability to Tenderer, in accordance with ITT Clause 60.

Signature: [insert signature of authorised representative of the Tenderer]
Name: [insert full name of signatory with National ID Number]
In the capacity of: [insert capacity of signatory]
Duly authorised to sign the Tender for and on behalf of the Tenderer

[If there is more than one (1) signatory, or in the case of a JV, add other boxes and sign accordingly].

Attachment 1: [ITT Sub Clause 40.3]
Written confirmation authorising the above signatory(ies) to commit the Tenderer

[and, if applicable]

Attachment 2: [ITT Sub Clause 29.2(b)]
Copy of the JV Agreement / Letter of Intent to form JV with draft proposed Agreement
Tenderer Information (Form PW3-2)

[This Form should be completed only by the Tenderer, preferably on its Letter-Head Pad]

<table>
<thead>
<tr>
<th>Invitation for Tender No:</th>
<th>IFT No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender Package No:</td>
<td>[ Package No]</td>
</tr>
<tr>
<td>Lot No (when applicable)</td>
<td>[Lot No]</td>
</tr>
</tbody>
</table>

1. Eligibility Information of the Tenderer [ITT –Clauses 5 & 29]

1.1 Nationality of individual or country of registration

1.2 Tenderer's legal title

1.3 Tenderer's registered address

1.4 Tenderer's legal status [complete the relevant box]

- Proprietorship
- Partnership
- Limited Liability Concern
- Government-owned Enterprise
- Others [please describe, if applicable]

1.5 Tenderer's year of registration

1.6 Tenderer's authorised representative details

Name
National ID number
Address
Telephone / Fax numbers
e-mail address

1.7 Litigation [ITT Cause 13]

A. No pending litigation ☐ [if no pending litigation put Tick Mark in Box]
B. Pending litigation
<table>
<thead>
<tr>
<th>Year</th>
<th>Matter in dispute</th>
<th>Value of Pending Claim in Taka</th>
<th>Value of Pending Claim as Percentage of Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.8 Tenderer to attach photocopies of the original documents mentioned aside

[All documents required under ITT Clauses 5 and 29]

The following two information are applicable for National Tenderers

1.9 Tenderer’s Value Added Tax Registration (VAT) Number

1.10 Tenderer’s Tax Identification Number (TIN)

[The foreign Tenderers, in accordance with ITT Sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]

2. Qualification Information of the Tenderer [ITT Clause 32]

2.1 General Experience in Construction Works of Tenderer [State years of experience]

2.2 Specific Experience in Construction Works of Tenderer

Completed Contracts of similar nature, complexity and methods/construction technology

<table>
<thead>
<tr>
<th>Contract No</th>
<th>Name of Contract</th>
<th>Role in Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Prime Contractor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subcontractor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Management Contractor</td>
</tr>
</tbody>
</table>

[insert reference no] of [insert year]

[insert name]

Award date

Completion date

Total Contract Value

Procuring Entity’s Name

Address

Tel / Fax

e-mail

Brief description with justifications of the similarity compared to the Procuring Entity’s requirements

[state justification in support of its similarity compared to the proposed works]

2.3 Average annual construction turnover [ITT Sub Clause 15.1(a)]

[Total certified payments received for contracts in progress or completed under public sector for a period as stated under ITT Sub Clause 15.1(a), using rate of exchange at the end of the period reported]

<table>
<thead>
<tr>
<th>Year</th>
<th>Currency</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Taka or Equivalent Taka</td>
<td></td>
</tr>
</tbody>
</table>
2.4 Liquid assets available to meet the construction cash flow [ITT Sub Clause 15.1(b)]

<table>
<thead>
<tr>
<th>No</th>
<th>Source of Financing</th>
<th>Amount Available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to confirm the above statements the Tenderer shall submit, as applicable, the documents mentioned in ITT Sub Clause 32.1(d)

2.5 Contact Details [ITT Sub Clause 32.1 (h) ]
Name, address, and other contact details of Tenderer Bankers and other Procuring Entity(s) that may provide references, if contacted by this Procuring Entity

2.6 Qualifications and experience of key technical and administrative personnel proposed for Contract administration and management [ITT Sub Clause 32.1(f)]

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Years of General Experience</th>
<th>Years of Specific Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Tenderer to complete details of as many personnel as are applicable. Each personnel listed above should complete the Personnel Information (Form PW3-5)]

2.7 Major Construction Equipments proposed to carry out the Contract [ITT Sub Clause 32.1(g)]

<table>
<thead>
<tr>
<th>Item of Equipment</th>
<th>Condition (new, good, average, poor)</th>
<th>Owned, leased or to be purchased (state owner, lessor or seller)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Tenderer to list details of each item of major construction equipment, as applicable]
**JV Partner Information (Form PW3-3)**

*This Form should be completed by each JV partner.*

<table>
<thead>
<tr>
<th>Invitation for Tender No:</th>
<th>[ IFT No]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender Package No:</td>
<td>Package No</td>
</tr>
<tr>
<td>Lot No. (when applicable)</td>
<td>Lot No)</td>
</tr>
</tbody>
</table>

1. Eligibility Information of the JV Partner [ITT –Clauses 5 & 29]
   1.1 Nationality of individual or country of registration
   1.2 JV Partner’s legal title
   1.3 JV Partner’s registered address
   1.4 JV Partner’s legal status [*complete the relevant box*]
      - Proprietorship
      - Partnership
      - Limited Liability Concern
      - Government-owned Enterprise
      - Others [please describe, if applicable]
   1.5 JV Partner’s year of registration
   1.6 JV Partner’s authorised representative details
      - Name
      - National ID number
      - Address
      - Telephone / Fax numbers
      - e-mail address
   1.7 Litigation [ITT Cause 13]
      - A. No pending litigation [ ] [if no pending litigation put Tick Mark in Box]
      - B. Pending litigation
<table>
<thead>
<tr>
<th>Year</th>
<th>Matter in dispute</th>
<th>Value of Pending Claim in Taka</th>
<th>Value of Pending Claim as Percentage of Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>JV Partner to attach photocopies of the original documents mentioned aside</td>
<td>[All documents required under ITT Clauses 5 and 29]</td>
<td></td>
</tr>
</tbody>
</table>

The following two information are applicable for national JV Partners only

| 1.9  | JV Partner’s Value Added Tax Registration (VAT) Number |                                |                                               |
| 1.10 | JV Partner’s Tax Identification Number (TIN) |                                |                                               |

[The foreign JV Partners, in accordance with ITT Sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]

2. Key Activity(ies) for which it is intended to be joint ventured, if it can be specified [ITT Sub Clause 18.2]

<table>
<thead>
<tr>
<th>Elements of Activity</th>
<th>Brief description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Qualification Information of the JV Partners [ITT Clause 32]

3.1 General Experience in Construction Works of JV Partners [State years of experience]

3.2 Specific Experience in Construction Works of JV Partners

Completed Contracts of similar nature, complexity and methods/construction technology

<table>
<thead>
<tr>
<th>Contract No</th>
<th>Name of Contract</th>
<th>Role in Contract [tick relevant box]</th>
<th>Award date</th>
<th>Completion date</th>
<th>Total Contract Value</th>
<th>Procuring Entity's Name Address</th>
<th>Tel / Fax</th>
<th>e-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Prime Contractor</td>
<td>Subcontractor</td>
<td>Management Contractor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Brief description with justifications of the similarity compared to the Procuring Entity’s requirements [state justification in support of its similarity compared to the proposed works]
### Average annual construction turnover [ITT Sub Clause 15.1(a)]

[[Total certified payments received for contracts in progress or completed under public sector for a period as stated under ITT Sub Clause 15.1(a), using rate of exchange at the end of the period reported]]

<table>
<thead>
<tr>
<th>Year</th>
<th>Currency</th>
<th>Amount Taka or Equivalent Taka</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Liquid assets available to meet the construction cash flow [ITT Sub Clause 15.1(b)]

No Source of Financing Amount Available

<table>
<thead>
<tr>
<th>No</th>
<th>Source of Financing</th>
<th>Amount Available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to confirm the above statements the JV Partners shall submit, as applicable, the documents mentioned in ITT Sub Clause 32.1(d)

### Contact Details [ITT Sub Clause 32.1(h)]

Name, address, and other contact details of JV Partner’s Bankers and other Procuring Entity(s) that may provide references, if contacted by this Procuring Entity

### Qualifications and experience of key technical and administrative personnel proposed for Contract administration and management [ITT Sub Clause 32.1(f)]

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Years of General Experience</th>
<th>Years of Specific Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

JV Partners to complete details of as many personnel as are applicable. Each personnel listed above should complete the Personnel Information (Form PW3-5)

### Major Construction Equipments proposed to carry out the Contract [ITT Sub Clause 32.1(g)]

<table>
<thead>
<tr>
<th>Item of Equipment</th>
<th>Condition (new, good, average, poor)</th>
<th>Owned, leased or to be purchased (state owner, lessor or seller)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tenderer to list details of each item of major construction equipment, as applicable
## Subcontractor Information (Form PW3-4)

*This Form should be completed by each Subcontractor, preferably on its Letter-Head Pad*

### Invitation for Tender No: [IFT No]

### Tender Package No: [Package No]

### Lot No. (when applicable) [Lot No]

### 1. Eligibility Information of the Subcontractor [ITT – Clauses 5 & 29]

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Nationality of Individual or country of Registration</td>
</tr>
<tr>
<td>1.2</td>
<td>Subcontractor’s legal title</td>
</tr>
<tr>
<td>1.3</td>
<td>Subcontractor’s registered address</td>
</tr>
<tr>
<td>1.4</td>
<td>Subcontractor’s legal status [complete the relevant box]</td>
</tr>
<tr>
<td></td>
<td>Proprietorship</td>
</tr>
<tr>
<td></td>
<td>Partnership</td>
</tr>
<tr>
<td></td>
<td>Limited Liability Concern</td>
</tr>
<tr>
<td></td>
<td>Government-owned Enterprise</td>
</tr>
<tr>
<td></td>
<td>Other (please describe)</td>
</tr>
<tr>
<td>1.5</td>
<td>Subcontractor’s year of registration</td>
</tr>
<tr>
<td>1.6</td>
<td>Subcontractor’s authorised representative details</td>
</tr>
<tr>
<td></td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td>Address</td>
</tr>
<tr>
<td></td>
<td>Telephone / Fax numbers</td>
</tr>
<tr>
<td></td>
<td>e-mail address</td>
</tr>
</tbody>
</table>

### 1.7 Subcontractor to attach copies of the following original documents

All documents to the extent relevant to ITT Clause 5 and 29 in support of its qualifications

### The following two information are applicable for national Subcontractors

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8</td>
<td>Subcontractor’s Value Added Tax Registration (VAT) Number</td>
</tr>
<tr>
<td>1.9</td>
<td>Subcontractor’s Tax Identification Number (TIN)</td>
</tr>
</tbody>
</table>
[The foreign Subcontractors, in accordance with ITT sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]

2. Key Activity(ies) for which it is intended to be Subcontracted [ITT Sub Clause 19.1]

<table>
<thead>
<tr>
<th>2.1</th>
<th>Elements of Activity</th>
<th>Brief description of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2</th>
<th>List of Similar Contracts in which the proposed Subcontractor had been engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Contract and Year of Execution</td>
<td></td>
</tr>
<tr>
<td>Value of Contract</td>
<td></td>
</tr>
<tr>
<td>Name of Procuring Entity</td>
<td></td>
</tr>
<tr>
<td>Contact Person and contact details</td>
<td></td>
</tr>
<tr>
<td>Type of Work performed</td>
<td></td>
</tr>
</tbody>
</table>
Personnel Information (Form PW3-5)

[This Form should be completed for each person proposed by the Tenderer in Form PW3-2 & PW3-3, where applicable]

<table>
<thead>
<tr>
<th>Invitation for Tender No:</th>
<th>[IFT No]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender Package No</td>
<td>[Package No]</td>
</tr>
<tr>
<td>Lot No. (when applicable)</td>
<td>[Lot No]</td>
</tr>
</tbody>
</table>

A. Proposed Position (tick the relevant box)

- [ ] Construction Project Manager
- [ ] Prime Candidate
- [ ] Alternative Candidate
- [ ] Key Personnel
- [ ] Prime Candidate
- [ ] Alternative Candidate

B. Personal Data

Name

Date of Birth

Years overall experience

National ID Number

Years of employment with the Tenderer

Professional Qualifications:

1.

C. Present Employment [to be completed only if not employed by the Tenderer]

Name of Procuring Entity

(working under):

Address of Procuring Entity

(working under):

Present Job Title:

Years with present Procuring Entity:

Tel No:  Fax No:  e-mail address:

Contact [manager/personnel officer]:

D. Professional Experience

Summarise professional experience over the past twenty years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Company / Project / Position / Relevant technical and management experience.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Bank Guarantee for Tender Security (Form PW3-6)

[This is the format for the Tender Security to be issued by any scheduled Bank of Bangladesh in accordance with ITT Clause 35 & 36]

Invitation for Tender No: Date:

Tender Package No:

Lot No (when applicable)
To:

[Name and address of the Procuring Entity]

TENDER GUARANTEE No: [insert number]

We have been informed that [name of Tenderer] (hereinafter called “the Tenderer”) intends to submit to you its Tender dated [date of Tender] (hereinafter called “the Tender”) for the execution of the Works of [description of works] under the above Invitation for Tenders (hereinafter called “the IFT”).

Furthermore, we understand that, according to your conditions, the Tender must be supported by a Bank Guarantee for Tender Security.

At the request of the Tenderer, we [name of Bank] hereby irrevocably unconditionally undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk [insert amount in figures and words] upon receipt by us of your first written demand accompanied by a written statement that the Tenderer is in breach of its obligation(s) under the Tender conditions, because the Tenderer:

a. has withdrawn its Tender after opening of Tenders but within the validity of the Tender Security; or
b. refused to accept the Notification of Award (NOA) within the period as stated under ITT; or
c. failed to furnish Performance Security within the period stipulated in the NOA; or
d. refused to sign the Contract Agreement by the time specified in the NOA; or
e. did not accept the correction of the Tender price following the correction of the arithmetic errors as stated under ITT.

This guarantee will expire

(a) if the Tenderer is the successful Tenderer, upon our receipt of a copy of the Contract Agreement signed by the Tenderer or a copy of the Performance Security issued to you in accordance with the ITT; or
(b) if the Tenderer is not the successful Tenderer, twenty-eight (28) days after the expiration of the Tenderer’s Tender Validity period, being [date of expiration of the Tender Validity plus twenty-eight (28) days].

Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature Signature
Letter of Commitment for Bank’s Undertaking for Line of Credit (Form PW3-7)

[This is the format for the Credit Line to be issued by any scheduled Bank of Bangladesh in accordance with ITT Clause 32.1(d)]

Invitation for Tender No: Date:

Tender Package No:

Lot No (when applicable)
To:

[Name and address of the Procuring Entity]

CREDIT COMMITTMENT No: [insert number]

We have been informed that [name of Tenderer] (hereinafter called “the Tenderer”) intends to submit to you its Tender (hereinafter called “the Tender”) for the execution of the Works of [description of works] under the above Invitation for Tenders (hereinafter called “the IFT”).

Furthermore, we understand that, according to your conditions, the Tenderer’s Financial Capacity i.e. Liquid Asset must be substantiated by a Letter of Commitment of Bank’s Undertaking for Line of Credit.

At the request of, and arrangement with, the Tenderer, we [name and address of the Bank] do hereby agree and undertake that [name and address of the Tenderer] will be provided by us with a revolving line of credit, in case awarded the Contract, for execution of the Works viz.[insert name of works], for an amount not less than BDT [in figure] (in words) for the sole purpose of the execution of the above Contract. This Revolving Line of Credit will be maintained by us until issuance of “Taking-Over Certificate” by the Procuring Entity.

In witness whereof, authorised representative of the Bank has hereunto signed and sealed this Letter of Commitment.

Signature

Signature
Notification of Award (Form PW3-8)

Contract No:                        Date:

To: [Name of Contractor]

This is to notify you that your Tender dated [insert date] for the execution of the Works for [name of project/Contract] for the Contract Price of Tk. [state amount in figures and in words], as corrected and modified in accordance with the Instructions to Tenderers, has been approved by [name of Procuring Entity].

You are thus requested to take following actions:

i. accept in writing the Notification of Award within seven (7) working days of its issuance in accordance with ITT Clause 64

ii. furnish a Performance Security in the form as specified and in the amount of Tk [state amount in figures and words], within fourteen (14) days of acceptance of this Notification of Award but not later than [specify date], in accordance with ITT Clause 65 & 66.

iii. sign the Contract within twenty-eight (28) days of issuance of this Notification of Award but not later than [specify date], in accordance with ITT Clause 70.

You may proceed with the execution of the Works only upon completion of the above tasks. You may also please note that this Notification of Award shall constitute the formation of this Contract which shall become binding upon you.

We attach the draft Contract and all other documents for your perusal and signature.

Signed

Duly authorised to sign for and on behalf of [name of Procuring Entity]

Date:
Contract Agreement (Form PW3-9)

THIS AGREEMENT made the [day] day of [month] [year] between [name and address of Procuring Entity] (hereinafter called “the Procuring Entity”) of the one part and [name and address of Contractor] (hereinafter called “the Contractor”) of the other part:

WHEREAS the Procuring Entity invited Tenders for certain works, viz, [brief description of works] and has accepted a Tender by the Contractor for the execution of those works in the sum of Taka [Contract Price in figures and in words] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereafter referred to.

2. The documents forming the Contract shall be interpreted in the following order of priority:

(a) the signed Contract Agreement
(b) the Notification of Award
(c) the completed Tender and the Appendix to the Tender
(d) the Particular Conditions of Contract
(e) the General Conditions of Contract
(f) the Technical Specifications
(g) the General Specifications
(h) the Drawings
(i) the priced BOQ and the Schedules
(j) any other document listed in the PCC forming part of the Contract.

3. In consideration of the payments to be made by the Procuring Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procuring Entity to execute and complete the works and to remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Bangladesh on the day, month and year first written above.

For the Procuring Entity       For the Contractor

Signature

Name

National ID No.
Title

In the presence of Name

Address
Bank Guarantee for Performance Security (Form PW3-10)

[This is the format for the Performance Security to be issued by any scheduled Bank of Bangladesh in accordance with ITT Clause 65, 66, 67 & 68]

Contract No: [insert reference number]          Date: [insert date]

To:

[ insert Name and address of Procuring Entity]

PERFORMANCE GUARANTEE No: [insert number]

We have been informed that [name of Contractor] (hereinafter called “the Contractor”) has undertaken, pursuant to Contract No [insert reference number of Contract] dated [insert date of Contract] (hereinafter called “the Contract”), the execution of works [description of works] under the Contract.

Furthermore, we understand that, according to your conditions, the Contract must be supported by a Bank Guarantee for Performance Security.

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

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

Signature                                      Signature
Bank Guarantee for Advance Payment (Form PW3-11)

[This is the format for the Advance Payment Guarantee to be issued by any scheduled Bank of Bangladesh in accordance with GCC Clause 73]

Contract No: [insert reference number] Date: [insert date]

To:

[insert Name and address of the Procuring Entity]

ADVANCE PAYMENT GUARANTEE No: [insert number]

We have been informed that [name of Contractor] (hereinafter called “the Contractor”) has undertaken, pursuant to Contract No [insert reference number of Contract] dated [insert date of Contract] (hereinafter called “the Contract”), the execution of works [description of works] under the Contract.

Furthermore, we understand that, according to your Conditions of Contract under GCC Clause 75, the Advance Payment on Contract must be supported by a Bank Guarantee.

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

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

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

Signature Signature
Bank Guarantee for Retention Money Security (Form PW3-12)

[This is the format for the Retention Money Guarantee to be issued by any scheduled Bank of Bangladesh in accordance with GCC Clause 70]

Demand Guarantee

[Bank’s Name, and Address of Issuing Branch or Office]

Beneficiary: [insert Name and Address of the Procuring Entity]

Date: [insert date]

RETENTION MONEY GUARANTEE No.: [insert number]

We have been informed that [insert name of Contractor] (hereinafter called “the Contractor”) has entered into Contract Number [insert reference number of the Contract] dated [insert date] with you, for the execution of [insert name of Contract and brief description of Works] (hereinafter called “the Contract”).

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of Tk. [insert the amount of the second half of the Retention Money] which becomes due after the Defects Liability Period has passed and certified in the form of Defects Correction Certificate, is to be made against a Retention Money Guarantee.

At the request of the Contractor, we [insert name of Bank] hereby irrevocably unconditionally undertake to pay you any sum or sums not exceeding in total an amount of Tk. [insert amount in figures] (Taka [insert amount in words]) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor failed to properly correct the defects duly notified in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number [insert A/C no] at [name and address of Bank].

This guarantee is valid until [insert the date of validity of Guarantee that being twenty-eight (28) days beyond the Defects Liability Period]. Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature  Signature
Section-6: Bill of Quantities

For OSP Subscriber Cable Networks of different Access Gateway (AGW) of SBN Exchange Area [Lot-A].

(Schedule for Quotation of Rates)

[The Contractor must submit rates for Materials & Services separately as per clause 7.7 of Section 7 considering Annexure-A, Annexure-B and other relevant clauses of Tender Document]

(Contractor can expand this form as per necessity)

List of BoQ for SBN Exchange Area [Lot-A]

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Designator</th>
<th>Unit</th>
<th>Total</th>
<th>Unit Rate (Taka)</th>
<th>Total ( Taka)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HH-1</td>
<td>Each</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>HH-2</td>
<td>Each</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>UC-P1/4(HDD/OC)</td>
<td>Meter</td>
<td>20,154</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CP-Ex. Duct</td>
<td>Meter</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC-JA-20/0.4</td>
<td>Meter</td>
<td>7,248</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC-JA-30/0.4</td>
<td>Meter</td>
<td>4,385</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC-JA-50/0.4</td>
<td>Meter</td>
<td>6,641</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC-JA-100/0.4</td>
<td>Meter</td>
<td>11,134</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC-JA-200/0.4</td>
<td>Meter</td>
<td>9,650</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC-JA-300/0.4</td>
<td>Meter</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>BC-TB-M/S (Road Cutting)</td>
<td>Meter</td>
<td>20,154</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>PL-S-7.0 [New]</td>
<td>Each</td>
<td>104</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PL-S-7.0 [Old]</td>
<td>Each</td>
<td>84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>TC-100 [TIP Cable]</td>
<td>Each</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TC-600</td>
<td>Each</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>TC-D-300</td>
<td>Each</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TC-t-300</td>
<td>Each</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>DP-B-20</td>
<td>Each</td>
<td>79</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DP-B-30</td>
<td>Each</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DP-B-50</td>
<td>Each</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DP-W-20</td>
<td>Each</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DP-W-30</td>
<td>Each</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DP-W-50</td>
<td>Each</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DP-W-100</td>
<td>Each</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DP-IN-50</td>
<td>Each</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SL. No.</td>
<td>Designator</td>
<td>Unit</td>
<td>Total</td>
<td>Unit Rate (Taka)</td>
<td>Total (Taka)</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>------</td>
<td>-------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>DP-IN-100</td>
<td>Each</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>CB-C50-700 [new cabinet]</td>
<td>Each</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CB-C50-700 [existing] [Please see Note 9 below]</td>
<td>Each</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>CB-T-100</td>
<td>Each</td>
<td>108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>SC-CS1</td>
<td>Each</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC-CS2</td>
<td>Each</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC-CM1</td>
<td>Each</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC-CM2</td>
<td>Each</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pot Head joint</td>
<td>Each</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>CR-VF</td>
<td>KG</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>CT-EtE</td>
<td>100 Pair</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Survey, PAT &amp; Report [For Survey please see Note 8 below]</td>
<td>LOT</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>GB-G1</td>
<td>Each</td>
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<td>17</td>
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<td>18</td>
<td>TE-t [Test Gear] [Please see Note 7 below]</td>
<td>LOT</td>
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</table>

Notes for Lot-A:

- Note 1: Quotation of Rate shall include all duties, VAT & Taxes Paid/Payable if contract is awarded.
- Note 2: Rate shall include all expenditure for Factory Acceptance Test.
- Note 3: During work order, the Employer shall reserve the right to delete any component.
- Note 4: Quantity for any item may vary during award of the Contract.
- Note 5: Tenderer has to quote for all the items of BOQ irrespective of quantities.
- Note 6: Road Cutting Compensation will be made as per the guide line of clause no. 7.1 & 7.21 of Section-7 of the Tender document.
- Note 7: Lot of Telecom Equipment/ Test Gears comprises: 1(one) OTDR, &1(one) Variable Attenuator.
- Note 8: A survey shall be conducted by the successful bidder to the respective area to determine the actual BoQ [may be changed during implementation] and a AGW-wise drawing showing the OSP network of Primary & secondary cable, Cabinet, DP etc. be submitted to BTCL before start of work. After completion of work and before PAT contractor shall submit 3 (three) copies of As Built Drawing of respective AGW.
- Note 9: For Existing cabinets, existing DPs with secondary network will be used but termination at cabinets with available termination blocks from SL. No. 11 [CB-T-100] shall have to be done.
## Summary Price for Lot-A

### OSP copper cable network for SBN Exchange Area [Lot-A]

<table>
<thead>
<tr>
<th>Material + service</th>
<th>Total Amount (Taka)</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Grand Total for the Work (Material + Service)</td>
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**Taka in Figure:**
**Taka in Words:**

**Notes:**

**Note-1:** VAT, IT and other applicable taxes/surcharges will be deducted from every bill before making any payment as per prevailing rules and regulations.

**Note-2:** The Contractor has to refill the trench with sufficient sand and excavated soil, and a good compaction has to be done for good repairing of the road with the trenching cost.
**Bill of Quantities [BoQ]**

For OSP Subscriber Cable Networks of different Access Gateway (AGW) of Gulshan Exchange Area [Lot-C].

(Schedule for Quotation of Rates)

[The Contractor must submit rates for *Materials & Services separately* as per clause 7.7 of Section 7 considering Annexure-A, Annexure-B and other relevant clauses of Tender Document]

(Contractor can expand this form as per necessity)

**List of BoQ for Gulshan Exchange Area [Lot-C]**

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Designator</th>
<th>Unit</th>
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<th>Unit Rate (Taka)</th>
<th>Total ( Taka)</th>
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<td>HH-2</td>
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<tr>
<td>3</td>
<td>UC-P1/4(HDD/OC)</td>
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<td>20,193</td>
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<td>CP-Ex. Duct</td>
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<td>Total (Taka)</td>
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<tr>
<td></td>
<td>CB-C50-700 [existing]</td>
<td>Each</td>
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<td>11</td>
<td>CB-T-100</td>
<td>Each</td>
<td>110</td>
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<td>26</td>
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<td>Each</td>
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<td>Pot Head joint</td>
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<td>[For Survey please see Note 8 below]</td>
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<td>LOT</td>
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<tr>
<td>18</td>
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<tr>
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<td>[Please see Note 7 below]</td>
<td></td>
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</tr>
</tbody>
</table>

Notes for Lot-C:

- **Note 1**: Quotation of Rate shall include all duties, VAT & Taxes Paid/Payable if contract is awarded.
- **Note 2**: Rate shall include all expenditure for Factory Acceptance Test.
- **Note 3**: During work order, the Employer shall reserve the right to delete any component.
- **Note 4**: Quantity for any item may vary during award of the Contract.
- **Note 5**: Tenderer has to quote for all the items of BOQ irrespective of quantities.
- **Note 6**: Road Cutting Compensation will be made as per the guide line of clause no. 7.1 & 7.21 of Section-7 of the Tender document.
- **Note 7**: Lot of Telecom Equipment/ Test Gears comprises: 1(one) Copper Cable Fault Locator Machine [Bico Meter] of 10 km range & 1 (one) Digital Multimeter.
- **Note 8**: Note 8: A survey shall be conducted by the successful bidder to the respective area to determine the actual BoQ [may be changed during implementation] and an AGW-wise drawing showing the OSP network of Primary & secondary cable, Cabinet, DP etc. be submitted to BTCL before start of work. After completion of work and before PAT contractor shall submit 3 (three) copies of As Built Drawing of respective AGW.
- **Note 9**: Note 9: For Existing cabinets, existing DPs with secondary network will be used but termination at cabinets with available termination blocks from SL No. 11 [CB-T-100] shall have to be done.
## Summary Price for Lot-C

<table>
<thead>
<tr>
<th>OSP copper cable network for Gulshan Exchange Area [Lot-C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material + service</td>
</tr>
<tr>
<td>Grand Total for the Work (Material + Service)</td>
</tr>
</tbody>
</table>

**Taka in Figure:**

**Taka in Words:**

**Notes:**

**Note-1:** VAT, IT and other applicable taxes/surcharges will be deducted from every bill before making any payment as per prevailing rules and regulations.

**Note-2:** The Contractor has to refill the trench with sufficient sand and excavated soil, and a good compaction has to be done for good repairing of the road with the trenching cost.
**Bill of Quantities [BoQ]**

For OSP Subscriber Cable Networks of different Access Gateway (AGW) of Uttara, Mogbazar, Nilkhet & Ramna Exchange Area [Lot-E].

(Schedule for Quotation of Rates)

[The Contractor must submit rates for Materials & Services separately as per clause 7.7 of Section 7 considering Annexure-A, Annexure-B and other relevant clauses of Tender Document]

(Contractor can expand this form as per necessity)

**List of BoQ for Uttara, Mogbazar, Nilkhet & Ramna Exchange Area [Lot-E]**

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Designator</th>
<th>Unit</th>
<th>Total</th>
<th>Unit Rate (Taka)</th>
<th>Total  (Taka)</th>
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</thead>
<tbody>
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<td>1</td>
<td>HH-1</td>
<td>Each</td>
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</tr>
<tr>
<td>2</td>
<td>HH-2</td>
<td>Each</td>
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<td></td>
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</tr>
<tr>
<td>3</td>
<td>UC-P1/4(HDD/OC)</td>
<td>Meter</td>
<td>21,500</td>
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<tr>
<td>4</td>
<td>CP-Ex. Duct</td>
<td>Meter</td>
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<td>BC-TB-M/S (Road Cutting)</td>
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<td>TC-D-300</td>
<td>Each</td>
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<td>DP-W-20</td>
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<td>DP-IN-50</td>
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<td>DP-IN-100</td>
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<tr>
<td>10</td>
<td>CB-C50-700 [new cabinet]</td>
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Notes for Lot-E:

- Note 1: Quotation of Rate shall include all duties, VAT & Taxes Paid/Payable if contract is awarded.
- Note 2: Rate shall include all expenditure for Factory Acceptance Test.
- Note 3: During work order, the Employer shall reserve the right to delete any component.
- Note 4: Quantity for any item may vary during award of the Contract.
- Note 5: Tenderer has to quote for all the items of BOQ irrespective of quantities.
- Note 6: Road Cutting Compensation will be made as per the guide line of clause no. 7.1 & 7.21 of Section-7 of the Tender document.
- Note 7: Lot of Telecom Equipment/ Test Gears comprises: 4 (Four) Measuring wheels, 4 (Four) Copper Cable fault Locating machines [Bico Meter of 10 km range] & 4 (Four) Digital Multimeters.
- Note 8: A survey shall be conducted by the successful bidder to the respective area to determine the actual BoQ [may be changed during implementation] and a AGW-wise drawing showing the OSP network of Primary & secondary cable, Cabinet, DP etc. be submitted to BTCL before start of work. After completion of work and before PAT contractor shall submit 3 (three) copies of As Built Drawing of respective AGW.
- Note 9: Note 9: For Existing cabinets, existing DPs with secondary network will be used but termination at cabinets with available termination blocks from SL. No. 11 [CB-T-100] shall have to be done.
<table>
<thead>
<tr>
<th>Material + service</th>
<th>Total Amount (Taka)</th>
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</thead>
<tbody>
<tr>
<td>Grand Total for the Work (Material + Service)</td>
<td></td>
</tr>
</tbody>
</table>

**Taka in Figure:**

**Taka in Words:**

**Notes:**

**Note-1:** VAT, IT and other applicable taxes/surcharges will be deducted from every bill before making any payment as per prevailing rules and regulations.

**Note-2:** The Contractor has to refill the trench with sufficient sand and excavated soil, and a good Compaction has to be done for good repairing of the road with the trenching cost.
Section 7
General Specification
For OSP-Copper Cable Network works

7.1 Scope

Bangladesh Telecommunications Company Limited (BTCL) has deployed a Soft Switch based Telecommunications System in Dhaka City. The scopes of works under this tender are to Supply, installation, testing and commissioning of OSP subscriber cable networks of different AGWs installed under RODTS [171 KL] Project at Sher-e-Bangla Nagar, Gulshan, Uttara, Mogbazar, Nilkhet and Ramna Exchange Area. For this purpose, this Tender proposes to procure the following works; major goods and related services under the scope of this procurement are summarized below:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Scope</th>
<th>Remark</th>
</tr>
</thead>
</table>
| Laying of underground copper cable through HDD or open cut method. | 1. HDD/open cut trench length ≈ i) Lot-A : 20,154 meter  
ii) Lot-C : 20,193 meter  
iii) Lot-E : 21,500 meter  
2. Total cable Length (including different sizes/pairs of cable) ≈ i) lot-A : | Only copper Cable will be supplied by BTCL. Required cable will be supplied from Bangladesh Cable Shilpa Limited (BCS), Khulna. Contractor shall carry the cables from BCS, Khulna to the installation sites with their own cost and risk. |

<table>
<thead>
<tr>
<th>Cable Size</th>
<th>Length in meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC-JA-20/0.4</td>
<td>7,248</td>
</tr>
<tr>
<td>BC-JA-30/0.4</td>
<td>4,385</td>
</tr>
<tr>
<td>BC-JA-50/0.4</td>
<td>6,641</td>
</tr>
<tr>
<td>BC-JA-100/0.4</td>
<td>11,134</td>
</tr>
<tr>
<td>BC-JA-200/0.4</td>
<td>9,650</td>
</tr>
<tr>
<td>BC-JA-300/0.4</td>
<td>0</td>
</tr>
<tr>
<td>Total cables</td>
<td>39,058</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cable Size</th>
<th>Length in meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC-JA-20/0.4</td>
<td>8,160</td>
</tr>
<tr>
<td>BC-JA-30/0.4</td>
<td>3,465</td>
</tr>
<tr>
<td>BC-JA-50/0.4</td>
<td>5,373</td>
</tr>
<tr>
<td>BC-JA-100/0.4</td>
<td>7,509</td>
</tr>
<tr>
<td>BC-JA-200/0.4</td>
<td>5,515</td>
</tr>
<tr>
<td>BC-JA-300/0.4</td>
<td>0</td>
</tr>
<tr>
<td>Total cables</td>
<td>30,022</td>
</tr>
<tr>
<td>Classification</td>
<td>Scope</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>≈ iii) Lot-E :</td>
<td></td>
</tr>
<tr>
<td>Cable Size</td>
<td>Length in meter</td>
</tr>
<tr>
<td>BC-JA-20/0.4</td>
<td>6,623</td>
</tr>
<tr>
<td>BC-JA-30/0.4</td>
<td>9,296</td>
</tr>
<tr>
<td>BC-JA-50/0.4</td>
<td>10,066</td>
</tr>
<tr>
<td>BC-JA-100/0.4</td>
<td>11,030</td>
</tr>
<tr>
<td>BC-JA-200/0.4</td>
<td>9,800</td>
</tr>
<tr>
<td>BC-JA-300/0.4</td>
<td>0</td>
</tr>
<tr>
<td>BC-JA-600/0.4</td>
<td>1,000</td>
</tr>
<tr>
<td>BC-JA-900/0.4</td>
<td>2,000</td>
</tr>
<tr>
<td>BC-JA-1200/0.4</td>
<td>800</td>
</tr>
<tr>
<td>Total cables</td>
<td>50,515</td>
</tr>
<tr>
<td>Number of Cabinet, DP Box, DP Pole</td>
<td>1. Cabinet</td>
</tr>
<tr>
<td>≈ i) Lot-A : 12</td>
<td></td>
</tr>
<tr>
<td>ii) Lot-C : 12</td>
<td></td>
</tr>
<tr>
<td>iii) Lot-E : 17</td>
<td></td>
</tr>
<tr>
<td>2. DP Box</td>
<td></td>
</tr>
<tr>
<td>≈ i) Lot-A : 146</td>
<td></td>
</tr>
<tr>
<td>ii) Lot-C : 204</td>
<td></td>
</tr>
<tr>
<td>iii) Lot-E : 291</td>
<td></td>
</tr>
<tr>
<td>3. DP Pole [New]</td>
<td></td>
</tr>
<tr>
<td>≈ i) Lot-A : 104</td>
<td></td>
</tr>
<tr>
<td>ii) Lot-C : 129</td>
<td></td>
</tr>
<tr>
<td>iii) Lot-E : 137</td>
<td></td>
</tr>
<tr>
<td>Supply of HDPE DUCT etc.</td>
<td>HDPE, 1 to 4 ways</td>
</tr>
<tr>
<td>≈ i) Lot-A : 20,154 meter</td>
<td></td>
</tr>
<tr>
<td>ii) Lot-C : 20,193 meter</td>
<td></td>
</tr>
<tr>
<td>iii) Lot-E : 21,500 meter</td>
<td></td>
</tr>
<tr>
<td>Construction of Hand hole</td>
<td>Hand hole</td>
</tr>
<tr>
<td>≈ i) Lot-A : 14</td>
<td></td>
</tr>
<tr>
<td>ii) Lot-C : 17</td>
<td></td>
</tr>
<tr>
<td>iii) Lot-E : 10</td>
<td></td>
</tr>
<tr>
<td>Warning Tape</td>
<td>Polyethylene tape having width of approximately 15cm and</td>
</tr>
<tr>
<td></td>
<td>minimum thickness of 0.15mm.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.2. GENERAL

7.2.1 Specification type

(1) The specification set forth herein are to specify the requirements and conditions related to Subscriber Cable Works and the general performance objectives for the outside plant of the Project.

(2) Tenderer and Contractor shall comply closely with the whole requirements stipulated in these specification, tendering, engineering, manufacturing, shipping, installation, construction, tests, commissioning and any other matters which are not specified herein but may be required for the successful implementation of the Project.

Tenderer and Contractor shall comply with the standards generally accepted by BTCL. Should there be any doubts or difficulties, Tenderer and Contractor shall seek clarifications and make enquiries from BTCL. Any deviation or change shall be only with the approval of BTCL.

7.2.2 Attachments to the Specifications

Detail location map of proposed Primary and Secondary Cable network may be seen in project office. A list of Access Gateways covered under this tender is shown in Table 1-1. However, the locations of outside plant may be changed. Distribution of Primary and Secondary lines among exchanges may be changed and/or rearranged if BTCL feels necessary.

7.3 Scope of Project

7.3.1 The scope of work of subscriber cable networks in different exchanges are shown in Table 1-1. However, the quantity mentioned in Table 1-1 may also be changed and/or rearranged. Variation to any extent on either side may happen and decision of BTCL in this regard will be binding on the bidders.
### Table 1-1

#### Lot-A

<table>
<thead>
<tr>
<th>Works and Area</th>
<th>Name/Location of AGW</th>
<th>Length of Primary Cable Pairs [meter]</th>
<th>Length of Secondary Cable Pairs [meter]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscriber Copper Cable Network under SBN Exchange Area. [Lot-A]</td>
<td>231/1, Rayer Bazar, Pathshala Goli</td>
<td>2,000</td>
<td>4,760</td>
</tr>
<tr>
<td></td>
<td>226/5, Sher-e-Bangla Road, Rayer Bazar.</td>
<td>2,000</td>
<td>4,623</td>
</tr>
<tr>
<td></td>
<td>Japan Garden City, Mohammadpur</td>
<td>2,000</td>
<td>6,665</td>
</tr>
<tr>
<td></td>
<td>WASA Bhaban, Lalmatia (ONU Room)</td>
<td>2,000</td>
<td>6,800</td>
</tr>
<tr>
<td></td>
<td>Sher Shah Suri Road, Mohammadpur</td>
<td>1,650</td>
<td>4,580</td>
</tr>
<tr>
<td></td>
<td>Bandhan, R-4, Kadirabad Housing, Katasur</td>
<td>1,650</td>
<td>4,580</td>
</tr>
<tr>
<td></td>
<td>Sharo Kunjo, Rayer Bazar Beribadh</td>
<td>1,650</td>
<td>4,580</td>
</tr>
<tr>
<td><strong>Total length of Cable pairs [Lot-A]</strong></td>
<td><strong>9,650</strong></td>
<td><strong>27,428</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Lot-C

<table>
<thead>
<tr>
<th>Works and Area</th>
<th>Name/Location of AGW</th>
<th>Length of Primary Cable Pairs [meter]</th>
<th>Length of Secondary Cable Pairs [meter]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscriber Copper Cable Network under Gulshan Exchange Area. [Lot-C]</td>
<td>Shahid Moinul Road, Dhaka Cant</td>
<td>2,000</td>
<td>6,222</td>
</tr>
<tr>
<td></td>
<td>Rajanigandha Officers’ Quarter, Dhaka Cant</td>
<td>2,000</td>
<td>6,231</td>
</tr>
<tr>
<td></td>
<td>Air HQ (Communication Building), Dhaka Cant</td>
<td>330</td>
<td>2,392</td>
</tr>
<tr>
<td></td>
<td>Radisson Hotel, Airport Road</td>
<td>330</td>
<td>2,392</td>
</tr>
<tr>
<td></td>
<td>Kurmitola General Hospital, Dhaka Cant</td>
<td>330</td>
<td>2,392</td>
</tr>
<tr>
<td></td>
<td>Members’ Quarter, Banani</td>
<td>175</td>
<td>1,626</td>
</tr>
<tr>
<td></td>
<td>H-30, R-9, Block-G, Banani</td>
<td>175</td>
<td>1,626</td>
</tr>
<tr>
<td></td>
<td>Amin Mohammad Foundation, H-96, R-5, Block-F, Banani</td>
<td>175</td>
<td>1,626</td>
</tr>
<tr>
<td><strong>Total length of Cable pairs [Lot-C]</strong></td>
<td><strong>5,515</strong></td>
<td><strong>24,507</strong></td>
<td></td>
</tr>
<tr>
<td>Works and Area</td>
<td>Name/Location of AGW</td>
<td>Length of Primary Cable Pairs [meter]</td>
<td>Length of Secondary Cable Pairs [meter]</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>---------------------------------------</td>
<td>--------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Subscriber Copper Cable Network under Uttara, Mogbazar, Nilkhet &amp; Ramna Exchange Area. [Lot-E]</td>
<td>Kamrangir Char ONU Exchange</td>
<td>2,000</td>
<td>8,405</td>
</tr>
<tr>
<td></td>
<td>Biswas Builders New Market City Complex</td>
<td>2,000</td>
<td>6,800</td>
</tr>
<tr>
<td></td>
<td>595, Uttar Shahjahanpur, Mogbazar</td>
<td>2,000</td>
<td>6,800</td>
</tr>
<tr>
<td></td>
<td>House-34, Road-11, Sector-10, Uttara</td>
<td>2,000</td>
<td>8,610</td>
</tr>
<tr>
<td></td>
<td>House-19, Road-3B, Sector-9, Uttara [3 AGWs]</td>
<td>5,500</td>
<td>6,400</td>
</tr>
<tr>
<td><strong>Total length of Cable pairs [Lot-E]</strong></td>
<td><strong>13,500</strong></td>
<td><strong>37,015</strong></td>
<td></td>
</tr>
</tbody>
</table>

7.4 **Demarcation of Provision of Works**

7.4.1 Subscriber Cable Network.

The Contractor shall provide all the “Outside plant” facilities and works necessary for making up loop line from the distribution point up to the termination of tip cable on MDF.

The provision of subscriber transferring work from old networks to proposed ones and the installation of new subscriber drop wires shall be carried on by BTCL.

7.4.2 Share of Work with Inside Plant

The following provision and works shall be considered as other Contractor’s Work.
- Main Distribution Frame (MDF)

7.4.3 Share of Work with Building Construction

Exchange Building Construction is to be performed by other Contractor.

7.5 **Contractor’s Implementation Time Schedule.**

7.5.1 Before the commencement of work, Contractor shall have to submit to Project Office, the detailed implementation time schedule mentioning Site survey; Collection, procurement and transportation of materials; Network installation; Preparation of As-built drawing; and Provisional acceptance test.

7.5.2 Contractor shall submit the detailed implementation progress to the Project Office Monthly. Any deviation of the actual progress from the previously submitted schedules shall be amended accordingly and immediately submitted to the Project Office.

7.6 **ITU-T Recommendation**

Tenderer shall comply with all relevant recommendations of the ITU-T. However, in the event of any discrepancies between this set of Specifications
and ITU-T’s recommendations, the requirements stipulated in these Specifications shall be applied.

7.7 **Bill of Quantities for Outside Plant.**

The work for Outside Plant is composed of Assembly Units as in Annexure-A. Bill of Quantities as shown in Annexure-B, which are to be finalized after detailed survey by the contractor for outside plant consist of 2 (two) categories in the service and equipments in the following formats. Any deviation from the requirement specified here under shall be treated as reason of rejection of tender.

**Bill of quantities (Materials) “Proforma A”**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Designator</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Rate (Taka)</th>
<th>Total (Taka)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bill of quantities (Services) “Proforma B”**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Designator</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Rate (Taka)</th>
<th>Total (Taka)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Price Summary “Proforma C”**

<table>
<thead>
<tr>
<th>SL No.</th>
<th>DESCRIPTION</th>
<th>TAKA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUB-TOTAL MATERIALS (A)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SUB-TOTAL SERVICES (B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL AMOUNT</strong></td>
<td></td>
</tr>
</tbody>
</table>

Tenderer shall include in his tender proposal the unit price and total price for the Bill of Quantities for outside plant as per requirements. The quantities of different items along with the name of exchanges are shown in Annexures which will be basis for tender proposal.

The basis of the bill of quantities of outside plant includes subscriber cable network plan consisting of the following:

- General Key Map
- Key Map
- Primary Cable Route Plan
- Cable Chamber and MDF allocation Plan
- Primary Conduit route
- Conduit System General Plan
- Construction details and sample drawings of
The Contractor shall have to verify the BOQ with that of design and drawing books of network plans to be supplied by Project Office, and if required, the contractor shall have to go for site inspection for the purpose. The final Bill of Quantities for Outside Plant shall only be determined based on the result of verification, weather change in BOQ occurs or not, as mentioned above after being accepted and approved by Project Office.

7.8 The detailed design and drawings of outside plant

7.8.1 The detailed design and drawings of outside plant will be supplied by Project Office. The detailed design drawings (according to the Engineering instruction and installation practices) shall include the followings:

- General Key Map
- Key Map
- Primary Cable General Plan
- Primary Cable Route Plan
- Conduit System and cable jointing plan
- Termination cable diagram
- Cable racking diagram in manhole and cable chamber/tunnel.
- Structural diagram in cable chamber/vault
- Civil construction design/drawings
- Detail manhole/ hand hole design/drawings

The contractor shall submit the details of installation standard, Materials and Accessories for approval of Project Office.

7.8.2 Contractor shall rectify the plans in accordance with the decision and the comments of Project Office, cabinet area by cabinet area, or route by route. Project Office will return two (2) copies to Contractor duly signed, as an approved plan.

7.9 Ordering of Materials

After the effective date of the Contract, Contractor shall commence the ordering of materials which will be used in the works to implement this Project. In this case, the quantity of materials to be ordered shall meet the quantity calculated based on the approved detailed design.

7.10 Deviation from Specifications

Deviation from the Specifications shall not be permitted. However, minor modifications or changes will be allowed with the prior approval of Project Office. The approval of Project Office of the minor modifications or changes will be given to Contractor within a reasonable time.
7.11 Modification of the Specifications

When the modifications and changes in the already approved drawings and set forth are necessary due to the modifications of the specification and standards or manuals which are required on rare occasions, the procedure of submission and approval for the drawings concerned shall be in the same way as specified in Paragraph 7.8 above.

7.12 Work Priority

Order of work priority for Contractor’s detailed design and installation works may be given to the contractor accordingly with the requirement of Project Office. Contractor shall take into account the order of work priority given by mutually agreed schedules.

7.13 Interim Inspection/Test and Provisional Acceptance Test

7.13.1 General

Interim Inspection/Test and Provisional Acceptance Test shall be carried out for the Outside Plant. The inspections and tests shall be undertaken jointly by Contractor and Project Office.

7.13.2 Inspection and Test

7.13.2.1 The inspection and test shall be performed to check the conformity of the work to the specified standards.

7.13.2.2 Necessary equipment and manpower for the test shall be provided by Contractor. Test result reports shall be prepared by Contractor and submitted to Project Office upon completion of the tests.

7.13.2.3 Contractor shall submit five (5) copies of test result reports to Project Office in a format previously approved by Project Office.

7.13.2.4 Should any faulty materials and goods and unsatisfactory installation be detected in the course or such inspections and/or tests, Contractor shall immediately repair, replace and remedy such unsatisfactory items at his own expense.

7.13.2.5 Contractor shall maintain logbook in order to ensure full supervision during installation, Contractor shall record the significant items in the book and submit it to Project Office from time to time for the check by the Inspector of Project Office.

Photograph showing clearly the cable installation in all manholes, direct buried cable installation in trench before back-filling and warning tapes lying shall be maintained.
7.14 As-built Drawings

7.14.1 After the completion of Provisional Acceptance Test, Contractor shall submit the As-built Drawings to Project Office.

7.15 Guarantee Period

Contractor shall guarantee the performance of the outside plant facilities installed for a period of **twelve (12) months** from the date of the issuance of Provisional Acceptance Certificate, in accordance with the stipulation in 1.1(o) of General Conditions of Contract. **A final review of the performance of the outside plant shall be made at the end of this period.** If the required reliability and performance standards are met, the Final Acceptance Certificate (FAC) shall be issued after the Guarantee period ends.

7.16 Compensation

Contractor shall compensate owner of the premises for any damages or loss caused by the installation work. The recovery or repair works shall be done as soon as possible and made in the same manner as stated in this set of specification.

Contractor shall also compensate/restore any damage/fault, if any such situation arises from installation of network.

7.17 Design Principle

7.17.1 The telephone cable network shall be carefully designed since the major portion of investment for public telecommunication facilities is to be occupied by the outside plant.

7.17.2 The design work shall aim at optimum plant provision taking quality, flexibility, reliability, practicability, economy and maintainability into consideration.

7.17.3 The design shall be based on detailed field survey and to suit various conditions and external environment in the exchange area concerned.

7.17.4 In connection with the route selection, Contractor shall try to select the road that meet the following conditions as far as practicable:

   (1) Road that will realize a minimum cable route distance.

   (2) Road to be back-filled and compacted properly.

   (3) Road having sufficient width and least likelihood of interfering with surface traffic.

   (4) Road that allows easy installation for manholes and conduit because of fewer occupancies by other utilities, e.g. water supply
sewerage, power line, gas and etc.

(5) Road least affected by electrical and chemical corrosion.

(6) Road having least likelihood of rebuilding or abandonment due to city planning or road rearrangement.

(7) Conduit routes should be selected based on an overall study of technical matters involved in construction and maintenance.

7.18 Design Principle of Civil Work

7.18.1 Handhole

(a) The handhole will be constructed in front of the Access Gateway and where required. The design principle of handhole should be as per attached drawing of Hand holes in this document.

(b) The types and external dimension of handholes are as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Length (cm)</th>
<th>Width (cm)</th>
<th>Height (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH1</td>
<td>170</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>HH2</td>
<td>240</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

7.19 Design Principle of Subscriber Cable Network

7.19.1 Structure of Subscriber Cable Network

(1) The flexible network system with cross-connection cabinets shall be employed in the subscriber networks. The principle of the system is illustrated below:

(2) It is usual to employ semi-rigid (non-flexible direct feeding without cabinet) in the immediate vicinity of the exchange.

(3) No bridge tap shall be applied to subscriber network unless under exceptional situation, such as cable transfer by multiple teeing.

7.19.2 Transmission Requirements for Subscriber Lines
1. **Attenuation Loss**

   In the design of subscriber loop, the attenuation loss of subscriber line shall be limited to 10 DB at 1000 Hz in terms of line length between MDF and the farthest distribution point of a single cable route.

2. **D.C. Loop Resistance**

   Maximum allowable loop resistance of subscriber cables shall be 1,500 Ohms.

3. The cable loss value and the D.C. resistance value to be used for the design are tabulated below:

<table>
<thead>
<tr>
<th>Cable Conductor Diameter (mm)</th>
<th>Cable Loss Value at 1000Hz (dB/Km)</th>
<th>Loop Resistance Value (Ohm/Km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4</td>
<td>1.90</td>
<td>290</td>
</tr>
<tr>
<td>0.5</td>
<td>1.51</td>
<td>182</td>
</tr>
<tr>
<td>0.6</td>
<td>1.26</td>
<td>125</td>
</tr>
<tr>
<td>0.8</td>
<td>0.90</td>
<td>71</td>
</tr>
<tr>
<td>0.9</td>
<td>0.84</td>
<td>55</td>
</tr>
</tbody>
</table>

4. **Application of Conductor Diameter for Subscriber Cable Network.**

   (1) A design with finest unit-gauge shall be applied to subscriber loop in principle. However, the most economical 2-gauge is also acceptable. The combination of three gauges shall never be applied to loop configuration.

   (2) Within one cabinet area, the design with a single gauge shall be applied in principle.

5. **Primary Cable Design**

   The primary cables to be installed in this Project shall be engineered and designed, taking the following into account:

   (1) Available Structure: Existing Manholes, Hand holes and Conduits and cabinets.

   (2) Type of Cable:

      PE single sheath with moisture barrier and jelly filled cellular-solid PE insulated Pair cable.

   (3) Mutual Capacitance : $52 \pm 2$ nF/Km

   (4) Cable Sizes :

      0.4 mm  300, 600, 900, 1200, pairs (or others if required).

   (5) Maximum Outer Diameter of Cable:

      Maximum diameter of the Cable is restricted by the following inside diameter of PVC pipe.

      - Mean value  99 mm.
- Minimum value 98 mm

(6) Direct burial method may only be applied when Conduit system cannot be installed due to site situation.

7.20 Secondary Cable Design

(1) The secondary cable network shall generally be planned direct buried cable with PE double sheath or PE single sheath with steel tape armored with moisture barrier and jelly filled cellular solid PE insulated Pair cable.

(2) Secondary Cable Application

The secondary cable consists of buried cable, Conduit cable and aerial cable. These cables shall be installed accordance with the following criteria:

a) Buried Cable Application

   i) Route application: from cross-connection cabinets to distribution points and/or the riser portion connected to the aerial secondary cable.

   ii) Occupancy condition: along footways.

b) Conduit cable application

   i) Route application: same as buried cable.

   ii) Occupancy condition: in the areas where the use of buried cable is not appropriate as in the densely housed commercial areas along the route, and also, in the areas where buried cable installation is not appropriate, from the viewpoint of urbanization and for other reasons.

(3) Type and size of Secondary Cable

a) Type of Secondary Cable

   Buried cable: PE double sheath or PE single sheath with steel tape armored with moisture barrier and jelly filled cellular-solid PE insulated Pair cable.

b) Mutual capacitance:

   \[ 52 \pm 2 \text{nF/Km (more than 50 pairs)} \]

   \[ 52 \pm 4 \text{nF/Km (50 pairs or less)} \]

c) Size of Secondary Cable

   i) Buried Cable and Conduit cable

   0.4 mm  20, 30, 50, 100, 200, pairs (or others if required).

7.20.1 Cross-Connection Cabinet and Distribution Area

i) Subscriber Accommodation

   A distribution area shall be so sized as to be approximately 1-2 Km distance subscribers.

ii) Cabinet Area
The size of a cabinet area shall be defined according to the DP areas assessed from the demand data.

The standard size of cross connection cabinet shall be 700 pairs.

- One standard housing with mounting frame for terminal heads up to 700 pairs.

The positions shall be occupied by terminals and cables in the sequence according to their column from up to down wards

- 1st column for secondary cables
- 2nd column for primary cables
- 3rd column for primary cables
- 4th column for secondary cables and so on.

The average ratio of primary pairs versus secondary pairs at cabinets shall be 3:4 for fully loaded cabinets in settled areas.

Based on the density of the area, the number of primary pairs shall range between 100 to 600 cable pairs.

The cabinet area boundary shall follow natural demarcations as town/city wards, water course, railway lines, roads etc. where-ever possible.

The cabinet shall be located within its cabinet area at a point selected so that approximately 80% of the secondary cable pairs are forward feeding.

The cross connection cabinet shall always be located on public property, in front of walls or houses. Disturbance of public traffic or of access to private building through the cabinet must be avoided. A working area of one square meter in front of the cabinet shall be ensured. The proposed location of the cabinet shall be verified by subsequent field inspection.

### 7.20.2 Coding System for Cables, Cabinets and DP’s

1. All cables, cabinets and DP’s have to be coded according to the standards as detailed as per instruction of project office in order to allow clear identification of the plant. The coding system shall also facilitate the addressing of each individual subscriber circuit in the network records.

2. The code numbers shall be clearly labeled on the cabinets and DPs in the fields as well as on the cables at places where they are accessible. The individual coded have also to be indicated clearly on the respective maps and diagrams according to BTCL standards and specifications for Outside Plant Documentation.

3. Connecting Primary/Secondary Cable with Terminal Block

   a) Connection of stub cables of terminal blocks with riser cables from primary/secondary cables shall be made in the cabinet.

   b) Connection of the stub cables with primary/secondary cables shall be made in the manhole.

   c) The riser cables shall be terminated to the terminal blocks directly.

### 7.20.3 Pair Assignment to Cabinet and Distribution Point
Pairs to cross-connection cabinet and distribution point shall be assigned to cabinet or distribution point in numerical order from the far end to the near end along the primary or secondary cable route.

7.20.4 Direct Service Area

No cross-connection cabinets shall be provided for the direct service area in which subscriber pairs will be connected directly to the MDF. This connection method shall be exceptionally applied in cases where the following situations exist simultaneously:

a) Area in which suitable demand exists in the immediate vicinity of the Exchange.

b) Area in which comparatively stable demand is anticipated. In this case, the secondary cables shall be concentrated to a certain manhole and jointed directly to the primary cable.

7.20.5 Distribution Point (DP)

In general the location of a pole mounted DP has to be determined in the wire center of the DP area in order to minimize the length of drop wires.

7.20.6 Design of DP and Cabinet Areas

DP-Areas

- The allocation of blocks of buildings and housing areas into DP-areas shall be done on the survey map. The following criterion shall be observed.
- Standard capacities of DPs, 20 pairs, 30 pairs and 50 pairs.
- Practical considerations for secondary network design.
- A planning cable fill of 80%, i.e. at average for the assessed demand of 8 lines, 10 secondary cable pairs will be terminated at the DP. This means that an additional portion of 20% of the secondary cable pairs shall be added as spares for unexpected demand.

The existing network and necessary rearrangements:

- DP numbers shall be shown on the secondary network detailed design plans only. In some cases where existing DP Pole is available, in that cases DP Box will be installed with that existing Poles.
- All DPs shall be coded according to the coding system as per instruction of project office.
- Standard symbols shall be used on the drawings as defined in BTCL’s Specifications for Outside Plant Documentation.
- A subsequent survey shall be carried out to confirm DP locations and pole sites and other details. All poles shall be place on public property in general.
7.20.7 Application of Distribution Point

(1) The following types of distribution points shall be applied as follows:

a) The pole-mounted distribution point without protection for buried cable shall be installed on the riser poles for buried cable.

b) The internal distribution point shall be applied to the buildings which accommodate six lines or more.

c) The wall-mounted distribution point shall be applied in case where the internal type is impracticable and/or where the feeding along the outside wall of building close to a line is possible without spoiling the view.

(2) Cable Termination of Distribution Point

a) For pole-mounted distribution point

The buried cable with the same conductor diameter as that each distribution area may be terminated directly to the Distribution Point (DP).

b) For wall-mounted distribution point

In the same as the case of buried cable or the pole-mounted distribution point mentioned above.

c) For internal distribution point in the building

Buried cable and conduit cable:

Buried cable or conduit cable with the same conductor diameter as that in each distribution area shall be terminated to the internal distribution point or private MDF.

7.20.8 Splicing and Branching of Buried cable and conduit cable

Adequate splicing points on the Buried cable and Conduit cable shall be set up for distribution points and branching cable. Splicing points shall be concentrated and minimized in consideration of installation and material cost.

7.21 Excavation for Hand hole, Trench, pit and / or HDD

1) All excavation shall be done in a thorough and workmanlike manner in accordance with the detailed drawings and the specifications under the directions of BTCL and subject to the approval and acceptance by BTCL.

2) The bidder shall quote the required road cutting compensation or/and road repairing cost for making pit for HDD, trench, hand hole, etc. for installation of
copper cable network. The Contractor shall arrange all permission from relevant authorities (such as Municipal Authorities, Local Govt. authorities, R&H Dept. Rail way Dept., Electricity, Water, Sewerage, Gas, etc.).

3) Necessary payment to the concerned authorities (as mentioned above sub-clause 2) for road cutting compensation or/and repair the affected road/area must be done by the contractor. The Payment to the Contractor for this work (against item no. (5) of BoQ) shall be completed only after submission of ‘No Objection Certificate’ or ‘Clearance Certificate’ from the concerned authorities’ at their letter head pads to the Project office.

4) ‘No Objection Certificate’ or ‘Clearance Certificate’ shall contain at least the following information;

_The Contractor of BTCL contract no.-------- dated.---- has properly repaired the affected road/area and/or pay necessary compensation to us or to our dept. for copper cable laying along in different location of Dhaka city (Insert the name of the area/site)._ 

5) Necessary application, formalities and payments to respective authorities for road cutting permission or others (if any) will be made by the Contractor.

6) Contractor shall pay compensation bill claimed by the government, semi-government and autonomous organizations etc. and Contractor shall be responsible for any claim for delaying the execution of works within the time frame fixed by the concerned authorities.

7) Contractor shall obtain all pertinent records from the electric company, water supply, gas Supply Company and sewerage authority and other underground utilities organization in order to plant his work and safe guard of other utilities.

8) Contractor shall take all precautions necessary for safety of general public and for protective and preserving any and all temporary or permanents utilities.

9) If during the execution of the construction and installation, existing underground facilities are interrupted, or any part thereof is disturbed, contractor shall immediately notify the facts to BTCL and owner of the utility.

10) If contractor is obliged to change the location of excavation due to existing underground facilities which are found during construction, additional cost on the works for the above route/location change shall be borne by Contractor.

11) Contractor is directly responsible for all damages to existing utilities including telecommunication facilities and shall restore these damages immediately at his own expense.

12) If the presence of underground facilities is expected or when required by BTCL, Contractor shall at his own expense excavated test pits at the location of question.
13) If any obstructions which interfere with excavation of manhole and hand hole site or conduit trench are encountered, Contractor shall consult with BTCL about modification of drawing to be initiated.

14) Contractor shall dispose all excavated materials except what to be used for backfilling.

15) Contractor shall at all times adequately protect the sides of the excavation against cave-in. Sheeting and shoring supporting work shall be applied at contractor’s expense, where required by BTCL, and / or considered to be necessary.

16) Contractor shall confer with the proper road administrative authority and ensure that the proposed depth of manhole and hand holes, conduits conform to the final grades of carriageways and footways.

17) Contractor shall excavate insofar as possible to comply with the trench width requirements as detailed in the drawings given in Section 9. Any excess in this width, unless specifically authorized by BTCL, shall be at his own expense. This includes extra restoration expenses or pavements, macadam’s and /or tiles.

18) Upon completion of trenching, all manholes and hand holes which will contain metallic sheath cable shall be earthed as illustrated in the drawings given in Section 9. The trench shall be so arranged as to avoid any dip profile of conduit and be arranged with smoothly and gradually descending grade so as to terminate conduits at the specified location of the manhole and hand hole as shown in “outside plant construction drawings” which will be provided by contractor and approved by BTCL.

19) Contractor shall at his own expense protect and support any type of utility services like pipe, conduit, cable, wire or any other item of telephone and other services of foreign exposed or encountered during the excavation. Contractor is obligated to restore all times to their original conditions and to the satisfaction of BTCL and owners of such plants as shown in the “Outside plant construction drawings” which will be provided by Contractor and approved by BTCL.

Any disagreement/deviation of clause 7.21.2-7.21.4 will be treated as “Material Deviation” as per ITT clause 52.

7.22 Determination of Direction for Cable Placing

In order to avoid confusion for maintenance and future expansion, the structural direction of cable shall be determined as follows:

1. For Primary cables:
   From MDF to cross-connection cabinet

2. For secondary cables:
7.23 **Splicing**

The connector splicing with watertight, physically strong and practicable closure shall be applied to both primary and secondary cables.

The following splice case arrangements shall apply:

- Straight type
- Y type
- 4 way type
- 6 way type

The closure shall be re-enterable and allow changes of splice shape. It is advantageous to do with a small number of branching out on the distribution cable in case where the distance between two distribution points is short in order to minimize the splice points.

7.24 **MDF Cable Termination**

Cable Termination Capacity of MDF:

Maximum 1200 pairs to be terminated on vertical frame in the MDF.

7.25 **Manual and Drawing**

7.25.1 This Section specifies the manuals and drawings to be submitted by Contractor.

7.26 **Detailed Drawings and/or Plans**

7.26.1 Description and Requirements of Drawings and/or Plans

Description and Requirements of documents depending upon the size of the existing plant (conduit system, primary cable network, etc.) and the capacity of the plant, the documentation shall contain the following as applicable.

1) Subscriber Cable Network

a) Key map (Scale 1:10,000 & 5000)

A geographical map showing the exchange location and boundary, and the existing and proposed cabinets locations, boundaries numbers, and capacity and the existing and proposed primary routes.

b) Primary Cable General Plan (Not to scale)

A diagram indicating the approximate geographic location, relative to each other, of all cabinets and primary cables within the exchange area. Details shown include size, type, gauge, routing and length of each section between joints. Pair allocations, cabinet numbering, number of primary pairs.
terminated, spare or stub pairs terminated, and the cable type at each cabinet indicated on the plan for both, existing and planned networks.

c) Cable Chamber and MDF Allocation Plan

i) Cable Chamber (Not to scale)

A plan showing all of permanently installed racking cables, pothead joints, air blocks, air pipes and equipment within the cable vault. Each cable shall be individually identified.

The location of pothead joint, air block, air pipes, brackets and bearers making up the racking shall be shown as well.

ii) MDF Allocation Plan (Not to scale)

A diagram showing all verticals installed on the MDF and their respective block termination and related cables.

d) Manhole Racking Diagram

Detailed drawing showing type of Manhole, cable identification, inner dimensions of manhole, Conduit entrance formations (and designation to next MH), rack and support position, cable types installed, occupied Conduits, pair designation, allocation of joint positions.

e) Secondary Cable Plan (Scale 1:5000)

A geographic layout plan indicating cabinet locations, cabinet numbering, number of terminated primary and secondary cable pairs at each cabinet and DP locations, types and numbers.

Each route shall be shown cable sizes, type, gauge, jointing arrangements sections length of each cable, DP numbers and their type.

Each cable shall be shown separately. Cabinet and exchange boundaries shall be indicated. (Manholes, manhole numbers and conduit routes shall be indicated when occupied by secondary cable).

Secondary cable route shall generally be designed at 1:5000 scale, but in case of necessity and field condition of network areas, the plan for the secondary route will be drawn at any of 1:3000, 1:2500, 1:2000, 1:1000.

(2) Civil work

a) Duct System General Plan (Not to scale)

A diagram indicating the approximate geographical relationship of all conduits manholes, cabinets and risers with length’s measurements between them.

The numbers of ducts have to be indicated as well as the occupation, indicated by the cable types and their quantities (junction cable and other cables shall be indicated as well).

b) Civil Construction Drawing (Not to scale)

A geographical plan showing location, position, size and type of manhole, cabinets, duct and risers, section plan of road to lay the duct and the
Exchange boundaries. Also describe road name along the route respectively.

c) Special Detail Drawing

As an exception, where standard Manhole cannot be constructed, special Manhole shall be proposed and brief report shall be prepared and detailed construction drawings shall be shown as detailed.

d) Structure Drawings in Cable Chamber and/or Trench

Cable Chamber and Trench shall be designed with sufficient space available in inside for provision of future installation works, and detailed construction drawings shall be prepared showing the details of Cable Chamber and/or Trench.

e) Detailed Manhole Plan

Detailed construction drawings showing dimensions, steel and concrete specifications, reinforcing details racking, frame and cover hardware, duct entrance details, ladder, hooks/bolts or fixing details.

(3) All detailed design and drawings of the outside networks plans shall be done with AUTO CAD-2007 or latest version.

7.26.2 Size of Detailed Drawings and/or Plans

The sizes of paper shall be used as per standard as follows:

a) Detailed drawings and/or plans: A-1, A-2 or A-3.
b) Technical documents: A-4

A different size of paper from the above may be permissible to be used by contractor for his own drawings and documents or those for explanation to BTCL but those shall not be submitted as official drawings and documents.

7.26.2.1 Preparation of working Drawing/Plan and approval from Project Office.

The detailed design and drawings for implementation of the work will be supplied by Project Office. Based on that design and drawings Contractor should do field survey. After thorough verification, contractor shall finalize the working design and drawings and take necessary approval from Project Office. These working drawing will be used for implementation of the project.

7.27 As-built Drawings

7.27.1 As-built Drawings, Test Reports and Line Information Sheet.

Upon completion of the Provisional Acceptance Test and prior to issuance of the Provisional Acceptance Certificate, Contractor shall prepare the following As-built Drawings, Test Report, Line Information Sheet and any other technical documents if required as follows:

1) As-built Drawing
   a) Subscriber Cable Network
i) Key map
ii) Primary cable and cable jointing diagram
iii) Primary cable route diagram
iv) Cable Chamber and MDF Termination Diagram
v) Cabinet Layout
vi) Secondary Cable Route
vii) Secondary cable details (including joints)

b) Civil Work
   i) Conduit System General Diagram
   ii) Details of Manholes
   iii) Special Design Drawing
   iv) Structure Drawing in Cable Chamber and/or Trench
   v) Civil Construction Drawing

c) Any other special drawings.

All As-built drawings shall have to be drawn with Auto CAD 2000 or latest version. As-built drawings shall be directly printed from the computer using a good quality printer. Necessary approval should be taken from Project Office for sample of as-built drawings.

At the time of submitting as-built drawings, contractor should provide the soft copy of as-built drawings in CD to Project Office. As-built drawings thus delivered in CD must be editable under Auto CAD 2000 or latest version.

2) Test Report
   Contractor shall submit the test report for the electrical performance tests.

3) Line Information Sheet
   Contractor shall submit line information sheet with line connection information of the MDF, primary cable and secondary cable for each AGW.

7.27.2 Size of As-built Drawings, Test Report and Line Information Sheet.
   Contractor shall produce the following sized As-built Drawings, Test Report and Line Information Sheet:
   1) As-built Drawing
      Same size as that of detailed design and drawings and/or plans as specified in paragraph 3.2.2
   2) Test Report
      With size – A3 or A4
   3) Line Information Sheet size-A3.

7.27.3 Number of copies of As-built Drawings, Test Report and Line Information Sheet.
7.27.3.1 Prior to issuance of the Provisional Acceptance Certificate (PAT), Contractor shall submit the following numbers of As-built Drawings, Test Report and Line Information Sheet which have been signed by Project Office.
7.27.3.21) As-built Drawing
- One (1) set of original
- Two (2) sets of book-formed copies

2) Test Report and Line Information Sheets
- One (1) set of original format for both Primary and Secondary cables separately
- Two (2) sets of book-formed copies for both Primary and Secondary cables separately.

7.28 HDPE pipe specification

HDPE pipe shall be of following minimum standard and shall have to satisfy following technical specifications.
(a) The quality of offered HDPE duct is to be ensured by producing certificate which will be issued by available international/local standard organization such as ISO, BSTI etc.
(b) Specifications for 60 mm permanently lubricated HDPE Telecom ducts.

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<th>Item</th>
<th>Unit</th>
<th>Value</th>
<th>Test Standard</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Material Density</td>
<td>kg/m³</td>
<td>930 to 958 at 27ºC</td>
<td>ASTM D1238</td>
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<tr>
<td>2</td>
<td>Heat Reversion</td>
<td></td>
<td>Dimension shall not change by more than 3%</td>
<td>ISO2505/ASTM D1238</td>
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<td>3</td>
<td>Crash Resistance</td>
<td></td>
<td>Deflection with load not greater than 10%</td>
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<td>4</td>
<td>Tensile strength</td>
<td>Newton/mm²</td>
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<td>5</td>
<td>Elongation at break</td>
<td>%</td>
<td>Min. 350</td>
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<td>6</td>
<td>Environmental Stress Cracking Resistance (ESCR)</td>
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<td>Duct shall not crack or split</td>
<td>ASTM D1693</td>
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<tr>
<td>7</td>
<td>Impact Strength</td>
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<td>No crack or split</td>
<td>D2444</td>
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<td>8</td>
<td>Hydro Static Pressure Test</td>
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<td>No swelling, leakage or bursting</td>
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<td>9</td>
<td>Coefficient of friction</td>
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<td>10</td>
<td>Type of HDPE duct</td>
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<td>Spiral Ribbed</td>
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<tr>
<td>11</td>
<td>Lubricated Layer</td>
<td></td>
<td>Must have solid lubricant, clearly visible and white in color, uniform layer</td>
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<td>12</td>
<td>Lubricated Layer thickness</td>
<td></td>
<td>Should be minimum 10% of wall thickness</td>
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<td>13</td>
<td>Duct size (nominal)</td>
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<td>60 / 53 mm</td>
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<td>13a.</td>
<td>Outer Diameter</td>
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<tr>
<td>13b.</td>
<td>Wall thickness</td>
<td></td>
<td>3.5 ± 0.25 mm</td>
<td></td>
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<td>13c.</td>
<td>Minimum coil length</td>
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<td>500 meter</td>
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Any disagreement of serial number 10 & 13 (including sub-clauses) of above specifications of HDPE duct shall be considered as "Material deviation".

The tenderer shall submit user's certificate of satisfactory performance for a period of at least one year for the offered HDPE duct from at least two Telecom operators/carriers. The total amount of HDPE duct to be covered in the said certification shall be at least 50 Km. Name and address of the certificate issuing authority, certification date, name, designation and contact number of the signatory shall be clearly mentioned in the certificate. If the Tenderer fails to submit the said certificates or the submitted certificate(s) do(es) not fulfill the requirements mentioned in the clause, the Tender will be considered as having material deviation and will be declared as Non-responsive.

Appropriate non-metallic couplers will be used to join two pieces of HDPE duct for a locked and air sealed assembly and will be suitable for direct buried application. Couplers will be push-fit type and no other tools or heating will be required to use these couplers.

7.29 Direct Buried cable installation standard.

7.29.1 Selection of Cable route has great importance because the success of cable installation is very much depended on it. Cable route should be as short as possible and straight. Attention must be given to underground properties of other departments such as power lines, water lines, Gas lines and sewerage lines etc., which should be avoided as much as possible.

Road crossing should be avoided where possible especially if the course would be in an oblique direction. Railway crossing should also be avoided if possible.

7.29.2 Road cutting permission and necessary traffic clearance must be obtained from the concerned Authorities before digging the trench. All the information about the position of routes from other departments such as Electricity, Gas, Water and Sewerage etc. are to be collected. Attention to be given not to damage underground properties of other departments. All local utility distribution organizations be contacted, and if possible, accurate and up-to-date utility route maps are to be collected.

7.29.3 Prior to starting excavation work, the emergency contact numbers/address of all the utility distribution organizations should be obtained by contractor and notified to the BTCL Site Engineer in case of accidental damage during construction works.

7.29.4 An emergency repair team should be appointed by the contractor before commencing works. The team should be equipped to provide response and repairs to any accidentally damaged water lines, gas lines, sewerage pipes, or electricity cables, so as to causes as little disruption as possible if any accidental damage occur. The site supervisor should be notified of the emergency contact numbers/addresses of this team.

7.29.5 As a supplement to the above procedures and in case such accurate route maps are unobtainable, other precautions should be taken.
7.29.6 A good quality cable/metal detector may be employed, such the C.A.T (Cable avoidance Tool) Metal pipe and Cable locater. This should be switched to R mode, in which it will detect buried cables and metal pipes even though these cable/pipes carry no energy of their own. The device will also locate large metal objects, including steel reinforcement used in underground RC structures. The device should be used along the entire proposed trench route.

7.29.7 A further precaution should be taken by walking the trench route, looking for Cable or Pipe risers appearing from the Sewage Manhole Covers, Gas or Water Stop-tap covers, etc., or any other item including the presence of buried utilities.

7.29.8 Any item detected by the device or by observation should be investigated by digging pilot holes. If the item detected proves to be an obstacle to the trench route, a fresh route should be considered and investigated.

7.29.9 Pilot holes should be dug at regular intervals along the proposed trench line to check for any otherwise undetectable obstruction such as PVC pipes etc.

7.29.10 Buried cable shall be normally installed on the footway away from the carriage way.

7.29.11 The excavation of trenches shall be carried out in such a manner as to minimize the interference’s with existing pipes, cables, trees or any other underground objects.

7.29.12 The depth of buried cable measured from the top of the cable to the surface of ground or pavement shall be at least 100 cm. The trench shall be of sufficient width to permit adequate compaction of back-filling materials.

7.30 Size and type of trench excavation:

7.30.1 Trench wall should be vertical. Widths of trenches should be the minimum required to install Cable and protective bricks. Unnecessary disturbance of surrounding earth should be avoided whenever possible. Minimum Depths of Secondary Cable should be 100cm.

7.30.2 Although armored secondary Cables are normally Directly Buried in trenches, there are certain circumstances where special arrangements have to be made. These include:-

7.30.3 Where the secondary Cable follows the primary Route from CCC or manhole, the Cable should be pulled inside an appropriate sized PVC conduit (i.e. 110mm) which should have been installed during primary conduit construction work.

7.30.4 Such secondary conduits are treated as supplementary when calculating Manhole sizes or the need for concrete encasement. They are normally laid on top of the primary conduit configuration. Multiple Cable occupancy of such conduits is allowed.

7.31 Jointing Pits

7.31.1 Jointing Pits should be dug to facilitate jointing work on Direct Buried Cables. The dimensions of these pits should be the minimum required for the jointing technician to carry out his work without difficulty.
7.31.2 Suitable brick chamber shall have to be constructed for placement of joint for direct buried cables. In case of joints up to 100 pairs cable, 2 (two) concrete slab (1:2:4) of size 50cmx25cmx8cm shall be placed over the brick chamber and same number of concrete slab (1:2:4) of the size 50cmx30cmx8cm shall be used for more than 100 pairs cable joints.

7.31.3 Successful Bidder shall submit the diagram of cable jointing Pits to Project Office and take approval before execution of any jointing works on Direct Buried Cables.

7.31.4 After the placing of cable, back-filling with sand shall be carried out with adequate compaction up to the ground level for the Asphalted road, RCC road, CC road, Brick road, paved footway and Asphalted carriage way. But back filling in the soil (kaccha) road is to be done up to the depth of 45 cm with sand from the top of the cable and the rest depth with the excavated materials (as per Trenching Diagram, Drawing No. 9.2.1 of Section-9).

7.31.5 Trench shall be promptly back-filled. The back filling shall be carried out in layer’s not exceeding 20cm in thickness. Each layer shall be well-compacted with adequate watering, before the sand for next layer is placed. Back filling for trench on Asphalted carriage-way or paves footway shall be in accordance with the special specifications of the roads Authorities concerned. But it should be approved by Project Office.

7.31.6.1 Trench shall be restored in accordance with the specifications of the Road Authorities concerned.

7.32 MDF Cable Termination Standard

7.32.1 Primary cable

(1) Primary cables for subscribers shall be spliced to tip cables with moisture damming in the cable chamber, trench, or MDF room standard.

(2) The tip cables shall be terminated to the Main Distribution Frame in alphabetical or numerical order of the cable name.

(3) In general, termination splice shall be vertically or horizontally mounted in the cable chamber, trench or MDF room.

(4) The shields of cables shall be bonded to the grounding system at the exchange by suitable method.

(5) Shield to tip cable, if any, shall be bonded to the shield of primary cable.

(6) The pairs in the tip cable shall be wrapped to the protector terminals or shall be fixed by adequate means, so as not be loosened easily.
7.32.2 Cross-Connection Cabinet Installation Standard

The outside dimension of the cabinet shall be of length 750mm, width 320 mm and height 980mm. Foundation base shall be constructed with reinforced cement concrete to fix the cross connect cabinet properly. The contractor shall propose the design of foundation base for approval of Project Office. The following points shall be considered for the base foundation of cross connect cabinet.

a) The foundation pit is dug according to the specified capacity of cabinet.
b) The height of the cabinet base should be 50 cm from the finished ground level. The height may vary in some special cases i.e. flood area, marshy land etc. which will be decided on mutual agreement.
c) Construct the base of the cabinet with one layer of brick flat soling and on the top of it construct RCC of thickness 15cm with coarse aggregate (stone) of below 25mm.
d) Construction of wooden/steel framing and iron/reinforcement.
e) Pouring of concrete with care (mixture rate: cement 1: fine aggregate 2: coarse aggregate 4.)
f) Rising conduits
Install four 4 (four) number 110mm PVC conduits by arranging the rising part of conduits horizontally to face the front of cabinet with the rising parts projected about above the ground and with PVC conduits.

7.32.3 The cross-connection cabinets shall be placed on the footway away in general. The locations shall be carefully decided so as to minimize the public inconvenience and to avoid damage to cabinets by third parties.

7.32.4 Approvals of Project Office and other authorities concerned shall be confirmed prior to placing the cabinet at site.

7.32.5 All cabinet shall be protected by suitable grill against pasting of advertising and hand bills. The grills shall be made of MS bar and properly fixed on the base of the Cabinet.

7.32.6 The cabinet foundation shall be setup horizontally and along the road.

7.32.7 The cabinet shall be firmly bolted to the foundation. If the cabinet is 20m away from the manhole, a hand hole will be constructed in the face of the cabinet with the consent of Project Office. The cabinet shall be connected with manhole by 2 (two) PVC pipes of 110mm nominal outer diameter and 5.0 mm wall thickness, for inlet/outlet of cable.

7.32.8 A suitable grounding rod shall be installed for cabinet grounding. The cabinet shall be bonded to the grounding rod. The depth of grounding rod measured from top of rod to ground surface shall be more than 80cm.

7.32.9 The PVC pipes whether vacant or occupied shall be sealed at cabinet end and manhole end/ handhole end by rubber plugs or water proof compounds.

7.32.10 The shields of all cables terminated in the cabinet shall be bonded to the grounding tag of the cabinet or grounding rod.

7.32.11 The followings shall be durably stenciled on the cabinet door:
OSP | AGW of 171 KL Project

(1) BTCL
(2) The name of exchange
(3) The cabinet number

7.32.12 The durable cabinet card holder shall be attached to the inside of the cabinet door and shall be weather protected. The cards shall indicate the cable name and pair number of terminal blocks.

7.33 Distribution Point (DP) Installation Standard

7.33.1 Distribution Point shall be of the following types:

(1) Pole-mounted type without protector for buried cable/conduit cable application.
(2) Wall-mounted type use for buried/conduit cable application on the wall of building.
(3) Internal type used for the termination inside the building.

7.33.2 Distribution point shall be firmly fixed on pole or wall by means of suitable stainless steel tape binder.

7.33.3 When installing the distribution point on the wall or inside the building, contractor shall obtain permission from the owner of the building prior to the installation.

7.33.4 When riser cable is terminated to the terminal blocks on the pole or wall-mounted distribution point, the cable termination side of terminal blocks shall be sealed off with a suitable water proof compound after cable termination.

7.33.5 The following clauses shall be clearly and durably stenciled on the cover of the distribution point.
   - Exchange name or its abbreviation
   - Cabinet number or primary cable name
   - Distribution point number

7.33.6 The numbering of distribution points shall confirm to that of every 10 (ten) pairs of terminal blocks in the cross-connection cabinet.

7.33.7 Pole-mounted distribution point shall be placed at a location higher than 4m above the ground.

7.33.8 Wall-mounted distribution point shall be placed at a location higher than 1.5m to 3m from the ground, wherever possible.

7.33.9 When distribution cable is terminated on pole or wall-mounted distribution point, the shield of the cable shall be bonded to the grounding tag of the distribution point.

7.33.10 The internal distribution point shall be installed inside the building subject to the consent of the owner.

7.33.11 The location of internal distribution point shall be dry and provided with good illumination.
7.34 **Splicing Standard**

7.34.1 Splicing of Metallic Cable

1. All cable splicing work shall be performed in strict conformity with the standards and/or practices approved by Project Office. Tenderer shall submit the details of splicing method and splice closure in this connection.

2. When the existing cable, if any, will be spliced to another existing cable or a new cable, the existing pairs shall be verified and tested for continuity and insulation resistance prior to splicing. The test data shall be recorded.

3. Lead sheaths or shields of cables on both sides of splice closure shall be connected electrically.

4. In general, cable sheath opened for splicing shall be completely closed with water proof splice closure before the stoppage of work for the day, unless cable sheath is temporarily closed by an approved method.

5. During splicing caution shall be exercised not to damage the working joint closures.

6. Arrangement of non-spliced pairs in the cable shall be always done in the splice closure by a suitable method approved by Project Office.

7.34.2 Twisting

The insulated conductor shall be twisted into pairs.

7.34.3 Stranding

1. Twisted pairs shall be assembled in such a way that it can be easily identified and counted based on basic color code.

2. The cable shall be fully color coded by the use of basic color scheme which provides different color combinations of insulation for each pair in a 25/10 pair sub-unit, together with colored bindings to distinguish individual groups form each other.

7.35 **Tip Cable**

7.35.1 General

This requirement covers for the tip cable for subscriber cable to be terminated on the MDF of subscriber cable Plan. Project Office will supply Tip cable and contractor will collect it from the factory gate of BCS, Khulna.

7.35.2 Conductor

Each conductor shall consist of a solid wire of commercially pure annealed copper, smoothly drawn, circular in section uniform in quality and free from all defects, uniformly coated with pure tin, and having a diameter of 0.5 mm.
7.36 Cross-Connection Cabinet

7.36.1 General:

1) The specification covers the requirements of Cross-Connection Cabinet (hereafter referred as CCC), is to be used in the Outside Plant telephone cable network as a junction point between the primary underground cables and the secondary underground or aerial cables. This outdoor type Cross-Connection Cabinet shall be feasible to be installed on concrete foundation on footway.

2) The Cross-Connection Cabinet shall be able to accommodate 700 pairs (single door), of cables required for termination of both primary and secondary cables

1) The cabinet shall contain the vertical framework or mounting channels, which shall be suitable for mounting necessary columns and rows. It must have a provision of grounding point to connect the aluminum screen of the cable sheath. The vertical framework or mounting channels must be suitable for fixing CT module separately.

4) Suitable foundation bolts (J or Lewis type) and accessories shall be designed and provided for bolting the cabinet to foundation base of concrete. There shall be at least 6 (six) foundation bolts for each cabinet. Foundation bolts shall be provided with washer.

7.36.2 Cabinet Housing

1) The Cabinet housing shall be made of weather proof fiber reinforced surface plastic moldings and be provided with hinge door(s) for access.

2) The housing shall have long life and be of high quality to withstand the ambient temperature and conditions in Bangladesh. The color of coating of the housing shall be gray.

3) The frame of housing shall be carefully structured to avoid any strain of wrap. The door(s) of housing shall be always open and close smoothly and shall not deteriorate with age.

4) The mechanical requirement for the fiber-reinforced plastic shall not be less than 100 N/m² in bending strength and 200 N-cm/cm² in impact strength.

5) The door shall be securely fixed to the housing with a locking device, which does not permit access of handling or opening the door by outsiders.

6) The suitable ventilation holes to avoid dew condensing inside shall be provided and covered by dust and vermin-proof filters. These holes shall not allow any raindrops to penetrate inside.

7) The housing shall be protected from the moisture infiltration from the conduit opening by sealing cable entrances either with anti-vermin urethane foam compound or rubber cap.

8) The racks for terminal blocks shall be mounted tightly and the entrance cable support and jumper wire rings shall be provided. The earth tag shall also be provided.

9) There shall be adequate provision for supporting and guiding jumper wires all around the built in rack, and between the C.T. Blocks. Necessary support shall also be provided for holding primary & secondary wires. These supporting arrangements should be rigid, tough.
and of adequate strength and may be metallic or non-metallic.
10) Bidders shall state the details of the cabinet housing with drawing in his tender proposal.

7.36.3 Expected life.

1) The CCC and its accessories shall be designed to meet the average life expecting of about 20 years without serious degradation of the performance or reliability of the product while installed and exposed completely to the open environment.

2) The CCC and its accessories shall be capable of maintaining its performance for 24 hours daily throughout the year under the following climatic conditions:

   I. TEMPERATURE : - 10° C + 55° C
   II. HUMIDITY : - Relative humidity (R.H) up to 100% within the temperature range 0°C to 40°C and up to 75% RH at temperature above 40 degree centigrade.
   III. DUST : - With a built-up of dust on operational surfaces to a level, which may occur because of imperfections in sealing of housing.
   IV. ALTITUDE : - At any altitude of Bangladesh.
   V. WIND-PRESSURE : - The CCC shall be able to withstand to wind pressure of 110 kg.f/sq.m
   VI. ULTRAVIOLET RAY : - The materials of the CCC, their strength and appearance shall not be affected by ray exposure.

2) Tendered shall state the details of the cabinet housing with drawings in his Tender Proposal.

7.36.4 Termination module of CCC

7.36.4.1 General.

Both primary and secondary cables shall be terminated in the cable termination modules (here after referred as CT modules) fitted in cable termination blocks (C.T. Block), mounted in the vertical channels of CCC. Interconnection between primary and secondary cables shall be done by jumper wires.
7.36.4.2 Size of C.T. block/module.

The C.T. block shall be of 100 pair type consisting of 10 C.T. modules. Each C.T. Module shall be of 10 pair terminal tags. Terminal pair shall be in a form of column where as C.T. block will be constituted by 10 rows of C.T. Modules.

7.36.4.3 General requirement for C.T. Block.

1) Ten numbers of ten pair C.T. modules constitute a C.T. block. The C.T. blocks are mounted on the mounting vertical channels or frame works of CCC.
2) The C.T. Module shall be gripped to the frame of the C.T. block and held at securely in its place during the removal of jumper wires.
3) C.T. blocks and modules shall be easily accessible after installation.
4) There shall be one label holder of each C.T. block at the top portion.
5) C.T. blocks shall be mounted on the frame with the help of proper screws to hold the block tight vertically.
6) The cable entry slots or points in C.T. block shall have a lining of rubber or equivalent material to protect the cables from damage.
7) Hard transparent removable cover to the C.T. block shall be provided to protect C.T. modules from dust.

7.36.4.4 General requirements for C.T. modules

1) The terminal modules (C.T. modules) shall be moulded of high insulation, low moisture absorption, flame retardant, high impact strength material and high resistance to physical and solvent stresses. They may be of Fiber-glass reinforced polycarbonate /Polyester UL94-V0.
2) The terminal Tag (Contact elements) housed as stated above shall be designed for both side connections, one for termination of cable and other for termination of Jumper wire. It also shall have a test access point from the front.
3) Each terminal module and terminal pair shall be marked with point number 0-9 or 1-10.
4) Every C.T. Module must have guide for jumper wire. The wire guide should be open-able and, wire direction shall be left 10pr, right 10pr, or both sides each 5pr divide. The wire, guiding channel of the C.T. Module for pair termination shall be free of sharp edges. The size of the guide shall be adequate to accommodate to number of jumper wire with over all dimension of 1.3 mm.
5) Each C.T. module shall be ready for termination of the wires (i.e. incoming cables and jumper wires) and the connection shall be of IDC (insulation displacement connection) type.
6) The terminal tag shall be of insertion type.
4) The supplier is required to provide the cable terminal tool including sources of supply. The cable terminal tool shall not damage the wire insulation at the use and have a provision to indicate the user that pressure applied is adequate and proper connection has been made.
5) Detail shall also be provided for construction and mounting practices employed throughout the equipment. Installation technique shall be described.
6) Contact element shall be made of nickel or chrome or tin plated brass or high strength phosphor bronze with anti-corrosion or equivalent approved materials with appropriate coating used for IDC method. The supplier shall provide all the details as connection along with the test certification.

7) Each of CT modules must be fixable separately inside Cabinet.

8) The ground terminal is an integral part of the magazine and provides the connection to the mounting bracket.

7.36.5 Identification
The housing shall carry the following identification on the door (s) with a durable and indelible manner.

a) BTCL
b) Name of Exchange
c) Cabinet number

7.36.6 Cabinet Card
A durable cabinet card to record any identify the following information shall be furnished and retained inside pocket of the door(s).

a) Cable names and their code
b) Cable size
c) Pair allocation and pair number of terminal blocks and jumper termination.

7.36.7 Packing
The cabinet and terminal blocks shall be shipped securely packed in separate wooden boxes, clearly marked with the manufacturer’s designation and quantity.

7.37 Galvanized Steel Pole
7.37.1 General
The pole should be made of Galvanized steel.

7.37.2 Galvanizing
Steel pole shall be hot dip galvanized conform to ISO 1460-1973 (E), or equivalent.

7.37.3 Structure
Steel pole shall mainly be of round type with suitable ration of taper between top and bottom parts (as per the design supplied by Project office) or any other type prior approval from Project office.

7.37.4 Size and Load Strength
Steel poles shall be able to withstand a working load of not less than the value specified below at 0.5m from the top of the pole at right angle.
The followings shall be required on each pole.
<table>
<thead>
<tr>
<th>Whole Length (m)</th>
<th>Load Strength (kgf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0</td>
<td>200</td>
</tr>
</tbody>
</table>

The total height of the pole shall be 7m. The lower part of the pole shall be made of cast iron with proper bitumen coating for protection against rust. The upper part of the pole shall be made in segments with Galvanized steel. The socket shall be threaded firmly to the sole plate which shall be made of cast iron.

The sheet thickness of the different segments of the pole shall be 1.83mm to 2.43mm.

The cast iron socket shall be provided with one hole 33cm above the bottom for cable inlet and another hole 40cm below its top position for water outlet. Distribution Point Box shall be fixed at about 1 meter below the top of the post and one hole shall be provided near the DP Box position for cable outlet. Bracket made of Galvanized steel having length about 70cm with holes for fixing it with the post by U back and saddle shall be provided below the DP Box. Traverse with about 10 holes shall be provided near top of the post for subscriber loop line. This shall be fixed with post by U backed saddle.

7.37.5 Other Treatment

Steel pole shall be treated with followings:

1) Top and Bottom Cap
   Steel pole shall have suitable caps on the top and bottom parts of the pole.

2) Anti-corrosive Paint
   Steel pole shall be treated by suitable paint for protection against corrosion at the part of that;
   - 50cm above the ground surface, and
   - 50cm below the ground surface, after complete installation.

3) Identification Plate
   Identification plate stenciled with followings shall be provided on the suitable part of the pole surface.
   - Size and load strength
   - Year of manufacture
   - Name of manufacture

7.38 Splicing Closure and Connector for Metallic Cable

Splicing Closure

7.38.1 General

1) The joint closure shall be heat shrinkable, and suitable for installation in cable chamber, manhole and direct burial installation. The joint closure including its all accessories shall be procured from a renowned manufacturer.

2) The sleeve material is a reinforced composite laminate with an integral metal barrier. Its outer surface is treated with a temperature-indicating system.
to facilitate uniform heating during installation. In addition, white lines are painted on the flat side of the rails which become visible through the channel openings as installation is completed.

3) The sleeve and the flap are pre-coated with a hot-melt adhesive which will seal the closure seam and bond the sleeve to the canister and the cable sheaths during installation.

4) The joint closure shall allow branch joints with maximum of 3 (three) cables at each end of the closure.

5) The joint closure shall be applicable for jointing of same or different types /sizes of cables.

6) The closure has to protect the joints from:-
   - Ultraviolet break down
   - Insects and Dust
   - Entry of water

7) The joint closure and the relevant accessories shall consist of anti-corrosive materials and materials resistant against acid, oil, pollutant etc.

8) The joint closure shall have mechanical strength to withstand tensile, compressive, bending and torsion stresses expected in normal conditions.

9) Jointing materials manufactured before more than one year, shall not be accepted.

7.38.2 Life expectancy

1) The closure shall be designed for an expectancy of at least 20 years without any serious degradation of the performance or reliability when installed and exposed completely to the open environment.

2) The closure shall be capable of maintaining its performance for 24 hours daily throughout the year under the following climatic conditions
   - Temperature: -10 degree C to +55 degree C
   - Humidity: Relative humidity (RH) up to 100% within the temperature of 0 °C to 40 °C and 80% RH at temperature above 40 degree centigrade.
   - DUST: Dusty environment.
   - Altitude: At any altitude of Bangladesh.
   - Wind-pressure: The enclosure shall be able to withstand the wind pressure of 100 kg f /sq.m.
   - Ultraviolet-ray: The enclosure should not be affected any way by ultraviolet ray exposure.

3) Moisture-vapor transmission rate (ASTM F1249)
• Test temperature: $(23 \pm 3)^{\circ}C$
• Sample: $10 \times 10$ cm
• Duration: Until stabilization
• Result: $\leq 0.03$, gm/m²/24 hrs

4) The tightness of installed closures shall be checked by pressurizing to 40 kPa for a period of 15 minutes while immersed in water at room temperature.

7.38.3 Contents and specifications of the closure assembly:

1) The cable joint set shall have the following kit components:

- Enclosure body (heat-shrinkable)
  - Shield bond connector
  - Flexible stainless steel channel
  - Metallic canister
  - Desiccant (silica gel)
  - Aluminum cable foil
  - Compound sheet
  - Inner liner
  - Tie.wraps: 2pcs
  - Cleaning tissue
  - Installation instruction
  - Abrasive strip
  - Marking paper
  - Sealant strips
  - Filling compound

The bidders shall supply any other additional components if required for proper jointing works.

2) The heat-shrinkable closures of the size 43/8-250, 75/15-500, 92/25-500, 122/30-500, 160/42-500, 200/50-500 and 200/50-720 shall be applicable for the enclosing of 10 to 40 pairs, 50 to 150 pairs, 200 to 500 pairs, 600 to 900 pairs, 1000 to 1200 pairs, 1300 to 1500 pairs and above 1500 pairs of Jelly-filled cable. (If any required) Contractor shall provide his own classification of the closures in accordance with Cable gauge.

<table>
<thead>
<tr>
<th>Size</th>
<th>Cable splicing</th>
<th>Compound (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>43/8-250</td>
<td>Up to 40 pears</td>
<td>1,000</td>
</tr>
<tr>
<td>75/15-500</td>
<td>Up to 150 pears</td>
<td>1,500</td>
</tr>
<tr>
<td>92/25-500</td>
<td>Up to 500 pears</td>
<td>2,000</td>
</tr>
<tr>
<td>122/30-500</td>
<td>Up to 900 pears</td>
<td>3,000</td>
</tr>
<tr>
<td>160/42-500</td>
<td>Up to 1,200 pears</td>
<td>4,000</td>
</tr>
</tbody>
</table>
The branch-off clip kit should be supplied with necessary accessories such as shield continuity clip; metallic foil, Tie-wrap, cleaning tissue etc.

7.38.4 Enclosure body
1) The enclosure body shall provide easy access for inspection of the joints without disturbing to joint.
2) The enclosure shall be designed to enclose, and provide physical and environmental protection to the joint.
3) The enclosure body made of weather and ultraviolet-ray resistant durable plastic material.
4) The enclosure shall be designed in such a way that no rainwater shall enter the joint either from enclosure body or from the end caps or end seals through the surface of cable.
5) The enclosure shall have to correct shrink ratio in accordance with the used cable and joint dimensions.
6) The thickness of enclosure body shall not be less than 1.3 mm.

7.39 25 Pair Modular Connector.
7.39.1 General
1) The 25 pair modular connector is used for connection of polyethylene insulated copper conductor of size 0.4 mm to 0.8 mm in diameter of underground jelly filled cable in the manhole. The modular splicing connector shall consist of a base, a body and a cover. The connector body shall contain staggered insulation displacement contact elements and wire cut-off blades. The connection system shall be designed in such a way that wires need not be stripped, as the insulation displacement connection metallic element displaces the insulation, trims the protruding wire and makes a watertight connection to the conductor.
2) 25 pair modular will be applied in principle to joints of 150 spliced pairs or more, 2-wire connector is suitable for splicing from 10 pairs to 100 pairs.

7.39.2 Scope
1) This specification covers detailed requirement for the 25 pairs modular straight splicing connector, half tap module T-joint connector and bridging joint to join copper conductors with Polyethylene insulation of telephone underground cable.
2) General description of Splicing rig equipment and other necessary tools, have also to be given in this specification.
3) This specification covers the technical provisions governing the supply of materials but does not include all the provisions of commercial contract.

7.39.3 2-Wire Connector
1) The connector shall be of mechanical press-together crimping type with double element designed to joint two conductors in one operation, using suitable connector pliers (crimping tool).

2) On crimping the double element of the connector shall make electrical connection at two points of less than 1 milliohm contact resistance to any conductor ranging from 0.4 mm to 0.9 mm.

3) The connectors shall be suitable to joint conductors with any type of insulation up to maximum outer diameter of 2.00 mm.

4) The connector shall be of such appropriate dimensions that they shall be suitably accommodated in standardized sizes of heat shrinkable joints.

7.40 Warning Tape

The warning tape shall be made of polyethylene tape having width of approximately 15cm and minimum thickness of 0.15mm and shall be supplied by the contractor. The tape shall be yellow in color and shall be durably printed with the letter monogram indicating telephone cable of BTCL and attention at intervals of 1 meter, as follows:

Monogram of telephone set
BTCL/বি টি সি এল

7.41 Grounding Materials

General

The grounding materials shall consist of grounding rods (electrodes), grounding wire and clamps. Contractor shall have to supply grounding materials from local market.

7.41.1 Grounding Rods (Electrodes)

1) The grounding rods shall be composed of one or two pieces of solid steel rods which are circular in section, and shall meet the following requirements:
   a) To be sufficiently anti-corrosive.
   b) To have sufficient mechanical strength to be resisted being driven vertically into hard soil, and
   c) To have Low resistance when installing underground.

For these requirements, it shall be allowable if the steel rod is welded and covered with copper having sufficient thickness in circular section.

2) The grounding rod shall have the following device or functions:
   a) In case of a coupled type of grounding rods, the couplings shall have a mechanical strength corresponding to that of rods and shall give durable electric contact with an electrical resistance of not more than 100 milli-ohms.
   b) Protective cap so as not to deteriorate and deform the rod-head, when hammering the rod into the ground.
c) Lead wire to be connected or adaptable to the top of the rod shall be provided. The quality of the lead wire shall be equal to or better than the grounding wire as specified in Paragraph 2.12.3.

d) The length of grounding rod used for a station protector or other plants shall be more than 550mm or 1,200mm respectively.

3) Tenderer shall submit the specifications of proposed grounding rods in the Tender Proposal.

7.41.2 Grounding Wire

1) The single wire required for grounding and bonding to all grounding systems shall be as specified in this Paragraph.

2) The single wire shall be composed of a single solid copper of minimum 1.6mm diameter and shall be insulated.

3) The copper wire shall be covered with green colored polyvinyl chloride or equivalent, of at least 0.8mm thickness.

4) The finished wire shall meet the following electrical requirements:

   a) Maximum conductor resistance at $20^\circ$C : 9.0 ohms/km
   b) Minimum insulation resistance : 60 meg ohm/km
   c) Dielectric strength: To withstand 500 volts DC for one minute.

7.41.3 Grounding Clamps:

1) The numbers and types of grounding clamps required for connection between grounding wire, electrodes and grounding or bonding objects shall be so designed and manufactured as to have low transition resistance.

2) The grounding clamps shall be made of galvanized steel with zinc coating of approximately 550 g/m or more.

7.41.4 Packing

1) The grounding rods shall be packed in bundles or cartons

2) The grounding wire shall be supplied in coils of 300 meters in length.

7.42 Continuity Test

1) Continuity test shall be performed by means of the followings:

   a) At the time of the IIT:

   All the number of cable pairs and cable shields shall be tested. Cross-talk test with 1 KHz oscillator and receiver shall be performed for every combination in each 10 pair sub-unit of all primary cables and secondary cables. If a sound is heard, Near-end cross-talk attenuation loss shall be measured and repaired and corrected to not less than 60 dB at 1 KHz.

   b) At the time of the PAT:

   Generally, the number of cable pairs and cable shield to be tested is on a 10 percent random sampling basis.

2) The test result should confirm that cables are free from ground, short, open, reverse, cross, split and transposition.
7.42.1 Insulation Resistance Test

1) Insulation resistance shall be measured by completely steady 500 Volts DC after electrification.

2) Insulation resistance test shall be performed by means of the followings:
   a) At the time of the IIT:
      If the results of continuity test specified in Paragraph 3.6.2 are satisfactory, the insulation resistance test shall be performed on ten (10) percent pairs of the Primary and Secondary Cables, and pairs sampled shall include a pair in each 10 pair subunit.
   b) At the time of PAT:
      Ten (10) percent sampling of Primary and Secondary cables but on different pairs from the pairs tested at the IIT, and including the stumped pairs in the Primary and Secondary Cables.

3) Measured insulation resistance shall not be less than 500 mega-ohms/km for new cables and 50 mega-ohms/km for existing cable, respectively.

7.42.2 DC Loop Resistance Measurement

1) DC Loop resistance measurement shall be performed on one (1) pair in each one hundred (100) pairs for each Primary cable.

2) Measured DC Loop resistance shall not exceed the values to be calculated based on the values as shown in Table 3.6.1

Table: Loop Resistance

<table>
<thead>
<tr>
<th>Conductor Diameter (mm)</th>
<th>Loop Resistance per kilo-meter at 20(^0)C (ohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4</td>
<td>290</td>
</tr>
</tbody>
</table>

Temperature correction for measured values shall be made if required.

7.42.3 Resistance Unbalance Measurement

1) DC resistance measurement shall be performed on the same pairs specified in Paragraph 3.6.3 (1).

2) DC resistance unbalance between individual conductors of each pairs shall not exceed 3% of DC loop resistance and average value for all measured pairs shall not exceed 1%.
7.42.4 Insertion Loss at 1 KHz

1) Insertion loss measurement at 1 KHz shall be made of 2 pairs of each primary cable in furthest cabinet.

2) Each measured insertion loss shall be within 10% of the calculated value of each pair. Temperature correction shall be made, if required.

7.43.0 Technical Specifications of Test Instruments

7.43.1 GENERAL

Bidder shall propose test equipments and special tools for O.F. splicing for installation, operation and maintenance of the optical fiber network. The bidder shall quote the number of quantity as mentioned in schedule BoQ.

All test equipment shall be from well-reputed manufactures with guarantee for calibration and repair maintenance services preferably in Bangladesh for a period of 10 years from the date of signing of agreement.

The contractor shall supply original complete software in CD including operating system, Instruction, Operation and User manuals for the test equipment.

The contractor must submit document/brochure of test equipment with adequate technical details and offer must be clearly mentioned which module and software option had been included in the offer, so that BTCL clearly evaluate whether the offer meets BTCL specification.

7.43.2 OPTICAL TIME DOMIAN REFLECTOMETER (OTDR)

The proposed Optical Time Domain Reflectometer shall be JDSU MTS-6000 or Equivalent or better or new version of the specified model. It shall be Long Ranged and Plug-in Module with both FC and SC interfaces.

The bidder shall quote the price of the test equipment as per BoQ.

The features and the specifications are given below.

(a) Main Characteristics:

1) Wavelength : 1310nm to 1550nm
2) Span : 0.1km to 200km
3) Internal memory capacity : At least 250 traces.
4) Display : TFT Color, 8.4 in LCD, 88x600, high visibility
5) Output Power at source mode : -3.5 dBm
6) Optical Interfaces : Both FC and SC.
7) Input Power : 100 – 240 volt AC, 50Hz – 60Hz
8) Internal Battery : Re-chargeable Li ion type
9) Environment : Temperature: 0⁰-50⁰C, Humidity: Max 95% non-condensing
10) Dynamic range : 40db minimum
11) Battery Back-up : Minimum 6 hours.
12) Laser safety : Class 1M laser.

(b) Operating Modes:
1) OTDR Mode
2) Fiber break locator mode
3) Source mode

(c) Others: All other essential hardware and software for successfully operating and maintaining the test equipment shall also be the part of the specification of the proposed test equipment.

7.43.3 FUSION SPLICING MACHINE

The proposed fusion splicing machine shall be FUJIKURA Model FSM-80S or Equivalent or better or new version of the specified model along with fiber optic cleaver [FUJIKURA Model CT-30 Series or Equivalent or better or new version of the specified model], stripper and other accessories.

The following features of the fusion splicing machine shall be included:

1) Applicable Optical Fibers
2) Fiber count : Single
3) Type of fiber : SM (ITU-T G.652D)
   : MM (ITU-T G.651)
   : DS (ITU-T G.653)
   : NZDS (ITU-T G.655)
4) Fiber dimensions
   Cladding diameter : 80 to 150 μm with standard fiber clamp
   Coating diameter : 100 to 1000 μm
Cleave length: 8 to 16mm with coating diameter of 250 μm or less

: 16mm with coating diameter of 250 to 1000 μm

Splicing Modes / Tube Heating Modes / Display language: Splicing mode

5) AUTO: Automatic fiber identification (SM/MM/DS/NZDS)
6) SM: Single mode fiber (ITU-T G.652D)
7) MM: Multi mode fiber (ITU-T G.651)
8) DS: Dispersion shifted fiber (ITU-T G.653)
9) NZDS: Non-zero Dispersion shifted fiber (ITU-T G.655)
10) AT1 / AT2: Attenuation splices modes
12) No. of splicing mode: 100 modes (programmable 40 / data base 60)
13) No. of heating mode: 30 modes (programmable 10 / data base 20)
14) Display language: English
15) Splicing Performance:

   Typical splice loss (measured by cut-back method relevant to ITU-T standards)
   SM (ITU-T G.652D) : 0.02dB
   MM (ITU-T G.651) : 0.01dB
   DS (ITU-T G.653) : 0.04dB
   NZDS (ITU-T G.655) : 0.04dB

   Return loss: 60dB or greater

   Typical splicing time: 7sec, 12 sec: Auto mood, 15 sec: Auto mode

16) Heating performance

   Typical tube heating time: 35sec. with FP-03 protection sleeve

17) LCD monitor / Viewing Method

   Monitor: 5.6 inch TFT color LCD monitor
   Magnification: 295x for single X or Y view 147x for X and Y view

   Two operation styles: Front monitor / Top monitor selectable
18) Storage of Splice Results

No. of splice memory: 2000 splices

Data stored: Date, Splice mode No./title1/title2, error message, estimated splice loss, cleave angle, axial offset, cleave angle threshold, estimated splice loss threshold, arc power, arc time.

19) Arc power calibration

Real-time arc calibration: With AUTO splice mode, arc power should be automatically calibrated real-time by feedback control with cladding illumination observation.

Automatic arc power calibration: For SM/DS/NZDS/MM splice modes, automatic arc power calibration function should be available.

In-line Proof Tester

Proof load: 1.96N (200gf) / 4.41N (450gf) option

Power Supply

AC: ADC-18 14.8V/ 100V to 240V, 50Hz to 60Hz

DC: ADC-13/ 10V to 15V

Detachable Battery-09

No. of splice/tube heating per full charge: 60

Terminals

USB.1.1 (USB-B type) or 2.0: For PC communication

Environment

Operating conditions: -10 to + 50 degree C / 0 to 95% RH (Non-dew) /0 to 5000m.

Storage conditions: -40 to + 80 degree C / 0 to 95% RH (Non-dew)

Wind protection: Up to 15m/s (33mph)

Sensors for compensation: For Atmospheric Temperature and Pressure.

The bidder shall quote the unit price of the test equipment.
7.43.4 Light Source

The proposed light source shall be of JDSU OLS-35 model or equivalent model of world renowned North American/European Union/Japanese brand. The proposed equipment shall satisfy following minimum requirements:

Mode: Single mode light source
Source type: LASER
Wavelength: 1310 & 1550 nm
Spectral width: < 5 nm
Output Power: -7 dBm or more
Short term stability: ± 0.02 dB
Long term stability: ± 0.05 dB
Optical Interface Connector: FC/PC

7.43.5 Optical Power Meter

The proposed light source shall be of JDSU OLP-34 model or equivalent model of world renowned North American/European Union/Japanese brand. The proposed equipment shall satisfy following minimum requirements:

Detector type: Germanium/InGaAs
Wavelength Range: 800 to 1600 nm
Calibrated wavelengths: 850, 980, 1300, 1310, 1490 & 1550 nm
Power Range: -60 to +5 dBm
Display Range: -60 to +10 dBm
Maximum input power: +10 dBm or more
Measurement units: dB/ dBM/ W
Absolute Uncertainty: ± 0.2 dB
Linearity: ± 0.06 dB (-50 to +5 dBm)
Optical Interface/ Connector: Universal 2.5 mm/1.25 mm

7.43.6 Optical Variable Attenuator:

Attenuators are used in fiber optic communications, either to test power level margins by temporarily adding a calibrated amount of signal loss, or installed permanently to
properly match transmitter and receiver levels. Variable fiber optic attenuators are with adjustable attenuation range with function is same as attenuators and are used inline.

Main features:
1) Single mode calibrations at 1310, 1490, 1550, 1625 nm
2) Multimode calibrations at 850, 1300 nm
3) Superior absolute accuracy, power handling, ORL & PMD
4) Low minimum insertion loss
5) Supplied with metal free SC, ST, LC interchangeable connectors
6) Remote control software
7) Must have wide range of attenuation level with manually adjustable feature. Attenuation level etc. shows on LCD or LED display
8) Capable to be used in DWDM applications.
Section 8. Particular Specifications

8.0 Acceptance Tests:
Acceptance tests will be divided into two parts. One is Provisional Acceptance Test (PAT) and another is Final Acceptance Test (FAT).

8.1 Provisional Acceptance Test (PAT):
8.1.1 Before acceptance of the installed OSP network system, BTCL PAT team shall carry out, on site, detail tests of the finished works and related supplied goods such as HDPE duct, Hand-Hole, Cabinet, DP, Test Gears etc. to ascertain their technical and other specifications, inventory checking of the work, section by section testing of laid Copper Cable Networks etc. The PAT team will also check whether the work has been performed as per the specifications mentioned in the tender document. Such tests and checking shall be termed as “Provisional Acceptance Test (PAT)”. Prior to the commencement of such tests, the Contractor shall submit a proposed procedure for the PAT to be subsequently passed by BTCL. PAT team will be formed with the approval of the Managing Director, BTCL. The PAT will be done by the PAT team of BTCL and Contractor’s Engineers jointly.

8.1.2 On completion of installation and self-testing of any Section or complete OSP work, the Bidder shall submit 3(three) copies of self-test results and As Built Drawing to BTCL and will offer PAT for that Section/ complete works. BTCL shall start such tests within one month after receipt of the request. The Bidder may, upon agreement by both parties, offer PAT for any part or parts of the total system. BTCL may also ask the Bidder for partial PAT

8.1.3 The Bidder shall be totally responsible for arrangement of all equipment, consumables, test gears and measuring equipment required for the PAT. All costs for this service shall be quoted.

Whereas the Bidder’s Engineer shall be liable to make necessary arrangement to complete any kind of possible tests for asserting the specifications during the PAT.

8.1.4 During these Tests, the Bidder has to provide per diem allowance to PAT Engineers as follows:

a) Number of BTCL’s PAT Engineers: Maximum 5 (five) persons per lot.
b) Number of days allowed for per diem charge: 30 (thirty) working days per lot.
c) Per diem charge to BTCL’s PAT Engineers : Taka 1,000 (one thousand) per person per day
d) Other facilities: Other facility related to PAT.

However, the Bidder shall note that, if necessary, any or all PAT can continue for more than the above scheduled period; but, in such case, the Bidder shall not be liable to pay per diem for more than 150 man-days per lot.
8.1.5 After satisfactory completion of PAT of any Section, payment for the works of that Section may be made to the Contractor according to the payment terms & conditions of this tender. Based on the recommendation of the PAT team, the Project Director may issue PAC for that Section.

8.2 Final Acceptance Test (FAT):

8.2.1 After completion of the PAT, the Engineers of the Bidder will take prompt necessary steps to remove all types of defects/faults of the work and replace all types of faulty goods/materials at the Contractor’s own cost. At the end of the Performance Guarantee Period, the overall performance of the works and related supplied goods/materials will be reviewed and this review shall be termed as “Final Acceptance Test (FAT)”. FAT team will be formed by Director (Maintenance and Operation), BTCL.

8.2.2 The review shall include (but not limited to) the required working reliability and performance standards of the goods/materials to meet the tender specifications. The Contractor’s responsibility is to resolve all shortcomings mentioned in PAT reports and to remove of all pending & outstanding faults or shortages encountered during the Performance Guarantee Period. When this FAT becomes due, the Contractor shall make an official request to BTCL for starting the FAT and BTCL shall start the FAT within one month of receiving the request from.

8.2.3 The Contractor shall be responsible for arrangement of all equipment, consumables, test gears and measuring equipment required (if any) for such review tests. All costs for materials and service (if any) shall be quoted. Based on the recommendation of the FAT team, the Director (Development & Coordination), BTCL may issue FAC (Final Acceptance Certificate).

8.3 Payments:

All payments shall be made through irrevocable Letter of Credit (L/C) or through A/C payee cheque. As per Clause GCC-66, the Project Director / Project Coordinator shall pay the Contractor the amounts certified by the Project Manager within twenty-eight (28) days of the date of each certificate. The maximum amount to be certified by the Project Manager in different stages for satisfactory progress of the work will be as follows:

i. 60% of the total amount of the price of material used for the works completed as per BoQ.

ii. 60% of the total amount of the price of OSP service works, excluding miscellaneous items completed as per BoQ.

iii. After issuing PAC of each Section, payment of remaining 40% of the total amount of price of material and service works (except miscellaneous items) of that Section will be made. In case the PAC cannot be issued due to some unavoidable circumstances for which the Contractor is not liable; the Project Director may make a part payment, maximum 70% of the completed materials and service works for which PAC could not be issued.
iv. 100% of the payment for Survey, Network Planning and Design will be made after issuance of the Certificate of Completion of Survey, Network Planning and Design. Such Completion Certificate will be issued by the Project Director.

v. 100% of the payment for Maintenance Support Service [if any] during Guarantee Period will be made after issuance of each FAC.

vi. 100% of the payment for Project Management will be made after issuance of each PAC.

vii. 100% of the payment for Transportation will be made after issuance of each PAC.

8.4 Title of Ownership of the Equipment
For all OSP covered by this purchase, the title of ownership shall be deemed to have been vested upon BTCL after such equipment have been loaded on board of any vessel for subsequent shipment to any port of entry in Bangladesh.

8.5 Storage of Materials
The Contractor shall be responsible for storage of all materials at his own cost and risk until successful completion of PAT. The Contractor may avail the storage spaces, if available, at different sites free of charge; but in all such cases the security responsibilities for the store and risks shall vest upon the Contractor.

8.6 Cut-over of the systems
The systems shall, generally, be put into commercial service after successful completion of the PAT. But BTCL shall reserve the right to put any or all portion of any or all systems to commercial service, under special circumstances, even if such portion(s) have not successfully passed the PAT. Under such circumstances, the Contractor shall not be relieved of his responsibilities of successful completion of the PAT for the relevant portion(s).

8.7 Documentation
The Contractor shall supply at least (but not limited to) the following documents before PAT of each station. All cost for those documents shall be quoted
i) As-built drawings for all relevant Cabinets, DPs etc. : 2 sets per site.
ii) Copper Cable Route map from AGW to DPs. : 2 sets per site.

8.8 Installation Material
The Bidder shall quote for all installation material for all of the OSP covered by this purchase. The material shall include all type of local material necessary to be used during installation, self-testing and PAT functions. All costs for materials shall be quoted and failure to quote shall be considered that the Bidder proposes to provide these material totally "free of charge" to BTCL.
8.9 Installation and Commissioning Services

The Contractor shall be responsible to provide all services related to installation, commissioning and cut-over services for all OSP covered by this purchase.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Section #</th>
<th>Clause #</th>
<th>Agreed/Not Agreed</th>
<th>Reference to bidder's document</th>
<th>Remarks (if any)</th>
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</table>
## 2. List of Deviation(s)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Section #</th>
<th>Clause #</th>
<th>Compliance</th>
<th>Reference to bidder's document</th>
<th>Remarks of Deviations</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Agreed/Not Agreed</td>
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</table>
Section 9. Drawings

Notes on Drawings

9.1 Attachments (Trench, HH & Others)

1. Standard Trench section Diagram
2. Structural Diagram of H.H
3. Indicative Bridge/Culvert Crossing Methods
4. Accessories

9.2 Attachments (Annex-1,2,3,4,5 & 6: List of AGWs with area and telephone Capacity etc.)
9.1.1 STANDARD TRENCH SECTIONAL DIAGRAM (1/1)

Sectional Drawing of 1 Way HDPE Ø40mm (Unit:cm) (FOR SOIL ROAD)

Sectional Drawing of 1 Way HDPE Ø40mm (Unit:cm) (FOR ASPHALT ROAD)
9.1.2 STRUCTURAL DIAGRAM M.H. & H.H. (1/3)

HANDHOLE-HH1

SECTION B-B

Earthing Rod
Ø 12 x 1500mm

Bare Lead Wire

PLAN

A

B

2 Vertical baree/channel

1200

300 300 Pulling cap

120

1440

120

1000

120

120

1000

120

120

1440

1200

300 300
9.1.2  STRUCTURAL DIAGRAM M.H & H.H. (3/3)

PROPOSAL FOR THREE PART TOP SLAB (HH1)

REINF. DETAIL OF TOP SLAB (HH1)

ISOMETRIC VIEW (HH1)

PLAN OF SLAB INCLUDING HANDLE (HH1)

HANDHOLE COVER DETAILS-HH1

NOTE: ALL DIMENSIONS IN MM

DETAIL OF HANDLE 'D'
9.1.3 INDICATIVE BRIDGE CROSSING METHODS (1/2)
9.1.3 INDICATIVE BRIDGE CROSSING METHODS (2/2)

NOTE: The noted portion of 130mm double walled corrugated HDPE connecting to 40mm HDPE shall not be bent abruptly and shall be extended to sufficient depth of normal soil cover.
9.1.4 CONCRETE MARKER POST

NOTE: The black colored arrow portion shall be carved in 2mm before painting.

White Fluorescent Painting
9.1.5 O.D.F

OPTICAL DISTRIBUTION FRAME
ALUMINUM
ANNEXURE-A
DEFFINITIONS OF ASSEMBLY UNITS

General Requirements

Any deviation or disagreement from the requirement specified hereunder shall be treated as the cause of non-responsiveness.

A.1 General

1) This annexure-A sets forth the Definition of the Assembly Units that constitute the discreet segments of the Outside Plants Facilities.

2) Each Assembly unit comprises inseparable sub-elements of Wire And Cable Equipment and Material (hereinafter abbreviated “WCEM”) and Work except chose materials supplied by BTCL.

3) In computing the price for each Unit, the following matters shall be considered.

The following shall be included in the material portion of each item.

- Ocean freight
- Storage at harbor
- Inland transportation
- Warehouse fee

The following shall be included in installation portion of each item.

- Insurance for installation work
- Expenses for damage or loss concerning consumable tools
- Expenses for damage field survey and detailed design
- Expenses for acceptance tests
- Expenses of all as-built drawing, maintenance manuals, and any other documents concerned for maintenance use.
- Expenses for all equipment, machinery, vehicle and tools of non-consumable nature that are necessary for the work, and are owned by the Contractor.
- Inland transportation and warehouse fees for materials to be supplied by BTCL.

A.2 A unit for cable and conduit works shall be composed of one (1) meter length of work and WCEM. The length of cable and conduit shall be rounded off to the nearest meter.
A.3 Description of Assembly Unit

Any deviation from the requirement specified hereunder shall be treated as non-responsiveness of the tender.

Each Assembly Unit shall be defined as follows:

**CP-Ex. Duct**: Cable Pulling through BTCL existing duct.

A.4 Section HH-Hand hole Unit

The Unit designation shall be: **HH-x**

<table>
<thead>
<tr>
<th>HH</th>
<th>is to designate Handhole</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>is to designate Handhole type</td>
</tr>
</tbody>
</table>

Where, \( x = 1 \) for Handhole type 1
\( x = 2 \) for Handhole type 2

This Assembly Unit Includes all Work and WCEM associated with the installation of handhole. These Assembly Units also include such ancillary items as the cable rack, cover frame with steel chain, pulling-in iron, step iron, name plate, ladder and other hardware relates therewith, and arranging and supporting of existing cables where the handhole is rebuilt or cut into the existing conduit.

A.5 Section UC-Underground Conduit Unit

A.5.1 Section UC includes all Work and WCEM associated with underground conduit (HDPE) or Buried Cable by Open-cut trenching method. These Assembly Units shall be identified by the letter UC suffixed by sub-units.

A.5.2 The length of conduit shall be measured along the surface as follows:

a) Center of one manhole cover to center to another manhole cover, or
b) Inside wall of cable chamber to center of manhole cover, or
c) Center of manhole cover to center of base of cross-connection cabinet, or
d) Center of manhole cover to center of cable trench cover or inside of wall.

A.5.3 These Assembly Units include temporary resurfacing of pavements, driveways, and the repair to service condition of fences, lawns, shrubbery, water pipes, underground power and telephone facilities, and any other Properties damaged during construction and installation of underground conduit.

These Assembly Units covers include excavation, backfilling, sheeting as required and site cleaning.
A.5.4 These Assembly Units covered under Section UC are as follows:

A.5.5 Installation of Main Conduit (HDPE) or Buried Cable (Open cut method) Section

The Unit Designation shall be: **UC-t-Vx-Y**

- **UC** is to designate Underground Conduit
- **t** is to designate Conduit type
- **Vx** is to designate the number of Conduits
- **Y** is to designate the protection over the Conduits

Where, 

- **t** = for necessary HDPE duct.
- **Vx** = Number of HDPE duct viz. 2, 4, 6, 8, 9, 12, etc.
- **HDD** = Installation of HDPE Duct at a depth of minimum 3 meter for Cable pulling by Horizontal Directional Drilling Method or Buried Cable installation by Open cut Trenching Method where necessary brick & sand back filling is included.

For examples, **UC-P2(HDD/OC)**: Necessary HDPE duct containing 2 Ducts for HDD method or Open cut Trenching method for buried cable installation with Brick & sand back filling with warning tape. Railway/Highway boring or any bridge/others crossing is included in this item.

The boring length is to be considered the length of the pipe laid across the of Railway/Highway.

A.6 Section BC-Buried Cable Unit

A.6.1 Section BC- it includes all work and WCEM associated with the installation and/or repair of buried cable.

A.6.2 These assembly unit shall be identified by the letter BC suffixed by the sub

A.6.3 units to indicate filled and double sheathed or armored type of metallic as follows:

- **JW**-filled, double sheathed, metallic cable.

- **JA**-Filled, double sheathed with steel armored metallic cable:

A.6.4 These Assembly Units covered under section BC are as follows:

A.6.5 Installation of Buried cable

The Unit Designation shall be: **BC-JA-t/x**

- **BC** is to designate Buried Cable
- **JA** is to designate Jelly filled, PE double sheathed steel armored metallic cable.
- **t** is to designate pair count of the cable
x is to designate the conductor diameter in mm

For example-BC-JA –300/.5 buried cable 300 pairs. 0.5 mm conductor armoured, PE double sheath, jelly filled, cellular solid polyethylene insulated cables.

These Assembly Unit includes all Works and WCEM necessary for laying of one (1) meter of buried cable in the trench.

These Assembly Unit include all Work and WCEM necessary for the cable works in vertical run on poles/buildings continued from the trench up to a distribution point shall be inclusive of all guards, prospective pipes, hardware, and accessories required for cable laying works and all work and WCEM necessary for protective pipe placement if required, for the placement of warning tape.

The measurement of each length of buried cable shall be sum of the cable length between the splicing points leased on the horizontal length of the cable run in the trench and cover Center shall be adopted as the starting point for such a measurement regardless of the cable and run and splice in the manhole.

A.6.6 Trench for Buried Cable.

The Unit Designation shall be: **BC-TB-t**

- **BC** is to designate Buried Cable
- **TB** is to designate Trench for buried Cable
- **t** is to designate Pavement Type

Where, 

- t= **M/S** for metallic road/ for Soil road
- RC= Necessary length of Trench

Example : **BC-TB-M/S(RC)**

This Assembly Unit include all Work and WCEM necessary for excavation, back filling, temporary and resurfacing of pavements and removal of excavated materials and placement of bricks of 1 meter of trench by open cut method or by HDD method. **Necessary Road cutting/repairing compensation for respective authorities should be quoted against this item. (item no. 5 of BoQ).**

A.7 Section PL - Pole Units

A.7.1 Section PL includes all Work and WCEM associated with installation of poles.

A.7.2 These Assembly Units shall be identified by the PL suffixed by the sub-units.

A.7.3 The Assembly Units covered under Section PL are as follows:

The Unit Designation shall be: **PL-S-h**
PL is to designate Pole Unit
S is to designate Steel Pole
h is to designate height of the Pole

For example: PL-S-7 G.S pole 7 meters height for DP.

These Assembly Unit include all Work and WCEM necessary for installation of 1 (one). Steel pole.

These Assembly Unit also include parts (Necessary Steel binder for fitting/fixing of DP box, Horizontal bar bolts etc.) attached to the pole and also the disposal of soil and restoration of the ground form.

A.8 Section TC-Terminal Cable Units

A.8.1 Section TC includes all work and WCEM associated with termination of cables.

A.8.2 The Assembly Units covered under the section TC are as follows:

A.8.3 Termination of cable with Tip Cable.

The Unit Designation shall be: TC-t

TC is to designate Termination Cable

**t** is to designate pair count of the cable

For example; TC-1200 1200 pair cable termination.

These Assembly Unit includes all Work and WCEM necessary for installation of TIP cable and cable termination and splicing of the TIP cable to the outdoor cable conductors, installation of splice closures (pothead) and any other work and WCEM for grounding to the grounding bar (of MDF) and securing the outdoor cable to walls, racking, etc., in the cable chamber or trench.

This Unit also includes all work and WCEM necessary for preventing ingress of moisture.

A.8.4 Termination of cable without Tip cable

The Unit Designation shall be: TC-D-t

TC is to designate Termination Cable

D is to designate termination without TIP Cable

**t** is to designate pair count of the Cable

For example, TC-D-400 Termination of 400 pair outdoor cable directly.

This Assembly Unit include all Work and WCEM with necessary for termination of one (1) outdoor cable on the Main distribution Frame.
This Assembly Unit includes all Work and WCEM, necessary for installation of cable termination and any other work and WCEM for grounding to the grounding bar (of MDF) and securing the outdoor cable to walls, racking, etc., in cable chamber or trench.

A.9 Section DP- Distribution Point Unit.

A.9.1 Section DP includes all work and WCEM associated with distribution points.

These Assembly Unit shall be identified by the letter DP suffixed by the sub-units to indicate installation or removal.

A.9.2 The Assembly Unit covered under section DP are as follows:

A.9.3 Distribution Point for Buried Cable Application

The Unit Designation shall be: \(DP-t-x\)

\[
\begin{align*}
DP & \quad \text{is to designate Distribution Point} \\
t & \quad \text{is to designate DP type} \\
x & \quad \text{is to designate pair count of the Cable}
\end{align*}
\]

Where, \(t\) = B Pole mounted type for Buried Cable Application

=BP Pole mounted type with protector for Buried/ Conduit Cable Application.

=W Wall mounted type for buried cable application.

For example:

- DP-B-20 Distribution Point pole mounted Type, 20 pairs Buried cable Application.
- DP-W-20 Distribution Point, Wall-mounted Type, 20 pairs, Buried cable Application.

These Assembly Unit include all Work and WCEM necessary for installation of one (1) distribution point of pole-mounted type, or wall-mounted-type for buried cable application together with the accessories.

These Assembly Unit include all Work and WCEM necessary for termination of riser cable conductors, for bonding of cable shield to distribution point housing as mentioned in clause 7.20.5 for stenciling exchange name or its abbreviation, cabinet number and distribution point number by color paint on the cover of the distribution point and on the pole and for fixing accessories for drop wiring on the pole such as hooks, distribution rings and bridle ring.

A.9.4 Internal Distribution Point

The Unit Designation shall be: \(DP-t-x\)

\[
\begin{align*}
DP & \quad \text{is to designate Distribution Point}
\end{align*}
\]
Where, \( t \) = IN Internal type for the termination into Building

For example: DP-IN-20 Distribution Point, Internal, 20 pairs.

These Assembly Units include all Work and WCEM necessary for installation of one (1) distortion point.

These Assembly Units also include all Work and WCEM necessary for termination of cable conductors and for stenciling exchange name or its abbreviation, cabinet number and distribution point number by color paint on the cover of the distribution point neatly, where applicable.

A.10  Section CB- Cross-Connection Cabinet Unit.

A.10.1 Section CB- Includes all Work and WCEM associated with one (1) Cross Connection Cabinet.

A.10.2 These Assembly Units shall be identified by the letter CB-C, CB-T, in accordance with the works cabinet installation and terminal block installation and suffixed by size of concrete foundation and the capacity Sof cabinet and terminal block.

Installation of conduits between manhole and cabinet is not included in this unit except four (4) 90° bending pipes and riser pipes for primary and secondary cable lead in to the cross-connection cabinet.

A.10.3 These Assembly Units covered under section CB are as follows:

Cross –Connection Cabinet Installation.

The Unit Designation shall be: CB-t-x

<table>
<thead>
<tr>
<th>CB</th>
<th>is to designate Cross-connection Cabinet</th>
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<tr>
<td>t</td>
<td>is to designate type of Cross-Connection Cabinet</td>
</tr>
<tr>
<td>x</td>
<td>is to designate Capacity of the Cabinet.</td>
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Where, \( t = C-50 \) Cross-Connection Cabinet concrete foundation with 50 cm base height from the finished ground level.

\( = CSP \) Cross-Connection Cabinet 50 Cm special height of concrete foundation.
For example:

- CB-C-50-700 Cross-Connection Cabinet 50 cm height of concrete foundation, and capacity 700 pairs.

- CB-CSP-700 Cross-Connection Cabinet 50 cm special height of concrete foundation, and capacity 700 pairs.

These Assembly Units also include all Work and WCEM necessary for installation of one (1) cross-connection cabinet such as excavation, concrete foundation, mounting hardware and stenciling the name as specified in the technical requirement for cable work.

These Assembly Units also include all Work and WCEM necessary for installation of grounding, associate hardware and guard posts (Grill) where required.

A.10.4 Terminal Block installation

The Unit Designation shall be: **CB-T-x**

- **CB-T** is to designate Cable Termination Block
- **x** is to designate pair capacity of the block

For example: CB-T-100 Cable Termination Block, 100 pairs

These Assembly Units include all Work and WCEM necessary for installation of the terminal blocks in cabinet.

These Assembly Units also include all Work and WCEM necessary for terminating the cabin on terminal block.

**A.11 Section SC-Cable Splice Closer Units.**

A.11.1 These Assembly Units shall be identified by letter SC, and suffixed as follows depending upon the pair count of the Cables.

A.11.2 The number of pairs of the largest cable entering into the closure will determine the unit designation.

<table>
<thead>
<tr>
<th>Unit Designation</th>
<th>Pair range of the largest cable (Pairs)</th>
<th>Cable Classification</th>
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<tbody>
<tr>
<td>SC-CS1</td>
<td>Upto 40</td>
<td>Buried/ Conduit</td>
</tr>
<tr>
<td>SC-CS2</td>
<td>50~150</td>
<td>Buried/ Conduit</td>
</tr>
<tr>
<td>SC-CM1</td>
<td>200~500</td>
<td>Buried/ Conduit</td>
</tr>
<tr>
<td>SC-CM2</td>
<td>600~900</td>
<td>Buried/ Conduit</td>
</tr>
<tr>
<td>SC-CLT</td>
<td>1000~1200</td>
<td>Buried/ Conduit</td>
</tr>
</tbody>
</table>
A.11.3 The outer protective covering (armored tapes, Over sheath etc.) should be disregarded in determining the count of the cable pairs.

A.11.4 These Assembly Units also include all Work and WCEM for installation of one (1) cable splice closure and include opening the cable sheaths or shields, internal bonding harness, closing the closure and filling the re-enterable compound in the closure, where required.

These Assembly Units also include

1) All Works and WCEM necessary for excavation, back-filling and sheeting and placement of mechanical protection, site cleaning, and as may be applicable, temporary resurfacing of pavement and the repair to their original condition of fences lawns shrubbery, water pipes underground power lines, telephones facilities, and any other properties damaged during the installation of the splice closure for buried cable.

2) All Works and WCEM necessary for installation of one (1) splice closure and to install additional hooks, bolts, plates on conduit cable in existing manhole and cable supporters in manhole and cable chamber in manhole or building, where required, and for bonding between the screen of cable and the earth terminal of manhole of the conduit cable

Also include the following works-

A.11.5 Section SC includes all work and WCEM necessary for splicing of One (1) cable Pair in cable including working cables.

A.11.6 These Assembly units shall be identified by the letter SC suffixed to indicate the types of splicing, transfer splicing.

A.11.7 The Assembly Units covered under the section SC are as follows:

A.11.7.1 Cable Splice of Non–working Pairs

1) This Assembly shall include all Work and WCEM necessary for making a splice of one (1) Non- Working pair in splicing between a new cable and existing cable.

2) This Assembly Unit also includes test and verification of cable pairs.

A.11.7.2 Capping Splice

These Assembly Units also include all Work and WCEM necessary for capping of one (1) non-working cable pair in cables but does not include the dead pairs. This Assembly Unit includes test and verification of cable pairs.
Transfer Splice

1) These Assembly Units includes all Work and WCEM necessary for transfer of one (1) working cable pair to one (1) new cable pair in any type of cable and for placing, connection and/or removal of jumper wire in cross-connection cabinets and MDF.

These Assembly Units includes test and verification of cable pairs.

2) If size of cable is equal to or less than 100 pairs, then the number of existing cable pairs shall apply regardless of the presence of non-working pairs in the same cable.

3) If size of cable is more than 100 pairs, then each 100 pair unit which includes the working pairs shall be counted for transfer splice.

A.12 Section GB- Grounding and Bonding Unit.

A.12.1 Section GB includes all work and WCEM associated with installation of grounding and bonding system for outside plant facilities, except the groundings or bonding included in the respective Section Concerned.

A.12.2 These Assembly Units shall be identified by the letter GB suffixed by the letter G or B in accordance with the installation of grounding and bonding system, respectively.

A.12.3 These Assembly Units covered under section GB are as follows:

A.12.4 Grounding

The Unit Designation shall be: GB-G1

Where, GB is to designate Grounding and Bonding
G1 is to designate installation of grounding system with one rod.

These Assembly Units includes all Work and WCEM necessary for installation of grounding system with one (1) rod.

These Assembly Units also includes all Work and WCEM necessary for bonding the grounding system to an object of the grounding.

A.13 Section TE-Tools, Measuring Equipment, and Spare materials Units

A.13.1 Section TE includes all tools, measuring equipment and spare materials necessary for maintenance of Outside Plant to be established by the Project.

A.13.2 These Assembly Units shall be identified by the letter TE suffixed by the sub-units as defined below.

The Unit Designation shall be: TE-t
TE is to designate Tools, Measuring equipment & Spare Materials.

t is to designate Tools/ Measuring equipment/ Vehicle/ Spare materials.

A.14 Section CT-EtE: Cable Testing- End to End.

These Assembly Units includes all Work and WCEM necessary for Testing of cable pair from MDF to Cabinet and Cabinet to DP Box.

A.15 Racking Structure of MDF/Cable Chamber

The Unit Designation shall be: CR-VF

Where, CR is to designate Cable runner
VF is to designate Racking structure (Vertical/Horizontal Frame)

This Assembly Unit Included all Work and WCEM necessary for installation of complete anti-corrosive Racking Structure in an exchange cable chamber and MDF Room. This Assembly Unit shall be quoted on the basis of weight in kilograms (kg) of the metallic frame.

A.16 Besides these, the contractor may quote any item/items as on optional if he feels that it is required for the Outside Plant Works