NEPAL ELECTRICITY AUTHORITY

(An Undertaking of Government of Nepal)

Distribution and Consumer Services Directorate

Janakpur Regional Office

Mujeliya, Janakpur

NATIONAL COMPETATIVE BIDDING (NCB)

Contract Identification NO: NCB/JRO 2074/075-08

BIDDING DOCUMENTS

FOR

SUPPLY, DELIVERY, INSTALLATION/ERECTION, TESTING & COMMISSIONING OF HT & LT LINE AT SIGHDEVI-RANIBAN, OKHALDHUNGA

NOVEMBER, 2017

Nepal Electricity Authority
Distribution and Consumer Services Directorate
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Abbreviations

BD ... .Bidding Document

BDF .... Bidding Forms

BDS .... Bid Data Sheet

BOQ ... . Bill of Quantities

COF ..... . Contract Forms

DP ..... . Development Partners

DoLIDAR ..... Department of Local Infrastructure Development and Agricultural Roads

ELI ... . Eligibility

EQC .... Evaluation and Qualification Criteria

EXP ... . Experience

FIN ... . Financial

GCC ... . General Conditions of Contract

GoN .... Government of Nepal

ICC ... . International Chamber of Commerce

IFB ……. Invitation for Bids

ITB ... . Instructions to Bidders

JV ... . Joint Venture

LIT ... . Litigation

NCB ... . National Competitive Bidding

PAN ... . Permanent Account Number

PPA ... . Public Procurement Act

PPMO ... . Public Procurement Monitoring Office

PPR ... . Public Procurement Regulations

PL ... .Profit & Loss

SBD .... Standard Bidding Document

SCC ... . Special Conditions of Contract

TS ... .Technical Specifications

VAT ... . Value Added Tax

WRQ ... . Works Requirements

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Invitation for Bids (IFB)

Nepal Electricity Authority

Janakpur Regional Office, Mujeliya, Janakpur

First date of Publication: 2074/08/12

National Competitive Bidding

Tenders are invited for the following Scheme of Nepal Electricity Authority, Janakpur Regional Office, Mujeliya, Dhanusha.

Tender No:	Description of Works/Jobs	Cost of Tender Document (Bank Deposit)	Sale of Tender Documents available and available till date (Office time)	Last Date of Bid Submission, Opening Time and Place	Bid Security Bid Bond (Bank Deposit/Bank Guarentee)	Tender Documents Available From	Bank A/C No.
NCB/JRO 2074/075-08 (E-bidding)	Supply, Delivery, Installation/Erection, Testing & Commissioning of HT & LT Line at Singhdevi-Raniban, Okhaldhunga	NRS 3000.00	Janakpur Regional Office, Mujeliya, Dhanusha and 2074/09/12	2074-09-13, at or before 12:00 noon and 14:00 Hrs Respectively at NEA, Janakpur Regional Office, Mujeliya, Dhanusha	NRS 95,000.00 valid for 120 Days.	2074/08/13	Deposit A/C No. 5201017500256 Nabil Bank Ltd., Janakpur

For the further details, Please visit the following website : **http://www.eproc.nea.org.np.**

Contact Tel.No. 041-521075, 528568

Part - I

BIDDING PROCEDURES

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SECTION - I

Instructions to Bidders

A. General	
1. Scope of Bid	1.1 In connection with the Invitation for Bids indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues this Bidding Document for the procurement of Works as specified in Section V (Works Requirements). The name, identification, and number of Contracts of the National Competitive Bidding (NCB) are provided in the BDS. 1.2 Throughout this Bidding Document: (a) the term "in writing" means communicated in written form and delivered against receipt; (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and (c) "day" means calendar day.
2. Source of Funds	2.1 GoN Funded: In accordance with its annual program and budget, approved by the GoN, the implementing agency indicated in the BDS plans to apply a portion of the allocated budget to eligible payments under the contract(s) for which this Bidding Document is issued. Or Public Entities' own Resource Funded: In accordance with its annual program and budget, approved by the public entity, the implementing agency indicated in the BDS plans to apply a portion of the allocated budget to eligible payments under the contract(s) for which this Bidding Document is issued. Or DP Funded: The GoN has applied for or received financing (hereinafter called "funds") from the Development Partner (hereinafter called "the DP") indicated in the BDS toward the cost of the project named in the BDS. The GoN intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued. 2.2 DP Funded: Payment by the DP will be made only at the request of the GoN and upon approval by the DP in accordance with the terms and conditions of the financing agreement between the GoN and the DP (hereinafter called the "Loan/Grant Agreement"), and will be subject in all respects to the terms and conditions of that Loan/Grant Agreement. No party other than the GoN shall derive any rights from the Loan Agreement or have any claim to the funds.

3. Fraud and Corruption	3.1 The Government of Nepal (GoN) requires that the Procuring Entities as well as bidders, suppliers and contractors and their sub-contractors under GoN/DP-financed contracts, shall adhere to the highest standard of ethics during the procurement and execution of such contracts. In this context, the Employer; (a) defines, for the purposes of this provision, the terms set forth below as follows: (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party; (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation; (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party; (iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party. (iv) "obstructive practice" means: (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a GoN/DP investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (bb) acts intended to materially impede the exercise of the GoN's/DP's inspection and audit rights provided for under sub-clause 3.5 below. (b) will reject bid(s) if it determines that the bidder has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question; 3.2 The Bidder shall not carry out or cause to carry out the following acts with an intention to influence the implementation of the procurement process or the procurement agreement : (a) give or propose improper inducement directly or indirectly, (b) distortion or misrepresentation of facts, (c) engaging in corrupt or fraudulent practice or involving in such act, (d) interference in participation of other competing bidders, (e) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings, (f) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing

	artificial/uncompetitive bid price with an intention to deprive the Employer the benefit of open competitive bid price, (g) contacting the Employer with an intention to influence the Employer with regards to the bids or interference of any kind in examination and evaluation of the bids during the period from the time of opening of the bids until the notification of award of contract. 3.3 PPMO, on the recommendation of the Procuring Entity may blacklist a Bidder for a period of one (1) to three (3) years for its conduct including on the following grounds and seriousness of the act committed by the bidder: (a) if convicted by a court of law in a criminal offence which disqualifies the Bidder from participating in the contract, (b) if it is established that the contract agreement signed by the Bidder was based on false or misrepresentation of Bidder's qualification information, (c) if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for, or in executing, a GoN/DP-financed contract. (d) if the successful bidder fails to sign the contract. 3.4 A bidder declared blacklisted and ineligible by the GoN, Public Procurement Monitoring Office (PPMO) and/or the DP in case of DP funded project, shall be ineligible to bid for a contract during the period of time determined by the GoN, PPMO and/or the DP. 3.5 The Contractor shall permit the GoN/DP to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the GoN/DP, if so required by the GoN/DP. 3.6 DP Funded: In pursuance of the fraud and corruption policy, the DP. (a) will reject a proposal if it determines that the bidder recommended for award has directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question; (b) will cancel the portion of the loan/ credit/ grant allocated to a contract if it determines at any time that representative(s) of the GoN or of a beneficiary of the fund engaged in corrupt, fraudulent, collusive, or coercive practices during the procurement or the execution of that contract, without the GoN having taken timely and appropriate action satisfactory to the DP to remedy the situation.
4. Eligible Bidders	4.1 A Bidder may be a natural person, private entity, or government - owned entity—subject to ITB 4.5—or any combination of them in the form of a Joint Venture (JV) under an existing agreement, or with the intent to constitute a legally-enforceable joint venture. In the case of a JV: (a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. Maximum number of JV shall be as specified in the BDS. The qualification

	requirement of the parties to the JV shall be as specified in Section III Evaluation and Qualification Criteria, and (b) the JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during Contract execution. 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of any country or eligible countries mentioned in the BDS. A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed sub Contractors or suppliers for any part of the Contract including related services. 4.3 A Bidder shall not have a conflict of interest. A Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process, if: (a) they have controlling partners in common; or (b) they receive or have received any direct or indirect subsidy from any of them; or
	(c) they have the same legal representative for purposes of this bid; or (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or (e) a Bidder participates in more than one bid in this bidding process either individually or as a partner in a joint venture. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the party is involved. However, this does not limit the inclusion of the same sub Contractor in more than one bid; or (f) a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Contract that is the subject of the Bid; or (g) a Bidder or any of its affiliates has been hired (or is proposed to be hired) by the Employer as Engineer for the Contract. 4.4 A firm that is under a declaration of ineligibility by the GoN/DP in accordance with ITB 3, at the date of the deadline for bid submission or thereafter, shall be disqualified. 4.5 Enterprises owned by Government shall be eligible only if they can establish that they are legally and financially autonomous and operate under commercial law, and that they are not a dependent agency of the GoN. 4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.

	4.7 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders. 4.8 Firms shall be excluded in any of the cases, if (a) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Nepal prohibits any import of goods or Contracting of works or services from that country or any payments to persons or entities in that country. (b) DP Funded: as a matter of law or official regulation, Nepal prohibits commercial relations with that country, provided that the DP is satisfied that such exclusion does not preclude effective competition for the supply of goods or related services required;
	(c) DP Funded: a firm has been determined to be ineligible by the DP in relation to their guidelines or appropriate provisions on preventing and combating fraud and corruption in projects financed by them. 4.9 The bidder shall meet the eligibility criteria specified in section III (Evaluation and Qualification Criteria) of bid document.
5. Eligible Materials, Equipment and Services	5.1 The materials, equipment and services to be supplied under the Contract shall have their origin in any source countries as defined in ITB 4.2 above and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services. 5.2 For purposes of ITB 5.1 above, "origin" means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.
B. Contents of Bidding Documents	
6. Sections of Bidding Document	6.1 The Bidding Document consist of Parts I, II, and III, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8. **PART I Bidding Procedures** Section I Instructions to Bidders (ITB) Section II Bid Data Sheet (BDS) Section III Evaluation and Qualification Criteria (EQC) Section IV Bidding Forms (BDF) **PART II Requirements** Section V Works Requirements (WRQ) Section VI Bill of Quantities (BOQ)

	PART III Conditions of Contract and Contract Forms Section VII General Conditions of Contract (GCC) Section VIII Special Conditions of Contract (SCC) Section IX Contract Forms (COF) 6.2 The Invitation for Bids issued by the Employer is not part of the Bidding Document. 6.3 The Employer is not responsible for the completeness of the Bidding Document and **their** Addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids. 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.
7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting	7.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address indicated in BDS or raise any question or curiosity during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer shall be required to make available as soon as possible the answer to such question or curiosity in writing to any request for clarification, provided that such request is received as mentioned in ITB 7.5. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2. 7.2 The Bidder is encouraged to visit and examine the Site of Works and its surroundings and obtain for itself, on its own risk and responsibility, all information that may be necessary for preparing the bid and entering into a Contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. 7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection. 7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. 7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer as mentioned in BDS.

	7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer as mentioned in BDS. 7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting. 7.7 Non attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.
8. Amendment of Bidding Document	8.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing agenda. 8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3. 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2
C. Preparation of Bids	
9. Cost of Bidding	9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
10. Language of Bid	10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.
11. Documents Comprising the Bid	11.1 The Bid shall comprise the following: (a) Letter of Bid; (b) completed Schedules, in accordance with ITB 12 and 14, or as stipulated in the BDS; (c) Bid Security, in accordance with ITB 19; (d) alternative bids, at Bidder's option and if permissible, in accordance with ITB 13; (e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2; (f) documentary evidence in accordance with ITB 17 establishing

	the Bidder's qualifications to perform the Contract; (g) Technical Proposal in accordance with ITB 16; (h) In the case of a bid submitted by a JV, the JV agreement, or letter of intent to enter into a JV including a draft agreement, indicating at least the parts of the Works to be executed by the respective partners; and (i) Any other document required in the BDS. 11.2 The Bidder is solely responsible for the authenticity of the documents submitted by the Bidder.
12. Letter of Bid and Schedules	12.1 The Letter of Bid, Schedules, and all documents listed under ITB 11, shall be prepared using the relevant forms in Section 4 (Bidding Forms), if so provided. The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
13. Alternative Bids	13.1 Unless otherwise indicated in the BDS, alternative bids shall not be considered. 13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the BDS, as will the method of evaluating different times for completion. 13.3 When specified in the BDS pursuant to ITB 13.1, and subject to ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Document must first price the Employer's design as described in the Bidding Document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer. 13.4 When specified in the BDS, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified in the BDS and described in Section V (Works Requirements). The method for their evaluation will be stipulated in Section III (Evaluation and Qualification Criteria).
14. Bid Prices and Discounts	14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules shall conform to the requirements specified below. 14.2 The Bidder shall submit a bid for the whole of the works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section IV (Bidding Forms). In case of Unit Rate Contracts, the Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities. 14.3 The price to be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered.

	14.4 Unconditional discounts, if any, and the methodology for their application shall be quoted in the Letter of Bid, in accordance with ITB 12.1. 14.5 If so indicated in ITB 1.1, bids are invited for individual Contracts or for any combination of Contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.4, provided the bids for all Contracts are submitted and opened at the same time. 14.6 Unless otherwise provided in the BDS and the Conditions of Contract, the prices quoted by the Bidder shall be fixed. If the prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Table of Adjustment Data in Section IV (Bidding Forms) and the Employer may require the Bidder to justify its proposed indices and weightings. 14.7 The bidder is subject to local taxes such as VAT, social charges or income taxes on nonresident international personnel, and also duties, fees, levies on amounts payable by the employer under the Contract. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total bid price submitted by the Bidder.
15. Currency of Bid and Payment	15.1 The currency of the bid and payment shall be in Nepalese Rupees.
16. Documents Comprising the Technical Proposal	16.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.
17. Documents Establishing the Qualifications of the Bidder	17.1 To establish its qualifications to perform the Contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding information sheets included in Section IV (Bidding Forms).
18. Period of Validity of Bids	18.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as nonresponsive. 18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB

	19, it shall also be extended 30 days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its Bid.
19. Bid Security	19.1 The Bidder shall furnish as part of its bid, in original form, a bid security as specified in the BDS. In case of e-submission of bid, the Bidder shall upload scanned copy of Bid security letter at the time of electronic submission of the bid. The Bidder accepts that the scanned copy of the Bid security shall, for all purposes, be equal to the original. The details of original Bid Security and the scanned copy submitted with e-bid should be the same otherwise the bid shall be non-responsive.
	19.2 The bid security shall be, at the Bidder's option, in any of the following forms: (a) an unconditional bank guarantee from "A" class commercial bank or; (b) a cash deposit voucher in the Employer's Account as specified in BDS. In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section IV (Bidding Forms) or in another Form acceptable to the employer. The form must include the complete name of the Bidder. The bid security shall be valid for minimum thirty (30) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2. 19.3 The bid security issued by any foreign Bank outside Nepal must be counter guaranteed by an "A" class commercial Bank in Nepal. 19.4 Any bid not accompanied by an enforceable and substantially compliant bid security shall be rejected by the Employer as nonresponsive. In case of e- Submission, if the scanned copy of an acceptable Bid Security letter is not uploaded with the electronic Bid then Bid shall be rejected. 19.5 The bid security of unsuccessful Bidders shall be returned within three days, once the successful bidder has furnished the required performance security and signed the Contract Agreement pursuant to ITB 38.1and 39.1. 19.6 The bid security shall be forfeited if: (a) a Bidder requests for withdrawal or modification of its bid, except as provided in ITB 18.2: (i) during the period of bid validity specified by the Bidder on the Bid, in case of electronic submission; (ii) from the period twenty-four hours prior to bid submission deadline up to the period of bid validity specified by the Bidder on the Letter of Bid, in case of hard copy submission. (b) a Bidder changes the prices or substance of the bid while providing information pursuant to clause 27.1;

	(c) a Bidder involves in fraud and corruption pursuant to clause 3.1; (d) the successful Bidder fails to: (i) furnish a performance security in accordance with ITB 38.1; or (ii) sign the Contract in accordance with ITB 39.1 (iii) accept the correction of arithmetical errors pursuant to clause 31.1; 19.7 The Bid Security of a JV shall be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.
20. Format and Signing of Bid	20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it ORIGINAL". Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the bid in the number specified in the BDS, and clearly mark each of them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail. In case of e-submission of bid, the Bidder shall submit his bid electronically in PDF or web forms files as specified in ITB Clause 21.1(b), If a Bidder submits both the electronic bid and a bid in hard copy within the bid submission deadline, then the submitted Bids shall be accepted for evaluation provided that the facts and figures in hard copy confirm to those in electronic bid. If there is any major discrepancy in fact and figures in the electronic bid and bid in hard copy, it shall be treated as two separate bids from one Bidder and both the Bids shall be disqualified, as per ITB Clause 4.3 (e). 20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid, except for un amended printed literature, shall be signed or initialed by the person signing the bid. 20.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids	
21. Sealing and Marking of Bids	21.1 Bidders may always submit their bids by mail or by hand or by courier. When so specified in the BDS, bidders shall have the option of submitting their bids electronically. Procedures for submission, sealing and marking are as follows:

(a) Bidders submitting bids by mail, by hand or by courier

i. Bidders shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as

"ORIGINAL", "ALTERNATIVE" and "COPY." These envelopes containing the original and the copies shall then be enclosed in one single envelope.

ii. The inner and outer envelopes shall:

(aa) bear the name and address of the Bidder;

(bb) be addressed to the Employer as provided in BDS 22.1;

(cc) bear the specific identification of this bidding process indicated in BDS 1.1; and

(dd) bear a warning not to open before the time and date for bid opening.

iii. If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

(b) Electronic Bid Submission **P**rocedures : Bidders submitting Bids electronically shall follow the electronic bid submission procedure specified in this clause as follows:

i. **For e-submission,** the bidder is required to register in the e-GP portal http://www.eproc.nea.org.np. for downloading and submitting the bid electronically.

ii. Interested bidders may either purchase the bidding documents from the employer's office as specified in the invitation for bid (IFB) or bidders registered in the e-GP portal of PPMO may download the bidding document from

http://www.eproc.nea.org.np. after login. If bidders choose to download the bidding document and submit the bid electronically, then the cost of the bidding document shall be deposited as specified in IFB. In addition, electronic scanned copy (.pdf format) of the bank deposit voucher/cash receipt should also be submitted along with the electronic bid files.

iii. The bidder shall then prepare/fill the documents and forms included in the issued bid documents or the downloaded bid documents from the e-GP portal of PPMO -

http://www.eproc.nea.org.np. as applicable. The required documents and forms shall be prepared in PDF form and/or shall be filled in the web forms in the e-GP system as specified below.

S. N.	Document	Requirement	Remarks
1	Letter of Bid	Mandatory	PDF/Web Forms
2	Bid Security (Bank Guarantee)	Mandatory	PDF

3	Company/Form registration	Mandatory	PDF
4	VAT registration	Mandatory	PDF
5	Tax clearances certificate or evidence of tax return submission	Mandatory	PDF
6	Power of Attorney of Bid signatory	Mandatory	PDF
7	Business Registration Certificate (License)	Mandatory; If Required	PDF
8	Bank Voucher for cost of bid document	Mandatory	PDF
9	Joint venture agreement	Mandatory	Mandatory in case of JV Bids Only
10	Qualification Information	Mandatory	Web Forms (Experience, Turnover, etc.)
11	Applicable Price Adjustment Table	Mandatory; If applicable	No price adjustment will be treated if the indices in the Price Adjustment Table are not provided.
12	Completed BOQ	Mandatory	Web Forms

Note:

a) The documents specified as "Mandatory" should be included in e-submission and non submission of the documents shall be considered as non-responsive bid.

b) Bidders (all partners in case of JV) should verify/update their profile documents as appropriate for the specific bid before submitting their bid electronically.

iv) The Bidder shall then upload the PDF bid files and submit the complete bid online through e-GP portal of PPMO- http://www.eproc.nea.org.np. within the specified date and time.

v) Bidders are advised to download the bid submission report to ensure that all the documents/ files are up to date and complete.

vi) The Bidder / Bid shall meet the following requirements and conditions for e-submission of bids;

aa) The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files (not

	complying as per ITB Clause 21.1(d) shall be considered incomplete and rejected for further bid evaluation. bb) In addition to electronically submitted PDF files/web forms, the Bidder shall be required to submit original bid security letter/ documents and clarifications as specified in ITB Clause 27. If a bidder does not submit the original Bid security letter and requested documents and or clarifications within the specified time limit then the bid shall not be considered for further evaluation. cc) If major discrepancy is found between the electronically submitted PDF bid files and the documents/ clarifications provided by the Bidder as per ITB Clause 27, then the bid shall not be considered for further evaluation. dd) The facility for submission of bid electronically through e-submission is to promote transparency, non-discrimination, equality of access, and open competition in the bidding process. The Bidders are fully responsible to use the e- submission facility properly in e-GP portal of PPMO- http://www.eproc.nea.org.np. as per specified procedures and in no case the Employer shall be held liable for Bidder's inability to use this facility. ee) When a bidder submits electronic bid through the PPMO e-GP portal, it is assumed that the bidder has prepared the bid by studying and examining the complete set of the Bidding documents including specifications, drawings and conditions of contract. ff) Bidders who submit electronic bid should deposit the bidding document fee as specified in IFB and upload the scan copy (in pdf format) of the deposit voucher at the time of bid submission. The deposited amount shall be verified by the Employer during the bid evaluation process. The submitted Bid shall be non-responsive and shall not be evaluated if the cost for bidding document is not deposited as specified in the IFB.
22. Deadline for Submission of Bids	22.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS. In case of e-submission, the standard time for e-submission is Nepalese Standard Time as set out in the server. The e-procurement system will accept the e-submission of bid from the date of publishing of notice and will automatically not allow the e-submission of bid after the deadline for submission of bid. 22.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
23. Late Bids	23.1 The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, and Modification of Bids	24.1 A Bidder may withdraw, or modify its bid after it has been submitted either in hard copy or by e-submission. Procedures for withdrawal or modification of submitted bids are as follows: (i) Bids submitted in hard Copy a) Bidders may withdraw or modify its bids by sending a written notice in a sealed envelope, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2 before 24 hours prior to the last deadline of submission of bid. The corresponding modification of the bid must accompany the respective written notice. All notices must be: (aa) prepared and submitted in accordance with ITB 20 and ITB 21,and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL", "MODIFICATION;" and (bb) received by the Employer twenty four hour hours prior to the deadline prescribed for submission of bids, in accordance with ITB 22. ii) E-submitted bids. a) Bidder may submit modification or withdrawal prior to the deadline prescribed for submission of bids through e-GP system by using the forms and instructions provided by the system. Once a Bid is withdrawn, bidder will not be able to submit another bid for the same bid. b) Withdrawal and modification of bids through hard copy shall not be considered in case of e-submitted bids 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders after completion of the bid opening. 24.3 Bidder may submit request for withdrawal or modification only one time. 24.4 No bid may be withdrawn if the bid has already been modified. 24.5 Request for withdrawal or modification must be made through the same medium of submission. Request for withdrawal or modifications through different medium shall not be considered. 24.6 The following provisions apply for withdrawal or modification of the Bids: (i) In case of bids submitted in hard copy no bid shall be withdrawn or modified in the interval between 24 hours prior to the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof. (ii) In case of e-submitted bids no bids shall be withdrawn or modified in the interval between deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.
25. Bid Opening	25.1 The Employer shall open the bids in public at the address, date and time specified in the BDS in the presence of Bidders` designated

	representatives and anyone who choose to attend. 25.2 The Employer shall download the e-submitted bid files. The e-procurement system allows the Employer to download the e-submitted bid files (report) only after bid opening date and time after login simultaneously by at least two members of the Bid opening committee. 25.3 Electronically submitted bid shall be opened at first in the same time and date as specified above. Electronic Bids shall be opened one by one and read out. The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete. 25.4 Thereafter, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be Permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding bid. No bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening. Only envelopes that are opened and read out at bid opening shall be considered further.
	25.5 All other envelopes shall be opened one at a time, reading out: the name of the Bidder; the Bid Price(s), including any discounts and alternative bids and indicating whether there is a modification; the presence of a bid security and any other details as the Employer may consider appropriate. Only discounts and alternative offers read out at bid opening shall be considered for evaluation. No bid shall be rejected at bid opening except for late bids, in accordance with ITB 23.1. 25.6 The Employer shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, or modification; the Bid Price, per Contract if applicable, including any discounts and alternative offers; and the presence or absence of a bid security. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record.

E. Evaluation and Comparison of Bids	
26. Confidentiality	26.1 Information relating to the examination, evaluation, comparison, and post-qualification of bids and recommendation of Contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.

	26.2 Any attempt by a Bidder to influence the Employer in the evaluation of the bids or Contract award decisions may result in the rejection of its bid. 26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.
27. Clarification of Bids	27.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids, in accordance with ITB 31. In case of e-submission of bid, upon notification from the employer, the bidder shall also submit the original of documents comprising the bid as per ITB 11.1 for verification of submitted documents for acceptance of the e-submitted bid. 27.2 If a Bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.
28. Deviations, Reservations, and Omissions	28.1 During the evaluation of bids, the following definitions apply: (a) "Deviation" is a departure from the requirements specified in the Bidding Document; (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.
29. Determination of Responsiveness	29.1 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB11. 29.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that, (a) if accepted, would: (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

	(ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer's rights or the Bidder's obligations under the proposed Contract; or (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids. 29.3 The Employer shall examine the technical aspects of the bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section V (Works Requirements) have been met without any material deviation, reservation or omission.
	29.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission. 29.5 In case of e-submission bids, the Employer evaluates the bid on the basis of the information in the electronically submitted bid files. If the Bidder cannot substantiate or provide evidence to establish the information provided in e-submitted bid through documents/ clarifications as per ITB Clause 27.1, the bid shall not be considered for further evaluation.
30. Nonconformities, Errors, and Omissions	30.1 Provided that a bid is substantially responsive, the Employer may waive any non-conformities in the bid. 30.2 Provided that a bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the bid. Failure of the Bidder to comply with the request may result in the rejection of its bid. 30.3 Provided that a bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price may be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the methods indicated in Section III (Evaluation and Qualification Criteria). 30.4 If minor discrepancies are found such as in technical specification, description, feature which does not make the bid to be rejected, then the cost, which is calculated to the extent possible due to such differences, shall be included while evaluating the bid. 30.5 If the value of such non-conformities is found to be more than fifteen percent of the quoted amount of the bidder on account of minor discrepancies pursuant to ITB 30.4, such bid shall be considered ineffective in substance and shall not be involved in evaluation.

31. Correction of Arithmetical	31.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:

Errors	(a) only for unit price Contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected; (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 the bid price in the Summary of Bill of Quantities and the bid amount in item (c) of the Letter of Bid, the bid price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Bid will be corrected.
	(d) 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), (b) and (c) above. 31.2 If the Bidder that submitted the lowest evaluated bid does not accept the correction of errors, its bid shall be disqualified and its bid security shall be forfeited.
32. Evaluation of Bids	32.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted. 32.2 To evaluate a bid, the Employer shall consider the following: (a) the bid price, excluding Value Added Tax , Provisional Sums, and the provision, if any, for contingencies in the Summary Bill of Quantities, for Unit Rate Contracts, or Schedule of Prices for lump sum Contracts, but including Day work items, where priced competitively; (b) price adjustment for correction of arithmetic errors in accordance with ITB 31.1; (c) price adjustment due to discounts offered in accordance with ITB 14.4; (d) adjustment for nonconformities in accordance with ITB 30.3; (e) application of all the evaluation factors indicated in Section III (Evaluation and Qualification Criteria); 32.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation. 32.4 If this Bidding Document allows Bidders to quote separate prices for different Contracts, and to award multiple Contracts to a single Bidder, the methodology to determine the lowest evaluated price

	of the Contract combinations, including any discounts offered in the Letter of Bid, is specified in Section III (Evaluation and Qualification Criteria). 32.5 In case of special evaluation in civil works, if the bid for an Unit Rate Contract, which results in the lowest Evaluated Bid Price, is seriously unbalanced or front loaded or substantially below updated estimates in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder as mentioned in BDS to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract. 32.6 In case of e-submission bids, the Employer evaluates the bid on the basis of the information in the electronically submitted bid files. If the Bidder cannot substantiate or provide evidence to establish the information provided in e-submitted bid through documents/ clarifications as per ITB Clause 27.1, the bid shall not be considered for further evaluation.
33. Comparison of Bids	33.1 The Employer shall compare all substantially responsive bids in accordance with ITB 32.2 to determine the lowest evaluated bid.
34. Qualification of the Bidder	34.1 The Employer shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid meets the qualifying criteria specified in Section III (Evaluation and Qualification Criteria). 34.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1. 34.3 An affirmative determination of qualification shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Employer shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.
35. Employer's Right to Accept Any Bid, and to Reject Any or All Bids	35.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to Contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.
F. Award of Contract	
36. Award Criteria	36.1 The Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract

	satisfactorily.

37. Letter of Intent to Award the Contract/Notification of Award	37.1 The Employer shall notify the concerned Bidder whose bid has been selected in accordance with ITB 36.1 within seven days of the selection of the bid, in writing that the Employer has intention to accept its bid and the information regarding the name, address and amount of selected bidder shall be given to all other bidders who submitted the bid. 37.2 If no bidder submits an application pursuant to ITB 40 within a period of seven days of the notice provided under ITB 37.1, the Employer shall, accept the bid selected in accordance with ITB 36.1 and Letter of Acceptance shall be communicated to the selected bidder prior to the expiration of period of Bid validity, to furnish the performance security and sign the contract within fifteen days.
38. Performance Security	38.1 Within Fifteen (15) days of the receipt of Letter of Acceptance from the Employer, the successful Bidder shall furnish the performance security as under mentioned from A class Commercial Bank in accordance with the conditions of Contract using Sample Form for the Performance Security included in Section IX (Contract Forms), or another form acceptable to the Employer. The performance security issued by any foreign Bank outside Nepal must be counter guaranteed by an "A" class commercial Bank in Nepal. i) If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent below the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price. ii) For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows: **Performance Security Amount =[(0.85 x Cost Estimate – Bid Price) x 0.5] + 5% of Bid Price.** The Bid Price and Cost Estimate shall be inclusive of Value Added Tax. 38.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security. In that event the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily. The process shall be repeated according to ITB 37.
39. Signing of Contract	39.1 The Employer and the successful Bidder shall sign the Contract Agreement within the period as stated ITB 38.1. 39.2 At the same time, the Employer shall affix a public notice on the result of the award on its notice board and make arrangement for causing such notice to be affixed on the notice board also of the District Development Committee, District Administration Office and District Treasury and Controller Office. The Employer may make arrangements to post the notice into its website, if it has; and if it does not have, into the website of the Public Procurement Monitoring Office, identifying the bid and lot

	numbers and the following information: (i) the result of evaluation of bid; (ii) date of publication of notice inviting bids; (iii) name of newspaper; (iv) reference number of notice; (v) item of procurement; (vi) name and address of bidder making contract and (viii) contract price 39.3 Within thirty (30) days from the date of issuance of notification pursuant to ITB 37.1 unsuccessful bidders may request in writing to the Employer for a debriefing seeking explanations on the grounds on which their bids were not selected. The Employer shall promptly respond in writing to any unsuccessful Bidder who, requests for debriefing. 39.4 If the bidder whose bid is accepted fails to sign the contract as stated ITB 39.1, the Public Procurement Monitoring Office shall blacklist the bidder on recommendation of the Public Entity.
40. Complaint and Review	40.1 If a Bidder is dissatisfied with the Procurement proceedings or the decision made by the Employer in the intention to award the Contract, it may file an application to the Chief of the Public Entity within Seven (7) days of providing the notice under ITB 37.1 by the Public Entity, for review of the proceedings stating the factual and legal grounds. 40.2 Late application filed after the deadline pursuant to ITB 40.1 shall not be processed. 40.3 The chief of Public Entity shall, within five (5) days after receiving the application, give its decision with reasons, in writing pursuant to ITB 40.1: (a) whether to suspend the procurement proceeding and indicate the procedure to be adopted for further proceedings; or (b) to reject the application. The decision of the chief of Public Entity shall be final for the Bid amount up to the value as stated in 40.4. 40.4 If the Bidder is not satisfied with the decision of the Public Entity in accordance with ITB 40.3, is not given within five (5) days of receipt of application pursuant to ITB 40.1, it can, within seven (7) days of receipt of such decision, file an application to the Review Committee of the GoN, stating the reason of its disagreement on the decision of the chief of Public Entity and furnishing the relevant documents, provided that its Bid amount is more than Rupees Twenty Million (Rs. 20,000,000). The application may be sent by hand, by post, by courier, or by electronic media at the risk of the Bidder itself. 40.5 Late application filed after the deadline pursuant to ITB 40.4 shall not be processed. 40.6 Within three (3) days of the receipt of application from the Bidder, pursuant to ITB 40.4, the Review Committee shall notify the concerning Public Entity to furnish its procurement proceedings, pursuant to ITB 40.3. 40.7 Within three (3) days of receipt of the notification pursuant to ITB 40.6, the Public Entity shall furnish the copy of the related documents to

	the Review Committee. 40.8 The Review Committee, after inquiring from the Bidder and the Public Entity, if needed, shall give its decision within one (1) month of the receipt of the application filed by the Bidder, pursuant to ITB 40.4. 40.9 The Bidder, filing application pursuant to ITB 40.4, shall have to furnish a cash amount or Bank guarantee from "A" class commercial bank equivalent to zero point five percent (0.15%) of its quoted Bid amount with the validity period of at least ninety (90) days from the date of the filing of application pursuant to ITB 40.4. 40.10 If the claim made by the Bidder pursuant to ITB 40.4 is justified, the Review Committee shall have to return the security deposit to the applicant, pursuant to ITB 40.9, within seven (7) days of such decision made.

SECTION - II

Bid Data Sheet

A. General	
ITB 1.1	The number of the Invitation for Bids is: **NCB/JRO 2074/075-08**
ITB 1.1	The Employer is: **Nepal Electricity Authority** **Distribution and Consumer Services Directorate** **Janakpur Regional Office** **Mujeliya, Janakpur**
ITB 1.1	The number and identification of lots comprising this bidding process is: **N/A** Following is the addition of the new definitions: (a) "Bidder" shall mean a legally registered entity submitting the Bid proposal. The entity may be a supplier or manufacturer of the tendered Goods or contractor or any combination of them in the form of a Joint Venture as specified in Qualification Requirements. (b) "Joint Venture" shall mean a legally enforceable association constituted by legally registered entities with the purpose of committing the obligations required by the Bid. (c) "Goods" shall mean equipment, plant, goods, materials, etc. to be supplied and installed for the completion of the work as particularly described in the specifications.
ITB 2.1	The name of the Project is: **Supply, Delivery, Installation/Erection, Testing & Commissioning of HT & LT Line at Singhdevi-Raniban, Okhaldhunga.** The DP is: **Not Applicable** The implementing agency is: **Nepal Electricity Authority (NEA)** GoN Funded or DP Funded: **GoN Funded**
ITB 4.1 (a)	Maximum number of partner in a joint venture shall be : 3 (three) The qualification requirement of the parties to the JV shall be : Lead partner – at least 40% Other partners – at least 25% Overall (Lead partner plus other partners) – 100 %
ITB 4.2	Eligible Countries – **Nepal only**

B. Bidding Document	
ITB 7.1	For clarification purposes only, the Employer's address is: Attention: **Sachidanand Yadav** Address: **Nepal Electricity Authority** **Distribution and Consumer Services Directorate** **Janakpur Regional Office** **Mujeliya, Janakpur** Telephone: **+977-041-521075, 528568** Facsimile number: **041-520387** Electronic mail address: **neajsro@gmail.com**
ITB 7.4	A Pre-Bid meeting **"shall not"** be held. A site visit shall not be organized by the Employer.
ITB 7.5	Time for request: Requests for clarification should be received by the Employer no later than 10 days prior to the deadline for submission of bids.
C. Preparation of Bids	
ITB 10.1	The language of the bid is: **English**
ITB 11.1 (b)	In accordance with ITB 12 and ITB 14, the following schedules shall be submitted with the bid, including the priced Bill of Quantities for Unit Rate Contracts and Schedule of Prices for lump sum contracts: **N/A**
ITB 11.1 (i)	The Bidder shall submit with its bid the following additional documents: **Two**
ITB 13.1	Alternative bids "shall not be" permitted.
ITB 13.2	Alternative times for completion "shall not be" permitted.
ITB 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: None
ITB 14.6	The prices quoted by the Bidder shall not be subject to adjustment during the performance of the Contract.
ITB 18.1	The bid validity period shall be: **120 days.**
ITB 19.1	The Bidder shall furnish a bid security, from "A" class commercial bank with a minimum of **95,000.00**, which shall be valid for 30 days beyond the validity period of the bid.
ITB 19.2 (b)	Account Name: **NEA, Janakpur Regional Office**

	Bank Name: **Nabil Bank Ltd.** Bank Address: **Janakpur, Dhanusha** Account Number: **5201017500256**
ITB 20.1	In addition to the original of the bid, the number of copies are: 2 (Two)
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall indicate: (a) The name and description of the documentation required to demonstrate the authority of the signatory to sign the Bid such as a Power of Attorney; and (b) In the case of Bids submitted by an existing or intended JV, an undertaking signed by all parties (i) stating that all parties shall be jointly and severally liable, and (ii) nominating a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.
D. Submission and Opening of Bids	
ITB 21.1	Bidders "shall" have the option of submitting their bids electronically.
ITB 22.1	For bid submission purposes only, the Employer's address is : **Nepal Electricity Authority** **Distribution and Consumer Services Directorate** **Janakpur Regional Office, Janakpur, Mujeliya** Telephone: **+977-0410521075, 528568** Facsimile number: **+977-041-520387** e- mail address: **neajsro@gmail.com** The deadline for bid submission is : Date : **2074-09-13** Time : **On or Before 12:00 noon.**
ITB 25.1	The bid opening shall take place at : **Nepal Electricity Authority** **Distribution and Consumer Services Directorate** Address : **Janakpur Regional Office, Janakpur, Mujeliya** Date : **2074-09-13** Time : **At 14:00 hours**
E. Evaluation and Comparison of Bids	
ITB 32.5	The amount of the performance security be increased by Eight (8) percent of the quoted bid price.

F. Special Instructions to Bidders for e-Bidding

A) Bid submission procedures through electronically (e-submission) only:

i. Interested eligible bidders shall, either purchase the hard copy of the bidding document directly from the Employer's office as specified in the Invitation for Bid (IFB) or may download the necessary parts of the bidding documents from e-procurement section in NEA's web site http://www.eproc.nea.org.np. In case, the bidders choose to download the bidding documents, prepare the bids on downloaded documents, and submit their bids electronically. The Bidders shall be required to deposit the non refundable fee for the bidding document (as specified in the bid notice) in the bank account specified in the IFB and electronic scanned copy (*.pdf format) of the bank deposit voucher shall also be submitted along with the electronic bid files.

ii. The Bidder shall fill the following documents and forms (in hard copy of issued bid documents), signed by the authorized representative with seal of the company.

a) Bill of Quantity (BOQ) with rate, amount, b) Forms of Bid, Qualification Information

The Bidder shall then scan the completed original documents, forms in PDF formats with appropriate filename shown if the table below.

S. No.	Document	PDF File name	Requirement	Remarks
1	Form of Bid	Bid form -1	Mandatory	
2	Bid Security (Bank Guarantee)	Bid security-2	Mandatory	
3	Company registration,	Company reg-3	Mandatory	All firms in case of JV
4	VAT/PAN registration,	VAT reg-4	Mandatory for National firms	All firms in case of JV
5	Tax clearances certificate,	Tax-5	Mandatory for National firms	All firms in case of JV
6	Power of Attorney of Bid signatory	Power of att-6	Mandatory	
7	Joint venture agreement	JV doc-7	Mandatory	In Case of JV
8	Qualification Information	Qualifications-	Mandatory	
9	BOQ with rate, amount and total amount	BOQ-9	Mandatory	
10	Manufacturers Authorization	Authorization - 10	Mandatory	
11	Technical Data Sheet	TDS-11	Mandatory	
12	Certification Documents	Certifications-12	Mandatory	Like ISO Certification
13	Declaration Form	Declaration-13	Mandatory	

Note: **Mandatory** *means the mentioned files shall be included in e-submission and non-submission of such file shall be considered as non-responsive bid.*

iii. For e-submission purpose the Bidder shall, at first, register in the e-procurement section

NEA's web site http://www.eproc.nea.org.np.

iv. After preparing all the required bidding documents in PDF, scan the files as specified in (ii).

v. The Bidder shall upload the PDF bid files and submit the complete bid online through e-procurement section of NEA's website http://www.eproc.nea.org.np. within the specified date and time.

vi. The e-procurement system will accept the e-submission of bid from the date after publishing of notice and will automatically disallow the e-submission of bid after the deadline for submission of bid, as specified above.

vii. The standard time for e-submission is Nepalese Standard Time as set out in the server of IT Department of NEA.

viii. When a bidder submits his bid in hard copy, the e-procurement section does not allow the bidder to submit his Substitution or Modification or Withdrawal through e-procurement section of NEA's web site.

ix. Bidders may submit his Substitution or Modification or Withdrawal either in hard copy or through e-submission.

x. For Substitution of Bid, the Bidder shall follow similar steps as specified in ITB Clause - 22 with a Substitution letter in PDF file.

xi. For Modification or Withdrawal of bid, the Bidder is required to submit PDF scan copy of their Modification or Withdrawal letter and a written Power of Attorney of the signatory for Modification/ Withdrawal, duly signed by Authorized Representative/s of the Firm / all authorized Joint Venture partners.

xii. When a Bidder submits electronic bid by downloading the bidding documents from the NEA's webpage it is assumed that the Bidder prepares his bid by studying and examining all the Bidding documents including specifications and conditions of contract.

xiii. In case the Bidder choose to download the bidding documents and deposit the cost of bidding documents (as specified in the bid notice), such deposited amount shall be verified by the office during bid evaluation process. The bid shall be considered as non-responsive and shall not be evaluated if the specified cost for bidding document is not deposited in the Employer's Revenue account.

xiv. Proposed facility for submission of bid electronically through e-submission is to increase transparency, non-discrimination, equality of access, and open competition. The Bidders shall be fully responsible to use the e-submission facility in e-procurement section of NEA's website http://www.eproc.nea.org.np. in specified procedures and in no case the Employer shall be held liable for Bidder's inability to use this facility.

B) Requirements and Conditions for e-submission of bid:

i. The Bidder shall submit his bid electronically in PDF files in the manner as specified above, and additional submission of hard copy of "original plus one copy of bid" is not mandatory.

ii. In case, if both the electronic bid and original bid in hard copy are submitted to the Employer within the bid submission deadline, the Bidder's electronic bid and original bid in hard copy will be accepted for evaluation provided the facts and figures in hard copy confirm to the PDF files in electronic bid. If there is any discrepancy in fact and figures between the electronic bid and original bid in hard copy, it will be treated as two separate bids from one Bidder and hence, both the electronic bid and original bid in hard copy shall be disqualified.

iii. However, for electronically submitted bid in PDF files, the Bidder shall be required to submit documents/clarifications for verification purpose upon notification to do so from the Employer within 3 days. Non-submission of such documents by the Bidder within specified period may cause forfeiture of Bid Security.

iv. The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files (not complying with the ITB Clauses) shall be considered incomplete and rejected for further bid evaluation.

v. In addition to electronically submitted PDF files, the Bidder shall be required to submit documents and clarifications as required by the Employer. Non-submission of such documents and or clarifications by the Bidder within specified time may cause forfeiture of Bid Security.

vi. In case of major discrepancy found between electronically submitted PDF bid files and documents/ clarifications provided by the Bidder, the bid shall not be considered for further evaluation.

vii. The Bidder shall attach the Bid Security Guarantee in the format attached in the Bid Document. The Bid Security may be forfeited

a. if the Bidder does not respond to and/or submit the documents and or clarifications when requested by the Employer.

b. if major discrepancy is found between e-submitted bid information and documents/clarifications provided by the Bidder during verification process as requested by the Employer.

C) Bid Opening process for e-submitted bid

i. Electronically submitted bid shall be opened first at the Bid opening time.

ii. The e-procurement system allows the Employer to download and open the e-submitted bid files from the bidders only after the time for opening the bids.

iii. The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files (not complying with the ITB Clauses) shall be considered incomplete and rejected for further bid evaluation.

iv. After opening of e-submitted bids files, all files shall be printed and recorded at the time of bid opening.

v. In case of "WITDRAWAL" or "MODIFICATION" or "SUBSTITUTION" by the Bidder through e-submission, the e-submitted PDF files under "WITDRAWAL" or "MODIFICATION" or "SUBSTITUTION" shall be opened and read out first. Bids for

which acceptable notice of "WITDRAWAL" or "SUBSTITUTION" has been submitted pursuant to ITB Clause shall not be opened.

D) Bid Evaluation and Comparison process for e-submitted bid

i. In case of e-submitted bids, the Employer evaluates the bid based on the information as per electronically submitted bid files. For clarification/ verification purpose, the Employer may request the Bidder to submit documents/ clarifications.

ii. In case, the Bidder could not substantiate or provide evidence to prove the information provided in e-submitted bid through documents/clarifications, the bid shall not be considered for further evaluation and respective ITB Clause for forfeiture of bid security shall be applicable.

iii. The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files (not complying with the ITB Clauses) shall be considered incomplete and rejected for further bid evaluation.

E) Qualification Information

In case of e-Bidding, the Bidder is required to submit the documents to prove minimum qualification requirements only and not the detail documents.

F) Bid Security Format

Form of Bid security shall include the provision as 'This Bank Guarantee shall not be withdrawn or released merely upon return of the original Guarantee by the Bidder unless notified by the Employer for the release of the Guarantee'.

Nepal Electricity Authority

Declaration Form (for E-bidding)

S.No.	Description		Status			
			Issued to (as applicable)	Issued by (as applicable)	Date of Issue	No. of Pages
1	Notarized Power of Attorney from the Company to Sign on Company's behalf (For Single Bidder)					
2	Joint Venture Agreement; ***If any***					
3	Notarized Power of Attorney to Sign the Bid on Company's behalf (Each Partner in case of JV)					
4	Notarized Power of Attorney to Sign the Bid (On Behalf of JV)					
5	Registration Certificate of the Bidder (and each partners in case of JV)					
6	Bid Security					
7	Price Schedule					
8	Bid Form					
9	Qualification Forms					
10	Complete Certified Audited Report of the Bidder (and each partner in case of JV)	Year 1				
		Year 2				
		Year 3				
11	Performance (or user) Certificate/s	1				
		2				

	(Bidder)	3				
		4				
12	Manufacturer's Authorization/s	1				
		2				
		3				
		4				
13	Power of Attorney from the Company to Issue the Manufactures Authorization					
14	Business License of Manufacturer/s	1				
		2				
		3				
		4				
15	User Certificate/s (Manufacturer)	1				
		2				
		3				
		4				
16	ISO Certificate	1				
		2				
		3				
		4				
17	Type Test Report/s (if required as per specification)	1				
		2				
		3				
		4				
18	Technical Data	1				

	Sheet	2				
		3				
		4				
19	Other Certification (as per requirements)	1				
		2				
		3				
		4				

SECTION - III

Evaluation and Qualification Criteria

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders by post-qualification exercise. GoN/DP requires bidders to be qualified by meeting predefined, precise minimum requirements. The method sets pass-fail criteria, which, if not met by the bidder, results in disqualification. In accordance with ITB 32 and ITB 34, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section IV (Bidding Forms).

1. Evaluation

In addition to the criteria listed in ITB 32.2 (a) - (e) the following criteria shall apply:

1.1 Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity, to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section V (Works Requirements).

1.2 Multiple Contracts (Not Applicable)

1.3 Completion Time

Time to complete the plant and services from the effective date for determining time for completion of pre-commissioning activities is: 12 months. No credit will be given for earlier completion.

1.4 Alternative Technical Solutions (Not Applicable)

1.5 Quantifiable Nonconformities, Errors and Omissions

Pursuant to ITB 30, the cost of all quantifiable nonmaterial nonconformities or omissions (minor omissions or missing items) shall be evaluated. The Employer will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of bids.

2. Qualification

Failure to fulfill any of the requirements specified in Qualification Criteria given below shall result in disqualification of the Bid.

2.1. Power of Attorney

The Bid shall include a notarized power of attorney authorizing the signatory of the bid to commit the Bid on behalf of the Bidder.

2.2. Legal Status:

i) For the Bidder which is not a Joint-Venture:

The Bidder shall be a manufacturer or a contractor legally registered in their home country for at least five (5) years. A notarized copy of legal registration certificate shall be submitted along with the Bid.

ii) For the JV Bidder:

(a) Original of joint venture agreement legally binding on all JV partners shall be included in the Bid. The joint venture agreement shall bear the seal of the entity and signatures of personnel authorized by the respective entities forming the joint venture. All such authorization documents shall also be included in the Bid. These Authorization document shall be on the original letterhead of the respective entity with stamp/seal of the entity.

(b) The number of joint venture partners shall not exceed three (3).

(c) Partners of the JV shall be a manufacturer or contractor legally registered for at least five (5) years.

(d) Notarized copies of legal registration certificates for each JV partners shall be submitted along with the Bid.

2.3. Project Experience:

2.3.1 For the Bidder which is not a Joint Venture (JV):

a. The Bidder shall include certificates from the end users validating that the Bidder has successfully completed supply, construction, installation, testing and commissioning of at least one contract of similar nature (construction of 2.2 km of 11 kV or higher voltage transmission line & 11 km of 0.4/23 kV or higher voltage Distribution line) in the last10 years.

The Bidder must have executed construction, installation and commissioning of at least one Contract of similar size and nature or number of contracts of similar nature whose aggregate size is not less than the size of this bid.

If the bid involves design the bidder shall propose there reputed designer with the experience of similar work and two user certificates not earlier than 10 years from the date of bid submission.

b. The end user's certificates included in the bid shall be on the end user's original letter

head with valid address for correspondence and signed by or on behalf of the end user.

2.3.2 For the JV Bidder:

a. The lead partner shall have completed at least one project of size which is at least <40%of the Project experience stated above>.If the Bidder is previously not involved in design, then Lead Partner shall propose the reputed designer with the experience of similar work and two end user certificates not earlier than last ten (10) years from the date of bid submission.

b. Each of the other partners of the JV shall have accomplished at least one project of size (as a JV) at least <25% of the Project Experience stated above>.

c. The Bid shall include certificates from the end users for the lead partner and each of the other partners validating that they have successfully completed design (if the Bid involve design), supply, construction, installation and commissioning of projects of the size stated in 2.3.2 (a) and (b) above. The date in the end user certificates shall not be earlier than last ten (10) years from the last date of bid submission.

d. The JV partners together shall have successfully completed design (if the Bid involve design), supply, construction, installation and commissioning of projects whose aggregate size is not less than the size of this Bid.

2.4. Financial Capacity of the Bidder

2.4.1 Financial Statements:

The Bidder including joint venture partners, if any, shall submit audited financial statements (Balance Sheet and Profit & Loss Account) for the last three (3) fiscal years. Balance sheet and profit & Loss Account sheet shall be signed and sealed by the registered auditor (s).

2.4.2 Line of Credit:

In the event that the working capital of the bidder (including each of the JV partner) is to be supplemented with the line of credit from a Bank, the Bidder shall submit original letter of the Bank pledging un equivocally that the Bank will provide required financial support in case the Bidder is awarded the contract. The amount of line of credit shall be clearly mentioned in the Bank letter. The bid title and the bid number shall also be mentioned in the Bank letter.

2.4.3 Average Annual Turnover

a. For the Bidder which is not a Joint Venture:

The Bidder shall have Average Annual Turnover (defined as the total payments received by the Bidder averaged over last three consecutive years) of not less than NRs **46,00,000.00**.

b For the JV Bidder:

i. The Average Annual Turnover of the lead partner shall not be less than 51% of the amount stated above in sub-clause 2.4.3.a.

ii. The Average Annual Turnover of other partners shall not be less than 10% of the amount stated in sub-clauses 2.4.3.a.

iii. Aggregate Annual Turnover of all the JV partners shall not be less than the values specified in sub-clauses 2.4.3.a.

2.4.4 Availability of Financial Resources (working capital)

a. For the Bidder which is not a Joint Venture:

The Bidder shall have working capital (defined as total current assets less total current liabilities) of at least NRs **10,25,000.00** in the last fiscal year.

If the Bidder's working capital is in adequate, the Bidder shall supplement Working Capital with Banker's letter confirming the availability of a line of credit such that aggregate of the Bidder's Working Capital for the last fiscal year and the line of credit shall not be less than there acquired amount.

b For the JV Bidder:

i. Working Capital of the lead partner shall not be less than 51% of the amount stated above in sub-clause2.4.4.a.

ii. Working Capital of other partners shall not be less than 10% of the amount stated in sub- clauses2.4.4.a.

iii. Aggregate working Capital (with line of credit facilities) of all the JV partners shall not be less than the values specified in sub-clauses 2.4.4.a.

2.5. Quality of Goods

The offered Goods shall be in conformity with the specifications. The Bidder shall fill in technical Data Sheet provided in Section V, Works Requirements of the Bidding document. In order to prove that the Goods offered are in conformity with the specifications, the Bidder shall furnish documentary evidence in the form of literature (catalogue), drawings, detailed description of Goods with essential technical and performance characteristics and type test reports wherever called for.

i. In case the Bidder is not the manufacturer of Goods offered, the Bidder shall submit manufacturer's certificate authorizing the Bidder to supply the manufacturers' Goods. This certificate shall bear details of the Goods that the manufacturer will be supplying under the authorization. The authorization shall be on the manufacturer's original letterhead with seal/stamp of the manufacturer.

ii. The manufacturer of Goods to be supplied under this Bid shall hold valid quality ISO certificate as required by the specifications and a copy of ISO certificate shall be included in the Bid.

iii. Type test certificate, if applicable, shall be included in the Bid and shall bear a date that is not earlier than five years from the last date of Bid submission, unless otherwise stated in the technical specification. The type test certificate shall have been issued by

a reputed independent laboratory accredited by International Laboratory Accredition Corporation (ILAC) or International Accreditation Forum (IAF) or other reputed accreditation agencies.

In case of the type test certificate is not as per the requirement, the bidder shall, upon award of the contract, undertake to carry out the required type tests from an independent laboratory qualified as above or in a laboratory owned or nominated by the Client/Employer before delivery of the corresponding equipment at no extra cost to the Client/Employer.

2.6 Manufacturer's Experience

The Bidder shall submit at least two numbers of end user certificates showing that the manufacturer has successfully completed the supply of 10m or higher size Steel Tubular Pole accessories, ACSR Rabbit Conductor or higher size conductor accessories and Insulator (Disc & Pin) & Hardware at least twice the bid quantity (specified in bill of quantities/price schedules) as a main supplier over last five (5) years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity for each item offered (as specified above) shall have been in operation satisfactorily to the end users for at least One (1) year. The end user certificates shall be on the letterhead of the end user with valid address for correspondence and signed by or on behalf of the end user.

2.7 Miscellaneous

The Bidder or any of the Joint Venture partners shall not be on the black list circulated by Public Procurement Monitoring Office, Government of Nepal or Nepal Electricity Authority.

2.8 Eligibility

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	

2.8.1 Conflict of Interest

No conflicts of interest in accordance with ITB Sub-Clause 4.3.	must meet requirement	existing or intended JV must meet requirement	must meet requirement	not applicable	Letter of Bid

2.8.2 Government-owned Entity

Applicant required to meet conditions of ITB Sub-Clause 4.5.	must meet requirement	existing or intended JV must meet requirement	must meet requirement	not applicable	Forms ELI -1, ELI - 2 with attachments

2.8.3 UN Eligibility

Not having been declared ineligible based on a United Nations resolution or Employer's country law, as described in ITB Sub-Clause 4.8.	must meet requirement	existing or intended JV must meet requirement	must meet requirement	not applicable	Letter of Bid

2.8.4 Other Eligibility

Submission of the following document is must:

- Copy of Firm Registration Certificate
- Copy of Business Registration Certificate
- Copy of VAT and PAN Registration Certificate,
- Copy of Tax Clearance Certificate/Tax return submission evidence for the F/Y 2073/74.
- A written declaration made by the bidder with a statement that s/he is not ineligible to participate in the procurement proceedings; has no conflict of interest in the proposed procurement proceedings, and has not been punished for a profession or business related offences.
- Joint Venture Authorization/Agreement (if any).
- Notarized Power of Attorney.
- Other documents as needed

2.9 Pending Litigation

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	

2.9.1 Pending Litigation

All pending litigation shall be treated as resolved against the Applicant and so shall in total not represent more than 50 percent of the Applicant's net worth.	must meet requirement by itself or as partner to past or existing JV	not applicable	must meet requirement by itself or as partner to past or existing JV	not applicable	Form LIT – 1

2.10 Personnel

The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements:

No.	Position	Total Work Experience [years]	Experience In Similar Works [years]
1	Project Engineer (Electrical)	10	2
2	Electrical Engineer	2	1
3	Electrical Overseer	5	2

The Bidder shall provide details of the proposed personnel and their experience records in the relevant Information Forms included in Section 4 (Bidding Forms).

2.11 Equipment

The Bidder must demonstrate that it has owned/hired the key equipment listed hereafter:

No.	Equipment Type and Characteristics	Min. Number Required
1	Truck and Pick Up Truck	1 each
2	Insulation Tester	1 Set
3	Survey equipment (Theodolite or Total station)	1 set
4	Hand Ratchet Puller (Hand Vice)	3 Set
5	Digital Multimeter	2
6	Digital Tongue Tester	2
7	Crimping Tools	2 set
8	Wire Cutter	2 Set
9	Rollers, Ropes	1 Lot
10	Ladders	as required
11	Safety equipment (Safety Belt, Helmet, Gloves, Safety Boots) – as required	as required

SECTION - IV

Bidding Forms

This Section contains the forms which are to be completed by the Bidder and submitted as part of its Bid.

Letter of Bid

The Bidder must accomplish the Letter of Bid in its letterhead clearly showing the Bidder's complete name and address.

Date: .....

Name of the contract: .....

Invitation for Bid No.: .....

To: ……..

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8;
(b) We offer to execute in conformity with the Bidding Documents the following Works:

(c) The total price of our Bid, excluding any discounts offered in item (d) below is:

(d) The discounts offered and the methodology for their application are:

(e) Our bid shall be valid for a period of ***[insert validity period as specified in ITB 18.1]*** days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(f) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;

(g) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries or any countries [insert the nationality of the Bidder, including that of all parties that comprise the Bidder if the Bidder is a consortium or association, and the nationality of each Subcontractor and Supplier];

(h) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3;

(i) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB 4.3, other than alternative offers submitted in accordance with ITB 13;

(j) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any

part of the contract, has not been declared ineligible, under the Employer's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;

(k) We are not a government owned entity/We are a government owned entity but meet the requirements of ITB 4.5.1

(l) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;

(m) We declare that, we have not been black listed as per ITB 3.4 and no conflict of interest in the proposed procurement proceedings and we have not been punished for an offense relating to the concerned profession or business.

(n) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and

(o) If awarded the contract, the person named below shall act as Contractor's Representative:

(p) We agree to permit the Employer/DP or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the Employer.

Name: .....

In the capacity of .....

Signed ……...

Duly authorized to sign the Bid for and on behalf of ……

Date ……....

Bid Security
Bank Guarantee

Bank's Name, and Address of Issuing Branch or Office
(On Letter head of the 'A' class Commercial Bank)

Beneficiary: ..... name and address of Employer …….

Date: ……...

Bid Security No.: .....

We have been informed that . ……. .[insert name of the Bidder] (herein after called "the Bidder") intends to submit its bid (hereinafter called "the Bid") to you for the execution of …….. name of Contract . …… under Invitation for Bids No. …… ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee. At the request of the Bidder, we……. . name of Bank. …….. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of . . ……...amount in figures ……. (. …….. .amount in words …….) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

(a) has withdrawn or modifies its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
(b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
(c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.
(d) is involved in fraud and corruption in accordance with the ITB

This guarantee will remain in force up to and including the date ……number……days after the deadline for submission of Bids as such deadline is stated in the instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not letter than the above date.

This Bank guarantee shall not be withdrawn or released merely upon return of the original guarantee by the Bidder unless notified by you for the release of the guarantee.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.

. . .Bank's seal and authorized signature(s) . . .

Note:

The bid security of ……. has been counter guaranteed by the Bank ……..…..…… on ……..... (Applicable for Bid Security of Foreign Banks).

Manufacturer's Authorization Letter

[This letter of authorization should be on the letterhead of the manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the manufacturer]

Date: _____

IFB No.: _____

To:_____

WHEREAS_____ who are official manufacturers of _____ having factories at _____ do hereby authorize _____ exclusively to submit a Bid in relation to the Invitation for Bids indicated above, the purpose of which is exclusively to provide the following Goods, manufactured by us _____and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the General Conditions of Contract, with respect to the Goods offered by the above firm in reply to this Invitation for Bids.

Name _____

In the capacity of: _____

Signed _____

Duly authorized to sign the Authorization for and on behalf of _____

Date __

Technical Proposal Format

Personnel

Equipment

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Others

Personnel

Form PER - 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section III (Evaluation and Qualification Criteria). The data on their experience should be supplied using the Form below for each candidate.

No.	Name	Position*	Academic Qualification	Total Work Experience [Years]	Experience in Similar Works [years]
1.					
2.					
3.					
4.					
5.					

* As listed in Section III (Evaluation and Qualification Criteria).

Form PER - 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with asterisk (*) shall be used for evaluation.

Position*		
Personal Information	**Name**	**Date of Birth**
	Professional qualifications	
Present employment	**Name of employer**	
	Address of employer	
	Telephone	**Contact (manager/personnel officer)**
	Fax	**E-mail**
	Job title	**Years with present employer**

Summarize professional experience over the last twenty years in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From*	**To***	**Company, Project, Position and Relevant Technical and Management Experience***

Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III (Evaluation and Qualification Criteria). A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder. The Bidder shall provide all the information requested below, to the extent possible. Fields with asterisk (*) shall be used for evaluation.

<table>
<tr><td colspan="3">Type of Equipment*</td></tr>
<tr><td rowspan="2">Equipment Information</td><td>Name of manufacturer</td><td>Model and power rating</td></tr>
<tr><td>Capacity*</td><td>Year of manufacture</td></tr>
<tr><td rowspan="2">Current Status</td><td>Current location</td><td></td></tr>
<tr><td colspan="2">Details of current commitments</td></tr>
<tr><td>Source</td><td colspan="2">Indicate source of the equipment
🗀 Owned 🗀 Rented 🗀 Leased 🗀 Specially manufactured</td></tr>
</table>

The following information shall be provided only for equipment not owned by the Bidder.

<table>
<tr><td rowspan="4">Owner</td><td colspan="2">Name of owner</td></tr>
<tr><td colspan="2">Address of owner</td></tr>
<tr><td>Telephone</td><td>Contact name and title</td></tr>
<tr><td>Fax</td><td>email</td></tr>
<tr><td>Agreements</td><td colspan="2">Details of rental / lease / manufacture agreements specific to the project</td></tr>
</table>

Bidder's Information and Qualification Format

Site Organization

Method Statement

Mobilization Schedule

Construction Schedule

Others

Bidder's Qualification

To establish its qualifications to perform the contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI - 1: Bidder's Information Sheet

Bidder's Information	
Bidder's legal name	
In case of JV, legal name of each partner	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the following original documents.	
1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2. 2. Authorization to represent the firm or JV named in above, in accordance with ITB 20.2. 3. In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1. 4. In case of a government-owned entity, any additional documents not covered under 1 above required to comply with ITB 4.5.	

Form ELI - 2: JV Information Sheet

Each member of a JV must fill in this form

JV / Specialist Subcontractor Information	
Bidder's legal name	
JV Partner's or Subcontractor's legal name	
JV Partner's or Subcontractor's country of constitution	
JV Partner's or Subcontractor's year of constitution	
JV Partner's or Subcontractor's legal address in country of constitution	
JV Partner's or Subcontractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the following original documents.	
1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and 4.2. 2. Authorization to represent the firm named above, in accordance with ITB 20.2. 3. In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5.	

Form LIT - 1: Pending Litigation

Each member of a JV must fill in this form

Pending Litigation			
☐ No pending litigation in accordance with Criteria 2.8.2 of Section III (Evaluation and Qualification Criteria) ☐ Pending litigation in accordance with Criteria 2.8.2 of Section III (Evaluation and Qualification Criteria)			
Year	**Matter in Dispute**	**Value of Pending Claim in NRS**	**Value of Pending Claim as a Percentage on Net Worth**

Form FIN - 1: Financial Situation

Each Bidder or member of a JV must fill in this form

Financial Data for Previous 3 Years [in NRS]		
Year 1 :	**Year 2 :**	**Year 3 :**

Information from Balance Sheet

Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			

Information from Income Statement

Total Revenues			
Profit Before Tax			
Profit After Tax			

- Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three or above years, as indicated above, complying with the following conditions.
- All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister
  or parent companies.
- Historic financial statements must be audited by a certified auditor.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form FIN - 2: Average Annual Construction Turnover

Each Bidder or member of a JV must fill in this form

The information supplied should be the Annual Turnover of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for work in progress or completed to NRs at the end of the period reported.

Annual Turnover Data for the Last 3Years	
Year	**Amount Currency**

- **Average Annual Turnover**

Form FIN - 3: Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III (Evaluation and Qualification Criteria).

Financial Resources		
No.	**Source of financing**	**Amount (in NRS)**
1		
2		
3		

Note :

The letter from the Bank must be unconditional.

Form FIN- 4: Current Contract Commitments / Works in Progress

Bidders and each partner to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments									
No.	**Name of Contract**	**Name of the Contractor/s**	**Employer's Contact Address, Tel, Fax**	**Contract Amount**	**Contract Date**	**Contract Duration**	**Value of outstanding works [NRS]**	**Estimated Completion Date**	**Average Monthly Invoicing [NRS/month]**
1									
2									
3									
4									
5									
6									

Form EXP - 1: General Project Experience

Each Bidder or member of a JV must fill in this form.

General Construction Experience				
Starting Month Year	**Ending Month Year**	**Year**	**Contract Identification and Name and Address of Employer Brief Description of the Works Executed by the Bidder**	**Role of Bidder**

Form EXP - 2(a): Specific Project Experience

Fill up one (1) form per contract.

Contract of Similar Size and Nature			
Contract No…… of…..	**Contract Identification**		
Award Date		**Completion Date**	
Role in Contract	☐ **Contractor**	☐ **Management Contractor**	☐ **Subcontractor**
Total Contract Amount	☐ **NRS ……..**		
If Partner in a JV or subcontractor, specify participation of total contract amount	**Percent of Total**	**Amount**	
Employer's Name **Address** **Telephone/Fax Number** **E-mail**			
Description of the similarity in accordance with Criteria 2.4.2 (a) of Section III			
Note : ***The Employer should insert here contract size, complexity, methods, technology, or other characteristics as described in Section V (Work Requirements) against which the bidder demonstrates similarity in the box on the right-hand-side.***			

Form EXP - 2(b): Specific Project Experience in Key Activities

Fill up one (1) form per contract.

Contract of Similar Size and Nature			
Contract No…… of……..	**Contract Identification**		
Award Date		**Completion Date**	
Role in Contract	☐ **Contractor**	☐ **Management Contractor**	☐ **Subcontractor**
Total Contract Amount	☐ **NRS ……..**		
If Partner in a JV or subcontractor, specify participation of total contract amount	**Percent of Total**	**Amount**	
Employer's Name **Address** **Telephone/Fax** **Number** **E-mail**			
Description of the similarity in accordance with Criteria 2.4.2 (a) of Section III			
Note : *The Employer should insert here production rate(s) for the key activity (activities) subject contract against which the bidder demonstrates in the box on the right-hand-side production rates achieved by him on previous contracts.*			

Part - II

REQUIREMENTS

Table of Clauses

Section - V Works Requirements .....V-1 to V-84

Requirements ……..……

Technical Specification (Electrical Equipment)……

Technical Data Sheet……...

Inspection, Testing and Commissioning……..

Section - VI Bill of Quantities..... VI-1 to VI-14

Preamble of Bill of Quantities ……..……..……...VI-1

Bill of Quantities .....…..VI-2

ANNEX…….

Drawings…….....

RKS (EMPLOYER'S) REQUIREMENTS

CHAPTER 1: TECHNICAL PREAMBLES TO PRICE SCHEDULES

1 General Information

This describes the requirements of those items which have not been included in the Construction Standard and which are of general nature.

(a) All the Construction Units shall include the cost of preparation, revision and reproduction of supporting Structure Data Sheets (SDS) and drawings.

(b) All Construction Units shall include the cost of cutting and painting bolt ends extending more than 30 mm beyond the nut if necessary.

(c) All Construction Units shall include necessary cost for trimming and cutting of trees to clear route for new or existing works. Trimming and Cutting of trees shall be the responsibility of the Contractor but the Employer shall assist to obtain necessary permit for the same.

2. Construction Unit, 1

Pre-Construction Survey, Mappings, Preparation of SDS, Single line diagram and Final BOQ

The Construction Unit is for carrying out pre-construction survey, preparation of pre-construction drawings/mappings, single line diagram and SDS; and preparation of final SDS and As Built Drawing.

Unit: This construction unit is per km of line length.

2.1 Structure Data Sheet (SDS)

SDS shall be prepared to provide the details of specific construction information necessary for erection of pole structures with hardware and accessories, conductor stringing and transformer installation. The SDS shall be used in conjunction with the area plan drawing to document the works to be performed. A copy of the SDS format shall be provided in the event the bidder awarded the contract

Abbreviations used in the preparation of SDS shall be defined as follows:

S. No.	Nomenclatures	Meaning
A	Pole Construction No.	Number assigned by the Contractor to identify pole on plan drawing.
B	Span	Length of conductor span between poles
C	BK	Angle of line deflection in degrees
D	Pole	Pole quantity
E	Frame	The Construction Standard for 33, 11 kV system for which the pole is to be framed.
F	Stay	The Construction Standard for stay to be installed.
G	Transformer	The Construction Standard for which the transformer/installation is to be framed.
H	Conductor	The number and size of ACSR conductors in mm^2 for 33,11 kV
I	Conductor (km.)	Running km length of conductor.
J	SA	Single Arm Structure
K	TO	Tee Off Structure
L	DE	Dead End Structure
M	DDE	Double Dead End Structure
N	HS	H- Pole Structure
O	TR	Transformer Structure
P	A	Single wire type stay
Q	B	Double wire type Stay
R	C	Flying type stay
S	D	Flying type with shorter stay lead or bow type stay
T	SA1	Single arm structure for deviation between $>15^0$- 30deg is to be framed
U	A	Low voltage frame type A
V	B	Low voltage frame type B
W	C	Low voltage frame type C
X	D	Low voltage frame type D
Y	E	Low voltage frame type E

Note:

- Information for a single pole location need not be confined to a single row.
- All works, whether new or on existing systems, shall be documented on the SDS.
- Each SDS shall include the applicable "As Built" Plan Drawing number(s).
- Similarly each "As Built" Plan Drawing shall include the applicable SDS number(s).

2.2 Pre-Construction Survey

Standard check survey and drafting procedure shall be used to carry out the survey works and preparation of drawings. This is the responsibility of the contractor to conduct the survey and submit the survey report by their own cost and responsibilities.

Following points should be considered while preparing the drawing.

1. As far as possible, the proposed electric line shall follow the bank of existing road/trail to avoid the right of way problem during construction period.

2. The schematic diagram of 11/0.4-0.230 kV line shall show the tapping point, conductor size and line length, load centers. One set of Drop Out fuse set shall be included as a sectionlizer at each branch tapping point of main HT Line.

Staking drawings shall include but shall not be limited to:

- Location, description and coverage of NEA existing HV/LV line and communication line in the area of proposed Distribution line routes;
- Identification and fixing of HT Tapping point, load centers, beneficiary households and HT/LT route alignment
- Existing Transformer of NEA utilized for LT tapping if any.
- Identification and fixing of pole structure during the road crossing, river crossing and in the crossing of any other facilities like Bridges, Pipelines etc if any existed in the area of proposed Electrification.
- Details of Feeder line and Households details of every identified load center
- Slide, slopes/cross slopes etc in the proposed route of HT/LT line.
- Wild Reserve area/ Forest if any in the proposed route of HT/LT line.
- Notations regarding areas unsuitable for pole line structures e.g. swamp, solid rock etc;
- All features within 60 meters of the proposed route which are significant in construction and maintenance of the line;
- Details of Construction units if differs from the Contract agreement Units.

2.3 Contractor's Drawing/mapping and Data

The Contractor shall provide **GIS mapping** of the proposed line route of HT line in the forms of Mylar tracings or computer printed drawing showing the chain edge of each pole location/angle point in **1:5000 scale** with **electronic copy in compact disc (CD**) required for construction and record purposes. The required number of construction plan drawings and associated SDSs shall be at least **Five (5) copies** and shall be duly **recommended** from local NEA branch office and/or the Employer.

Checking and revising the Drawings and Structure Data Sheets if necessary, is a part of the Scope of Work of the Contractor. The contractor shall produce the revised or final drawings in accordance with the General Specifications.

Revised Line Staking Drawings shall be provided by the Contractor for the approval of the Employer for the execution of construction works.

The Contractor shall submit the drawings and data to the concerned office of the Employer for approval in the following manner:

The title of Contractor's drawing shall also include the followings:

(a) NEPAL ELECTRICITY AUTHORITY (Nepal Government's UNDERTAKING)

(b) Name of the Division

(c) Contract No.

(d) Ratings of the line

The size of the drawings except otherwise specified in the Specification shall be any one of the following sizes.

A1	594mm x 841mm	(23.39" x 33.11")
A2	420mm x 594mm	(16.54" x 23.39")
A3	297mm x 420mm	(11.69" x 16.54")
A4	210mm x 297mm	(8.27" x 11.69")

Reproducible of all final approved drawings shall be made on Mylar films or computer printed drawings with computer electronic files in CD.

All drawings for approval and final as built drawings shall be produced in A1 and shall be bound neatly.

Computer Electronic File (CEF)

The Contractor shall prepare and submit the computer printed drawing with Computerized Electronic File (CEF) for all final Approved as Built Drawings within one **(1) months** after the completion of the Works.

Structural Data Sheet

Structural Data Sheet shall be checked and prepared in such a manner that it shall show each and every items installed in each pole and the actual length of each and every span.

3. Construction Unit, 2

11 kV Supports, Insulators and Hardware

This Construction unit is for the supply and installation of single, double, triple or four pole structures fitted with cross-arm, insulators and other hardware.

This covers the work such as Supply and delivery of all the necessary materials from respective factory warehouse, excavate pole hole, set pole, if necessary, back fill and tamp poles, compact the back filling adequately, realign, if necessary, install framing including insulators and hardware all complete.

Support Type	Description	Reference Specification/Standard	
		Equipment	Construction
CS11-STP-01	11 kV, Single Arm Structure		
CS11-STTP-06 AND 12	11 kV, Single Pole Dead end type Structure		
CS11-STTP-06 AND 13	11kV Single Pole Structure-Double Dead End Type		
CS11-STTP-06 AND 14	11kV Double Pole H- Structure-Double Dead End Type		

CS11-STTP-06 AND 11	11kV Single pole Single Arm Tapping		
CS11-STTP-06 AND 11	11kV Single pole Double Arm structure type		
PL13	8 m LT 1 Phase-2 wire		

4. Construction Unit, 3

11 kV & 230 V Conductor and Accessories
This construction unit is for the stringing of 11/0.4-0.230 kV conductor and supply, delivery of accessories.

This unit covers the Supply and delivery of all the necessary materials from respective factory warehouse to the site, set up wire stringing reels, pulling lines, stringing blocks on poles/cross-arms, install and remove temporary guard structures, if necessary, install and remove temporary structures to keep conductor from dragging on earth, if necessary. Pull conductors, sag and dead-end, remove conductor from stringing blocks, tie to insulators, make necessary compression joints, and connect jumpers and complete installation.

Conductor Type	Description	Reference Specification/Standard	
		Equipment	Construction
A	11 kV, three wire Rabbit		
D	230 V, two wire Weasel		

5. Construction Unit, 4

Stays and Anchors

This Construction unit is for the supply, Delivery and installation of complete single, double, flying or bow type stay assembly.

This Unit includes the Supply and delivery of all the required materials from factory warehouse to site, excavate hole, install anchor rod, back fill with gravel if specified, ramp till well compacted, install stay wire and stay insulator, adjust tension and further adjust tension if necessary after installation and stringing of conductor. Provide sand and stone as a local material for the installation of stay for HT/LT distribution line and install the stay sets as per the construction standard drawings.

Type of Stays and Anchors:

Stay Type	Description	Reference Specification/Standard	
		Equipment	Construction
A	HT/lt Single Stay		

6. Construction Unit, 5

This Construction unit covers all the necessary works for the preparation of final as built drawing, Structural Data Sheet, testing, charging of electric distribution system and handover with documentation to N.E.A.

7. Construction Unit, 6

Labour Rates

This construction unit is intended to use for such work, which has not been defined by a Construction standard. Contractor shall submit along with the bid, a written description of work which may have to be performed under certain situation and which was not foreseen during the design and study. This shall include location, number and classification of personnel to perform the work and estimated number of hours/day per man. This construction unit is to be charged only upon the approval of the Employer. This unit includes necessary transport of equipment to perform the assigned work.

S.No	Designation	Rate per hour or per day
1	Engineer	
2	Supervisor	
3	Foreman	
4	Lineman/ Electrician	
5	Helper	
6	Labor/Unskilled Jyami	

Note: The construction unit outlined in these sections contains general information and may vary. The actual construction units will be as per BOQ of the price schedules.

CHAPTER 2: CONSTRUCTION STANDARDS, TECHNICAL SPECIFICATIONS

A. CONSTRUCTION STANDARD

A.1 ELECTRICAL WORKS

1. General

1.1 These specifications together with the Construction Standards shall govern the performance of the Works and shall be the basis for inspection and acceptance of the Works by the NEA.

1.2 These specifications and the Construction Standards shall be considered as mutually inclusive, and the conditions stated in each shall supplement the other as appropriate.

1.1 All these specifications shall be followed at all times by the Contractor unless specifically accepted in writing by the NEA, or unless some aspects of the work covered by these specifications are not required by the scope of work.

2. Route of Circuits

2.1 The line routes shown on line route drawings are provisional and subject to finalization by the Contractor. To the greatest extent practicable, all overhead circuits should be located along streets or traveled ways ordained by the Village Development Committee or required authority as public property, except as required for service drops and circuits to individual consumers.

2.2 To the greatest extent practicable, all facilities should be located on public property, and in no case shall private property be occupied unless specifically authorized by the NEA.

3. Surveys and Staking

3.1 All structures should be located at the outer limits of public property along streets or travelled ways. Structures should also be located along streets at property lines of adjacent private property. Structures and stays running parallel or perpendicular to the line route shall not block portions of streets, travelled ways, drives, passages, or gates.

3.2 All structures shall be so located as to reduce, to the greatest extent practicable, obstacles to pedestrian and vehicular traffic.

3.3 Where underground facilities are indicated by surface conditions, or where such facilities can be located, structures and stays shall be so located as to avoid conflict with such facilities during construction.

3.4 All structure and stay lead locations shall be staked. At points of intersection (PI) of tangent line sections, steel rebar stakes shall be used to locate the PI. A minimum of two (2) side sightings will be made at each PI to permit re-location of PI in the event of stake removal. All structure locations in tangent line sections shall be staked.

3.5 All distances between structures, and other necessary measurements of length, shall be measured to accuracy of 0.1 meter and all angles shall be determined by transit to an accuracy of 0.1 decimal degree. All elevations shall be measured to an accuracy of 0.1 meter by means acceptable to the NEA.

3.6 All measuring and staking activity shall be accomplished by personnel with experience in survey procedures; and standard survey equipment acceptable to the NEA, shall be used to perform the survey work. Field survey notes covering all survey work shall be produced and maintained and shall be returned to the NEA at the time of submission of final PCS report. The format of proposed survey notes shall be submitted to the NEA for approval.

3.7 Survey work shall include centerline and structure location and staking; determination of overhead and side clearings of other structures, wires, and obstacles; area surveys and plotting; and centerline profiles of terrain; as directed by the NEA.

4. Technical Documentation

4.1 All technical documentation as specified herein shall be prepared by the Contractor. The Contractor shall employ skilled drafting personnel to produce all documentation specified. All technical documentation prepared by the Contractor shall be subject to the approval of the NEA prior to acceptance by the NEA of such documentation. All technical documentation shall be prepared in the English language.

4.2 Documentation shall be prepared using the following mediums:

(a) A4 Size of paper shall be used to produce the base Structure Data Sheet (SDS) and A1 size of drawing papers for As-Built Drawings and other drawings specified by the NEA. The scale for drawing shall be 1:5000.

A1	594 mm x 841 mm	(23.39" x 33.11")
A4	210 mm x 297 mm	(8.27" x 11.69")

(b) Computerized geographical information system shall be used to produce small area plotting, profiles of line-sections and centerline plotting necessary for the development of SDS and As-Built Drawings.

(c) A set of digitized data on CD shall be submitted separately.

4.3 SDS shall be prepared as specified in *, Preamble to Price Schedules* by the Contractor showing his proposed construction details for erection of facilities in accordance with the Construction Standards. The SDS shall be prepared after the centerline survey and staking is completed, for any line section designated by NEA, and shall be submitted to NEA for approval prior to any construction of the facilities shown in SDS. Submission of SDS for approval shall be in A4 size paper.

NEA may require any revisions to be made, at their sole discretion, prior to approval of the SDS for construction. An approved and field checked SDS is required for all Construction Units invoiced by the Contractor. The Contractor and NEA representative shall perform Field checking of the SDS jointly. The SDS and As Built Plan are intended as permanent records for NEA. Any construction performed prior to the Contractor's receipt of approved SDS from NEA shall be completely at the Contractor's risk, and NEA shall have the right to require any correction due to the un-approved construction activities.

4.4 As-Built Drawings shall be prepared by the Contractor in the general format provided by the NEA. Drawing size shall be approximately 841 x 594 mm overall and the scale shall be 1:5000. The NEA shall provide any available environmental background data for inclusion on the various drawings and the Contractor shall record (in ink) all facilities As Built.

4.5 The Contractor shall prepare other technical drawings, in the same medium and format as the As-Built Drawings, for example As-Built Drawings index sheets, pole maps, and one line diagrams as specified and required by the NEA.

4.6 The Contractor shall prepare and furnish Transformer Record documents, in the format specified by the NEA, for each transformer installed.

5. Material Storage

5.1 The Contractor shall be responsible for storage of all materials and equipment delivered by him for the work; and security of materials. The Contractor shall manage all labor, equipment, and vehicles to load and transport said materials and equipment to the worksites.

5.2 **Worksite**

(a) Extended storage of materials along the routes of lines will not be permitted.

(b) Conductor reels may be spotted at the worksites for a short period prior to installation provided that crating and reel lagging are intact to protect the items. Poles may be spotted at structure locations for short periods prior to setting.

(c) All poles, and conductor placed at the worksites shall be located so that the items are not subject to damage and do not impede pedestrian or vehicular traffic.

(d) Any damage caused by imprudent placement of equipment and materials by the Contractor at the worksites shall be corrected by the Contractor, in a manner acceptable to the NEA, at the Contractor's cost.

5.3 Contractor's Storage Facility

The Contractor shall be financially responsible for the secure and proper storage of materials, prior to installation of the materials and equipment, to prevent loss or damage to any materials. However Contractor may use NEA sub-stations premises subject to approval of concern

NEA/Substation Authorities.

6. Poles and Cross Arms

6.1 Pole Numbering

Poles and structures shall be numbered in accordance with a numbering system provided by NEA. Each pole shall be marked permanently through template with the assigned number.

6.2 Pole Framing

Pole and structures shall generally be framed in accordance with Construction Standards and the construction SDS. Where special framing requirements are necessary, the Site Engineer or Engineer shall provide framing instructions for the specific structure.

Each cross-arm shall be attached to the pole by a pole clamp or by machined bolts of sufficient length to pass completely through the holes provided on the pole and cross-arms and receive their full complement of nuts.

Bolts of proper length shall be used. Excess nuts shall not be used to make use of a bolt, which would otherwise be too long. The end of a machined bolt projecting more than 3 centimeters beyond the nut shall be cut off to a length of 2 centimeters beyond the nut. Each bolt, when installed, shall have its full complement of nuts.

Washers shall be used where specified in these standards. For wooden pole, bolted connection through wood members should be drawn tight to allow for shrinkage of wood. Bolts should be pulled up so that the wood is compressed but not so tight to break the wood fibers. Fiber breaks on the surface of the pole increases probability of decay.

During the erection work at the field there may be necessity to modify galvanized steel hardware and may have to be drilled, reamed, filed or cut. Under such a condition the area of the steel exposed, after these modifications, shall be coated with a zinc-rich paint to protect the steel from corrosion.

6.3 Excavation

All excavations made for the installation, or demolition, of facilities shall be accomplished in a timely manner according to the scheduled installation. Required excavations shall be opened, material installed, and backfill placed, as specified, in a continuing operation to the greatest extent practicable.

Any excavation left open during discontinuous construction, which is accessible to the public or along public thoroughfare, shall be covered or barricaded, and marked by suitable visual means, to prevent a public hazard.

Excavations shall be properly located and sized for the intended use. Pole and stay plate/ anchor excavations shall be correctly sized to retain undisturbed soil to the greatest extent consistent with the means of excavation. Pole holes shall be made by power-driven auger or by manual methods; power-driven shovel equipment shall not be used. Pole holes shall be excavated to the specified depth with no tolerance shallow and tolerance of ten (10) centimeters deep. The bottom of pole holes shall be undisturbed soil, gravel or rock. Stay plate holes shall be excavated by manual methods to specified depth with no disturbed soil in the direction of the anchor rod.

All excavations shall be backfilled with excavated material, or as specified for the installation. Backfill shall be free of foreign materials and shall be well tamped with excess backfill graded over the excavated area to prevent depressions resulting from eventual natural compaction. The Contractor if so directed by NEA shall remove large amounts of excess backfill from the site. If so directed by NEA, the Contractor shall provide suitable backfill materials for excavations where existing removed materials is insufficient, or inappropriate, to provide suitable grading of the excavated area.

6.4 Pole Setting

Poles shall be set in accordance with the appropriate Sections of the Construction Standards.

Each pole shall be assigned a unique construction number at the time of structure staking for preliminary identification and preparation of SDS.

Pole holes shall be dug large enough in diameter to admit a tamping bar all around the periphery of the pole and shall have a uniform dimension as per the type of pole used at the top and bottom. Poles shall be planted in the ground to the depth specified in construction. Drawings before planting a pole, the bottom of the hole made for planting the pole, shall be cleaned of free soil and firmly tamped, to prevent the hole from settling.

The stability of a pole, particularly a pole without stay, is greatly influenced by the size of the pole hole, the nature of the soil and the care exercised in back filling and tamping. Two active hand tampers and one slow shovel shall result in good compaction.

Poles shall be set to stand perpendicular except at terminals, angles and other points of excessive strain where they shall be given a rake not to exceed 10 centimeters against the direction of strain. Poles located at the sides of banks or other locations, where washouts may occur, shall be protected by suitable cribbing, or shall be referred to the Engineer for recommended action.

After the pole is in position and the hole is back filled and tamped, soil shall be piled and packed firmly around the pole. Pole setting shall be inspected prior to acceptance and any back fills that have sunk shall be refilled.

Where it is necessary to set poles at locations where the soil has very low bearing value, or in swampy conditions, a pole may be fitted with a bog shoe in accordance with construction drawings the engineer may specify that type of construction.

Poles located in shallow riverbeds shall be protected by gabions as designated by the Site Engineer or Engineer. Gabions should be approximately 2 meters x 1 meter x 1 meter. Four such gabions are required for each pole.

Set pole and pour 860 mm diameter foundation as per construction standard construction drawing. Level areas around pole and set gabions in pattern shown in construction drawing. It is important to lace adjacent gabions together along the perimeter of all contact surfaces. Fill gabions with hard, durable, clean stone, 100 mm to 200 mm in size in three layers. Install two connecting wires at each layer. Lace gabion lids securely making certain all edges are closed. Fill void between pole and gabion with hard, durable, clean rock 200 mm minimum size.

7. Stays

7.1 Stay leads specified in construction documents are defined as the horizontal distance from the centerline of the pole at ground line to the point where the anchor rod should enter the ground assuming the ground to be level. For the correction in stay leads for uneven ground see construction drawing.

The Engineer, upon request, may designate the actual location of stay anchor rods on slope of hills. The stay stake indicates the point where the anchor rod enters the ground. The anchor hole shall be dug accordingly.

The attachment of one stay shall not overlap that of another stay when 2 or more stays are carried to a pole or anchor. Each shall be entirely independent of the other. This does not prevent the use of multiple eye rods for nuts designed for such use.

All stays to be installed on a pole line shall be placed and drawn reasonably taut before the conductors are tensioned. After the conductors are tensioned and sagged to their final position, the stays shall be carefully inspected to see that each is carrying its share of the load on the pole as intended. If multiple stays are not carrying equal strain, the slack stay shall be pulled up until it is sharing load as intended.

Stay anchors must be installed full depth and set to pull against undisturbed soil to develop full tension. An anchor not properly installed will move and allow movement of the top of the pole, thus slacking the conductors. Stay anchors installed in soft or unstable earth shall be placed at specified depth and back filled with 5 cm. maximum size crushed stone placed to a depth of 1 meter from the bottom of the pole.

7.2 Installation of Stays

Where stays are installed on a line angle structure, line of stay shall bisect the outside line angle.

The span of stay extending between poles shall not be greater than 60 meter.

Anchor and anchor rods shall be set so that the axis of the rod and line of stay shall be straight. The portion of the anchor rod above the ground shall not be bent at an angle to connect a stay wire. If this occurs, anchor and anchor rod shall be reset. The anchor rod shall not be exposed for more than 15 centimeters above the ground after the anchor is set.

If gravel back fill is required to set anchor in soft or unstable soil, as per construction drawing, the Contractor will have to carry out the gravel back fill as directed by Engineer.

If a stay is installed on a pole where low voltage conductor is dead ended or double dead ended and extends past stay, a piece of plastic hose slit along the length shall be placed over the stay wire extending from the upper stay attachment to 200 mm below lowest low voltage conductor. After installation, the hose shall be wrapped with plastic tape and the hose shall be secured to the upper stay bolt with tie wire.

7.3 Stay Insulators

Stay insulators shall be installed on all stays in accordance with the construction drawings.

8. Conductor

Aluminum Conductor Steel Reinforced (ACSR) conductor shall be used for 33,11,0.4/0.23 kV overhead lines.

8.1 Sagging

Conductors shall be sagged in accordance with the sag chart specified by these specifications.

The importance of careful sagging of conductors cannot be over emphasized. Conductors have definite characteristic that control their behavior resulting from changes of temperature, wind speed and additional load due to ice or wet snow.

Conductors must not be sagged too tightly (less than specified sag) as unspecified extra tensions may result in failure of conductor structure.

Conductors sagged too loosely (more than specified sag) may contact adjacent conductors hardware or any structure. Excess sag can reduce clearance beneath the line with the ground to the point of danger.

8.2 Sag Charts

Unless otherwise noted, all sag charts are calculated on the basis of 35 kg/m^2 wind pressure. Sag is always measured vertically, without wind, when conductors are being installed or re-sagged.

Unless otherwise specified by the Site Engineer or Engineer for a specific condition, initial or stringing sag shall be applied to the installation of all new unstressed conductors. The initial sag is always less than the final sag. The most practical method of obtaining the correct sag is by sighting between two adjacent structures. Choose the structure, which is reasonably near the same elevation

Sags for the various temperatures shall be furnished by the Engineer in a table form for spans not covered by the sag chart.

In order to ascertain the sag for a given stringing temperature, select the point corresponding to the proper temperature on the scale on the left-hand side of the sag chart. Lay a straight edge so that it passes through this point and the point of the center scale representing the length of span to be sagged. The straight edge will then indicate the proper stringing sag on the right-hand scale. Interpolate if the temperature of span is not exactly the same as designated on the chart. The low voltage neutral conductor shall be sagged with the same sag as the low voltage phase conductor. If the low voltage conductor, as a group, has less design sag than the high voltage phase conductor installed above it, the low voltage conductor, as a group, shall be installed to the same sag as the high voltage conductors installed above. The sag of pre stressed conductors such as installed with a tensioning machine shall be specified by the Engineer for the job.

8.3 Stringing

All cable grip used for the installation of conductors shall be of the type designed to prevent injury to the conductor.

Attach targets to each structure at a distance below each point of the support of conductor equal to the required sag. Sight from one target to the other. The line of sight between targets may be horizontal or inclined. Draw the conductor up to the proper sag, which will be reached when its lowest point will be in line with the target.

Where terrain and / or length of span in such that the targets would fall below the ground line, the difference in elevation between the lower conductor attachment and the lowest point of sag, sag below lowest support will be furnished by the engineer in the tabular form.

The dynamometers and similar apparatus shall be used for tensioning of conductor to obtain appropriate sagging of conductors. Dynamometer shall be used only when the sight method is not feasible. Dynamometer shall be checked for accuracy before using.

For stringing of ACSR conductors of all sizes, stringing rollers or roller shall be used to support the conductor as it is pulled out and sagged. Stringing rollers shall be used regardless of size of aluminum conductors, bare or covered.

Stringing rollers shall be suspended at each insulator support position so that the conductor shall roll smoothly over the roller-protecting conductor from any physical damage.

Stringing sheaves shall have a diameter at least 20 times the conductor diameter and so finished as to prevent damage of any kind to the conductor as it is pulled through the sheaves.

Conductor drum shall be located at a sufficient distance from the first structure to avoid excessive bending of the conductor over the sheaves and excessive downward loading on the cross-arms.

Attention shall be paid to the fact that all sag charts contained herein for ACSR conductors are calculated on the basis of non pre-stressed conductor. For this reason, at no time during the stringing or sagging operation, shall conductors of this type be pulled to sag, which are less than those shown by the charts.

Special care shall be taken at all times to prevent the conductor from becoming kinked, twisted or abraded in any manner. Where it is necessary to drag conductors on the ground, the conductors shall be protected by covering all stones or other objects, which might damage the conductor with boughs or trees or suitable pieces of lumber. These requirements are especially important when ACSR conductor is being handled on river crossing spans. Floats with rollers shall be used to prevent the conductor from dragging along the river bottom.

In stringing conductors across highways, the conductors shall be fully protected from passing vehicles by use of temporary guard structures.

8.4. Damaged Conductor

Damaged conductors shall be repaired by using a repair sleeve provided that no more than 2 strands of the outer aluminum layer are damaged and further provided that none of the sleeve core strands are damaged. For a conductor damaged in excess of the above conditions, the damaged section of the conductor shall be cut out and a tension splice installed.

When cutting out damaged section of conductor, no more than 1 tension splice shall be permitted in a span and no splice is made within 8 meters of an insulator attachment.

8.5 Sag Error

Sag error shall not exceed ± 40 mm from the sag defined by the sag chart.

8.6. Conductor Attachment

Conductors shall be secured to pin insulators with pre-formed conductor ties or with tie wire. Insulator ties, except at jumper supports in structures, shall be made with pre-formed ties when available.

Conductors shall be connected to dead end assemblies with tension set.

8.7 Line Splices for Tensioning and Looping

Cleaned and polished contact surfaces are necessary to make conductor splices so that it shall remain free from trouble. Great care shall be taken to completely clean the strands of aluminum conductor. The splicing sleeve must be centered over the conductor ends before compressing to make a splice of required strength.

Appropriate sleeve shall be used for splicing ACSR conductors prior to installation. The outer strands of aluminum shall be carefully cleaned with a wire brush to remove all foreign matter till the aluminum shines brightly. The cleaning applies to both new and old conductors. The manufacturer pre-filled with inhibitor compound supplies splicing sleeves for aluminum conductor.

Splices in line conductors shall be so located that the end of the splicing sleeve is at least 30 cm from the end of a suspension or dead end clamp. Non-tension loops, such as between dead ends, shall be spliced with a connector when the conductors are of same metal and size.

8.8 Connectors

Cleaned and polished contact surfaces are necessary to make electrical connections that will be free from trouble.

Tap connectors are supplied by manufacturers pre-filled with inhibitor compound. Excess inhibitor compound shall not to be removed but it shall be wiped over the connector as a moisture seal. Connectors shall not be covered or taped.

Compression connectors shall be located in such a manner that there shall be at least 30 cm of conductor between the end of the connector and the end of a dead end

Connectors shall be installed on non-tensioned portion of the conductor such as loops in preference to the conductor in the span.

Connectors installed on conductor shall be located in a span adjacent to the crossing rather than the crossing span when practicable.

Aluminum compression connectors, pre-filled with inhibitor compound, shall be compressed on the cleaned area of aluminum conductor. Where necessary, inhibitor compound shall be applied to the cleaned conductor and connector before assembly.

Aluminum compression connectors shall be used for connecting aluminium-to-aluminium conductors.

8.9 Conductor Accessories

Pre-Formed Ties and Grips

Taps for jumpers and services shall not be made over the legs of ties or dead end grips.

Pin Insulator Ties

Pin insulator ties are of 2 types:

a. With single top grooves: Single top ties may be used to turn line angles to 7 degrees where single insulators are permitted. Please refer construction drawing for specific applications.

b. With side grooves with specific size of ties for specific conductor in each tie style: Specific usage is dictated by insulator pin loading and use of single insulators as specified in construction drawing.

Shackle Insulator Ties

Shackle insulator ties are furnished in one type with specific size of ties for specific conductor. Shackle ties may be used to turn line angles at 20 degree. At the line angles, the conductor shall be located on the side of the vertically installed shackle insulator that causes the conductor to be forced against the shackle insulator. Angle loading shall not be imposed on the ties itself.

Preformed Stay Wire Binder

Preformed stay wire binder for stay wire are furnished as per construction drawing.

Preformed stay wire binder are right hand lay. Preformed stay wire binder may be removed and replaced up to 3 times, when initially installed, to permit adjustment of stay tension.

When applying ties or grips the manufacturer's identification tag and colour coding shall be checked to insure that the tie or grip is the right unit specified for application on the specific conductor or wire strand.

Perform for stay wire are furnished with 2 crossover markings. When applying preform on hardware, the grip shall be installed using the crossover point closest to the loop of the grip.

Compression Fittings

Full-tension conductor splices and repair sleeves are furnished for all conductors to be installed.

a. Full Tension Conductor Splice

Full-tension spliced for ACSR conductor is provided in a 2/1-piece unit. Full tension conductor splices will develop full conductivity of the conductor and a minimum of 95% of the rated conductor breaking strength. Please see construction drawing for splicing instructions.

b. **Repair Sleeves**

Conductor repair sleeves are furnished for all conductors to be used to restore the rated current carrying capacity of conductors with broken strands. Repair splices have no tension rating.

8.10 PG Clamps

PG clamps are furnished in a full range of sizes for application in the non-tension connection in 33, 11 kV circuits. The PG clamps are designed for general use in making tap and jumper connections of various types.

In all applications of PG clamp fittings, the conductor metal shall be wire-brushed to a bright condition to remove surface oxidation on the conductor.

8.11 Application

When applying ties or grips the manufacturer's identification tag and colour coding shall be checked to insure that the tie or grip is the right unit specified for application on the specific conductor or wire strand.

Preformed for stay wire are furnished with 2 crossover markings. When applying preformed on hardware, the grip shall be installed using the crossover point closest to the loop of the grip.

In all applications of PG clamp fittings, the conductor metal shall be wire-brushed to a bright condition to remove surface oxidation on the conductor.

8.12 Line Construction

Arrangement of Conductor

The standard position of 11 kV phase conductors on the cross-arm in the normal triangular/horizontal configuration looking from the normal source of power supply shall be seen as:

Red (R) on top of the pole, Yellow (Y) on right hand end of the cross-arm and Blue (B) on left hand end of the cross arm.

Attachments to Poles

Boltholes are provided on poles for cross-arms, cross-arm braces and stay bolts.

Conductor Ties

Pre-formed ties and grips shall be used for attaching conductors to structures when available.

If pre-formed materials are not available, the wire shall be soft conductor so that when made up, the tie wire will bind the conductor tightly. No tie wire shall be used for a second time.

Tie wire shall be of the same metal as that of the bare conductor to which the tie is applied.

Conductor Support

The conductor supports on straight lines shall be carried on the top wire groove of the pin insulator. Conductors shall be attached to the side conductor groove of pin insulator on the outside of angles so that transverse conductor tension will tend to hold the conductor in the insulator groove.

Conductor ties shall not hold a conductor on the insulator when uplift exists. If uplift is found, it is required to consult with the Site Engineer or the Engineer to determine remedial action to be taken.

8.13 Pole Wiring

All taps or connections passing from one level to another on the pole shall, as far as possible, be vertical. Connections shall have sufficient length so that the line conductors are not moved from normal positions and normal movement is not restricted. Connections shall have at least 30 centimeters clearance from other conductors. Any connection carried from one side of the pole to the other side shall be supported on pin insulators.

9. Installation Criteria

9.1 The line alignment should be as straight as possible to minimize requirements for stays.

The basic span shall be maintained within the following limits:-

11 KV line: 50 m

9.2 The entire construction works shall be performed as per the construction units specified. Whenever the construction unit does not cover any specific activity, the Contractor and the Employee shall mutually settle the cost as per the man-hour involvement for the same and according to the labor rate quoted by the Contractor in his Bid.

9.3 Detailed schedules of material to be used are provided in each structure drawing of the construction standards. It shall be the responsibility of the Contractor to judge the appropriateness of the listed material according to the site conditions. If there is any need for addition/reduction or deviation from the listed material size/quantity, the Contractor shall ask the Employee for the approval of the same.

9.4 All types of line clearances shall be maintained as per the construction standards provided to the Contractor. Deviations from the standards may be allowed only for unique or special conditions.

9.5 Safety rules of the NEA shall be strictly observed at all times by the Employee and the Contractor and their personnel. Special care shall be taken to maintain the optimum conductor sag to provide adequate safety to the construction and the property or people.

9.6 All fastenings (e.g. preforms, nut bolts, stays and the like) shall be so installed that the constructed line components shall not fail to remain within the safety margin while maximum working load is applied. If the Contractor requires clarification of any construction standard or unit or he feels any doubt in his interpretation of construction activities he should clarify the points with the Employee in writing and the decision thus made shall be valid for further work.In the case where the break angle exceeds the above values the Contractor shall make dead end at the angle structure and use disc insulator fittings.

10. Installation Criteria

10.1 The line alignment should be as straight as possible to minimize requirements for stays.
The basic span shall be maintained within the following limits:-

33 kV line: 50m to 55 m
11 kV line: 50m to 55 m
Low voltage and composite line:

S.No.	No. of wire	Span in meter
1.	4 wire	35-40
2.	3 wire	40-45
3.	2 wire	45-50

10.2 The entire construction works shall be performed as per the construction units specified. Whenever the construction unit does not cover any specific activity, the Contractor and the CRED shall mutually settle the cost as per the man-hour involvement for the same and according to the labor rate quoted by the Contractor in his Bid.

10.3 Detailed schedules of material to be used are provided in each structure drawing of the construction standards. It shall be the responsibility of the Contractor to judge the appropriateness of the listed material according to the site conditions. If there is any need for addition/reduction or deviation from the listed material size/quantity, the Contractor shall ask the CRED for the approval of the same.

10.4 All types of line clearances shall be maintained as per the construction standards provided to the Contractor. Deviations from the standards may be allowed only for unique or special conditions.

10.5 Safety rules of the NEA shall be strictly observed at all times by the CRED and the Contractor and their personnel. Special care shall be taken to maintain the optimum conductor sag to provide adequate safety to the construction and the property or people.

10.6 All fastenings (e.g. preforms, nut bolts, stays and the like) shall be so installed that the constructed line components shall not fail to remain within the safety margin while maximum working load is applied.

10.7 If the Contractor requires clarification of any construction standard or unit or he feels any doubt in his interpretation of construction activities he should clarify the points with the CRED in writing and the decision thus made shall be valid for further work.

10.8 HV Insulators: The Contractor shall use HV pin insulators in the alignment of the line where the break angle does not exceed the limits provided hereafter,

S.No.	Conductor size in mm2	Minimum break angle in degrees
1.	100 (Dog)	7
2.	50 (Rabbit)	15.5
3.	30 (Weasel)	24.5

In the case where the break angle exceeds the above values the Contractor shall make dead end at the angle structure and use disc insulator fittings.

11. Installation of Stays

11.1 The Contractor, in general, shall install at least one stay for the supports in the following cases

(a) Dead end structure
(b) Tee-off (Tap) structure

11.2 Stay may not be installed in the following conditions

HV Line (33, 11 kV) with 11 m Pole a) - Conductor 3x100 mm 2
- Span 75 m (max)
- Break angle: 4 deg.

b) - Conductor 3x50 mm 2
- Span 75 m (max)
- Break angle: 5.5 deg. c) - Conductor 3x30 mm 2
- Span 75 m (max)
- Break angle: 6.5 deg.

Composite (HV +LV) line with 11 m pole a) - Conductor 3x100 mm 2 HV; 3x50 mm 2+30 mm 2 LV
- Span 40 m (max)
- Break angle : 2 deg. b) - Conductor 3x50 mm 2 HV; 3x30 mm 2+1x30 mm 2 LV
- Span 50 m (max)
- Break angle: 2.5 deg.

For conditions different from the above, the Contractor shall provide calculations showing the number of stays necessary and get approval from NEA prior to installation.

12. Transformer Structures

Distribution panel-board material and equipment ratings shall be determined by the kVA rating of the transformer and number of 400/230 volt out going distribution circuits. Where out going distribution circuits are installed, pole moment loading must be balanced by another out going distribution circuits in the opposite direction or by installation of stays.

Two separate rods shall be used to earth the transformer structure

a.) One for surge arresters and equipment

b) Another for the neutral of transformer low voltage winding, body of transformer and the body of MCCB box.

Each earth rod shall be driven at a minimum distance of 2 meters from the adjacent pole resulting in a minimum distance of 6 meters between the two ground rods.

Ground conductor lead shall be stranded steel wire. 1/2" banding material shall be used to strap grounding conductors to pole(s) at one (1) meter intervals.

Compression connectors and PG clamp shall be used to make all electrical connections. When connecting copper transformer circuit conductor to the secondary line conductors, the copper conductor shall be placed below the aluminium conductor at the connection so that rainwater will flow from the aluminum conductor onto the copper conductor.

Conductor shall be terminated on main breaker and neutral bus with cable socket of proper size.
Individual conductors of the circuits located in panel boards shall be bundled with cotton or nylon cord and trained and tied to conductor standoff clips.

13. Grounding Procedure

13.1 Purpose

Grounding conductors and electrodes (ground rods) are installed on poles and structures to provide a low impedance path to ground for fault currents and over voltages and current waves initiated by lightning strokes. The objective is to minimize possible difference in potential between normally non-current carrying parts and from those parts to ground. It is also necessary to provide a current path to ground to enable protective devices to quickly de energize the circuit under over voltages and over current conditions.

13.2 Parts to be grounded

The following parts shall be grounded
a) Surge arrester ground studs
b) Normally non-current carrying parts of the switches, frames, panel boards, cabinets, re closer tanks etc.
c) Low voltage neutral points of the transformer.
d) Neutral for the low voltage (0.4/0.23 kV) line shall be grounded at every 15 poles.

13.3 Grounding Conductors

Conductor sizes for grounding of specific parts shall be made as follows.
Surge Arrestor 2AWG copper welded
Switch frames and re closers 2 AWG copper welded
Transformer neutral points 25 sq mm copper wires
All the grounding conductors shall be installed with the high-density polythene pipe at least above reach of the human beings

13.4 Ground Rod Installation

At switches, re closers grounding points the ground rod shall be installed in the ground at a minimum lateral distance of two meter from the associated poles. The top of the ground rod shall be driven to a minimum depth of 40 centimetres below grade before connecting the ground conductor to the ground rod.
At the transformer structure body of the transformer and the body of surge arrestor, MCCB box, the grounds shall be separated laterally from transformer secondary neutral point grounds by a minimum of 6

meters. Ground rods shall be driven to a minimum depth of 40 centimetres below grade before connecting the grounding Conductor to the ground rod.

The grounding conductor shall be encased in a rigid plastic pipe for a distance of 3 meters above the top of the concrete pole foundation or collar. The plastic pipe shall be of sufficient internal diameter to contain the grounding conductor.

14. 400/230 Volt Low Voltage Circuits

General Instructions

14.1 General

Bare wire 400/230 Volt circuits shall be supported on shackle insulator with D-iron. Generally, shackle insulator with D-iron shall be placed on the same side of the pole throughout the length of the line. Care shall be taken to see that shackle insulator with D- iron shall be mounted on that side of the pole from where most of the house service connection shall be extended.

Spacing between two conductors for low voltage circuit shall be 305 mm.

The three low voltage phase conductor shall be located in descending order from the top of the pole with Red (R) on the top, Yellow (Y) below Red and Blue (B) below Yellow. The low voltage neutral conductor shall occupy the bottom position.

14.2. Neutral Conductor

Neutral conductor may be the same size as the phase conductor or be sized smaller than the phase conductors. The neutral conductor size shall be specified by the work plan.
All neutral conductors shall be bare ACSR.

14.3 Phase Conductor

Phase conductors shall be bare ACSR conductor as specified by the work plan.

15. Safety

15.1 The Contractor shall take all measures required to safeguard the public, public and private property from any hazard to life, limb, or property, which may arise during the performance of the construction of the works. Such measures shall include, but not be limited to barricades, signs, newspaper announcements, traffic control by police, or other advisory and control methods deemed appropriate.

15.2 The Contractor shall provide his work force with all tools and equipment in sufficient numbers and quality to perform all aspects of the works in a safe manner. The Contractor shall provide protective headgear for all members of his workforce, and shall provide protective clothing as required for specific tasks. The Contractor shall instruct his work Force in proper and safe construction techniques and shall continuously monitor compliance with safety instructions throughout the period of the Contract.

15.3 The Contractor shall provide, and require use of, protective grounding equipment when :

a) Work is being performed on lines adjacent, either in extension of, or parallel to, energized circuits.
b) Work is being performed on isolated circuits after conductors have been installed

15.4 The Contractor shall maintain all tools and equipment in good working order. All mechanized equipment shall have adequate safety mechanisms and guards in place and be fully operational. Operators of such equipment shall be skilled and fully trained in the operation of such equipment.

15.5 The Contractor shall provide and maintain emergency medical supplies to cover with accidents and snakebites for his work force on a readily available basis. The Contractor shall also instruct all supervisory personnel in the action to be taken in the event of serious injury, and the sources and locations of professional medical assistance, which shall be employed in such cases.

15.6 The Contractor shall apply all accidental insurance policies to his work force for an accident occurring during the working period of the construction.

16. Tests

16.1 The Contractor shall furnish the electrical test equipment and personnel to perform electrical tests of equipment and circuits, as specified by, and under the supervision of the NEA.

16.2 The Contractor shall meggar all circuits installed with a motor-driven megger or equivalent instrument to demonstrate the acceptable insulation characteristics of the line prior to energization and Provisional Acceptance. 400/230 V overhead circuits shall be tested at 500 volts AC.

16.3 The Contractor shall conduct DC hi-potential tests on all underground circuits, after

makeup but prior to backfilling. The test shall be made with DC hi-potential test set capable of non-destructively testing the cable at approximately 300% of cable voltage rating.

16.4 The Contractor shall megger all transformers with a motor-driven megger prior to connection to the LV network.

16.5 All tests specified shall be conducted during suitable atmospheric conditions under the supervision and witness of the NEA. All test results shall be documented and signed by both parties.

17. Demolition

17.1 The Contractor shall perform the removal of all existing facilities in accordance with the specific directions of the Authorized Personnel. All materials removed shall remain the property of NEA and the Contractor shall deliver all salvaged materials to the NEA warehouse, or as specifically directed by the Branch Chief in writing.

18. Cleanup

18.1 The Contractor shall ensure that all worksites shall be free of all manner of debris resulting from the construction activity.

18.2 All crating, conductor reels, packaging materials, conductor scraps, and other miscellaneous items are removed from the workplace. All holes resulting from removal of facilities shall be filled. If trees or brush have been cut or trimmed, all cuttings shall be removed. The worksites shall be left in clean natural conditions.

18.3 Site cleanup shall be an integral part of the Provisional Acceptance process, and no line section shall be provisionally accepted unless all cleanup work has been accomplished.

19. Tree Cutting and Trimming

19.1 Any tree cutting or tree trimming shall be accomplished by the Contractor in coordination with CBO.

19.2 All cutting shall be removed by the Contractor with disposition of cutting as specified by NEA.

20. Interruptions to Existing Service

20.1 The Contractor shall arrange for interruptions of service to existing lines with NEA. Every effort shall be made to limit such interruptions to the minimum.

20.2 If it is possible to maintain service to a section of line by constructing temporary facilities approved by NEA, the Contractor shall detail man hours and classification of personnel required to construct such facilities and submit to NEA for approval prior to any work being performed. Payment for approved work shall be based on the rates covered in Preamble to Price Schedules.

B. SPECIFICATIONS OF ELECTRICAL GOODS

B1a. TUBULAR STEEL POLE (NOT APPLICABLE)

1. Scope

1.1 This Specification covers the design, fabrication, testing and supply of tubular steel poles commonly used in overhead electric lines.

2. General

The steel pole shall be fabricated in several lengths and strengths as specified in Table 1 contained herein.

2.1 The steel tubular poles must be manufactured by a company approved to quality standard ISO 9001:2000. The ISO 9001 certification number, the name of the authorized approving authority with the contact address and telephone and fax numbers shall also be stated. The Bidder shall enclose a copy of the ISO 9001 certificate with the bid.

3 Description

3.1 The steel poles shall be of swagged design and shall consist of three (3) separate lengths of steel tubing swagged at two joints to fabricate the poles. However, there are some numbers of poles as mentioned in the price and delivery schedule which shall be of folding type. The quantities of such folding poles shall be intimated at the time of contract.

3.2 The steel tubing used in pole fabrication shall be of steel of any approved process possessing a minimum tensile strength of 42 kg/sq. mm and a chemical composition of not more than 0.06% sulphur and not more than 0.06% phosphorous.

3.3 The tubing diameter and tubing wall thickness shown in Table 1 for each length of pole are the minimum size to be used in fabricating each length of pole. It shall be the

responsibility of the Bidder to determine the adequacy of the component tubing shown for the load to be sustained. However, in no case the tubing diameter and wall thickness for any component tube be less than the value shown in Table 1.

3.4 Tubular poles shall be made of welded tubes, swagged and joined together. The upper edge of each joint shall be chamfered at an angle of about 45-degree. The steel poles shall be composed of three sections of diminishing diameters and minimum diameter thickness and lengths of pole shall be as shown in Table 1.

3.5 All tubes forming parts of the above supports shall be made from hot insulated seamless or continuously welded steel in accordance with BS 6323 or equivalent applicable Standards.

3.6 The entire bottom section of the poles including the base plate shall be fully galvanized with minimum coating of weight not less than 460-gm/-sq. m internally and externally.

The remaining portion of the pole shall be painted with one coat of red oxide primer as specified in IS 2074-1997.

3.7 Each pole shall be provided with a steel top plate 3-mm minimum thickness welded to the end of the section. The top plate shall not project beyond the perimeter of the top section. Each pole shall also be provided with a welded base plate welded to the bottom of the pole.

3.8 The pole shall, be drilled in accordance with the drilling patterns as defined in the Figure. All the holes shall be of 18 mm dia. However, the manufacturer must get approval of the drilling pattern before manufacturing the poles. Each pole shall be marked with the appropriate length as shown in Figure.

3.9 The folding type of poles shall be fabricated in such a way that the section pieces can be carried to the site and fitted on the site itself. The pole section on top shall have a flange and the section under it shall overlap to a length of 25 cm as shown in the diagram. The poles shall be drilled in such a way that the section in top could be securely fixed the section under it by two bolts of 5/8" x 7" at 90 degree each other. Two such joints form a complete pole of three sections as shown in Fig 2 and 3.

3.10 The size of the base plate shall be as per governing standard.

4 Tolerance

4.1 The following tolerances shall be maintained:

a)	Tolerance of diameter:	+/-1% (Not Applicable)
b)	Tolerance on weight:	+/-7.5% on each pole. (Not Applicable) +/-5% on a bulk load. (Not Applicable)
c)	Tolerance on thickness:	+/10% on each sheet. (Not Applicable)

d) Straightness: The finished poles shall not be out of straightness by more than 1/600 of the height.

5. Tests

5.1. The following test (s) shall be performed for the pole furnished. All testing shall be fully documented and certified test reports shall be provided to NEA.

a Tensile test and chemical analysis for sulphur and phosphorous
b. Deflection test
c. Permanent set test
d. Drop test

5.2 Number of poles selected for conducting tensile test and chemical analysis for sulphur and phosphorous shall be as given below:

Lot Size	No. of poles
Up to 500	1
501 to 1000	2
1001 to 2000	3
2001 to 3000	4
3001 and above	5

5.3 Number of poles selected or conducting deflection test, permanent set test and drop test shall be as given below:

Lot Size	No. of poles
Up to 500	5
501 to 1000	8
1001 to 2000	13
2001 to 3000	18
3001 and above	20

The deflection test, permanent set test and drop test shall be conducted in succession on each of the poles selected.

5.4 **Deflection Test**

Each pole shall be rigidly supported for a distance from the butt end equal to the depth which it is to be planted in the ground. It shall then be loaded as cantilever and the appropriate deflection load of Table applied at right angles of the axis of pole 30 cm from the top of the poles up to 9 m (Overall) and 60 cm from the top for poles over 9 m (overall). For convenience in testing, the pole may be fixed horizontally and the load applied vertically. The temporary deflection due to the applied load at the point of application of load shall not exceed 157.5 mm.

5.5 Permanent Set Test

This test shall be carried out immediately after the deflection test. After application of proper load specified in Table 1 the permanent set measured from the zero position after the release of the appropriate applied load at the point of application of the load shall not exceed 13 mm.

5.6 Drop Test

The test shall be made in the case of swagged poles. The pole shall be dropped vertically with the butt end (bottom end) downwards, three times in succession from a height of 2 m on to a hardwood block 150 mm thick laid on concrete foundation. The pole shall not show any signs of telescoping or loosening of joints.

5.7 Should of any of the poles selected fail to pass any of the tests specified above two further poles shall be selected for testing from the same lot in respect of each failure. Should both these additional poles fail, the test material represented by the test samples shall be deemed as not complying with these specifications.

6. Quality Assurance Program

Along with the Bid the Bidder shall furnish quality assurance program of the manufacturer which includes the Quality System and the Quality Plans, which shall include, among others, information to meet the following requirement, failing which the Bid shall be liable for rejection.

i. The structure of the organization;
ii. The duties and responsibilities assigned to staff ensuring quality of works;
iii. The system for purchasing, taking delivery and verification of materials;
iv. The system for ensuring quality of workmanship;
v. The quality assurance arrangement shall conform to relevant requirements of ISO9001:2000;
vi. Statement giving list of important raw materials, names of manufacturer for the raw materials, list of standards according to which the raw materials are tested, list of test normally carried out on raw materials;
vii. List of manufacturing facilities available with supporting documents;
viii. List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections;
ix. List of testing equipment available with the manufacturer for final testing of equipment specified and the test plant limitation, if any, vis-à-vis the type, special, acceptance and routine tests specified in the relevant standards.

7. Bid Documentations

7.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for selections of steel tubings, and any standard followed in the fabrication and testing of the poles offered.

7.2 The Bidder shall provide a description and certified dimensional drawings of each type of pole otherwise the bid offer shall be rejected.

7.3 Two (2) clear certified copies of all type tests performed on similar type of poles and similar working loads otherwise the bid offer shall be rejected. The type test must have been carried out in recognized national or international testing laboratory or independent testing laboratory other than manufacturer.

7.4 A clause-by-clause commentary of specification, specifying compliance and deviations, if any.

7.5 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

B1b. Pole Fittings and Accessories (APPLICABLE)

The poles are utilized for forming the following six kinds of pole sets. The dimension and other relevant parameters specified for forming all of the three pole sets are shown on the table below. The Bidders are required to check the correctness of the dimensions the Pole Clamps carefully and are welcomed to suggest better type of Clamps (if any) for improvement based on their past experience in this field. If the Bidders suggest for better type of Clamps they shall quote for the suggested type of Clamps. The minimum strength of the end fittings shall not be less than 70kN.

For 10 m Pole:

Refer Drawing No: CS11-STP-01			
11 kV SINGLE ARM STRUCTURE (SA) STEEL TUBULAR POLE			
S.N.	**QTY.**	**UNIT**	**MATERIAL**
1	1	NOS	STEEL CROSSARM CHANNEL (100x 50x6.4x300) mm.
2	1	SET	GALVANIZED POLE CLAMP WITH NUT,BOLT AND WASHERS (TC1) & (TC2)
3	1	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x1200) mm.
4	2	SET	GALVANIZED POLE CLAMP WITH NUT,BOLT AND WASHERS (TC2) & (TC1)
5	2	NOS	GALVANIZED FLAT CROSSARM BRACE(40x6.0x660) mm
6	2	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (12 x51) mm
7	1	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
8	3	nos	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)
9	1	NOS	10 METER STEEL TUBULAR PLE (FOLDING)

Refer Drawing No: CS11-STTP-06 ANSD 11			
11 kV SINGLE POLE DEAD END STRUCTURE STEEL TUBULAR POLE			
S.N.	**QTY.**	**UNIT**	**MATERIAL**
1	1	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x300) mm.
2	1	SET	GALVANIZED POLE CLAMP WITH NUT,BOLT AND WASHERS (TC1)
3	1	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x1200) mm.
4	1	SET	GALVANIZED POLE CLAMP WITH NUT,BOLT AND WASHERS (TC1) & (TC2)
5	2	NOS	GALVANIZED FLAT CROSSARM BRACE(40x6.0x660) mm
6	2	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (12 x51) mm
7	1	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
8	3	NOS	11 KV DISC INSULATOR WITH TENSION SET BALL AND SOCKET EYE,BACK STRAP
9	1	NOS	10 METER STEEL TUBULAR PLE (FOLDING)

Refer Drawing No: CS11-STTP-07 AND 13			
11 kV SINGLE POLE DOUBLE DEAD END STEEL TUBULAR POLE			
S.N.	QTY.	UNIT	MATERIAL
1	1	NOS	10 METER STEEL TUBULAR PLE (FOLDING)
2	4	NOS	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)
3	6	SET	11 KV DISC INSULATOR WITH TENSION SET BALL AND SOCKET EYE,BACK STRAP
4	6	NOS	PG clamp for 0.05sq.inch ACSR Conductor “rabbit”
5	2	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x300) mm.
6	2	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x1200) mm.
7	4	NOS	GALVANIZED FLAT CROSSARM BRACE(40x6.0x660) mm
8	12	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (12 x51) mm
9	4	NOS	GALVANIZED Strap for insulator string (6x50x396 mm)
10	1	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
11	4	SET	Galvanized Double Arming Bolts with Suitable nuts and Washers (16x305 mm)

Refer Drawing No: CS11-STTP-08 AND 14			
11 kV DOUBLE POLE DOUBLE DEAD END STEEL TUBULAR POLE(H- STRUCTURE)			
S.N.	QTY.	UNIT	MATERIAL
1	2	NOS	10 METER STEEL TUBULAR PLE (FOLDING)
2	3	NOS	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)
3	2	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x2390) mm.
4	2	NOS	GALVANIZED Bracing angle (40x40x5x2071 mm)
5	2	NOS	GALVANIZED STEEL CROSSARM CHANNEL (40x 40x5x2719) mm.
6	4	set	GALVANIZED POLE CLAMP WITH NUT,BOLT AND WASHERS (TC4) & (TC5)
7	6	set	11 KV DISC INSULATOR WITH TENSION SET BALL AND SOCKET EYE,BACK STRAP
8	6	nos	GALVANIZED Strap for insulator string (6x50x396 mm)
9	17	set	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (12 x51) mm
10	4	set	Galvanized Double Arming Bolts with Suitable nuts and Washers (16x305 mm)
11	6	nos	PG clamp for 0.05sq.inch ACSR Conductor “rabbit”

Refer Drawing No: CS11-STTP-05 AND 11			
11 kV SINGLE POLE (TAP OFF STRUCTURRE) STEEL TUBULAR POLE			
S.N.	QTY.	UNIT	MATERIAL
1	1	NOS	10 METER STEEL TUBULAR PLE (FOLDING)
2	5	NOS	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)
3	3	SET	11 KV DISC INSULATOR WITH TENSION SET BALL AND SOCKET EYE,BACK STRAP
4	4	NOS	GALVANIZED FLAT CROSSARM BRACE(40x6.0x660) mm
5	1	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x300) mm.
6	2	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x1200) mm.
7	3	NOS	GALVANIZED POLE CLAMP WITH NUT,BOLT AND WASHERS (TC4) & (TC5)
8	6	NOS	PG clamp for 0.05sq.inch ACSR Conductor “rabbit”
9	4	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (12 x51) mm
10	2	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm

Refer Drawing No: CS11-STTP-04 AND 10			
11 kV DOUBLE ARM STRUCTURE (DA) STEEL TUBULAR POLE			
S.N.	**QTY.**	**UNIT**	**MATERIAL**
1	2	NOS	STEEL CROSSARM CHANNEL (100x 50x6.4x300) mm.
2	4	SET	Galvanized Double Arming Bolts with Suitable nuts and Washers (16x305 mm)
3	2	NOS	GALVANIZED STEEL CROSSARM CHANNEL (100x 50x6.4x1200) mm.
4	2	SET	GALVANIZED POLE CLAMP WITH NUT,BOLT AND WASHERS (TC2) & (TC1)
5	4	NOS	GALVANIZED FLAT CROSSARM BRACE(40x6.0x660) mm
6	4	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (12 x51) mm
7	1	SET	GALVANIZED BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
8	6	nos	11 kV Pin Insulator with Spindal,Preform pin ties (Top ties)
9	1	NOS	10 METER STEEL TUBULAR PLE (FOLDING)

B1c. Drawing of the Clamps, Cross Arms, Horizontal & Cross Bracing & the Nut- Bolts (APPLICABLE)

9.1 Typical drawing of the Pole clamps, Cross Arms, Bracing etc. are shown on the drawings herein. On which the size of clamps varies and stated as TC1, TC2, TC3, TC4, TC5, TC6 and so on. Their dimensions are mentioned on the drawing. Thickness and width of the clamp must be as stated in drawing.

9.2 Hexagonal Nut-Bolts and Washers shall be of 16-mm. diameters and with varying lengths and threaded portions and shall confirm the strength to BS. The size (length) and quantity of Nut-Bolts and Washers shall be as per required to fix the channels, clamps, bracing plates etc.

9.3 The Bidders have to check the correctness of the length of the Bracing and the Clamps and if founds any, incorrectness they have to suggest the correct length and should quote the price for the correct length and type.

9.4 Number of stay clamp with V hanger as per total number of poles quantity.

Table 1

Poles specifications (NOT APPICABLE)

IS Designation	**410SP- 44**
Overall Length	10 m
Planting depth. m	1.8
Sections:	
Length, m	
Top (h1)	2.7
Middle (h2)	2.7
Bottom (h3)	5.6
Outside Diameter, mm	
Top (h1)	114.3
Middle (h2)	139.7
Bottom (h3)	165.1
Thickness, mm	
Top (h1)	3.65
Middle (h2)	4.50
Bottom (h3)	4.85
Approximate weight, kg	168
Crippling load, kgf	329
Application of load from top of pole, m	0.6

Drawings

The purpose of drawings is to specify locations, dimensions, materials to be used, stages of manufacturing, and other characteristics of the Goods and Related Services. The Purchaser should prepare such drawings, as needed, and include them in the Procurement Document. Such drawings, as part of the SS, are Contract documents and, therefore, shall be part of the Contract.

These Bidding Documents includes drawings.

List of Drawings		
Drawing No.	**Drawing Name**	**Purpose**
1	Steel Tubular Pole 10Mts.	Attached at the end of document

Inspection and Test

To ensure about the quality of Pin, Disc, D-Iron, Shackle, Stay set, Stay wire, Stay Insulator & Hardware materials, the inspection shall be carried out by the NEA's representative and/or by third party.

Pre dispatch inspection will be carried out at finished stage when Pin, Disc, D-Iron, Shackle, Stay set, Stay wire, Stay Insulator & Hardware materials are ready for dispatch. As and when the Pin, Disc, D-Iron, Shackle, Stay set, Stay wire, Stay Insulator & Hardware materials are ready for dispatch, an offer intimating about the readiness of Pin, Disc, D-Iron, Shackle, Stay set, Stay wire, Stay Insulator & Hardware materials, for pre dispatch inspection for carrying out routine tests.

Note: Whatsoever test quantities mentioned in the in the technical specification sub-clause 5.2 and 5.3 the testing work shall be performed as per section 3 (ii).

B2: CROSSARMS AND BRACING ANGLES

1. Scope

This Specification covers the fabrication and supply of galvanized steel cross-arms and bracing members commonly used in overhead power line construction.

2. Material

2.1 The steel cross-arms shall be fabricated from hot-rolled channels and angles.

2.2 The steel channels and angles shall be fabricated and tested in accordance with Indian Standards IS: 226-1975 and IS-808-1964 or any revision thereof or other equivalent national or international standard provided that ensure at least equal or better quality to the standard mentioned above will also be acceptable. The minimum tensile strength of the steel shall be 4200 kg/cm2.

3. Description

3.1 The steel cross-arms and bracing angles shall be of sizes shown in the Table 1: Cross-arms and bracing angles, contained herein.

3.2 Conceptual hole pattern and size of holes on cross-arm channels are shown in appropriate drawings herein, however, the Supplier must confirm with the Project the locations and sizes of holes prior to the manufacture.

3.3 The surface of the steel shall be flat after drilling or (punching) and free of dimpling or imperfections. The hole edges shall be broken by reaming. The holes shall be full dimension after galvanizing and no minus tolerance of specified hole size will be accepted.

3.3 The steel cross-arm and bracing angles shall be furnished reasonably smooth on all surfaces and free of burrs or sharp projections.

4. Galvanizing

4.1 The steel cross-arms and bracing angles shall be galvanized after fabrication in accordance with IS: 2629-1985 or any revision thereof or other equivalent national or international standard provided that ensure at least equal or better quality to the standard mentioned above will also be acceptable..

5. Tests

5.1 Apart from the tests indicated herein in the referenced standards, the channels and angles shall undergo following tests:

- Visual Inspection;
- Verification of Dimensions;

6. Quality Assurance Program

Along with the Bid the Bidder shall furnish quality assurance program of the manufacturer which includes the Quality System and the Quality Plans, which shall include, among others, information to meet the following requirement, failing which the Bid shall be liable for rejection.

i. The structure of the organization;
ii. The duties and responsibilities assigned to staff ensuring quality of works;
iii. The system for purchasing, taking delivery and verification of materials;
iv. The system for ensuring quality of workmanship;
v. The quality assurance arrangement shall conform to relevant requirements of ISO9000;
vi. Statement giving list of important raw materials, names of manufacturer for the raw materials, list of standards according to which the raw materials are tested, list of test normally carried out on raw materials;
vii. List of manufacturing facilities available;
viii. List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections;
ix. List of testing equipment available with the manufacturer for final testing of equipment specified and the test plant limitation, if any, vis-a-vis the type, special, acceptance and routine tests specified in the relevant standards.

7. Bid Documentation

7.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of channels and angles and two (2) clear copies of all other relevant standards referenced therein.

7.2 The Bidder shall provide a complete description, catalogue and certified dimensional drawings of all channels and angles.

7.3 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

7.4 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

Table 1 : GALVANIZEd STEEL CROSSARM CHANNELS AND ANGLE BRACES

S.No.	Description	Type	Dimension in mm.	Ref. DWG.
1.	11 kV, Single Pole, Triangular:			
	1.1 Pole Top Crossarm	Channel	100×50×6.4×5×300	CS-11-LM-01
	1.2 Standard Crossarm	Channel	100×50×6.4×5×l200	
	1.3 Flat Bracing	Bracing	40×6×660	
	1.4 Strap (6x50x396)	Strap	(6x50x396)	
2.	11 kV, Double Pole: 2.1 Standard Crossarm	Channel	100×50×6.4×5×2390	CS-11-LM-03
3	1.1 Standard Crossarm	Channel	100×50×6.4×5×600	DWG 1
	1.2 Standard Crossarm	Channel	100×50×6.4×5×1500	DWG 2
	1.3 Standard Crossarm	Channel	40x40x5x2071	

TECHNICAL DATA SHEETS

(To be completed by Bidder)

Item: Cross-arm and angle

	Description	*Unit*
1.	Manufacturer	
2.	Steel Classification	
3.	Minimum tensile strength of steel	
4.	Is the cross arm and angles fabricated from hot-rolled steel sections?	Yes/No
5.	Governing Standard	
6.	Standard attached?	Yes/No
7.	Governing Standard for galvanizing	
8.	Drawings of cross arm and bracing?	Yes/No

Signed _____

On behalfl of _____

Address _____

Date _____

B3: FLAT CROSSARM BRACE

1. Scope

This Specification covers the fabrication, testing and supply of flat, galvanized steel cross-arm braces.

2. Material

2.1 The flat cross-arms brace shall be fabricated out of hot rolled steel flat.

2.2 The steel flat for cross-arms brace shall be fabricated and tested in accordance with Indian Standards IS: 226-1975, and IS-1731-1971 or any revision thereof or other equivalent national or international standard provided that ensure at least equal or better quality to the standard mentioned above will also be acceptable. The minimum tensile strength of the steel shall be 4200 kg/cm2.

3. Description

3.1 The brace shall be furnished reasonably smooth on all surfaces and free of burrs or sharp projections.

3.3 The surface of the steel shall be flat after drilling or (punching) and free of dimpling or imperfections. The hole edges shall be broken by reaming. The holes shall be full dimension after galvanizing and no minus tolerance of specified hole size will be accepted.

3.3 The brace shall have a minimum tensile strength of 3182 kg at the bolt-hole and bolt slot.

3.4 The brace shall be capable of being bent 10 degrees at the bolt hole or slot and 140 degrees at any point between hole and slot without cracking of the base metal on the outside of bent portion.

3.5 The brace shall be drilled and dimensioned in accordance with Dwg.7H attached herein.

4. Galvanizing

4.1 The flat cross arm brace shall be hot dipped galvanized after fabrication in accordance with IS: 2629-1985 or any revision thereof or other equivalent national or international standard provided that ensure at least equal or better quality to the standard mentioned above will also be acceptable.

5. Tests

Apart from the tests indicated herein in the referenced standards, the flat cross arm brace shall undergo following tests:

- Visual Inspection;
- Verification of Dimensions;

6. Quality Assurance Program

Along with the Bid the Bidder shall furnish quality assurance program of the manufacturer which includes the Quality System and the Quality Plans, which shall include, among others, information to meet the following requirement, failing which the Bid shall be liable for rejection.

i. The structure of the organization;
ii. The duties and responsibilities assigned to staff ensuring quality of works;

iii. The system for purchasing, taking delivery and verification of materials;

iv. The system for ensuring quality of workmanship;

v. The quality assurance arrangement shall conform to relevant requirements of ISO9000;

vi. Statement giving list of important raw materials, names of manufacturer for the raw materials, list of standards according to which the raw materials are tested. list of test normally carried out on raw materials;

vii. List of manufacturing facilities available;

viii. List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections;

ix. List of testing equipment available with the manufacturer for final testing of equipment specified and the test plant limitation, if any, vis-a-vis the type, special, acceptance and routine tests specified in the relevant standards.

7. Bid Documentation

7.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of flat cross arm brace and two (2) clear copies of all other relevant standards referenced therein.

7.2 The Bidder shall provide a complete description, catalogue and certified dimensional drawings of flat cross arm brace.

7.3 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

7.4 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

TECHNICAL DATA SHEETS

(To be completed by Bidder)

Item: Flat cross-arm brace

	Description	***Unit***
1.	Manufacturer	
2.	Steel Classification	
3.	Minimum tensile strength of steel	
4.	Is the flat cross arm brace fabricated from hot-rolled steel sections?	Yes/No
5.	Governing Standard for manufacturing and testing	
6.	Governing Standard for galvanizing	
7.	Standards attached?	Yes/No
8.	Drawings of flat cross arm brace?	Yes/No Signed

Signed _____

On behalfl of _____

Address _____

Date _____

B4. POLE CLAMPS

POLE CLAMPS

1. Scope

1.1 This Specification covers the fabrication and supply of galvanized steel pole clamps with nuts, bolts and washers for use on overhead power line construction.

2. Material

2.1 The pole clamp shall be fabricated out of hot-rolled steel flat.

2.2 The steel flat for pole clamp shall be fabricated and tested in accordance with Indian Standards IS: 226-1975, and IS-1731-1971 or any revision thereof or other equivalent national or international standard provided that ensure at least equal or better quality to the standard mentioned above will also be acceptable. The minimum tensile strength of the steel shall be 4200 kg/cm^2.

3. Description

3.1 Outline details of pole clamps are shown in the drawings DWG.1H - DWGAH. Dimensions may be changed to comply with the final pole sizes selected. Therefore, the dimensions must be confirmed with the Project prior to manufacture.

3.2 Two (2) numbers of galvanized, 16 mm. (dia.) X 60mm. (length), fully threaded bolts with two (2) nuts and washers shall be provided with each pole clamp.

3.3 The fittings shall be free of burrs, splinters, splits, sharp points and edges, which may damage conductors or show evidence of poor workmanship.

3.4 The surface of the steel shall be flat after drilling or (punching) and free of dimpling or imperfections. The hole edges shall be broken by reaming. The holes shall be full dimension after galvanizing and no minus tolerance of specified hole size will be accepted.

3.5 The pole clamps shall have a minimum tensile strength of 3182 kg at the bolt-hole and bolt slot.

4. Galvanizing

4.1 The pole clamps and nut, bolts and washers shall be galvanized after fabrication in accordance with IS: 2629-1985 or any revision thereof or other equivalent national or international standard provided that ensure at least equal or better quality to the standard mentioned above will also be acceptable.

5. Tests

5.1 Apart from the tests indicated herein in the referenced standards, the pole clamps shall undergo following tests:

- Visual Inspection;
- Verification of Dimensions;

6. Quality Assurance Program

Along with the Bid the Bidder shall furnish quality assurance program of the manufacturer which includes the Quality System and the Quality Plans, which shall include, among others, information to meet the following requirement, failing which the Bid shall be liable for rejection.

i. The structure of the organization;
ii. The duties and responsibilities assigned to staff ensuring quality of works;
iii. The system for purchasing, taking delivery and verification of materials;
iv. The system for ensuring quality of workmanship;
v. The quality assurance arrangement shall conform to relevant requirements of ISO9000;
vi. Statement giving list of important raw materials, names of manufacturer for the raw materials, list of standards according to which the raw materials are tested, list of test normally carried out on raw materials;
vii. List of manufacturing facilities available;
viii. List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections;
ix. List of testing equipment available with the manufacturer for final testing of equipment specified and the test plant limitation, if any, vis-a-vis the type, special, acceptance and routine tests specified in the relevant standards.

7. Bid Documentation

7.2 The Bidder shall provide a complete description, catalogue and two (2) copies of certified dimensional drawings of pole clamps.

7.3 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

7.4 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

TECHNICAL DATA SHEETS

(To be completed by Bidder)

Item: Pole Clamps

	Description	Unit
1.	Manufacturer	
2.	Steel Classification	
3.	Governing Standard for galvanization	
4.	Drawings of Pole Clamp furnished?	Yes/NoSigned

Signed _____

On behalfl of _____

Address _____

Date _____

B5. GALVANISED STEEL BOLTS, NUTS AND MISCELLANEOUS FASTENING COMPONENTS

1. Scope

1.1 This Specification covers the fabrication and supply of galvanized steel bolts and nuts, as specified herein, for use in overhead electric line construction.

2. Material

2.1 The bolts and nuts shall be manufactured and tested in accordance with IS: 1363 (Part I)-1984 or the latest version thereof or any other national or international standards that ensures at least equal or better quality to the standard mentioned above, will also be acceptable.

3. General

3.1 Bolts and nuts shall be furnished in the types, diameters and lengths specified in the Price Schedule. *However, the dimensions and length of threading of bolt must be confirmed with the Project prior to manufacture.*

3.2 Thread forms shall be consistent with all material/items listed herein and shall not strip or slip under sustained tensile loading equal to the design tensile strength of the threaded material item.

3.3 The manufacturer must have been accredited with ISO 9001:2000 with design and manufacturing quality certification.

4. Machine Bolt and Nut

4.1 Each machine bolt shall be furnished with two (2) hexagonal nuts and two (2) plain washers assembled thereon.

5. Double-Arming Bolt and Nut

5.1 Each double-arming bolt shall be furnished with four (4) hexagonal nuts and two (2) washers assembled thereon.

6. Galvanizing

6.1 The nut-bolts and ferrous materials in all other fastening components shall be galvanized after fabrication in accordance with IS: 2629-1985 or any revision thereof or other equivalent national or international standard provided that ensure at least equal or better quality to the standard mentioned above will also be acceptable.

7. Tests

7.1 The bolt and nut shall undergo type and routine tests in accordance with the relevant governing standard.

8. Quality Assurance Program

Along with the Bid the Bidder shall furnish quality assurance program of the manufacturer which includes the Quality System and the Quality Plans, which shall include, among others, information to meet the following requirement, failing which the Bid shall be liable for rejection.

i. The structure of the organization;

ii. The duties and responsibilities assigned to staff ensuring quality of works;

iii. The system for purchasing, taking delivery and verification of materials;

iv. The system for ensuring quality of workmanship;

v. The quality assurance arrangement shall conform to relevant requirements of ISO9000;

vi. Statement giving list of important raw materials, names of manufacturer for the raw materials, list of standards according to which the raw materials are tested, list of test normally carried out on raw materials;

vii. List of manufacturing facilities available;

viii. List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections;

ix. List of testing equipment available with the manufacturer for final testing of equipment specified and the test plant limitation, if any, vis-a-vis the type, special, acceptance and routine tests specified in the relevant standards.

9. Bid Documentation

9.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of bolt and nut and two (2) clear copies of all other relevant standards referenced therein.

9.2 The Bidder shall provide certified type test results of bolt and nut as required by governing standards.

9.3 The Bidder shall provide catalogue and certified dimensional drawings of all types of bolt and nut.

9.4 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

9.5 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

TECHNICAL DATA SHEET

(To be completed by Bidder)

Item : Galvanized Steel Nuts and Bolts

	Description	***Unit***
1.	Manufacturer	
2.	Material Description	Yes/No furnished?
3.	Governing Standard for manufacturing and testing	
4.	Governing Standard for galvanization	
5.	Standards attached?	Yes/No
6.	Catalog numbers attached for all items?	Yes/No

Signed _____

On behalfl of _____

Address _____

Date _____

B6. GROUND RODS AND CLAMPS

1. Scope

This Specification covers the fabrication and supply of galvanized steel ground rods and clamps for use in overhead power line construction.

2. Description

Ground Rod

2.1 The ground rod shall be made of high carbon, open-hearth steel so as to achieve maximum strength. It shall be hot dip galvanized.

2.2 The ground rod shall be 19mm in diameter and 8 Feet in overall length.

2.3 The driven end of the ground rod shall have a truncated cone point. The cone point shall be approximately 13mm long, measured along the axis of the ground rod. The driving head of the ground rod shall have an approximate 3 mm, 45 degrees chamfer.

2.4 The manufacturing process shall assure that ground rod does not bend when driven into hard soils.

Ground Rod Clamp

2.5 The ground rod clamp shall be heavy duty forged steel clamp provided with a hex head cup point set screw of high strength steel with machine-cut threads. It shall be so manufactured that it gives low resistance connection. The ground rod clamp shall be galvanized. 2.6 The clamp shall suitably accommodate and clamp a 19 mm. ground rod and a stranded grounding conductor of 7/12 SWG size.

3. Galvanizing

3.1 The galvanization of ground rod and clamp shall be in accordance with IS: 2629-1985 or any revision thereof or any other national or international standards that ensure at least a substantially equal quality to the standard mentioned above will also be acceptable.

4. Testing

4.1 Testing shall be in accordance with the governing standard.

5. Bid Documentation

5.1 The Bidder shall provide a complete description, and catalogue of ground rod and clamp.

5.2 The Bidder shall provide certified type test results of ground rod and clamp as required by governing standards.

5.3 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

5.4 All data, drawings, catalogue and other technical documents shall be bound separately from the Bid documents.

B7. GROUNDING CONDUCTOR

1. Scope

This specification covers the fabrication and supply of galvanized stranded steel grounding conductor for use in the neutral grounding of distribution transformers and body grounding of electrical equipment.

2. Description

2.1 The conductor shall be 7-wire stranded conductor and shall conform to the characteristics as specified in Table 1 contained herein. Stranded conductor shall be galvanized.

3. Galvanizing

3.1 The stranded stay wire shall be galvanized after fabrication in accordance with IS: 2629-1985 or any revision thereof or any other national or international standards that ensure at least equal or better quality to the standard mentioned above will also be acceptable.

4. Bid Documentation

4.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of grounding conductor and two (2) clear copies of all other relevant standards referenced therein.

4.2 The Bidder shall provide a complete description, and catalogue of grounding conductor.

4.3 The Bidder shall provide certified type test results of grounding conductor as required by governing standards.

4.4 A clause-by-clause commentary on specification, specifying compliance and deviations, if any. 4.5 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

TABLE 1

GROUNDING CONDUCTOR MINIMUM REQUIREMENTS

Number of strand 7-N0.	12 SWG
Diameter of single strand	2.67 mm
Weight	299 kg/km
Short time fusing current	12 kA for 1 sec.
Resistivity	15 Micro-Ohm-cm

B8. PARALLEL GROOVE (PG) CLAMPS

1. Scope

This Specification covers design fabrication testing and supply of universal parallel groove (UPG) clamps and fittings commonly used in overhead electric power lines.

2. Description

2.1 The PG clamp shall be designed and manufactured to achieve full compatibility between clamps and conductors and produce uniform and electrically efficient connections between conductors for the class of connection intended.

2.2 The PG clamp is intended to be used for ACSR to ACSR conductor.

2.3 The body of PG clamp shall be made of aluminum alloy from a permanent mould process and hardware consisting of nuts, bolts and washer shall be made of hot dip galvanized steel. The PG clamps shall have sufficient mass and contact area to provide the thermal capacity required for load cycling and fault current. The clamps shall be designed to provide the distributed current density necessary to prevent hot spots, and current carrying rating of the conductors for which they are designated. PG clamp shall have oxide inhibiting compound and contact aid.

2.4 The clamps shall be manufactured to accommodate ACSR conductors as shown in Table 1.

2.5 The grooves on the clamps shall be open-edged on two (2) edges for easy installation over a run conductor and insertion of tap conductor.

2.6 The clamp shall be tested in accordance with the relevant ANSI standard or other equivalent national or international standard specifying the performance requirement for the electrical and mechanical characteristics of clamps. The clamps shall conform to all testing requirements of that standard for the classes of clamps considered.

2.7 Each clamp shall be marked with the type and size of conductor, which will correctly fit each groove.

3. Bid Documentation

3.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of PG clamp.

3.2 The Bidder shall provide a complete description, and catalogue/drawing of PG clamp.

3.3 The Bidder shall provide certified type test results of PG clamp as required by governing standards.

3.4 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

3.5 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

TABLE 1

PG CLAMP for ACSR to ACSR conductor

Groove A	Groove B	Identification
D	D	D-D
D	R	D-R
D	W	D-W
R	R	R-R
R	W	R-W
W	W	W-W

D= 100 mm^2 ACSR Conductor
R= 50 mm^2 ACSR Conductor
W= 30 mm^2 ACSR Conductor

B9. INSULATORS & HARDWARES

PORCELAIN INSULATORS

1. SCOPE

This Specification covers the fabrication and supply of porcelain insulators, as herein specified, for use on overhead power line construction.

2. GENERAL

2.1 All porcelain insulators shall be fabricated and tested in accordance with the Standards referenced or other national or international standards, for each type of insulator.

2.2 Porcelain shall be sound, free from defects, thoroughly vitrified and smoothly glazed. The glaze shall be brown in color. The glaze shall cover all exposed parts of the insulators.

2.3 The design of insulators shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to deterioration. The porcelain shall not engage directly with hard metal.

2.4 The cement used in construction of insulators shall not give rise to chemical reaction with metal fittings and its thickness shall be as uniform as possible.

2.5 The insulators should be manufactured in automatic temperature-controlled kilns to obtain uniform baking and better electrical and mechanical properties.

2.6 The manufacturer of the Insulator must have been accredited with ISO 9001 (including design in the scope of registration)quality certification.

3. PIN INSULATOR

3.1 The pin insulator shall be manufactured and tested in accordance with IS: 731-1971 and IS:3188 or the latest version thereof or any other national or international standards that ensures at least equal or better quality to the standard mentioned above, will also be acceptable. The lead thread shall be compatible with the insulator pin specified in these documents.

The pin insulator shall have following ratings and features:

-	Highest System Voltage	12 kV	36 kV
-	Rated Voltage	11 kV	33 kV
-	Creepage Distance (min)	265 mm	680 mm
-	Wet Power Frequency Withstand Voltage	35 kV	75 kV
-	Impulse Withstand Voltage	75 kV	170 kV
_	Puncture Power Frequency Voltage (min)	105 kV	180 kV
-	Visible Discharge Voltage (Effective)	9 kV	27 kV
-	Cantilever Strength	5 kN	10 kN
-	G.I. Pin Head	Small	Large
		IS Ref. S165P	IS Ref. L300N

IS 2486 Part-II

4. DISC INSULATOR

4.1 The disc insulator shall be manufactured and tested in accordance with IS: 731-1971 or latest version thereof or any other national or international standards that ensures at least equal or better quality to the standard mentioned above, will also be acceptable.

4.2 The disc insulator shall be ball and socket fitting type. The disc insulator shall have the following ratings and features:

-	Highest system Voltage	12 kV
-	Rate Voltage	11 kV
-	Porcelain Diameter (min)	255 mm
-	Spacing	145 mm
-	Creepage Distance (min)	280 mm
-	Power Frequency Puncture Withstand Voltage	1.3 x Actual dry flashover voltage
-	Wet Power Frequency Withstand Voltage	35 kV
-	Impulse Withstand Voltage	75 kV
-	Puncture Power Frequency Voltage (min)	105 kV
-	Visible Discharge Voltage	9 kV
-	Mechanical Strength	45 kN
-	Ball and Socket Size	16 mm B
-	Applicable Standard for Special Characteristics	IS: 3188-1980

5. SHACKLE INSULATOR

5.1 The shackle insulator shall be manufactured and tested in accordance with IS: 1445-1977 or the latest version thereof or any other national or international standards that ensures at least equal or better quality to the standard mentioned above, will also be acceptable.

5.2 The shackle insulator shall have following ratings and features:

Type-B

- Highest System Voltage 1 kV
- Rated Voltage 500 V
- Power Frequency Withstand Voltage, 1 minute:

Dry	23 kV
Wet	10 kV

- Power Frequency Puncture Withstand voltage, 1 minute: 1.3 x actual dry flashover voltage
- Leakage Distance (min) 63 mm
- Mechanical Strength 11.5 kN
- IS Type 1

6. STAY INSULATOR

The Stay insulators shall be made of brown glazed high class porcelain as shown in the related drawing. The stay insulator shall be manufactured and tested in accordance with ISO as detailed in drawings. The stay insulator shall have following ratings and features:

Rated Voltage KV	33	11
Highest system Voltage KV	36	12
Creepage distance mm (min mm)	57	41
Minimum Failing Load	>80kN	>40kN
Power Frequency Withstand Voltage, KV		
For 1 minute		
Dry	27	18
Wet	13	8
IS Designation	C	A

7. MARKING

7.1 Each insulator shall be engraved or embossed to show the following:

a) Name or trademark of manufacturer.
b) Year of manufacture.
c) Contract No.
d) Minimum failing load in Newton (for pin and disc insulators only)

7.2 Markings on porcelain shall be printed and shall be applied before firing.

8.0 TESTS

The insulators shall comply with the following tests as per IS: 731-1971

8.1 TYPE TEST

The following tests shall constitute the type tests:

a. Visual examination,,
b. Verification of dimensions,
c. Visible discharge test,
d. Impulse voltage withstand test,
e. Wet power frequency voltage withstand test
f. Temperature cycle test,
g. Electro-mechanical failing load test (for string insulators)
h. Mechanical failing load test
i. 24-hour mechanical strength test for strain insulators
j. Puncture test
k. Porosity test and
l. Galvanizing test

The type test report must be submitted along with the Bid.

8.2 ACCEPTANCE TESTS

The test samples shall be subjected to the following acceptance tests in the order indicated below:

a. Verification of dimensions,
b. Temperature cycle test
c. Twenty four hours mechanical strength test (for string insulator)
d. Electro-mechanical failing load test (for string insulators)
e. Mechanical failing load test
f. Puncture test
g. Porosity test and
h. Galvanizing test

For carrying out acceptance tests specified above, the sampling procedure shall be as follows:

Lot Size	**First Sample Size**	**Second Sample Size**	**Acceptance Number**	**Rejection Number**
1	2	3	4	5
N	**n_1**	**n_2**	**c_1**	**c_2**
101-500	5	10	0	2
501-800	7	14	0	3
801-1300	10	20	0	3
1301-3200	15	30	1	4
3201-8000	25	50	2	5
8001 and above	35	70	2	7

The lot shall be considered as conforming to the requirements of the acceptance tests if the number of failures found in the first sample n1 is less than or equal to c1. If the number of failures is greater than or equal to c2, the lot shall be considered as not conforming to the requirements of the acceptance tests and shall be rejected. If the number of failures is between c_1 and c_2 and a second sample of n_2 insulators shall be selected and subjected to acceptance tests. If the number of failures in the two samples combined is less than c_2, the lot shall be considered as conforming to the requirements of acceptance tests otherwise it shall be considered to have failed

The acceptance tests shall be conducted in the manufacturer's premises at the time of pre-dispatch inspection test in presence of Purchaser's nominated Inspectors.

8.3 ROUTINE TEST

The following tests shall be carried out as routine tests:

- Visual examination
- Mechanical routine test
- Electrical routine test

The above specified routine test on each unit shall be carried out by the Manufacturer and the test report shall be submitted to the inspectors at the time of pre-dispatch inspection test.

9. BID DOCUMENTATION

9.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of porcelain insulators and two (2) clear copies of all other relevant standards referenced therein.

9.2 The Bidder shall provide certified type test results of all types of porcelain insulators as required by governing standards and the documentary evidence to show that it has automatic temperature-controlled kilns. Failure of bidder to provide the said documents shall lead to rejection of its bid.

9.3 The Bidder shall furnish two (2) sets of dimensional drawings of all types of porcelain insulators.

9.4 The Bidder shall provide complete description, catalogue (in original) dimensional drawings of all types of insulators.

9.5 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

INSULATORS HARDWARE

INSULATOR PIN

1. SCOPE

This Specification covers the fabrication and supply of bolt-type, long shank cross-arm insulator pins.

2. DESCRIPTION

2.1 The insulator pin shall be fabricated and tested in accordance with the nominated standards or any other national or international standards that ensure at least equal or better quality to the standard mentioned above will also be acceptable. The insulator pin shall be furnished with a spring washer, stainless steel split lock and nut assembled on the insulator pin. The ratings and features of the insulator pins shall be as follows:

	For 11 kV	*For 33 kV*
Head Type	Small S165P	Large L300N
Total Length	315 mm	450 mm
Stalk Length	165 mm	300 mm
Shank Length	150 mm	150 mm
Minimum Failing Load	5 kN	10 kN
Applicable Standard	IS: 2486 (Part II)	

The insulator pins shall be compatible with the pin insulators specified above.

2.2 The manufacturer of the Insulator Pin must have been accredited with ISO 9001 (including design in the scope of registration) quality certification

3. MATERIAL

3.1 The insulator pins shall be fabricated from hot rolled steel. The pin shall be a single piece, obtained by the process of forging. It shall not be made by jointing, welding, shrink fitting or any other process from more than one piece of material. It shall be of good finish free from flaws and other defects. The finish of the collar shall be such that a sharp angle between the collar and the shank is avoided.

4. GALVANIZING

4.1 All ferrous components except or those made of stainless steel shall be hot dip galvanized. The threads of nuts and tapped holes, when cut after galvanizing shall be well oiled and greased. The galvanizing shall conform to IS: 2629-1985 or any other equivalent national of international standards.

5. FINISH

All insulator pins shall be reasonably smooth on all surfaces and free of sharp projections.

6. TEST

6.1 Insulator pins shall comply with the following tests as per IS: 2486 (Part I).

6.2 *Type Tests:*

- Visual examination test
- Checking of threads on head
- Galvanizing test
- Mechanical test

6.2 *Acceptance Tests:*

- Checking of threads on head
- Galvanizing test
- Mechanical test

6.3 *Routine Test:*

- Visual examination.

7. Bid Documentation

7.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of insulator pins and two (2) clear copies of all other relevant standards referenced therein.

7.2 The Bidder shall provide certified type test results performed on insulator pins in accordance with the latest version of governing standards otherwise bid offer shall be rejected.

7.3 The Bidder shall provide standard catalogue and certified dimensional drawings of all types of insulator pins.

7.4 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

7.5 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

DISC INSULATOR FITTINGS
(TENSION SET)

1. **Scope**

1.1 This specification covers the fabrication and supply of tension type disc insulator fittings.

2. **Description**

2.1 The disc insulator fittings shall be supplied with ball and socket couplings (socket eye, ball eye/ball clevis etc.), twisted straps, and bolted type tension clamps. Number of U-bolts in tension set shall be 3 (three).

2.2 Tension clamp shall be suitable for ACSR conductor, diameter ranging from 5 mm. to 16.5 mm.

2.3 The ultimate strength of disc insulator fittings shall be more than 45 kN.

2.4 All components of disc insulator fittings shall be such that they fulfill all requirements of this specification and compatible with disc insulator specified above.

2.5 All parts of different fittings, which provide for interconnection, shall be made such that sufficient clearance is provided at the connection point to ensure free movement of insulator assembly.

2.6 The twisted strap shall be suitable for 50x100x50 mm. cross arm. Size of the holes for bolt, which anchors twisted strap with cross arm shall be suitable for insulator pins specified in above and width of the twisted strap shall be designed accordingly. Diameter of nuts and bolts of strap shall be equal to shank diameter of insulator pins. Nuts and bolts shall also be provided with spring washer and split pin.

2.7 Unless otherwise specified in this specifications, disc insulator fittings shall be in accordance with IS: 2486 (Part I & II) or any other equivalent national or international standards.

2.8 The manufacturer of the disc insulator fittings must have been accredited with ISO 9001 (including design in the scope of registration) quality certification

3. **Material**

3.1 The tension clamp shall be made of the aluminium alloy type. Other accessories like ball eye/ball clevis, socket eye, nuts, and bolts shall be made of hot rolled steel and obtained preferably by process of forging. Twisted cross arm strap shall be made of MS sheet metal. Cotter bolts and U-bolts shall be of galvanized steel. Cotter pins shall be stainless steel.

3.2 All forging and castings shall be of good finish and free from flaws and other defects. The edges on the outside of fittings, such as at the eye, socket and holes, shall be rounded.

4. Galvanizing

4.1 All ferrous fittings and the parts other than those of aluminumalloy and stainless steel, shall be hot dip galvanized in accordance with IS: 2629-1985 or any other equivalent national or international standards.

5. Tests

5.1 The disc insulator fittings shall comply with the following tests as per IS: 2486 (Part I) or any other equivalent national or international standards.

1. *Type Test:*

- Verification of Dimensions,
- Visual Examination Test
- Slip Strength Test
- Mechanical Test
- Electrical Resistance Test
- Heating Cycle Test
- Galvanizing Test

2. *Acceptance Tests:*

- Verification of dimensions
- Galvanising Test
- Mechanical Tests

3. *Routine Tests:*

- Visual Examination Tests
- Routine Mechanical Test

6. **Marking**

6.1 The tension clamp shall be marked on it following:

a) Name or trademark of manufacturer
b) Name of the Purchaser as follows: "NEA-DCSD"

7. **Bid Documentation**

7.1 The Bidder shall provide with the Bid two (2) clear copies of the governing standards for fabrication and testing of disc insulator fittings and two (2) clear copies of all other relevant standards referenced therein.

7.2 The Bidder shall provide certified type test results performed on disc insulator fittings in accordance with the latest version of governing standards otherwise bid offer shall be rejected.

7.3 The Bidder shall provide a complete description, catalogue and certified dimensional drawings of all components of disc insulator fittings.

7.4 A clause-by-clause commentary on specification, specifying compliance and deviations, if any.

7.4 All data, drawings, catalogues and other technical documents shall be bound separately from the Bid documents.

SHACKLE INSULATOR FITTINGS

1. Scope

1.1 This Specification covers the fabrication and supply of D-Iron type shackle insulator fittings, and shackle strap required for shackle insulators for use in overhead low voltage line construction.

2. General Requirements

2.1 The shackle fittings shall be free of burrs, splinters, splits, sharp points and edges which may damage conductors or show evidence of poor workmanship. All ferrous fittings and parts other than stainless steel shall be galvanized as per IS: 2629-1985 or equivalent national or international standard. The minimum coating thickness shall be not less than 85 micron.

3. Other Requirements

3.1 D-iron type shackle fittings shall consists of the following main components:

- Mild steel D-iron;
- 1 no. of mild steel bolt and nut;
- 1 no. of spring washer.

The shackle strap consists of:

- 2 nos. of mild steel straps;
- 1 no. of mild steel bolt and nuts;
- 1 no. of spring washer.

The shackle strap shall be compatible with the type of shackle insulator intended to be used with it.

4. Tests

4.1 The shackle fittings shall comply with the following tests as per IS: 7935 or equivalent national or international standard:

1. Type Tests:

- Visual Examination,
- Verification of Dimensions,
- Galvanizing.

2. Acceptance Tests:

- Verification of Dimensions,
- Galvanizing Tests.

3. Routine Test:

- Visual Examination Test.

B11: Stay Set and Miscellaneous

1. Stay Set

1.1 General

This specification covers the supply of the stay set assembled with the following accessories for use to guy overhead 33 KV line at angle points and dead end points. All the accessories shall be galvanized as per the relevant Standards.

1.2 Stay Rods

Stay rods shall be made of mild steel of ultimate tensile strength of 4200 kg/sq. cm as per IS 432 - (part - 1). Length and section of the rod shall be as mentioned in the rating and features. One end of stay rod shall be square headed 50 x 50 x 15 mm and other end is threaded as shown in drawing.

1.3 Turnbuckle:

The stay turnbuckle shall be bow type with ratchet nut adjuster as shown in figure. The turnbuckle shall be made of steel of 4200 kgf/sq. cm as per IS 432 (part -1). Bow type part of the turnbuckle shall be made of 5/8 in (16 mm) steel rod. A thimble made of 18 SWG G. I, steel shall coupled with bow. The thimble shall be suitable for 7/10 SWG stay wire.

1.4 Stay Plate

The stay plate shall be square type galvanized M.S. plate of 6 mm thick. The plate shall have suitable square shape hole of 40mm x 40mm at the center. The dimension of the plate shall be of 400mm x 400mm for 33 kV line. Stay plate rod assembled with stay rod has been shown in the drawing.

1.5 Galvanizing

All the stay set assembly must include rod, plate, turnbuckle, nut & bolts, washers, thimble etc. and they should be hot dip zinc galvanized conforming to IS.2629-1985.

1.6 Stay Wire

The Stay Wire shall be the zinc-coated steel wire strand type generally used for guying the Stay Set used on poles for the construction of overhead power line.

a) Description of strands
The steel strand shall be fabricated in accordance with ASTM specification A-475 or and equivalent national or international standard, subject to the provision of paragraph 4 contained herein.

The steel strand shall have the following features:

	For 33KV	For 11KV
Wire SWG	7/10	7/12
Quality of individual wire	Class B with high strength	Class B with high strength

Quoting on the wire	Zinc	Zinc
Individual wire diameter after quoting	12.70 mm	8mm
No. of strand	7 wires	7 wires
Nominal diameter of the Strand	4.19 mm	2.64mm
Laying of the Strand	Left hand lay	Left hand lay
minimum breaking strength	8527.53Kg	2720kg

b) Packaging

The steel wire strand shall be furnished in 70m reels. Each reel shall have a weather resistance tag securely attached the length, nominal diameter, number of individual wires, grade of the strand, and the class of zinc coating.

1.7 Other accessories

The Stay Set shall also include all other accessories such as nut, bolts washers, thimble etc. that are necessary to assemble and fit the complete Stay Set.

1.8 Ratings of Stay Set

Details	Stay Type A (11KV)	Stay Type B (33KV)
Length of stay rod	6ft (1800mm)	8ft (2440mm)
Diameter of Rod	16mm	18mm
Ultimate tensile Strength of stay rod and turn buckle	4200kg /sq cm	4200kg/sq cm
Length of threaded portion	300mm	300mm
Thimble Shape	Suitable for 7/12 SWG steel wire	Suitable for 7/10 SWG Steel wire
Thimble Section	18 SWG min	18 SWG min
Stayplate section	300x300x6mm	400x400x6mm
Elbow	16 dia M.S. Rod,	18mm dia. M.S. Rod
Galvanization	conform to IS0-2629-1985	Conform to IS -2629-1985
Applicable Standard for Steel	IS-432	IS-432

2. Miscellaneous

2.1 Full Tension Sleeve

The sleeve shall be dual tension (2 pieces) for use with ACSR conductor. The steel sleeve shall be heavily plated for resistance to corrosion and compatibility with aluminum and shall be abrasive lined for maximum holding strength.

The aluminum outer sleeve for ACSR Dog conductor shall have a filler hole to permit centering over the steel sleeve and permit inhibitor application.

2.2 Aluminum Binding Wire

The aluminum binding wire shall be used for binding or securing Dog conductor to pin insulators fixed on the cross arms. The aluminum binding wire should be of required strength and conforming to latest ISO standards. However, the diameter of the aluminum wire should not be less than 3.25 mm.

CHAPTER 3: INSPECTION, TESTING AND COMMISSIONING

1.1 SCOPE OF WORK

The whole of the Works supplied under the Contract shall be subject to inspections and tests by the Employer or their Representatives during manufacture, erection and after completion. The inspections and tests shall include, but not be limited to, the requirements of this section of the Specifications.

The Contractor shall provide all costs, appliances, apparatus, supervision, labor and services necessary to carry out all tests, unless specifically stated otherwise.

The Contractor shall furnish the detailed schedule of his commissioning plan at least one month prior to the scheduled date. The schedule shall include the commissioning procedures, testing sequences and details of special testing equipment, tests and commissioning record formats, information about relevant standards etc.

The scope of the commissioning program includes the site testing and putting into successful operation of all the equipment supplied under the Contract, for 33kV line system.

1.2 OBJECTIVES

The objectives of commissioning work, prior to the successful energization of the line at full voltage and connection to the system, are the following:

- Confirm the integrity (correctness) of installation.
- Confirm the integrity of insulation, connections and phasing.
- Ensure proof of equipment characteristics.
- Review workmanship.
- Confirm the correct implementation of the design.
- Check and measure resistivity of earthing grid and earthing system.

1.3 QUALITY ASSURANCE, INSPECTION AND TESTING

To assure that the supply and services under the scope of this Contract whether manufactured or performed within the Contractor's works or at his subcontractor's premises or at the Site or at any other place of work, are in accordance with the Specifications, the Contractor shall adopt suitable quality assurance program to control such activities at all points necessary. Such program shall be outlined by the Contractor and shall be finally accepted by the Employer after discussions before the award of the Contract. A quality assurance program of the Contractor shall generally cover, but not be limited to the following:

(a) His organization structure for the management and implementation of the proposed quality assurance program.
(b) Documentation control system.
(c) Qualification data for bidder's key personnel.
(d) The procedure for purchases of materials, parts, components, and selection of sub-contractors' services including vendor analysis, source inspection, incoming raw materials inspection, and verification of materials purchases.
(e) System for shop manufacturing including process controls and fabrication and assembly controls.

(f) Control of non-conforming items and system for corrective actions.
(g) Control of calibration and testing of measuring and testing equipment.
(h) Inspection and test procedure for manufacture.
(i) System for indication and appraisal of inspection status.
(j) System for quality audits.
(k) System for authorizing release of manufactured products to the Employer.
(l) System for maintenance of records.
(m) System for handling storage and delivery.
(n) A quality plan detailing out the specific quality control procedure adopting for controlling the quality characteristics relevant to each item of supply.

The quality plan shall be mutually discussed and approved by the Employer after incorporating necessary corrections by the Contractor as may be required.

- Quality Assurance Documents

The Contractor shall be required to submit all the Quality Assurance Documents as stipulated in the Quality Plan at the time of Employer's inspection of material/equipment.

The Employer, through his duly authorized representatives, reserves the right to carry out Quality Audit and Quality Surveillance of the systems and the procedures of the Contractor's and the subcontractor's Quality Management and Control Activities.

- Inspection, Testing and Inspection Certificates

The provisions of the clauses on Test and Inspection of the General Conditions of Contract and Special Conditions of Contract shall be applicable to the supply and erection portions of the Works. The Employer shall have the right to re-inspect at his expenses, any material though it would have been previously inspected and approved by him at the Contractor's works before, and if, after the same are inspected at Site following the latter, material is found defective, then the Contractor shall bear the cost of this inspection and reinstatement according to specification.

1.4 TESTS AT MANUFACTURERS WORKS

1.4.1 General

Where no specific test is specified, then the various items of materials and equipment shall be tested in accordance with the relevant British, IEC, or other relevant Standards. Where no appropriate standard is available, tests shall be carried out in accordance with the maker's standard practice, which shall be subject to the Employer's approval.

At least fourteen days' prior notice, in writing or by tele-fax, shall be given to the Employer of the readiness of the plant for test or inspection and every facility shall be provided by the Contractor and subcontractor (s) to enable the Employer or their Representative to carry out the inspections and witness the tests. This includes progress, test rig and packing inspections also.

Inspection of equipment will not be carried out unless the Employer has approved copies of the relevant sub-orders, drawings and test procedures. No equipment shall be packed, prepared for shipment, or dismantled for the purpose of packing for shipment, unless it has been satisfactorily inspected, or inspection has been waived by the Employer.

Functional electrical and mechanical tests shall be carried out on the completed plant after assembly in the Works. The extent and method of recording the results shall be agreed by the Employer in sufficient time to enable the tests to be satisfactorily witnessed or to make

any changes to the proposed program of tests. All instruments and apparatus used in the performance of the tests shall be subject to the approval of the Employer and, if required by the Employer, shall be calibrated to an agreed standard at a laboratory of national standing to be nominated by the Contractor and approved by the Employer. The costs of carrying out such calibration shall be borne by the Contractor in all cases.

The costs associated with arranging/making/performing any test in manufacturer's works or tests to be conducted at the site or elsewhere shall be borne by the Contractor. TheNEA shall bear the cost associated with inspectors' travel, hotel and daily allowances etc.

After receiving the prior information about the completion of manufacturing at the factory, the Employer will depute his personnel or personnel from independent authority (third party) to the Contractor's factory to witness the fabrication, assembly and testing of any or all parts of major equipment. The number of the Employer's personnel and equipment (but not limited to) to be witnessed will be as listed below. The duration of such visits shall be as per inspection/testing requirements.

-Steel Tubular Pole Fittings, & Insulator and Hardware & Stay Set 1 persons, 1 visit

1.4.2 Test Certificates

Within30 days of the completion of any test, triplicate sets of all principal test records, test certificates and performance curves shall be supplied to the Employer.

These test records, certificates and performance curves shall be supplied for all tests, whether or not they have been witnessed by the Employer or his representative. The information given on such test certificates and curves shall be sufficient to identify the material or equipment to which the certificate refers and should also bear the Contract reference title. Specified requirements shall be shown on each certificate for comparison with actual test results.

When all equipment has been tested, test certificates of all factory and site tests shall be compiled by the Contractor into volumes and bound in an approved form complete with index. Two copies of each volume shall be supplied to the Consultant and five copies to the Employer.

1.4.3 Type Tests

Type tests are required to prove the general design of the equipment and the Contractor may submit certificates of such design tests, which have been carried out on identical equipment. Notwithstanding any provision in BS, IEC or ANSI Standards, the Employer shall have the right to accept such certificates in lieu of the specified type tests or to reject them.

The type tests prescribed shall be carried out at the Contractor's cost in all cases, where either such certificates are not available or are rejected by the Employer

1.4.4 Commissioning Test

The contractor shall be responsible for checking that total and relative sags of conductors are within the specified tolerances. Such checks shall be carried out at positions along the route selected by the Employer and the contractor shall provide the necessary surveying instruments to enable the checks to be carried out with the line in service without any extra charge.

The commissioning tests are as follows:

(a) Measurement of line parameters

The line insulation resistance shall be measured on each individual section of the lines before the jumper loops are closed and again on the whole lines when they are completed.

The electrical parameters of the lines such as resistance, reactance, susceptance etc. shall be measured in a manner to be approved by the Employer, sufficiently accurately to enable the positive, negative and zero sequence impedance to be determined for the lines.

The underground cable shall be subjected to sheath integrity test, insulation resistance test, phase out and high voltage withstand including subsequent IR test.

The lines shall then be energized at the proposed operating voltage from the Employer's system or generating station and the charging current measured and other such tests performed as the Employer may require to make on the completed line.

The contractor shall carry out all these tests in the presence of the Employer, and shall provide all the necessary labor, transportation, apparatus, instruments and other assistance as required, without any extra charge.

(b) High voltage tests

The overhead lines shall be tested with DC voltage applied between each phase and earth by means of a DC high voltage testing unit and without cleaning of the insulators. Bidders shall state leakage current expected for such tests, for the different section of lines and taking into consideration and atmospheric conditions given in Section. The contractor shall supply the necessary apparatus, instruments and the D.C. high voltage supply to the testing unit including those required for carrying out test and should be shown in the appropriate schedules.

The test voltage shall be applied for five minutes for 33 kV overhead lines and shall be as follows:
Line Voltage: 33 kV
D C Test Voltage to Earth :33x1.732 kV

The electric power necessary for the tests at Site shall be managed by the Contractor. The contractor shall satisfy himself that all connections are good before switching power and shall be responsible for, and make good any damage that may arise because of faulty connections.

All D.C. measuring apparatus, instruments including D.C. high voltage testing unit will be subject to checking and calibration by the Employer before starting the high voltage D.C. current test, catalogues and details to be submitted with offer. Full details and catalogue of the proposed high voltage D.C. testing equipment shall be submitted for approval before shipping the test equipment.

CHAPTER 4: TECHNICAL DATA SHEET

TECHNICAL DATA SHEET

(To be completed by manufacturer)

Item **Cross Arms and Bracing Angles**

	Description	Queries
1.	Manufacturer's name	
2.	Steel Classification	
3.	Minimum tensile strength of steel	…….kN
4.	Is the cross arm and angles fabricated from hot-rolled steel sections?	Yes/No
5.	Governing Standard	
6.	Standard attached?	Yes/No
6.	Governing Standard for galvanizing	
7.	Drawings of cross arm and bracing submitted?	Yes/No

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEET

(To be completed by manufacturer)

Item **Flat Cross Arm Brace**

	Description	Queries
1.	Manufacturer	
2.	Steel Classification	
3.	Minimum tensile strength of steel	……..kN
4.	Is the flat cross arm brace fabricated from hot-rolled steel sections?	Yes/No
5.	Governing Standard for manufacturing and testing	
6.	Governing Standard for galvanizing	
7.	Standards attached?	Yes/No
8.	Drawings of flat cross arm brace submitted?	Yes/No

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEET

(To be completed by manufacturer)

Item **Galvanized Pole Clamps**

	Description	Queries
1.	Manufacturer	
2.	Steel classification	
3.	Minimum tensile strength of steel	……..kN
4.	Referenced galvanizing specification	
5.	Drawings of pole clamp furnished?	Yes/No

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEET

(To be completed by manufacturer)

Item **Galvanized Steel Nuts and Bolts**

	Description	**Queries**
1.	Manufacturer	
2.	Material description furnished?	Yes/No
3.	Minimum tensile strength of steel	……..kN
4.	Governing standard for manufacturing and testing	
5.	Governing standard for galvanization	
6.	Standards attached?	Yes/No

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEET

(To be completed by manufacturer)

Item **Ground (Earth) Rods and Clamps**

Description	**Queries**
1. Manufacturer	
2. Material Description furnished?	Yes/No
3. Governing Standard for manufacturing and testing	
4. Governing Standard for galvanization	
5. Standards attached?	Yes/No
6. Catalog/ dimensional drawings attached for all items?	Yes/No
7. Dimensions (Ground Rod):	
Length mm.	
Diameter mm.	
8. Catalog number	
Rod	
Clamp	
9. Copies of type test results attached?	Yes/No

Signature ……

As representative for…….

Address……..

Date……

TECHNICAL DATA SHEET

(To be completed by manufacturer)

Item	**Grounding Conductor**
Description	**Queries**
1. Manufacturer	
2. Governing Standard for manufacturing and testing	
3. Governing Standard for galvanization	
4. Standards attached?	Yes/No
5. Diameter	mm
6. Cross Section	sq. mm
7. Short time fusing	
30 cycles	Amps
8. Weight (Approx.)	kg/km
9. Resistance at 20 degree C (Approx.)	Ohms/km

Signature…….

As representative for…….

Address……..

Date…….

TECHNICAL DATA SHEET

(To be completed by Bidder)

Item	**Universal Parallel Groove (UPG) Clamp**
Description	**Queries**
1. Manufacturer	
2. Material Description furnished?	Yes/No
3. Governing Standard for manufacturing and testing	
4. Governing Standard for galvanization	
5. Standards attached?	Yes/No
6. Catalog/ dimensional drawings attached?	Yes/No

Signature…….

As representative for……..

Address……..

Date……

TECHNICAL DATA SHEET

(To be completed by Bidder)

Items	**Compression Connectors**
Description	**Queries**
1. Manufacturer	
2. Material Description furnished?	Yes/No
3. Governing Standard for manufacturing and testing	
4. Standards attached?	Yes/No
5. Catalog/ dimensional drawings attached?	Yes/No

Signature……..

As representative for……

Address……

Date…….

TECHNICAL DATA SHEET

(To be completed by Bidder)

Item **Pin Insulator**

	Description	*Unit*	*NEA's Requirement*
1.	Manufacturer		To be specified
2.	Catalogue/ Dimensional drawings	Yes/No	Yes,to be submitted
3.	Governing Standards	Yes/No	Yes,to be submitted
4.	Copies of Standards Attached:	Yes/No	Yes,to be submitted
5.	Copies of type test attached?	Yes/No	Yes,to be submitted
6.	Marking as per specifications	Yes/No	Yes
7.	Ratings:		
	Highest System Voltage	kV	12, 36
	Rated Voltage	kV	11, 33
	Creepage Distance (min)	mm	265, 680
	Wet Power Frequency Withstand Voltage	kV	35, 80
	Impulse Withstand Voltage	kV	75, 170
	Puncture Power Frequency Voltage (min)	kV	108, 185
	Visible Discharge Voltage (Effective)	kV	9, 27
	Cantilever Strength	kN	5, 10
	G.I. Pin Head		Small, Large
8.	Approximate Weight, kg	To be specified mandatorily	

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEET

(To be completed by Bidder)

Item **Disc Insulator**

	Description	*Unit*	*NEA's Requirement*
1.	Manufacturer		To be specified
2.	Catalog/Dimensional drawings	Yes/No	To be specified
3.	Governing Standards	Yes/No	Yes,to be submitted
4.	Copies of Standards Attached:	Yes/No	Yes,to be submitted
5.	Copies of type test attached?	Yes/No	Yes,to be submitted
6.	Marking as per specifications	Yes/No	Yes
7.	Ratings:		
	Highest system Voltage	kV	12
	Rated Voltage	kV	11
	Porcelain Diameter (min)	mm	255 (min.)
	Spacing	mm	145
	Creepage Distance (min)	mm	280
	Power Frequency Puncture Withstand Voltage	kV	1.3x Actual dry flashover voltage
	Wet Power Frequency Withstand Voltage	kV	35
	Impulse Withstand Voltage	kV	75
	Puncture Power Frequency Voltage (min)	kV	105
	Visible Discharge Voltage	kV	9
	Mechanical Strength	kN	45
	Ball and Socket Size	mm	16 mm B
	Applicable Standard		IS:3188-1980
8.	Approximate Weight, kg	To be specified mandatorily	

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEET

(To be completed by Bidder)

Item **Stay Insulators**

	Description	Queries
1.	Manufacturer	
2.	Catalog No.	
3.	Model number	
4.	Applicable standards	
5.	Copies of standards attached?	Yes/No
6.	If not IS standards, are standards Used equivalent?	Yes/No
7.	Copies of alternate standards attached?	Yes/No
8.	Ratings:	
	Highest system voltage	……..kV
	Rated voltage	…..…kV
	Creepage distance (min)	……mm
	Minimum failing load	…….kN
	Power frequency withstand voltage, 1 minute	
	Dry	……..kV
	Wet	…….kV
	IS designation	

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEETS

(To be completed by Bidder)

Item	**Shackle Insulator**
Description	**Queries**
1. Manufacturer	
2. Catalog No.	
3. Standards	
4. Copies of standards attached:	Yes/No
5. If not IS standards, are standards used equivalent?	Yes/No
6. Copies of alternate standards attached?	Yes/No
7. Ratings:	
Highest system voltage,	kV
Rated voltage,	kV
Power frequency withstand voltage, 1 minute	
Dry	kV
Wet	kV
Power frequency puncture withstand	
Voltage, 1 minute	kV
Leakage distance (min),	mm
Mechanical strength	kN
IS designation	

Signature…….

As representative for…….

Address……..

Date……

TECHNICAL DATA SHEETS

(To be completed by Bidder)

Item **Insulator Pins**

	Description	*Unit*	*NEA, Requirement*
1.	Manufacturer		To be specified
2.	Type of Steel Used		Hot Rolled Steel
3.	Dimensional drawings attached?	Yes/No	Yes, to be submitted
4	Governing StandardYes/NoYes, to be submitted		
5.	Copies of Standards Attached:	Yes/No	Yes, to be submitted
6.	Copies of type test attached?	Yes/No	Yes, to be submitted
7.	Ratings and Features:		

	For 11 kV (N/A)	*For 33 kV*
Head Type	Small S 165 P	Large L300N
Total Length (mm)	315	450
Stalk Length (mm)	165	300
Shank Length (mm)	150	150
Minimum Failing Load (kN)	5	10
Applicable Standard	IS: 2486 (Part II)	
Catalogue Number	To be submitted	

8.	Approximate Weight	kg	To be specified mandatorily

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEET

(To be completed by Bidder)

Item **Disc Insulator Fittings**

	Description	*Unit*	*NEA, Requirement*
1.	Manufacturer/Catalogue No.	Yes, to be specified and submitted	
2.	Dimensional drawings attached?	Yes/No	Yes, to be submitted
3.	Governing Standard	IS: 2486 (Part I &II)	
4.	Copies of Standards Attached:	Yes/No	Yes, to be submitted
5.	Copies of type test attached?	Yes/No	Yes, to be submitted
6.	Aluminum Alloy Tension Clamp	Yes/No	Yes
7.	Ferrous parts are galvanized?	Yes/No	Yes
8.	Cotter Pins are Stainless Steel?	Yes/No	Yes
9.	Ultimate Strength of Clamps	kN	45
8.	Approximate Weight	kg	To be specified mandatorily

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

TECHNICAL DATA SHEETS

(To be completed by the Manufacturer)

Item	**Shackle Insulator Fittings**
Description	**Queries**
1. Manufacturer	
2. Catalogue no.	
3. Drawing furnished?	Yes/No
4. Steel classification	
5. Reference galvanizing specifications	

Signature…….

As representative for……..

Address……

Date…….

TECHNICAL DATA SHEET

(To be completed by Bidder for each transformer rating)

Item: Stay Set

	Description	Queries
1.	Manufacturer's name	
2.	Steel Classification for stay set and stay wire	
3.	Governing Standard	
4.	Standard attached?	Yes/No
5.	Governing Standard for galvanizing	
6.	Drawings of stay set submitted?	Yes/No
7.	Rating details	
	Stay set	
	Length of stay rod	……..mm
	Diameter of stay rod	……..mm
	UTS of stay rod and turn buckle	……..kg/sq.cm.
	Length of threaded portion	……..mm
	Elbow diameter	……..mm
	Stay Plate	
	Length of stay plate	……..mm
	Breadth of stay plate	……..mm
	Thickness of stay plate	……..mm
	UTS of stay plate	……..kg/sq.cm.
	Length of threaded portion	……..mm
	Elbow diameter	……..mm
	Stay wire	
	Manufacturer	……..
	Wire SWG	……..
	Quoting on the wire	……..
	Individual wire dia after quoting	…….. mm
	Number of strands	……..
	Nominal diameter of the stranded wire (overall)	……..mm
	Left hand lay	Yes/No
	Minimum breaking strength	……..kg

	Class of Zn coating	
8.	Test reports submitted?	Yes/No

Sign (Manufacturer's authorized Representative)……

Date……

Bidder's Seal ……

CHAPTER 5: DRAWINGS

CHAPTER 6: IMPLEMENTATION SCHEDULE

S.No.	Description	Month					
		3	6	9	12		
1	Mobilization						
2	Survey						
3	Design , Manufacturing & supply						
4	Construction ,Commissioning and Charging						

SECTION - VI

Bill of Quantities

Preamble of Bill of Quantities

A. General

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Special Conditions of Contract, Technical Specifications, and Drawings.

2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Project Manager and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Project Manager may fix within the terms of the Contract.

3. For any item for which measurement is based on records made before or during construction the records shall be prepared and agreed between the Engineer and the Contractor. Should the Contractor carry out such work without the prior agreement of the Engineer, the Engineer may request the Contractor to carry out investigations to confirm the extent of the work and the quantity of work certified for payment shall be solely at the Engineer's discretion. The cost of any such investigation shall be borne by the Contractor.

4. The rates and prices bid in the priced Bill of Quantities shall, except as otherwise provided under the Contract, include all construction equipment, labor, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

5. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

6. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

7. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities. The Specification Clause references where given in the item description of the Bills of Quantities are for the convenience of bidders and generally refer to the principal relevant- specification clause but do not necessarily represent the whole of the specification requirements for the work required within the item. The presence of a Specification clause reference shall not in any way reduce the Bidders obligation to complete work in accordance with all the requirements of the Specification.

8. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Project Manager in accordance with the Conditions of Contract.

9. The method of measurement of completed work for payment shall be in accordance with the Specifications.

10. The abbreviations and symbols used in this Bill of Quantities are: ***applicable***

Bill of Quantities

Nepal Electricity Authority

Janakpur Regional Office

Mujelia,Janakpur

PRICE SHEDULE (MATERIAL)

Materials Cost Estimate for Singhadevi and Raniban VDC of Okhaldhunga District (FY 2074/075)

S.N.	Type	Description	unit	Qty	Rate NRs.	Amount NRs.
Supply of complete set with accessories for pole (All poles Supplied by NEA)						
1	**For LT Line (8 m Steel Tubular Pole will be Supplied By NEA except fitting & accessories complete)**					
1.1		Fully Galvanized 8 meter Steel Tubular Pole (folding type) fitting and accessories complete as per drawing and specifications for 0o deviation (Two wire)	Nos.	200		
2	**For HT Line (10 m Steel Tubular Pole will be Supplied By NEA except fitting & accessories complete)**					
1.1	CS11-STP-01	10 m. Steel Tubular Pole fittings and accessories complete as per drawing and specifications (single arm structure)	Nos.	13		
1.2	CS11-STTP-06 AND 12	10 m. Steel Tubular single pole fittings and accessories complete as per drawing and specifications (dead end structure)	Nos.	1		
1.3	CS11-STTP-07 AND 13	10 m. Steel Tubular Pole intermediate support structure fittings & accessories complete as per drawing and specifications (double dead end structure)	Nos.	6		
1.4	CS11-STTP-08 AND 14	10 m. Steel Tubular Pole (H structure double dead end)fittings & accessories complete as per drawing and specifications	Nos.	3		
1.5	CS11-STTP-05 AND 11	10 m. Steel Tubular Pole single arm Tapping Structure fittings & accessories as per drawing and specifications for 11 KV	Nos.	1		
1.6	CS11-STTP-04 AND 10	10 m. Steel Tubular Pole fittings and accessories complete as per drawing and specifications (double arm structure)	Nos.	8		
3	**Supply of complete set with accessories for conductor (0.03 sq. inch & 0.05 sq. inch ACSR Conductor will be Supplied by NEA except fitting & accessories complete)**					
3.1		0.03 sq. inch ACSR Conductor for LT (Two Wire)	km	11		
3.2		0.05 sq. inch ACSR Conductor (for 11 kV, Three wire)	km	2.20		
4		Galvanized Stay Set for LT (400 V)	Set	102		
5		Galvanized Stay Set for HT (11 kV)	Set	25		
				Sub total :		

Total Amount in Words:

Note:

1. Steel Tubular Pole (8 m & 10 m) & ACSR Conductor (0.03 sq. inch & 0.05 sq. inch will be Supplied by NEA, Janakpur Regional Office.

2. Unit Price shall include all custom duties and taxes as per prevailing laws/regulations, transportation cost to the final destination and insurance.

Nepal Electricity Authority
Janakpur Regional Office
Mujelia,Janakpur

PRICE SHEDULE (LABOUR)

Labour Cost Estimate for Singhadevi and Raniban VDC of Okhaldhunga District (FY 2074/075)

S.N.	Description	Unit	Qty	Rate NRs.	Amount NRs.
1	Pre - Construction Survey, Geographical Mapping, Drawing, Staking Preparation of Structure Data Sheet, Single Line Diagram & Final Bill of Quantity etc	km	13.20		
2	**Erection of pole with accessories**				
2.1	Fully Galvanized 8 meter Steel Tubular Pole (folding type) with fitting and accessories complete as per drawing and specifications for 0o deviation (LT Two wire)	nos	200		
2.2	10 m. Steel Tubular Pole with fittings and accessories complete as per drawing and specifications (single arm structure)	nos	13		
2.3	10 m. Steel Tubular single pole with fittings and accessories complete as per drawing and specifications (dead end structure)	nos	1		
2.4	10 m. Steel Tubular Pole intermediate support structure complete as per drawing and specifications (double dead end structure)	nos	6		
2.5	10 m. Steel Tubular Pole (H structure double dead end) complete as per drawing and specifications	nos	3		
2.6	10 m. Steel Tubular Pole for installation of single arm Tapping Structure as per drawing and specifications for 11 KV	nos	1		
2.7	10 m. Steel Tubular Pole with fittings and accessories complete as per drawing and specifications (double arm structure)	nos	8		
3	**Stringing of ACSR conductor with accessories**				
3.1	0.03 sq. inch ACSR Conductor for LT Two Wire	km	11		
3.2	0.05 sq. inch ACSR Conductor (for 11 kV, Three wire)	km	2.20		
4	**Installation of stay set with accessories**				
4.1	Galvanized Stay Set for LT (400 V)	set	102		
	Galvanized Stay Set for HT (11 kV)	set	25		
5	Preparation of Final as built drawing, Testing, Charging of electric distribution system and handover	km	13.20		
6	Transportation of all construction materials from JRO to Singdevi-Raniban with loading and Unloading	LS	1.00		
			Sub total :		
Total Amount in Words:					

Note:

1. Steel Tubular Pole (8 m & 10 m) & ACSR Conductor (0.03 sq. inch & 0.05 sq. inch will be Supplied by NEA, Janakpur Regional Office.

2. Unit Price shall include all custom duties and taxes as per prevailing laws/regulations,

transportation cost to the final destination and insurance.

Nepal Electricity Authority

Janakpur Regional Office

Mujelia,Janakpur

FY 2074/075

SUMMARY

Materials Cost (1)	Labour Cost (2)	Total Cost Estimate (3=1+2)	VAT @ 13 % (4= 13% of 3)	Grand Total Cost Estimate (NRs) (5 = 3+4)
Total Amount in Words:				

Note:

1. Steel Tubular Pole (8 m & 10 m) & ACSR Conductor (0.03 sq. inch & 0.05 sq. inch will be Supplied by NEA, Janakpur Regional Office.

2. Unit Price shall include all custom duties and taxes as per prevailing laws/regulations, transportation cost to the final destination and insurance.

Nepal Electricity Authority

Janakpur Regional Office

Mujelia,Janakpur

Construction unit 1 (For LT Line)

Unit rate calculation of poles accessories

Type	S. No.	Description	Unit	Qty	Rate (NRs)	Amount (NRs)
Steel Tubular Pole (0o Deviation) (LT Two Wire)	1	8 m long Steel Tubular Pole	Nos.	0		
	2	Shackle Insulator with D-iron, Nuts bolt & washers (400 volt)	Nos.	2		
		Sub-Total				

Construction unit 2 (For LT Line)

Unit Rate Calculation of ACSR Conductor Accessories

Type	Description	unit	Qty	Rate NRs.	Amount NRs.
(0.03 sq. inch ACSR Conductor LT Two Wire)	0.03 sq. inch ACSR Conductor "WEASEL"	km	0		
	Binding Wire suitable for 0.03 sq. inch ACSR Conductor	Lot	1		
	PG Clamp for 0.03 sq. inch ACSR Conductor "WEASEL"	Nos.	4		
	Sub-Total				

Construction Unit 3 (For LT Line)

Unit Rate Calculation of supply of Stay Set

Type	S. No.	Description	Unit	Qty	Rate NRs.	Amount NRs.
Steel Tubular/Telescopic Pole (Type A) (Single Stay Set for LT)	1	Stay Plate (6×300×300 mm)	Nos.	1		
	2	Stay Rod 16 mm	Nos.	1		
	3	Turn Buckle	Set	1		
	4	Double Eye (Twisted)	Nos.	1		
	5	Preform Wire Compatible for Stay Wire of size 7/2.64 mm	Set	4		
	6	Bot and Washer	Set	2		
	7	Thimble	Nos.	2		
	8	Stay Insulator	Nos.	1		
	9	7/12 Stay Wire	kg	5		
		Sub-Total				

Nepal Electricity Authority

Janakpur Regional Office

Mujelia,Janakpur

Construction unit 2 (For 11 kV Line)

Unit rate calculation of poles accessories

Type	S. No.	Description	Unit	Qty	Rate (NRs)	Amount (NRs)
CS11-STP-01 Type (Steel Tubular Pole) Single Arm Structure for 11 KV	1	10 meter Steel Tubular Pole (Folding)	Nos.	0		
	2	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)	Nos.	3		
	3	Galvanized Steel Crossarm Channel (100x50x6.4x300 mm)	Nos.	1		
	4	Galvanized Steel Crossarm Channel (100x50x6.4x1200 mm)	Nos.	1		
	5	Galvanized Pole Clampwith Nut, Bolt and Washers (TC1 & TC2)	Nos.	2		
	6	Galvanized Flat Crossarm Brace (40x6x660 mm)	Nos.	2		
	7	Galvanized Bolts with suitable nuts and washers (12x51 mm)	Set	2		
	8	Galvanized Bolts with suitable nuts and washers (16x305 mm)	Set	1		
		Sub-Total				

Type	S. No.	Description	Unit	Qty	Rate (NRs)	Amount (NRs)
CS11-STTP-06 AND 12 Type (Steel Tubular Pole) (Single Pole Dead End Structure type for 11 kV)	1	10 meter Steel Tubular Pole (Folding)	Nos.	0		
	2	11 kV Disc Insulator with with Tension Set ball and socket eye, back strap	Set	3		
	3	Galvanized Steel Crossarm Channel (100x50x6.4x300 mm)	Nos.	1		
	4	Galvanized Steel Crossarm Channel (100x50x6.4x1200 mm)	Nos.	1		
	5	Galvanized Flat Crossarm Brace (40x6x660 mm)	Nos.	2		
	6	Galvanized Pole Clampwith Nut, Bolt and Washers (TC1 & TC2)	Nos.	2		
	7	Galvanized Bolts with suitable nuts and washers (12x51 mm)	Set	2		
	8	Galvanized Bolts with suitable nuts and washers (16x305 mm)	Set	1		
		Sub-Total				

Type	S. No.	Description	Unit	Qty	Rate (NRs)	Amount (NRs)
CS11-STTP-07 AND 13 Type (Steel Tubular Pole) Single Pole Double Dead End type for 11 kV	1	10 meter Steel Tubular Pole (Folding)	Nos.	0		
	2	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)	Nos.	4		
	3	11 kV Disc Insulator with with Tension Set ball and socket eye, back strap	Set	6		
	4	PG Clamp for 0.05 sq.inch ACSR Conductor "RABBIT"	Nos.	6		
	5	Galvanized Steel Crossarm Channel (100x50x6.4x300 mm)	Nos.	2		
	6	Galvanized Steel Crossarm Channel (100x50x6.4x1200 mm)	Nos.	2		
	7	Galvanized Flat Crossarm Brace (40x6x660 mm)	Nos.	4		
	8	Galvanized Bolts with suitable nuts and washers (12x51 mm)	Set	12		
	9	Strap for insulator string (6x50x396 mm)	Nos.	4		
	10	Galvanized Bolts with suitable nuts and washers (16x305 mm)	Set	1		
	11	Galvanized Double arming Bolts with suitable nuts and washers (16x305 mm)	Set	4		
		Sub-Total				

Type	S. No.	Description	Unit	Qty	Rate (NRs)	Amount (NRs)
CS11-STTP-08 AND 14 Type (Steel Tubular Pole)Double Pole Double Dead End (H Structure) for 11 kV	1	10 meter Steel Tubular Pole (Folding)	Nos.	0		
	2	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)	Nos.	3		
	3	Galvanized Steel Crossarm Channel (100x50x6.4x2390 mm)	Nos.	2		
	4	Galvanized Bracing angle (40x40x5x2071 mm)	Nos.	2		
	5	Galvanized Steel Crossarm Channel (40x40x5.0x2719 mm)	Nos.	2		
	6	Galvanized Pole Clampwith Nut, Bolt and Washers (TC4 & TC5)	Set	4		
	7	11 kV Disc Insulator with with Tension Set ball and socket eye, back strap	Set	6		
	9	Strap for insulator string (6x50x396 mm)	Nos.	6		
	10	Galvanized Bolts with suitable nuts and washers (12x51 mm)	Set	17		
	11	Galvanized Double arming Bolts with suitable nuts and washers (16x305 mm)	Set	4		
	12	PG Clamp for 0.05 sq.inch ACSR Conductor "RABBIT"	Nos.	6		
		Sub-Total				

Type	S. No.	Description	Unit	Qty	Rate (NRs)	Amount (NRs)
CS11-STTP-05 AND 11 Type (Steel Tubular Pole) Tap off Structure for 11 kV	1	10 meter Steel Tubular Pole (Folding)	Nos.	0		
	2	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)	Nos.	5		
	3	11 kV Disc Insulator with with Tension Set ball and socket eye, back strap	Set	3		
	4	Galvanized Flat Crossarm Brace (40x6x660 mm)	Nos.	2		
	5	Galvanized Steel Crossarm Channel (100x50x6.4x300 mm)	Nos.	1		
	6	Galvanized Steel Crossarm Channel (100x50x6.4x1200 mm)	Nos.	2		
	7	Galvanized Flat Crossarm Brace (40x6x660 mm)	Nos.	4		
	8	Galvanized Pole Clamp with Nut, Bolt and Washers (TC1 & TC2 & TC3)	Nos.	3		
	9	PG Clamp for 0.05 sq.inch ACSR Conductor "RABBIT"	Nos.	6		
	10	Galvanized Bolts with suitable nuts and washers (12x51 mm)	Set	4		
	11	Galvanized Bolts with suitable nuts and washers (16x305 mm)	Set	2		
		Sub-Total				

Type	S. No.	Description	Unit	Qty	Rate (NRs)	Amount (NRs)
CS11-STTP-04 AND 10 Type (Steel Tubular Pole) Double Arm Structure for 11 KV	1	10 meter Steel Tubular Pole (Folding)	Nos.	0		
	2	11 kV Pin Insulator with Spindle, Preform pin ties (Top ties)	Nos.	6		
	3	Galvanized Steel Crossarm Channel (100x50x6.4x300 mm)	Nos.	2		
	4	Galvanized Steel Crossarm Channel (100x50x6.4x1200 mm)	Nos.	2		
	5	Galvanized Flat Crossarm Brace (40x6x660 mm)	Nos.	4		
	6	Galvanized Bolts with suitable nuts and washers (12x51 mm)	Set	4		
	7	Galvanized Bolts with suitable nuts and washers (16x305 mm)	Set	1		
	8	Galvanized Double arming Bolts with suitable nuts and washers (16x305 mm)	Set	4		
		Sub-Total				

Nepal Electricity Authority
Janakpur Regional Office
Mujelia,Janakpur

Construction unit 3 (For 11 kV Line)

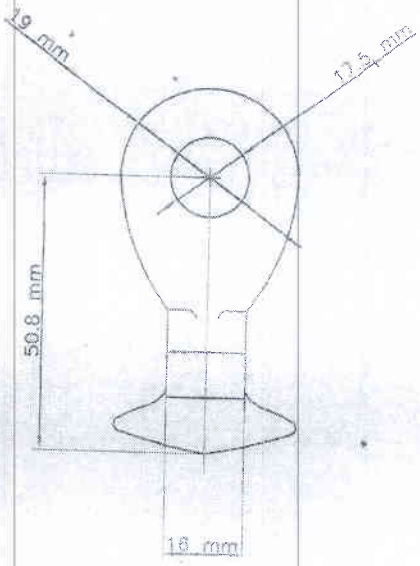
Unit Rate Calculation of ACSR Conductor Accessories

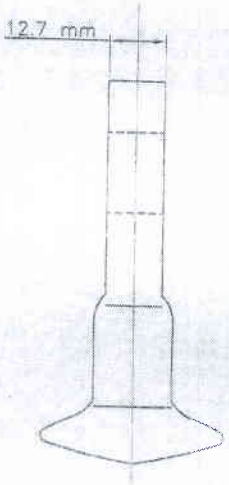
Type	Description	unit	Qty	Rate NRs.	Amount NRs.
(0.05 sq. inch ACSR Conductor for 11 kV)	0.05 Sq. inch acsr Conductor "RABBIT"	km	0		
	Binding Wire suitable for 0.05 sq. inch ACSR Conductor	Lot	1.00		
	Sub-Total				

Nepal Electricity Authority

Janakpur Regional Office
Mujelia,Janakpur
Construction Unit 4 (For 11 kV Line)
Unit Rate Calculation of supply of Stay Set (Galvanized)

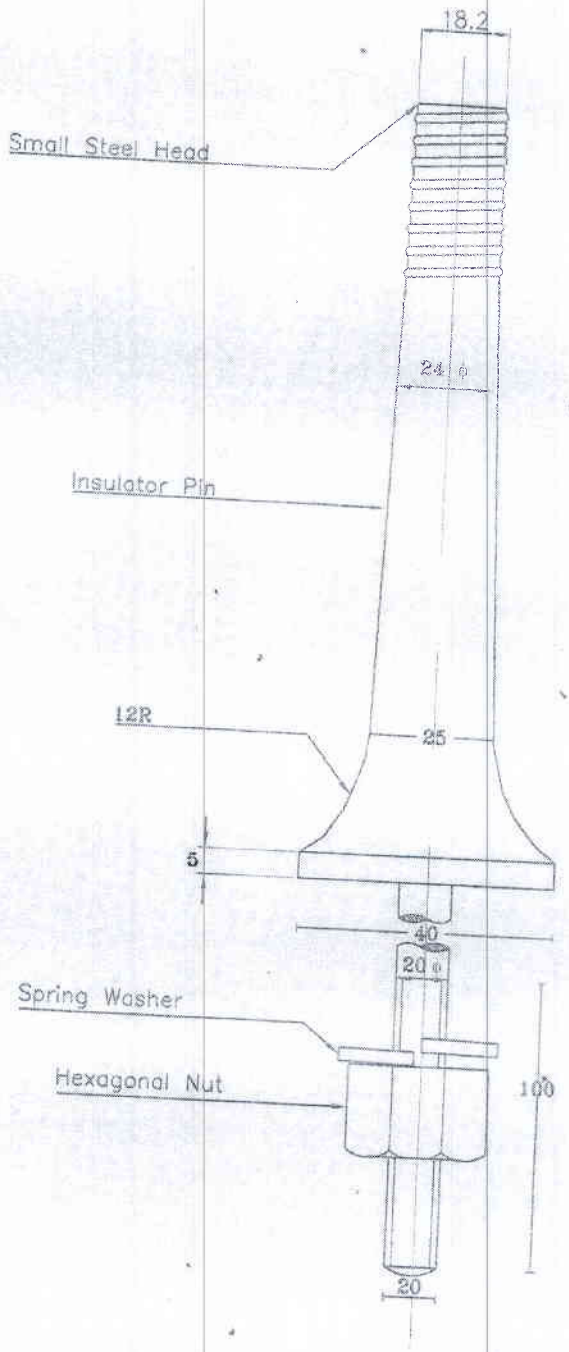
Type	S. No.	Description	Unit	Qty	Rate NRs.	Amount NRs.
Steel Tubular/Telescopic Pole (Type A) (Single Stay Set for HT)	1	Stay Plate (6×600×600 mm)	Nos.	1		
	2	Stay Rod (1.5mX16mm)	Nos.	1		
	3	Turn Buckle	Set	1		
	4	Double Eye (Twisted)	Nos.	1		
	5	Preform Wire Compatible for Stay Wire of size 7/3.25 mm	Set	4		
	6	Bot and Washer	Set	1		
	7	Thimble	Nos.	2		
	8	Stay Insulator	Nos.	1		
	9	7/10 Stay Wire	kg	7		
		Sub-Total				





BALL EYES

Drawing CS11-LM-12	Hardwares for Tension Set	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services



TYPE SI 65 P IS:2486 (PART II)

Drawing		
CS11-LM-09	Insulator Pin	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services

Refer Drawing No: CSG-TIES-01and 02

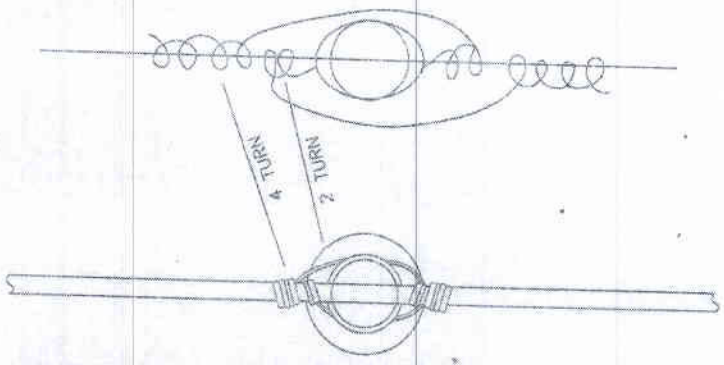
S.No.	SPECIFICATION	DESIGNATION	11 kV PIN INSULATOR TIE	33 kV PIN INSULATOR TIE
1	**TOP TIE**			
A	100 sq.mm.	TT-1	RED	RED
B	50 sq.mm.	TT-2	YELLOW	YELLOW
C	30 sq.mm.	TT-3	BLUE	
2	**SIDE TIE**			
A	100 sq.mm.	ST-1	GREEN	GREEN
B	50 sq.mm.	ST-2	BLACK	BLACK
C	30 sq.mm.	ST-3	PINK	
3	**DOUBLE PIN TOP TIE**			
A	100 sq.mm.	DTT-1	RED	
B	50 sq.mm.	DTT-2	YELLOW	
C	30 sq.mm.	DTT-3	BLUE	

S.No.	SPECIFICATION	DESIGNATION	COLOURE CODE
	STAY WIRE		
A	7/3.25 mm	GS-1	RED
B	7/2.64 mm	GS-2	BLUE

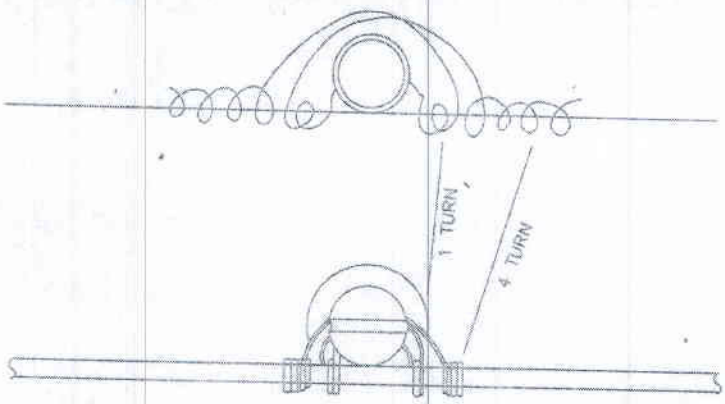
CONSTRUCTION STANDARDS PREFORMED INSULATOR TIES	NEPAL ELECTRICITY AUTHORITY Technical Service/ Commercial Department Distribution and Consumer Services

JUMPER TIES

TOP GROOVE



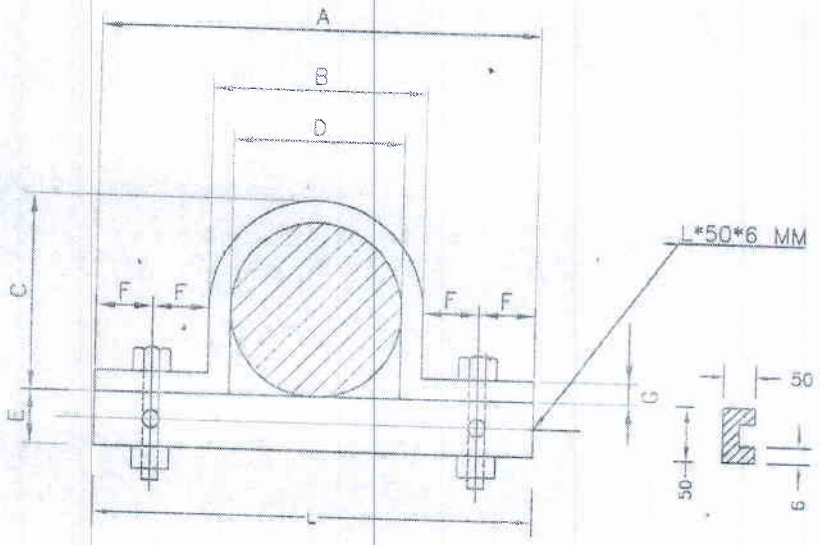
SIDE GROOVE



NOTES

1. TIE WIRE ASSEMBLY SHOULD BE AS TIGHT AS CAN BE WRAPPED.
2. TURNS MAY BE IN EITHER DIRECTION, AS LONG AS ONE-HALF THE TURNS OPPOSE THE OTHER HALF TO PREVENT LOOSENING OF THE TIE.
3. USE ONLY FOR SECURING JUMPERS ON STRUCTURES.

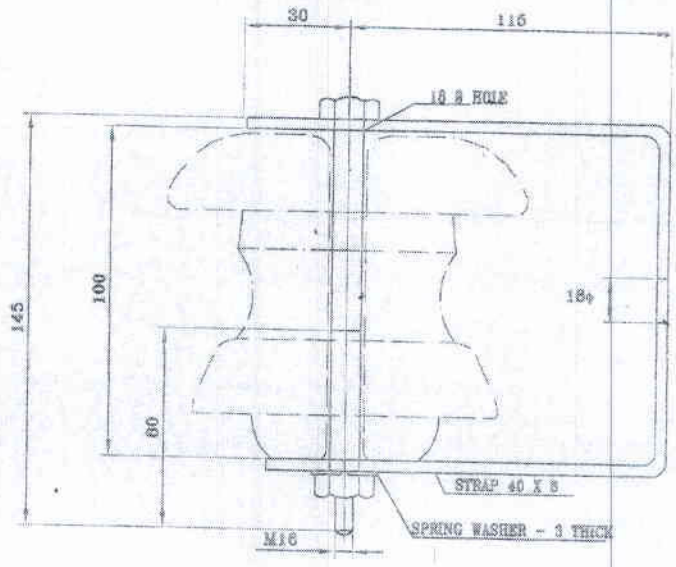
Drawing		
CSG-TIES-01	**Insulator Ties**	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services



D (Pole Dia.)	A	B	C	E	F	G
88.9	200.9	100.9	94.9	50	25	6
114.3	226.3	126.3	120.3	50	25	6
139.7	251.7	151.7	145.7	50	25	6
165.1	277.1	177.1	171.1	50	25	6

ALL DIMENSIONS ARE IN MM

Drawing	Pole Clamp	NEPAL ELECTRICITY AUTHORITY
CS11-LM-14	(Tubular Poles)	Technical Services / Commercial Department
		Distribution and Consumer Services

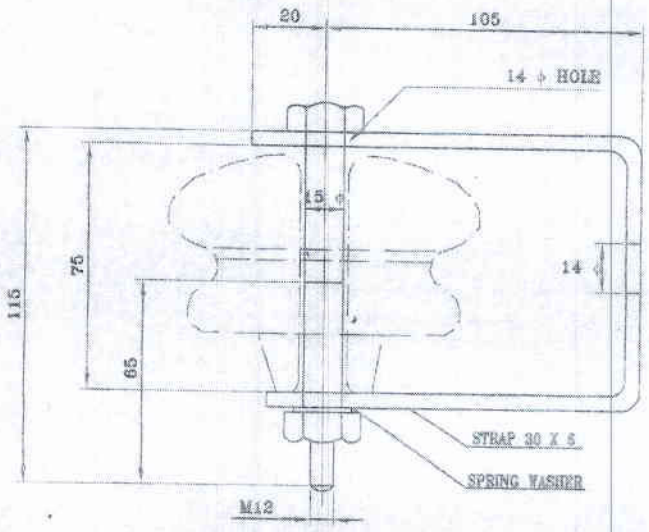


TYPE A

1	STRAP - 40 X 6	1
2	'BOLT - 160 X 145	1
3	SPRING WASHER - 3 THICK	1
4	HEXAGONAL NUT	1

NOTES :-

1. ALL FITTINGS HOT DIP GALVANISED
2. FITTINGS AS PER IS 7935 - 1975

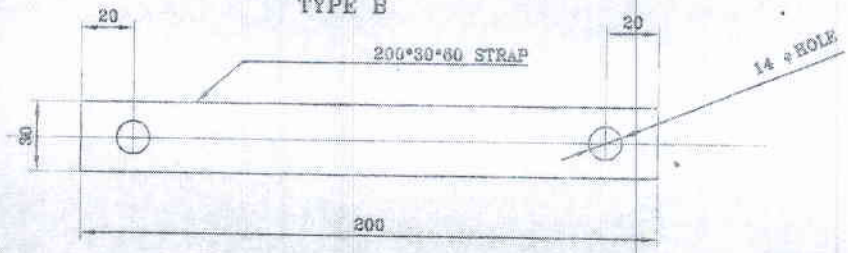


TYPE B

1	STRAP - 30 X 6	1
2	BOLT - 120 X 115	1
3	'SPRING WASHER - 3 THICK	1
4	HEXAGONAL NUT	1

NOTES :-

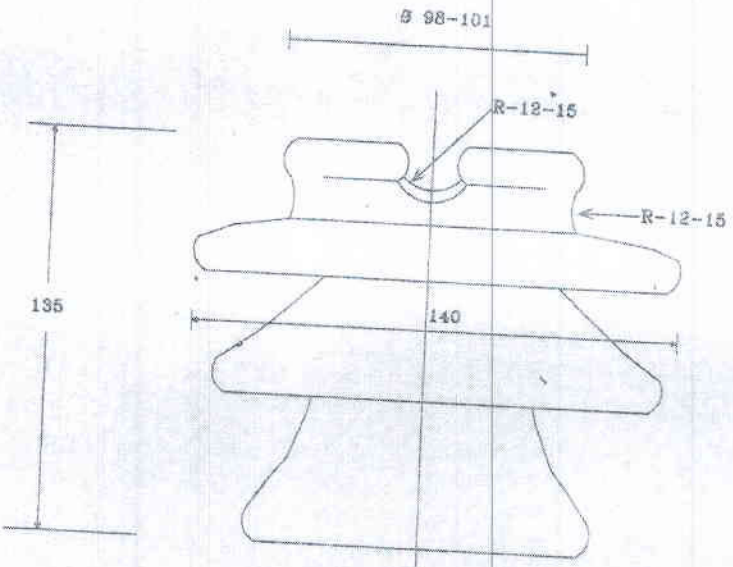
1. ALL FITTINGS HOT DIP GALVANISED
2. FITTINGS AS PER IS 7935 - 1975



EXTENSION STRAP

ALL DIMENSIONS AS PER IS 7935 - 1975

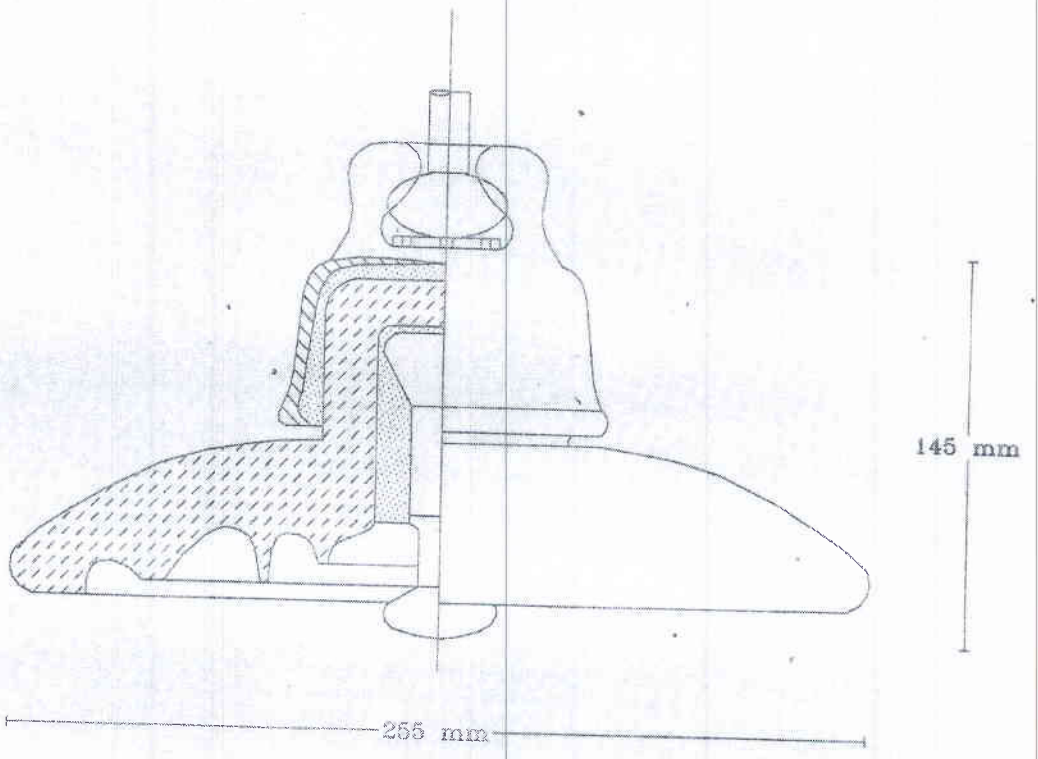
Drawing CS11-LM-13	Shackle Insulator Fittings (D-Iron)	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services



TYPE A

Applicable Standard IS : 731

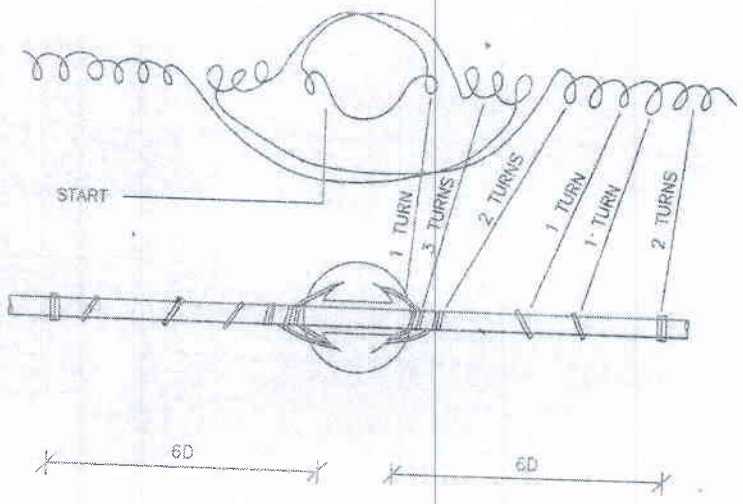
Drawing CS11-LM-05	11 kV Pin Insulator	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services



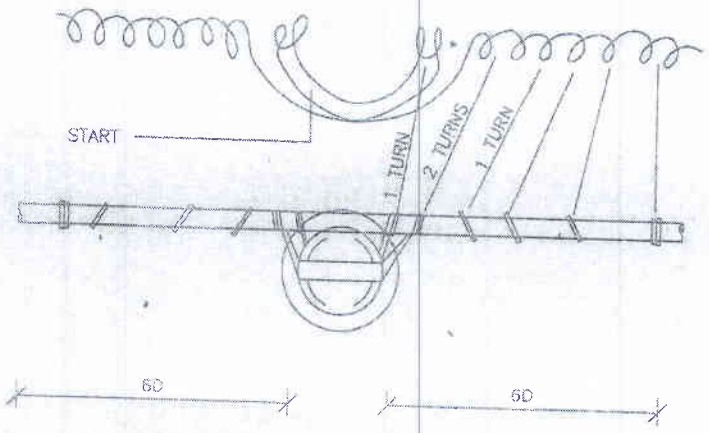
Applicable Standard IS : 731 & IS : 3188

Drawing		
CS11-LM-06	Disc Insulator	NEPAL ELECTRICITY AUTHORITY Technical Services,/ Commercial Department Distribution and Consumer Services

TOP GROOVE

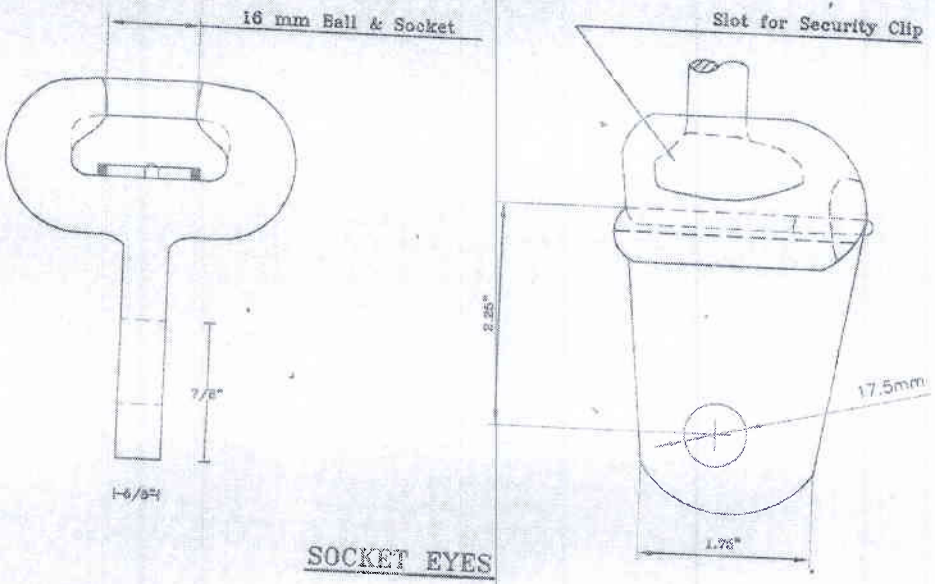


SIDE GROOVE

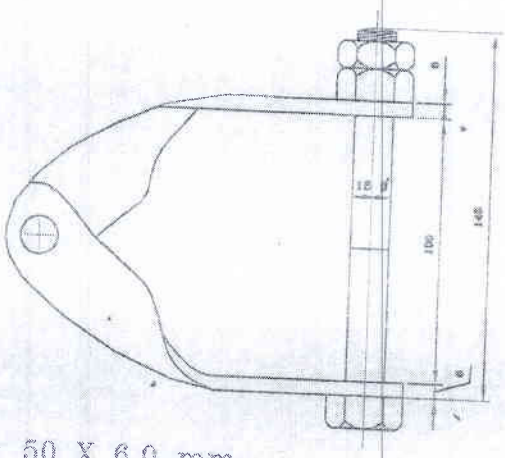


NOTE
1. HAND TIES TO BE USED ONLY WHEN PREFORMED TIES NOT AVAILABLE.
2. CLINCH LAST TWO TURNS TIGHT WITH PLIERS.
3. SOFT DRAWN – TIE WIRE, TO BE USED FOR ALL TIES.

Drawing		
CSG-TIES-02	**Insulator Ties**	NEPAL ELECTRICITY AUTHORITY **Technical Services / Commercial Department** Distribution and Consumer Services



SOCKET EYES

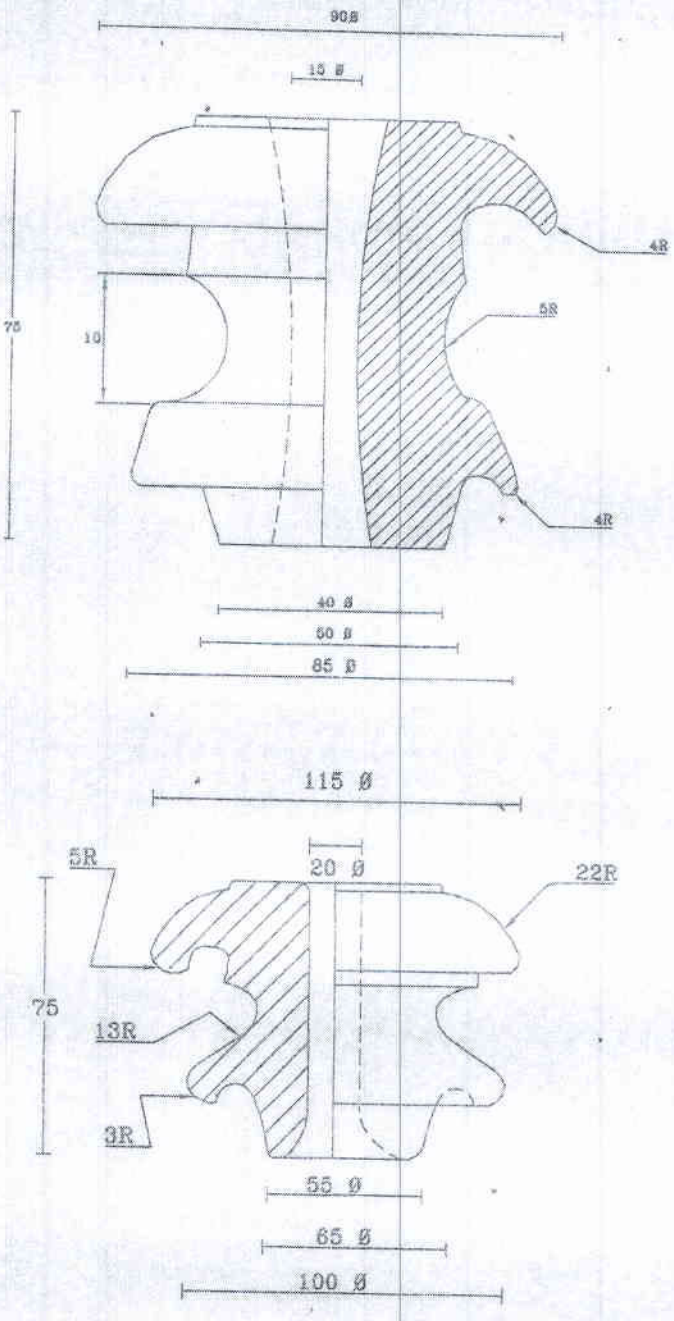


Section: 50 X 6.0 mm

BACK STRAP

Drawing CS11-LM-11	Hardwares for Tension Set	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services

Shackle Insulator

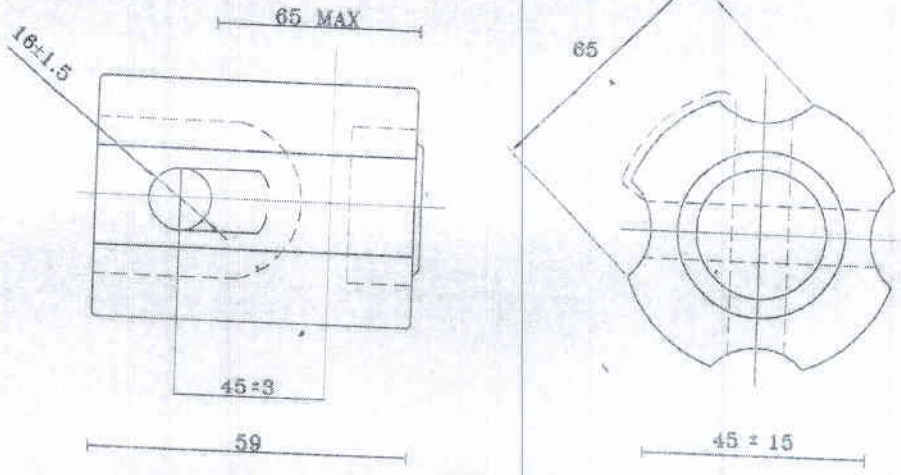


TYPE -B

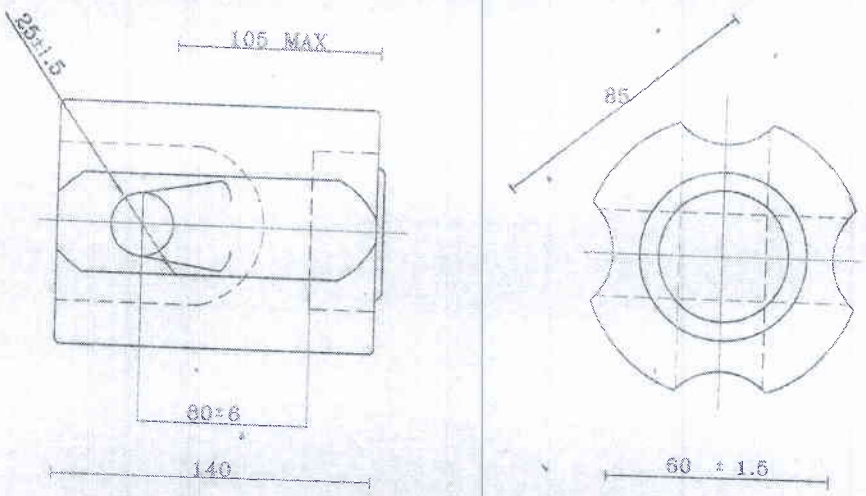
TYPE -A

Applicable Standard IS : 1445

Drawing		
CS11-LM-07	Shackle Insulator	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services



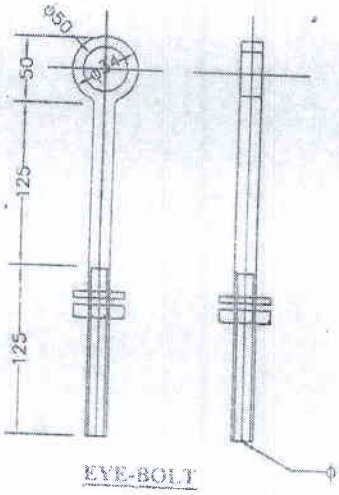
TYPE – 2



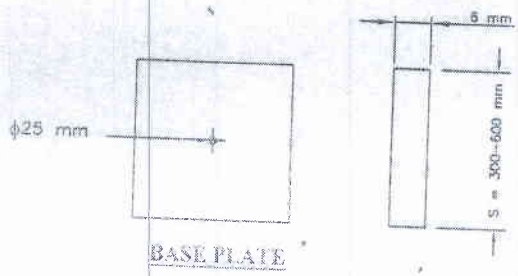
TYPE – 1

Applicable Standard IS : 5300

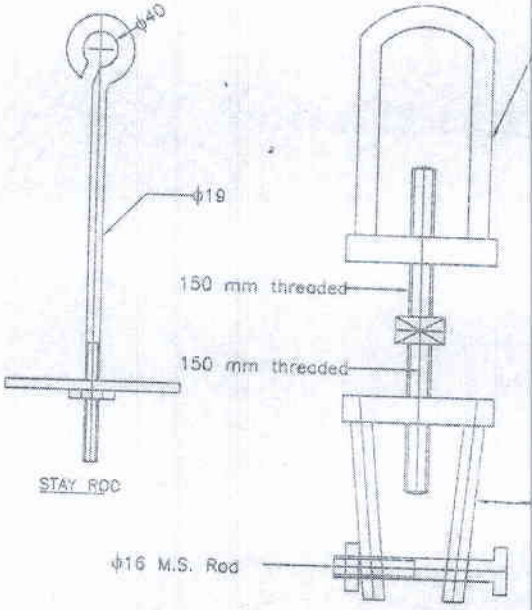
Drawing CS11-LM-08	Stay Insulator	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services



EYE-BOLT

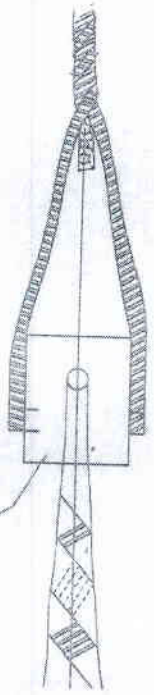


BASE PLATE



STAY ROD

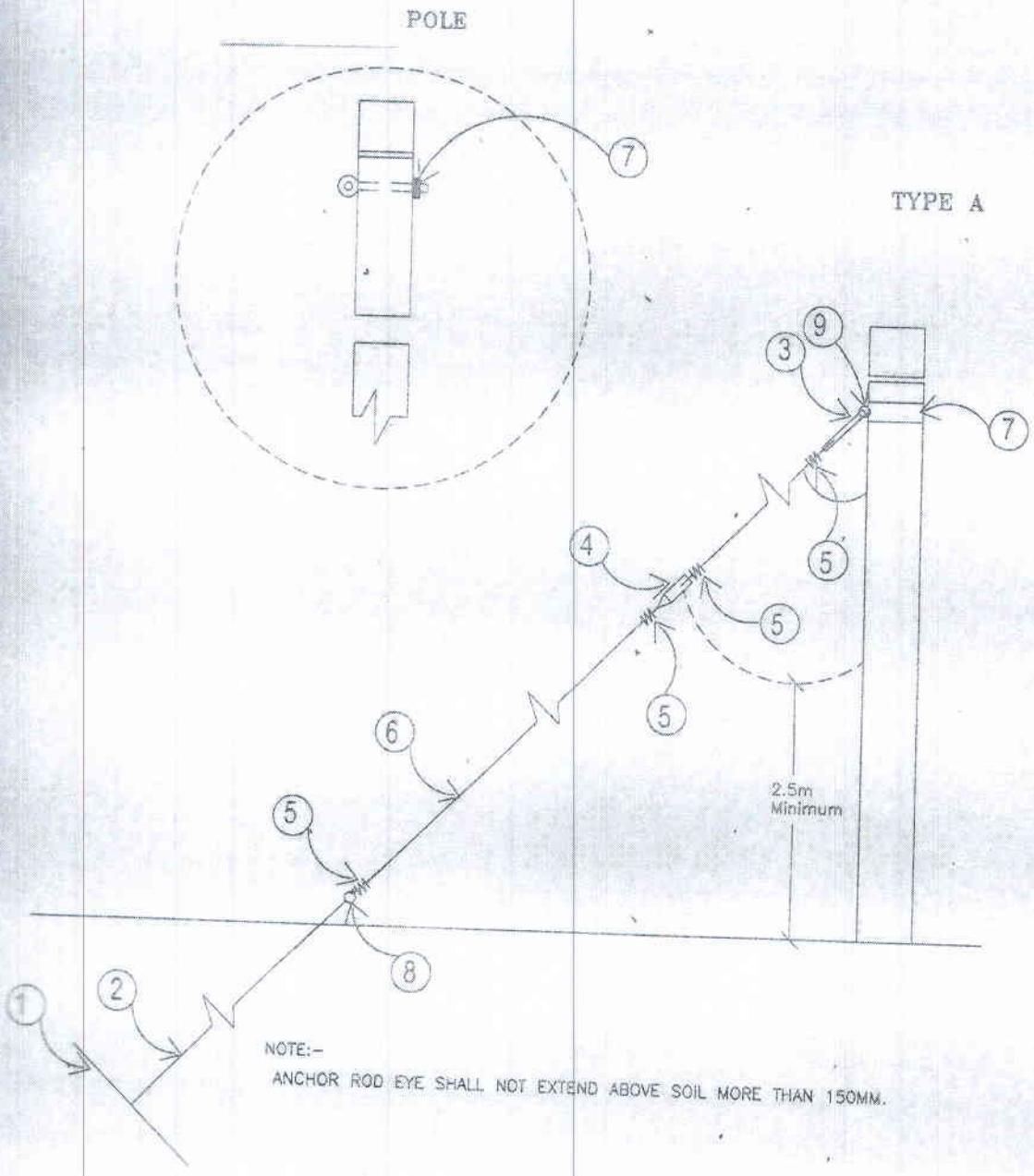
TURN BUCKLE



PREFORMED WIRE ASSEMBLY WITH STAY INSULATOR

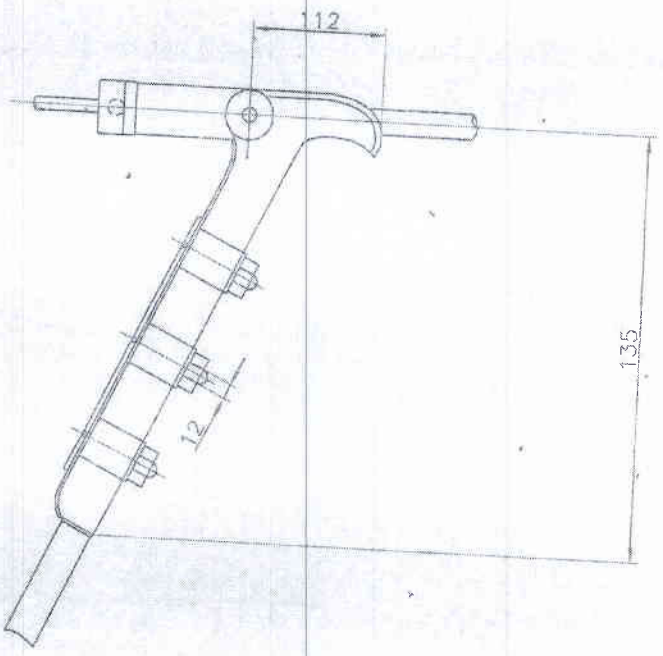
S. N.	Description	Unit	HT Stay	LT Stay
1	Length of Stay Rod	mm	2440	1500
2	Diameter of Stay Rod	mm	19	16
3	Length of threaded portion of stay rod	mm	300	300

Drawing CSG-STAY-11	Hardware for Stay Set	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services

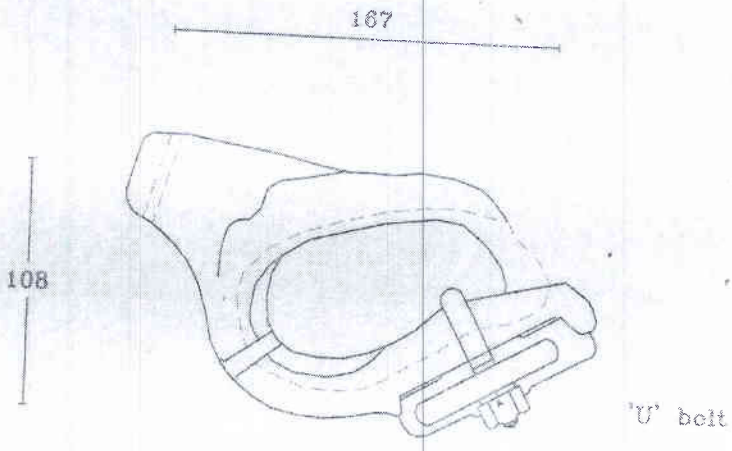


NOTE:-
ANCHOR ROD EYE SHALL NOT EXTEND ABOVE SOIL MORE THAN 150MM.

Drawing	Stays and Anchors	NEPAL ELECTRICITY AUTHORITY
CSG-STAY-02	HT and LT Stay - Type A	Technical Services / Commercial Department.
		Distribution and Consumer Services

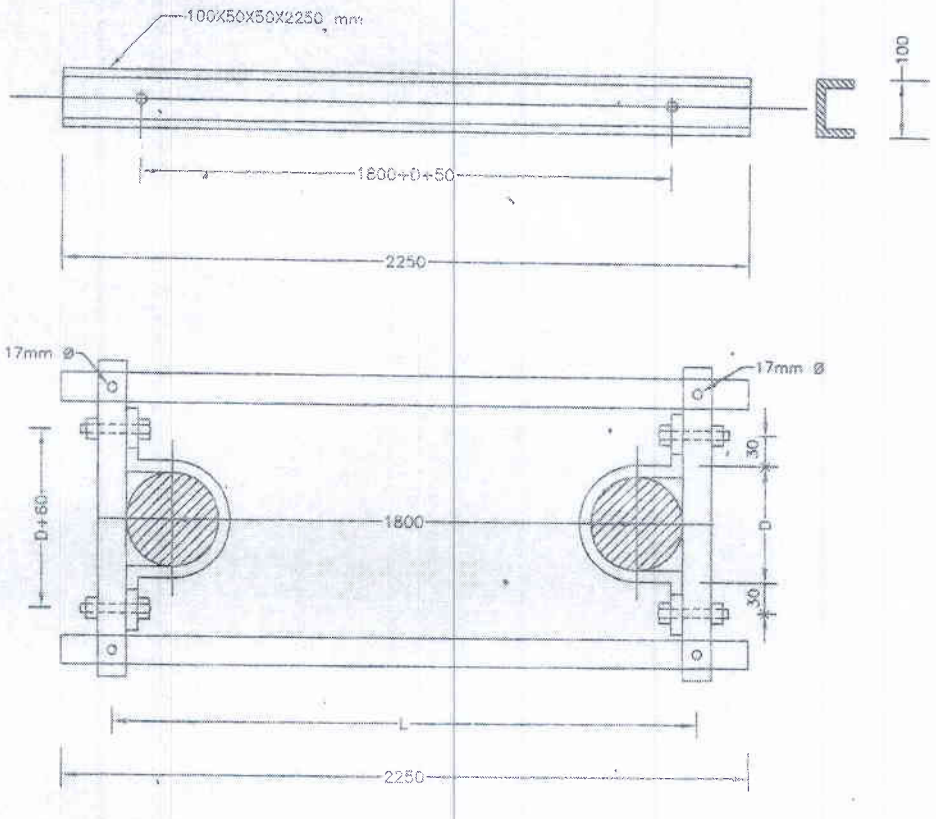


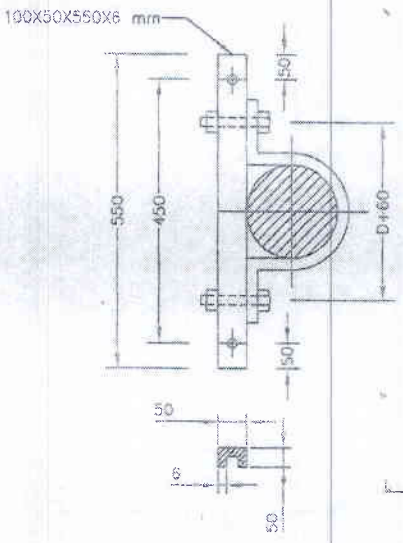
TYPE A (Straight Type)



TYPE B (Snail Type)

Drawing CS11-LM-10	Tension Clamp	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services



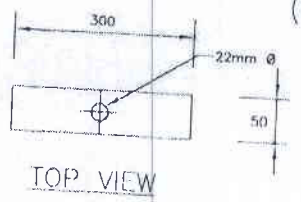


L = 1800 + D + 50

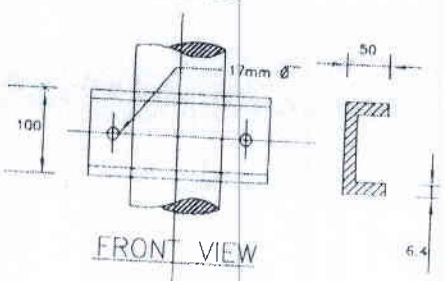
D = DIAMETER OF THE POLE

Drawing		
CS11-LM-04	Transformer Platform	NEPAL ELECTRICITY AUTHORITY Technical Services / Commercial Department Distribution and Consumer Services

A) POLE TOP CROSSARM
(100*50*6.4*300)

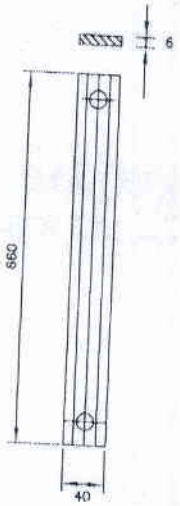


TOP VIEW

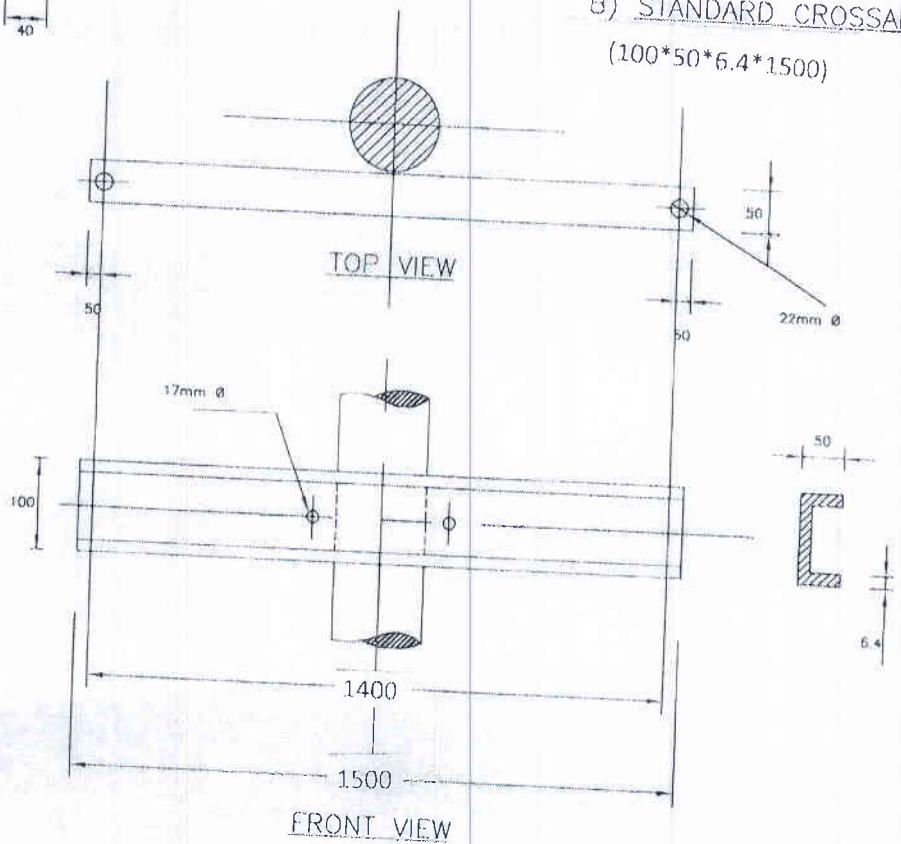


FRONT VIEW

C) FLAT CROSSARM BRACE
(40*6*660)



B) STANDARD CROSSARM
(100*50*6.4*1500)



TOP VIEW

FRONT VIEW

LOCATION OF HOLES TO BE CONFIRMED PRIOR TO MANUFACTURE

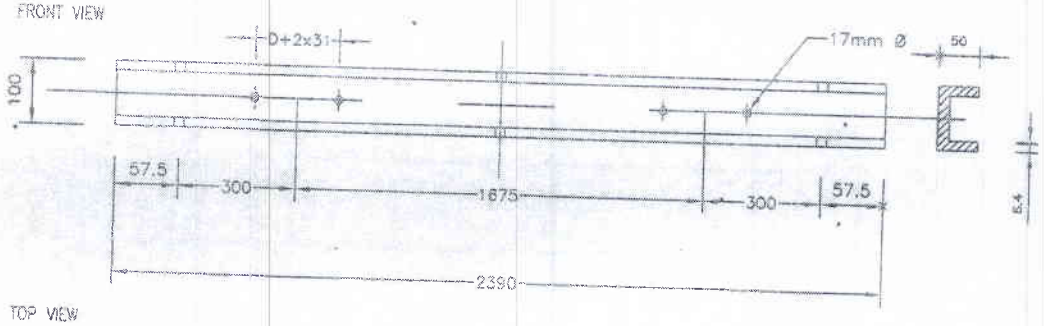
DWG2

Standard Crossarm
11 kV Single Pole Structure

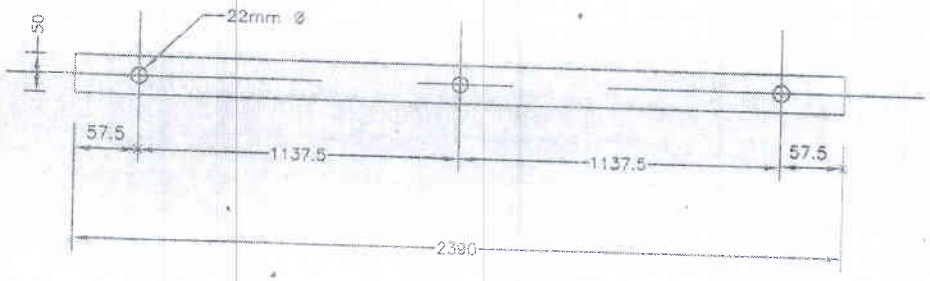
NEPAL ELECTRICITY AUTHORITY
Technical Services / Commercial Department
Distribution and Consumer Services

CROSSARM CHANNEL (100*50*6.4*2390 MM)

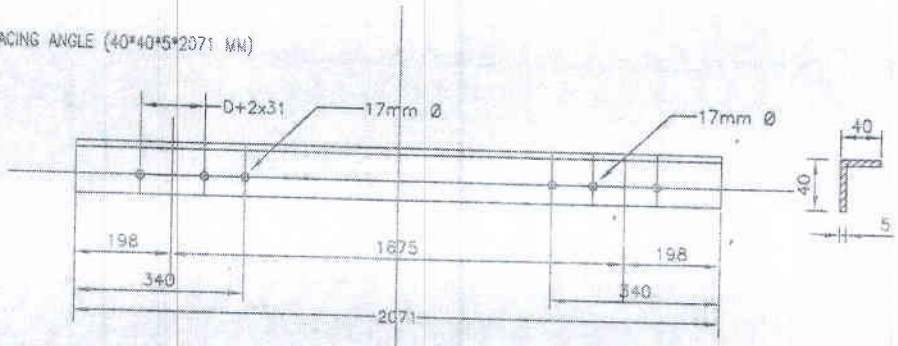
FRONT VIEW



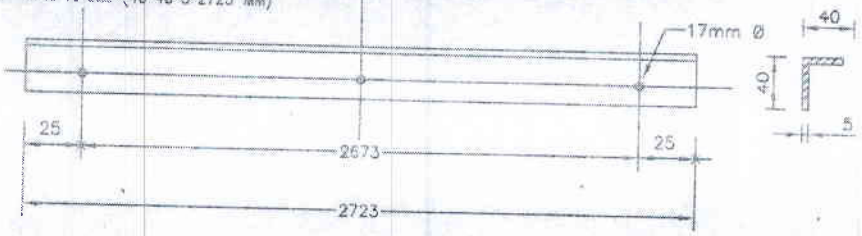
TOP VIEW



BRACING ANGLE (40*40*5*2071 MM)



CROSS BRACING ANGLE (40*40*5*2723 MM)

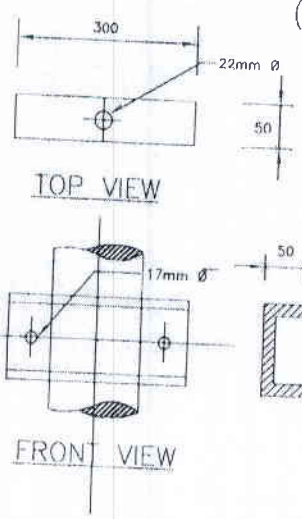


LOCATION OF HOLES TO BE CONFIRMED PRIOR TO MANUFACTURE

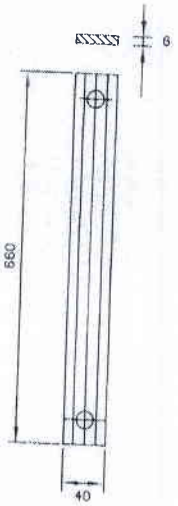
D = DIAMETER OF THE POLE

Drawing	Crossarm & Bracing for	NEPAL ELECTRICITY AUTHORITY
CS11-LM-03	11 kV Double Pole (H-Structure)	Technical Services / Commercial Department
		Distribution and Consumer Services

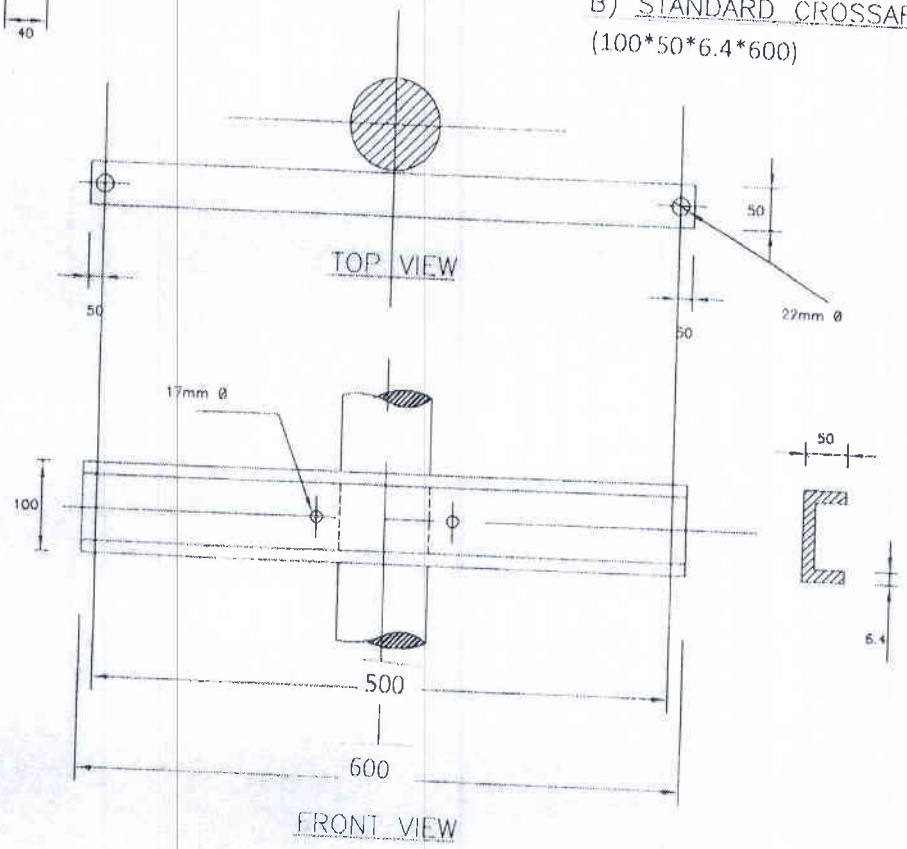
A) POLE TOP CROSSARM
(100*50*6.4*300)



C) FLAT CROSSARM BRACE
(40*6*660)



B) STANDARD CROSSARM
(100*50*6.4*600)

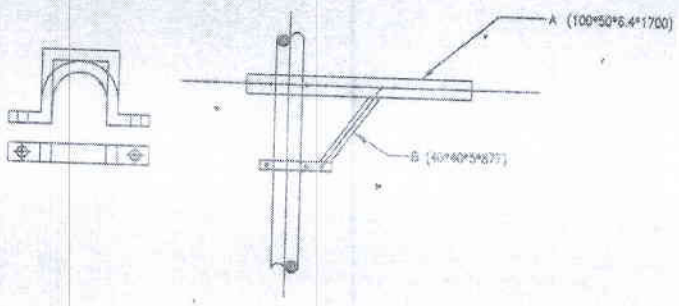


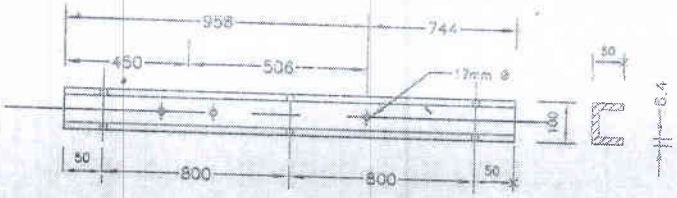
LOCATION OF HOLES TO BE CONFIRMED PRIOR TO MANUFACTURE

DWG1

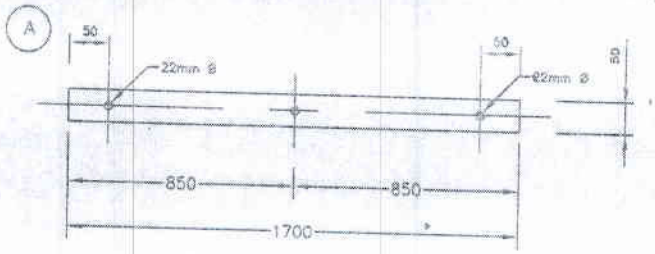
Standard Crossarm
11 kV Single Pole Structure

NEPAL ELECTRICITY AUTHORITY
Technical Services / Commercial Department
Distribution and Consumer Services

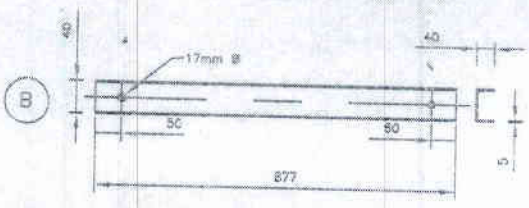




FRONT VIEW

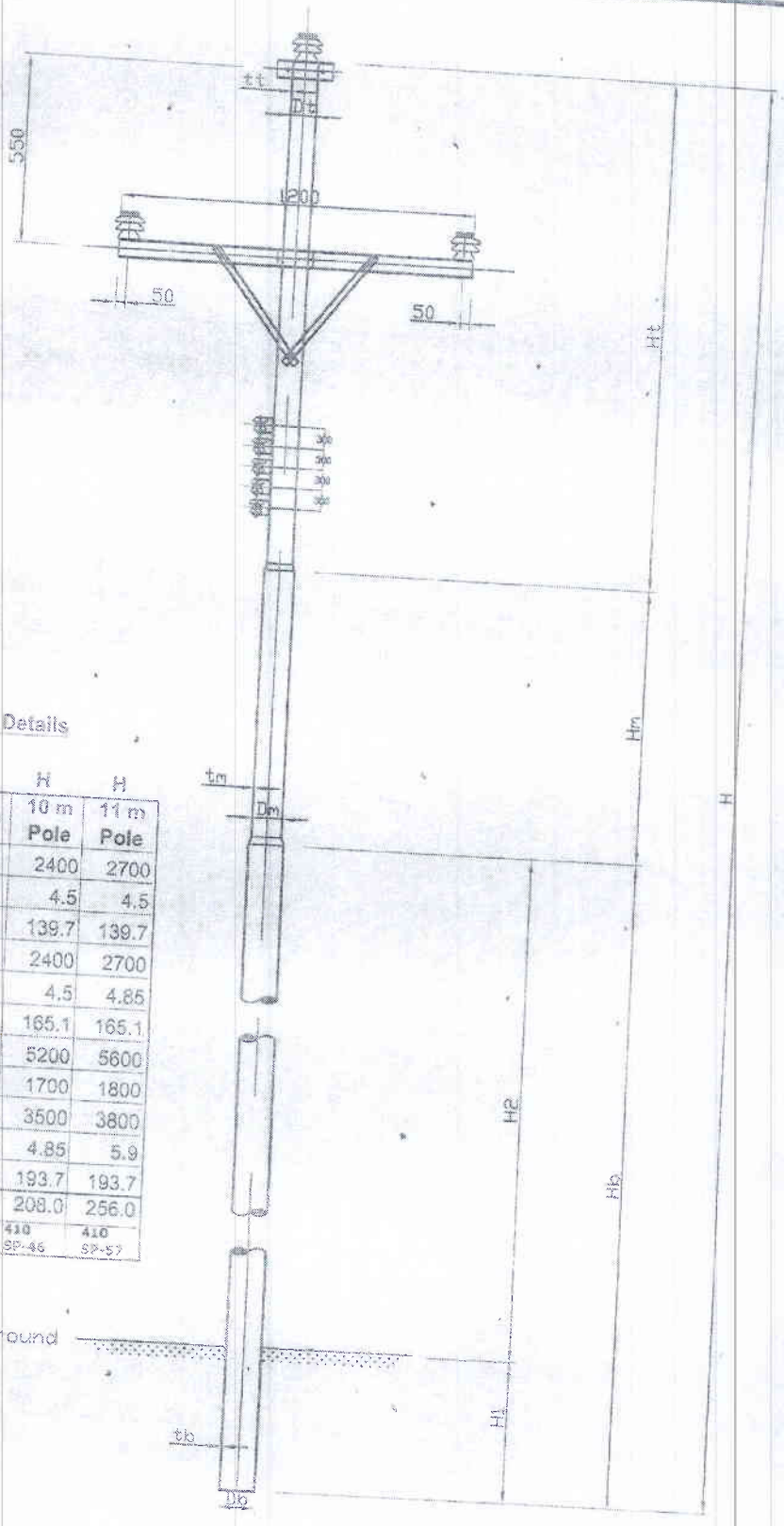


TOP VIEW



LOCATION OF HOLES TO BE CONFIRMED PRIOR TO MANUFACTURE

Drawing	Standard Crossarm	NEPAL ELECTRICITY AUTHORITY
CS11-LM-02	11 kV Single Pole Offset Structure	Technical Services / Commercial Department
		Distribution and Consumer Services



Pole Details

Description		H 10 m Pole	H 11 m Pole
Top Section	H_t	2400	2700
	t_t	4.5	4.5
	D_t	139.7	139.7
Middle Section	H_m	2400	2700
	t_m	4.5	4.85
	D_m	165.1	165.1
Bottom Section	H_b	5200	5600
	H_1	1700	1800
	H_2	3500	3800
	t_b	4.85	5.9
	D_b	193.7	193.7
Weight, Kg		208.0	256.0
IS		410 SP-46	410 SP-63

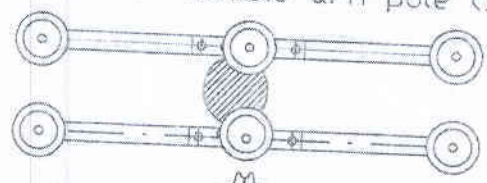
Drawing	11kV, 10/11 m ST Pole	NEPAL ELECTRICITY AUTHORITY
CS11-STP-01	No Deviation (0 - 7 deg)	Technical Services / Commercial Department Distribution and Consumer Services

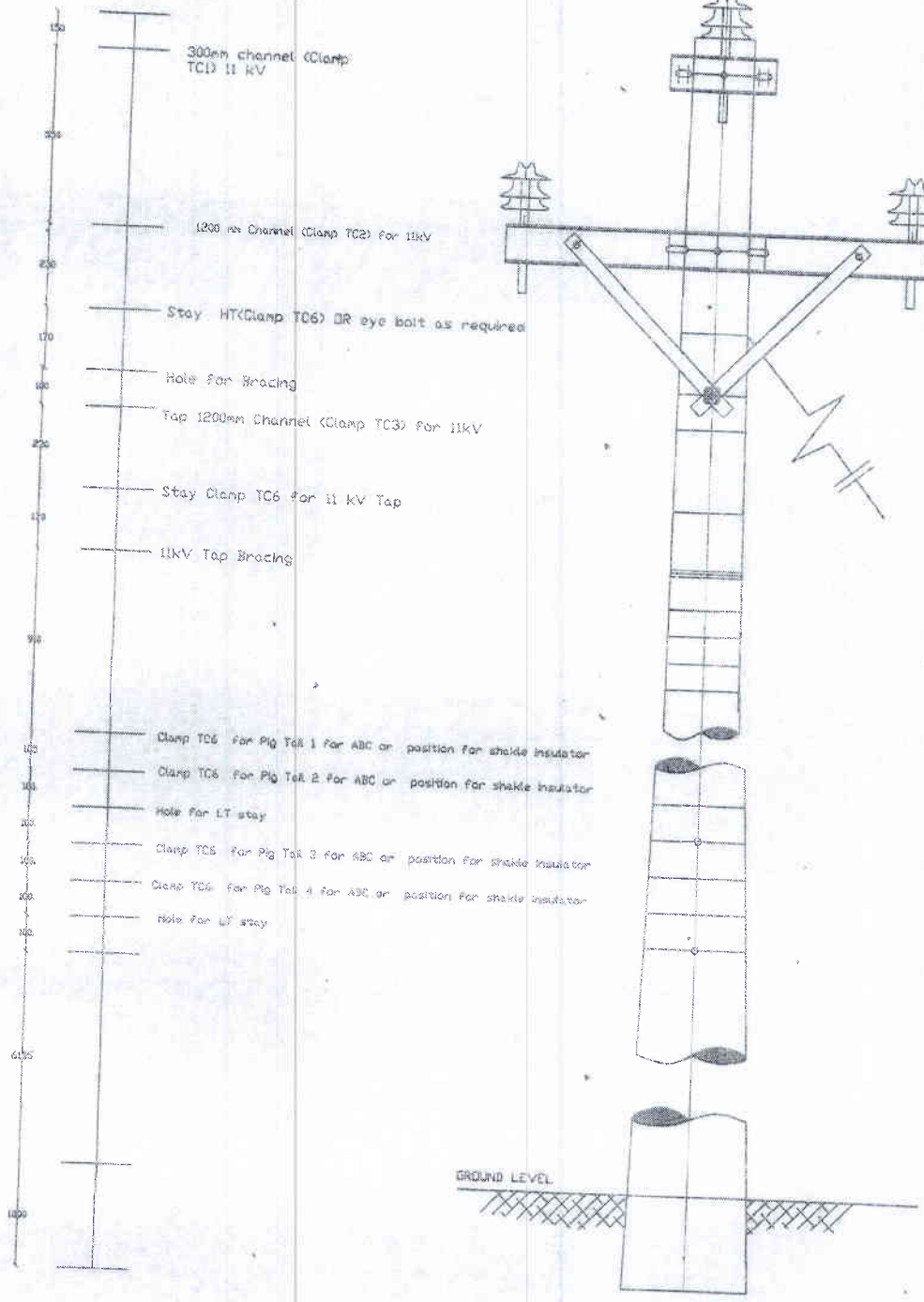
Refer Drawing No: CS11-STP- 01

S.No.	QTY.	UNIT	MATERIAL
1	3	NOS	PIN INSULATOR
2	3	NOS	INSULATOR PIN
3	3	NOS	PREFORM PIN TIES (TOP TIES)
4	1	NOS	STEEL CROSSARM CHANNEL (100x 50x6.4x300) mm.
5	1	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC1)
6	1	NOS	STEEL CROSSARM CHANNEL (100x 50x6.4x1200) mm.
7	1	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC2)
8	2	NOS	FLAT CROSSARM BRACE(40x 6.0x660) mm
9	2	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (12 x51) mm
10	1	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
11	1	NOS	STEEL TUBULAR POLE 10 m /11m

CONSTRUCTION STANDARDS 11 kV SINGLE ARM STRUCTURE (SA) STEEL TUBULAR POLE	NEPAL ELECTRICITY AUTHORITY Technical Service/ Commercial Department Distribution and Consumer Services

Top view of double arm pole (11kV)



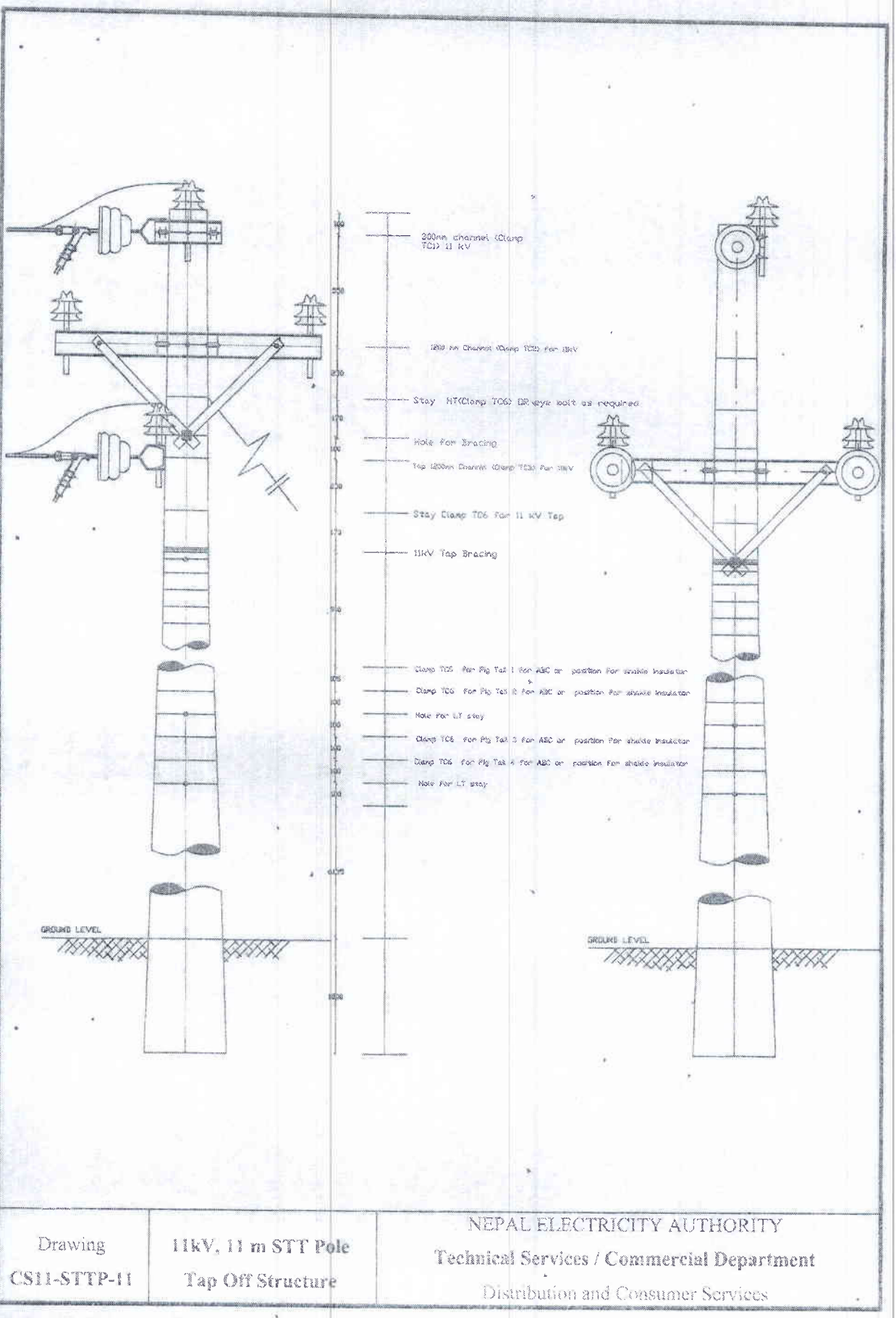


Drawing	11kV, 11 m STT Pole	NEPAL ELECTRICITY AUTHORITY
CS11-STTP-10	Double Arm Structure	Technical Services / Commercial Department
		Distribution and Consumer Services

Refer Drawing No: CS11-STTP- 04 AND 10

S.No.	QTY.	UNIT	MATERIAL
1	6	NOS	PIN INSULATOR
2	6	NOS	INSULATOR PIN
3	6	NOS	PREFORM PIN TIES (TOP TIES)
4	2	NOS	STEEL CROSSARM CHANNEL (100 x 50 x 6.4 x 300) mm.
5	2	NOS	STEEL CROSSARM CHANNEL (100 x 50 x 6.4 x 1200) mm.
6	4	NOS	FLAT CROSSARM BRACE (40x 6.0 x 660) mm
7	4	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (12 x 51) mm
8	1	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (16 x 305) mm
9	4	SET	DOUBLE ARMING BOLTS WITH NUTS AND WASHERS(16 x 305) mm
10	1	LOT	HT STAY SET (AS REQUIRED)
11	1	NOS	TELESCOPIC POLE 10 m / 11m

CONSTRUCTION STANDARDS 11 kV DOUBLE ARM STRUCTURE (DA) TUBULAR POLE	NEPAL ELECTRICITY AUTHORITY Technical Service/ Commercial Department Distribution and Consumer Services

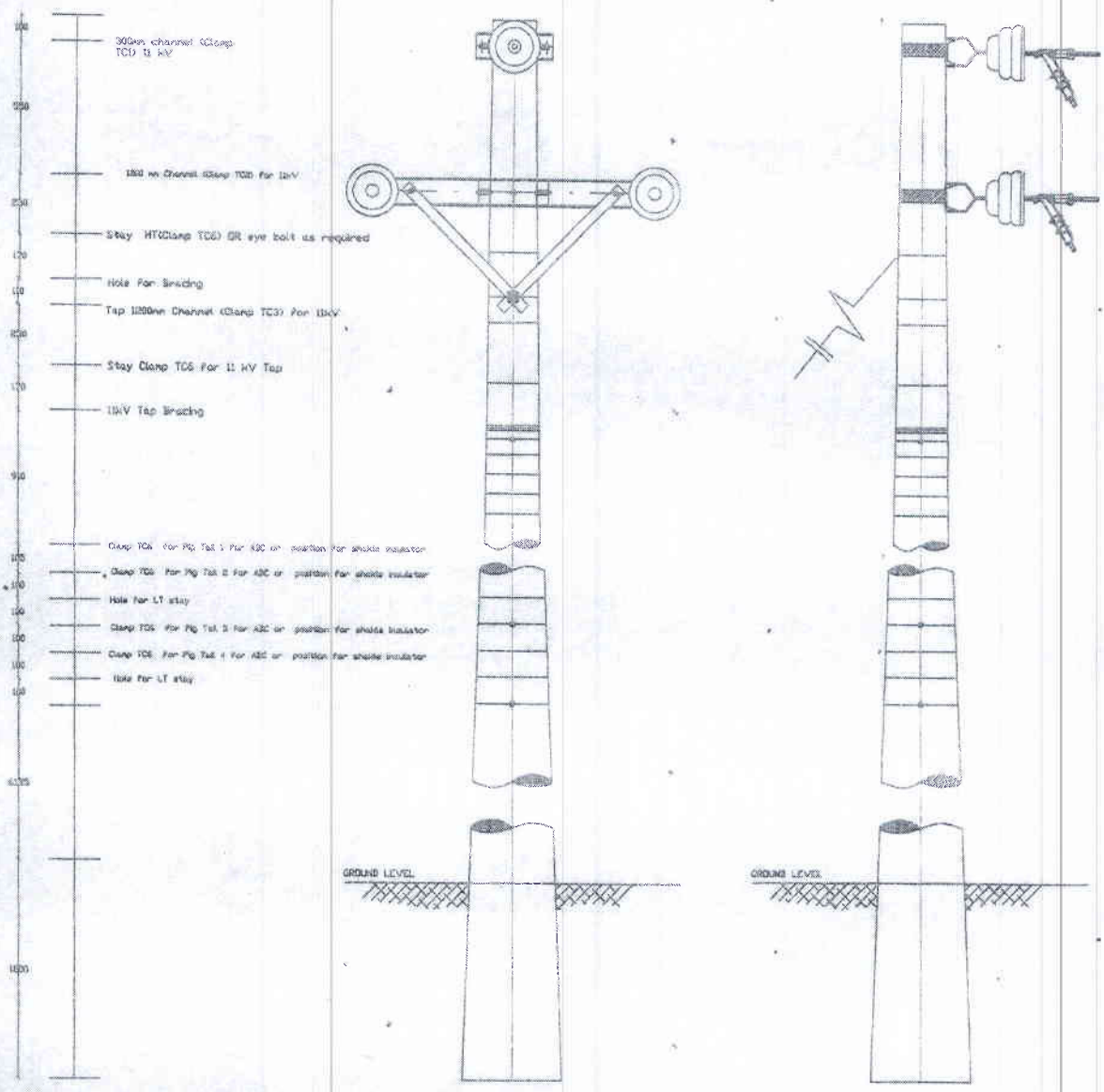


Drawing	11kV, 11 m STT Pole	NEPAL ELECTRICITY AUTHORITY
CS11-STTP-11	Tap Off Structure	Technical Services / Commercial Department
		Distribution and Consumer Services

Refer Drawing No: CS11-STTP- 05 AND 11

S.No.	QTY.	UNIT	MATERIAL
1	5	NOS	PIN INSULATOR
2	5	NOS	INSULATOR PIN
3	5	NOS	PREFORM PIN TIES (TOP TIES)
4	3	SET	DISC INSULATOR
5	3	SET	BACK STRAP
6	3	SET	TENSION SET WITH BALL AND SOCKET EYE
7	6	NOS	PG CLAMP
8	1	NOS	STEEL CROSSARM CHANNEL (100x 50x 6.4 x 300) mm.
9	1	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC1)
10	2	NOS	STEEL CROSSARM CHANNEL (100 x 50 x 6.4 x 1200) mm.
11	1	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC2)
12	1	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC3)
13	4	NOS	FLAT CROSSARM BRACE (40x 6.0 x 660) mm
14	4	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (12 x 51) mm
16	2	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
17	1	LOT	HT STAY SET (TYPE AS REQUIRED)
18	1	NOS	TELESCOPIC POLE 10 m / 11 m

CONSTRUCTION STANDARDS 11 kV TAP OFF STRUCTURE (TO) TUBULAR POLE	NEPAL ELECTRICITY AUTHORITY Technical Service/ Commercial Department Distribution and Consumer Services



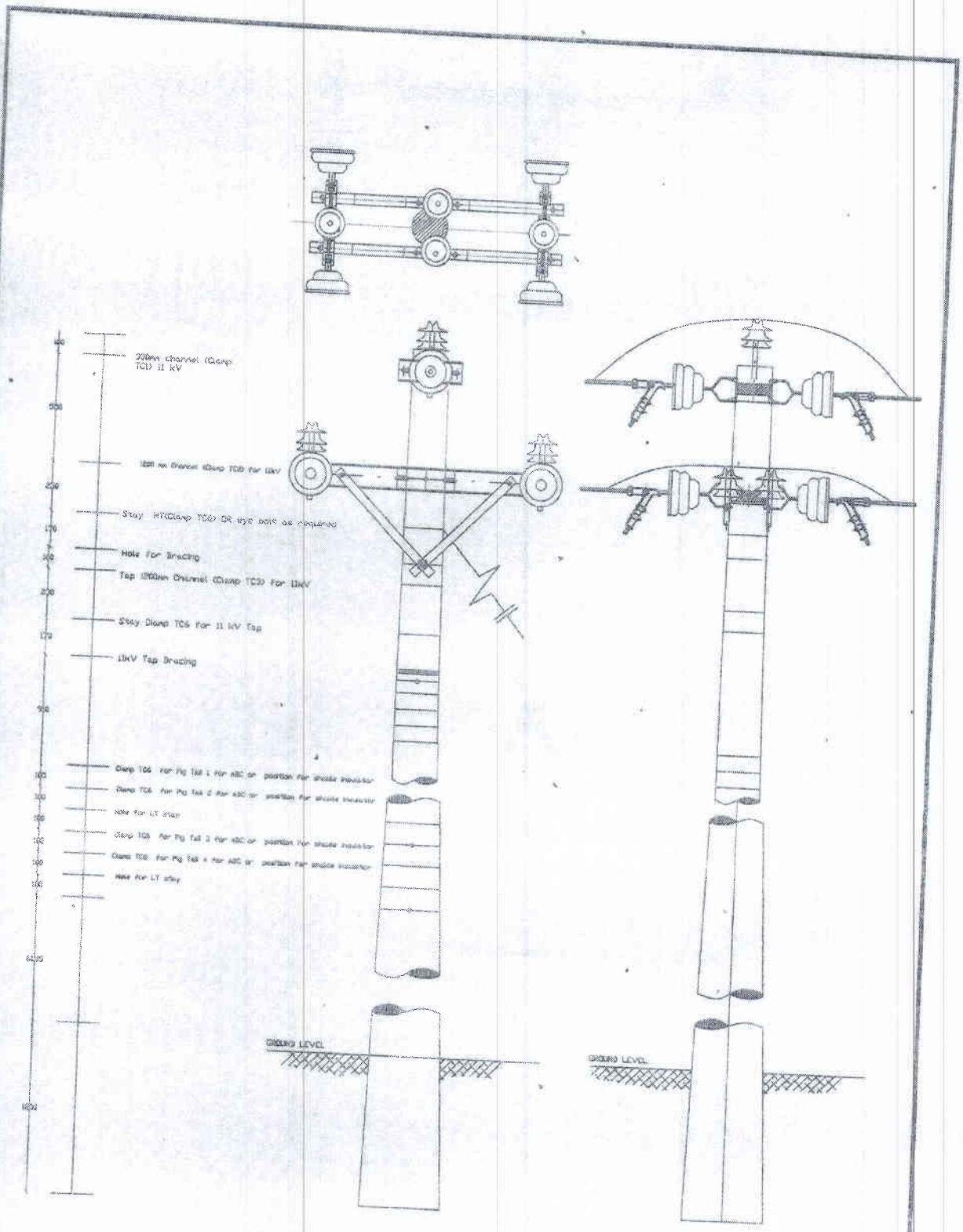
Drawing	11kV, 11 m STT Pole	NEPAL ELECTRICITY AUTHORITY
CS11-STTP-12	Dead End Structure	Technical Services / Commercial Department
		Distribution and Consumer Services

Refer Drawing No: CS11-STTP- 06 AND 12

S.No.	QTY.	UNIT	MATERIAL
1	3	NOS	DISC INSULATOR
2	3	SET	BRACK STRAP
3	3	SET	TENSION SET WITH BALL AND SOCKET EYE
4	1	NOS	STEEL CROSSARM CHANNEL (100x 50x 6.4 x 300) mm.
5	1	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC1)
6	1	NOS	STEEL CROSSARM CHANNEL (100 x 50 x 6.4 x 1200) mm.
7	1	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC2)
8	2	NOS	FLAT CROSSARM BRACE (40x 6.0 x 660) mm
9	2	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (12 x 51) mm
10	1	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (16 x 305) mm
11	1	LOT	HT STAY SET (TYPE AS REQUIRED)
12	1	NOS	TELESCOPIC POLE 10 m / 11 m

CONSTRUCTION STANDARDS
11 kV DEAD END STRUCTURE (DE)
TUBULAR POLE

NEPAL ELECTRICITY AUTHORITY
Technical Service/ Commercial Department
Distribution and Consumer Services



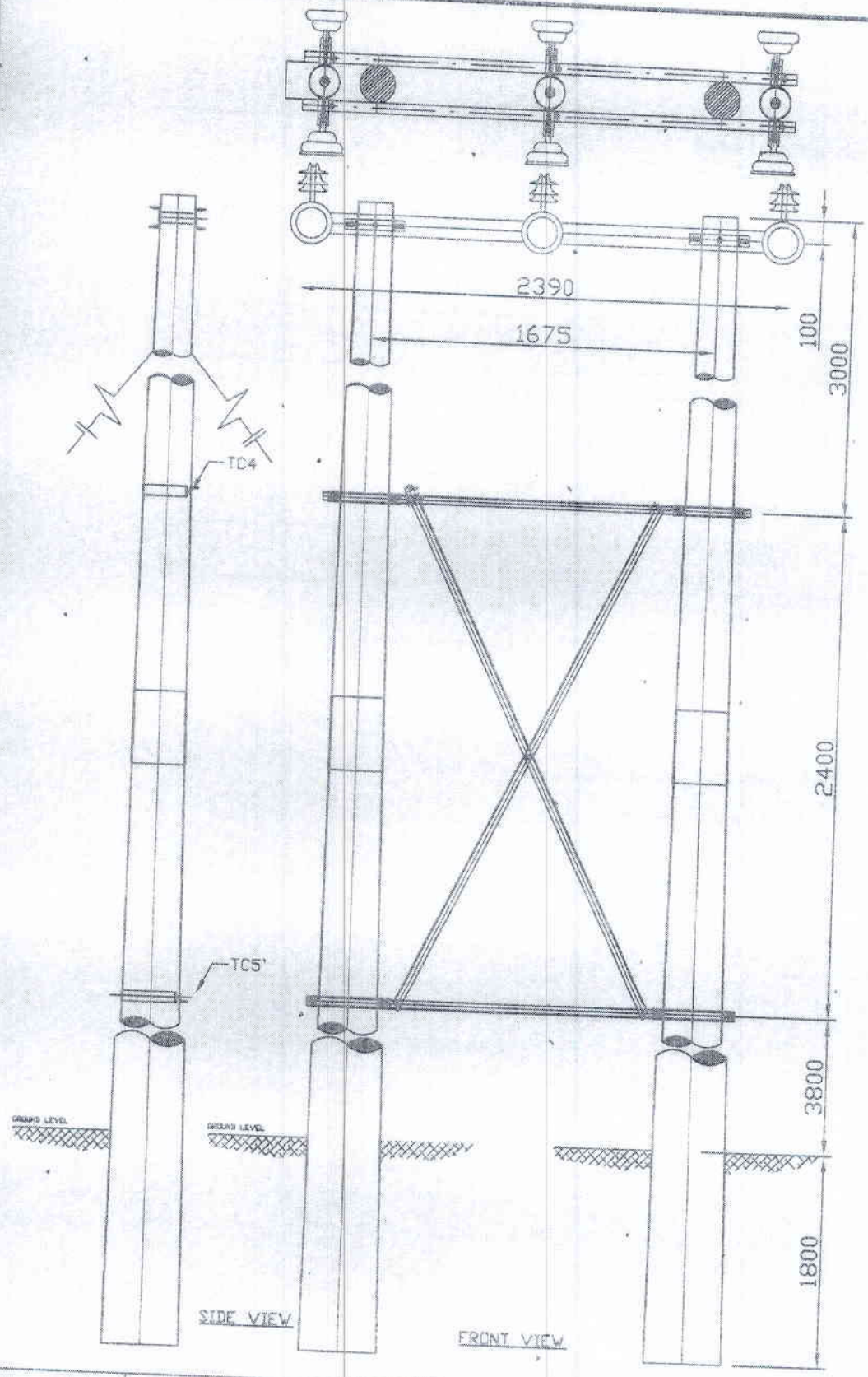
Drawing	11kV, 11 m STT Pole	NEPAL ELECTRICITY AUTHORITY
CS11-STTP-13	Double Dead End Structure	Technical Services / Commercial Department
		Distribution and Consumer Services

Refer Drawing No: CS11-STTP- 07 AND 13

S.No.	QTY.	UNIT	MATERIAL
1	4	NOS	PIN INSULATOR
2	4	NOS	INSULATOR PIN
3	4	NOS	PREFORM PIN TIES (TOP TIES)
4	6	NOS	DISC INSULATOR
5	6	SET	BACK STRAP
6	6	SET	TENSION SET WITH BALL AND SOCKET EYE
7	6	NOS	PG CLAMP
8	2	NOS	STEEL CROSSARM CHANNEL (100x 50x 6.4 x 300) mm.
9	2	NOS	STEEL CROSSARM CHANNEL (100 x 50 x 6.4 x 1200) mm.
10	4	NOS	FLAT CROSSARM BRACE (40x 6.0 x 660) mm
11	12	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (12 x 51) mm
12	1	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (16 x 305) mm
13	4	SET	DOUBLE ARMING BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
14	4	NOS	STRAP FOR INSULATOR STRING (50 x 6 x 396) mm
15	1	LOT	HT STAY SET (TYPE AS REQUIRED)
16	1	NOS	TELESCOPIC POLE 10 m / 11 m

CONSTRUCTION STANDARDS
11 kV DOUBLE DEAD END STRUCTURE (DDE)
TUBULAR POLE

NEPAL ELECTRICITY AUTHORITY
Technical Service/ Commercial Department
Distribution and Consumer Services



Drawing	11kV, 11 m STT Pole	NEPAL ELECTRICITY AUTHORITY
CS11-STTP-14	H - Structure	Technical Services / Commercial Department
		Distribution and Consumer Services

Refer Drawing No: CS11-STTP- 08 AND 14

S.No.	QTY.	UNIT	MATERIAL
1	3	NOS	PIN INSULATOR
2	3	NOS	INSULATOR PIN
3	3	NOS	PREFORM PIN TIES (TOP TIES)
4	6	NOS	DISC INSULATOR
5	6	SET	BACK STRAP
6	6	SET	TENSION SET WITH BALL AND SOCKET EYE
7	6	NOS	PG CLAMP
8	2	NOS	STEEL CROSSARM CHANNEL (100x 50x 6.4 x 2390) mm.
9	2	NOS	BRACING ANGLE (40 x 40 x 5 x 2071) mm.
10	2	NOS	CROSSARM BRACING ANGLE (40 x 40 x 5.0 x 2723) mm
11	17	SET	BOLTS WITH SUITABLE NUTS AND WASHERS (12 x 51) mm
12	2	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC4)
13	2	SET	POLE CLAMP WITH NUT,BOLT AND WASHERS (TC5)
14	4	SET	DOUBLE ARMING BOLTS WITH SUITABLE NUTS AND WASHERS (16 x305) mm
15	6	NOS	STRAP FOR INSULATOR STRING (50 x 6 x 396) mm
16	5	SET	HT STAY SET (TYPE AS REQUIRED)
17	2	NOS	TELESCOPIC POLE 10 m / 11 m

CONSTRUCTION STANDARDS 11 kV H- STRUCTURE (HS) TUBULAR POLE	NEPAL ELECTRICITY AUTHORITY Technical Service/ Commercial Department Distribution and Consumer Services

Part - III

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SECTION - VII

General Conditions of Contract

General Conditions of Contract

A. General	
1. Definitions	1.1 Boldface type is used to identify defined terms. (a) The **Accepted Contract Amount** means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects. (b) The **Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events. (c) The **Adjudicator** is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.2 hereunder. (d) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid. (e) **Compensation Events** are those defined in GCC 42 hereunder. (f) The **Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC 53.1. (g) The **Contract** is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC 2.3 below. (h) The **Contractor** is the party whose Bid to carry out the Works has been accepted by the Employer. (i) The **Contractor's Bid** is the completed bidding document submitted by the Contractor to the Employer. (j) The **Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract. (k) **Days** are calendar days; months are calendar-months. (l) **Day works** are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant. (m) A **Defect** is any part of the Works not completed in accordance with the Contract. (n) The **Defects Liability Certificate** is the certificate issued by Project Manager upon correction of defects by the Contractor. (o) The **Defects Liability Period** is the period calculated from the Completion Date where the Contractor remains responsible

	for remedying defects. (p) **Drawings** include calculations and other information provided or approved by the Project Manager for the execution of the Contract. (q) The **Employer** is the party who employs the Contractor to carry out the Works, as specified in the SCC. (r) **Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works. (s) **Force Majeure** means an exceptional event or circumstance: which is beyond a Party's control; which such Party could not reasonably have provided against before entering into the Contract; which, having arisen, such Party could not reasonably have avoided or overcome; and, which is not substantially attributable to the other Party. (t) The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance. (u) The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the SCC. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order. (v) **Letter of Acceptance** means the formal acceptance by the Employer of the Bid and denotes the formation of the contract at the date of acceptance. (w) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works. (x) **Party** means the Employer or the Contractor, as the context requires. (y) **SCC** means Special Conditions of Contract (z) **Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function. (aa) The **Project Manager** is the person named in the SCC (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract. (bb) **Retention Money** means the aggregate of all monies retained by the Employer pursuant to GCC 46.1. (cc) The **Site** is the area defined as such in the SCC. (dd) **Site Investigation Reports** are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the

	Site.
	(ee) **Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager. (ff) The **Start Date** is given in the SCC. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates. (gg) A **Subcontractor** is 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. (hh) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works. (ii) A **Variation** is an instruction given by the Project Manager which varies the Works. (jj) The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the SCC.
2. Interpretation	2.1 In interpreting these GCC, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC. 2.2 If sectional completion is specified in the SCC, 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). 2.3 The documents forming the Contract shall be interpreted in the following order of priority: (a) Contract Agreement, (b) Letter of Acceptance, (c) Contractor's Bid, (d) Special Conditions of Contract, (e) General Conditions of Contract, (f) Specifications, (g) Drawings, (h) Bill of Quantities (or Schedules of Prices for lump sum contracts), and (i) Any other document listed in the SCC as forming part of the

	Contract.
3. Language and Law	3.1 The language of the Contract and the law governing the Contract are stated in the SCC.
1. Project Manager's Decisions	4.1 Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Employer and the Contractor in the role representing the Employer.
2. Delegation	5.1 The Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.
3. Communications	6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.
4. Subcontracting	7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.
5. Other Contractors	8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the SCC. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification
6. Personnel and Equipment	9.1 The Contractor shall employ the key personnel and use the equipment identified in its Bid to carry out the Works, or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid. 9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
7. Employer's and Contractor's Risk	10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.
11. Employer's Risks	11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer'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 Employer 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 Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed. 11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer'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 an Employer's risk, or (c) the activities of the Contractor on the Site after the Completion Date.
12. Contractor's Risks	12.1 From the Starting Date until the Defects Liability 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 Employer's risks are Contractor's risks.
13. Insurance	13.1 The Contractor shall provide insurance in the joint names of the Employer and the Contractor from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the SCC 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.
	13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the proportions of Nepalese Rupees required to rectify the loss or damage incurred. 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the

	premiums the Employer 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. 13.4 Alterations to the terms of insurance shall not be made without the approval of the Project Manager. 13.5 Both parties shall comply with any conditions of the insurance policies.
14. Site Investigation Reports	14.1 The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the SCC, supplemented by any information available to the Bidder.
15. Contractor to Construct the Works	15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings. 15.2 The Contractor shall construct and install a Notice Board in the Construction Site containing the information as per the Clause 111 of the PPR.
16. The Works to Be Completed within intended Completion Date	16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them within the intended Completion Date.
17. Design by contractor and Approval by the Project Manager	17.1 The contractor shall be responsible for the design of permanent works as specified in SCC. 17.2 Contractor shall be responsible for design of the Temporary Works. The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval. 17.3 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, shall be subject to prior approval by the Project Manager before their use. 17.4 The Project Manager's approval shall not alter the Contractor's responsibility for design of temporary works.
18. Safety, Security and Protection of the Environment	18.1 The Contractor shall, throughout the execution, and completion of the works and remedying of any defects therein: a. Have full regard for the safety of all persons entitled to be upon the site and keep the site (so as the same is under his control) and the works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons. b. Provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when necessary or required by the Project Manager or by any duly constituted authority, for the protection of the Works of for the safety and convenience of the public or others. 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 his methods of operation. d. Ensure that any cut or fill slopes are planted in grass or other plant cover as soon as possible to protect them from erosion. e. Any spoil or material removed from drains shall be disposed off to designated stable tipping areas as directed by the Project Manager. f. Shall not use fuel wood as a means of heating during the processing or preparation of any materials forming part of the works. g. The Project Manager shall have the power to disallow any working practice or activity of the Contractor or direct that such practices or activities be modified should the Project Manager consider, on the advice of the relevant Government Departments, that the practices or activities will be harmful to wildlife. h. Provide on the Site such life saving apparatus as may be appropriate and an adequate and easily accessible first aid outfit or such outfits as may be required by any government ordinance, factory act, etc., subsequently published and amended from time to time.
19. Discoveries	19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.
20. Possession of the Site	20.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the SCC, the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.
21. Access to the Site	21.1 The Contractor shall allow the Project Manager and any person authorized 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.
22. Instructions, Inspections and Audits	22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located. 22.2 The Contractor shall permit the GoN/DP and/or persons appointed by the GoN/DP to inspect the Site and/or the accounts and records of the Contractor and its sub-contractors relating to the performance of the Contract, and to have such accounts and records audited by auditors appointed by the GoN/DP if required by the GoN/DP. The Contractor's attention is drawn to Sub-Clause 58.2 which provides, inter alia, that acts intended to

	materially impede the exercise of the GoN's/DP's inspection and audit rights provided for under this Sub-Clause constitute a obstructive practice subject to contract termination.
23. Dispute Settlement	23.1 The Employer and the Contractor shall attempt to settle amicably by direct negotiation any disagreement or dispute arising between them under or in connection with the Contract. 23.2 Any dispute between the Parties as to matters arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party's request for such amicable settlement may be referred to Arbitration within 30 days after the expiration of amicable settlement period.
	Not Applicable.
25 Procedures for Disputes	25.1 In case of arbitration, the arbitration shall be conducted in accordance with the arbitration procedures published by the Nepal Council of Arbitration (NEPCA) at the place given in the SCC.
B. Time Control	
26. Program	26.1 Within the time stated in the SCC, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule. 26.2 An update of the Program shall be a program 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. 26.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the SCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall Provide an updated Activity Schedule within 15 days of being instructed to by the Project Manager. 26.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.
27. Extension of	27.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is

the Intended Completion Date	issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost. 27.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 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 at least 7 days prior to the intended completion date. 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 new Intended Completion Date.
28. Acceleration	28.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor. 28.2 If the Contractor's priced proposals for acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.
29. Delays Ordered by the Project Manager	29.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.
30. Management Meetings	30.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure. 30.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.
31. Early Warning	31.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible. 31.2 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 by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.
C. Quality Control	
32. Identifying Defects	32.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.
33. Tests	33.1 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.
34. Correction of Defects	34.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the SCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected. 34.2 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.
35. Uncorrected Defects	35.1 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, and the Contractor shall pay this amount.
D. Cost Control	
36. Contract Price	36.1 In the case of a Unit Rate contract, the Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item. 36.2 In the case of a lump sum contract, the Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for Materials on Site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.
37. Changes in the Contract Price	37.1 In the case of an Unit Rate contract: (a) If the final quantity of the work done differs from the

	quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 2 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. (b) The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 10 percent, except with the prior approval of the Employer. (c) If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities. 37.2 In the case of a lump sum contract, the Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.
38. Variations	38.1 All Variations shall be included in updated Programs, and, in the case of a lump sum contract, also in the Activity Schedule, produced by the Contractor.
	38.2 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) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered. 38.3 If the Contractor's quotation is 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. 38.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event. 38.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning. 38.6 In the case of an Unit Rate contract, if the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in GCC 37.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the

	Contractor shall be in the form of new rates for the relevant items of work.
39. Cash Flow Forecasts	39.1 When the Program, or, in the case of a lump sum contract, the Activity Schedule, is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.
40. Payment Certificates	40.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously. 40.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor within 30 days of submission by contractor. 40.3 The value of work executed shall be determined by the Project Manager. 40.4 The value of work executed shall comprise: (a) In the case of an Unit Rate contract, the value of the quantities of work in the Bill of Quantities that have been completed; or (b) In the case of a lump sum contract, the value of work executed shall comprise the value of completed activities in the Activity Schedule. 40.5 The value of work executed shall include the valuation of Variations and Compensation Events. 40.6 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.
41. Payments	41.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest as indicated in the SCC on the late payment in the next payment. 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. 41.2 If an amount certified is increased in a later certificate or 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. 41.3 Items of the Works for which no rate or price has been entered in BOQ shall not be paid for by the Employer and

	shall be deemed covered by other rates and prices in the Contract.
42. Compensation Events	42.1 The following shall be Compensation Events: (a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC 20.1. (b) The Employer modifies the Schedule of Other Contractors in a way that affects the work 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. (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site. (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons. (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor. (i) The advance payment is delayed. (j) The effects on the Contractor of any of the Employer's Risks. (k) The Project Manager unreasonably delays issuing a Certificate of Completion. (l) Force majeure events as determined by the Project Manager. 42.2 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.

	42.3 As soon as information demonstrating effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, 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 shall assume that the Contractor shall react competently and promptly to the event. 42.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.
43. Tax	43.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC 45.
44. Currency	44.1 The currency of Contracts shall be Nepalese Rupees.
45. Price Adjustment	45.1 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the SCC. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due. 45.2 **Adjustment Formulate:** "The adjustment to the Interim Payment Certificates in respect of changes in cost and legislation shall be determined from separate formulae for each of the types of construction work to be performed and Plant to be supplied. The formulae will be of the following general type: $$pn = A + b\frac{Ln}{Lo} + c\frac{Mn}{Mo} + d\frac{En}{Eo} + etc.$$ Where: **pn** is a price adjustment factor to be applied to the amount for the payment of the work carried out in the subject month, determined in accordance with Sub-Clause 41; **A** is a constant, specified in the Bidding Forms- Table of Price Adjustment data, representing the nonadjustable portion in contractual payments;[1] **b, c, d,** etc., coefficients representing the estimated

	proportion of each cost element (labor, materials, equipment usage, etc.) in the Works or sections thereof, net of Provisional Sums, as specified in the SCC; **Ln, Mn, En,** etc., are the current cost indices or reference prices of the cost elements for month "n," determined pursuant to Sub-Clause 45.4, applicable to each cost element; and **Lo, Mo, Eo,** etc., are the base cost indices or reference prices corresponding to the above cost elements at the date specified in Sub-Clause 45.4
	45.3 **Sources of Indices and Weightings:** The sources of indices shall be those listed in the Bidding Forms- Table of Price Adjustment data, as approved by the Project Manager and stated in SCC. Indices shall be appropriate for their purpose and shall relate to the Contractor's proposed source of supply of inputs on the basis of which his Contract shall have been computed. As the proposed basis for price adjustment, the Contractor shall have submitted with his bid the tabulation of Weightings and Source of Indices in the Bidding Forms, which shall be subject to approval by the Project Manager. 45.4 **Base, Current and Provisional Indices:** The base cost indices or prices shall be those prevailing on the day 30 days prior to the latest date for submission of bids. Current indices or prices shall be those prevailing on the day 30 days prior to the last day of the period to which a particular Interim Payment Certificate is related. If at any time the current indices are not available, provisional indices as determined by the Project Manager will be used, subject to subsequent correction of the amounts paid to the Contractor when the current indices become available. 45.5 **Weightings:** The weightings for each of the factors of cost given in the Bidding Forms shall be adjusted if, in the opinion of the Project Manager, they have been rendered unreasonable, unbalanced or inapplicable as a result of varied or additional work already executed or instructed under Clause 38 or for any other reason. 45.6 **Subsequent Legislation:** If, after the date 30 days prior to the latest date for submission of bids for the Contract, there occur changes to any National Statute, Ordinance, Decree, or other Law or any regulation or by-law of any local or other duly constituted authority, or the introduction of any such Statute, Ordinance, Decree, Law, regulation or by-law which causes additional or reduced cost to the Contractor, other than under the preceding sub-clauses of this clause, in the execution of the Contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor, be determined by the Project Manager and shall be added to or deducted from the Contract Price and the Project Manager shall notify the Contractor accordingly, with a copy to the Employer. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same shall already have taken into account in the indexing of any inputs to the Price Adjustment Formulae in accordance with the provisions of Sub-Clauses 45.2

	45.7 Where, price adjustment provision is not applicable pursuant to Sub-clause 45.1 then the Contract is subject to price adjustment only for construction material in accordance with this clause. If the prices of the construction materials stated in the contract is increased or decreased in an unexpected manner in excess of ten (10%) percent in comparison to the base price construction material stated in Section –IV, Bidding Forms-Table of Price Adjustment Data, then the price adjustment for the increase or decrease of price of the construction material beyond 10% shall be made by applying the following formulas: For unexpected increase in price $P = [R_1 - (R_0 \times 1.10)] \times Q$ For unexpected decrease in price P $= [R_1 - (R_0 \times 0.90)] \times Q$ Where: "P" is price adjustment amount "R_1" is the present price of the construction material (Source of indices shall be those listed in the Bidding forms) "R_0" is the base price of the construction material "Q" is quantity of the construction material consumed in construction during the period of price adjustment consideration If the Base price and source is to be proposed by the Bidder as per the provision made in Section –IV, Bidding Forms-Table of Price Adjustment Data then the Base price and source filled by Bidder for the construction material stated in the Bidding Form shall be subject to the approval of the Project manager and shall be as stated in SCC.. 45.8 The Price Adjustment amount shall be limited to a maximum of the initial Contract Amount as specified in the SCC. 45.10 The Price Adjustment provision shall not be applicable for delayed period if the contract is not completed in time due to the delay caused by the contractor or the contract is a Lump sum Contract or a Fixed Budget Contract.
46. Retention	46.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the SCC until Completion of the whole of the Works. 46.2 Upon the issue of a Defects Liability Certificate by the Project Manager, in accordance with GCC 55.1, half the total amount retained shall be repaid to the Contractor and half

	when the Contractor has submitted the Tax evidence document issued by the concerned Internal Revenue Office that the contractor has submitted his Income Returns . On completion of the whole works, the Contractor may substitute retention money with an "on demand" bank guarantee.
47. Liquidated Damages	47.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the SCC for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the SCC. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities. 47.2 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. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC.41
48. Bonus	48.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day stated in the SCC for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.
49. Advance Payment	49.1 The Employer shall make advance payment to the Contractor of the amounts stated in the SCC by the date stated in the SCC, against provision by the Contractor of an unconditional bank guarantee from 'A' class commercial Bank in a form and by a bank acceptable to the Employer in amounts equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.
	49.2 The Contractor is to 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 in this way by supplying copies of invoices or other

	documents to the Project Manager. 49.3 The advance payment shall be repaid by deducting proportionate amounts, as stated in SCC, from payments otherwise due Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.
50. Securities	50.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount specified in the SCC, by a 'A' class commercial bank acceptable to the Employer, and denominated in Nepalese Rupees. The Performance Security shall be valid until a date 30 days from the date of issue of the Defect Liability Certificate in the case of a bank guarantee. 50.2 Additional Performance Security required as per ITB 34.5 shall be valid until a date 30 days from the date of issue of the Certificate of Completion in the case of a bank guarantee. 50.3 The performance security issued by any foreign Bank outside Nepal must be counter guaranteed by an "A" class commercial Bank in Nepal.
51. Day works	51.1 If applicable, the Day works rates in the Contractor's Bid 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. 51.2 All work to be paid for as Day works shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done. 51.3 The Contractor shall be paid for Day works subject to obtaining signed Day works forms.
52. Cost of Repairs	52.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.
E. Finishing the Contract	
53. Completion	53.1 The Contractor shall request the Project Manager to issue a certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the work is completed.
54. Taking Over	54.1 The Employer shall take over the Site and the Works within seven days of the Project Manager's issuing a

	certificate of Completion.
55. Final Account	55.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 60 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 60 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.
56. Operating and Maintenance Manuals	56.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the **SCC.** 56.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the SCC** pursuant to GCC 56.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the SCC** from payments due to the Contractor.
57. Termination	57.1 In no case, the contractor shall terminate the contract unilaterally, without duly notifying the Employer. 57.2 The Employer may terminate the Contract at any time if the contractor : a. does not commence the work as per the Contract, b. abandons the work without completing, c. fails to achieve progress as per the Contract. 57.3 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. 57.4 Fundamental breaches of Contract shall include, but shall not be limited to, the following : (a) The Contractor uses the advance payment for matters other than the contractual obligations, (b) the Contractor stops work for 30 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager; (c) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days; (d) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation. (e) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 90 days of the date of the Project Manager's certificate;

	(f) 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; (g) the Contractor does not maintain a Security, which is required; and (h) 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 defined in the **SCC**. (i) If the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract, pursuant to GCC 58.1. 57.5 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC 57.2 above, the Project Manager shall decide whether the breach is fundamental or not. 57.6 Notwithstanding the above, the Employer may terminate the Contract for convenience. 57.7 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.
58. Fraud and Corruption	58.1 If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 15 days notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site. 58.2 Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with Clause 9. For the purposes of this Sub-Clause; (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party. (ii) "fraudulent practice"[5] is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation; (iii) "collusive practice"[6] is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party; (iv) "coercive practice"[7] is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence

	improperly the actions of a party; (v) "obstructive practice" is (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (bb) acts intended to materially impede the exercise of the GON's/DP's inspection and audit rights provided for under Sub-Clause 22.2.
59. Black Listing	59.1 Without prejudice to any other rights of the Employer under this Contract, GoN, Public Procurement Monitoring Office (PPMO), on the recommendation of procuring entity, may blacklist a Bidder for its conduct for a period of one (1) to three (3) years on the following grounds and seriousness of the act committed by the bidder. (a) if it is established that the Contractor has committed substantial defect in implementation of the contract or has not substantially fulfilled its obligations under the contract or the completed work is not of the specified quality as per the contract.
60. Payment upon Termination	60.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer. 60.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for

	the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on 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. 60.3 If the Contract is terminated because of fundamental breach of Contract or for any other fault by the Contractor, the performance security shall be forfeited by the Employer.

	In such case, amount to complete the remaining works as per the Contract shall be recovered from the Contractor as Government dues.
61. Property	61.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.
62. Release from Performance	62.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, 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 work carried out before receiving it and for any work carried out afterwards to which a commitment was made.
63. Suspension of DP Loan/Credit/Grant	63.1 In the event that the Donor Agency suspends the loan/ credit/grant to the Employer from which part of the payments to the Contractor are being made: a. the Employer is obligated to notify the Contractor of such suspension within 7 days of having received the Donor Agency's suspension notice; and b. if the Contractor has not received sums due him within the 30 days for payment provided for in Sub-Clause 41.1, the Contractor may immediately issue a 15-day termination notice.
64. Project Manager's Duties and Authorities	64.1 The Project Manager's duties and authorities are restricted to the extent as stated in the SCC.
65. Quarries and Spoil Dumps	65.1 Any quarry operated as part of this Contract shall be maintained and left in a stable condition without steep slopes and be either refilled or drained and be landscaped by appropriate planting. Rock or gravel taken from a river shall be removed over some distance so as to limit the depth of material removed at any one location, not disrupt the river flow or damage or undermine the river banks. The Contractor shall not deposit excavated material on land in Government or private ownership except as directed by the Project Manager in writing or by permission in writing of the authority responsible for such land in Government ownership, or of the owner or responsible representative of the owner of such land in private ownership, and only then in those places and under such conditions as the authority, owner or responsible representative may prescribe.
66. Local Taxation	66.1 The prices tendered by the Contractor shall include all taxes that may be levied in accordance to the laws and regulations in being in Nepal on the date 30 days prior to the closing date for submissions of Bids on the Contractor's equipment, plant and materials acquired for the purpose of the Contract and on the services performed under the Contract. Nothing in

	the Contract shall relieve the Contractor from his responsibility to pay any tax that may be levied in Nepal on profits made by him in respect of the Contract.
67. Value Added Tax	67.1 The Contract is not exempted from value added tax. An amount specified in the schedule of taxes shall be paid by the Contractor in the concerned VAT office within time frame specified in VAT regulation.
68. Income Taxes on Staff	68.1 The Contractor's staff, personnel and labor will be liable to pay personal income taxes in Nepal in respect of their salaries and wages, as are chargeable under the laws and regulations for the time being in force, and the Contractor shall perform such duties in regard to such deductions as may be imposed on him by such laws and regulations. 68.2 The issue of the Final Account Certificate pursuant to clause 55 shall be made only upon submittal by the Contractor of a certificate of income tax clearance from the Government of Nepal.
69. Duties, Taxes and Royalties	69.1 Any element of royalty, duty or tax in the price of any goods including fuel oil, and lubricating oil, cement, timber, iron and iron goods locally procured by the Contractor for the works shall be included in the Contract rates and prices and no reimbursement or payment in that respect shall be made to the Contractor. 69.2 The Contractor shall familiarize himself with GON the rules and regulations with regard to customs, duties, taxes, clearing of goods and equipment, immigration and the like, and it will be necessary for him to follow the required procedures regardless of the assistance as may be provided by the Employer wherever possible. 69.3 The Contractor shall pay and shall not be entitled to the reimbursement of cost of extracting construction materials such as sand, stone/boulder, gravel, etc. from the river beds or quarries. Such prices will be levied by the local District Development Committee (DDC) as may be in force at the time. The Contractor, sub-contractor(s) employed directly by him and for whom he is responsible, will not be exempted from payment of royalties, taxes or other kinds of surcharges on these construction materials so extracted and paid for to the DDC.
70. Member of Government, etc, not Personally Liable	70.1 No member or officer of GoN or the Employer or the Project Manager or any of their respective employees shall be in any way personally bound or liable for the act or obligations of the Employer under the Contract or answerable for any default or omission in the observance or performance of any of act, matter or thing which are herein contained.
71. Approval of Use of Explosives	71.1 No explosives of any kind shall be used by the Contractor without the prior consent of the Employer in writing and

	the Contractor shall provide, store and handle these and all other items of every kind whatsoever required for blasting operations, all at his own expense in a manner approved in writing by the Employer.
72. Compliance with Regulations for Explosives	72.1 The Contractor shall comply with all relevant ordinances, instructions and regulations which the Government, or other person or persons having due authority, may issue from time to time regarding the handling, transportation, storage and use of explosives.
73. Permission for Blasting	73.1 The Contractor shall at all times maintain full liaison with and inform well in advance, and obtain such permission as is required from all Government authorities, public bodies and private parties whatsoever concerned or affected, or likely to be concerned or affected by blasting operation.
74. Records of Explosives	74.1 Before the beginning of the Defects Liability Period, the Contractor shall account to the satisfaction of the Project Manager for all explosives brought on to the Site during the execution of the Contract and the Contractor shall remove all unused explosives from the Site on completion of works when ordered by the Project Manager.
75. Traffic Diversion	75.1 The Contractor shall include the necessary safety procedures regarding and pedestrian traffic diversion that is needed in execution of the works. The Contractor shall include in his costing of works, any temporary works or diversion that are needed during the construction period. All traffic diversion should be designed for the safety of both the motoring public and the men at work. It shall ensure the uninterrupted flow of traffic and minimum inconvenience to the public during the period concerned. As such, adequate warning signs, flagmen and other relevant safety precautionary measures shall be provided to warn motorists and pedestrians well ahead of the intended diversion as directed by the Project Manager. All traffic devices used shall be designed in accordance with the instruction of Project Manager.

SECTION - VIII

Special Conditions of Contract

The following Special Conditions of Contract shall supplement the GCC. Whenever there is a conflict, the provisions herein shall prevail over those in the GCC

Special Conditions of Contract

A. General	
GCC 1.1 (q)	The Employer is: **Nepal Electricity Authority** **Janakpur Regional Office, Mujeliya, Janakpur**
GCC 1.1 (u)	The Intended Completion Date for the whole of the Works shall be: **12 months from the date of contract effective.**
GCCs 1.1 **(aa) & 4.1**	The Project Manager is : **Sachidanand Yadav** The Project Manager and Engineer are synonyms.
GCC 1.1 (s)	For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is 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 Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
GCC 1.1 (cc)	The Site is located at **Different parts of the country and defined in Scope of the Works .**
GCC 1.1 (ff)	*The **Start Date** shall be*: The Effective Date, upon which the period until the Time for Completion of the Facilities shall be counted from, is the date when all of the following conditions have been fulfilled: (a) This Contract Agreement has been duly executed for and on behalf of the Employer and the Contractor; (b) The Contractor has submitted to the Employer the performance security. (c) The Employer has paid the Contractor the first installment of advance payment. Each party shall use its best efforts to fulfill the above conditions for which it is responsible as soon as practicable. In case the Contractor does not claim the advance payment within 30 days of the date of contract signing, the 30th day will be considered as the start date.
GCC 1.1 (jj)	The Works consist of **Supply, Delivery, Installation/Erection, Testing and Commissioning of HT & LT Line at Singhdevi-Raniban, Okhaldhunga** Turnkey basis as defined in the **Bidding Data and Scope of Works.**
GCC 2.2	Sectional Completions are: **Not Applicable.**
GCC 2.3(i)	The following documents also form part of the Contract: - Minutes of Meetings as agreed upon.

<table>
<tr><td></td><td>- Value Added Tax (VAT) certificate
- PAN certificate
- Tax clearance certificate</td></tr>
<tr><td>GCC 3.1</td><td>The language of the contract is ENGLISH/NEPALI
The law that applies to the Contract is the law of NEPAL</td></tr>
<tr><td>GCC 8.1</td><td>Schedule of other contractors: None</td></tr>
<tr><td>GCC 13.1</td><td>The minimum insurance covers shall be:
(a) <u>Cargo Insurance</u>
Covering loss or damage occurring, while in transit from the supplier's or manufacturer's works or stores until arrival at the Site, to the Facilities (including spare parts therefore) and to the construction equipment to be provided by the Contractor or its Subcontractors.
<table>
<tr><th>Amount</th><th>Deductible limits</th><th>Parties insured</th><th>From</th><th>To</th></tr>
<tr><td>110 % of CIP cost</td><td>(*)</td><td>Contractor</td><td>Dispatch Certificate</td><td>Arrival to Site</td></tr>
</table>
(*) Excess 5% of claimed amount subject to minimum of NRs 20,000 for normal and NRs 80,000 for act of God/major perils and collapse.
(b) <u>Installation All Risks Insurance</u>
Covering physical loss or damage to the Facilities at the Site, occurring prior to completion of the Facilities, with extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the defect liability period while the Contractor is on the Site for the purpose of performing its obligations during the defect liability period.
<table>
<tr><th>Amount</th><th>Deductible limits</th><th>Parties insured</th><th>From</th><th>To</th></tr>
<tr><td>110% of Contract Value</td><td>(*)</td><td>Contractor</td><td>Dispatch Certificate</td><td>Final Acceptance Value</td></tr>
</table>
(*) Excess 5% of claimed amount subject to minimum of NRs 10,000 for normal period and NRs 30,000 for testing period.
(c) <u>Third Party Liability Insurance</u>
Covering bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property (including the Employer's property and any parts of the Facilities that have been accepted by the Employer) occurring in connection with the supply and installation of the Facilities.
<table>
<tr><th>Amount</th><th>Deductible limits</th><th>Parties insured</th><th>From</th><th>To</th></tr>
</table></td></tr>
</table>

NRs. 1 million	As in (b) above	Contractor's Employees	Commencement of Works	Defect Liability Certificate
NRs. 1 million	As in (b) above	Employer's Personnel	Commencement of Works	Defect Liability Certificate
NRs. 4 million	As in (b) above	Third Party Personnel	Commencement of Works	Defect Liability Certificate

Automobile Liability Insurance
Covering use of all vehicles used by the Contractor or its Subcontractors (whether or not owned by them) in connection with the supply and installation of the Facilities. Comprehensive insurance in accordance with statutory requirements.

Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

Employer's Liability

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

Other Insurances

The Contractor is also required to take out and maintain at its own cost the following insurances:

Details: None

Amount	Deductible limits	Parties insured	From	To

The Employer shall be named as co-insured under all insurance policies taken out by the Contractor except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insured's under all insurance policies taken out by the Contractor, except for the Cargo, Workers' Compensation and Employer's Liability Insurances. All insurers' rights of subrogation against such co-insured's for losses or claims arising out of the performance of the Contract shall be waived under such policies.

i. .The minimum cover for personal injury or death insurance shall, however, be not less than as per requirements of the Labor Act of Nepal.

GCC 14.1	Site Investigation Reports are: **None**

GCC 17.1	The following shall be designed by the Contractor: **As Applicable.**
GCC 20.1	The Site Possession Date(s) shall be: **As agreed during contract signing.**
GCC 23.2	Not Applicable.
GCC 24	Not Applicable.
GCC 25	Institute whose arbitration procedures shall be used: Council of Arbitration (NEPCA). The Place of Arbitration shall be: Kathmandu, Nepal
B. Time Control	
GCC 26.1	The Contractor shall submit for approval a Program for the Works **within 30 days** from the date of the Letter of Acceptance.
GCC 26.3	The period between Program updates **is 60 days**. The amount to be withheld for late submission of an updated Program is: **All due bills shall be withheld.**
C. Quality Control	
GCC 34.1	The Defects Liability Period is: **365 days.**
D. Cost Control	
GCC 37.1 (d)	Add this new sub-clause: **The quantities entered in the Price Schedule are only estimated quantities. After detailed site investigation and design, the Contractor shall prepare a final Price Schedule within 3 months from the date of Contract Signing and submit to the Manager for approval. The Contractor shall agree to make no claims for anticipated profit or alleged losses because of any difference between the quantities actually furnished and erected and the estimated quantities in the Contract.** NEA reserves the right at the time of award of contract or within six months from the effective date of contract to increase or decrease the quantities of the Price-schedule by up to fifteen percent (15%) of the contract price. Taking this into consideration, the Bidder shall present a fairly balanced price on Bill of Quantities.
GCC 41	Delete sub-clauses 41.1, 41.2 and 41.3 and replace with the following: Advance Payment (i) Up to 20 % (Twenty percent) of total Contract price may be payable in two installments: Up to 10% after the signing of agreement for the mobilization of contractor's team at the site. The remaining 10 % is conditional and shall be payable to the contractor after

the contractor completes full mobilization at site and fulfills contractual obligations such as submission of insurance policies, work programme, approval of Pre Construction Survey report (PCS) , Structural Data Sheet (SDS) and final BOQ for approval.

(ii) For the Advance payment the Bidder shall produce the advance payment bank guarantee, which shall be deducted in proportion to each and every running bill submitted by the contractor. Such bank guarantee shall be made valid up to the entire contract period. Conditional bank guarantee shall not be accepted.

(iii) The contractor shall start the work within 30 days of the first Advance Payment.

(iv) The contractor shall submit to NEA, the provision evidencing for which the expenditure of the advance payment was made.

(v) The Advance Payment guarantee shall be forfeited if the Advance Payment is used in the works other than the scope of this contract.

Payment for Supply & Delivery

Thirty percent (30%) of the Contract Price for supply portion will be paid against delivery of Plant and Materials at Site and submission of shipping documents comprising of clean on-board bill of lading for goods supplied from outside the Country or delivery list/truck receipt for goods supplied from within the Country, detailed invoice, inspection and test certificates issued by Employer's inspector/nominated inspection agency (where applicable), factory test report, packing list, insurance certificate, certificates of origin, manufacturer's or supplier's warranty certificate and certificate issued by the Employer's Representative evidencing delivery of Plants or Materials at Site. *Report of Physical Verification or test at site (where applicable) of material is must for such payments.*

Forty percent (40%) of the Contract Price for supply portion will be paid after successful installation/Testing/Commissioning of Plants or at Materials at the specified site.

Remaining Five Percentages (5%) of supply portion will be paid after testing and commissioning of equipment and issuance of taking over certificate.

Payment for Construction and Installations

Payment for Construction and Installation works against progress bill will be made according to the progress report, approved by the Employer's Representative.

i. Payments to the Contractor for progress payments shall be made by the NEA to the Contractor within reasonable time after receipt of invoices.

ii. Payments to be made to the Contractor by the NEA other than progress payments shall be made in accordance with the relevant clauses governing each type of payment.

iii. All payments to the Contractor for work performed under the Contract shall be in Nepalese Rupees in accordance with supply and construction items unit prices pursuant to the Bid Price Schedules. Notwithstanding NEA procedural assistance to the Contractor, will neither make any foreign currency payments to the Contractor for any reason whatsoever nor guarantee any foreign currency commitment by the Contractor.

	iv. Progress Payment shall be made only after the completion of work under any construction unit complete as mentioned in BOQ as per standard drawing, specification and as directed by the Manager. **Retention Amount** **Five percent (5%) from each progress payment** for supply of Plant and Materials; Insurance, Clearing, Forwarding and Inland Transportation to Site; and Construction and Installation works shall be retained. The following conditions shall be fulfilled for the payment of such retained amount: (a) 5% retention amount shall be paid against issuance of Defect Liability Certificate. This Certificate shall be issued upon receipt of income tax clearance certificate by Government of Nepal (GON), Internal Revenue Department (IRD) and custom clearance documents showing the re-export of all the returnable items or tax payment Certificate for items disposed in the Country including fulfillment of all outstanding obligations. If the Contractor fails to clear all the required taxes, custom clearances and all outstanding obligations as mentioned above, such money shall be deducted from this portion of the Retention money. The Employer shall pay the Contractor the amounts certified by the Manager within 45 days from the date of approval of each certificate. **Income Tax Deduction** From each progress bill, an amount, as determined by the prevalent rules and regulations of GOVERNMENT OF NEPAL, shall be deducted and deposited with the concerned Tax Department in the Country as a deposit towards Contractor's income tax.
GCC 41.1	**The interest rate: Not Applicable**
GCC 42.1	Delete sub-clause 42.1 (e), (f), (g) & (i)
GCC 43	Delete sub-clause 44.1 and replace with the following: **1. In the country of Origin** The prices bid by the Contractor shall include all taxes, duties and other charges imposed outside the Employer's country on the production, manufacture, sale and transport of the Contractor's Equipment, Plant, Materials and supplies to be used on or furnished under the Contract, and on the services performed under the Contract. **2. In Nepal** **General:** (a) Unless otherwise specifically declared in the contract documents, the prices bid by the Contractor and its suppliers and subcontractors shall include business taxes and other taxes that may be levied in accordance with the laws and regulations in force or in effect in Nepal as of 28 days prior to the closing date for submission of tenders in the Employer's country on the Equipment, Plant, Materials and Supplies (permanent, temporary and consumables) acquired for the purpose of the Contract and

on the services performed under the Contract. Whatsoever provisions made in the Contract document shall not relieve the Contractor, its suppliers and subcontractors from their responsibility to pay income tax that may be levied in the Employer's country on profits made by the Contractor, its suppliers and subcontractors in respect of the Contract.

(b) **Value Added Tax (VAT)**: if not included in the costs while submitting bids by the Contractor, sub contractor or its nominated sub contractor, shall be eligible for refund on all imported equipment and materials to be supplied and delivered exclusively for use in the Project.

(c) In the event that the origin of any of the contractor's or its subcontractor's or the nominated subcontractor's plant, equipment and materials is India or third country, the provisions for the exemption of customs duties and VAT as per regulation of GoN, as mentioned in this clause shall be applied. For such provision, the Contractor must submit the request for the Custom, VAT exemption along with all supporting documents as required by GoN.

(d) The Employer will bear custom duty, VAT, any license fee and contribution levied by the Tax Department of GOVERNMENT OF NEPAL on above imported Plant and VAT (13%) on Plant procured directly from local manufacturers.

(e) Thirteen percent (13%) VAT will be levied on Construction and Installation. The Employer will pay this VAT to the Contractor on each bill and the Contractor shall be responsible for payment of the same to the concerned tax authority in the Country.

e to comply with this regulation may result in imposition of full customs duties, VAT, etc. as per prevalent rules and regulations of GOVERNMENT OF NEPAL. In such case, the additional taxes and duties, including VAT, shall be borne by the Contractor.

Staff Income Tax:

ontractor's staff, personnel and laborers, and those of its subcontractors, will be liable to pay personal income taxes in the Employer's country, irrespective of whether they are local or foreign nationals on income earned including salaries and wages as applicable under the laws and regulations of Nepal. The Contractor shall perform such duties in regard to Tax Deduction at Source (TDS) thereof as may be applicable by such laws and regulations.

Import License:

ontractor shall inform the Employer and the Project Manager in writing the details of the equipment and materials to be imported into Nepal for use on the Works at least 56 days prior to arrival of shipment at disembarkation port, and shall submit a formal written request for assistance from the Employer for importation processing. The Employer will assist the Contractor to obtain necessary permits for import of such equipment and materials into Nepal.

Import license fees or any other charges shall be at the cost of the Contractor. The Contractor shall be responsible for transport from the Port of disembarkation to the Site or location of the Works. The Contractor shall be fully responsible to determine these rates and the amount payable at the time of preparing tender document and include such costs in its bids. In failing to do so, the Employer shall not be liable to pay such costs and the Contractor shall pay such charges as local or any customs authorities en-route may impose, which will not be an eligible item for refund from the Employer.

Duties on Equipment, Plant, Materials and Supplies:

(a) Notwithstanding the provisions of this document, the Contractor's Plant and Equipment, including essential tools thereof, imported for the sole purpose of executing the Contract on condition of re-export upon completion of the Works, shall be exempt from payment of customs duties, VAT and applicable taxes. However, the Contractor shall deposit the amount or provide a Bank Guarantee to the GON Customs office equal to amount of customs duties and other taxes as per the prevailing laws, rules and regulations of Nepal for those imported equipment, plant, materials and supplies at the time of import. Such deposited amounts shall be refunded, or the Bank guarantee cancelled by the Customs Office after Re-export of those imported equipment, plant, materials and supplies.

(b) Any plant, materials or supplies imported by the Contractor for the performance of the Works but not incorporated in the Works shall be taken out of Nepal within 90 (Ninety) days from the date of issuance of the Performance Certificate. If the Contractor disposes off or consumes any equipment, spare parts, materials or supplies within Nepal, it shall pay all customs duties, VAT, income tax on the sales proceeds and taxes applicable on such items under the laws and regulation of Nepal in force.

(c) Equipment, plant, materials and supplies, imported by the Contractor for execution of the Works, shall be subject to payment of customs duty at a special rate of one percent (1%) of CIP or Customs entry point value. This customs duty shall be paid by the Contractor at the time of import and will be reimbursed by the Employer to the Contractor upon submission of the original receipt issued by the Customs Department.

(d) VAT shall be exempted on all imported materials & equipment purchased for the use in the Works (shall be reimbursed by the Employer in case the Employer is unable to avail exempt facility).

(e) VAT applicable on plant & equipment supplied directly from manufacturing plant in the Employer's country shall be reimbursed.

(f) The Contractor shall maintain records satisfactory to the Employer documenting use of all Plant, Materials and Supplies imported into and/or procured for the performance of the Works. If any of such Plant, Materials and/or Supplies, imported into Nepal or otherwise supplied to the Project at a special or preferential rate of Customs Duties or taxes, are misused or found to be used or appropriated for any purpose other than the Project, the Contractor shall be held fully responsible, and liable to pay customs duties, VAT and other taxes and/or any penalties as may be imposed in

	accordance with the prevailing laws and regulations of Nepal. (g) Income tax assessed in accordance with the prevailing Income Tax Act of Nepal and as per the provision of any specific Double Taxation Agreement, shall be imposed on the Contractor, its sub-contractors and nominated sub- contractors. An advance income tax as per the prevailing income Tax Act and Finance Act shall be deducted from the monthly progress payment of the Contractor. (h) The Contractor shall pay all duties, taxes, fees and contributions levied in Nepal in Nepalese Rupees as directed by the relevant governmental department or office, or any other local statutory agency or body in accordance with the relevant rules and regulations. (i) The provisions of this clause shall apply equally to foreign subcontractors or nominated subcontractors of the Contractor employed for the Works. (j) The Contractor and any foreign subcontractors or nominated subcontractors employed on the Works, if not already registered in Nepal, shall be required to get registered with the Inland Revenue Department (IRD) for the purpose of the Contract, which shall be undertaken within 28 days after signing of the Contract Agreement. The Contractor, sub-contractor or the nominated subcontractor shall submit certified copies of the Registration Certificate(s) to the Manager within 14 days of registration. (k) Other local fees and charges (toll taxes) shall be applied in accordance with the prevailing laws and regulations of Nepal. (l) The Contractor shall pay all applicable customs & taxes and the Employer shall reimburse the same at the earliest. (m) Locally available goods, construction materials including fuel, lubricating oil, cement, timber, iron and steel goods, etc. shall be procured locally. All taxes for such goods procured from the local market shall be included in the Contract Rates and Prices and no reimbursement or payment in that respect shall be made to the Contractor.
GCC 45.1	Delete sub clause 45.1,45.2and 45.3 and replace with the following: This is fixed price contract.
GCC 45.7	N/A
GCC 45.8	N/A
GCC 46.1	The proportion of payments retained is: **5 (FIVE) PERCENT**
GCC 47.1	The liquidated damages for the whole of the Works are **0.05 PERCENT** of the final Contract Price per day. The maximum amount of liquidated damages for the whole of the Works is 10 PERCENT of the final Contract Price.

GCC 48.1	Delete this clause.
GCC 49.1	The Advance Payment shall be limited to **Twenty percent (20%)** of the initial Contract price excluding the provisional sums, day works and VAT and shall be made to the Contractor upon submission of acceptable Bank Guarantee for advance payment.
GCC 49.3	Deduction will be at the rate of 20% of the respective Interim Payment Certificate until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the end of 70 % of the approved contract period.
GCC 50.1	erformance Security shall be for the following minimum amounts equivalent as a percentage of the Contract Price: i. Five percent (5%) (Clause ITB 38.1) if the bid price is not below 15% of the office estimate. ii. If the bid price is below 15% of the office estimate then the Performance Security shall be additional 50% of the amount which is below 15% of the office estimate as follows. performance security = 5% of Bid price + 50% of (0.85 * Office Estimate - Bid Price) iii. an additional amount of 8% of the Contract price if the Employer has increased the Performance Security amount pursuant to ITB Sub Clause ITB 32.5 The standard form(s) of Performance Security acceptable to the Employer shall be "an Unconditional Bank Guarantee" acceptable to the Employer of the type presented in Section IX of the Bidding Documents. The Performance security shall be valid for a period of ninety (90) days beyond the expiration of warranty period and will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract including any warranty obligations and submission to purchaser by the supplier of Income Tax clearance certificate issued by the concerned GON office. The supplier shall promptly extend the validity suitably to cover agreed extension of the warranty period of the supplied goods.
E. Finishing the Contract	
GCC 53.1	Replace the whole clause with following The Contractor shall request the Project Manager to issue a certificate of Completion of the Works, after completion of the Works in accordance with the Contract, including Tests on Completion. A pre-requisite for such request is that the entire Work has been subjected to normal operating stresses for at least two (2) months and that no defects or elements of danger have developed during this period (except for minor outstanding work that does not affect the use of the Works or Section for their intended purpose). The Employer's right to subject part of the

	Work to normal operating stresses during the course of execution is not affected by the provisions of this article. When the Employer/Employer's Representative is satisfied that the whole Works have been completed and has established that the individual components are impeccable in all respects and fulfill the stipulated conditions, and after any defects that may have come to light have been remedied, a Taking-Over Certificate will be issued by the Employer's Representative with copy to the Employer. The right to determine whether or not the whole Work is completed rests with the Employer/Employer's Representative. If the Works are divided into Sections, the Contractor shall be entitled to apply for a Taking-Over Certificate for each Section. The issuance of the Taking-Over Certificate marks the beginning of the Defect Liability Period. The Employer can reject the application, giving his reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued: the Contractor shall then complete such work before issuing a further notice under this Sub-Clause.
GCC 56.1	The date by which operating and maintenance manuals are required is: **Prior to the issuance of the Certificate of Completion.** The date by which "as built" drawings is required is: **Prior to Completion Certificate.** Moreover, should any change is required in the "as-built" drawings because of rectification of any defects within the Defects Liability Period, such changes shall be incorporated and "as-built" drawings shall be updated accordingly before issuance of the Final Acceptance Certificate.
GCC 56.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is: **Full value of last Invoice.**
GCC 57.2 (g)	The maximum number of days is: **consistent with clause 47.1 of liquidated damages.**
GCC 57.2	Add new Sub Clauses i) the Advance Payment as per GCC clause 41 is found to be misused. j) the Contractor fails to meet the Work Execution Schedule. k) the Contractor does not start the work within 30 days of the contract effective date.
GCC 57.6	Add this new Sub Clause

	The Contractor cannot terminate the contract without pre notification to the Employer.
GCC 59.1	Add new Sub Clauses (a) if the bidder fails to sign the contract as per ITB 39.1. (b) if the contractor has been found engaged in corrupt or fraudulent practices in competing for or in executing the contract pursuant to GCC 58.1.
GCC 60.1	The Performance Security shall be forfeited. The excess amount required for the completion of the remaining works as per contract shall be recovered from the contractor as government due.
GCC 61.1	The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, **is *50%.***
GCC 64	The Project Manager has to obtain the specific approval of the Employer for taking any of the following actions : a. Approving subcontracting of any part of the works under General Conditions of Contract Clause 7; b. Certifying additional costs determined under General Conditions of Contract Clause 42; c. Determining start date under General Conditions of Contract Clause 1; d. Determining the extension of the intended Completion Date under General Conditions of Contract Clause 27; e. Issuing a Variation under General Conditions of Contract Clause 1 and 38, except in an emergency situation, as reasonably determined by the Project Manager; emergency situation may be defined as the situation when protective measures must be taken for the safety of life or of the works or of adjoining property. f. Adjustment of rates under General Conditions of Contract Clause 37;

Annex-1

Table of Price Adjustment Data
[SCC 45.1]

Code	Index Description	Source of Index*	Base Value and Date	Employer's Proposed Weighting Range (coefficient)	Bidder's Proposed Weighting (coefficient)**
1	2	3	4	5	6
	Non - adjustable (A)			0.15	0.15
	Labor (b)				
	Materials (c)				
	Equipment usage (d)				
		Total			**1.00**

Note: Base value and Bidder's proposed weighting coefficient to be filled as per "Bid Form of Table of Price Adjustment Data" in Bidding Forms (Section-IV) after verification by the Employer in case of the alternative provision of Bidder proposed value and weighting coefficient.

Table of Price Adjustment Data
[SCC 45.7]

Code	Construction Material*	Unit	Base Price (NRs/Unit) ** (Ex-factory)	Source (Factory)**
1	2	3	4	5

** For the purpose of calculation of price adjustment, the Ex-factory price of the same source mentioned in the table shall be taken into consideration

SECTION - IX

Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Table of Forms

1) Letter of Intent…….....IX-2
2) Letter Of Acceptance…….IX-3
3) Contract Agreement……..IX-4
4) Performance Security….....IX-5
5) Advance payment Security……..…IX-6

Letter of Intent

[on letterhead paper of the Employer]

Date: ... ……

To: ... .name and address of the Contractor .....

Subject: ..... Issuance of letter of intent to award the contract .....

This is to notify you that, it is our intention to award the contract .....[insert date] .....for execution of the ..... [insert name of the contract and identification number, as given in the Contract Data/SCC] to you as your bid price ..... [insert amount in figures and words in Nepalese Rupees] as corrected and modified in accordance with the Instructions to Bidders is hereby selected as substantially responsive lowest evaluated bid.

Authorized Signature: ……

Name: ... …….

Title: …….

CC:
[Insert name and address of all other Bidders, who submitted the bid]

Letter of Acceptance

[on letterhead paper of the Employer]

Date: ……..

To: .... name and address of the Contractor ……...

Subject:..... Notification of Award

This is to notify that your Bid dated .....date ……..for execution of the……..name of the contract and identification number, as given in the Contract Data/SCC …….... for the Contract price of Nepalese Rupees [insert amount in figures and words in Nepalese Rupees], as corrected in accordance with the Instructions to Bidders is hereby accepted in accordance with the Instruction to Bidders.

You are hereby instructed to contact this office to sign the formal contract agreement within 15 days with Performance Security as specified in the SCC consisting of a Bank Guarantee in the format included in Section IX (Contract Forms) of this Bidding Document.

The Employer shall forfeit the bid security, in case you fail to furnish the Performance Security and to sign the contract within specified period.

Authorized Signature: ……...

Name and Title of Signatory: ……

Contract Agreement

THIS AGREEMENT made the .....day of …….. between……. name of the Employer …….. (hereinafter "the Employer"), of the one part, and ……name of the Contractor ……(hereinafter "the Contractor"), of the other part:

WHEREAS the Employer desires that the Works known as …….... name of the Contract .....should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects in the sum of NRs ….....…..[insert amount of contract price in words and figures including taxes] (hereinafter "the Contract Price").

The Employer and the Contractor agree as follows:

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

2. The following documents shall be deemed to form and be read and construed as part of this Agreement.
   (a) the Letter of Acceptance;
   (b) the Letter of Bid;
   (c) the Addenda Nos ..... insert addenda numbers if any ……
   (d) the Special Conditions of Contract;
   (e) the General Conditions of Contract;
   (f) Bills of Quantities (BOQ);
   (g) the Specification;
   (h) the Drawings;
   (i) the Activity Schedules; and
   (j) Table of Price Adjustment Data
   (k).....[Specify if there are any other document]

3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer 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 Nepal on the day, month and year indicated above.

Signed by ……. for and on behalf the Contractor in the presence of	Signed by…….. for and on behalf of the Employer in the presence of
Witness, Name Signature, Address, Date	Witness, Name, Signature, Address, Date

Performance Security

(On letterhead paper of the 'A' class commercial Bank)

..... Bank's Name, and Address of Issuing Branch or Office .....

Beneficiary: ..... Name and Address of Employer …….....

Date: .....

Performance Guarantee No.:…….

We have been informed that ... ... [insert name of the Contractor] (hereinafter called "the Contractor") has been notified by you to sign the Contract No. .. .. [insert reference number of the Contract] 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, a performance guaranteeis required.At the request of the Contractor, we ... . [insert name of the Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ..... [insert name of the currency and amount in figures*] (... .. insert amount in words) such sum being payable in Nepalese Rupees, 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(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the ... . Day of ..... **, and any demand for payment under it must be received by us at this office on or before that date.

……

Seal of Bank and Signature(s)

Advance Payment Security

(On letterhead paper of the 'A' class commercial Bank)

..... *Bank's Name, and Address of Issuing Branch or office*.....
Beneficiary: ..... *Name and Address of Employer*
.....
Date: .....
Advance Payment Guarantee No.:.....

We have been informed that . . . . . ***name of the Contractor***. . . . . (hereinafter called "the Contractor") has entered into Contract No. . . . . ***reference number of the Contract***. . . . . dated . . . . .with you, for the execution of . . . . . ***name of contract and brief description of Works***. . . . .(hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum . . . . . ***name of the currency and amount in figures****. . . . . (. . . . . ***amount in words***. .. . .) is to be made against an advance payment guarantee. At the request of the Contractor, we . . . . . ***name of the Bank***. . . . . hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of . . . . . ***name of the currency and amount in figures****. . . . . (. . . . . ***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 used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number . .. . . ***Contractor's account number***. . . . . at . . . . . ***name and address of the Bank***. . . . . .

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that eighty (80) percent of the Contract Price has been certified for payment, or on the . . . day of . . . . . , ...**, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

. . . . . .

Seal of Bank and Signature(s)